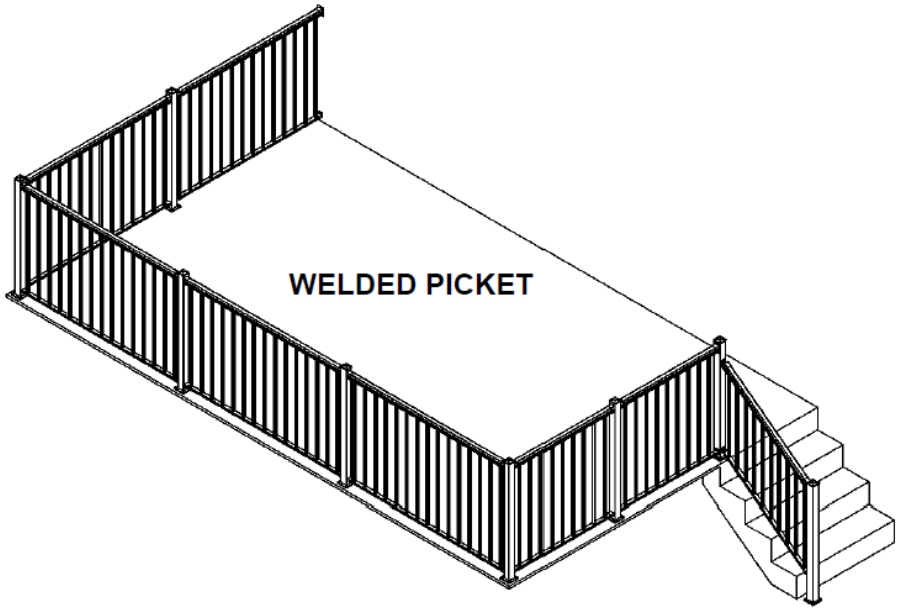
Kit — Welded Picket Installation Instructions



TOOLS & MATERIALS REQUIRED

- 10" Miter (w/ Carbide Triple Chip Blade) or Hacksaw
- Tape Measure
- Electric power cords
- Pencil
- 1/8", 5/32", 3/16", and 1/4" Drill Bits
- Cordless or Electric Drill, variable speed
- Level
- Hammer Drill for concrete or stucco applications
- Exact-o-knife
- NP1 Urethane Caulking and Caulking Gun
- Robertson #2 Bit Head
- Straight Screw Driver (Chicago Bolts)
- Hex Head Driver Bits (#10 Tek & #14 Tek)

WARNING

No representation or warranty is given that your particular application of these products complies with relevant building codes or that the fasteners provided or used are appropriate for your application. Therefore consult with professionals and local building officials before beginning work; (i) to ensure compliance with relevant building codes for your application and for your proposed use of fasteners; (ii) to ensure the integrity of the structural components in connection with which these products are to be used (iii) to identify appropriate safety gear that is to be used during installation such as safety harness when working above ground; (iv) to ensure that the work area is free from utilities, services and hazards; and (v) to clarify any instructions or warning that may not be clear. Always work in a safe manner wearing protective gear such as gloves, eyewear, headwear, footwear and clothing. When using tools always comply with operating manuals and instructions. Metal and glass may have sharp edges and could fragment or splinter during or as a result of handling or cutting. Do not use these products in connection with any substance that is or may be harmful or corrosive to the products. Inspect and maintain these products and the structural components that they are used in connection with on a regular basis using professionals when appropriate. These instructions have been prepared for certain standard residential applications. Obtain professional advice for any non-standard or non-residential application.

No member of Excell Railing Systems shall be liable for any loss or damage resulting from improper installation or use of this product. In the unlikely event that any member of Excell Railing Systems becomes liable for any loss or damage, the aggregate liability shall be limited to the retail purchase price of the product.

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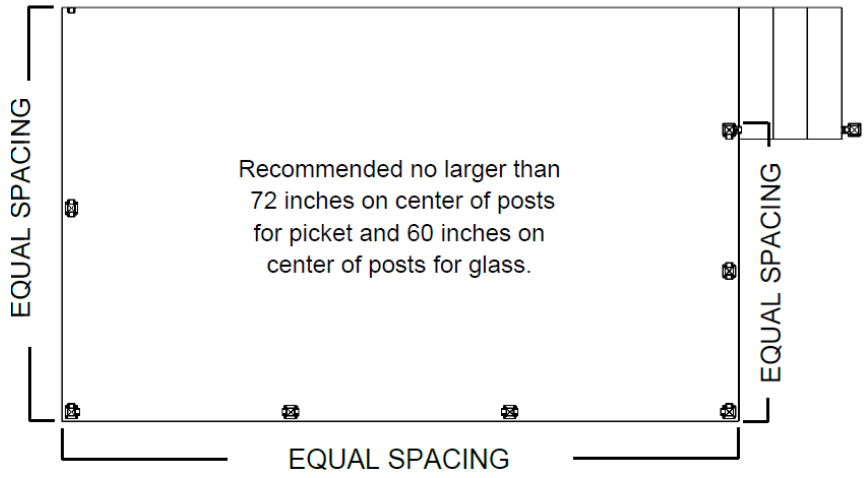
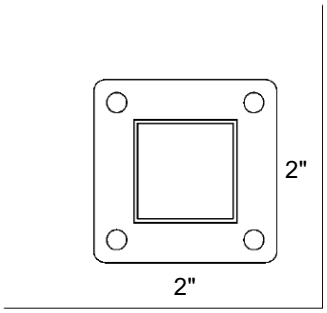
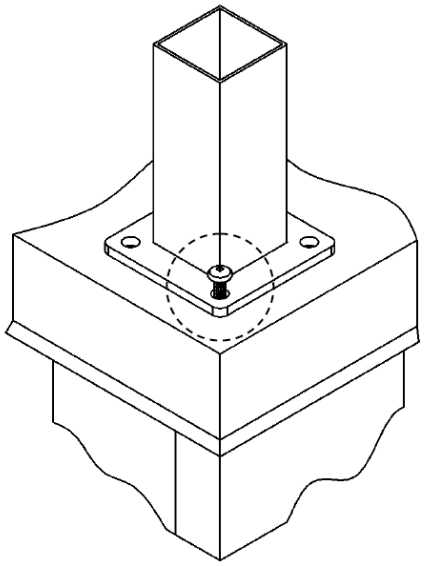
STEP 1: POST SETUP

a) Based on your deck layout, place posts on the deck equally spaced apart. Ensure mounting area has adequate solid blocking.



b) Once you have the posts placed into their positions, (approx. 2" from edge of the post base plate to edge of deck), pre-drill and loosely fasten the post to the deck with 1 fastener leaving 1/2" above the post base plate.



