

# Roofing Training - Basics

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# Tools

- 🏠 Hammer
- 🏠 Measuring Tape
- 🏠 Chalk Line & Chalk
- 🏠 Speed Square
- 🏠 Framing Square or Shingle Cutter
- 🏠 Utility Knife
- 🏠 Metal Snips
- 🏠 Extension Ladder(s)

## Reminder...

DAHFH Construction Staff may ask volunteers to vary from the practices included in the Construction Manual due to a change in materials, procedures, or other special circumstances.

# Safety



- 🏠 Any tools or material up on the roof must be secured with nails or cleats or in a tool belt
- 🏠 Volunteers may not wear leather-soled or slick-soled shoes on the roof; soft-soled shoes are recommended
- 🏠 Lift with your legs not your back – a bundle of shingles weighs 60 to 80 pounds
- 🏠 Do not carry shingles up the ladder - use the shingle lift

# Safety

- 🏠 Handle metal flashing carefully – the edges are very sharp
- 🏠 Sweep the roof periodically to remove any dirt or loose particles from the shingles – **warn the people working below**
- 🏠 At the end of a row do not nail a shingle in place, allowing it to run long, and then lean over to cut flush with the drip edge
- 🏠 Remind volunteers not to “chase” anything
- 🏠 Establish a drop zone

# Safety – Extension Ladders

- 🏠 Extension ladders should be properly positioned and stable
- 🏠 Build and secure a proper ladder block
- 🏠 Extension ladders should never be moved if there are people on the roof
- 🏠 Ladders should extend at least three rungs above the edge of the roof



# Safety – HUGS

## (Horizontal Under-Eave Guard System)

- 🏠 Do not lean against any of the HUGS rails
- 🏠 Do not use the HUGS as a foot hold
- 🏠 Do not lean any material against rail system

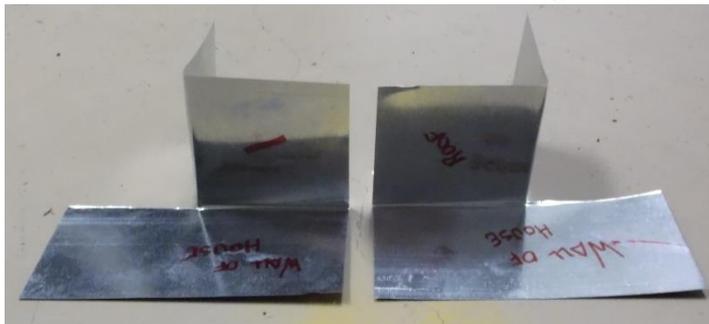
## Before Starting...

- ✓ Verify kick-out flashing has been installed
- ✓ Verify fascia is installed

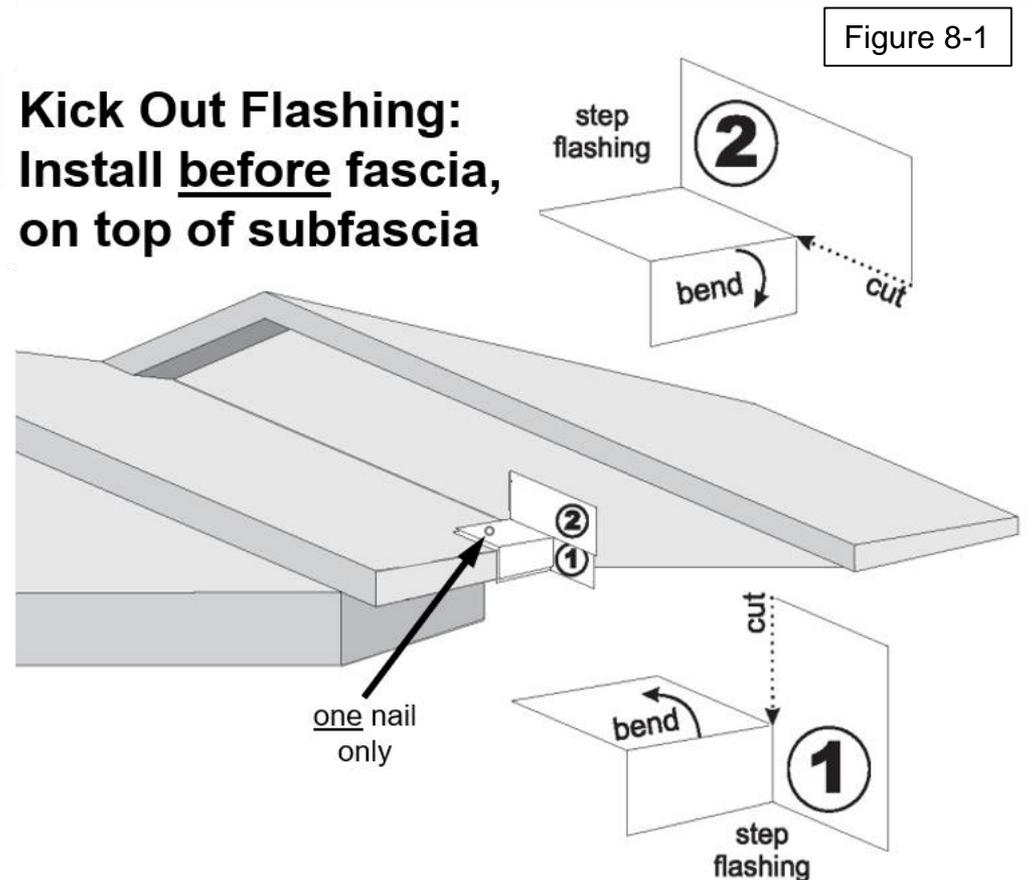
## Then...

