

Chapter 11. Siding and Soffit

11.1 PREPARATION

11.2 INSTALLING HOUSE SIDING

11.3 INSTALLING SOFFIT

11.4 INSTALLING FASCIA

11.5 INSTALLING SHUTTERS

11.6 INSTALLING EXTERIOR DOOR TOE KICK BOARD

11.7 SITE CLEANUP

Tools needed by volunteers:

Hammer
Nail apron
Tape measure

Tools and equipment needed:

Siding trailer
Generator
Extension cord
Tin snip
Crimper
Siding hook
Speed square
Utility knife
Slot tool
Framing nailer
Finish nailer
Soffit staple gun
Drill
Driver
2½" Hole saw
4½" Hole saw
Plank
Ladders

Materials needed:

Vinyl siding
Vinyl corners
J-channel
Undersill trim
F-channel
Soffit
Fascia
White vinyl jambs
White vinyl brickmold
Toe kick
16d Nails
8d Nails
¾" Collated nails
⅝" Collated nails
2½" Collated finish nails
1½" & 2½" Siding nails
Soffit nails
3" Sheetrock screws
#7x2½" Trim screws
6" Timber screws
Finish caulk
Air sealing tape
Personal Protection Equipment:
Safety glasses (required)

Reference Materials:

House Plan

NOTE: Figures 11-12, 11-16, 11-19 and 11-20 were provided courtesy of the Vinyl Siding Institute, Inc. Figures 11-5, 11-7, 11-17 and 11-22 are modified versions of figures provided courtesy of the Vinyl Siding Institute, Inc.

Safety First! Review the Safety Checklist before performing tasks in this chapter.

11.1. PREPARATION

11.1.1. Siding Pre-Installation Steps

1. Verify that all of the house wrap is installed with no OSB exposed . Caulk all penetrations using finish caulk.

11.1.2. Siding Layout

1. Refer to the House Plan, or Construction Supervisor, to determine whether there are any special siding items such as shakes, white band, gable vent, J-blocks, etc., and note those locations with a marker on the exterior OSB.
2. At each corner on the eave sides of the house, use a framing square or level to transfer the elevation of the bottom of the sub-fascia to the wall as shown in Figure 11-1. With the framing square blade (long leg) firmly against the wall, slide the square up until the tongue (short leg) contacts the bottom of the sub-fascia, and make a mark on the wall at the top of the square (this will be the **sub-fascia elevation and bottom of the gable corner blocking**) and $\frac{1}{2}$ " below the top of the square (this will be the **top of the siding corner, or bottom of the soffit**). Drive an 8d nail into the corner stud at the vertical center of the $\frac{1}{2}$ " mark.

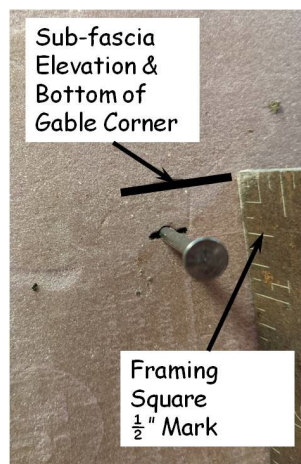


Figure 11-1. Siding Layout.

3. Locate marks as follows, making them very close to the corner, and transfer them to the gable side of the house.
 - a. Carefully measure the height of the F-channel. Measure down from the top mark the overall height of the F-channel, and make a mark. This will be the **bottom of the F-channel nailing flange** (see Figure 11-2).

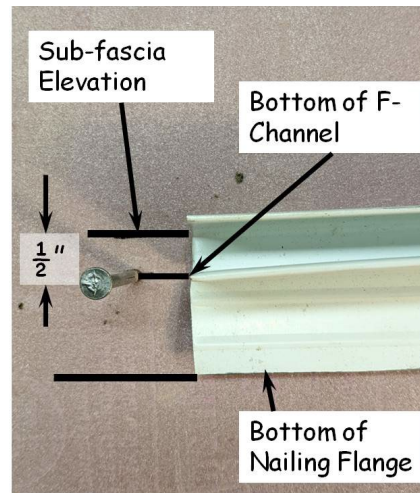


Figure 11-2. F-Channel Location.

- b. Each course of siding is 8" tall. The typical house requires $12\frac{3}{4}$ courses. The $\frac{3}{4}$ course at the top is planned so that there is approximately $2\frac{1}{2}$ " above the center butt to insert into the top undersill trim. This results in the top course being $\sim 6\frac{1}{2}$ " tall. The overall height of the siding is then $102\frac{1}{2}$ " ($12 \times 8 = 96 + 6\frac{1}{2} = 102\frac{1}{2}$ ". The bottom of the siding is thus nominally $102\frac{1}{2}$ " below the bottom of the F-channel, or the nail in Figure 11-2 above.
- c. Measure the height of several starter strips, to verify they are consistent. To determine the location of the top of the **starter strip**, subtract the starter strip width from $102\frac{1}{2}$ ".

EXAMPLE: For a typical starter strip width of $3\frac{1}{4}$ ", $102\frac{1}{2}" - 3\frac{1}{4}" = 99\frac{1}{4}"$ to the **top of the starter strip**. The **top of the skirting** is 1" below the top of the starter strip.

- d. To mark the location of the top of starter strip and the top of skirting, hook a tape measure on the nail at the bottom of the F-channel location from Step 2 above and mark the calculated distance below the nail (in the above example, $99\frac{1}{4}"$ and $100\frac{1}{4}"$).
- e. Repeat Steps a-d at each corner.

NOTE: This procedure assumes 12 siding courses at 8" each (96") and that the top course will be about $6\frac{1}{2}$ " tall, to total $102\frac{1}{2}"$. Non-standard houses with a different wall height will require adding or subtracting increments of 4" (one half of a course-height) to the $102\frac{1}{2}"$ dimension

4. Snap a chalk line between all four sets of marks (bottom of F-channel, bottom of F-channel nailing flange, top of skirting, top of starter strip) along both eave walls (be sure the chalk line is very taut, otherwise the chalk line will not be straight). Where there is a porch, underground electrical service or other obstacle that interferes with snapping the lower chalk lines, once the top chalk line has been snapped, measure

down from the snapped line to locate the lower lines at each side of the interference. Then snap chalk lines from these marks to the corresponding corner.

5. Using the marks from Step 3 above, transfer the bottom of F-channel, top of skirting, and top of starter strip marks at each corner to the gable end wall. Snap lines on both gable ends between each pair of corresponding marks (be sure the chalk line is very taut). If there is a gable end porch or other interference, see Step 4 above for instructions on snapping the lower two lines on either side of the interference.

11.1.3. Porch Soffit Prep

1. Consider fascia and lineals when determining how much to fur down the porch framing; consult with the Construction Supervisor. If lineals are included in the House Plan, determine where the top of the lineal will be, and fur down the porch framing to $\frac{1}{2}$ " above the top of the lineal (to leave room for F-channel and soffit). Determine the thickness of the furring required and attach to the bottom of the porch framing using $3\frac{1}{4}$ " collated or 16d nails.

NOTE: This procedure eliminates the need for a narrow piece of siding above the window.

2. To support the center of the porch soffit, install a 2x4 with the wide face vertical, parallel to the long edge of the porch, midway between the house wall and porch framing. Align the bottom edge of the 2x4 with the bottom of the furred porch framing. Hang the support 2x4 from the trusses using vertical 2x4s nailed to the trusses using $3\frac{1}{4}$ " collated or 16d nails.

11.1.4. Installing Metal Skirting

1. Consider the foot traffic around the house to determine how to hide as many seams as possible.

EXAMPLE: If installing on the driveway side, start at the rear of the house with the first piece. Then work toward the front. Overlapping this way will make the seams less visible when the house is viewed from the street up the driveway.

