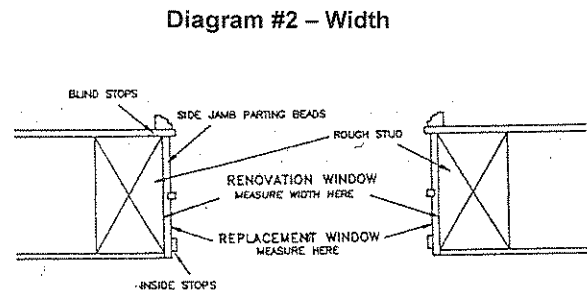
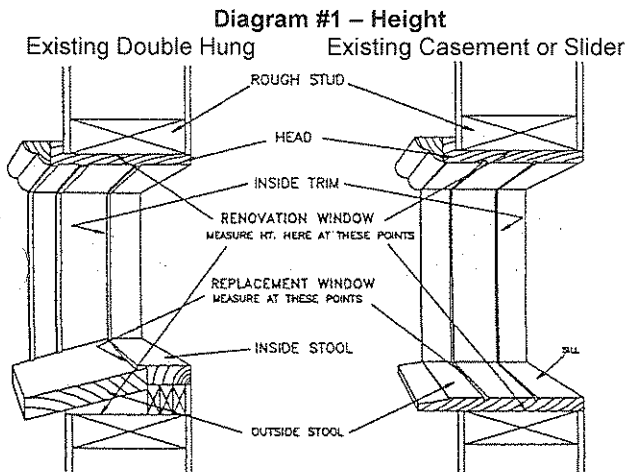


## MEASURE YOUR EXISTING WINDOWS

Before determining the height and width of your existing windows, decide whether you will be installing *replacement* or *renovation / new construction* windows.

### If installing *replacement* windows (within existing frame):

- Width**
- Measure between the jambs at the top, middle and bottom. Take the shortest measurement and deduct  $\frac{1}{2}$ " when ordering (see diagram #2)
- Height**
- When installing *casement* or *slider* windows, measure from head to sill at both sides and in the middle. Take the shortest distance; deduct  $\frac{1}{2}$ ". *Note: this is your "ordering size"*
  - When installing *single* or *double hung* windows, measure from the outside at the stool and window frame head. Take your measurements at both sides and in the middle. Remember to take the shortest measurement, and deduct  $\frac{1}{2}$ " (see Diag. #1)

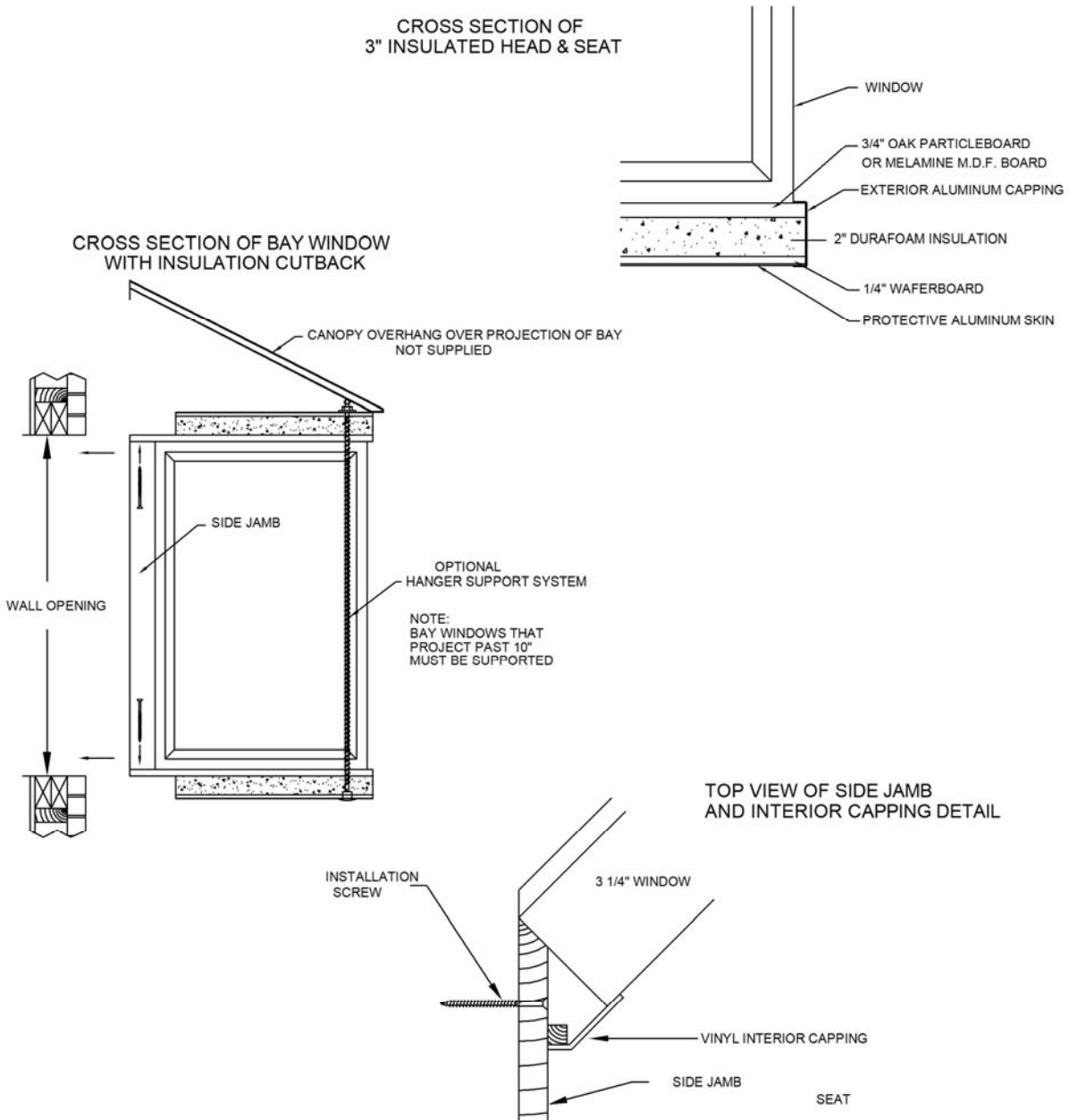


### If installing *renovation* or *new construction* windows (new opening or rough stud opening):

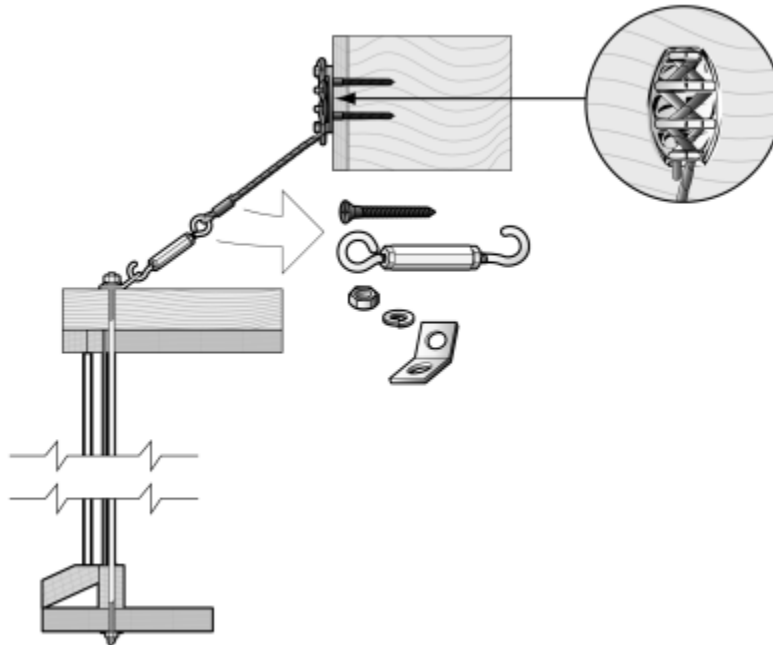
**Important:** Your new window must fit into the masonry opening (between your bricks or siding) as well as into the rough stud opening (between your interior rough studs). Therefore, measurements should be taken from inside and outside your home. For new openings, or where bricks are not a concern, simply measure the rough stud opening.

- Width**
- With the interior casing trim removed, look for the points where your window is anchored and measure at the top, middle and bottom. Take the shortest measurement and deduct  $\frac{3}{4}$ " when ordering (see diagram #2). Remember to measure the exterior masonry opening to ensure it will accommodate the same window size.
- Height**
- With the interior trim casing removed, look for points where your window is anchored and measure at rough stud opening at both both sides and in the middle. Take the shortest measurement and deduct  $\frac{3}{4}$ ". *Note: this is your "ordering height"* (see diagram #1). Do not forget to measure the exterior masonry opening to ensure it will accommodate the same window size.

## BAY WINDOW INSTALLATION DETAILS



## **GRIP-TITE™ CABLE SUPPORT SYSTEM FOR PROJECTION WINDOWS**



The *Grip-Tite™* Cable Support System features *The Gripper®* cleat which 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 still occurs.