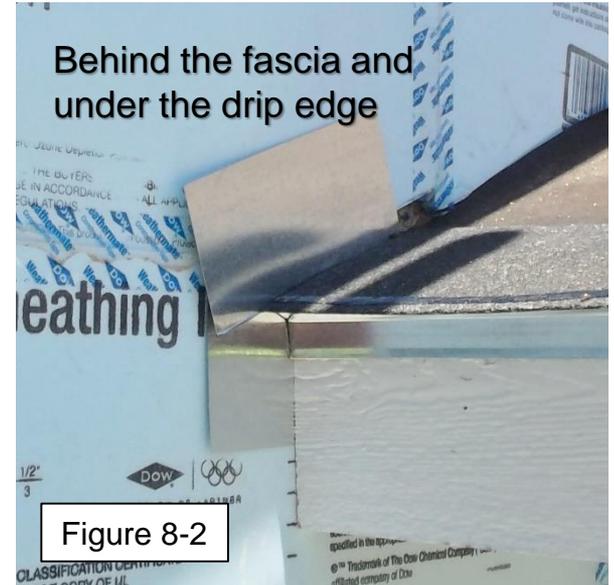
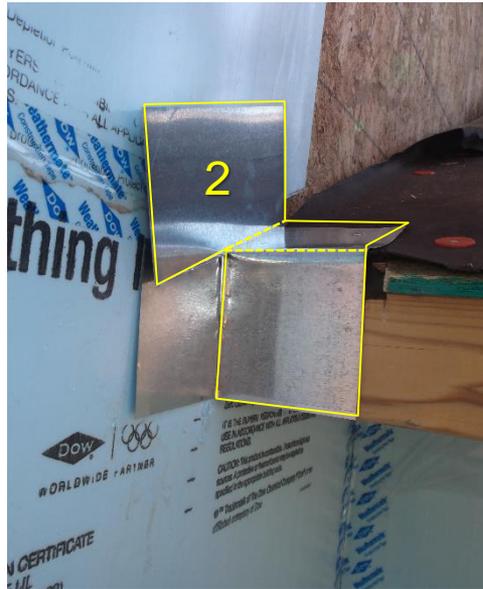
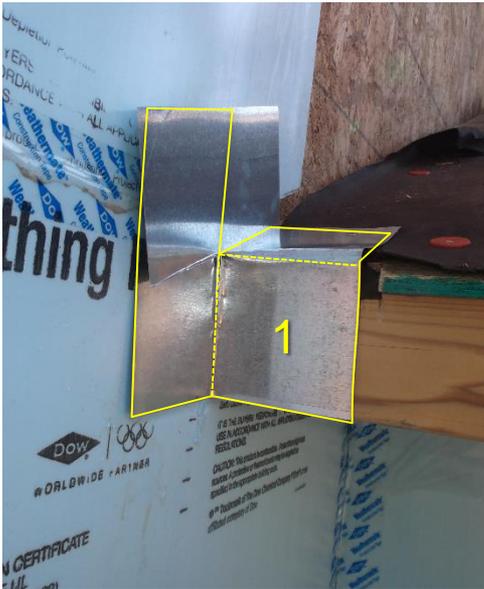
- 🏠 Install the drip edge
- 🏠 Tape decking and drip edge seams

# Kick Out Flashing



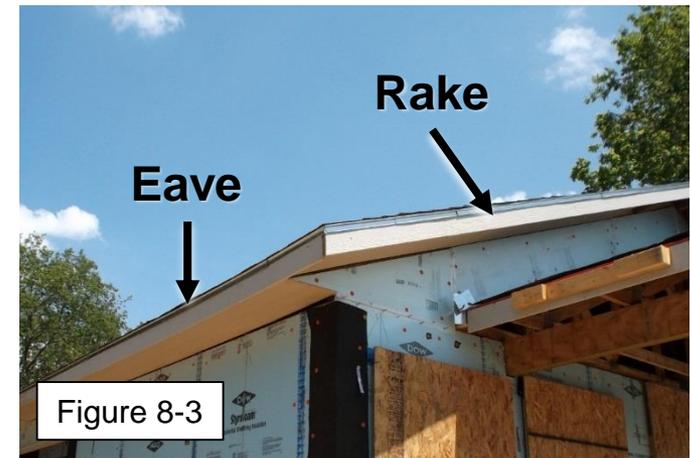
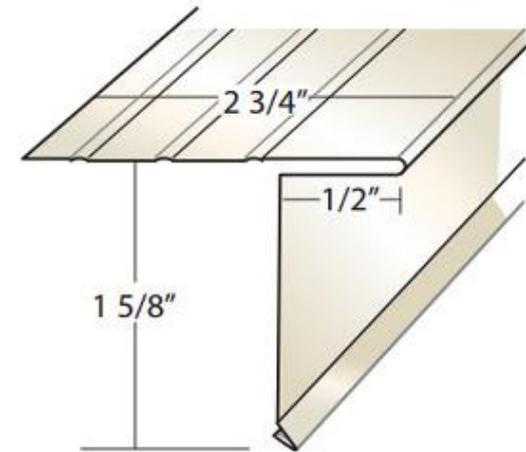
**Kick Out Flashing:**  
Install before fascia,  
on top of subfascia



