

Railing Works[®]

ARCHITECTURAL RAILING SYSTEMS

RAILING INSTALLATION MANUAL



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Tools Needed:

If ordering a Railing Install Kit from Nexan the following items are included:

- (1) 3/8" Drill Bit
- (4) 5/32" Drill Bits
- (4) #2 Square Drive Bits
- (1) 5/16" Nut Driver
- (1) 10" Long Drill Extension
- (1) Tube of Anti-Seize

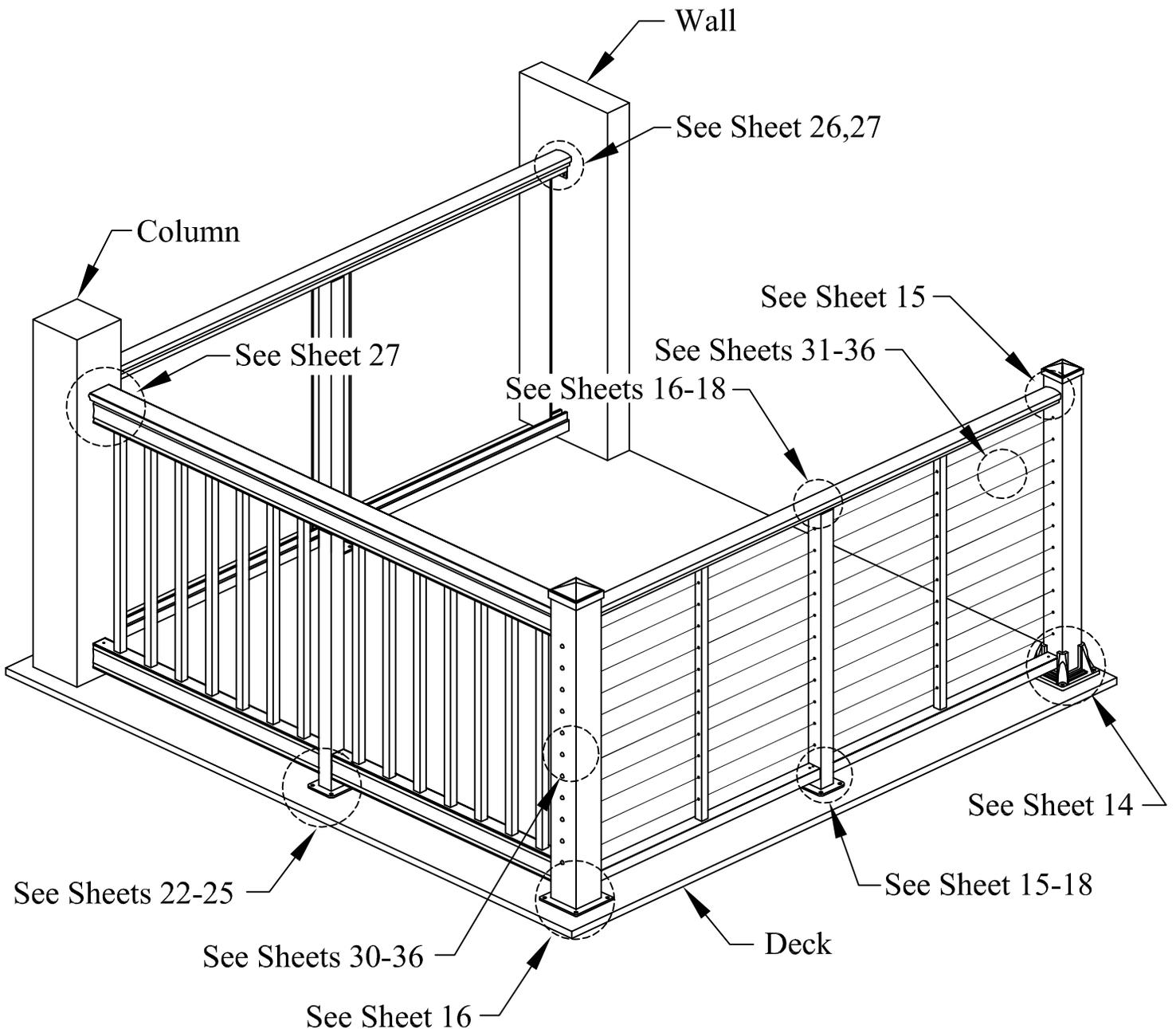
Other items needed:

- Safety Glasses
- Tape Measure
- Pencil / Fine Tip Marker
- 3/8" Drive Drill
- 3/8" Drive Impact
- Hammer Drill (If installing on concrete)
- 3/8" Concrete Drill Bits (If installing on concrete)
- 1/4" Concrete Drill Bit (If installing to concrete or brick walls)
- 5/32" Drill Bits (pre-drilling)
- 1/4" Drill Bits (pre-drilling for wood)
- 3/8" Drill Bits (pre-drilling decking or fascia for thru bolts)
- 7/16" Drill Bits (pre-drilling decking or fascia for thru bolts)
- 5/16" Drill Bits (Cable only)
- 15/32" Drill Bits (Cable only)
- 9/16" Socket and Wrench (Hex bolt installation)
- 7/16" Socket and Wrench (Cable only)
- 5/16" Nut Driver (Clip screws)
- #2 Phillips Bits (Wall mount screws)
- #2 Square Drive Bits (Trim screw installation/will need a few)
- Driver Extension for Drill or Impact (Installing rails to posts)
- Anti-Seize (For all thru bolts)
- Hammer / Rubber Mallet
- Hack Saw (Cable only)
- Miter Saw (If installing continuous top rail or custom fit railing)
- Non Ferrous Metal Saw Blade (If miter saw is needed)
- Fine Tooth Carbide Tip Blade (If non ferrous blade is hard to find)
- Denatured Alcohol (For cleaning railing if needed)
- Pliers
- C-Clamps / Bar Clamp
- Silicone Sealant
- Grinder with Cut Off Wheel (Cutting cable and concrete anchors)

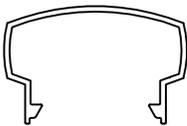
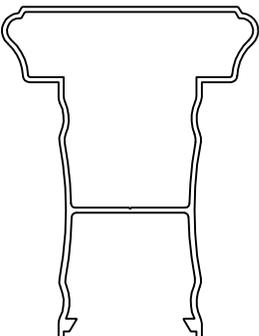
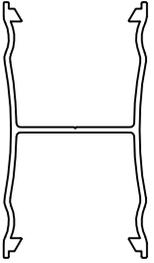
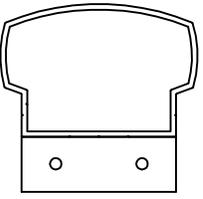
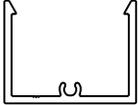
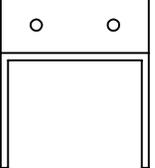
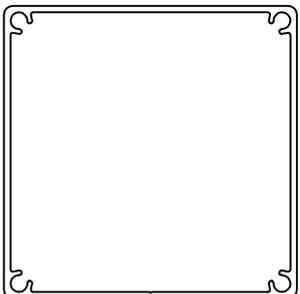
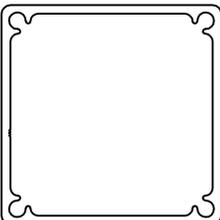
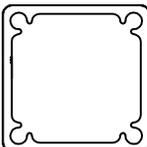
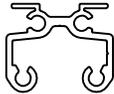
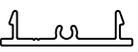
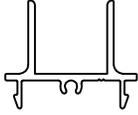
Railing Installation:

1. Unbox all material.
2. Locate Hardware box and open. Inside is a layout drawing for your order.
3. Review the layout drawing and all material to make sure your order has been shipped complete.
4. Go through hardware to make sure you have everything needed to complete installation.
If not, please contact us as quickly as possible.

Typical Deck Layout For Stair Railing see sheets 19,20,21,28



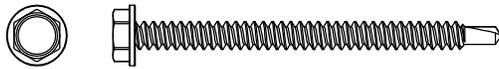
Railing Components

 Top Cap	 Traditional Top Cap	 Traditional Bottom Cap	 Top Cap Sleeve		
 Bottom Cap			 Bottom Cap Sleeve		
 4" Post	 3" Post	 2" Post	 Post Clip	 L-Clip	
 Flat Plate	 Privacy Flat Plate	 Glass Trim	 1" Square Picket	 Round Picket	 Flat / Belly Picket
 Privacy Panel		 Glass Gasket	 Frameless Glass Gasket	 Frameless Channel	

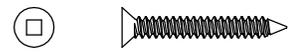
Hardware Components



Trim Screw



Clip Screw



Picket Screw



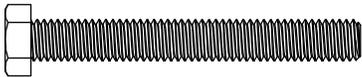
Phillips Head Screw



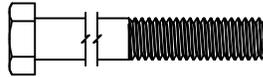
Flat Base Screw



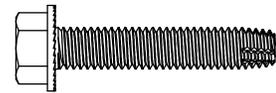
Tapcon Screw



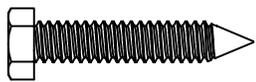
3" Thru Bolt



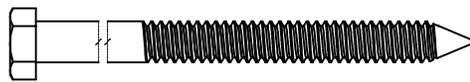
4 1/2" and 6 1/2" Thru Bolt



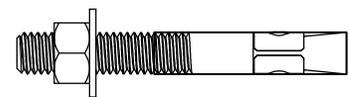
Type F Bolt



3" Lag Bolt



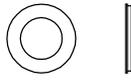
4" and 6" Lag Bolt



2" and 3" Concrete Anchor



Flat Washer



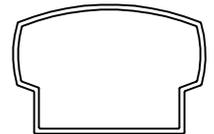
Bonded Washer



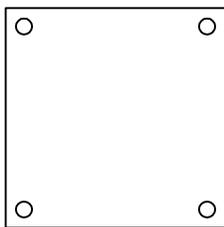
Lock Nut



Bolt Cap Cover



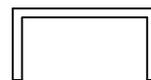
Top Cap Plug



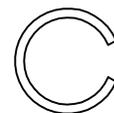
Post Gasket



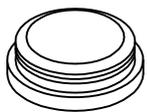
Post Spacer



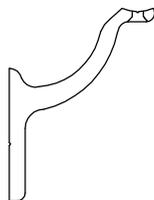
U-Channel



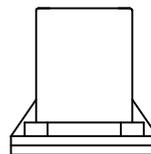
Grab Bar Splice



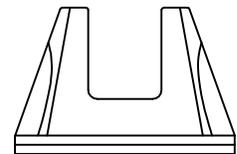
Grab Bar Plug



Grab Bar Bracket



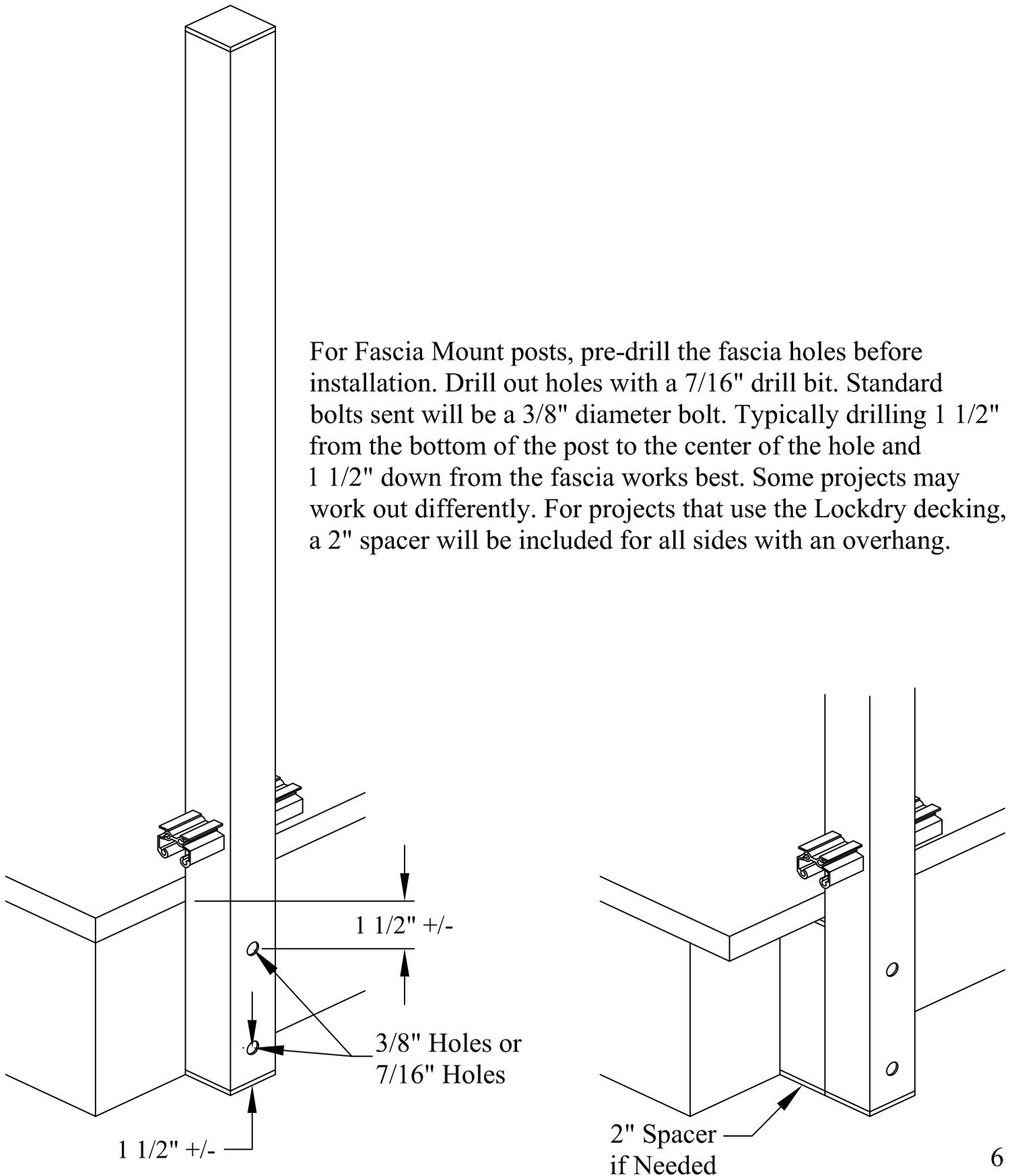
2" Post Pedestal



3" Post Pedestal

5. For Fascia Mount posts, pre-drill the fascia holes. Drilling holes out with a smaller drill bit will make drilling out the larger holes faster and easier. Typically use a 5/32" to a 1/4" bit is used for this application.

For Fascia Mount posts, pre-drill the fascia holes before installation. Drill out holes with a 7/16" drill bit. Standard bolts sent will be a 3/8" diameter bolt. Typically drilling 1 1/2" from the bottom of the post to the center of the hole and 1 1/2" down from the fascia works best. Some projects may work out differently. For projects that use the Lockdry decking, a 2" spacer will be included for all sides with an overhang.

