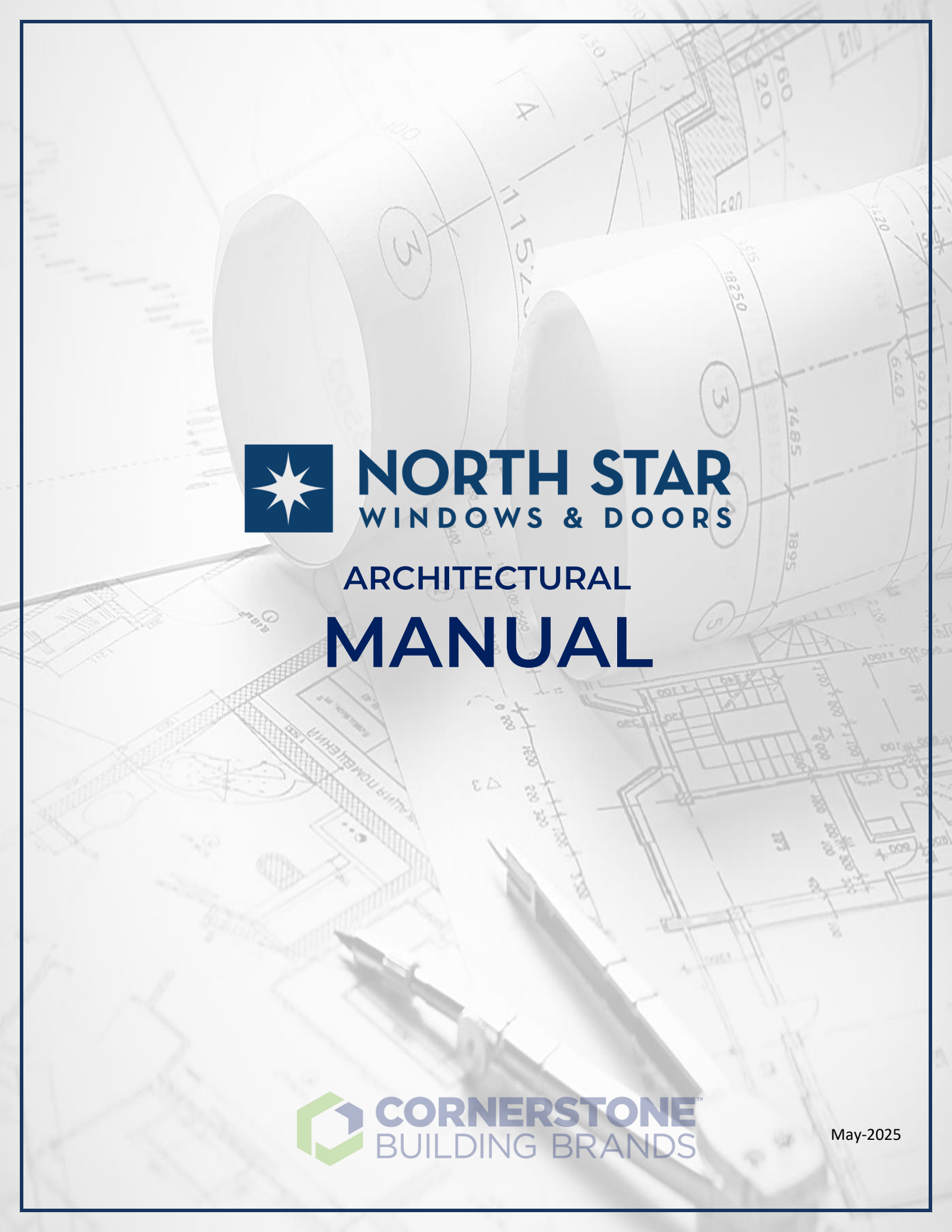


NORTH STAR
WINDOWS & DOORS

ARCHITECTURAL MANUAL

CORNERSTONE BUILDING BRANDS

May-2025

NORTH STAR WINDOWS & DOORS

Contents

NORTH STAR WINDOWS & DOORS

Why We Are the Best

North Star has earned a reputation for manufacturing and distributing attractive, high-quality, energy efficient vinyl windows and doors.

North Star's manufacturing system ensures all our vinyl windows and doors are built to meet or exceed industry standards. Our products are tested and certified by Canadian Standards Association and comply with American Architectural Manufacturers Association (AAMA) standards. We're so confident in our windows and doors that we back them with a transferable, limited lifetime warranty.

When you buy North Star products, you know you're getting the best quality and value for your investment.

The strong relationship we have with our various manufacturing partners has helped us maintain our reputation for leadership, innovation and the production of windows and doors of impeccable quality.

S.A.W.D.A.C. SIDING AND WINDOW DEALERS ASSOCIATION OF CANADA

NFRC National Fenestration Rating Council CERTIFIED

igmac

AAMA

CSA

ENERGY ADVANTAGE LOW-E GLASS

Window Wise APPROVED MANUFACTURER

fenestration canada

LoE3 366

Super Spacer BETWEEN YOU AND THE ELEMENTS.

ENERGY STAR PARTICIPANT

Committed to Green

At North Star, we care about the environment inside your home and outside it as well. We're constantly striving to save energy and eliminate waste throughout our EnviroMade™ production process in order to ensure a greener future for everyone.

Recycling excess materials

- **PVC** – All excess PVC scrap is recycled to make products such as vinyl fence and decking.
- **Cardboard** – Excess cardboard is recycled into products such as cellulose insulation.
- **Glass** – Scrap glass is recycled to use in road resurfacing.
- **Scrap metal** – Excess scrap metal is reused by scrap-metal recyclers.

Reducing energy consumption

- **Water** – Water from our glass-washing equipment is filtered for re-use.
- **Engine oil** – Used engine oil from our truck fleet is collected and re-refined to make various oil products.
- **Heat** – Heat that is generated from our equipment is re-directed into our plant to reduce overall energy costs.
- **Lighting** – Our entire plant's lighting system uses energy efficient lights to reduce overall energy consumption.

North Star is committed to a greener future, not only in the energy efficient products we make, but also in how we make them.

1071 Picture Window (No Sash)

SPECIFICATIONS

Frame

Combined frame and stop profiles are extruded by North Star Windows from virgin PVC powder material. Frames are multi-chamber design for strength and energy efficiency. Frame is fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ^3-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of frame with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of frame against flexible vinyl fin weather-strip co-extruded to exterior edge of frame. Install architectural profiled interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Weather-Stripping

Profiled exterior frame edge and profiled interior glass stop have co-extruded flexible vinyl fin weather-strip which seals against exterior and interior glass faces.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, Chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

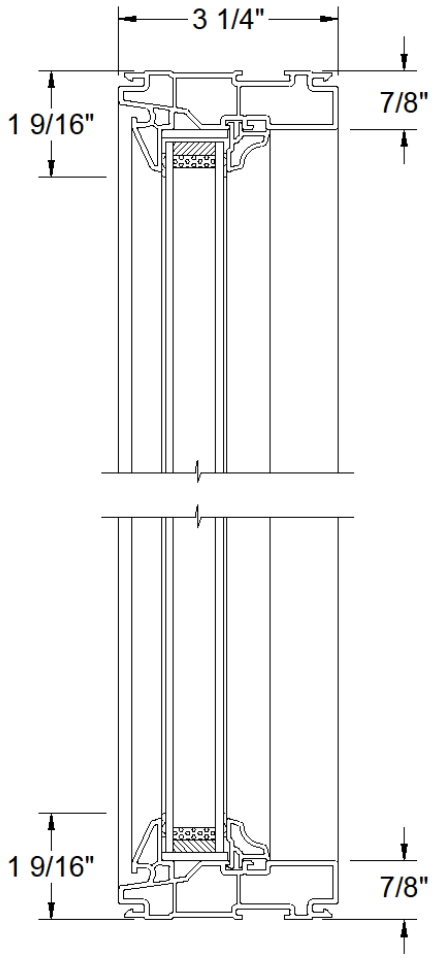
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

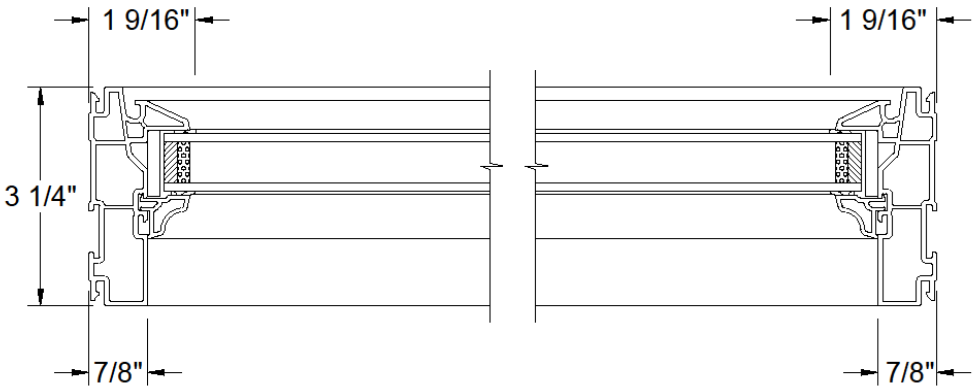
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

1071 Picture Window (No Sash) Details



VERTICAL SECTION



HORIZONTAL SECTION

1071 Architectural shape Windows

SPECIFICATIONS

Frame

Combined frame and stop profiles are extruded by North Star Windows from virgin PVC powder material. Frames are multi-chamber design for strength and energy efficiency. Frame is fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ^3-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of frame with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of frame against flexible vinyl fin weather-strip co-extruded to exterior edge of frame. Install architectural profiled interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Weather-Stripping

Profiled exterior frame edge and profiled interior glass stop have co-extruded flexible vinyl fin weather-strip which seals against exterior and interior glass faces.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

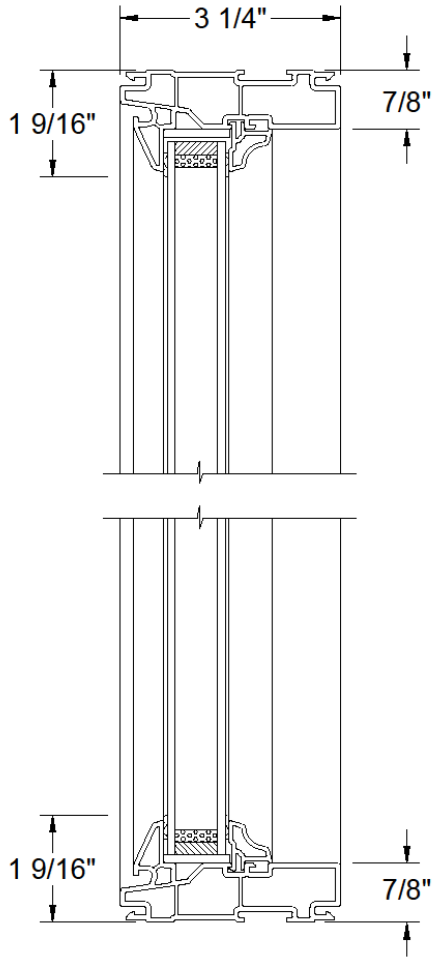
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

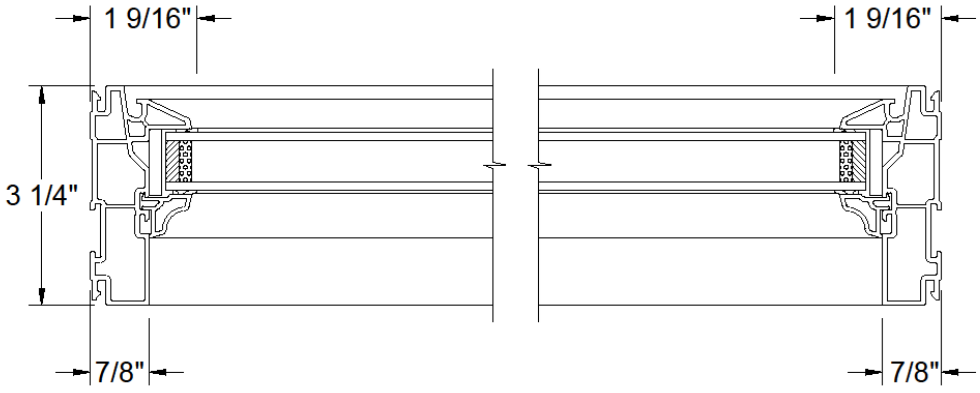
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

1071 Architectural Shaped Windows

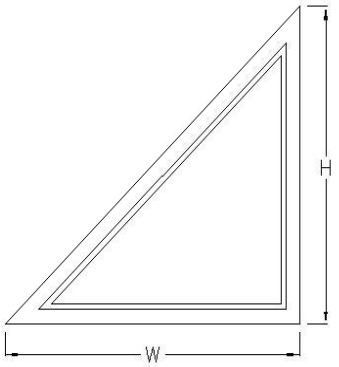


VERTICAL SECTION

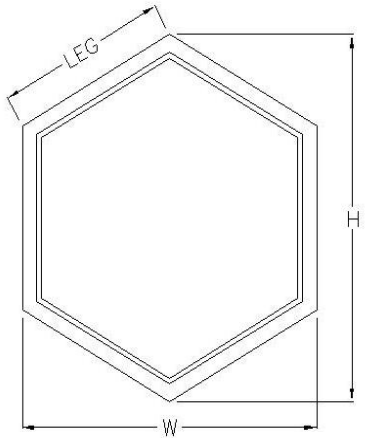


HORIZONTAL SECTION

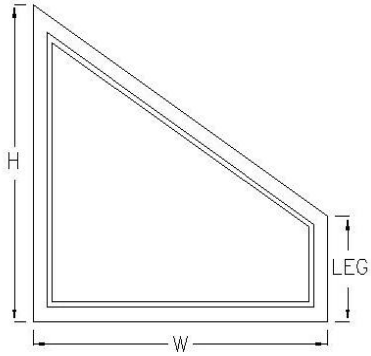
Non-Bent Geometric Shapes



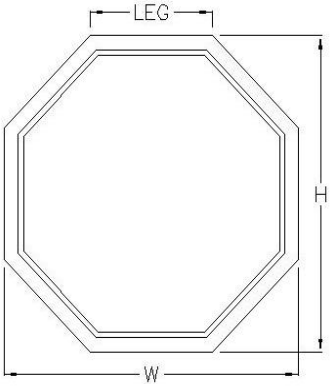
TRIANGLE
MODEL #1030



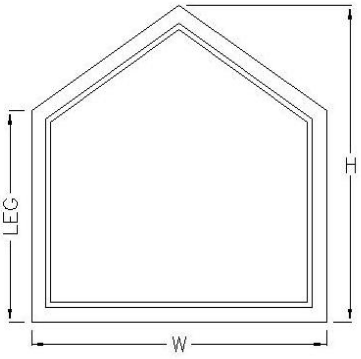
HEXAGON
MODEL #1031



TRAPEZOID
MODEL #1032

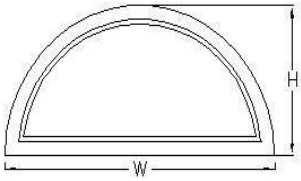


OCTAGON
MODEL #1033

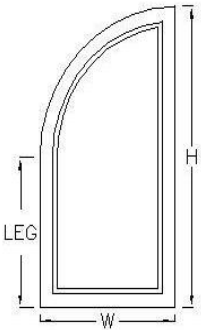


PENTAGON
MODEL #1034

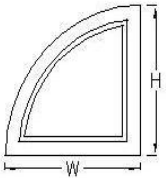
Bent Geometric Shapes



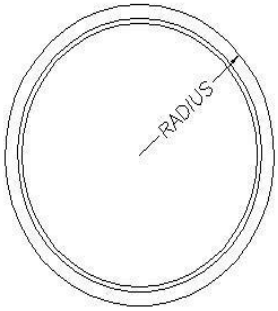
HALF ARCH
MODEL #1023



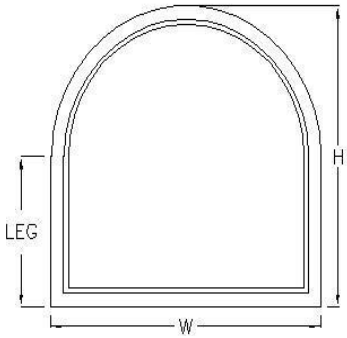
EXTENDED QUARTER ARCH
MODEL #1028B



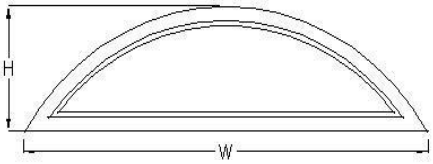
QUARTER ARCH
MODEL #1027



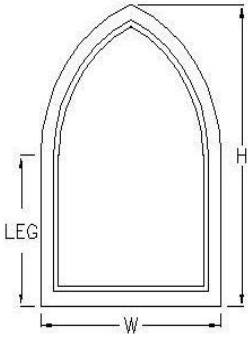
FULL CIRCLE
MODEL #1024



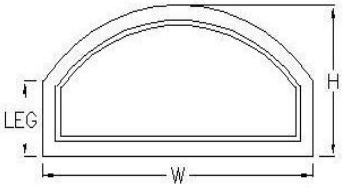
EXTENDED ARCH
MODEL #1028



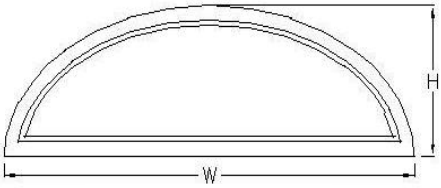
CORD/EYEBROW
MODEL #1025



CATHEDRAL
MODEL #1029



ELIPSE TOP
MODEL #1026



TRUE ELIPSE
MODEL #1037

1072 Picture Window (With Sash)

SPECIFICATIONS

Frame

Combined frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames are multi-chamber design for strength and energy efficiency. Frame is fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®.

Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ3-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install architectural profiled interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Weather-Stripping

Profiled exterior sash edge and profiled interior glass stop have co-extruded flexible vinyl fin weather-strip which seals against exterior and interior glass faces.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available on casement, awning, picture window and North Star Patio Doors. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

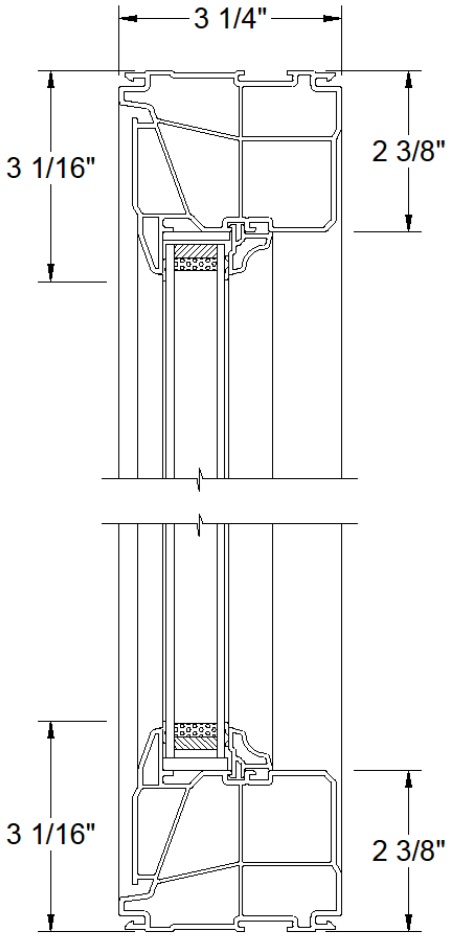
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

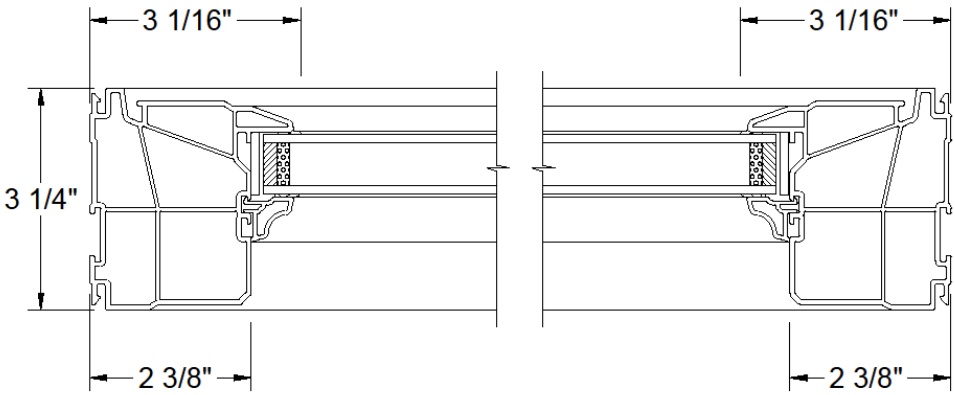
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

1072 Picture Window (With Sash) Details



VERTICAL SECTION

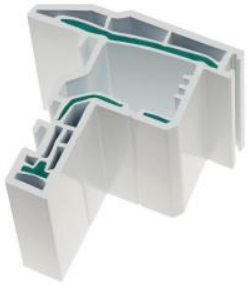


HORIZONTAL SECTION

NORTH STAR WINDOWS & DOORS

ULTRASTAR™

Introduction



A breakthrough product innovation pioneered by North Star Windows & Doors brings a revolutionary vinyl window reinforcement to the North American market. ULTRASTAR™ co-extruded reinforcements are engineered for lasting durability, delivering the stiffness, strength and stability that matter most in any window investment. This proprietary material made up of 55% fiberglass content is the first of its kind in North America and is available exclusively from North Star Windows & Doors.

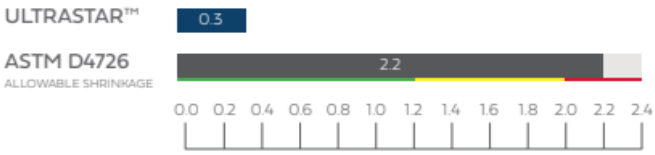
Material Advancements

The proprietary ULTRASTAR™ material represents a pioneering advancement in North American window manufacturing. Developed in collaboration with BASF, this high-tech Ultradur® solution seamlessly integrates with PVC profiles, significantly reducing the risks of shrinkage and contraction in various lighting conditions.

Performance Enhancement

Windows engineered with ULTRASTAR™ demonstrates exceptional rigidity, ensuring long-term performance under diverse conditions. The inherent stiffness of ULTRASTAR™ translates to windows maintaining their shape and achieving higher performance grades (PG) consistently, irrespective of weather fluctuations.

Furthermore, windows made with ULTRASTAR™ are 70% less susceptible to thermal expansion and contraction than windows with traditional metal reinforcements. Profile mad with ULTRASTAR™ has been tested in extreme temperatures reaching as high as 82° C (180° F) without moving, shrinking, or warping, ensuring long-term stability in varying climates and conditions.



This profile is CSA, AAMA, NRCan and ENERGY STAR® certified.

Advantages of Co-Extrusion

- Dimensional stability: Resistant to heat-induced stresses and temperature fluctuations, ensuring consistent performance over time.
- Unified high-performance material: Surpasses the limitations of traditional metal reinforcements, offering superior durability and reliability.
- Removal of metal reinforcements: Streamlined design for casement and awning sashes improves weight distribution and minimizes conductivity.
- Enhanced insulation and thermal performance: ULTRASTAR™ enhances insulation properties, reduces sound transmission, and optimizes overall thermal efficiency.

1171 Casement Window ULTRASTAR™

SPECIFICATIONS

Frame and Sash

By combining virgin vinyl PVC with 55% fibreglass contents through a sophisticated co extrusion process. Frames and sash are multi-chamber design for strength and energy efficiency. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Neoprene setting blocks are placed around glass in sash in diagonal pattern with silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible fin weather strip extruded to exterior edge of sash. Install architectural profiled interior glazing stops with soft flexible fin weather-strip against interior glass face.

Triple Weather-Stripping

Two flexible dual durometer bulb type compression gaskets are located around perimeter of window frame to ensure air and water tight seal and maximum energy efficiency. One water repellant pile weather-strip with stiff fin type vapor barrier is located around perimeter of sash increasing energy efficiency and reducing dust and dirt from accumulating around sash cavity.

Hardware

Truth Maxim hardware has concealed hinges and heavy-duty roto gear operator which allow sash to open to 90˚ for ease of cleaning. The roto gear operator will hold the sash at any position. Sash lock pulls weather-stripped sash against dual compression bulb weather gasket on frame. Concealed multipoint sash locks are standard on units taller than 22" in height. All steel components have Truth E-Gard™ coating for superior corrosion protection. Snubber hardware on the frame and sash ensure compression of the bulb weather-strip opposite to the lock side.

Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for casement windows that enable narrow sizes to meet egress codes.

Hardware Options

Standard Truth Maxim roto gear operator and sash locks are standard in white with contour handle. Truth Encore folding handle with roto gear nesting cover is available in white, Black, brushed antique chrome, satin nickel and oil rubbed bronze finish.

Note: Limit sash opening hardware, safeguard casement window, or opening control devices are available.

Screen

North Star Heavy Duty EZ-Screens are roll formed from heavy duty .025" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has spring loaded corner keys for easy removal and installation of screen. Standard screens are painted white or black. Additional option: laminated screen frames with mitered corners that include spring loaded corner keys for easy removal and installation are available in North Star interior/ exterior colors.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

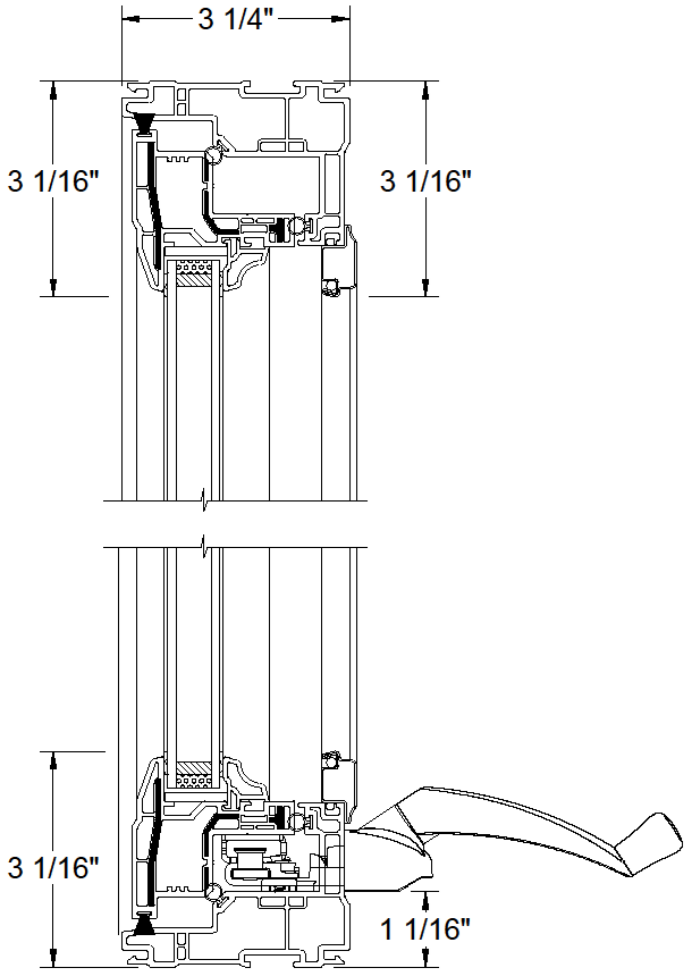
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

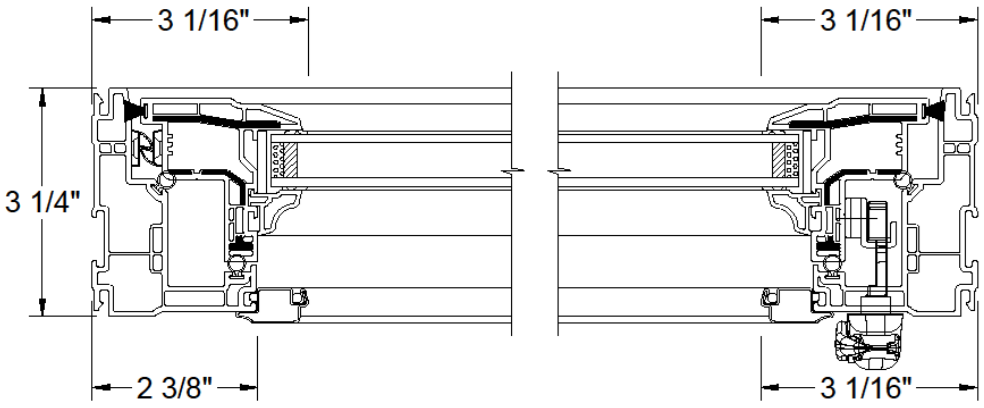
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements

1171 Casement Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1173 Awning Window

SPECIFICATIONS

Frame and Sash

By combining virgin vinyl PVC with 55% fibreglass contents through a sophisticated co extrusion process.Frames and sash are multi-chamber design for strength and energy efficiency. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Neoprene setting blocks are placed around glass in sash in diagonal pattern with silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible fin weather strip extruded to exterior edge of sash. Install architectural profiled interior glazing stops with soft flexible fin weather-strip against interior glass face.

Triple Weather-Stripping

Two flexible dual durometer bulb type compression gaskets are located around perimeter of window frame to ensure air and water tight seal and maximum energy efficiency. One water repellant pile weather-strip with stiff fin type vapor barrier is located around perimeter of sash increasing energy efficiency and reducing dust and dirt from accumulating around sash cavity.

Hardware

Truth Maxim hardware has concealed scissor hinges and heavy-duty roto gear operator. The roto gear operator will hold the sash at any position. Sash lock pulls weather-stripped sash against dual compression bulb weather-strips on frame. Dual sash locks located on window jamb. All steel components have Truth E-Gard™ coating for superior corrosion protection. Snubber hardware on windows 42" wide and over is applied to the frame and sash at head of window to ensure compression of the bulb weather-strip opposite to sill hardware.

Hardware Options

Standard Truth Maxim roto gear operator and sash locks are standard in white with contour handle. Truth Encore folding handle with roto gear nesting cover is available in white, Black, brushed antique chrome, satin nickel and oil rubbed bronze finish.

Screen

North Star Heavy Duty EZ-Screens are roll formed from heavy duty .025" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has spring loaded corner keys for easy removal and installation of screen. Standard screens are painted white or black. Additional option: laminated screen frames with mitered corners that include spring loaded corner keys for easy removal and installation are available in North Star interior/exterior colors.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

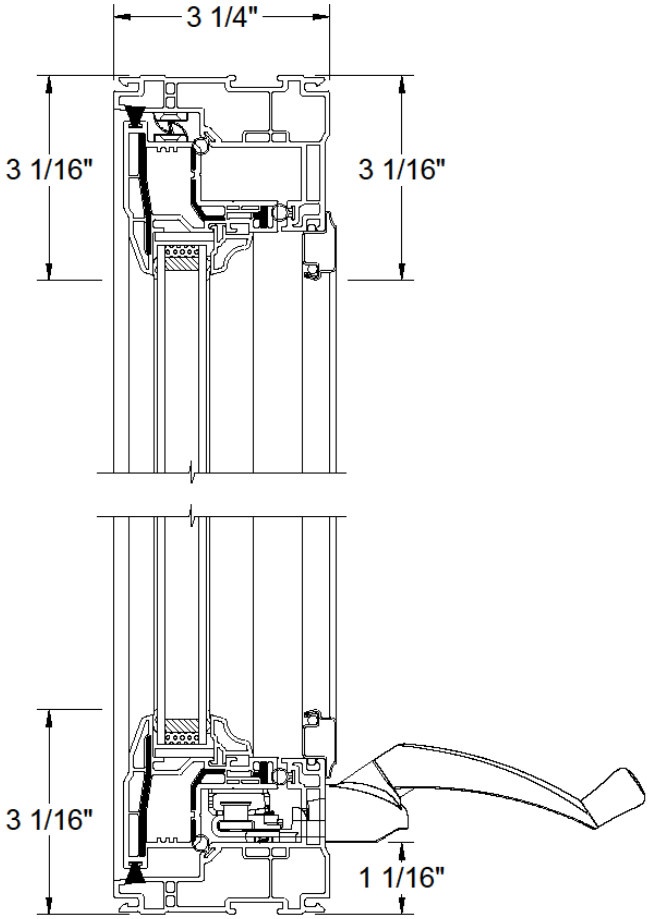
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

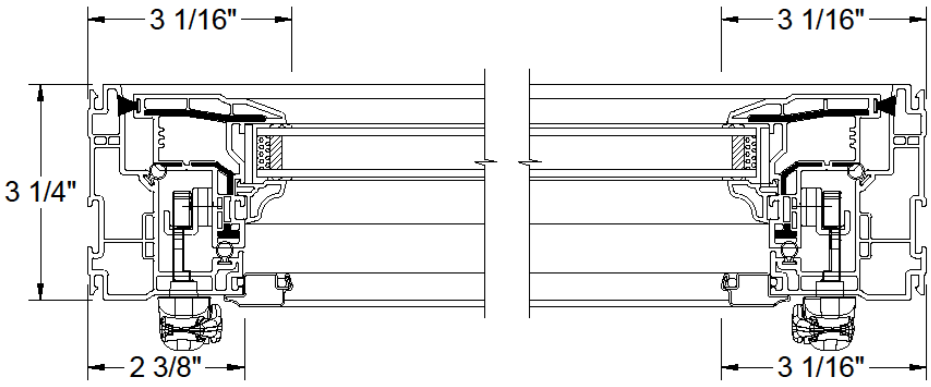
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

1173 Awning Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1271 Double Hung Tilt Window

SPECIFICATIONS

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Water repellant pile weather-strips with stiff fin type vapor barrier are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two additional pile weather-strip with stiff fin type vapor barrier are located on the inside of window frame at sill and jamb location for additional protection against air and water penetration.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for double hung tilt windows that enable narrow sizes to meet egress codes.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable pine laminated interior finish is ordered.

Note: Limit sash opening features are available. Consult your North Star Sales Consultant for details.

Screen

North Star screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner key with pull tab. Screen frame is available in white or North Star's nine exterior colors. Double hung is standard with full screen.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.

Special Options: Espresso, Midnight Black and Hickory can be applied on the interior.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

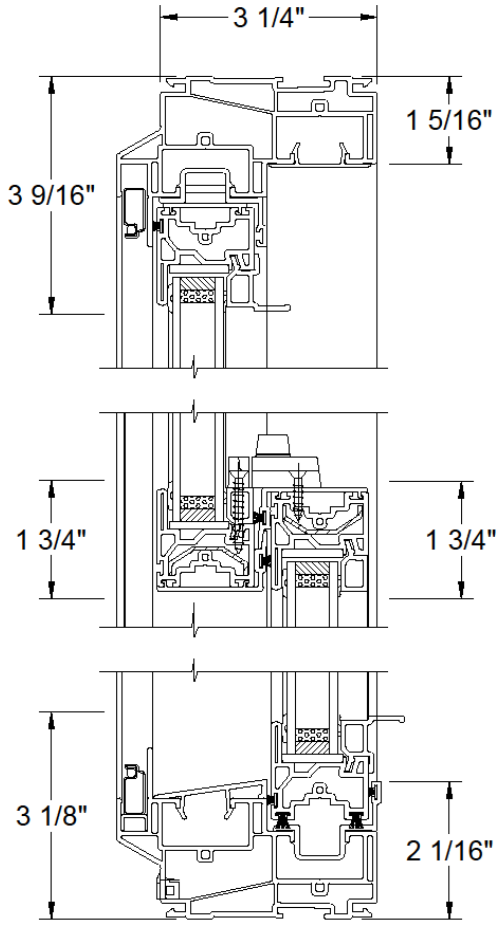
Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

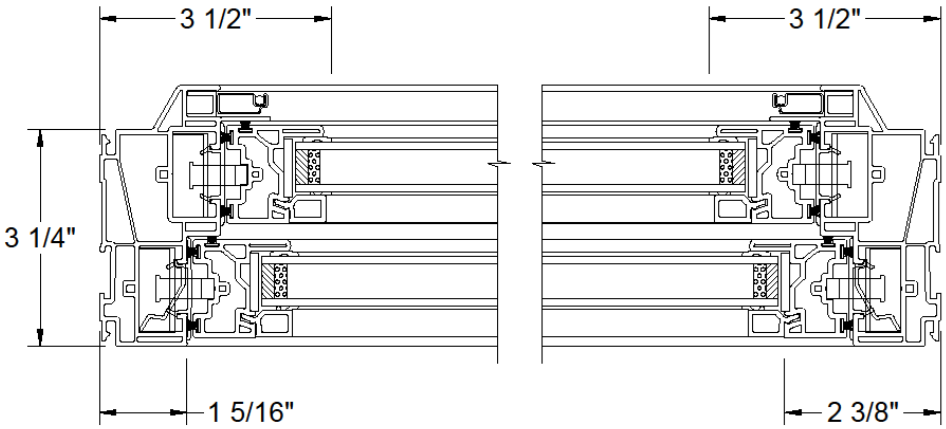
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

1271 Double Hung Tilt Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1272 Double Slider Tilt Window

SPECIFICATIONS

Note: Side Slider Tilt, both sash slide and tilt

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Water repellant pile weather-strips with stiff fin type vapor barrier are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two additional pile weather-strip with stiff fin type vapor barrier are located on the inside of window frame at sill and jamb location for additional protection against air and water penetration.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable laminated pine interior finish is ordered.

Note: Limit sash opening features are available. Consult your North Star Sales Consultant for details.

Screen

North Star screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner key with pull tab. Screen frame is available in white or North Star's nine exterior colors. Double slider has full screen.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, midnight black, Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

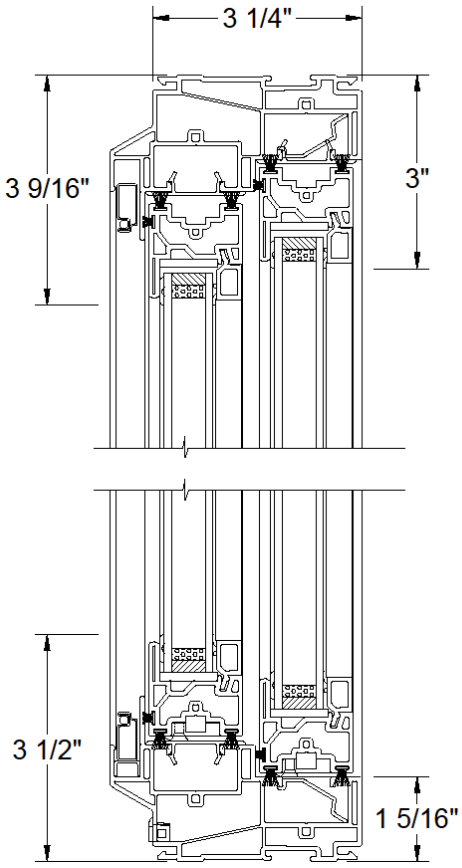
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

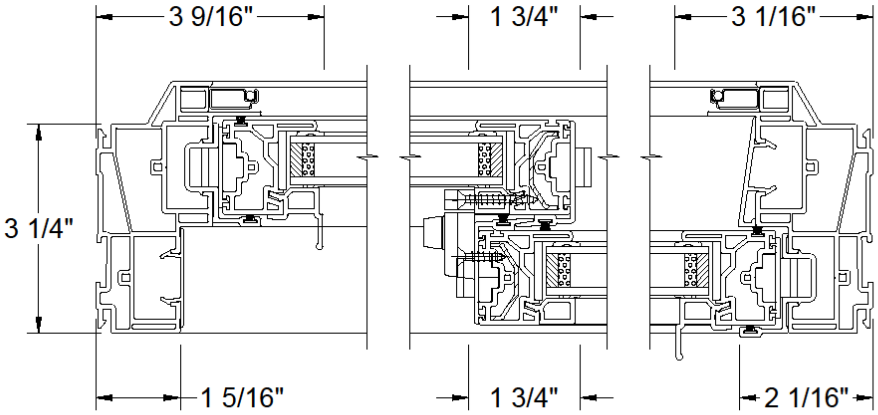
Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for double slider tilt windows that enable narrow sizes to meet egress codes

1272 Double Slider Tilt Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1273 Double Slider Liftout Window

SPECIFICATIONS

Note: Double Slider 1273, both sash slide

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoE^{3}-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Water repellant pile weather-strips with stiff fin type vapor barrier are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two additional pile weather-strip with stiff fin type vapor barrier are located on the inside of window frame at sill and jamb location for additional protection against air and water penetration.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable laminated pine interior finish is ordered.

Note: Limit sash opening features and mini angle locks are available. Consult your North Star Sales Consultant for details.

Screen

North Star screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner key with pull tab. Screen frame is available in white or North Star's nine exterior colors. Double slider has full screen.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, midnight black, and Hickory can be applied on the interior as well as the exterior for this window.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

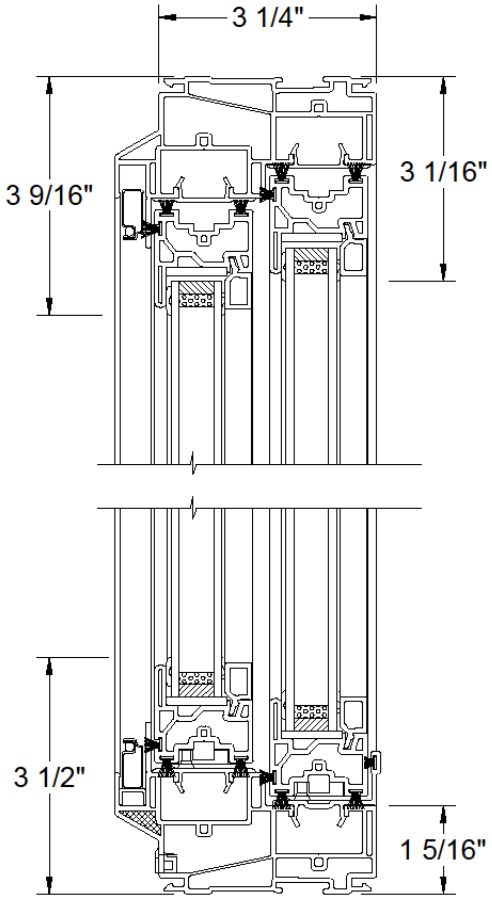
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance

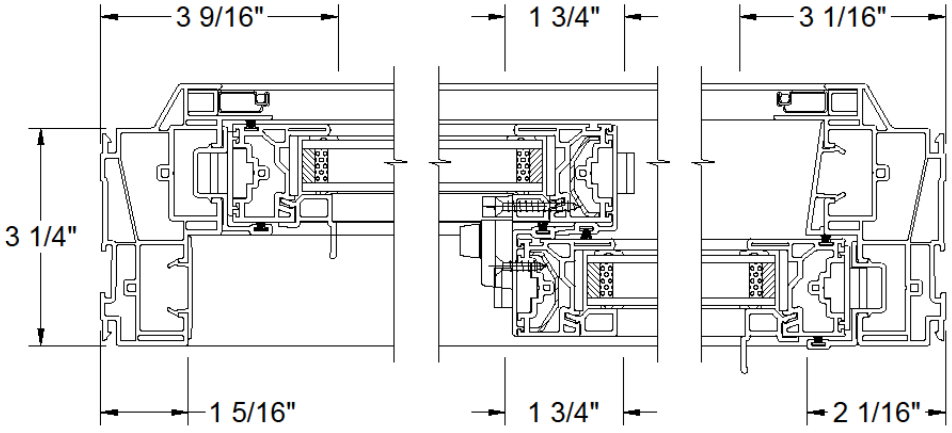
Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for double slider liftout windows that enable narrow sizes to meet egress codes.

1273 Double Slider Liftout Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1371 Single Hung Tilt Window

SPECIFICATIONS

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Seven water repellant pile weather-strips with stiff fin type vapor barriers are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two additional pile weather-strips are incorporated for added weatherability. One weather-strip is located on the inside of the window frame at sill and one weather-strip on the fixed upper sash where lower and upper sash overlap.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable pine laminated interior finish is ordered.
Note: Limit sash opening features and mini angle locks are available. Consult your North Star Sales Consultant for details.

Screen

North Star Single Hung 1/2 screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner key with pull tab. Screen frame is available in white or North Star's nine exterior colors.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, midnight black, and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

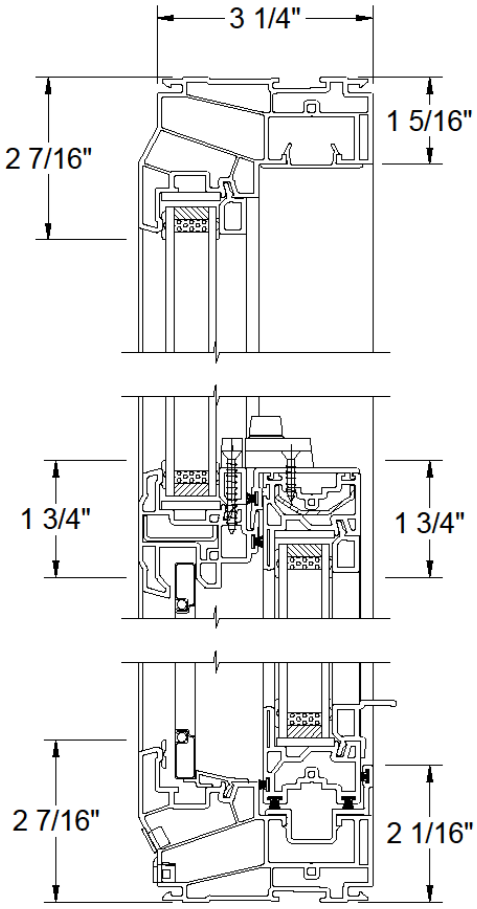
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

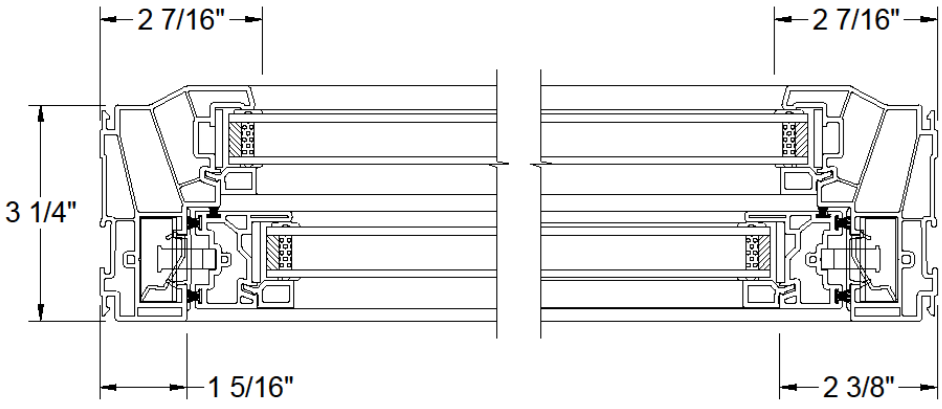
Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for single hung tilt windows that enable narrow sizes to meet egress codes.