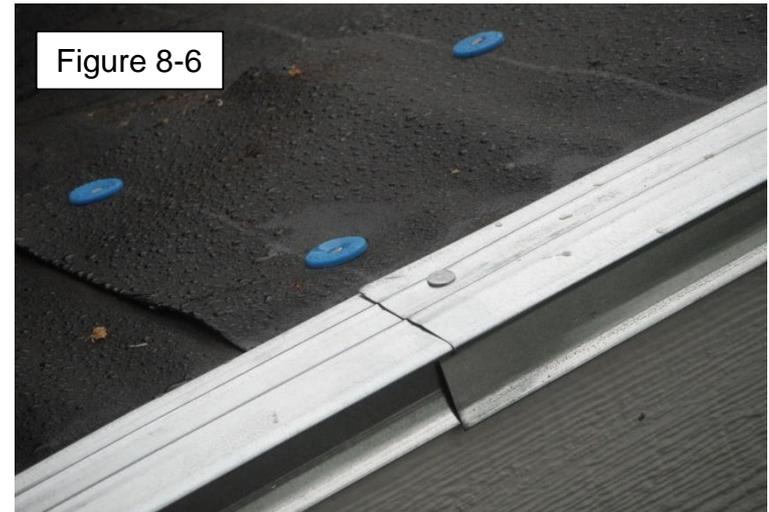


# Drip Edge

- 🏠 Easiest to install with two people
- 🏠 Plan ahead so short pieces (2 feet or less) are not used on long runs
- 🏠 Bottom of the drip edge is against the fascia, but do not force
- 🏠 Do the eaves first and start from the back of the house and work towards the street
- 🏠 Overlap by at least 3 to 4 inches
- 🏠 Use a roofing nail every 16 to 18 inches
- 🏠 Nail from one end to the other