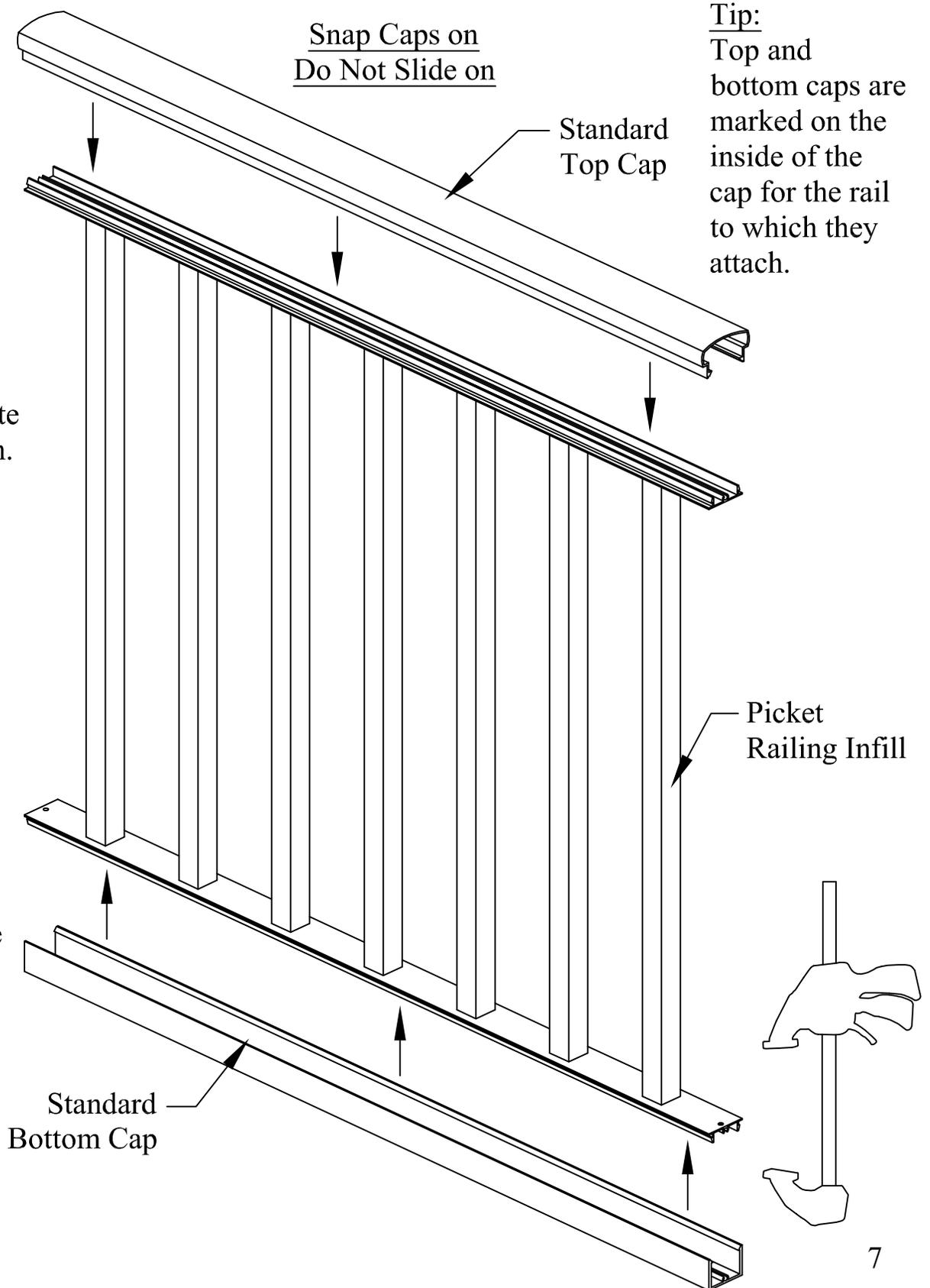


Standard Railing

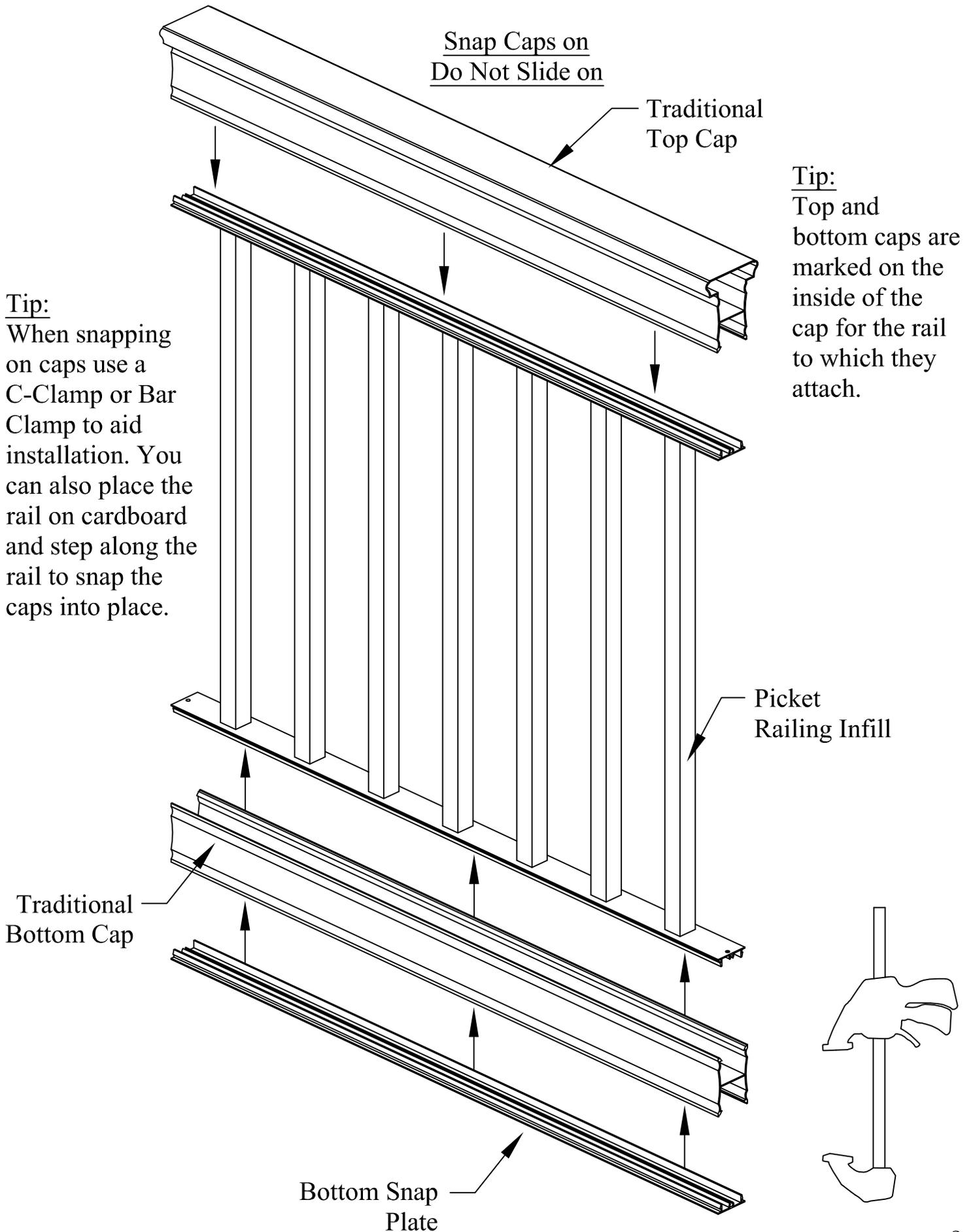
6. Install all bottom caps on railing Infills. For 3" post/Standard railing jobs and 4" Traditional railing jobs install the top caps as well. CAPS SNAP ON. Do not slide caps on. If your job is using 2" posts and a continuous top railing system, only install the bottom caps. The top cap is sent in long lengths and should be cut and installed after all railing is installed. All bottom caps match the rail length.

Tip:
For 2" post applications the railing infill is marked on the top as "Top". The top plate is longer than the bottom. Bottom caps and the bottom plate are the same length.

Tip:
When snapping on caps use a C-Clamp or Bar Clamp to aid installation. You can also place the rail on cardboard and step along the rail to snap the caps into place.



Traditional Railing

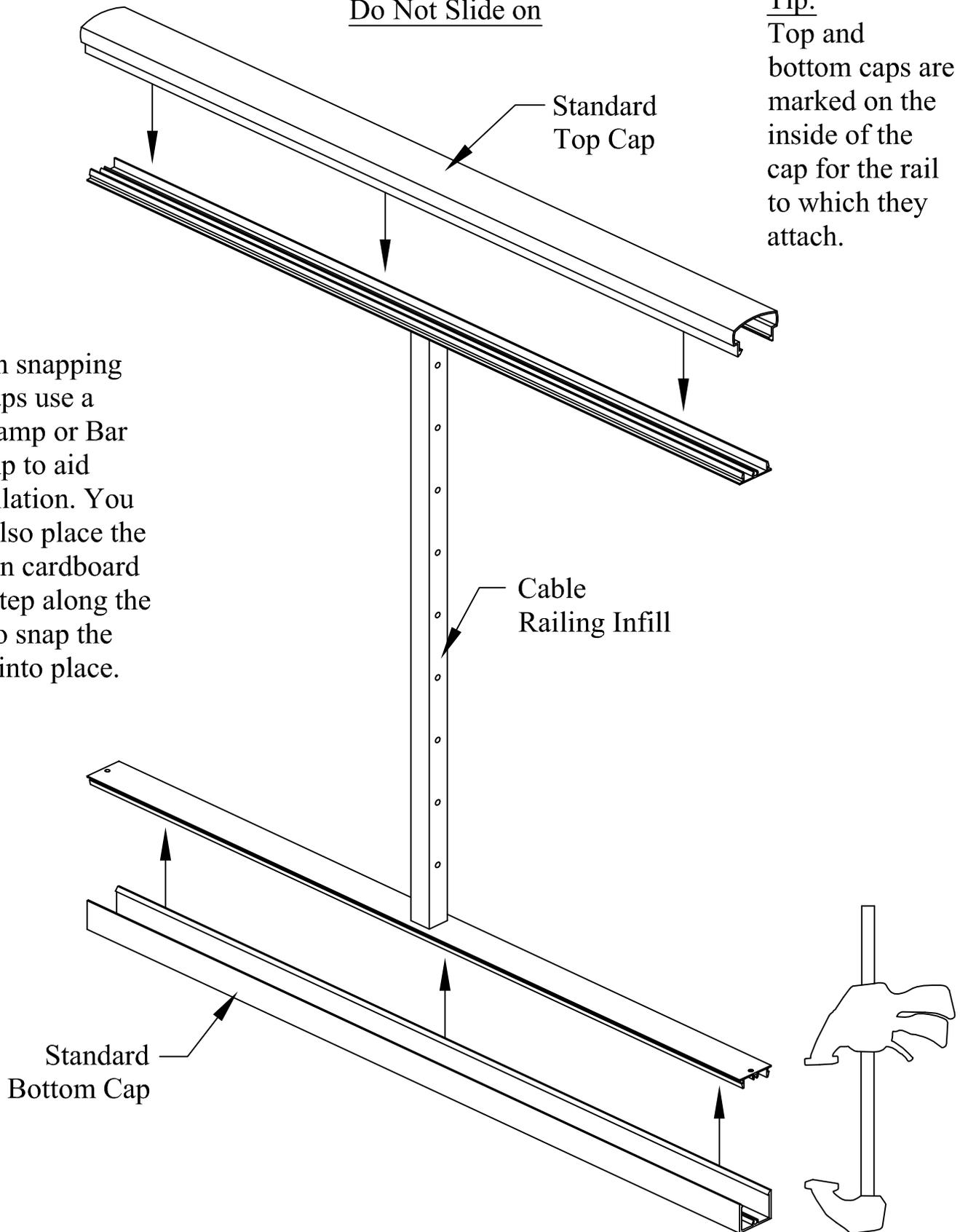


Cable Railing

Snap Caps on
Do Not Slide on

Tip:
Top and bottom caps are marked on the inside of the cap for the rail to which they attach.

Tip:
When snapping on caps use a C-Clamp or Bar Clamp to aid installation. You can also place the rail on cardboard and step along the rail to snap the caps into place.

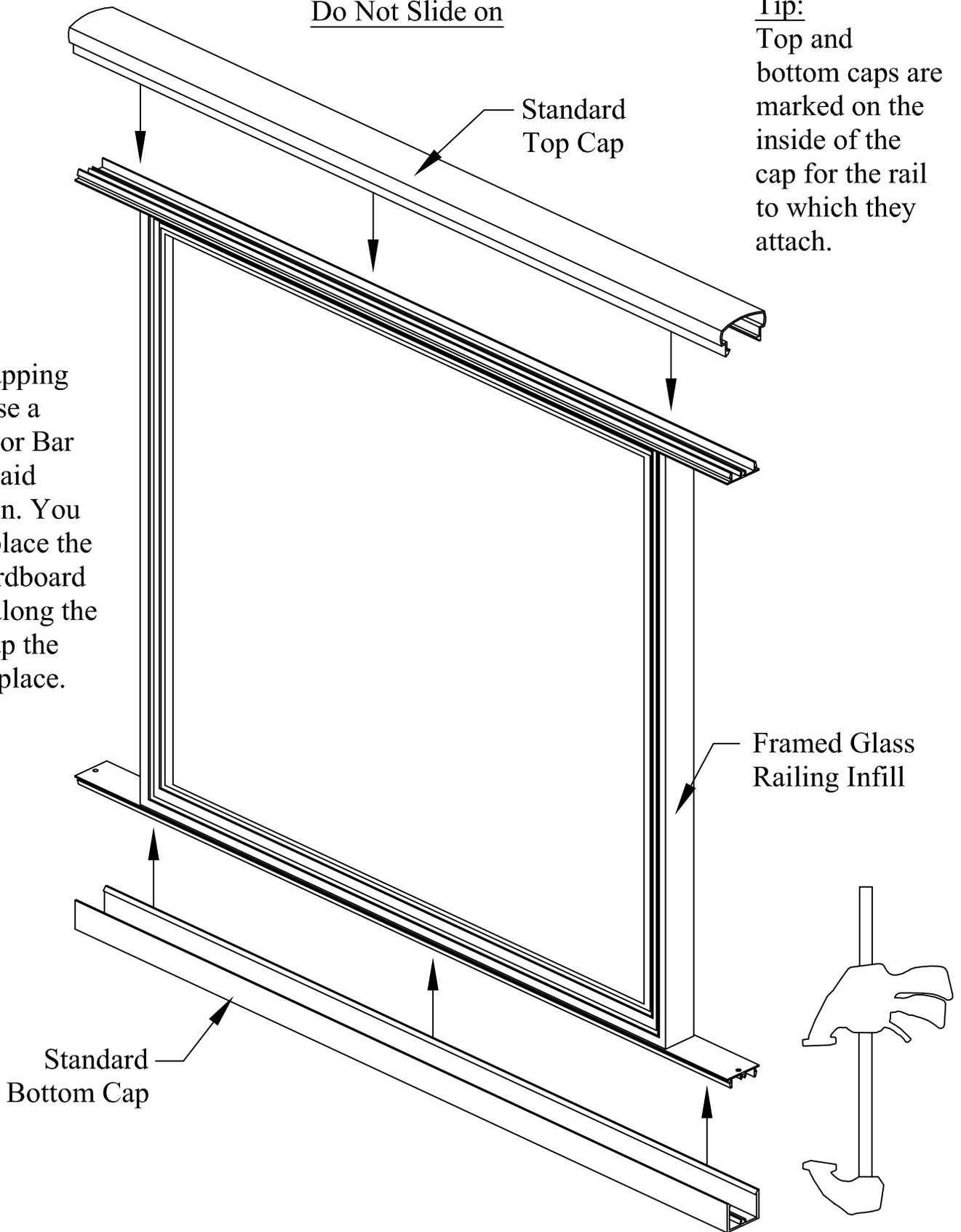


Framed Glass Railing

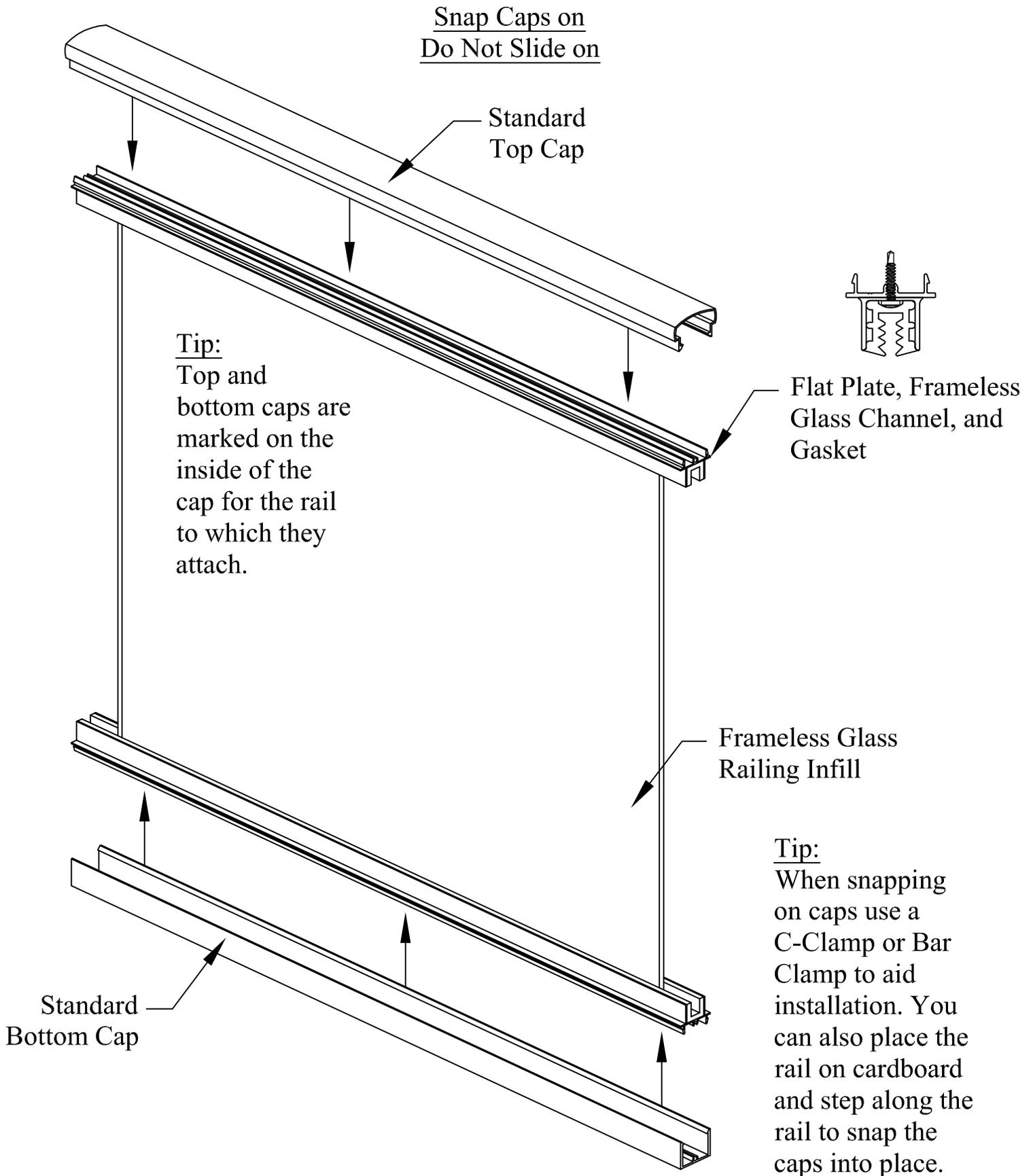
Snap Caps on
Do Not Slide on

Tip:
Top and bottom caps are marked on the inside of the cap for the rail to which they attach.

Tip:
When snapping on caps use a C-Clamp or Bar Clamp to aid installation. You can also place the rail on cardboard and step along the rail to snap the caps into place.