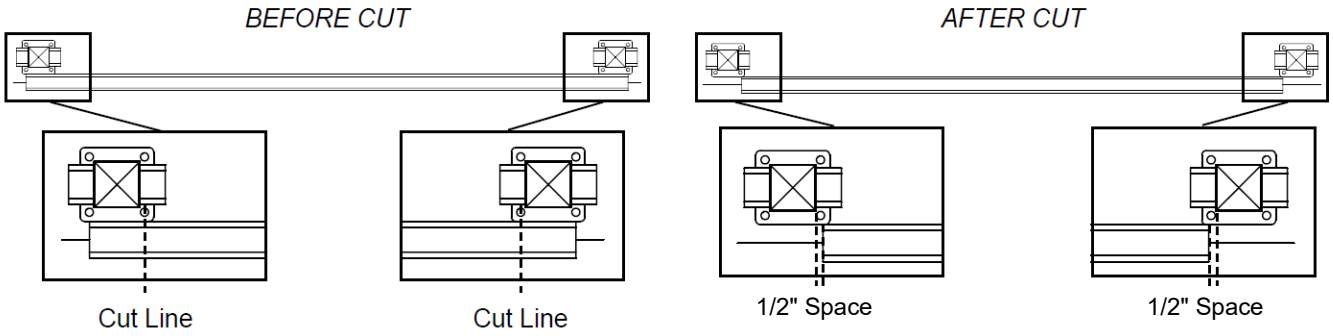


c) Starting at one end of the deck, plumb the end post, and secure all four fasteners. If you are wall mounting at the starting point, see step 2b. Some vinyl or rubber gasket can be used as shims under the base plates for these adjustments. Once you are satisfied with the adjustments pre-drill the remaining 3 holes in the deck, put a little NP1 Urethane Caulking onto the threads of the screws. Just snug the screws down, and do not over tighten (don't forget to back out the original fastener and apply the NP1 Urethane Caulking). As railing becomes secure, once again, double check posts are plum and square.

Note: Use NP1 Urethane Caulking for attaching the railing mounts to the building or wall too.

STEP 2: INSTALLING WELDED PICKET PANELS

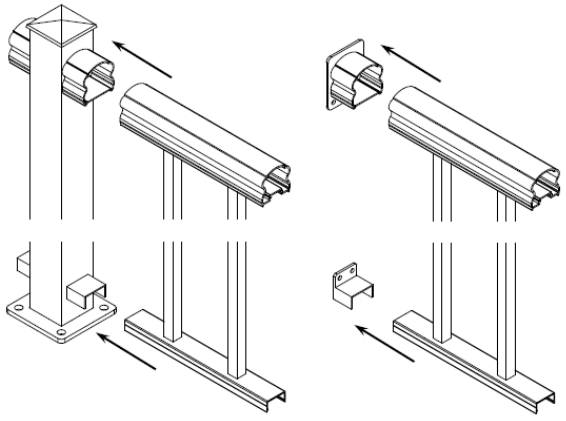
a) Position and hold the welded picket panel up to a post to post span. Centering the pickets between the posts. Using a pencil, mark the top and bottom rail on each side to the inside of the post. Deduct 1/2" on each side, and then cut the top and bottom rail.

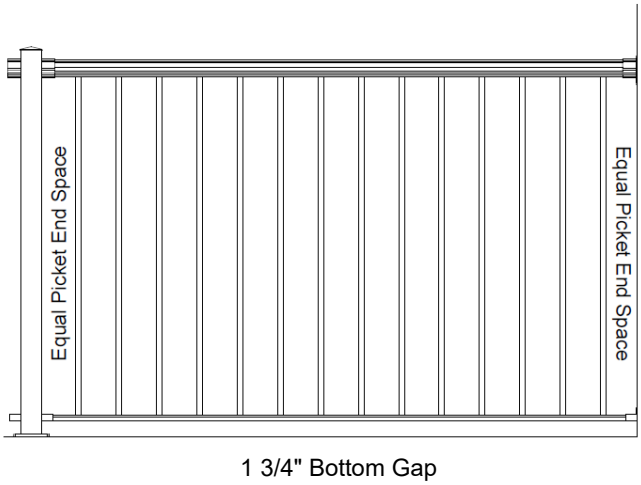


NOTE: Picket to post spacing should be no larger than 4 inches.

b) Join the railings together by sliding top and bottom rail into the post sleeves or into a loose wall mount.

NOTE: If you are mounting to a wall or column, (a) slide the loose wall mounts onto the top and bottom rail (b) measure and mount to wall or column.





c) Secure the top rail to the top sleeve using a #10 x 3/4" tek fasteners under the top sleeve and secure the bottom rail to the bottom wall mount using a # 10 x 3/4" tek fasteners on the outside of the deck.