1371 Single Hung Tilt Window Details

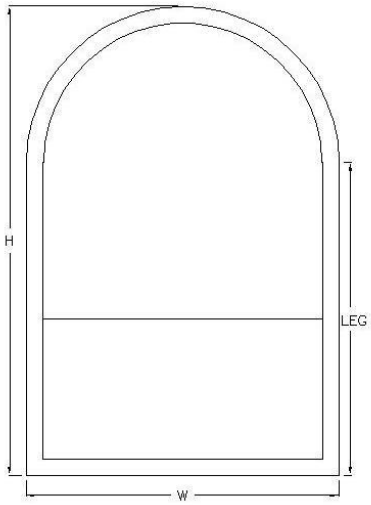


VERTICAL SECTION

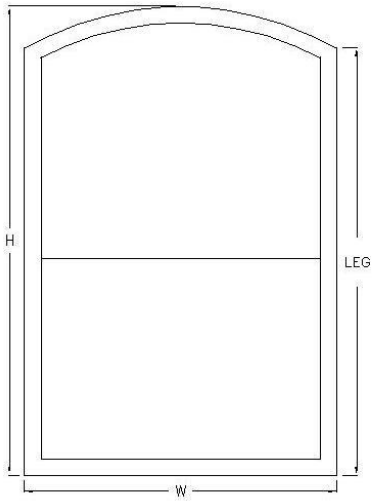


HORIZONTAL SECTION

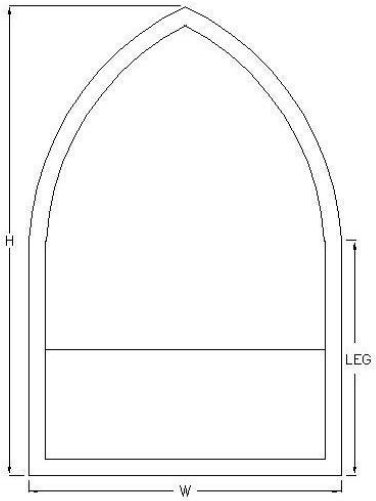
Shaped Top Single Hungs



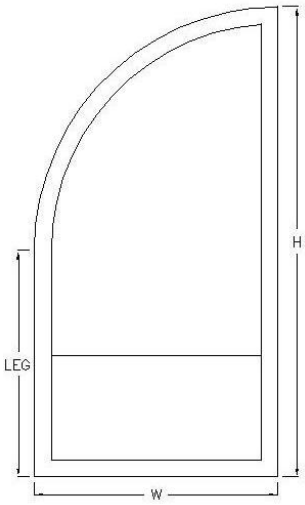
SINGLE HUNG ROUND TOP
MODEL #1320



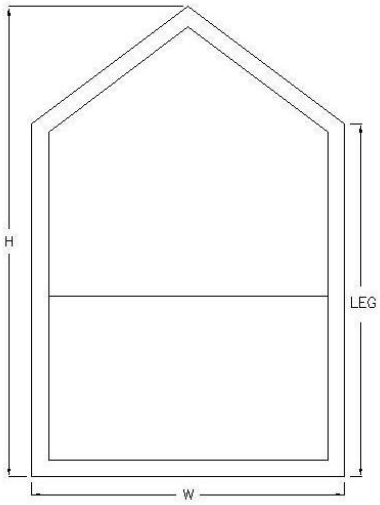
SINGLE HUNG CAMBER TOP
MODEL #1321



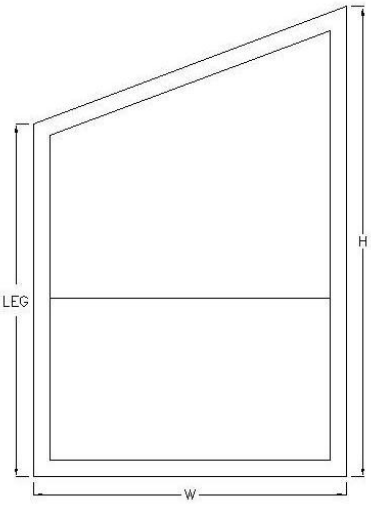
SINGLE HUNG CATHEDRAL
MODEL #1322



SINGLE HUNG QUARTER ARCH
MODEL #1323



SINGLE HUNG PENTAGON
MODEL #1324



SINGLE HUNG TRAPEZOID
MODEL #1325

1372 Single Slider Liftout Window

SPECIFICATIONS

Note: Single Slider 1372 has left side operating and right side fixed. Single Slider 1373 is reverse.

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Eight water repellant pile weather-strips with stiff fin type vapor barriers are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two interior side water repellant pile weather-strips with stiff fin type vapor barrier are located on the inside of window frame at sill and jamb location for additional protection against air and water penetration.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable laminated pine interior finish is ordered.

Note: Limit sash opening features are available. Consult your North Star Sales Consultant for details.

Screen

North Star screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner key with pull tab. Screen frame is available in white or North Star's nine exterior colors. Single Slider has 1/2 screen.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, midnight black, and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

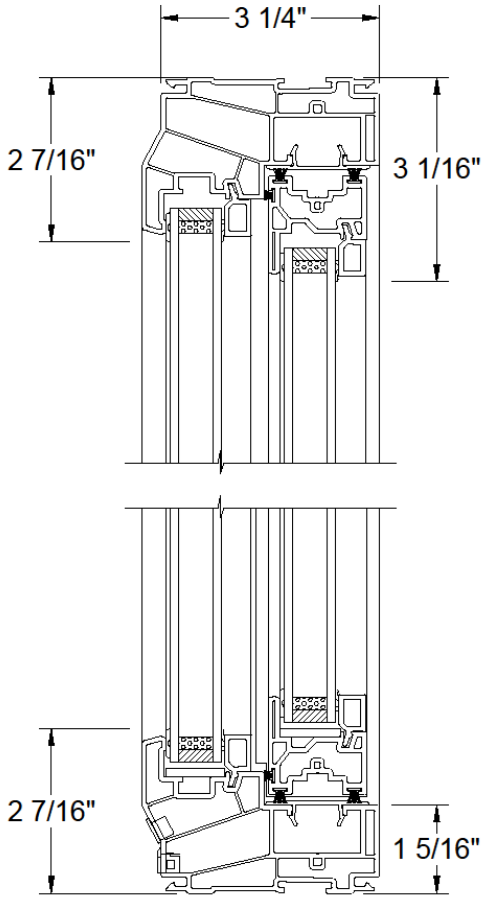
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

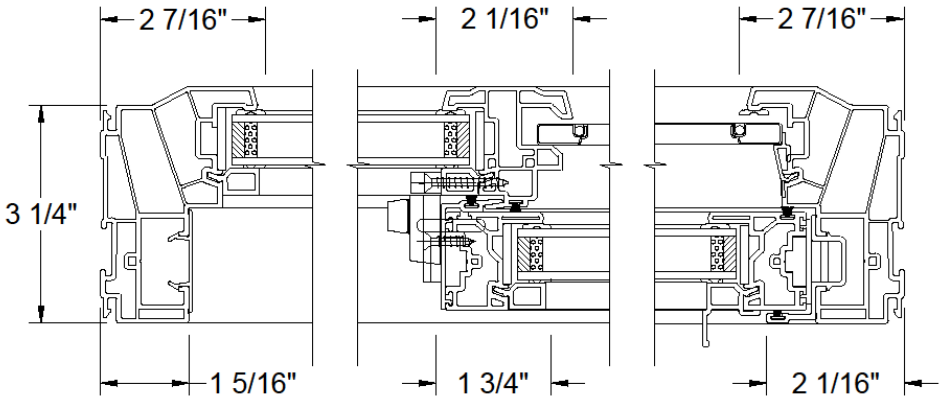
Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for single slider liftout windows that enable narrow sizes to meet egress codes.

1372 Single Slider Liftout Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1374 3-Lite (End-Vent) Single Slider Liftout Window

SPECIFICATIONS

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames complete with recessed drain covers with reticulated foam to keep insects out. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Multiple Weather-Stripping

Water repellant pile weather-strips with stiff fin type vapor barrier are located around perimeter of each operable window sash to ensure air and water tight seal and maximum energy efficiency. Two additional pile weather-strips with stiff fin type vapor barrier are located on the inside of window frame and sill and jamb location for additional protection against air and water penetration.

Hardware

Two die-cast cam locks and keeper are assembled onto each operable sash for weatherability and security. Windows less than 27 ¼" in width require one cam lock and keeper. Each sash is operated with two constant force coil spring balance hardware. True recessed finger latches release both top and bottom sash to allow sash to tilt in for ease of cleaning. Full length sash pull handles are extruded into the interior glazing stop profile. Standard color is white.

Hardware Options

Self-latching locks and keepers are available as an option. Black finish color locks, keepers and tilt latches are standard features when Kolonial Oak or Stainable/Paintable laminated pine interior finish is ordered.

Note: Limit sash opening features are available. Consult your North Star Sales Consultant for details.

Screen

North Star screens are roll formed from heavy .021" thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame has nylon injection molded corner keys with pull tab. Screen frame is available in white or North Star's nine exterior colors. Double Slider has full screen.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special Options: Espresso, Midnight Black and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

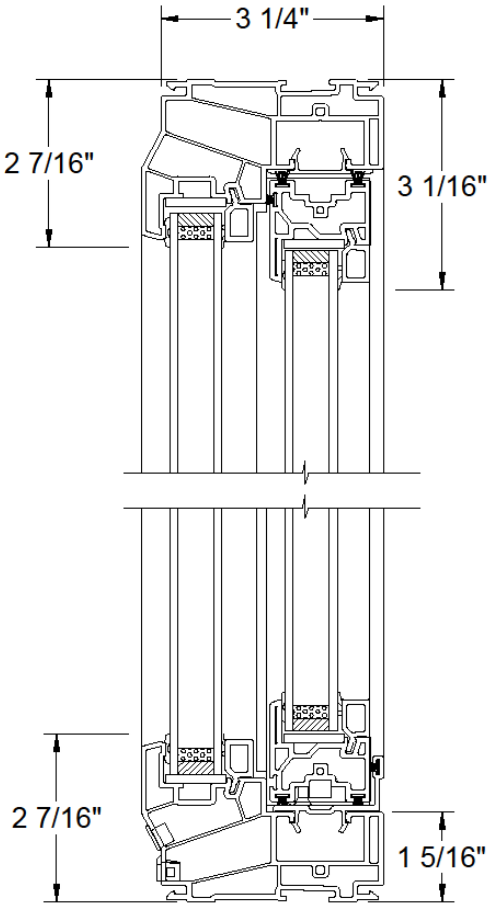
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

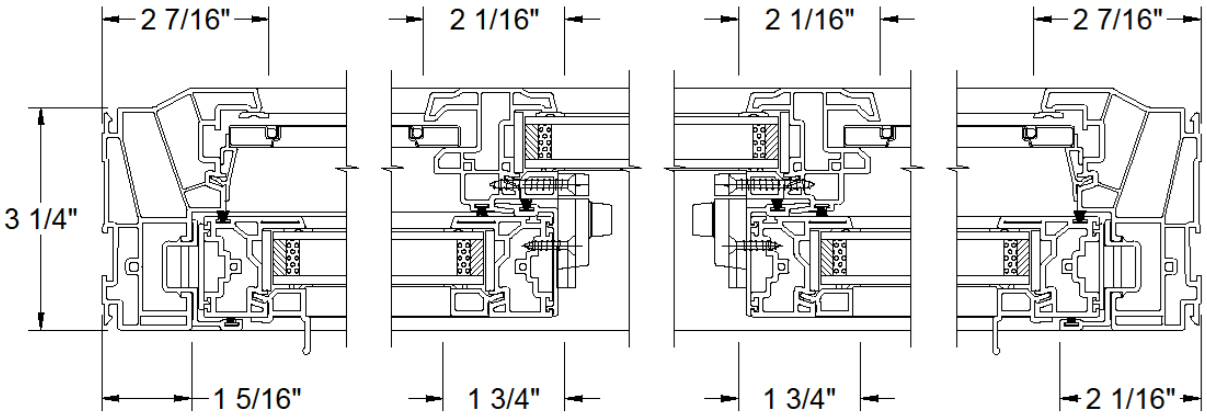
Egress

Consult local building codes to verify that the window ordered meets or exceeds egress requirements for your area. Special egress hardware is available for single slider liftout windows that enable narrow sizes to meet egress codes.

1374 3-Lite Single Slider (End Vent) Liftout Window Details



VERTICAL SECTION



HORIZONTAL SECTION

1377 Picture Window (Singles Frame)

SPECIFICATIONS

Frame

Combined frame and stop profiles are extruded by North Star Windows from virgin PVC powder material. Frames are multi-chamber design for strength and energy efficiency. Frame is fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Note: Profiles are designed to match sliding window profiles.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoE^3-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of frame with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of frame against flexible vinyl fin weather-strip co-extruded to exterior edge of frame. Install rectangular profiled interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Weather-Stripping

Profiled exterior frame edge and interior glass stop have co-extruded flexible vinyl fin weather-strip which seals against exterior and interior glass faces.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak, and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.

Special Options: Espresso, midnight black, and Hickory can be applied on the interior as well as the exterior for this window type.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter and white. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

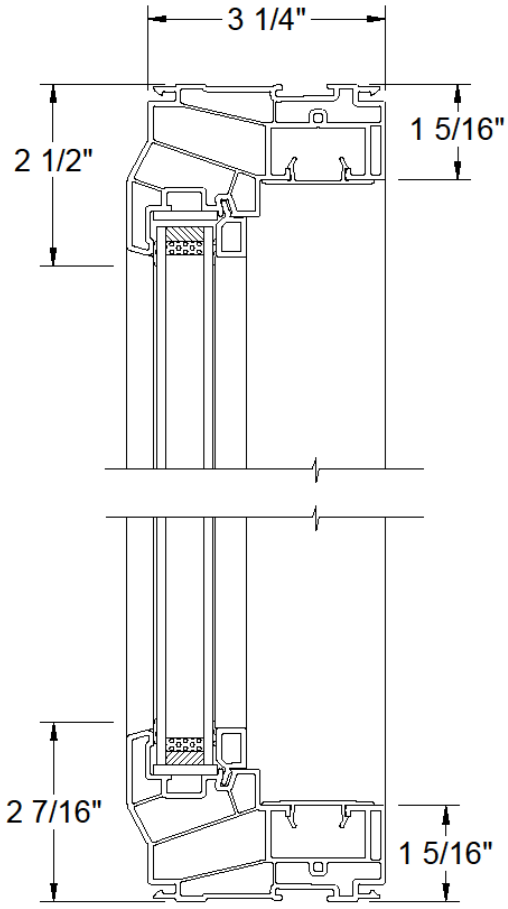
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

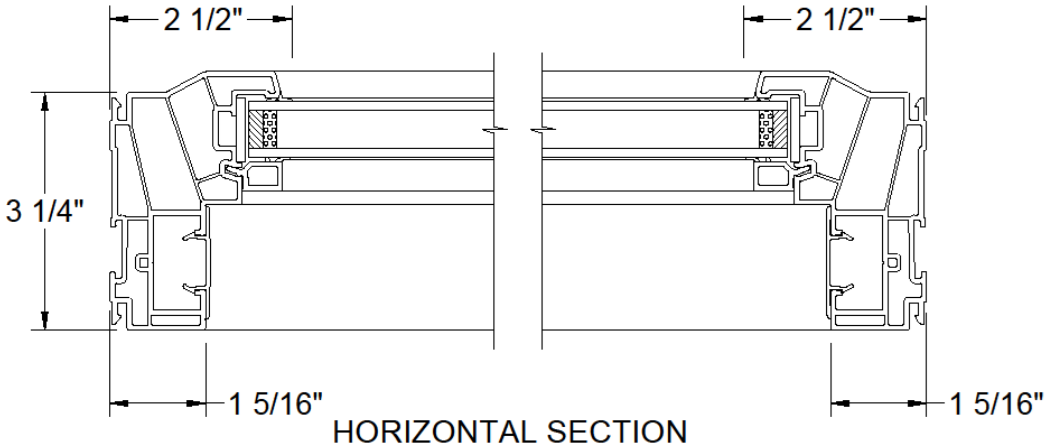
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

1377 Picture Window (Singles Frame)



VERTICAL SECTION



HORIZONTAL SECTION

Bay & Bow Window

SPECIFICATIONS

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Frames and sash are fusion welded ensuring a water and airtight seal as well as maximum strength and squareness. Frames are a full 3 ¼" depth.

Head and Seat

Standard head and seat is constructed of maintenance-free 3/4" white Formica®. Medium oak veneer (unfinished) head and seat is an optional upgrade. Laminated 2 1/8" insulated head and seat is optional with exterior vinyl extruded capping system. Front edge of head and seat are sealed against moisture with an aluminum foil backed ice and water shield before extruded vinyl capping is applied and sealed.

Insulated Glass

Double or triple insulating glass with Edgetech silicone foam low conductive S-Class Super Spacer®. Pilkington Energy Advantage ™ Low E (hard coat) glass is standard. Cardinal LoĒ³-366® (soft coat) glass is optional as well as Pilkington Activ™ Self-Cleaning glass. Laminated glass is available consisting of 3mm glass, 3/8" airspace and two 3mm glass panes with a .030" clear interior membrane in-between. Heavy inert argon or krypton gas is optional for the air space between the glass panes.

Glazing

Insert neoprene setting blocks around perimeter of sash with application of silicone toe bead sealant to interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather-strip against interior glass face.

Weather-Stripping

The combination of flexible vinyl bulb type and water repellant pile weather-strips with stiff fin type vapor barrier ensures maximum energy efficiency. See specifications of individual window types used in Bay or Bow for specific weather-strip detail.

Hardware

Hardware is dependent on types of windows used in Bay & Bow configurations. Grip-Tite™ cable support system is available for projected Bay and Bow windows.

Hardware Options

Refer to specifications for specific window type used in Bay or Bow for hardware options.

Screen

North Star screens are roll formed from heavy duty thick aluminum coil flatstock and screened with anti-glare fiberglass cloth. Screen frame is available in a variety of standard colors and laminates depending on window style.

Exterior and Interior Finishes

North Star standard vinyl extrusion has a clean, bright, white smooth finish. Nine North Star exterior textured color finishes (Ivory, chestnut brown, Cocoa, Hickory, Sandalwood, Sable, Espresso, Midnight Black and Anthracite Grey) and four interior wood grains (Kolonial Oak, Stainable/Paintable Pine, Light Oak and Walnut) are optional. Exterior color and interior wood grain are applied PVC laminate film with an acrylic overlay for exceptional UV protection. Exterior laminate is 200µm (microns) thick.
Special option: Espresso, Midnight Black, and Hickory laminate are available on interior and exterior of the windows.

Grilles

Windows may be enhanced with North Star 5/16" narrow and 5/8" wide flat rectangular or 5/8" wide contoured grilles between the glass panes. 5/16" narrow grilles are available in white, pewter and brass. A combination of white or wood grain interior and colored exterior is optional for 5/8" wide flat grilles. 5/8" wide flat grilles are available in pewter, white or black on all sides. Contoured 3/4" wide grilles are optional in white or white/colored exterior.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without airspace grille. Optional 1/4" X 5/16" pewter airspace grilles are available on double glazed units only. SDL grille bars are permanently applied to the interior and exterior glass surface.

Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brick molds, drywall/wood return, couplers and jamb extensions.

Standards

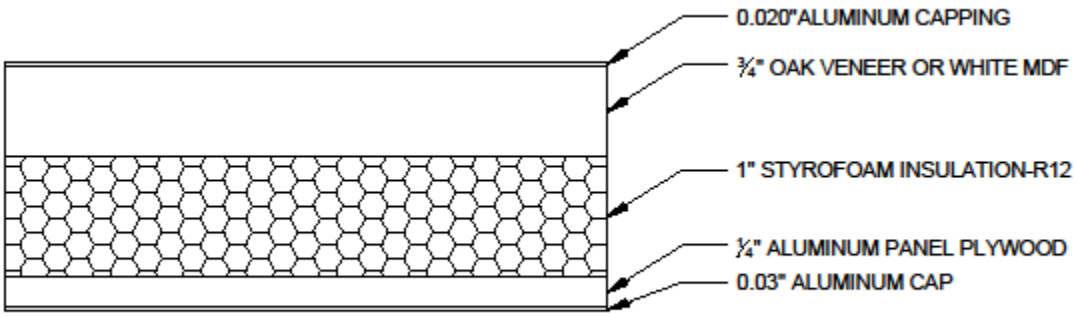
North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

Factory Assembled Bay and Bow Windows

North Star's unique bay and bow windows include the following features:

- Completely assembled with side jambs, including interior side capping to minimize trimming the cavity most common on bay and bow applications
- Exterior extruded vinyl capping on head and seat
- Head and seat with jambs include edge banding, which allows the option of a reveal when installing the casing trim
- Stretch-wrapped packaging on a shipping skid to avoid damage to the unit
- Air spaces behind window couplers are insulated with fiberglass batt insulation

Our standard head and seat is constructed of maintenance-free, 3/4" white Formica®.



Other Options Include:

- Medium oak veneer (unfinished). ***We recommend this veneer be waterproofed immediately following installation to provide adequate protection to the finish***
- 2-1/8" insulated laminated system with exterior extruded vinyl capping

- ***"Grip-Tite"***™ **CABLE SUPPORT SYSTEM:**
  - A great alternative for supporting bay and bow windows
  - ***Bay or bow windows must be supported to avoid sagging. Failing to do so will void all warranty***

- **BRICKMOLD:**
  - Available only on bay and bow windows without head and seat
  - Used mostly for new construction and walk-in bays and bows

30 Degree Bay Window Size Chart

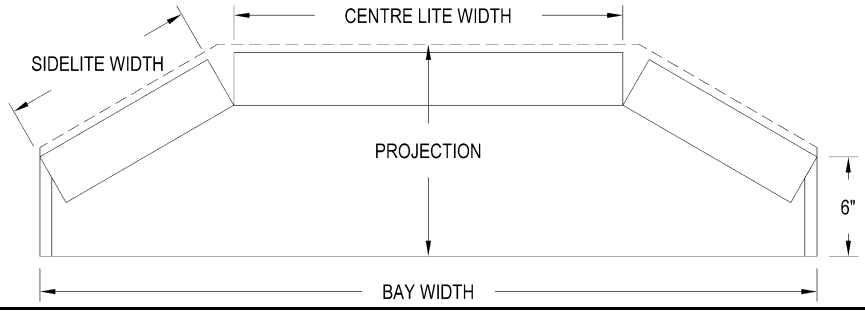
Use the chart below to determine window sizes.

The left column is the total width of the bay window. The sizes shown in the columns next to this are the widths of the side lites and center lites.

When calculating window heights, be sure to deduct 1-1/2" for regular Formica® head and seat, and 4-1/4” for insulated head and seat.

Standard jamb is 6”.

Bay Width	Side Lite Width	Centre Lite Width	Total Projection With 6" Jamb
48	12.0000	23.97	12.94
52	13.0000	26.23	13.44
56	14.0000	28.50	13.94
60	15.0000	30.77	14.44
64	16.0000	33.04	14.94
68	17.0000	35.31	15.44
72	18.0000	37.57	15.94
76	19.0000	39.84	16.44
80	20.0000	42.11	16.94
84	21.0000	44.38	17.44
88	22.0000	46.64	17.94
92	23.0000	48.91	18.44
96	24.0000	51.18	18.94
100	25.0000	53.45	19.44
104	26.0000	55.72	19.94
108	27.0000	57.98	20.44
112	28.0000	60.25	20.94
116	29.0000	62.52	21.44
120	30.0000	64.79	21.94
124	31.0000	67.06	22.44
128	32.0000	69.32	22.94
132	33.0000	71.59	23.44
136	34.0000	73.86	23.94
140	35.0000	76.13	24.44
144	36.0000	78.40	24.94



45 Degree Bay Window Size Chart

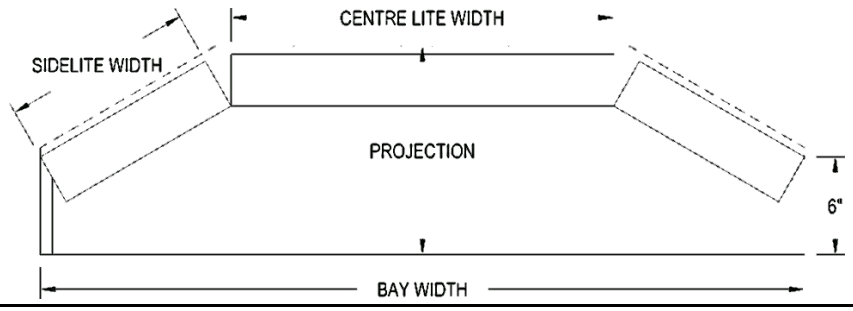
Use the chart below to determine window sizes.

The left column is the total width of the bay window. The sizes shown in the columns next to this are the widths of the side lites and center lites.

When calculating window heights, be sure to deduct 1-1/2" for regular Formica® head and seat, and 4-1/4” for insulated head and seat.

Standard jamb is 6”.

Bay Width	Side Lite Width	Centre Lite Width	Total Projection With 6" Jamb
48	12.0000	23.97	12.94
52	13.0000	26.23	13.44
56	14.0000	28.50	13.94
60	15.0000	30.77	14.44
64	16.0000	33.04	14.94
68	17.0000	35.31	15.44
72	18.0000	37.57	15.94
76	19.0000	39.84	16.44
80	20.0000	42.11	16.94
84	21.0000	44.38	17.44
88	22.0000	46.64	17.94
92	23.0000	48.91	18.44
96	24.0000	51.18	18.94
100	25.0000	53.45	19.44
104	26.0000	55.72	19.94
108	27.0000	57.98	20.44
112	28.0000	60.25	20.94
116	29.0000	62.52	21.44
120	30.0000	64.79	21.94
124	31.0000	67.06	22.44
128	32.0000	69.32	22.94
132	33.0000	71.59	23.44
136	34.0000	73.86	23.94
140	35.0000	76.13	24.44
144	36.0000	78.40	24.94



4-Lite Bow Window Size Chart

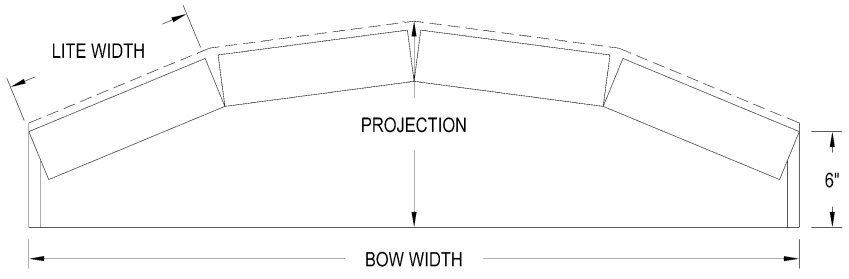
Use the chart below to determine window sizes.

The left column is the total width of the bay window. The sizes shown in the columns next to this are the widths of the side lites and center lites.

When calculating window heights, be sure to deduct 1-1/2" for regular Formica® head and seat, and 4-1/4” for insulated head and seat.

Standard jamb is 6”.

TOTAL WIDTH	10 DEGREE		15 DEGREE		20 DEGREE	
	Lite Width	Total Projection With 6" Jamb	Lite Width	Total Projection With 6" Jamb	Lite Width	Total Projection With 6" Jamb
60	14.86	11.75	15.01	14.45	15.33	17.27
64	15.88	12.10	16.05	14.98	16.41	17.99
68	16.90	12.46	17.10	15.52	17.49	18.72
72	17.92	12.81	18.14	16.06	18.57	19.45
76	18.94	13.16	19.19	16.59	19.65	20.18
80	19.96	13.52	20.23	17.13	20.73	20.90
84	20.98	13.87	21.28	17.66	21.81	21.63
88	22.00	14.22	22.32	18.20	22.90	22.36
92	23.02	14.57	23.36	18.73	23.98	23.09
96	24.03	14.93	24.41	19.27	25.06	23.82
100	25.05	15.28	25.45	19.80	26.14	24.54
104	26.07	15.63	26.50	20.34	27.22	25.27
108	27.09	15.98	27.54	20.88	28.30	26.00
112	28.11	16.34	28.59	21.41	29.38	26.73
116	29.13	16.69	29.63	21.95	30.46	27.46
120	30.15	17.04	30.67	22.48	31.54	28.18
124	31.17	17.39	31.72	23.02	32.62	28.91
128	32.19	17.75	32.76	23.55	33.70	29.64
132	33.21	18.10	33.81	24.09	34.78	30.37
136	34.23	18.45	34.85	24.63	35.86	31.10
140	35.25	18.81	35.89	25.16	36.94	31.82
144	36.27	19.16	36.94	25.70	38.02	32.55



5-Lite Bow Window Size Chart

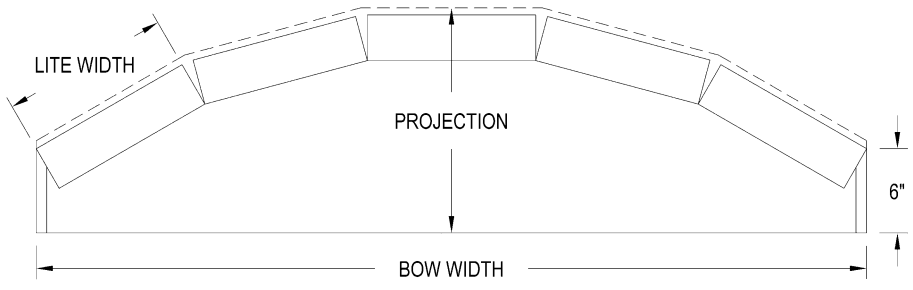
Use the chart below to determine window sizes.

The left column is the total width of the bay window. The sizes shown in the columns next to this are the widths of the side lites and center lites.

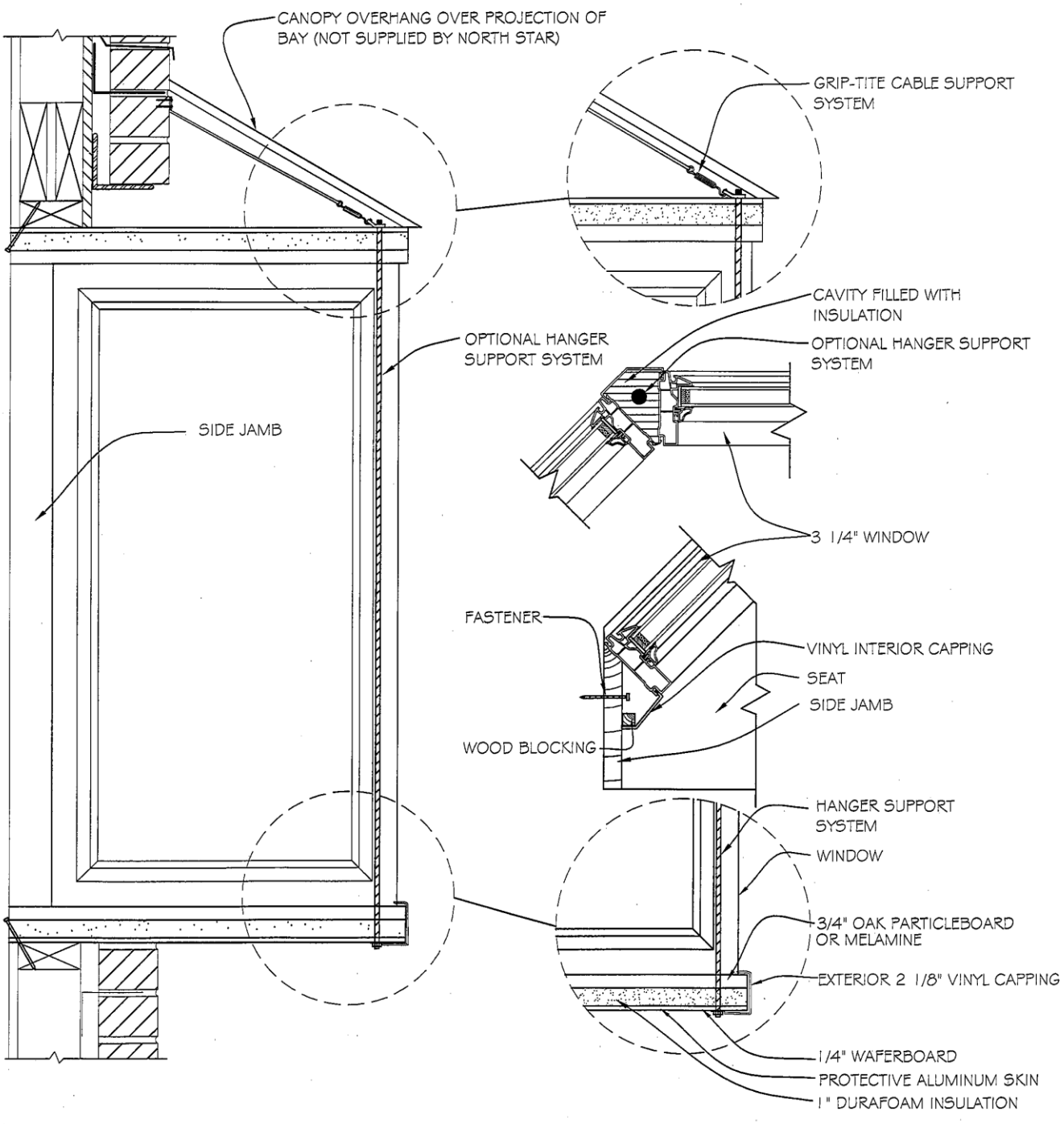
When calculating window heights, be sure to deduct 1-1/2" for regular Formica® head and seat, and 4-1/4” for insulated head and seat.

Standard jamb is 6”.

TOTAL WIDTH	10 DEGREE		15 DEGREE		20 DEGREE	
	Lite Width	Total Projection With 6" Jamb	Lite Width	Total Projection With 6" Jamb	Lite Width	Total Projection With 6" Jamb
60	11.92	12.84	12.15	16.16	12.65	19.72
64	12.74	13.27	13.01	16.81	13.56	20.61
68	13.57	13.69	13.87	17.46	14.47	21.51
72	14.39	14.12	14.73	18.11	15.37	22.40
76	15.21	14.54	15.59	18.76	16.28	23.29
80	16.04	14.97	16.44	19.41	17.19	24.19
84	16.86	15.39	17.30	20.07	18.09	25.08
88	17.69	15.82	18.16	20.72	19.00	25.97
92	18.51	16.24	19.02	21.37	19.91	26.87
96	19.34	16.67	19.87	22.02	20.81	27.76
100	20.16	17.09	20.73	22.67	21.72	28.65
104	20.99	17.52	21.59	23.32	22.63	29.54
108	21.81	17.94	22.45	23.97	23.53	30.44
112	22.64	18.37	23.30	24.62	24.44	31.33
116	23.46	18.80	24.16	25.27	25.35	32.22
120	24.29	19.22	25.02	25.92	26.25	33.12
124	25.11	19.65	25.88	26.57	27.16	34.01
128	25.94	20.07	26.73	27.22	28.07	34.90
132	26.76	20.50	27.59	27.88	28.97	35.80
136	27.59	20.92	28.45	28.53	29.88	36.69
140	28.41	21.35	29.31	29.18	30.79	37.58
144	29.24	21.77	30.17	29.83	31.69	38.47



Bay Window Installation Details



Note: All bay and bow windows must be supported to avoid sagging; failure to do so will void all warranty.

Cable Support System for Projection Windows – 1000 Series

The Cable Support System, featuring the straight line clamp is used to secure the cable to the window. The unique design features a “no-slip” function that locks the cable in place. This is key!

With other types of cable systems, a loop is formed. Should a problem develop afterwards, the weight of the window will collapse that loop – no matter how tightly it is drawn at installation – and the sagging problem will still occur.

With the straight line clamp, the cable is taut at final installation, and will remain that way. With the use of a cable support system, all sagging problems are virtually eliminated!

Caution:

Always use additional means of supporting the window during installation of Cable Support Systems.

CABLE SUPPORT KIT

Installation Instructions
Straight Line Clamp

1. Select the mounting locations for the Straight Line Clamps. **A, D, E**

2. Holding clamps in place, drive the mounting screws (#12 x 3” wood screws) halfway in, making sure the screws are straight. This will allow free operation of the clamps during cable installation. **Note**: The appropriate size Robertson bit is included with the cable support system. **E**

3. Check to ensure that the cable hex nuts have been placed 1” from the end of the threaded cable end. If not, adjust hex nut to the 1” specification. This requirement is for final adjustment purposes. **C**

4. With window level, pull cables up and through the Straight Line Clamp. **A, F**

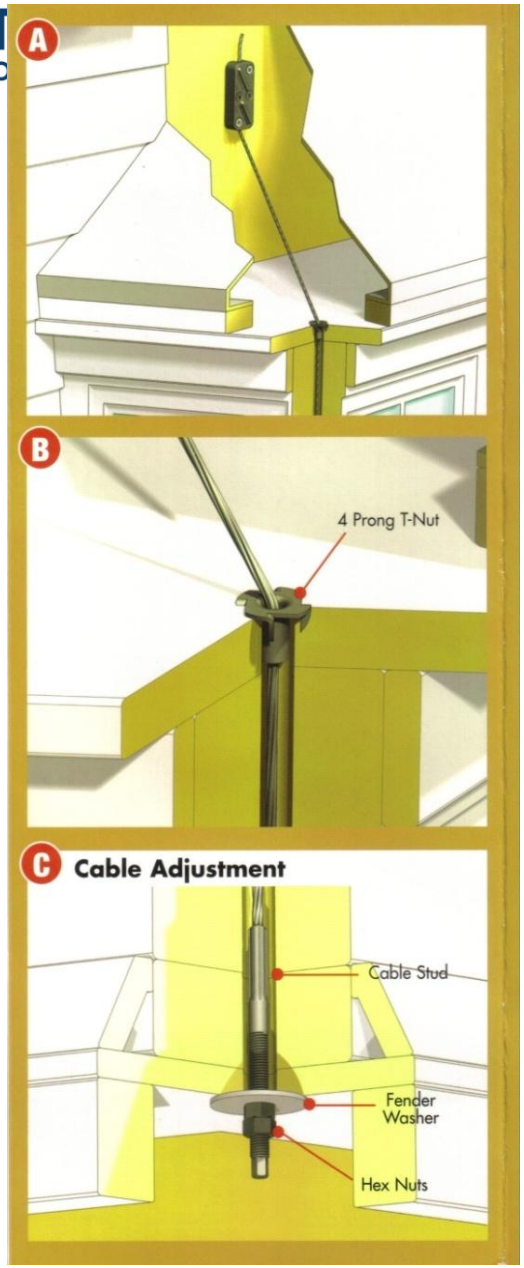
5. With cables set to the correct distance, secure the Straight Line Clamps. **F**

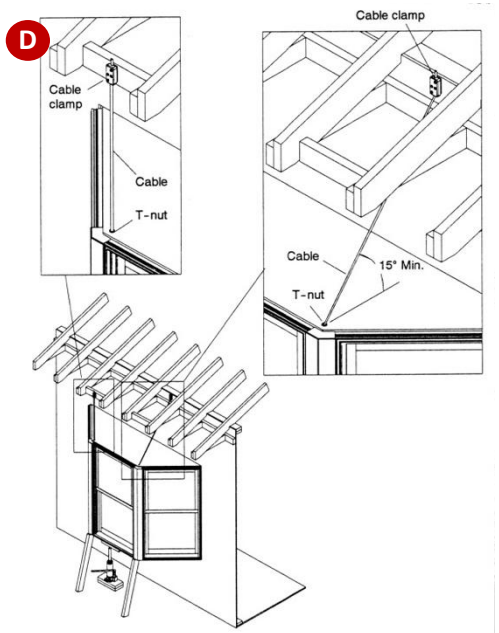
6. Setting 18-volt drill to medium torque (12 to 14) while holding the cables tight through the clamps, evenly torque the four screws on each clamp. Then, set the drill to a higher torque (15 to 17) and, torque all screws in sequence. **F**

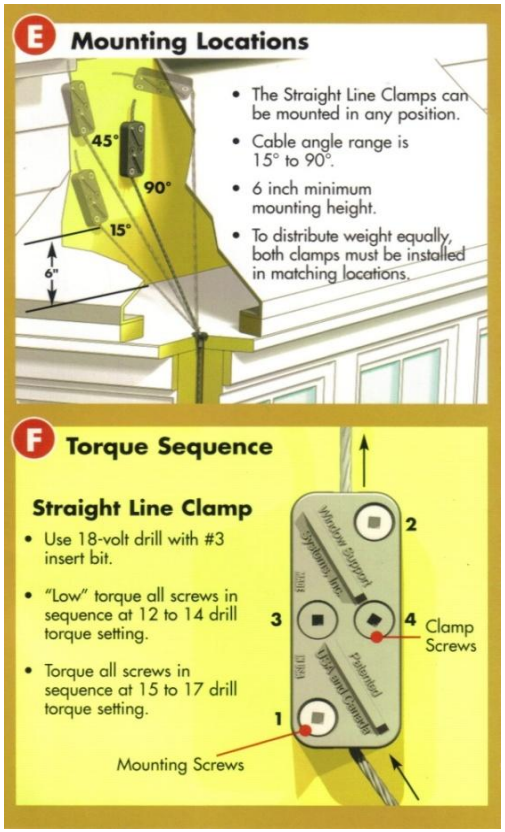
7. After cables are secure, adjust cable tension using pliers to hold threaded end of the cable. This will keep the cable from twisting as the hex nuts are tightened with a 1/2" wrench. Position window slightly above level so that only downward adjusting is required. Do not cut the threaded end of the cable as this will prevent future adjustment should it be needed. **C**

Position window slightly above level so that only downward adjusting is required.

Note: Double check for level and square before securing window to rough opening







Maximum and Minimum Sizes

Size Limitations			
Window Type		Minimum Overall Size	Maximum One Way
1071 Picture (No Sash)	Double Glazed	10”X10”	132” of 30 sq.ft.*
	Triple Glazed	N/A	130” or 22 sq. Ft.
1072 Picture (With Sash)	Double Glazed	12”X12”	132” x 40 sq. Ft.
	Triple Glazed	N/A	130” or 30 sq. Ft.
1171 Casement	Double Glazed	14-3/4”X17”	Max. 108 U.I(width plus height) Width cannot be greater than 36” Height can not be greater than 78”
	Triple Glazed	14-3/4”X17”	Max. 98 U.I(width plus height) Width cannot be greater than 36” Height can not be greater than 78”
1173 Awning	Double Glazed	21”X14-3/4”	Max. 108 U.I(width plus height) Width cannot be greater than 60” Height can not be greater than 60”
	Triple Glazed	21”X14-3/4”	Max. 96 U.I(width plus height) Width cannot be greater than 60” Height can not be greater than 60”
1271 Double Hung Tilt	Double Glazed	13”X22”	Max. 120 U.I(width plus height) Width cannot be greater than 48” Height can not be greater than 78”
	Triple Glazed	13”X22”	Max. 104 U.I(width plus height) Width cannot be greater than 42” Height can not be greater than 78”
1272 Double Slider Tilt	Double Glazed	22”X13”	Max. 126 U.I(width plus height) Width cannot be greater than 78” Height can not be greater than 54”
	Triple Glazed	22”X13”	Max. 106 U.I(width plus height) Width cannot be greater than 78” Height can not be greater than 54”
1273 Double Slider Liftout	Double Glazed	22”X13”	Max. 132 U.I(width plus height) Width cannot be greater than 78” Height can not be greater than 60”
	Triple Glazed	22”X13”	Max. 114 U.I(width plus height) Width cannot be greater than 78” Height can not be greater than 54”
1371 Single Hung Tilt	Double Glazed	13”X21”	Max. 120 U.I(width plus height) Width cannot be greater than 48” Height can not be greater than 78”
	Triple Glazed	13”X21”	Max. 104 U.I(width plus height) Width cannot be greater than 42” Height can not be greater than 78”

Size Limitations			
Window Type		Minimum Overall Size	Maximum One Way
1372 Single Slider Lift Out/ 1373 Reverse Single Slider Lift Out	Double Glazed	22”X13”	Max. 132 U.I(width plus height) Width cannot be greater than 78” Height cannot be greater than 60”
	Triple Glazed	22”X13”	Max. 114 U.I(width plus height) Width cannot be greater than 78” Height cannot be greater than 54”
1374 3-Lite (End Vent)	Double Glazed	48”X13”	Max. 168 U.I(width plus height) Width cannot be greater than 120” Height cannot be greater than 60”
	Triple Glazed	48”X13”	Max. 144 U.I(width plus height) Width cannot be greater than 108” Height cannot be greater than 54”
1377 Picture (Single Frame)	Double Glazed	13”x13”	132” or 40 sq.ft.*
	Triple Glazed	N/A	20 sq. Ft.

***Some glass options will have other size restrictions**

North Star Egress Windows – CANADA – 1000 Series

STYLE #1171 – CASEMENT (STANDARD HARDWARE)				
Min. Width Frame	Min. Height Frame	Example Window Size 3.8 sq. ft. opening	Formula *(Use this formula to determine sq. footage of an opening)*	
			Width	Height
24 13/16”	21”	24 13/16” x 41 1/4”	- 9 13/16”	- 4 3/4”
STYLE #1171 – CASEMENT (*EGRESS HARDWARE)				
22 1/4”	19 3/4”	22 1/4” x 41 1/4”	- 7 1/4”	- 4 3/4”

STYLE #1271 – DOUBLE HUNG TILT				
Min. Width Frame	Min. Height Frame	Example Window Size 3.8 sq. ft. opening	Formula *(Use this formula to determine sq. footage of an opening)*	
			Width	Height
20 1/8”	43 1/2”	32” x 55”	- 5 1/8”	(x.5) - 5 5/8”

STYLE #1371 – SINGLE HUNG TILT				
Min. Width Frame	Min. Height Frame	Example Window Size 3.8 sq. ft. opening	Formula *(Use this formula to determine sq. footage of an opening)*	
			Width	Height
19 3/4”	45”	32” x 55 1/4”	- 4 3/4”	(x.5) - 5 3/4”

STYLE #1272 – DOUBLE SLIDER TILT OR STYLE #1273 – DOUBLE SLIDER LIFTOUT				
Min. Width Frame	Min. Height Frame	Example Window Size 3.8 sq. ft. opening	Formula *(Use this formula to determine sq. footage of an opening)*	
			Width	Height
43”	20 1/4”	48” x 36 3/4”	(x.5) - 6 1/2”	- 5 1/4”

STYLE #1372 – SINGLE SLIDER LIFTOUT				
Min. Width Frame	Min. Height Frame	Example Window Size 3.8 sq. ft. opening	Formula *(Use this formula to determine sq. footage of an opening)*	
			Width	Height
40”	19 3/4”	46” x 35 1/4”	(x.5) - 5”	- 4 3/4”

Please Note:

Opening sizes shown are based on standard manufacturing allowance opening of the sashes.

Vertical and horizontal sliding windows may be altered by trimming the vinyl sash stops to meet minimum openings or square footage requirements. Consult your North Star Representative.

All operators which slide are calculated with 50/50 split.

Opening sizes decrease when CMR is off-centered.

When calculating sizes other than the examples shown, use the formula to determine the size of the opening. Windows cannot be smaller than the minimum widths and heights shown.

e.g. – Casement window 28(w) x 40(h)

28(w)-9 13/16”=18 3/16” 40(h)-4 3/4”-35 1/4" with standard hardware

18 3/16 x 35 1/4"/144=4.45 sq. ft. opening

North Star Egress Windows – UNITED STATES – 1000 Series

STYLE #1171 – CASEMENT (STANDARD HARDWARE)					
Min. Width Frame	Min. Height Frame	Example Window Size		Formula *(Use this formula to determine sq. footage of an opening)*	
		1st Floor (5.0 sq. ft. opening)	2nd Floor (5.7 sq. ft. opening)	Width	Height
30”	29”	30” x 40 1/2”	30” x 46”	- 9 13/16”	- 4 3/4”
STYLE #1171 – CASEMENT (*EGRESS HARDWARE)					
27 1/2”	29”	27 1/2” x 40 1/2”	27 1/2” x 46”	- 7 1/4”	- 4 3/4”

STYLE #1271 – DOUBLE HUNG TILT					
Min. Width Frame	Min. Height Frame	Example Window Size		Formula *(Use this formula to determine sq. footage of an opening)*	
		1st Floor (5.0 sq. ft. opening)	2nd Floor (5.7 sq. ft. opening)	Width	Height
25 1/4”	61 1/2”	35 3/4” x 61”	39” x 62”	- 5 1/8”	(x.5) - 5 5/8”

STYLE #1371 – SINGLE HUNG TILT					
Min. Width Frame	Min. Height Frame	Example Window Size		Formula *(Use this formula to determine sq. footage of an opening)*	
		1st Floor (5.0 sq. ft. opening)	2nd Floor (5.7 sq. ft. opening)	Width	Height
26 3/4”	58 3/4”	37 3/4” x 57”	40 3/4” x 58 3/4”	- 4 3/4”	(x.5) - 5 3/4”

STYLE #1272 – DOUBLE SLIDER TILT OR STYLE #1273 DOUBLE SLIDER LIFTOUT					
Min. Width Frame	Min. Height Frame	Example Window Size		Formula *(Use this formula to determine sq. footage of an opening)*	
		1st Floor (5.0 sq. ft. opening)	2nd Floor (5.7 sq. ft. opening)	Width	Height
53”	59 1/2”	59 1/4” x 36 1/2”	59 3/4” x 40 1/2”	(x.5) - 6 1/2”	- 5 1/4”

STYLE #1372 – SINGLE SLIDER LIFTOUT					
Min. Width Frame	Min. Height Frame	Example Window Size		Formula *(Use this formula to determine sq. footage of an opening)*	
		1st Floor (5.0 sq. ft. opening)	2nd Floor (5.7 sq. ft. opening)	Width	Height
50”	29”	58” x 35”	59 1/2” x 38”	(x.5) - 5”	- 4 3/4”

Please Note:

Opening sizes shown are based on standard manufacturing allowance opening of the sashes.