# Drip Edge



# Drip Edge Corners

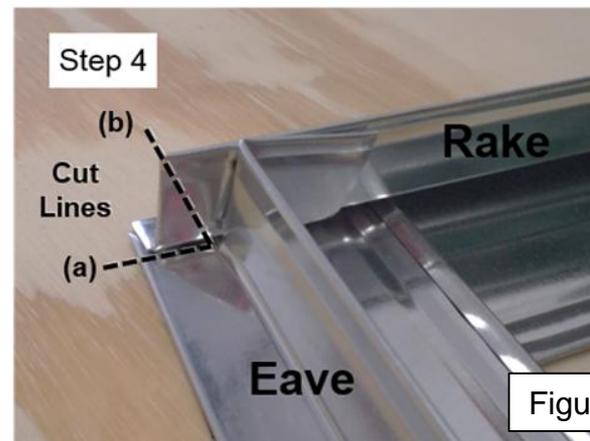
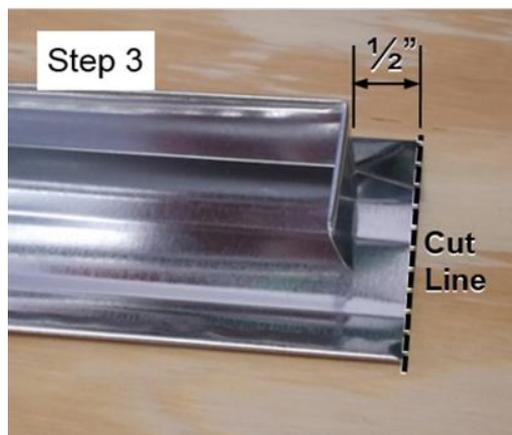
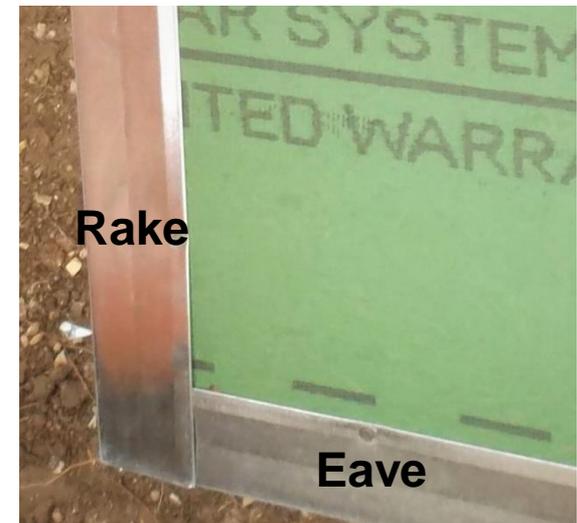
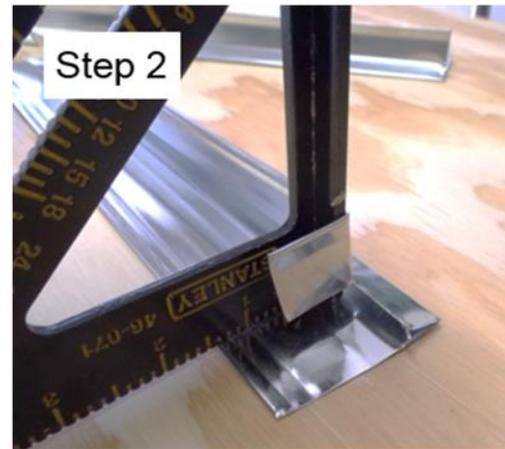
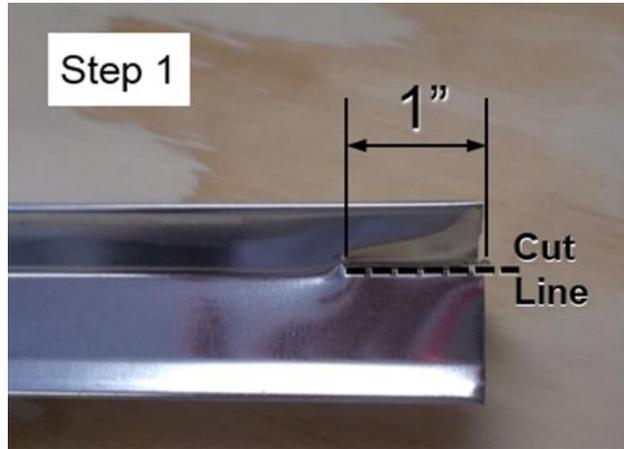
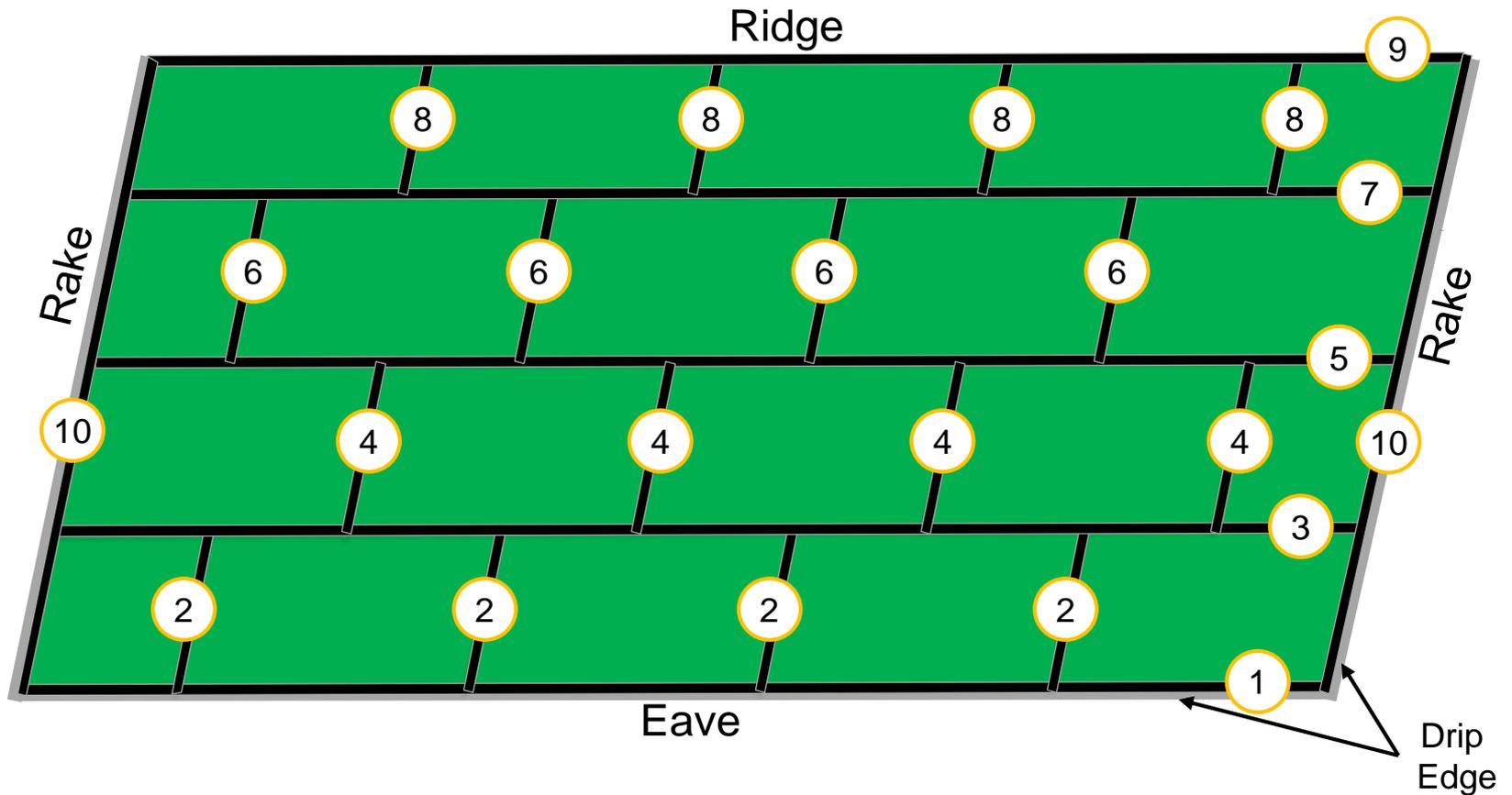
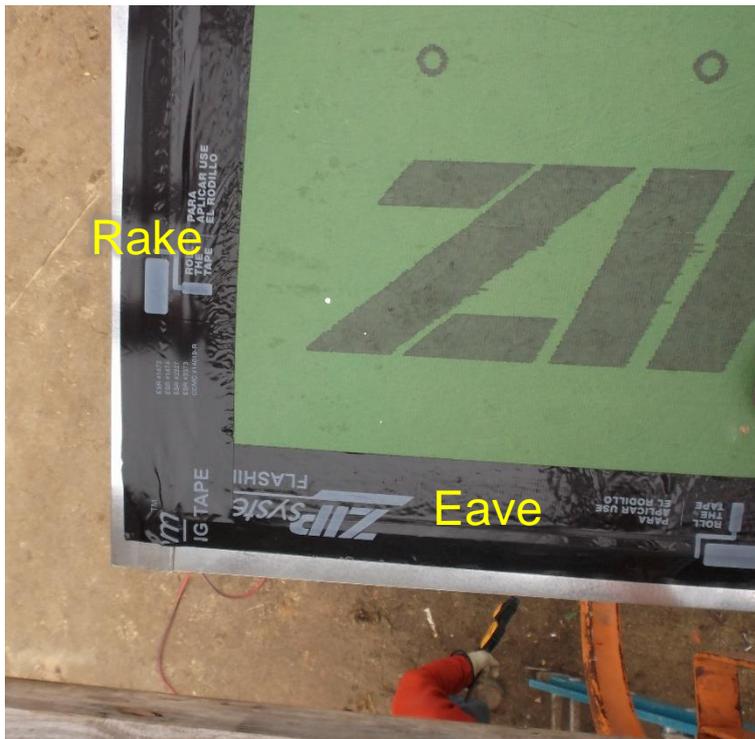