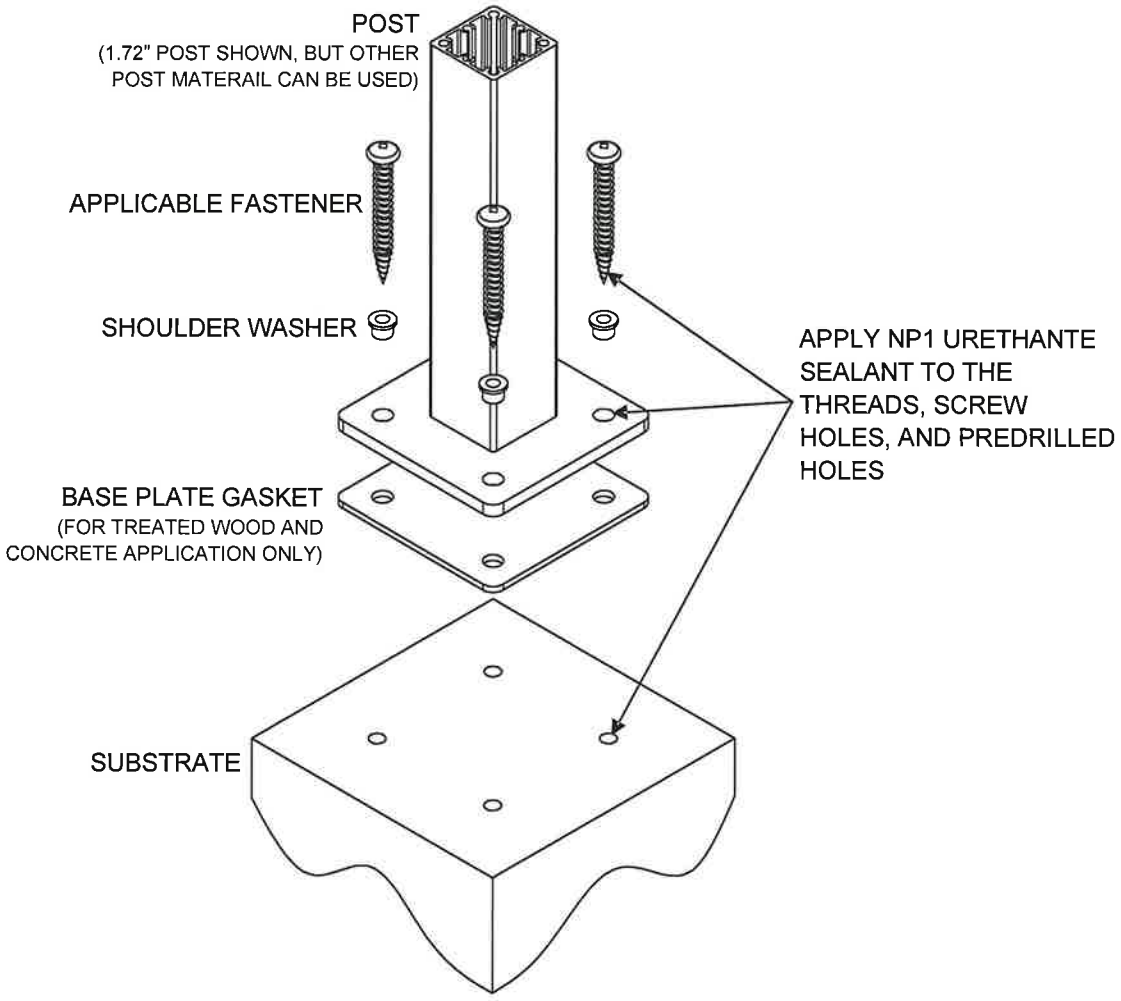
d) Slide your support leg under center line of bottom rail. Needed on spans of 48" or larger.

Example: 6'-0" - 1@3'-0" / 10'-0" - 30" apart. Secure with one TEK screw.

Repeat step 2 with the remaining welded picket sections

NOTE: Now that installation is complete, clean the railing of fingerprints using Vim or car polish.

Surface Post Installation Method



SHOULDER WASHER: These are put into the base plate mounting holes to prevent the stainless steel screw from marking the paint or coming in contact with the aluminum base plate, which could cause electrolysis. These can be purchased from the railing manufacturer.

NEOPRENE GASKET: These are used for treated wood and concrete applications. The Neoprene Gasket is placed between the post base plate and substrate. This will help prevent corrosion caused by the acidic reaction between the aluminum and the treated wood or concrete. These can be purchased from the railing manufacturer.

NP1 URETHANE SEALANT: This sealant is placed in all screw chases, predrilled holes, and to all screw threads when installing. The sealant will prevent leaks in the building structure, and create a barrier between the different metals in the railing, which reduces the chance of electrolysis or corrosion. This type of sealant is used instead of silicone because there are solvents within silicone that will also dissolve or corrode the screws and aluminum railing over time. This sealant can be purchased at most hardware stores.

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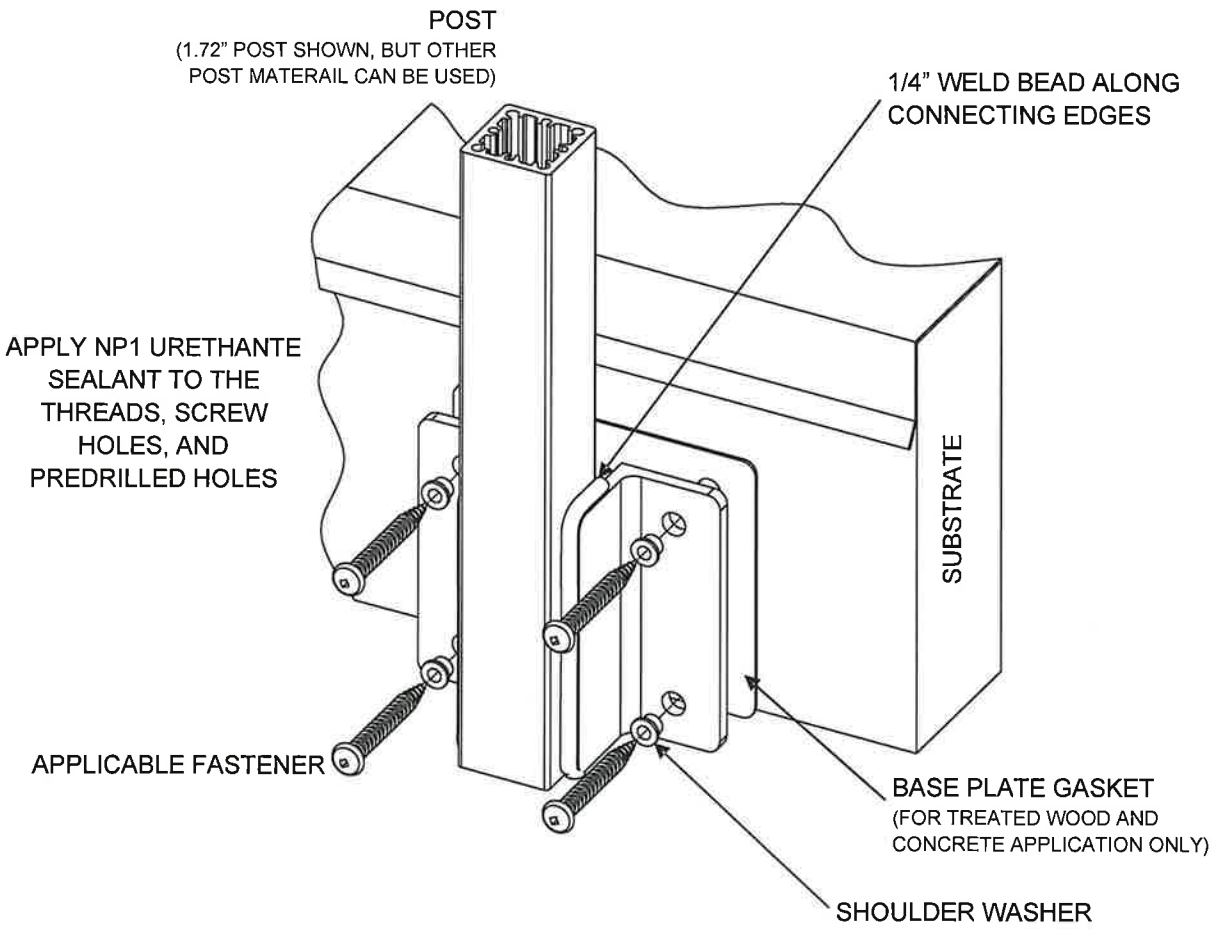
Fascia Post Installation Method