Vertical and horizontal sliding windows may be altered by trimming the sash stops to help meet minimum openings or square footage requirements. Consult your North Star Representative.

All operators which slide are calculated with 50/50 split.

Opening sizes decrease when CMR is off-centered.

When calculating sizes other than the examples shown, use the formula to determine the size of the opening. Windows cannot be smaller than the minimum widths and heights shown.

e.g. – Casement window 30(w) x 40 1/2(h)

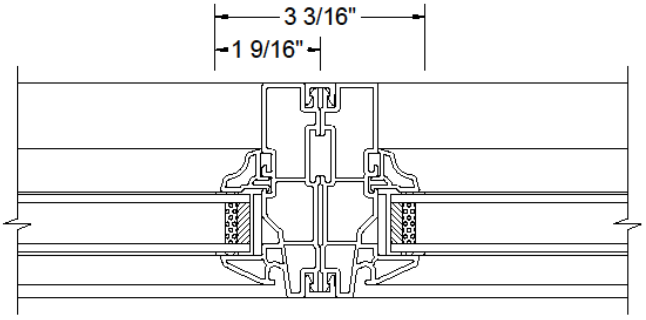
30(w)-9 13/16 = 20 7/16 40 1/2(h)-4 3/4 = 34 3/4

20 7/16 x 35 3/4 = 721.70 ÷ 144 = 5.01 sq. ft. opening

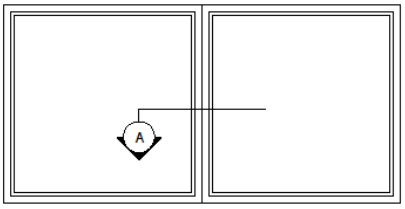
Window Mulling

1071 Picture Window (No Sash) – Mullion Details

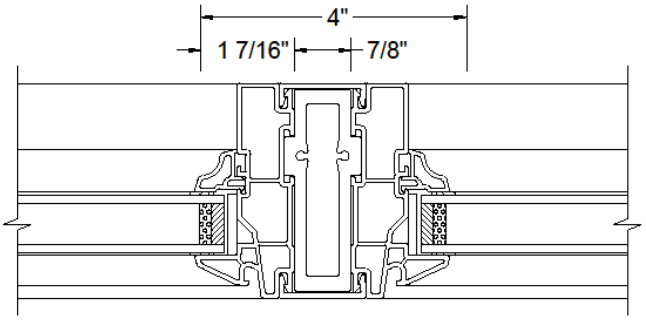
Unit : Fixed Window (No Sash) with Fixed Window (No Sash)



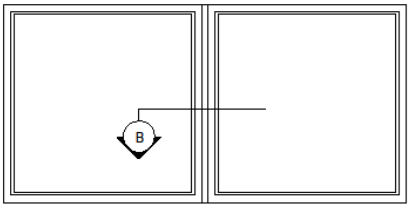
A - FIXED(NO SASH)/FIXED(NO SASH)
MULLION DETAIL



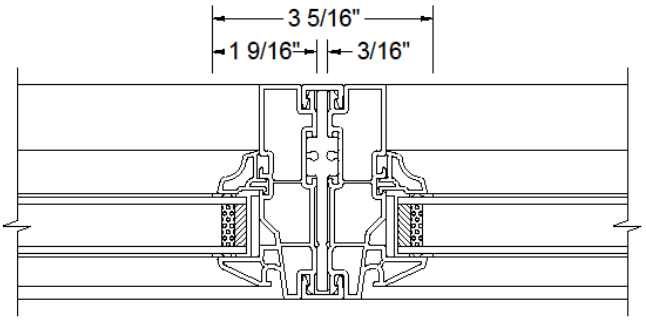
ELEVATION
EXTERIOR VIEW



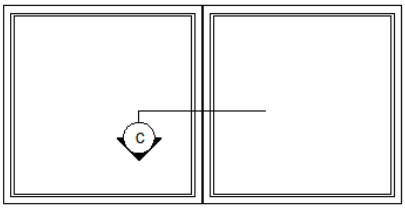
B - FIXED(NO SASH)/FIXED(NO SASH)
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW



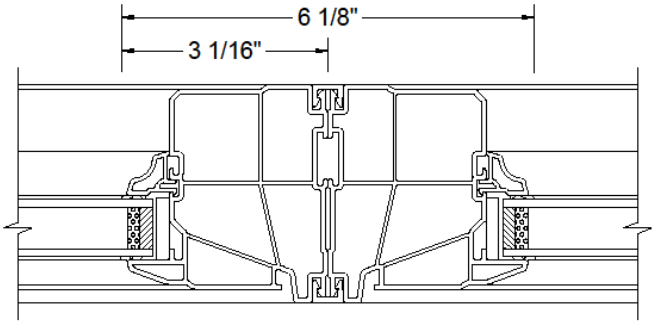
C - FIXED(NO SASH)/FIXED(NO SASH)
MULLION 3/16" REINFORCEMENT DETAIL



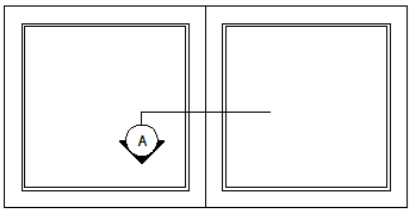
ELEVATION
EXTERIOR VIEW

1072 Picture Window (With Sash) – Mullion Details

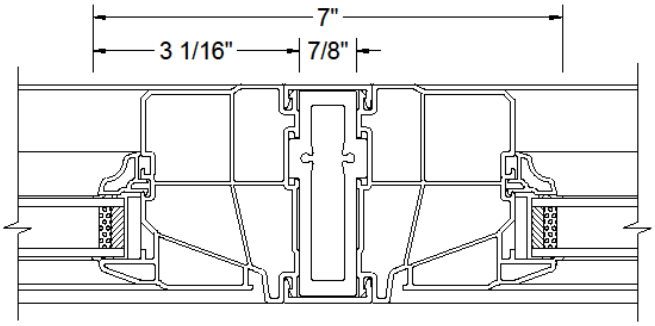
Unit : Fixed Window (With Sash) with Fixed Window (With Sash)



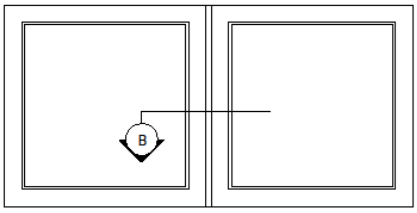
A - FIXED(WITH SASH)/FIXED(WITH SASH)
MULLION DETAIL



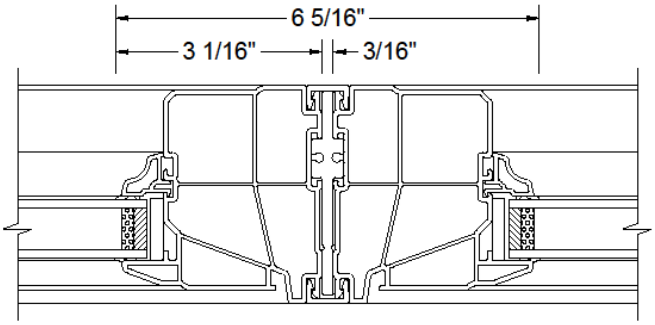
ELEVATION
EXTERIOR VIEW



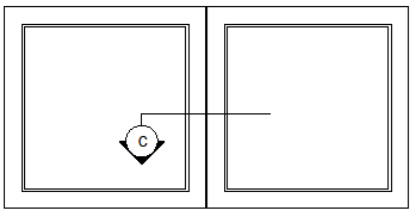
B - FIXED(WITH SASH)/FIXED(WITH SASH)
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW



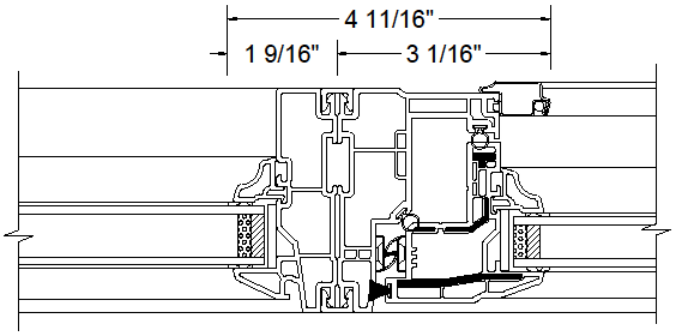
C - FIXED(WITH SASH)/FIXED(WITH SASH)
MULLION 3/16" REINFORCEMENT DETAIL



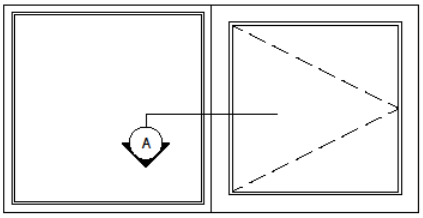
ELEVATION
EXTERIOR VIEW

1171 Casement Window – Mullion Details

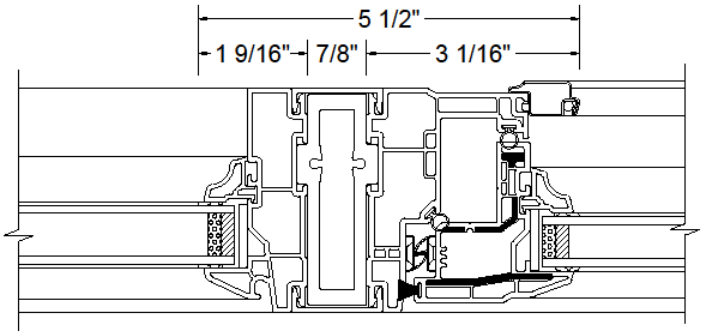
Unit : Fixed Window (No Sash) with Casement Window



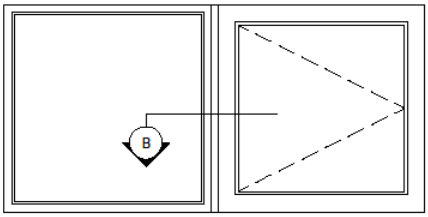
A - FIXED(NO SASH)/CASEMENT
MULLION DETAIL



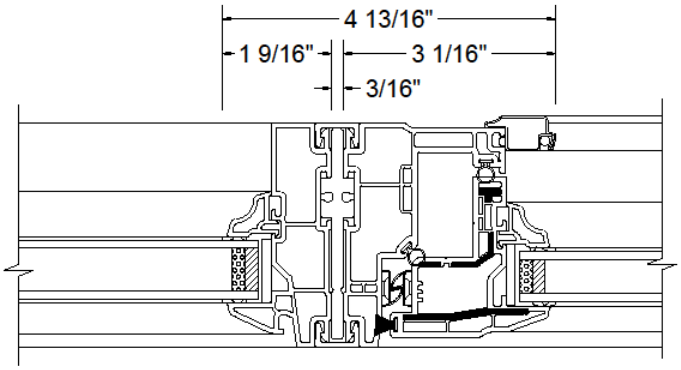
ELEVATION
EXTERIOR VIEW



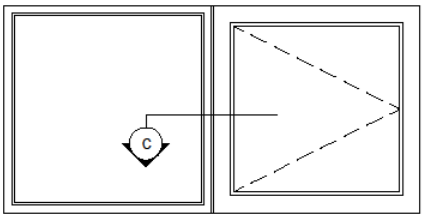
B - FIXED(NO SASH)/CASEMENT
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW

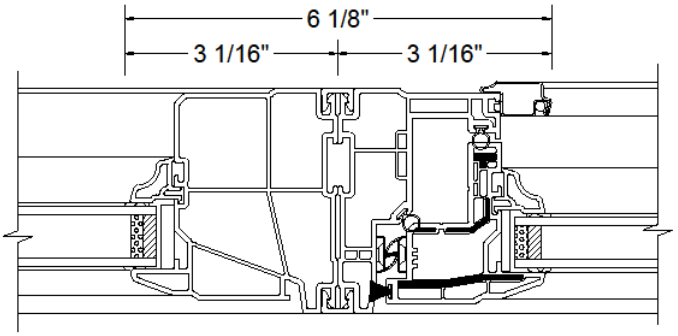


C - FIXED(NO SASH)/CASEMENT
MULLION 3/16" REINFORCEMENT DETAIL

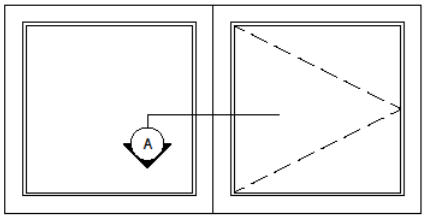


ELEVATION
EXTERIOR VIEW

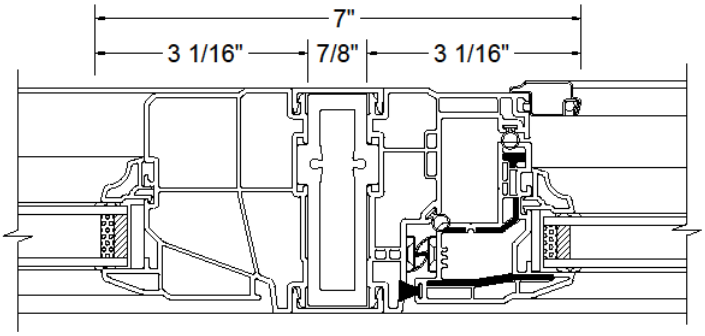
Unit : Fixed Window (With Sash) with Casement Window



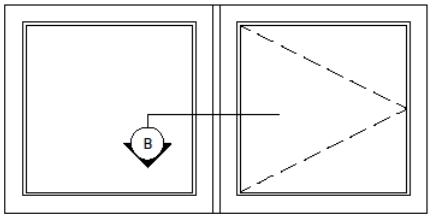
A - FIXED(WITH SASH)/CASEMENT
MULLION DETAIL



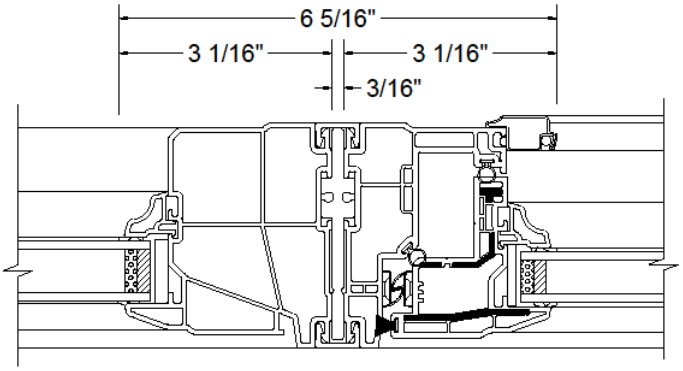
ELEVATION
EXTERIOR VIEW



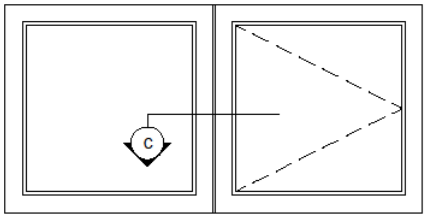
B - FIXED(WITH SASH)/CASEMENT
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW



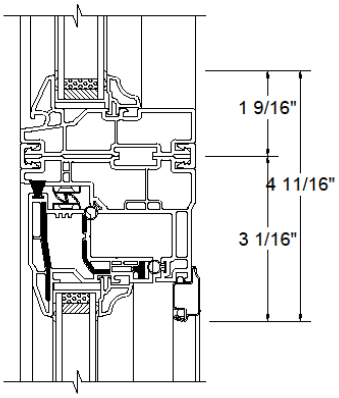
C - FIXED(WITH SASH)/CASEMENT
MULLION 3/16" REINFORCEMENT DETAIL



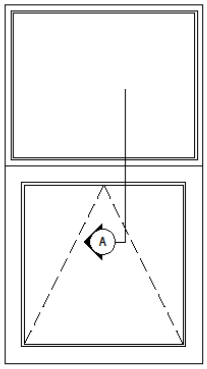
ELEVATION
EXTERIOR VIEW

1173 Awning Window – Mullion Details

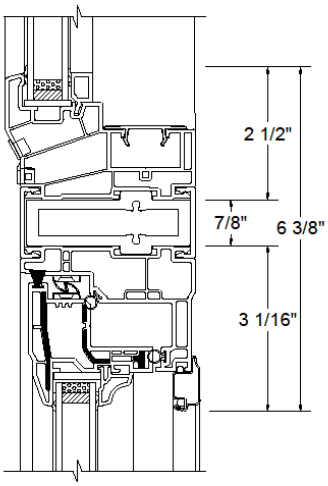
Unit: Fixed Window (No Sash, Single Frame, With Sash) Over Awning Window



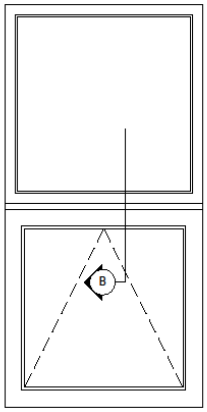
A - FIXED(NO SASH) OVER AWNING
MULLION DETAIL



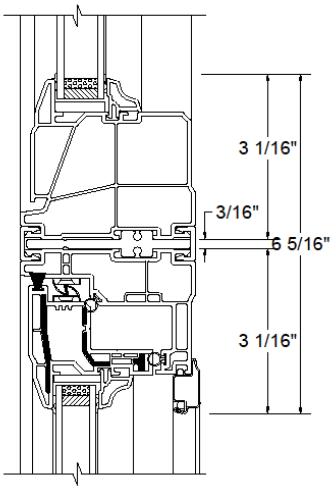
ELEVATION
EXTERIOR VIEW



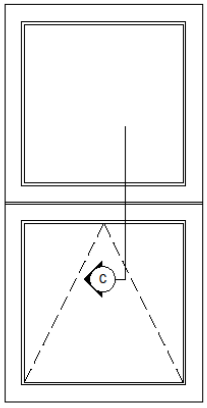
B - FIXED(SINGLE FRAME) OVER AWNING
MULLION DETAIL



ELEVATION
EXTERIOR VIEW

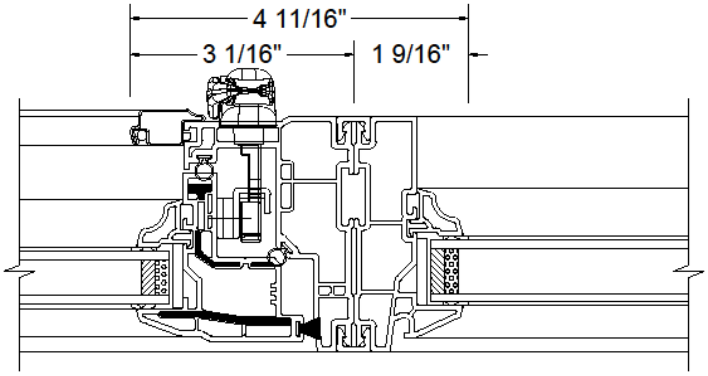


C - FIXED(WITH SASH) OVER AWNING
MULLION DETAIL

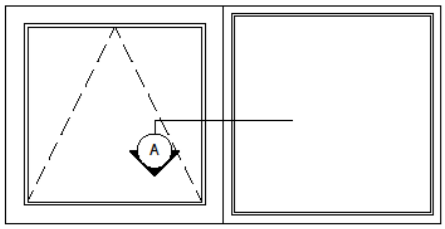


ELEVATION
EXTERIOR VIEW

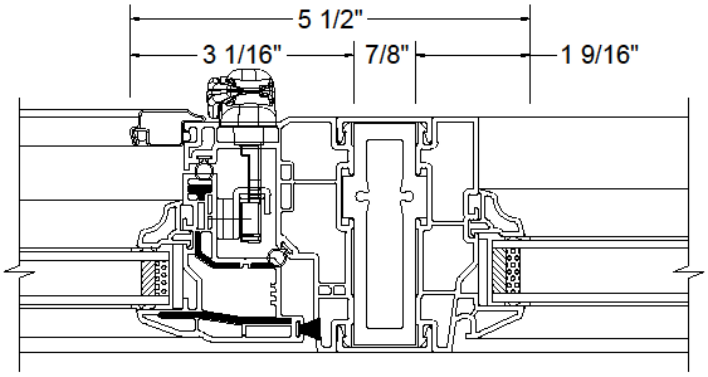
Unit: Awning Window With Fixed Window (No Sash)



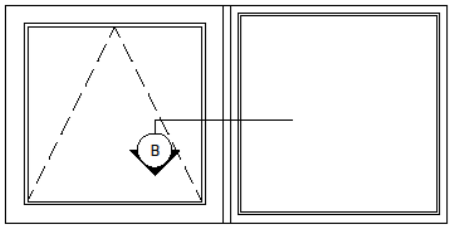
A - AWNING/FIXED(NO SASH)
MULLION DETAIL



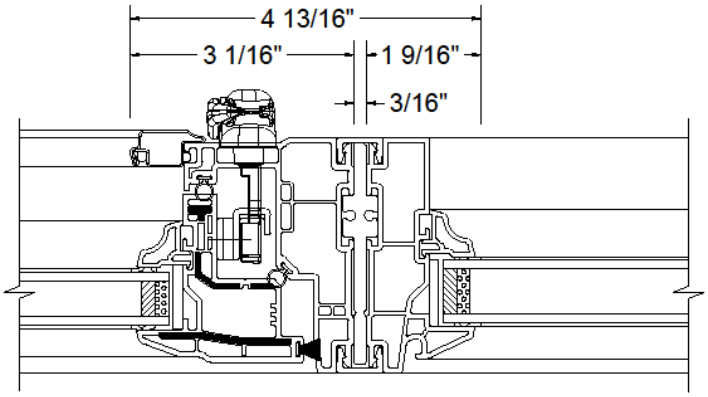
ELEVATION
EXTERIOR VIEW



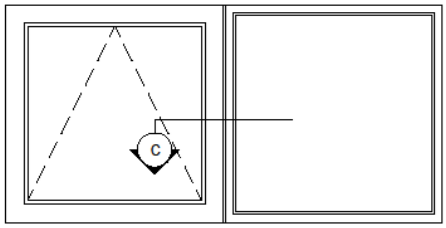
B - AWNING/FIXED(NO SASH)
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW

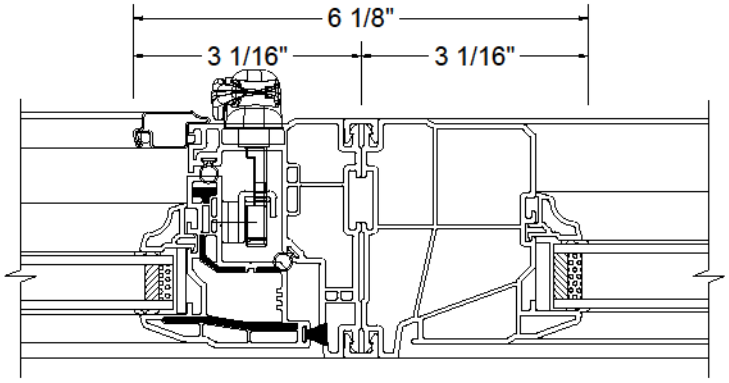


C - AWNING/FIXED(NO SASH)
MULLION 3/16" REINFORCEMENT DETAIL

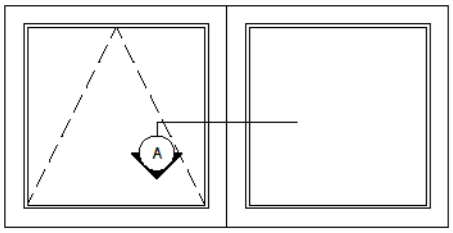


ELEVATION
EXTERIOR VIEW

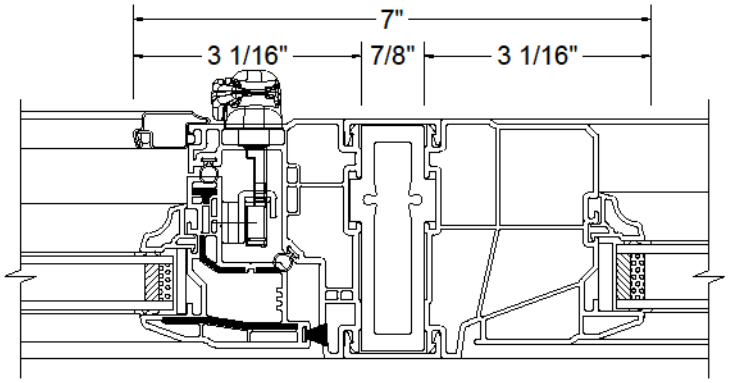
Unit: Awning Window With Fixed Window (With Sash)



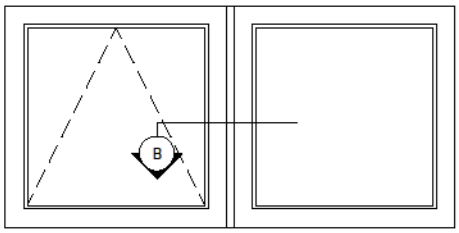
A - AWNING/FIXED(WITH SASH)
MULLION DETAIL



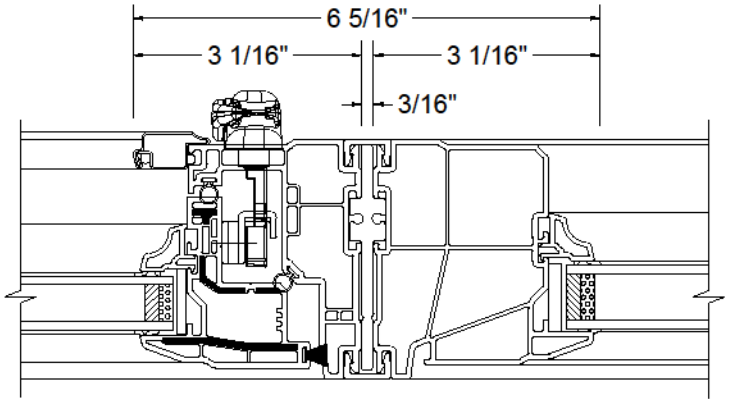
ELEVATION
EXTERIOR VIEW



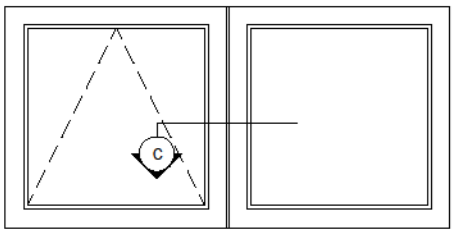
B - AWNING/FIXED(WITH SASH)
MULLION 7/8" REINFORCEMENT DETAIL



ELEVATION
EXTERIOR VIEW



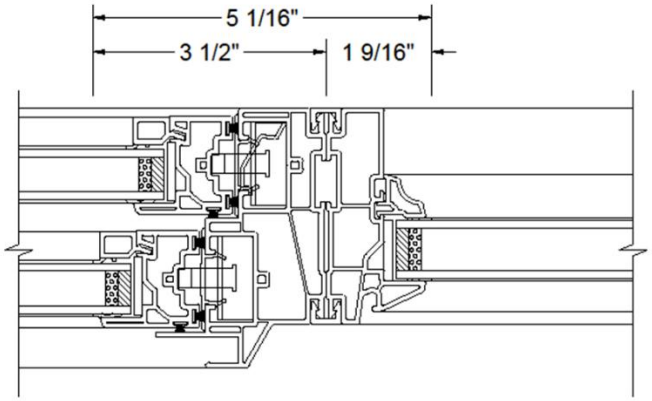
C - AWNING/FIXED(WITH SASH)
MULLION 3/16" REINFORCEMENT DETAIL



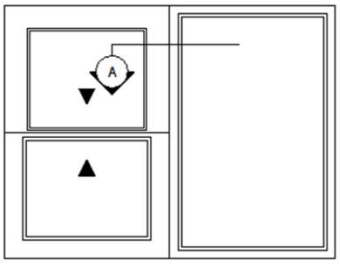
ELEVATION
EXTERIOR VIEW

1271 Double Hung Tilt Window – Mullion Details

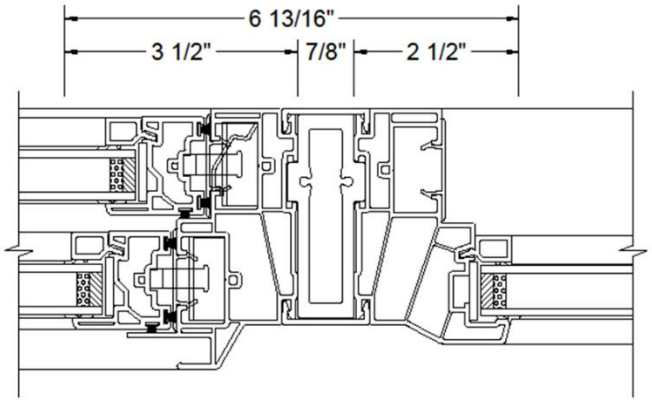
Unit: Double Hung Window Over Fixed Window (No Sash, Single Frame, With Sash)



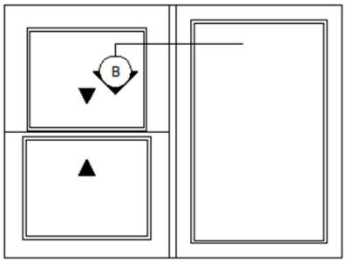
A -DOUBLE HUNG TILT/FIXED(NO SASH)
MULLION DETAIL



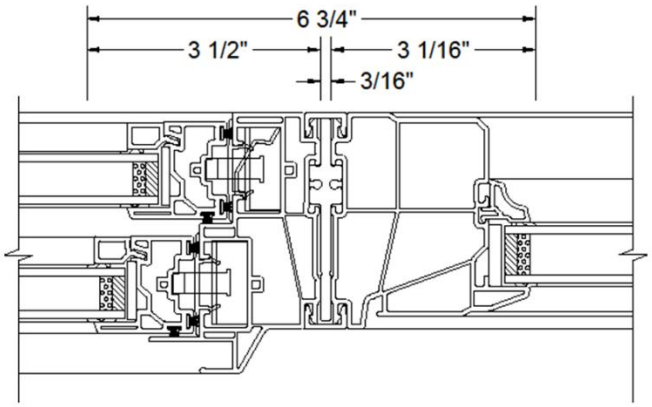
ELEVATION
EXTERIOR VIEW



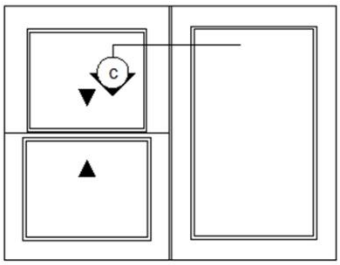
A -DOUBLE HUNG TILT/FIXED(SINGLE FRAME)
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



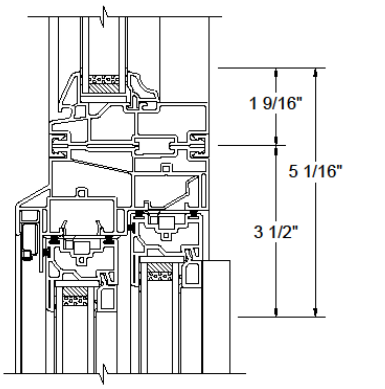
A -DOUBLE HUNG TILT/FIXED(WITH SASH)
MULLION DETAIL



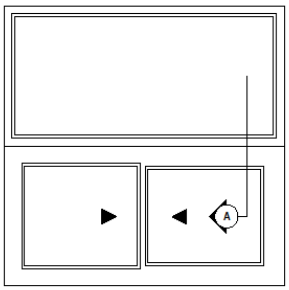
ELEVATION
EXTERIOR VIEW

1272 Double Slider Tilt Window – Mullion Details

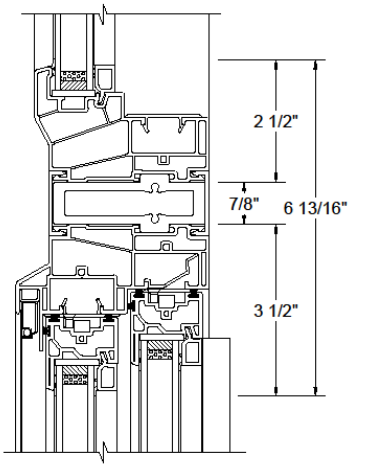
Unit: Fixed Window (No Sash, Single Frame, With Sash) Over Double Slider Tilt Window



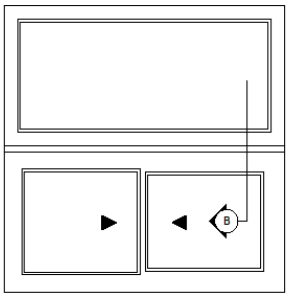
A - FIXED(NO SASH) OVER DST
MULLION DETAIL



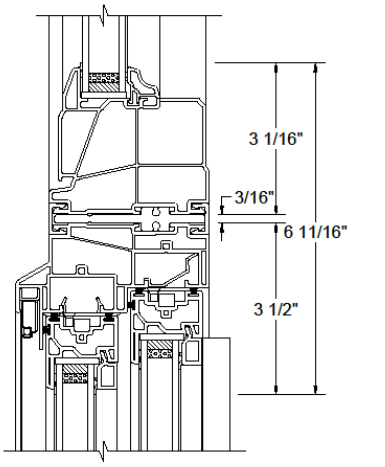
ELEVATION
EXTERIOR VIEW



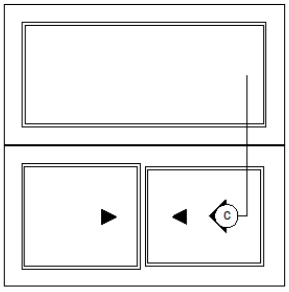
B - FIXED(SINGLE FRAME) OVER DST
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



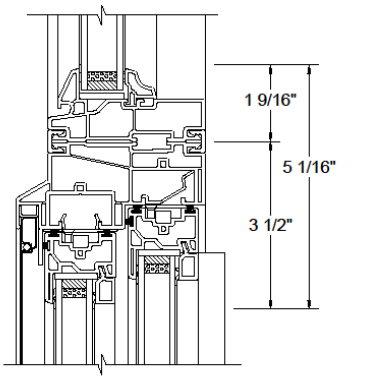
C - FIXED(WITH SASH) OVER DST
MULLION DETAIL



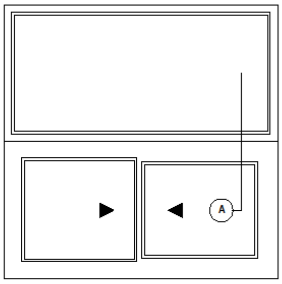
ELEVATION
EXTERIOR VIEW

1273 Double Slider Liftout Window – Mullion Details

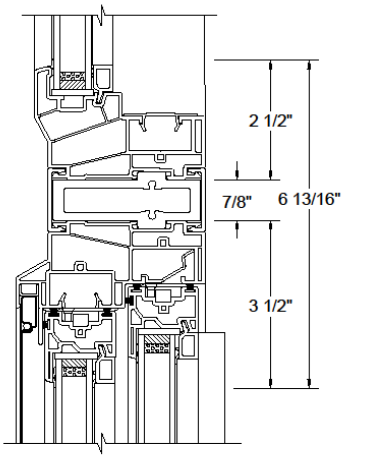
Unit: Fixed Window (No Sash, Single Frame, With Sash) Over Double Slider Liftout Window



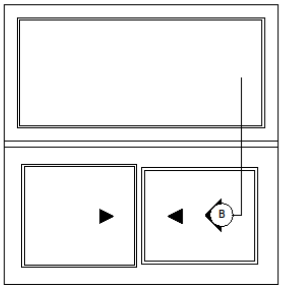
A - FIXED(NO SASH) OVER DSL
MULLION DETAIL



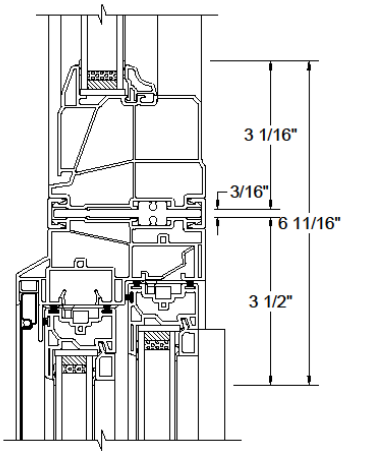
ELEVATION
EXTERIOR VIEW



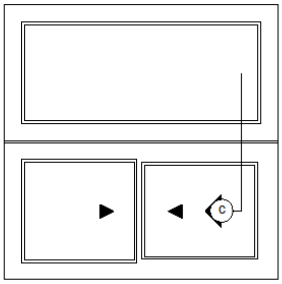
B - FIXED(SINGLE FRAME) OVER DSL
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



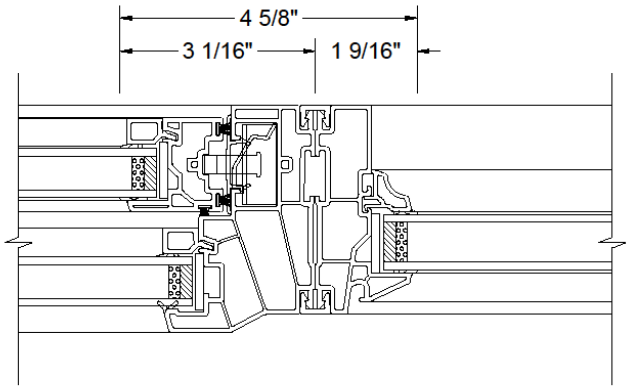
C - FIXED(WITH SASH) OVER DSL
MULLION DETAIL



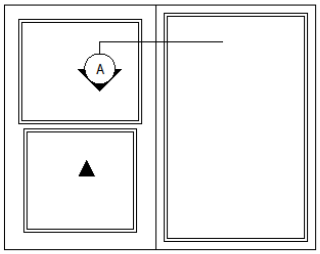
ELEVATION
EXTERIOR VIEW

1371 Single Hung Tilt Window – Mullion Details

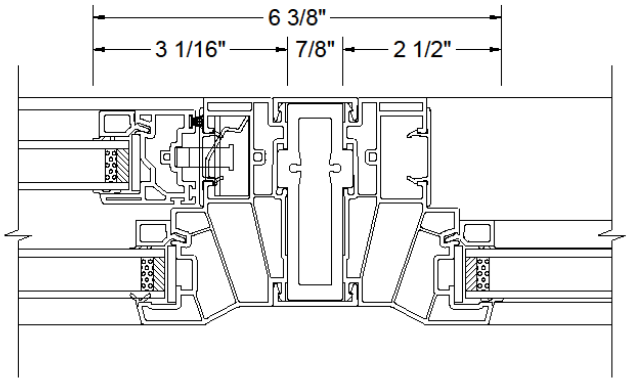
Unit: Single Hung Window With Fixed Window (No Sash, Single Frame, With Sash)



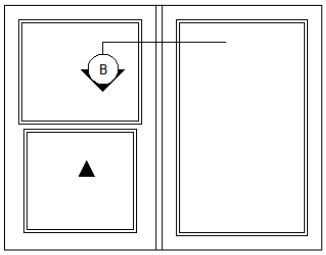
A - SINGLE HUNG TILT/FIXED(NO SASH)
MULLION DETAIL



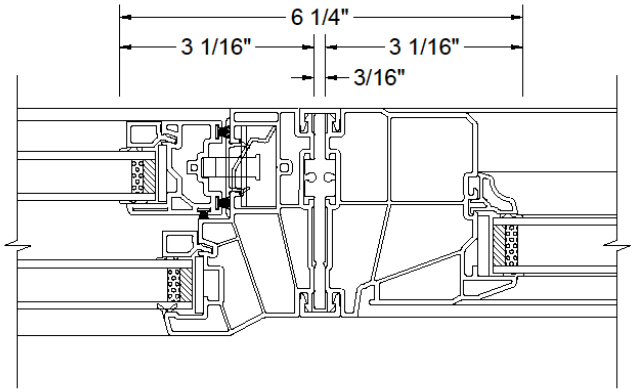
ELEVATION
EXTERIOR VIEW



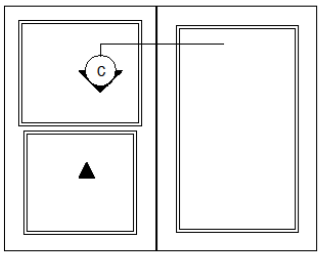
B - SINGLE HUNG TILT/FIXED(SINGLE FRAME)
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



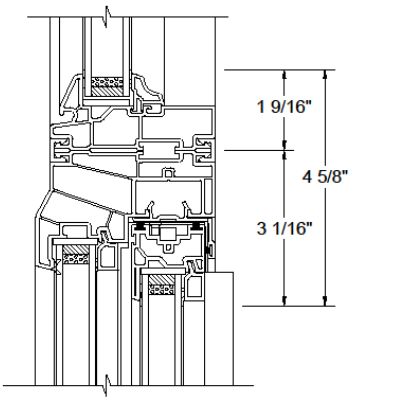
C - SINGLE HUNG TILT/FIXED(WITH SASH)
MULLION DETAIL



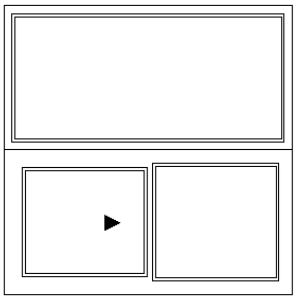
ELEVATION
EXTERIOR VIEW

1372 Single Slider Liftout Window – Mullion Details

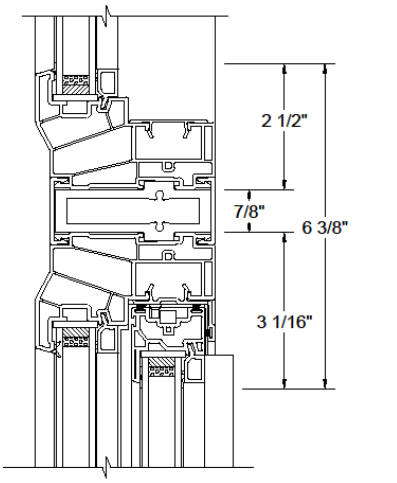
Unit: Fixed Window (No Sash, Single Frame, With Sash) Over Single Slider Liftout



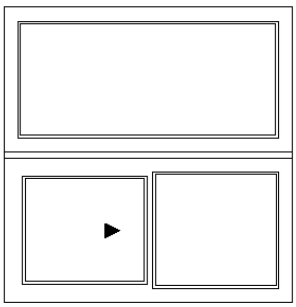
A - FIXED(NO SASH) OVER SSL
MULLION DETAIL



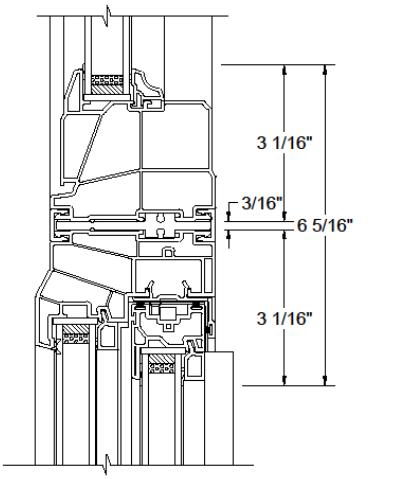
ELEVATION
EXTERIOR VIEW



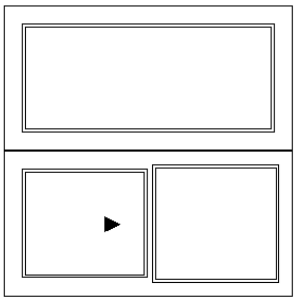
B - FIXED(SINGLE FRAME) OVER SSL
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



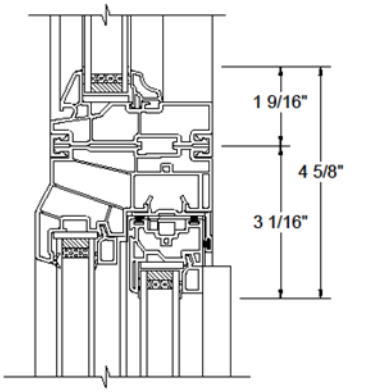
C - FIXED(WITH SASH) OVER SSL
MULLION DETAIL



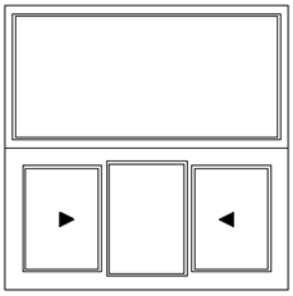
ELEVATION
EXTERIOR VIEW

1374 3-Lite Single Slider (End Vent) Window – Mullion Details

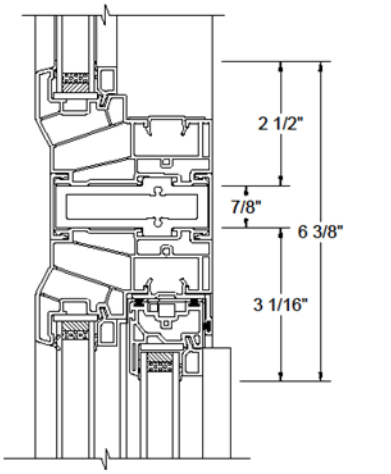
Unit: Fixed Window (No Sash, Single Frame, With Sash) Over 3 Lite Slider



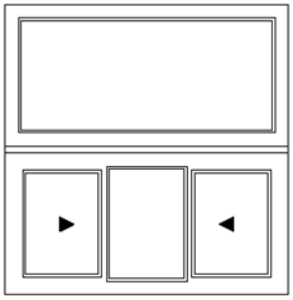
A - FIXED(NO SASH) OVER 3 - LITE SSL
MULLION DETAIL



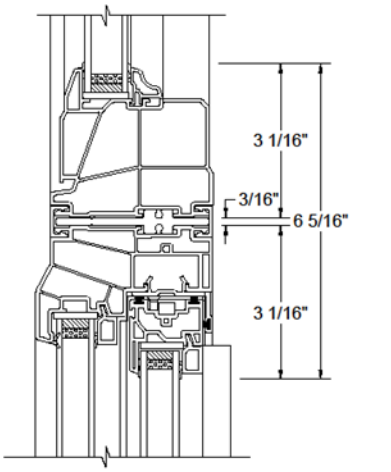
ELEVATION
EXTERIOR VIEW



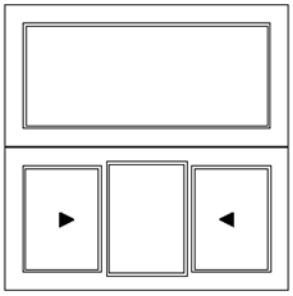
B - FIXED(SINGLE FRAME) OVER 3 - LITE SSL
MULLION DETAIL



ELEVATION
EXTERIOR VIEW



C - FIXED(WITH SASH) OVER 3 - LITE SSL
MULLION DETAIL



ELEVATION
EXTERIOR VIEW

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Patio Door

SPECIFICATIONS

Frame and Sash

All frame and sash profiles are extruded by North Star Windows from virgin PVC powder material. Frames and sash are multi-chamber design for strength and energy efficiency. Extruded frame is mechanically fastened at corners and sealed with one-sided adhesive backed closed cell polyethylene gaskets. The door frame's low-profile sill is fitted with an extruded anodized aluminum screen track. Extruded sash is fusion welded ensuring a water and airtight seal. Sash is metal reinforced providing superior rigidity. Frames are a full 5 7/8" in depth.

Insulated Glass

Tempered double or triple insulated glass with low conductivity Edgetech silicone foam, warm edge spacer and evacuated chamber filling with Argon gas. The insulated glass unit is available in a variety of coated glass options including Cardinal LowE180 (High solar heat gain), Cardinal LowE366 (Low solar heat gain) and Cardinal 272 glass for blinds. The insulated glass unit is built with 3mm glass and ½" air space, or 4mm glass with 7/16" air space. The bronze and grey tint options are available in 5mm glass with 7/16" air space. Internal white mini blinds that raise, lower and tilt are also available between the glass panes

Glazing

Insert neoprene setting blocks around the sash perimeter with silicone toe bead sealant application to the interior glazing cavity to stabilize glass movement. Furnish laid in insulated glass from interior side of sash against flexible vinyl fin weather-strip co-extruded to exterior edge of sash. Install interior glazing stops with flexible co-extruded vinyl fin weather strip against the interior glass face

Weather-Stripping

The door utilizes the following seals: Triple weather-strip comprising of mohair pile weather-strips with stiff fin type vapor barrier, gasket compression type bulb seals and closed cell foam enclosed in Vulcanized rubber. Around the operating panel on the sill and head the door utilizes four layers of the low friction water replant triple weather strip. In the meeting rail Two water-repellant pile weather strips with and two bulb-type compression gaskets are used. Three triple weather-strips are used on the lock side with additional gasket compression type bulb seals. Around the fixed panel two closed cell foam and two triple weather-striping are installed

Hardware

Opening panel is equipped with two tandem roller assemblies with noise and friction reducing nylon rollers with stainless steel ball bearings. Multipoint point (keyless) lock and keeper are standard. Multipoint and single point lock is available in 10" and 8" handle respectively.

