PERGOLA KITS USA

LEAN-TO PAVILION ASSEMBLY MANUAL

Shown above is a 8' x 10' Lean-To Pavilion

Thank you for your purchase of a new Lean-To Pavilion. Depending on the size of your Pavilion, installation can usually be completed in 1 to 2 days. These instructions are meant to serve as a guide for people with a base knowledge of general handyman skills. ***This assembly requires a minimum of three people to complete.***

Before You Begin

Please always check with your local building codes. They will vary from state to state.

The base of the pavilion must be solid and level. If you are installing them on a concrete slab or on concrete footers, they should be level where they posts will rest. If they are not, it may be necessary to cut the bottoms of the posts so that the bottoms are all level. Other than this, no cutting is necessary. If you think that you will need to make any additional cuts please contact us before doing so.
Making cuts without calling first may make installation difficult or void our warranties.

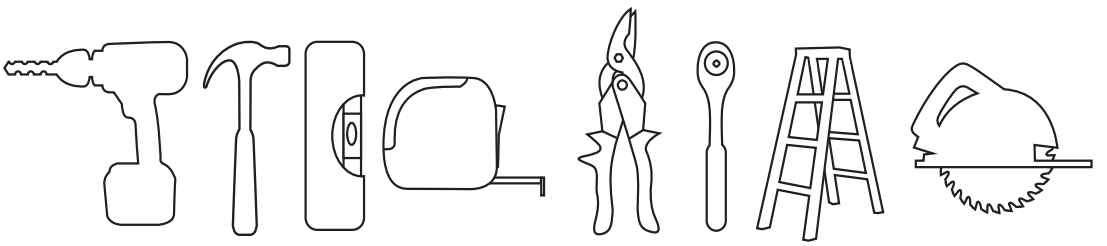
When connecting to concrete, Use wedge bolts, which are included in the kit. If connecting to an existing deck, lag bolts and deck screws (not included) will replace the wedge bolts. The pavilion does not give the ability to alter the location of the posts. It is important that it is laid out correctly and double-checked for accuracy before permanently attaching it to the base.

NOTE: Be sure not to place pavlion pieces directly on ground, as this may cause warping. Use scrap boards, etc. to keep pavilion components off ground and away from moisture contact.

NOTE: These instructions are for building a standard, rectangular pavilion. If your pavilion has custom dimensions with a longer gable side or square dimensions with equal sides, this reference point will need to be adjusted appropriately by the builder during installation. CALL WITH ANY QUESTIONS.

Tools Needed

Hammer drill, hammer, level, tape measure, tin snips, socket set, ladder, circular saw



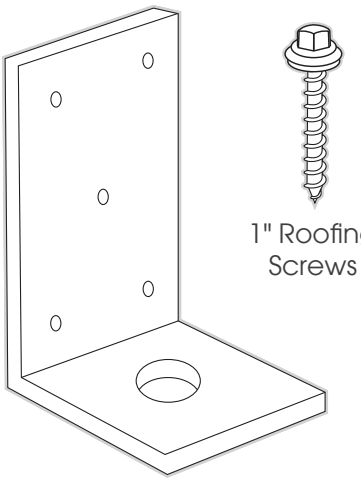
Site Preparation

It is important that the site is properly prepared before beginning assembly. It is imperative that the site be level. There are a few choices when installing this structure. The two most common are to anchor the posts to concrete pad/wood decking, or attaching to a concrete footer or two Sonotubes. Sinking the posts into the ground is not recommended unless it is called for by your local building codes. Anchoring the posts to concrete/wood decking, is the most common method, and is also the simplest. Please provide a level concrete or wood decking surface, and then lay out the template on the surface. Mark out the squares where the posts and brackets will go. Line up the markings that were made and this is where to set the posts. Posts cannot be anchored into loose pavers or stone. Customer assumes risk if not anchored into concrete or decking joists. This is the method that will be used for the following instructions:

Please check with the local building codes for the depth required for the footers/concrete slab. Also if using concrete footers, make sure that all of the tops of the footers are level with each other before starting to build. Contact your project advisor with any questions that you may have.

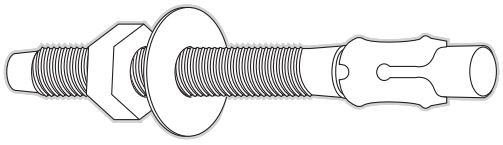
Hardware Included

(Hardware may vary)



Post Brackets

1" Roofing Screws



Wedge Anchors

GRK Screws

½" Screws

3½" Screws

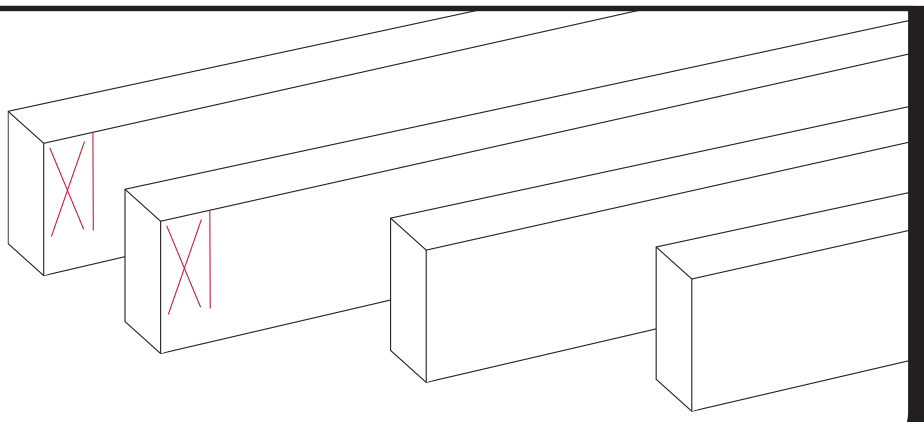
2" Screws

2½" Screws

NOTE: There will be a parts list sent with the pavilion. All hardware is included in each pavilion kit. The specific hardware will vary depending on the pavilion. Please see the parts list for details.

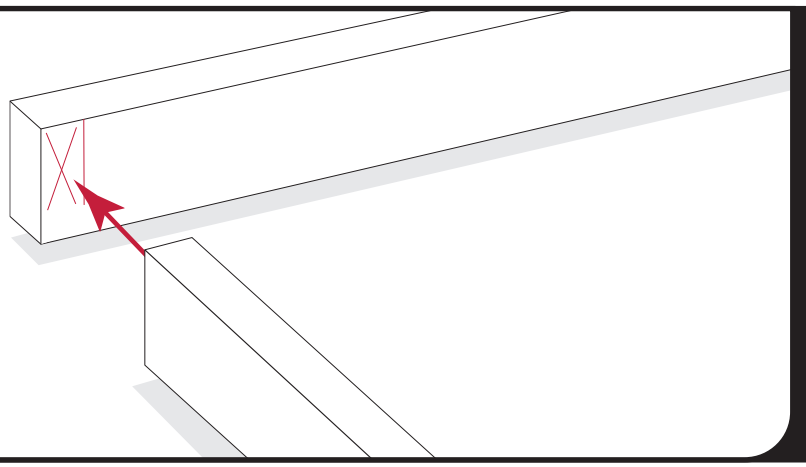
Template Assembly

1



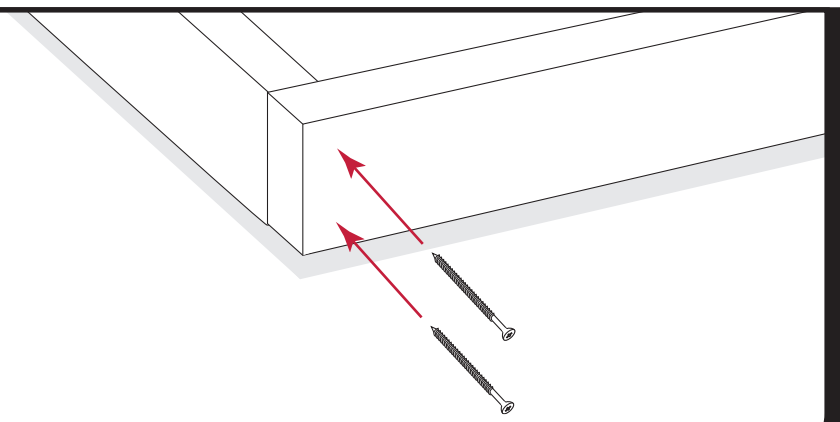
Your pergola kit includes a wooden template that you will use to mark your post locations. You will notice that two of the 2x4 boards have a marking near the ends. You will build a box that will reveal the outside corners of the posts when properly placed.
NOTE: For six post template the template will be spliced in the middle on the long side. Use letters to match up.

2



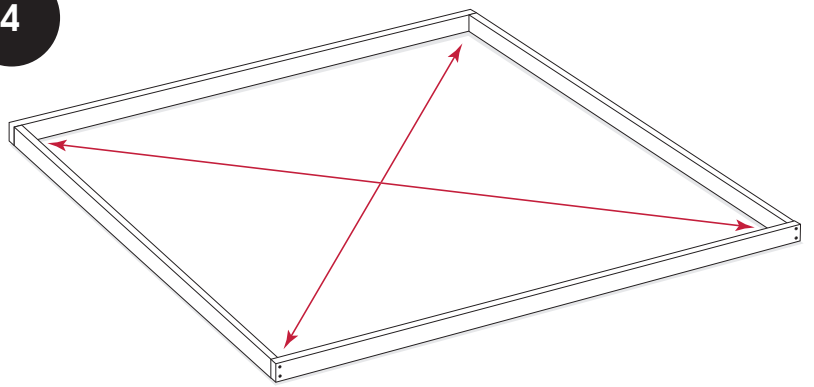
Arrange the template pieces so that they are positioned in the exact location where your pavilion will be placed. The boards with the marking on the ends will be across from each other. The marks will show where the other boards will be attached to create this box.

3



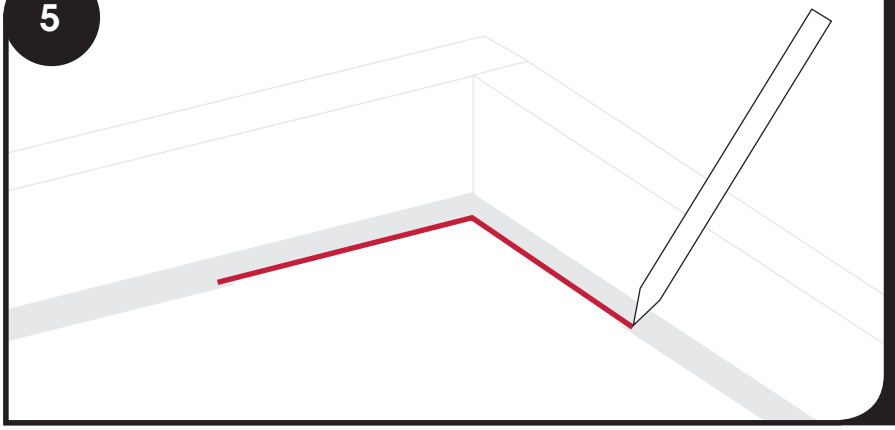
Connect the corners of the template pieces by driving two 2½" screws through the side of the template boards. On larger pavilions, your template will be spliced. Match the letters, then fasten them together with 2½" screws.
NOTE: For the six post template, also secure the long side splice with 2½" screws One in top, one in bottom.

4



Once the template is in position, you will need to square the template. Do this by measuring diagonally from one corner to its opposite corner. Then measure diagonally between the other two corners. These two dimensions MUST be the same. Adjust the template until the diagonal measurements are identical.

5



Once the template is "square," mark the post locations (using the INSIDE corners of the framed box) on the concrete slab with a pencil.

NOTE: If you have more than four posts, please mark them according to the template.

NOTE: if your pavilion gets a center post, please mark for center post as well.

