Chapter 16 - Siding

Contents

Things to Consider

- **The siding J-Blocks should have been installed during the Rough-in Mechanical phase.**
- **The cornice returns should have been wrapped with aluminum during the Roof Framing phase.**
- **Plans for upper level access should have been documented in the Fall Protection plan developed in the Pre-Construction meeting.**
- **The siding is installed with 2 ½" siding nails through the Styrofoam insulation; ½" OSB; and then into the framing.**
- **Locate the framing using the cap nails used to install the Styrofoam insulation.**
- **The siding will be installed parallel to the top and bottom plates in the wall.**

Safety Issues

- **Plan for upper level access in the "Fall Protection Plan".**
- **Installing siding while standing on porch or lower roofs requires the use of fall protection gear.**
- **Inspect ladders, pump jacks and fall protection gear daily before use.**

Timing & Prerequisites

- This phase of the project cannot begin until the exterior insulation, windows and doors are installed, and the porches have been poured.
- If any section of siding will be installed above a porch or lower roof, that section cannot be installed until the shingles have been installed.
- The House/Project Lead will work with the Construction Superintendent to co-ordinate these volunteer activities.

Recommended Order of Operations

The following is a recommend sequence of operations, although these could change depending on volunteers and other building demands.

- Setup and organization
- Pump Jacks (if they will be used)
- F-Channel & Soffits on the eaves
- Cornice Return Covers
- F-Channel & Soffits on the gables
- Aluminum Fascia
- Corner Posts
- J-Channel & Finish Trim
- Starter Strips
- Siding

Materials Needed

Eaves & Rakes	***Siding***
Perforated Soffit	**Double Lap Siding**
6" Wide Aluminum Fascia	**Starter Strip**
10" Wide Aluminum Fascia	**J-channel (siding color)**
White Aluminum Coil Stock	**F-channel (white)**
White Aluminum Nails	**Utility Trim (siding color)**
2 ½" Decking Screws	**Outside Siding Corners (white)**
	Inside Siding Corners (white or siding color)
	Siding Nails (2 ½")
	1 ¼" Roofing Nails
	Z-Flashing
	Aluminum coil stock for Diverter Flashing

Phase Specific Tools Needed

Description:	**Quantity:**
Siding	
○ Tin Snips (1 per crew)	
○ Snap Lock Punch (1 per crew)	
○ Nail Slot Punch (1 per crew)	
○ Unlocking Tool (1 per crew)	
○ Trim Nail Set (1 per crew)	
○ 6" Hand Seam Brake (1 per site)	
○ Hack Saw (1 per site)	
○ Combination Square (1 per site)	
○ Guillotine Siding/Flooring Cutter (1 per site)	

Introduction Videos

The following link is to 9 videos from the Vinyl Siding Institute. These videos should be reviewed prior to starting the siding project.
Getting Started Video

Organize Materials

Critical Issues
➢ **The various pieces of trim should be separated and inventoried. Trim should be kept off the floor and out of traffic areas. These pieces are easily damaged.**

1. Verify you have all materials needed.
2. Build temporary racks in the storage container or basement to hold materials. (See Temporary Shelving in the Overview chapter).
3. Place all aluminum and trim pieces on the racks to protect them from damage. These materials can be easily dented and / or damaged.
4. Stack soffit boxes separately from the siding boxes for easier access.
5. During cold weather, if the siding is not kept in a warm storage area, bring the siding into a warm area ½ hour before cutting it.

Vinyl Siding Parts

Vinyl siding includes several parts.

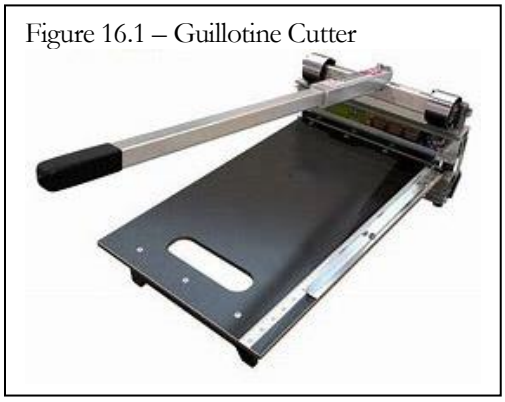
- Starter Strip – Installed horizontally along the bottom of the siding; in areas where there are no roofs or decks below. These pieces of trim lock in the bottom of the first row of siding.
- Corner Posts – Installed where two (2) walls of siding join vertically. This trim covers the ends of the siding rows.
- Utility Trim / Finish Trim / P-Channel – Installed horizontally below the soffit F-Channel and below the windows. These pieces of trim lock in the top edges of the siding.
- J-Channel – Installed around doors and windows; along the bottom edges of siding walls above roofs; along the bottom of siding walls over porch decks; and under the gable truss rakes. This trim covers the various edges of the siding.
- F-Channel – Installed under the roof rakes and porch roofs to hold the edges of the soffit panels.
- Perforated Soffit – Installed under eaves; rakes; and porch roofs.
- Shakes – Installed at the top of a gable when the prints call for them.
- Fascia – White Aluminum wrapped over the sub-fascia and cornice returns.

Cutting Siding/Soffit

Critical Issues
➢ **Vinyl must be warm when it is cut or it will shatter.**

- Straight cut pieces of siding should be cut using a guillotine siding/flooring cutter. This cutter has been designed for cutting flooring but works very well on siding. (See Figure 16.1)
- Diagonal cut pieces of siding for fitting under eaves or over roofs can be cut with either snips or with a diagonal siding jig. These tables can be site built.
- Straight cut pieces of soffit can be cut with the guillotine cutter although the soffit panels are slightly wider than the guillotine cutter. If the guillotine cutter is used, the nail fin will need to be cut with a snip.

Figure 16.1 – Guillotine Cutter



- For diagonal cuts, either cut the pieces with snips or build a siding jig.

1. Build a siding Jig. (See Figure 16.2 & 16.3).
    a. Cut a table top from ¾" OSB. The table will sit on top of saw horses and hold the jig. It should be approximately 4' x 2'.
    b. Cut siding fences; two (2) 2x4s – 36". The fences will hold the siding and are installed on the table top with 9 1/2" between them. The area between the fences needs to be large enough to fit siding (9 3/8").
    c. Cut two (2) pieces of ½" OSB to support the saw above the siding. Install the Saw Support perpendicular to the Siding Fences with about 3" between the supports.
    d. Cut two (2) pieces of 1x4 for the Saw Fences. The fences will hold the saw perpendicular to the siding. Install the Saw Fences on the Saw Supports with the distance between them equal to the width of the saw plate. Space the fences so the saw blade cuts a line mid way between the saw fences. Use a square to position the saw fences perpendicular to the siding fences. Proper installation of these fences is critical to ensure square cuts.

e. Cut a 9 1/2" wide piece of ½" OSB for the sacrifice spacer and slide it under the saw fences between the siding fences. This holds the piece of siding off the table so the saw blade does not cut the table.

f. Set-up saw horses with the jig spanning the horses.

g. Set the saw depth to 1"; place it between the Saw Fences; then cut through the Siding Fences. This will be the Cut Line for the siding.

2. Install a fine-tooth blade with the teeth reversed into a circular saw. Mark this saw "*siding only*".

Figure 16.2 – Straight Cut Siding Jig

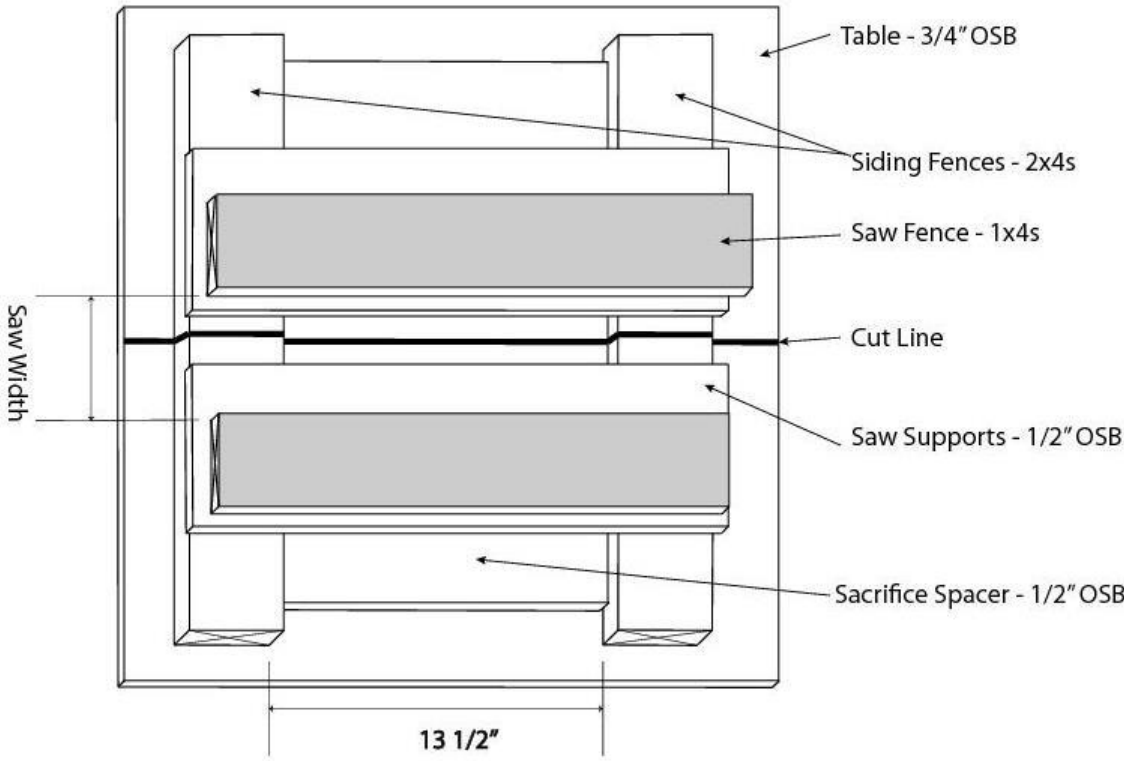
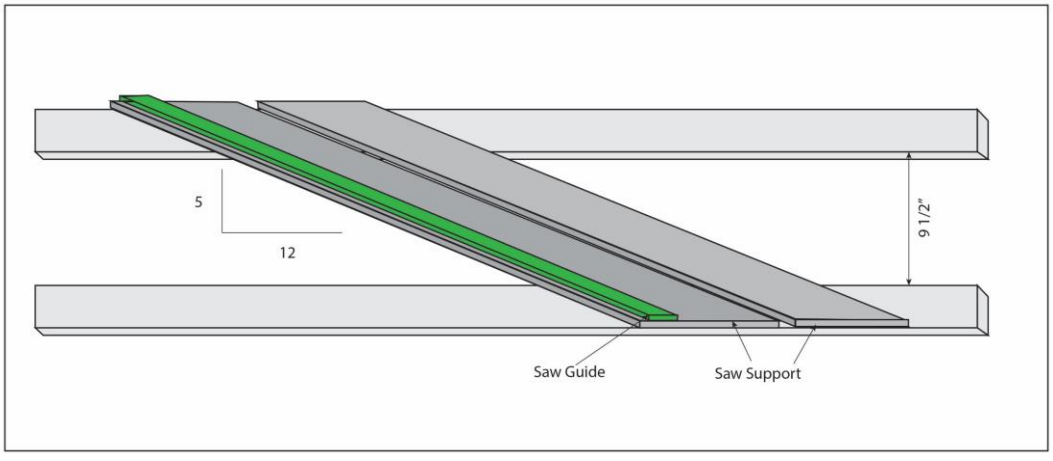