2. Install metal skirting around the house. Using the "nail slot punch tool", punch slots every 12"-18" and 1" from the top. Do not install any piece longer than 12' or shorter than 4'. Any piece longer than 12' will buckle and get wavy when the summer sun heats it up and expands it.
3. Install skirting with its top aligned with the skirting chalk line (created in Section 11.1.1.3) with care. Nail with $2\frac{1}{2}$ " siding nails into the center of the pre-punched slots. DO NOT nail tight. Leave a $\frac{1}{8}$ " gap between nail head and skirting. The skirting will hang on the nails the same way the siding does.

4. Overlap all seams by 3" and hold them back from each corner and at egress wells by 1-2". If a vertical edge will show, create a hem on the exposed end to improve its appearance and strength.
5. Skirting is required at the bottom of the wall between the garage and house. Cut coil stock 12" wide, then bend in half to make a 6" wide strip, using the brake to tightly close the bend. Nail this strip to the bottom of the garage/house common wall(s), with the bent edge down, tight to the garage concrete floor. Use 2½" siding nails close to the top of the strip, into the studs.

11.1.5. Installing Skirting Corners

1. Bend corner pieces with hems on both vertical edges. Install corners using 2½" siding nails.

NOTE: Make sure hems are folded TIGHT. Outside corners should be bent slightly less than 90° for snug fit.

2. Standard outside corners are finished with a 5" x 5" (L-shaped) x 12" long corner (including the 1" hem on each visible edge). If the skirting is not 12", make the corner piece length match the skirting height.
3. 2"x5" L-shaped corner pieces are used next to egress well walls and porch concrete foundations. The 2" leg is inserted between the foundation or egress wall and adjacent foamboard while the 5" leg covers the end of the skirting. Fit the corner snugly to the wall or foundation. Match the length of the corner to the skirting, normally 12". At porches, trim the top of the corner piece to match the angle of the bottom of the concrete slab.
4. Corners at egress wells must be spaced 2" wider than the egress cover to allow the cover to easily fit tight to the foundation. Cut the 2" foam foundation insulation back from the window opening enough to allow proper spacing of the corners (see Figure 11-3).



Figure 11-3. Skirting Around Egress Window.

5. The skirting over egress wells is a two-piece system that includes corner bends. Measure the width of the well (outside to outside). Divide that number by 2 and add 2" to obtain the length for each of the two pieces. Each piece will be 3" x (distance from concrete foundation to outside of house wall) x the calculated length.

11.1.6. Installing Gable Corners

1. At each corner of the house, measure from the eave end sub-fascia to the house wall (inside measurement). Measure every corner because the measurements at each corner can vary slightly.

NOTE: Most measurements will be between 21" and 22" in length for 5:12 pitch roofs, and about 15" for 6:12 pitch roofs.

2. Gable corners are built using one layer of 1/2" OSB (see Figure 11-4).
 - a. For 5:12 pitch roofs (most common) take some scrap OSB, at least 14" wide, and as long as the measurement determined in Step 1 above (e.g. 22" length). From the nominal 22" length side, measure up from one edge of the OSB 14" and make a mark. Measure up the other edge 5" and make a mark. Draw a line to connect these two marks and cut along the line.
 - b. For 6:12 pitch roofs take some scrap OSB, at least 13" wide, and as long as the measurement determined in Step 1 above (e.g. 15" length). From the 15" side, measure up one edge 5", and the other edge 13", draw a line to connect the marks, and cut.

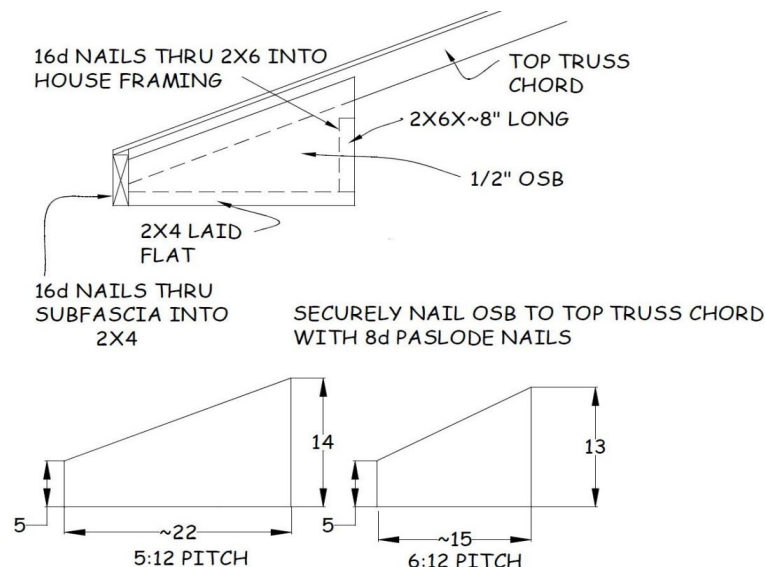


Figure 11-4. Gable Corner.

3. Cut a scrap 2x4 to the same length (eave to wall measurement from Step 1) as the OSB.

4. Cut a scrap 2x6 to 8”.
5. Assemble the gable corner by flushing the wide edge of the 2x4 with the end of the 2x6 and nailing them together with two 3¼” collated nails.

NOTE: Before assembly, double check the orientation of the frame pieces and OSB.

6. Nail the OSB to the 2x4 and the 2x6 with six 2⅜” collated nails, using either factory edges or a framing square to keep the frame pieces square to each other (see Figure 11-4).
7. Lift the assembly into place between the sub-fascia and wall. The OSB that matches the angle of the roof will be up and over the outside of the gable truss tail.
8. Line up the bottom of the 2x4 frame with the bottom of the sub-fascia and the top mark on the house wall.
9. Nail the OSB to the gable truss tail with five 2⅜” collated nails.
10. Line up the gable corner block so it is flush with the corner of the house.
11. Nail through the corner 2x6 into the house framing with two 3¼” collated nails. Make sure to nail into solid framing and not just the OSB.
12. Verify that the 2x4 is flush with the bottom of the sub-fascia; nail through the sub-fascia into the 2x4 with two 3¼” collated nails.

11.1.7. Installing Corner Posts

1. Use the corner post jig to mark nailing location of corner posts. Cut, at an angle, about 2” off the bottom end of the corner post nailing flanges so they are not visible below the bottom of the siding once installed. Install corner posts so their bottoms end 1” below the bottom of the starter strip. Use a small piece of ½” OSB or a short piece of F-channel as a temporary spacer between the top of the corner post and the gable end corner to get the correct spacing when installing the post. Leave a ⅛” gap between the top of the corner post and the temporary spacer to be sure there is enough room to install the permanent F-channel later.

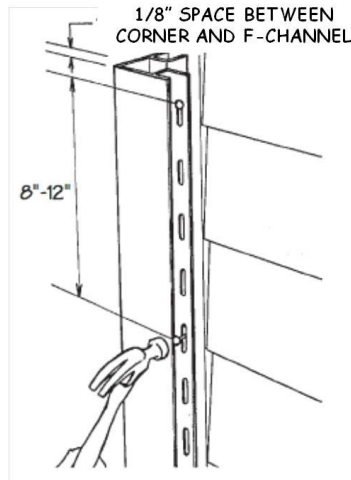


Figure 11-5. Siding Corner Post.

2. Snugly nail the top end of each flange with a nail in the TOP of the slot. Then, snugly nail the bottom and middle of each flange with nails in the center of the slots. Step back to assess straightness and squareness; adjust as required. Finally, snugly nail in the center of every fifth slot, making certain the fit remains square, straight and plumb. Use 2½" siding nails (except when being applied directly over OSB sheathing, then use 1½" siding nails), being sure to hit framing or OSB sheathing.

