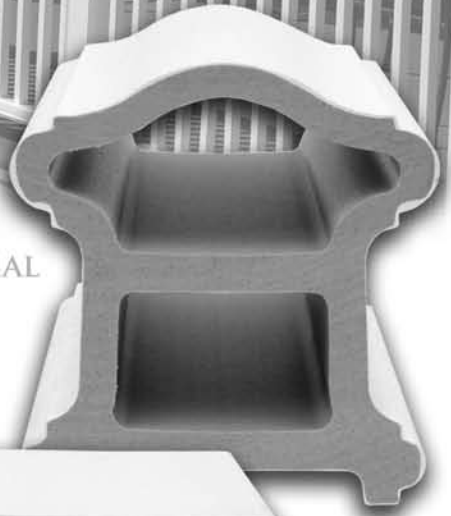


MISSION & PROVINCIAL

PROVINCIAL



MISSION



Installation Guidelines

Mission & Provincial Railing

fiberon® Horizon railing systems are designed to work with a number of different decking materials and surfaces. Before initiating any project, obtain a copy of your local building codes and understand them thoroughly. Local building code requirements will always supersede any and all suggested procedures and measurements in the following installation guideline.

Note: For more detailed instructions visit us online at www.fiberondecking.com

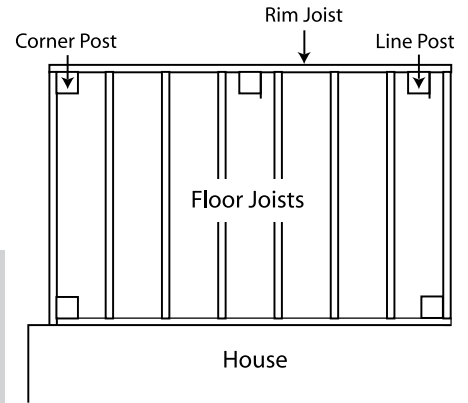


Figure 1

POST INSTALLATION

Determine where the railing posts will be positioned by using a scaled drawing of your project. For proper aesthetics, divide the perimeter dimensions evenly so that posts are spaced equally. To optimize post placement, additional joists or alternative locations may be required. Posts may be installed by using one of three methods. Choose the method or methods that best suit your particular project.

fiberon® Guardrail systems should only be secured to code compliant posts. Securing a guardrail to another structure (i.e. building) is not recommended (Fig. 1).

Note: The inside measurement between posts cannot exceed 96" for 8' section and 72" for 6' section.

Joist Mount Brackets (sold separately)

Use Joist Mount Brackets on projects where framing is fully exposed (Fig. 1). In new construction, Joist Mount Brackets are attached to the inside of the framing before the porch flooring or decking is installed. Joist Mount Brackets may be used to install railing on existing decks provided the framing underneath is exposed to permit proper installation. Joist Mount Brackets can be used in a corner or line application and bolts directly to the framing with four galvanized carriage bolts. Follow these guidelines to complete the post installation:

Note: When installing 8 foot sections in regions requiring 1999 Standard Code compliance, the standard Joist Mount Bracket may NOT be used. Use either the Pro Joist Mount Bracket, the Surface Mount Bracket or the vinyl sleeve option. When in doubt, check with your local Building Inspections Department.

1. Determine position of the posts on the framing (Fig. 1).
2. Position Joist Mount Bracket flush with top of framing at each post location (Fig. 2).
3. Use the Joist Mount Bracket as a template for hole location. With a pencil, mark hole positions on the framing.
4. For corner posts, remove the side plate from the bracket (Fig. 2). Mark hole positions on framing (Fig. 3).
5. Drill holes at desired locations using a 7/16" drill bit.
6. Attach brackets to rim joists using four 3/8" x 3" galvanized carriage bolts, washers, and nuts (at this point, do not fully tighten).
7. Insert post into bracket until bottom of post contacts stop tab on bottom of bracket (Fig. 4).
8. Fully tighten carriage bolts and nuts to secure post in place. Ensure that post remains plumb.