Figure 16.3 – Diagonal Cut Siding Jig



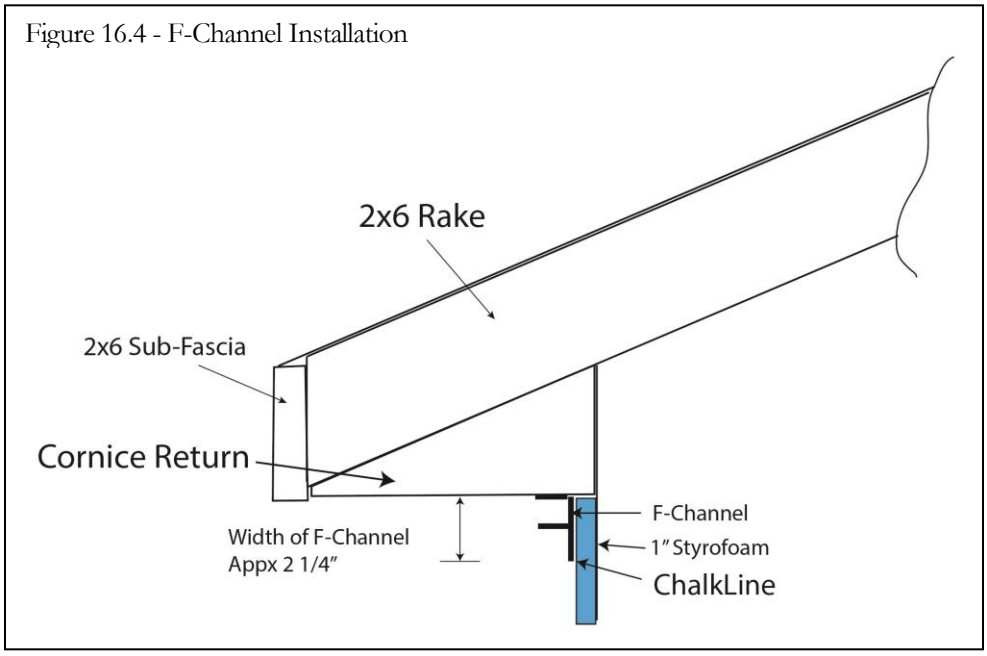
Soffits & Fascia

Critical Issues
➢ **Installation of some soffits and fascia panels will need to be delayed until the siding is complete to allow access to the fall protection straps.**
Safety Issues
➢ **Ladders must be positioned securely and tied in as necessary. Outriggers should be used if a flat surface is not available.** ➢ **Do not lean out away from the ladder. Keep your belt buckle inside the ladder.** ➢ **For gable end work above porch and lower roofs, harnesses and gable end anchors must be used until the last anchor has to be cut and covered up.**

F-Channel

- F-channel will be installed horizontally under the eaves of the main roof and porch roof; under the eaves of the rake on the house's main roof; and within the perimeter of the porch beams / walls.

Figure 16.4 - F-Channel Installation



Install F-channel under Eaves

- Measure down from the bottom edge of both the front and back cornice returns the width of the F-channel and make a mark. Snap a chalk line

between the two points on the Styrofoam insulation. Hold the line tight to ensure the line is straight. (See figure 16.4).

- Install strips of F-channel with the nail fin pointed down and with the bottom edge flush to the chalk line. The F-channel runs from one end of the house to the other and is cut flush to the Styrofoam insulation at each end.
- Attach the F-channel. Use 2 ½" siding nails through the nail fin every 10" along the strip.
- If more than one strip of F-channel is required to span the house, leave a ¼" gap between the nail fins.

Install F-Channel within the Perimeter of the Porch Ceiling

- 2x4 nailers will be added below the trusses to hold the soffit panels; therefore, the F-channel must be held down from the bottom of the trusses by 1 ½".

1. On the beams and walls below the porch trusses, measure down from the bottom of the trusses 2 ¼" and snap chalk lines. (1 ½" spacer + ¾" soffit).
2. Install F-channel with the nail fin up and the bottom of the channel even with the chalk lines. For F-channel on the house, install the channel using 2 ½" siding nails through the Styrofoam insulation and into the framing below, at 10" intervals. For F-channel on the beam, install the channel using 1 ½" siding nails into the 2x6 top plate.
3. If more than one strip of F-channel is required, leave ¼" between the pieces for expansion.
4. At the corners, cut the strips ¼" shorter and miter the ends to a 45°.

Install F-channel under Gable Rakes

1. Using a framing square, make marks on the Styrofoam insulation even with the bottom of the sub-fascia at the bottom and top of the gable. Snap a chalk line between the marks.
2. Measure down perpendicular to the line the width of the F-channel and make a second set of marks. Snap another chalk line with the new marks.
3. Install strips of F channel with the nail fin pointed down and with the bottom edge flush to the bottom chalk line.
4. The F-channel will run from the side of the cornice return cover to the peak. Cut the bottom edge of the bottom piece at an angle to fit even with the side of the cornice return. At the ridge, plumb cut the top edge of the top piece.
5. Attach the F-channel using 2 ½" siding nails through the nail fin every 10" along the strip.
6. If more than 1 strip of F-channel is required; leave ¼" between the nail fins for expansion.

Soffits

Critical Issues

- **Do not install the soffits until the porch framing and fire-rated wall assemblies have been inspected.**

Figure 16.5 – Soffit panels

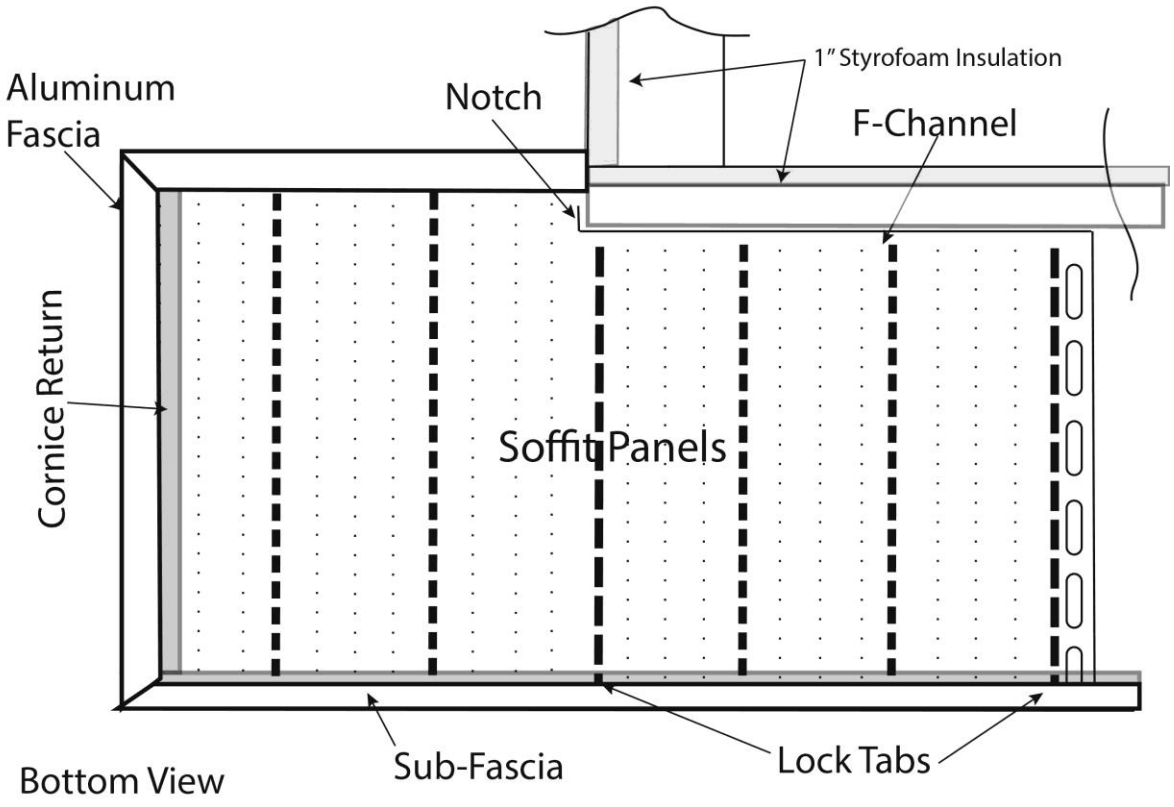
- 12” perforated soffit panels will be installed under the eaves of the main roof and porch roofs; under the rakes on the house’s main roof; and within the perimeter of the porch beams / walls. The panels are installed with the nail flange perpendicular to the house.
- The inside edge of the soffits will fit into the F-channel installed above and the outside edge will be nailed to the sub-fascia. White aluminum fascia will be added later to cover the outside edge.
- The nails should be installed so nail heads will be covered by the aluminum fascia and will not be visible.
- For eaves covered with DensGlass, ensure the DensGlass does not extend below the sub-fascia. The soffits must fit snuggly to the bottom of the sub-fascia.

Install Soffit Panels under Eaves

1. Cut soffit panels to fit between the back of the F-channel and the front of the sub-fascia board. Cut the panel ½” short to allow for expansion.
2. The length will not be consistent over the entire length of the eave. Cut 2 or 3 panels and then re-measure.
3. The soffit panels will cover from the front of the front cornice return to the back of the back cornice return.