11.1.8. Installing Starter Strip

1. Keep the starter strip 4" short of the corners. Do not leave any gap between pieces of starter strip – butt each one tightly to the adjacent strip. Nail the top of the starter strip snug to the chalk line on the house every five slots using 2½" siding nails except when installing directly onto OSB sheathing then use 1½" siding nails. Nail in the top slots only.
2. On garage walls, use 1½" siding nails into the framing. If any nails are exposed inside the garage sheathing, use an oscillating tool with a metal cutting blade to cut the nail end off flush with the inside of the sheathing.
3. After installation, use a string line or sight down the length of the starter strip to check for rises and dips. Straighten the starter strip if rises and dips exceed ¼". Use a speed square or similar method at each corner to verify that the bottom edges of the starter strip are at the same elevation.
4. Measure the distance from the top of the nail flange to the bottom of the top lock (see Figure 11-21). This is normally 1¼" to 1⅜". Add this measurement to 8" and 40" to obtain the height of the lower and upper quality lines in Step 4, below.
5. Create quality lines: At each corner of the house, and at one or two locations in between, make marks at the heights calculated in Step 3, above, measuring from the bottom of the starter strip. Snap horizontal chalk lines at both sets of marks, and

verify that the middle marks are within 1/16" of the chalk line. If they are not, it means that the starter strip is not straight, or the marks were poorly measured, or the chalk line was not taut enough when snapping. Correct by rechecking that the starter strip is straight and adjust as required until the middle measurement is the same as both ends (and re-snap the chalk lines if required). If the starter strip was straight, then re-check and re-snap the chalk line as needed. These quality lines represent the top (of the nailing flange) of the first and fifth rows of siding.

11.1.9. Installing J-Blocks

1. Verify that all J-blocks for exterior house lights, two outlets, and garage lights have been installed (per House Plan). When locating vent openings, do not put them in the same I-joist bay as any heating vent holes in the deck above. Locate the perimeter of the hole a minimum of 6" from I-joists and 2" below the bottom of the subfloor. If the HVAC holes have not been cut yet, write with red marker "VENT PIPES" (or similar for other J-blocks) on the main floor bottom plate above where the J-block has been installed.
2. Install electrical outlet J-blocks, located per House Plan. Wall mounted J-blocks should be located where there is OSB sheathing, with the long edge vertical (ignore the markings on the J-block). Locate the J-block with a 1/2" gap between the J-block and a stud, and with a 1/2" gap between the box and the bottom plate. The gaps allow for spray foam insulation. Attach using 2 1/2" siding nails through a side flange into the stud, and through the bottom flange into the bottom plate. Attach the other two sides with 1 5/8" drywall screws through the OSB. Check for level throughout installation.

NOTE: If there is no OSB where the J-block must be mounted, consult the Construction Supervisor or Site Leader regarding additional support.

3. Use the House Plan to locate exterior hose faucet J-blocks (if provided). From inside the basement, locate a space between I-joists where there is no heating vent cut in the floor above. Drive a 6" timber screw through the rim board 2" below the underside of the floor deck, centered between I-joists. Then locate and mark the hole on the exterior wall. Before installing the J-block, cut pieces of 1/2" or 3/4" OSB or rim board, as required, to fill the depth of the back of the J-block. Install the J-block and OSB/rim board with its center aligned with the 1/4" hole in the rim board. Ensure the J-block is level before nailing.
4. The centers of wall-mounted light J-blocks are located 12" below the top edge, and 12" from the outside edge of the exterior door brickmold, unless there is to be a window shutter on that side of the door. If so, locate the J-block centered between the brickmold and the edge of the shutter. If so, and the window is less than 43" from the door molding (assumes shutters are 15" wide), make a mark 15" from the window edge, and center the J-block between the door brickmold and this mark.

5. The center of the garage gable-end light is located 18" directly below the peak of the soffit.
6. If the furnace air intake and exhaust pipes have been installed, and, if not done already, caulk around each pipe. Fit a color-matched J-block or white vinyl board around them by drilling two 2½" holes with the same spacing as the pipes. If no J-block is provided, use a white vinyl board 5" wide by approximately 8", or long enough so that there is 1½" of board outside the pipe on each end. Slide the J-block or board onto the pipes and install J-channel around it. Put a continuous bead of caulk on the back of the vinyl board, between the pipe holes and the board perimeter. Finish caulk the gap between the board and pipe perimeters. Cover the J-channel flange nails with shingle-style flashing tape.
7. If the galvanized HVAC fresh air intake has been installed, replace the large hex-head screws with 2½" siding nails. Air-seal the perimeter with flashing tape. Install J-channel on the top and sides of the vent, and undersill across the bottom. Cover the flanges and nails with shingle-style flashing tape.
8. All J-blocks must be air sealed using flashing tape applied shingle-style. Keep the tape edge a minimum of ½" away from the inside edges of the J-block opening so the tape won't show after siding installation. Nails, slots and all edges must be covered by the tape.

11.1.10. Installing F-Channel

1. Install F-channel on eave and gable ends by lining up the BOTTOM of the F-channel to the chalk-line created in Section 11.1.3.3 and nail snugly every 12 -18", using 2½" siding nails, (except when being applied directly over OSB sheathing, then use 1½" siding nails) being sure to hit framing or OSB sheathing. F-channel is also needed under the porch ceiling area.
2. F-channel at the gable corner should look as shown in Figure 11-6, with the nailing flange cut back to avoid issues as shown on the right, where the F-channel nailing flange is exposed when looking from below. The gable end F-channel must end just short of the outside of the sub-fascia so the end is covered by the eave fascia.
3. Except at eave-to-gable intersections, F-channel pieces must be at least 48" long.



Figure 11-6. F-Channel at Gable Corner.

11.1.11. Installing J-Channel

1. J-channel is installed around doors and vents, gables (eave to peak), above the porch roof, and on the porch gable after the porch ceiling soffit and fascia have been installed. Snugly attach using 2½" siding nails (except when being applied directly over OSB sheathing, then use 1½" siding nails) in every fifth slot, being sure to hit framing or OSB sheathing.
2. Except above doors, around electrical service panels, and along the side of porch concrete and other unusual locations, J-channel pieces must be at least 36" long.
3. Where multiple J-channel pieces must be used for long sections, splice the ends as shown in Figure 11-7, with the overlapped end pointing away from the main line of sight. Carefully cut 1" off the nailing flange and back "hook" from one piece and insert that end into the factory end of the adjoining piece.

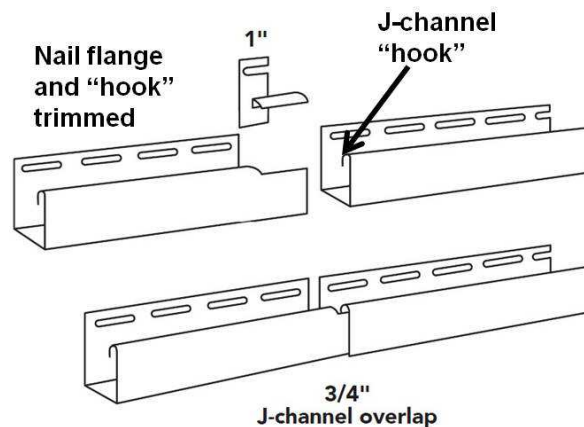


Figure 11-7. J-Channel Splice.

4. See the left side of Figure 11-8 for proper J-channel installation where the gable end meets the eave. The upper piece is inserted into the horizontal, and the back of the horizontal is relieved (the “hook” is trimmed) so that there is a smooth transition between pieces. The horizontal piece also has a rain tab bent into the top of the corner piece, and is cut to end flush with the corner piece. The right side of Figure 11-8 shows an example of incorrect installation, where the cut end of the upper piece is visible when looking up.