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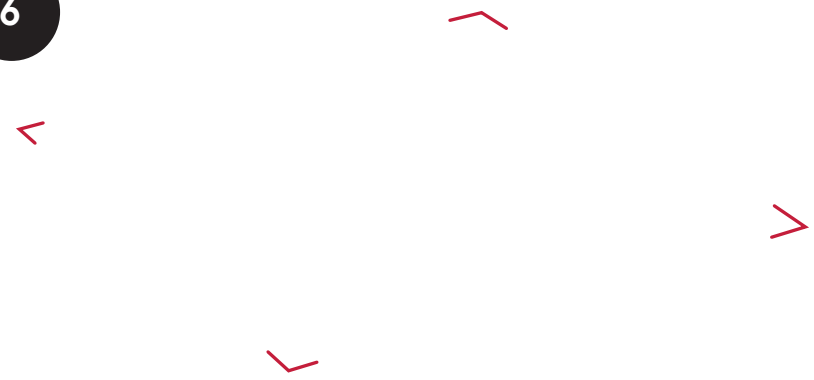
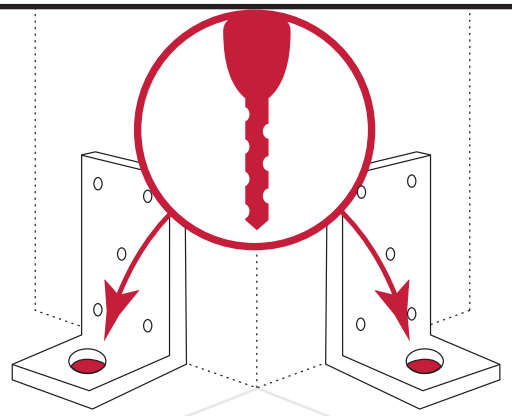


Remove and set the wooden template aside. You are now ready to assemble your pavilion.

Assembly

1

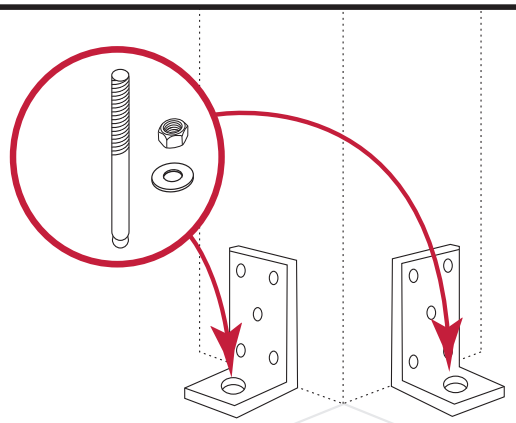


Locate and install your post brackets.

NOTE: If you ordered heavy-duty anchors, please refer to page 15.

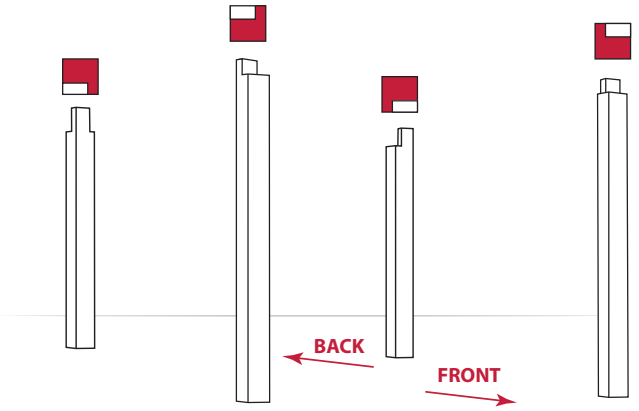
Use a ½" mason bit and drill down about ½" farther than length of anchor bolt.

2



When holes are all drilled, put the anchor bolts in. Make sure the nut and washer are on. Use a hammer and an old 2x4 to protect the threads. Tap bolt into the hole. When you have it down against, tighten nut with a wrench. Do this with all brackets.

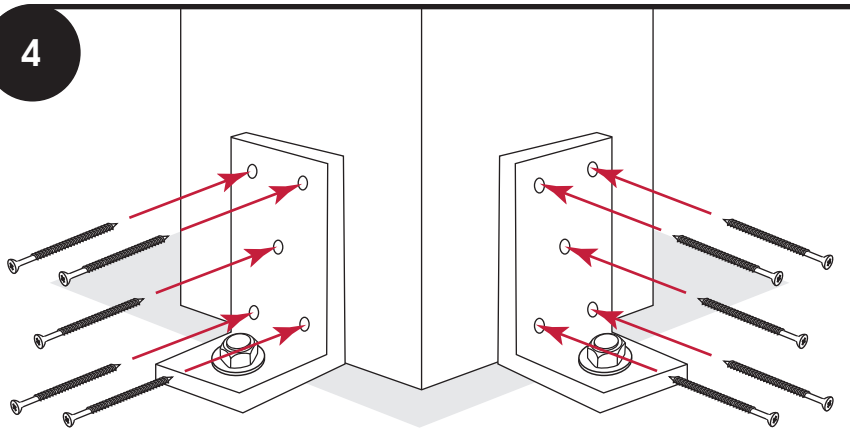
3



Locate all of the posts. The tallest posts will be placed with the large notches facing forward, where the front of the pavilion is going. The shortest post will be placed with the large notches facing toward the back, where the back of the pavilion is going. The small notches on each post will face inwards.

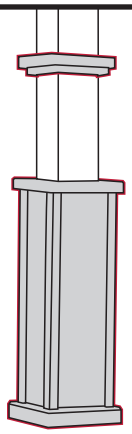
NOTE: Pay special attention to the position of the notches on all four posts.

4



Double check your notch position and position the first post. While the post is being held in place, perfectly level, and perfectly flush with the corner mark, attach one L Bracket to the post, centered on the outside of the post at the bottom with five 2½" screws per bracket. Repeat with second L bracket on other inside edge. Repeat for all posts.

5



Slide the bottom post trim over the top of the post, then with the widest part of the square top trim facing up, slide it onto the top of the post also.

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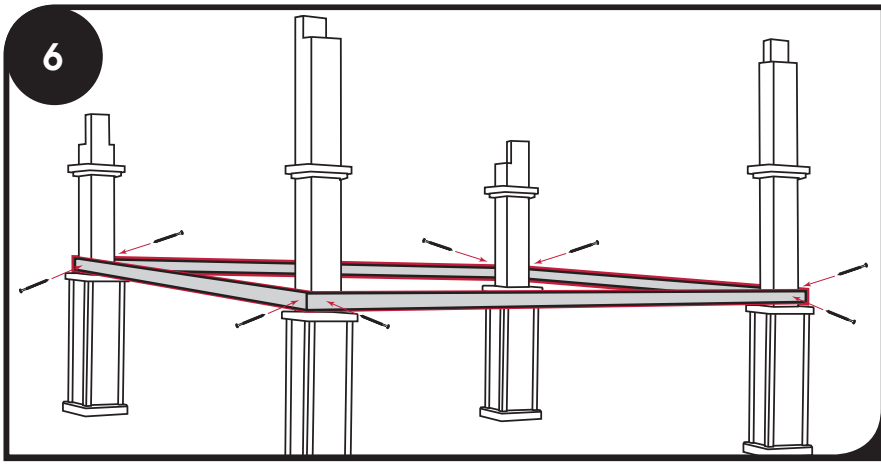
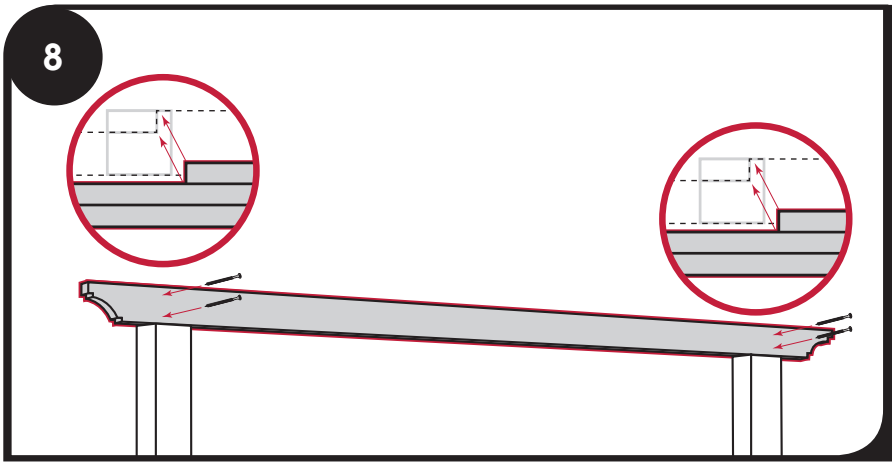


Once square, screw template boards to posts with one 2½" screw per end.

7

Locate the headers for the front and back side of your pavilion. If you have six posts, your headers will be spliced on the center posts.

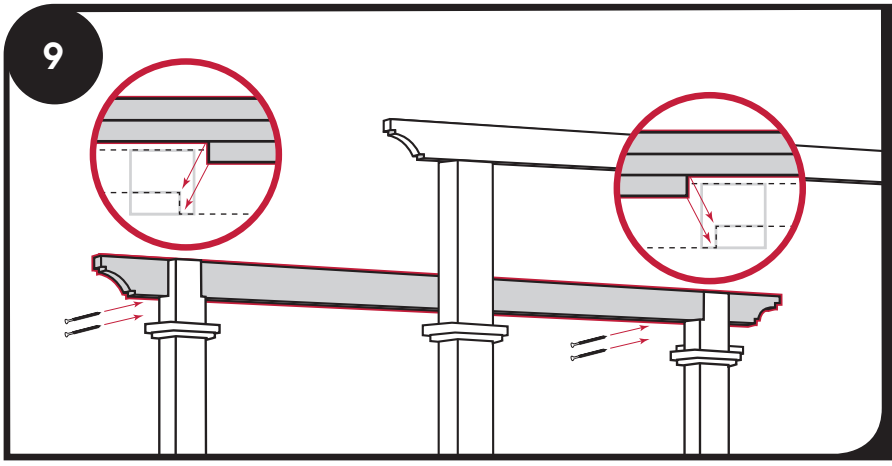
8



Starting on the front side, position the header onto the outside top post. Be sure it is resting in the notch properly. Using two 3½" screws per post secure the header to the post. **DO NOT USE PRE-DRILLED HOLES FOR THIS STEP**

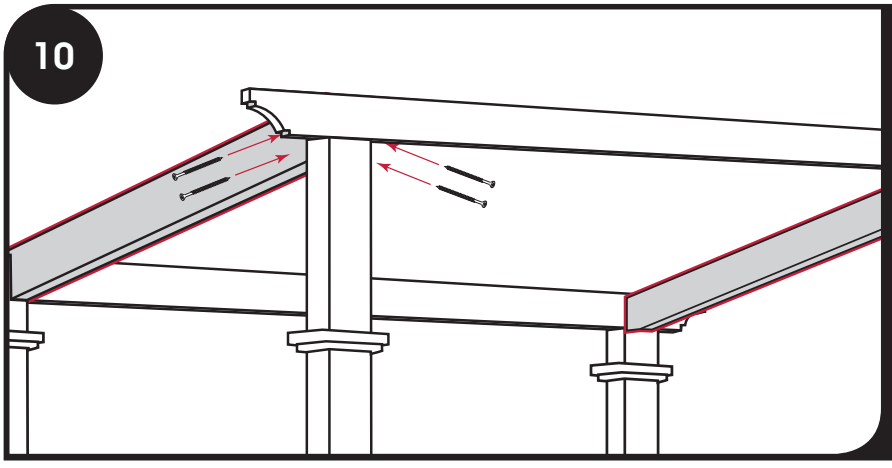
NOTE: If you have more than four posts, the headers are spliced at each center post.