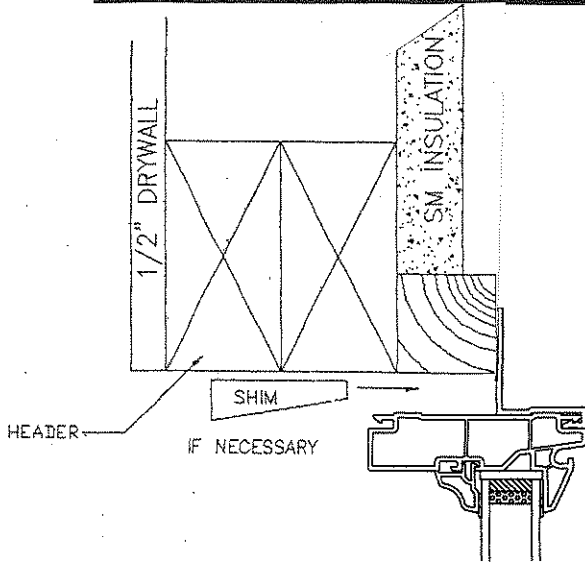
With *The Gripper®*, the cable is taut at final installation and remains that way. With the use of a *Grip-Tite™* cable support system, all sagging problems are virtually eliminated!

- Cable support kits feature 1/8” galvanized steel aircraft cable, and assemblies are certified tested to have a minimum break strength of 1700 pounds.
- While the main reason for using a *Grip-Tite™* cable support kit is to eliminate any potential sagging problem, the simple truth is that it’s easy to install!

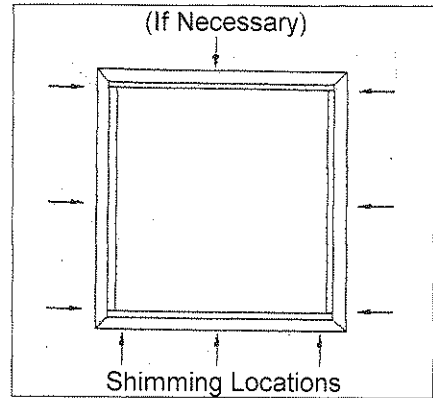
**Caution:** Always use additional means of supporting the window during installation of *Grip-Tite™* Support Systems.

## NEW CONSTRUCTION – INSTALLATION “TIP”

### Installation Using Nail Flange

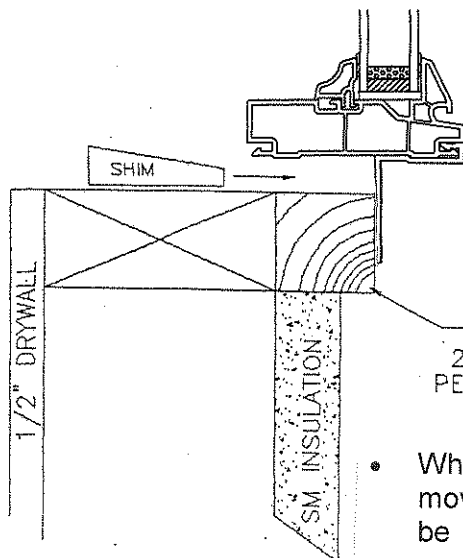


R.S.O. should be 1" bigger overall ... 1/2" per side, top and bottom



If using S.M. insulation on exterior wall, it is recommended that an exterior frame be installed in order to fasten window (see diagram).

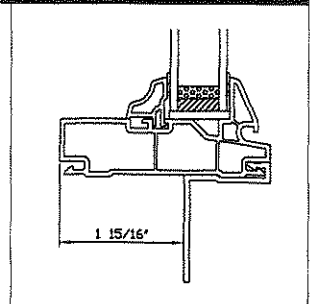
This way, the window does not rest on the S.M. insulation, and can be shimmed properly.



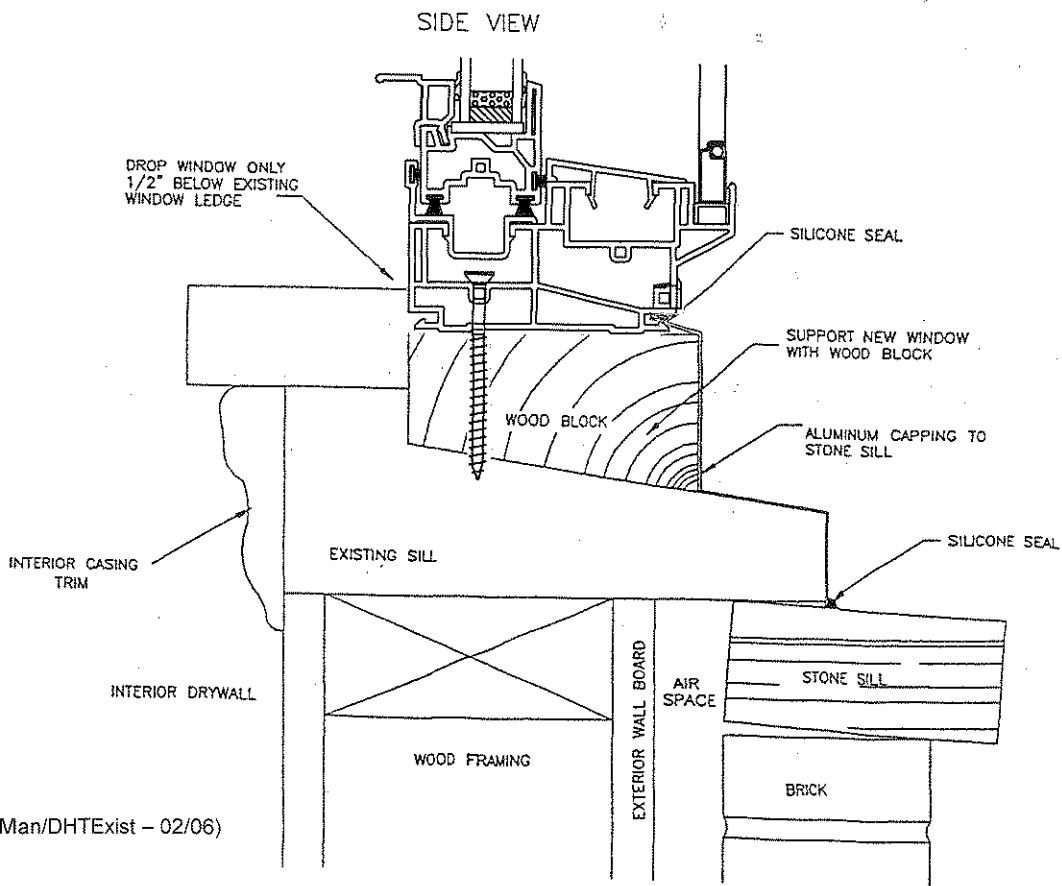
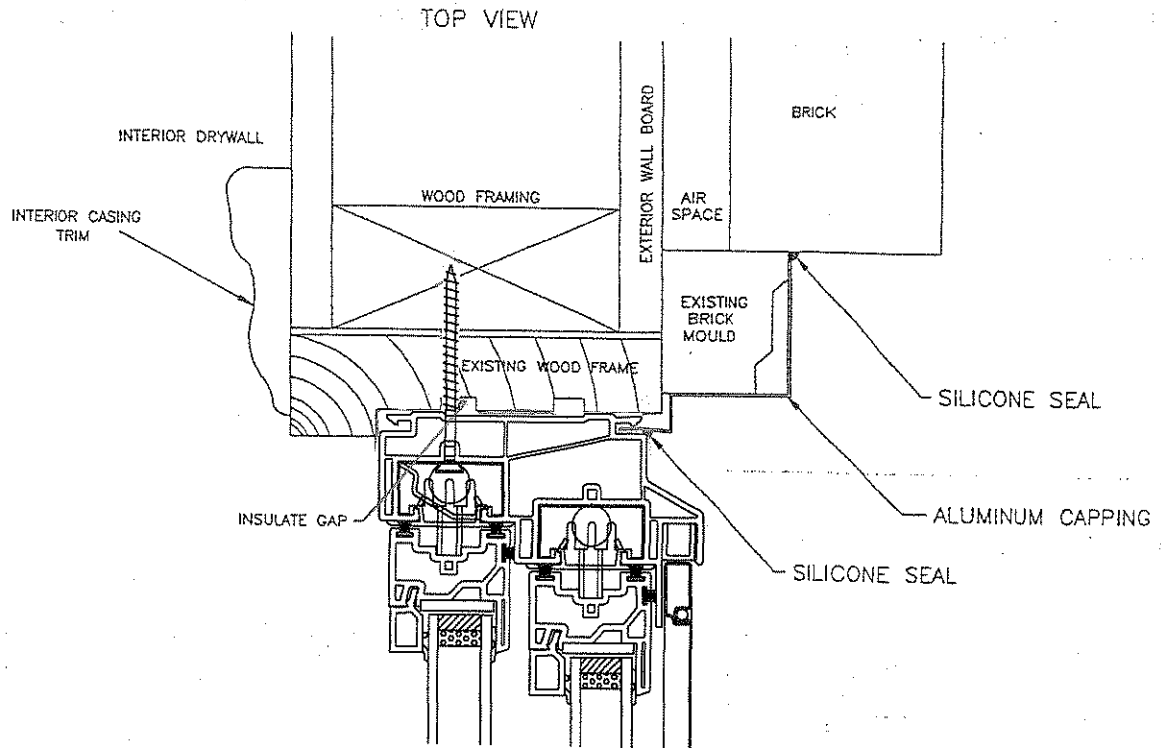
INSTALL 2"X2" FRAME AROUND PERIMETER OF OPENING

