

# Backyard America

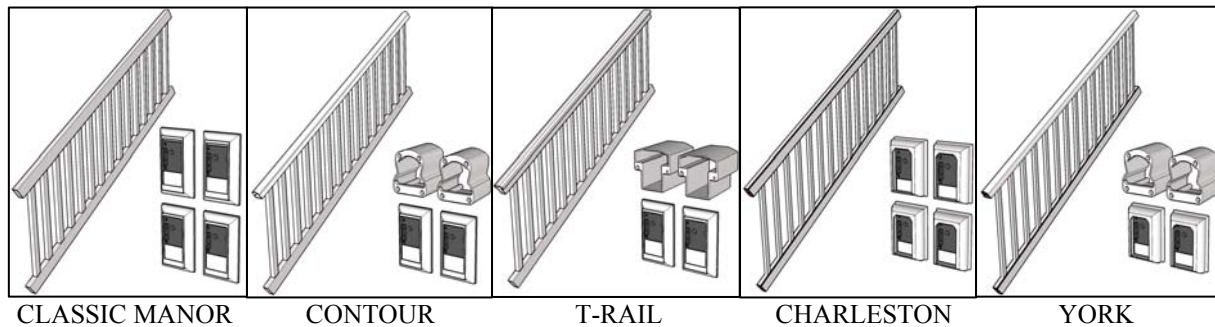
## Stair Railing Installation Instructions

Always check the local building code before beginning a project. Please read these instructions completely and thoroughly before beginning installation. Always wear protective glasses when installing the railing system.

### REQUIRED TOOLS:

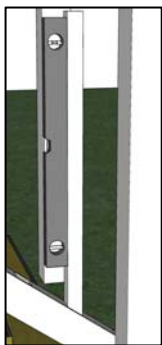
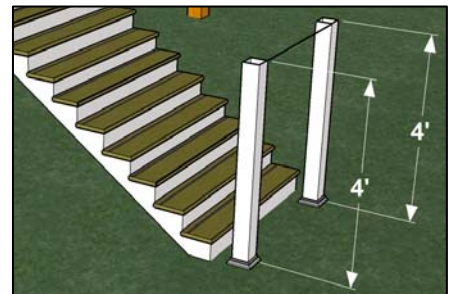
- Protective Eye Glasses
- Electric Drill/Screwdriver with Phillips Bit
- Level
- Tape Measure
- Miter Saw
- PVC Glue

One section of railing contains four major components (pictured below): Top & Bottom Rail, Aluminum Inserts in some models, Rail Brackets, and Pickets.



It is recommended to use this railing system with Backyard America vinyl or composite post sleeves and accessories to obtain the best look as well as the easiest installation. The rails are designed to work with a standard 35° angle; however, they will accommodate stairs within a few degrees above or below this standard. **Wait to snap any screw caps or bracket trim into place until the section of railing is completely installed.**

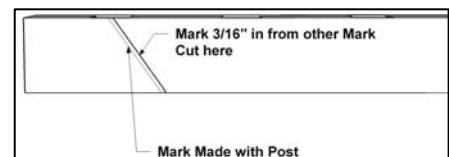
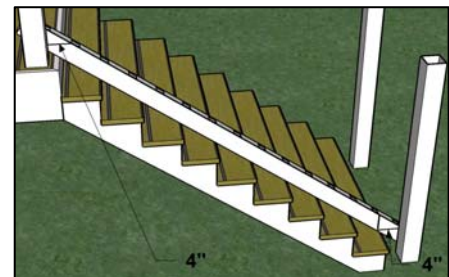
**PRE-RAILING INSTALLATION:** Begin by securing post sleeves. The post sleeves can be slid over top wooden posts and held into place with screws from the railing mounting brackets. For installation without a wooden post, use a post mount (available at Backyard America). Post mounts may be mounted on either wood or concrete (For more information on installing post mounts, please refer to the separate instructions supplied with the mount). Post sleeves should be trimmed down to the height of the lowest post.