9



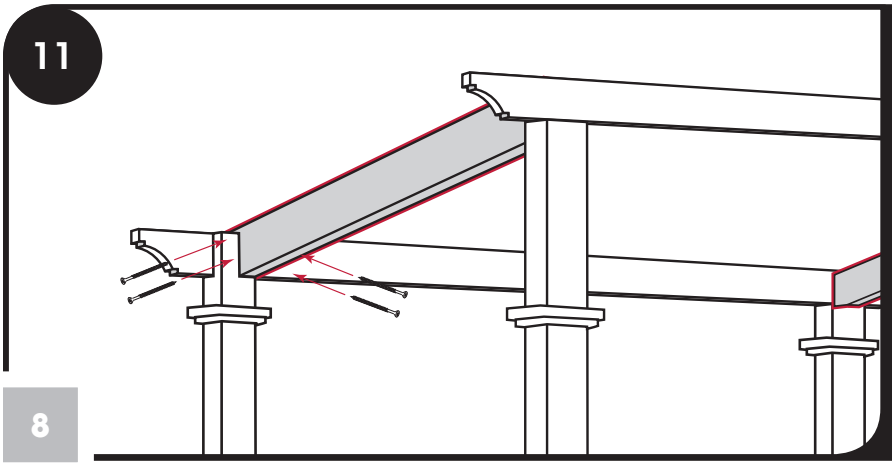
On the back side, position the header onto the outside top post. Be sure it is resting in the notch properly. Using two 3½" screws per post, secure the header to the post. **DO NOT USE PRE-DRILLED HOLES FOR THIS STEP**

10



Install the return beams, one on each side to connect the higher front and lower back posts. Attach the front (high) side first with four 3½" screws, two on each side.

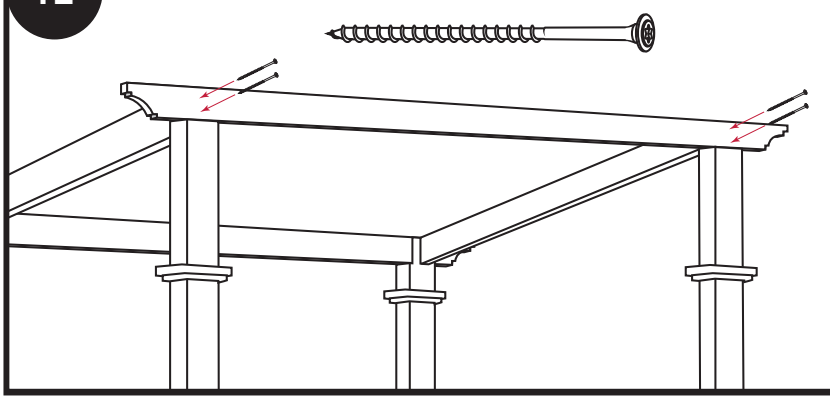
11



Attach the rear (low) side with four 3½" screws, two on each side.

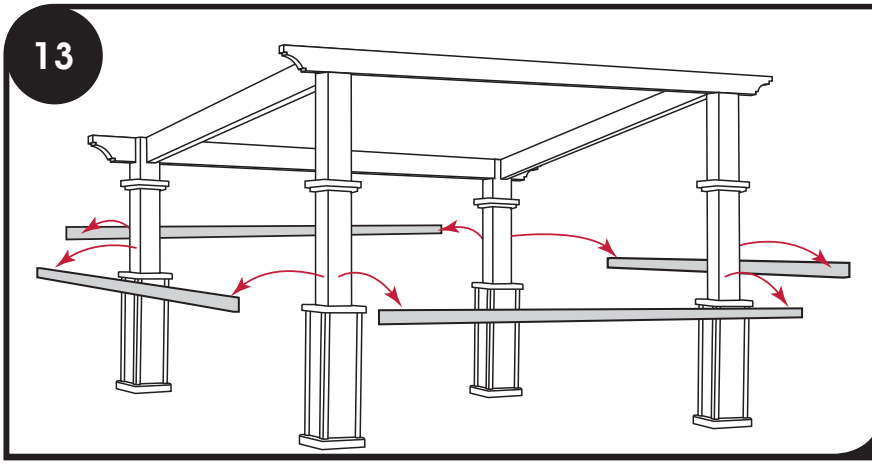
NOTE: if you have a center post, repeat this step with the center post now. Using four 3½" screws, two on each side.

12



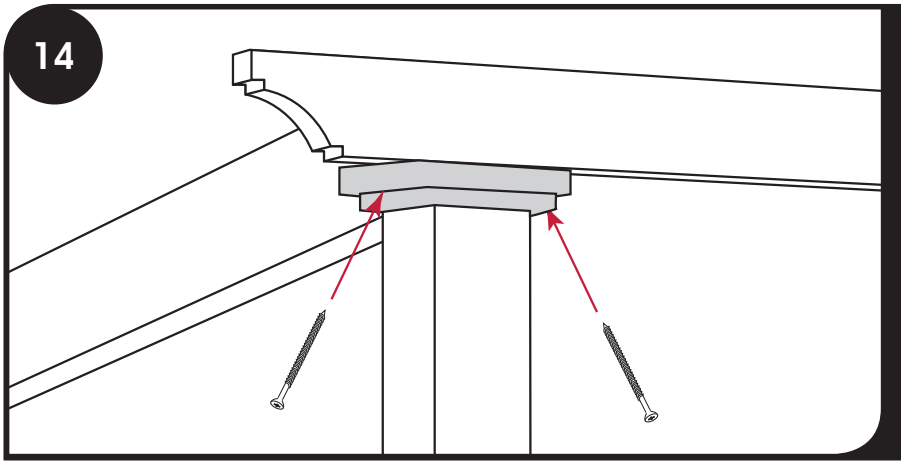
Secure the structure using 8" GRKs through the pre-drilled holes in the headers. Repeat on all remaining pre-drilled holes.

13



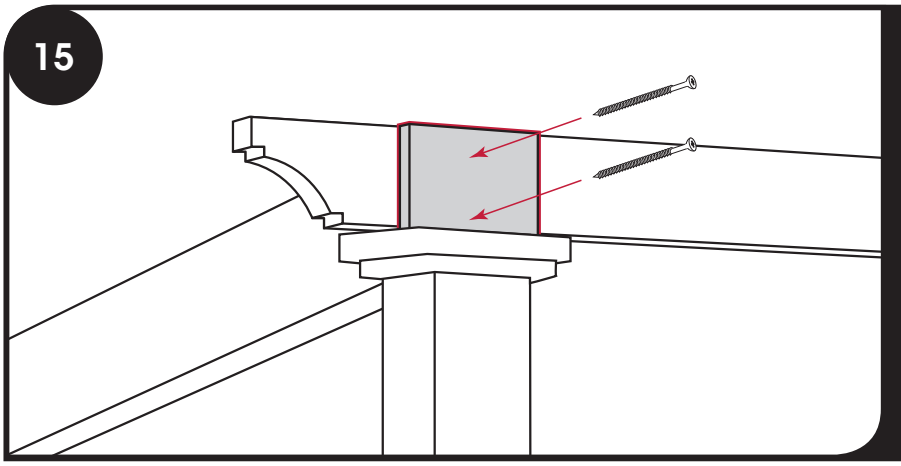
Remove the template boards from around the pavilion.

14



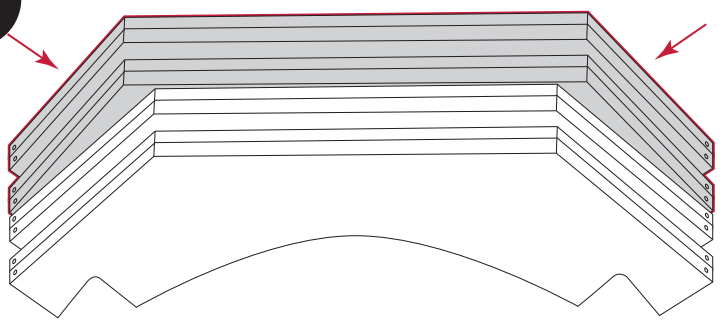
Slide the top trim piece against the bottom of the header, attach with two 2½" screws into the bottom of the header, one on each side.

15



Install the header trim pieces. Center them above the top post trim on the outside of each header. Attach with 2½" screws. Repeat on all remaining posts on the outside of the header.

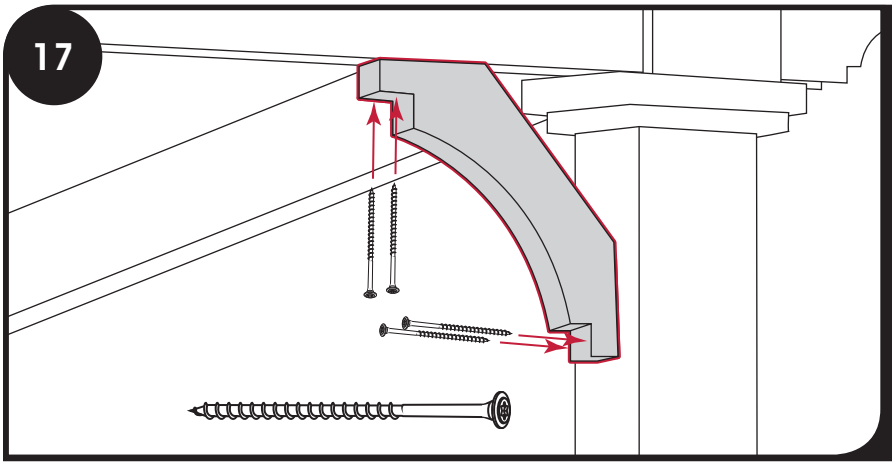
16



Locate all the corner braces. Lay them on the ground and choose the four braces that have the same angle at the top and the bottom. These will be used to support the two main headers (front and back).

NOTE: For six post pavilions choose the eight braces that have the same angle on both sides. These will be attached to main headers.

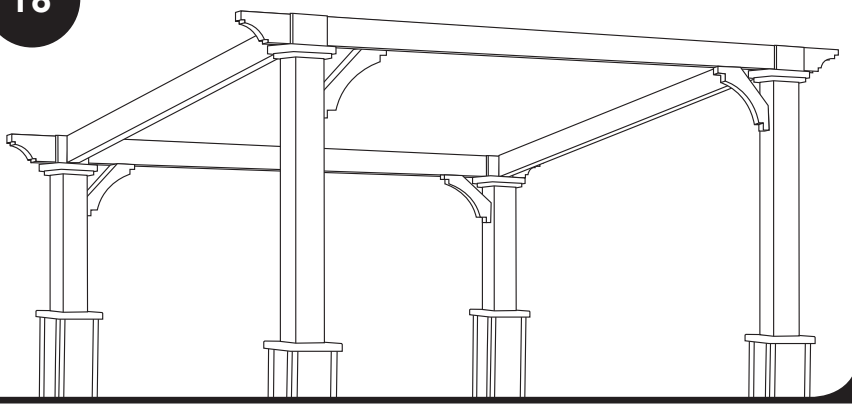
17



Hold the brace in place being sure the top and bottom are flush with the header and post. Use four 5" TimberLOK screws for each brace. Place them in the pre-drilled holes to secure the braces.

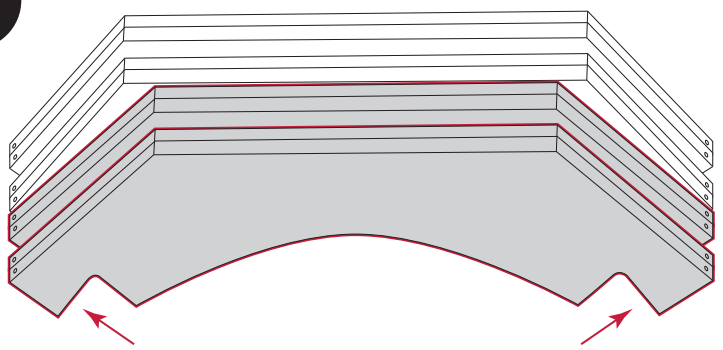
Note: For pressure treated pavilions, the side attachment screws must face inward.

18



Repeat this process with the remaining three braces on all sides for the main headers, front and back.