### Cross Section of Window with Nail Fin

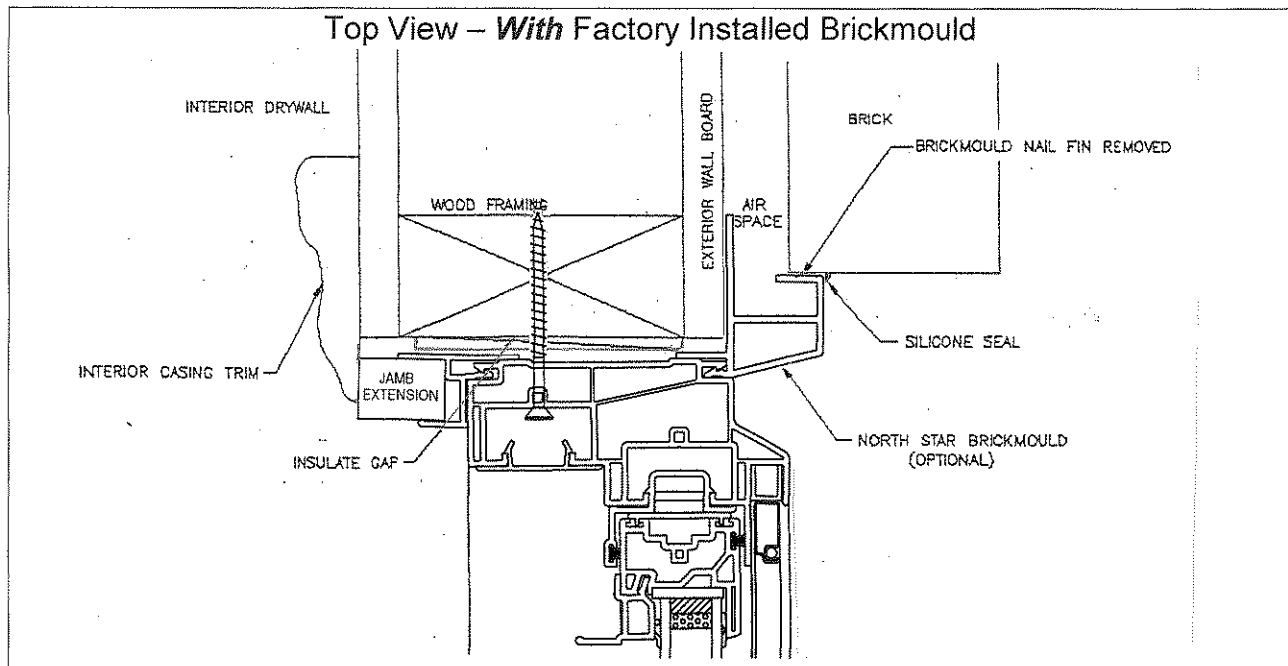
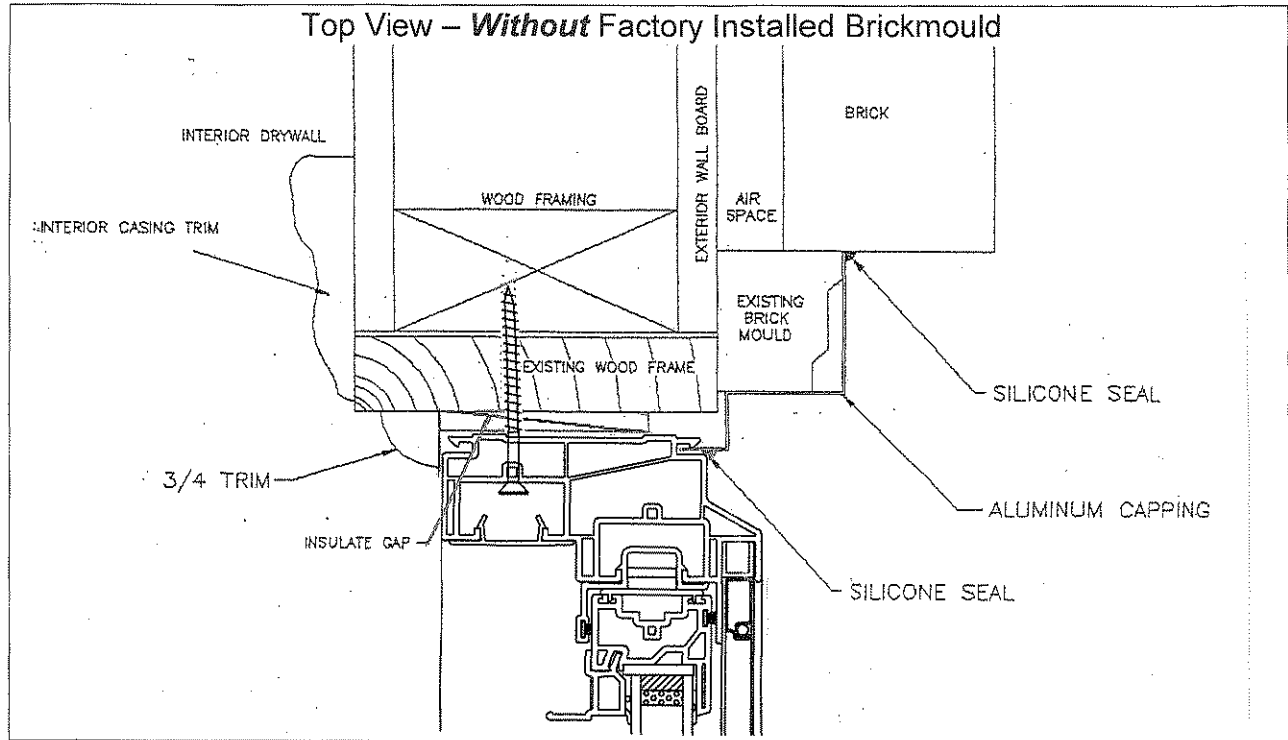
- When using nail flange, the window is moved to the outside. Provisions must be made when installing to ensure proper installation.
- When laying masonry frame up to exterior frame, do not force window. A caulking clearance of 3/8" must be left to allow for expansion and contraction in wood frame construction



