



VINYL SIDING

Approved Methods

As of May 10, 2021



This manual is a derivative of the copyrighted work of Anna Gallant Carter titled *Habitat for Humanity Charlotte Construction Manual; Approved Home Building Methods*. Anna has given Charlotte Region Habitat for Humanity her permission to make this derivative available online on a website accessible to the public and in print for the benefit of the Charlotte Region Habitat for Humanity staff and volunteers as well as other Habitat for Humanity affiliates. This agreement does not transfer to Charlotte Region Habitat for Humanity, its affiliates, staff or volunteers, the author's exclusive right to sell, rent, lease, or lend copies of the work to the public.

Note to the Reader: Due to differing conditions, tools, and individual skills, the authors of this manual and Charlotte Region Habitat for Humanity assume no responsibility for any damages, losses incurred, deaths, or injuries suffered as a result of following the information published in this manual. Although this manual was created with safety as the foremost concern, every construction site and construction project is different. Accordingly, not all risks and hazards associated with homebuilding could be anticipated by the authors of this manual and Charlotte Region Habitat for Humanity. Always read and observe all safety precautions provided by any tool or equipment manufacturer, and always follow all accepted safety procedures. Because codes and regulations are subject to change, you should always check with authorities to ensure that your project complies with all local codes and regulations.

Table of Contents

Introduction to the Vinyl Siding Section 5

 This Section Includes 5

 Schedule..... 5

 Vinyl Siding Workdays..... 5

 Crew Assignments 5

Vinyl Siding Safety Guidelines..... 6

Siding Task List..... 7

 Staffing 7

 Siding Prep Tasks to Be Completed..... 7

 Siding Installation Tasks to Be Completed..... 7

 Quality Checkpoints 7

Vinyl Siding Tool, Equipment & Material List 8

 Tools Each Siding Crew Member Will Need 8

 Tools Each Siding Crew Will Need..... 8

 Tools & Equipment Needed at Each Site..... 9

 Props Useful for Demonstrations..... 9

 Material List..... 10

Siding Material Description 11

 Terminology:..... 14

General Instructions for Vinyl Siding 15

 Habitat Charlotte uses the historic siding package..... 15

 The Basics of a professional siding installation 16

Construction Details - Siding Prep..... 17

 Flash Front Porch Wall 17

 Side Wall Flashing at Roof Line 17

 Flash Windows 19

 Starter Strip Lay Off..... 19

 Starter Strip Installation 21

 Starter Strip on Front Porches 22

J-Channel Starter on Front Porch	22
Outside and Inside Corner Posts Installation	23
J-Channel for Front Porch Ceiling	25
F-and J- channel securing soffit and siding at top of porch wall.	26
Splicing a J- Channel.....	27
Corner Posts Notched at Porch Beams.....	27
Corner Post at Soffit.....	27
Window and Door Trim Layout.....	29
Window Starter Strip Detail.....	30
Double Window Center Trim Detail.....	31
Spacing Starter Strip at Windows	32
Installing the window trim	33
Mitering Window and Door Trim	36
Window and J-Channel and Undersill Trim	37
Door Trim Detail.....	38
J-Channel Prep	39
J-Channel on Porch Beams and up Gable	39
Siding at Porch Beam Alternatives	40
J-Channel and F-Channel Misc. Locations	41
Construction Details - Siding	42
Using a Siding Saw Table jig to cut siding and soffit panels.....	42
Siding Panels & Gable Vent.....	44
Temperature Effects on Vinyl.....	44
Panel Lay-out.....	44
Cutting Panels - General Instructions	46
Nailing Panels - General Instructions	46
Securing Soffit and Siding at Top of Side Walls.....	47
Panels at Window and Doors.....	48
Fitting at narrow openings between windows.....	49
Habitat Begs You!.....	49
Shutter Installation.....	51
Panels on Gable Walls	52
Soffit Installation.....	55
Soffit at Eaves.....	55
Soffit at Gable Overhangs.....	56
Soffit at Side Porches.....	56
Boxing Return Wrap	58
Fascia Installation.....	58
Aluminum Fascia at Eaves.....	58

Aluminum Fascia at Gable Overhangs	59
Porch Ceiling	60
Caulk Application	61
Clean Site, Re-stack Materials	61
Construction Details	62
Short Porch Beam Cross Section	62
Microlam (Long Beam) Cross Section.....	62
Box Beam Cross Section.....	64
Frieze Detail	65
Soffit & Frieze Board Detail	66
Vinyl Siding Appendix.....	67
Alternative Methods and Details.....	67
Undersill Trim for Double Windows	67
Rules for Installing Siding.....	68

Introduction to the Vinyl Siding Section

This Section Includes

- Safety Guidelines Task List
- Tool and Equipment List Material List

Please note that some of the photos in this chapter do not show the foam blue board applied to the OSB. These photos will be replaced in the future.

Schedule

Vinyl Siding Workdays

On most Habitat projects the vinyl siding installation can be completed during three scheduled workdays: One Siding Preparation day, and two Siding Installation days. However, weather, the height of the house off the ground, and the complexity of the house plan may add an additional day to the schedule.

Crew Assignments

Crew Assignments for Prep: On the Siding Preparation workday the crew consists of two experienced siding crew leaders each with two additional volunteers. If the work is to be done during the week, a crew may consist of one of the Habitat Construction Staff members and two or three weekday volunteers. An experienced crew can normally prepare a house for siding during one workday. If more crews are available on the preparation day, they may also begin the regular siding installation. A prep day is most successful when the crews are small and there is not a rush to stay ahead of the faster paced siding panel installation crews.

Crew Assignments for Siding: It is suggested that eight volunteers, plus the task leader and four experienced crew leaders, be recruited for Siding. Divide into 3 person crews by distributing the experience level among the crew leaders. Each crew should be assigned to work on a particular side of the house until that section of the house is completely finished, including the siding, soffit and fascia. An experienced crew member should tackle the slower but more difficult projects that may hold up the crew if not completed in time. It is tempting to put large numbers of volunteers on siding, but without one experienced crew leader for each two inexperienced crew members, the work will proceed too quickly and not allow time for quality control. If siding is not installed properly, entire walls of siding may have to be removed and reinstalled. (Siding is the number one service issue for Habitat.) Having experienced crew leaders on every crew, and keeping the crews small, will result in satisfied volunteers and quality work.

Vinyl Siding Safety Guidelines

Review these guidelines with each crew member at the start of the day or as they arrive on site.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Speak up if something looks unsafe. An observer can spot danger quicker than a worker.

Know where **water** & a **first aid** kit are located. Tell the site supervisor immediately in the event of an injury.

Habitat **requires safety glasses** not just when using power saws, but at all times. Habitat **requires hard hats** during siding.

Utility knives - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades. Use a nail slot punch for elongating nails slots. **Utility knives are prohibited for cutting vinyl.**

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walkboards, and pathways. Discarded material must be placed in the designated area.

Power Saws:

- Habitat requires that **ear & eye protection** be used when using power saws to cut vinyl. Don’t bind the blade of any saw – listen for it. Back off and re-support material.
- Keep electric cords out of the way of the saw and out from underfoot.
- Don’t cross hands over to stabilize material on the miter saw. Find another way or get help.
- **Guards** on saws must be in place & operating. **Do not disable the guard, even on a siding saw table.**

Use a **ladder** that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent sideways movement. When a ladder is placed leaning against a wall, ensure that both feet of the ladder are on level ground and that the ladder is vertical. A plank or something solid, large enough to be placed under one of the feet without moving, may be necessary to stabilize the ladder.

Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walk boards, placing scaffolding on solid footing, and guardrail requirements).

Keep the entire work area, inside and out, **free of trip and fall hazards**.

Don’t leave **loose objects** on scaffolding, roof deck, or ladders. **Keep tools not in use in your tool belt** at all times. Select the correct tool for your work. Carry only those you need.

No loose clothing or hair that can get caught in power tools.

Wear appropriate clothing for the task including work boots that protect from falling objects, have a nonskid sole & resist nail penetrations. No open toed shoes allowed.

Tools must be in a safe condition (meet OSHA standards, i.e. no nicks in cords or missing ground prongs.)

Think & concentrate on your task.

If you are uncertain about how to do a task, or how to operate a power tool, **ask** your crew leader.

Siding Task List

Staffing

House Leader

Siding Task Leader

4 Crew Leaders

8 Additional Volunteers

Siding Prep Tasks to Be Completed

1 crew _____ Flashing

1 crew _____ Lay off and install starter strip

2 people _____ Install vinyl corner posts

2 people _____ Install J-channel around porch beams

2 people _____ Install J-channel on porch beam and up gable

1 crew _____ Install J-channel around windows/doors/misc. locations

Siding Installation Tasks to Be Completed

All crews _____ Set up Scaffolding

All crews _____ Install vinyl siding and gable vent

All crews _____ Install soffit

All crews _____ Install fascia

2 people _____ Install J-and F-Channel and porch ceilings

1 person _____ Caulk Joints

All Crews _____ Clean site, restack materials

Quality Checkpoints

- _____ Starter strip level and straight
- _____ Corner posts straight and plumb
- _____ Corners of J-channel at windows and doors neatly cut and fitted
- _____ Scaffolding securely braced and walk boards in place
- _____ Siding panels level
- _____ Nailed so panels can still move
- _____ Lap joints in siding away from main traffic pattern
- _____ Siding trim at top of walls properly installed
- _____ Last piece of siding at top of wall securely fastened
- _____ ¼" gap where siding is cut around windows, corners, and doors
- _____ Soffit properly installed
- _____ Corners of fascia lapped correctly
- _____ All materials restacked, site cleaned up, tools accounted for and put away

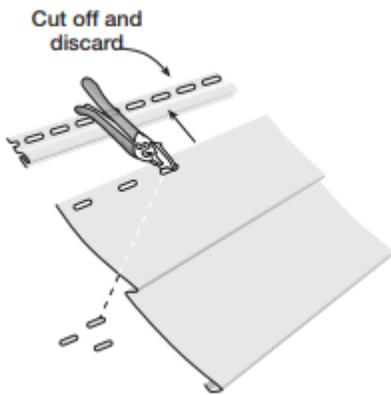
Vinyl Siding Tool, Equipment & Material List

Tools Each Siding Crew Member Will Need

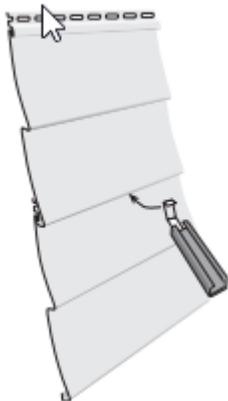
Hammer (16 oz. Min.)
Nail Apron
Measuring Tape (16' Min.)
Square (Speed or Combination)
2 Pencils
Siding Snips
Safety Glasses
Work Gloves (highly recommended when working in winter)
Hard Hat
Water

Tools Each Siding Crew Will Need

30' Measuring Tape
4' Level
Framing Square
Chalk Line
Nail Slot Punch (makes slots)

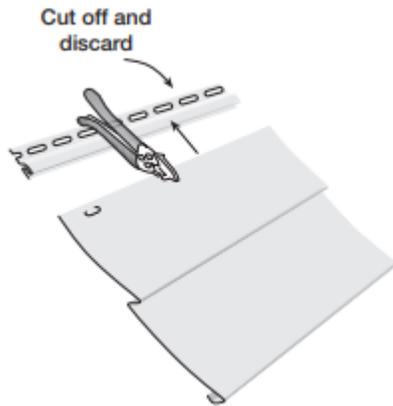


Zipper Tool (unlocks panels)



Tools & Equipment Needed at Each Site

Ear Protection/Glasses/Hard Hats
Twelve-Gauge Grounded Drop Cords (100')
Three or four-Way Electrical Box
Circular Saw (7¼")
Vinyl Siding Saw Blade or Plywood Saw Blade Backwards
Snap Lock Punch (makes tabs)



Hand Held metal brake (Bender)
Heavy duty aluminum shears
Nail punch



Caulk Gun
Extension Ladder (16' Minimum)
Step Ladders (8')
Step Ladders (6')
Siding Saw Table (jig)
Metal Scaffolding with Walk Boards
Saw Horses

Props Useful for Demonstrations

J-Channel cuts for windows and doors
Window Trim cuts for windows and doors
2 Panel samples to show proper engagement
Panel sample to show nailing flange cut away
Boxing return wrap
J-Channel butt joint cuts
Panel sample to demonstrate Nail Slot Punch

Material List

Siding

Siding Panels

Starter Strip

Outside Corners

Inside Corners

J-Channel

F-Channel

Undersill Trim

Vented Soffit

Unvented Soffit

Gable vents

Nails

Siding Nails

Hot Dipped Nails for Starter Strip

White Fascia Nails

Miscellaneous

Chalk

Scrap Blue Board

Boxing Returns (if not installed)

Caulk – exterior

Roll of Silver Window flashing tape

Roll of Galvanized porch flashing (only on subfloor homes)

Insulation company installs baffles

Additional Items Needed

Window Trim

Under sill Trim

Starter strip - windows and doors

Vinyl shakes (or board and batten)

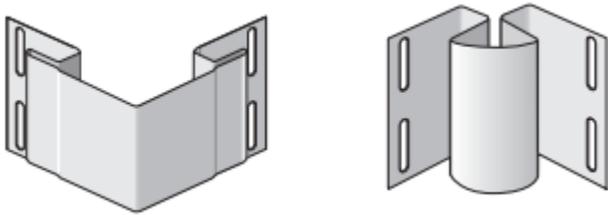
Gray Board to cover beams

Fascia

6"x1" fascia for boxing returns

Siding Material Description

Outside and Inside Corners: Vinyl material formed to resemble a wooden corner post, with a nailing flange and a channel to receive the ends of the siding panels along both sides. Each post is 10' long.



J-Channel: White vinyl material pre-formed in a “J” shape, with a single nailing flange and a channel to receive the ends of the siding panels around the perimeter of any openings in the wall. (Doors etc.) Each piece is 10' long.



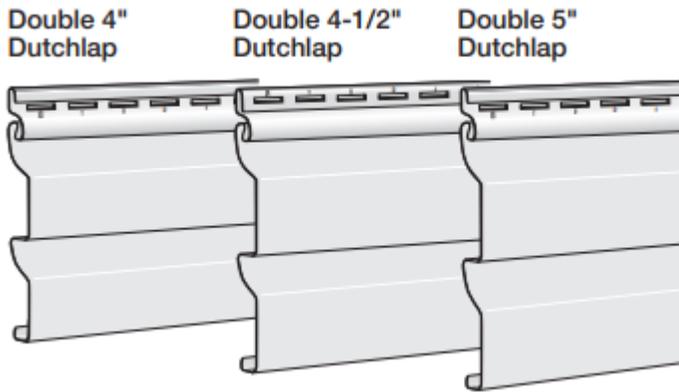
F-Channel: White vinyl material pre-formed in an “F” shape, with a single nailing flange and two channels.