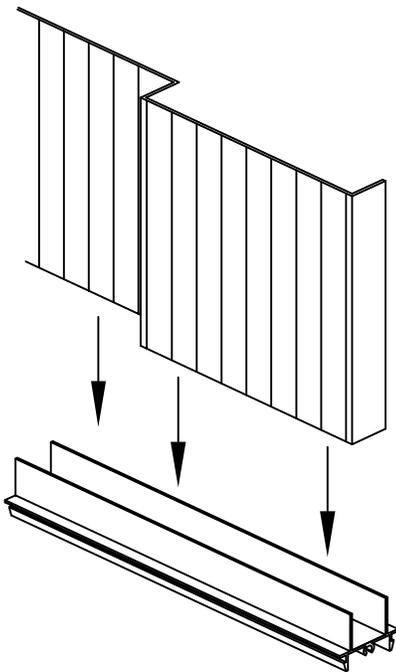
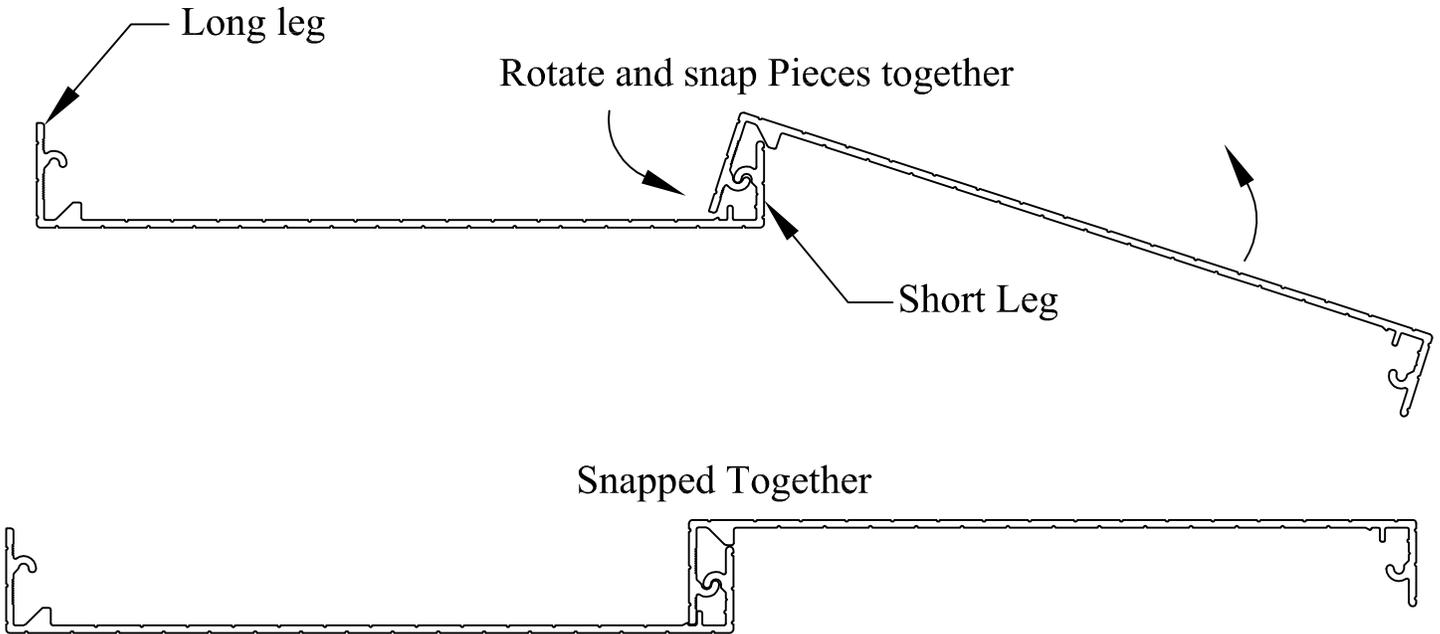


Frameless Glass Railing



Privacy Panel Assembly

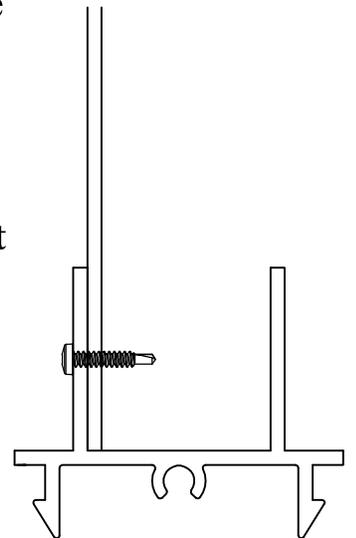
7. If installing Privacy Railing, the pieces of Privacy Panels must first be snapped together. After this is accomplished, slide them into the open channel of the flat plate. The Bottom Flat Plate must be installed before the top. Once you slide the Privacy Panel on, attach the railing to the post as needed.



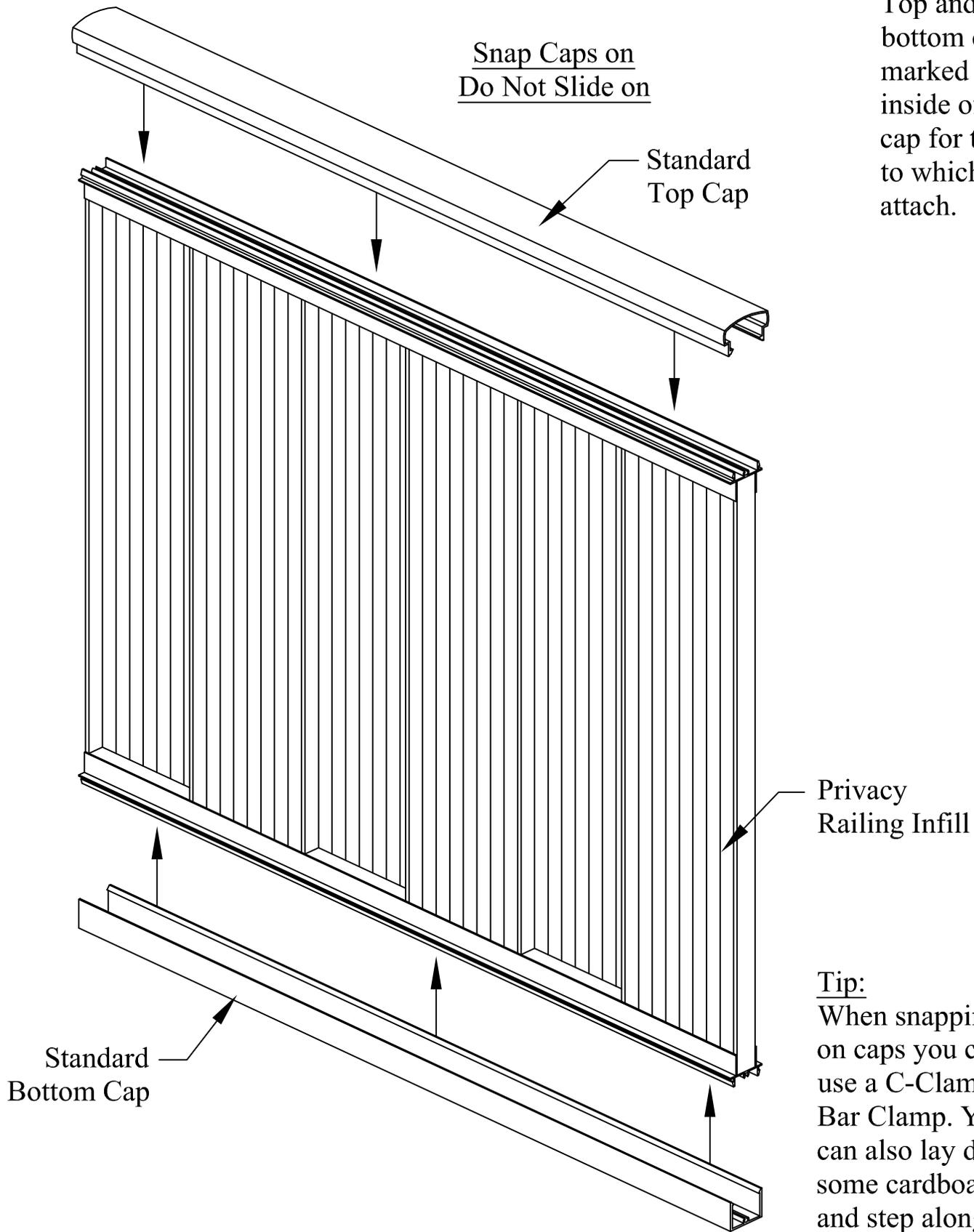
Slide into channel of flat plate. Top & bottom.

Tip:

Some projects may require the Privacy Panels to be ripped down to make a specific length of rail. If this occurs, install (1) #10 x 1" Trim Screw at top and bottom of rail through the channel and into the Privacy Panel.



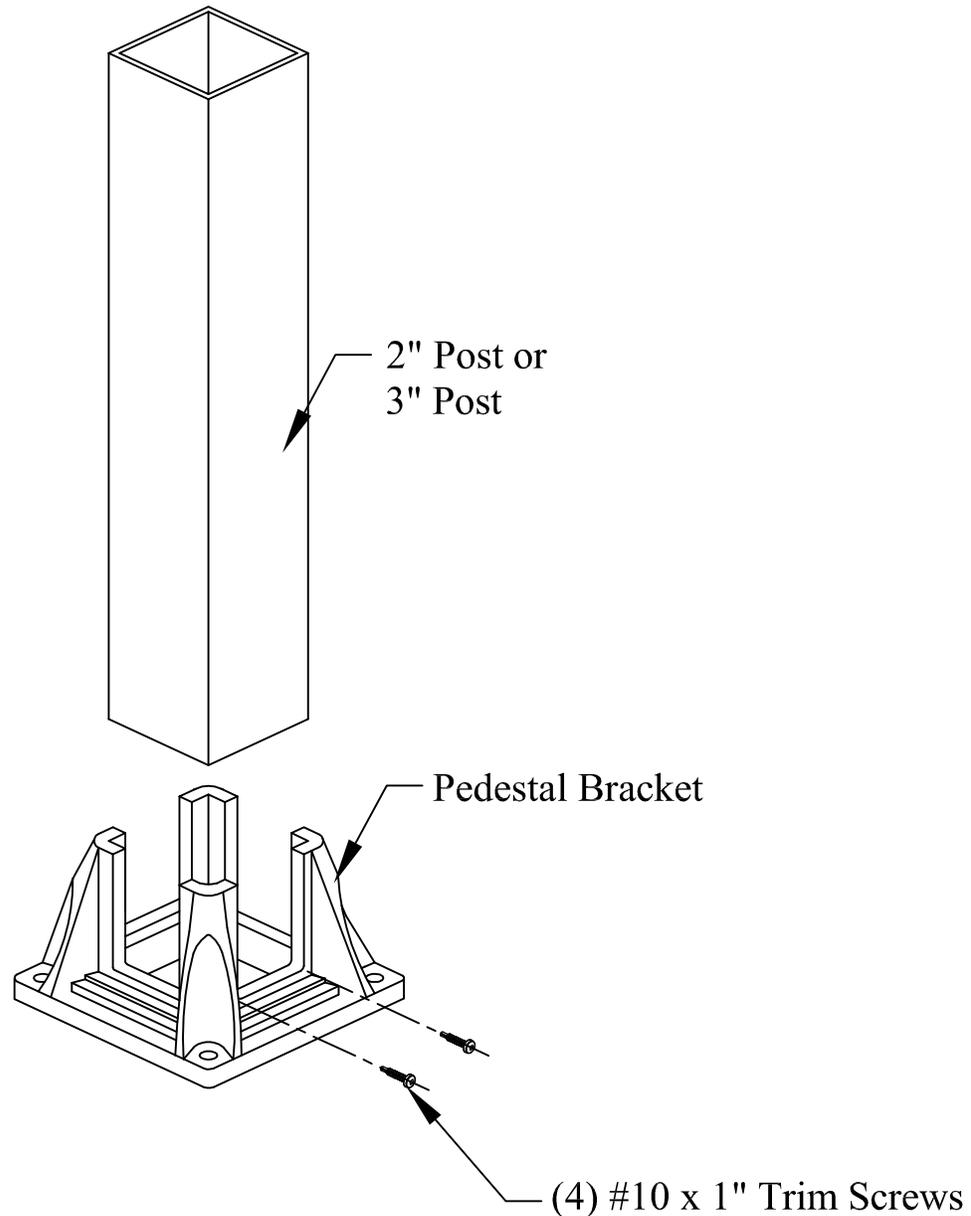
Privacy Railing



Tip:
Top and bottom caps are marked on the inside of the cap for the rail to which they attach.

Tip:
When snapping on caps you can use a C-Clamp or Bar Clamp. You can also lay down some cardboard and step along the rail to snap the caps on.

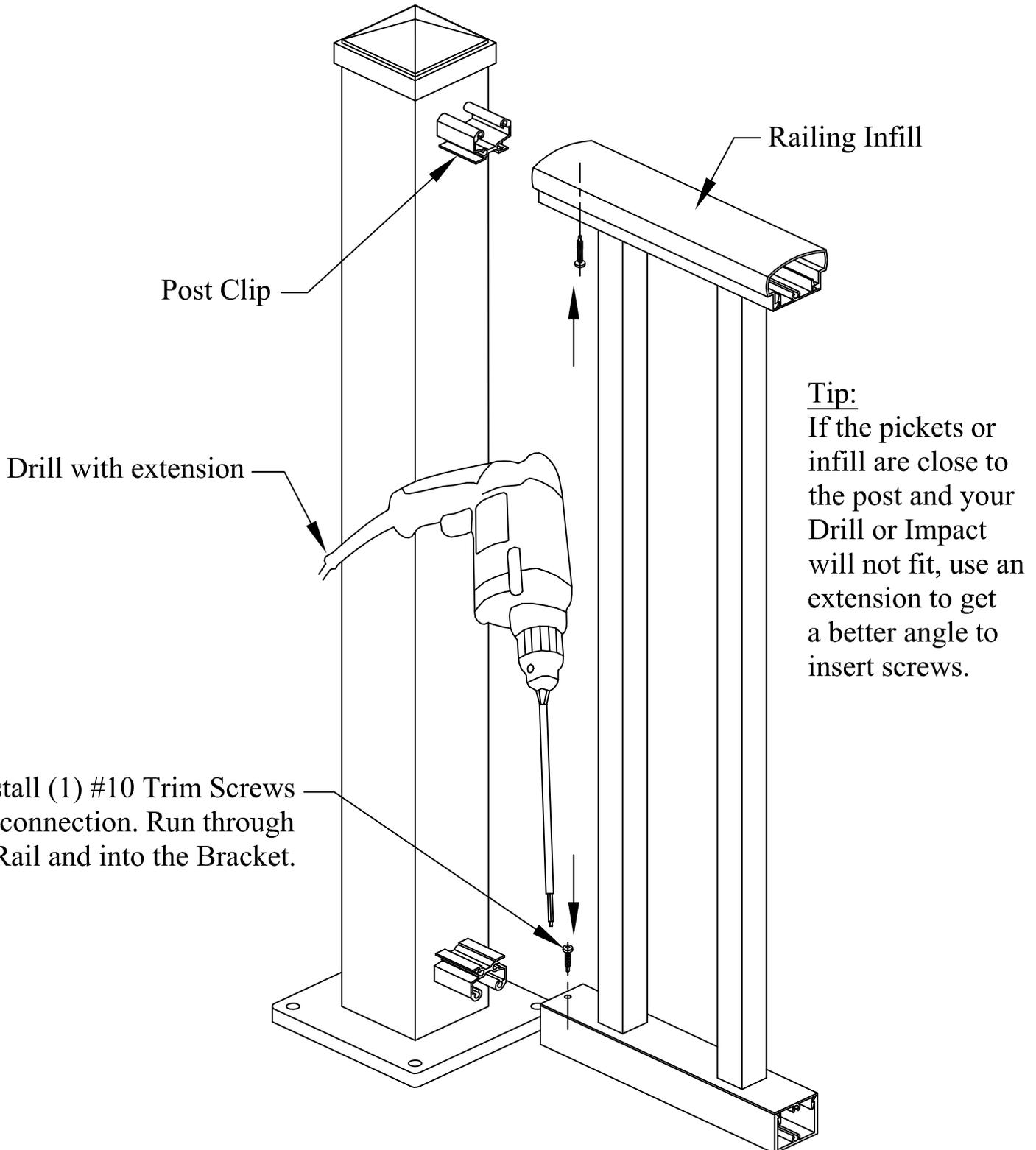
8. If your application has posts with the pedestal mount then they must be attached to all of the posts next. In the hardware box you will find a large bag of screws painted to match. The posts will slide down into the pedestals and (4) #10 x 1" Trim Screws must be installed through the pedestal and into each post. Pre-drill with a 5/32" drill bit before installing screws.



9. Find the layout drawing that is in the hardware box. Begin by laying out posts and railing according to the layout. All posts and railing are labeled. The posts are usually labeled on the mount brackets for the railing.

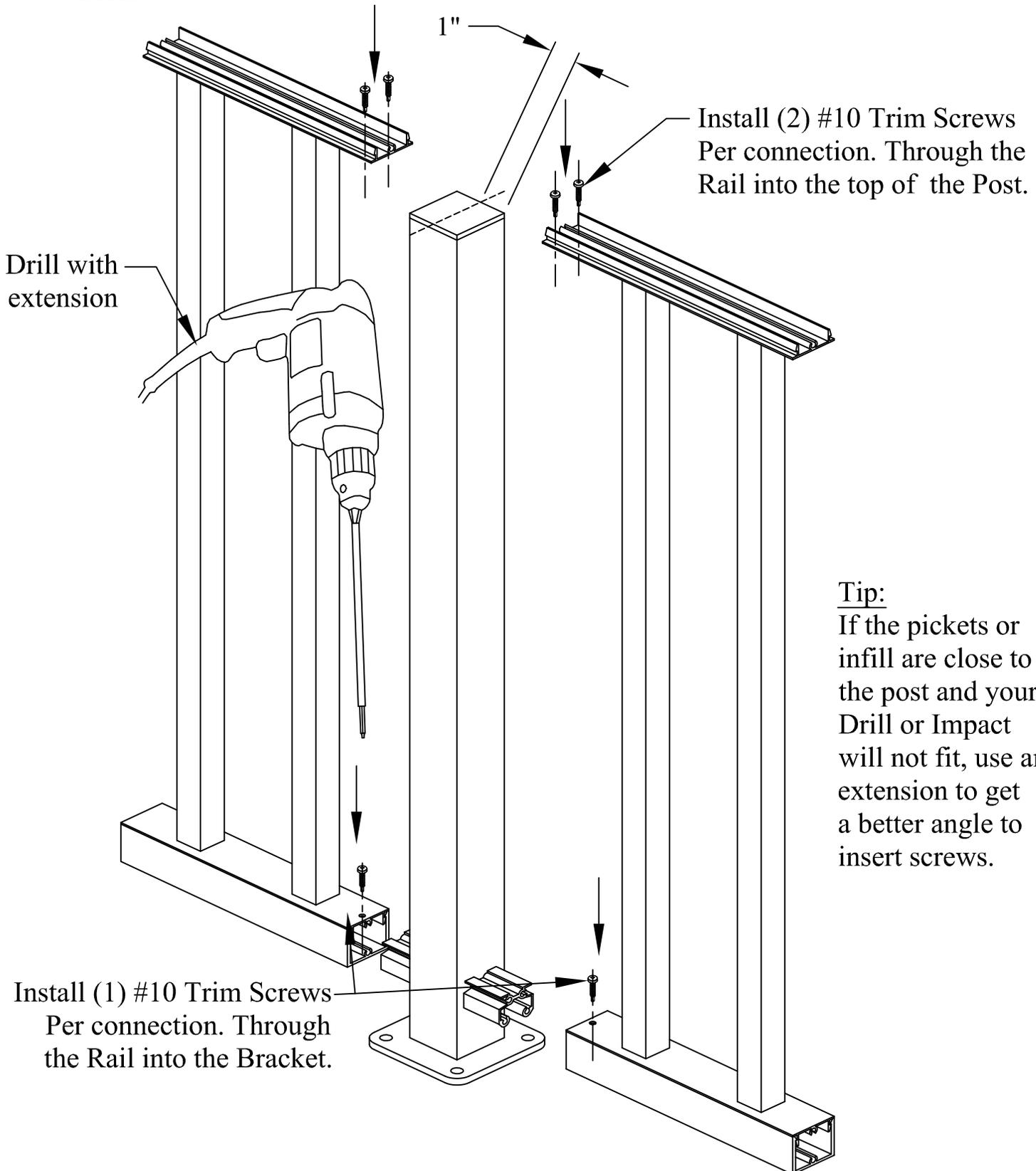
3" & 4" Post

10. Once the railing is laid out in the general location, begin assembly of the railing system. If you have Top Deck Mount railing the best way to begin is to assemble a few sections at a time. Then stand them up and attach larger sections until you get the full deck assembly together. Do not anchor posts yet. For attaching railing to each post, use the #10 Trim Screws that are in your hardware. Assembled in the drawing below are 3" & 4" posts.