Figure 8-4

# Taping Sequence



# Taping Drip Edge



# Types of Shingles

## 3-Tab



## Architectural



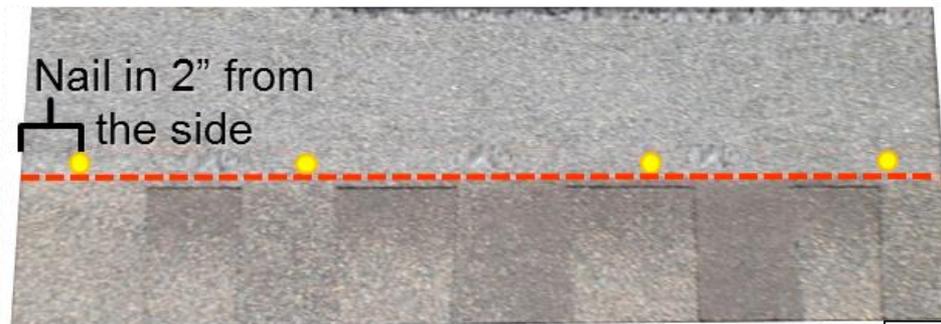
# Starter Strip (Architectural Shingles)

- 🏠 Starter strip should align with the bottom or outside edge of the drip edge **on both the rake and eave**
- 🏠 Tar strip down to adhere to drip edge
- 🏠 Butt ends together, no overlap
- 🏠 4 nails per starter strip
- 🏠 Do not nail into drip edge



# Nailing Patterns

- 🏠 Use four nails for full shingles
- 🏠 Use three nails for shingles less than 13 inches
- 🏠 Do not nail into the drip edge



Nail slightly above the orange or white line or on the fabric strip

Architectural

Figure 8-12

# Shingle Placement

- 🏠 For the first row of shingles, the bottom edge should align with the bottom edge of the drip edge
- 🏠 Start shingling from the front of the house
- 🏠 The side of a shingle should butt up to the one next to it; do not overlap

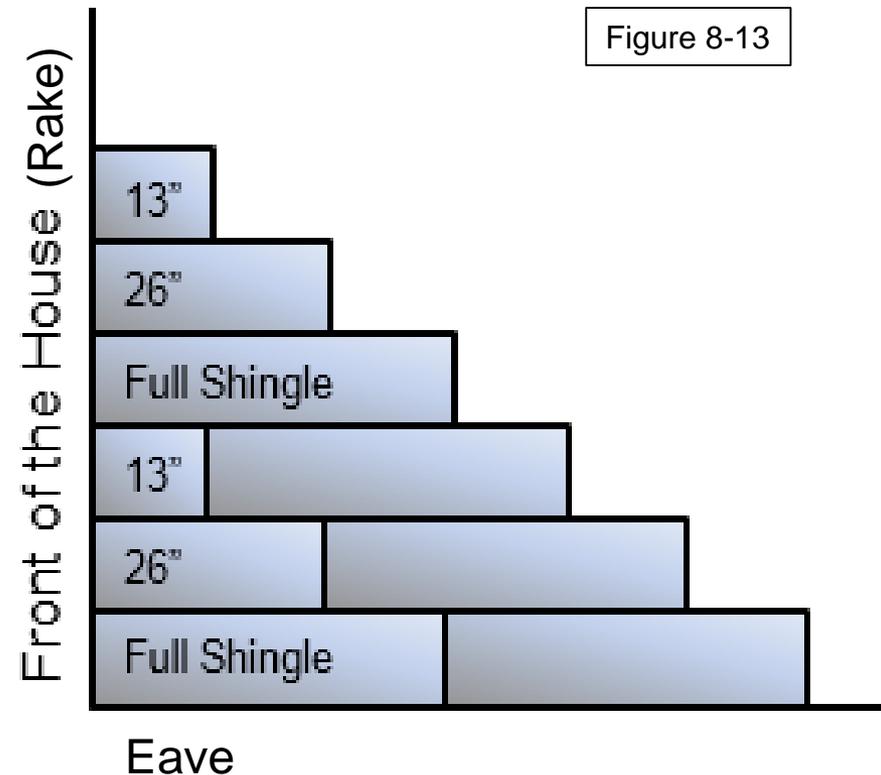
# Architectural Shingles Alignment

- 🏠 Bottom edge of shingles should be flush with the top of the cut or ridge of the shingle below
- 🏠 Measure every 5 to 6 rows; if the measurements varies by more than ½-inch, snap a chalk line to correct



## Staggering Seams (Architectural Shingles)

- 🏠 Align the first row flush with the starter strip along the eave and rake
- 🏠 Create a stagger at the beginning of the row so the seams do not line up



## Other Shingle “Rules”

- 🏠 Last shingle of the row is cut to fit – do not nail in place and then cut
- 🏠 No cuts should be less than 10 inches
- 🏠 Seams should be a minimum of 6 inches apart
- 🏠 Minimize walking and standing on shingles – **do not lay on shingles**
- 🏠 Have volunteers work from the top side of the shingles to prevent damage