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KIT RAIL INSTALLATION USING 2 1/2" POSTS

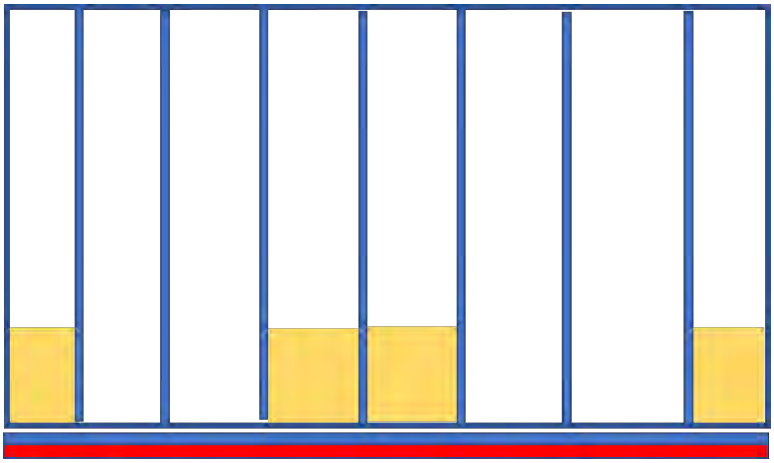
Tools need to install railing:

- Impact gun and drill
- #3 square bit / #2 square bit
- 11/64 drill bit for post screws
- 1/8 drill bit for 3/4" screw
- Shims
- Caulk
- Small flat bar caulking gun
- Level
- **Safety Glasses***
- Saw blade (96-tooth blade suitable for cutting non-ferrous metals) *Saw should get up to full RPM's before cutting rails*

*Always wear safety glasses when using the saw to cut metal railing

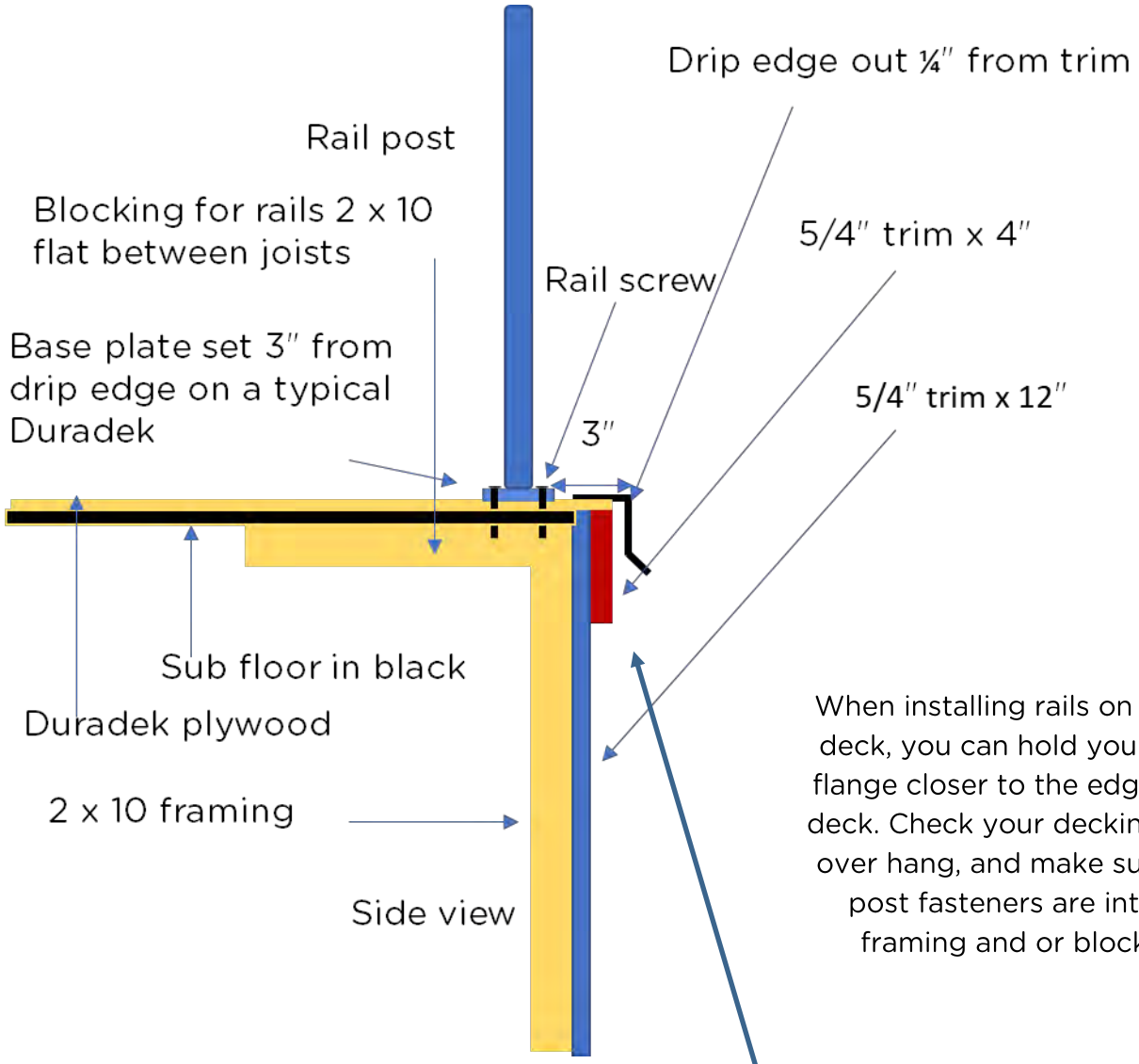
Blocking:

- There needs to blocking at all post locations.
- It is best to use 2 x 10 material for your blocking. Insert the 2 x 10 flat in-between the joists where you plan to install your post.
- If there is a joist that is in question, then install blocking on both sides of that joist.
- Putting (3) 2 x 10's and placing them against the band board of the deck may result in a fastener ending up between the 2 x 10's and won't provide a secure anchor point.
- Fastening the post to just plywood or decking boards is not acceptable or safe.