4. The soffit panels which cover the area from the cornice returns to the house must be cut to cover the entire area. They will need to be cut with a notch to fit. (See Figure 16.6).
5. Position the first panel on the bottom of the cornice return with the nail fin opposite the cornice return. Attach the panel to the bottom edge of the cornice return with a couple of white aluminum nails. Attach the nail fin to the sub-fascia with a single white aluminum nail.
6. Slide the remaining panels into the F-channel; locking them into the previous panel's lock tab.
7. Nail the panels in place with white aluminum nails through the nail flange into the sub-fascia board.
8. Nails into the sub-fascia board should be nailed in tightly so any expansion is toward the F-channel.
9. The panel at the end will need to be cut for length and width.
10. For gable ends, install the soffit panels starting at the bottom on each side and continue to the top. The gap at the top will be covered with a piece of white aluminum. (See Figure 16.6).

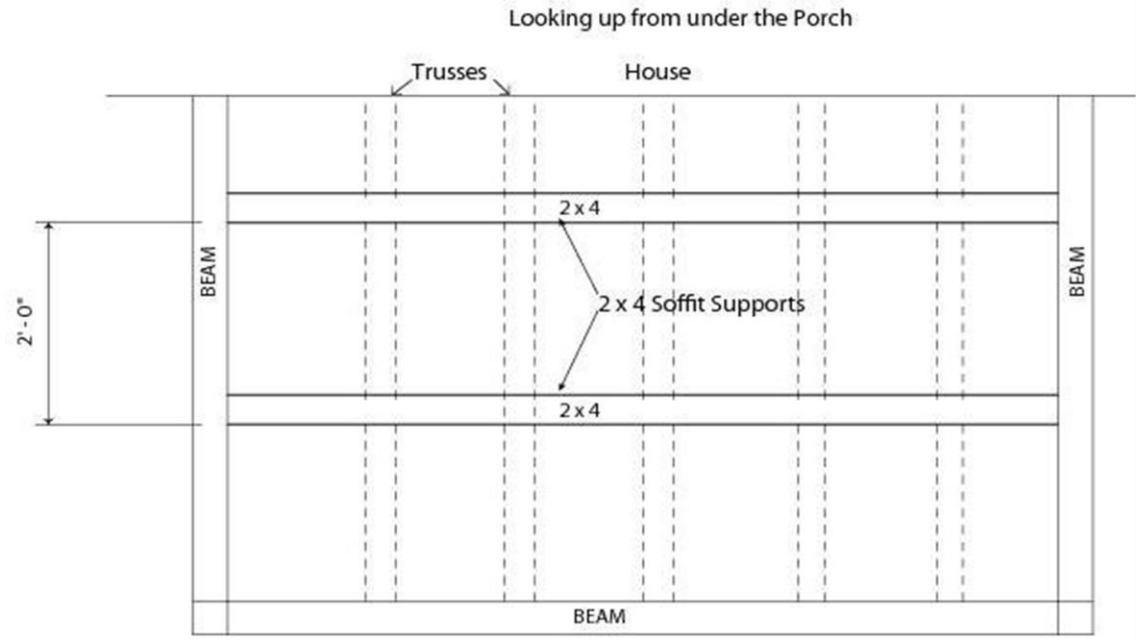
Figure 16.6 – Soffit under Cornice Returns (Bottom View)



Install soffit panels under the Porch Roof

1. Install 2x4 nailing strips to the bottom of the porch roof trusses. (See Figure 16.7).
2. For porches with trusses which run perpendicular to the house, install the nailing strips across the bottom of the trusses using 2 ½" wood screws, 1 through the nailer into each truss above.
3. For porches with the trusses running parallel to the house, install the nailing strips along the bottoms of the trusses using 16d sinkers; 1 nail every 16".
1. Cut the soffit panels to fit within the F-channels. Cut the panels ½" shorter to allow for expansion.
2. Insert the soffit panels into the F-channels by slightly flexing them in the middle.
3. Nail the soffit panels into the nailing strips using 1" roofing nails; 1 per intersection.
4. Lock the panels together using the previous panel's lock tab.

Figure 16.7 – Nailer for Soffit Panels



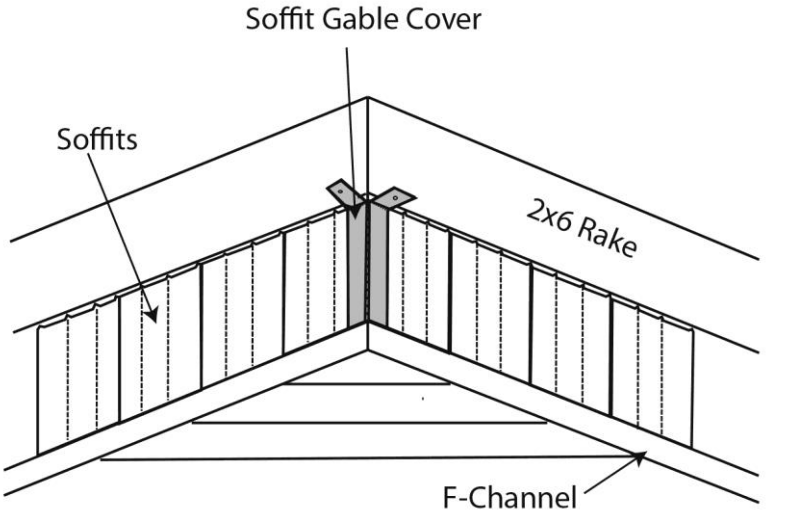
Gable Soffit Joint Cover

Cover the area where the soffit panels meet at the top of the rake by fabricating the soffit joint cover. (See figure 16.8)

1. Cut a piece of white aluminum 3" wide by 15" long.
2. Fold the aluminum in half lengthwise.
3. Cut the fold at one end to create flaps.

4. Insert the not-cut end into the F-channel between the soffit panels and the F-channel.
5. Fold the flaps over the front of the sub-fascia holding the soffit tight to the sub-fascia.
6. Nail the cover in place with 1” roofing nails; 1 nail through each flap.

Figure 16.8 – Soffit Joint Cover at the peak



Aluminum Fascia

Critical Issues
➢ **Extreme care must be taken not to bend the panels. Two sets of hands should always be used.**
➢ **The white aluminum nails used to install the fascia bend very easily. Care must be taken to drive them straight and not to dent the fascia.**
Safety Issues
➢ **The edges are very sharp. Gloves should always be worn.**

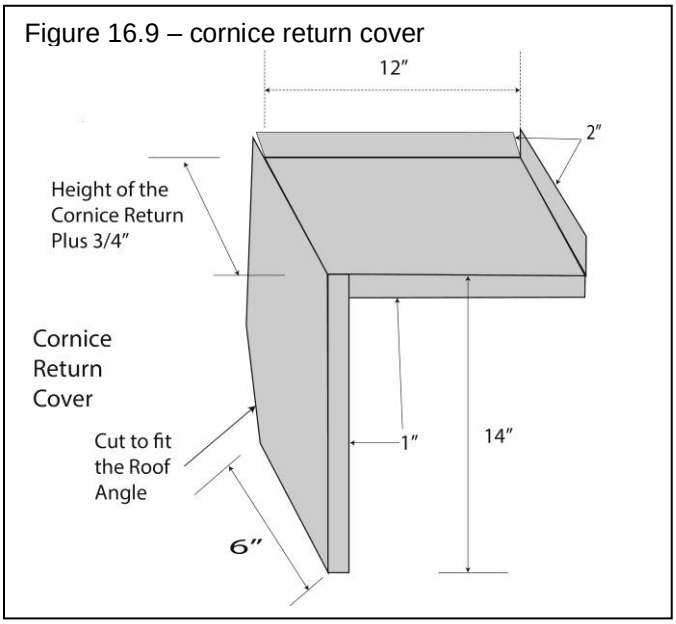
Wrap Cornice Returns with Aluminum

- Cut and bend a piece of white aluminum coil stock to cover the front and side of the cornice return. (See Figure 16.9).
- The cornice returns may have been covered before the trusses were set. (See “Wrap Cornice Returns with Aluminum” in the Roof Framing chapter).

1. Cut a piece of white aluminum coil stock for each cornice return cover. Calculate the size as:
   a. The length is approximately 28”. (14” for the front + 12” back to the house + 2” return on the house)

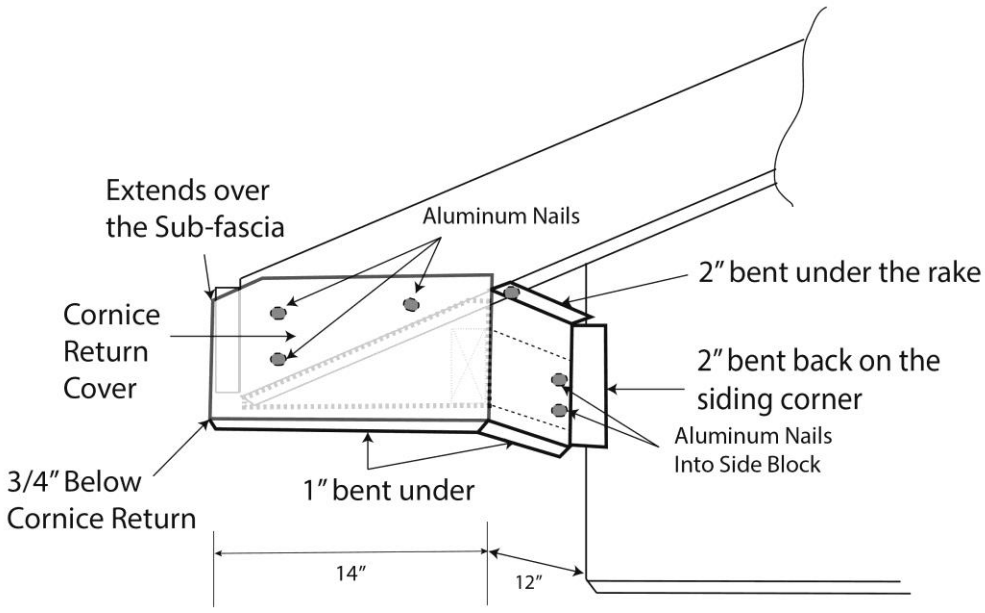
   b. The height should be equal to height of the cornice return + 1” bend on the soffit + 2” bend on the rake board.
2. Bend a 1” lip along the bottom edge.
3. Identify which half of the material will cover the front of the cornice return and which half will fit over the side of the return. Make a cut in the 1” lip which runs along the bottom at 14” from the front edge outside edge.
4. Lay the metal over a sharp edge at the 14” mark and bend it 90 degrees. A metal break will make a sharper bend.
5. Cut the top 2” of the 90 degree bend and bend the top 2” of the side at a slight angle to fit under the rake.
6. Make a mark 6” up from the bottom of the outside edge of the front. Draw a line from the mark at the roof angle. Remove the part above the line. This will allow the cover to fit under the roof.
7. Bend a 2” lip up the end which fits against the house. Bent it out. Remove the 1” bottom bend and the top 2” of the bend.

