

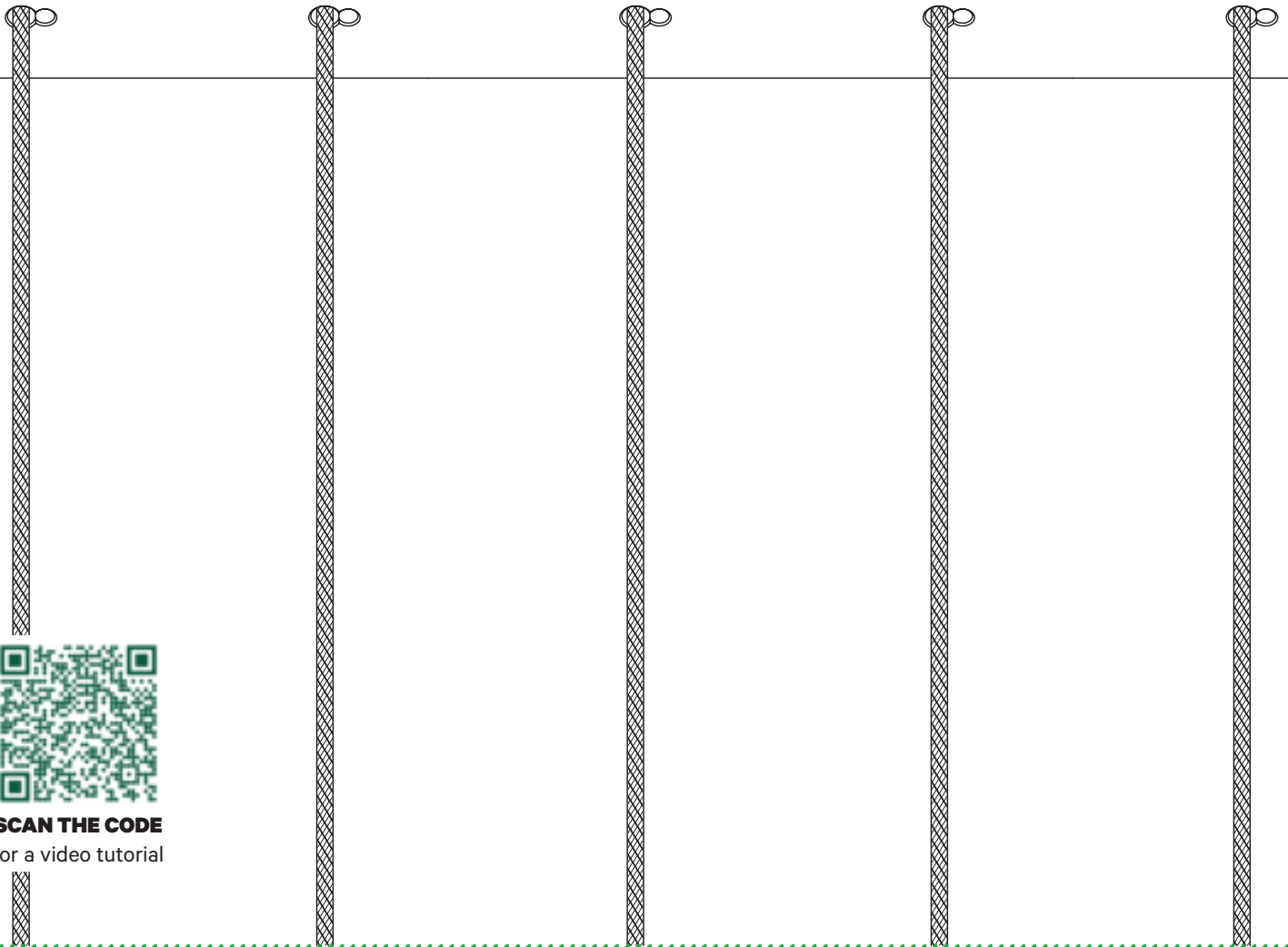
how to install

Summit Series Cable Railing

Posts | Panels | Support Bars | Cable

Layout and install Summit Series railing from start to finish.

 SUMMIT SERIES



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Project Overview

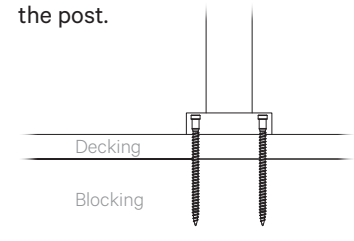
Post Mounting Screw Recommendations

MOUNTING MATERIAL	SCREW RECOMMENDATIONS
Pressure Treated Wood*	4-1/2" coated post mounting screws (included with posts)
Composite*	4-1/2" coated post mounting screws (included with posts)
High tannin woods (i.e. cedar, tropical hardwood, etc.)*	4-1/2" stainless steel post mounting screws (sold separately at cablebullet.com)
Concrete**	1/4" x 3-1/2" Tapcon concrete anchors (or equivalent)

*3-1/2" of structural blocking is required. It is the installer's responsibility to ensure there is adequate blocking to securely anchor your posts.

**Concrete should be 4" thick minimum (6" is preferred), rated at 3500 PSI or higher, and free of any cracks in the area where posts will be mounted.

Posts MUST be anchored to your project's structural frame (joist, blocking, etc). Blocking should have enough depth that none of the post mounting screw length extends past the bottom. If you do not have interior blocking, consult a local builder for a custom solution to secure against a 200 lb concentrated load at the top of the post.



Post Spacing Guidelines

① Level Post Spacing 8ft. MAX

Posts should be spaced no further than 96 inches apart on center for 96-inch level panels (48 inches for 48-inch panels).



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② Stair Post Spacing 7.5ft. MAX

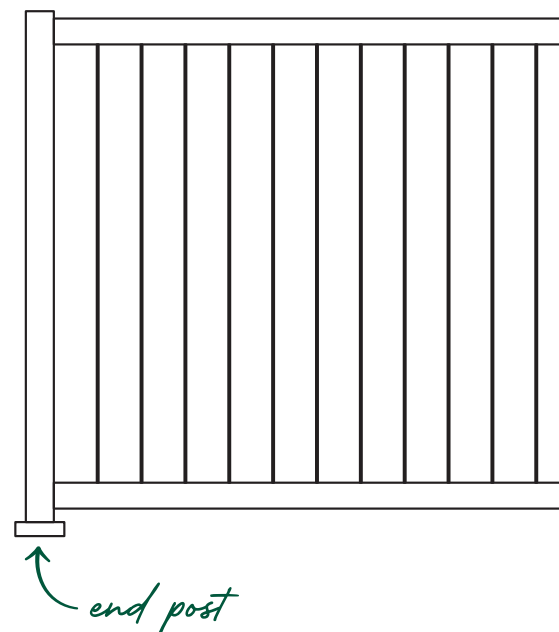
Stair posts should be spaced no further than 90 inches apart from the inside post faces as measured along the rail. Longer spans will need additional stair posts and stair panels.

Stair Pitch Requirements: We recommend a stair pitch of 30–38°. Pitches outside of this range will require rail modification in order to install.

③ Support Bars Every 48in.

Add Support Bars on any section greater than 48 inches. Your aluminum rails must be supported in order to meet code requirements.