## INSTALLATION OF DOUBLE HUNG WINDOW INTO AN EXISTING DOUBLE HUNG WOOD FRAME WITH OLD FRAME LEFT IN



## INSTALLATION OF SLIDER WINDOW INTO AN EXISTING SASHLESS SLIDER WOOD FRAME WITH OLD FRAME LEFT IN



Installation of slider window with wood frame removed

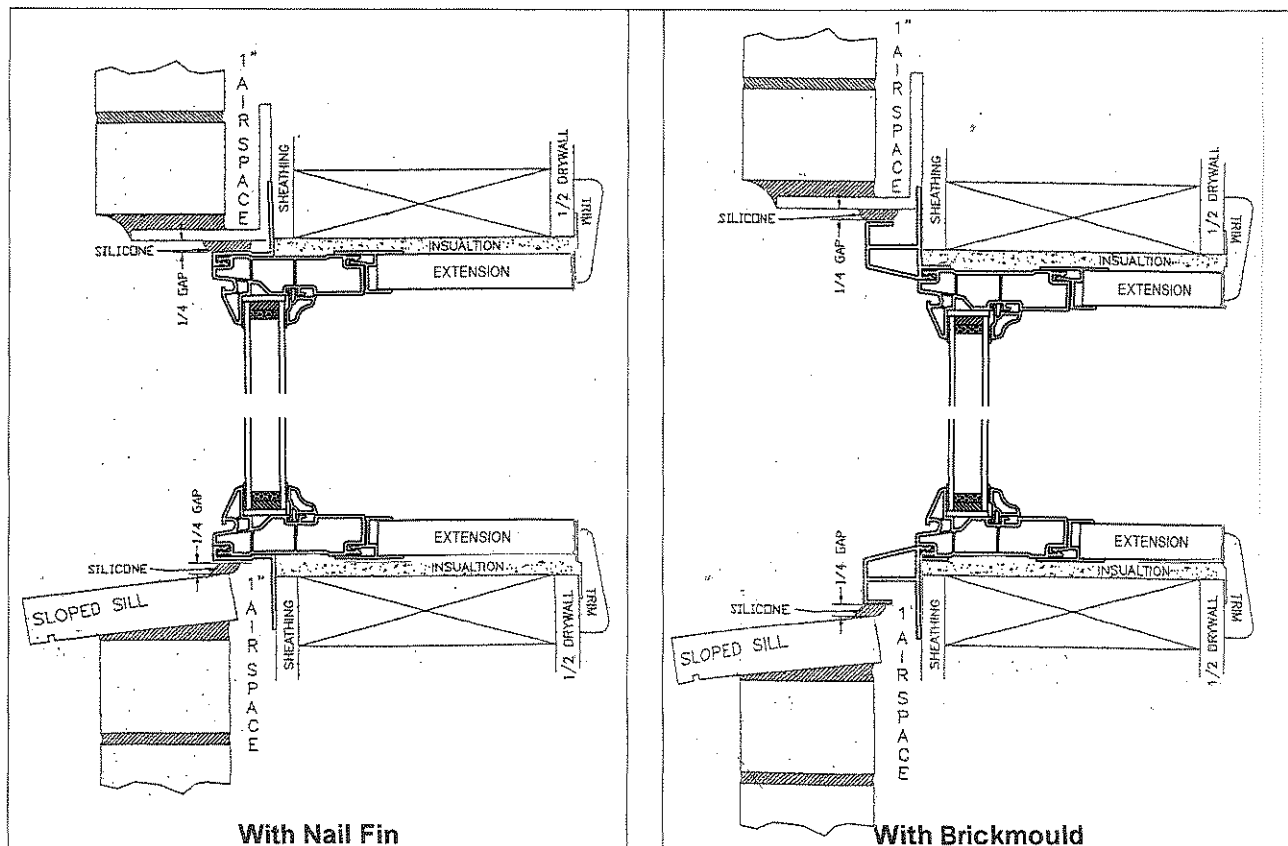
## WINDOW INSTALLATION in MASONRY APPLICATIONS

A job well done is a job that you need not return to. Allowances must be made for settling in of wood framing materials for both new construction and renovation applications. Many factors such as climate changes and the drying process for new lumber will cause framing materials to expand and contract. If you plan on finishing the exterior in brick, here is a tip that will save you some aggravation in the future.

Inform the bricklayer that he should leave a 1/4" gap between the window and the masonry opening. This gap will allow the wood structure to expand and contract without binding the window in the masonry opening. It is this binding that could cause many adverse effects such as:

- Sashes binding in frames
- Distortion of frames
- Possibility of frames or glass cracking under stress

When mortar has cured, proceed to seal the gap between the window and the brick with a flexible sealant such as silicone.



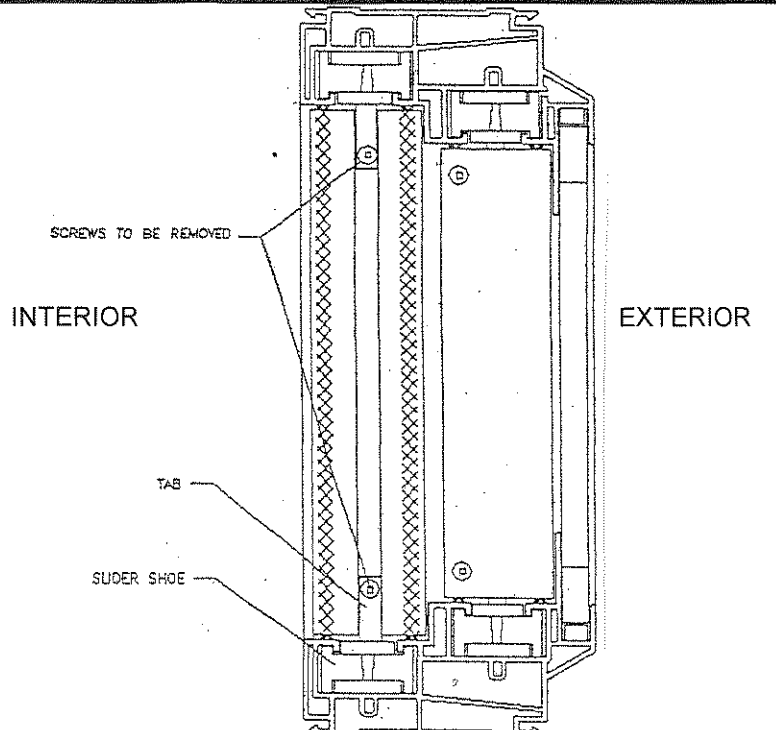
## SASH REMOVAL ON A SLIDER TILT WINDOW

Tools required: Flat screw driver for prying #1 Robertson screwdriver Hammer

### Cross Section Side View of Slider Tilt

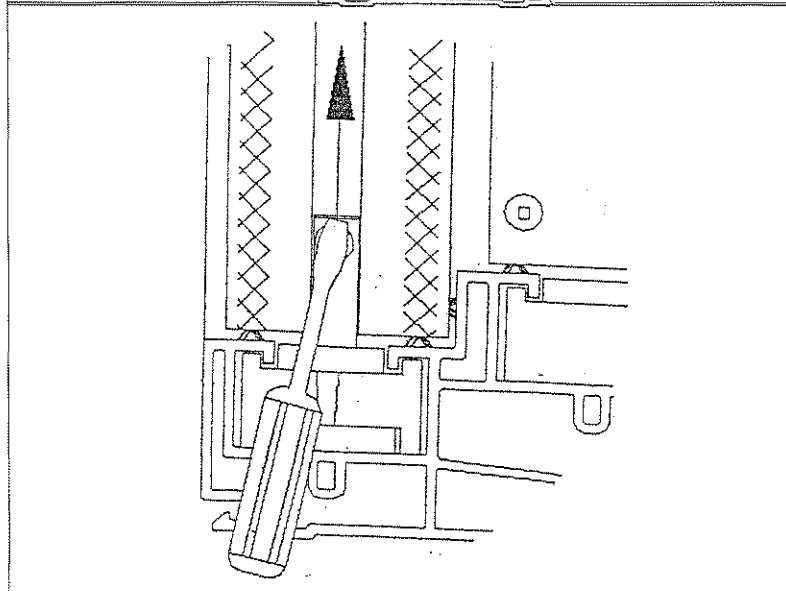
#### Step #1

- Slide interior sash open to expose the back of the sash
- With #1 Robertson screwdriver, remove screws as shown



#### Step #2

- Place flat screwdriver on the lip of the tab, and with a hammer, force the pin **upward**
- On the top pin, repeat this procedure, only applying force **downward**
- The tabs are pressed into the slider shoe, so it may be difficult to pop them out.

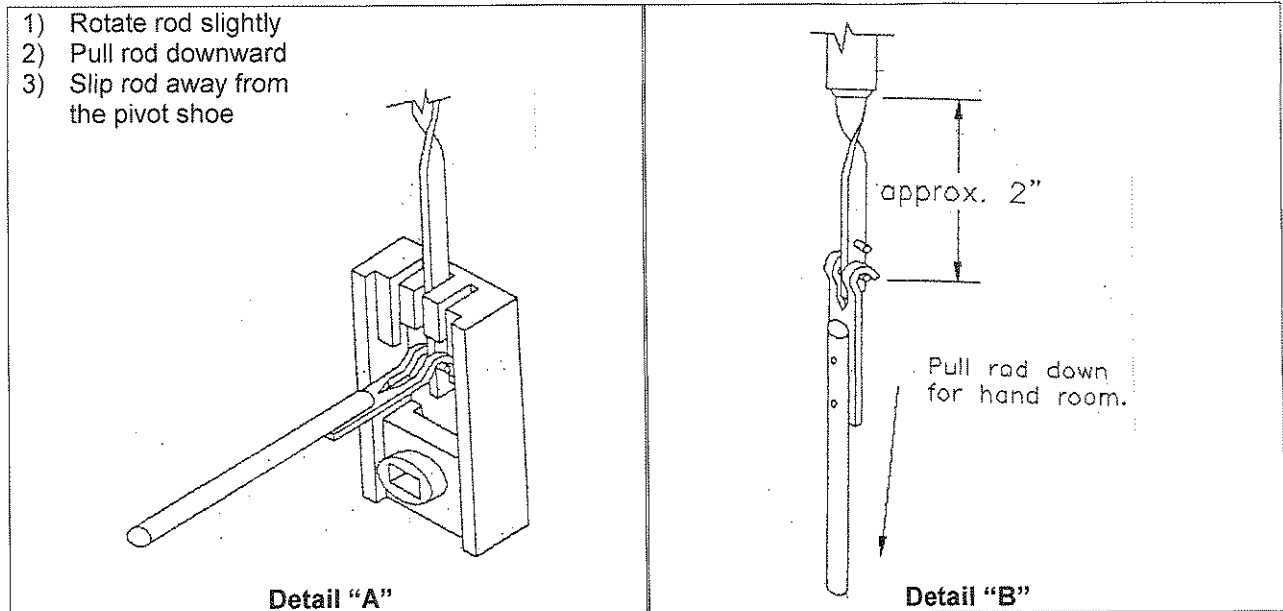


#### Step #3

- Open tilt latches and tilt sash inward as if you were to clean sash, then rock sash gently and remove



## BALANCE ROD ADJUSTMENT PROCEDURE



If your windows require adjustment for some reason, such as the sash is dropping, or hopping up from the sill, or if the spiral rod is disengaged, a simple adjustment will remedy the problem.