Hardware Options

Every door manufactured comes equipped with a standard white or black single-point and multi point locking mechanism. For added assurance, single and multi-point keyed locks and easy-to-use security bolt and security bar are also available. Satin Nickle, black and white handles are available in multipoint lock only.

Screen

North Star heavy duty extruded aluminum screen frame with adjustable steel rollers, screened with anti-glare fiberglass cloth. Screen frame is available in white and North Star's nine standard exterior colors.

Exterior and Interior Finishes

The Fusion Colour Wrap™ application process is a sophisticated method used to prevent our colours from chipping or peeling like paint can over time. All ComfortStar™ sliding patio doors come with a generous assortment of exterior colour options. We offer 9 UV-resistant exterior laminated traditional and architectural colours, all of which match our Series 1000 windows.

Virtually indistinguishable from real wood, our interior colour overlays in walnut, light oak, and kolonial oak offer the warmth and comfort of a real wood finish. If colour matching to pre-existing paint colours or finishes, our woodgrain stainable and paintable overlay is the perfect solution. Our midnight black, espresso, and hickory overlays are available on the interior with a matching exterior.

Special options: Espresso, Hickory and Midnight Black are available for patio doors interiors as well as exterior.

Grilles

Create a unified, timeless aesthetic through the use of traditional or contemporary grilles, available in four sleek profiles: 1/4" flat, 5/8" flat, 3/4" contour and 7/8" SDL. Our Between the Glass (BTG) grilles are encased between the two panes of insulating glass, leaving a smooth surface that's a breeze to clean. 5/16" narrow grilles are available in white, pewter and brass.

Divided Lites

Classic simulated divided lites (SDL) are also available. SDL grilles are available in 7/8" and 2" widths. Standard SDL comes without air space grille.Optional1/4"X5/16"pewter airspace grilles are available on double glazed units only.

SDL grille bars applied to the outer surfaces of the insulated glass.

Blinds in Between Lites

North Star's internal mini-blinds are sealed between two panes of tempered safety glass. Finger tip controls allow the blinds to be raised or lowered and adjusted as needed to allow for light or privacy. No cleaning is ever required!

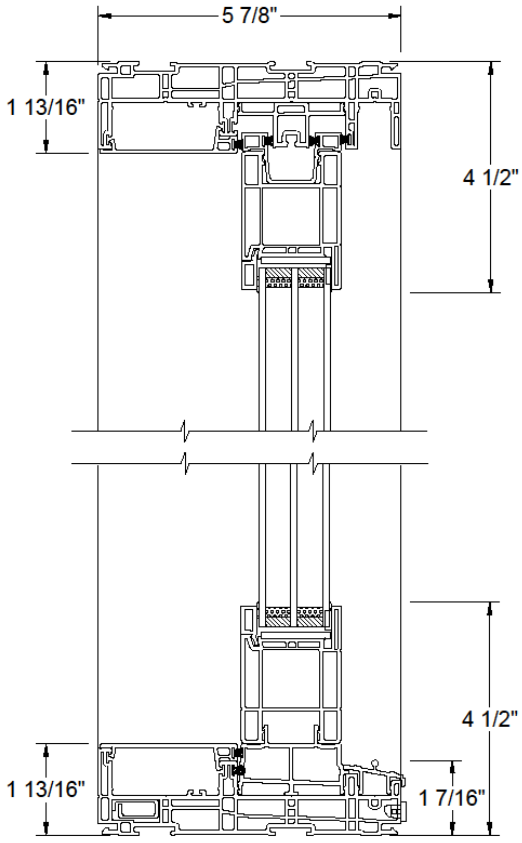
Accessories

North Star offers a variety of vinyl accessories such as nailing fin, brickmolds, drywall/wood return, couplers and jamb extensions.

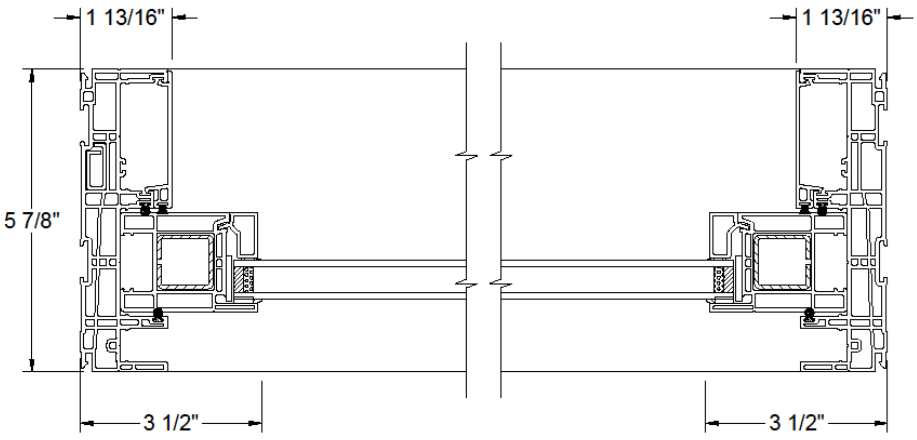
Standards

North Star windows have been tested by an independent laboratory for air, water, structural and thermal performance requirements.

3510 ComfortStar Sidelite Details

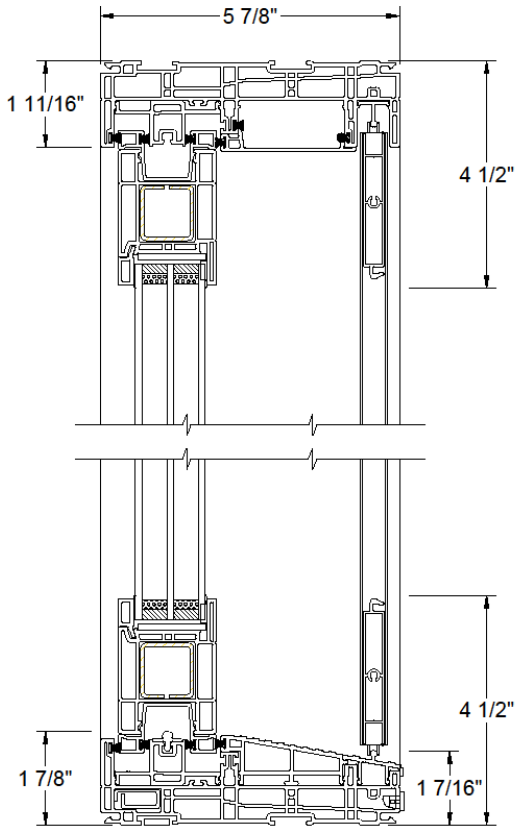


VERTICAL SECTION

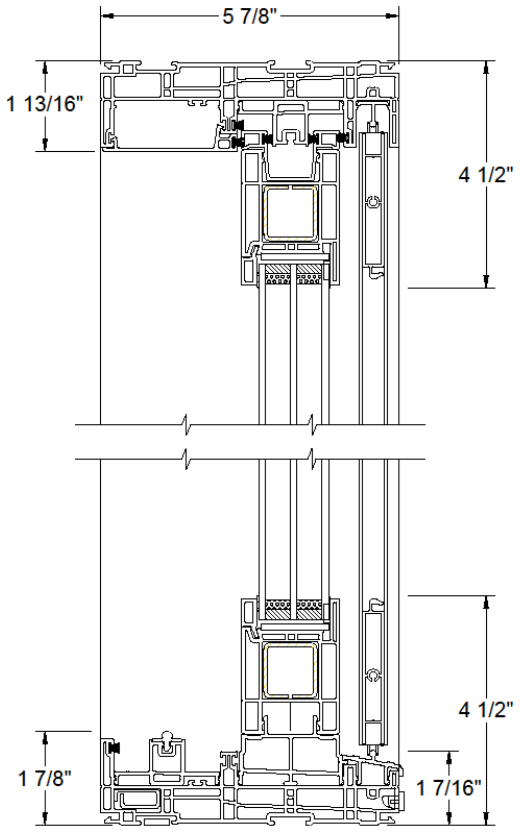


HORIZONTAL SECTION

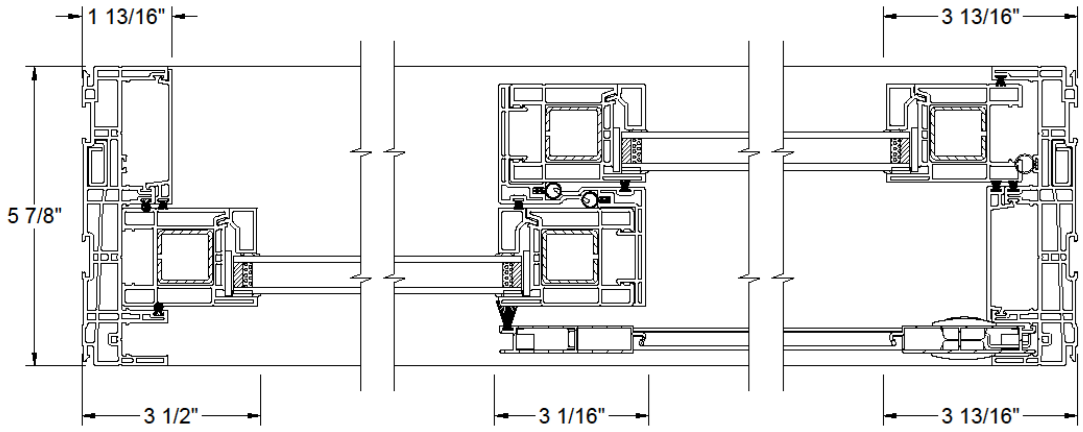
3520 ComfortStar Two Panel Patio Door Details



VERTICAL SECTION
(OPERATING SIDE)

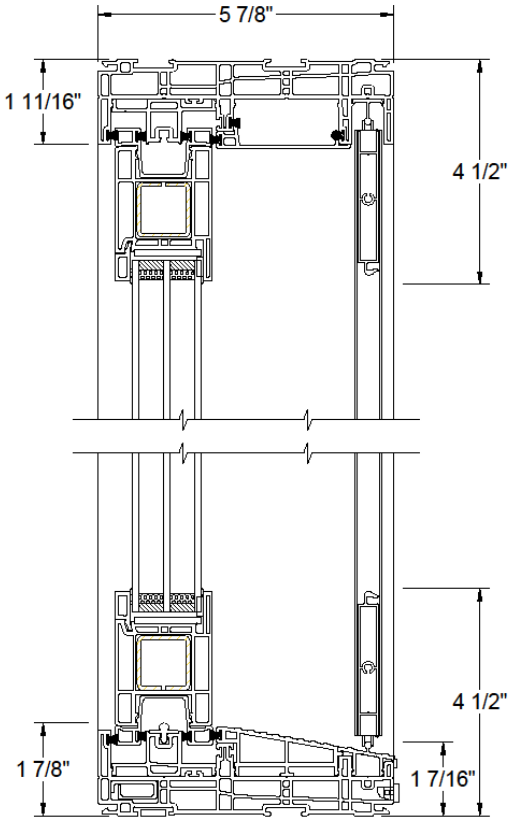


VERTICAL SECTION
(FIXED SIDE)



HORIZONTAL SECTION

3530 ComfortStar Three Panel Patio Door Details



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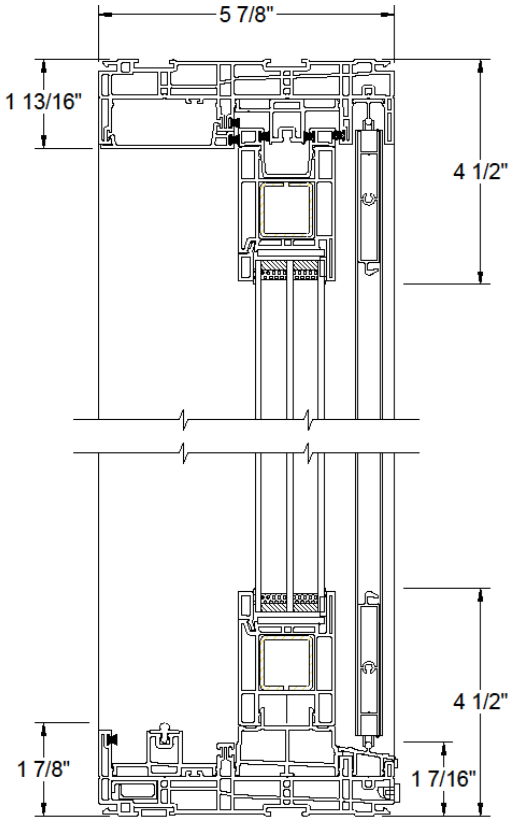

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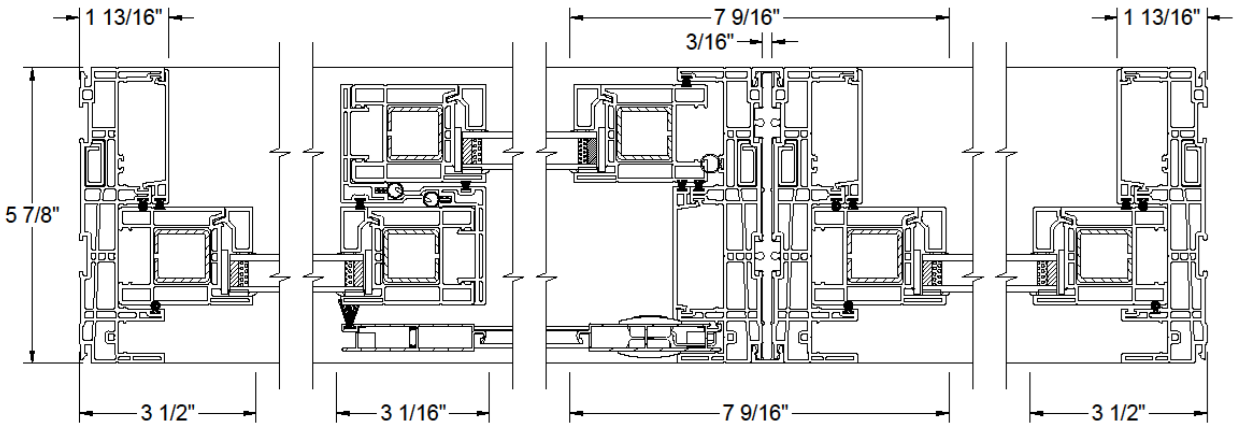
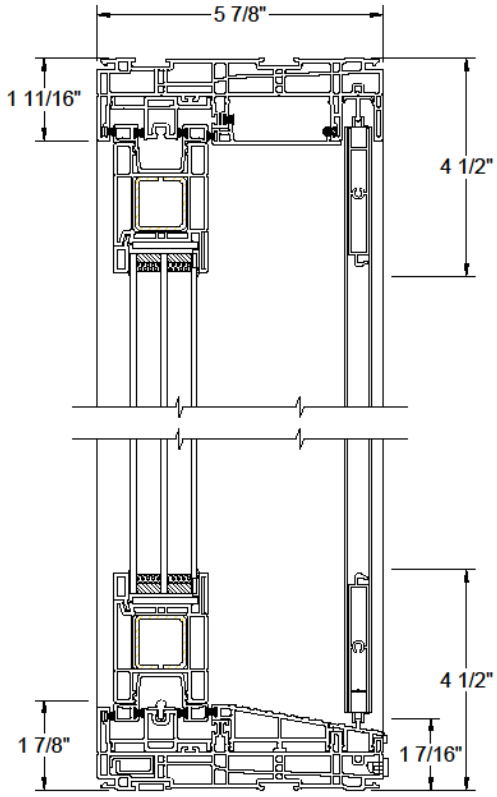


HORIZONTAL SECTION

3540 ComfortStar Four Panel Patio Door Details



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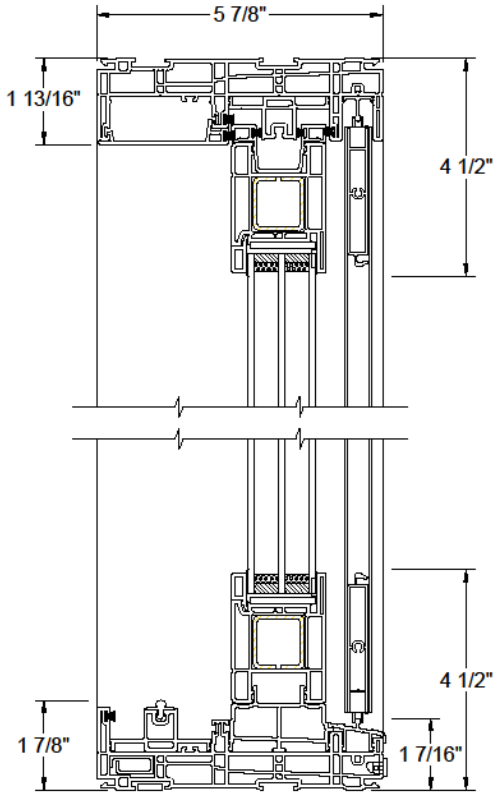

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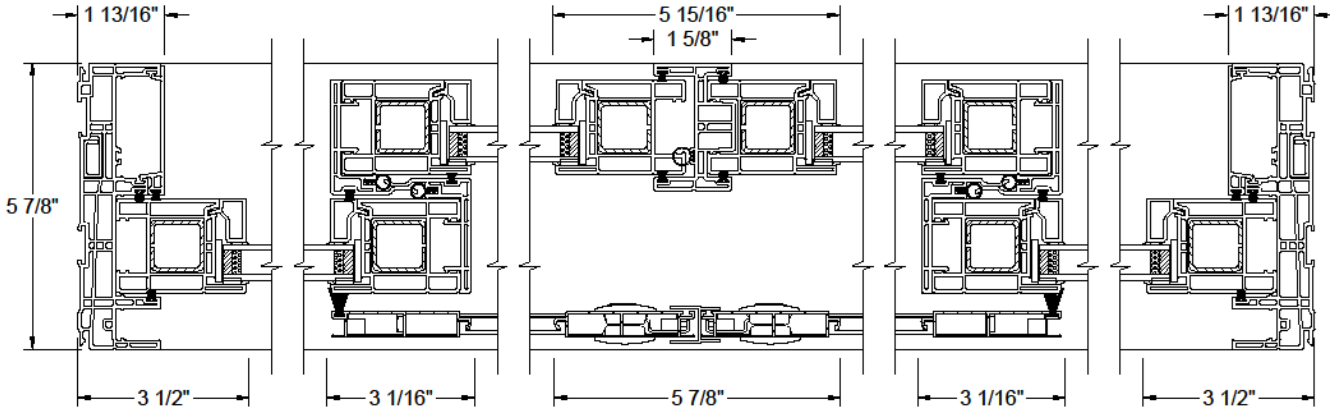
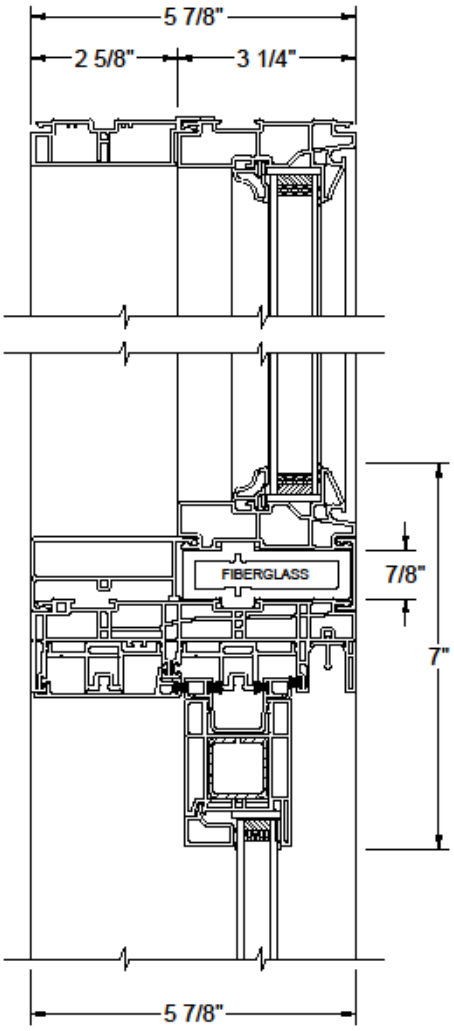
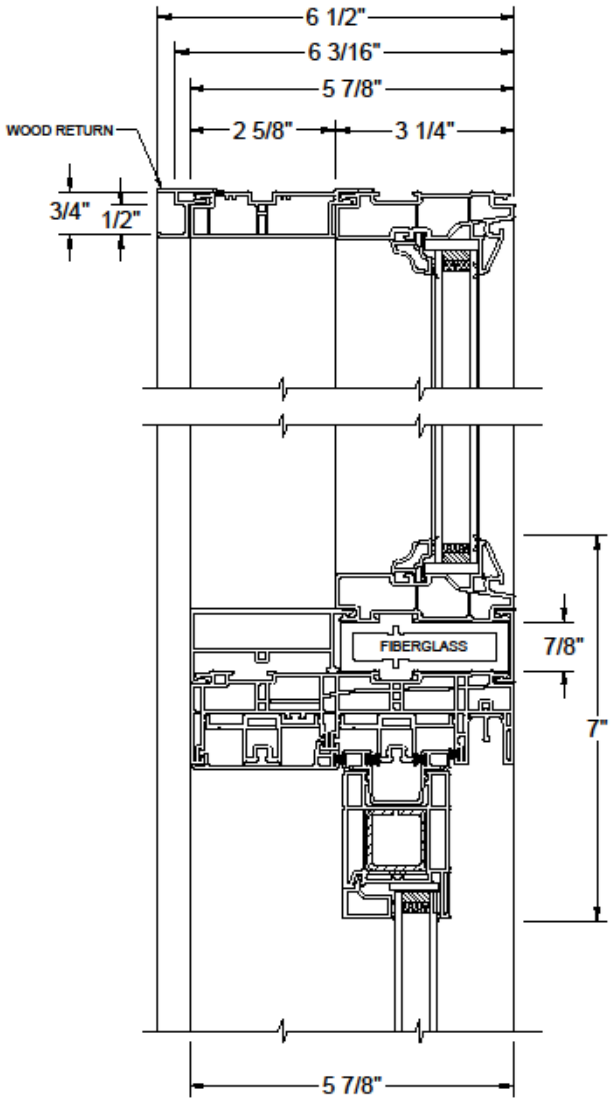
(FIXED SIDE)



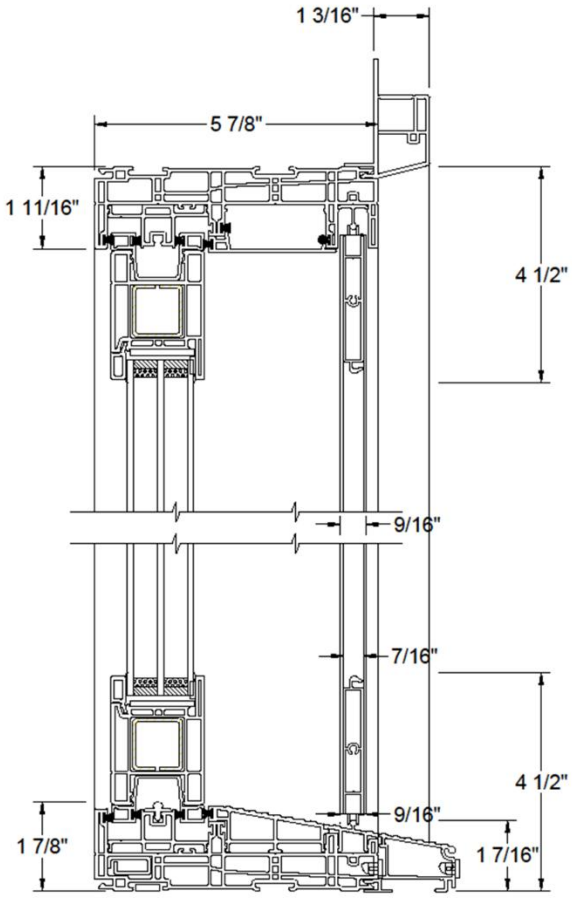
HORIZONTAL SECTION

3500 ComfortStar Transom Reinforcement & Coupler Details





ComfortStar Two Panel Door with Brickmold and Sill Extender Details



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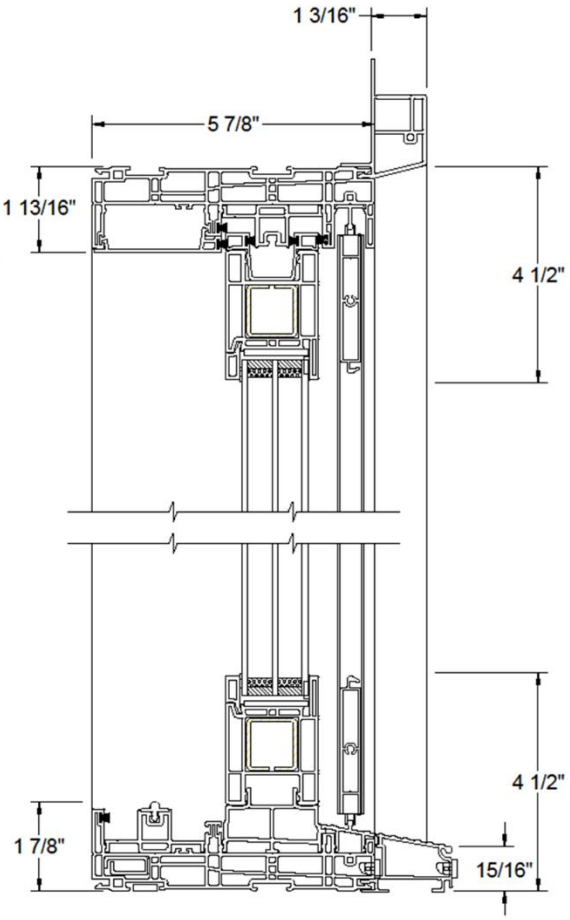
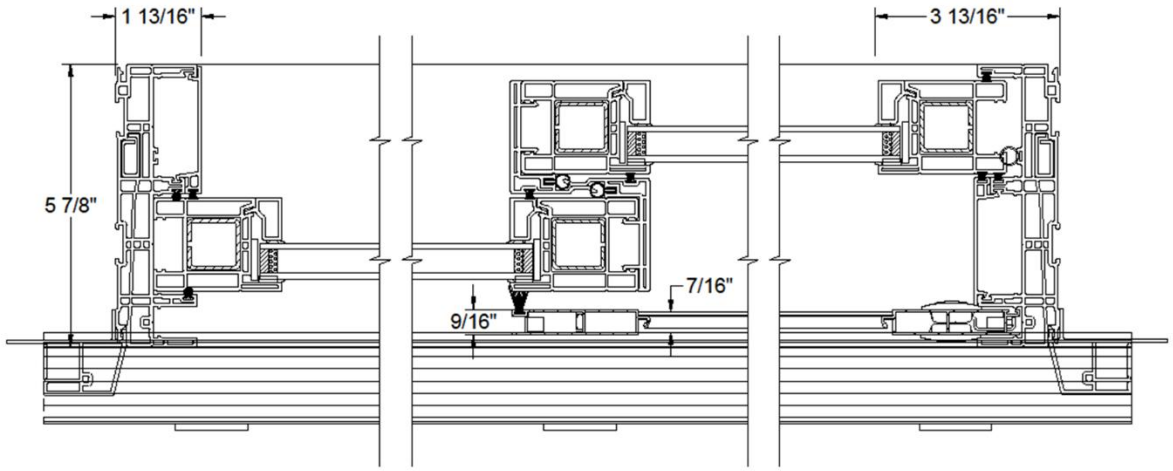


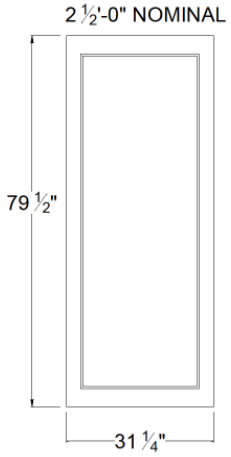
VERTICAL SECTION
(FIXED SIDE)

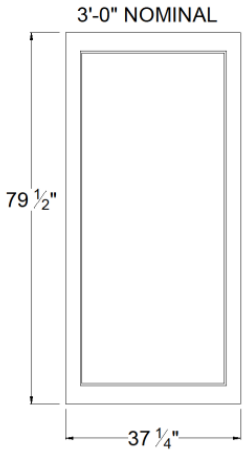


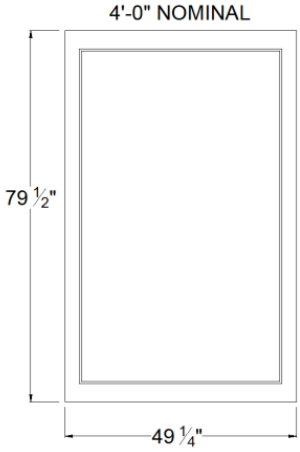
HORIZONTAL SECTION

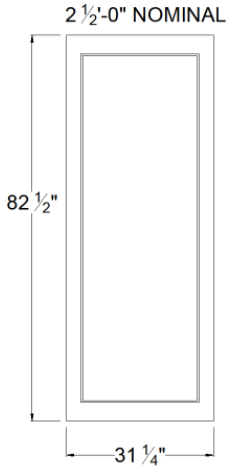
ComfortStar Sidelite (O)

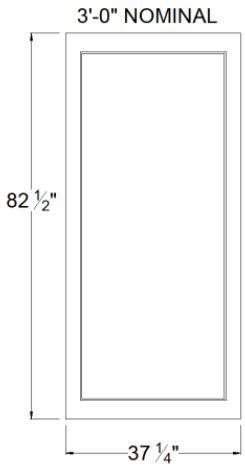
Standard Height: 79 ½”, 82 ½”, 95 ½”

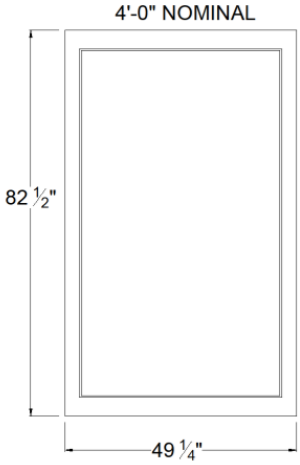


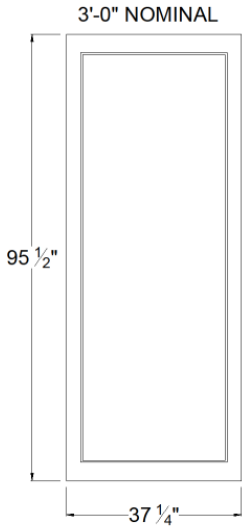


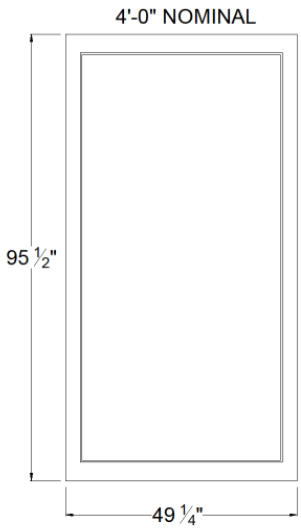






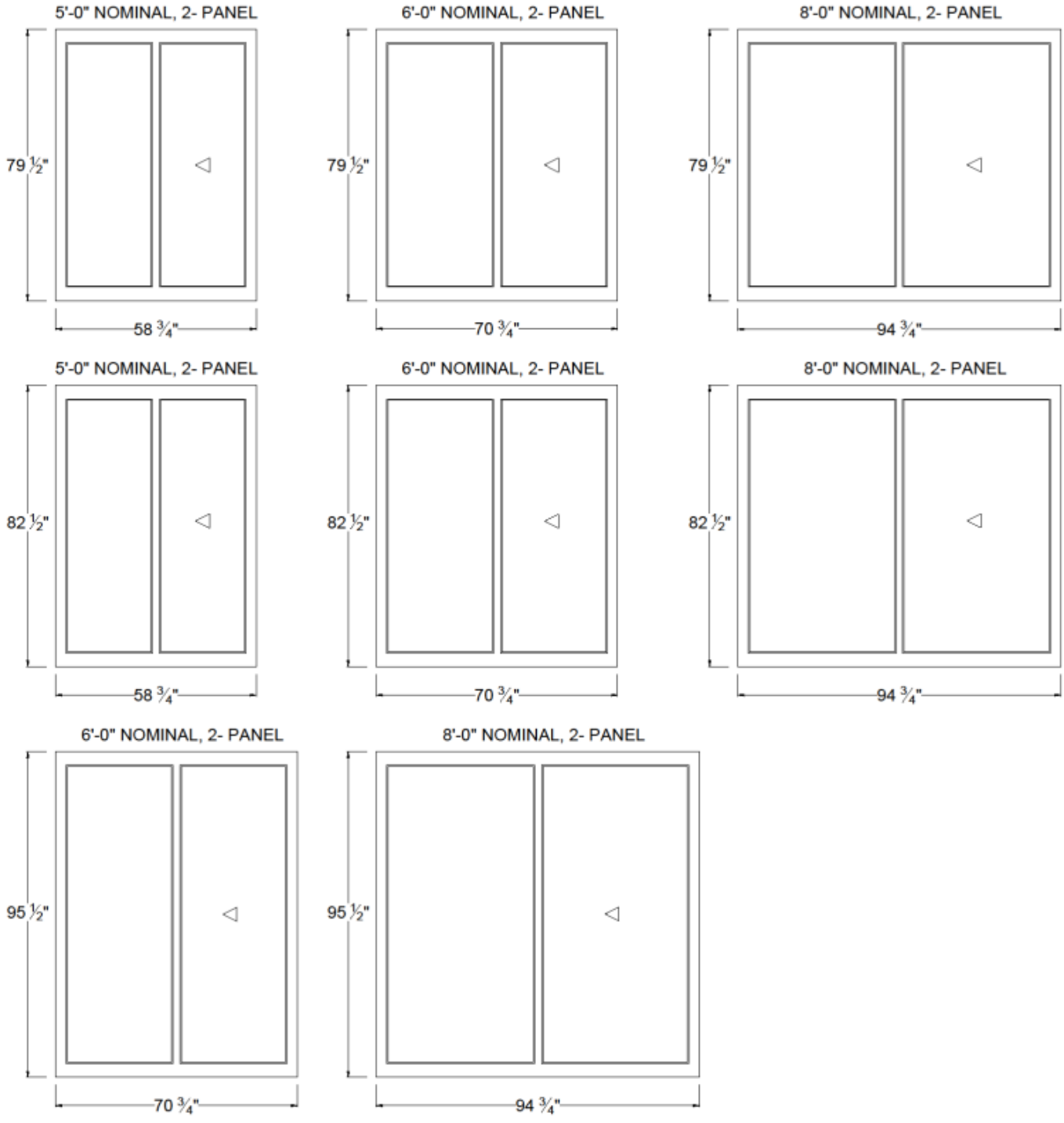






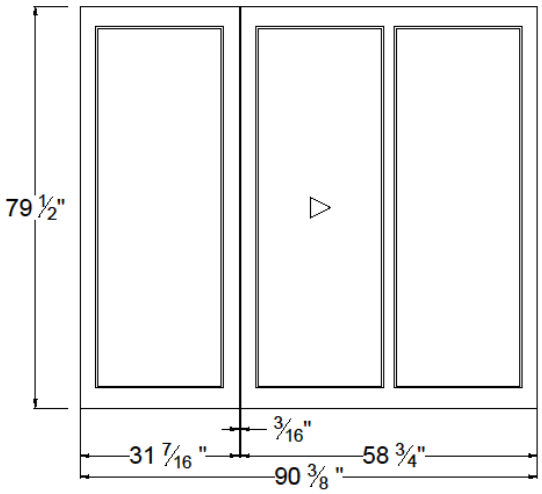
ComfortStar Two Panel Patio Door (OX)

Standard Height: 79 ½”, 82 ½”, 95 ½”

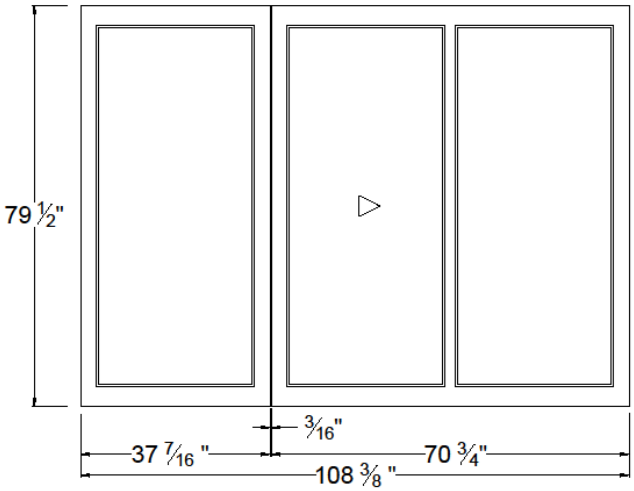


ComfortStar Three Panel Patio Door Standard Height – 79 ½” (OXO) (Mulled with 3/16” Reinforcement)

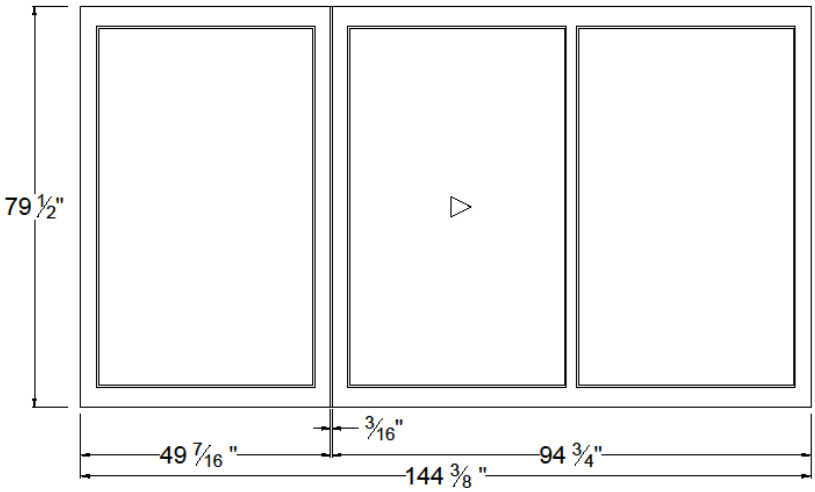
7'- ½ " NOMINAL, 3-PANEL



9'- 0" NOMINAL, 3-PANEL

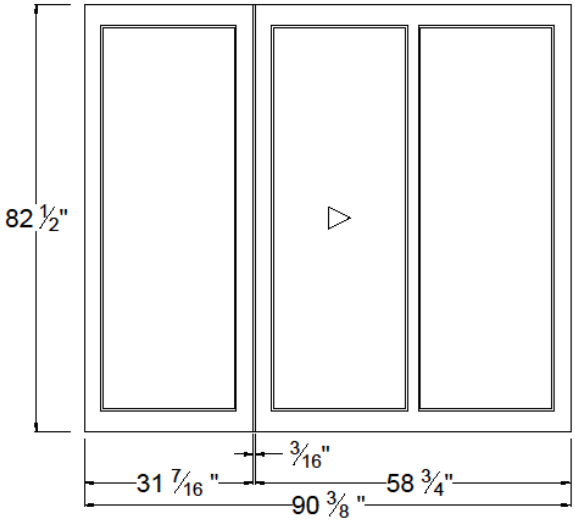


12'- 0" NOMINAL, 3-PANEL

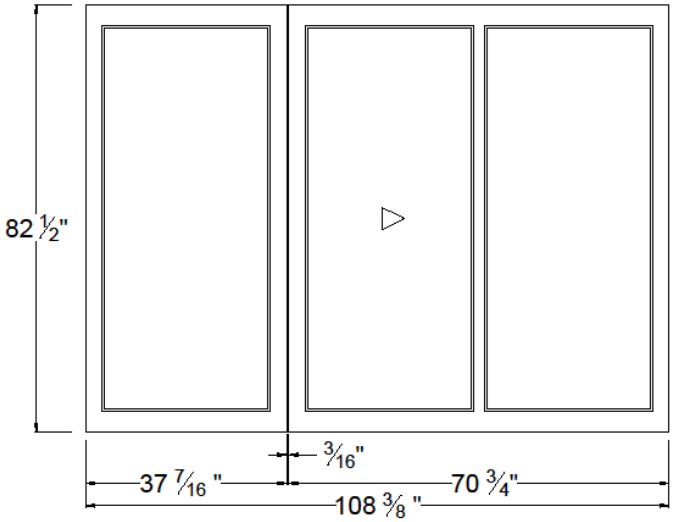


ComfortStar Three Panel Patio Door Standard Height – 82 ½” (OXO)

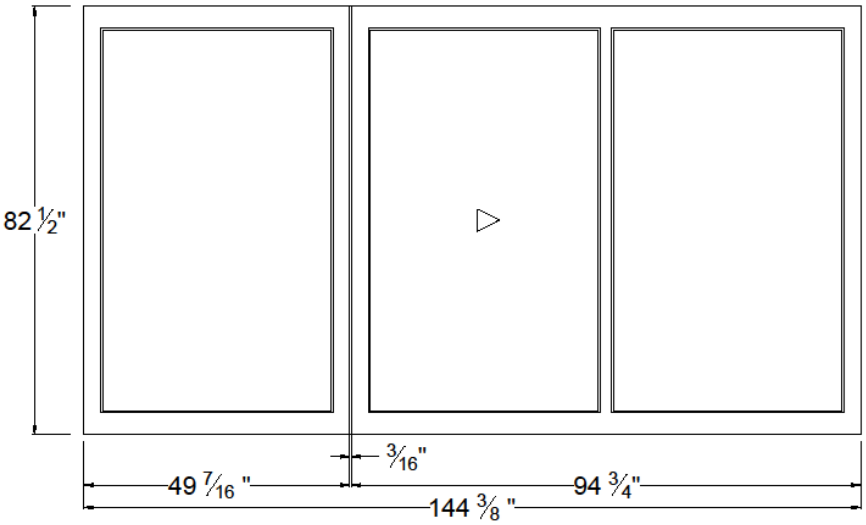
7'- ½ " NOMINAL, 3-PANEL



9'- 0" NOMINAL, 3-PANEL

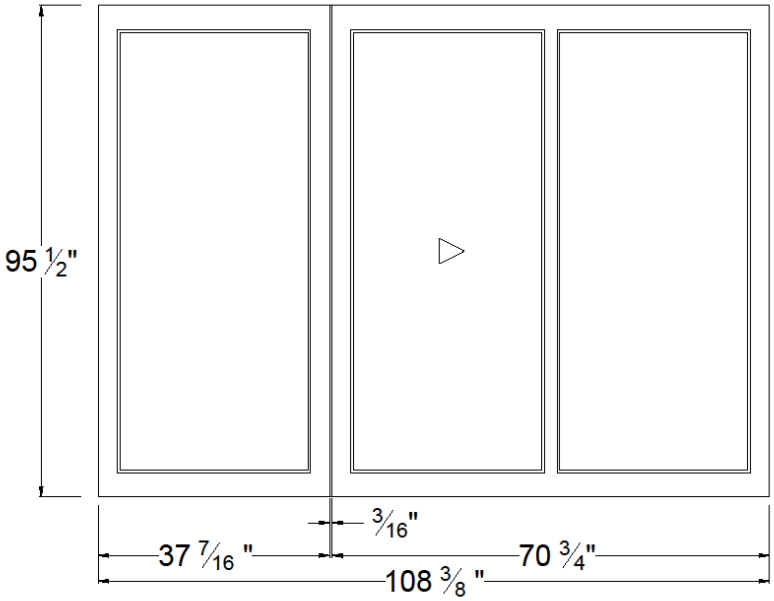


12'- 0" NOMINAL, 3-PANEL

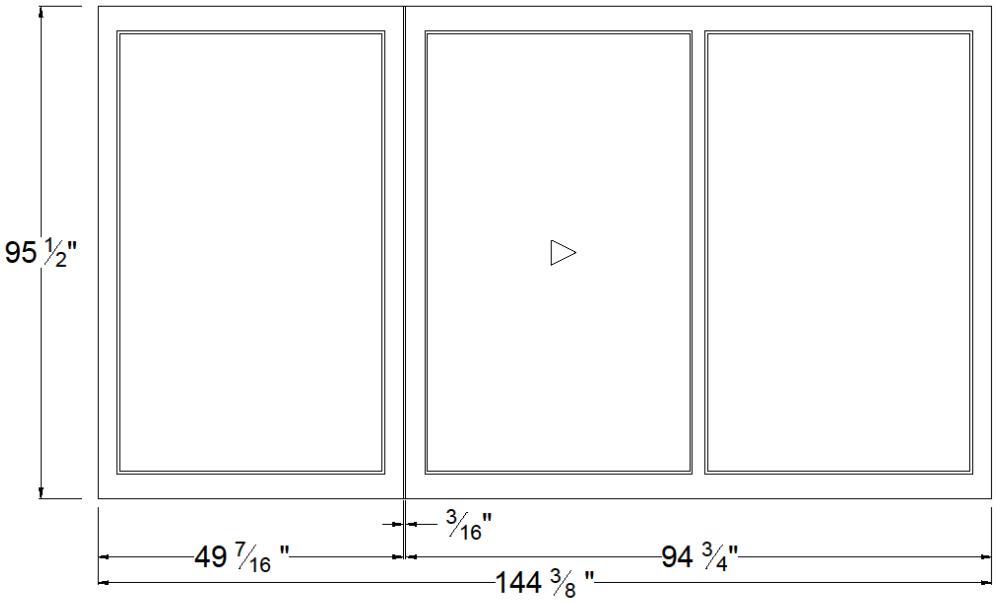


ComfortStar Three Panel Patio Door Standard Height –95 ½” (OXO)