— Level Panels: 96 inches MAX on center —




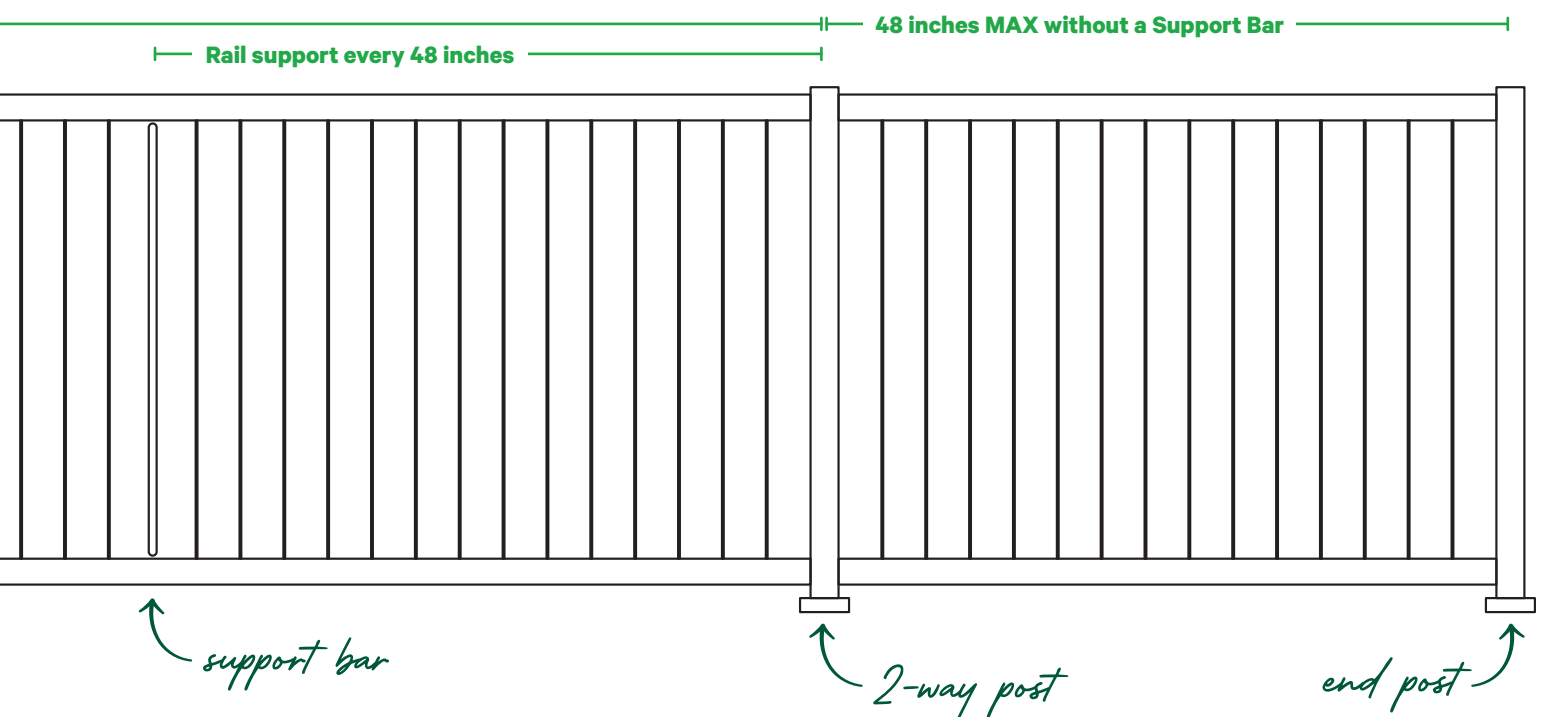
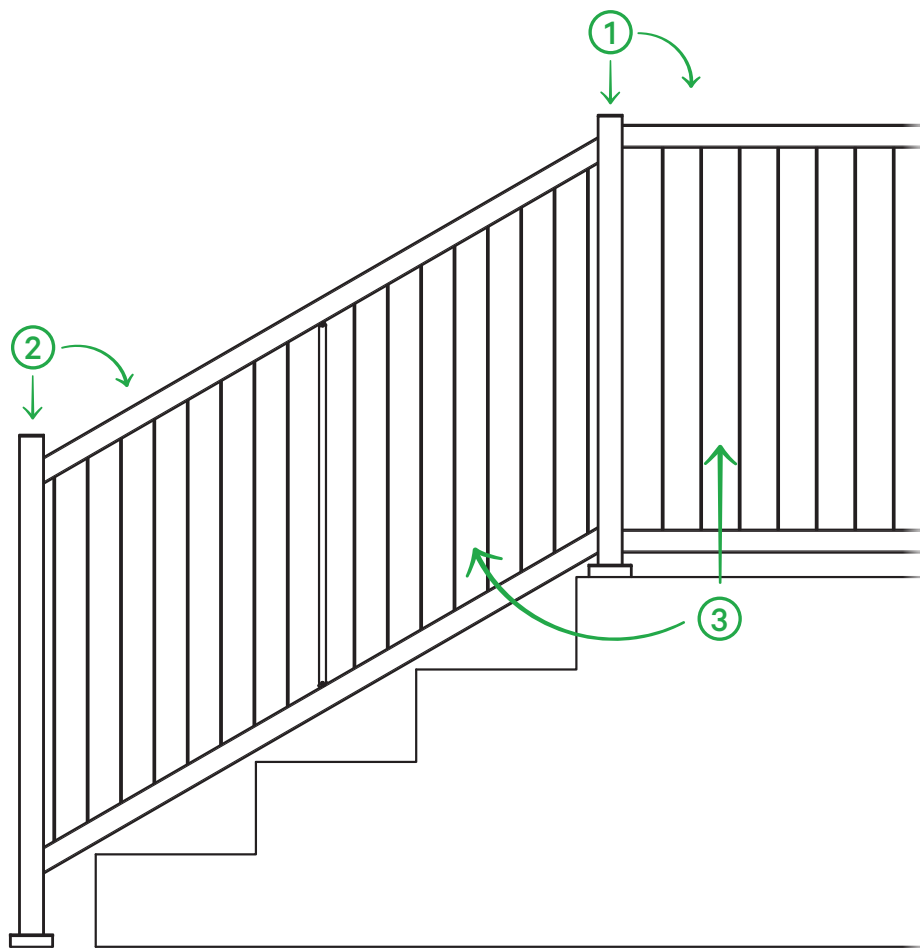
Order of Installation

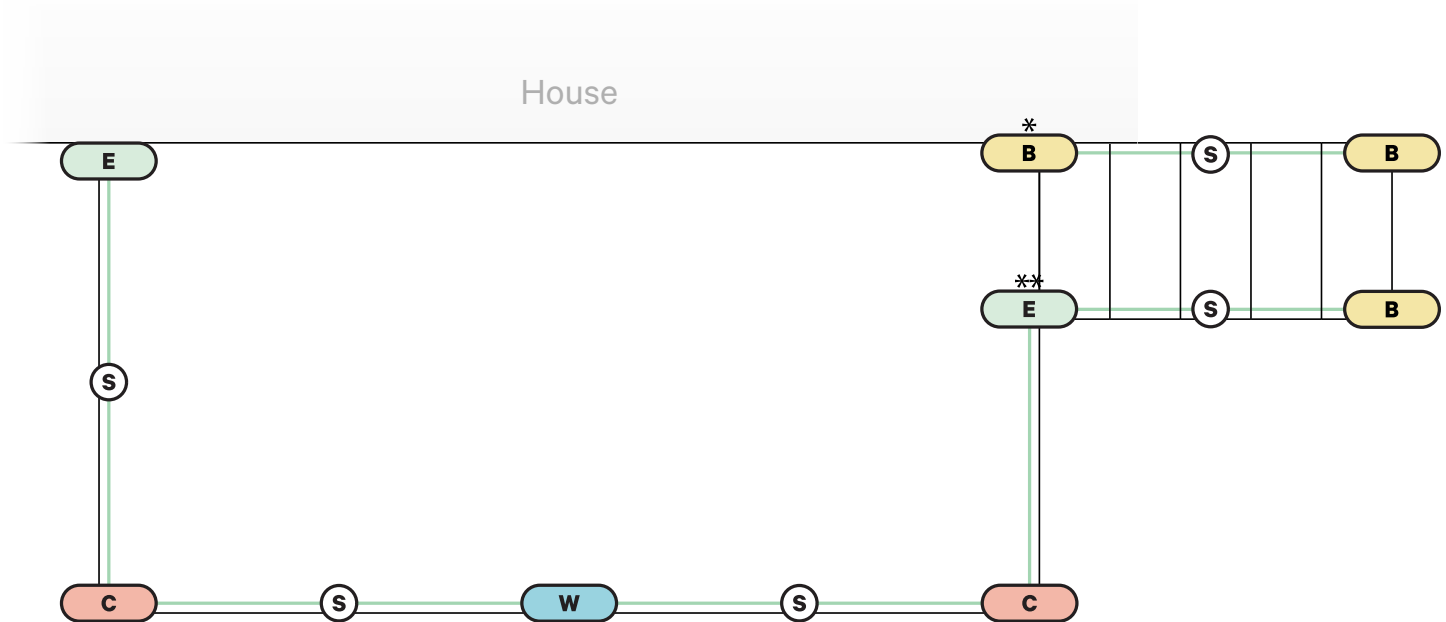
- ① **Level Posts & Rails**.....Page 5
- ② **Stair Posts & Rails**.....Page 8
- ③ **Cable Infill & Support Bars**.....Page 15

❗ **PLEASE NOTE:** All Cable Bullet recommendations and rail components are designed to comply with International Residential Code (IRC).
Building codes may vary, and it is the installer's responsibility to verify that the installed system complies with all applicable state and local building codes.

For more information on Cable Bullet and building code standards visit: www.cablebullet.com/pages/terms-conditions

❗ **CAUTION:** 
Wear eye protection during installation.