Tilt sash downward to expose balance tilt shoe. Follow "Detail A" to disengage balance rod from tilt shoe. Be careful not to allow rod to "spin off" or disconnect from tensioning rod.

If a sash is dropping, adjust tension by rotating balance rod against the tension. Apply tension to both sides equally. Do not exceed more than two full turns at a time. Reconnect rod to tilt shoe. Reposition sash and check operation. If additional tension is required, repeat the process until sash holds in any position.

If a sash is hopping, less tension is required. Release tension equally on both sides by allowing the balance adjuster to rotate with the tension for one or two full turns. Reconnect rod to tilt shoe. Reposition sash and check operation. If additional tension is required, repeat the process if necessary.

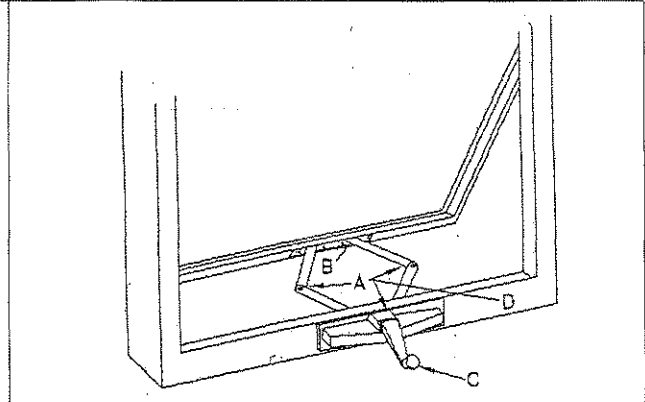
If the rod is disconnected from the pivot shoe, then follow "Detail B" for position of balance rod before connecting balance adjuster to the balance rod. Apply tension to both sides equally, not exceeding four full turns at a time.

**IMPORTANT:** Before tilting lower sash, make certain that the sash is raised at least 3" above the sill.

## EASY TIPS TO KEEP YOUR WINDOWS OPERATING SMOOTHLY

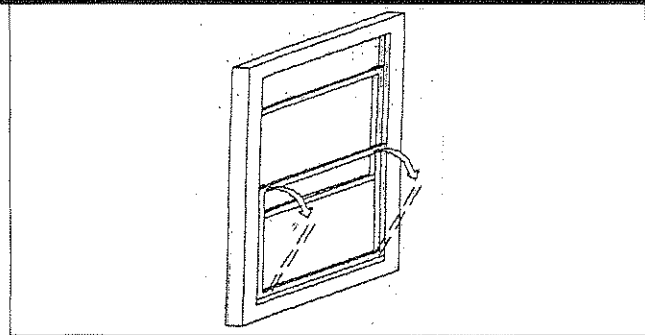
Your **AWNING** window may require occasional lubrication:

- A. *Scissor linkage*: Oil or silicone spray
- B. *Pivot points*: Oil or silicone spray
- C. *Handle*: Oil or silicone spray
- D. *Gears*: Grease



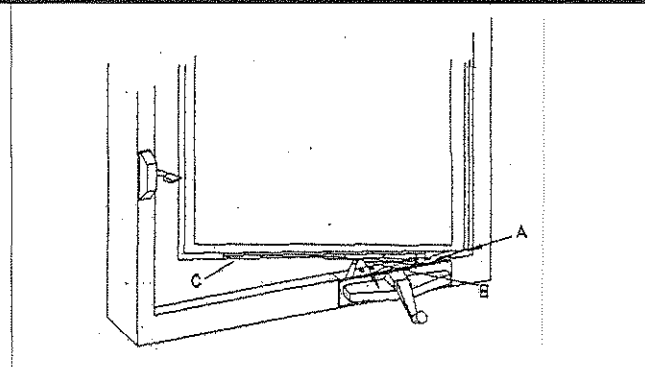
**SINGLE** and / or **DOUBLE HUNG** windows:

- A. To clean, raise window sash up
- B. Apply pressure on tilt latch at top of sash
- C. Tilt sash inward



Your **CASEMENT** window may require occasional lubrication:

- A. *Exterior hinge*: Oil or silicone spray
- B. *Rotor Gear for Handle*: grease
- C. *Glide Bar*: Oil or silicone spray

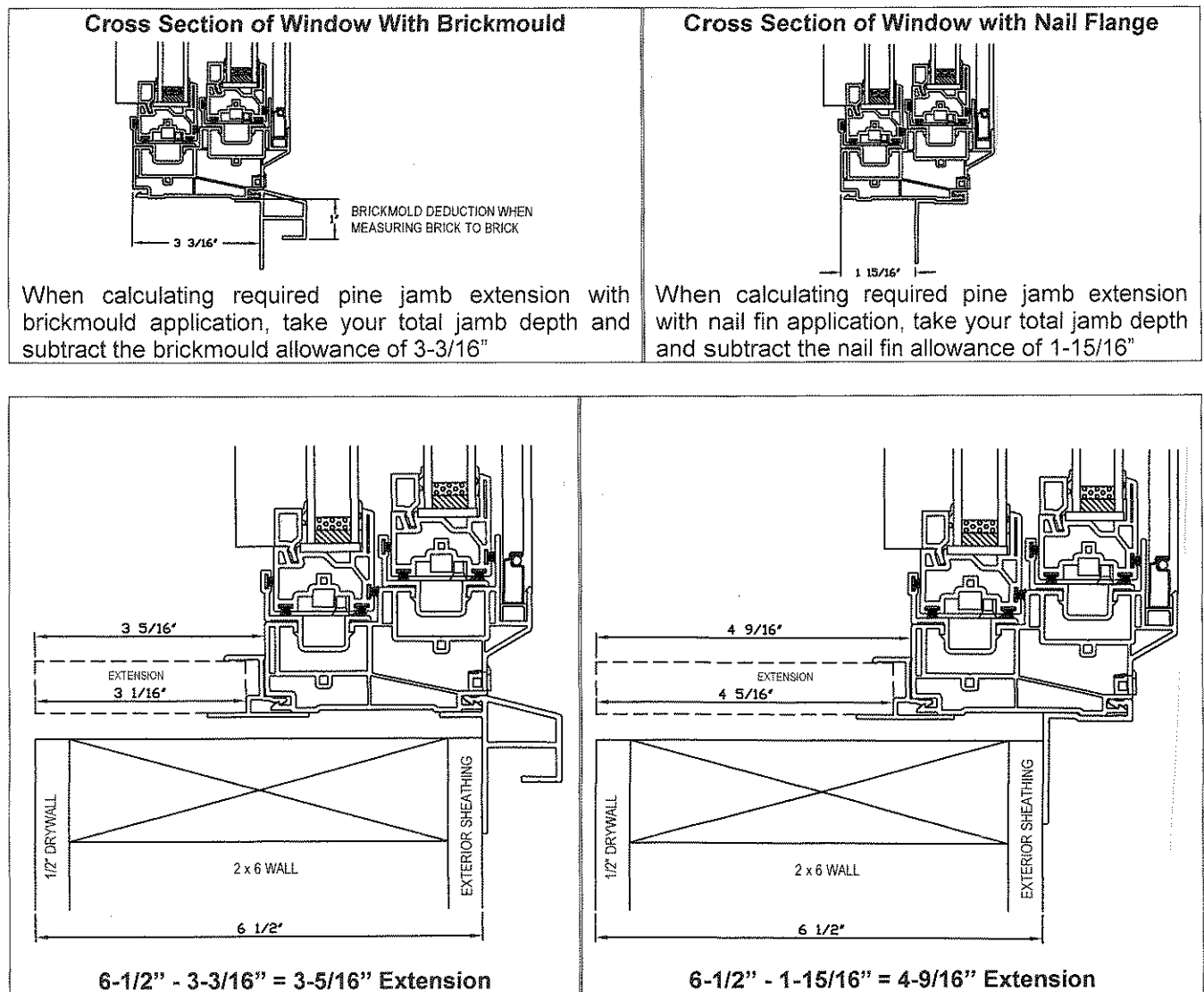


**IMPORTANT:** Do not leave uninstalled windows stacked against each other in direct sunlight, nor apply poly over the exterior of the window unit once installed. The heat build up causes the vinyl to distort, and voids the warranty.

## CALCULATIONS

### When Brickmould, Nailfin and Pine Jamb Extension is Applicable

When ordering windows, North Star requires outside tip-to-tip dimensions of the window. In some cases, the brick-to-brick measurement is used. When this applies, take your narrowest brick-to-brick size on the width and height, and subtract 2" (1" per side), off your measurement. To get the tip-to-tip window ordering size, subtract an additional 3/8" off width and height for expansion and contraction tolerances.