Figure 16.9 – cornice return cover



8. Nail the cornice return cover in place with white aluminum nails; 1 through the part under the rake into the bottom edge of the 2x6 rake; 3 in the face into the 2x6 rake; and 2 through the back edge of the side into the 2x4 back brace. Ensure the bottom of the cornice return cover is spaced ¾” below the bottom of the cornice return to allow for the soffit which will be installed later.

Figure 16.10 – Cornice Return Cover



Cover Horizontal Sub-Fascia with Aluminum

1. Use 6” wide aluminum fascia to cover the sub-fascia wrapping 1” around the ends. Tuck the 1” bend under the aluminum cornice return cover, then nail the cornice return cover to the sub-fascia with 2 white aluminum nails.
2. Bend the first and last piece to fit over the end of the sub-fascia by 1”
    - Using tin snips, cut off the first 1” of the bottom lip of the L-shaped aluminum.
    - Using a hand brake, bend the first inch of the panel into a 90° angle back away from the front.
3. Predrill a 1/16” hold in the bottom edge of the fascia every 2’.
4. Position the aluminum fascia on the sub-fascia and push it up under the drip edge and under the cornice return cover.
5. Bring the lip up against the soffit. Use light pressure. The bottom edge of the panel must stay straight to keep it from rippling.
6. Secure the fascia using white aluminum nails through each hole. Do not nail the fascia type to prevent rippling.

Cover Gable Ends Sub-Fascia with Aluminum

1. Use 6” wide aluminum to cover the sub-fascia boards.
2. Begin at the lowest point and work up; overlapping the pieces from bottom up to prevent water from running under the panels.
3. Using tin snips, cut the bottom end of the first piece at an angle to allow it to sit flush with the vertical edge of the cornice return.

4. Mark the bottom edge of the fascia at the point where it will intersect the inside edge of the cornice return cover. Snip the bottom edge at that point. Remove the ½" seam from the portion of the bottom edge which fits over the cornice return. Bend over the remaining ½" of the bottom edge to form a new seam fitting over the cornice return.
5. Predrill a 1/16" hold in the bottom edge of the fascia every 2".
6. Position the aluminum fascia on the sub-fascia and push it up under the drip edge.
7. Nail through the holes in the bottom edge using painted aluminum nails. Do not nail tight to prevent rippling.
8. The upper panel should overlap the lower panel by 1".
9. To overlap the panels at the ridge, cut the first piece to extend to the drip edge on the other side of the roof. Cut off enough of the bottom lip to allow the panel to overlay the sub-fascia of the other side of the roof.
10. On the other side, plumb cut the panel down from the peak, overlaying the first piece. Nail through the top edge of the second panel with two (2) white aluminum nails.

Soffits and Fascia Checklist

- Ensure the soffit panels are locked together.
- Ensure the fascia completely covers the ends of the soffits and fits snuggly up into the drip edge.
- Ensure the fascia panels are not wrinkled, scratched or dented.

Siding Layout

Siding will be installed on the exterior of all house walls including:

- From ¾" below the sill plate of the house up to the bottom of the soffits on the eaves.
- From the porch floors up to the bottom of the porch ceilings.
- On the gable ends of the porches and transition trusses.

At the home owner's option, the gables may be covered with siding or shakes.

Starting Lines

Critical Issues

- **It is important the siding be even on all sides of the house. Creating a level horizontal line around the entire house before starting will provide a good starting point for the siding.**
- **Create the starting line and reference lines before installing the corner posts. This will make it easier to continue the lines evenly around the corners.**
- **The starting line can be created by measuring down from the bottom of the soffits or measuring up from the sill plates.**
- **Ensure construction tape has been installed on all 4 sides of the J-Blocks. The Plumbing, Electrical and HVAC J-Blocks were installed with the rough-in mechanicals. They must be flashed with construction tape before the siding is installed**

Safety Issues

- **Pump Jacks must be set up properly with the safety pieces attached.**
- **Ladders must be placed on solid surfaces. Do not place blocking under the legs.**
- **Ladders must be securely anchored at the top. Tie the ladders in or block them so they cannot slide.**
- **Work from roofs require the use of harnesses and fall protection gear.**

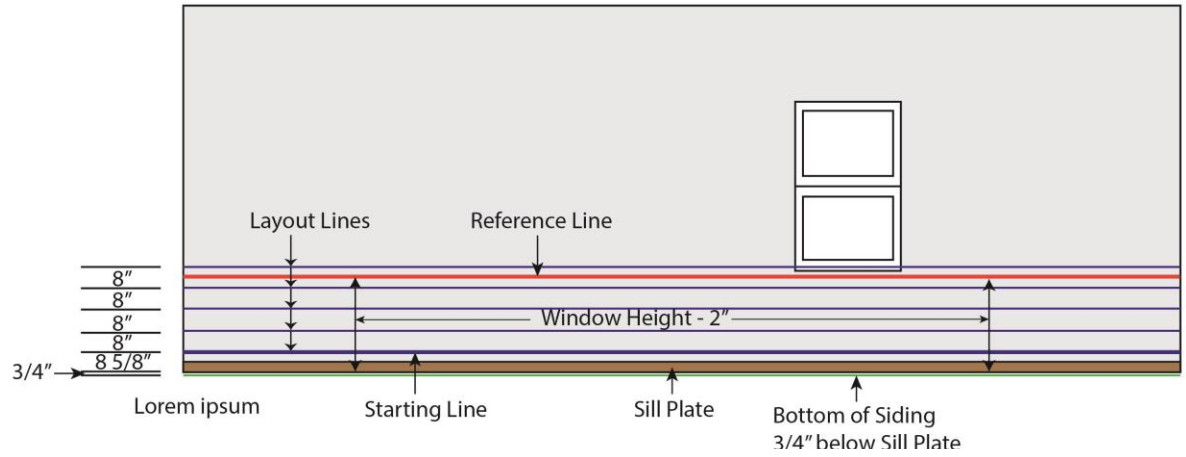
Create a Reference Line

Critical Issues

- **Chalk lines must be pulled very tight to create a straight line. Installing nails at one end of the house allows for pulling the string tight.**
- **When snapping the chalk line, only raise the chalk line 1" above the Styrofoam insulation. Pulling too far creates slack in the line.**

1. To keep the siding level to the sill plates around all sides of the house, create a level reference line. (See Figure 16.11)
    a. Measure down from the bottom of the first floor windows to the bottom of the sill plate.
    b. Subtract 2" from that measurement.
    c. Measure up that distance from the bottom of the sill plate at each corner.
    d. Snap chalk lines between these points. The line should be level to the sill plate and fall 2" below the windows.

Figure 16.11 – Reference and Layout Lines



Create a Starting Line

1. At each corner of the house, make a mark 8 5/8" from the bottom of the sill plate. The bottom edge of the first row of siding should fall ¾" below the bottom of the sill plate. Snap chalk lines between these marks. The top edge of the nail flange of the first row of siding will be aligned with this line. Verify it is parallel to the reference line made above.
2. If a continuous starting line cannot be established at 8 5/8" above the sill plate due to a porch or other obstacle, make marks on either side of the obstacle and snap lines on each side.
3. This line will be used later to install the starter strip.

Create Siding Layout Lines

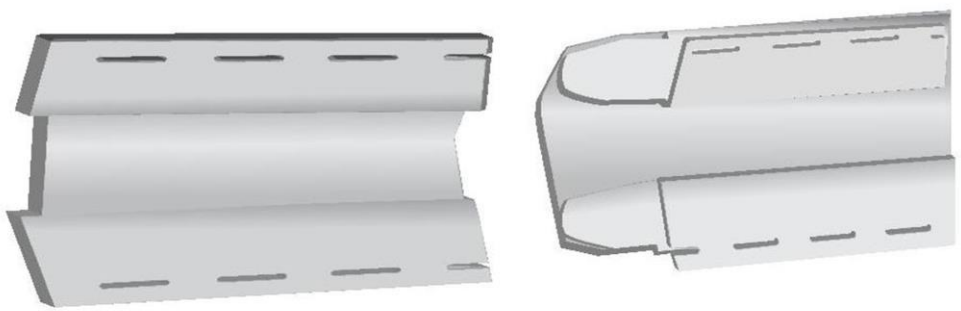
1. When working with volunteers, it is important to keep the siding straight. Creating layout lines is an easy way.
2. Continue making marks up each corner of the house every 8” above the starting line.
3. Snap chalk lines between these marks. For more experience crews, lines may only be needed every other set of marks. Keep the line taut.
    a. To help keep the chalk line taut, install an 8d common nail at the marks.
    b. Hook the chalk line on the nail for each row and pull the line taut.
4. On some houses, several marks on certain sides of the house may be needed to navigate around the jogs in the side.
5. Continue the line over the porch area using a level, if necessary.

Siding Trim

Install Outside / Inside Corners

Critical Issues
➢ **Siding corners must be installed using chalk lines to keep them straight.**

Figure 16.12 – Corner Posts



1. The bottom of the corner should go 9” below the “starting line”.
2. Make a mark on the Styrofoam insulation at the sill and below the soffit, 3” in from the corner of the house. It may be difficult to identify where the exact corner is; therefore, you will need to extend the plane of the opposite edge using a straight edge and measure in from the straight edge. Mark both faces of the corner.
3. Double check the corners are square by using a combination square on the corners as they are nailed.
4. Snap a chalk line vertically between the 2 points on the same face. Repeat for the other faces.
5. Position the nail flange of the corner along the chalk lines. Nail the corner into place starting at the top of the nail flange.
    - Use 2 ½” siding nails through the nail flange.
    - Nail the top nail in tight.
    - Nail every 8" to 10".
    - Do not nail the rest of the nails tightly. Allow a 1/32" space between the nail head and the nailing strip. (dimes width)
6. If more than one corner post is needed, the upper post overlaps the bottom post. (See figure 16.12)
    - Cut off 1" of the nailing flanges.
    - Overlap ¾".
7. The top of the corner posts should end ¼" from the soffit.

8. Trim the nail flange from the bottom 1” of the corners which extend below the starter strip.

Z-Channel

Critical Issues
➢ **For doors without an overhead porch roof, Z-flashing must be installed over top of the brick molding prior to installing the J-channel.**

Install Z-channel at top of exterior door molding

1. Cut a piece of Z-flashing to a width of the top brick molding. Position the Z-flashing on top of the Styrofoam insulation and over the top of the brick molding. Attach the Z-flashing with 2 ½” siding nails through the flashing, Styrofoam insulation and OSB.