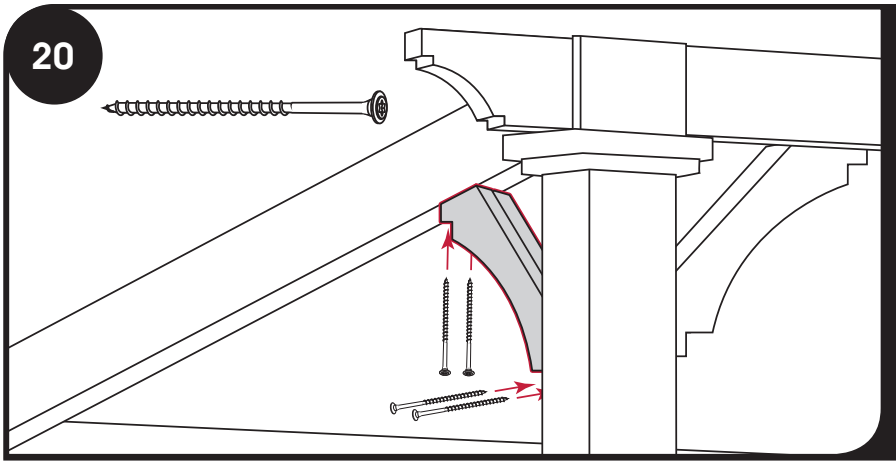
19



Locate the remaining four braces with different angles cut on the top and bottom.

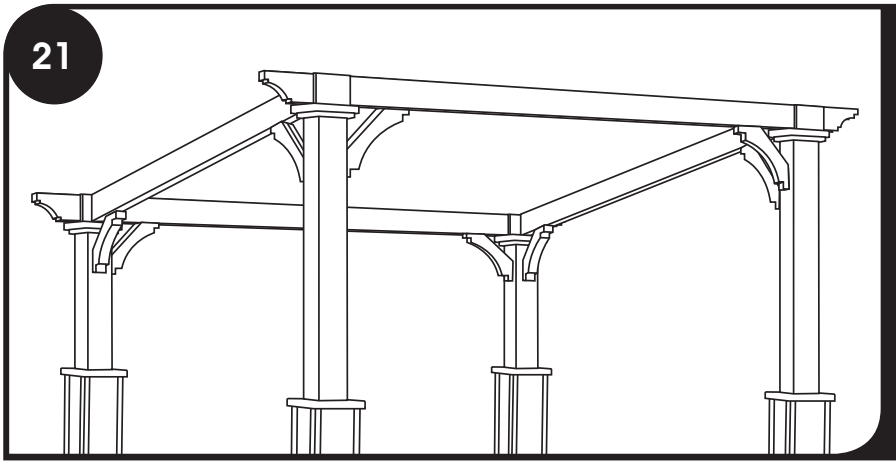
NOTE: When installing, if both ends are not flush before drilling, do not install. Find the brace that fits the angle. For pressure treated, be sure brace's side screws are facing inside the pavilion.

20



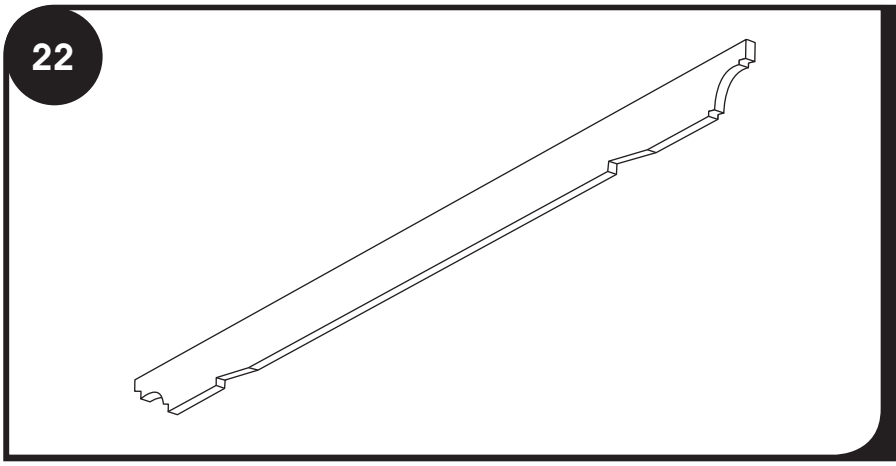
Hold the brace in place being sure the top and bottom are flush with the return beam and post. Use four 5" TimberLOK screws for each brace. Place them in the pre-drilled holes to secure the braces.

21



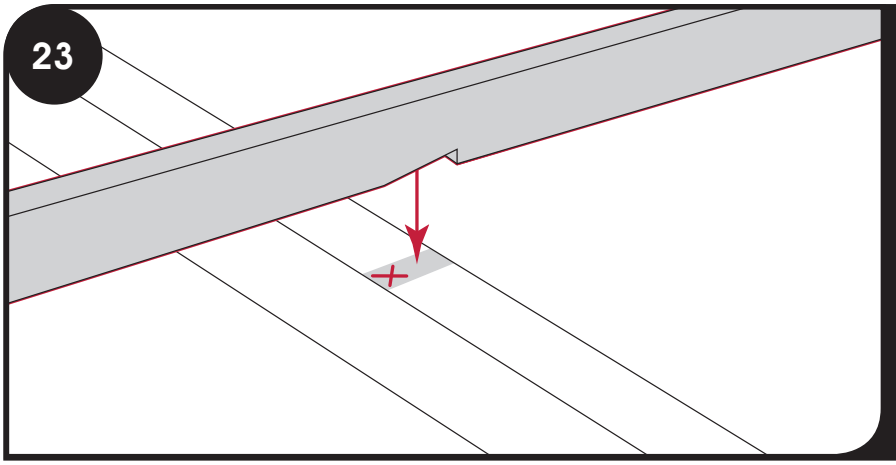
Repeat this process with the remaining three braces on all sides for the return beams, front and back.

22



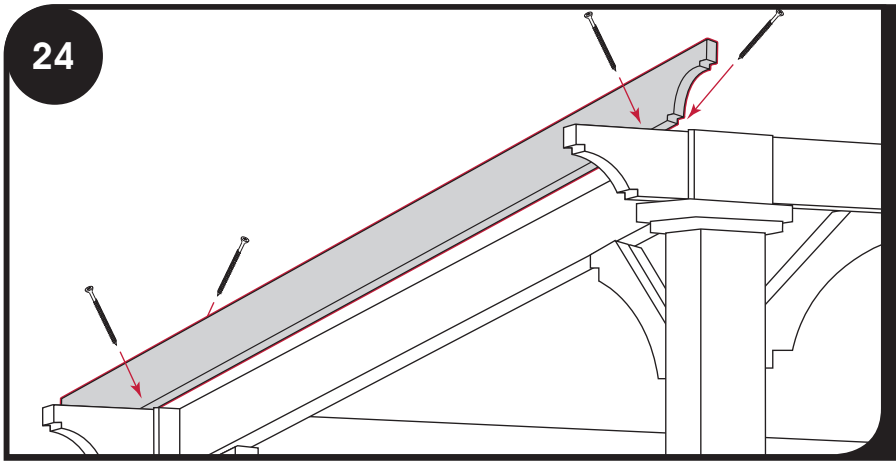
Locate the 2x6 rafters. The number of rafters will vary based on length of pavilion. Rafters will be notched on bottom in two places so they sit flush on the top of the front and back headers.

23



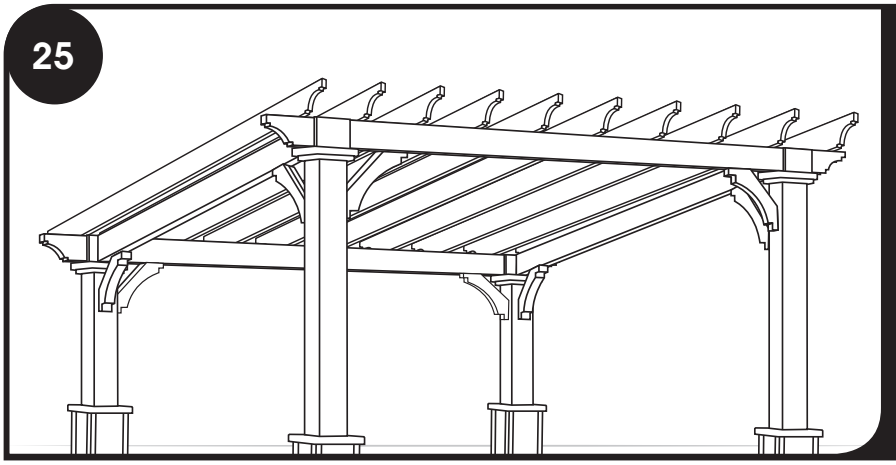
Place rafter on top of "X" marks being sure the side of the rafter is flush with the corresponding line. Be sure rafter seats into place where notched.

24



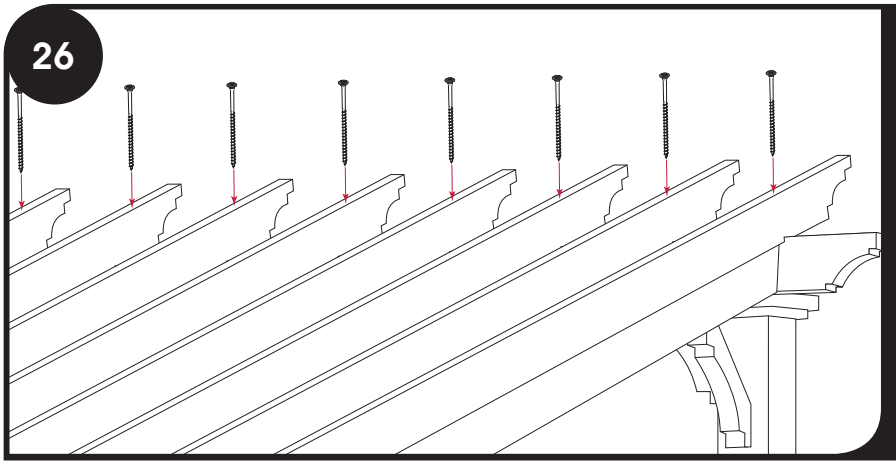
Attach the rafters with two 3½" screws run through the pre-drilled holes and into the high side header and two more 3½" screws into low side header.

25



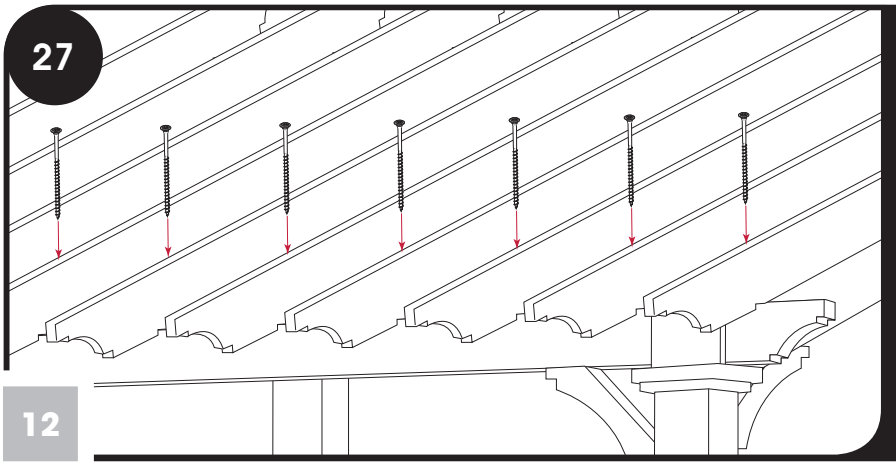
Continue the process until all rafters are attached.