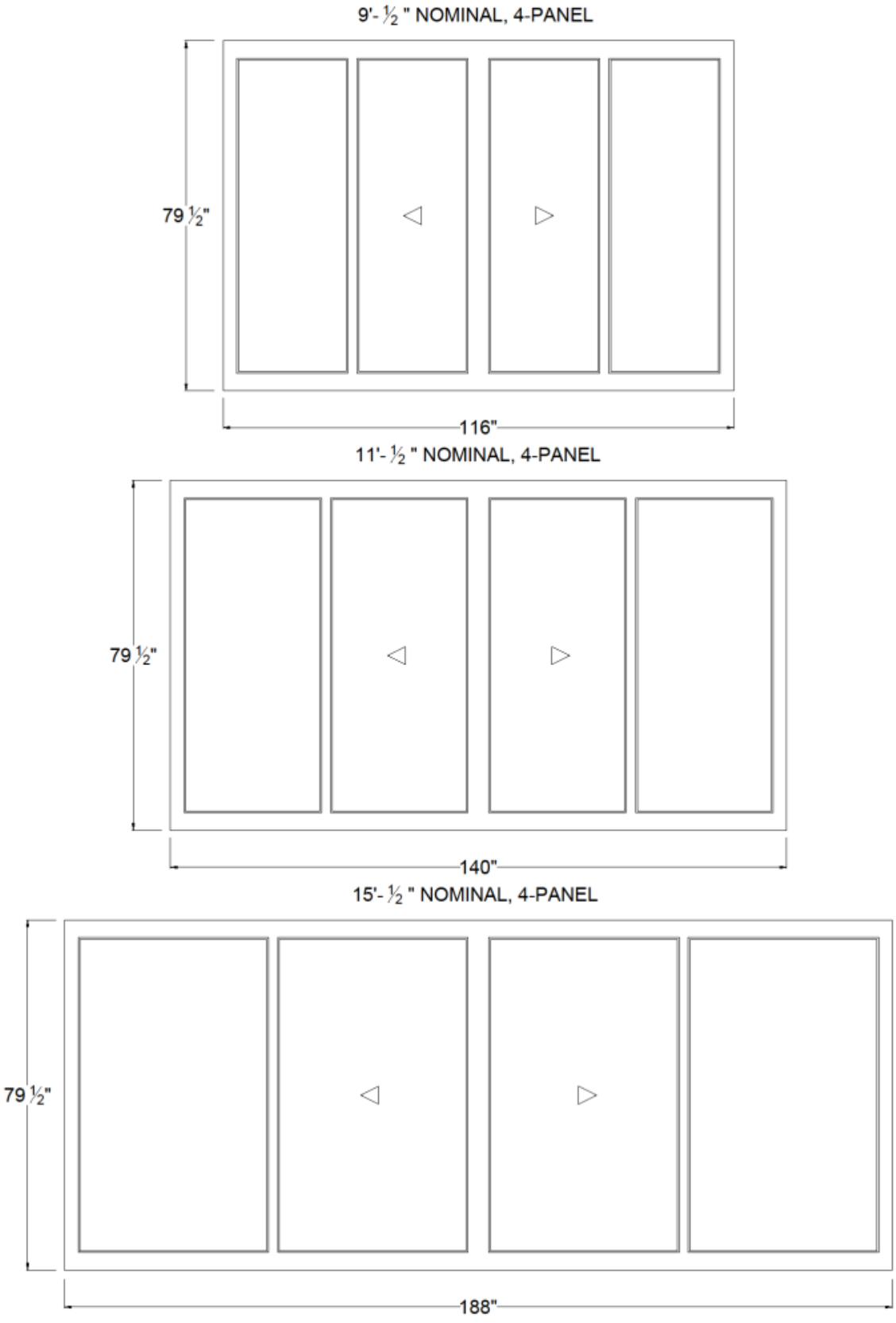
9'- 0" NOMINAL, 3-PANEL



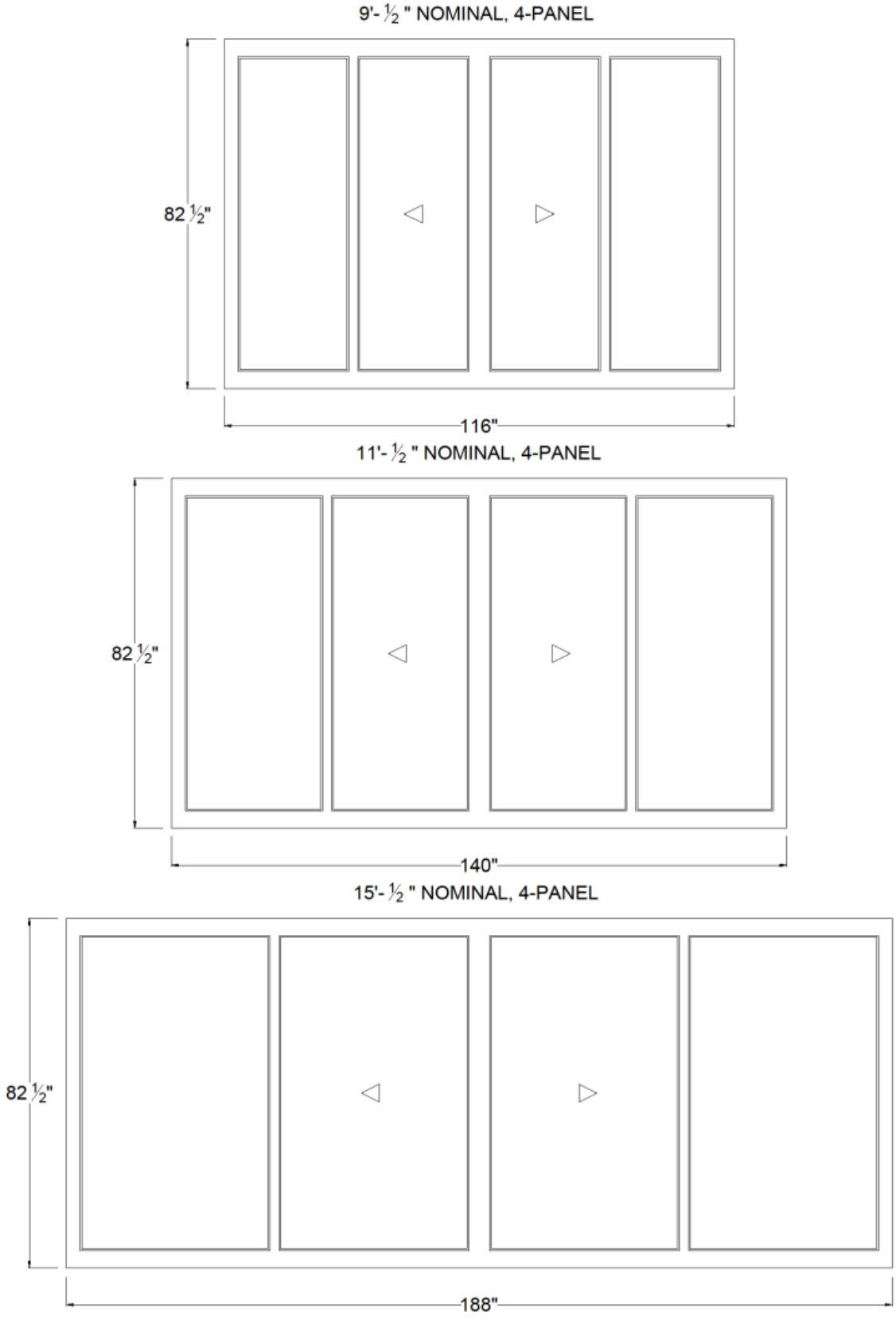
12'- 0" NOMINAL, 3-PANEL



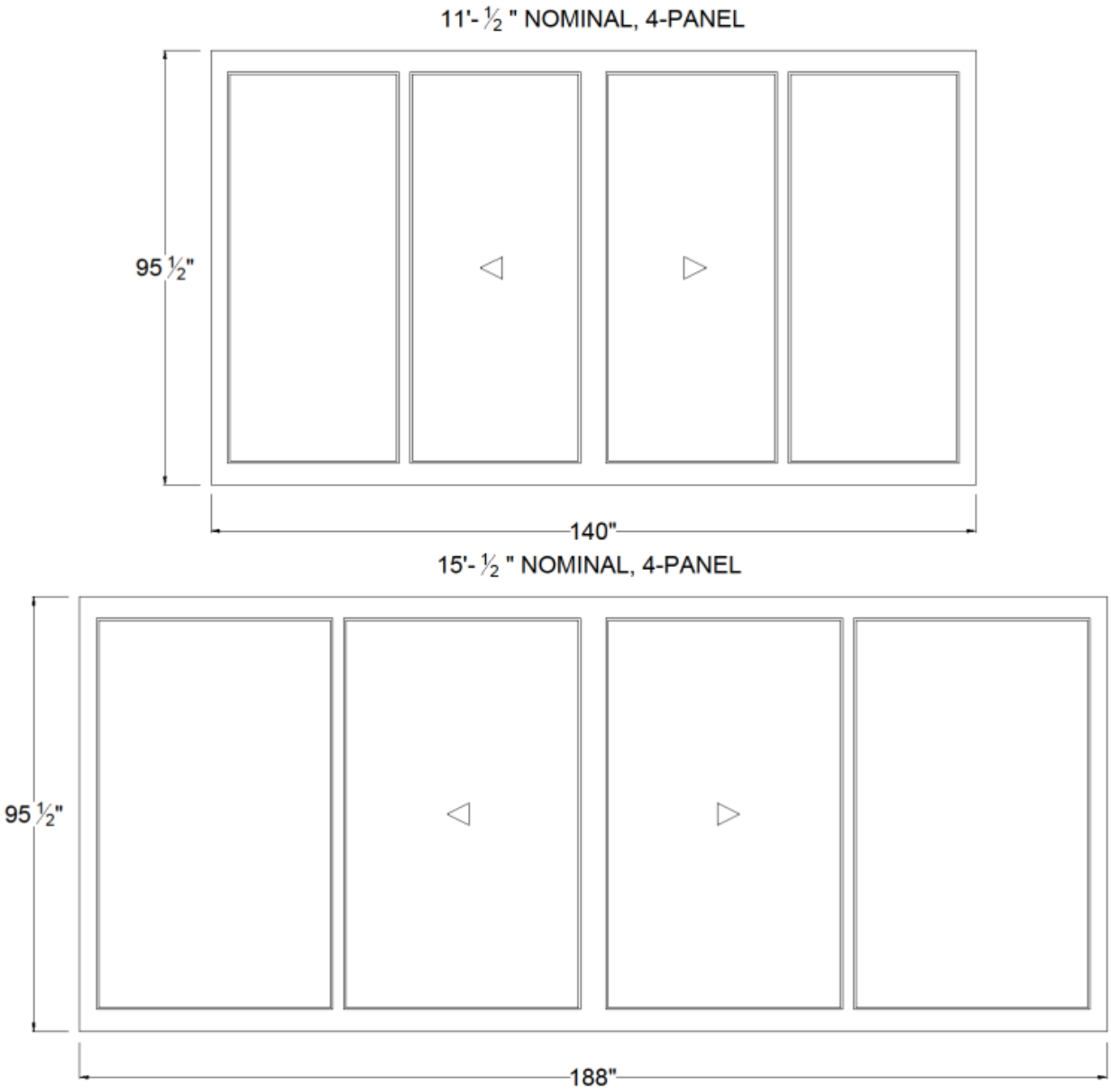
ComfortStar Four Panel Patio Door standard height –79 ½”



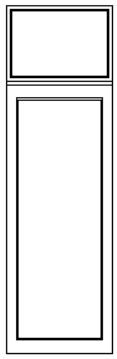
ComfortStar Four Panel Patio Door standard height –82 ½”



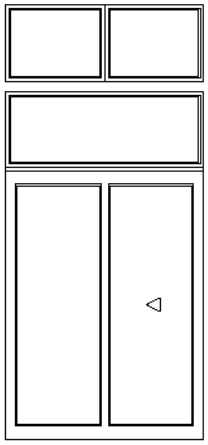
ComfortStar Four Panel Patio Door standard height –95 ½”



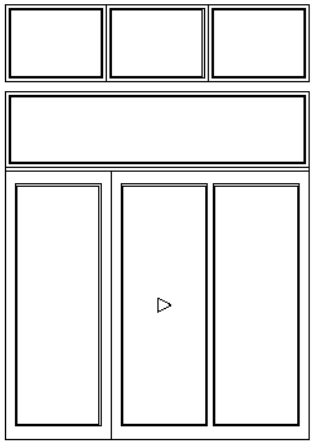
ComfortStar Patio Door Transom Details



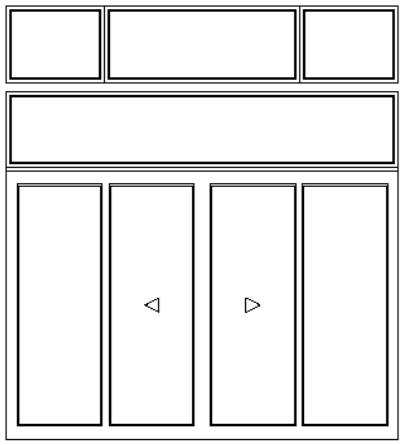
2'-½" SIDE LITE



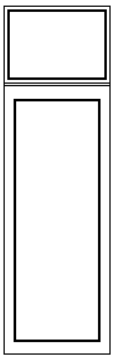
5'-0"NOMINAL, 2 PANEL



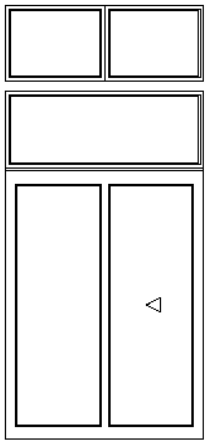
7'- ½" NOMINAL, 3 PANEL



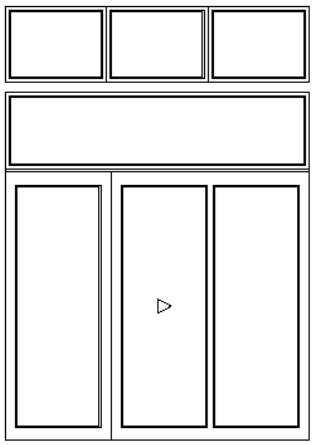
9' - ½" NOMINAL, 4 PANEL



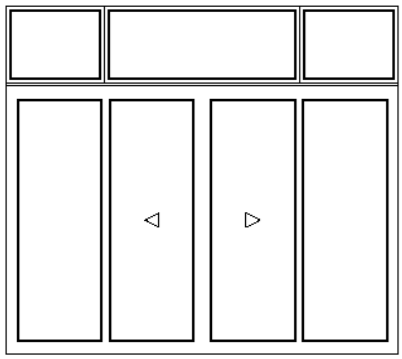
3'-0" SIDE LITE



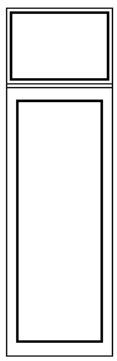
6'-0"NOMINAL, 2 PANEL



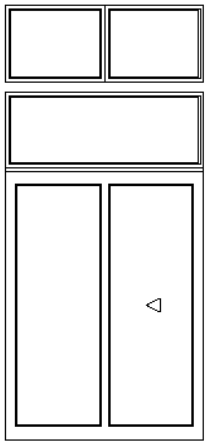
9'- 0" NOMINAL, 3 PANEL



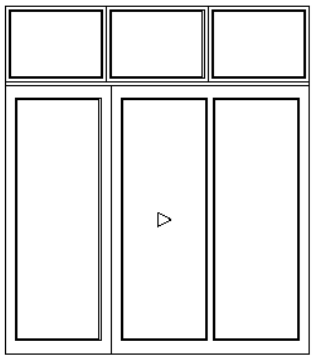
11' - ½" NOMINAL, 4 PANEL



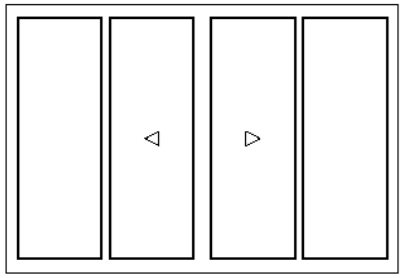
4'-0" SIDE LITE



8'-0"NOMINAL, 2 PANEL



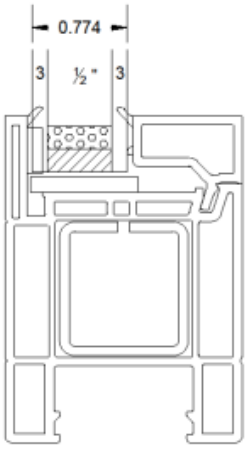
12'- 0" NOMINAL, 3 PANEL



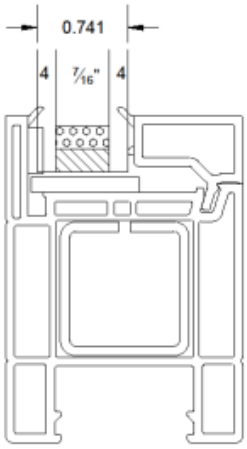
15' - ½" NOMINAL, 4 PANEL

NOTE: 7/8" FIBREGLASS HORIZONTAL REINFORCEMENT IS INSTALLED BETWEEN PATIO DOOR AND TRANSOM.
3/16" FIBERGLASS VERTICAL REINFORCEMENT IN BETWEEN TWO PANEL PATIO DOOR AND SIDELITE

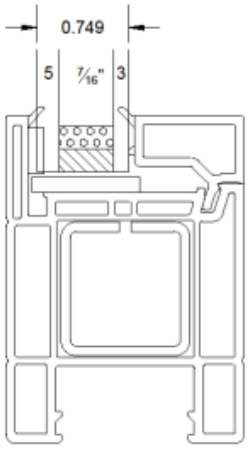
ComfortStar Patio Door Glazing Details



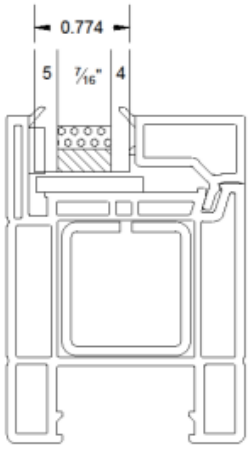
5' & 6' , H<83"



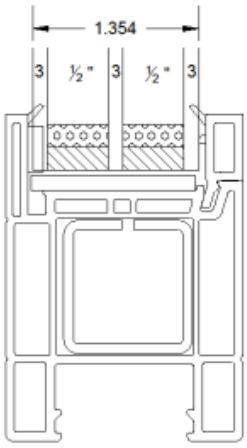
(5' & 6' UNITS, H>83)
(8' UNIT, STD & 8' HT)
(CUSTOM SIZE DOOR)



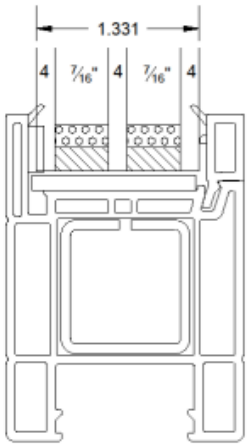
(5' & 6' UNITS, STD HT)
(WITH BRONZE & GREY)



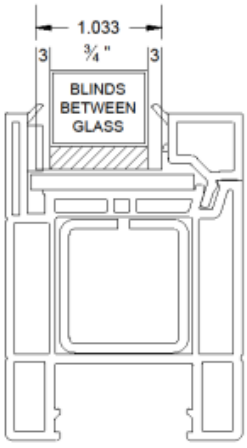
(5' & 6' UNITS, STD HT)



(5' & 6' UNITS, STD HT)
(WITH BRONZE & GREY)



(5' & 6' UNITS, H>83)
(8' UNIT, STD & 8' HT.)
(CUSTOM SIZE DOOR)

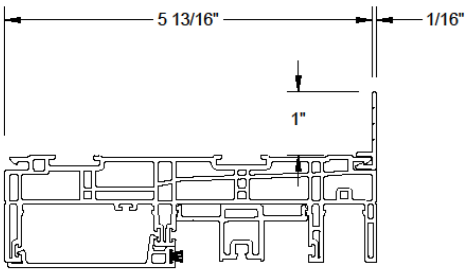


(5' & 6' UNITS, STD HT ONLY)

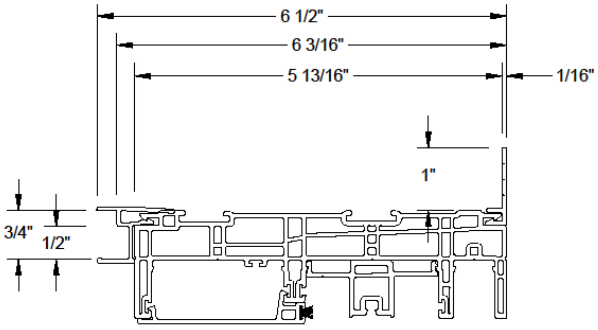
ComfortStar Patio Door Jamb Details

1. Sill Expander & New Construction Nail Fin

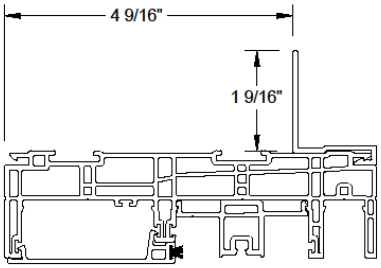
SILL EXPANDER WITHOUT WOOD RETURN



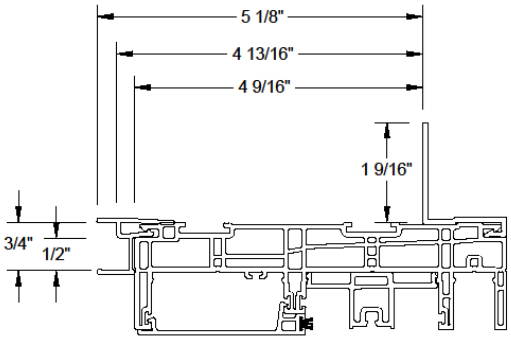
SILL EXPANDER WITH WOOD RETURN



NAIL FIN WITHOUT WOOD RETURN

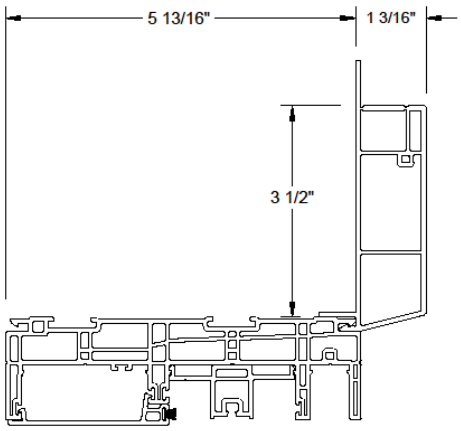


NAIL FIN WITH WOOD RETURN

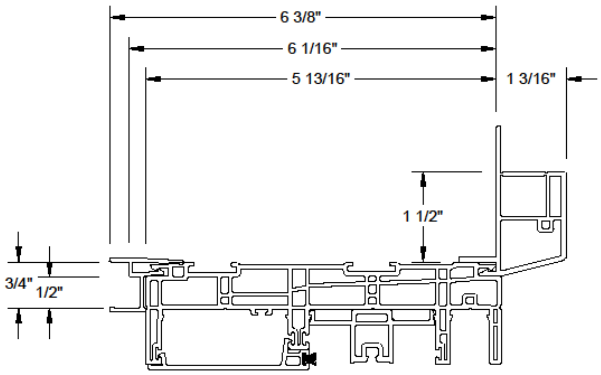


2. New Construction Brickmold

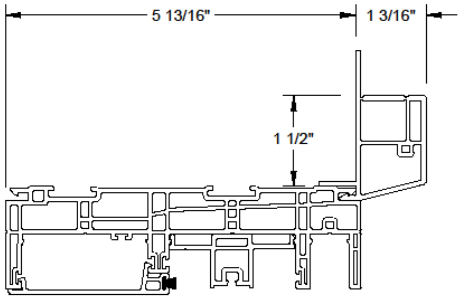
3 ½" BRICKMOLD



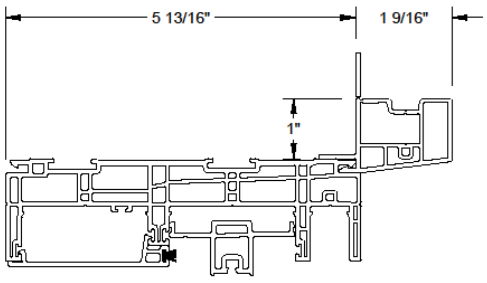
1 ½" BRICKMOLD WITH WOOD RETURN



1 ½" BRICKMOLD

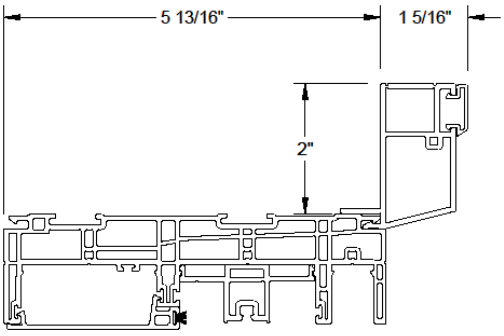


1" SILL NOSE

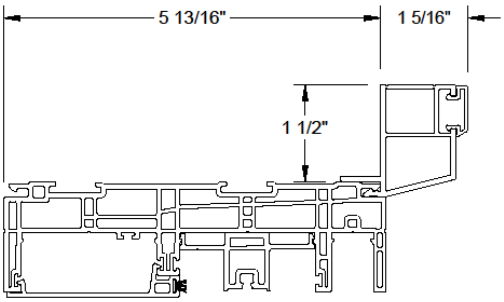


3. Renovation Brickmold

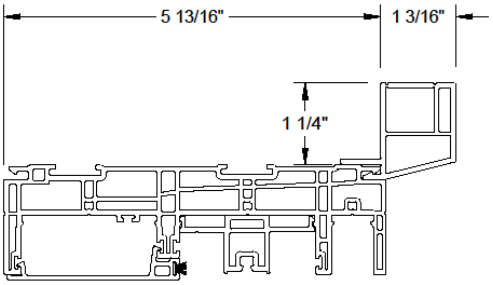
2" BRICKMOLD WITH CAP



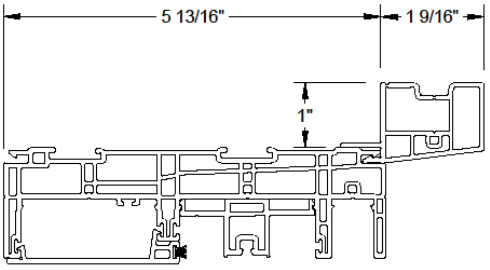
1 ½" BRICKMOLD WITH CAP



1 ¼" BRICKMOLD, NO FIN

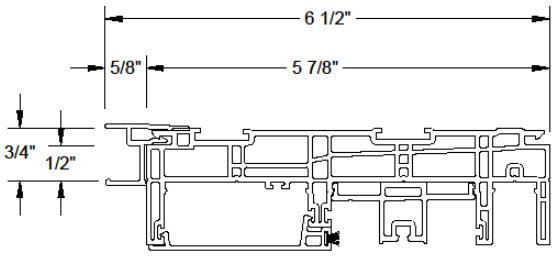


1" SILL NOSE, NO FIN

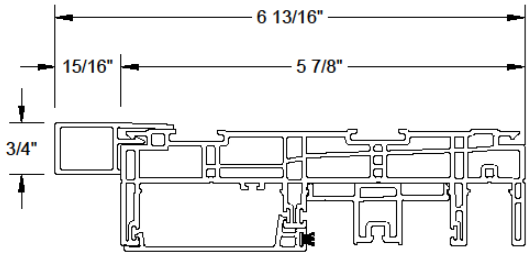


4. Interior Option

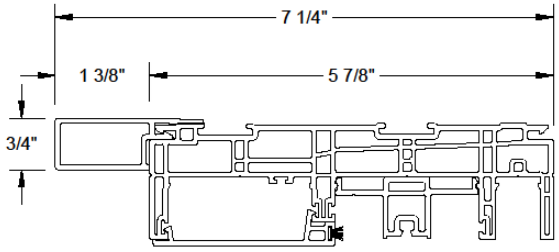
WOOD RETURN



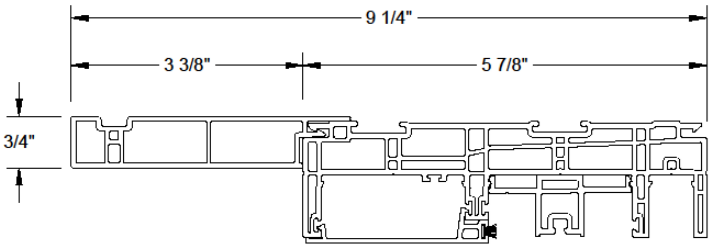
PVC JAMB EXTENSION 0.955"



PVC JAMB EXTENSION 1 3/8"



PVC JAMB EXTENSION 3 3/8"



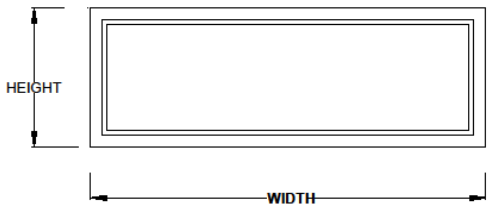
Comfort Star Patio Door Opening size

Two Panel Door	Frame size		Opening Size			
			With Handle		Handle & Pocket Cover Removed	
	Width	Height	Width	Height	Width	Height
5 FT DOOR	58 3/4	79 1/2	22 1/8	75 15/16	23 1/8	75 15/16
6 FT DOOR	70 3/4	79 1/2	28 1/8	75 15/16	29 1/8	75 15/16
8 FT DOOR	94 3/4	79 1/2	40 1/8	75 15/16	41 1/8	75 15/16

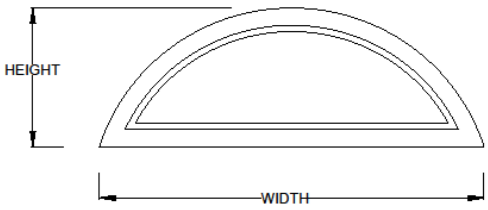
Four Panel Door	Frame size		Opening Size			
			With Handle		Handle & Pocket Cover Removed	
	Width	Height	Width	Height	Width	Height
9- 1/2 FT DOOR	116	79 1/2	45 13/16	75 15/16	47 13/16	75 15/16
11 -1/2 FT DOOR	140	79 1/2	57 13/16	75 15/16	59 13/16	75 15/16
15 -1/2 FT DOOR	188	79 1/2	81 13/16	75 15/16	83 13/16	75 15/16

Transom Options

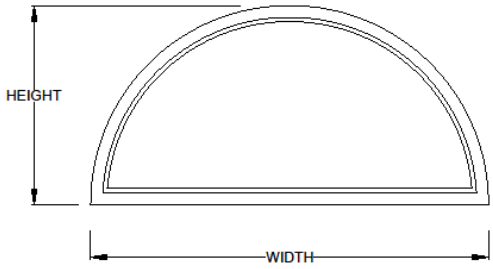
RECTANGULAR



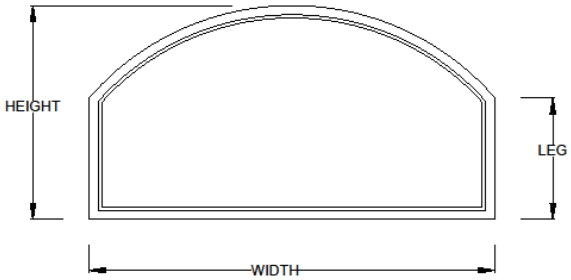
EYEBROW



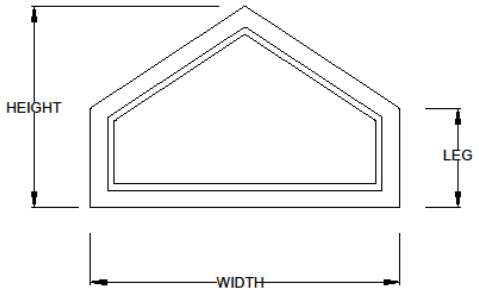
HALF ARCH



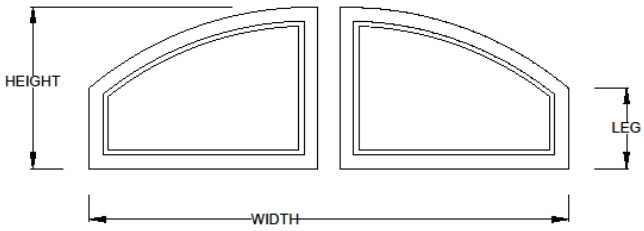
ELLIPSE TOP(MIN LEG HT 4")



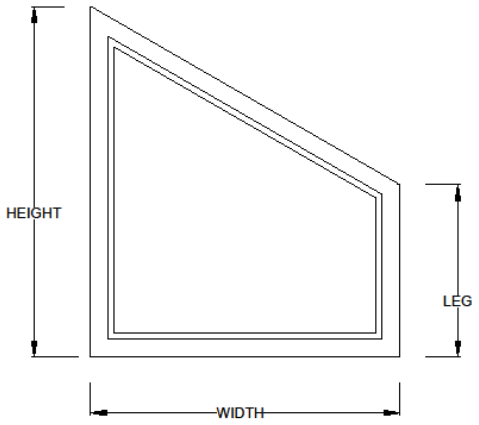
PENTAGON (MIN LEG HT 4")



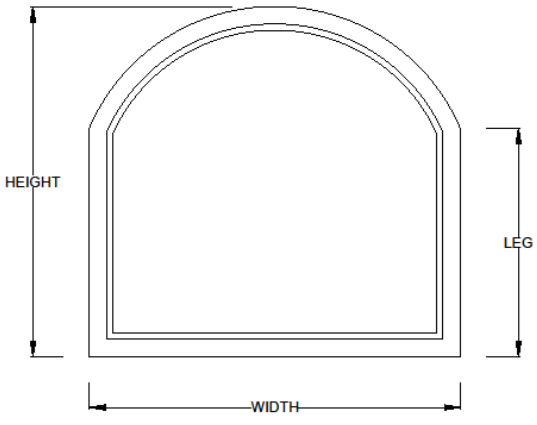
LEFT-RIGHT ELLIPSE TOP(MIN LEG HT 4")



TRAPEZOID (MIN LEG HT 4")



EXTENDED ARCH(MIN LEG HT 4")



NORTH STAR WINDOWS & DOORS

Product Features and Options	Single Hung Tilt	Double Hung Tilt	Single Slider Lift	Slider Tilt	Casement	Awning	Custom Shapes	Picture	Comfortstar Doors
Exterior Colors									
White	●	●	●	●	●	●	●	●	●
Cream	O	O	O	O	O	O	O	O	O
Cocoa	O	O	O	O	O	O	O	O	O
Hickory	O	O	O	O	O	O	O	O	O
Sandalwood	O	O	O	O	O	O	O	O	O
Sable	O	O	O	O	O	O	O	O	O
Espresso	O	O	O	O	O	O	O	O	O
Midnight Black	O	O	O	O	O	O	O	O	O
Anthracite Grey	O	O	O	O	O	O	O	O	O
Interior Color									
White	●	●	●	●	●	●	●	●	●
Stainable/paintable Pine	O	O	O	O	O	O	O	O	O
Kolonial Oak	O	O	O	O	O	O	O	O	O
Light Oak	O	O	O	O	O	O	O	O	O
Espresso	O	O	O	O	O	O	O	O	O
Midnight Black	O	O	O	O	O	O	O	O	O
Walnut	O	O	O	O	O	O	O	O	O
Hickory	O	O	O	O	O	O	O	O	O
Grilles									
5/16" Narrow									
Pewter on Ext/Int	O	O	O	O	O	O	O	O	O
Brass on Ext/Int	O	O	O	O	O	O	O	O	O
White on Ext/Int	O	O	O	O	O	O	O	O	O
5/8" Flat									
White on Ext/Int	●	●	●	●	●	●	●	●	●
Pewter on Ext/Int	O	O	O	O	O	O	O	O	O
Black on Ext/Int	O	O	O	O	O	O	O	O	O
Split Finish Color Ext/White Int	O	O	O	O	O	O	O	O	O
Split Finish White or Color Ext./(Kolonia' Oak,Light Oak, Walnut)	O	O	O	O	O	O	O	O	O
Black Ext/Black Int	O	O	O	O	O	O	O	O	O
3/4" Contour									
3/4" Contour White on Ext/Int	O	O	O	O	O	O	O	O	O
3/4" Contour Ext/White Int	O	O	O	O	O	O	O	O	O
7/8" or 2" SDL									
SDL Standard 7/8"	●	●	●	●	●	●	●	●	●
SDL -2" Mullion	O	O	O	O	O	O	O	O	O
7/8" or 2" SDL Muskoka									
SDL Muskoka with/with out Grid-7/8" Mullion	●	●	●	●	●	●	●	●	●
SDL Muskoka with/with out Grid-2" Mullion	O	O	O	O	O	O	O	O	O

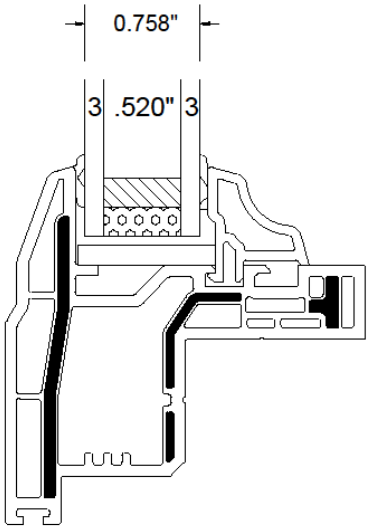
● STANDARD O OPTIONAL

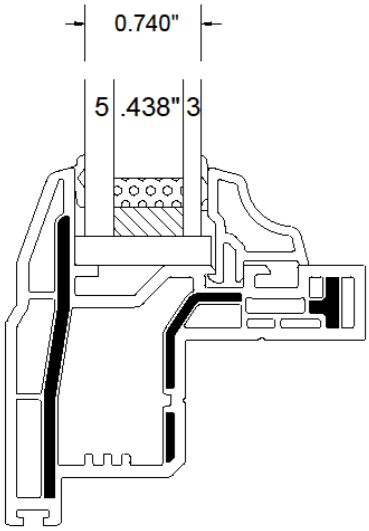
Product Features and Options	Single Hung Tilt	Double Hung Tilt	Single Slider Lift	Slider Tilt	Casement	Awning	Custom Shapes	Picture	Comfortstar Doors
Hardware									
Maxim Hardware (Standard)					○	○			
Encore Folding Hardware					●	●			
Cam Locks	●	●	●	●					
Self-Locking	○	○	○	○					
Limit Opening Device					○	○			
Window Opening Control Device					○				
Egress Hinges					○				`
Window Opening Control Device (Hung & Slider)	○	○	○	○					
Add On Vent Stop	○		○						
Mini Angel Ventlock	○	○	○	○					
Extended Sash Stop	○	○	○	○					
Multi Point Lock with out Key Lock									●
Multi Point Lock with Key Lock									○
Single Point Lock with out Key Lock									○
Single Point Lock with Key Lock									○
Security Bolt									○
Security Bar									○
Hardware Finish									
White	●	●	●	●	●	●			●
Black (Matte)	○	○	○	○	○	○			○
Oil Rubbed Bronze (Encore Only)					○	○			
Brushed antique chrome (Encore Only)					○	○			
Stain Nickel (Encore only)					○	○			
Stain Nickel (Multi Point Lock Only)									○

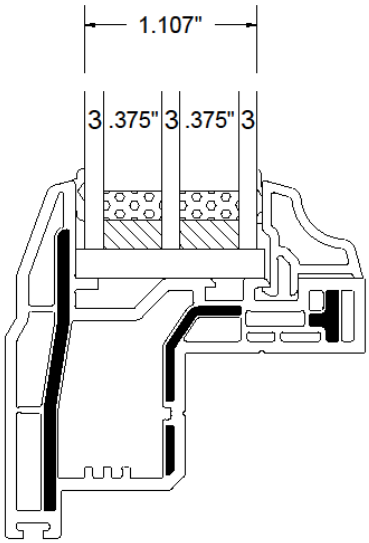
● STANDARD ○ OPTIONAL

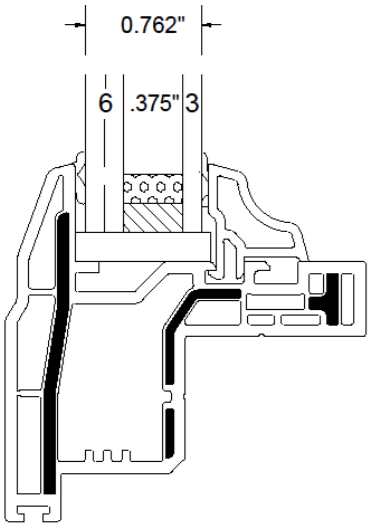
Glazing Options

1000 Series – Casement/Awning Glazing Options

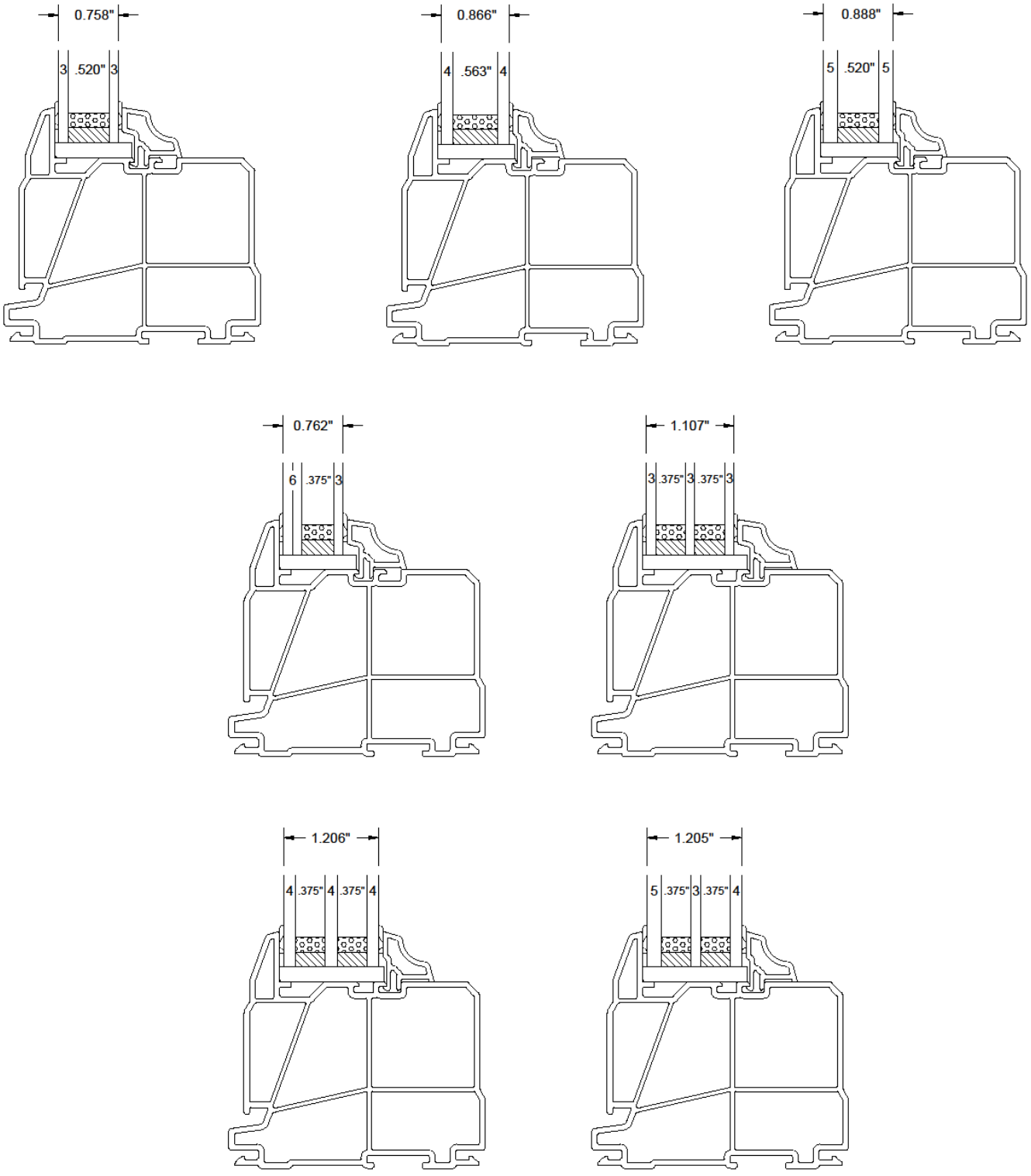




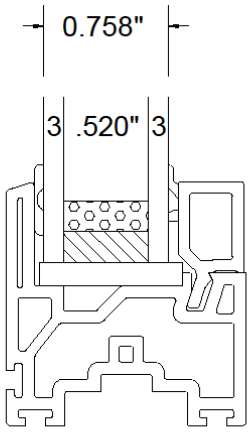


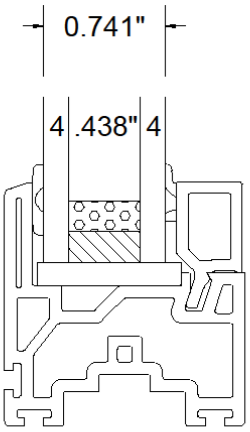


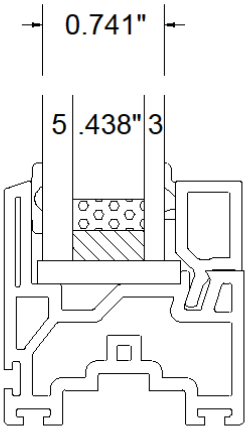
1000 Series – Picture Glazing Options

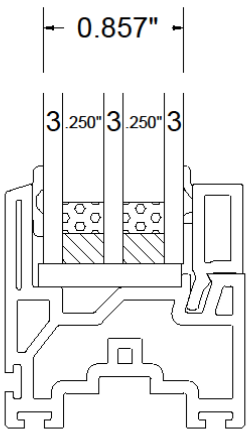


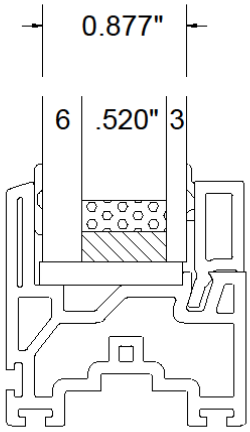
1000 Series – Single & Double Hung/Slider Glazing Options

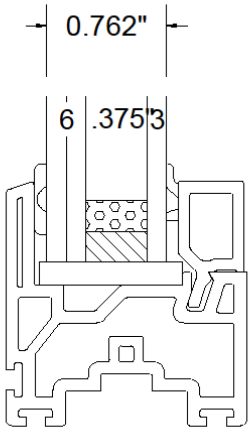




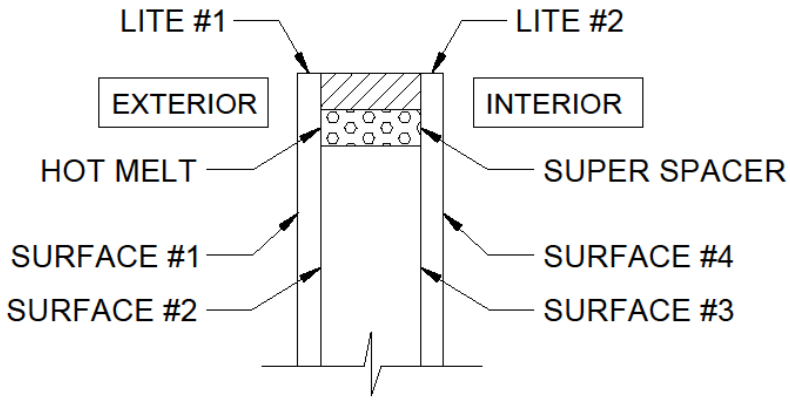




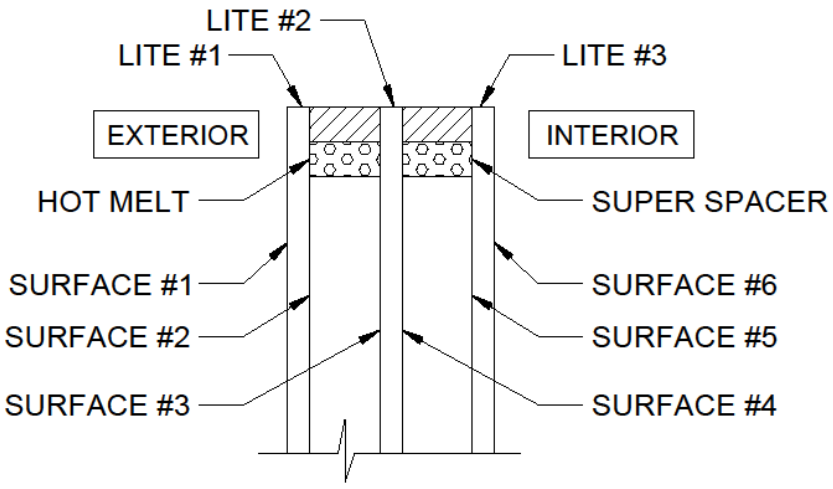




Double Glazed Unit Assembly



Triple Glazed Unit Assembly

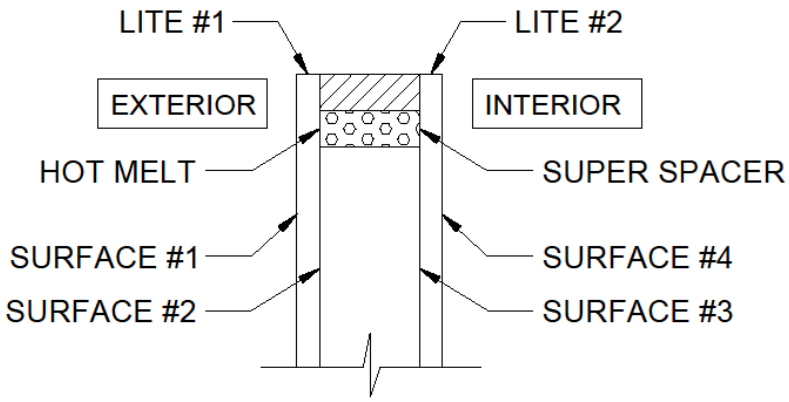


DOUBLE GLAZED UNIT ASSEMBLY		
LITE #1	**LITE #2**	**PARAMETERS**
Clear Bronze or Grey	Clear Clear	Tinted, Lite #1 Grids Available
Clear Bronze or Grey	Low "E" Low "E"	Low "E", Surface #3 Tinted, Lite #1 Grids Available
Clear Low "E" Bronze or Grey	Obscure Obscure Obscure	Obscure, Rough Surface #3 Low "E", Surface #2 Tinted, Lite #1 Grids Available
LoE 366 LoE 366	Clear Obscure	LoE 366, Surface #2 Grids Available
Obscure	Obscure	Obscure, Rough Surfaces #2 & #3

NOTE:

The following combinations are not available:

- LoE 366 with Bronze or Grey



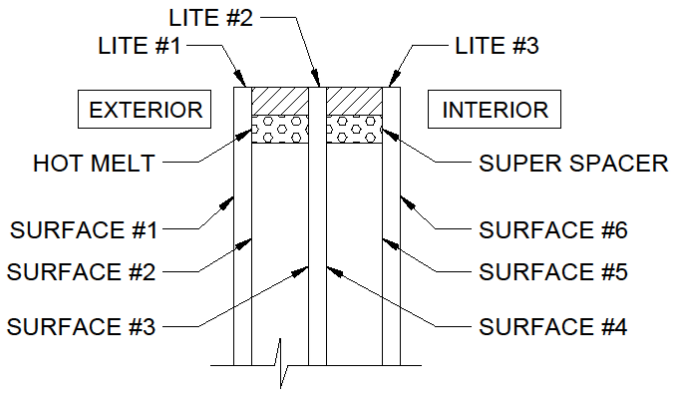
TRIPLE GLAZED UNIT ASSEMBLY			
LITE #1	**LITE #2**	**LITE #3**	**PARAMETERS**
Clear Bronze or Grey	Clear Clear	Low “E” Low “E”	Low “E”, Surface #5 Tinted, Lite #1 Grids Available
Clear Bronze or Grey	Obscure Obscure	Low “E” Low “E”	Low “E”, Surface #5 Obscure, Rough Surface #4 Tinted, Lite #1 Grids, Space A
Clear Bronze or Grey	Low “E” Low “E”	Low “E” Low “E”	Low “E”, Surfaces #3 & #5 Tinted, Lite #1 Grids, Space “A”
LoE 366 LoE 366 LoE 366	Clear Obscure Clear	Clear Clear Low “E”	Obscure, Rough Surface #4 Grids, Space, “A”
Clear Low “E” LoE 366	Obscure Obscure Obscure	Obscure Obscure Obscure	Obscure, Rough Surfaces #4 & #5 Low “E”, Surface #2 LoE 366, Surface #2 Grids, Space “A”

NOTE:

The following combinations are not available:

- LoE 366 with Bronze or Grey

Grids always space “A”



STC (Sound Transmission Class)

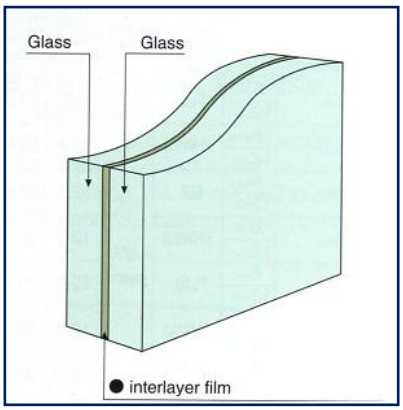
The ability of a window to reduce exterior noise is rated by its STC (Sound Transmission Class) or OITC (Outdoor-Indoor Transmission Class). In both cases, the higher the rating, the better the window is at reducing sound.