J-channel

Critical Issues
➢ **No J-Channel is required on the windows. The J-channel is built into the window.**
➢ **All of the nailing in this section should be in the center of the nailing slots and there should be a space of 1/32" (dimes width) between the nail heads and the vinyl.**
➢ **Place a nail every 10” along the trim.**
➢ **For J-Channel install horizontally with the solid side down, add 3/16” weep holes to J-Channel at a maximum of 24”.**

J-channel is installed to create pockets for the cut edges of the siding panels. J-channel will be needed:

- around doors
- under roof gables
- across porches and lower roofs
- around meter mounting block
- around porch decks
- around porch beams
- around porch gable ends

J-channel will not be needed around windows, around siding blocks and along siding corners as these items have J-channels built into them.

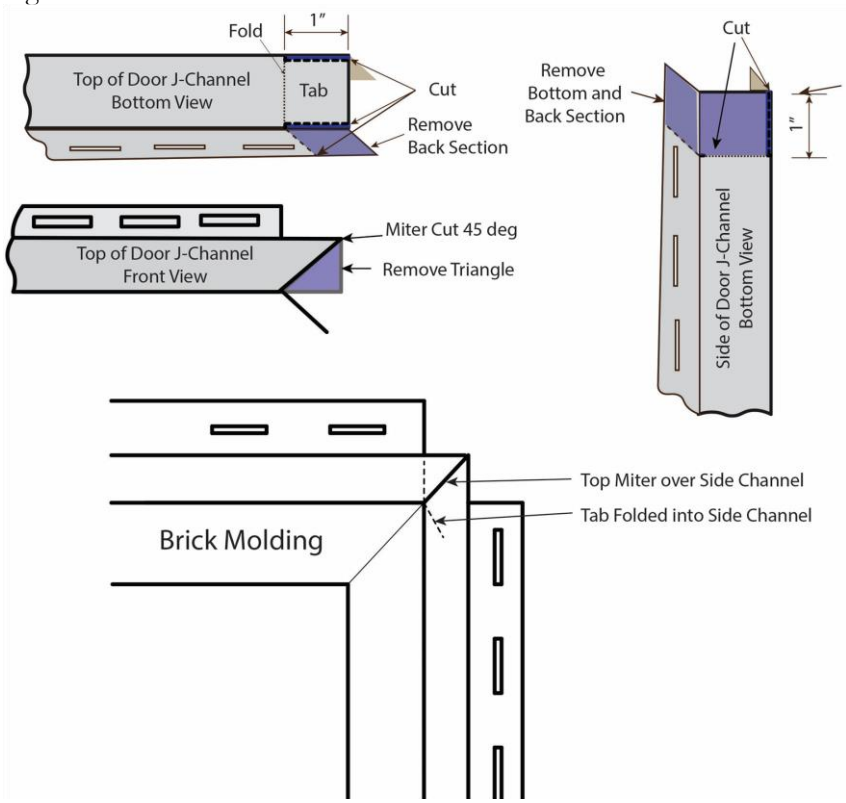
The J-channel around the porch beams is installed before the Smart Trim.

Install J-channel at sides of exterior doors

1. Ensure the brick-molding has been painted prior to installing the J-channel.

2. Cut the J-channel for the sides longer than the height of the door brick-molding by 7/8”. The pieces will extend above the brick-molding by the width of the J-channel (1”) and must be held off the floor by 1/8”.
3. Cut and remove the top 1” from the back and bottom sides of the channel. The cut line for the notch must be even with the top of the brick-molding. (See Figure 16.13)
4. Hold the notches even with the top of the brick-molding and nail in place with 2 ½” siding nails every 8" to 10". Do not nail tight except for nail the top nail tight to hold the J-channel in place.

Figure 16.13 – -Channel on Doors



Install J-channel at top of exterior door molding

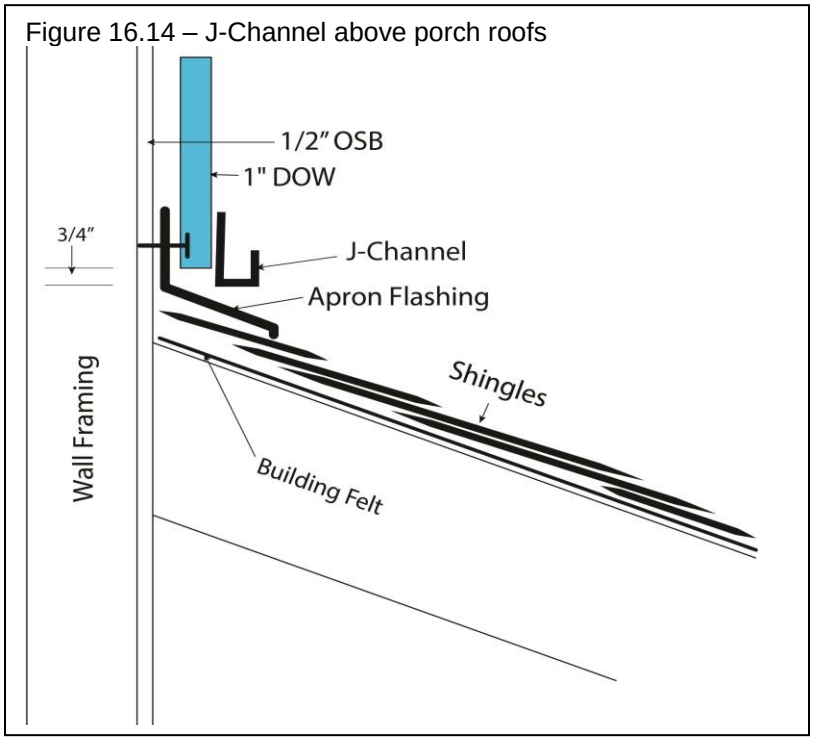
2. Cut the top piece of J-channel longer than the width of the door by 2 times the width of a J-channel. It must extend to the outside edges of the side J-channel installed above.
3. Cut a tab on the "bottom" of the channel on both ends. This tab should be the length of the overhang. Leave the tab attached. Do not remove the material.
4. Miter cut the front flange on both ends to 45°. (See Figure 16.13)
5. Set the J-channel into place with the 45° miter extending over the side J-channel.

6. Bend the tabs down on both ends over the J-channels on the sides.
7. Nail the top J channel into place using 2 ½" siding nails every 8" to 10".

Install J-channel along the bottom of walls over the porch roof(s) and transition walls

If the siding will start above a roof, such as over a porch roof or section of the house which steps up, then the bottom panels of siding will sit in a section of J-channel.

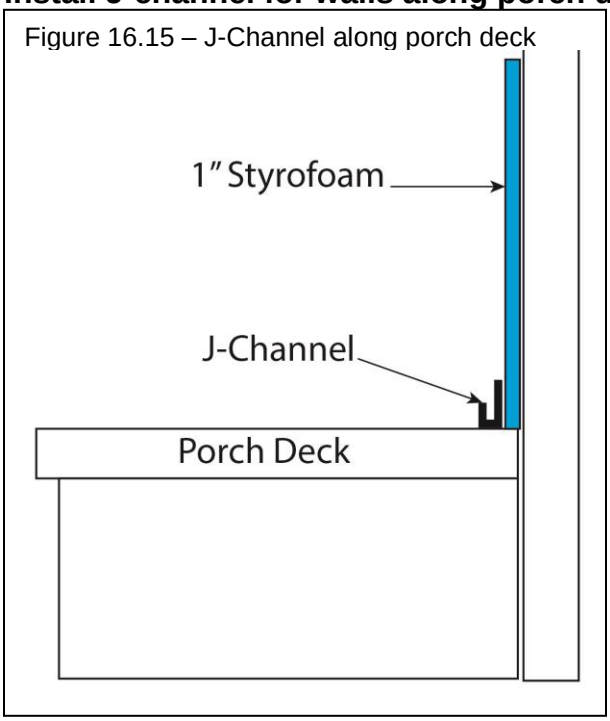
Figure 16.14 – J-Channel above porch roofs



1. The bottom of the J-channel should be ½" above the **shingles** or flashing.
2. The J channel should end ¼" from the edge of the corner posts or even with the end of the shingles.
3. Nail the channel in place with 2 ½" siding nails every 8" to 10".
4. If more than one length of J channel is required, the pieces should overlap ¾". Cut 1" from the nailing hem of one side. Allow ¼" for expansion. Install the top piece over the lower piece.

Install J-channel for walls along porch decks

Figure 16.15 – J-Channel along porch deck



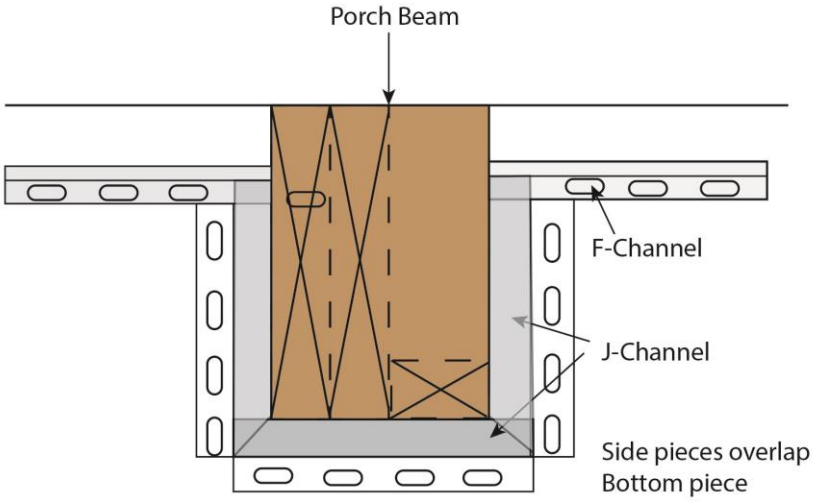
1. The J-channel rests on the concrete floor.
2. Cut and position the J-channel to fit along the porch floor. Leave a ¼" gap where the J-channel meets corner posts and the door J-channel.
3. If the porch does not extend to the corner of the house:
    a. Extend the J-channel 1" over the sides of the porch and miter cut them.
    b. Run J-channel up the sides of the concrete porch. Extend the J-channel 1" above the porch floor and fit it behind the horizontal piece.
    c. Nail in place using 2 ½" siding nails every 8" to 10".
4. Cut scrap pieces of utility trim or the nail flange to fit into the horizontal J-channel. This will sit behind the siding and hold it snug.

Install J-Channel around the Meter Mount Block

1. Cut pieces of J-channel to wrap around the meter mounting Smart Trim. Interlock the ends similarly to installing J-channel around doors.
2. Ensure the Smart Trim has been painted before installing the J-Channel.