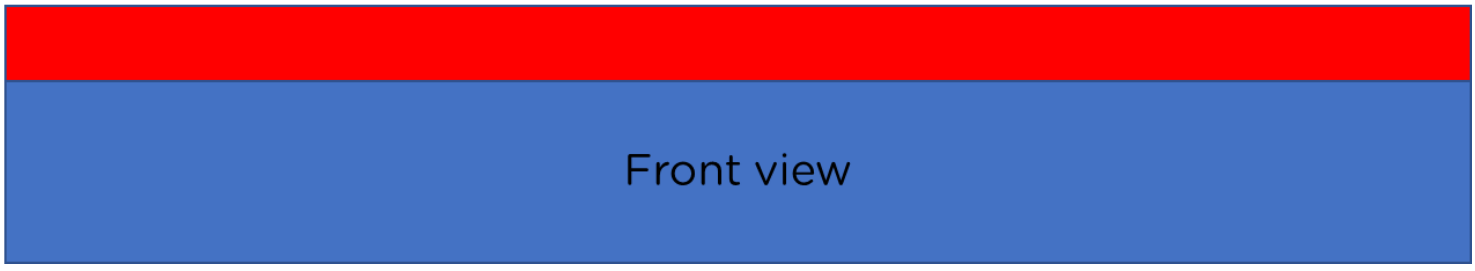
Top view of deck framing with blocking at all post locations - 2 x 10 flat between joists.

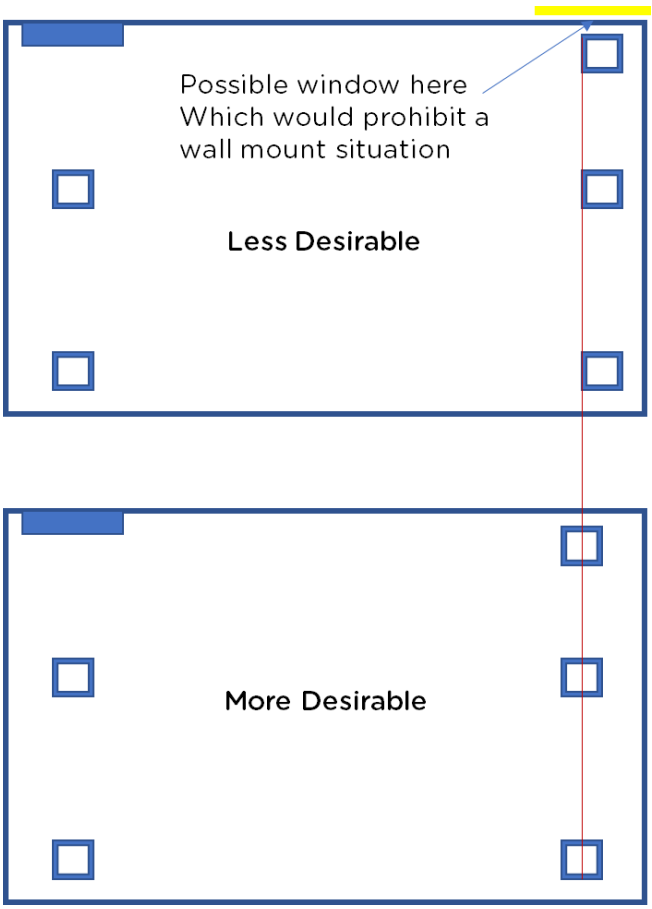
TRAINING TIPS: Step-by-step Details



When installing rails on a wood deck, you can hold your post's flange closer to the edge of the deck. Check your decking board over hang, and make sure your post fasteners are into the framing and or blocking.

The post flange should be set in 2" from the edge of the deck, or 3" when using the Drip-Edge with blocking at the post location. Setting the post flange 2" or 3" from the deck edge ensures the fasteners will go into the framing and the blocking. You do not want your fasteners to attach to the trim boards.





NOTE:

If only one side of the railing system is getting wall mounted and the other side is getting an end post, you should keep the distance of the drip edge on the side rails the same for both sides.

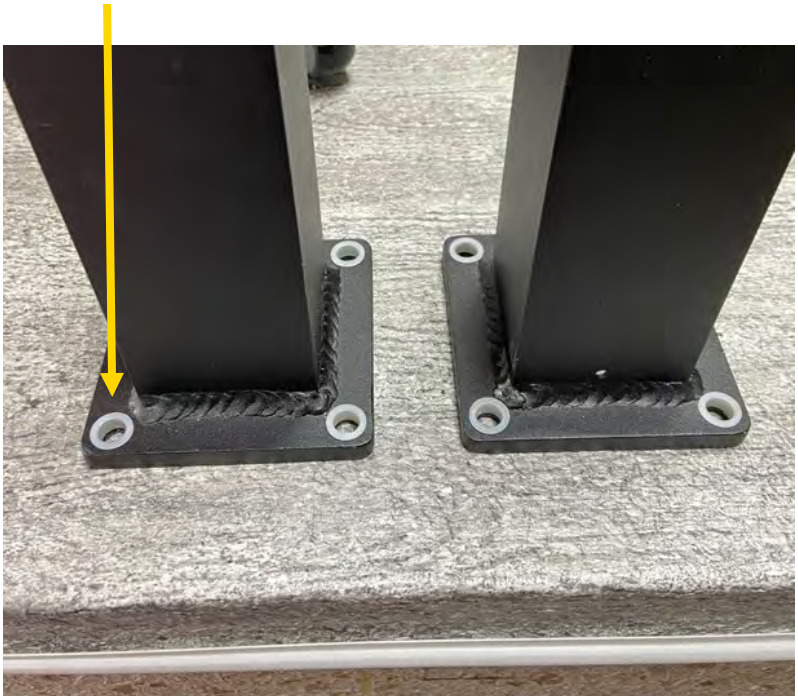
This will look better than having one side 3" off the drip edge and the other side 4 $^{1}/_{2}$" off the drip edge. *This should be discussed with the homeowner in advance.*

If you are wall mounting the railing system at the house into trim boards, place a post in front of the trim board, center it to the trim board, then measure off the drip edge how far in the post flange is from the deck edge.