Post Types



END POSTS

End Posts are mortised on one side and should be used on level surfaces where a level span of rail is coming to an end. This includes the landing at the top of a stair run if the rail will continue into a level run.

**A blank Stair Post is used here because the rail does not continue into a level run (no mortises are needed since the stair rail attaches to post faces.)*



2-WAY POSTS

Two-Way Posts are mortised on opposite sides to continue rail on a level run.



CORNER POSTS

Corner Posts are mortised on adjacent sides to turn rail on a level run at a 90° corner.

*****Even though the rail forms a 90° corner here, an End Post is used because stair rail attaches to the faces of posts and does not require a mortise.***



STAIR POSTS

Stair Posts are blank (un-mortised) and designed to be cut down to allow for flexibility in stair applications. Rails are attached to the faces of Stair Posts using hidden, internal brackets.



SUPPORT BARS

Any section (level or stair) longer than 48 inches must use a Support Bar in order to meet code requirements. Support Bars are included in our stair panels and 96-inch level panels.

Level Posts & Rails

tools

- ❑ Power drill
- ❑ Miter saw with a non-ferrous metal cutting blade
- ❑ 3/16 x 12" drill bit*
- ❑ #25 drill bit*
- ❑ 3/32 Allen wrench*
- ❑ 3/16 Allen wrench*
- ❑ 3/32 x 6" power bit*
- ❑ T30 x 6" power bit*
- ❑ Magnetic Multi-Bit Screwdriver*
- ❑ T-Handle Tap Wrench*
- ❑ 10-32 taper tap*
- ❑ Tape measure
- ❑ Speed square
- ❑ Level
- ❑ ChalkShot (optional)*
- ❑ Fine-point pencil
- ❑ Chalk line

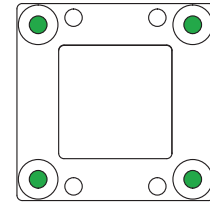
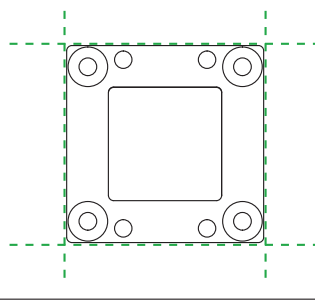
supplies

- ❑ Summit Series Terminal Posts*
- ❑ Summit Series Level Panels*
- ❑ Post Mounting Screws (see page 2)*
- ❑ Post Leveling Plates (optional)*
- ❑ Painter's tape

*available at cablebullet.com



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1. Determine Post Placement

Before securing to your surface, roughly lay out the location of all of your posts according to your project layout and the post spacing guidelines in this guide. Outline the exact placement of each post using painter's tape or a fine-point pencil.



PRO TIP: Use a chalk line and a speed square to mark straight, right-angle lines along which to place your posts. This will ease the installation of your rails to make sure everything is perfectly aligned and square.

3. Drill Pilot Holes

Set your post aside and drill your four pilot holes using the 3/16 x 12" drill bit. Drill deep enough to accommodate your post mounting screws.



WARNING: It is the installer's responsibility to ensure there is adequate blocking to securely anchor your posts.

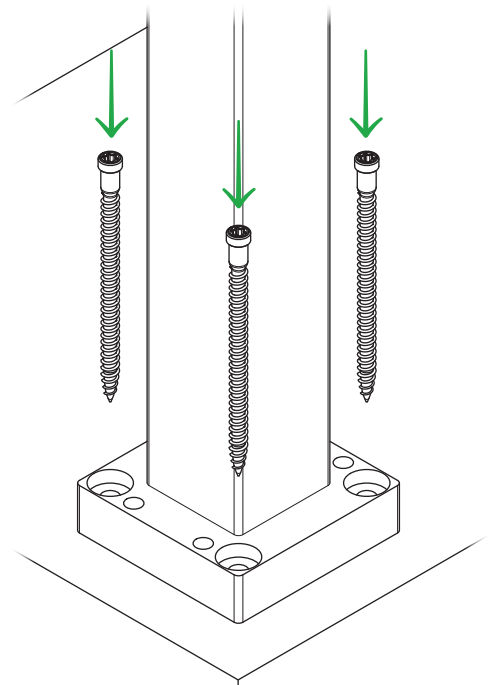
At this time, place your Post Leveling Plates, matching the plate holes with your pilot holes.

2. Mark Post Location

Once your final post placement is determined, start with your first post and mark the location of each pilot hole in the post base.

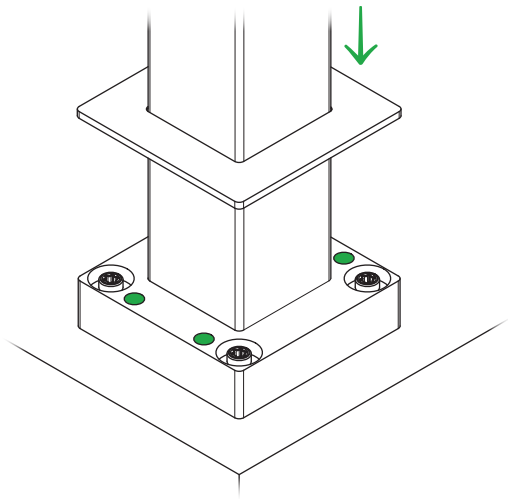


PRO TIP: Use ChalkShot for easy, accurate pilot hole marking.



4. Set Mounting Screws

Return your post to its location ensuring mortises are positioned correctly and loosely set each post mounting screw using the T30 bit. Do not fully tighten the mounting screws yet.

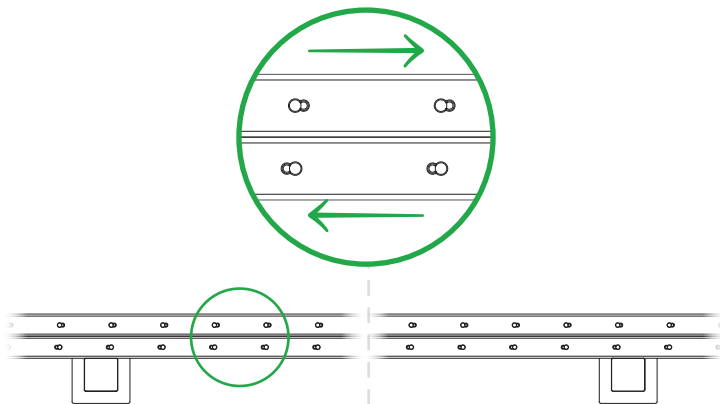


5. Plumb Post

Use a 3/16" Allen wrench and a level to advance the built-in leveling screws to plumb your post. Once your post is plumb, tighten each post mounting screw and set your post base cover plate in place.

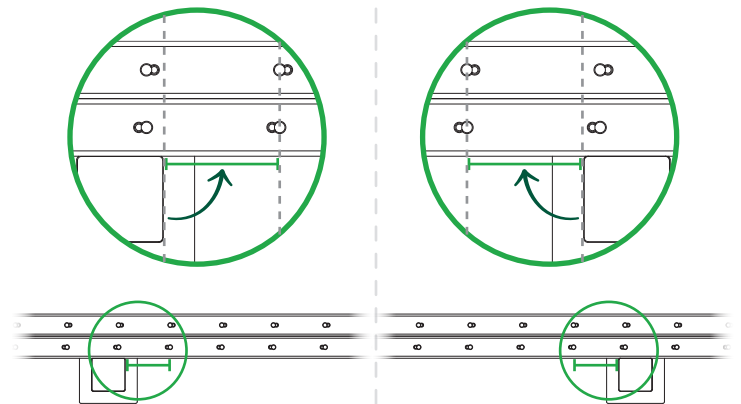
Repeat steps 2 through 5 for each of your level posts ensuring that posts are in line and square to each other.

If your section is 96 inches (or 48 inches if using 48-inch panels), your rails are already cut to the appropriate length and you can skip to step 10. If you need a section cut to a custom length, continue to step 6.



6. Prepare Rails

Lay 2 lengths of rail alongside your posts, ensuring that the tensioning holes are facing up. The set screw holes (smaller) should be running in opposite directions.