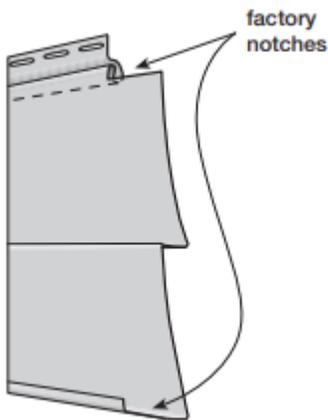
Undersill Trim: White vinyl material preformed in a flattened “J” shape, with a single nailing flange and a locking channel. It is installed under double windowsills and other horizontal projections and grasps the top crimped edge of the siding panel below it. Each piece is 10' long.



Vinyl Siding Panels: Vinyl material in a variety of colors and styles which has been pre-formed to resemble wood lap siding. Each piece is 12' - 6" long and 9" - 10" wide, with a nailing flange along the top edge and a locking channel along the bottom.



Factory End

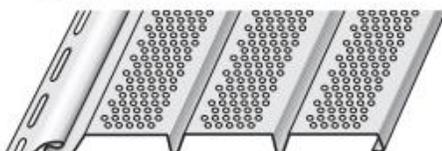


Vinyl Soffit Panels: White vinyl material, similar to siding panels, but with holes or slots to provide attic ventilation. Panels are 12' long and 12" wide and are cut to fit under the eaves and gable overhangs. Solid panels are used for porch ceilings and rake overhangs.

Solid Soffit



Fully Vented Soffit



Aluminum Fascia: White pre-finished aluminum strips which have been formed into an “S” shape $\frac{3}{4}$ " at the bottom and 6" high. Each piece is 12' long and cut to allow the ends to overlap.

Aluminum Fascia for Boxing Returns (6"): Pre-finished aluminum strips which have been formed to cover the boxing returns. (The boxing return wraps will be formed on site.)

Siding Nails: 1½" to 2" galvanized nails. Similar to roofing nails.

Fascia Nails: White stainless steel nails approximately 1" long.

Boxing Return Framing Kits: Pre-cut and partially assembled 2x4 and 2x6 framing members used to finish off the lower ends of the gable overhangs or “ladder” framing.

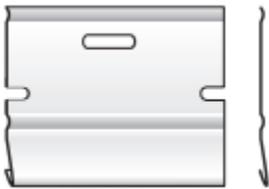
Gray Miratec Board: Typically 1x boards in 8-16' length used as trim board over the porch beams. On one surface it is smooth while the other is wood grain. Both sides are primed.



Vinyl Window and Door Trim: Lineal window trim adds a wider face profile that can help unify and accent a home's exterior, adding a design element that can be both subtle and distinctive. These are applied to the front windows and the front door. The window trim is typically applied to the front windows but may be applied to the sides in some situations.

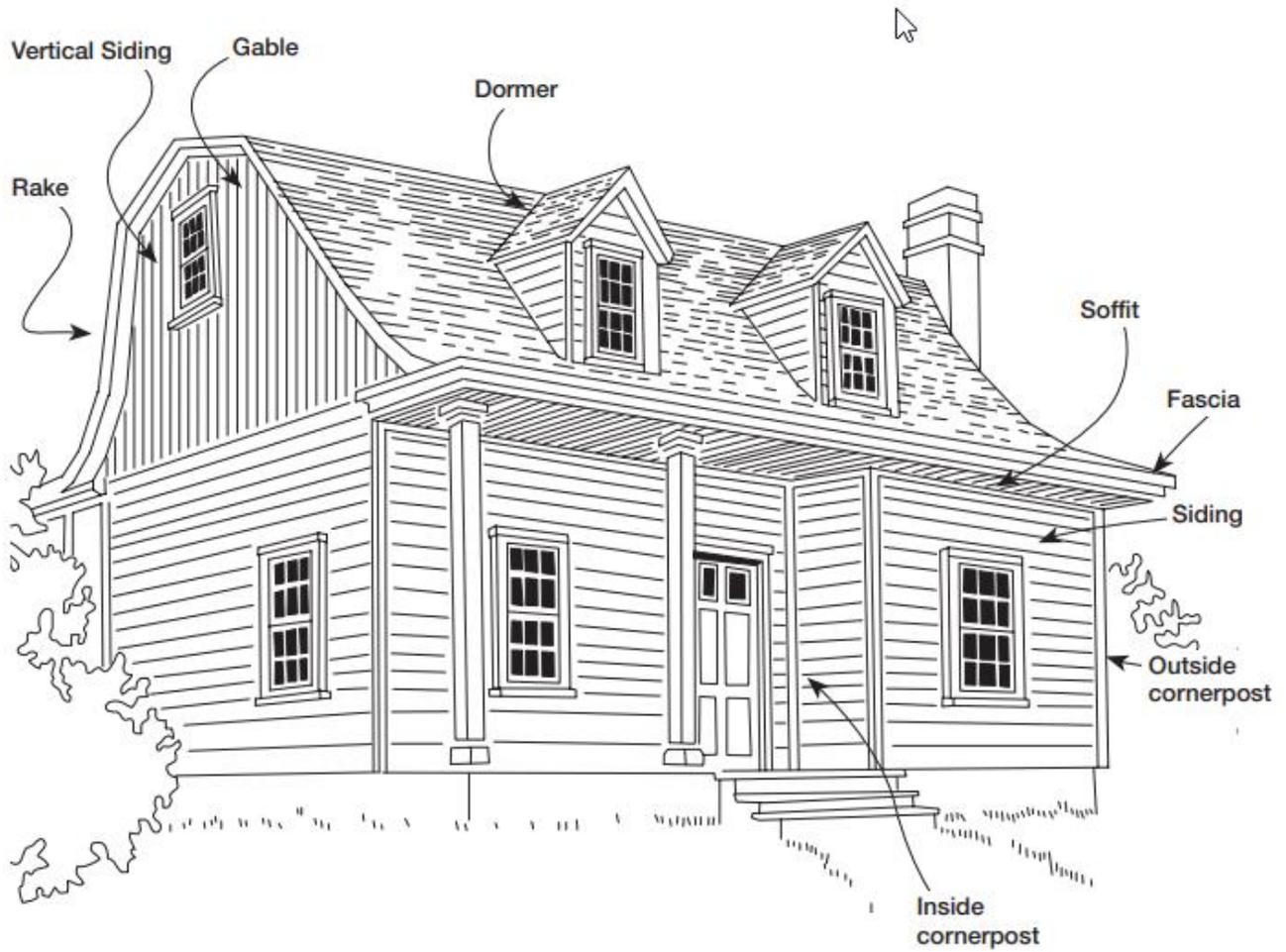


Starter strip: metal based that is installed to hold the first course of siding.



Terminology:

Home Exterior Terms



General Instructions for Vinyl Siding

Habitat Charlotte uses the historic siding package.

- Porch Beams are wrapped with painted 1x material (gray board)
- Wider vinyl window and door trim is used on the front door and the front windows. (unless the house is on a corner lot, then all windows are wrapped)
- Vinyl cedar shakes are on the front gable (s), or vertical Board and Batten
- Starter strip is used around windows and doors that have the wider vinyl trim installed.
- On Gables Gray board is installed flush with the button edge, then drip-cap material on top of that, then J-channel.
- On intermediate gables starter strip is used to secure the vinyl frieze board.
- Fascia width is 5 ½" (vs. 3 ½")



Historic Siding Package



Hal Cole is our Wizard of Siding. This chapter is dedicated to Hal.

The Basics of a professional siding installation

Following these recommendations—the basics of a professional installation—can help ensure a quality installation that fulfills homeowners' expectations and reduces call backs.

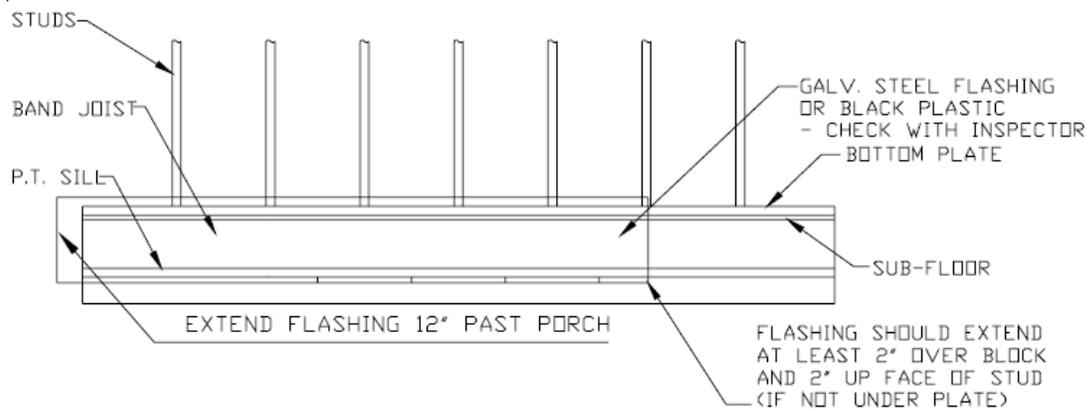
1. Install all siding and accessories over a smooth, flat surface. Always install siding over a rigid sheathing, and never install it over open studs.
2. Vinyl siding is not a watertight material. Install a weather-resistant barrier and flash around all windows and doors before installing vinyl siding and trim.
3. There are three recommended ways to cut vinyl siding: For rip cuts, use aviation snips or shears to fit panels around windows and doors. For cross cuts, use a circular saw with a vinyl siding or plywood blade in the reverse position.
4. Always leave room for expansion and contraction into receiving channels like outside corner posts, inside corner posts, and J-Channel. If the temperature is above 40°, leave 1/4"; if the temperature is below 40°, leave 3/8".
5. When installing horizontal vinyl siding panels 12' 6" in length or shorter, overlap the factory notches 1" to 1-1/4" (depending on the temperature).
6. Always nail in the center of the nail slots: 16" on center for siding; 8" to 12" for accessories.
7. **DO NOT NAIL TIGHT!** Always leave 1/8" to 1/16" between the nail head and the nail hem to allow for movement when the panel expands and contracts.
8. Hang vertical accessories from the top of the top nail slot. If the accessory is longer than 12', hang it from the top two nail slots.
9. Lap away from the highest traffic pattern, typically the front of the house. Keep laps at least 3' apart from course to course.
10. If a hole is needed, for example, to run a wire through the siding from inside the house, contact the supervisor and request that a drill be used.
11. In corners where there's very little space between the back door and the corner of the house, there's not enough room for an "inside corner" channel. In these cases, we tuck one piece of J channel against another in a 90 degree orientation and use that as the strategy for the inside corner.



Construction Details - Siding Prep

Flash Front Porch Wall

On houses built on a subfloor: With galvanized roll flashing, flash up the front porch wall to protect band floor framing. Nail along the top (above water source). This step is not needed for houses built on a slab.



Front Porch Wall Flashing

Side Wall Flashing at Roof Line

When a house has adjoining parallel gables additional flashing is required. Flashing is needed where the smaller, lower gable joins the wall of the larger gable. Step flashing is installed under the shingles when they are applied to the roof. See the photo below.

Step One: Bend a piece of step flashing to create a diverter and install at lowest shingle.

Step Two: Install J-channel along Gable roof line stopping at diverter piece. Vinyl J-channels should not be in direct contact with roofing shingles, since the shingles may transfer enough heat to the vinyl J-channel to cause its distortion.

Step Three: Cut siding around the diverter so that water from the roof is able to flow off the roof without being directed behind the siding.



Mock up of a vertical slit.



The slit allows water from the J-Channel to be channeled out over the siding.



The photos and drawing above shows the finished step flashing and J Channel to accommodate the siding.

Flash Windows

A layer of flashing is installed after the window is installed over the foam insulation board. This flashing is installed in the following order - bottom, sides, then top to shed water. Apply the flashing strips, covering the nailing flange. Place it over the nailing flange and against the window but not lapped onto the sides of the window frame or it will show after siding is installed.



Starter Strip Lay Off

To ensure that the siding is level and even around the house, lay off for the starter strip by measuring down from the bottom of the truss overhang to a point where, when it is installed, the bottom edge of the strip will be 1" below the top of the masonry foundation wall. Measure against trusses that sit firmly on the cap plate. It is easier to install starter strip if the line is chalked for the top of the starter strip. Connect the points by striking a tight and straight chalk line.

It is absolutely necessary that the starter strip is installed in a straight line or the first panel of siding will not engage properly. This is achieved in part by putting a tremendous amount of tension on the chalk line before snapping. On long walls it helps to pull the line tight and have a third volunteer hold the center against the wall and then alternately snapping each side.

Establish additional points, of equal distance down from the trusses at all house corners, on both sides of any door openings, and in the middle of any long walls.