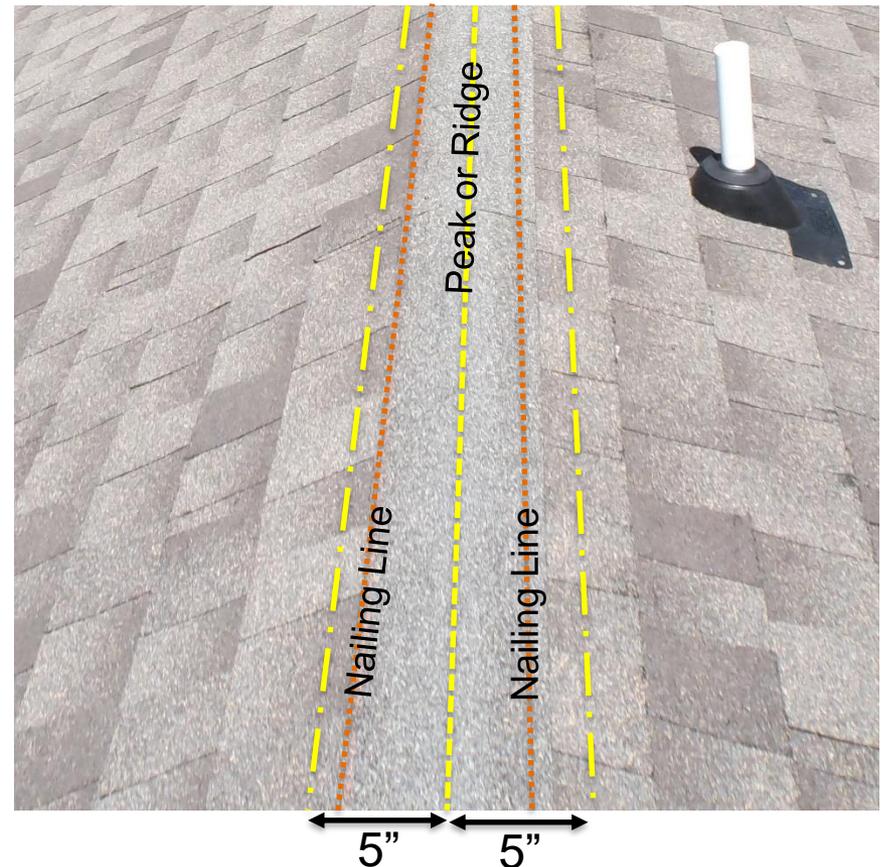
# Cutting Shingles

- 🏠 If using the shingle cutter, cut:
  - Architectural shingles rock side up
- 🏠 If using a board and knife, cut from the back side



# At the Peak or Ridge

- 🏠 Shingle until the nailing line (see Slide 17) is within 5 inches of the peak
- 🏠 Overlap the peak from both sides of the roof



# Vent Caps or Boots

- 🏠 Vents extend through the decking to provide ventilation for mechanical and plumbing systems
- 🏠 PVC boot or vent cap is used to ensure a watertight seal
- 🏠 The vent pipes vary in size; be sure to use the correct size
- 🏠 Tape the sides and top of boot

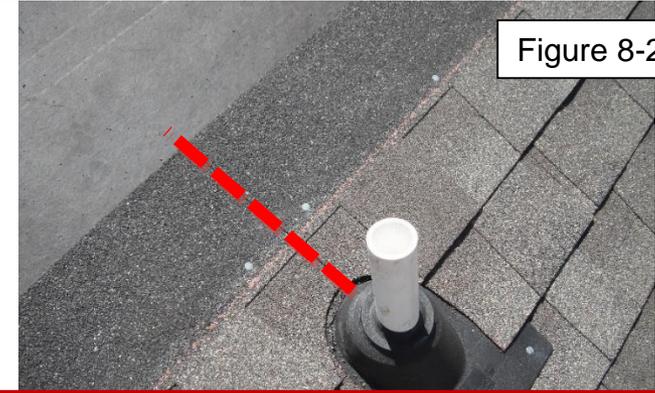


Figure 8-28

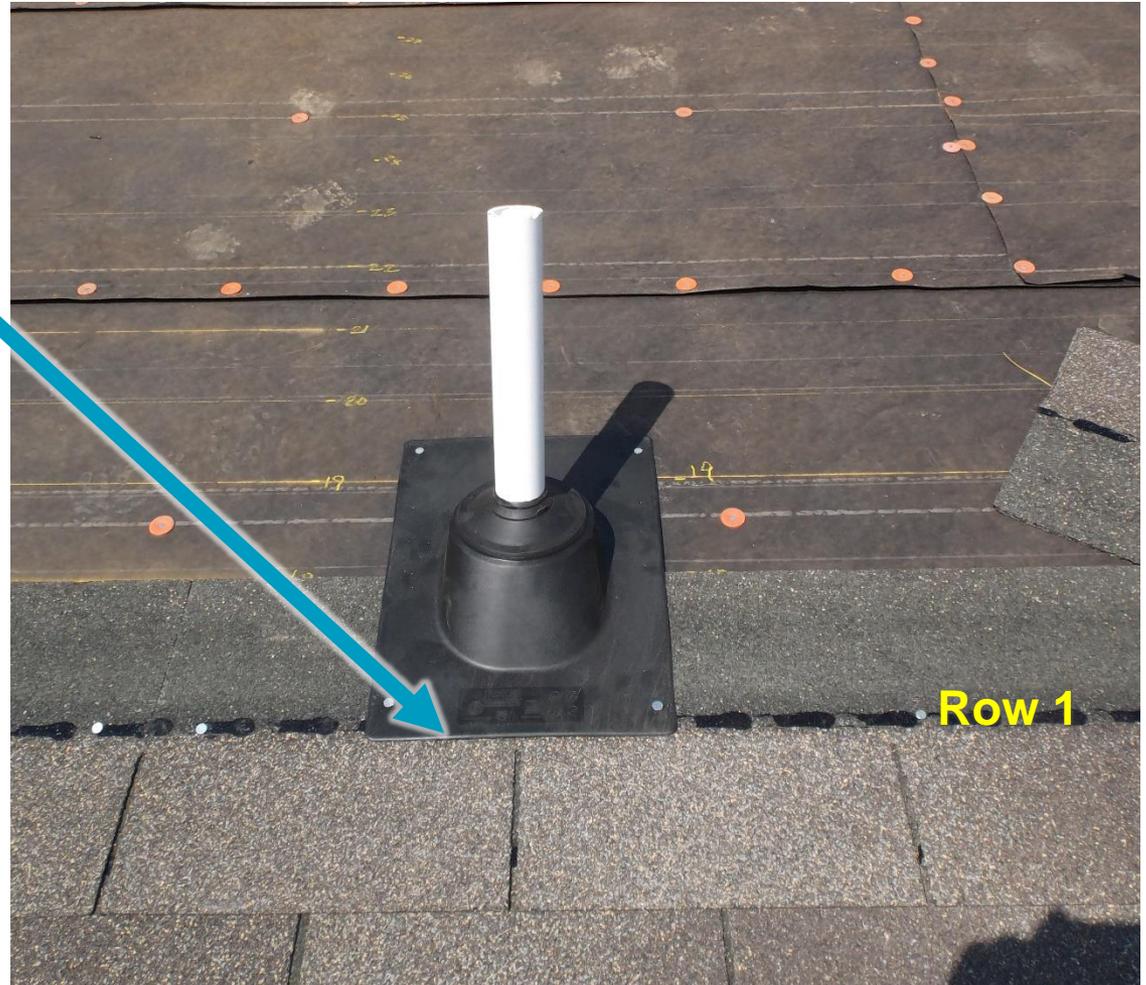
When possible, avoid having a seam immediately above the boot