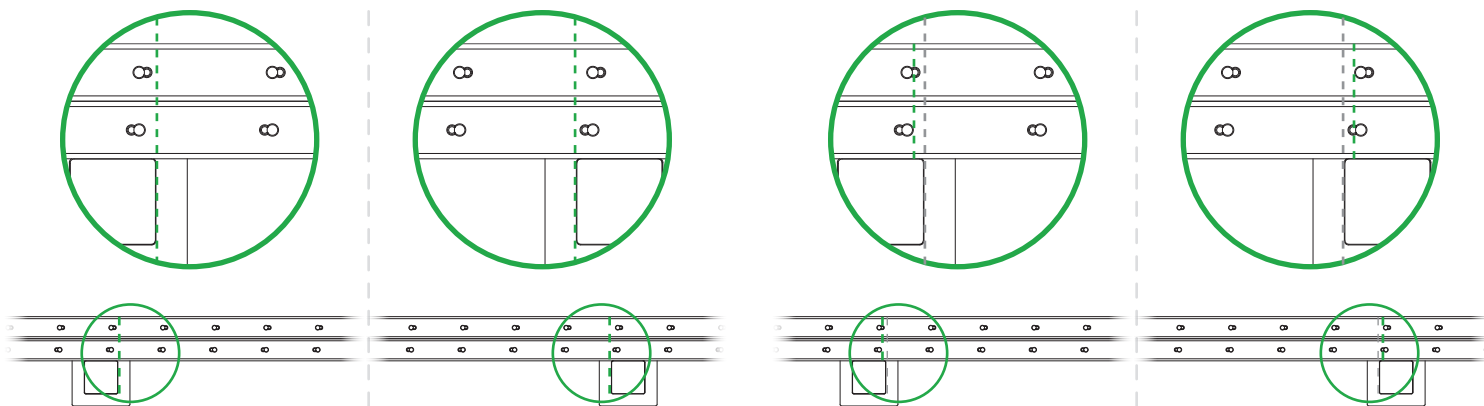


7. Center Cable Holes

Adjust the rails until the two outermost tensioning holes (larger) on each rail are equidistant from the face of your posts.




PRO TIP: If your rail section is longer than 48 inches, ensure that an odd number of tensioning holes are between your posts in order to center your Support Bar.



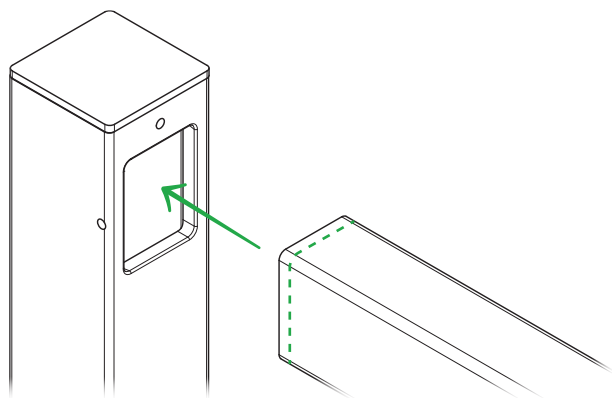
8. Mark Inside Rail Length

Once the rails are properly positioned, mark the ends of each rail where they intersect the inside post faces.

 **PRO TIP:** Use painter's tape to mark these measurements for easy reference later.

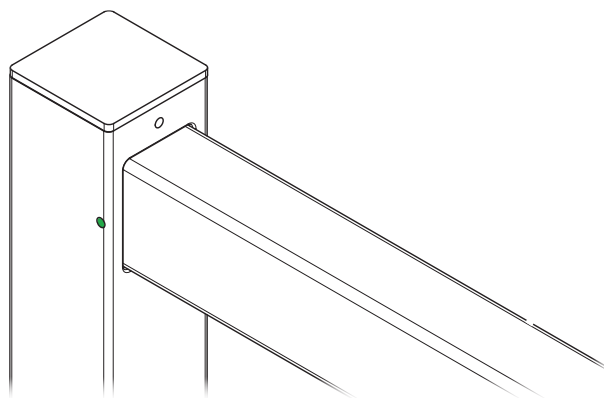
9. Cut Rails

Measure and make a cut mark at each end of your rails that is 1/4" past the mark made in step 8. Cut your rails at this new mark using a miter saw with a non-ferrous metal cutting blade.




10. Insert Rail Ends

Slide your top rail into place on the posts until the marks made in step 8 align with the post faces.



11. Secure Rail

Locate the set screw hole on the post and use the #25 drill bit to drill through **one** wall of your rail. Drive in a 10-32 set screw by hand using the 3/32" Allen wrench or manual bit driver. Repeat this step on the other end of your top rail.

 **PRO TIP:** If threading was marred during drilling, re-tap the set screw hole using the #10-32 taper tap.

Repeat steps 10 and 11 on the bottom rail.

Stair Posts & Rails

tools

- ❑ Power drill
- ❑ Right-angle drill (recommended)
- ❑ Miter saw with a non-ferrous metal cutting blade
- ❑ 3/16 x 12" drill bit*
- ❑ 5/32 x 2-1/16" drill bit*
- ❑ 3/32 Allen wrench*
- ❑ 1/8 Allen wrench*
- ❑ 5/32 Allen wrench*
- ❑ 3/16 Allen wrench*
- ❑ 3/32 x 6" power bit*
- ❑ T20 x 3-1/2" power bit*
- ❑ T30 x 6" power bit*
- ❑ Magnetic Multi-Bit Screwdriver*
- ❑ T-Handle Tap Wrench*
- ❑ 10-24 taper tap*
- ❑ Stair Template*
- ❑ Tape measure
- ❑ Level
- ❑ Spring-loaded center punch (optional)
- ❑ 2-4 rubber clamps (small profile and high poundage rating are best)
- ❑ ChalkShot (optional)*
- ❑ Fine-point pencil

supplies

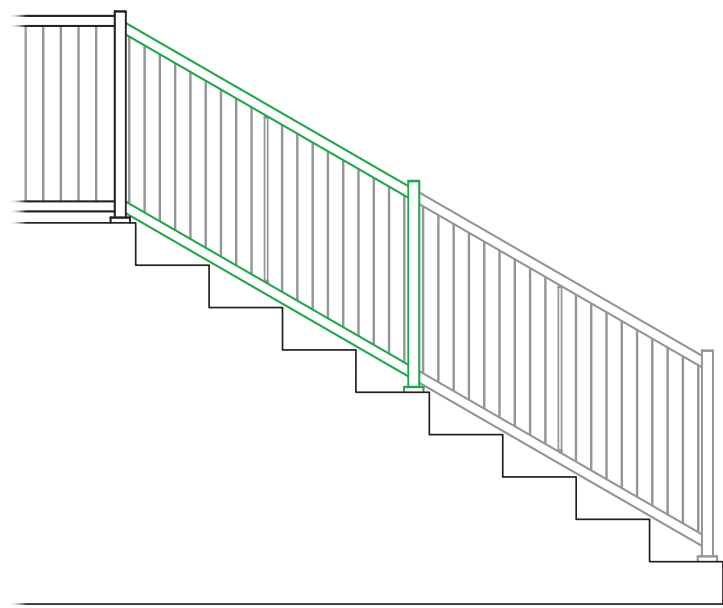
- ❑ Summit Series Stair Posts*
- ❑ Summit Series Stair Panels*
- ❑ Support Bar Kits (included with stair panels)*
- ❑ Stair Rail Brackets (included with stair panels)*
- ❑ Post Mounting Screws (see page 2)*
- ❑ Post Leveling Plates (optional)*
- ❑ Spacer shims (see page 9)
- ❑ Painter's tape
- ❑ Canned air
- ❑ Machine oil (optional)

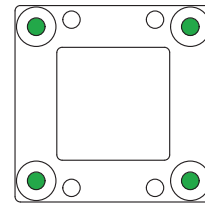
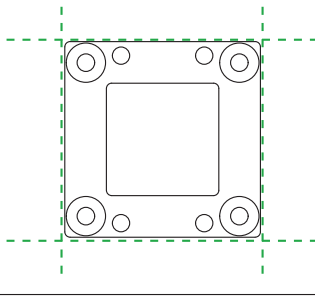
*available at cablebullet.com



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Our stair posts are designed to be cut down to allow for flexibility in your stair layout. If more than one stair post is required for your layout, **complete sections** (both posts and rails) **one at a time starting from the top of your stairs**. For each subsequent stair section, repeat the following process starting at step 2.