Install J-Channel around the Porch Beams

Figure 16.16 – J-Channel around Porch Beams



1. Install the J-channel around the beam before the Smart Trim on the beams.
2. Cut pieces of J-channel to wrap around each porch beam. Cut pieces to run down the inside face, across the bottom, and up the outside.
3. Interlock the ends similarly to installing J-channel around doors.
4. Nail the J-channel to the Styrofoam with 2 ½" siding nails.

Trim for Porch Gables

Critical Issues

- **The trim on porch gables should not be installed until the Smart Trim has been installed.**
- **Ensure the Tyvek wrap has been installed on the gable ends before installing the trim.**

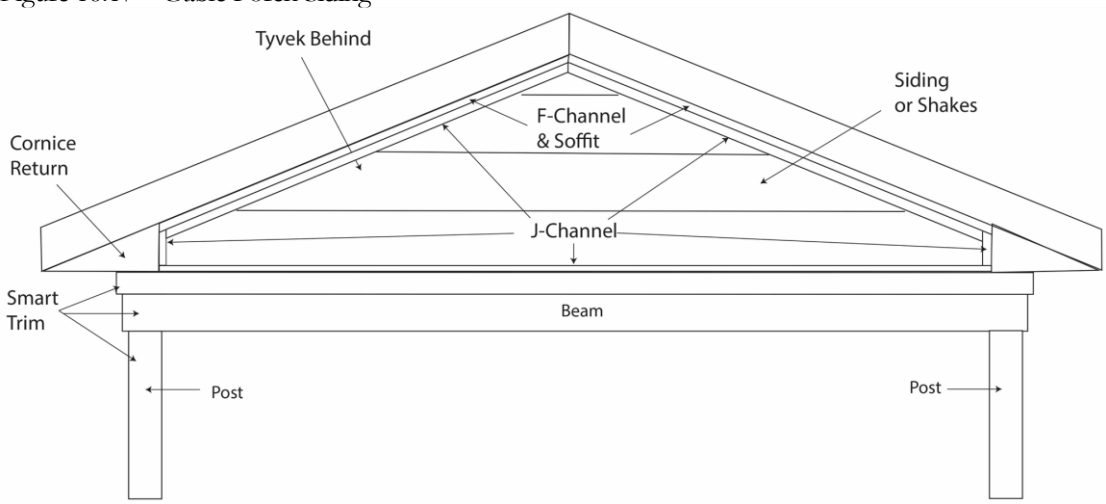
The trim required for the porch gables will vary upon the type of porch gable. Types of porch gables are:

- Gabled
- shed with rake
- shed without rake
- house extended.

Gable Porch Roofs

Gable roof porches are porches which have full gable trusses which sit parallel to the front or back of the house. (See Figure 16.17).

Figure 16.17 – Gable Porch Siding



Install J-channel on the gable of a gable porch roof

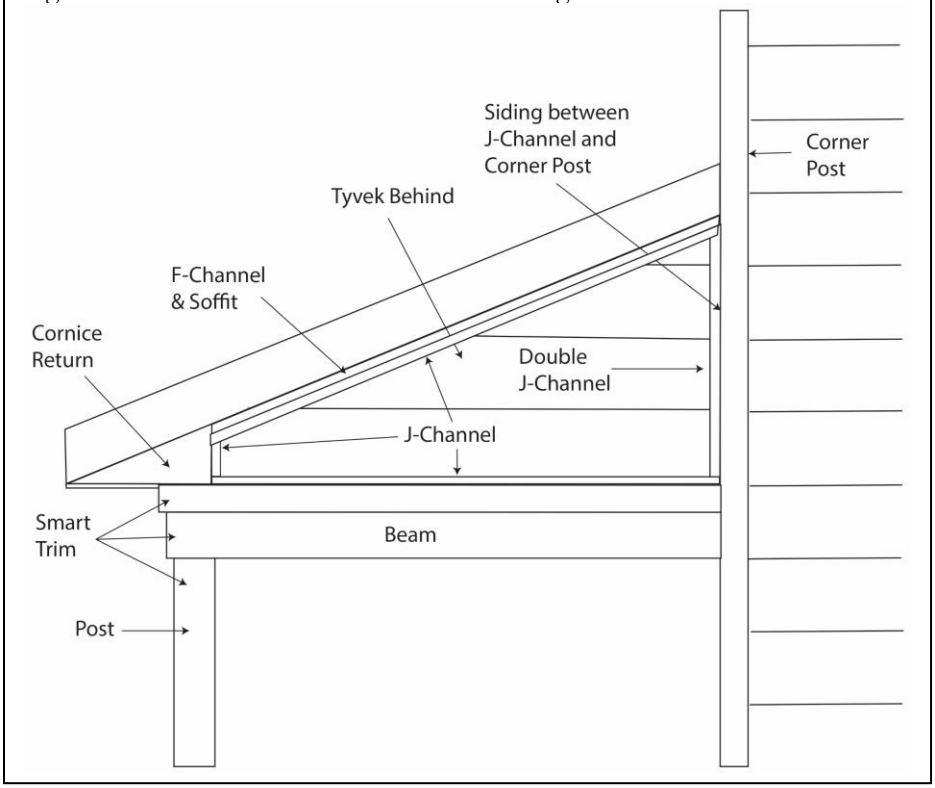
Cut pieces of J-channel to fit above the Smart Trim on the beam, along the sides of the cornice returns and up the eaves. Install the vertical pieces first and fit the horizontal and diagonal pieces to the verticals. (See Figure 16.18).

Nail into place with 2 ½” siding nails every 8" to 10".

Shed Porch Roofs with a Rake

Shed roof porches with rakes are porches with roofs which slope away from the house and have rakes extending from the sides. (See Figure 16.18).

Figure 16.18 – Shed Porch Gable with Rake Siding



Install J-channel on the gable of a shed porch roof with a rake

Cut pieces of J-channel to fit above the Smart Trim on the beam, under the F-channel under the eave, and up the side of the cornice return. (See Figure 16.18).

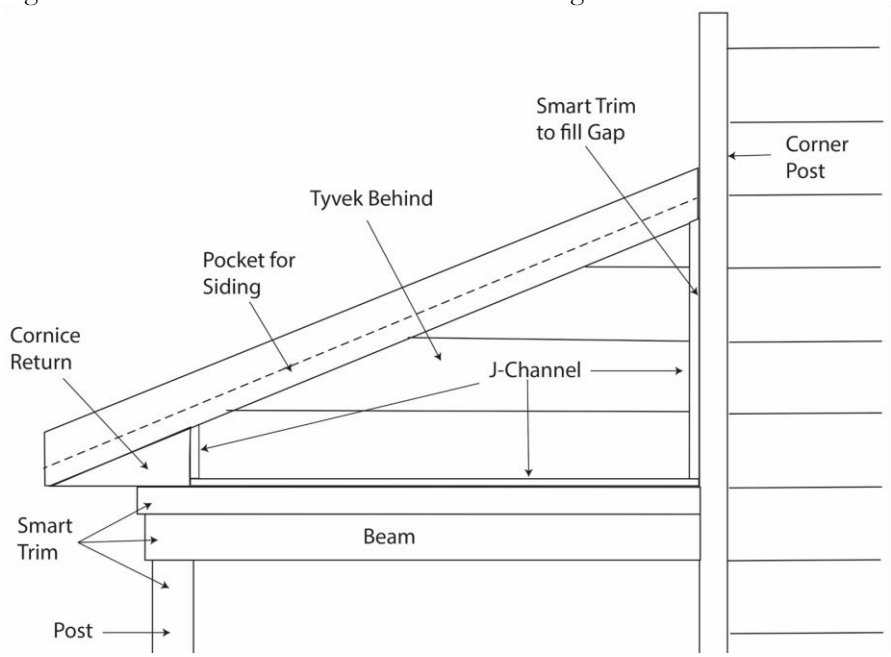
Add a pair of J-channels up the seam between the gable and the house siding. One channel will face the siding on the house and one channel will face the siding on the gable.

Nail into place with 2 ½” siding nails every 8" to 10".

Shed Porch Roofs with no Rake

Shed roof porches without rakes are porches with roof which sloped away from the house and have a siding pocket instead of a rake. (See Figure 16.19).

Figure 16.19 – Shed Porch Gable without Rake Siding



Install J-channel on the gable of a shed porch roof without a rake

Cut pieces of J-channel to fit above the Smart Trim on the beam and up the side of the cornice return. (See Figure 16.19).

Nail into place with 2 ½” siding nails every 8" to 10".

House Trusses which extend over the porch

Some porches do not have their own truss system. The trusses on the house roof extend out over the porch.

These gables will be covered with siding as part of siding the house. (See “Siding Panels” above).

Install J-Channel under the F-Channel for the Soffits

- The Vinyl Siding Institute recommends using both J-Channel and Finish Trim at the top of the walls; below the soffits. Some installers feel the job looks better without the J-Channel. If double Finish Trim will be needed to level out the top row of siding, the J-Channel option will look best. It is the installer's option.

1. Install the J-channel directly under the F-Channel used to install the soffits.
2. Cut pieces of J-channel to fit each length of F-Channel. When more than one length of J-Channel is needed, overlap the pieces by ¾".
    a. Remove 1" of the nail fins of the J-channel of the piece which will overlap the other.
    b. Overlap the front and bottom edges by ¾".
3. Nail the J-channel to the Styrofoam with 2 ½" siding nails.

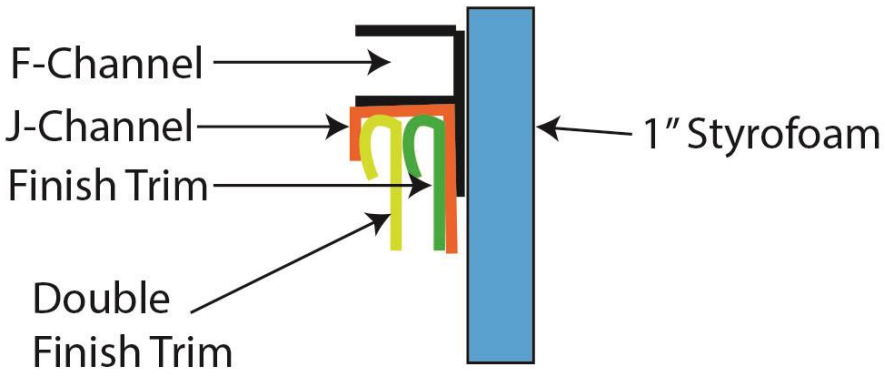
Finish Trim / Utility Trim (P-Channel)

Critical Issues
➢ **Double Finish Trim may be required to keep the last row of siding level.**

Install utility trim along the horizontal eaves

1. If J-Channel has been installed under the F-Channel, install the trim inside of the J-Channel. If no J-Channel has been installed, install the trim directly under the F-Channel. Install it with the nail fin down. (See Figure 6.20)
2. Nail in place using 2 ½" siding nails; 1 every 24" into the OSB sheathing on truss energy heels.
3. If the top row of siding will be cut too narrow to fit into the J-Channel without bending, a second Finish Trim will be needed. Install the second Finish Trim directly over the first and nail through the first with 2 ½" siding nails.