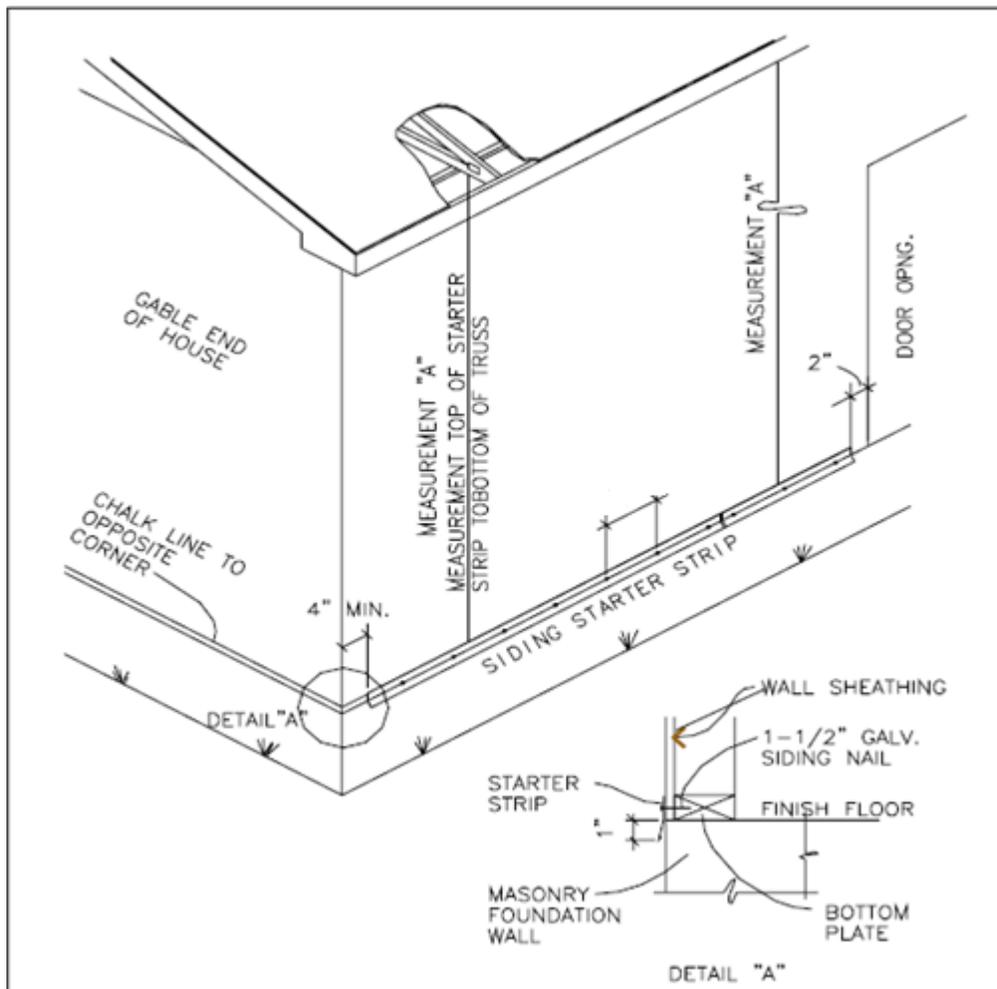
An alternative method is to use the top of the foundation as the reference point. Again, the **bottom** of the starter strip is placed 1" below the top of the foundation. Do not trust the bottom of the wall

sheathing for measuring. Measuring 1 ½ “(for 2 ½” wide starter strip) above the top of the foundation, brickwork, or concrete, mark and chalk for the top of the starter strip. See the site supervisor if there is a discrepancy in the two methods due to site circumstances.

To establish a line on the gable ends of a house, where there are no truss overhangs, simply extend the chalk line at the sides of the house around the house corner. Note: Do not set the corners until starter strip lines are extended around the corners.

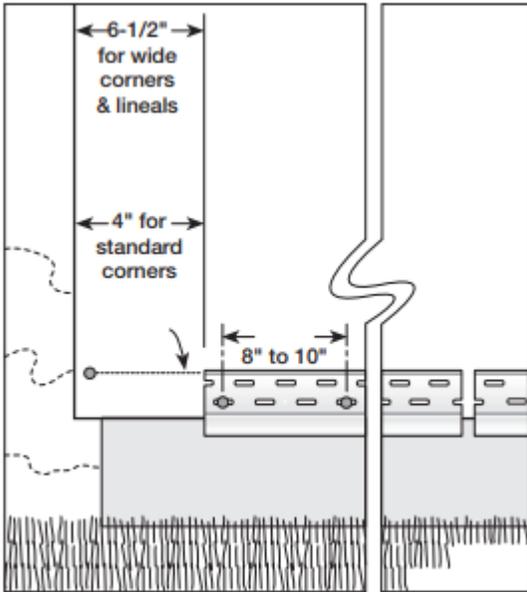
In order to keep the siding panels straight and level, chalk additional reference lines around the house just below and just above the window openings. Determine the initial points for these lines by measuring up from the bottom of the starter strip or down from the trusses. This is necessary primarily to find panels that are not locked into position but also because of the vertical creep in siding that occurs due to the varying tension different crew members put on the panels.

An alternative to charked reference lines, an experienced siding crew can periodically measure down from the trusses to the siding at several places along the wall to check for identical measurements. This is especially useful when working up and around windows and doors. Hint: A ½” difference typically means a lower panel is not fully engaged. See the site superintendent should this occur.



Starter Strip Installation

Siding is installed on the house after the blue board is installed over the OSB. If the outside and inside corners are not installed, you should determine the size of corners you will be using. On standard outside corners (4" width) begin approximately 4" from any house outside corner, 2" from any house inside corner and 2" from each side of an exterior door opening, attach the starter strip to the house with 1 1/2" to 2" galvanized siding nails roughly 8" apart. Continue until the strip extends around the entire perimeter of the house, leaving approximately 1/4" space between the pieces of starter strip. Nail starter strip tight using the nailing pattern shown below.



1/4" Space Between Starter Strips



Wood Side Porch – If a wood side porch is to be installed, it is easiest to install siding at the side porch door if the 2x12 deck piece is in place under the threshold. The 2x12 is, or will be, installed from outside to outside of the door's brick mold. The J-Channel that sits against the side of the brick mold will extend to the bottom of the 2x12. Stop the starter strip 2" short of where the J-Channel will go.

Starter Strip on Front Porches

Starter strip can be used when it starts the panels at a height that keeps them in alignment with those around the porch corners, otherwise use J- Channel as a starter.

Chalk a level line by measuring down from the trusses, not up from the un-level porch floor. Install the starter strip as previously instructed. Hold the starter strip back 2" from doors. Hold back 4"-5" from corners.

J-Channel Starter on Front Porch

Keep the siding panels even around the porch corners.

It will be best to use J-Channel when starter strip does not allow the panels to line up level around the porch corner. The first piece of porch siding will be ripped along its bottom edge and will sit in the J-Channel. Set J-Channel at a height that aligns the top of the panels to those around the corner.

Chalk a level line by measuring down from the trusses, not up from the un-level porch floor. Drill 1/4" weep holes every 12 inches along the bottom of long pieces of J-Channel.

An alternative approach allows the J-channel to lay on the floor of the porch, raised about 1/8" from the floor, after the weep holes have been drilled as above, and the siding cut to maintain level along the top, as follows:

At a front corner post, make a mark on the corner post level with the top of the nailing flange on the first course of siding along the adjacent side of the house. (A scrap piece of siding may be temporarily installed for this purpose.) Carefully transfer the mark from the side of the corner post to the front and thence to the blue board on the front of the porch.

Repeat the same procedure on the other front corner post.

Using a level, carefully extend the lines along the blue board from each corner to the trim around the front door. At 3 ft. intervals, measure the height from inside the J-channel to the line on the blue board and, using these dimensions, construct a line along a new piece of siding, measuring from the top of the siding down. Cut along this line carefully.

For each of these approaches, a strip of scrap siding, set in the J-Channel behind the finish piece, will keep the siding pushed to the front for a neater appearance.



Small Notch for Brickmold Does Not Need J-Channel



J-Channel Used in Lieu of Starter Strip (Slab House)



J-Channel Used in Lieu of Starter Strip (Crawl Space House)

Outside and Inside Corner Posts Installation

Since corner posts are somewhat flexible, it is necessary to strike a chalk line from top to bottom of both sides of the house corner in order to keep the vinyl corner plumb and straight. Use a scrap piece of inside and outside corner material to determine the distance from the house corner to the outside of the

nail flange on the siding corner post. Mark this dimension at the top and bottom at both sides of the house corner, then chalk a line between these points. Do not push the corner piece out of square. Holding a tri-square against the scrap is helpful.

Note: When measuring from the corner of the sheathing, make adjustments if the Blue Board does not come to the true corner.

Fasten the corner posts to each inside and outside corner of the house with 1½" or 2" galvanized siding nails, every 12", nailing in the pre-punched holes of the nailing flange. Maintain the height and location of the corner post by nailing, tight, at the top of the top two slots. **The remaining nails must be installed in the center of the slots, with the head 1/16" proud of the nailing flange** in order to enable the expansion and contraction of the vinyl post.

Use a tri-square to keep the post square when nailing or place vertical chalk lines to locate edges of corner posts.

Cut the post to within ½" of a mark that is level with the bottom of the gutter board. Use a level to transfer a line from the bottom of the gutter board to the wall.

Outside corner posts extend 1" below the starter strip, with the nailing flange cut off even with the bottom of the starter strip. Cutting off about 1" of nailing flange in a 45 degree should work. Though the flange should not be visible once siding is installed, extending it below the wood framing is important for water proofing. Refer to drawing on page 23 and the photo below.

When J-Channel is used in lieu of starter strip, install the corner posts off the concrete floor by ¼".



The standard 3/4" inside corner post, should extend 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so it does not show below the siding. Set the post straight and true. Position the top nail in the top of the nailing slot. All other nails should be in the center of the nail slots.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Use a **ladder** that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent side-ways movement.

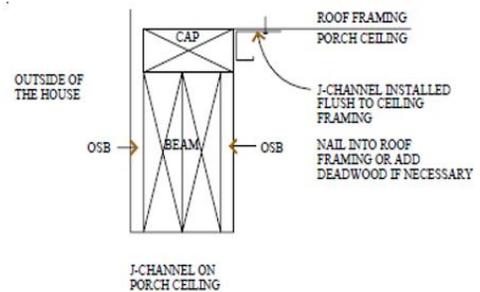
Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walk boards, placing scaffolding on solid footing, and guardrail requirements).

Keep the entire work area, inside and out, **free of trip and fall hazards**.

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walk boards, and pathways. Dispose of scrap in the designated area.

J-Channel for Front Porch Ceiling

To support a soffit ceiling, install J-channel around the inside perimeter of the porch on the gray board covering the porch beams. Install the J-channel along the top of the gray board by nailing or, using a screw gun and drywall screws, through the base of the J-channel into the top of the gray board. The nailing flange will be hidden by the soffit.



J-channel added below F-channel on porch wall. Under-sill trim must also be inserted into J-channel

J-Channel on porch holds soffit in place.



Notch required on gray board for J-channel on porch

F-and J- channel securing soffit and siding at top of porch wall.

F-channel should be installed along the top of the porch wall, level with the trusses, to accept the soffit.

Insert Undersill trim into J-channel and then nail the assembled channels through the nailing flange of the F-channel to accept the top of the wall siding.

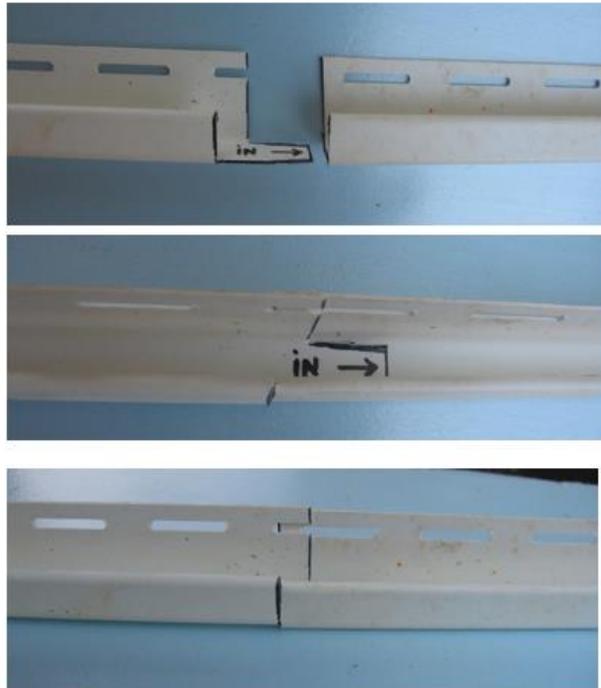
The top of the final pieces of siding must be cut on a line measured at several points (~ every 2 feet) along the panel that ensures that the top of the siding panel is fully inserted into the Undersill trim.

Use a Snap Lock Punch to create raised lugs on the vinyl siding every 12 to 14 inches along the cut edge with the raised lug on the outside face. Install the siding panel, making sure the raised lugs (from snap lock punch) lock into the under-sill trim.



Splicing a J- Channel.

To extend a j-channel use the following technique:



Cuts used to join J-Channel. The tab should be a minimum of $\frac{3}{4}$ inch because it will channel water over the joint. Position accordingly. The arrow is in direction of water flow, downslope.

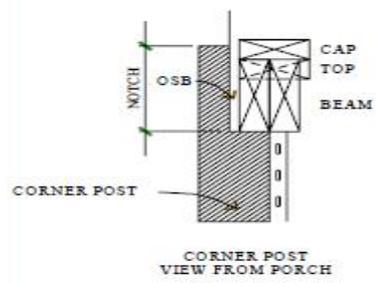
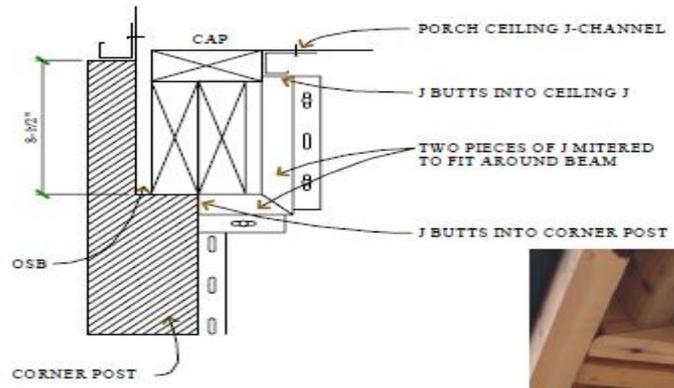
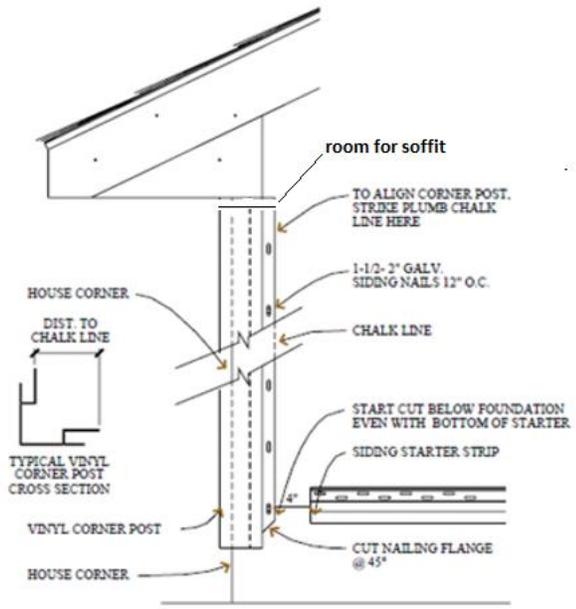
Corner Posts Notched at Porch Beams

On porch corners, the corner posts must be notched around the beam.

Where front porch corner posts extend to the ceiling, leave a space for J-Channel and soffit (measure J-Channel on site - it will be either $\frac{3}{4}$ " or $\frac{7}{8}$ ").

Corner Post at Soffit

Where a corner post extends to the soffit area, mark a level line from the fascia board onto the sheathing. Lower the mark by the thickness of the J-Channel material. Take a corner to this height, which will be the bottom of the soffit.