Figure 11-8. J-Channel at Gable Corner.

5. See Figure 11-9 for examples of unacceptable J-channel installation at the corner piece. The J-channel is short of the corner piece in both examples. Also, the top of the corner piece shown on the left has a sloppy cut at the top.



Figure 11-9. Unacceptable J-channel Installation.

6. Where a roof meets a wall, J-channel is installed vertically. Figure 11-10 shows the intersection of the end of the porch roof with the house wall. The J-channel should

end at the bottom of the undersill, and the undersill should end inside the J-channel, where a slot has been cut to receive it.

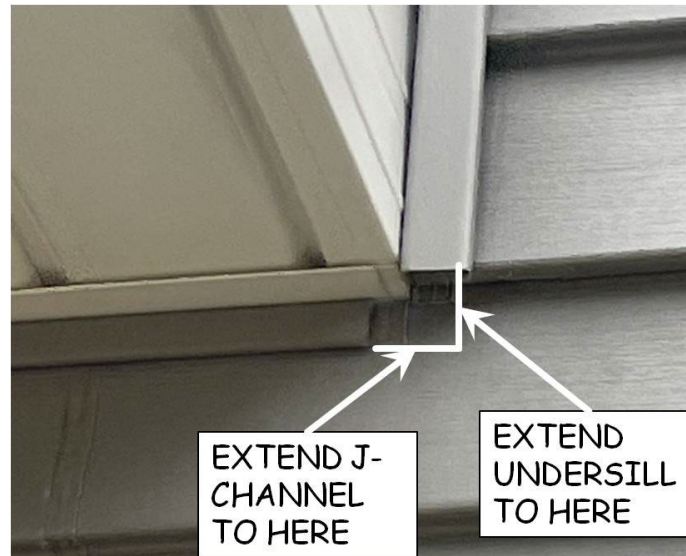


Figure 11-10. Undersill/J-Channel Corner.

7. Before installing J-channel around gable-end exterior doors that are not under a porch roof, bend and install a drip cap above the door's top brickmold.
8. Install the door top piece of J-channel nailing flange behind the house wrap such that the wrap covers the nails and slots. Trim as necessary.
9. For door side pieces, measure from the top of the brickmold to the porch concrete, and add 1". Cut J-channel side pieces to that length. Cut a 1" notch in the top end as shown in Figure 11-11. Install the side pieces with the bottom of the notch flush with the top of the brickmold, nailing snugly every fifth slot.

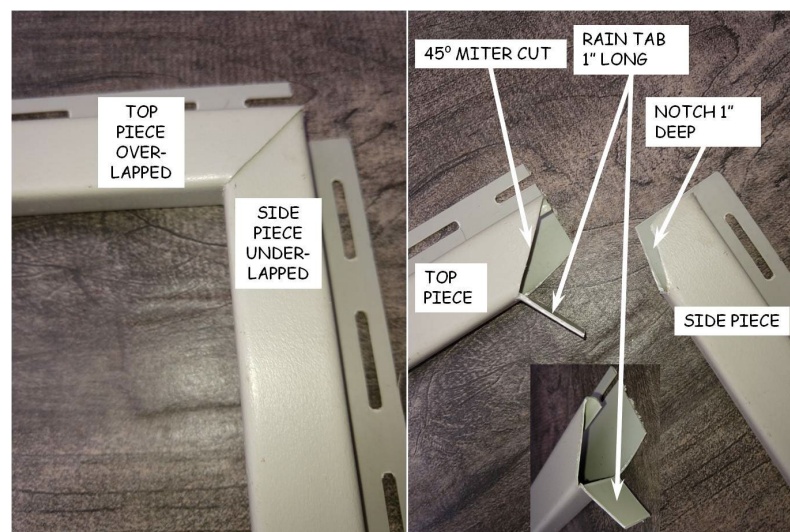


Figure 11-11. J-Channel Upper Corner Detail.

10. Cut the top piece to length so that both ends are flush with the exposed face of the side pieces. Cut a rain tab and 45° miter as shown and install the top piece with the top of the nailing flange behind any house wrap above, and the top of the side pieces inserted behind the miter cut of the top piece. Nail snugly every fourth slot. Fold the rain tabs down into the side pieces.
11. Where a section of roof meets a wall, install the J-channel ½" above the shingles with the nailing flange behind any housewrap, if present (see Figure 11-12). Use a strip of ½" thick OSB about 2-3' long as a spacer to ensure a uniform gap. Tape the top edge of the J-channel, covering the nail slots, using flashing tape. Then tape the top edge of the step flashing, covering the top edge of the J-channel tape shingle-style.

NOTE: Use a single strip of 6" wide flashing tape, if possible, to cover both joints.

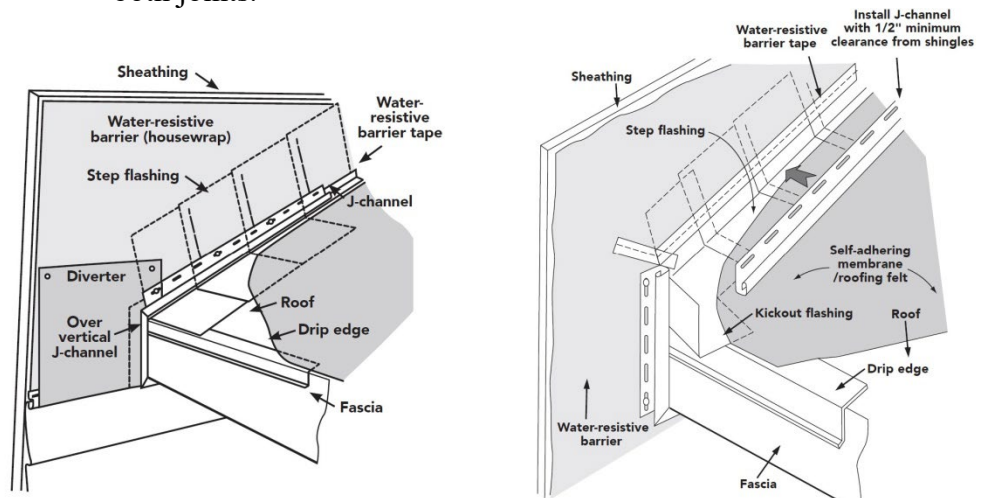


Figure 11-12. F-Channel Over Roof.

12. J-channel is installed on top of the porch concrete where it meets the house wall (see Figure 11-13). A short piece will wrap down the edge of the slab, ending 1" below the bottom of the starter strip. To provide more stability to the short piece, cut the nailing flange 4-6" long on the upper end, and nail in place with 2½" siding nails.

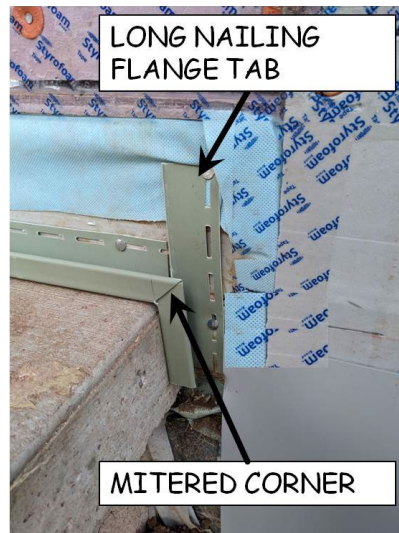


Figure 11-13. Porch Slab J-Channel.