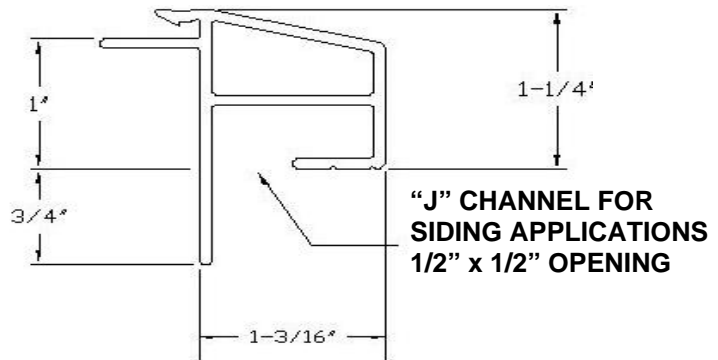
## BRICKMOLD

### \*STANDARD BRICKMOLD

(Profile #180)

DEDUCT 1"\*\*\*  
PER SIDE WHEN  
CALCULATING  
FRAME SIZE

\*NOTE SIZE CHANGE

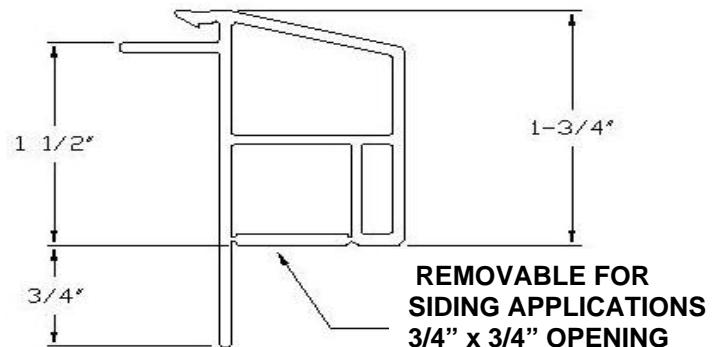


### \*ARCHITECTURAL BRICKMOLD

(Profile #181)

DEDUCT 1-1/2"\*\*\*  
PER SIDE WHEN  
CALCULATING  
FRAME SIZE

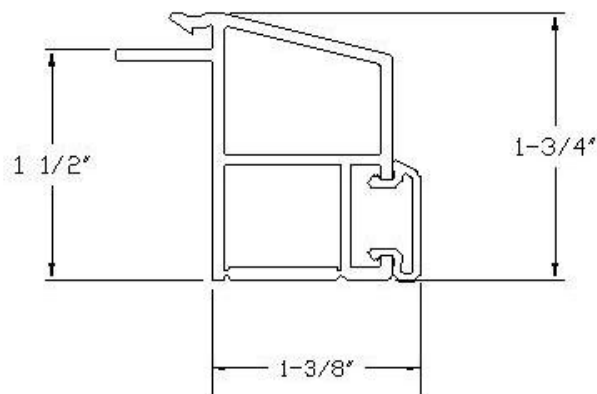
\*NOTE SIZE CHANGE



### \*NEW\* ARCHITECTURAL BRICKMOLD CAP

(Profile #186)

DEDUCT 1-1/2"\*\*\*  
PER SIDE WHEN  
CALCULATING  
FRAME SIZE



1071 Picture (No Sash)  
1072 Picture (with Sash)  
1171 Casement  
1173 Awning

# Glazing Instructions

The Best  
Just Got  
Better!



Figure 1

**First things first!**  
Before installing the sealed unit into the frame, make sure the glass setting blocks are firmly in place. Every corner will have two setting blocks, each three inches from the corner (See Figure 1).

A third setting block should be located on each dimension, with an additional block added at one foot increments on dimensions over three feet.

Using suction cups, place the bottom of the sealed unit into the bottom of the window frame. Be careful that the sealed unit is inserted fully to the exterior of the frame, and that it is sitting squarely on the glass setting blocks.

Before installing the glass stop into the frame, remove the release paper from the foam tape on the glass stop. Next, keeping the glass securely in the frame, insert the first piece of glass stop into the corner. It's best to install the top piece of glass stop first, it will hold the glass in place.

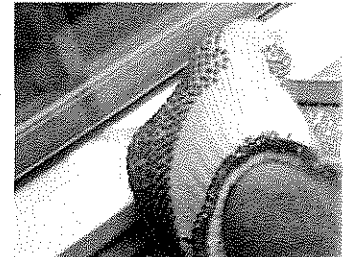
With the glass stop inserted in the corner, give a firm inward twist, this will help the glass stop seat into the glazing groove.



Using a nylon hammer, firmly strike the glass stop into place. Do NOT use a rubber mallet or metal hammer. When striking the glass stop keep the hammer flat against the glass as shown here.



Once the glass is secure in the frame, apply a six inch heel bead of silicone at the centre point on each side jamb. The silicone should contact both the edge of the glass and the frame. These beads, located on the side jambs, are important in order to maintain the structural integrity of the window.



Further silicone is required at various points of the window. This is critical for the prevention of water leakage. See the other side of this page for details on model specific applications.

Finally, install the bottom piece of glass stop. Once installed, continue with the vertical stops. Insert each end of the glass stop into a corner (See Figure 5). The flexible nature of the



Figure 5

glass stop will allow you to secure both corners before snapping the glass stop into place. To complete the installation, firmly strike the glass stop into place. Once again, make sure you use a nylon hammer, keeping the hammer flat against the glass.

*North Star strongly recommends the use of safety glasses and protective gloves when working with glass*

The Best Just Got Better!

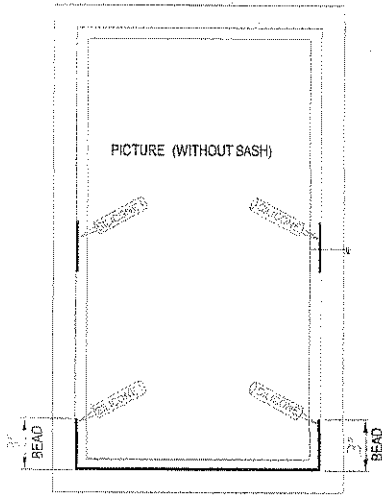


For more details visit [www.northstarwindows.com](http://www.northstarwindows.com)

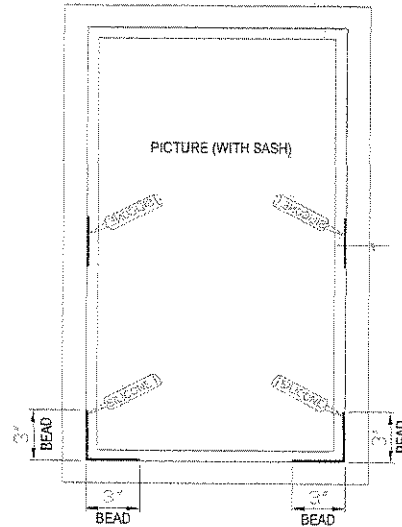
The Best  
Just Got  
Better!

- 1071 Picture (No Sash)
- 1072 Picture (with Sash)
- 1171 Casement
- 1173 Awning

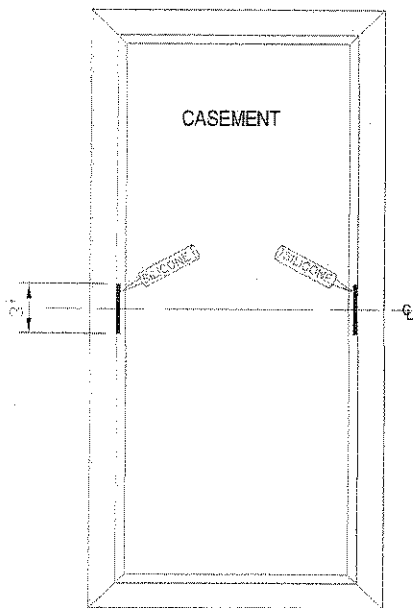
# Silicone Detail



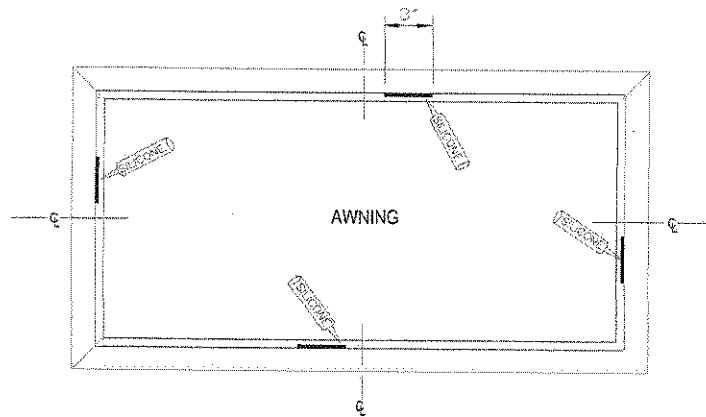
1071 Picture (No Sash)



1072 Picture (with Sash)



1171 Casement



1173 Awning

Get the right tools for the job!  
Suction cups and nylon hammers  
are available directly from North Star!

The Best Just Got Better!