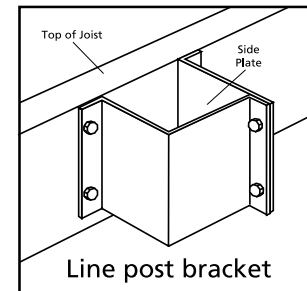


Figure 2

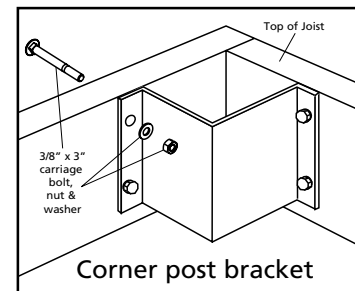


Figure 3

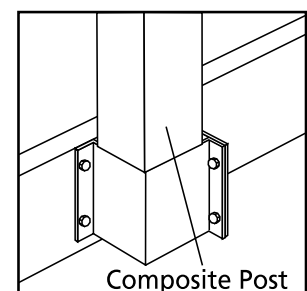


Figure 4



www.horizonrailing.com

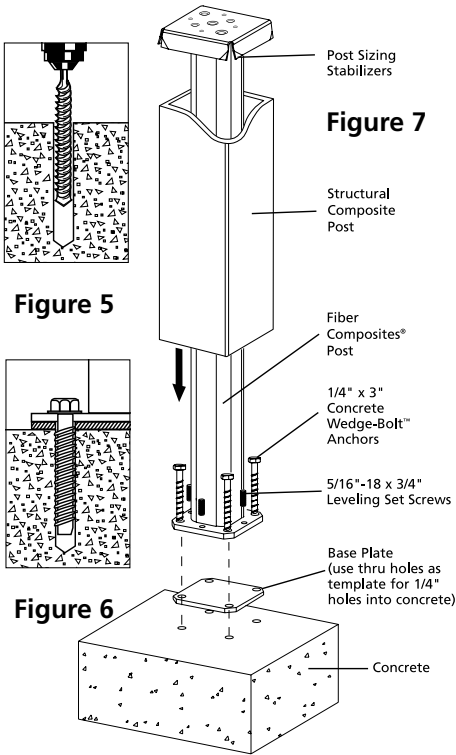


Figure 7

Surface Mount Brackets (kits sold separately)

Use the Surface Mount Brackets to install posts directly onto the deck or porch surface. Surface Mount Brackets are available for concrete or wood/composite surfaces. When installing a post on a concrete surface, the support system is anchored into the concrete. When installed on a wood or composite deck, the support system is installed after the deck surface has been attached. Follow these guidelines to complete the post installation:

For Concrete: (Fig. 7)

1. Lay out the locations for the posts.
2. Use the base plate as a template and mark the four corner holes for the concrete Wedge-Bolt™ Anchors.
3. Drill the marked holes using a 1/4" masonry drill bit. Drill the hole into the concrete base to a depth of at least 1/2" deeper than the length of the 1/4" x 3" Wedge-Bolt™ Anchors. Blow the hole clean of dust and debris (Fig. 5).
4. Align the base plate over the drilled holes.
5. Position the post mount over the top of the base plate.
6. Screw the 5/16" leveling set screws into the four tapped holes. If needed, adjust the set screws to straighten the post.
7. Insert the four concrete Wedge-Bolt™ Anchors into holes located on the corners of the bottom plate. Begin tightening the Wedge-Bolt™ Anchors by rotating clockwise and applying pressure in toward the base. This will engage the first few threads as the Wedge-Bolt™ Anchors begin to advance. Continue to tighten until the head of the Wedge-Bolt™ Anchor is firmly seated against the post mount (Fig. 6).
8. Slide the composite post over the post mount until it contacts the concrete. The post sizing stabilizers will secure the composite post in proper position.