Figure 16.20 – Finish Trim Installation



Install utility trim under windows

1. Align the trim directly beneath the window using 1" siding nails; 1 every 8".

Starter Strips

Critical Issues

- **Place nails in both top and bottom holes in the nail fin.**
- **Place nails 10” apart.**

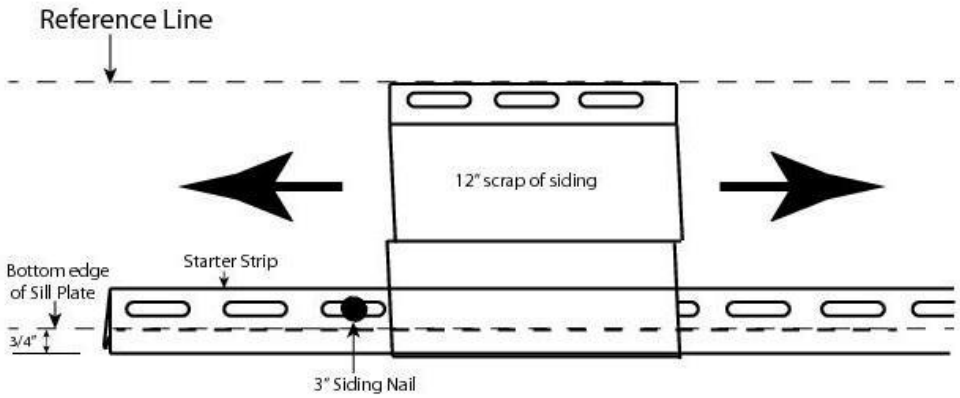
Figure 16.21 – Starter Strip

Install starter strips

1. Cut and position pieces of starter strip to fit.
    a. Hold the starter strip away from the nail fins on the siding corners by 2”.
    b. The gaps between adjacent starter strips should be ½” wide.
    c. Ensure the seams between the starter strips break more than 12” from the seams in the first row of siding.
2. Cut a 12” scrap of siding to help position the starter strip.
3. Place the scrap of siding in the middle of the starter strip to be installed.
4. Hold the top of the scrap of siding even with the “Starting Line” made above.
5. Hold the starter strip tight to the bottom of the scrap of siding.
6. Insert 2 ½” siding nails into the holes in the top row in the starter strip closest to the edges of the scrap of siding. (See Figure 16.22).
7. Slide the siding scrap left and right; holding it even with the Starting Line. Continue to install 2 ½” siding nails as the scrap moves along.
8. The starter strip has 2 rows of holes for attaching the strip. Add additional 2 ½” siding nails in the bottom row of holes; place 1 nail every 10”.
9. Nail the starter strip to the house using 2 ½” siding nails;
    - Nail at 10" intervals
    - Nail in the center of the nailing slots.

- Do not nail tightly. Allow a 1/32" space (dimes width) between the nail head and the strip.
- Ends of strips should be ½" apart. (Do not butt or overlap).

Figure 16.22 – Starter Strip Installation



Gable Vent (If Provided)

Critical Issues
➢ **The gable vent is decorative only. Do not cut the Styrofoam insulation behind the vent.**

1. If the Home Owner's Selection sheet specifies a gable vent, install the gable vent on the front gable truss. The front elevation in the prints should show the position.
2. The vent should be positioned in the upper 1/3 of the gable.
3. Locate the placement of the gable vent by:
    - Snap a chalk line across the gable area even with the bottom of the cornice returns.
    - Measure the distance between the cornice returns and draw a vertical line in the center; extending from the chalk line to the peak of the gable.
    - Measure the length of the line. Divide the length by 3 and measure up from the intersection of the 2 lines by twice that distance. That point will be the location of the center of the gable vent.
    - Draw a 24" horizontal line through the center point.
    - Install the gable vent over the center point using the intersecting lines to center the vent. Align the center point of each nail fin to the lines. For gables covered with 1" Styrofoam, install the vent with 2 ½" siding nails; 2 per nail fin. For gables covered with Tyvek, use 1 ½" siding nails.

Siding Panels

Critical Issues

Installation Do's and Don'ts:

- Leave a ¼" gap at the end of the panels inside the corner post pocket.
- Overlap the panels by 1".
- The panels are nailed into place using 2 ½" aluminum siding nails.
- The nails are installed in the center of the nailing slot;
- There should be a 1/32" gap between the nail heads and the vinyl.
- The nails are installed into the framing lumber. (The location of the cap nails in the Styrofoam insulation should tell you where the studs are located.)
- "Nail Slot Punch to expand holes in nail flange when they do not fall on a stud" is not needed since we are installing the siding over OSB. Nailing as close as possible to studs is recommended.
- A factory cut edge must be visible (on top) at the overlaps.
- The overlaps should not be visible on the sides of the house when looking from the front of the house.
- On the sides begin at the rear of the house and work forward. On the front and back of the house install the siding in the same direction.
- Stagger the overlaps so no two courses have overlaps that are aligned vertically unless they are separated by at least 3 rows.
- Start and end each row with a piece which is at least 2' long.
- Ensure the panel has locked onto the panel(s) beneath it.
- Panels are manufactured so the laps are 4" wide. Pull the panels up tight so each lap measures a multiple of 4" from the laps below.
- Hold the distance between the top of the nail flange to the next reference lines to a multiple of 8" to keep the tops even.

Planning- It is important to spend some time planning. Plan the layout of the siding such that:

- Install the siding from the back of the house to the front of the house. Installing the back piece first will cause the front piece to overlap the back, which will hide the seams.
- The front and back sides should be installed so that the seams are least visible from the highest traffic area.
- A random pattern looks best. After installing the first row, the cutoff piece from the last piece in the first row will become the first piece in the second row. Continue this pattern as long as the cutoff piece is larger than 2'. This technique should produce a fairly random look.
- No panels smaller than 2'. This may mean that both the first and last panel in the rows may need to be cut.
- The seams in the first row above or below a window or door must **not** occur directly under or over a window or door. Adjust the size of the pieces in the rows as needed.

Cutting - Cut the siding such that:

- The edge towards the back of the house is a manufactured edge. This will ensure that the visible edges of the siding panels are straight and clean cut.
- The panels in the field are cut perpendicular. Using the guillotine cutter is recommended.
- The panels under the gable rakes are cut at the appropriate angle. A jig can be built with the "Cut Line" set at the roof angle or a template piece can be created. Mark the siding with the template and cut it with snips.

First Row over Starter Strip

- Cut and position the first panel as described above.
- Snap the locking tab of the panels in the first row into the starter strip. These tabs are difficult to snap into the starter strip; double check that they are locked. The top of the first row should align with the reference line, described previously.

First Row over J-Channel

- If the first row is over a porch deck, the first row will sit in a J-channel.
- Measure down from the reference line to the bottom of the J-channel.
- Subtract 16" from the measurement. The remainder will be the width of the starting piece; including the nail flange.
- Transfer the measurements to a panel. Draw a line indicating where to trim off the bottom of the panel.
- Trim the panel with snips or by scoring the line with a utility knife then snapping it off.

- Verify the panel is the width you need before nailing it into place.
- Install the panel with 2 ½” siding nails.

Rows between the First and Last Rows

- Measure and cut the panels as above.
- Snap the panels into the nail flange of the panel below. Hold the panel up tight and nail in place with 2 ½” siding nails.
- Ensure the panels are pulled up to the Siding Layout lines.

Siding for Under Windows

Note: Do not seam siding just under or over windows or doors.

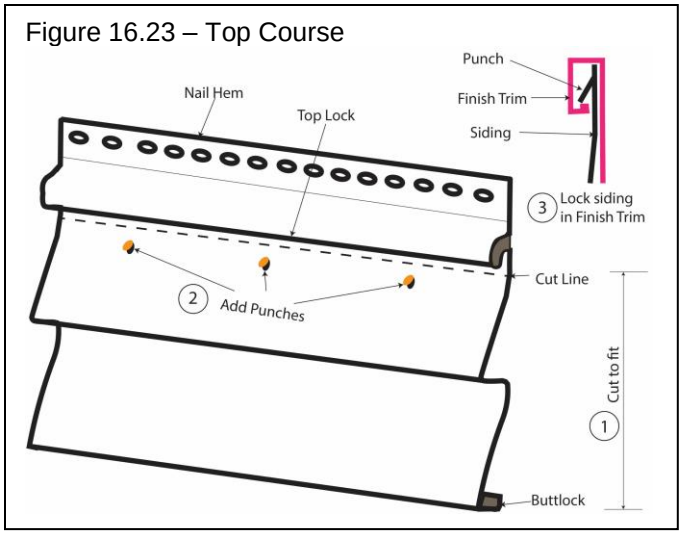
1. Hold a panel beneath the window. Mark the location of the sides of the window on the panel. Mark the location of the actual window sides; not the edge of the J-channel. Add approximately ¼" for expansion on both sides of the window.
2. Measure down from the bottom (inside the J-channel) to the bottom of the lock tab. Transfer this measurement to the panel.
3. Cut out the space for the window using tin snips and a utility knife.
4. Using a snap lock punch put lugs along the horizontal cut out area every 6". The raised part of the lug should be on the outside of the panel.
5. Ensure the panel fits correctly, the lugs are locked into the utility trim, and the panel is hooked onto the panels beneath it.
6. Using 2 ½” siding nails nail the panel into place using the same procedure as the other panels.

The Last Course Horizontal Row

The last course of siding will need to be trimmed and punched to fit into the utility trim.

1. Measure from the top of the utility trim to the base of the lock tab on the previous course.
2. Make this same measurement at several locations along the wall.
3. Measuring from the bottom of the panel to be installed mark the dimensions obtained above minus ¼".
4. Trim the panel as indicated by your marks.
5. Using a snap lock punch put lugs into the cut edge every 6". (The raised lug should be on the outside of the panel). Do not place punches within the last 6” of the panels.