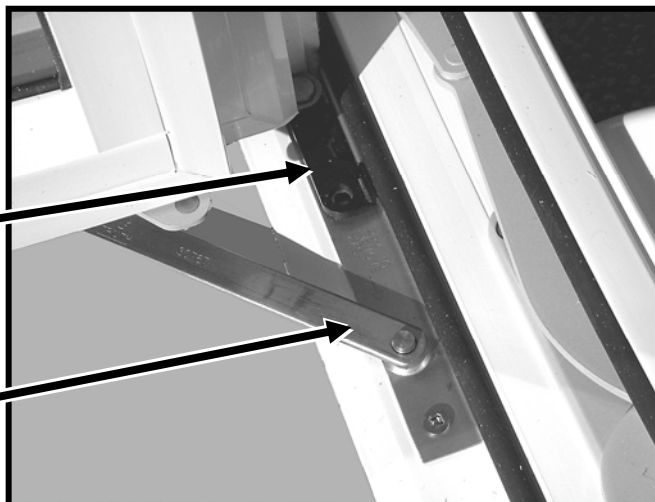


For more details visit [www.northstarwindows.com](http://www.northstarwindows.com)

## CASEMENT SASH INSTALLATION

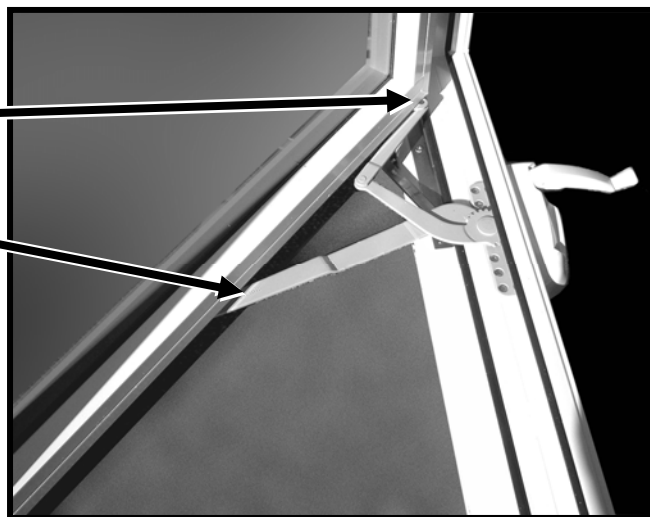
### 1. Connecting the hinge:

- Remove screen from casement unit
- Unwrap sash
- Slide bottom hinge nylon glide shoe into bottom hinge track
- Slide top hinge nylon glide shoe into top hinge track
- Snap sash support arm into frame track snap stud, bottom and top



### 2. Connecting the roto operator:

- Crank open operator
- Snap roto linkage arm into sash operator bracket stud
- If unit has dual arm operator, connect operator arm into the plastic slide shoe which is in sash track



### 3. To check sash fit and function, crank unit closed and engage locks.

- Install screen

## SINGLE AND DOUBLE HUNG SASH REMOVAL/INSTALLATION

### Sash Removal:

Unlock the sash by turning the sash lock lever counter-clockwise. After raising the bottom sash, (AA figure 1) remove the fillister head #5 screws from each of the tilt balance knobs. (DO NOT remove the pan head screws which fasten the pivot bar to the sash.)

Tilt latches are located at the top corners of the sash. Slide latch buttons inward toward each other. Pull top of sash toward you and the sash will swing into the tilt position ("BB" in figure 1). With the sash in the tilt position allow one side to rise until the sash pin (located in the bottom corner of the sash) releases from the balance shoe, ("C" in figure 2). Slightly swing sash to remove ("D" in figure 2).

**Note:** The top sash is not removable on Single Hung window units. To tilt Double Hung top sash, lower the sash and repeat procedures for tilting the bottom sash.

### Sash Installation:

Identify the top or bottom sash for reinstallation. The lock is on the bottom sash. If the unit has been shipped with the sash removed, begin by removing the fillister head screws located in each tilt balance shoe knob.

On Double Hung windows, the top sash must be installed first in the outside track followed by the bottom sash in the inside track.

Hold the sash, exterior side up. Insert one metal pivot pin on one corner of the sash, into the pivot shoe knob in the side jamb.

Carefully slide engaged pivot pin and balance shoe downward or upward, until metal pivot pin on the opposite side can be aligned and inserted into the pivot shoe.

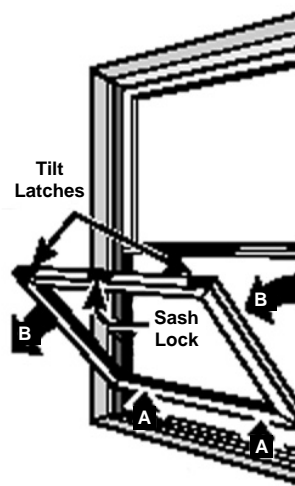
Level the sash and swing it up into the track. Be sure that both tilt latches engage the frame.

**IMPORTANT: Reinstall #5 fillister head screws into each tilt shoe knob to ensure the sash does not fall out.**

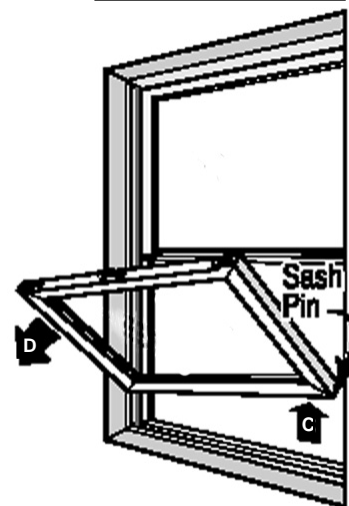
Test sash operation.

Lock unit by turning sash lock lever clockwise.

**FIGURE 1**



**FIGURE 2**







40684 Talbot Line, St. Thomas, Ont., N5P 3T2  
Phone: (519) 637-7899  
Toll Free: (800) 265-5701  
Fax: (519) 637-3403  
Website: [www.northstarwindows.com](http://www.northstarwindows.com)

## BOW AND BAY INSTALLATION INSTRUCTIONS

Before you begin, remember that all bays and bows require a support system to ensure unit integrity and to validate the North Star warranty. Prepare the site to accept the North Star hanger system, or custom built support structure.

Before installing the unit into the rough opening, apply a bead of sealant where the seat board meets the frame.

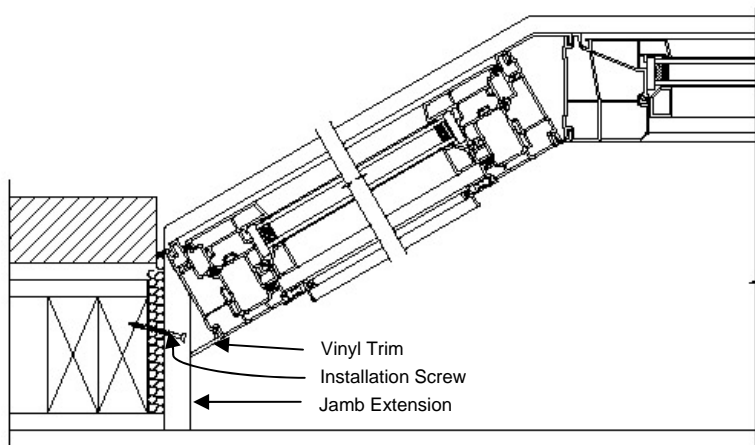
Set the window into the opening. Check to make sure the unit is square, jambs are straight and plumb, and the sill is level.

To secure the unit, begin fastening the window through the window jamb extension, using screws which are the appropriate length. Depending on the window projection, these screws can be hidden behind the interior vertical vinyl trim, as shown in figure 1.

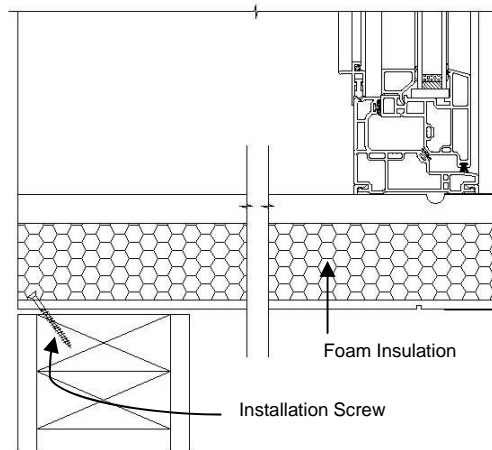
Typically, installation screws should be located no more than 16" apart. The window should also be shimmed at each screw location to prevent any distortion of the window frame.

If the unit is supplied with insulated head and seat option, angle the screws through the foam insulation in head and seat as shown in figure 2. This method of fastening ensures that fasteners are hidden behind casing.

If the unit is supplied with a non-insulated head and seat board, the location and number of fasteners will require careful planning for a neat appearance on the final job.