### 1. Determine Cut Angle and Cut Bottom Rail to Length.

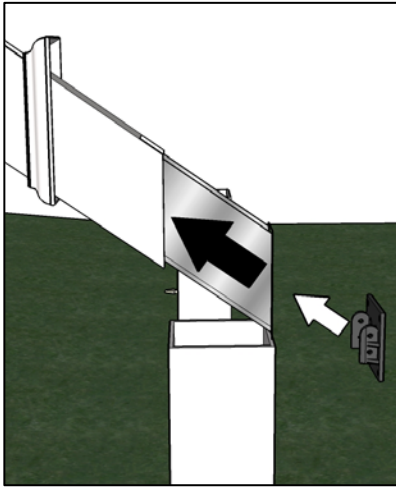
Once the posts are installed, rails may be attached. To determine the cut angle at each end of the rail: lay the rail on top of the steps as in the figure to the right. Ensure that the bottom rail is oriented with the routed holes facing up and that the rail is centered between the posts. The space between the routed hole and the post should be equal on both ends. Insert a picket into the last picket hole on each end of the rail between the posts. Check for plumb. If the picket is not plumb; keep the picket racked, and move the rail to until the picket is plumb. Mark the angle on each end of the rail using the post as a guide. Subtract

$\frac{3}{16}$ " from each line to allow room for the brackets. Cut the rail and aluminum insert at the same time on both ends of the rail. The standard picket spacing to meet code is less than 4". Ensure this spacing between the last picket and the post at both ends. If spacing is greater than 4", the rail may need to be offset to obtain the correct distance.

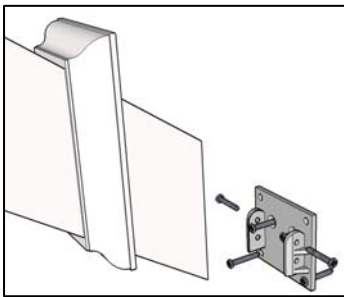
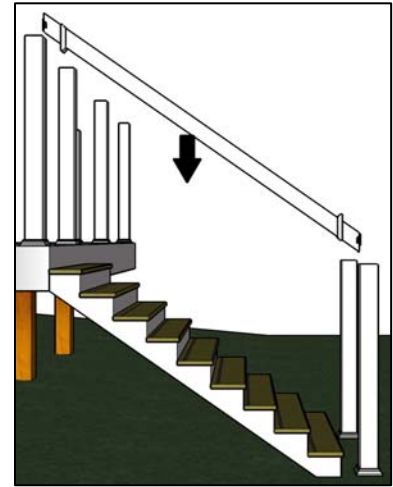


Mark for 2" x 3 1/2" Bottom Rail

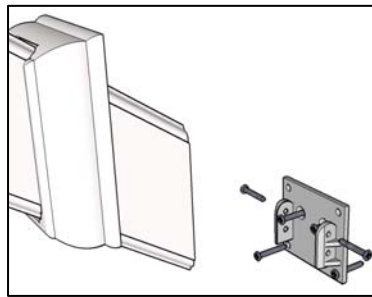
**2. Install Optional Post Trim.** If using the optional post trim, install it before attaching any rails.



**3. Install Bottom Rail.** Slide the trim pieces of the rail brackets onto the bottom rail facing the finished trim towards the center of the rail. If your stair angle is greater than 32°, be sure to file out the 2" x 3 1/2" opening on the trim to enlarge it. Marks are provided on the inside of the trim for 35° and 37°, make adjustments as needed. Place the black base of the bracket around the end of the rail. Lower the rail into position. It is recommended to have someone help, or a block to rest the rail on. Ensure the bracket is centered on the post. Attach the bracket to the post according to the screw placement below.



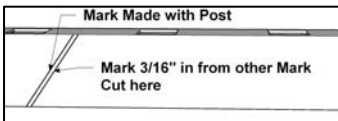
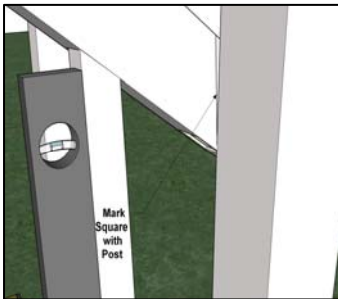
VINYL