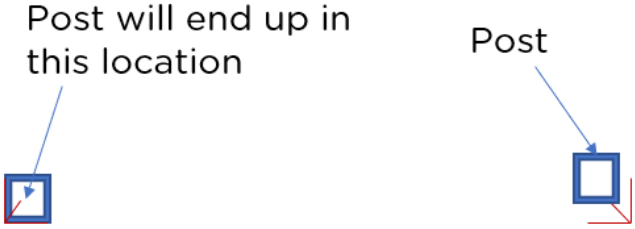
A lot of times this makes your post more than 3" off the edge of the deck, which shouldn't be a problem because there is supposed to be blocking at all the post locations. This allows you to move the corner posts into align with the center of the trim board against the house.

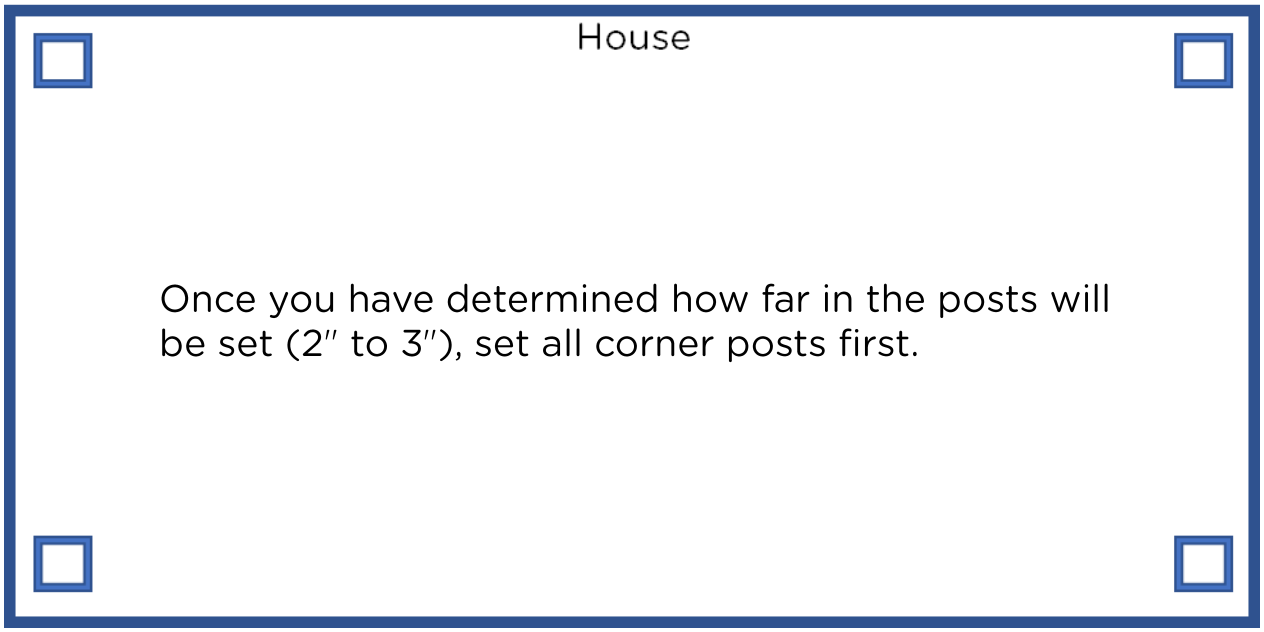
TRAINING TIPS: Step-by-step Details

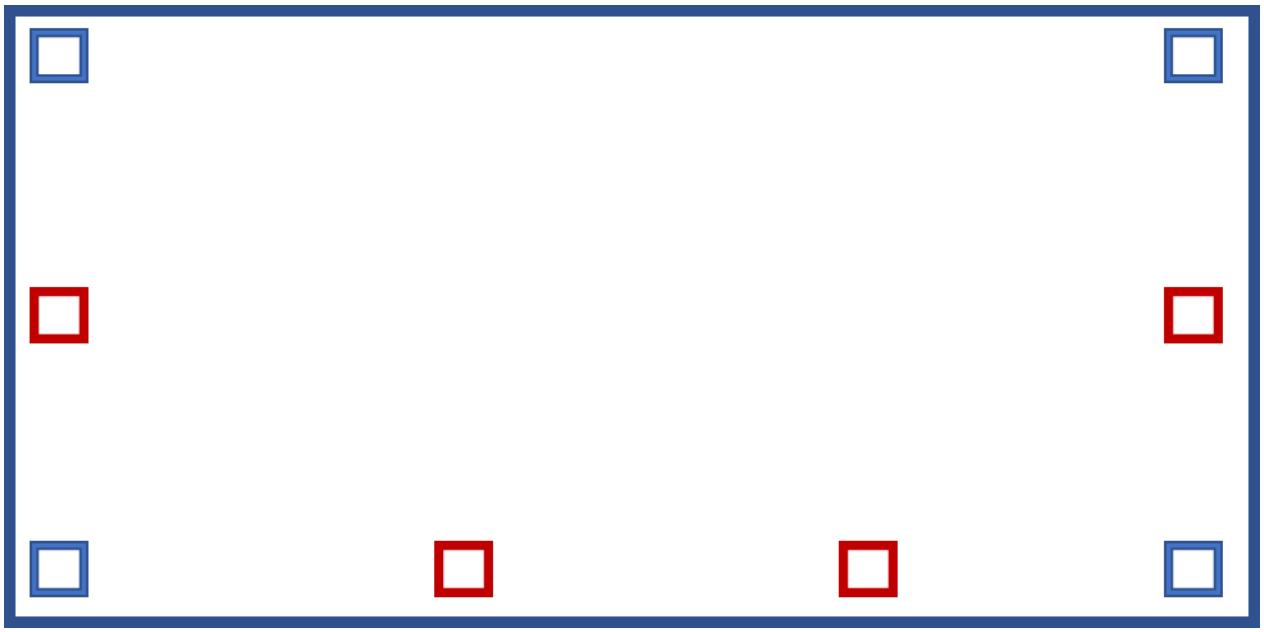
For the 2 1/2" posts you will need the larger 7/16 shoulder washer inserted in the holes of the post flange as a spacer for the screws. Without this shoulder washer there will be too much slop room for the fastener



- Make a small mark 2" from the deck edge or 3" when using drip flash on both sides
- Make a small L shape mark to represent the outside corner of the post then draw a small diagonal line as shown to show the post goes to the inside of the marks







Measure between the corner posts and space the intermediate posts **(in red)** evenly apart. Check local codes as to how far apart the posts can be.