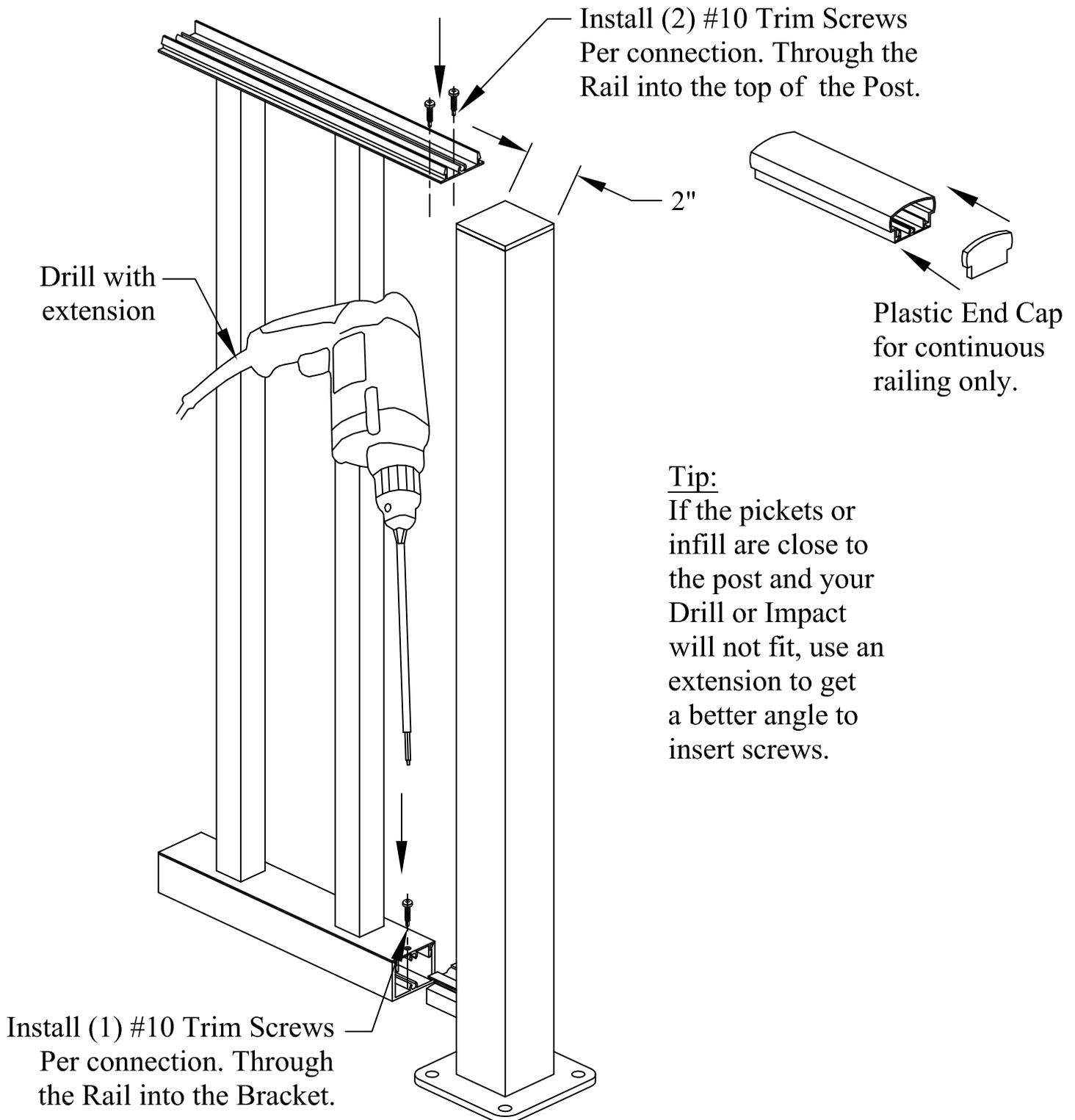
2" End to End Post

11. On applications with 2" End to End railing post, the bottom connection is the same as the 3" and 4" post. On the top of the rail the railing actually sits on the top of the posts. For an End to End post application, the railing should be placed 1" onto the post for each rail. Do not anchor posts yet. All top cap is sent longer than needed. Cut and install after post are anchored. Install plastic end caps sent for all open ends of rail.



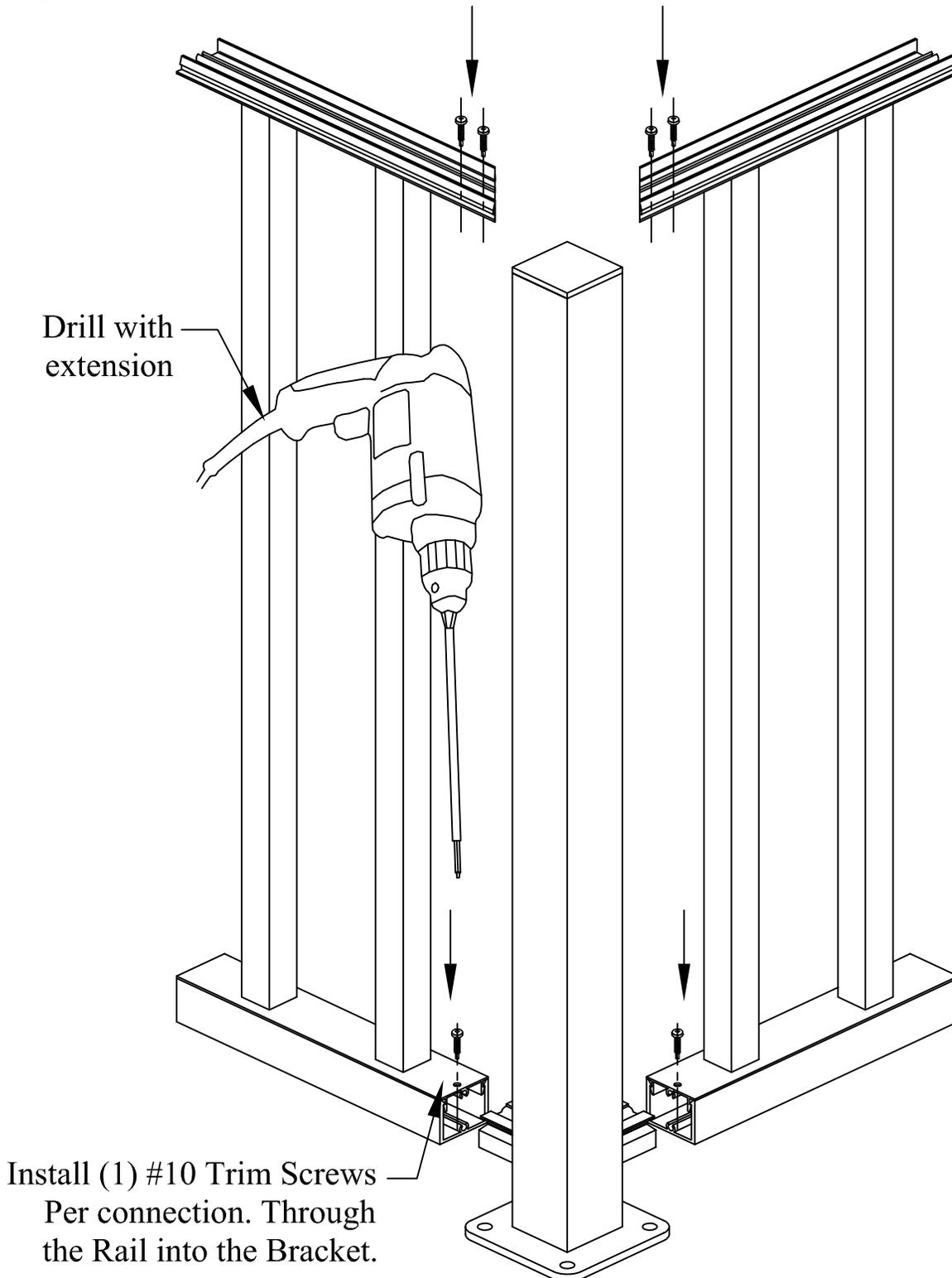
2" Dead End Post

12. On applications with the 2" Dead End railing post, the bottom connection is the same as the 3" and 4" post. On the top of the rail the railing actually sits on the top of the post. For Dead End post applications, the railing will be spaced 2" onto the post for each rail. Do not anchor posts yet. All top cap is sent longer than needed. Cut and install after posts are anchored. Install plastic end caps sent for all open ends of rail.



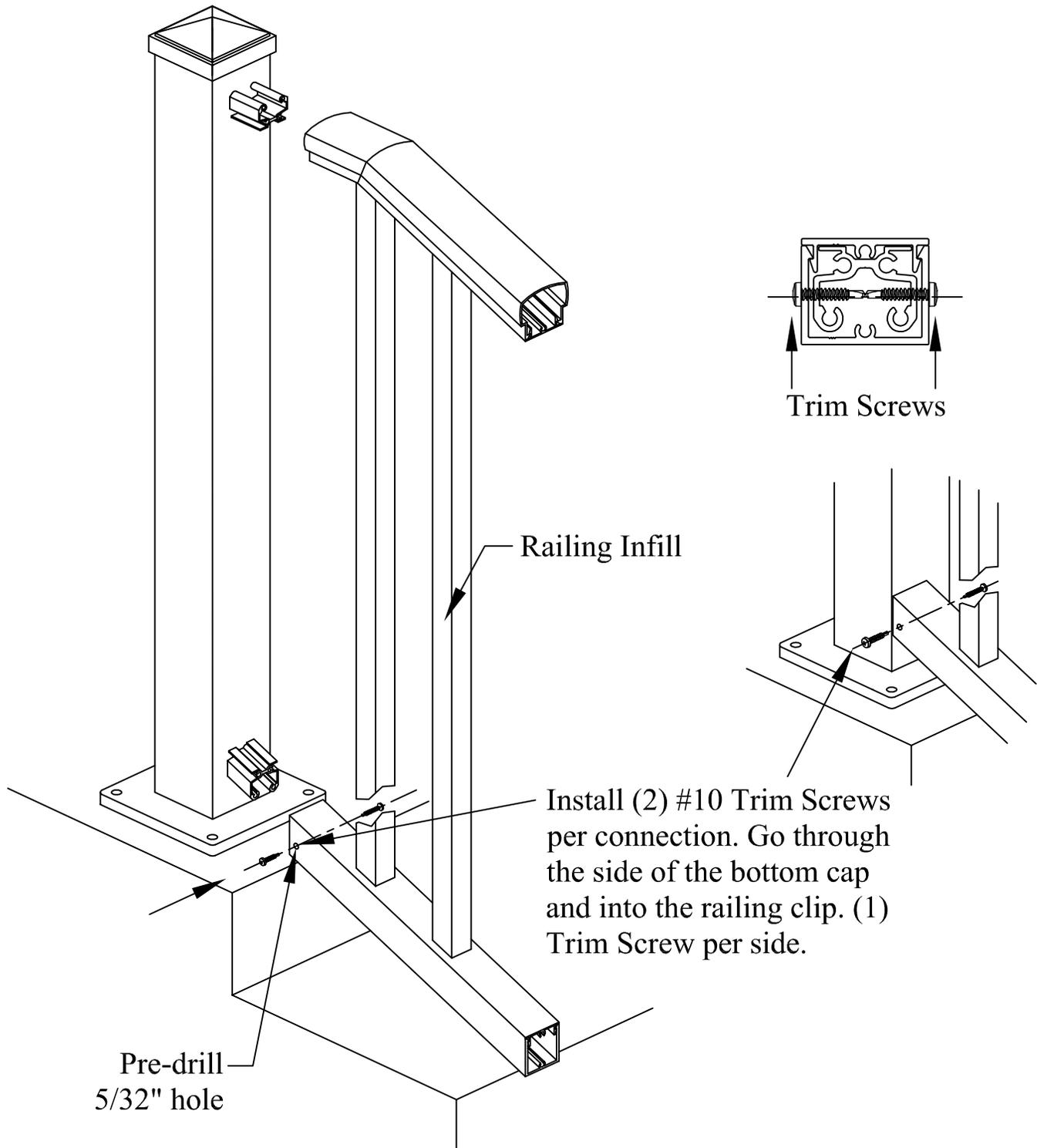
2" Corner Post

13. On applications with a 2" Corner railing post, the bottom connection is the same as the 3" and 4" post. On the top of the rail, the railing actually sits on the top of the post. For a Corner post, the railing should be placed across the post and the rails should be cut on an angle. Do not anchor posts yet. All top cap is sent longer than needed. Cut and install after posts are anchored. Install plastic end caps sent for all open ends of rail.



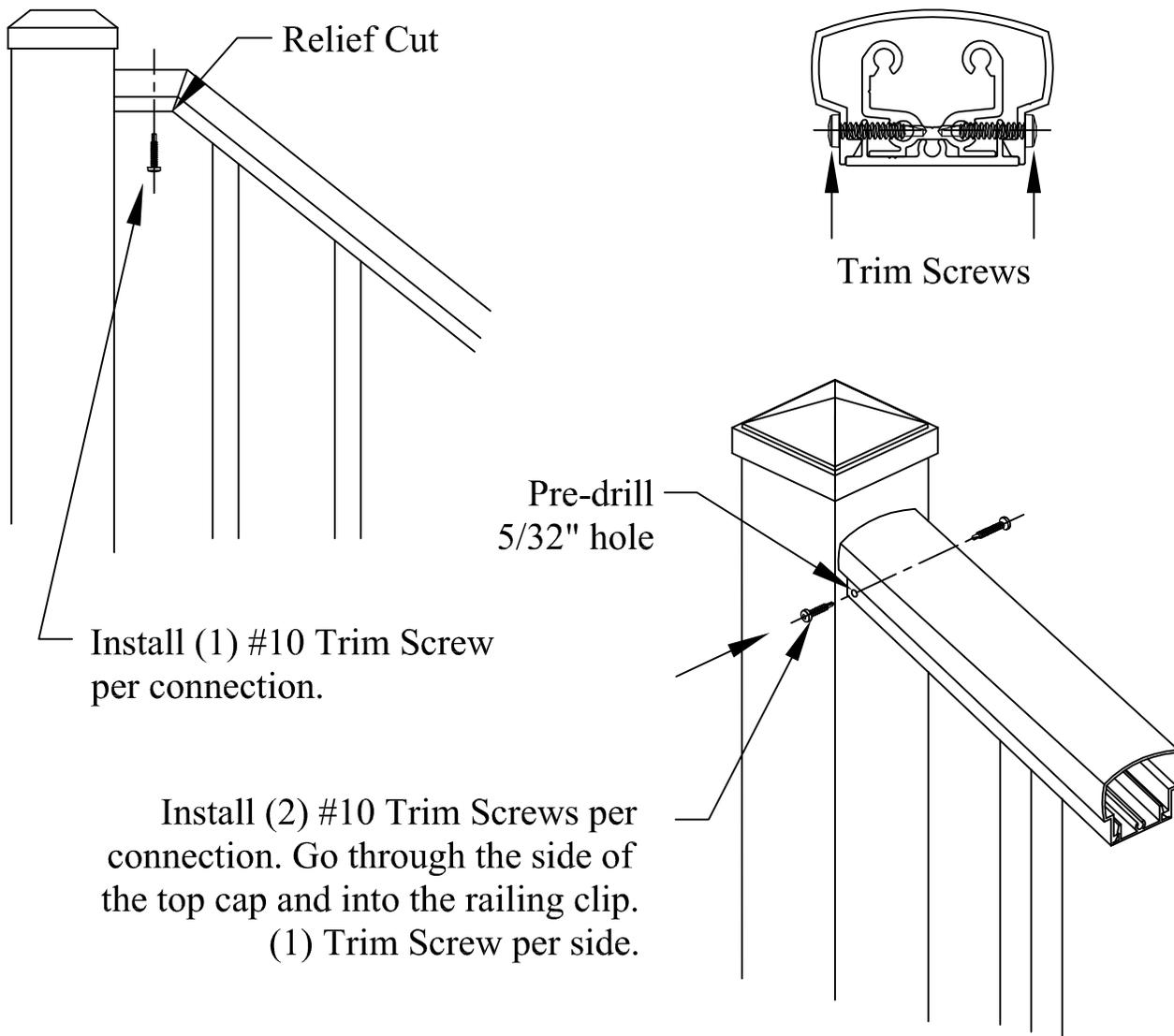
Stair Railing Bottom Connection

14. Now, start to slide the railing into location according to the layout drawings. Read through all instructions and study the drawing before anchoring any post. If you have stair railing, start now to assemble the rails to the posts as was done on the straight rails. Some of the connections can be applied differently to make the installation easier.