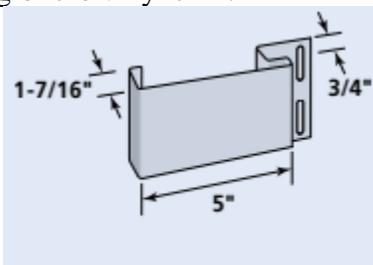
Leave room for the soffit. The top mark is level with the bottom of the gutter



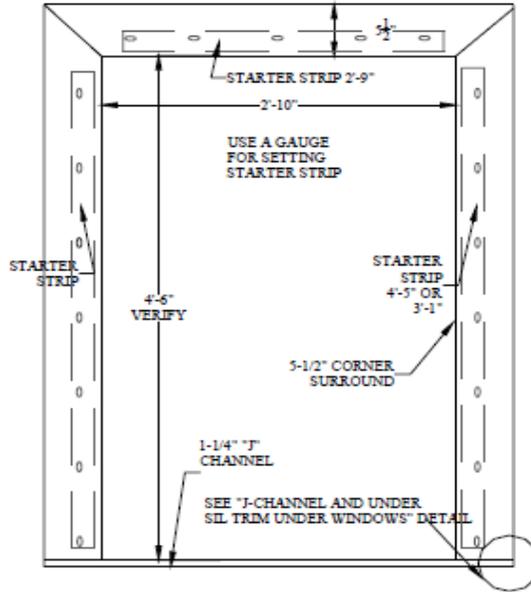
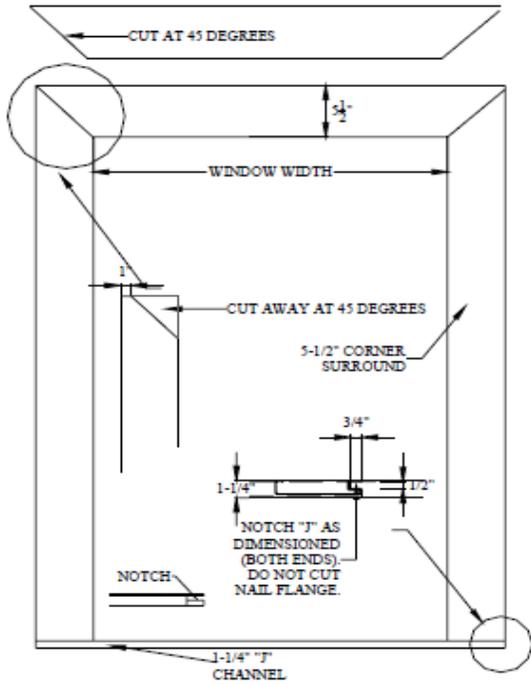
Window and Door Trim Layout

Lineal window trim adds a wider face profile that can help unify and accent a home's exterior, adding a design element that can be both subtle and distinctive. These are applied to the front windows and the front door. The window trim is typically applied to the front windows but may be applied to the sides in some situations.

The 3/4" channel receives siding panels. The other side slides over installed starter strips. Shown below is the drawing of the vinyl trim.



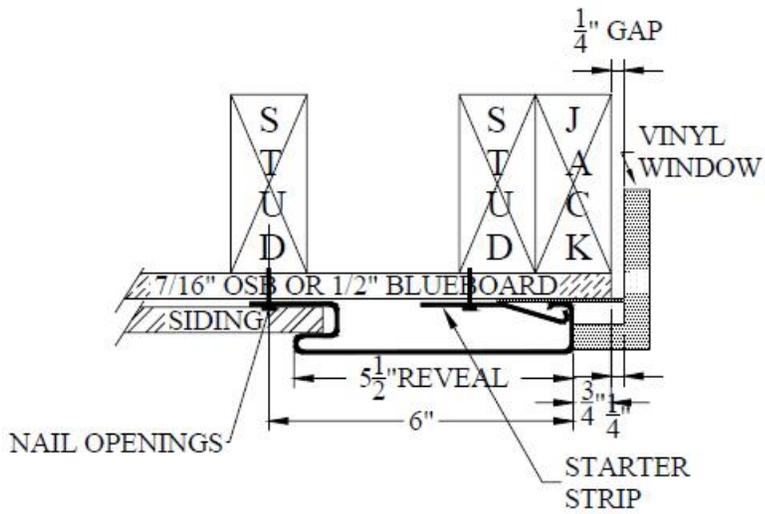
The sections below describe the locations of the starter strips required for the installation. The pictures on the following pages indicate how the component parts of the trim must be cut and installed.



Window Starter Strip Detail

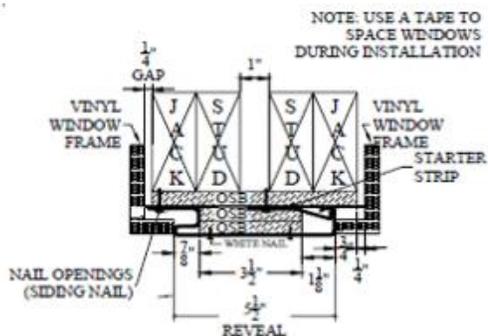
“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Use a **ladder** that will reach the work. Move the ladder with your work. Place ladders on a solid footing.



Double Window Center Trim Detail

This trim will be gray board, cut to fit, nailed in with trim nailer. See site supervisor.



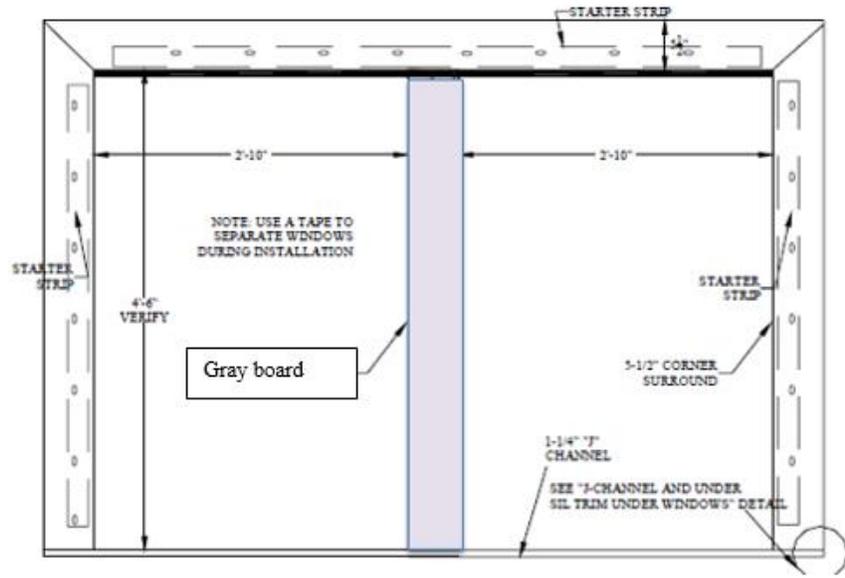
Details for vinyl center trim (above and below)
Photos of 1x center trim (right)



Double windows.



Wood center trim in place.



Spacing Starter Strip at Windows

Starter strip cannot extend beyond the corner of the window frame. Holding starter strip back 2” from edge of window frame is adequate. Use 2 cut starter strip on each side of the window at about 4” in length and 2 of the same length at the top of the window, as shown in the image below:



Two methods are used for setting the starter strip relative to the window frame. The first is to use a 6d or 8d nail held perpendicular to the house and against the window trim. The second method, which is more reliable, is to make a spacer out of scrap J-Channel. Hold the spacer against the window trim with its nail flange against the house and mark for the starter strip.



Holding an 8d nail works as a spacer for setting starter strip.



A scrap of J-Channel makes a more reliable spacer.

Installing the window trim

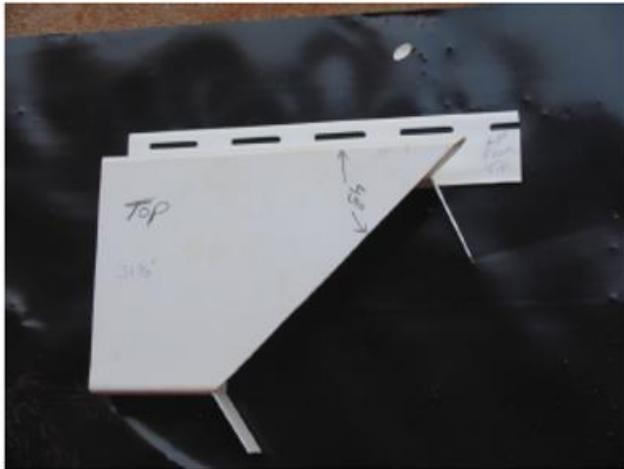
There are 2 techniques to installing the vinyl trim on the side of the door or the window, depending on the construction state at the site.

1. Install the side trim from the top of the window if there is adequate room above the window to allow this procedure. Simply slide the trim so that it engages with the installed starter strips on the side.
2. If the above step is not feasible, follow this procedure (see photos that follow):
 - a. Set the side trim against the starter strip and drop it down about 4"
 - b. Place $\frac{1}{2}$ " marks on the lowered trim the position of the starter strip and add about $\frac{1}{4}$ " to this opening.
 - c. From each end of the marks, run a line and use this outline to cut from the back side of the trim the opening you marked. Cut only the part of the trim that will be sliding over the starter strip.
 - d. Place the side trim over the starter strip and push up so it engages with the starter strip. Make sure the bottom of the trim is flush with the bottom side of the window casing.
 - e. Wait on the nailing of the trim flange until you have completed the top trim over the window and door.

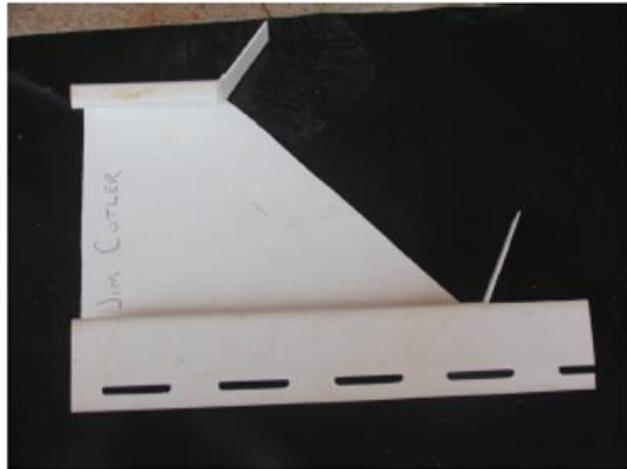




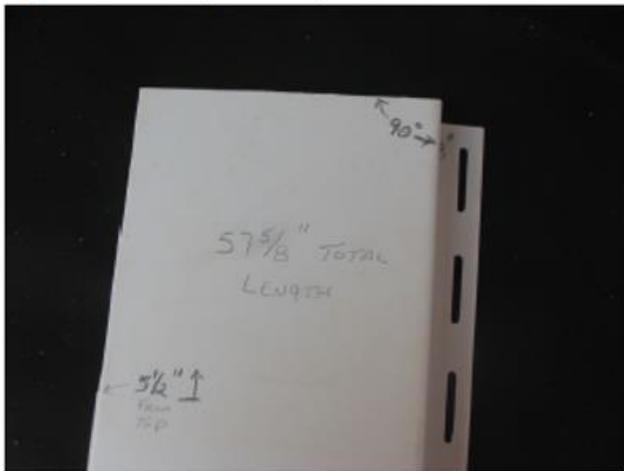
Mitering Window and Door Trim



This mock up shows the cuts needed for mitering the top window trim. (front side)



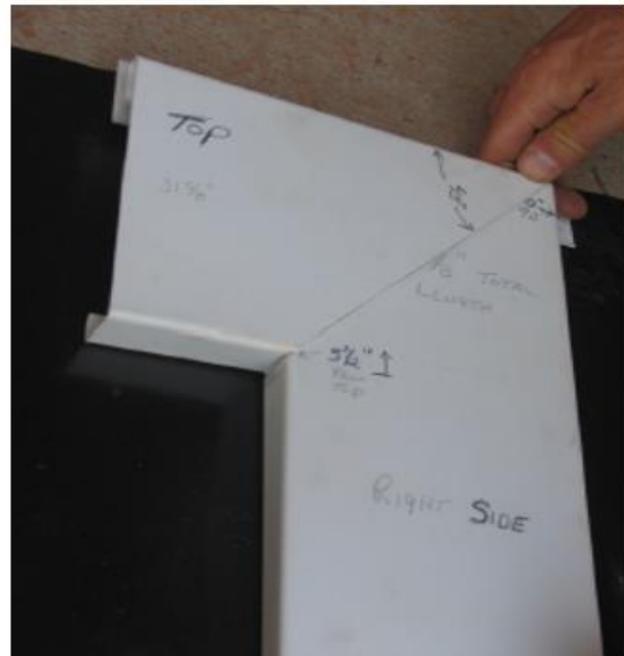
Back side of top piece.



Front of side piece.



Back of side piece.

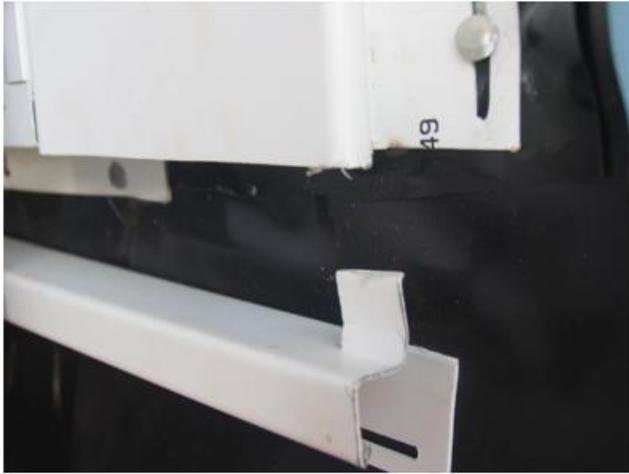


The mock-up put together forming a neat mitered joint



This shows how the tab will divert water out over the joint.

Window and J-Channel and Undersill Trim



Notched J-Channel is installed under the window.



It slips into the window's side trim.