For Wood: (Fig. 9 - Corner, Fig. 10 - Line)

1. Lay out the locations for the posts.
2. Thickness of wood/composite deck and reinforcement boards underneath deck should be a minimum of 4". (Two treated 2" x 8" lumber under the deck board) (Fig. 8). Fasten reinforcement boards with 3" stainless steel fasteners as shown below (Fig. 11).
3. Use post mount as a template and mark the four corner holes for the 5/16" x 5-1/2" bolts.
4. Drill four 3/8" holes at the marked locations, drilling through the deck board and the reinforcement boards.
5. Align the base plate over the drilled holes as shown at left (Fig. 9).
6. Screw the 5/16" leveling set screws into the four tapped holes. If needed, adjust the set screws to straighten the post.
7. Insert the four 5/16" x 5-1/2" bolts into the drilled 3/8" holes.
8. Fasten the four bolts underneath the reinforcement boards with the 5/16" Fender washer and hex nut.
9. Slide composite post over the post mount until it contacts the base plate. The post sizing stabilizers will secure the post in proper position.

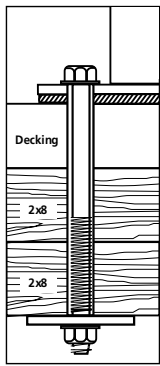


Figure 8

Corner Application

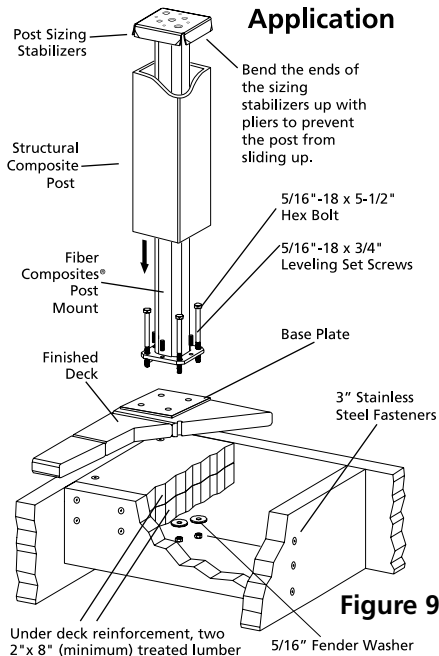


Figure 9

Line Application

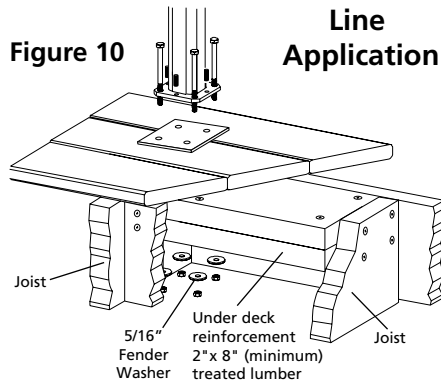
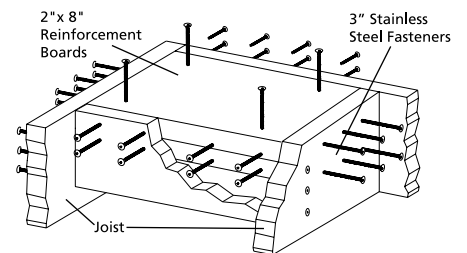


Figure 10

Figure 11



Post sleeve over wood post

Use the Post Sleeve method to install railing directly to a wooden 4x4 deck post. This is ideal for new deck construction methods that attach the rim joist directly to the 4x4 deck support posts, where wood 4x4 deck support posts extend through the deck serving as rail posts, or in those code compliant applications where the use of existing 4x4 wooden rail posts is desired.

1. Ensure 4x4 wooden posts are code compliant and, where possible, spaced equally for the best looking application.
2. Determine the desired height of post sleeve. Typically, the height is no less than 2" above top of the finished railing system. This ensures the proper placement of post caps that slide down over the top of the post sleeve.
3. Cut the post sleeve to the desired height.
4. The wood post should be approximately 1" shorter than the height of the post sleeve. Cut wood post as necessary.
5. After decking is installed, slide sleeve over the wood 4x4 (Fig. 12).