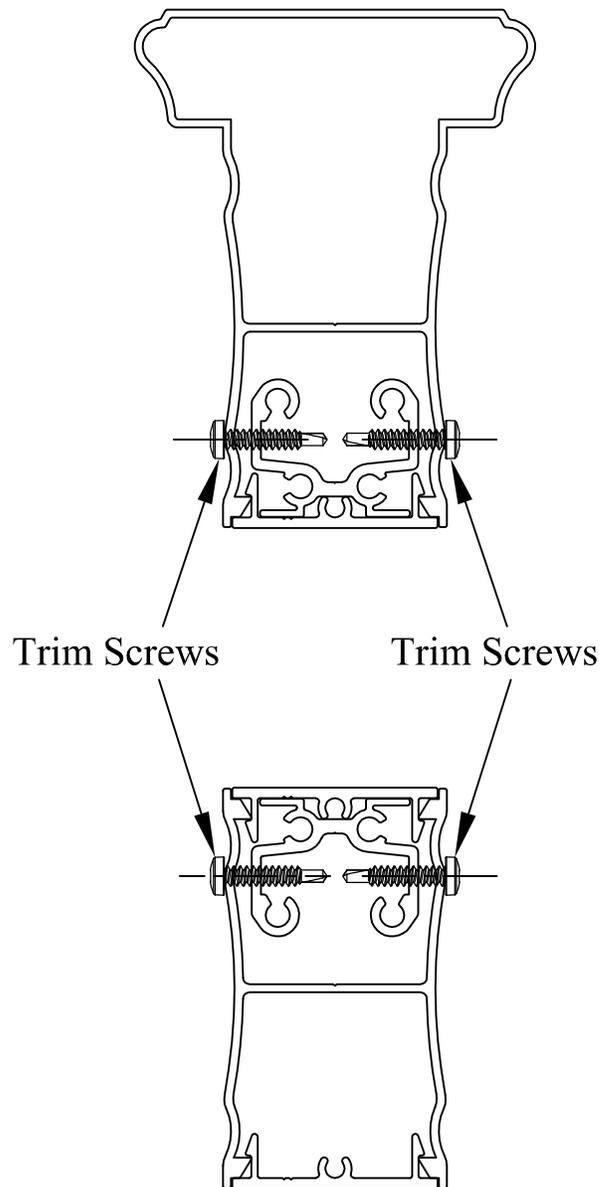
Stair Railing Standard Top Connection

15. Sometimes the top stair rail will need to have a relief cut to match up with the straight rail on the deck. If so, you will need to bend the flat plate of the railing infill down to rest on the mounting bracket for 3" & 4" post and on the top of the rail for 2" post. Attach this area to the post in the same way that other straight rails are attached. See below for an easier attachment for stair rails with no relief cut and straight mounting bracket.

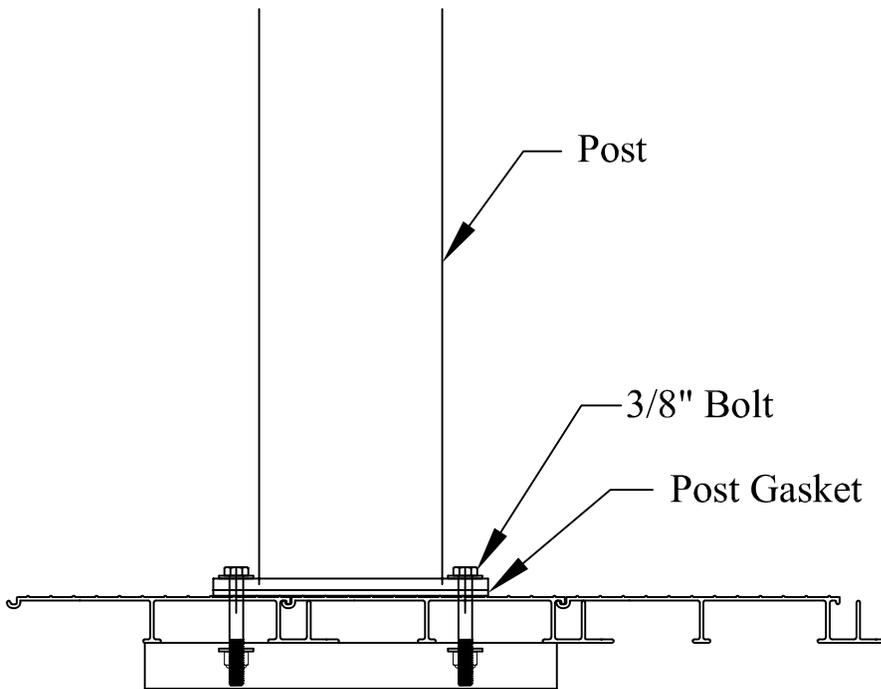


Stair Railing Traditional Connection

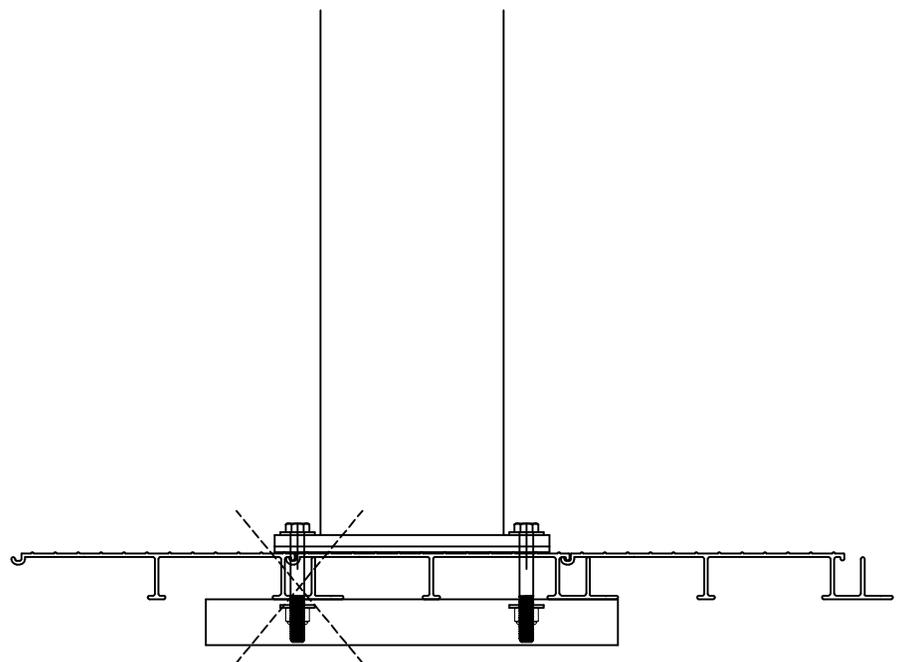
16. Below is a drawing showing where to install the trim screws on a Traditional stair railing project.



17. Once all railing is built, start to slide the railing into location according to the layout drawings. Read through all instructions and study the drawing before anchoring any posts. If installing over Lockdry Decking be sure to miss all water channels in the decking. If you run any hardware into the water channels of the Lockdry Decking, you will void any warranty with the waterproofing of the Lockdry Decking.



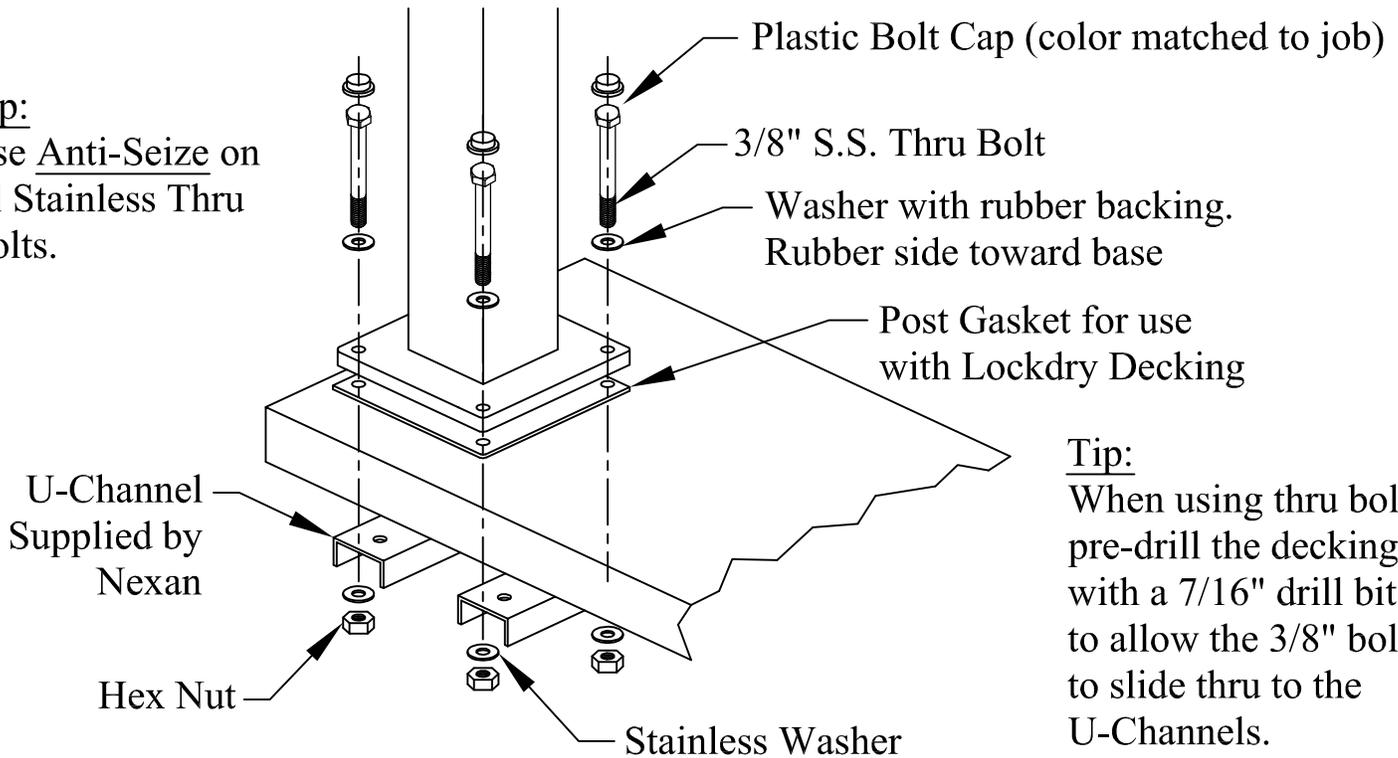
Correct Installation



Incorrect Installation

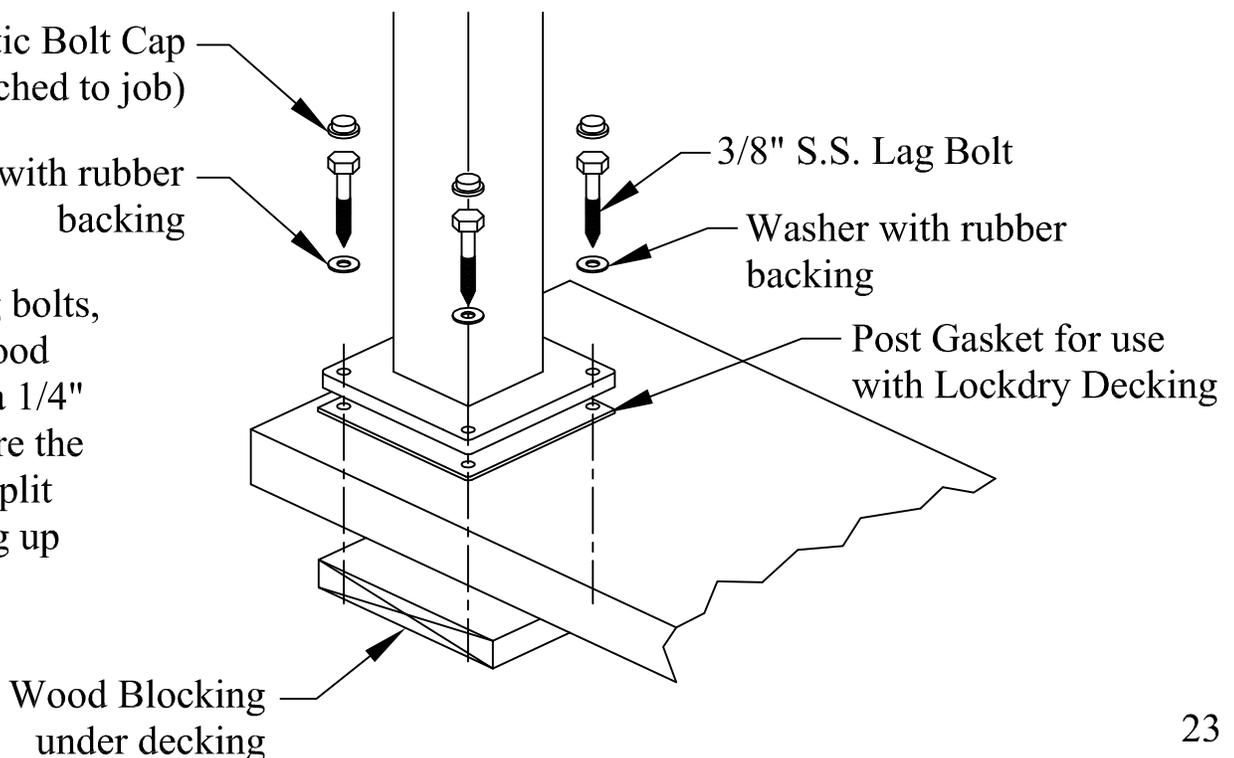
18. Once all railing is built, start to slide the railing into location according to the layout drawings. Read through all instructions and make sure to study the drawing before anchoring any post. If installing over Lockdry Decking, make sure to miss all water channels in the decking. If you run any hardware into the water channels of the Lockdry Decking, you will void any warranty with the waterproofing of the Lockdry Decking.

Tip:
Use Anti-Seize on all Stainless Thru Bolts.

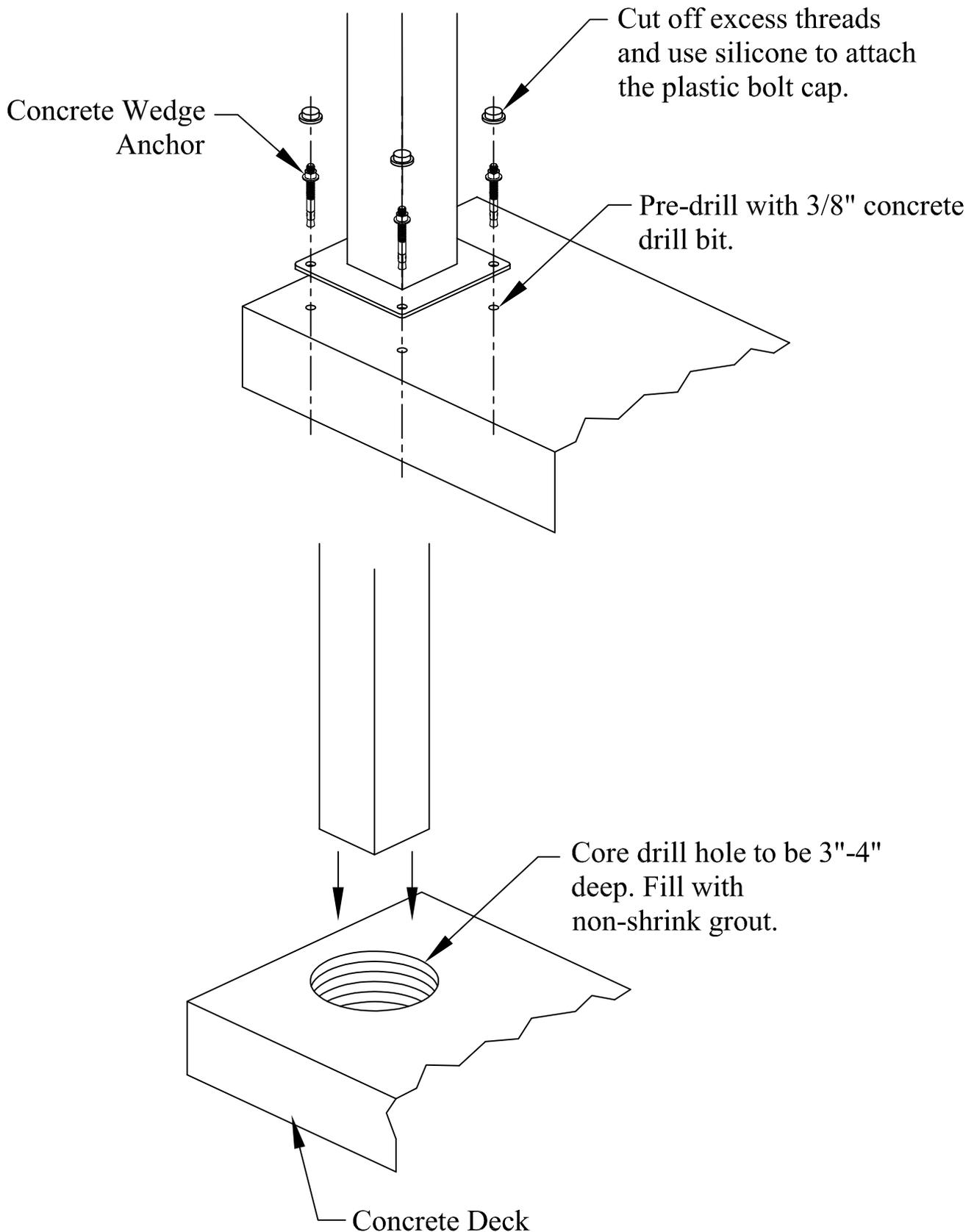


Tip:
When using thru bolts, pre-drill the decking with a 7/16" drill bit to allow the 3/8" bolts to slide thru to the U-Channels.

Tip:
When using lag bolts, pre-drill the Wood Blocking with a 1/4" drill bit to ensure the wood will not split when tightening up the lag bolts.