26



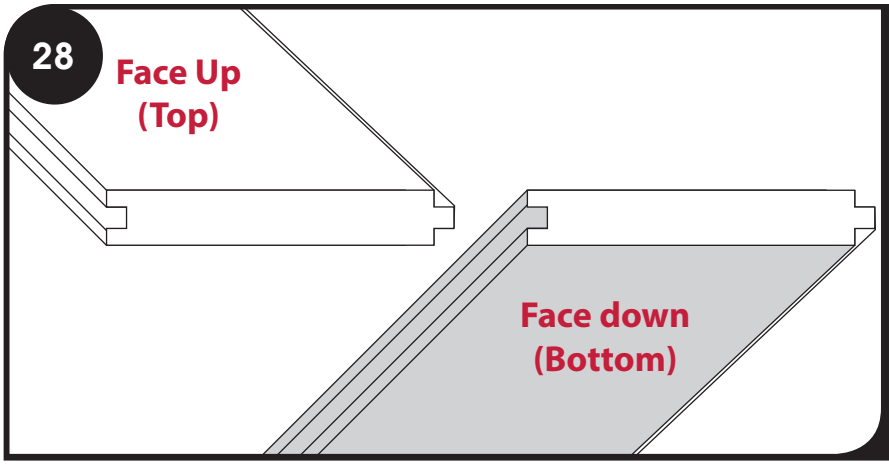
Attach the rafters into the high side header from the top down with one 8" GRK screw.

27



Attach the rafters into the low side header from the top down with one 8" GRK screw.

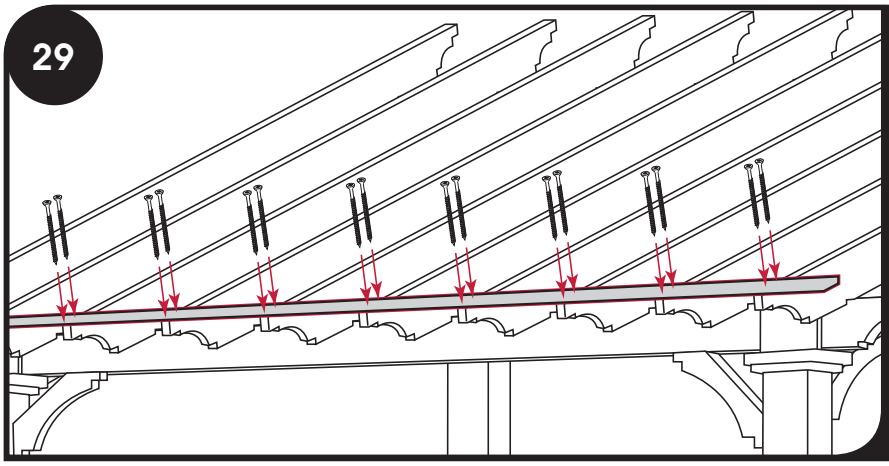
28



You are now ready to install the roof decking boards.

NOTE: if your pavilion ceiling was stained. The stained side of the board must face downward.

29

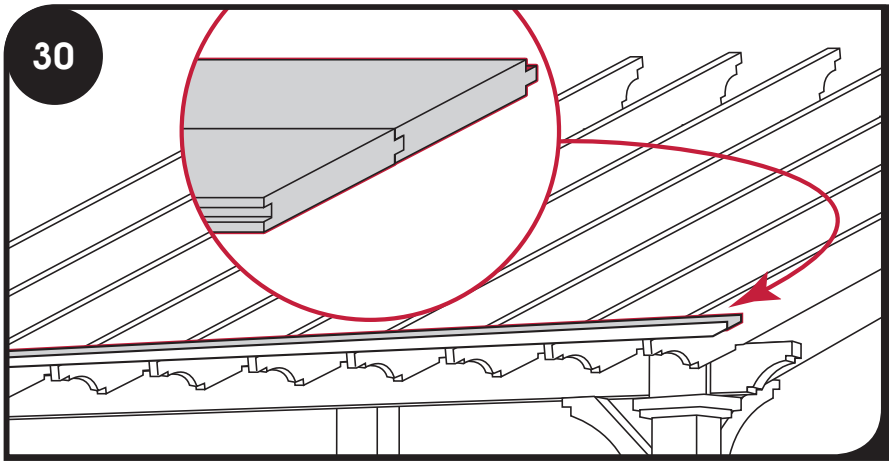


Place the first board on low side of pavilion. Make sure the groove is facing the back of the structure and the tongue side is facing toward the front of the structure.

NOTE: Be sure this first decking board is flush with the ends of the rafters so the remaining boards attach squarely.

NOTE: Be sure board is fully seated before screwing into place.

30



Tightly fit the next boards groove into the installed tongue board.

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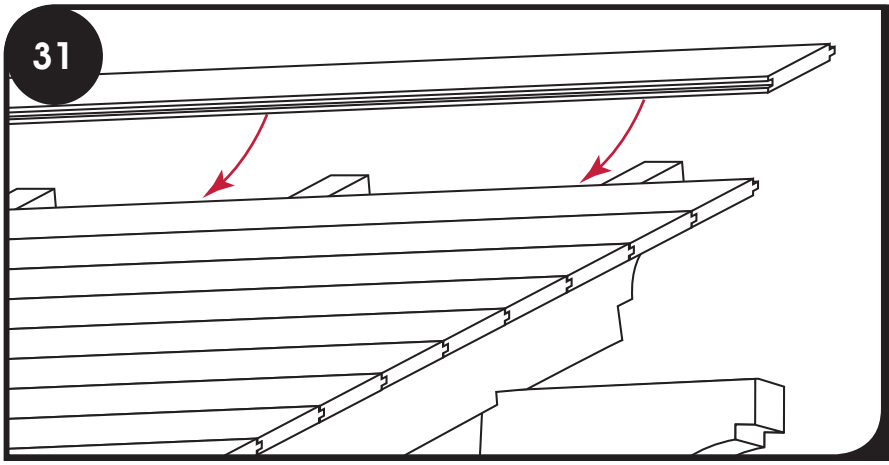

Continue placing the decking boards up the roof. Fit them tightly in place to maintain a square roof. Secure each board in place using 2" decking screws.

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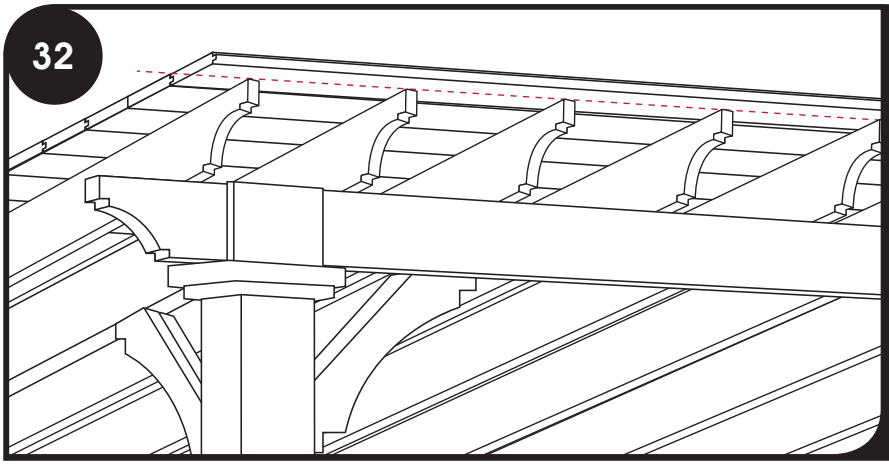
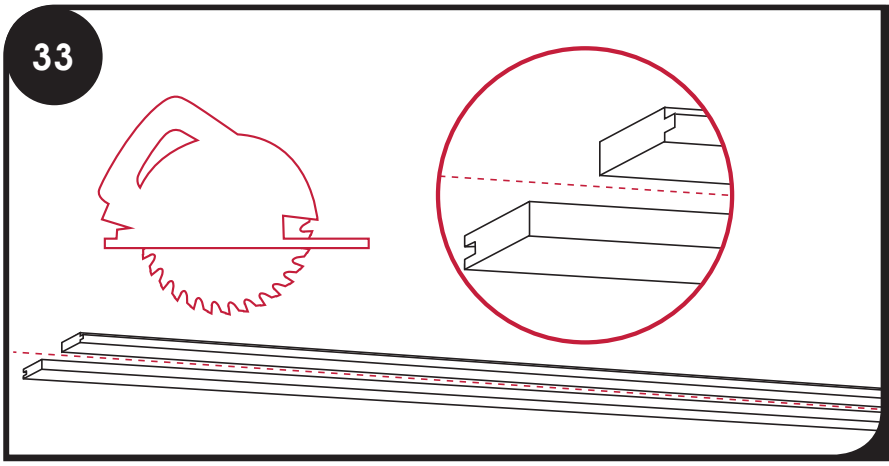


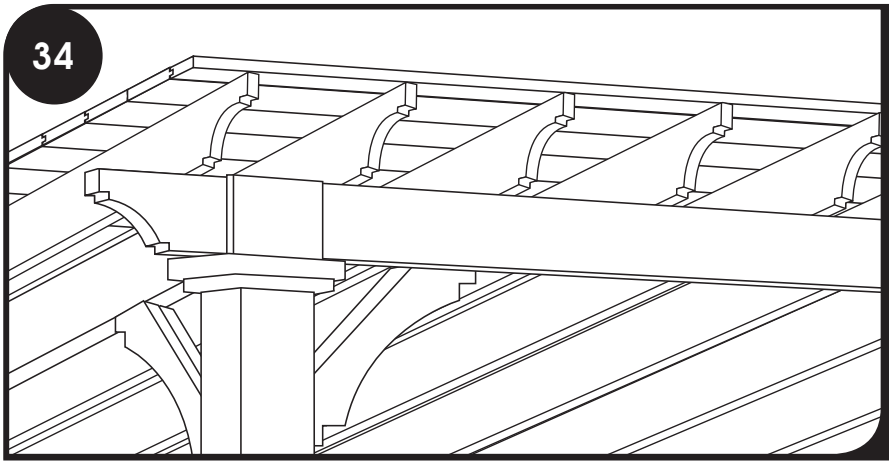
Mark the underside of the board at the end of the last rafter on both sides of the last deck board.

33



Use a straight edge or chalk line to mark a line across the length of the board. Rip the board accordingly.

34



Now reinstall the trimmed board. Fit it tightly and secure to the rafters with 2" screws at each rafter.

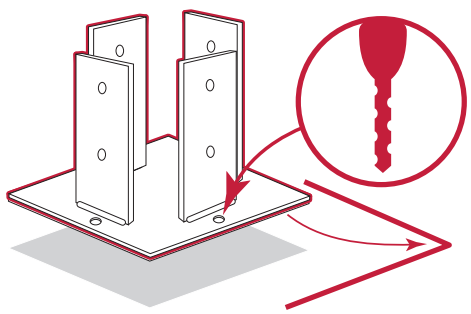
You are now ready for roofing material.

See page 18 for asphalt shingle

See page 20 for metal roofing

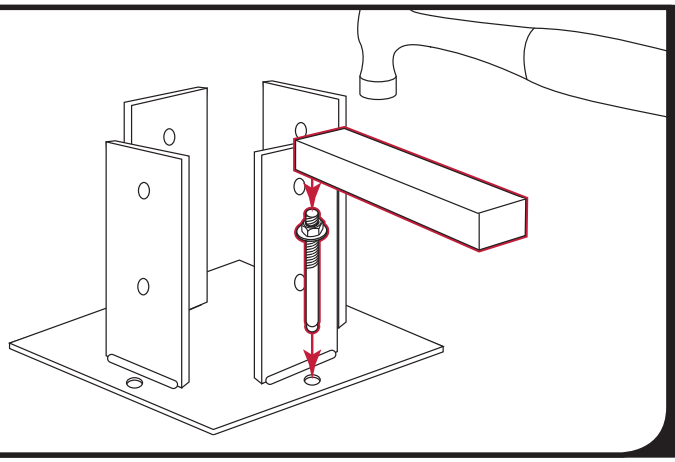
Heavy-Duty Anchors for High Wind

1



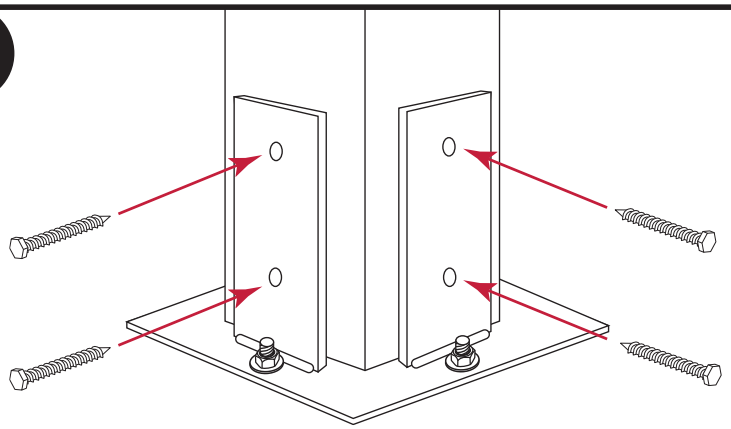
Set the outside edges of the brackets at the pencil marks you made from the template. Using the bracket base as a template, drill a hole using a ½" masonry bit about 1" longer than the masonry bolt in each of the four anchor bolt holes. Clear all concrete dust from the holes.