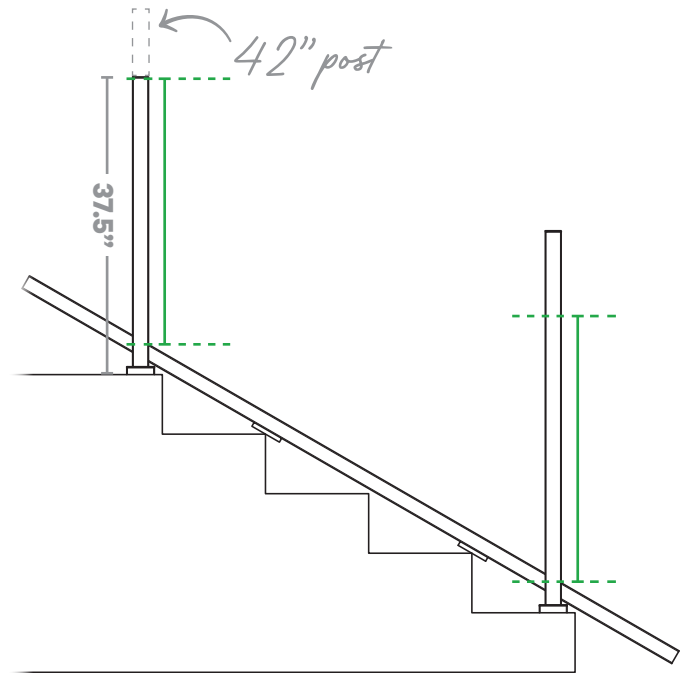
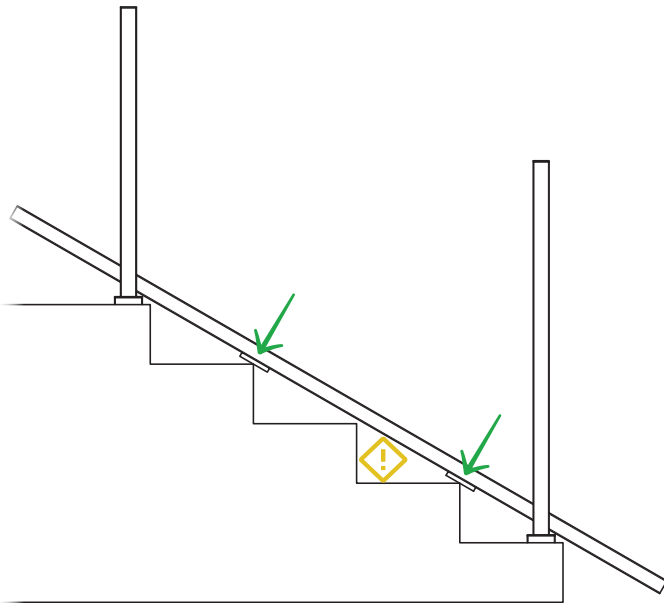
1. Determine Post Placement

With the top post on the deck surface fully secured, roughly lay out the location of all of your Stair Posts according to the post spacing guidelines in this guide. Outline the exact placement of each post using painter's tape or a fine-point pencil. All Stair Posts but the uppermost can be set aside for now.

2. Mark Post Location

With the uppermost Stair Post in its determined position, mark the location of each pilot hole in the post base.


 **PRO TIP:** Use ChalkShot for easy, accurate pilot hole marking.



3. Orient Bottom Rail

Place a stick of rail on two 1/2" shims* on the nosing of your stairs. Clamp the rail in place.

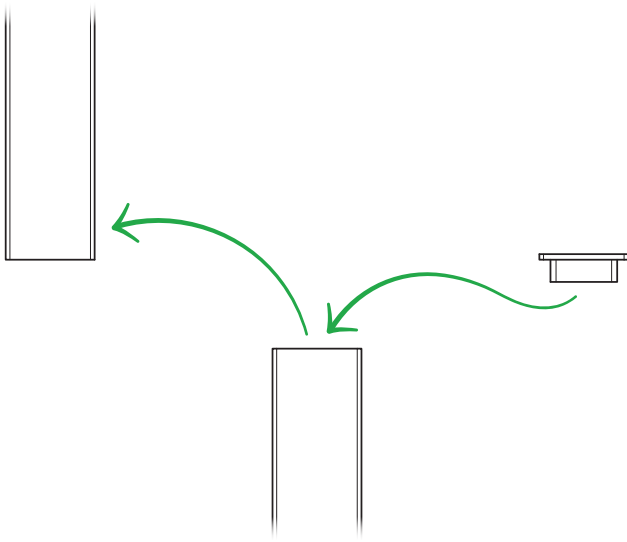
**The shim spacing between your bottom rail and the nosing of your stairs can be adjusted between 1/4" and 3/4" if needed.*

 **CAUTION:** International Residential Code (IRC) dictates that the triangular gap made by the bottom rail, the stair riser, and the stair tread may not allow a 6-inch sphere to pass through.

4. Find Stair Post Height

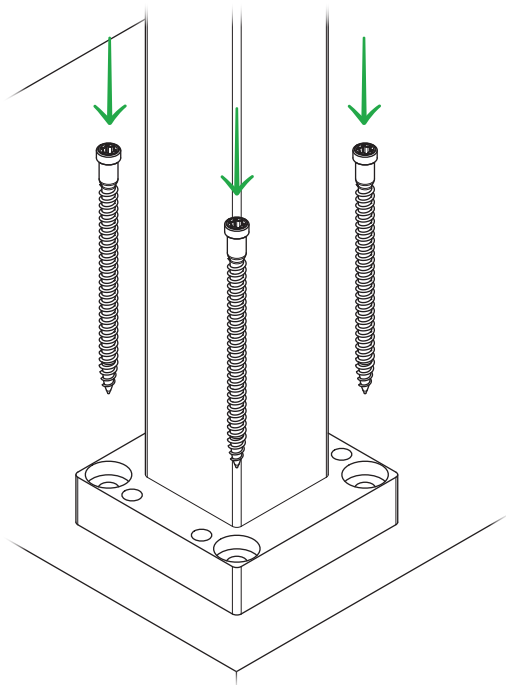
Measure from the top of the rail to the top of your upper post on the deck surface. If using 42-inch posts on your level surface, mark your upper post 37.5" from the mounting surface, and measure from the top of your rail to this new mark to find the height of your Stair Post.

Transfer this measurement to the downhill side of your Stair Post.



5. Cut & Cap Stair Post

Unclamp the rail, remove the bottom post from the stair tread, and cut it down to size using a miter saw with a non-ferrous metal cutting blade. Install the post top cap into your Stair Post.



7. Set Mounting Screws

Return your post to its location and loosely set each post mounting screw using the T30 bit. Do not fully tighten the mounting screws yet.

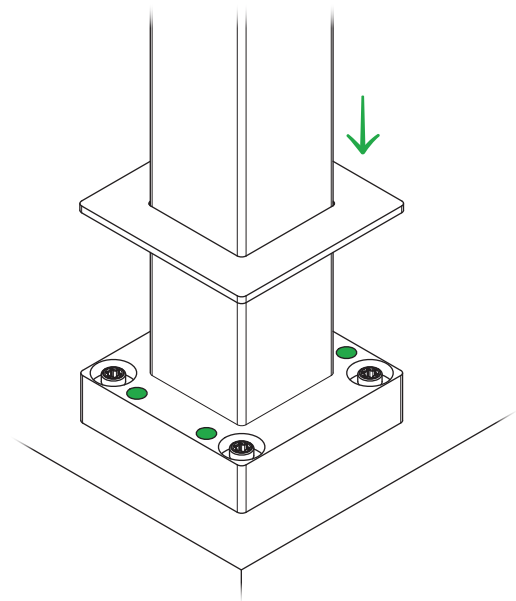
6. Drill Pilot Holes

Before replacing your post on the stair tread, drill your four pilot holes using the 3/16 x 12" drill bit. Drill deep enough to accommodate your post mounting screws.



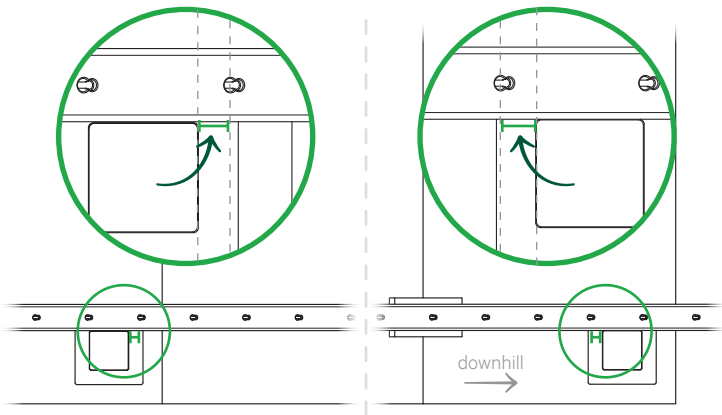
WARNING: It is the installer's responsibility to ensure there is adequate blocking to securely anchor your posts.

At this time, place your Post Leveling Plates matching the plate holes with your pilot holes.



8. Plumb Post

Use a 3/16" Allen wrench and a level to advance the built-in leveling screws to plumb your post. Once your post is plumb, tighten each post mounting screw and set your post base cover plate in place.