(Figure 1)



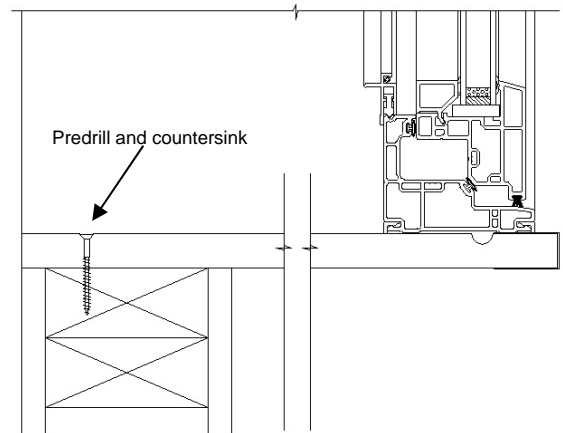
(Figure 2)

Holes should be predrilled and fasteners countersunk. (Figure 3)

Holes in oak finishes should be filled with wood putty. Screws in white melamine finishes should be capped with vinyl caps provided.

Make sure that the windows operate correctly. Ensure all locks and sashes fit and function properly.

On the exterior, insert foam backer rod around the unit perimeter and apply generous amounts of caulking to provide a weather tight seal. Trim and cap exterior to suit application.

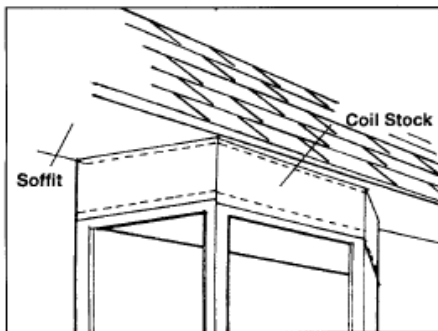


(Figure 3)

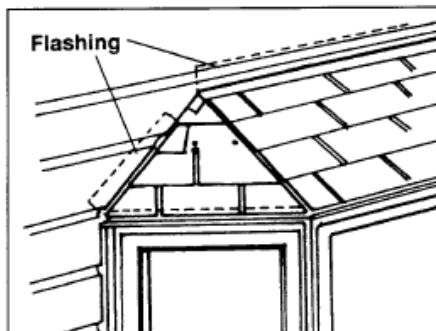
After all exterior work is complete, fill gaps between the window frame and framing members on the interior with fiberglass insulation, or low expansion-type foam. Trim the interior to suit the application.

Bow and bay windows are not intended to be installed with the head board directly exposed to the elements. If located in a protected area all that is required above the window is trim fashioned from coil stock, or siding to suit the desired appearance. (Figure 4)

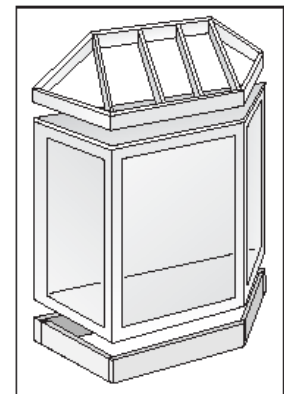
If the top of the window unit is exposed to the elements, a roof or exterior aluminum cap must be fitted to provide weather protection. (Figure 5)



(Figure 4)



(Figure 5)



(Figure 6)

If the underside of the bay or bow seat is not insulated, framing should be done to enclose and properly insulate with fiberglass or insulating foam board. (Figure 6)

Keep in mind that North Star has incorporated drainage into the seat boards and these drain holes must not be covered and further drainage provisions must be provided.

### Cable Supports for Bay and Bow Windows

Bay and bow windows are available with an optional cable support system. See separate instruction sheet for the installation and adjustment of the cable support system.

---

*Details shown are not intended to reflect complete installation procedures, but do reflect basic installation concepts. Specific applications may require additional considerations for anchoring, flashing, and sealing the unit. It is ultimately the responsibility of the installer to ensure the integrity of the installation.*

## INSTALLATION INSTRUCTIONS FOR NEW CONSTRUCTION

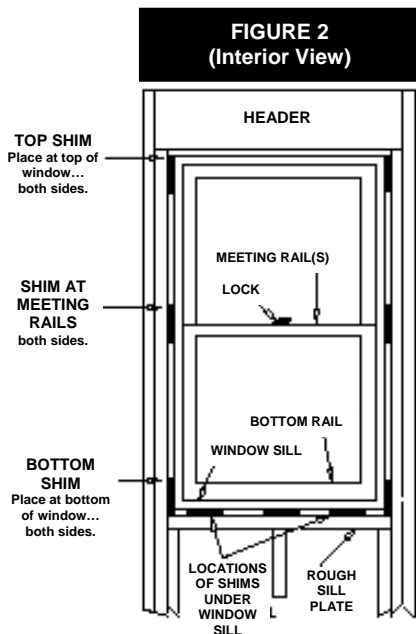
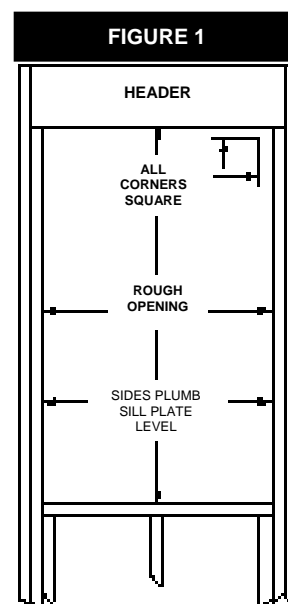
Before you begin, please read these instructions completely. Remember, a properly installed unit will provide superior weather protection and trouble free service.

When installing for new construction, the rough opening should be  $\frac{1}{4}$ " to  $\frac{1}{2}$ " larger than the window unit perimeter. Ensure the sill plate is level. (Figure 1)

Close and lock the sash to aid in keeping the window square during installation.

Apply a continuous  $\frac{3}{8}$ " bead of sealant around the interior perimeter of the nailing fin or the brickmold before setting the unit in place, or seal the fin with waterproof tape after the unit is installed.

The window sill must be supported in a straight and level position at a minimum of three points, where both jambs meet the sill plate, and in the middle. Windows greater than 30" should be supported every 12". Multiple windows should have a shim under each mullion. Ensure a minimum gap of  $\frac{1}{4}$ " between the sill plate and the window frame to allow for fluctuations in building materials and the window unit. (Figure 2)



From the exterior, set the window on the sill shims and adjust the side clearance to be equal on both sides. Using galvanized steel roofing nails which are long enough to penetrate the framing by at least 1", tack one upper corner to the nail fin to keep the window in place.

Make sure the window is centered, plumb, level, square and true in the opening, then nail the bottom opposite corner at the sill.

The unit requires shims in both side members at the top, middle, and bottom. Units over 60" in height require 2 additional shims, per side, equally spaced between existing shims. (Figure 2)

The measurement across the top, the middle, and the bottom should be the same. The wool pile (weatherstrip) clearance between the sash and frame will be even. Units which have meeting rails will be aligned evenly, and the cam latches should lock smoothly.

Nail the entire perimeter using every other slotted hole in the nailing fin/brickmold (approx. 12" centers) to the sheathing. Multiple units must be nailed directly under and 6" either side of each mullion.

Nail the fin snug, but not tight, similar to installing siding. Nails should be just tight enough to hold the window, but not stop movement of the frame work beneath during expansion and contraction.

Operating window units should have additional fasteners installed through window frames into framing members, as shown in the North Star renovation installation sheets specific to the window type.

Use self-adhesive flexible flashing, (ice and water shield tape) a minimum of 4" wide, with a self-adhering surface on one side, approved for use on vinyl, wood, and other substances such as house wrap.

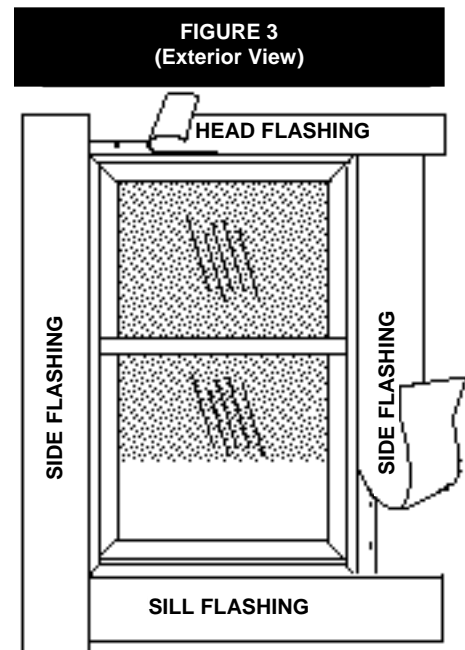
Apply sill flashing over the sill fin, extending at least 2" beyond each side jamb fins. Next, apply jamb flashing over the jamb fin, continuing at least 2" over and beyond the sill flashing. Apply head flashing, extending 2" past the jamb flashing. (Figure 3)

Leave a ¼" gap around the entire perimeter of the window frame when brick, stone, and stucco finishes are used on the exterior, to allow for fluctuation and expansion of materials and mortar.

Insert foam backer rod around the entire perimeter and apply generous amounts of caulking to provide a weather tight seal. Make certain that the drainage weeps on the outside of the window are open to allow water to drain from the sill.

On the interior, fill gaps between the window frame and framing members with fiberglass insulation, or low expansion type foam. Trim the interior to suit the application.

Check to ensure unit operates properly.



**IMPORTANT:** North Star Vinyl Windows and Doors will assume no responsibility for the consequences of inadequate or improper installation or lack of care of the installed product.