2



Install the washer and nut on the bolt so that only a few threads are showing above the nut. Using a piece of wood to protect the threads, tap the anchor bolt into the hole with a hammer until about ¾" of threads are showing. Tighten the nut and the base of the bolt will expand and anchor the entire assembly to the ground. Continue on with the rest of the anchor bolts.

3

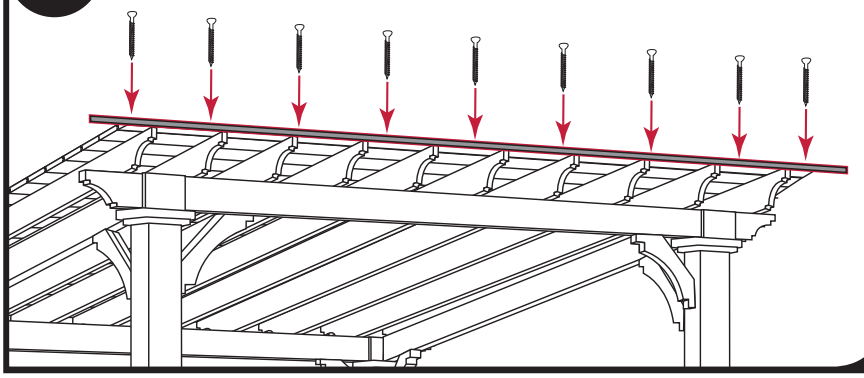


Place the post into the bracket. Level the post on both sides, then fasten 8½" x 3" lag screws into the post. Repeat this step with all posts. Turn to page 7 for your next assembly step.

Drip Edge

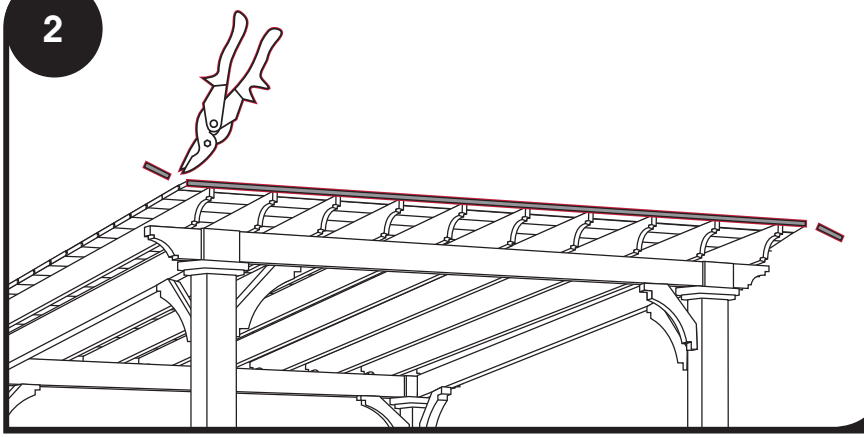
For both asphalt shingles and metal roofing.

1



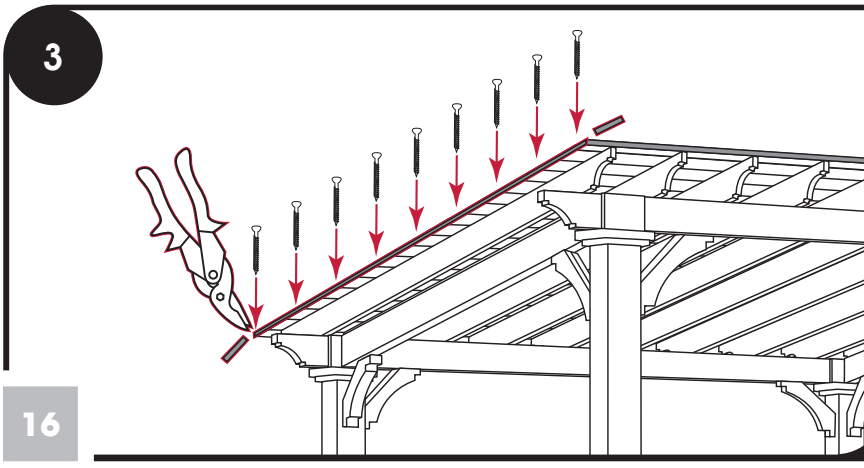
Install the front drip edge. Place the drip edge on top of the lath. Keep flush with edge of roof. Fasten with one ½" stainless steel screw every 24" and one final screw at the end.

2



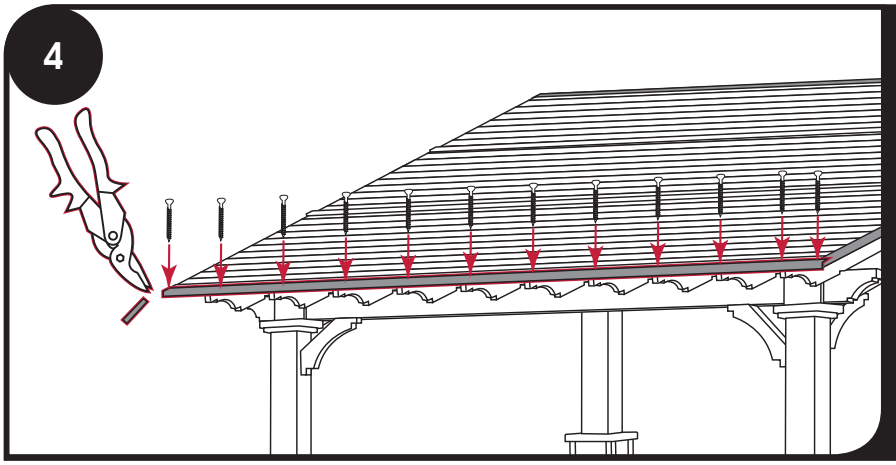
Using tin snips, cut the drip edge accordingly.

3



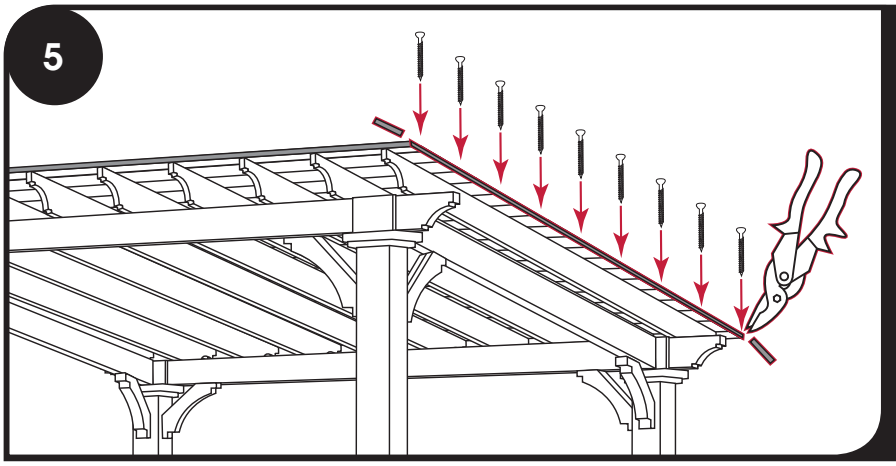
Install the left side drip edge. Attach with ½" stainless steel screw on top of each lath piece. Cut to size at ends.

4



Install the back drip edge. Place drip edge on top of the lath. Keep flush with edge of the roof. Fasten with one ½" stainless steel screw every 24" and one final screw at the end. Cut to size with tin snips.

5



Install the right side drip edge. Attach with ½" stainless steel screw on top of each lath piece. Cut to size at ends.

Shingle Roof Requirements

ROOF PITCH	REQUIREMENT
4:12 and steeper	• Architectural style asphalt shingles with Elephant Skin underlayment; or • Lapped G-rib metal panel over wood lath - no underlayment required; or • Standing seam metal panel - no underlayment required
2:12 or more but less than 4:12	• Architectural style asphalt shingles with IWS[1] underlayment; or • Lapped G-rib metal panel over wood lath - no underlayment required; or • Standing seam metal panel - no underlayment required
1:12 or more but less than 2:12	• Lapped G-rib metal panel over wood lath with IWS underlayment; or • Standing seam metal panel with Elephant Skin underlayment
Less than 1:12	• Standing seam metal panel with Elephant Skin underlayment

[1] Customer is responsible for checking local building codes. Local building codes supersede the above guidance.

[2] IWS on the entire roof, not just the lower portion of the roof. IWS is an abbreviation for "Ice & Water Shield". IWS is stronger and more impervious to water than standard underlayments.

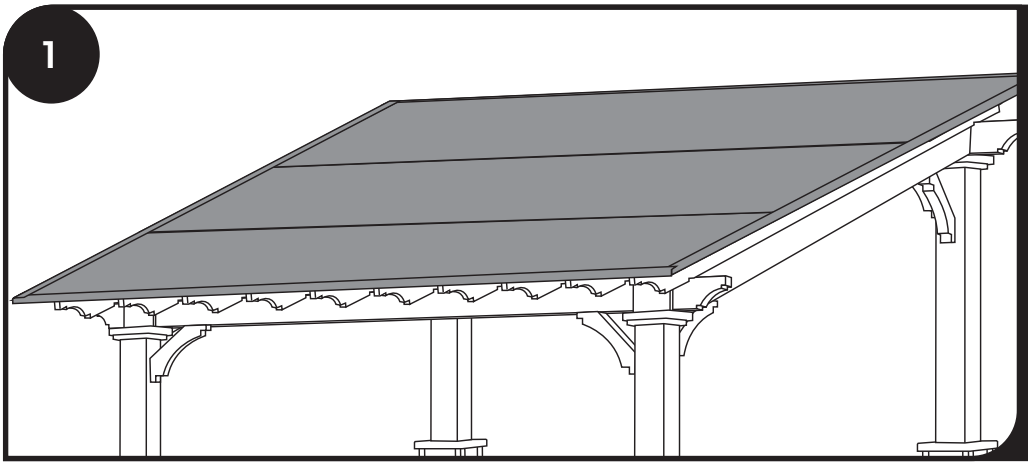
Roof Option 1
Shingles

Before starting step 1, be sure to install drip edge as shown on pages 16 & 17

NOTE: Before beginning, consult instructions on shingle packaging. We do not include fasteners for asphalt shingles with our kits. This is because some states require different fasteners than others, and because some customers have different tools than others (hammer, nail gun, pneumatic stapler, hammer tacker, etc.) Please use shallow depth fasteners to fasten your shingles to your 1x6 roof decking. For example: ⅝" long roofing nails or roofing staples with ⅝" leg and 1" wide crown. These fasteners will certainly be sufficient to hold the shingles to your roof in high storm winds and will not pierce the bottom surface of the 1x6 decking.