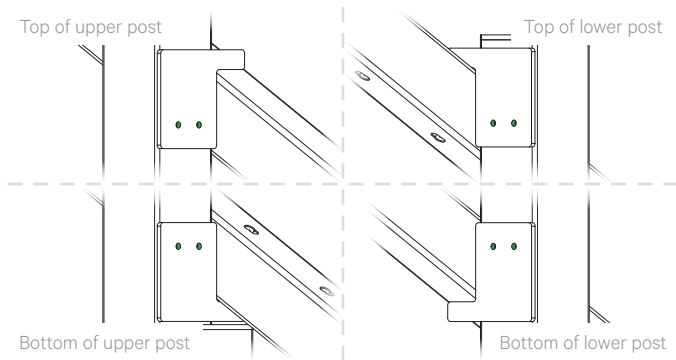


9. Center Cable Holes

Place the rail back on your shims making sure the set screw holes (smaller) are facing downhill. Loosely clamp in place.

Adjust the rail until the two outermost tensioning holes (larger) are equidistant from the face of your posts.

PRO TIP: If your rail section is longer than 48 inches, ensure that an odd number of tensioning holes are between your posts in order to center your Support Bar.

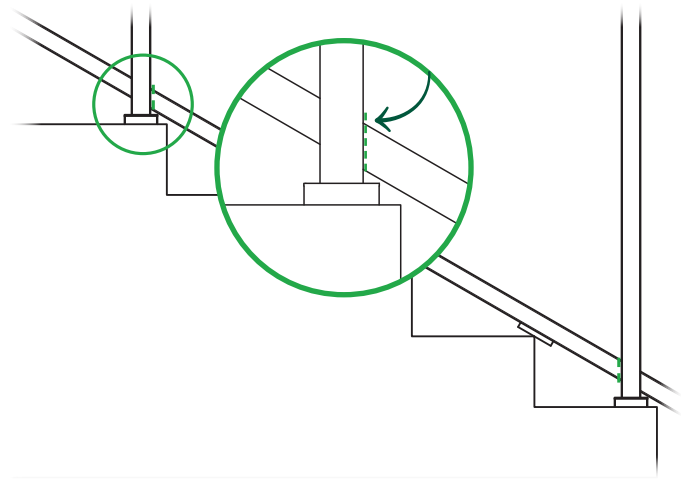


11. Mark Bracket Holes

Place the Stair Template against the post face with the long end pointed in the direction that the cables will run and the dog leg wedged against the opposite side of the rail from the cable holes (under for the bottom rail and over for the top rail). Mark the template holes with a fine-point pencil or a spring-loaded center punch. Repeat this step on the other post.

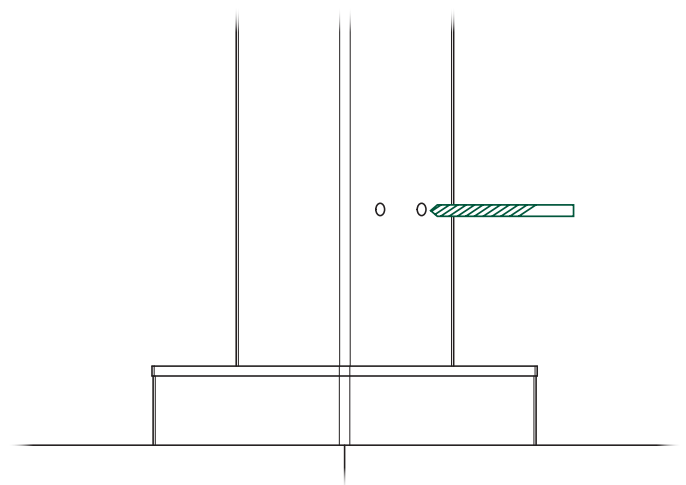
12. Cut Rails

Remove the rail and cut it at the marks made in step 10.



10. Mark Rail Length

Mark the side of the rail where it intersects the inside post face on each end.



13. Drill Bracket Holes

Drill the pilot holes in your posts using the 5/32" drill bit.

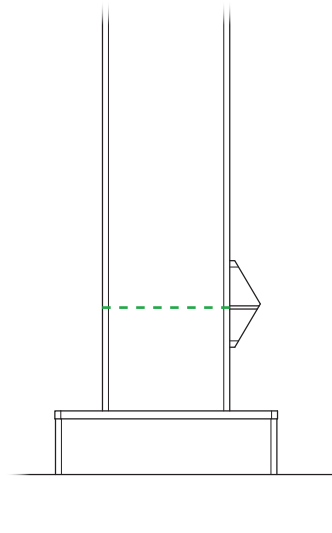
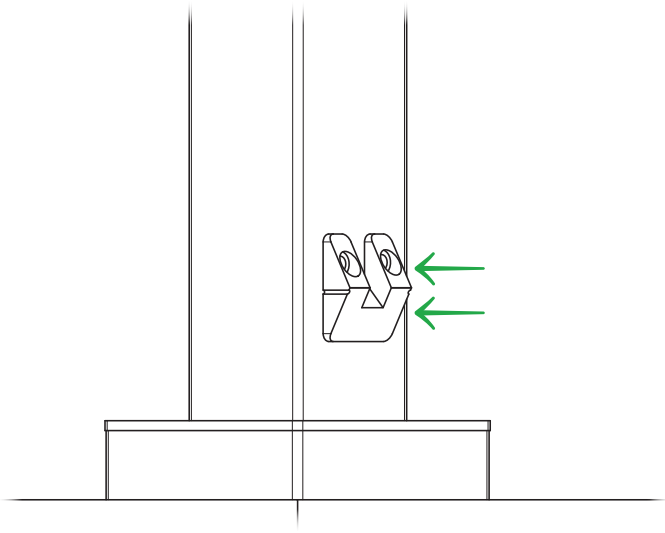
CAUTION: It is not advised to drill the pilot holes with the template in place.

PRO TIP: If space is limited at the base of your bottom post, you may need to use a right-angle drill for this step.

14. Tap Bracket Holes

Tap both pilot holes using the 10-24 tap.

PRO TIP: Use machine oil, blow out each hole with canned air, and tap a second time for a cleaner tap.



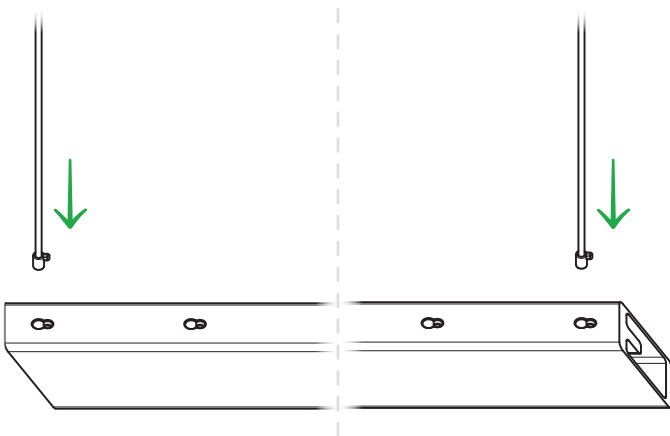
15. Attach Brackets

With the U-shaped channel facing in the direction of the cables, attach each Stair Rail Bracket using the 10-24 x 3/4" screws and a 5/32" Allen wrench.

At this point, use painter's tape to mark the side of the posts according to the etched groove on the Stair Rail Bracket. This will be where you'll drill to attach the rail.

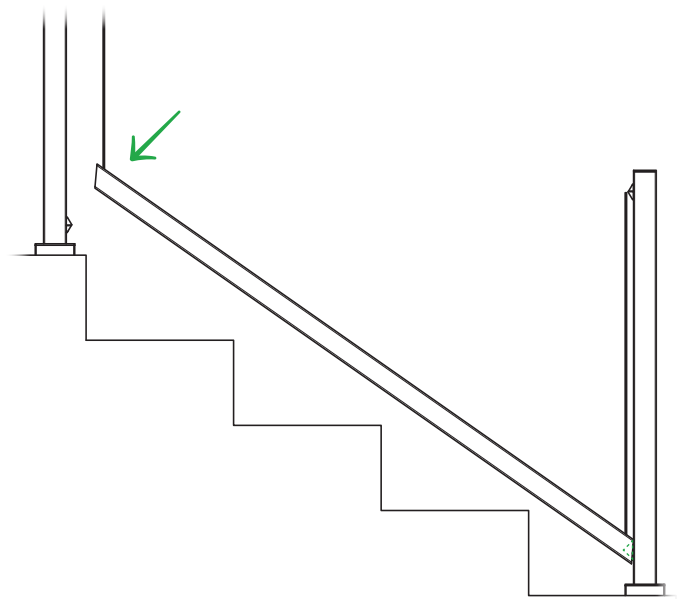


PLEASE NOTE: Our Stair Rail Brackets can accommodate a stair pitch of 30–38°. If your pitch falls outside of these parameters, your handrail will need to be routed out underneath in order to be installed.