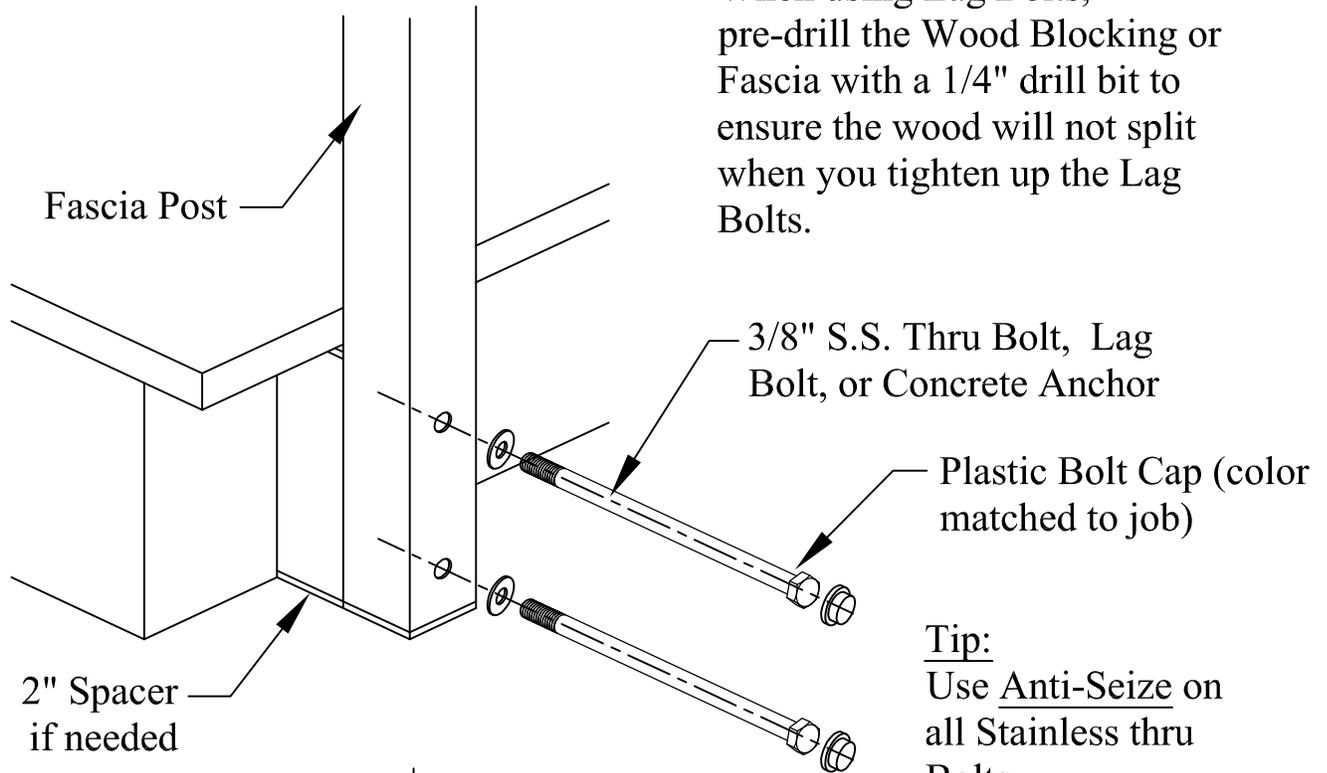


19. If installing on concrete, two attachment options are available. Concrete wedge anchors can be used or the post can be core-mounted to the deck.

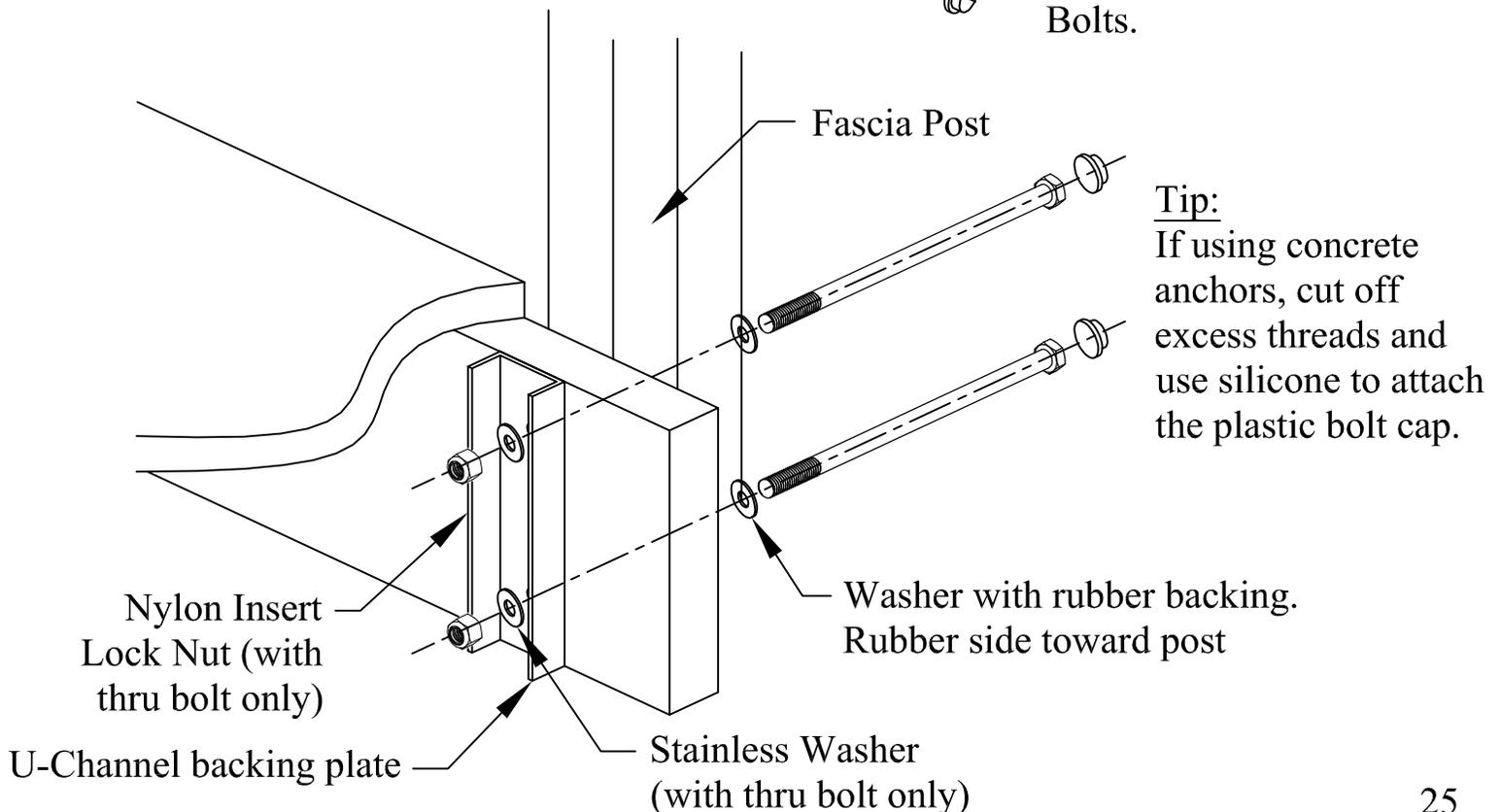


20. For Fascia Mounted post applications, attach the post to the fascia and install 1-2 infill panels at a time to complete the railing. Typically, starting on a corner and working each direction is best. Check that each section installed is level. Use a 1" or a 2" spacer as required. When using Lockdry Decking, a 2" spacer will be sent for all posts where a decking overhang occurs.

Tip:
When using Lag Bolts, pre-drill the Wood Blocking or Fascia with a 1/4" drill bit to ensure the wood will not split when you tighten up the Lag Bolts.

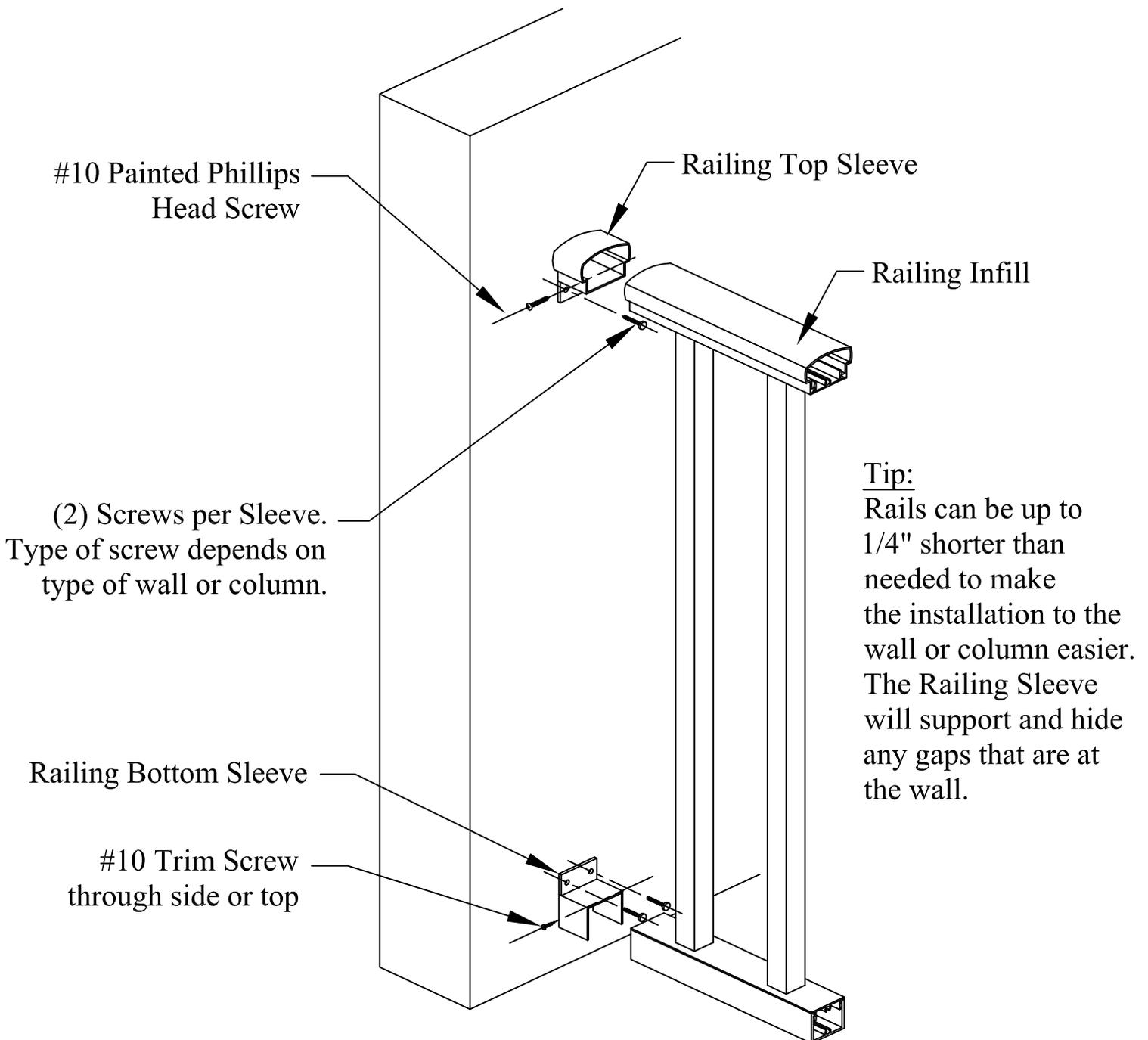


Tip:
Use Anti-Seize on all Stainless thru Bolts.



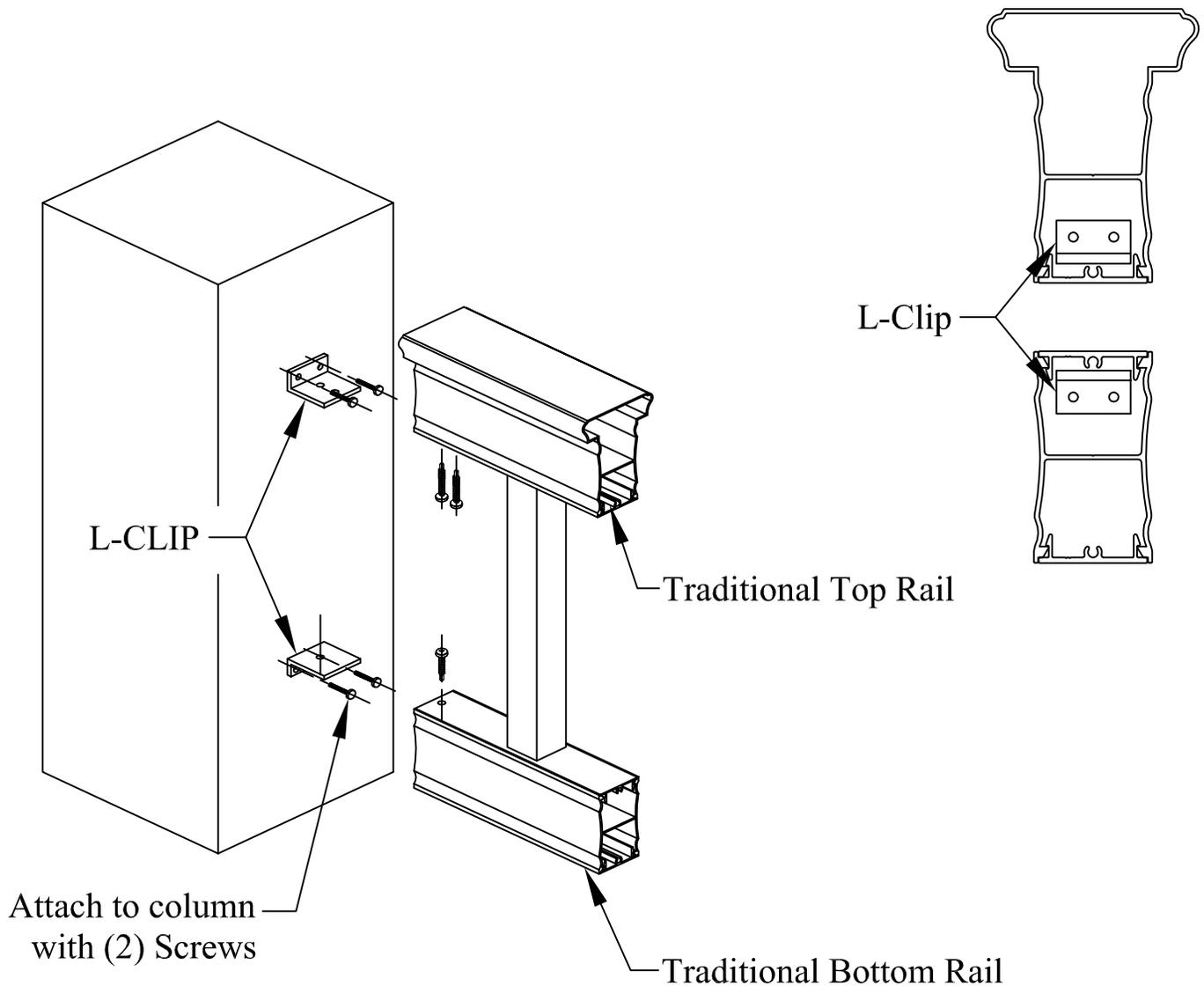
Railing Sleeve Connection for Standard Railing

21. Some projects require Railing Sleeves for wall attachment. Sleeves are for Standard Rail attachment only. If you have to use Railing Sleeves, you will first need to slide the sleeve onto the railing. Once the sleeve is on, stand the rail up and make sure that it is level. Then, mark the holes to be drilled into the wall. For attachment to the walls use (2) screws per sleeve to hold the sleeve to the wall or column. For concrete applications, Tapcons are included. For wood applications, wood screws will be included. After sleeves are attached to the wall and the rails are up, run a #10 x 1-1/2" Painted Phillips Head Screw into the side of the sleeve and into the rail to attach the sleeve to the railing.



L-Clip Connection for Traditional Railing

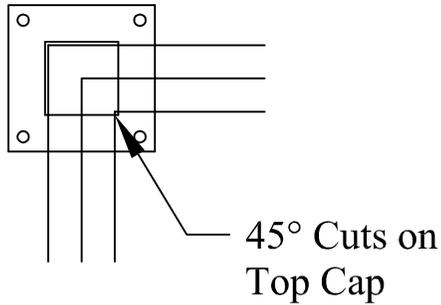
22. For Traditional Railing applications, use L-Clips for wall or column attachment. On the bottom clip the "L" of the clip will face down. For the top clip the "L" will face up. Doing this will hide the clip once the railing is installed. Install clips to the wall with (2) screws. For wood walls or columns, use typical wood screws. For concrete, Tapcons should be used. Note: In some cases you may need to wait to snap the caps to the rail so that you can attach the clips first. Next the rail should be secured against the wall by driving the screws through the L-Clip. Make sure the rail is level before mounting the clips to the wall. Then, snap on the top and bottom caps to finish off the rail.



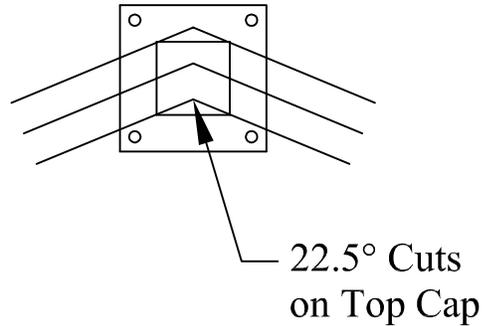
Typical Continuous Top Cap Cuts

23. When installing Continuous Top Cap, cut the top cap after all of the post are mounted. Below are examples of the typical cuts. Remember to make cuts 1/2 of the total angle of the deck and railing in that area. Use a miter saw with a carbide tip blade or a non ferrous metal cutting blade to cut the caps. Refer to the Layout Drawings for required angles.