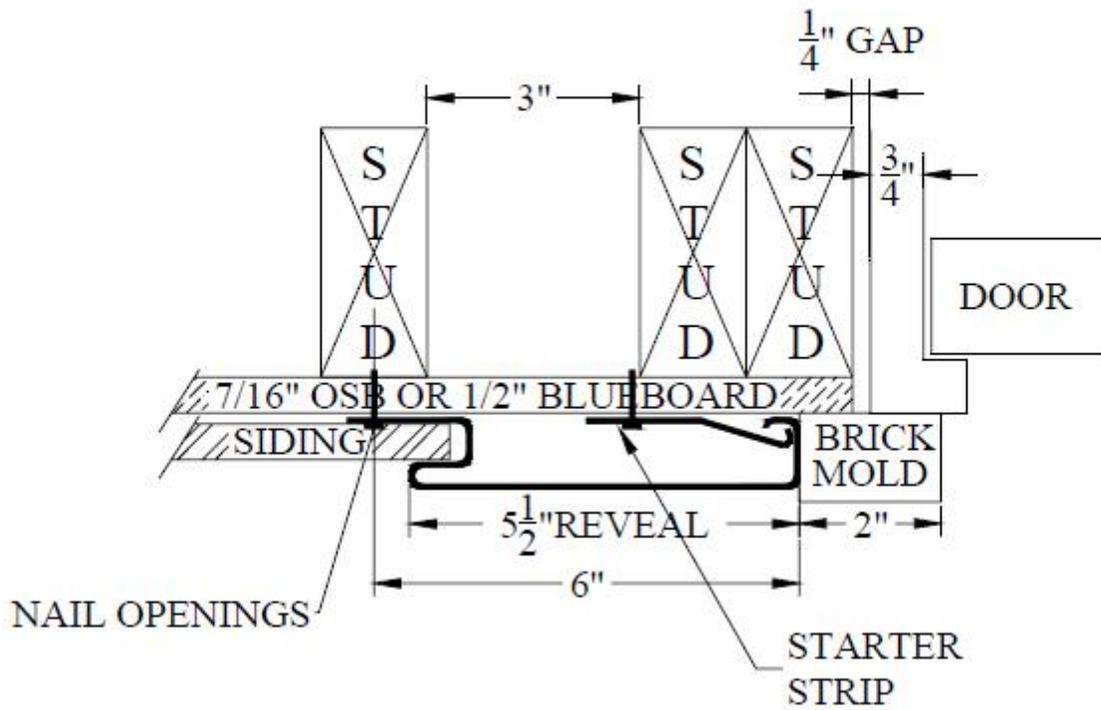


J-Channel in place.



Under sill trim is added inside the J-Channel.

Door Trim Detail



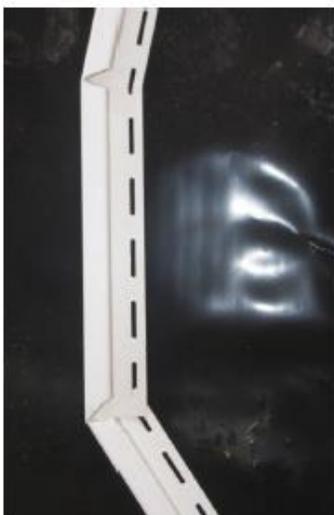
J-Channel Prep

J-Channel is used to cover raw edges of siding and to weatherproof these joints. Fasten J-Channel with 1½" to 2" galvanized siding nails at 8" o.c., nailed tight through holes in the pre-punched nailing channel.

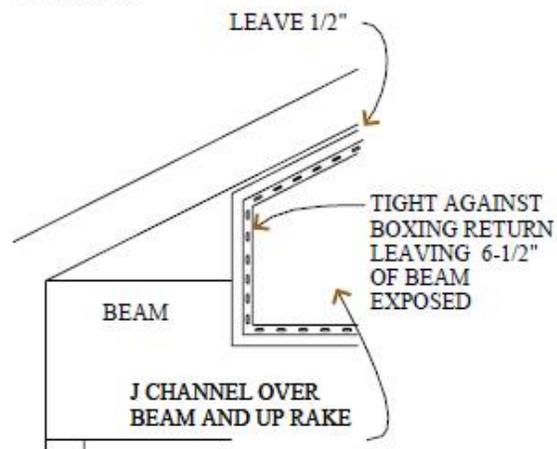
J-Channel on Porch Beams and up Gable

Install J-channel along the exterior of the porch beams. With the nailing flange up, set the bottom of the J-channel approximately 6 ½" above the bottom of the beam. A splice in the J-Channel at the center of the porch will allow for drainage and will make it easier to turn the J up the inside corners of the gable. Cut the J-channel long enough to bend up at the boxing return and again up the rake. Make these bends by cutting a "V" groove in the nailing flange.

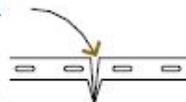
When placing the J-channel up the rake, hold it off the ladder ½" to leave room for the soffit to sit on top of it.



Siding is brought down several inches over the beam.



V-GROOVE CUT TO ALLOW J-CHANNEL TO BEND AROUND CORNER



Siding at Porch Beam Alternatives

Several options are available for the placement of siding on the front gable. See the site supervisor to see if an alternate method is to be used.



This option brings the siding down to the bottom of the boxing return and leaves the beam exposed.



Siding is brought down several inches over the beam. This is the method described on previous pages.

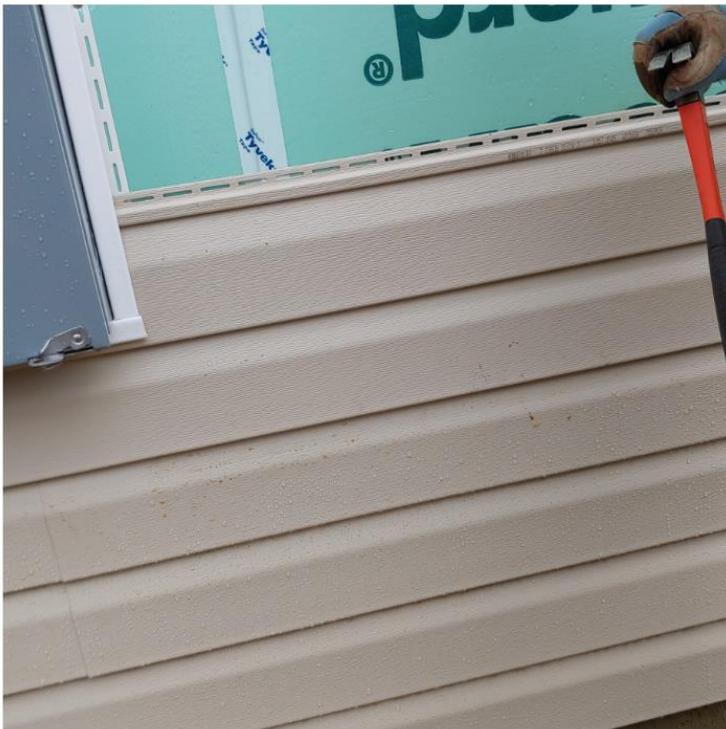
Drip cap on gables to prevent water from intruding behind gray board. Install above gray board before J-channel.

J-Channel and F-Channel Misc. Locations

Examples of where J-Channel is needed.

1. Under the eaves in combination with F-channel to support the soffit at the wall and the top piece of siding.
2. Under the gable overhang (under the gable ladder on the gable end of the house). Use a 1/2" spacer to leave room for the soffit.
3. Where a sidewall of the gable meets the roof line (i.e. a porch gable joins the larger gable). Proper flashing along with notching the siding into the J-channel will keep the water from getting behind the siding on the wall. Install a scrap of aluminum, bent at a 90, around the corner of the fascia board and wall. J-Channel should not be in direct contact with shingles because the heat from the roof will warp it and it will be harder to replace roofing. Use temporary shims to keep the J-Channel 1/4" off roofing.
4. Around the boxing return.
5. On long porch ceilings install two pieces of J- Channel back to back.
6. Around exterior electrical panel (see photo).

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY” Think & concentrate on your task. **Speak up** if something looks unsafe. An observer can spot danger quicker than a worker.



Construction Details - Siding

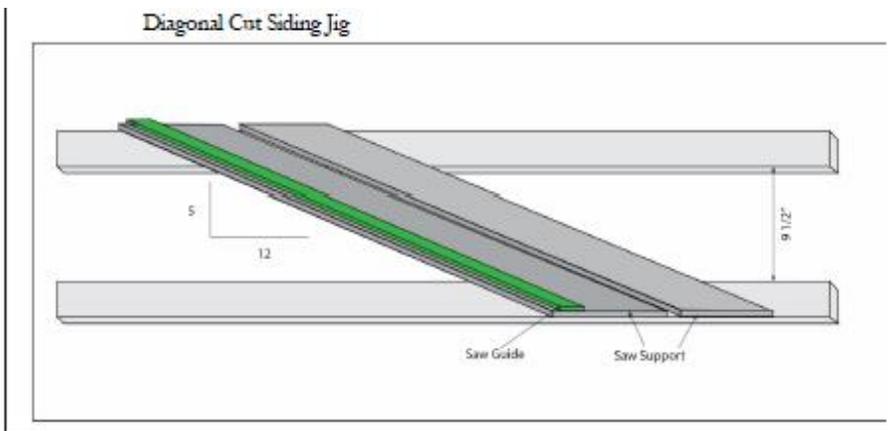
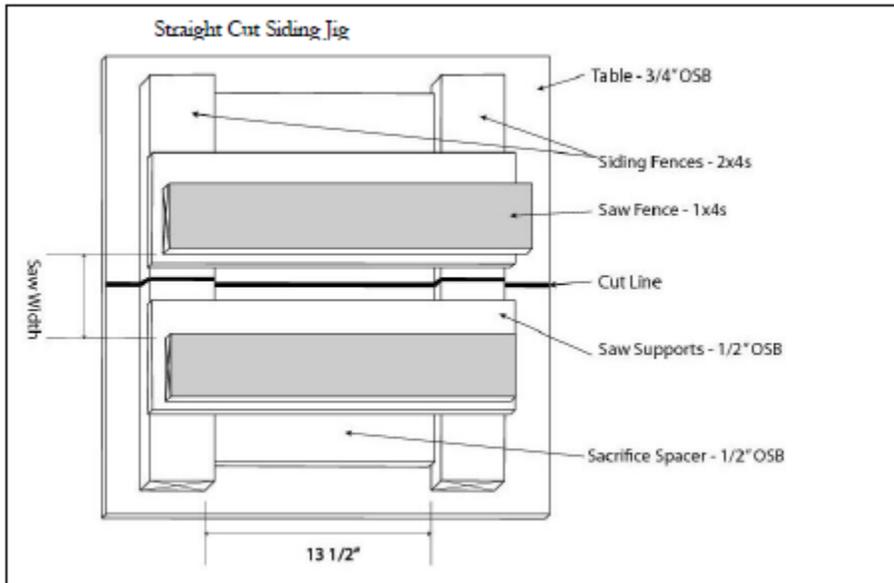
Using a Siding Saw Table jig to cut siding and soffit panels

When cutting soffit or siding with the siding saw, keep the nailing flange on the near side of the saw. The locking channel is pushed against the backside of the jig's frame because it is sturdier than the nailing flange. Placing the soffit against the back of the jig will keep it square as the saw is pushed through the material. Saw guards must be in position and operating, even on siding saw tables. By building the saw jig with a long enough saw skid (platform that the saw rests on) will make it easier to operate the guard as intended by the manufacturer.

Eye and ear protection are required when using power saws to cut vinyl.

Here are the general ways you can use the siding saw jig to cut siding:

- When using a siding jig, install a fine-tooth blade with the teeth reversed into a circular saw. Mark this saw "*siding only*".
- The siding table has been designed to cut at two angles; at right angles for straight, 90 degree cuts for the sides of a house, and at 22 ½ degrees for a gable with a "5-12" pitch roof.
- Angle cutting siding pieces for the right hand side of the gable is straightforward; a piece of siding is measured, marked, and is slid into the siding table until the cut mark on the siding sheet is visible at the bottom of the "5-12" cut slot. The saw, when used, will cut a piece of siding for use on the right side of the gable.
- In order to cut a piece of siding for the left side of the gable, it will be necessary to overturn the siding piece so that the piece is slid into the table with the back side up.
- Mark the required length along the bottom of the siding piece in the normal manner. Carefully extend this mark, under the sheet, over to the back side, so that it will be visible at the entrance of the "5-12" slot when the sheet is fed, face down, into the siding table. Use this slot to cut the piece of siding.
- The 'point' of the piece will now appear on the left side of the siding sheet.
- On these angle cuts for the siding to fit the right and left side of the gable, the siding nailing flange is at the top of the jig
- When measuring for the cut, measurements are always from the long part (bottom) of the gable.



Siding Saw table.



Place the soffit against the back of the jig. Note that the saw guard is being used.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Power Saws:

Habitat requires that **ear and eye protection** be used when using power saws.

Keep electric cords out of the way of the saw and not underfoot.

Don’t cross hands over to stabilize material on the miter saw. Find another way or get help.

Guards on saws must be in place & operating.

Siding Panels & Gable Vent

Temperature Effects on Vinyl

In cold weather siding is brittle. Do not hit it with a hammer. Cut carefully.

Weather affects length of panels. On days over 40 ° F, a ¼" gap where siding abuts corners, windows, or doors, is sufficient because the vinyl will not expand a great deal more. When the temperature is below 40°, increasing the gap to ⅜" will prevent the panel from buckling when the temperature rises and the vinyl expands.

Panel Lay-out

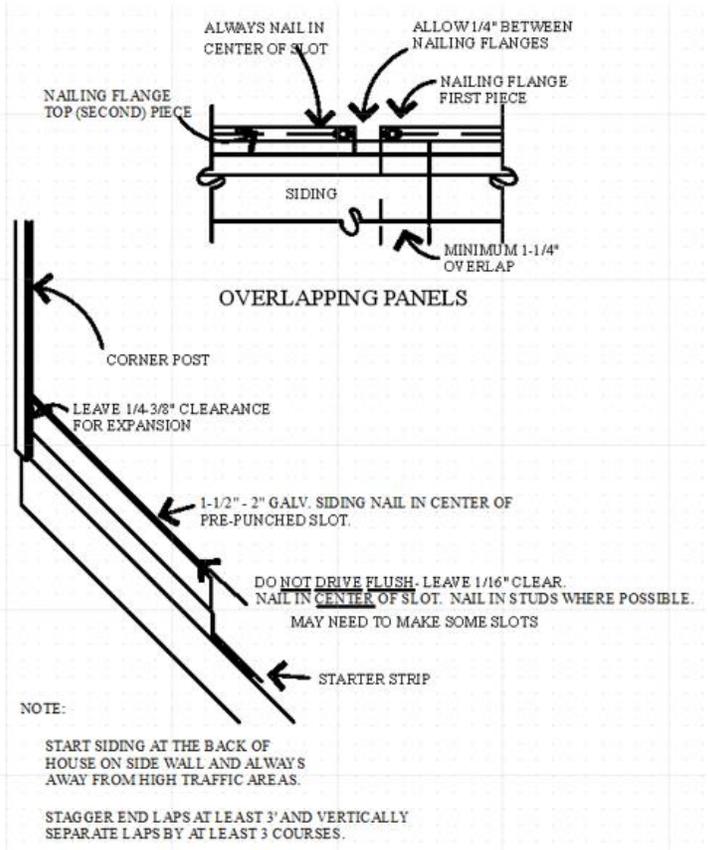
Do not place joints directly under or over windows. On the gable end of the house, a joint can be placed a minimum of three courses above a window.