16. Attach Guide Cables

Install one length of cable into each of the two outermost tensioning holes on the rail by inserting a crimped end and securing it by hand using a set screw and the 3/32" Allen wrench or manual bit driver. The set screw should be driven in until it is just flush with the rail.



17. Install Rail

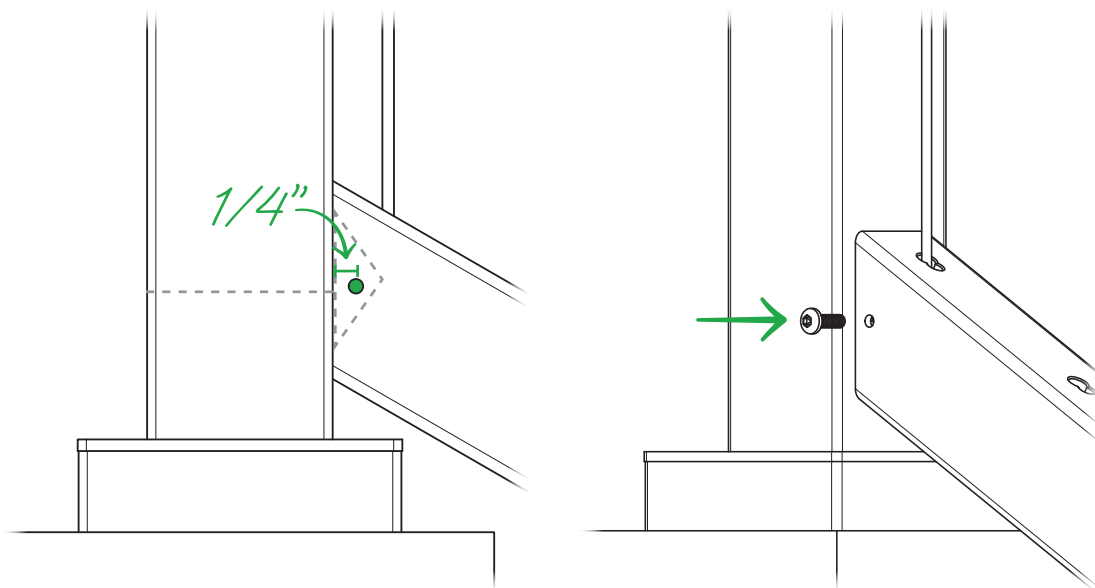
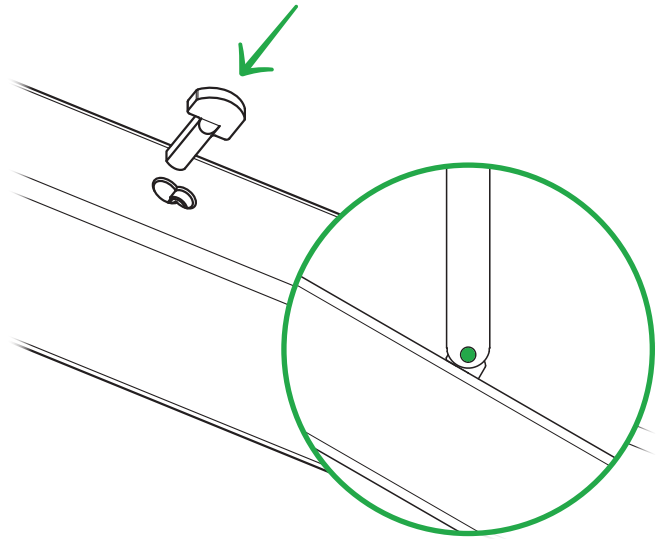
Slide your rail over the Stair Rail Brackets.



WARNING: Do not use power tools to drive in the set screws—they can strip and/or seize in the tensioning channel.

If your section is longer than 48 inches and you have completed step 17 for your top rail, it's time to install the Support Bar.

Starting at the bottom, insert one of the Support Bar Pins into the center tensioning (larger) hole on your bottom rail. The cutout should be flush against the rail and opposite the set screw (smaller) hole. Secure one end of the Support Bar to the pin using the 1/8" Allen wrench and a 1/4-20 set screw. Repeat this process to attach the top of your Support Bar to the top rail.



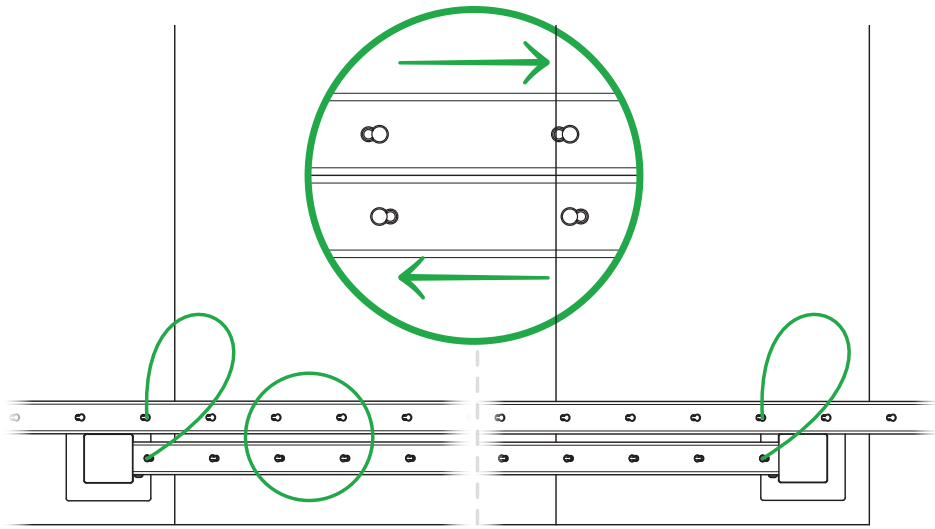
18. Secure Rail

Using the 5/32" drill bit, drill 1/2" deep through the side of the rail and into the Stair Rail Bracket. Your drilling location should be level with the marking made in step 15 and 1/4" away from the post face. Drive in a 8-32 x 1/2" screw by hand using the T20 manual bit driver.



PRO TIP: Mark 1/2" depth on your drill bit using painter's tape for consistency.

Repeat step 18 at the other bracket location on this side of the rail before switching to the other side. Each rail section should be secured with four screws—two per bracket.



19. Orient Top Rail

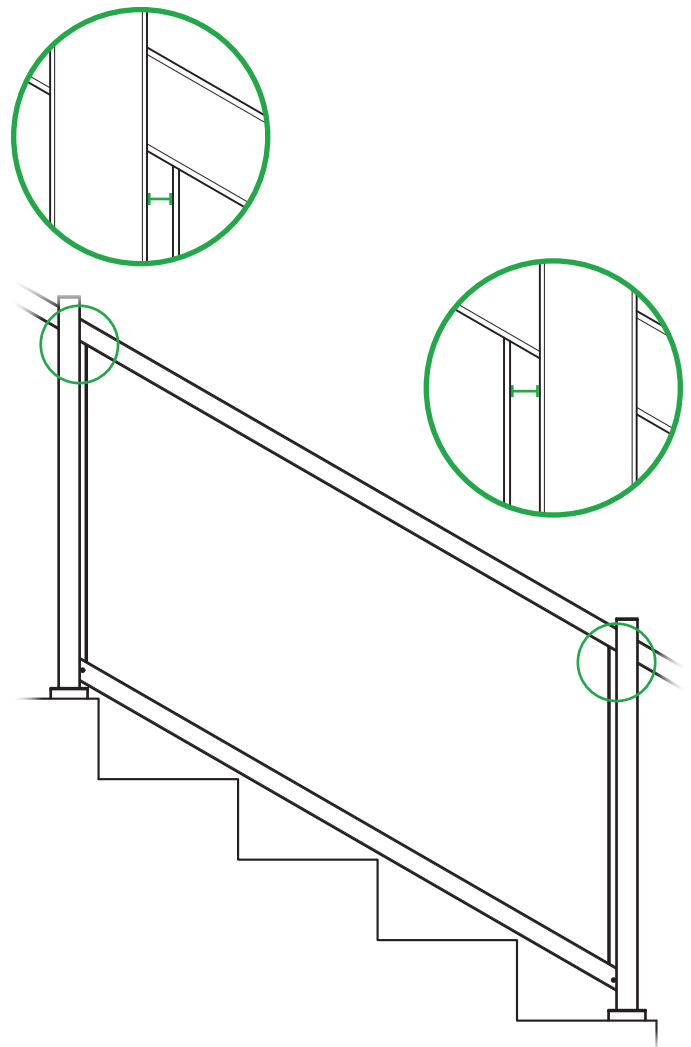
Place another stick of rail next to the installed bottom rail ensuring that the set screw holes (smaller) are facing uphill (opposite the bottom rail). Secure the other ends of the two cables from step 16 into appropriate tensioning holes on the top rail until the set screws are flush with the top rail.