11.1.12. Installing Undersill Trim

1. Undersill trim (or “utility trim” as noted in Figure 11-14) is installed below the soffit F-channel on eave sides of the house, and below any porch F-channel. Nail snugly approximately every fifth slot using 2½" siding nails (use 1½" siding nails when applying directly over OSB sheathing) being sure to hit framing or OSB sheathing.
2. Where a joint is required in the undersill, prepare one end as shown in Figure 11-14, and insert into the end of the other piece, leaving a ⅛" gap between ends.

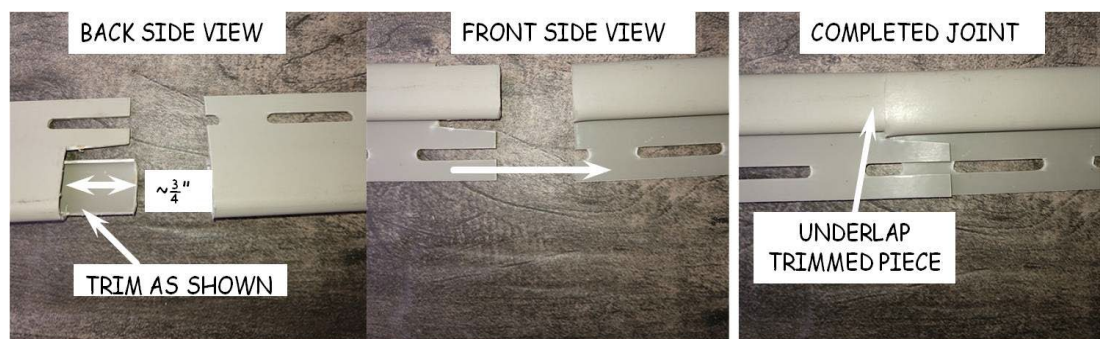


Figure 11-14. Undersill (“Utility”) Trim.

3. Undersill trim can be used to add strength to cut areas of siding under and above windows and above doors, if the cut edge is 2" or more from the center butt or top lock. Cut the trim to the same length as the siding cut-out, and slide into place over the cut edge (do NOT nail to the house).
4. Undersill trim is not needed around J-blocks.

5. To bring the siding forward and tight to the front inside surface of horizontal J-channel for a neat look, and to keep debris from getting into the J-channel, cut roughly 1" wide strips of ½" foamboard or use the nailing flange/top lock of scrap siding pieces. Insert this material behind the bottom of the cut section of the siding (between the J-channel nailing flange and the back of the siding). Seat the foam or nailing flange snugly to the bottom of the J-channel.

11.1.13. Installing Garage Overhead Door (OHD) Trim

1. Ensure the house wrap is neatly stapled flat to the framing around the OHD opening.
2. Install vinyl board door jambs around the OHD opening. Measure and cut the top jamb first. Measure the OHD rough opening and cut the top jamb ¼" shorter. Center the top jamb with a ⅛" gap at each end. Nail in place over the house wrap, using 2½" collated finish nails about every 18". Nail in pairs or stagger side-to-side. Ensure that the board is slightly proud of the exterior sheathing edge so that the brickmold will be tight to the jamb. Shim as required so that the top jamb is straight and level in both directions.
3. Install the side jambs in the same manner. Measure the height of the rough opening and cut the side jamb ⅛" shorter. Butt the top end snugly to the top jamb. Cut the bottom end at an angle to match the angle of the concrete, usually about 8°, so that the jamb is snug to the concrete. Shim as required so that the jamb is straight and plumb.
4. Install brickmold, starting with the top. Cut to length, with mitered ends, so that there is approximately ¼" of jamb revealed. Nail through the coved or rounded area of the molding with 2½" **collated finish nails** every 18" into the framing behind. Use a shim or other gauge to set a uniform jamb reveal along the entire length. If there are gaps between the jamb and brickmold, use a clamp to pull the brickmold tight to the jamb and nail as required. Angle any nails to be sure they don't come out the face of the jamb.

NOTE: When mitering the brickmold, relieve the back of the cut ½-1" so that the visible front of the joint is tightly closed.

5. Repeat with the side brickmold, mitering the top and cutting the bottom to end flush with the bottom of the side jambs.
6. Using the top brickmold as a guide, carefully cut the house wrap along the top of the brickmold. Bend and install a drip edge above the top brickmold, inserting the top flange behind the house wrap. The J-channel in this location must also be installed with the nailing flange behind the house wrap. Hold the house wrap up while nailing so it covers the nails when completed. (See Figure 11-15. The house wrap in the left side of Figure 11-15 is covering the drip edge and J-channel nailing flanges. The right side of Figure 11-15 shows flashing tape covering the house wrap at the corner where it has been cut to install the flashing and J-channel.)



Figure 11-15. Housewrap Over OHD.

7. Install drip flashing over the garage service door and window as described above for the overhead door. Install J-channel over the service door as for the OHD.

11.1.14. Installing Initial Siding Courses

1. Install two courses of siding on all walls of the house. This ensures that each side of the house has started out straight, that the layout is accurate, and that the first course has matched the quality line. This further ensures that the siding elevation matches at each corner.

11.2. INSTALLING HOUSE SIDING

11.2.1. Rules for Hanging Siding

1. Vinyl siding expands and contracts due to temperature changes. Never drive nails tight. The siding panels must hang on the nails and be permitted to move from side to side. Leave a $\frac{1}{8}$ " gap (the thickness of a nickel) between the nail head and the siding slot (see Figure 11-16).

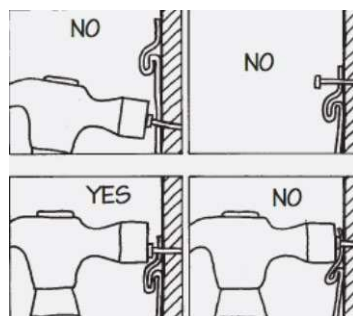


Figure 11-16. Siding Nail Head Gap.

2. Install siding with a 1" overlap between pieces and a minimum of ½" space between the top lock of the underlapping piece and the end of the overlapping piece (see Figure 11-17). Maintain a ¼" gap (⅜" when temperatures are below 40° F) at the corners (to allow for expansion) and ends of pieces, including corner posts, J-channel, J-blocks, windows, etc. Overlap the siding pieces such that in high traffic areas one cannot see into the overlapped joint.

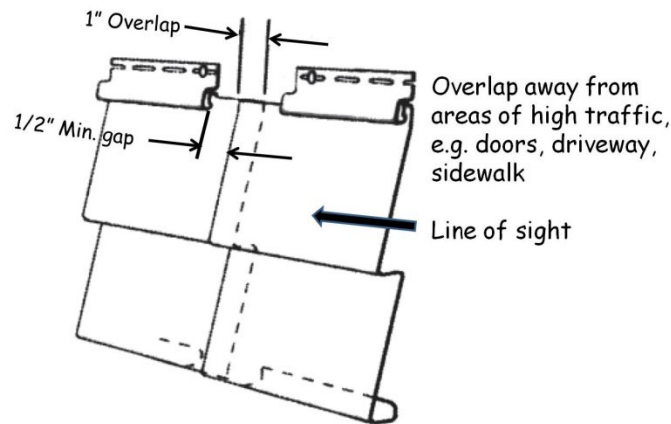


Figure 11-17. Siding Overlap.