90° Corner

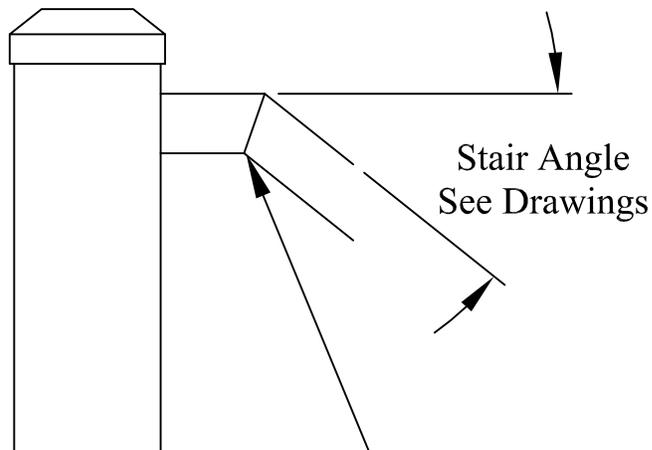


45° Corner



Top Cap cuts will always be 1/2 of the full angle of the railing

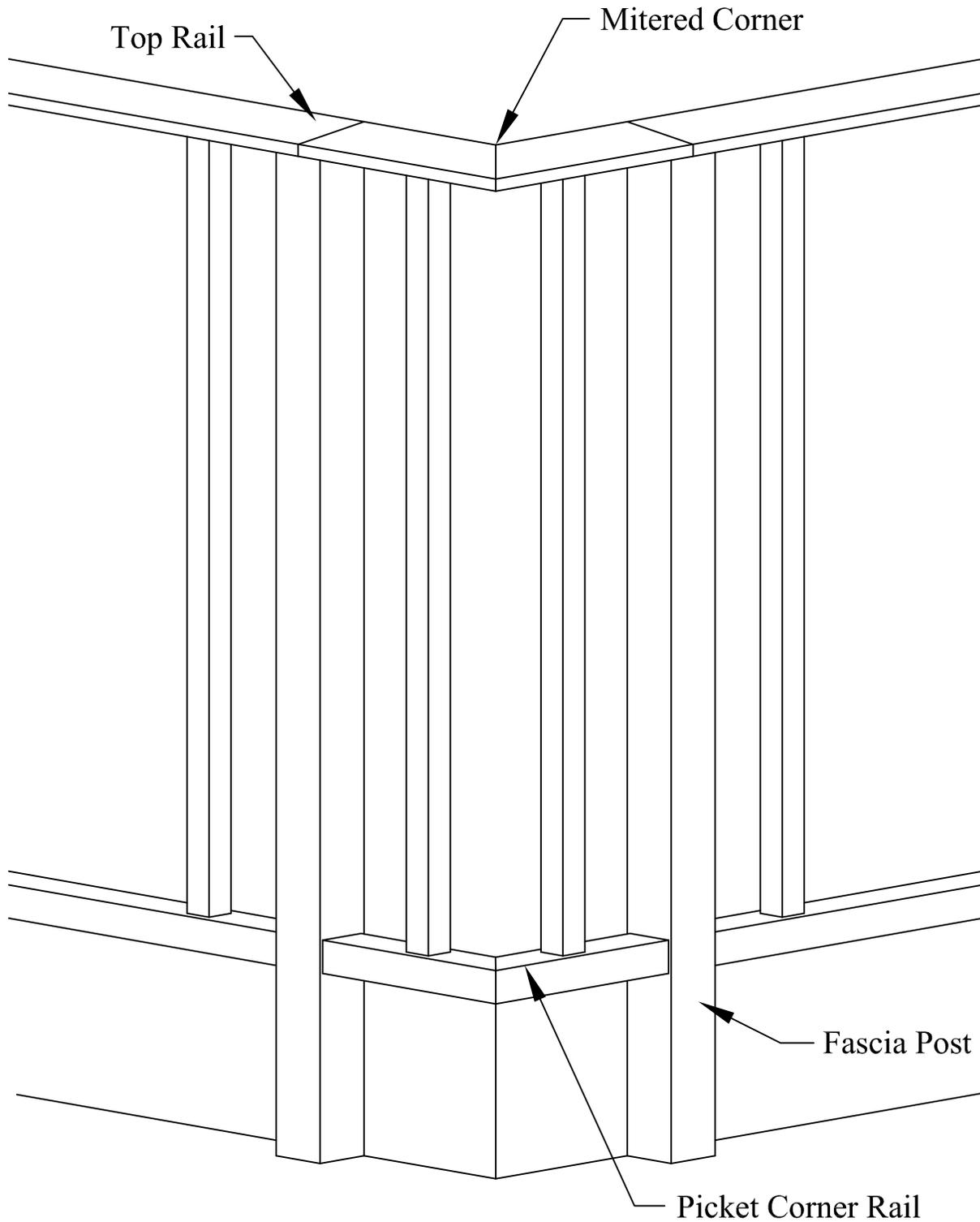
Stair Relief Cut



For stairs, cut the 2 pieces of Top Cap 1/2 of the total stair angle.
Example: 30° Stair will need 15° Cuts.

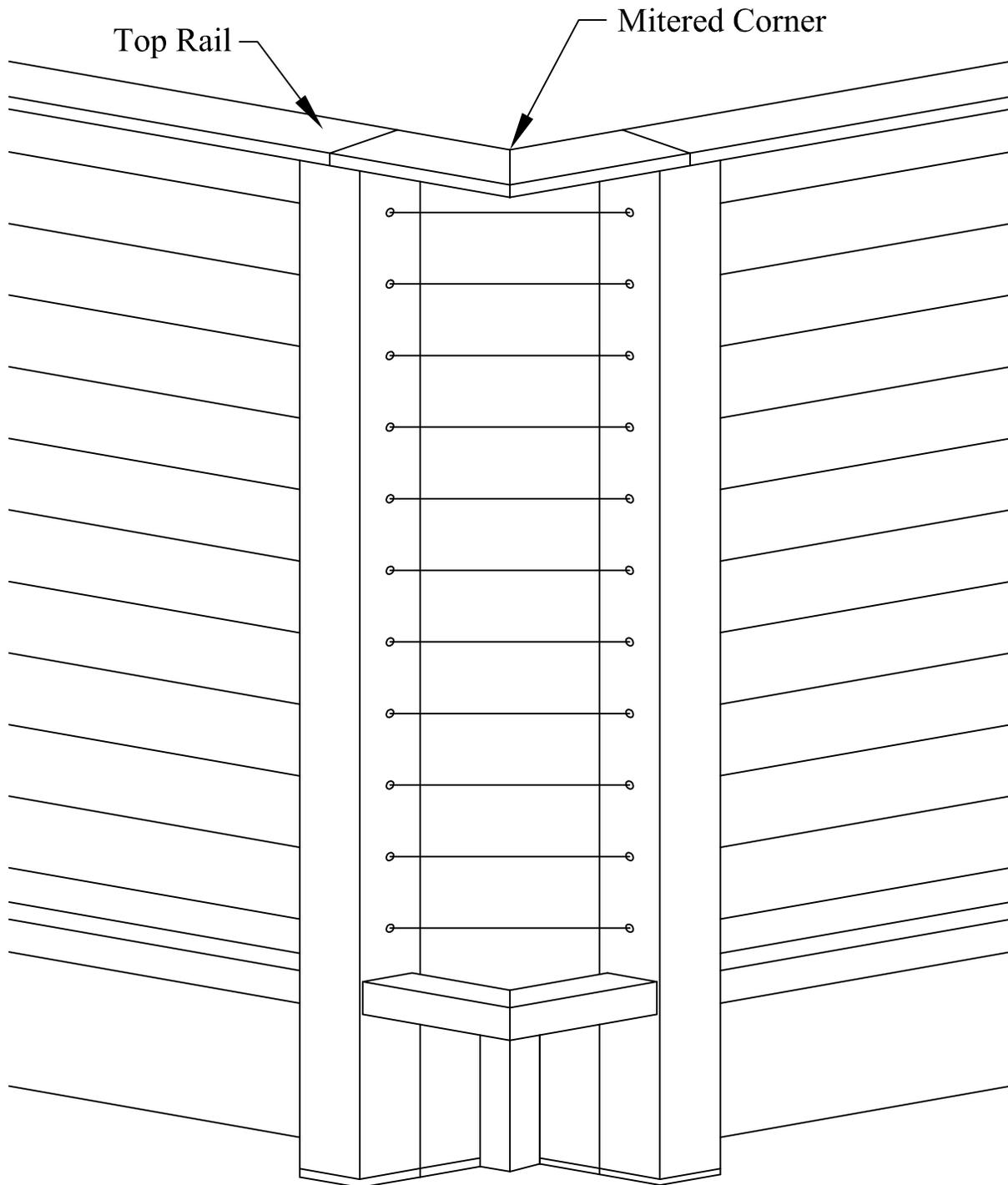
Typical Fascia Picket Corner

24. On Fascia railing and Continuous railing all top cap will be sent longer than needed and should be cut to fit on site. Install Top Cap after all posts are anchored. Plastic end caps are sent for open ends of railing.



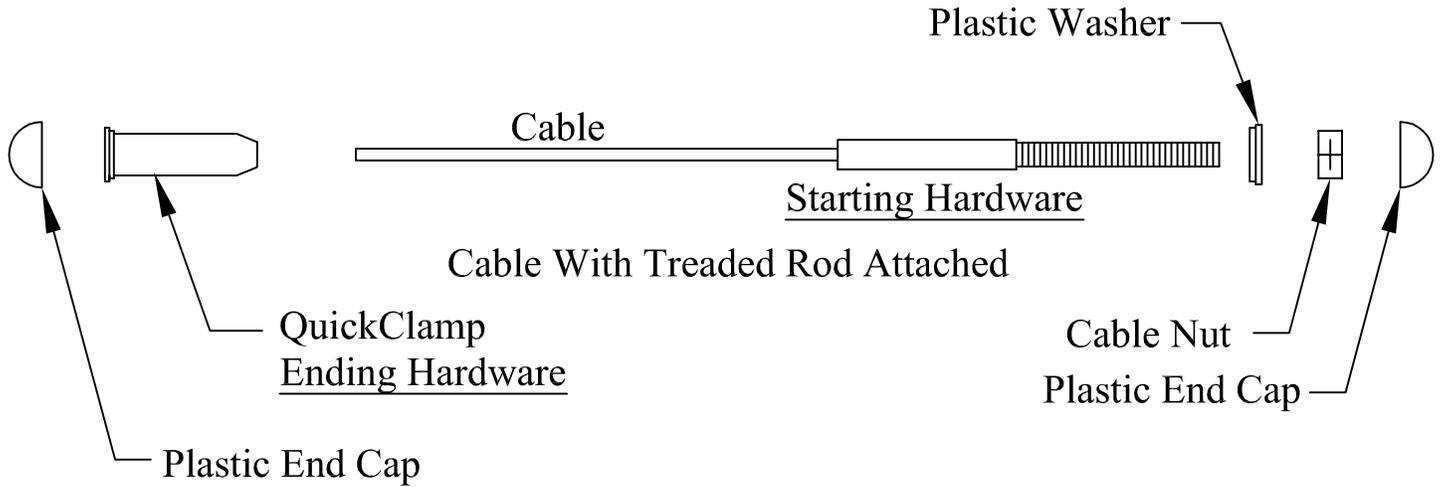
Typical Fascia Cable Corner

25. If installing Cable railing, install cables after you have completely anchored all posts and finished all Top Cap installation. Plastic end caps are sent for open ends of railing.

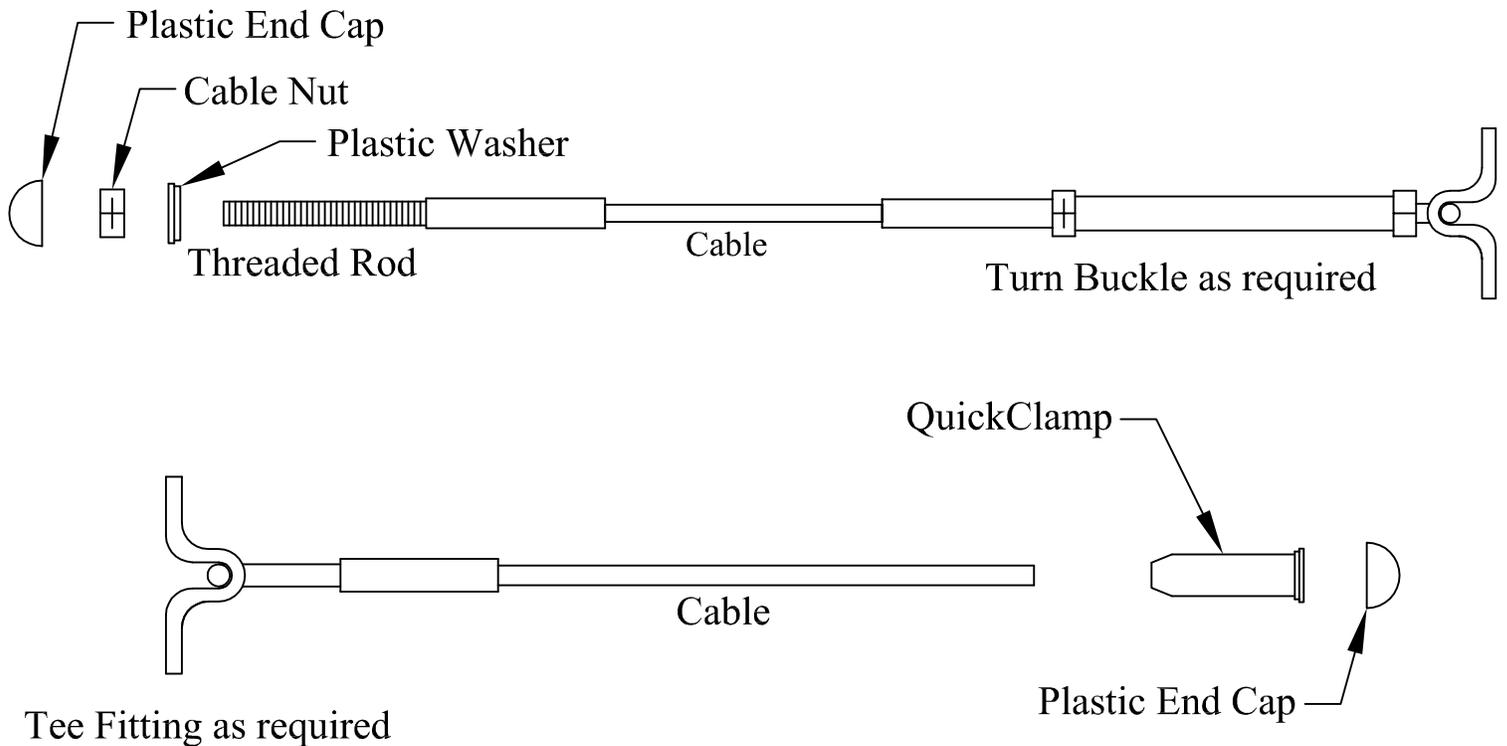


26. Below is the typical cable assembly as well as other connection types. Make sure to read Layout Drawing supplied to determine where the Cable Sets start and end. All cables are cut longer than needed and should be trimmed after all of the cables are ran and the cable hardware has been installed.

Typical Cable Assembly

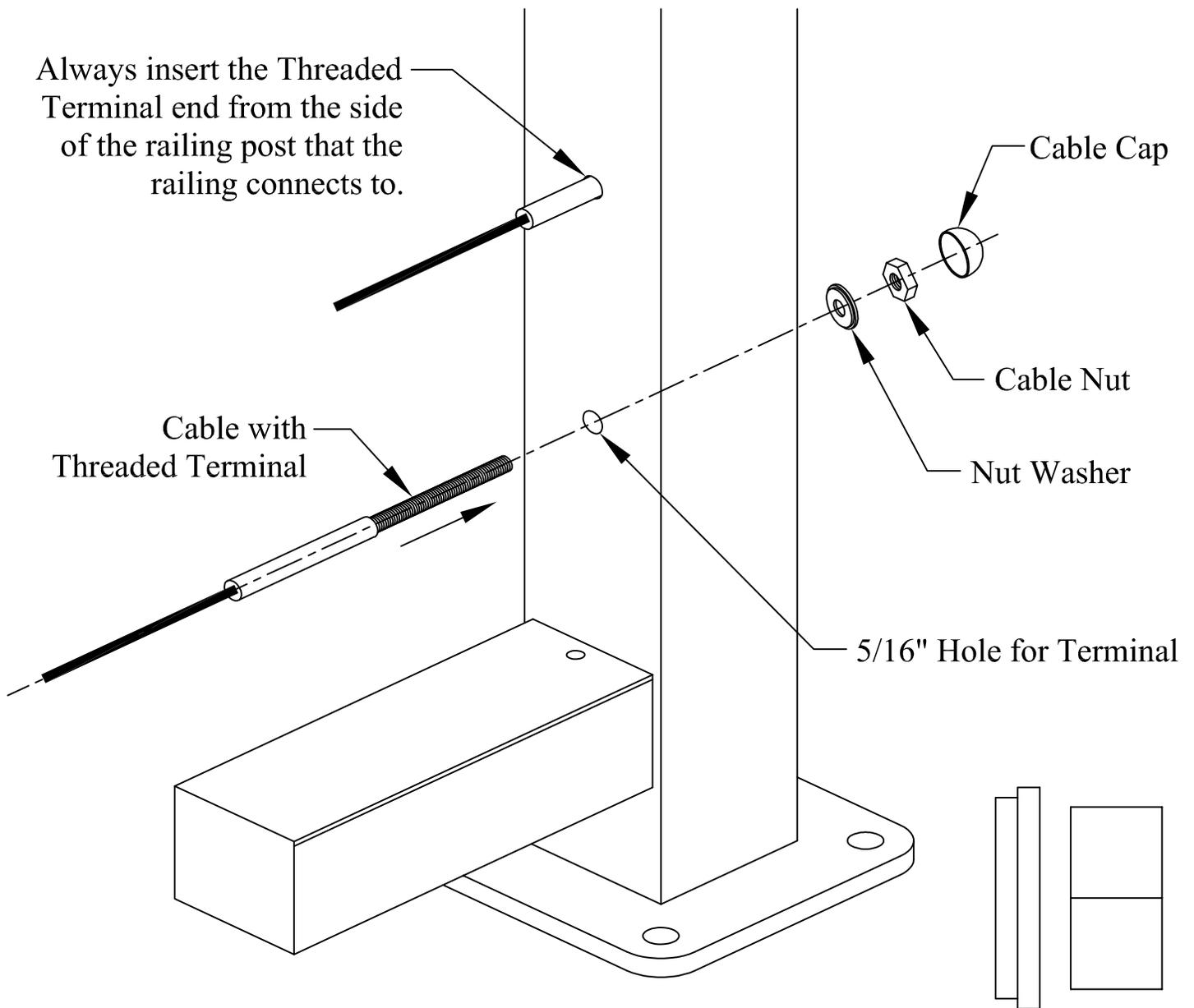


Optional Cable Assemblies



Cable Starting Post Assembly

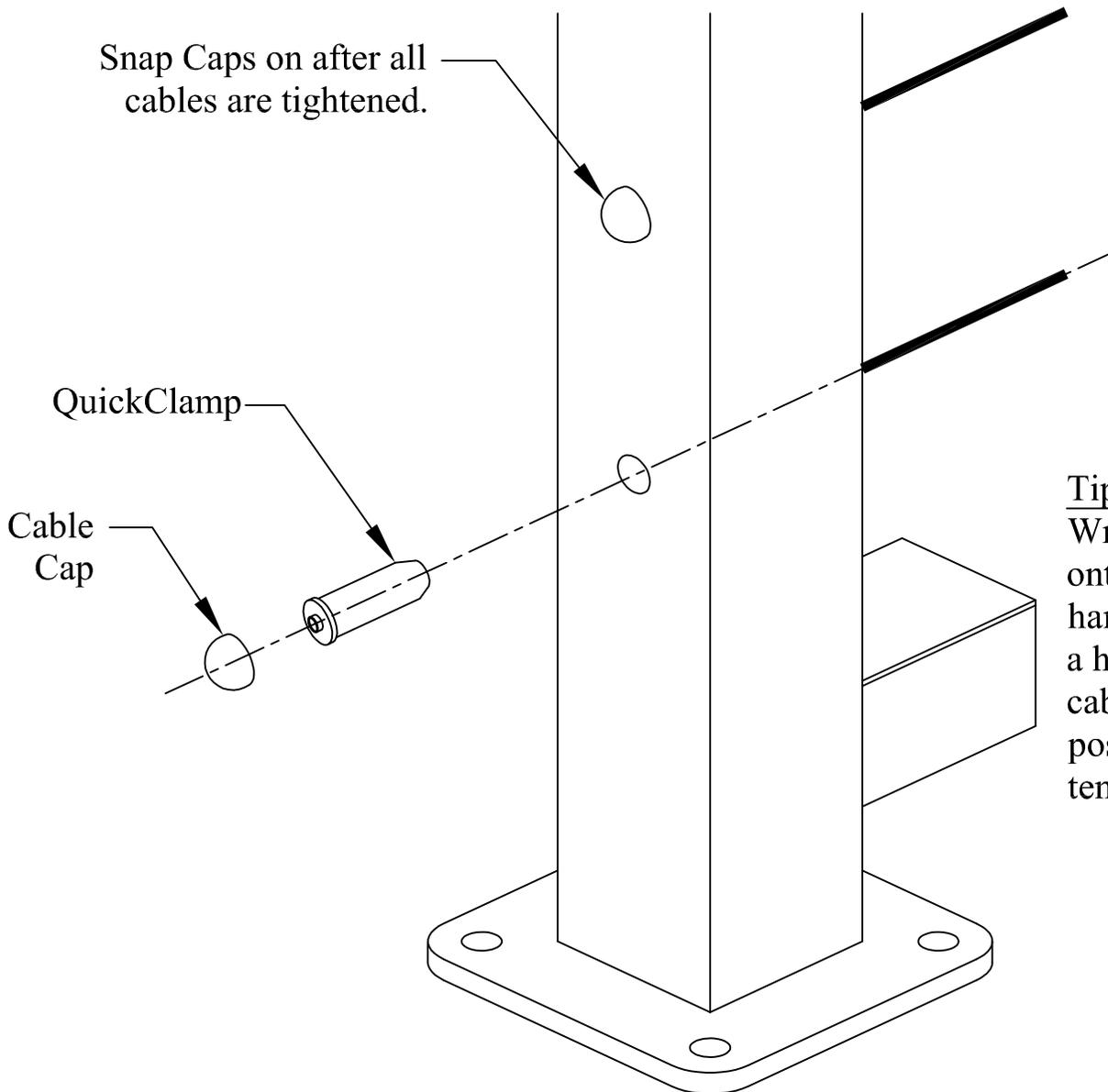
27. On Cable Starting Posts, review the layout drawings and run the cables according to the layout. Starting Posts are called out along with the Ending Posts and length of cable runs. Once all cables are ran and tightened, cut the excess threads off past the Cable Nut. Below is the typical Starting Post assembly.