20. Place Top Rail

Flip and lift the top rail until the cables are taut to determine the rail height. Loosely clamp in place. Adjust the rail until the two outermost tensioning holes (larger) are equidistant from the face of your posts. The cables should run parallel to the posts.

Repeat steps 10 through 18 of the top rail.

Remove the installed cables for step 12.



Cable Infill & Support Bars

tools

- ❑ 3/32 Allen wrench*
- ❑ 1/8 Allen wrench*
- ❑ 3/32 x 6" power bit*
- ❑ Magnetic Multi-Bit Screwdriver*
- ❑ T-Handle Tap Wrench*
- ❑ 10-32 taper tap*

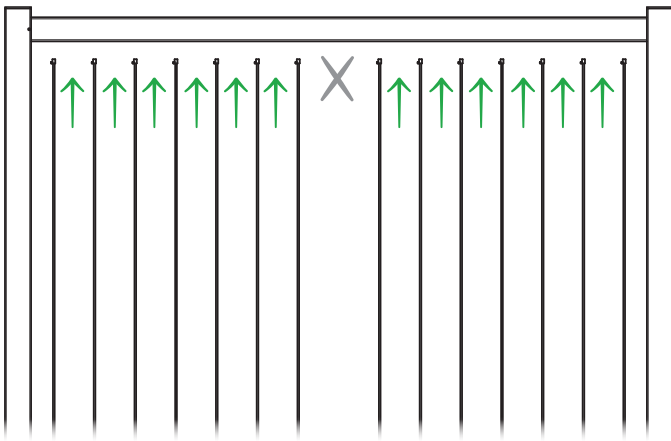
supplies

- ❑ Pre-crimped cable (included with panels)
- ❑ Support Bar Kits (if applicable)*

*available at cablebullet.com




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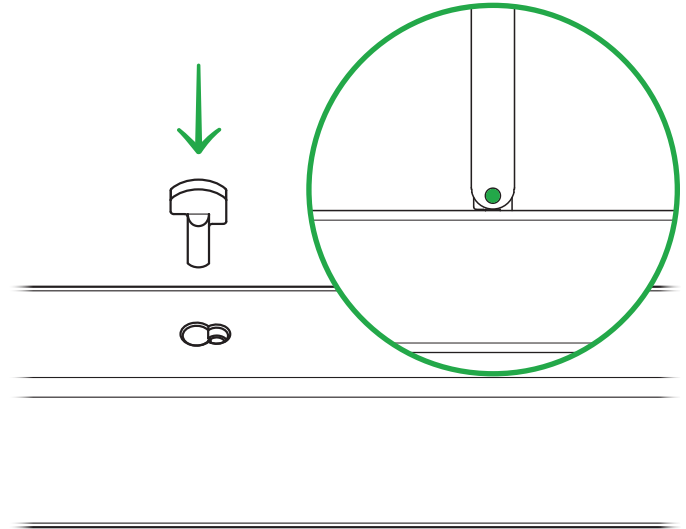
1. Attach Top Cable Ends

Insert the pre-crimped cable ends into the tensioning holes (larger) on the underside of your top rail. Use the 3/32" Allen wrench or manual bit driver to secure the cables by driving in set screws until they are flush with the face of the rail.

 **PRO TIP:** If you have trouble driving in a set screw, run the 10-32 tap through the set screw hole to clear the threads.

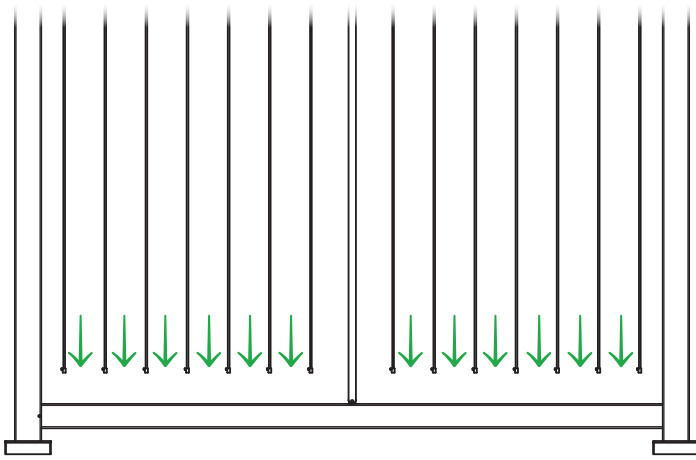
If your section is longer than 48 inches, skip the center tensioning hole as this is where your Support Bar will go.

 **WARNING:** Do not use power tools to drive in the set screws—they can strip and/or seize in the tensioning channel.



2. Install Support Bars (If Applicable)

Starting at the bottom, insert one of the Support Bar Pins into the center tensioning (larger) hole on your bottom rail. The cutout should be flush against the rail and opposite the set screw (smaller) hole. Secure one end of the Support Bar to the pin using the 1/8" Allen wrench and a 1/4-20 set screw. Repeat this process to attach the top of your Support Bar to the top rail.



3. Attach Bottom Cable Ends

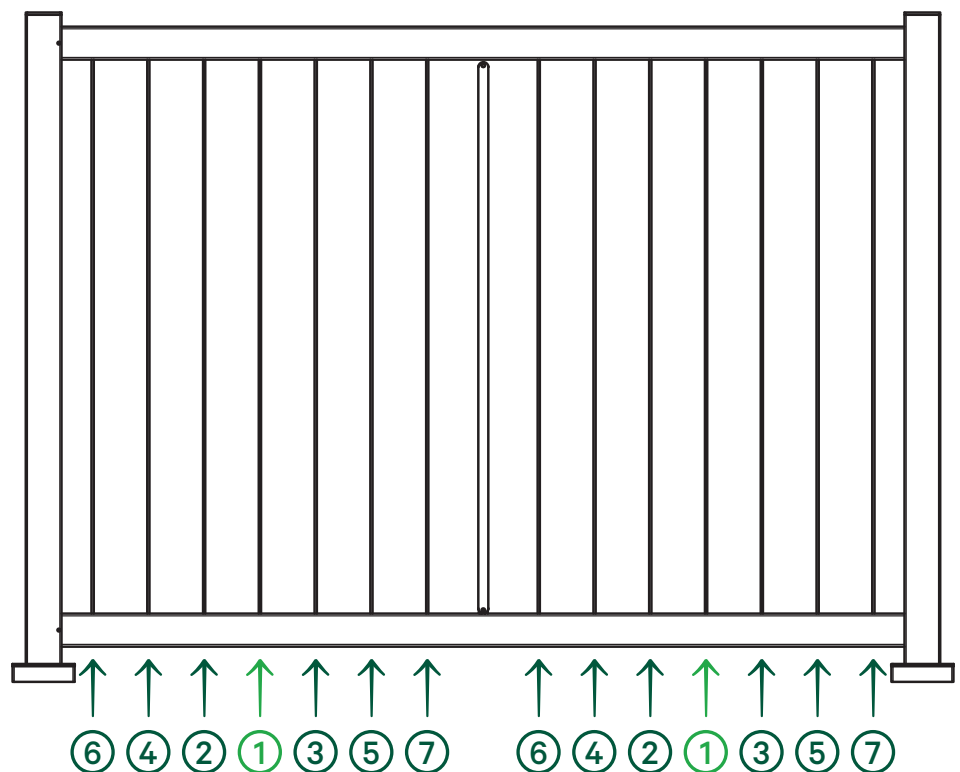
Use the 3/32" Allen wrench or manual bit driver to install each free cable end into the corresponding hole on the bottom rail. Drive in the set screws until they are flush with the face of the rail.

4. Tension Cables

Tension each cable by hand using the 3/32" Allen wrench or manual bit driver. Cables should be tensioned from the innermost cable in an unsupported span outward and can be easily re-tensioned over time as your project settles.

HOW TIGHT IS TIGHT ENOUGH?


A properly tensioned cable will deflect approximately 1/4" per foot under a 50 lb load. In other words, it will feel more like a bass guitar string, less like a piano wire.





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