3. Whenever possible, use factory ends at overlaps to ensure adequate spacing for expansion between ends of the nailing flange/top lock. If a cut end must be used at a joint, create a factory-like end by trimming 1½" from the nailing flange, top lock, and butt lock.
4. NEVER OVERLAP SIDING PIECES MORE THAN 1", OR RUN THE FACTORY (OR CUT) EDGE UNDER THE TOP LOCK OF THE ADJACENT UNDERLAPPING PIECE.
5. Always use 2½" siding nails, except when the siding is being installed directly over OSB (e.g., on a garage or shed). In those cases, use 1½" siding nails.
6. Always nail in the center of the slots in the lower row of slots and into a stud. Avoid nailing at angles: if a stud is not accessible from a slot in the lower row, use one of the offset slots in the upper row of slots (see Figure 11-18). If there is only a single row of slots, elongate the slot a smidge, using the slot tool, as necessary, to hit a stud. It's permissible to SLIGHTLY angle the nail to hit a stud as long as the head does not protrude so far that it will be visible on the next course. **Always slide each piece of siding side-to-side ¼ - ½" after nailing to be sure there is adequate clearance for temperature changes.**

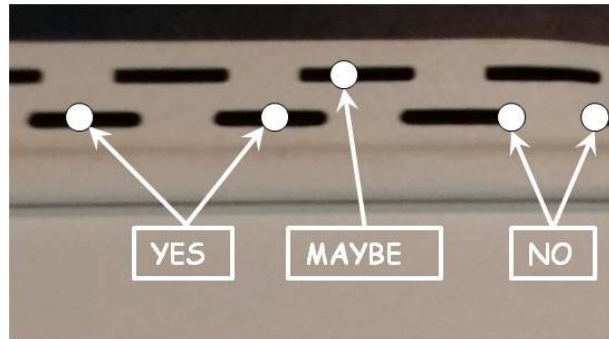


Figure 11-18. Nail Location in Siding Slots.

7. Always drive nails straight, never at an upward or downward angle.

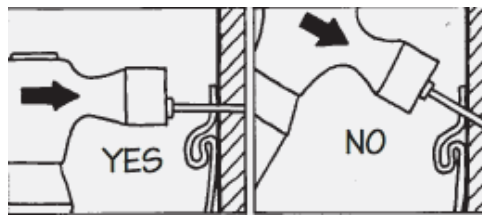


Figure 11-19. Proper Nailing Angle.

8. Be sure to leave $\frac{1}{4}$ " clearance when fitting siding around windows and other wall penetrations.

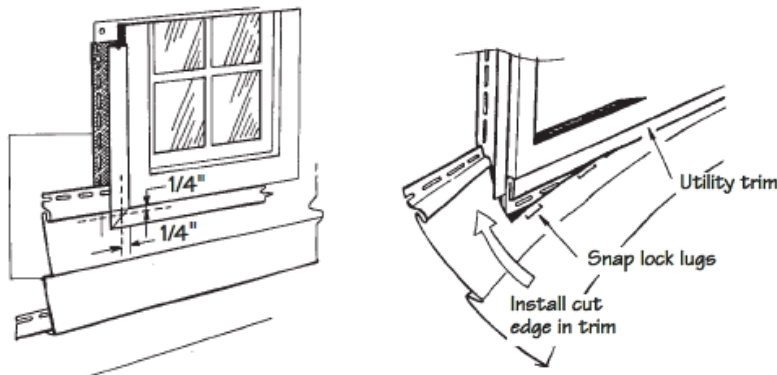


Figure 11-20. Wall Penetration Siding Clearance.

11.2.2. Hanging Siding

1. Install siding so that overlaps are not seen from the street or drive side of the house. Determine the length of the wall to be sided, and the starting end of the house based on the sightlines.
2. Start the first course with a piece that is the length indicated in Table 11-1 for the length of wall being sided. Keep installing full length pieces until a full length will

not fit and then cut a piece to fit (minimum length is 3'). Begin the second course with the nominal length indicated in the table, then begin the third course with the length indicated. Repeat the pattern with the fourth, and subsequent, courses. This procedure should maintain a 3' stagger of the seams between courses, and maintain a minimum of 3' pieces.

Table 11-1. Siding Starting Pieces Cut Lengths.

Wall Length, Feet	Nominal Length of Siding Starting Pieces, Feet		
	First Course	Second Course	Third Course
14	10	4	10
18	12	6	12
20	12	8	4
22	12	7	4
25	10	7	4
26	10	7	4
28	12	9	6
30	12	9	6
32	10	7	4
34	12	9	6
36	11	8	5
38	10	7	4
40	12	9	6
42	12	9	6
44	11	8	5
46	12	9	6
48	12	9	6
50	10	7	4
52	12	9	6
54	12	9	6
56	12	9	6
58	12	9	6
60	12	9	6

- As shown in Figure 11-21, the butt lock of each course locks into the top lock of the course below.

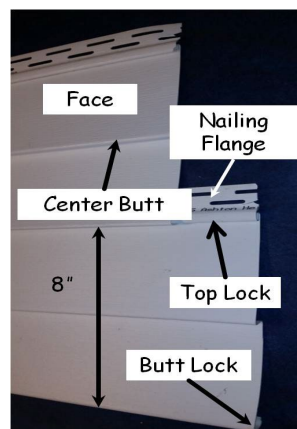


Figure 11-21. Siding Nomenclature.

4. On the 8s: The visible portion of each siding course is 8" high (see Figure 11-21). For each new course, snap the butt lock onto the top lock of the previous course along the entire piece. Nail the ends and middle, then measure up from the BOTTOM of the first course to the BOTTOM of the course being installed. Each measurement should be a multiple of 8 (e.g. 8", 16", 24", 32"). At each nail position, before nailing, check the measurement and adjust up or down to an even multiple of 8, and finish nailing the entire piece. Recheck as necessary and adjust the position of the nailing flange and re-nail, if required. Small adjustments can be made by tapping the nail head up or down as required. When installing the first and fifth courses, be sure the top of the siding (the nail flange) just touches the quality line previously snapped (see Section 11.1.6.4) on the wall.

TIP: When measuring, hold the tape vertically close to the measuring point, and be sure to observe the measurement with an eye at the same level as the measuring point to reduce parallax error.

5. As each piece is installed, pull along the top (nail flange) to ensure nails are in the studs; re-nail the siding if it pulls away. **Slide the piece side-to-side to ensure there is at least 1/4" of movement each way.**
6. Step back from the house at least 10' after every third course and look at the total appearance. Things to look for include:
 - Matching sides at the corners
 - No sagging rows
 - Minimal waves or no bulges
7. To ensure that the top (partial) siding course is uniform, as the third and second courses from the top are being installed, measure from the bottom of the F-channel to the siding top lock every four feet. If the measurements are not equal along the entire wall, adjust the height of the last two full-width siding courses as required to make the measurements equal.
8. On eave walls, measure from the bottom of the F-channel to the bottom of the top lock of the last full-width row of siding at several locations and adjust the height of the last full-width row as required to produce a uniform gap. Subtract 1/8" (max) from that measurement, and rip the last course of siding to this measurement. The table saw with a 7/4" vinyl-cutting blade installed can be used to make the rip cut.

WARNING: Do NOT use the brake and utility knife to make this cut!

9. Crimp the cut edge at 24" intervals with side-by-side (2"-3" apart) pairs of opposite crimps (front and back). Hold the crimps about 2" away from each end so they don't interfere with overlaps. Snap siding into place while inserting the top edge and crimps into the undersill trim installed below the soffit F-channel. The piece should EASILY snap into the under sill with light to medium pressure. If it has to be FORCED into place either the width of the piece is too narrow or the crimps are

too low on the piece. Cut a new, wider piece and/or set the crimps slightly closer (no more than $\frac{1}{8}$ ") toward the cut edge of the piece.

NOTE: Use a 12" to 24" test piece before cutting each full piece.

10. On gable end walls, repeat Steps 1–7 until just before the siding reaches the top of the windows on the gable ends.

NOTE: Be sure to install the soffit and fascia under the porch ceiling prior to siding the porch gable.