Figure 16.23 – Top Course

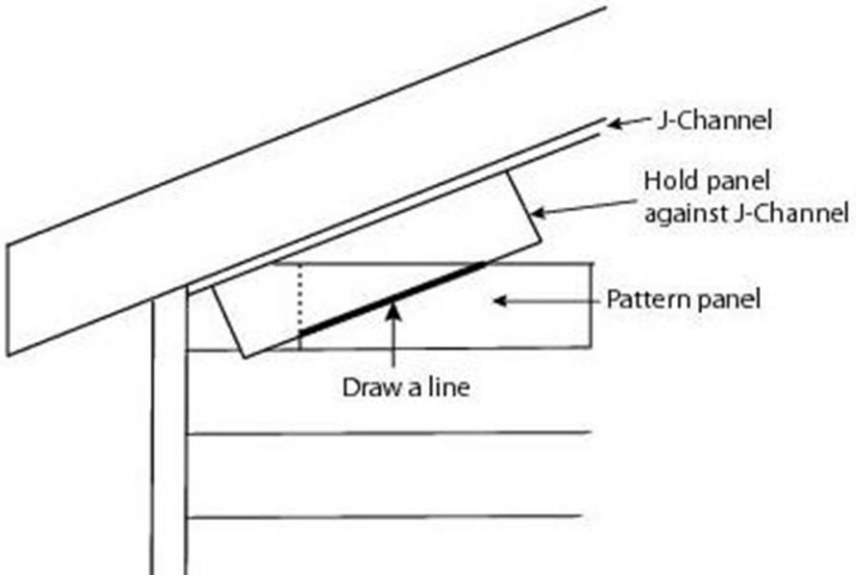


6. Push the panel up into the utility trim while ensuring it is locked onto the row beneath it.
7. Verify this piece is correctly locked into place along its entire length.

Prepare Patterns for Gabled Ends (See Figure 16.24)

1. Lock a scrap piece of siding into the last course below the gable. This will become the pattern piece.
2. Hold a second piece of siding against the J- channel under the roof.
3. Make a pencil line on the pattern piece of siding along the edge of the second piece of siding.
4. Cut along the pencil line. Use this piece as the pattern for this side of the gable.
5. Repeat this procedure for the opposite side of the roof.

Figure 16.24 – Fitting Siding under the Gable



Install Panels for Gabled Ends

1. Using the patterns made above, cut the end panels under the gable.
2. Install the panels with 2 ½" siding nails.
3. The last piece at the peak of the gable will need to be held in place with 1 white aluminum nail.

Sidewall Flashing at Roof Lines (See Figures 16.25 a, b, c, & d)

When a roof line runs along a sidewall and stops before the bottom edge of the sidewall, step flashing and a piece of diverter flashing is required.

The roofer will install a "kick-out flashing" at the bottom edge of the roof over the first row of shingles. He will continue integrating pieces of step flashing along the edge of each following row of shingles. The siding must be cut to fit around the "kick-out flashing". (See Figures 16.25a – 16.25d).

Do not cover the kick-out.

1. Install siding until the nail fin is above the bottom of the roof eave. (see Figure 16.25a).
2. Install J-channel over the shingles along the edge of the roof, from the kick-out flashing up to the ridge. Leave a ½" gap below the J-channel.
3. Cut a piece of aluminum flashing for the diverter. Cut a slice in the bottom edge of the flashing to slide down over the "kick out flashing". Position the diverter flashing over the "kick out flashing", over the nail fin of the last full course, and behind the nail fin of the J-channel on the roof.
4. Tape the J-channel to the diverter flashing with construction tape.

5. Cut a piece of siding to fit from the outside corner post to the horizontal J-channel on the fascia. Notch the piece to fit around the “kick out flashing”. Install the piece of siding over the diverter flashing. Ensure the piece locks in place. (See Figure 16.25c).
6. Cut a second piece of siding to extend 1” over the previous pieces and back to the roof. Cut the end which extends over the “kick out flashing” into a 1” tab. Install the piece even with and overlapping the first piece. This piece of siding will be installed into the J-channel on the roof. (See Figure 16.25d).

Figure 16.25a – Before Diverter Flashing

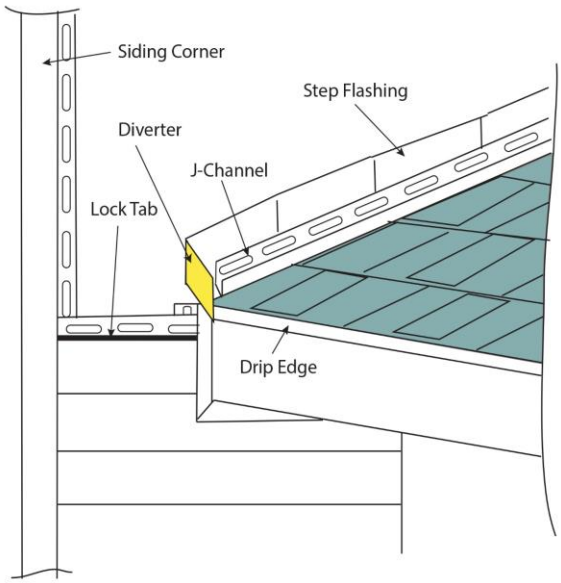


Figure 16.25b – Diverter Flashing

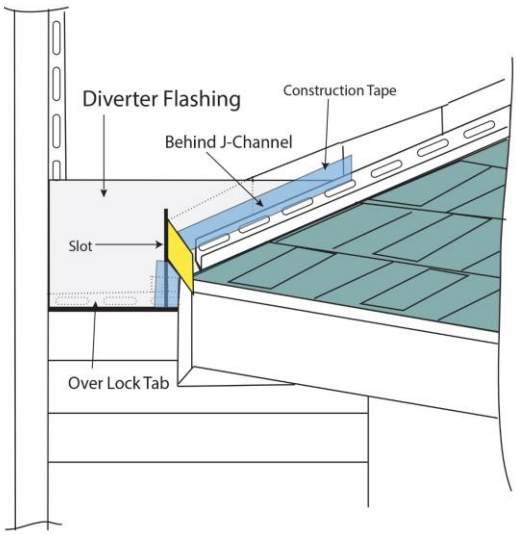


Figure 16.25c – After Diverter Flashing

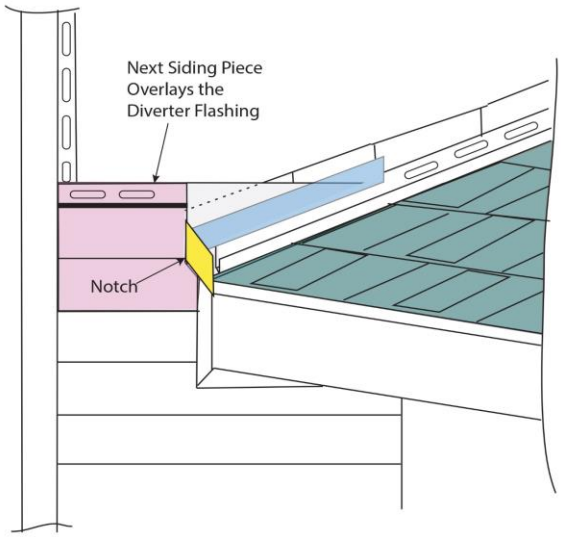
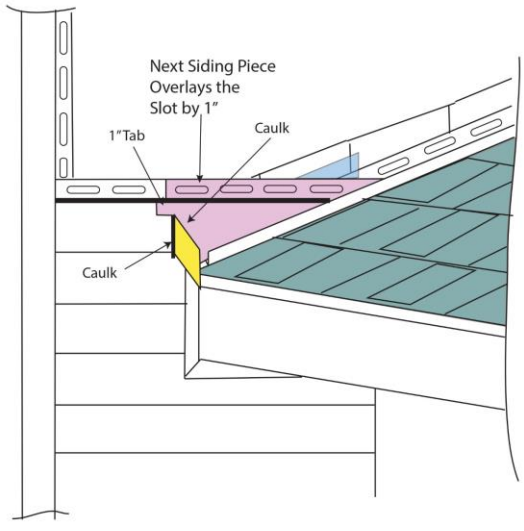


Figure 16.25d – Overlap Siding



Siding Checklist

- Sight up the walls looking for unlocked panels.
- Check the alignment of the panels on either side of the corners to verify their alignment.
- Sight down the walls looking for wavy panels caused by installing the nails too tight.

Shakes (As specified in design sheet)

Critical Issues
➢ **Shakes will be installed on the front gable ends of the house with or without a frieze board. Consult the Home Owners Selection sheet for specifics.**
➢ **Read and carefully follow the directions on the box.**

1. Plan your work.
   a. The first row will be locked into a starter strip. The starter strip will be visible from below. A J-Channel will be required to cover the starter strip and the bottom of the first row.
      i. If the shakes are installed over a porch beam or porch roof, install the J-channel with the channel facing up and install the bottom of the starter strip ½" inside the channel. The J-channel can be the same color as the siding of the shakes.
      ii. If the shakes are installed over a siding area, install the J-channel with the fin down and the utility trim for the siding below inside the J-channel. Install the shake starter strip above the J-channel. The J-channel will need to be the same color as the siding.
   b. Under the gable rakes, install J-channel flush to the F-channel holding the soffit. This J-channel will cover the edges on the sides of the shakes. This J-channel must be either white to match the F-channel or match the color of the shakes.
2. Install J-channel and starter strip.
   a. Install the J-channel and starter strip using the same procedures as for vinyl siding.
3. Install the shakes.
   a. The procedure for installing the shakes is printed on the box. Be sure to examine the shakes to:
      - Identify the temperature gauge and marking on the shakes for the correct spacing.
      - Identify the nailing points.
      - Identify the locking tabs and locking process.
   b. Install the shakes from the left to the right.
   c. Calculate the size of the left-most shake. The left shake may need to be shortened to ensure the right most shake has enough nail fin left.
      - Before installing each row, measure the distance to be covered by that row (measure the imaginary line across the lock tabs).

- Divide this distance by 48” (the length of a shake).
- If the remainder is greater than 30”, start with a full shake.
- If the remainder is less than 30” but greater than 12”, subtract the remainder from 30” and shorten the shake by the difference.
- If the remainder is less than 12”, either the left or right shake must be installed with a 3” roofing nail through the face. Start with a full shake and drill a hole in the last shake for the installing nail. Cover the head of the nail with paint to match the color of the shake.

d. Cut the left edge to fit into the J-channel using the calculation above.

e. Install the shakes using the process defined on the box.

f. Remove the cap from a 3” cap nail and use the nail to install the last shake placing the nail through the face of the shake.

Tips & Techniques

- When installing siding during a light rain, the water runs down the roof and drips on the volunteers. A simple solution is to insert a piece of drip edge upside down under the bottom edge of the bottom row of shingles above the existing drip edge. The lip will extend upward funneling the water down the roof away from the volunteers.

Quality Assurance Checklist

- Verify flashing details on roof to wall areas both aprons, steps, and diverters.
- Take pictures of completed items
- Ensure work site is clean and materials are properly stored before proceeding.