COMPOSITE

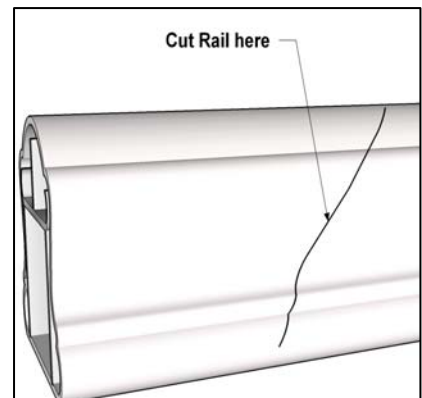
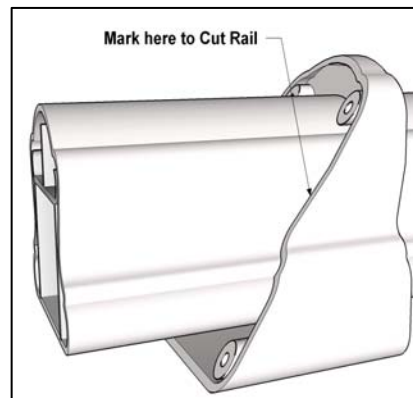
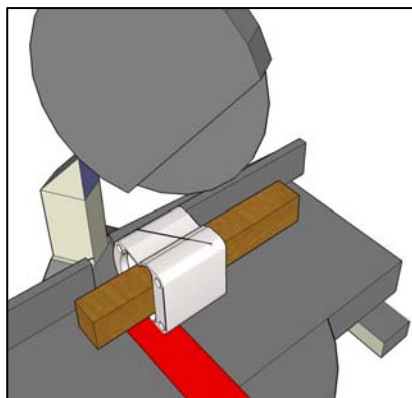
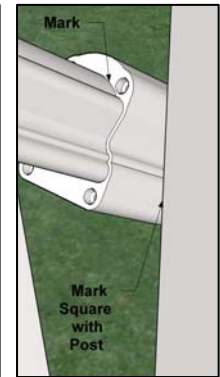
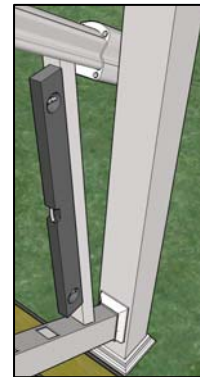
**4. Determine Cut Angle and Cut Top Rail to Length.**

Slide a picket into the furthest routed hole on each end of the bottom rail. By bending the pickets inwards slightly, slide the un-cut top rail onto the two pickets so that the top rail extends past the post on each end. Using a level, rack the pickets towards the top of the stairs until they are plumb. For 2" x 3 1/2" rails, simply mark a line similar to how the bottom rail was marked by using the post as a guide.



Mark for 2" x 3 1/2" Top Rail

To determine the cut angle at each end of the rail for T-Rails and Contour rails, slide a stair bracket over each end so that the counter-sunk holes are facing away from the posts. Lay the rail on top of the pickets in the same fashion as the 2 x 3 1/2. Adjust the bracket position so that it does not cover any portion of the picket hole. Mark the angle on each rail bracket using the post as a guide. Also, mark the rail against the bracket to record the bracket location. Slide the bracket off the rail, insert a piece of scrap wood and cut according to the picture to the right. Slide the cut bracket back onto the rail to the bracket location mark with the cut side facing the end of the rail. Transfer the angle from the bracket onto the rail. Remove the mounting bracket; then cut the rail and aluminum insert at the same time on both ends of the rail.