RAILING INSTALLATION

The following instructions describe the installation of three types of railing sections: Line, Stair, and Angled

Note: Once posts and/or post sleeves are installed, ensure they are plumb and level. Prior to fastening any sections to the posts, install Base Cove Moulding for a finished look (Fig. 12). Base Cove Moulding may not be installed after sections are attached to posts.

Line Rail Installation

1. Measure the distance between properly installed, plumb posts.
2. Mark the top rail for the inside distance between the posts. The distance from the end of the rail to the first baluster hole should be equal on both ends of the rail. Ensure that the bracket screws will fasten into the top rail and none fall into the routed baluster holes.

Note: Minimum distance from post to first baluster hole on top rail is 1 1/2".

3. Place the bottom rail next to the top rail so that the bottom rail slots are centered in the top rail square holes. Mark the bottom rail for the inside distance between the posts.
4. Cut the top and bottom rails to fit tightly between the posts.
5. Center the bottom bracket on the underside of the bottom rail (Fig 13). Insert the bottom bracket 1/16" from the end of the rail. Mark the three hole locations on the rail. Pre-drill 1/8" holes at desired locations. Repeat for opposite end.
6. Secure the bottom bracket to the bottom rail using three #10 x 3/4" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN SCREWS.**
7. Repeat steps 5-6 for the top rail. Center the top bracket on the underside of the top rail and mark the three hole locations (Fig. 14). Pre-drill 5/32" holes at desired locations. Secure top bracket with three #12 x 1" long screws. **DO NOT OVERTIGHTEN SCREWS.**
8. Ensure that the base cove moulding is in place at the bottom of the posts (Fig 17).
9. Cut the crush block to the desired height (consult local building official for the proper spacing between the deck and the railing). Place crush block on the deck surface midway between the posts (Fig 17).
10. Place the bottom rail between the posts and on the crush block. The shoulder on the bottom rail (Fig 15) should be toward the deck side of the rail.
11. Ensure that the bottom rail is level and that the rail ends are centered on each post.
12. Mark on the post the two bottom bracket hole locations. Pre-drill 1/8" holes at desired locations. Repeat for opposite end.
13. Secure the bottom rail to the post using two #10 x 3/4" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN SCREWS.** If attaching a rail to a structural wood post (with or without post sleeve), secure rail using two #10 x 2" long screws.