Cable Nut & Washer
Make sure to turn rib of washer against the cable nut.

Cable Ending Post Assembly

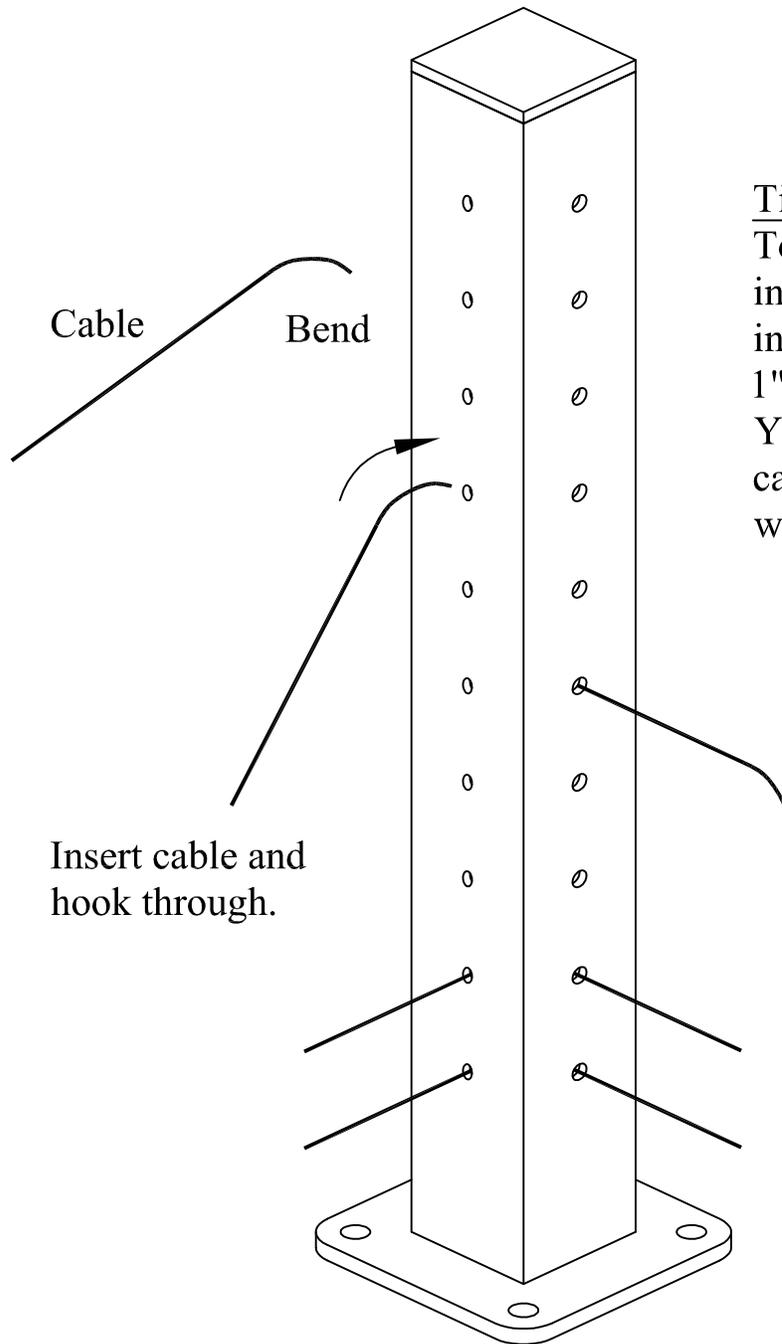
28. On Cable Ending Posts, review the layout drawings and run the cables according to the layout. Ending Posts are called out along with length of cable runs. Once all cables are ran and tightened, cut the excess cable off past the QuickClamp fitting. Once all cables are cut, install the Cable Cap. Below is the typical Ending Post assembly.



Tip:
Wrap end of cable onto the end of a claw hammer and use it as a handle to pull the cable as tight as possible before you tension the cable.

Cable Corner Post with Thru Cables

29. If your application requires the cable through a corner, bend a turn into the cable. This can be done by hand or using pliers. Tape can be wrapped around the end of the cable to keep it from spreading apart. All cables are cut longer than needed. The curved end can be cut off to install the QuickClamp fitting once you reach the end of the cable run.

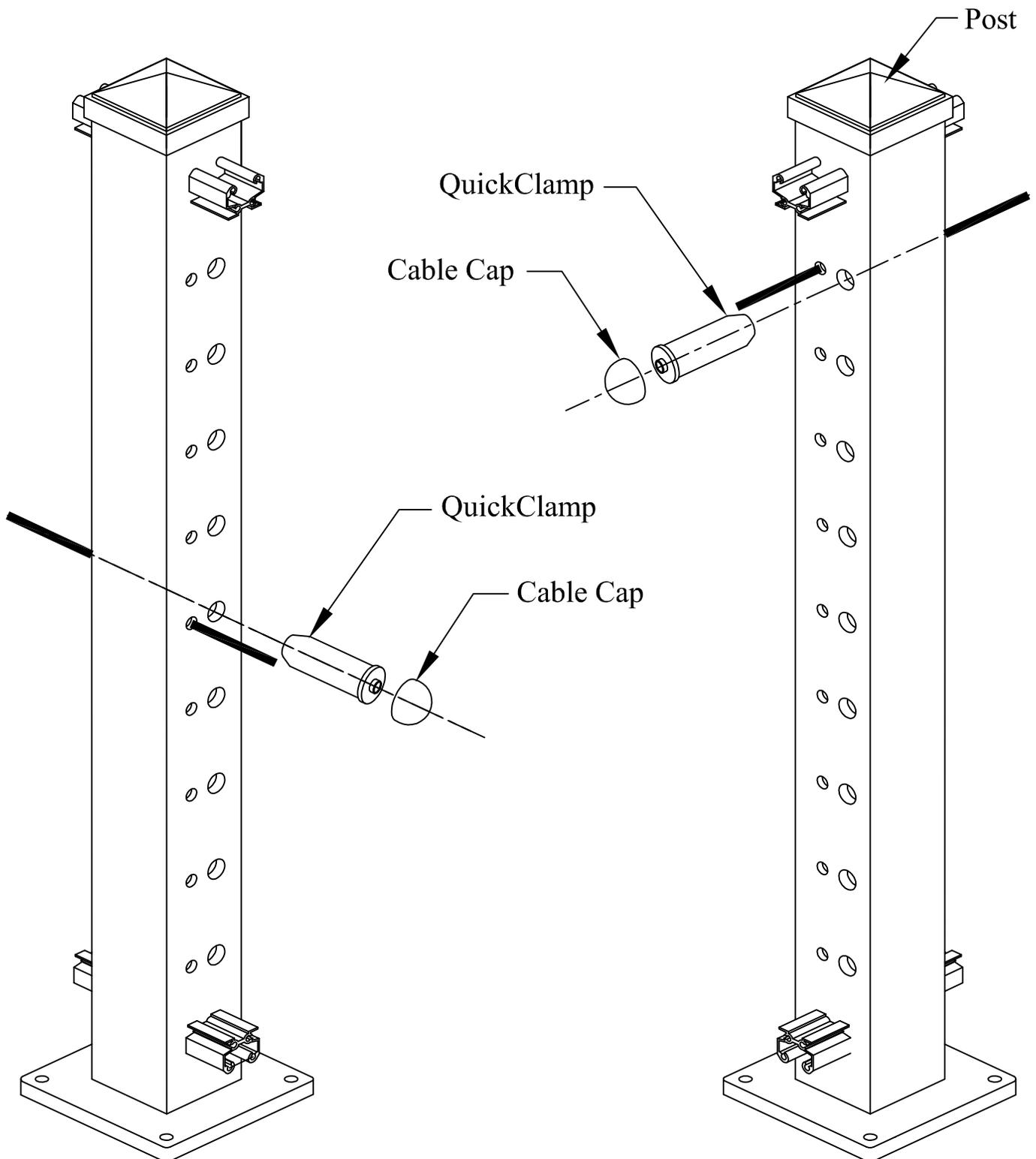


Tip:

To bend cable, insert the cable into the post about 1" and bend it. You can bend the cable by hand or with pliers.

Cable End to End Ending Post

30. On some projects, you will need to end 2 cable sets on 1 post. If this happens, then you will need to run the cable and cable fittings as shown below. The posts are pre-drilled for all cable holes. The ending holes are the larger holes and will accept the QuickClamp fittings. Cap the cable end in the same way that any other cable end would be capped.

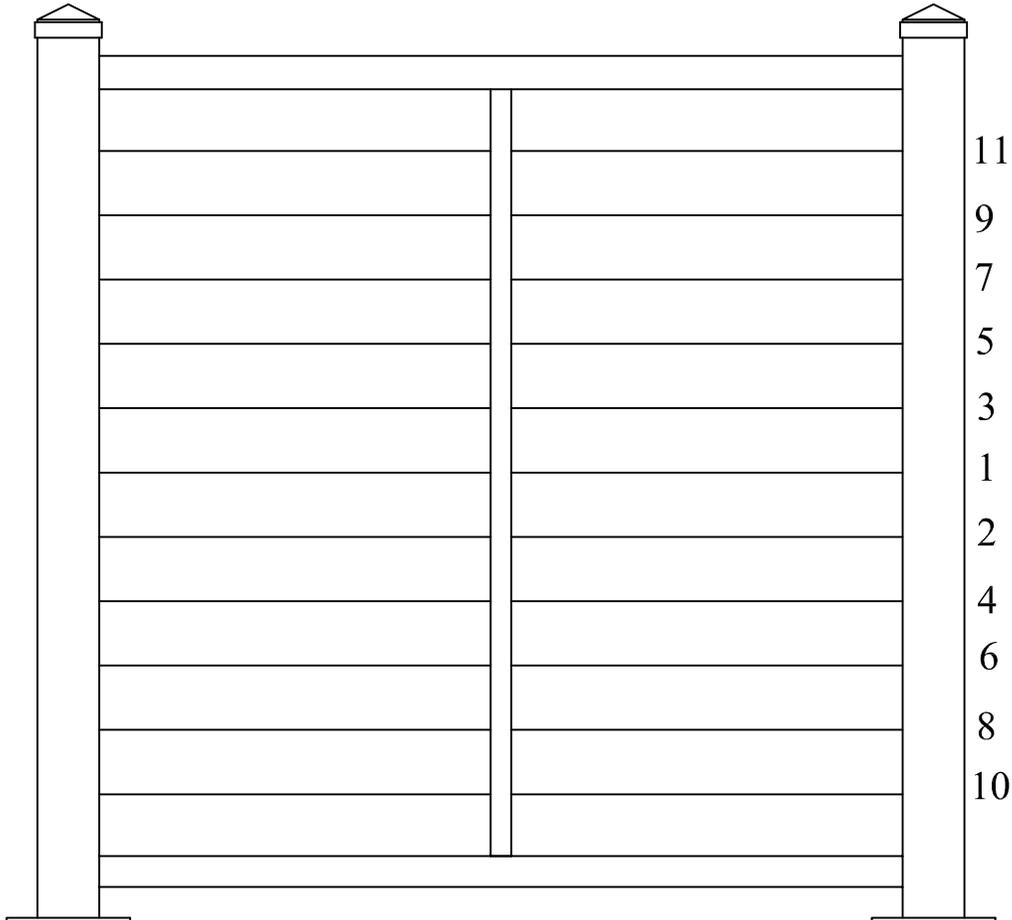


Cable Layout

31. After all cables are ran, pull them as tight as possible by hand before tensioning the cables. You will tension the cables with the Starting End (Threaded Terminal End). Use the tightening sequence below to tension the cables.

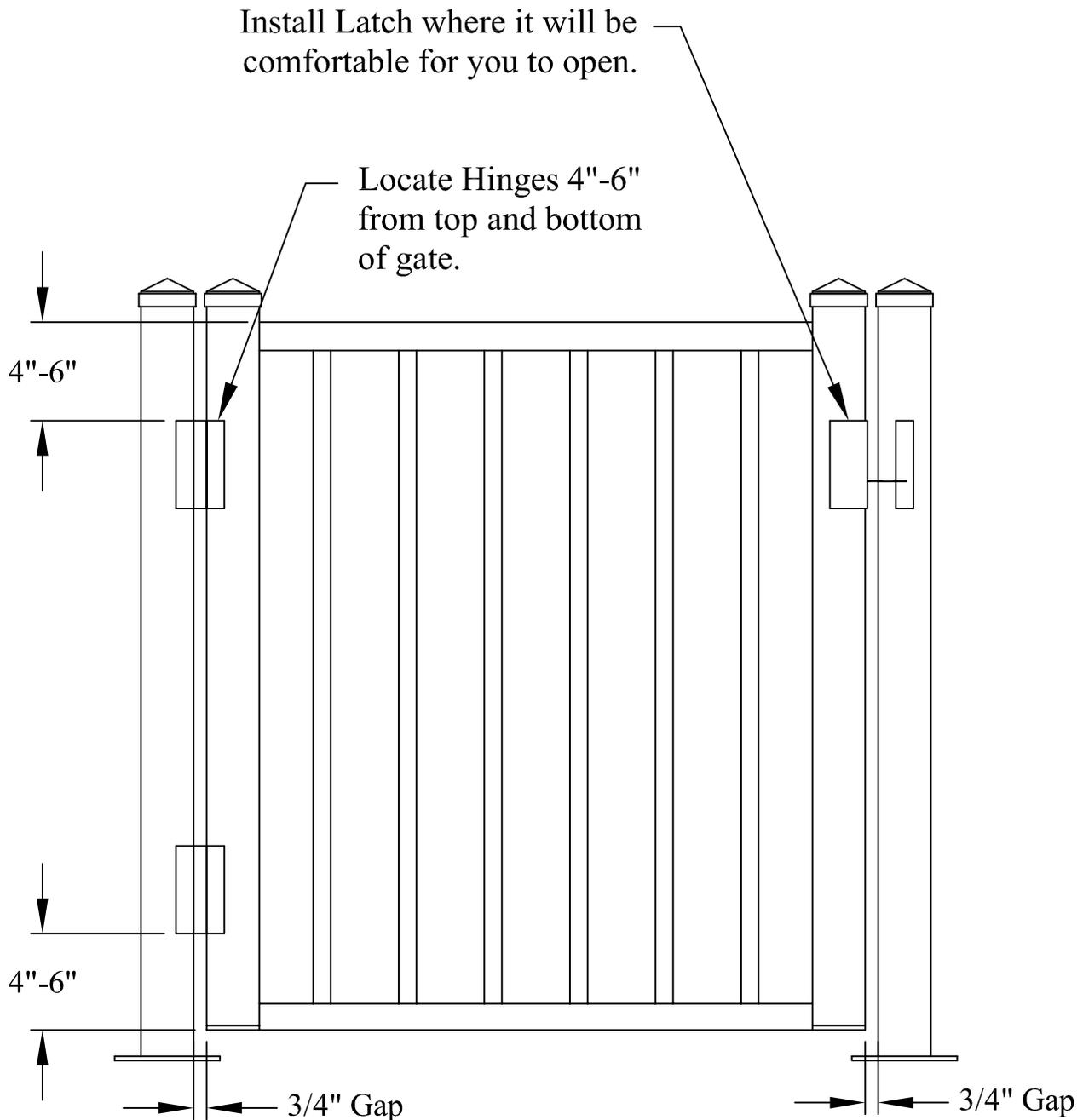
Tip:

Wrap end of cable onto the end of a claw hammer and use it as a handle to pull the cable as tight as possible before you tension the cable.



Gate Installation

32. If your project has a Gate, it will be the last thing that is installed. Make sure to read over the Layout drawing. The gate opening should be 1 1/2" - 2" larger than your gate. This allows room for the hinges as well as the proper swing ensuring the gate does not hit the railing. The hinges can be applied to either side, also the gate can swing in any direction that you want. Check that the gate swings in the proper direction before installing hinges. Step by step installation instructions are included for the latch. Please read thoroughly and install as directed. When installing on Cable Gates, some trimming of the hinge and/or latch may be required.



Grab Bar Details

33. Some projects require Grab Bar Railing. For all connection details see below.