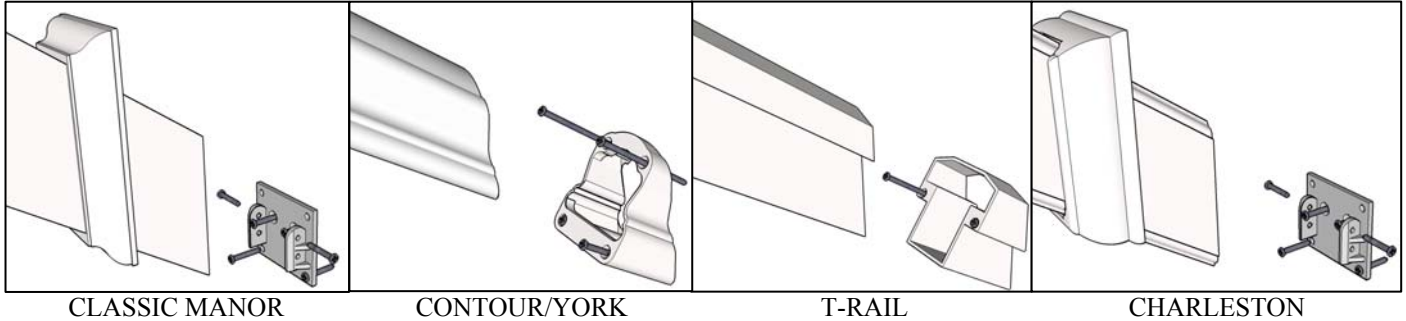
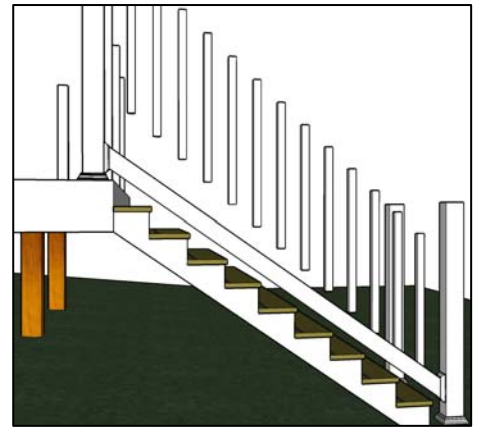


**5. Install Pickets.** Insert all of the pickets into the bottom rail.

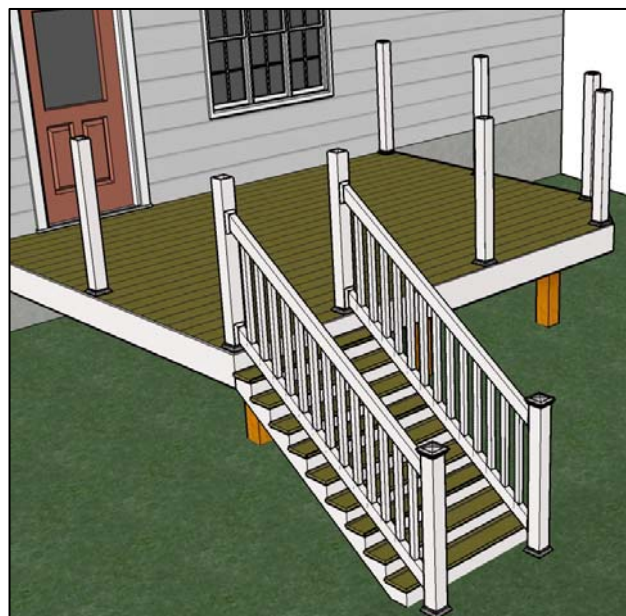
**6. Install Top Rail.** There are two different methods of installing the top rail, depending on the rail style. Find the correct rail style below, and follow the directions accordingly.

**Charleston / Classic Manor:** Slide the trim pieces onto the top rail facing the finished trim towards the center of the rail. Insert the base of the bracket into the end of the rail. Lower the rail into position. Start at one end and begin feeding the pickets into the top rail. Ensure that the bracket is centered on the post. Attach the bracket by installing screws according to the diagrams below.

**York / T-Rail / Contour:** Slide the bracket to the mark made in Step 4. Lower the rail into position. Start at one end and begin feeding the pickets into the top rail. Ensure that the bracket is centered on the post. Slide the bracket against the post and install the screws according to the diagrams below.



**7. Install Post Cap.** Place a small amount of PVC Glue on all four sides of the inside of the cap and slide it into place. Be careful not to drip glue on the outside of a post or cap or it will cause a “scar” in the vinyl.



It is the responsibility of the installer to meet or exceed all code and safety requirements, and to obtain all required building permits. These instructions are only a guide, and may not address every circumstance. The installer should determine and implement appropriate installation techniques for each situation. Backyard America shall not be held liable for improper or unsafe installations. All screws must be installed for safety and to meet code.