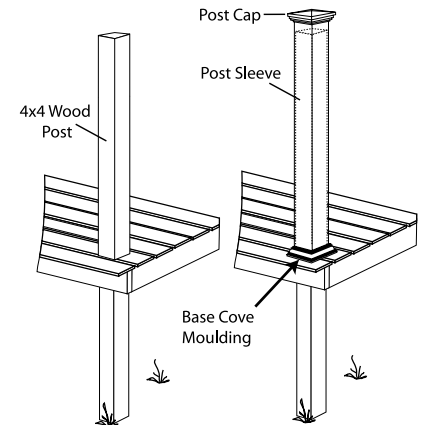


Figure 12

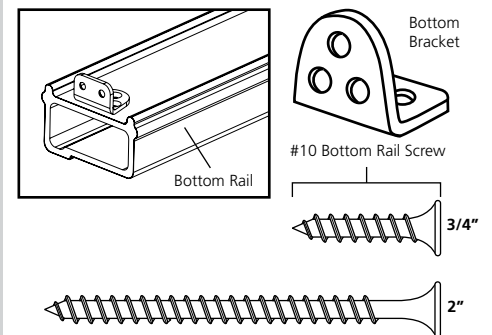


Figure 13

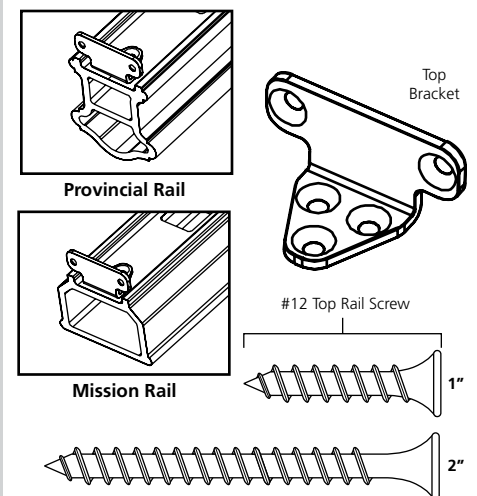


Figure 14

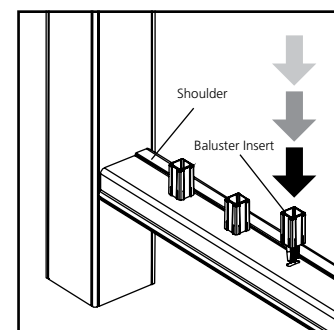


Figure 15

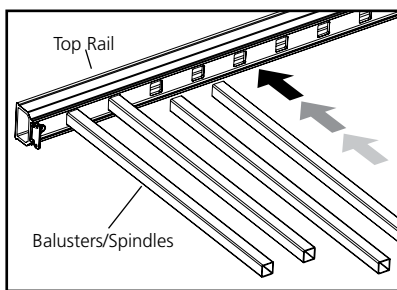


Figure 16

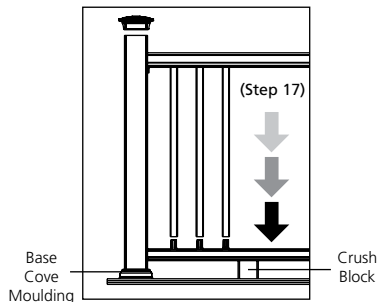


Figure 17

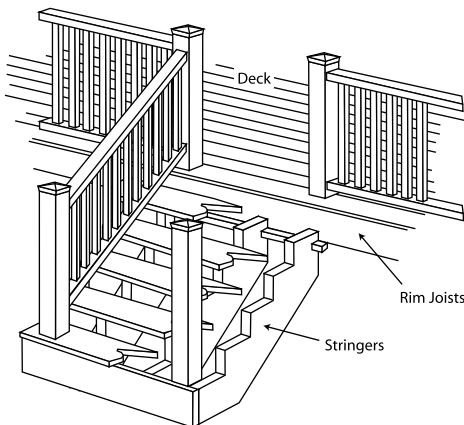


Figure 18

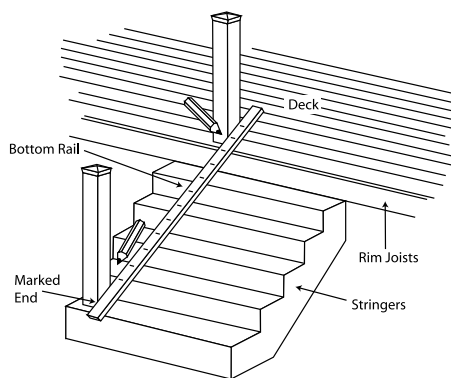


Figure 19

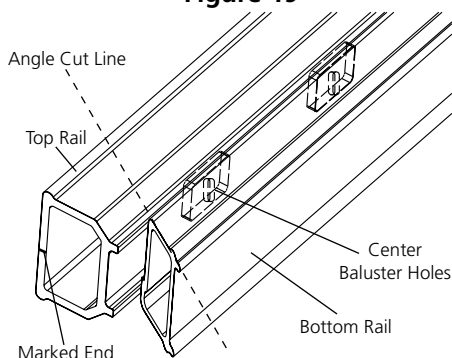


Figure 20

Note: A flexible shaft bit holder (not included) is helpful during this step.

14. Fully engage a baluster insert into each slot on the bottom rail (Fig 15).
15. Fully engage a baluster (or spindle) into the square holes on the underside of the top rail (Fig 16).
16. Place the top rail and balusters on top of the baluster inserts. Locate each baluster so that the baluster insert is engaged inside of the baluster.
17. Gently push down on the top rail until the ends of the balusters contact the top surface of the bottom rail (Fig 17).
18. Ensure that the top rail is level and that the rail ends are centered on each post.
19. Mark on the post the two top bracket hole locations. Pre-drill 5/32" holes at desired locations. Repeat for opposite end.
20. Secure the top rail to the post using two #12 x 2" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN SCREWS.**

Note: A flexible shaft bit holder (not included) is helpful during this step.