Plan the panel layout so that all the cut ends will be covered by a “factory” edge or will be hidden by a corner post or J-Channel. Always overlap joints with the factory edge exposed and away from the point of greatest traffic (so that panels joints are less visible). Overlap the two factory ends so that there is a ¼" space between the top locks of the adjoining pieces of vinyl siding.

This spacing allows the overlapping tail end to lock into the top lock of the adjoining piece of vinyl siding. On cut ends notch the nailing flange to resemble a factory edge.

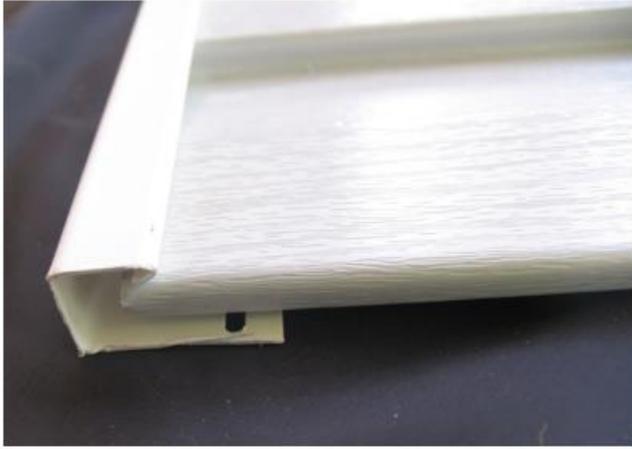


Overlapping Panel engages tab at the top and have a gap between nailing flanges. (Dashed line represents the hidden edge of the panel that slips underneath.)



Stagger joints at least 3' so that joints are not directly above each other, unless separated vertically by at least 3 courses of siding. Do not use pieces less than 3' long. Avoid a uniform stair step effect when installing panels as this makes the seams more visible. Random seams are best.

Allow ¼" clearance between the end of the siding panels and any abutting corner posts or J- Channel. On cut pieces remove a portion of the flange to allow the panel to “float” laterally. Do not allow the nailing flanges of two adjacent panels to touch.



Mock up showing gap between J-Channel and Panel



Illustration of joint pattern. Joints are emphasized.



Leave a 1/4" gap between panels and dead ends

Cutting Panels - General Instructions

Vinyl siding can be cut with siding snips, a circular saw with a vinyl specific blade, or a fine tooth plywood blade installed backwards. A siding saw table is recommended.

Nailing Panels - General Instructions

Attach panels to the house with 1½" to 2" galvanized siding nails. Make sure the panel is completely and firmly engaged along the length of the panel and lightly pushed upward before nailing. Do not put excess upward pressure on the panel and take notice that different crew members might use different tension. Drive nails only in the CENTER third of the nail slots to allow for expansion and contraction of the panels. A panel that cannot expand and contract with changes in the weather will warp and will have to be replaced. **CHECK TO SEE IF PANEL IS FULLY ENGAGED BEFORE NAILING.** Drive nails straight and level.

Ideally, the panels should be nailed only into the studs. However, since the framing studs are, basically, 24" o.c. this is not always practical. Nevertheless, when possible, nail in the center of a stud but remember the nail must be in, or close to the center of the slot. Generally, the panels should be nailed roughly every 11 inches.

When necessary, the slots must be elongated with snips or a Nail Slot Punch tool. The use of utility knives is prohibited due to safety reasons. **DO NOT NAIL THROUGH THE VINYL OR AT THE EDGE OF ANY SLOT.**

Drive nails straight and level as crooked nails also cause distortion and buckling of the siding panels. Leave 1/16" between the nail head and the siding nail flange. **REPEAT – leave EVERY nail in the panel 1/16" PROUD OF THE NAILING FLANGE!** After nailing, **CHECK EACH PIECE OF SIDING TO MAKE SURE IT WILL SLIDE BACK AND FORTH THE LENGTH OF THE NAIL SLOT.** Replace any nails that prevent the panel from expanding and contracting. You can test this by pushing the panel back and forth. Remove any nails that are not in the center of a slot - a common cause for buckling.

CREW LEADERS – LET THE ABOVE PARAGRAPHS BE YOUR PRIORITY.



Perfect! Nail is Straight, Centered, Shy



Perfect! Panel Locked and Engaged



No! Almost Engaged isn't good enough!

Siding Panels on Side Walls

Starting at a corner post at the back of the house, away from the highest traffic area, attach the first siding panel to the starter strip, making sure that it is properly locked-in. Slide the panel into the corner leaving a ¼" space for expansion, then nail in place as indicated above. Moving toward the front of the house, attach the next panel, overlapping the first panel so that there is a ¼" space between the top locks of the two overlapping pieces of vinyl siding.

No panel should be shorter than 3 ft. in length. Consequently, it may be necessary to reduce the length of the next-to-last panel, to ensure that the final panel is greater than 3 ft. in length.

When you reach the end of the wall or an opening, cut the last panel to fit, making sure to leave at least ¼" for expansion. Continue installing siding toward the top of the wall, beginning at the same end of the house as before. As you move up the wall, check every other row of siding for horizontal alignment. Do this by measuring from the top of the siding panel to the bottom of the roof trusses (or chalk lines put on by the Siding Preparation crew) approximately every 8' along the side of the house.

As you go up the wall, check for alignment with adjoining walls. Check every few rows against the reference points to keep vertical play at a minimum so that panels will go up the wall uniformly. Hint: If you get to the top of a door or window, and the panels did not come up evenly, the next full piece will not engage. It takes a straight run to engage a panel.

Securing Soffit and Siding at Top of Side Walls

A combination of F-channel, J-channel, and Undersill trim must be installed to accept both the soffit and the last row of siding on the side walls. Mark a line that is level with the bottom of the Gutter Board at several points along the entire wall. Snap a chalk line along these points. The F-Channel must be installed (nailing flange on the bottom) along this line.

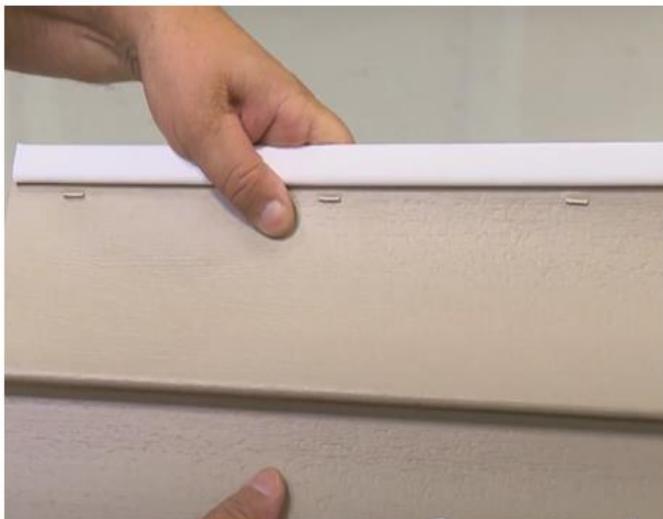


Insert Undersill trim into J-channel and then nail the assembled channels covering the nailing flange of the F-channel to accept the top of the wall siding.

The top of the final pieces of siding must be cut on a line measured at several points (~ every 2 feet) along the panel that ensures that the top of the siding panel is fully inserted into the Undersill trim.



Using a Snap Lock Punch to create raised lugs.



Install the siding panel making sure the raised lugs (from the Snap Lock Punch) lock into the under sill trim

Use a Snap Lock Punch to create raised lugs on the vinyl siding every 12 to 14 inches along the cut edge with the raised lug on the outside face. Install the siding panel, making sure the raised lugs (from snap lock punch) lock into the under-sill trim.

Panels at Window and Doors

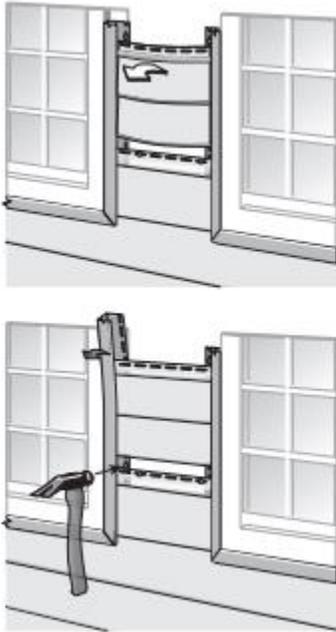
Notch siding panels to fit around the bottom of each window opening. Avoid having joints near openings. To lay off the notch you will need the width and depth of the cut. It is easiest to do this without a tape measure.

Width and placement: Hold the panel in place under (or over) the window and mark the left and right cut locations, leaving $\frac{1}{4}$ " gap for expansion. Remove the panel.

Depth of notch: Since it is difficult to obtain accurate measurements for the depth of the notch, a small scrap piece of siding can be used to lay off the cut. Lock the scrap piece into the nail flange of the piece of siding below the window and slide it against the edge of the window. Mark a line on the scrap where it meets the bottom of the window's J-Channel, leaving $\frac{1}{4}$ " clearance. Transfer this dimension to the actual piece of siding. Measurements may not be the same on both sides of the window.

Fitting at narrow openings between windows

To simplify installation in areas between windows, install J-Channel on both sides of opening. Bow the panel toward you and slip it into the channel, or slide them down from the opening at the top of the windows. If the area is very narrow, leave one J-Channel unnailed except at the lowest point (as shown). Bend this channel out slightly to insert panel. When the panel is in place and nailed, nail the J-Channel immediately above the panel and repeat the procedure. Be sure to leave adequate tolerances for expansion and contraction



Habitat Begs You!

Task leaders, crew leaders, everyone - you cannot watch too closely for the following quality control items. Leaders, explain to the crew that you will be diligently checking the following:

Panels are fully engaged - if a single panel is not fully engaged along its entire length, all panels above will most likely have to be removed. **“Habitat’s #1 service issue of all time.”**

Panels can move

- All nails in center of slot
- All nails $\frac{1}{16}$ ' proud and straight
- Ends are $\frac{1}{4}$ " shy of dead ends Nail flanges do not abut ($\frac{1}{4}$ " gap)

Panels are coming up uniformly. Check against reference points every few rows.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Utility knives - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades. Use a nail slot punch for elongating nails slots.

Utility knives are prohibited for cutting vinyl.

Keep the entire work area **free of trip and fall hazards.**

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walk boards, and pathways.



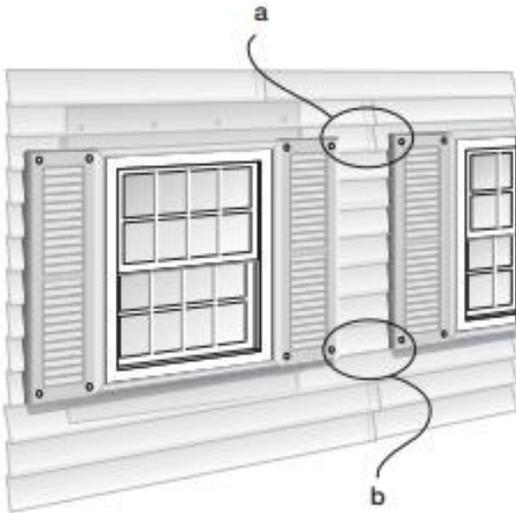
Neatly drill for Electrical and Phone Service wires.



Outlets come standard with J-Channel

Shutter Installation

The ideal application (a) has a joint between the two shutters where the shutters are secured to the home. In this way, the siding panel is not pinned between the two shutters and the siding is allowed free movement. When there is no joint between the shutters and when the shutters are secured to the home (b), the shutters' fasteners do not allow the siding panel to move. The siding panel then fails to perform because it cannot expand or contract with the temperature changes. To prevent this, enlarge the holes in the siding for securing the shutter—the hole should be 1/4" larger than the shank of the fastener. If possible, stagger the screws securing the shutter so that they do not line up on the same panel. It is also a good idea to apply caulk around the screws.



Gable Vents

The gable vent is flush mounted in the center of the gable and low enough so that it is a minimum of 10" below the ladder overhang. Because gable sizes are different, choose an aesthetically pleasing location. Large gables take an 18x24 vent and smaller ones a 12x18. No additional blocking is necessary. The gable vents come with a pre-built J-Mold wrap that is removed during siding and replaced after the siding panels are in place. The gable vent is for aesthetic purposes only so there is no need to cut out the OSB behind it. The attic is ventilated by the perforated soffit and the ridge vent.



A well placed gable vent leaves room for siding.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Use a **ladder** that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent side-ways movement.

Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walkboards, placing scaffolding on solid footing, and guardrail requirements).

Keep the entire work area, inside and out, free of trip and fall hazards.

Panels on Gable Walls

Follow instructions for installing vinyl siding on side walls until you reach the gable.

Before installing a siding panel that will extend into the gable area, it is necessary to install a piece of J-Channel under the gable overhang to receive the ends of the siding panels and to provide a slot for the installation of soffit. This may have been completed during prep. The J-Channel is installed along the face of the gable wall with the nailing flange facing down and away from the roof. Leave a ½" space between the top of the J-Channel and the bottom of the gable overhang to receive the soffit. See “J-Channel across Porch Beam and Up Gable”.

Siding panels are laid-off and cut the same way as side walls, except you must cut the ends that fit against the gable overhang on the same angle as the roof pitch, leaving ¼" for expansion.

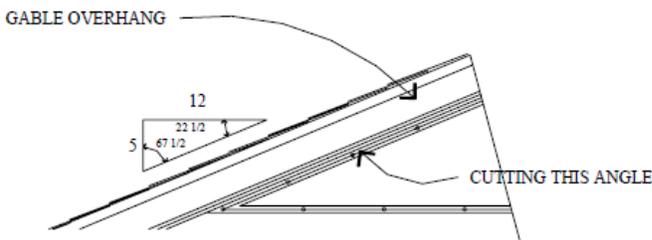
The siding saw tables which are provided on site are constructed to enable cuts of 5-in-12 and at right angles. This will enable safe and accurate cuts of the siding panels and should be used whenever cuts are required.

Should siding tables not be available, the angles may be determined as follows.