Usually the max is 6′ apart. You may end up with 6′ sections of rails on the long side and 5′ on the returns. That's fine, just keep all the sections uniform on each side of the deck.

TRAINING TIPS: Step-by-step Details

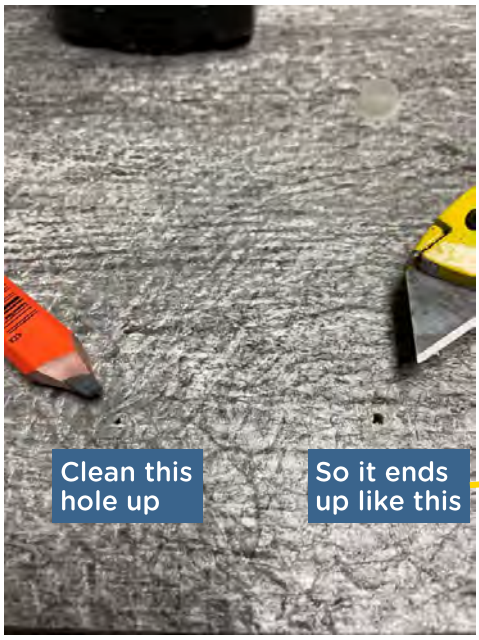
Set the corner posts first. Find the post marks on vinyl.

Set the post on marks making sure it is square with both sides of the deck.

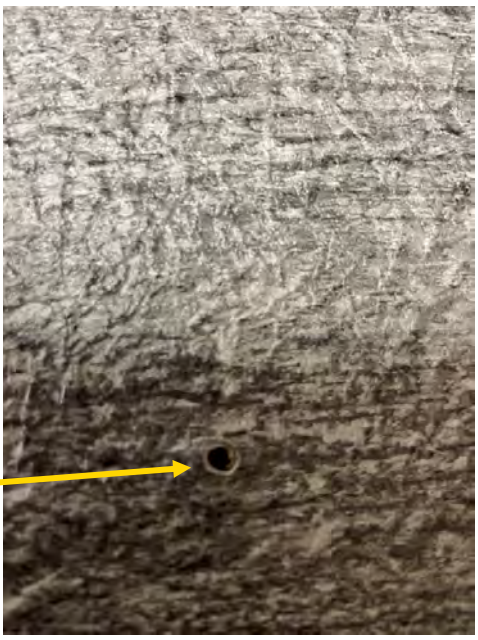
Pre-drill the holes for the fasteners using a 11/64 drill bit. Try to get the drill bit in the center of the hole.

Once the holes are drilled, move the post and blow off the sawdust.

Remove any loose vinyl that can obstruct the hole.



All holes should be cleaned up like this to allow the caulk to fill.



TRAINING TIPS: Step-by-step Details

Caulk the holes for the post flange. Hold the tip of the caulking gun tight to the floor over each hole. Press the trigger until you start to see the caulk come out under the tip. Then press the release trigger and move the caulk gun towards the center of the post as shown in the picture on the right.

Carefully set the post over the holes. Take the 3" screw or lag screw (depending on engineering) and stick it down in the tip of the caulking gun covering ¾ of it with caulk.

Tighten all the screws down completely. This will show you which way you need to shim up your post.

TRAINING TIPS: Step-by-step Details

Plumbing the post is very important. While you are on the deck facing the post, place your level on the inside of the post (facing you) to determine if the top of the post needs to come in or go out. If the deck is sloped properly it will most likely need to come in.

Check the post left to right by placing the level on one of the sides to determine if the post needs to go left or right.

This particular post needed to come in at the top. It was leaning to the right, so it had to go to the left.

Loosen the 2 outside screws, insert the shim on the outside of the post as shown.

Insert it far enough so that when you put the level on the post and push it outward at the top it is almost plumb.

This screw gets tightened up first because the post was leaning to the right as I sat on the deck.

Then tighten up this screw.

Recheck your post to make sure it is plumb. Put the level on both sides as before and check to make sure the post is plumb in both directions.

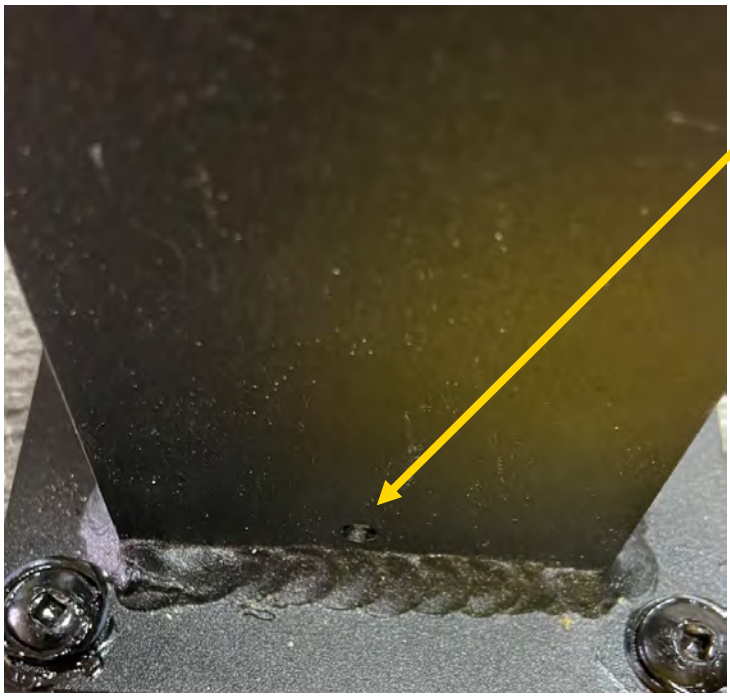
NEVER loosen a screw to get a post plumb. If it is not plumb, then adjust the shim and re-plumb.