21. Using PVC cement, glue crush block to underside of bottom rail midway between the posts.
22. Mount and glue post caps after all rail sections are installed.

Stair Rail Installation

Note: The stair angle is typically a 32 degree angle which is equal to a 7" rise and an 11" run. Building codes are very specific on allowable angles and widths. It is very important to consult with your local building code officials and plan your stair layout accordingly. Ensure that you leave adequate space for graspable hand rail if applicable. "Dry fitting" intermediate post placement will result in easier and better looking installations and may avoid placement of post mounting brackets in areas where screws cannot attach to the guardrail.

1. Position two line posts at top of stairway with the desired spacing and secure each post with the appropriate bracket (Fig 18).
2. Install the outside stringers just wider than the post's location. The posts mounted at the bottom of the stairs will be on the inside of the stringer and will line up directly with the posts at the top of the stairs.
3. Install each post at the bottom of each stair using a Joist Mount Bracket or Surface Mount Bracket.

Note: For stairs longer than six feet, it will be necessary to use multiple stair sections. The distance between posts, measured at an angle should not exceed 70 inches. Ensure all posts are plumb prior to final mounting.

Note: When using a Joist Mount Bracket inside the stringers, additional support may be required for stair treads that butt into the post.

4. Lay bottom rail on stair with marked end at lower post. Center the rail between the posts so that the distance from the post to the first routed hole is equal on both ends. (Fig 19).
5. Mark angles on the bottom rail.
6. Cut the bottom rail to length, Ensure that the rail fits tightly between the posts.
7. Place the top rail next to the bottom rail with the marked ends together (Fig 20). Using the bottom rail as a guide, center the larger routed holes in the top rail with the smaller routed holes in the bottom rail. Mark the cut lines on the top rail.
8. Cut the top rail to length.
9. Center the hinged bracket on the underside of the bottom rail. Inset the hinged bracket 1/16" from the end of the rail. Mark the three bracket hole locations on the rail. Pre-drill 5/32" hole at the desired locations. Repeat for opposite end.
10. Secure the hinged bracket to the bottom rail using three #12 x 1" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN SCREWS.**

11. Repeat steps 9-10 for the top rail.
12. Lay the bottom rail, with the routed holes upward, onto a 1/4" wood spacer located between the posts (Fig 22). This provides the rail spacing between the rail and stair treads and helps to stabilize the setup.
13. Using the hinged bracket as a template, swing the unsecured leg of the bracket downward so that it touches the post. Mark the two hole locations on the post. Repeat for opposite end.
14. Remove the bottom rail from between the posts.
15. Predrill 5/32" holes at desired bracket hole locations.
16. Place bottom rail between the posts. Secure the bottom rail to the post using two #12 x 1" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN.** If attaching rail to a structural wood post (with or without post sleeve), secure rail using two #12 x 2" long screws.

Note: A flexible shaft bit holder (not included) is helpful during this step.

17. Fully engage the baluster inserts into the routed holes of the bottom rail (Fig 21).
18. Mark the stair angle on one end of each baluster to be used (Fig 22).
19. Cut the stair angle on one end of each baluster, cut the stair angle on half of the other end (Fig 22).
20. Fully insert the non-angled ends of the balusters into the routed holes of the top rail. The angled cut of the baluster should be parallel with the length of the top rail. (Fig 22).
21. Place the top rail and balusters on top of the baluster inserts. Locate each baluster so that the baluster insert is engaged inside of the baluster.
22. Gently push down on the top rail until the ends of the balusters contact the top surface of the bottom rail.
23. Ensure that the top rail ends are centered on each post.
24. Using the hinged bracket as a template, swing the unsecured leg of the bracket downward so that it touches the post. Mark the two hole locations on the post. Repeat for opposite end.
25. Slightly pull the top of the rail section toward the staircase to gain access to holes. Predrill 5/32" holes at desired locations. Repeat for opposite end.
26. Secure top rail to post using two #12 x 2" long screws. Repeat for opposite end. **DO NOT OVERTIGHTEN SCREWS.**

Angle Rail Installation *(Angle Bracket Kit available by Special Order)*

Rails up to 30 degrees may be mounted to the post face by using the In Line "L" Bracket. Rails should be cut at the appropriate angle to fit tight against post. Cutting rails greater than 30 degrees will result in a rail that does not fully fit on post. Angles greater than 30 degrees require the use of the Angle Mount Bracket.