STC ratings give an indication of the reduction in high frequency sounds (voices, birds, etc.). OITC ratings, on the other hand, give an indication of the reduction in low frequency sounds (traffic, trains, etc.).

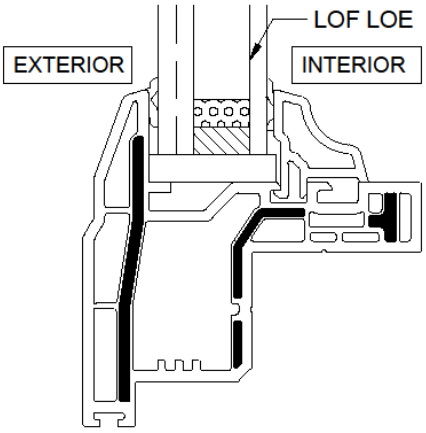
Laminated Glass to Reduce Sound Transmission

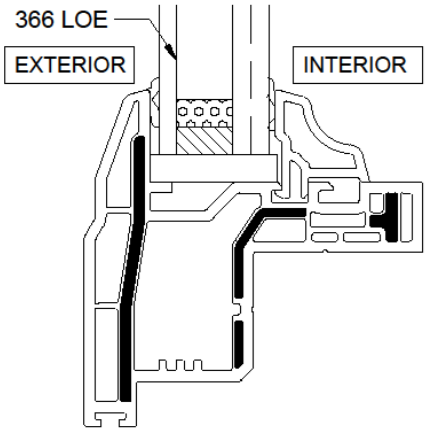
Laminated glass is highly effective in reducing noise, which in turn improves STC and OITC ratings. It is produced by permanently bonding two pieces of glass together with a tough plastic interlayer between them, keeping the layers of glass bonded – even when broken. Laminated glass also blocks 99.5% of the sun's ultraviolet rays, protecting furniture and flooring from fading.

North Star offers an insulated glass unit that is made up of 6mm laminated glass (3mm/3mm) to the exterior, and a standard 3mm glass to the room side. Having this mismatched glass effectively changes the frequency of the sound waves as they pass thought the insulated glass unit, reducing decibel levels.



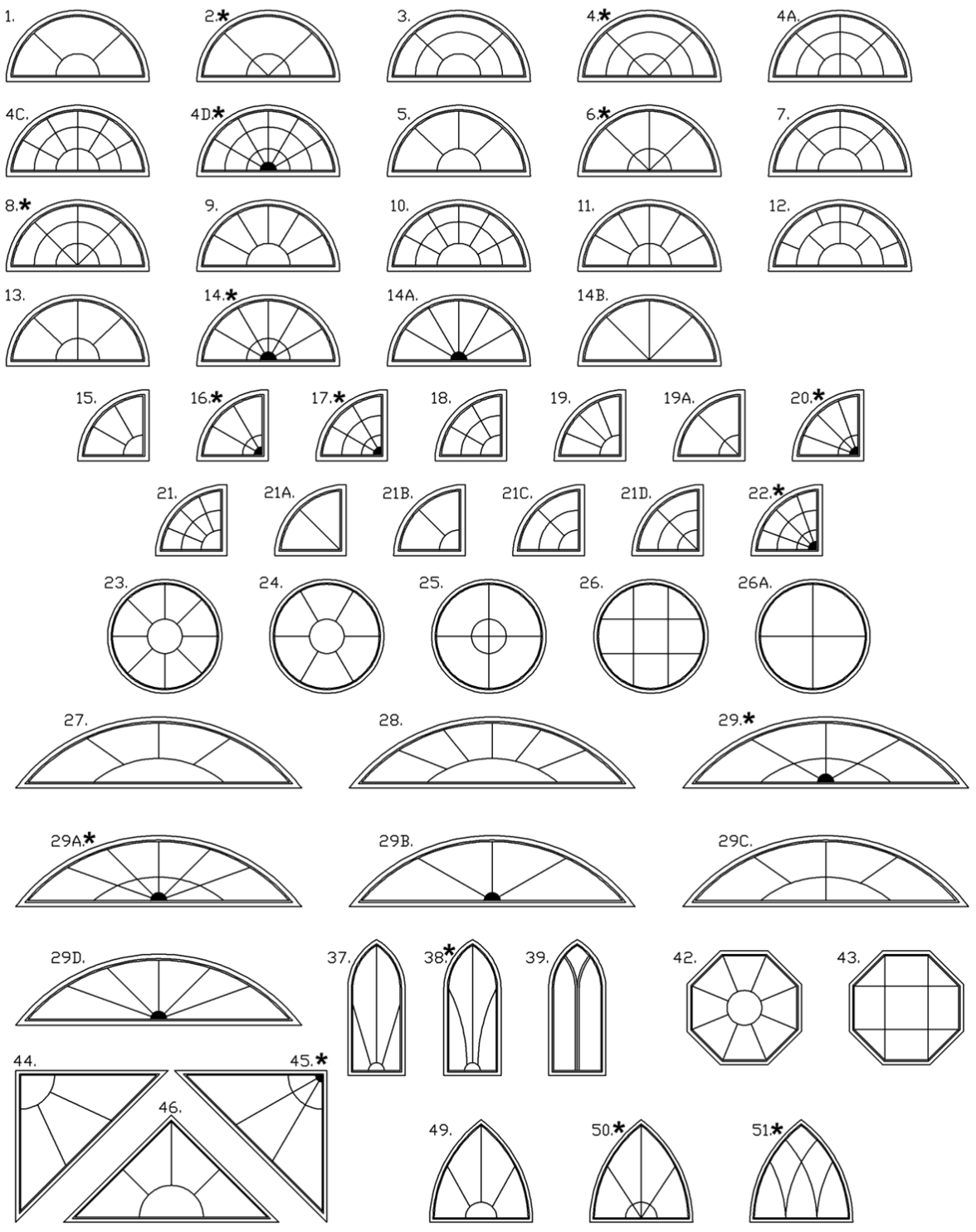
Our standard dual pane insulated glass unit with two panes of 3mm glass (non-laminated) will typically have an STC rating of about 25-28. The use of 6mm laminate glass will improve STC ratings to approximately 32-35, depending on the type of window. Contact our Sales team for STC values.





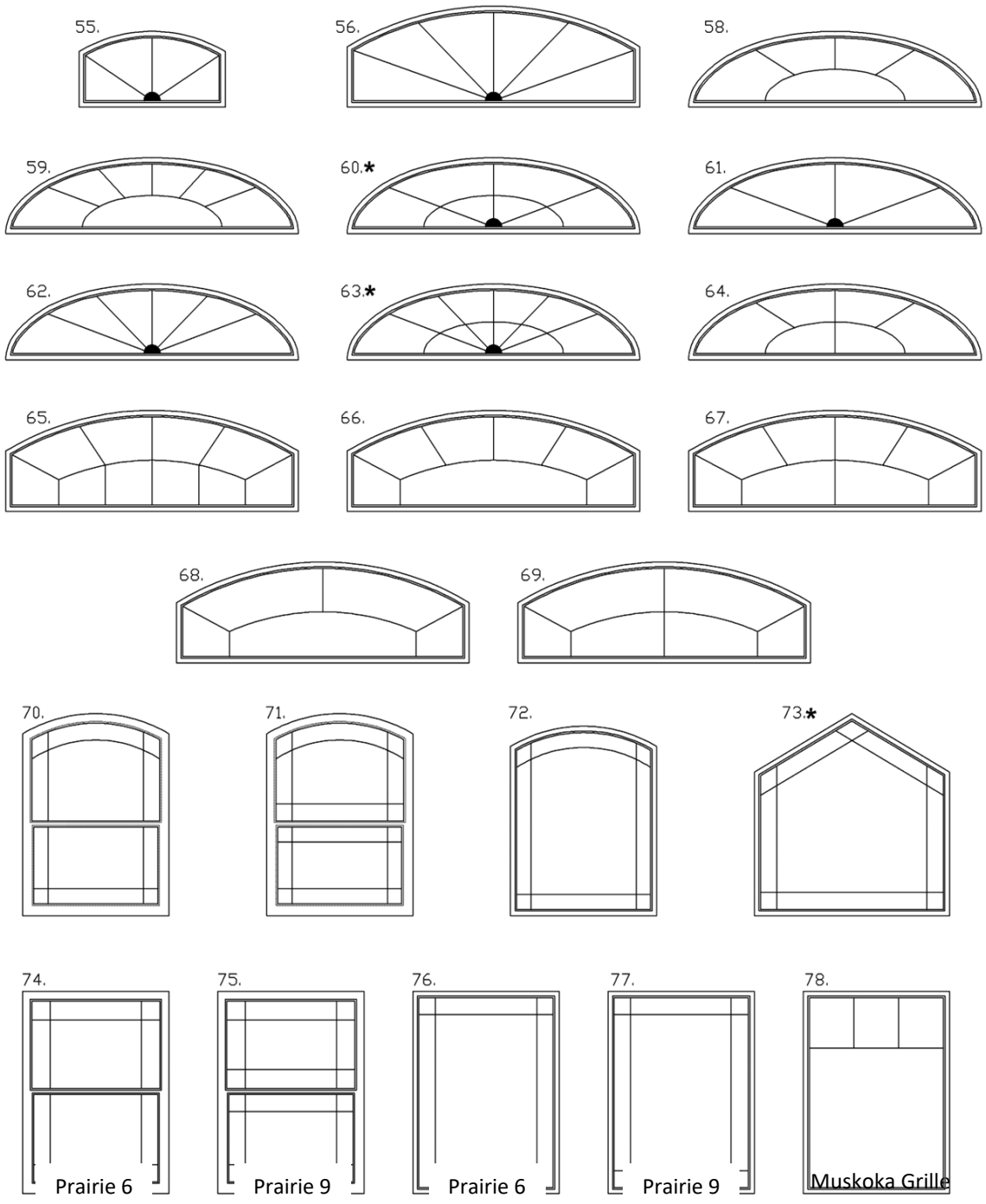
LAMINATED GLASS UNIT ASSEMBLY		
LITE #1	**LITE #2**	**PARAMETERS**
6mm Clear Laminate LoE 366	Low "E" 6mm Clear Laminate	Grids Avalaible

Architectural Grilles



(*Not Available with Contour Grille)

Note: Grilles between the glass panes may "rattle" when subjected to vibrations or windy conditions

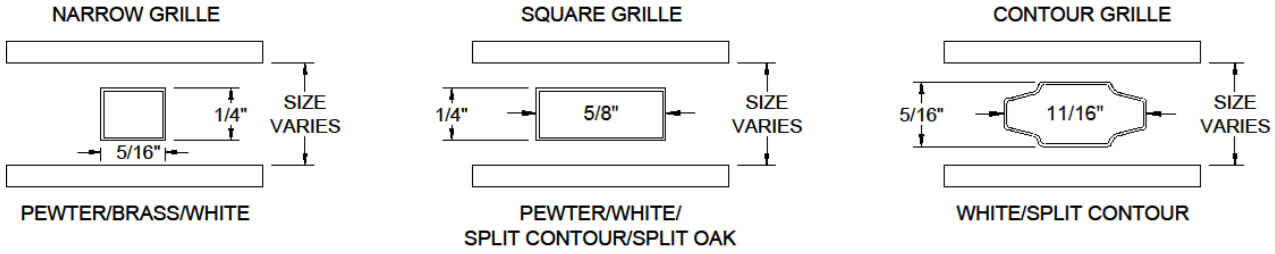


(*Not Available with Contour Grille)

Note: Grilles between the glass panes may "rattle" when subjected to vibrations or windy conditions

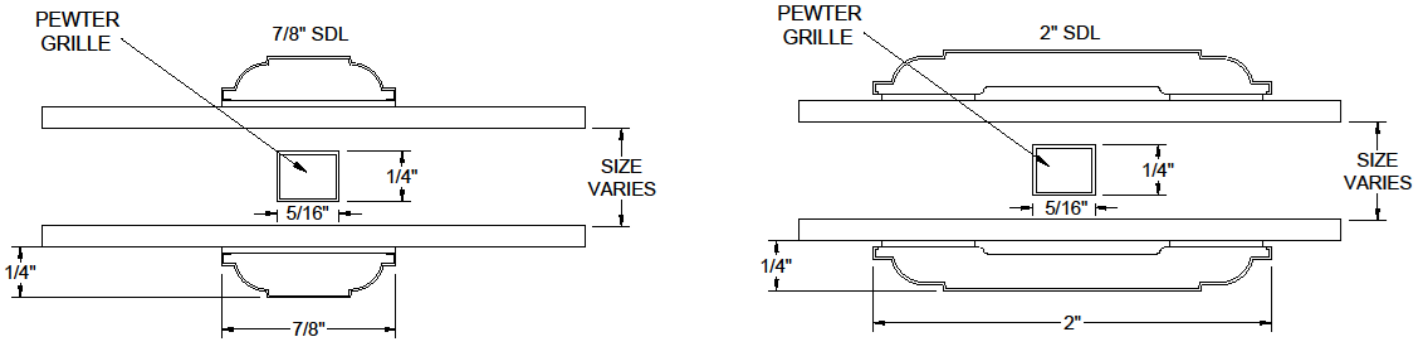
- 48” maximum unsupported horizontal span on 1/4" x 5/16” grille
- 60” maximum unsupported horizontal span on 1/4" x 5/8” flat grille
- 84” maximum unsupported horizontal span on 5/16” x 3/4” contour grille
- Prairie grilles available with 3 ½” or 4 ½” corners
- Minimum 8” diameter on contour grille. Minimum 10” if adding square grilles below in the same sealed unit

Between the Glass Grilles



Note: For triple glazing, grilles are placed in exterior airspace

Simulated Divided Lites



Note: Pewter air space grille is not available for SDL grilles with triple glazing

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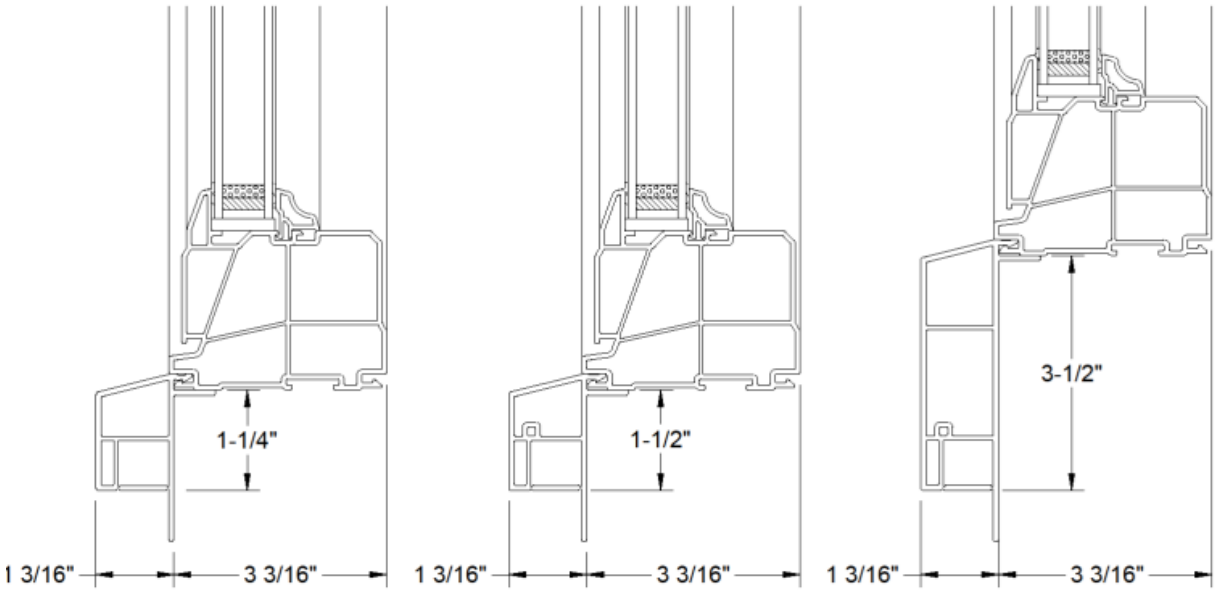
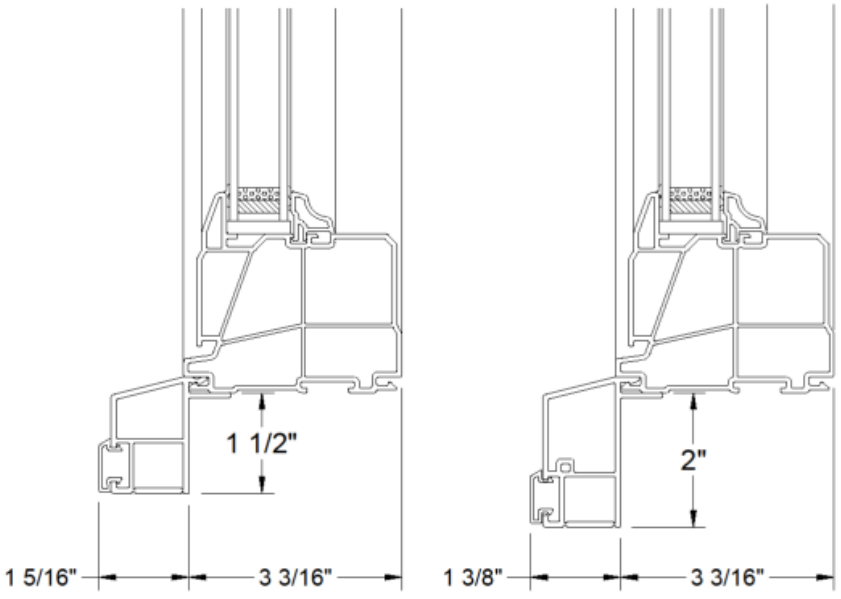
Brickmold

STANDARD BRICKMOLD



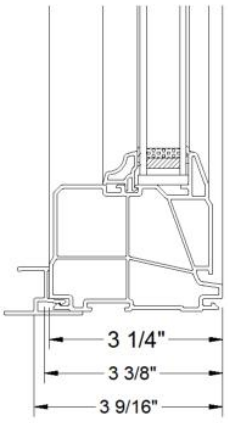
1-1/4" BRICKMOLD | 1-1/2" BRICKMOLD | 3-1/2" BRICKMOLD

RENOVATION BRICKMOLD

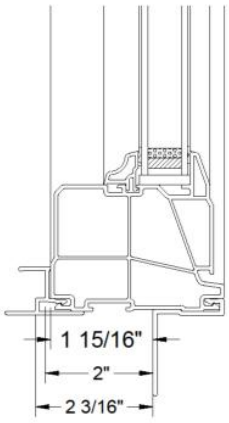


1-1/2" BRICKMOLD WITH CAP | 2" BRICKMOLD WITH CAP

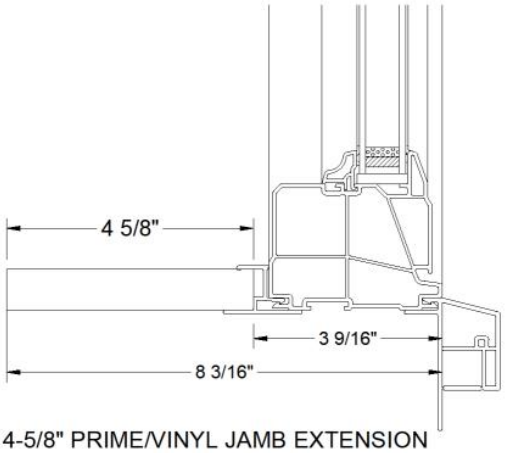
Accessories



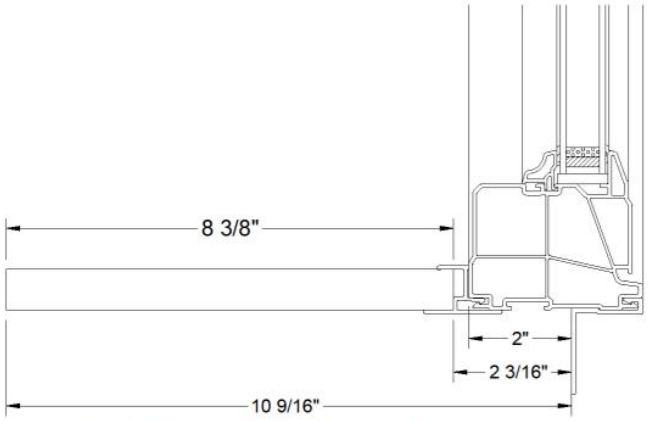
WOOD RETURN



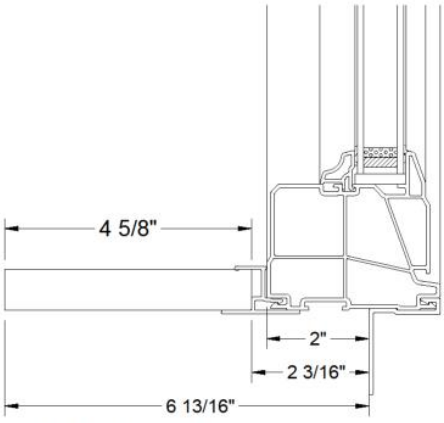
WOOD RETURN & NAIL FIN



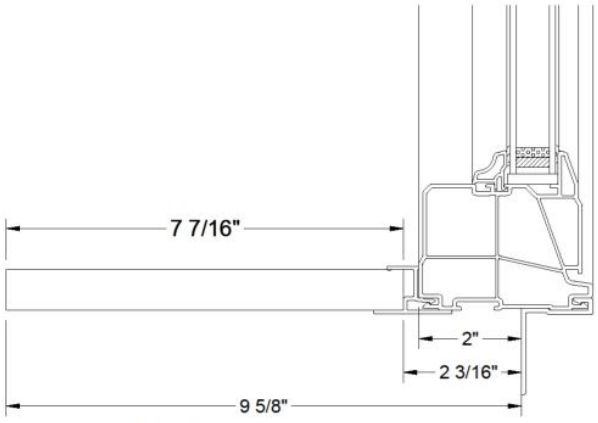
4-5/8" PRIME/VINYL JAMB EXTENSION
WITH BRICKMOLD



8-3/8" PRIME/VINYL JAMB EXTENSION
WITH NAIL FIN



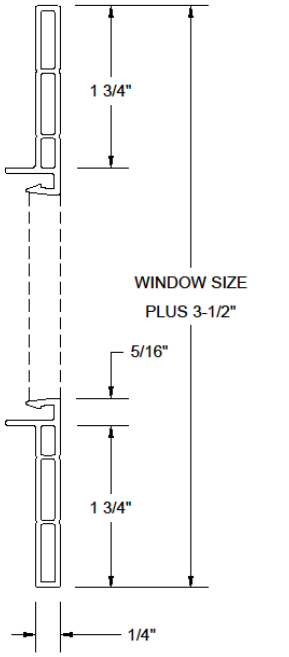
4-5/8" PRIME/VINYL JAMB EXTENSION
WITH NAIL FIN



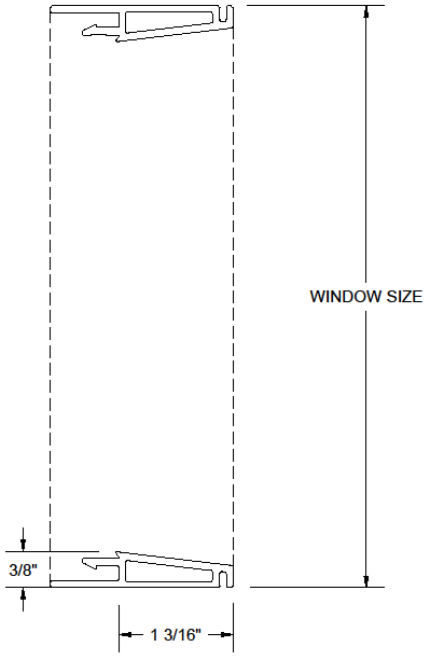
7-71/16" FOAM BOARD JAMB EXTENSION
WITH NAIL FIN

Exterior Accessories:

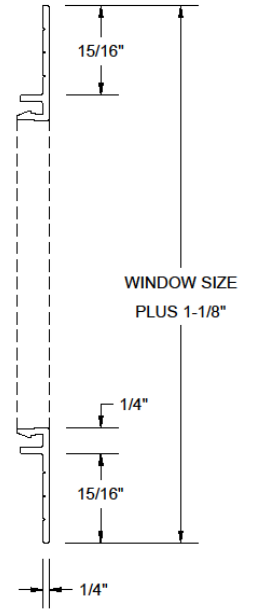
Frame Expander and Frame Extender (0” Brickmold)



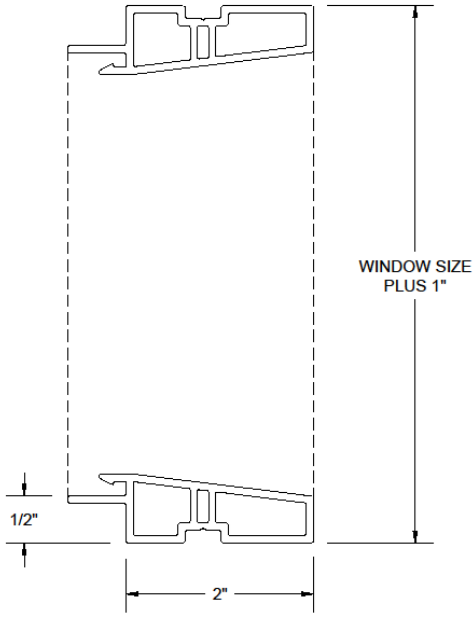
FRAME EXPANDER



FRAME EXTENDER



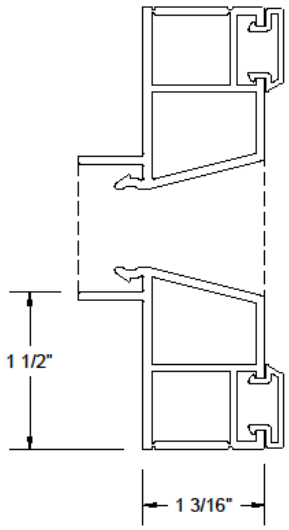
SILL EXPANDER



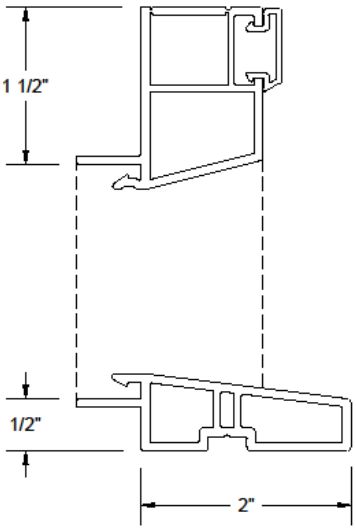
1/2" BRICKMOLD
SILL NOSE

1000 Series Brickmold

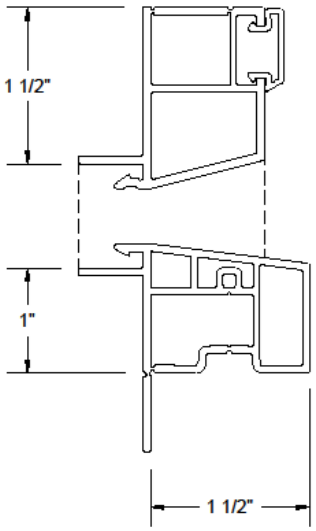
Renovation Brickmold: 1 ½" Brickmold with cap



1-1/2" BRICKMOLD
WITH CAP
DEDUCT 3" IN TOTAL WHEN
CALCULATING FRAME HEIGHT

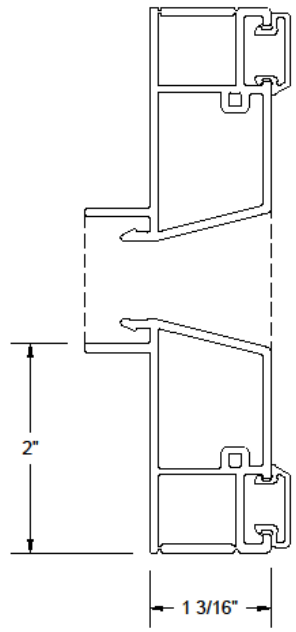


1-1/2" BRICKMOLD WITH CAP
WITH 1/2" SILL
DEDUCT 2" IN TOTAL WHEN
CALCULATING FRAME HEIGHT

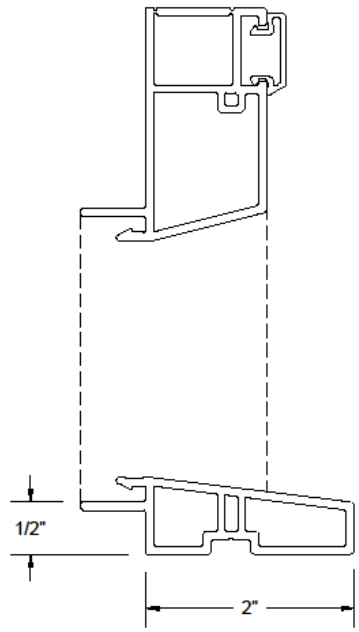


1-1/2" BRICKMOLD WITH CAP
WITH 1" SILL
DEDUCT 2 1/2" IN TOTAL WHEN
CALCULATING FRAME HEIGHT

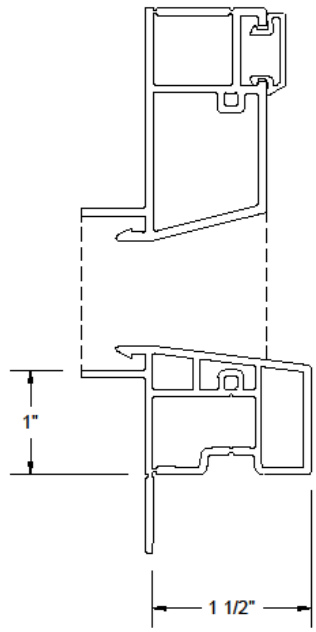
Renovation Brickmold: 2" Brickmold with cap



2" BRICKMOLD
WITH CAP
DEDUCT 4" IN TOTAL WHEN
CALCULATING FRAME HEIGHT



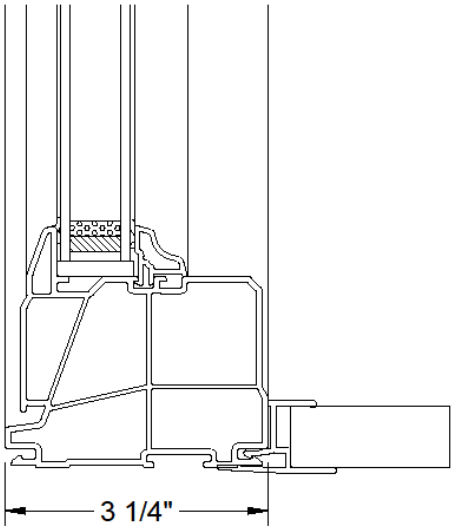
2" BRICKMOLD WITH CAP
WITH 1/2" SILL
DEDUCT 2 1/2" IN TOTAL WHEN
CALCULATING FRAME HEIGHT



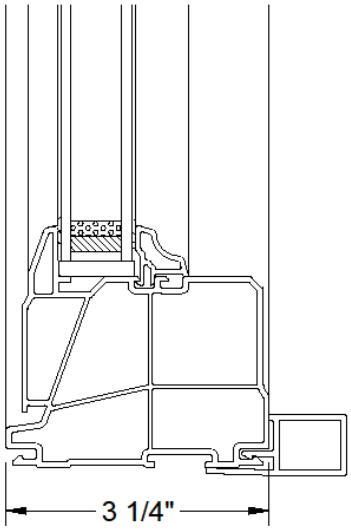
1-1/2" BRICKMOLD WITH CAP
WITH 1" SILL
DEDUCT 3" IN TOTAL WHEN
CALCULATING FRAME HEIGHT

Interior Accessories

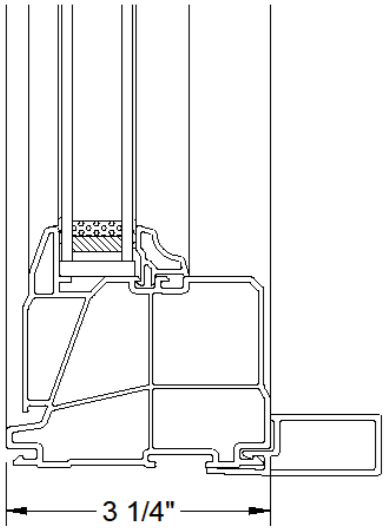
Jamb Extensions



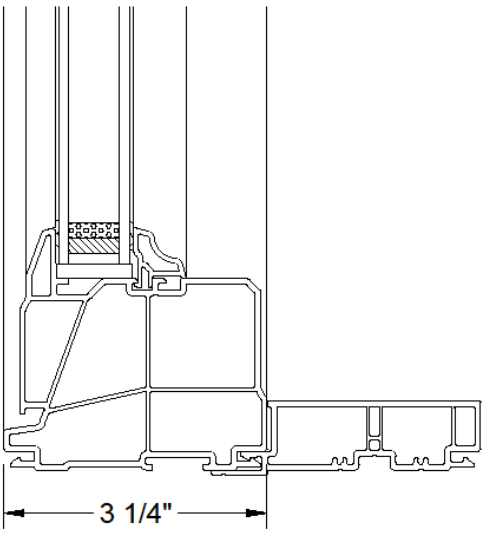
VINYL WRAP JAMB
EXTENSION



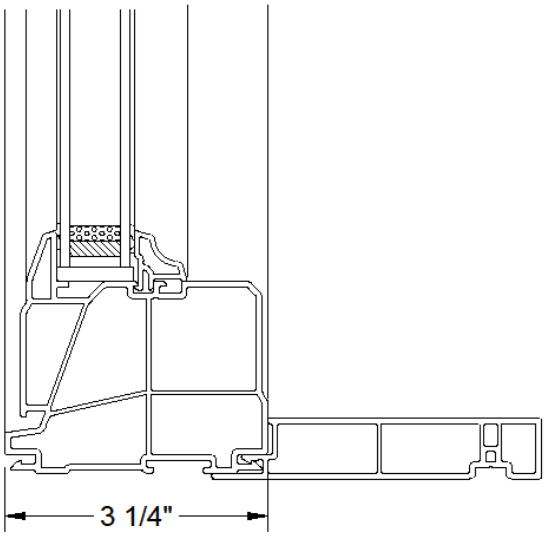
15/16" PVC JAMB
EXTENSION



1-3/8" PVC JAMB
EXTENSION

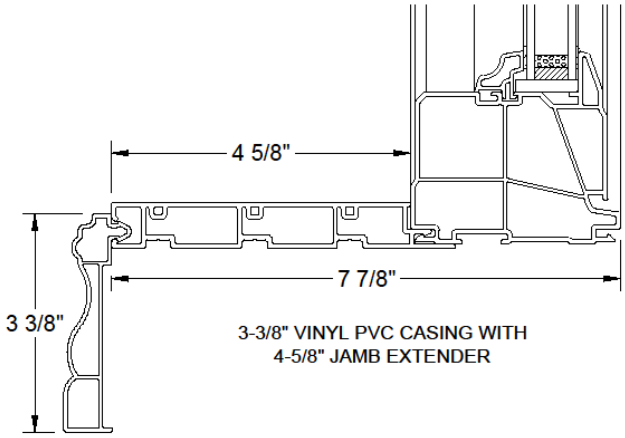


2-5/8" PVC
TRANSOM JAMB
EXTENSION

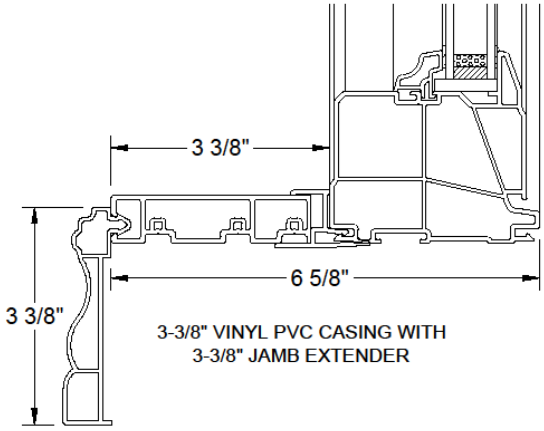


3-3/8" PVC JAMB
EXTENSION

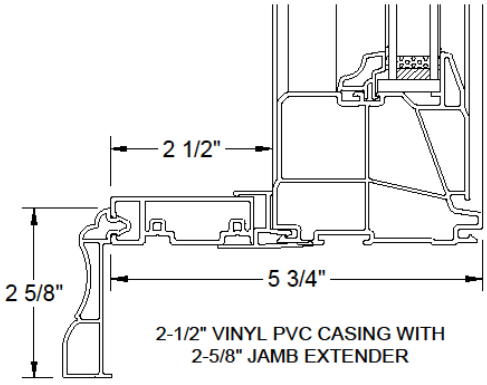
PVC Jamb Extensions with PVC Trim



3-3/8" VINYL PVC CASING WITH
4-5/8" JAMB EXTENDER



3-3/8" VINYL PVC CASING WITH
3-3/8" JAMB EXTENDER



2-1/2" VINYL PVC CASING WITH
2-5/8" JAMB EXTENDER

Note: The vinyl casings are joined by a Rosette/corner block on site. North Star will package separately to allow for window install

JAMB EXTENSIONS:

***AVAILABLE**

Jamb Extension	Total Jamb Depth		Vinyl Wrapped MDF		*Oak Veneer		Primed With White Wood Return
	With Nail Fin	With Brickmold	White	Stainable/ Paintable, Kolonial Oak, Espresso, Midnight Black, Hickory	With White Wood Return	With Laminate Interior Wood Return	
Up to 2-1/8"	3-3/16" to 4-5/16"	4-7/16" to 5-9/16"	*	*	*	*	*
2-1/8" to 4-5/8"	4-5/16" to 6-13/16"	5-9/16" to 8-1/16"	*	*	*	*	*
4-5/8" to 8-3/8"	6-13/16" to 10-9/16"	8-1/16" to 11-13/16"	*	*	*	*	*

***Oak jamb extensions exceeding 12 ft. in length with be spliced**

Note: Total jamb depth (including window and extension) over 8-1/2" will have the extensions shipped loose. These will be pre-cut and pre-drilled for simple jobsite application. Wood return will be attached to the window.

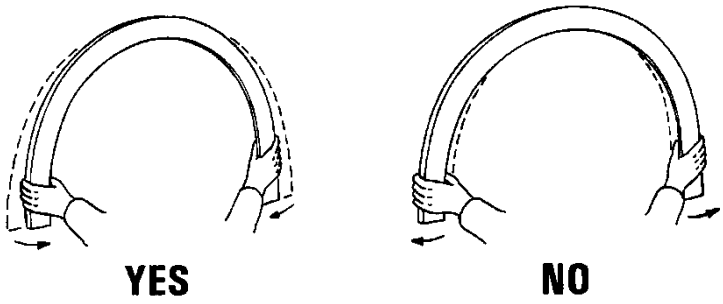
Extruded Vinyl Jamb Extension					
Jamb Extension	Total Jamb Depth		White	Stainable/ Paintable, Kolonial Oak,	Espresso, Midnight Black, Hickory
	With Nail Fin	With Brickmold			
15/16"	5-15/16"	4-1/8"	*	*	*
1-3/8"	3-3/8"	4-1/2"	*	*	*
3-3/8"	5-3/8"	6-1/2"	*	*	*

Foam Board PVC Jamb Extension					
Jamb Extension	Total Jamb Depth		White	Stainable/Paintable or Kolonial Oak	Espresso, Midnight Black, Hickory
	With Nail Fin	With Brickmold			
Up to 3-5/8"	3-3/16" to 5-13/16"	4-7/16" to 7-1/16"	*	*	*
3-5/8" to 7-7/16"	5-13/16" to 9-5/8"	7-1/16" to 10-7/8"	*	*	*

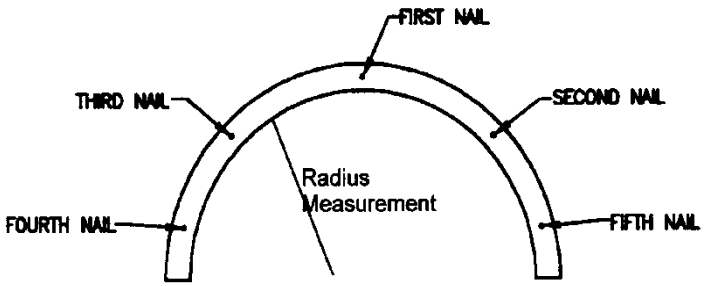
Note: Total jamb depth (including window and extension) over 8-1/2" will have the extensions shipped loose. These will be pre-cut and pre-drilled for simple jobsite application. Wood return will be attached to the window.

Curved Jamb Extension

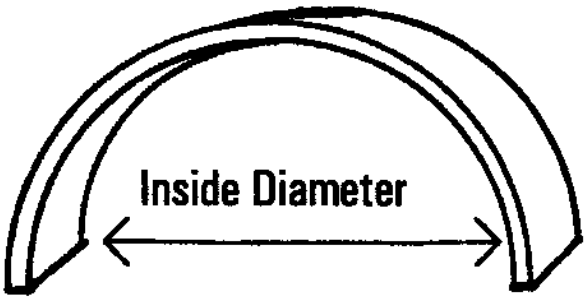
The nature of a laminated jamb extension allows for a certain amount of inward flexing to adjust the size, but **DO NOT spring it outward**, or it will delaminate.



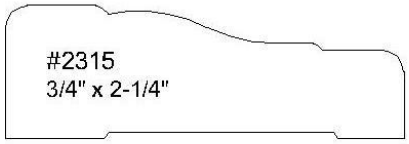
The first nail should be installed at the center top of the jamb extension so that you can control the fit. Then nail alternately from right to left. This allows an even balance so that the jamb extension can be adjusted to fit, if necessary.



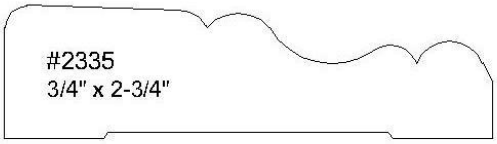
INWARD FLEX CHART FOR JAMB EXTENSION	
Inside Diameter	**Flex In**
18” to 26”	3/4"
27” to 36”	7/8”
37” to 46”	1”
47” to 66”	1-1/8”
67” to 94-1/2”	1-1/4”



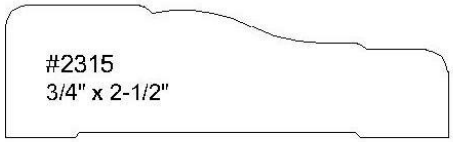
Wood Trim Profiles



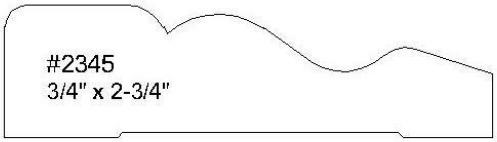
#2315
3/4" x 2-1/4"



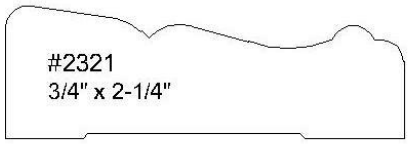
#2335
3/4" x 2-3/4"



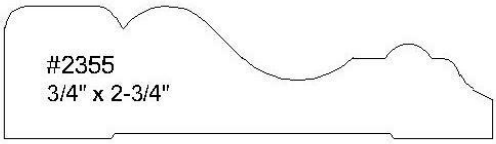
#2315
3/4" x 2-1/2"



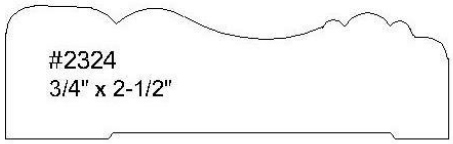
#2345
3/4" x 2-3/4"



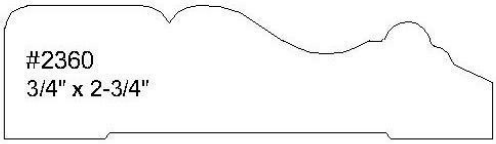
#2321
3/4" x 2-1/4"



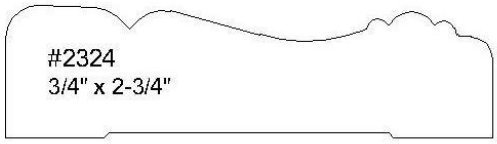
#2355
3/4" x 2-3/4"



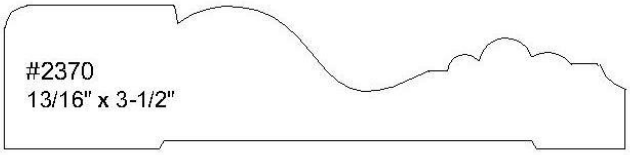
#2324
3/4" x 2-1/2"



#2360
3/4" x 2-3/4"



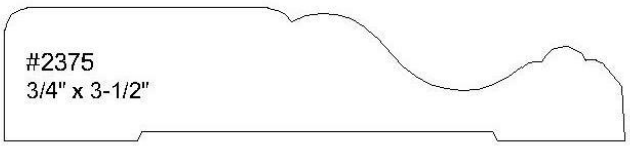
#2324
3/4" x 2-3/4"



#2370
13/16" x 3-1/2"

5/8" x 2-3/4"

COLONIAL CASING (PRIMED)
14'-0" LINEAL LENGTHS ONLY



#2375
3/4" x 3-1/2"

Product Installation Instructions

In the next section of the manual, we will go through each of one of our products and the minimum install requirement to maintain North Star warranty. The install instructions were created by utilizing industry known standards (CSA & SAWDAC) and certified NAFS testing.