11. Before the siding reaches the top of the windows on gable ends, secure the house wrap to the wall OSB with air sealing tape. Pull the house wrap down tight, making sure it covers the nailing flange at the top of the windows, and hold the bottom edge down with 6" pieces of air sealing tape every 6'. Tape the vertical ends of the house wrap along the entire edge. Tape the ends (at each corner of the house) from top to bottom.
12. When the siding on the gable ends reaches the roof angle, a transition must be made to cut the ends of the siding pieces to the proper angle to fit into the J-channel. Use the siding angle jig to cut the proper angle.
13. Siding on porch gables begins with J-channel under the first course rather than starter strip.

11.3. INSTALLING SOFFIT

1. Start by installing soffit pieces on the eave side of the house (see Figure 11-22 for a typical eave soffit installation). Measure from wall to outer edge of the sub-fascia and cut soffit pieces $\frac{1}{4}$ " less than that dimension.

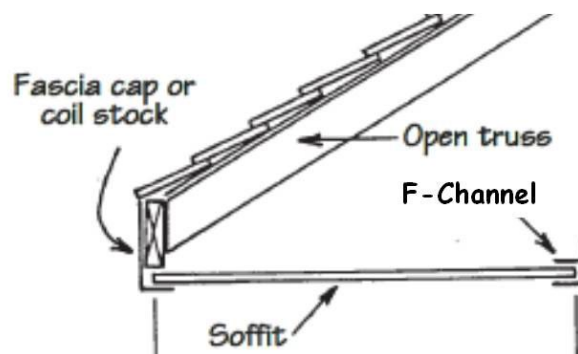


Figure 11-22. Eave Soffit.

2. Install the first soffit piece with the tongue end into the gable end F-channel and the grooved end exposed. Using a white trim nail (or the soffit stapler), attach the grooved end to the bottom of the sub-fascia. Then, nail or staple through the two valleys where it contacts the sub-fascia. Keep staples or nails within $\frac{1}{4}$ " of the outside of the subfascia

to be sure they are covered by the fascia. If using nails, they do not need to be tight to the bottom of the valley.

- Interlock the next piece by sliding the tongue end into the F-channel and exposed groove of the previous piece, making sure the soffit does not extend past the face of the sub-fascia. Check that it is square to the wall, and nail or staple into the sub-fascia through the flange at the groove end of the piece, and the middle valley. Continue the length of the eave, checking for square every three or four pieces.

NOTE: To ease installation, open the sawn ends of the groove with a utility knife or screwdriver, and cut about 1/4" at a 45° from the tongue ends.

- Install the porch ceiling soffit using one of the two patterns shown in Figure 11-23. The arrangement shown in Figure 11-24 is the preferred method if the widths of the soffit on both sides of the corner are within 1" of each other. Otherwise use the lower arrangement shown in Figure 11-23.

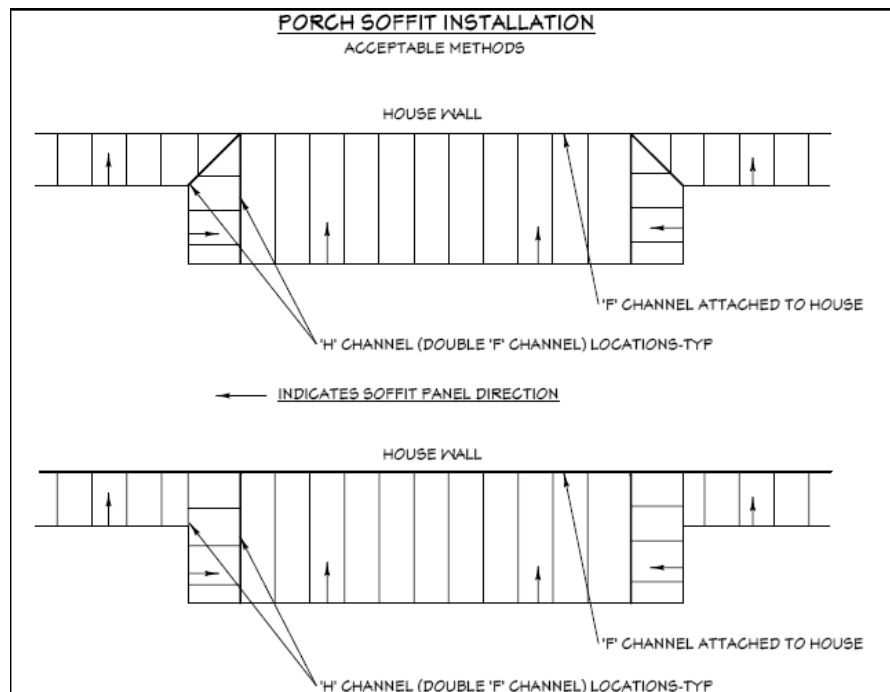


Figure 11-23. Porch Soffit.



Figure 11-24. Porch Soffit Corner.

5. When installing soffit on gable ends, start at the peak with the first piece bent in the middle. The installation process for one side of the gable will be different than described above, since the pieces will be installed by slipping the groove onto the installed piece's tongue, which is not nailed to the sub-fascia.

11.4. INSTALLING FASCIA

1. Install eave fascia first starting at the back of the house so overlaps are not seen from the front of the house. Overlap fascia pieces as required 1½", with a factory edge exposed. Fascia pieces must be at least 60" long.
2. Nail about 24-30" apart and about 6" from each end (on a full piece, only 4-5 nails are required). Do NOT try to nail through overlapping flanges. Do NOT hit the corner of fascia with a hammer as it will "kink".
3. Cut 1½" of the flange from the end of the fascia and bend a 1½" corner to fit over the corner of the gable sub-fascia. Trim the bottom corner from the bend to match the bottom edge of the gable sub fascia.
4. Push the fascia up under the gutter apron until the flange is snug to the soffit and drive a soffit nail through the fascia flange and soffit valley into the underside edge of the sub-fascia. This prevents nails from showing on the face of the fascia. Do not nail tightly; leave a ⅛" gap between the fascia and the head of the soffit nail. Make sure the fascia does not show "wrinkles" when installing.

NOTE: Another option is to pre-drill ⅛" holes into the fascia flange through the soffit valleys.

5. To finish the opposite end, repeat Step 3 above.
6. On gable ends, start at the bottom of the gable at the back of the house. Continue up the gable, shingle style, so overlaps will enable rain to wash off. At the peak, the front will overlap the back so the seam is less visible.

7. At the bottom of the gable end, the fascia must be cut at an angle to match the roof pitch. Determine the pitch from the house plan. In this example, it's 5:12. The lower end must be cut at this angle to match the eave. The point of this angle will be the flanged edge. The following figures describe a right-hand side of a gable end; the left hand will be opposite. In this example, at the peak, the RH side is the front of the house, so its cut edge will be exposed.
8. Position the flange of a speed square along the soffit flange (or along the edge where the LONG point will be) as seen in Figure 11-25. With the square corner of the speed-square against the edge at the length desired, pivot the speed-square at the 90° corner until the "5" on the "Common/Top Cut" (red) scale is aligned with the same edge (e.g. flanged edge). Draw a line along the short edge of the speed square on the face of the fascia.

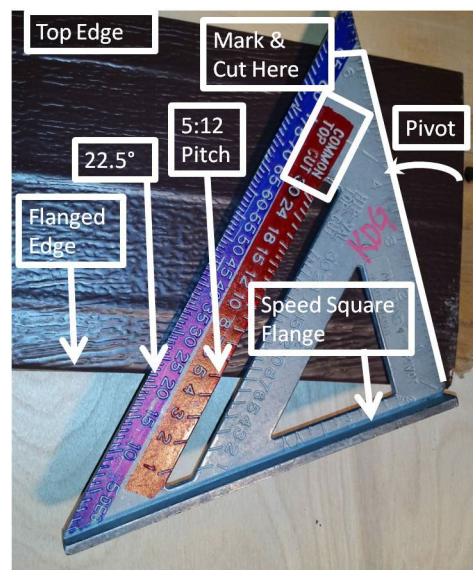


Figure 11-25. Marking Gable Eave End Fascia Angle.