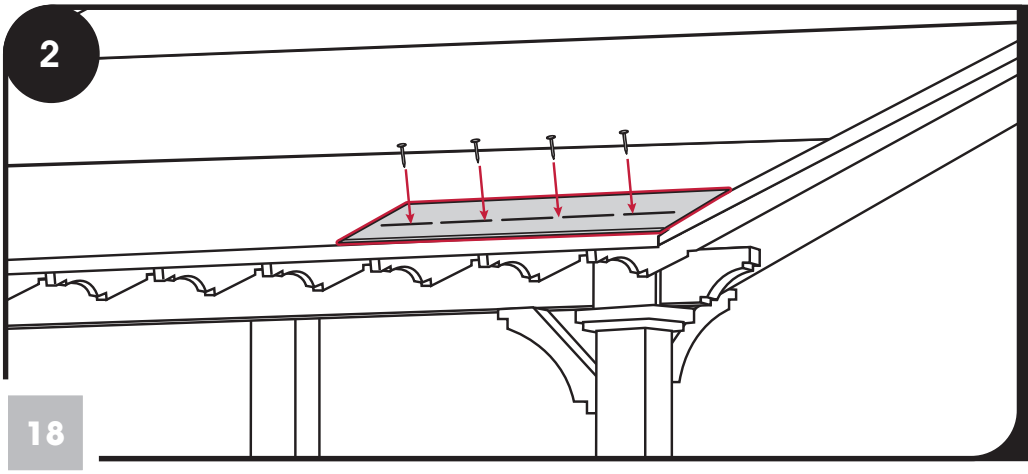
DO NOT PLACE PLYWOOD, OSB (ORIENTED STRAND BOARD) OR OTHER DECKING ON THE TOP OF THE 1x6 TONGUE AND GROOVE. It is not necessary and is too heavy for your structure.

1



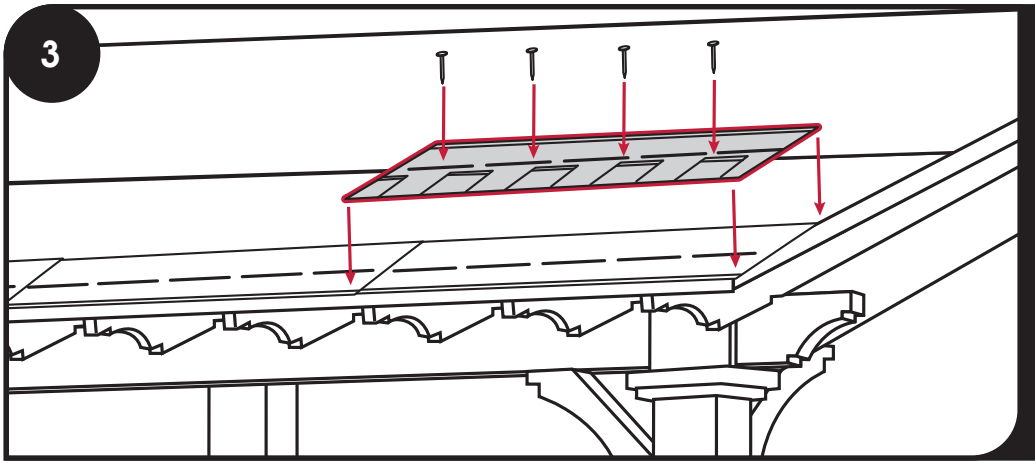
Install ice and water shield or roof paper. Start at the bottom and be sure to overlap 2" as you work upward. Install the drip edge to the edges of the roof using a fastener every 16".

2



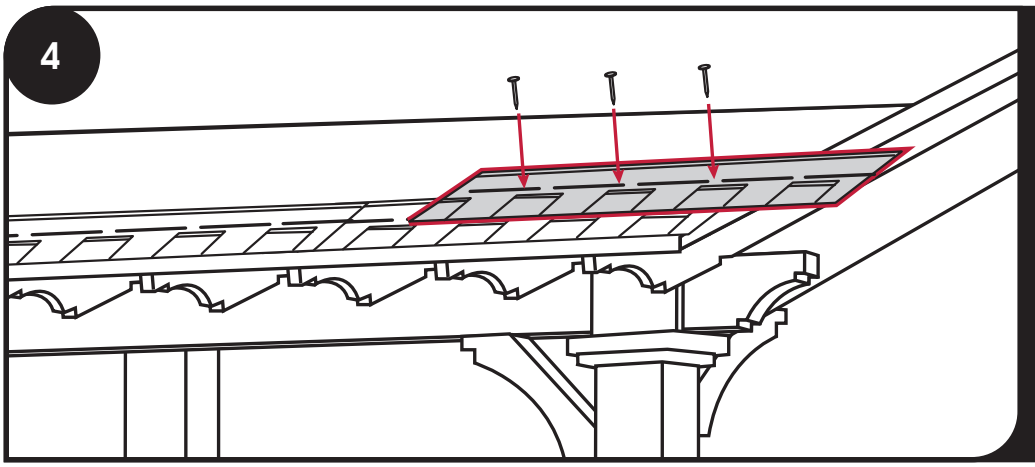
To install the first row of shingles, spin your shingles so the tabs face the peak and flip them over. Attach to roof using four ⅝" roofing nails. Place nails approximately 3" from bottom.

3



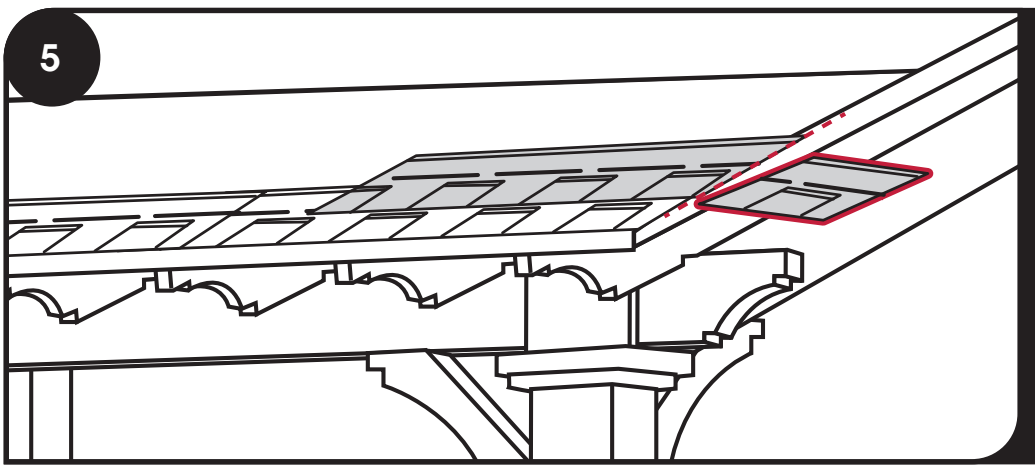
Use four 5/8" roofing nails and attach to roof through shingle at the center line marked on the shingle. Do not fasten below the line or your fasteners will be exposed.

4



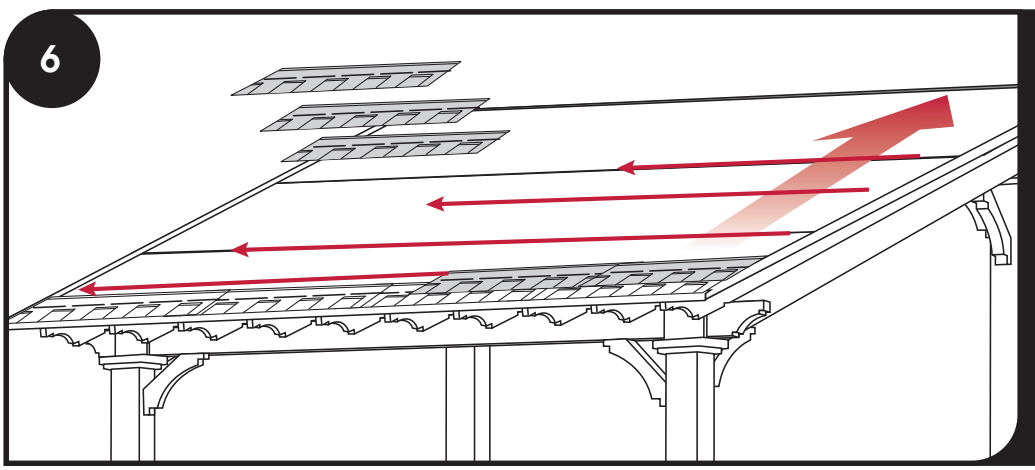
Start the second row, line up the bottom edge of the shingles with the architectural line on the shingle below. Attach the second row of shingles to the roof using a 5/8" roofing nails or a power stapler.
Do not use long nails or staples that protrude through the 1x6 roof decking.

5



Trim overhanging shingles with a scissors or utility knife. When using a knife cut from the bottom side.

6

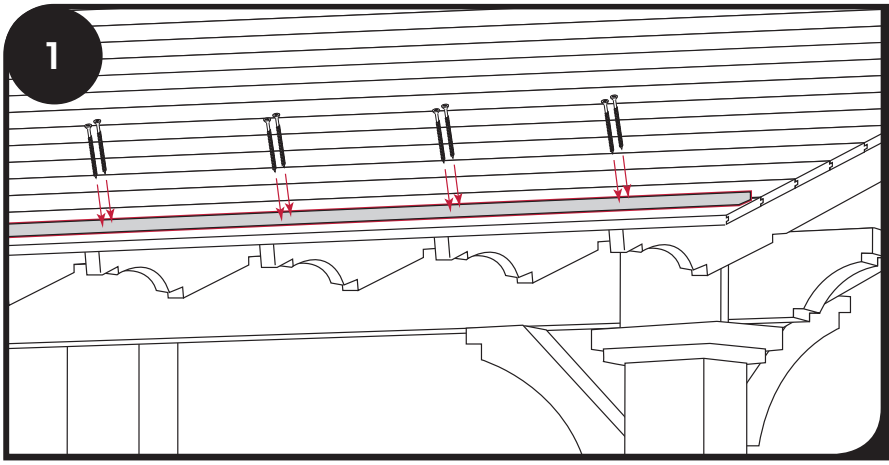


Work across the roof and then up the roof to the peak.

Roof Option 2
Metal Roofing

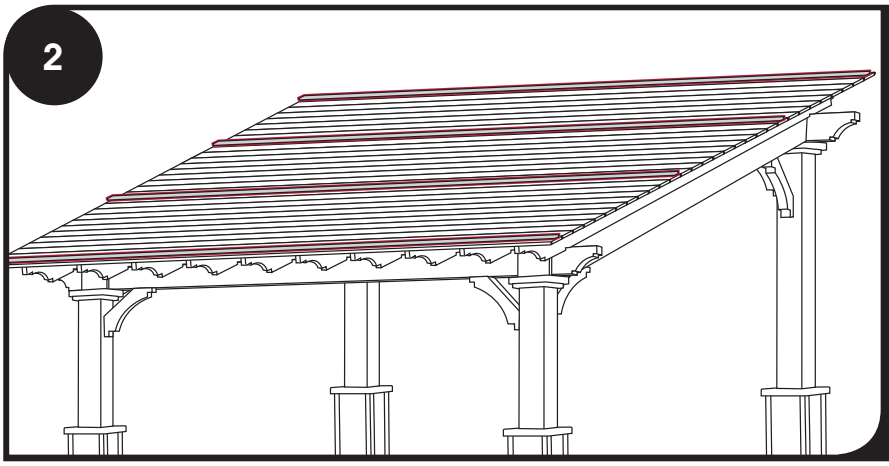
Before starting step 3, be sure to install drip edge as shown on pages 16 & 17

1



Fasten first piece of roof lath, keeping ⅛" - ¼" away from the bottom edge of the roof decking. Attach lath with one 2½" screw at each rafter. Be sure to not miss the rafter when installing the screws.