1. Determine the angle of your installation by using the supplied template (located on the last page of this booklet).
2. Cut the template out along the appropriate marked lines. (You may want to photocopy the template as a backup prior to cutting).
3. Position the template on the non-routed flat side of the top rail. Mark the proper cutting angle (Fig. 23).
4. Position the template on the top surface of the bottom rail (Fig. 23). Mark the proper cutting angle.
5. Ensure baluster holes are equidistant from the end of rail to ensure proper vertical alignment.

Note: Minimum distance from post corner to first square baluster hole 1 1/2".

6. Make angle cuts in top and bottom rails.
7. Align the angled brackets with the 90 degree cut in the railing. Inset the bracket 1/16" from rails end. Mark the three screw hole locations on both rails. Repeat at opposite end. Predrill 1/8" holes at desired locations.
8. After fitting angles to posts, follow the Line Rail instructions (Steps 6 through 22) to complete the rail section installation.

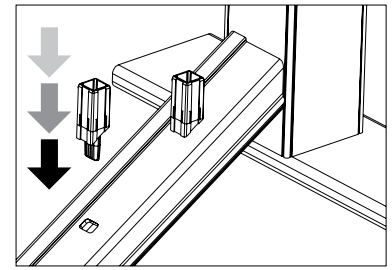


Figure 21

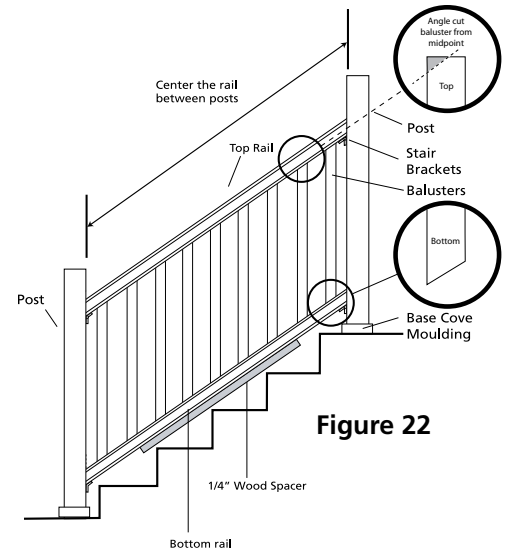


Figure 22

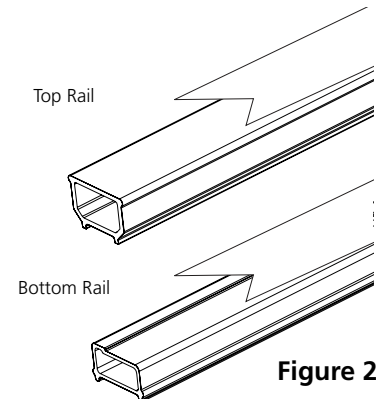


Figure 23

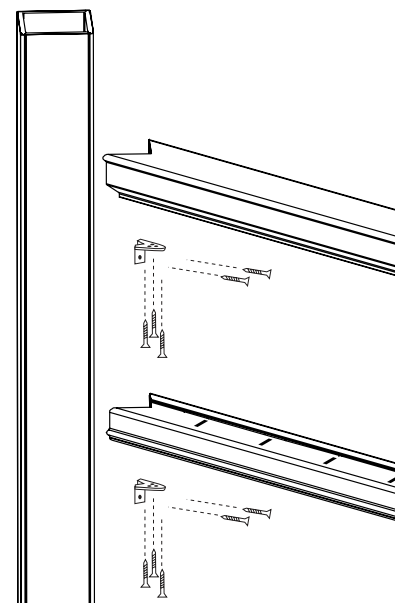
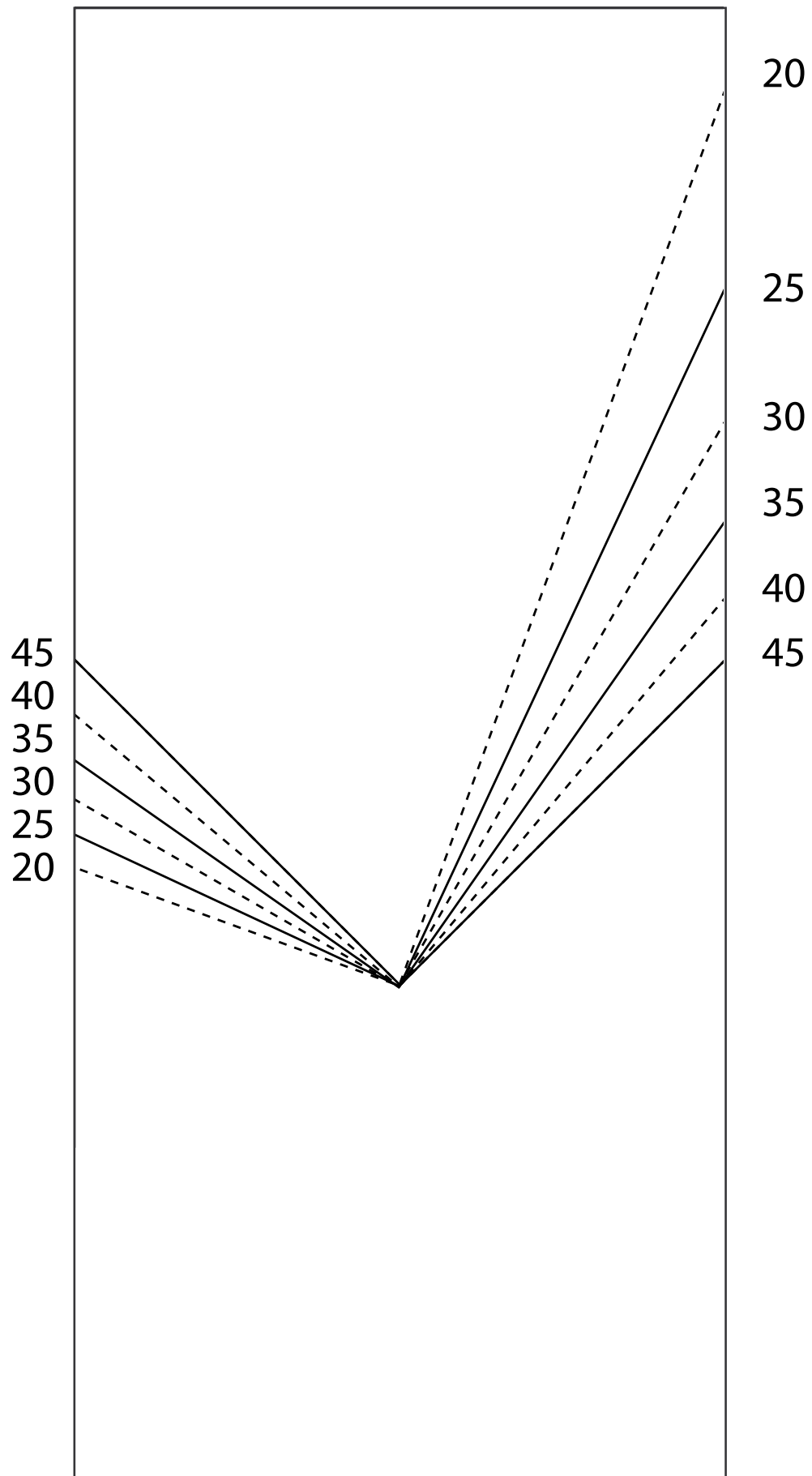


Figure 24



ANGLE RAIL CUTTING TEMPLATE