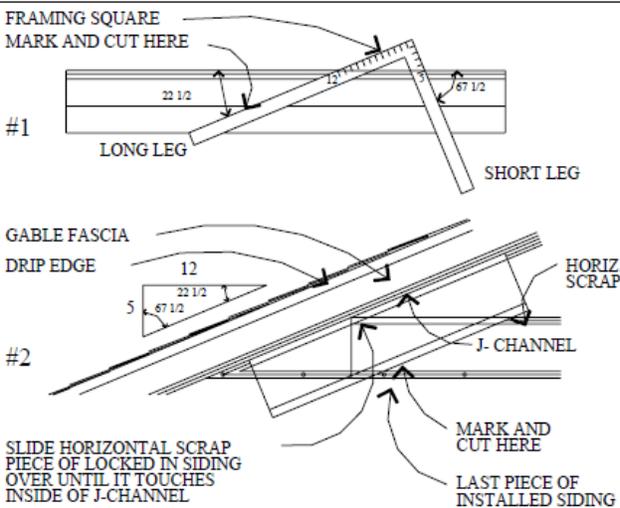
There are two popular methods to use.

Framing Square Method: These cuts can be laid-off using a framing square in the “seat-cut” position with the long leg of the square set on 12" and the short leg on 5" (or 24" and 10") for a 5-in-12 pitch. Mark along the long leg of the square to lay-off for the cut.

Template Method: Use scrap pieces of siding to make templates. Lock a scrap of siding on top of the previous piece of siding and slide it toward the gable overhang until the top edge of the siding touches the inside of J-Channel. Hold a second piece of scrap, against the J-Channel, and mark along the edge where it crosses the one locked into place. This is simply transferring and scribing the angle onto the sample piece. Cut the angle on the marked piece of siding and use it as a pattern for marking the other pieces.



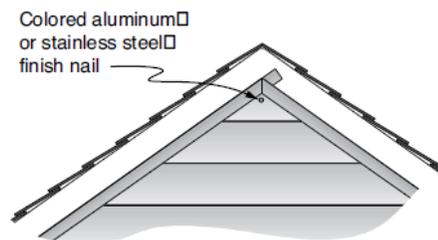
TWO WAYS TO MAKE ANGLE CUTS



Two Methods for Making Angle Cuts on a Gable

When the panel reaches the roof line, it is necessary to cut a vertical slit so the end of the J-Channel can exit the panel. This diverts the J-Channel water out from behind the siding. (See “J-Channel Misc. Locations” for previous steps.)

The last piece of siding, at the top of the gable wall, will be cut at the same roof angle on both ends, forming a small triangle without a nailing flange. This piece of siding is attached to the wall by nailing through the face of the siding panel into the OSB sheathing, using two white, stainless steel, fascia nails. This is the only time it is acceptable to nail through the siding. Use a nail setter (center punch) to drive the nail but not too tight. Caulk the exposed nail head.





Mock up of a vertical slit.



The slit allows water from the J-Channel to be channeled out over the siding.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Think & concentrate on your task.

Speak up if something looks unsafe. An observer can spot danger quicker than a worker.

Soffit Installation

Soffit at Eaves

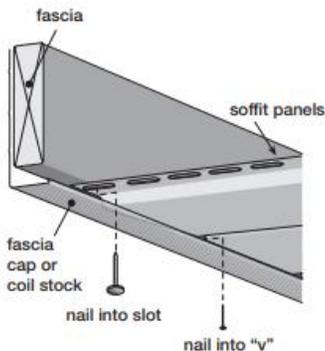
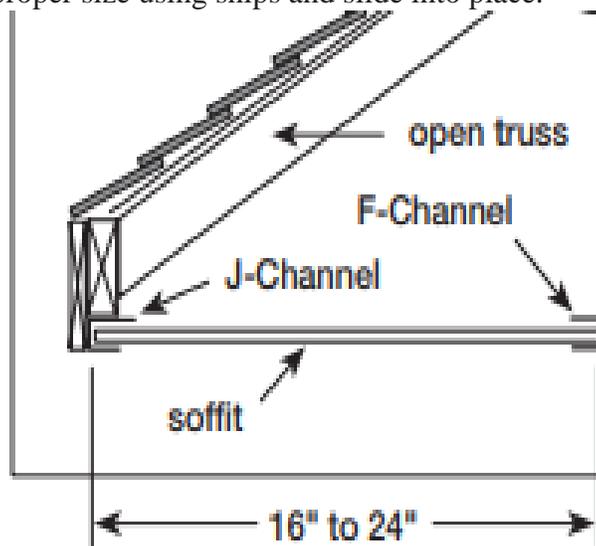
Measure the distance from inside the F- Channel to the outer edge of the gutter board. Make several measurements along the length of the house to ensure that the size remains constant, and then cut the soffit to this dimension, less 1/4". Any soffit that extends past the gutter board will buckle the aluminum fascia.

NOTE: All of the soffit for one side of the house can be cut quickly and accurately on the siding saw table by setting up a stop or marking the correct dimension on the saw table fence. Note that if the dimension between F-Channel and gutter board are not consistent multiple setups will be required. If, however, the saw table is not available, the soffit can also be cut with siding snips.

To install the soffit, start at one end of the house, not at both ends. Slide a piece of soffit into the corner of the boxing so that the nail flange edge is visible and the other sides are covered by the boxing return aluminum fascia trim. Attach the outside corner of the soffit to the bottom of the gutter board by nailing through a nailing slot in the nail flange, using a 7/8" roofing nail nailed tight. The first piece will have to be notched around the corner of the house because of the extra depth of the boxing return. Lock the next piece of soffit on to the first in the same way that siding panels are locked together. Before nailing, evenly and gently pull the piece of soffit so it is tight and square and then nail in place. Continue sliding each succeeding piece into the F-Channel, locking it onto the preceding piece, and nailing at the outside corner until you reach the opposite end of the house. Cut the last piece to proper size using snips and slide into place.



Solid soffit runs up the gable overhang. For air flow, vented soffit is used under the eaves.



Soffit at Gable Overhangs

Vinyl soffit is installed in the gable overhang in the same way as in the eaves, except that the soffit sits on top of the J-Channel instead of inside it and does not have to be perforated. Start at the lowest point on one side of the gable and continue up and over the highest point, finishing at the opposite side of the gable. The last piece of soffit is cut to the proper size with snips. The piece at the point of the gable is simply bent to the proper angle and continued down the other side.

On a hip roof miter the corners of the soffit and install J Channel back to back to accept the cut edge of the soffit material. Blocking will be necessary for the back to back J-Channel.



Install back to back J-Channel to miter the soffit on a hip roof corner.

Soffit at Side Porches

Install J-Channel back to back on side porches to accept the eave soffit on one side and the side porch soffit on the other side. Run the ceiling parallel with the framing for the cleanest look and perpendicular for the easiest installation. Both ways are acceptable.



Running side porch ceilings the same direction as soffit requires additional blocking.



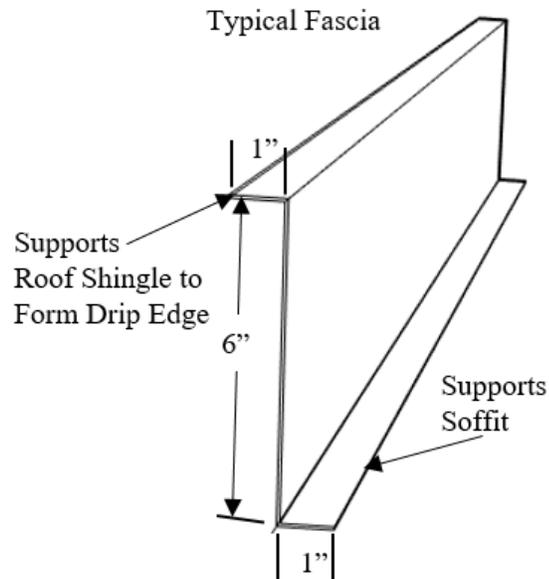
It is easier to install ceilings perpendicular to the framing.

Boxing Return Wrap

See framing section if the return has not been installed. The boxing return is wrapped with aluminum after the soffit is installed but before the siding panels and fascia are installed. Cover the return with wrap that is formed on site from 6" wide aluminum fascia material. Tabs are cut 1" to wrap around corners. The top corner is cut at an angle to match the roof pitch and slips under the drip edge. Nail the wrap near the top where the nails will be hidden by the rake piece. Careful measuring of the boxing return, adding extra length for tabs, is necessary. A hand held brake will be very useful. Secure with white 2d pre-finished stainless nails, stopped shy of denting the aluminum (do not set nails). Note: While constructing this master piece it is easy to mix up a left from a right hand return!



(H) Boxing return.



Fascia Installation

Aluminum Fascia at Eaves

The metal fascia is for covering the gutter board on the eaves and up the rake. Install the metal fascia after the boxing returns are wrapped.

The pre-formed aluminum fascia is installed so that the bottom 1" section fits snugly against the soffit and the top 1" section slides up against the shingles to create a drip edge. Do not force the metal to conform to the variations of the framing as this will cause the metal to buckle. The fascia is attached by nailing through to the center of the fascia board every 2' using a 2d, white, pre-finished stainless steel nail.

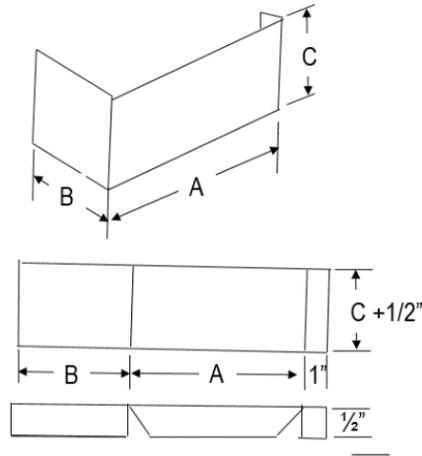
Work from the rear of the house to the front of the house to hide the joints from the street.

Overlap adjoining pieces 1". Continue until the entire gutter board is covered, finishing with a piece that ends flush with the edge of the boxing return.

NOTE: Aluminum fascia can be cut with siding snips; however, a better cut can be made across the fascia section by scoring the material with a sharp utility knife and bending it back and forth until it breaks. It is necessary to cut through the 1" section with snips before bending.



Boxing return wrap.



Aluminum Fascia at Gable Overhangs

Install the fascia up the gable much the same way as under the eaves. Beginning at the lowest point, cut a plumb cut along the face of the fascia at the boxing return. Install the fascia so that the cut edge of the plumb cut is flush with the eave fascia. Install a second piece of fascia in the same way as was done on the eaves. Starting at the lower end will allow water to flow over the joint.

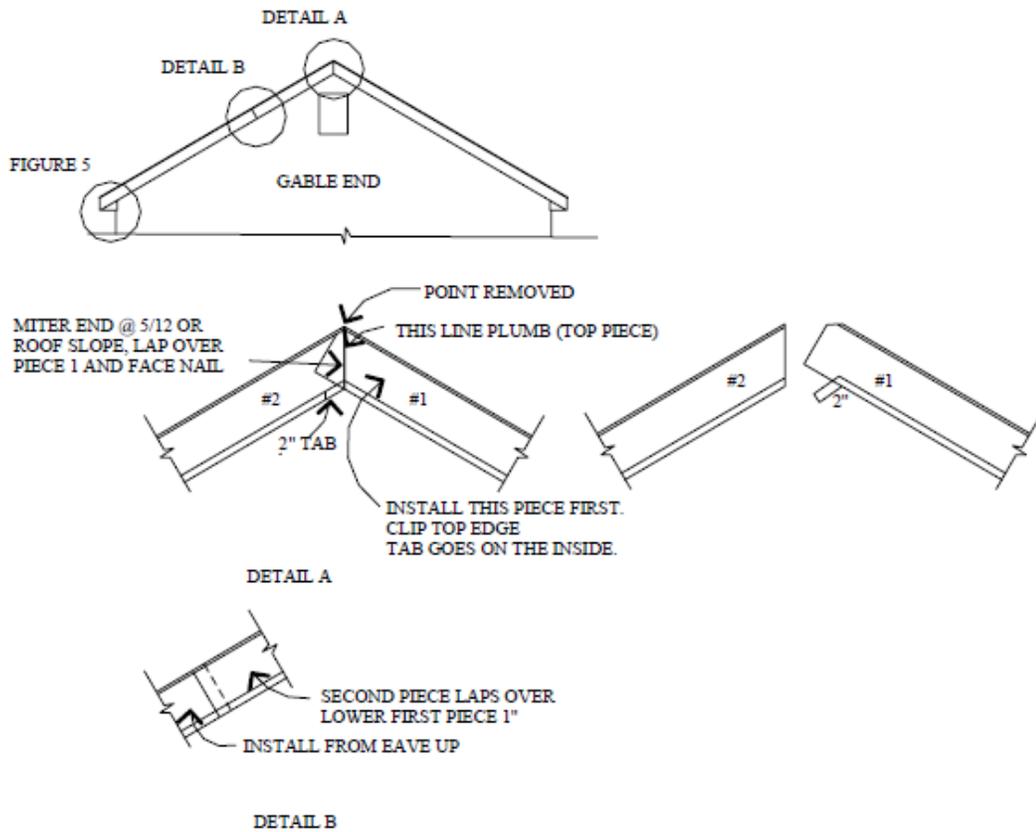
At the top of the gable, using a speed square, mark and cut the upper end of the fascia on about a 7-in-12 pitch (anything greater than a 5-in-12) so that the short point of the angle is in line with the center of the roof. Cut the fascia for the opposite side on a 5-in-12 pitch and overlap the first piece to give the appearance of “plumb-cut” at the apex of the gable. The overlapping fascia now has a piece behind it, which helps hide the joint. (This assumes a 5-in-12 roof pitch.)



Fascia and boxing return.



This is an example of how to cut fascia at the boxing return.



Porch Ceiling

Front porch ceilings are made of solid soffit material, which is installed like all other soffit. The addition of deadwood may be necessary. Run the soffit perpendicular to the roof trusses. The side or rear porches receive vented soffit material to match the soffit under the eaves.

Leave panels $\frac{1}{4}$ " short at each end for expansion and nail every 12" to 16". Leave $\frac{1}{16}$ " between the nail head and nailing flange and nail in the center of the slot. Before the final piece is installed, lightly mark the truss locations on the J-Channel. Use white stainless steel nails to secure the last piece. To keep the last piece from pulling up too tight, make a pilot hole with a siding nail.

Porches that are longer than the soffit length will need to have a joint installed. Install two pieces of J-Channel back to back in the center of the porch or another aesthetically pleasing location. See "Misc. J-Channel" in the prep section.