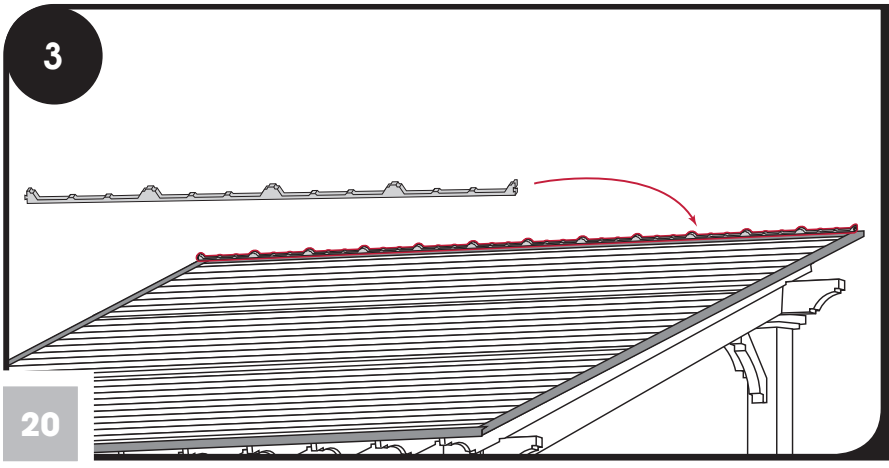
2



Repeat the process spacing each lath 20" - 24" apart. The last lath piece must sit ⅛" - ¼" away from the edge of the roof decking.

NOTE: Before starting step 3, be sure to install drip edge as shown on pages 16 & 17

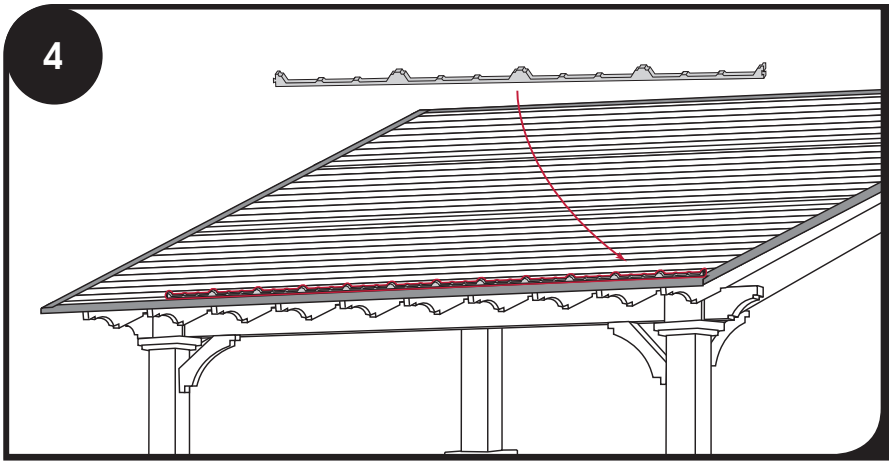
3



Remove the adhesive backing on the ribbing. Install the ribbing roughly 1½"-2" from the bottom of the drip edge on the front (high side) of the pavilion.

NOTE: Do not stretch the ribbing because the grooves of the roof must line up with the ribs.

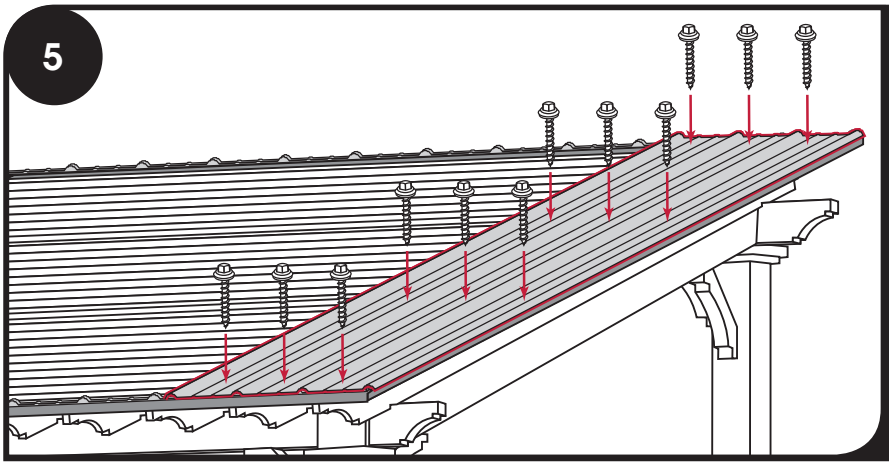
4



Remove the adhesive backing on the ribbing. Install the ribbing roughly 1½"-2" from the bottom of the drip edge on the back (low side) of the pavilion.

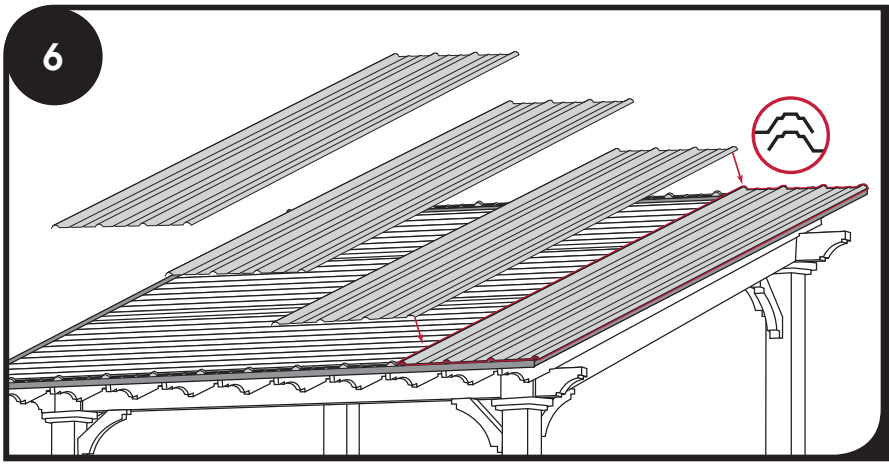
NOTE: Do not stretch the ribbing because the grooves of the roof must line up with the ribs.

5



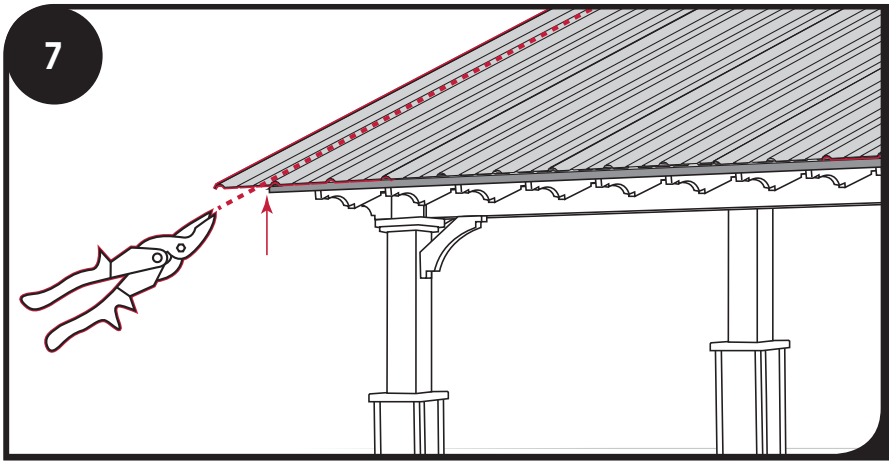
Install the metal roofing. Start on the right side and move across the roof to the left. Ensure the first piece is installed squarely. It must be flush on the ends and on the side. Attach metal roofing with 1" roofing screws. The first piece will have three screws at every lath.

6



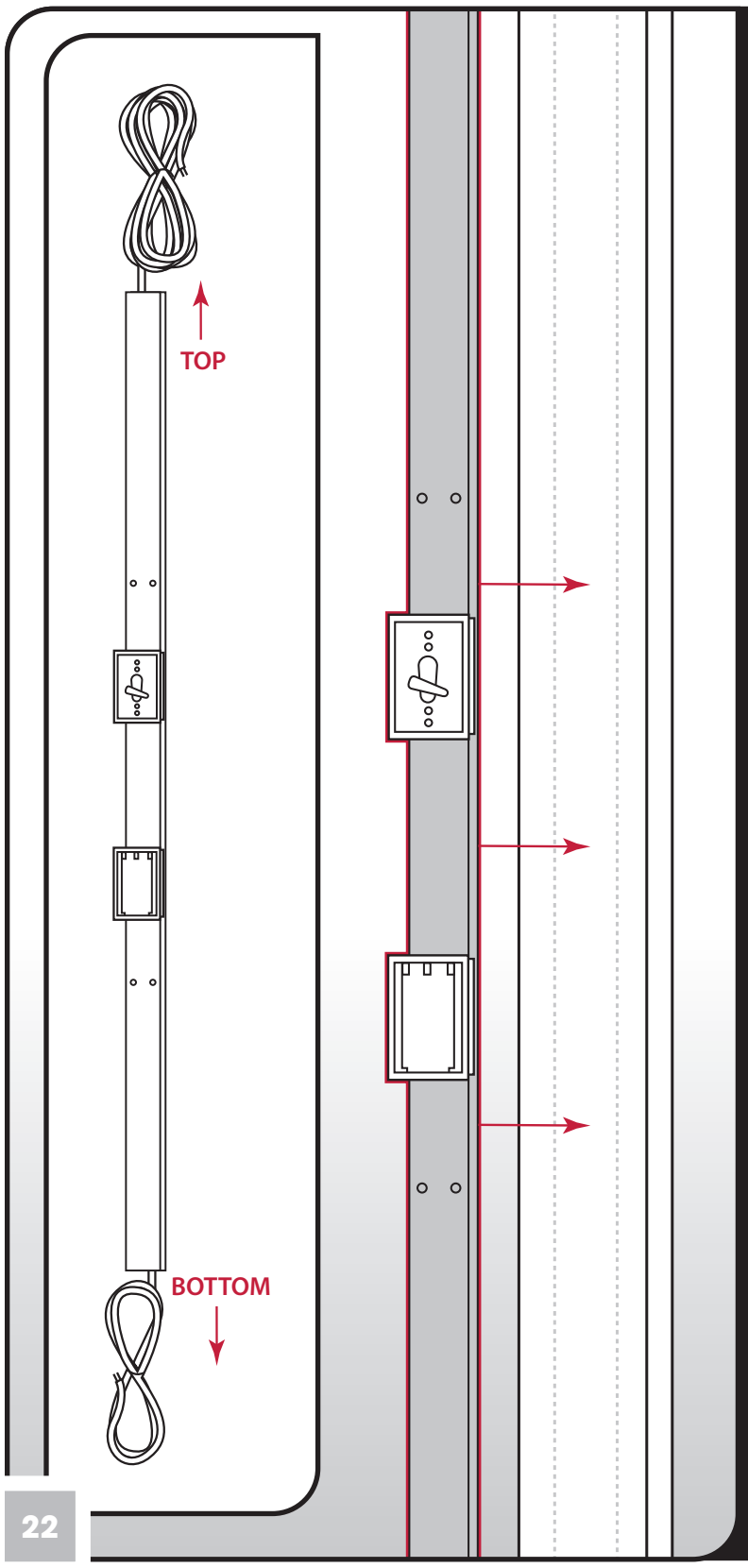
Install the metal roofing. Start on the right side and move across the roof to the left. Ensure the first piece is installed squarely. It must be flush on the ends and on the side.

7



The last piece of metal roofing may need to be cut to size to fit flush with the edge of the roof.

Electrical Package



NOTE: a qualified electrician is required to install any electrical work beyond the provided steps and roughed-in wiring package.

1. Locate the wire package and install it on one of the inside corner posts. Unless you ordered a pergola with a center post, you may install where needed.

2. The short length of wire is the bottom feed wire. Make sure the wire is positioned properly at the bottom of the electrical trim piece.

3. Push the longest wire up to the top of the header and run it up through the runners to wherever your fan is getting installed.

4. When the rough wire is in place, fasten the electrical trim piece to the post. Be sure not to screw into the wire. Fasten with 2½" screws.