9. Cut the fascia on this line; once installed, the cut edge will be vertical and will match the eave fascia corner. For reference, the blue scale indicates degrees; a 5:12 pitch aligns with 22.5°. Figure 11-26 shows the resulting piece after being cut to the correct angle.

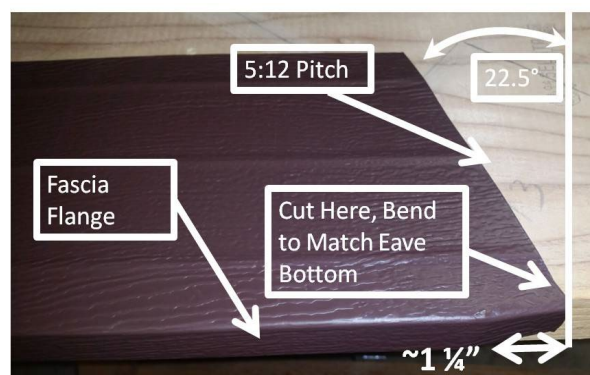


Figure 11-26. Eave End Gable Fascia.

10. At the peak, first cut a piece for the back side of the gable. This piece extends 1" past the sub fascia joint at the peak, and the factory edge will overlap the lower piece of fascia by 1½".
11. Measure from the top of the peak to the end of the fascia already installed and add 2½". Measure that distance from the appropriate factory end on the fascia and mark the top edge.
12. At the peak, the top edge of the fascia (under the roof drip edge) will be longer than the flanged edge. Follow the procedure in Step 8 above, but with the speed-square against the fascia top edge (again, the edge with the "long" point of the angle-to-be), to mark and cut the proper angle.
13. Cut the flange and trim the top corner as shown on Figure 11-27, and bend the tab to match the front-side gable angle. This small tab will cover the bottom of the joint and the top corner is trimmed to prevent any interference with the drip edge.

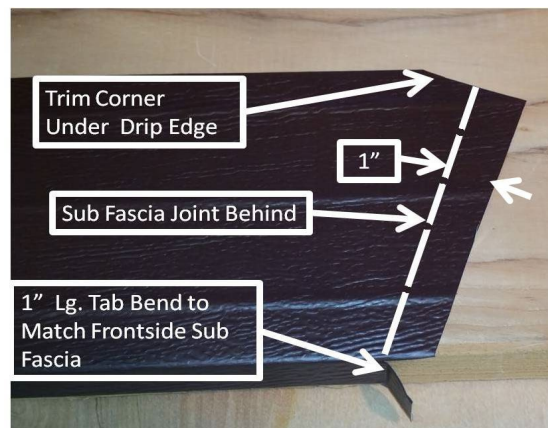


Figure 11-27. Gable Peak Back Side Fascia.

14. Install this piece with the flange bend snug to the bottom of the sub fascia joint.
15. Finish the peak with fascia on the front side. This piece's factory end will overlap the lower fascia by 1½". At the peak, it will have a finished 5:12 cut aligned with the peak and tight to the bend in the flange of the backside piece.
16. Measure from the end of the lower fascia piece to the peak and add 1½". Measure this distance from the appropriate factory edge and mark the top edge. Align the speed square 90° corner with this mark to mark and cut the necessary angle. See Figure 11-28 for the right-hand peak end cut.

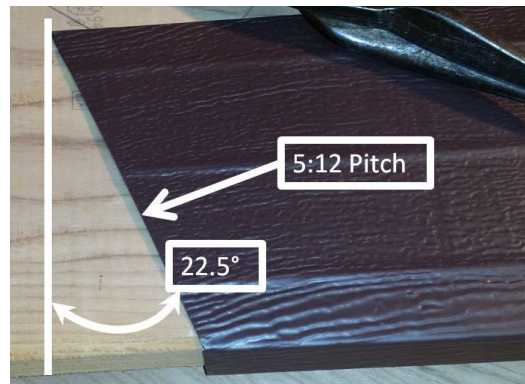


Figure 11-28. Gable Peak Front Side Fascia.

11.5. INSTALLING SHUTTERS

1. Shutters are held in place by shutter pins attached to the siding. Pins should be cut to a length of $2\frac{1}{4}$ " (the combined thickness of the shutter plus the siding) to prevent them from completely penetrating the OSB.
2. Count the pins before drilling any holes. Different size shutters may require different numbers of pins. Use the number provided in the kit.
3. Locate and drill holes for the pins in the shutter according to the manufacturer's instructions. Then, with the shutter held in the correct installation position, use the shutter as a template to mark and drill holes for the pins through the siding. Take care to not drill all the way through the OSB behind the siding.

11.6. INSTALLING EXTERIOR DOOR TOE KICK BOARD

11.6.1. Background

1. The purpose of this installation is to (1) support the door threshold and (2) to trim out the area under the door. The standard exterior door threshold overhang measures 2" ($\pm\frac{1}{4}$ ", depending on the door install) from the wall OSB to the outside edge of the door threshold.

11.6.2. Install Filler Piece

1. Remove the temporary threshold support piece.
2. Use a $\frac{3}{4}$ " piece of OSB decking material (preferred) or two layers of $\frac{1}{2}$ " OSB for the filler piece.
3. Measure the length from outside to outside of the brickmold and subtract 2". Measure the width (height) from the top of the concrete to the bottom of the brickmold and subtract 1". Cut the OSB to these dimensions.

NOTE: It is very important to keep this OSB a minimum of 1" off the concrete so it doesn't absorb moisture and swell or decay.

4. Install the OSB tight to the underside of the threshold (for proper support) using eight 3" sheetrock screws evenly spaced across the top and bottom of the OSB.

11.6.3. Install Toe Kick Trim

1. Measure the distance between the two J-channels next to the vertical pieces of the brickmold. Cut the toe kick board material to that length.
2. Measure the width (height) from the top of the concrete to the bottom of the brickmold. Check both ends for any variation in dimensions. Subtract $\frac{1}{8}$ " from the measurement at each end and, on the grain-finished face of the board, mark and connect the points. Cut the board to this width, tapering the cut as required. This reduced dimension allows the toe kick to be positioned with a $\frac{1}{8}$ " gap at the bottom so it is easier to install and not tight to the concrete.
3. On the face of the OSB installed in Section 11.6.2.4, apply a bead of construction adhesive around the perimeter (holding the bead 1" back from each edge) and from corner to corner (forming an "X"). Attach the toe kick board with the GRAIN-FINISHED FACE OUT to the OSB using six 2½" collated finish nails. Nail through the area where the OSB is located, remembering that the OSB is 1" up from the concrete and 1" short on each end.

11.7. SITE CLEANUP

1. On the last day of siding, the lot must be cleaned up for final grading and lawn preparation.
2. All returnable materials must be separated into piles - "wood" (lumber, OSB, I-joist, etc.), "siding-related" (vinyl and starter strip), and "metal" (soffit, F-channel, fascia, etc.) - and neatly stacked and covered with tarps. Neatly stack leftover cut siding pieces (longer than ~3') in the shed.
3. All usable scrap lumber or wood having nail holes, or too dirty to return, should be stacked near the recycle barrels to make it easy for the Logistics Crews to access it to take to another work site.
4. For future workdays, take a variety of the following from the scrap wood pile and place under the basement stairs (take from the returnable pile if there is not enough scrap):
 - Three to four full-length 2x4 studs;
 - Six to eight pieces of 2x4 or 2x6, 3'-5' long;
 - ½" and ¾" OSB scraps (six to eight small- to medium-size pieces).