For every product line, we compiled at least two different methods of anchoring the windows to the rough opening.

1. Installation of windows by screwing through the frame
2. Installation of windows by utilizing North Star contractor clip

Important information:

Anchoring the window through the **nail fin only** will void our warranty.

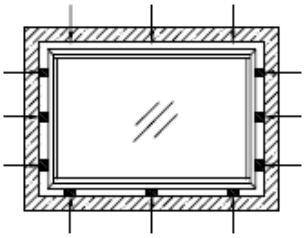
Deviating from the install instructions will impact the product rating.

When anchoring through the frame, you must seal/plug all holes created.

NORTH STAR
WINDOWS & DOORS

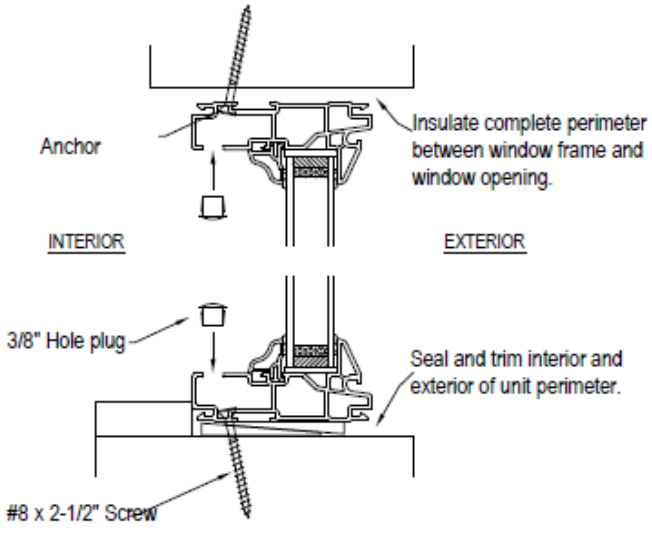
INSTALLATION INSTRUCTIONS

SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

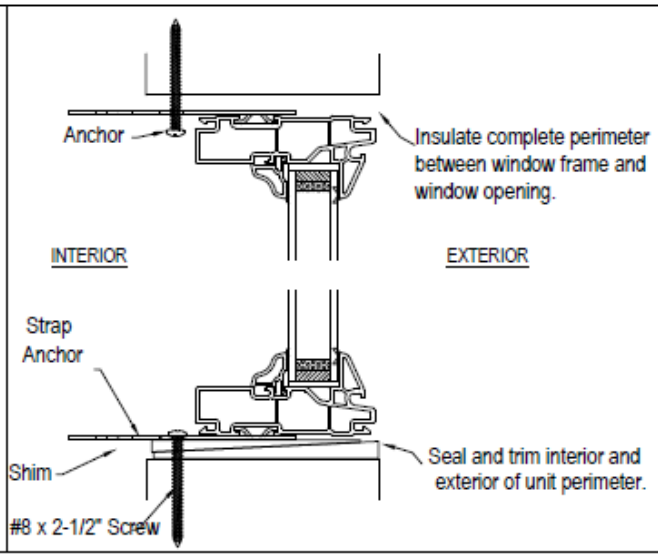


SERIES #1071 FIXED WINDOW (NO SASH)

METHOD 1: SCREWING THROUGH THE FRAME:



METHOD 2: USING A INSTALLATION CLIP/ ANCHOR



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.

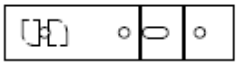
METHOD 1: SCREWING THROUGH THE FRAME:

2.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
3.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim placement should be 5" in from each corner and then at approximately 16" intervals around the window. **Do not install shims at the head.** Recommendation: shims at the sill should be placed beneath insulating glass unit setting blocks (lift the glass stop at the sill to ensure correct shim placement).
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
4.) At each shim location, drill a 3/8" diameter hole through first wall of the interior frame. Drill additional holes at the head parallel to the shims at the sill.
5.) Install using suggested #8 x 2-1/2" screws at each of these locations being careful not to bow frame. Screw length is dependent upon framing structure and must be of sufficient length to securely anchor unit in opening.
6.) Cap the 3/8" diameter holes with 3/8" plastic hole plugs.
7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

METHOD 2: USING A INSTALLATION CLIP/ANCHOR

2.) Place the galvanized steel strap anchor clips 2" in from each corner and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the window is level, plumb and square. **Do not install shims at the head.** Recommendation: shims/clips at the sill should be placed beneath insulating glass unit setting blocks (lift the glass stop at the sill to ensure proper shim placement).
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2-1/2" screws at each of these locations
7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

Strap Anchor



North star Windows and Doors warranty is only valid, if one of these two methods are followed.

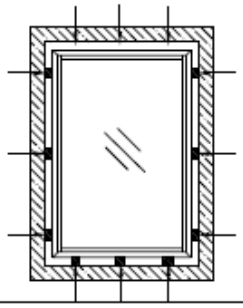
NORTH STAR WINDOWS & DOORS

INSTALLATION INSTRUCTIONS

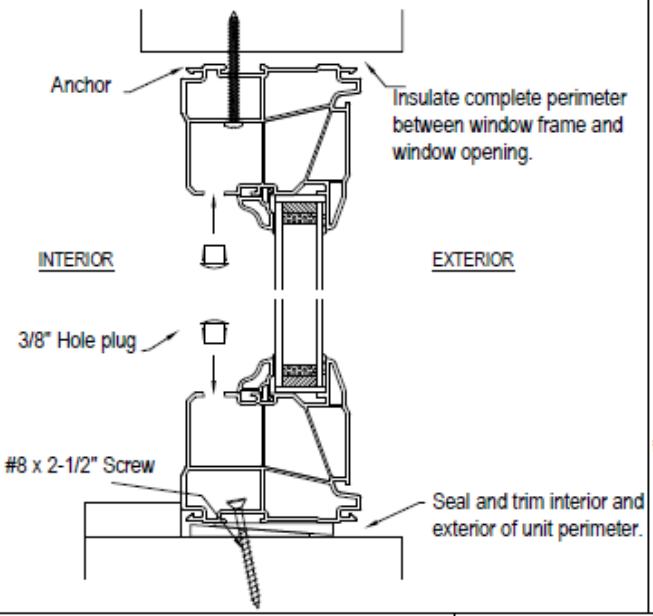
SERIES #1072 PICTURE WINDOW (WITH SASH)

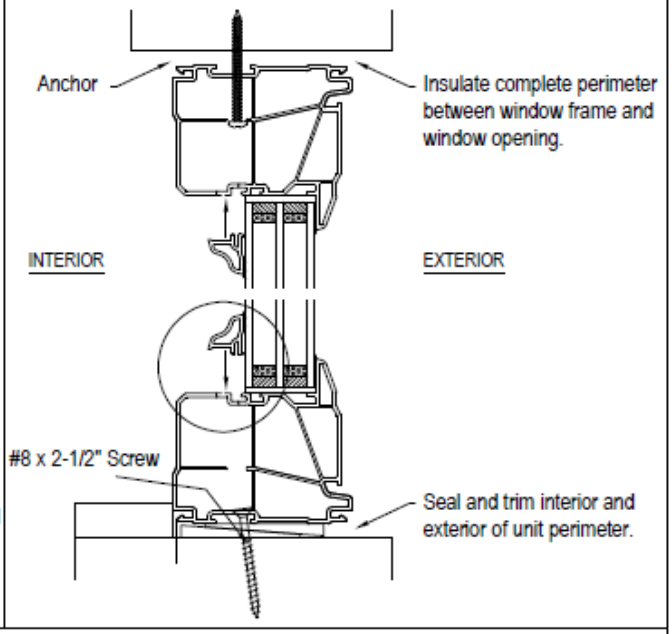
METHOD 1: SCREWING THROUGH THE FRAME:
(DOUBLE GLAZED/ TRIPLE GLAZED)

1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
3.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim placement should be 5" in from each corner and then at approximately 16" intervals around the window. Do not install shims at the head. Recommendation: shims at the sill should be placed beneath insulating glass unit setting blocks (lift the glass stop at the sill to ensure correct shim placement).



Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary





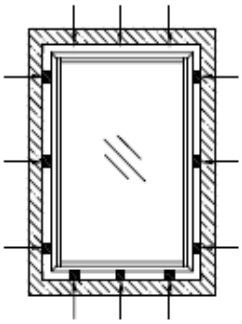
Double Glazed	Triple glazed units
4.) At each shim location, drill a 3/8" diameter hole through first wall of the interior frame. Drill additional holes at the head parallel to the shims at the sill. 5.) Install using suggested #8 x 2-1/2" screws at each of these locations being careful not to bow frame. Screw length is dependent upon framing structure and must be of sufficient length to securely anchor unit in opening. 6.) Cap the 3/8" diameter holes with 3/8" plastic hole plugs.	4.) With triple glazed units, there is not enough room behind the glass stop to drill and use the plastic hole plugs. When installing triple glazed units, for safety reasons, remove one stop, (refer to separate instruction sheet for stop removal and insertion or visit the dealer section of the North Star web site at www.northstarwindows.com for details). Once stop has been removed, at each shim location drill a 3/8" diameter hole, through the first and second walls of the interior frame. Note: hole location to be hidden when glass stop is reapplied. **Drill additional holes at the head parallel to the shims at the sill.** 5.) Install using suggested #8 x 2-1/2" screws at each of these locations being careful not to bow frame. Screw length is dependent upon framing structure and must be of sufficient length to securely anchor unit in opening. 6.) After installing glass stop, repeat procedure for each of the remaining stops.

7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

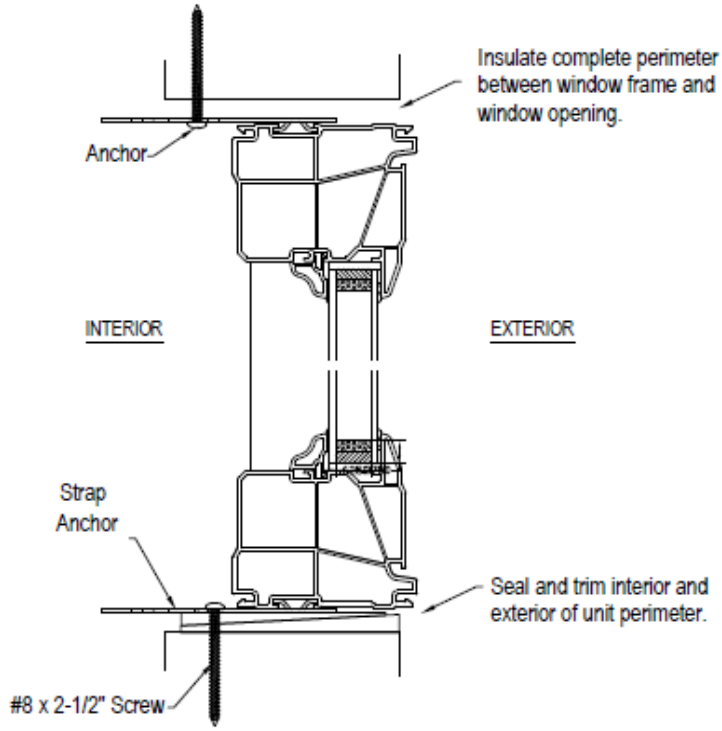
INSTALLATION INSTRUCTIONS

SERIES #1072 PICTURE WINDOW (WITH SASH)

SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

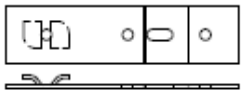


METHOD 2: USING A INSTALLATION CLIP/ ANCHOR



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the window is level, plumb and square. **Do not install shims at the head**. Recommendation: shims/clips at the sill should be placed beneath insulating glass unit setting blocks (lift the glass stop at the sill to ensure proper shim placement).
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2-1/2" screws at each of these locations
7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

Strap Anchor



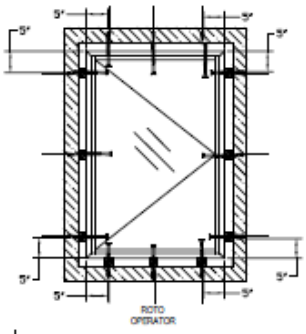
North star Windows and Doors warranty is only valid, if one of these two methods are followed.

NORTH STAR WINDOWS & DOORS

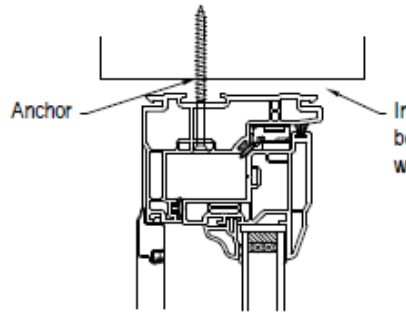
INSTALLATION INSTRUCTIONS

SERIES #1171 CASEMENT WINDOW

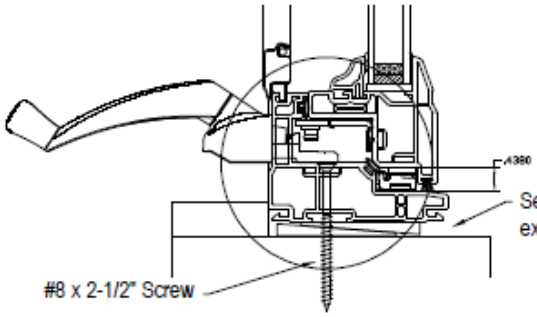
SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

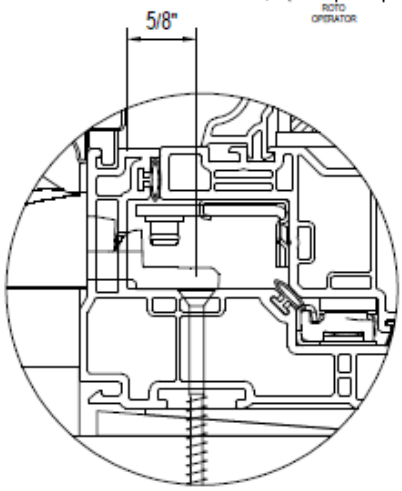


METHOD 1: SCREWING THROUGH THE FRAME



INTERIOR EXTERIOR





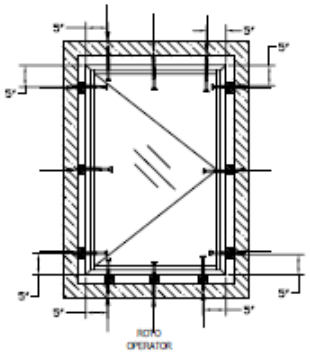
1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
3.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim placement should be 5" in from each corner and then at approximately 16" intervals around the window. Do not shim at the head and place additional shims at the sill below the roto operator.
Check: Shims should be firm but not tight enough to cause the jambs to bow. Shims at the head should be loose to ensure window operation as the house settles.
Check: level, plumb and squareness of frame and adjust shims if necessary
4.) Remove screen.
5.) Open sash fully. Install using suggested #8 x 2-1/2" screws at each of the sill location.
6.) Install using suggested #8 x 2-1/2" screws at the center of the head locations, add additional screws if needed.
Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
Screw position is 5/8" away from frame internal wall as shown above.
7.) Install screws at each of the side jamb shim locations.
8.) IMPORTANT: Seal screw heads in bottom of frame (sill) with silicone.
9.) Close sash and before locking, visually inspect the exterior of the window to ensure that the gap between frame and sash members remain constant. If operator fails to open, close or lock properly, verify sill and jambs are square using the measuring tape to cross measure corner to corner (square openings have equal cross measurements). The window can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
10.) Install screen.
11.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
12.) Seal and trim window inside and out to suit application.

North star Windows and Doors warranty is only valid, if one of these two methods are followed.

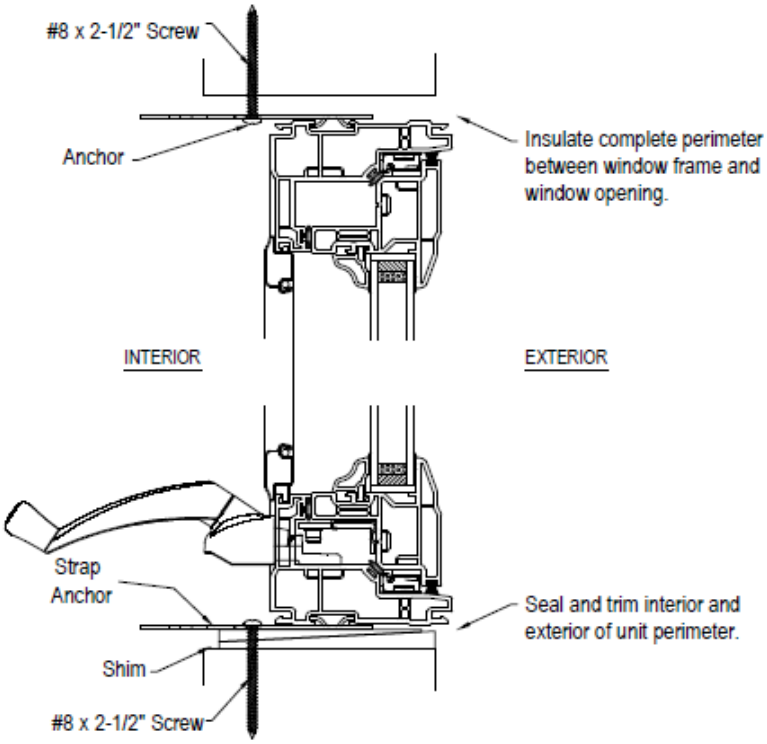
INSTALLATION INSTRUCTIONS

SERIES #1171 CASEMENT WINDOW

SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

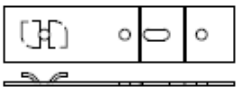


METHOD 2: USING A INSTALLATION CLIP/ ANCHOR



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the window is level, plumb and square.
DO not shim at the Head. Additional shims & clips at the sill must be place at the sill below the roto operator.
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2-1/2" screws at each of these locations
6.) Insulate between the window frame and the rough-opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation, causing unit frame to distort.
7.) Seal and trim window inside and out to suit application.

Strap
Anchor



North star Windows and Doors warranty is only valid, if one of these two methods are followed.

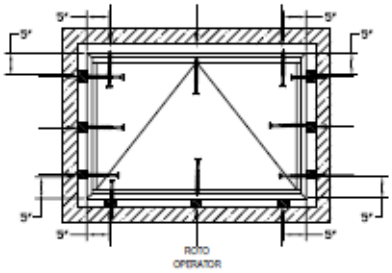
INSTALLATION INSTRUCTIONS

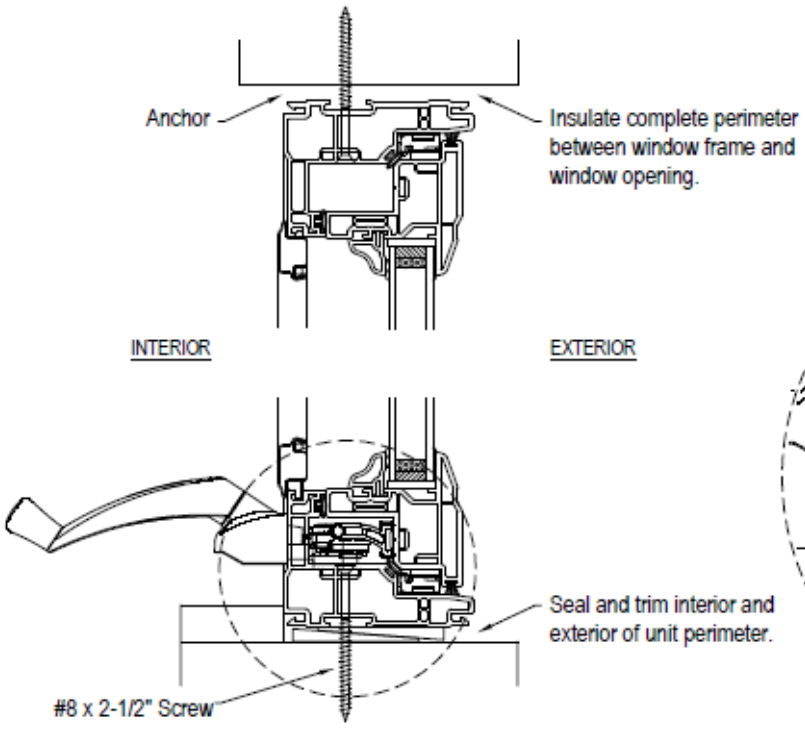
SERIES #1173 AWNING WINDOW

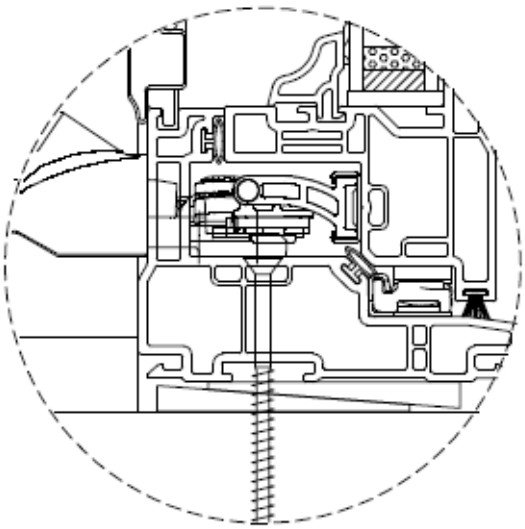
Two approved installation methods:
Screwing through the frame or using installation clip

METHOD 1: SCREWING THROUGH THE FRAME

SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE







1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
3.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim placement should be 5" in from each corner and then at approximately 16" intervals around the window. Do not shim at the head. Additional shims must be placed at the sill below the roto operator.
Check: Shims should be firm but not tight enough to cause the jambs to bow. Shims at the head should be loose to ensure window operation as the house settles.
Check: level, plumb and squareness of frame and adjust shims if necessary
4.) Remove screen.
5.) Open sash fully. Install using suggested #8 x 3" screws at each of the sill and head shim locations, being careful not to bow frame.
Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
Screw position is 5/8" away from frame internal wall as shown above.
7.) Install screws at each of the side jamb shim locations.
8.) IMPORTANT: Seal screw heads in bottom of frame (sill), with silicone.
9.) Close sash and before locking, visually inspect the exterior of the window to ensure that the gap between frame and sash members remain constant. If operator fails to open, close or lock properly, verify sill and jambs are square using the measuring tape to cross measure corner to corner (square openings have equal cross measurements). The window can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
10.) Install screen.
11.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
12.) Seal and trim window inside and out to suit application.

North star Windows and Doors warranty is only valid, if one of these two methods are followed.

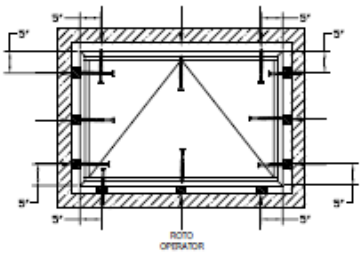
INSTALLATION INSTRUCTIONS

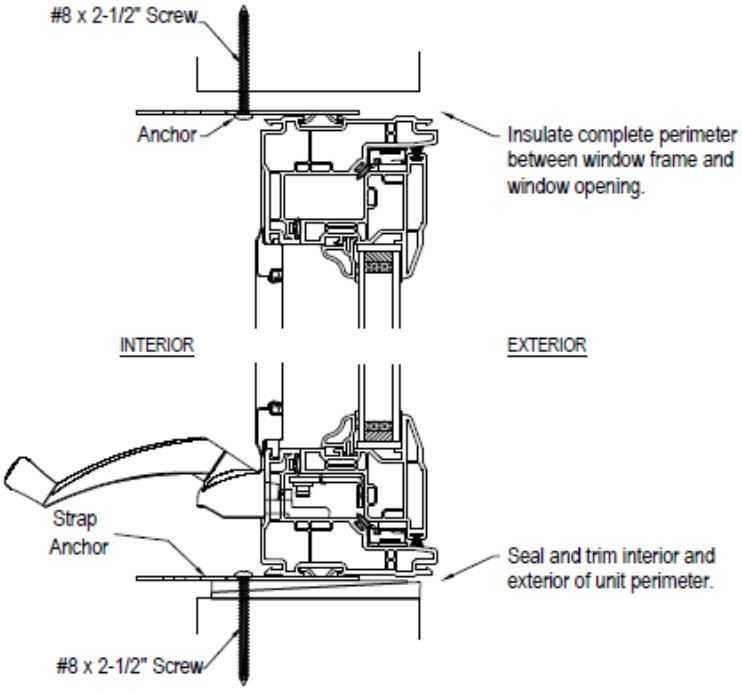
SERIES #1173 AWNING WINDOW

Two approved installation methods:
Screwing through the frame or using installation clip

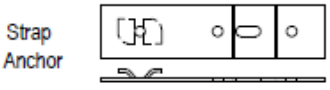
METHOD 2: USING A INSTALLATION CLIP/ ANCHOR

SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE





1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the window is level, plumb and square.
Do not shim at the head.
Additional shims & clips at the sill must be place at the sill below the roto operator.
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2" screws at each of these locations
6.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
7.) Seal and trim window inside and out to suit application.



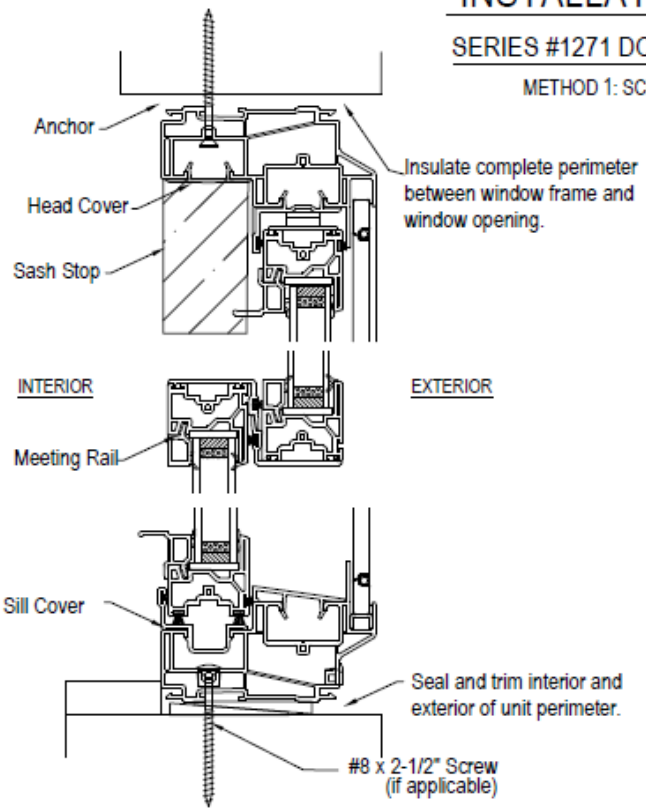
North star Windows and Doors warranty is only valid, if one of these two methods are followed.

NORTH STAR WINDOWS & DOORS

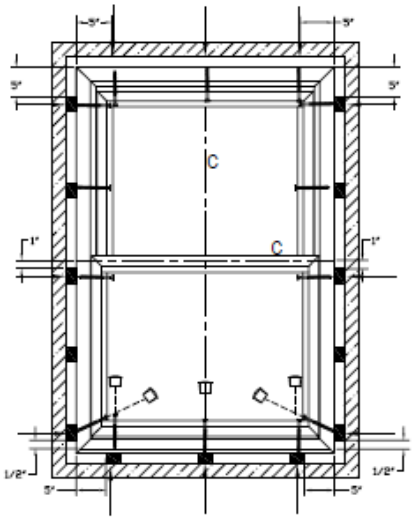
INSTALLATION INSTRUCTIONS

SERIES #1271 DOUBLE HUNG TILT WINDOW

METHOD 1: SCREWING THROUGH THE FRAME



SHIMMING/ANCHOR LOCATIONS DEPENDING ON UNIT SIZE

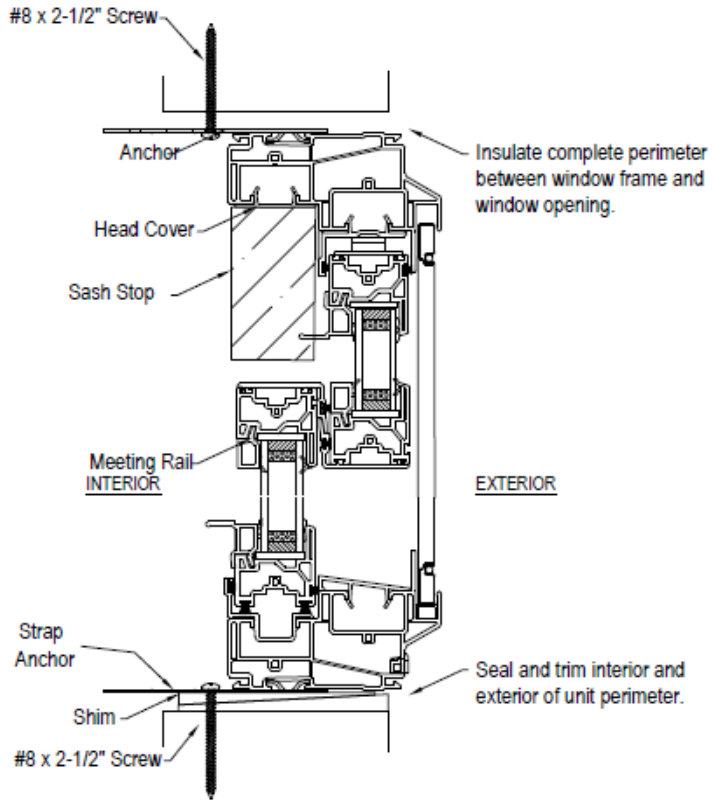


1.) Do not cut center banding.
2.) Check rough opening to ensure that the window unit will fit. Rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Unlock window and slide both sashes to center.
5.) Locate head and sill snap-in covers on the interior track and remove them by inserting a sharp chisel and prying.
6.) **Shim sill** so it is level and 1/8" to 1/4" off the sill plate.
7.) Shims the **sill**: 5" inch from each end and at 16"inch intervals.(Do not over shim and do not shim the head)
8.) Install screws through frame header in tracks where head cover was removed, 5" inches from each corner and in the center. Be careful not to bow frame.
NS Suggest using #8 x 2-1/2" screws. Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
9.) IMPORTANT: When anchoring unit through sill/jamb, place screws at shim locations and seal screw heads with a good quality sealant.
10.) Close sashes and lock window.
11.) **Shim Jambs**, 5" from the head, 1" below the meeting rail and 5" from sill
12.) Check that frame members are plumb and square and check that the seal gap between the sashes and frame is uniform across the entire window. Add shims if necessary and make sure that the distance between shims around the entire window does not exceed 16" inches.
13.) Cut and remove center banding.
14.) Raise lower sash completely and tilt sash inward.
15.) Fasten screws into interior track between pivot shoe (square nylon block which locks when sash is tilted inwards) and bottom of the balance.
***Do not put screws in path of pivot shoe as this would hinder the operation of the window.**
16.) Tilt lower sash back into frame and check that the gap between sash and frame remain constant over the entire height of the window.
17.) Remove inside sash stops (top inside track) and fasten screws into shim location
18.) Fasten screws into the bottom shim locations, then insert all covers and sash stops back to original position.
19.) Once all installation screws have been installed, re-verify that the unit has remained level, plumb and square. The window unit can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
20.) Insulate between the window frame and the rough opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation causing unit frame to distort.
21.) Seal and trim window inside and out to suit application

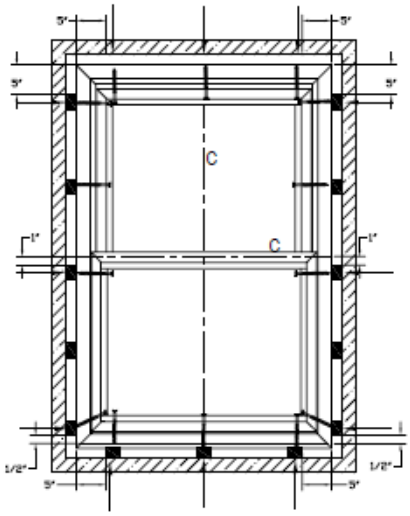
North star Windows and Doors warranty is only valid, if one of these two methods are followed.

INSTALLATION INSTRUCTIONS

SERIES #1271 DOUBLE HUNG TILT WINDOW

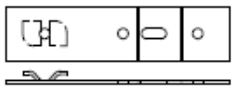


SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner, at the meeting rail and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the seal gap between the sashes and frame is uniform across the entire window. Do not place shims at the head. Add shims if necessary.
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2" screws at each of these locations
6.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
7.) Seal and trim window inside and out to suit application.

Strap
Anchor



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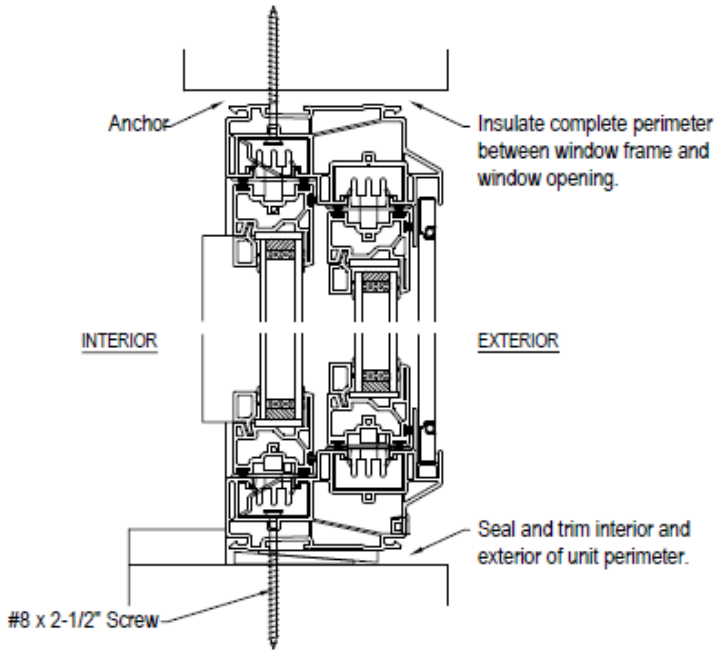
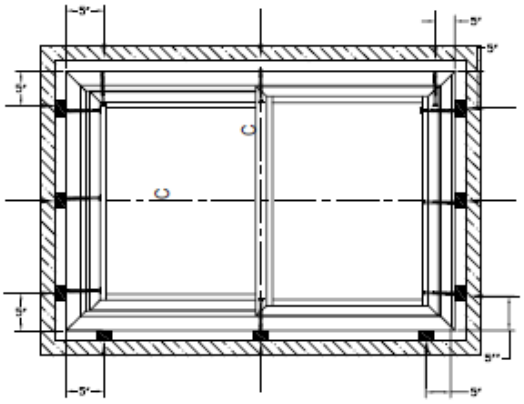
INSTALLATION INSTRUCTIONS

SERIES #1272 (DOUBLE) SLIDER TILT WINDOW



SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

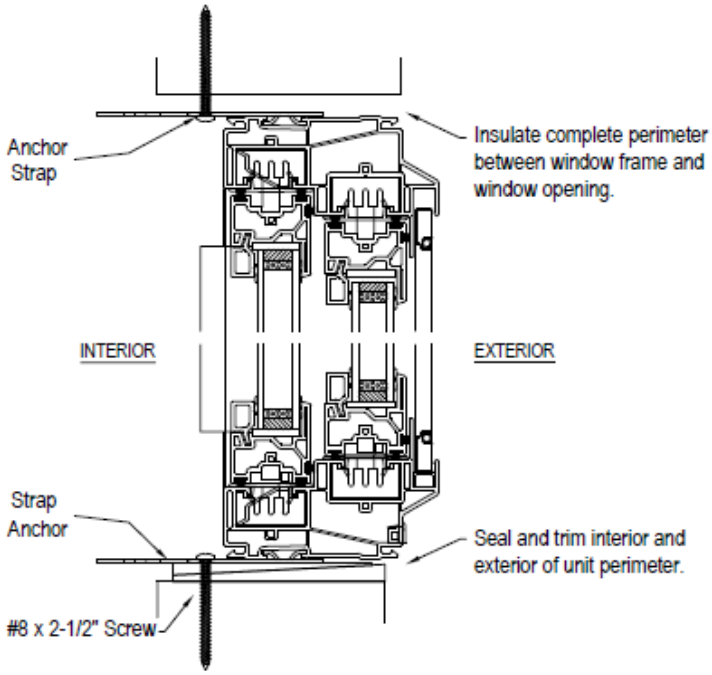


1.) Do not cut center banding.
2.) Check rough opening to ensure that the window unit will fit. Rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Unlock window, and slide sashes to center.
5.) Locate side jamb covers (snap in covers, located with weatherstripping at each end of the window) and remove them by inserting a sharp chisel and prying them out.
6.) Shim side jamb frame members 5" from top and bottom and approximately 16" intervals. Shims should be firm but not tight enough to cause the jambs to bow. Check level, plumb, and squareness of frame and adjust shims if necessary.
7.) Install screws through pockets of the frame where jamb covers were removed, at each shim location, being careful not to bow frame. Suggest using #8 x 2-1/2" screws. Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
8.) Snap jamb covers back into side jamb frame members.
9.) Close sashes and lock window.
10.) Shim frame sill members at center until frame members are level. Place additional shims 5" from each end and at 16" intervals. To ensure a proper seal the gap between sash and frame should be the same at the midpoint as at either end.
11.) Cut and remove center banding.
12.) Tilt innermost sash inward.
13.) Remove pocket cover from head and sill interior track.
14.) At the very center of the interior head and sill track, fasten unit through the frame using a #8 x 2-1/2" screw. Screw length must be of sufficient length to securely anchor unit in opening. Do not put screws in path of pivot shoe as this would hinder the operation of the window.
15.) IMPORTANT: When anchoring unit through sill/Jamb, seal screw heads with silicone.
16.) Snap pocket cover back into head and sill frame.
17.) Tilt sash back into frame and check that the gap between sash and frame remain constant over the entire width of the window. The window unit can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
18.) Insulate between the window frame and the rough opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation causing unit frame to distort.
19.) Seal and trim window inside and out to suit application.

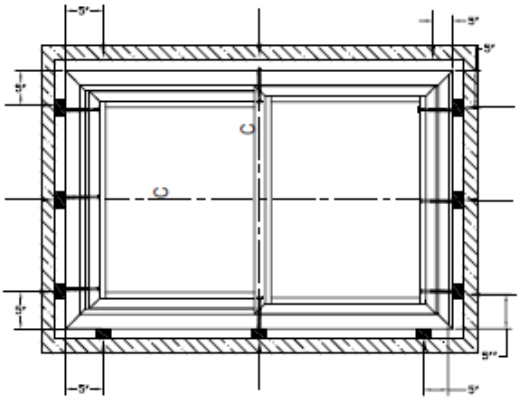
North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

INSTALLATION INSTRUCTIONS

SERIES #1272 (DOUBLE) SLIDER TILT WINDOW

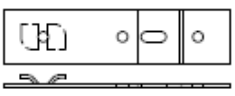


SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner, at the meeting rail and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the seal gap between the sashes and frame is uniform across the entire window. Do not shim Add shims if necessary.
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2" screws at each of these locations
6.) Insulate between the window frame and the rough-opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation, causing unit frame to distort.
7.) Seal and trim window inside and out to suit application.

Strap
Anchor



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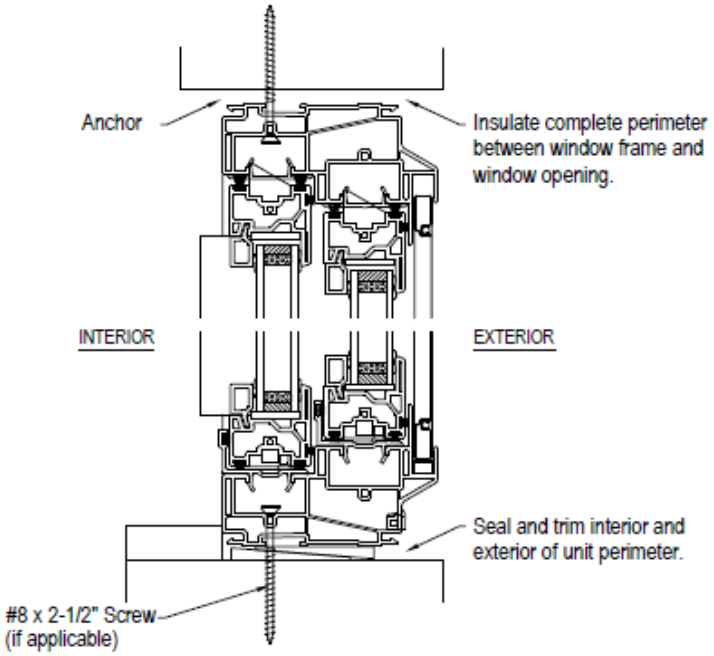
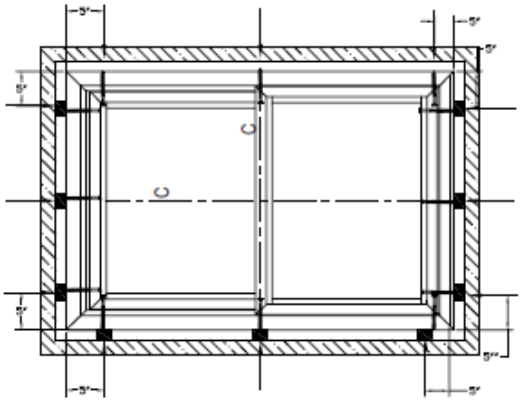
INSTALLATION INSTRUCTIONS

SERIES #1273 DOUBLE SLIDER LIFTOUT WINDOW



SHIMMING LOCATIONS
DEPENDING ON UNIT SIZE



1.) Do not cut center banding.
2.) Check rough opening to ensure that the window unit will fit. Rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Unlock window, and slide sashes to center.
5.) Locate side jamb covers (snap in covers, with weatherstripping on left side jamb, and flat pocket cover on right side jamb of window) and remove them by inserting a sharp chisel and prying.
6.) Shim side jamb frame members 5" from top and bottom and approximately 16" intervals. Shims should be firm but not tight enough to cause the jambs to bow. Check level, plumb, and squareness of frame and adjust shims if necessary.
7.) Install screws through pockets of the frame where jamb covers were removed, at each shim location, being careful not to bow frame. Suggest using #8 x 2-1/2" screws. Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
8.) Close sashes and lock window.
9.) Shim frame sill at center until frame members are level. Place additional shims 5" from each end and at 16" intervals.
To ensure a proper seal the gap between sash and frame should be the same at the midpoint as at either end.
10.) Cut and remove center banding.
11.) Remove interior sash.
12.) In exposed head track, fasten screws through frame at approximately 16" centers.
13.) Remove interior sill cover (snap in cover with weatherstripping), by prying with a sharp chisel, and then fasten screws through sill pocket.
14.) IMPORTANT: When anchoring unit through sill, place screws at shim locations and seal screw heads with NS approved silicone.
15.) Snap interior sill cover back into frame.
16.) Snap side jamb covers back into appropriate frame members.
17.) Put interior sash back into frame and check that the gap between sash and frame remain constant over the entire width of the window.
The window unit can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
18.) Insulate between the window frame and the rough opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation causing unit frame to distort.
19.) Seal and trim window inside and out to suit application

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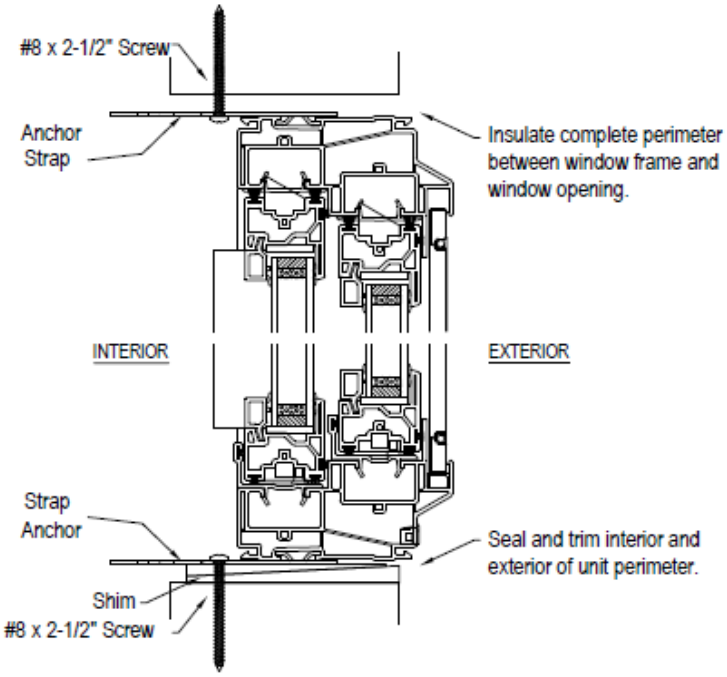
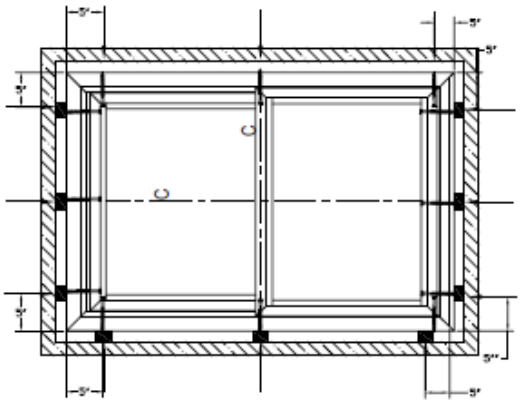
INSTALLATION INSTRUCTIONS

SERIES #1273 DOUBLE SLIDER LIFTOUT WINDOW

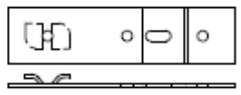


SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE



1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner, at the meeting rail and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate. Shim behind each clip location so that the seal gap between the sashes and frame is uniform across the entire window. Add shims if necessary. Do not add shims to the head
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
5.) Install using suggested #8 x 2" screws at each of these locations
6.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
7.) Seal and trim window inside and out to suit application.