- If the bottom edge of the boot is above the nailing line, the shingle will go under the boot
- If the bottom edge of the boot is below the nailing line, nail the boot in place and cut the shingle to go around the top of the boot

Reminder: Using flashing tape, tape sides, then top of boot











# Brick Ledger Board

- 🏠 Supports/distributes the weight of the masonry
- 🏠 Install using 4-inch deck screws spaced at 24 inches to secure into the gable

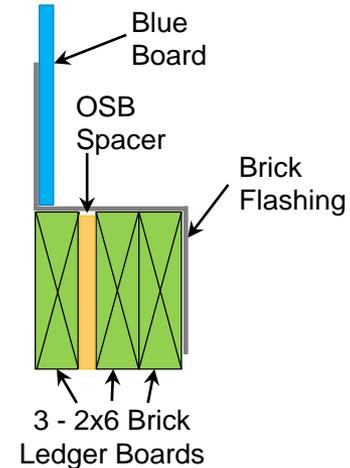


Figure 8-23

**Cross-Section View**



# Step Flashing



# Step Flashing

Must be installed as the roof is shingled

Step A - Set the step flashing in place. Use the orange or white line or tar line of the course below as a guide for the bottom edge of the flashing; flashing should not protrude farther than the bottom edge of the next shingle.

Step B - Set the shingle in place  
Step C - Nail the shingle in place

Step D - The end nail of the shingle should also go through the step flashing and hold it in place