Back to back J-Channel give a neat joint for porch ceiling that have ceilings longer than the length of the soffit

Caulk Application

After the siding is completed, neatly caulk the following areas with exterior latex caulk.

- Where the eave fascia meets the rake fascia
- Where the J-channel bends up and back near the boxing return
- At the dryer vents
- At phone/cable, electrical, and plumbing penetrations
- Drip caps on vinyl corner posts at porch corners.
- Where J-Channel meets any wood.
- At the slit cut in the siding where a small gable meets the wall of a large gable.
- Front porch post and beam if top of post was flashed.

Clean Site, Re-stack Materials

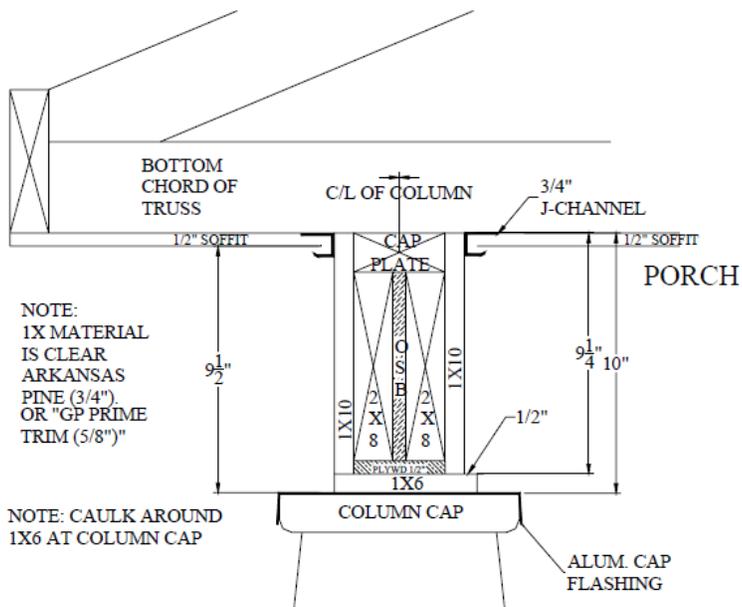
Sweep out house, put trash and debris in a pile near the street, re-stack all unused materials and protect from theft and the weather. Make sure all tools and equipment are accounted for and properly stored or returned.

Leave enough extra material for the homeowner to make future repairs.

Construction Details

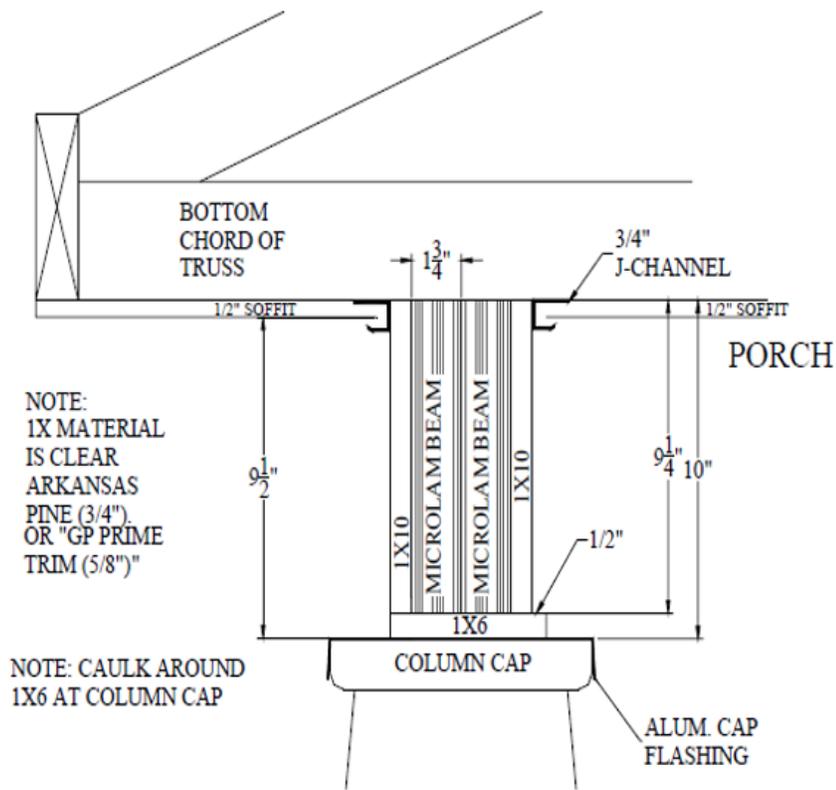


Short Porch Beam Cross Section



SHORT PORCH BEAM CROSS SECTION

Microlam (Long Beam) Cross Section



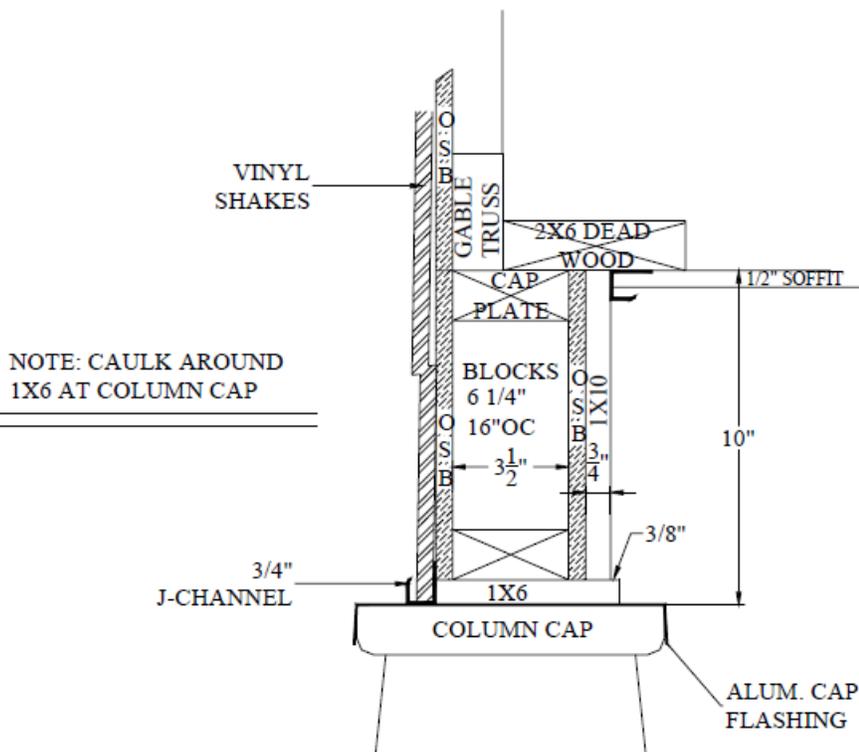
Microlam (Long Beam) Cross Section

Box Beam Cross Section



**“NO JOB IS SO IMPORTANT
THAT IT CAN’T BE DONE
SAFELY”**

Use a **ladder** that will reach the work. Move the ladder with your work. Place ladders on solid footing.

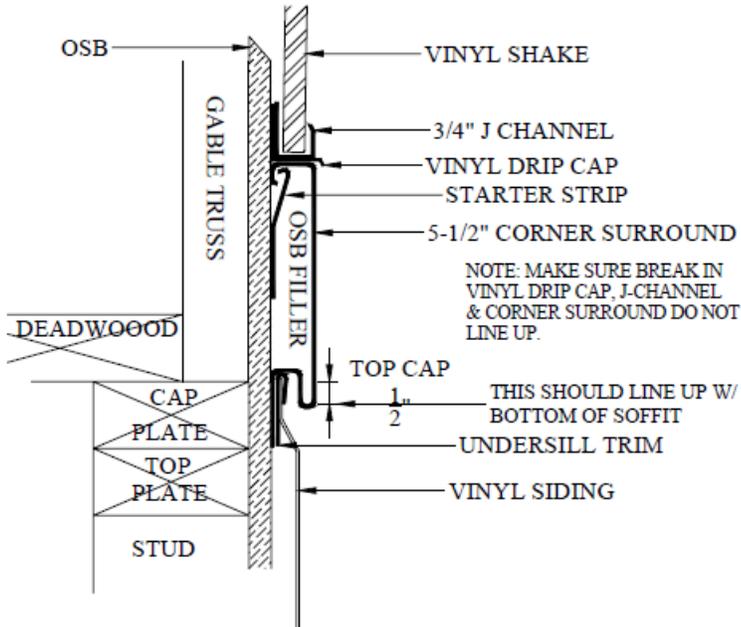


Frieze Detail

A frieze board is used when the porch is narrower than the house. The frieze visually connects the fascia on the house with the fascia on the porch. Please note that the photo below does not show the blue board applied to the OSB

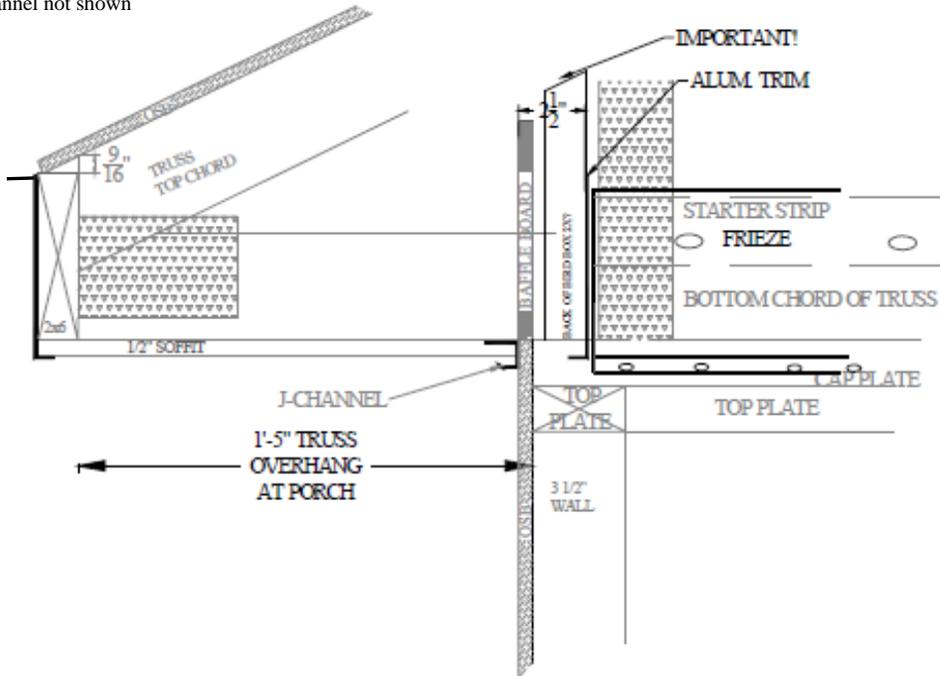


Frieze Board and Flashing

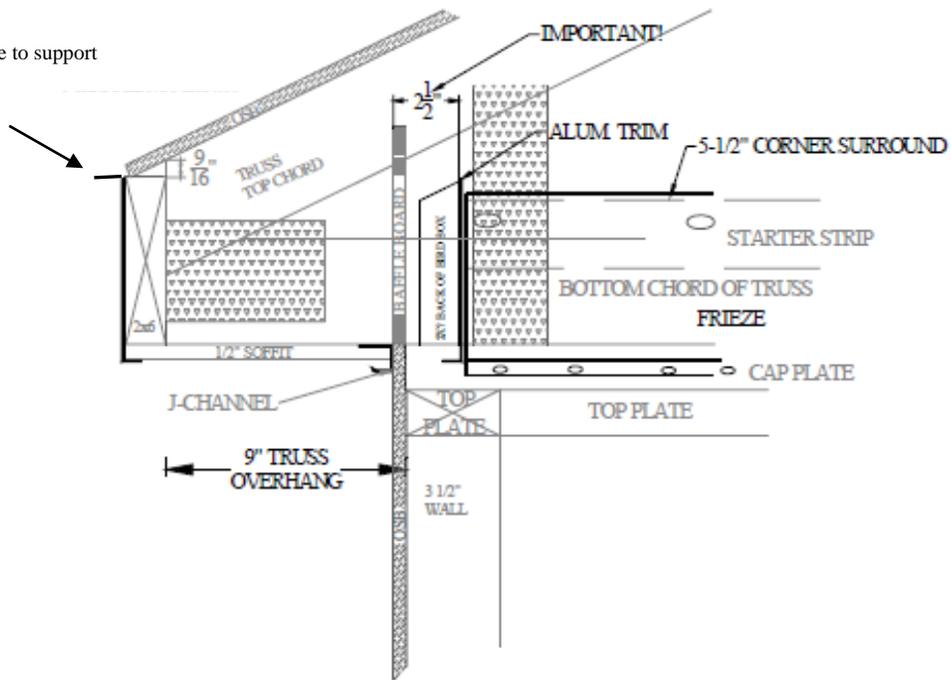


Soffit & Frieze Board Detail

Note:
 $\frac{3}{4}$ " F-Channel not shown



Note:
 Lip or edge to support shingles



Vinyl Siding Appendix

Alternative Methods and Details

Undersill Trim for Double Windows

Before installing the siding panel under a double window, cut and nail in place a piece of undersill trim to cover the horizontal cut edge of the notch. (Single windows do not need undersill trim.) Next, use a Snap Lock Punch to crimp the siding along the notch so it will “lock-in” to the undersill trim and hold the panel in place.

Rules for Installing Siding

1. Before installing the first course of siding, verify that the starter strip is
 - a. Installed such that the bottom of adjacent pieces are level with each other, and
 - b. Starter strips are nailed tight every 8”.
2. Do not nail the siding tight, leave the head about 1/16th of an inch free.
3. Pull the siding up tight while nailing.
4. Nail the siding in the center of the slot.
5. No piece should be shorter than 3 feet in length.
6. Overlap lines should not appear under each other (like brickwork).
7. Only factory edges should be exposed when overlapping pieces.
8. Start installing the sides from the rear of the house. Siding can be started from both corners, working towards the door, on the front of the house. This minimizes the appearance of siding edges being visible from the front door.
9. Do not allow overlap edges to be in line with window or door sides.
10. Allow ¼ inch between nailing flanges when overlapping panels.
11. Allow ¼ to 3/8 inch at corner posts for expansion. Allow ¼ inch at windows, doors, and at the cut-outs for the electrical outlets.
12. Check frequently at the corners to ensure adjacent sides match as siding is installed.
13. Siding can be very sharp. Use extreme care when cutting by hand.
14. Please ensure that the correct nails are used to install siding. Siding nails are generally 1 ¾ inch in length. Nail approximately every 11 inches.