Strap Anchor



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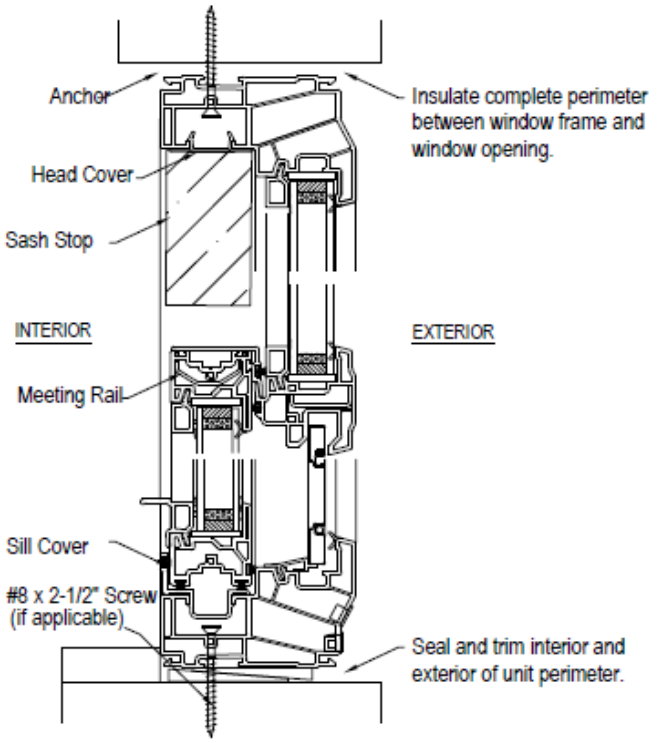
North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

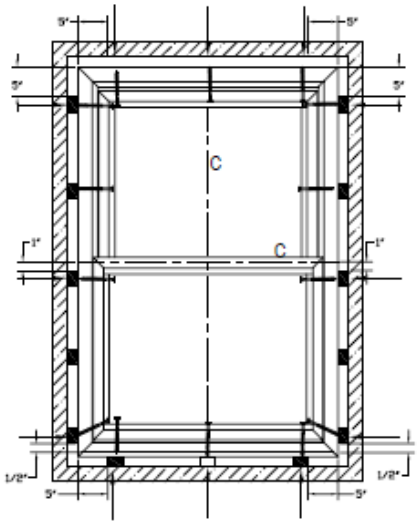
NORTH STAR WINDOWS & DOORS

INSTALLATION INSTRUCTIONS

SERIES #1371 SINGLE HUNG TILT WINDOW



SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE

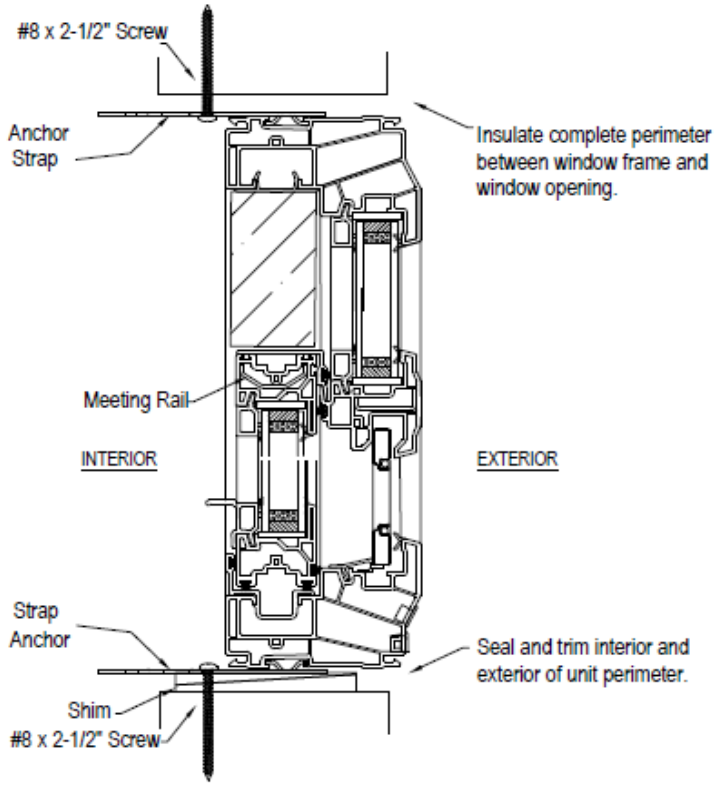


1.) Do not cut center banding.
2.) Check rough opening to ensure that the window unit will fit. Rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Unlock window and slide the operating sash to the center of the window.
5.) Locate head and sill snap-in covers on the interior track and remove them by inserting a sharp chisel and prying.
6.) **Shim sill** so it is level and 1/8" to 1/4" off the sill plate.
7.) Shims the window **sill**: 5" inch from each end and at 16"inch intervals.(Do not over shim and do not shim the head)
8.) Install screws through frame header in tracks where head cover was removed, parallel to sill shim location, being careful not to bow frame. Suggest using #8 x 2-1/2" screws. Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
9.) IMPORTANT: When anchoring unit through sill/Jamb, place screws at shim locations and seal screw heads with a good quality sealant.
10.) Close the operating sash and lock window.
11.) **Shim Jambs**, 5" from the head, 1" below the meeting rail and 1" from sill (or 1/2" from the bottom of the internal frame pocket with the sill cover removed)
12.) Check that frame members are plumb and square and check that the seal gap between the sash and frame is uniform across the entire window. Add shims if necessary and make sure that the distance between shims around the entire window does not exceed 16" inches.
13.) Cut and remove center banding.
14.) Raise sash completely and tilt sash inward.
15.) Fasten screws into interior track between pivot shoe (square nylon block which locks when sash is tilted inwards) and bottom of the balance.
***Do not put screws in path of pivot shoe as this would hinder the operation of the window.**
16.) Tilt sash back into frame and check that the gap between sash and frame remain constant over the entire height of the window.
17.) Remove inside sash stops (top inside track) and fasten screws into shim location
18.) Fasten screws into the bottom shim locations, then insert all covers and sash stops back to original position.
19.) Once all installation screws have been installed, re-verify that the unit has remained level, plumb and square. The window unit can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
20.) Insulate between the window frame and the rough opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation causing unit frame to distort.
21.) Seal and trim window inside and out to suit application

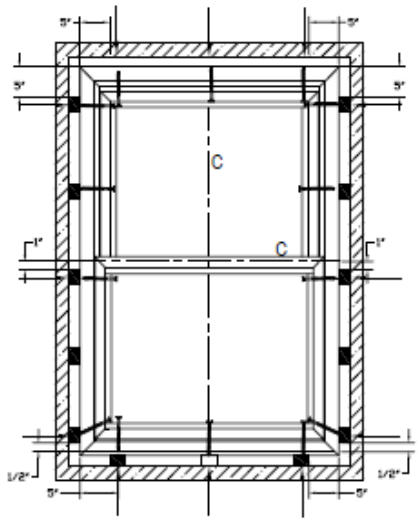
North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

INSTALLATION INSTRUCTIONS

SERIES #1371 SINGLE HUNG TILT WINDOW



SHIMMING/ANCHOR LOCATIONS
DEPENDING ON UNIT SIZE



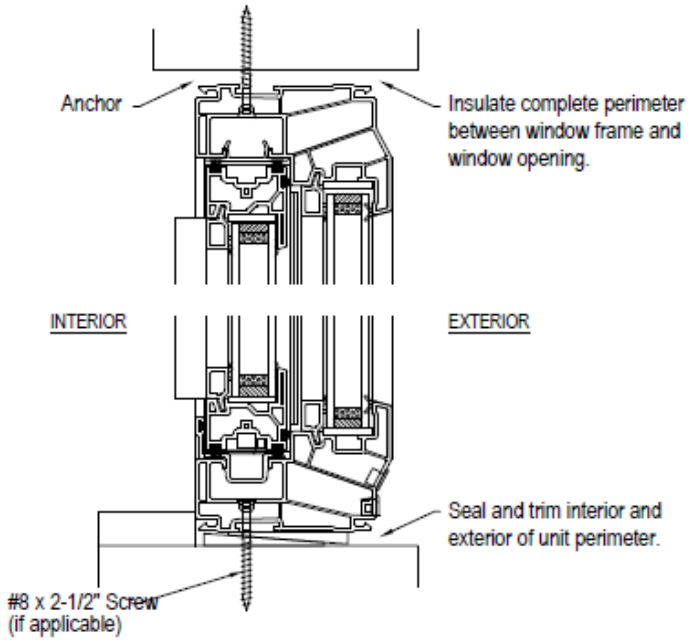
1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner, at the meeting rail and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate.
5.) Shim behind each clip location. Check that the seal gap between the operating sash and the frame is uniform.
Add shims if necessary. Do not place shims at the head
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
6.) Install using suggested #8 x 2" screws at each of these locations
7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

Strap Anchor

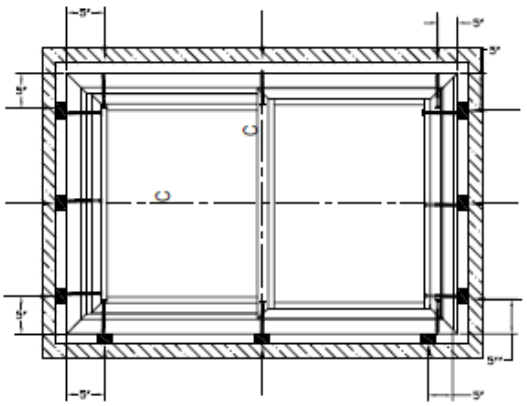
North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

INSTALLATION INSTRUCTIONS

SERIES #1372 SINGLE SLIDER LIFTOUT WINDOW



SHIMMING LOCATIONS
DEPENDING ON UNIT SIZE

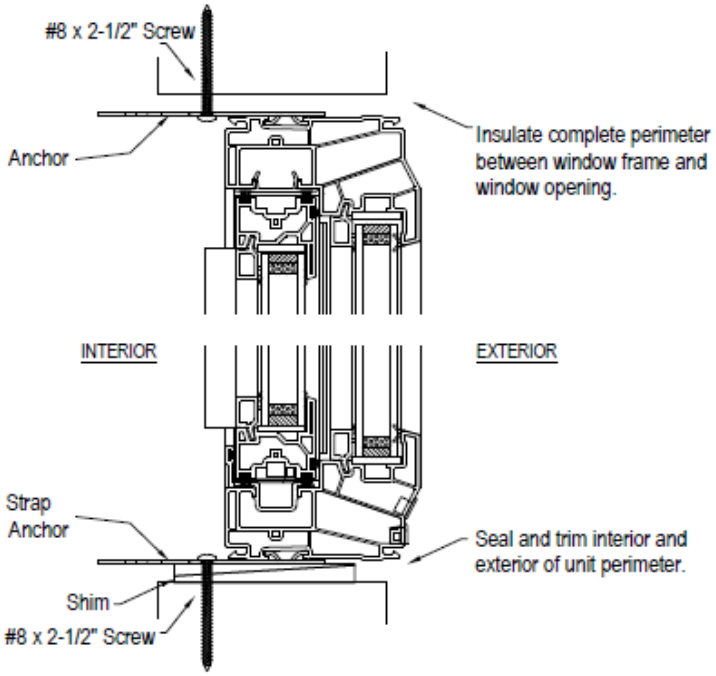


1.) Do not cut center banding.
2.) Check rough opening to ensure that the window unit will fit. Rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Unlock window, and slide sashes to center.
5.) Locate side jamb covers (snap in covers, with weatherstripping on left side jamb, and flat pocket cover on right side jamb of window) and remove them by inserting a sharp chisel and prying.
6.) Shim side jamb frame members 5" from top and bottom and approximately 16" intervals. Shims should be firm but not tight enough to cause the jambs to bow. Check level, plumb, and squareness of frame and adjust shims if necessary.
7.) Install screws through pockets of the frame where jamb covers were removed, at each shim location, being careful not to bow frame. Suggest using #8 x 2-1/2" screws. Screw length is dependent upon frame structure, screw length must be of sufficient length to securely anchor unit in opening.
8.) Close sash and lock window.
9.) Shim frame sill members at center and place additional shims 5" from each end and at 16" intervals.
To ensure a proper seal the gap between sash and frame should be the same at the midpoint as at either end.
10.) Cut and remove center banding.
11.) Remove operating sash.
12.) In exposed head track, fasten screws through frame at the center, at 5" from each corner, and at 16" centers.
13.) Remove interior sill cover (snap in cover with weatherstripping), by prying with a sharp chisel, and then fasten screws through sill pocket.
14.) IMPORTANT: When anchoring unit through sill, place screws at shim locations and seal screw heads with NS approved silicone.
15.) Snap interior sill cover back into frame.
16.) Snap side jamb covers back into appropriate frame members.
17.) Put sash back into frame and check that the gap between sash and frame remain constant over the entire width of the window.
The window unit can be readjusted by loosening the screws, leveling, shimming and re-tightening them as required.
18.) Insulate between the window frame and the rough opening, ensuring all voids are filled.
Caution must be exercised not to over pack the insulation causing unit frame to distort.
19.) Seal and trim window inside and out to suit application

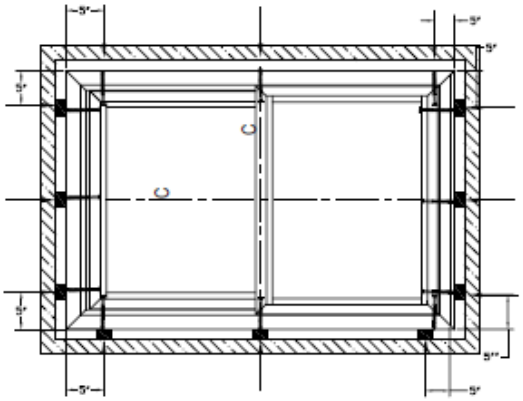
North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

INSTALLATION INSTRUCTIONS

SERIES #1372 SINGLE SLIDER LIFTOUT WINDOW

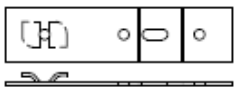


SHIMMING LOCATIONS
DEPENDING ON UNIT SIZE



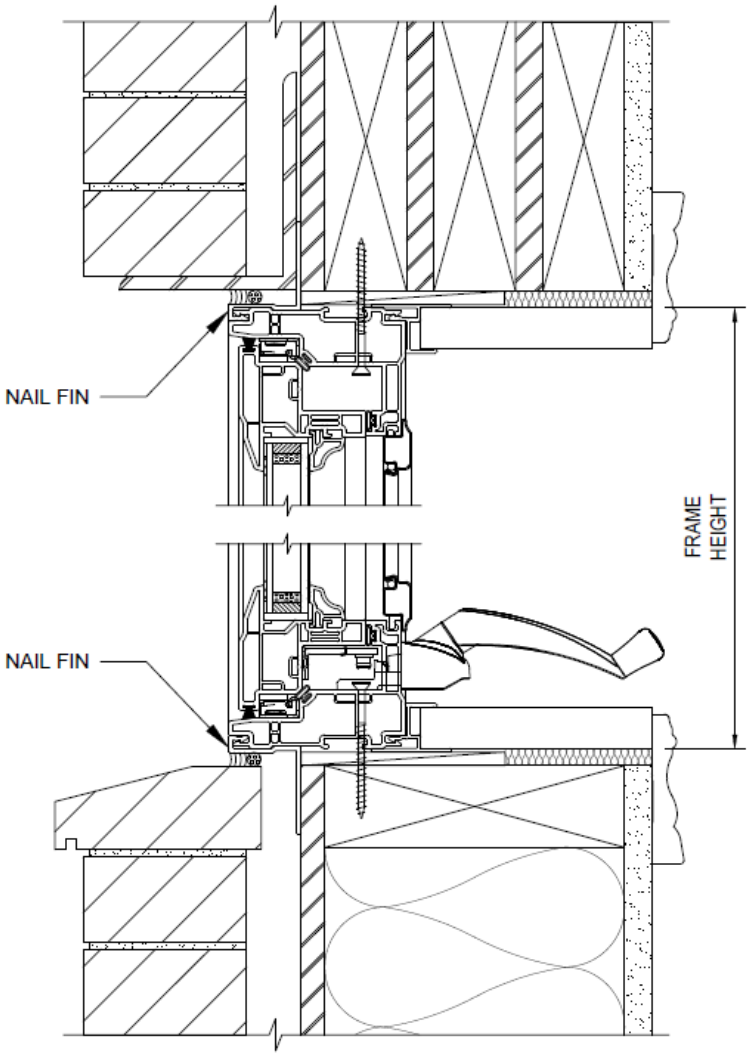
1.) Check rough opening to ensure that the window unit will fit. The rough opening should be 1/4" to 1/2" larger than the window, both horizontally and vertically.
2.) Place the galvanized steel strap anchor clips 2" in from each corner, at the meeting rail and then at approximately 16" intervals around the window.
3.) Center frame in opening so there is equal space between the jambs of the frame and the jambs of the rough opening.
4.) Shim sill so it is level and 1/8" to 1/4" off the sill plate.
5.) Shim behind each clip location. Check that the seal gap between the operating sash and the frame is uniform.
Add shims if necessary.
Check: Shims should be firm but not tight enough to cause the jambs to bow.
Check: level, plumb and squareness of frame and adjust shims if necessary
6.) Install using suggested #8 x 2" screws at each of these locations
7.) Insulate between the window frame and the rough-opening, ensuring all voids are filled. Caution must be exercised not to over pack the insulation, causing unit frame to distort.
8.) Seal and trim window inside and out to suit application.

Strap Anchor



North Star Windows and Doors warranty is only valid, if one of these two methods are followed.

1171 Casement (With Nail Fin) In Brick Wall



PROVIDE A CONTINUES BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE AND SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

DRIP CAP AND "J" TRIM RECOMMENDED. SEAL BEHIND AND UNDERNEATH.

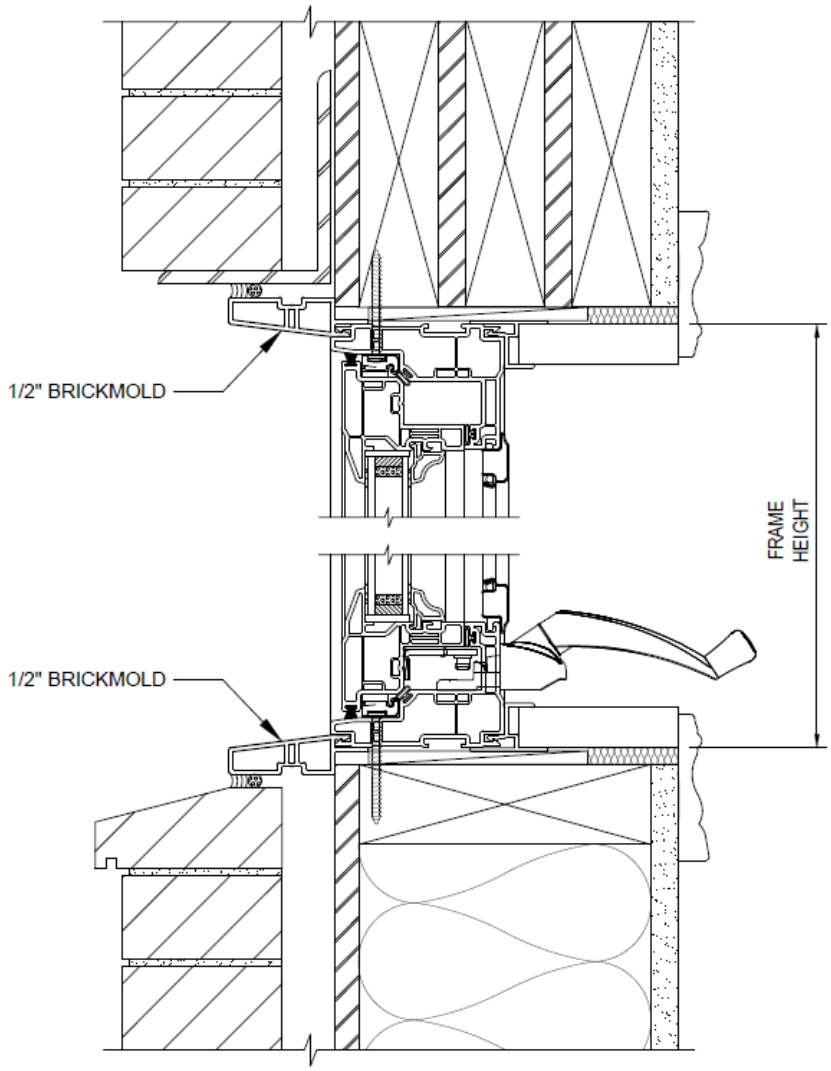
NORTH STAR WINDOWS MUST BE MOUNTED THROUGH THE FRAME (USE SCREWS AS SHOWN OR USE CONTRACTOR CLIP).

FILL VOIDS AROUND UNIT WITH INSULATION. DO NOT OVER FILL CAUSING UNIT TO BOW.

WHEN RIGID INSULATION OR OTHER COMPRESSIBLE SHEATHING MATERIAL IS USED. PROVIDE SOLID BLOCKING FOR FIN ATTACHMENT.

DETAILS SHOWN ARE NOT INTENDED TO REFLECT COMPLETE INSTALLATION PROCEDURES. BUT DO REFLECT BASIC INSTALLATION CONCEPTS.

1171 Casement (With ½" Brickmold) In Brick Wall



PROVIDE A CONTINUES BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE AND SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

DRIP CAP AND "J" TRIM RECOMMENDED. SEAL BEHIND AND UNDERNEATH.

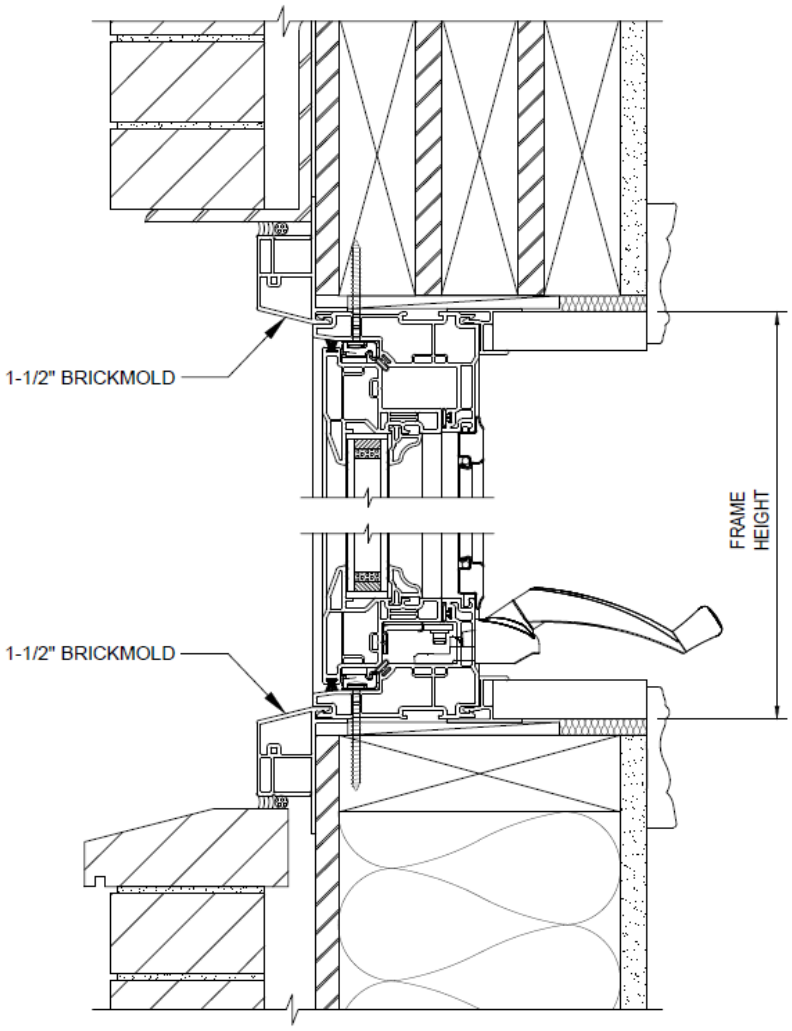
NORTH STAR WINDOWS MUST BE MOUNTED THROUGH THE FRAME (USE SCREWS AS SHOWN OR USE CONTRACTOR CLIP).

FILL VOIDS AROUND UNIT WITH INSULATION. DO NOT OVER FILL CAUSING UNIT TO BOW.

WHEN RIGID INSULATION OR OTHER COMPRESSIBLE SHEATHING MATERIAL IS USED. PROVIDE SOLID BLOCKING FOR FIN ATTACHMENT.

DETAILS SHOWN ARE NOT INTENDED TO REFLECT COMPLETE INSTALLATION PROCEDURES. BUT DO REFLECT BASIC INSTALLATION CONCEPTS.

1171 Casement (With 1-1/2” Brickmold) In Brick Wall



PROVIDE A CONTINUES BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE AND SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

DRIP CAP AND “J” TRIM RECOMMENDED. SEAL BEHIND AND UNDERNEATH.

NORTH STAR WINDOWS MUST BE MOUNTED THROUGH THE FRAME (USE SCREWS AS SHOWN OR USE CONTRACTOR CLIP).

FILL VOIDS AROUND UNIT WITH INSULATION. DO NOT OVER FILL CAUSING UNIT TO BOW.

WHEN RIGID INSULATION OR OTHER COMPRESSIBLE SHEATHING MATERIAL IS USED. PROVIDE SOLID BLOCKING FOR FIN ATTACHMENT.

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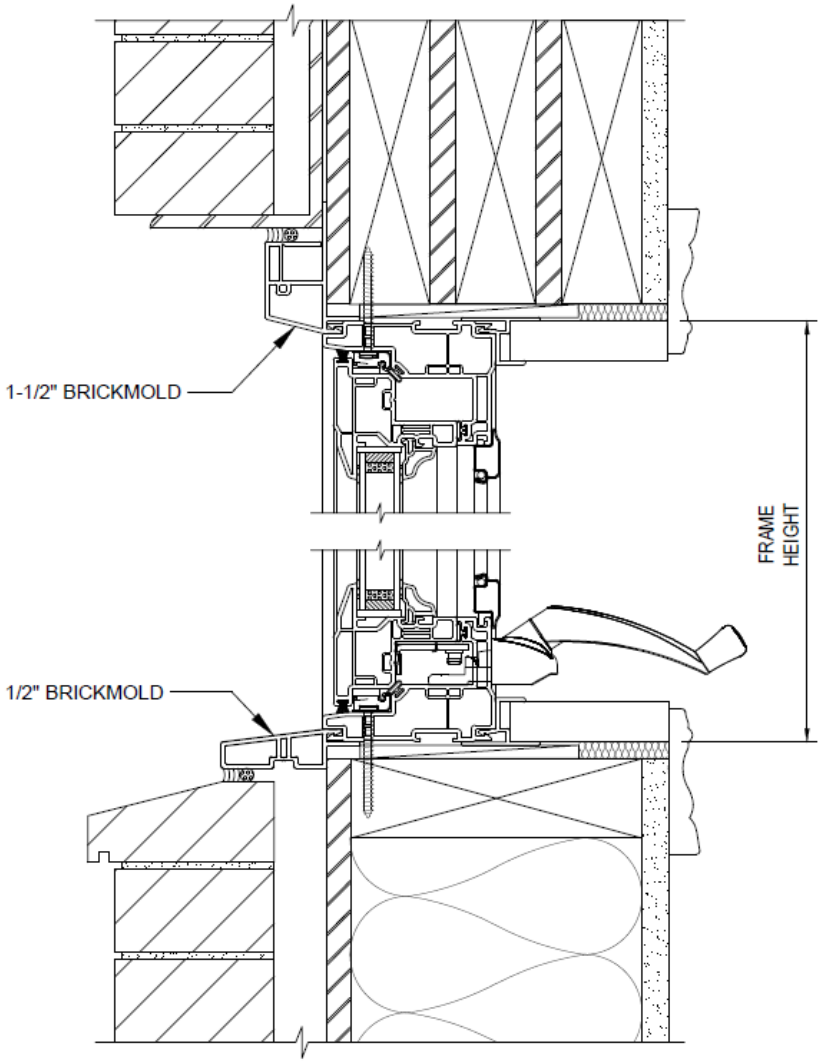
1171 Casement (With 1-1/2” Brickmold & 1/2” Sillnose) In Brick Wall



PROVIDE A CONTINUES BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE AND SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

DRIP CAP AND “J” TRIM RECOMMENDED. SEAL BEHIND AND UNDERNEATH.

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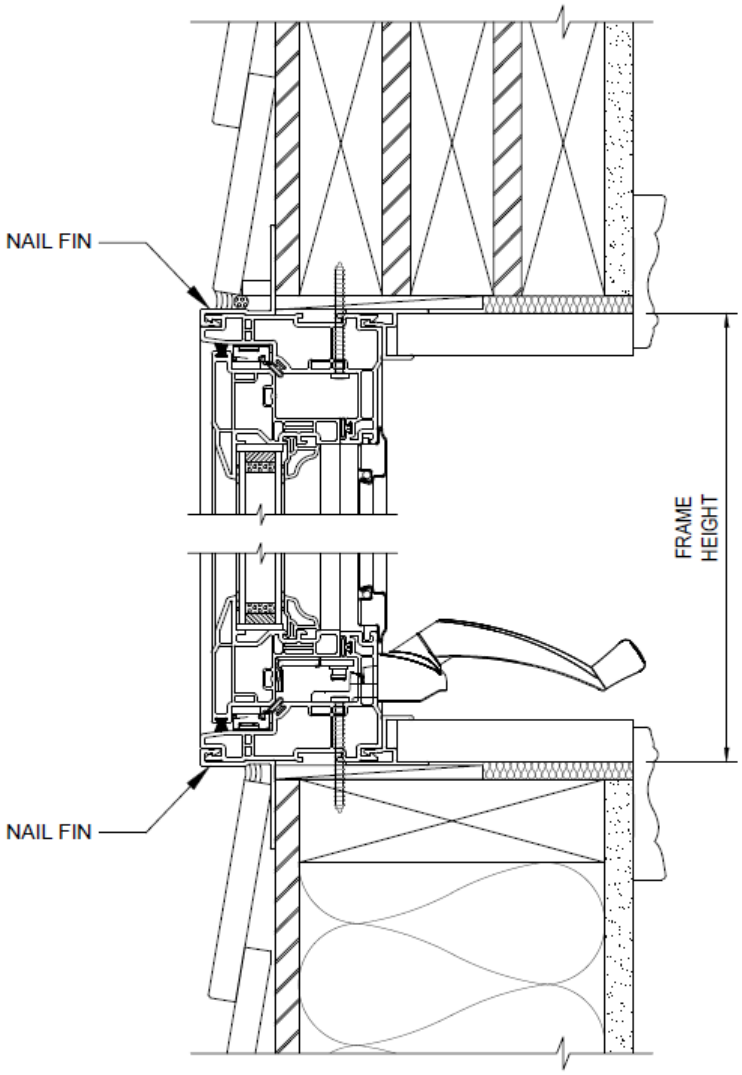
1171 Casement (With Nail Fin) In Wall (With Siding)



PROVIDE A CONTINUES BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE AND SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

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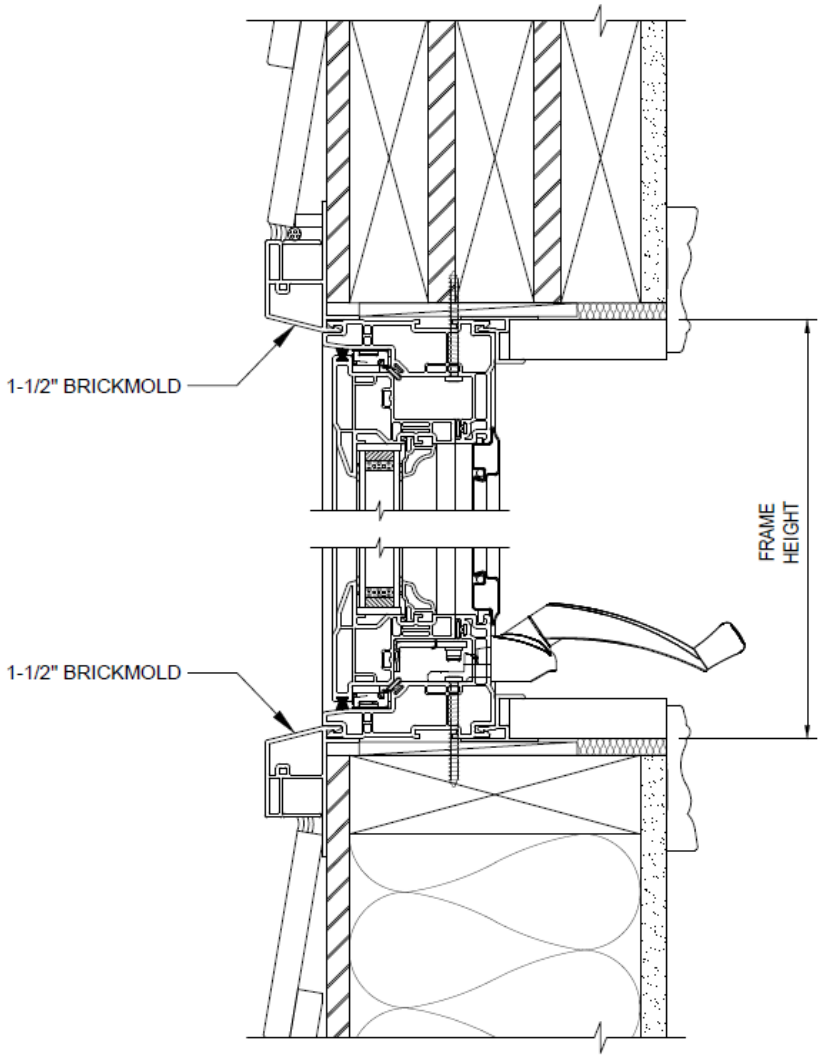
1171 Casement (With 1-1/2” Brickmold) In Wall (With Siding)



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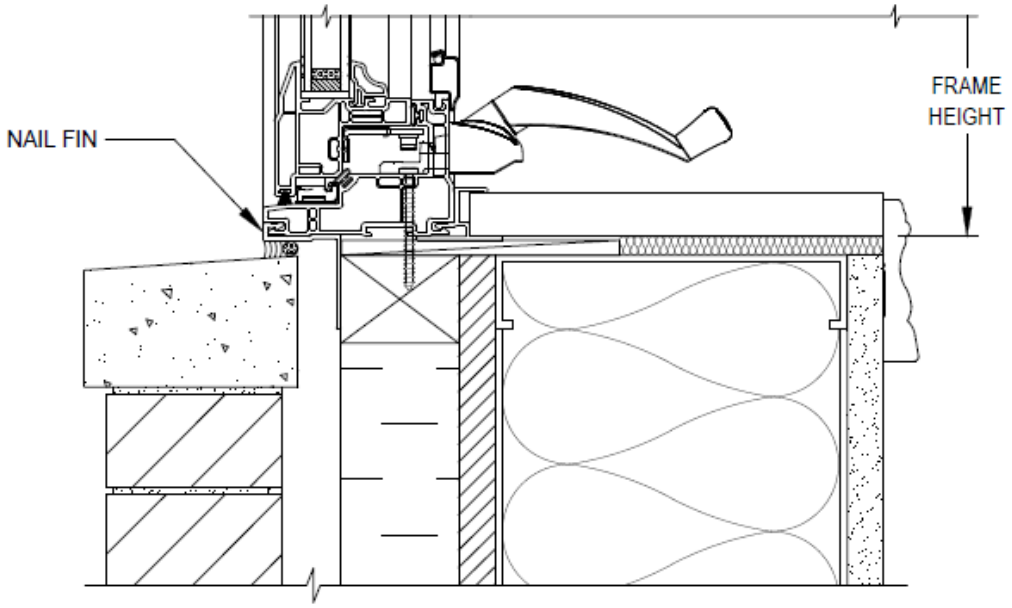
1171 Casement (With Nail Fin) In Stone Wall



PROVIDE A CONTINUOUS BEAD OF SEALANT BEHIND THE NAILING FIN BEFORE SETTING THE UNIT IN PLACE OR SEAL FIN WITH WATER PROOF TAPE

SHIM UNIT IN OPENING PLUMB, LEVEL AND SQUARE

DRIP CAP RECOMMENDED, SEAL BEHIND AND UNDERNEATH

FILL VOIDS AROUND UNIT PERIMETER WITH INSULATION. DO NOT OVERFILL CAUSING UNIT TO BOW

WHEN RIGID INSULATION OR OTHER COMPRESSIBLE SHEATHING MATERIAL IS USED, PROVIDE SOLID BLOCKING FOR FIN ATTACHMENT

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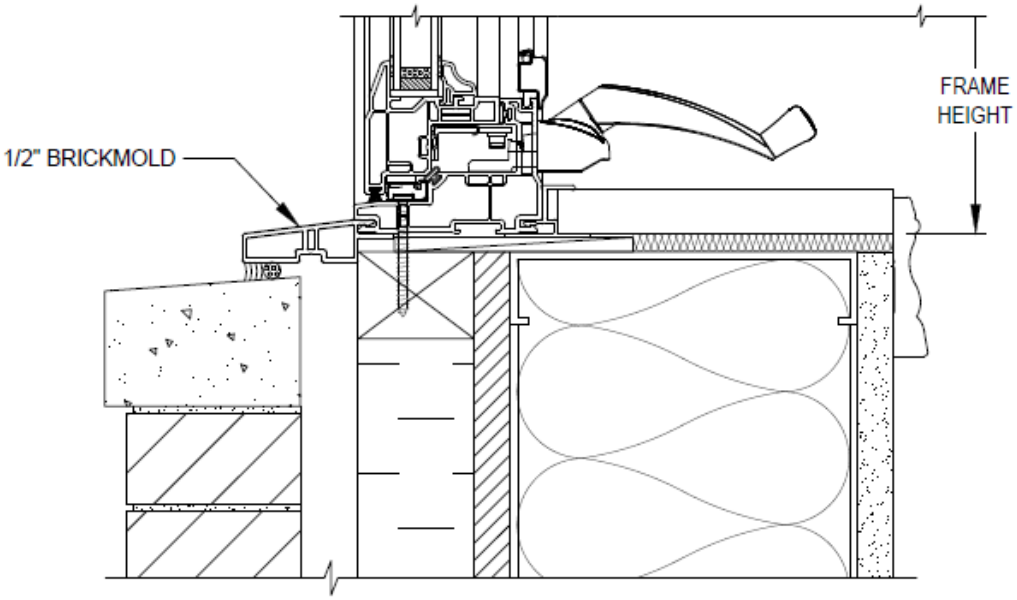
1171 Casement (With ½" Brickmold) In Stone Wall



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North Star's Architectural Services Division was created to assist architects and design technicians to match North Star Products to your imaginations and visions. This consultant service exists to merge fenestration expertise and experience with creative visionaries who design to create and inspire.

Contact a North Star Sales Consultant to begin the North Star experience.

Contact us by email at architect@northstarwindows.com

North Star Territories Managers

North Star has a team of window and door professionals making regular calls on the architectural community in their region. These professionals are able to introduce architects and design technicians to local authorized North Star dealers and North Star window centers for detailed information, service and pricing. North Star representatives are available for informative product demonstration luncheons conducted at architectural offices, job site visits or any other function requiring their fenestration expertise.

Architectural Handbook

The North Star architectural handbook is the omnibus for all North Star technical details. It contains current information for all North Star products and accessories.

Product Samples and Displays

Portable product samples and displays are available through North Star representatives and the dealer network. These tools aid in understanding product differences and features. North Star products are displayed by its dealer network through showrooms and at trade and home shows throughout their communities.

Glossary of Terms

Acrylic – A synthetic resin or acrylic or methacrylic esters. Acrylics are known for their property of clarity

Active Panel – Primary operating door panel

Air Infiltration - Air that leaks in and out of a home or building through cracks in walls, windows and doors is considered “infiltration”. The lower a window’s air infiltration rating, the more airtight it is.

Argon Gas – An inert, colourless and odourless gas used to fill the airspace between insulating Low E glass

Argon and Krypton - Argon and krypton are odorless, colorless, non-toxic inert gases that can be used instead of air between panes of glass to increase insulation and energy efficiency. Argon is the cheaper, more readily available gas, but krypton is a better insulator in narrow air spaces. Often, manufacturers will use a blend of air, argon, and/or krypton to balance cost and performance.

Assembly – Single units mulled together

Awning Window – A combination of frame and sash, hinged to allow the unit to pivot from the top with the sash opening to the exterior of the building

Balances – A steel spiral rod and spring system used in the jamb liner of Double Hung or Single Hung units

Bay Window – A series of three windows installed with two flanker units and a center sash, forming an arc or a polygon. North Star bay windows can be built at one of two fixed angles: 30° or 45°

Bow Window – A series of adjoining window units, installed on a radius

Brickmold – An exterior molding of window and door frames that abuts the exterior facing material of the structure

Calendar – A machine for giving a gloss to cloth, paper, etc. by pressing between rollers

Cam Lock – A lever-operated lock which is used to prevent intrusion through the sash

Capillary Tubes – A tube inserted into the insulating glass spacer that allows the inside and outside air pressure to equalize in higher elevations

Casement Window – A combination of frame and sash, hinged to allow the unit to swing open from the side like a door, with the sash opening to the exterior of the building

Condensation - Condensation on windows occurs when the surface temperature of the glass (glazing), sash or frame is lower than that of the humid air around it. The moisture vapour in the air changes into liquid water on contact with these cold surfaces.

(Exterior) Condensation - Energy-efficient windows will occasionally have condensation on the exterior glass surface. This usually happens during periods of warm weather and high humidity near the time of sunrise. Because energy-efficient windows greatly reduce the amount of heat escaping to the outside (which is good during the long periods of cold weather), the exterior glass surface is cool enough to allow condensation to form for a short period of time.

Condensation Resistance (CR) - CR measures how well a product resists the formation of condensation. CR is reported on a scale of 1 to 100. The higher the number, the better a product is at resisting condensation.

Divided Lites – Division of lite by the use of muntin bars

Muntins: The actual bars that create a pattern in the window

Simulated Divided Lites: Muntins permanently adhered to the interior and exterior of the glass

Grilles: Muntins in between the glass panes to create the effect of divided lites

Double Hung – Double Hung windows have two movable sashes which operate vertically

Energy Rating System (ER) - A window's ER rating is a measure of its overall performance, based on three factors: 1) solar heat gains; 2) heat loss through frames, spacer and glass; and 3) air leakage heat loss. All window Energy Ratings (ER) are evaluated in the same way.

Energy Star® Symbol - The international Energy Star® symbol is a simple way for consumers to identify products that are among the most energy-efficient on the market. Only manufacturers and retailers whose products meet the Energy Star® criteria can label their products with this symbol. Choosing an Energy Star® labeled product over a conventional model could save you hundreds of dollars in energy costs.

Canada and the United States have long been involved in the Energy Star® program and utilize a zone default qualification schedule. Qualifications are based on "U-Factors" and "SHGC" (solar heat gain coefficient), or "ER Ratings" in Canada.

Extrusion – Compacting and melting a plastic material and forcing it through an orifice in a continuous fashion

Finger Joint – A series of fingers machined into the ends of two pieces of lumber to be joined together. They are then held firmly in position by adhesive. Finger-jointed wood is very strong and has a lesser chance of warping than a clear piece of wood of the same length does

Fold-Down Handle - Optional fold-down handles offer a sleeker profile, are less obtrusive to your opening and allow window treatments to close better.

Glass Size (GS) – The measurement of the actual glass, not the visible glass

Glazing – Installing glass into windows and doors

Glider/Slider – Horizontal operating units which have one sash fixed, while the other glides open and shut horizontally

Grilles - Contour and Flat grilles add a decorative element to windows and are available in many styles. Choose a standard size or customize to the dramatic shapes of our architectural windows. Available in white, Ivory, Hickory, chestnut brown, Cocoa, Sable, Sandalwood, black, brass and pewter. These grilles offer a perfect accent to any window.

Inactive Panel – Secondary operating door panel

Insulating Glass (IG) – Two panes of glass separated by a spacer and hermetically sealed together with dead air space between panes

Interior Casing – The casing trim used on the interior perimeter of the window or door. Generally supplied by others except in the case of round top casing, which is factory supplied

Jamb Extension – A jamb-like member, usually surfaced on four sides, which increases or extends the depth of the exterior or interior window or door frame; jamb extensions imply a larger depth than vinyl jamb liners

Laminated Glass – Glass composed of two sheets fused together with a sheet of transparent plastic between the sheets. When broken, laminated glass will generally not leave the opening

Laminating – A method of gluing strips of thin clear wood to the lengthwise surfaces of finger-jointed material to provide the appearance of clear stock

Low E Glass – Low E stands for low emissivity. The lower the emissivity, the higher the percentage of long-wave radiation blocked, thereby improving thermal performance. Low E glass is coated with a microscopic, virtually invisible metal or metallic oxide layer. The primary function is to reduce the U-Value by suppressing radiative heat flow. A secondary feature is the blocking of short wave radiation to impede heat gain

LoE 366 (Cardinal) - LoE 366 – Is recommended when cooling costs outweigh heating costs in your energy usage, or where summer discomfort from heat build-up should be an important concern. This is the best glass for most applications in a southern climate. It has a very high reflection rate of the radiant outside heat to prevent heat gain in summer and in winter it still retains radiant once you turn on your furnace! LoE 366 has a lower Solar Heat Gain Coefficient (SHGC) in order to minimize Solar Heat Gain that results in extra work for your air conditioning unit.

EA- Pilkington Energy Advantage– Pilkington Energy Advantage Low-E is the best glass for most applications in a northern climate. It has a very high retention rate of the heat in your home in winter and prevents heat gain in summer. Energy Advantage Glass has a higher Solar Heat Gain Coefficient (SHGC) than Low-E glass designed for southern climates. It provides free winter heat for your home. Since as much as 95% of your energy expense for heating and cooling combined is for heating, this glass is more cost effective than other glass without a high SHGC.

Masonry Opening – A brick, stone or block opening into which a window or door unit is installed, including the outside casing

Mulling – The act of attaching two or more window or door units together. The joint is then finished with a mullion center cap or coupler trim

Mullion – The vertical member of a sash, window or door frame between openings in a multiple opening frame

Multi-Lock Hardware – An adjustable lock system used to ensure a tight seal and provide a secure locking system

Multi-Point Locking System – A line of standard or optional multiple-point locking mechanisms installed on the operative panel(s)/sash of various North Star patio door products to enhance security and performance

Obscure Glass – Glass formed by running molten glass through special rollers. These rollers have a pattern on them causing the glass to become patterned and thus obscure

Operator – An operating sash, panel or unit

OTW-Pilkington Clear (OTW)– Pilkington Clear (OTW) is a low iron extra clear float glass with one of the highest visible transmission in the market. The glass is colorless and does not show the green cast that is produced by other clear glass manufacturers. It is perfect for the northern climate when coupled with EAC. This combination is called North Star polar white and it provides an excellent solar heat gain.

Organic (Chem) – Of, or pertaining to, compounds containing carbon. Inherent in, or pertaining to, the fundamental structure of something

OSM – Outside Measurement

Patina – The natural, ever-changing finish that occurs when copper or bronze is exposed to the elements. A patina can also be created using a solution to start a chemical reaction in the metal

Pitch – A term used to describe the angle of a roof. For example: A 4-12 pitch indicates that the roof rises 4” vertically for each 12” horizontally

Plastics (Chem) – One of a large class of synthetic organic compounds capable of being molded, extruded, cast or drawn into filaments

Plinth Block – A decorative wood block placed between the vertical casing and the top casing of a unit to provide an elegant interior casing profile

Polymer – Compound of high molecular weight formed by the chemical combination of two or more molecules of the same kind

Polyurethane – Any of various polymers that contain NHCOO linkages and are used especially in flexible and rigid foams, elastomers and resins (as for coatings)

Prime – The first coat of paint in an application that consists of two or more coats; also refers to the paint used for such an initial coat; primer

R-Value – The resistance a material has to heat flow. Higher numbers indicate greater insulating capabilities

Radius – The length of an imaginary line from the center point of a circle to the arc or circumference of a circle

Rail – The cross or horizontal member of the framework of a sash, door or other panel assembly

Resin – A powder-like substance that is derived from sodium chloride (raw salt) and natural gas

RF – The percent of visible light reflected from a glazing system

Roto Gear – A term used to describe the steel drive worm, gears and crank device used for opening standard Awnings and Casements

Rough Opening – The opening in the wall where a window or door unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square

Round Top – Generally a semicircular window that is mulled to the top of another window or door, thus forming the round top appearance

Sash – The operating and/or stationary portion of the window unit that is separate from the frame

Sash Lock – A locking device which holds a window shut

Screens – A close-mesh woven screen material used to inhibit entry of insects, yet permit light, air and vision

Screen Pull Tabs - Screen pull tabs are constructed from a durable nylon material and are installed as an integral part of the screen itself, for ease of removal.

Sidelite – A stationary or operating glass panel mulled to or installed next to a door

Sill – The horizontal member forming the bottom of a window or exterior door frame; the lowest member of the frame of a structure, resting on the foundation and supporting the frame

Single Hung – A window very similar to a Double Hung window, except that the top sash is stationary or non-operable

Solar Energy Transmittance – The percentage of the solar spectrum energy (ultraviolet, visible and near infrared) that is directly transmitted through the glass product

Solar Heat Gain Coefficient (SHGC) – The ratio of solar heat gain through a glazing system compared to that of an unobstructed opening

Solvent – A substance, generally a liquid, capable of dissolving other substances

Shading Coefficient – Relative measure of the total amount of solar energy that enters a building space through a glazing system compared to the total amount of solar energy that enters a building through a single 1/8" clear glass pane

Spacer – Used to separate the two pieces of glass in an insulating glass panel

Square Foot – For measuring the area of a unit. R.O. width (in inches) x R.O. height (in inches) divided by 144 equals a unit's area in square feet

Stile – The upright or vertical perimeter piece of a sash, panel or screen

Stool – A horizontal trim member that laps the windowsill above the apron and extends beyond the interior casing

Super Spacer - A highly UV-resistant and, flexible silicone foam designed as the spacer between glass panes in sealed unit production. Units constructed of super spacer satisfy the toughest warm edge demands by:

- resisting condensation
- reducing energy costs
- providing long-life durability
- reducing outside noise distractions

Tempered Glass – Float glass panels heated and then cooled rapidly in a controlled environment. This process makes the glass several times stronger than regular glass. It also makes it safer because when broken, it yields small pebble-like fragments

Template – A pattern of a window unit from which dimensions and measurements can be determined

Thermoplastics – Resins or plastic compounds which, in their final state as finished articles, are capable of being repeatedly softened by an increase of temperature and hardened by a decrease in temperature

Thermoset – A product that will become permanently rigid when heated or cured (a thermosetting resin)

U-Factor – A measure of total heat flow through a window or door barrier from room air to outside air. Lower numbers indicate greater insulating capabilities

% UV Transmittance – The percentage of ultraviolet radiated wavelengths allowed to be transmitted through the glazed product

Visible Light Transmittance (VLT) – The percent of visible light transmitted through a glazing system