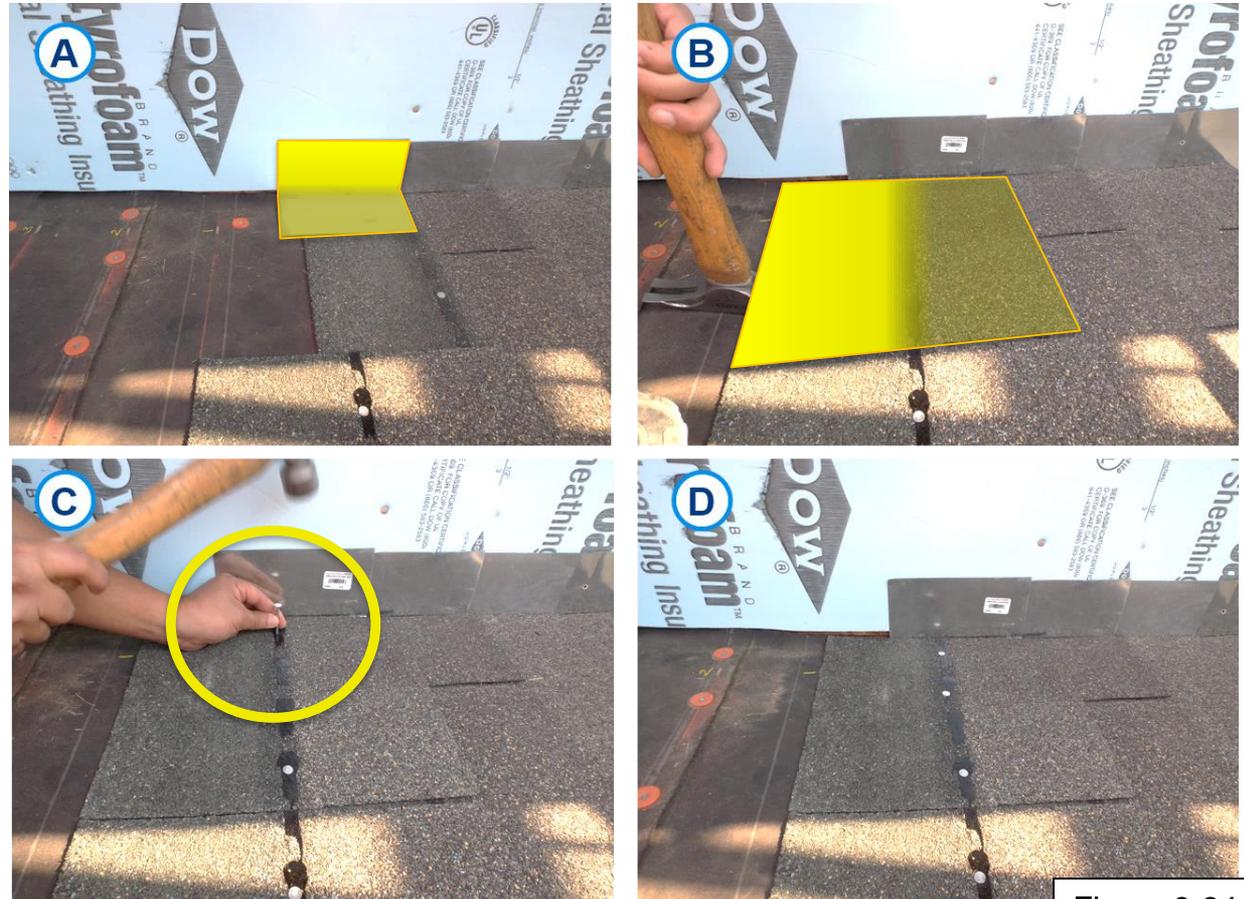


Figure 8-24

# Ridge Cap

- 🏠 May be cut from 3-tab shingles
- 🏠 On one side of the roof, snap a chalk line 5½ inches down from the peak (ridge line)
- 🏠 Use this line as a guide for cap
- 🏠 For the main roof, start at both ends and meet in the middle
- 🏠 For smaller sections (over porch or garage), start at the front of the house and work back
- 🏠 Use two roofing nails per cap; four on last piece

Cut lines (in red) for creating ridge cap from 3-tab shingles

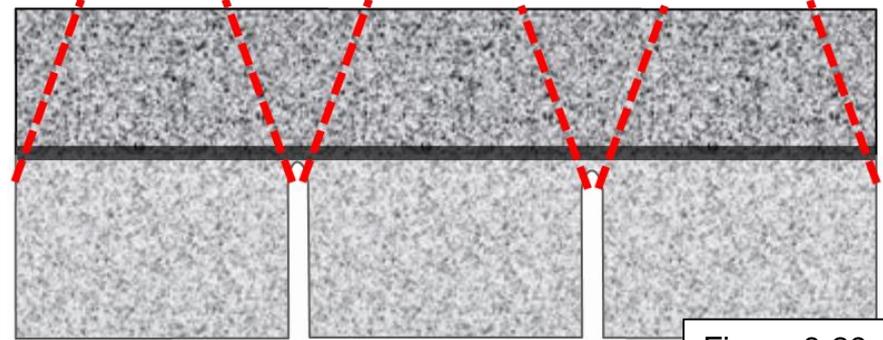


Figure 8-29

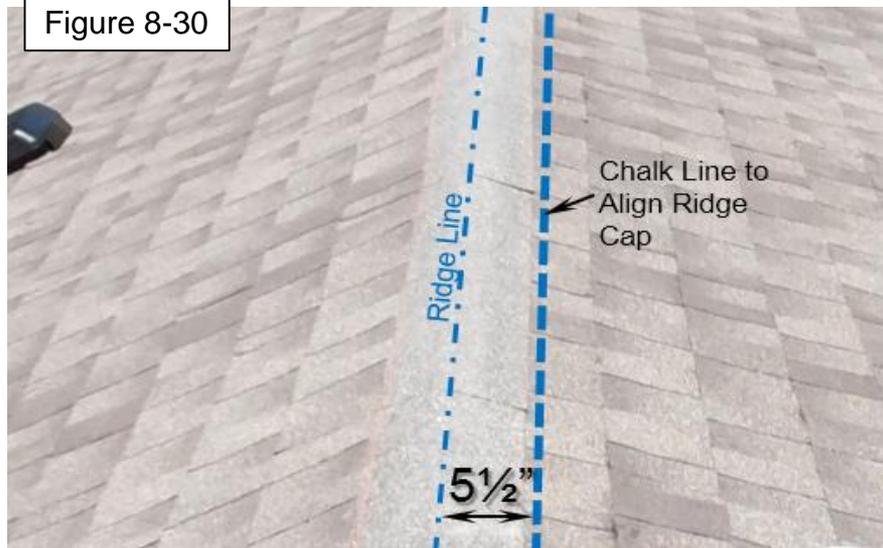


Figure 8-30



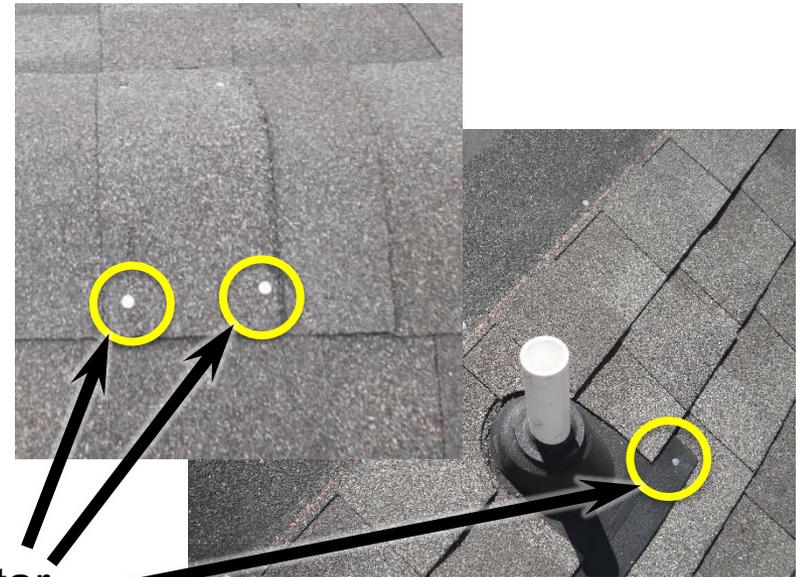
# Ridge Cap



Figure 8-33

# Finishing

- 🏠 Spray paint pipes black to retard UV damage from the sun
- 🏠 Tar any exposed nails, remember the vent caps and final pieces of ridge cap



Apply tar

# Brick Flashing

- 🏠 Install brick flashing over the brick ledger board after the roof is complete
- 🏠 The top flange of the flashing goes behind the Blue Board



# Quality

- 🏠 Rows should be straight and not wavy
- 🏠 As the rows approach the ridge, the row should be parallel to the ridge
- 🏠 Check for exposed nails

# Questions?