All screws must be tight when finished.

Once you have achieved plumb, you will need to remove the shim.

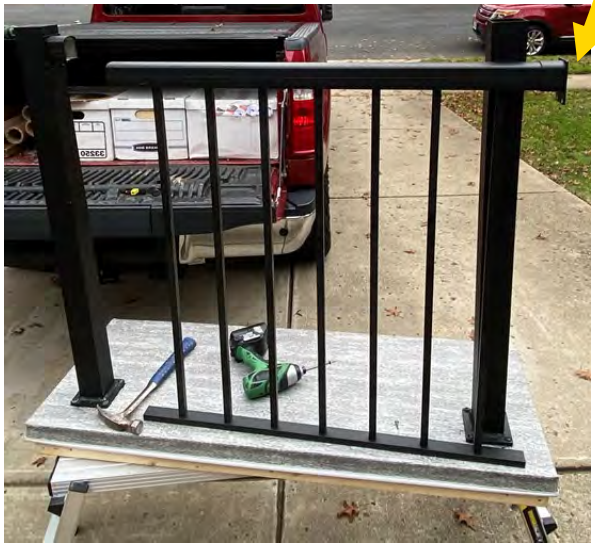
Lightly score the shim in the groove right at the post being extremely careful NOT to cut the Duradek.

You can use a small pry bar to help lift the shim up at the post. Then you should be able to pull the shim to one side breaking it free form the post.



- All the posts have a weep hole at the bottom middle, just above the flange.
- These weep holes should be facing the outside edge on all sides. Do not install them facing the inside of the deck.
- These holes allow water to escape if necessary.

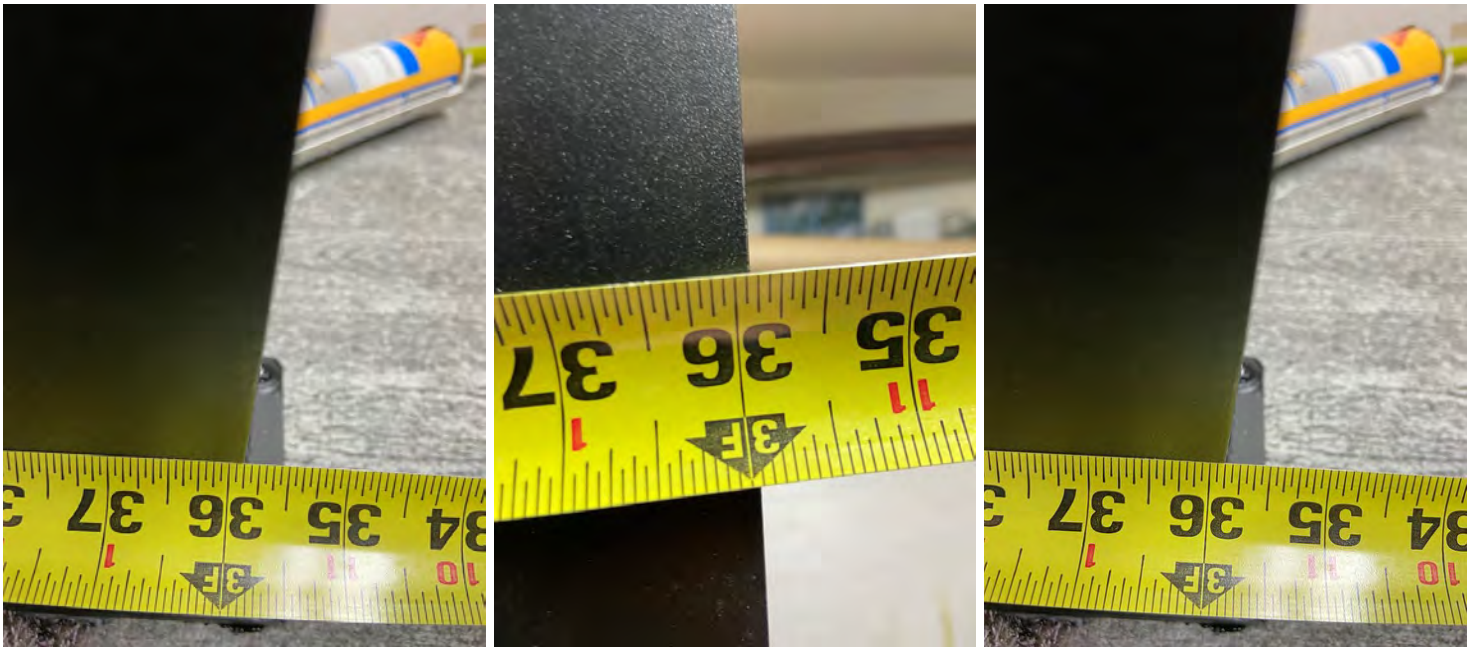
TRAINING TIPS: Step-by-step Details



Now install the top wall mounts to the post.

The wall mount has two different levels to it.

- The very top of the back plate.
- And the top of the sleeve that the top rail inserts into.
- Mark ¾″ from the top of the post to achieve the proper rail height. *Use the same method for a 42″ or 36″ system.*
- Pre-drill your holes with the 1/8″ bit as shown. Use the ¾″ screws to attach the wall mount to the posts.
- When attaching the wall mounts to the post, only screw in one wall mount per section.
- Pre-drill the holes for the other wall mount.
- When you are ready to install the panel, place the loose wall mount onto one side of the panel.
- Insert the other end of the panel into the wall mount you have already installed.
- Then install the loose wall mount to the other post.



- Now measure for your rail section. Always measure at the bottom and the top. They should be the same measurement if you plumbed your posts correctly.
- Measure between the two posts.
- Subtract $^{3}/_{4}''$ from your measurement. This will allow for the welds in the wall mount, as well as the thickness of the mounting plate on the wall mount.

TRAINING TIPS: Step-by-step Details

There are two ways to achieve the correct picket spacing at the ends of the panel.
This rail section is 35″ long. Half of 35″ is 17 1/2″.

One way is to start at the center of a picket.
For this panel, starting at the center of a picket gives you a spacing of 3 5/8″ past the last picket.

The second way is to start in the center of 2 pickets.
For this panel starting in the middle of 2 pickets, only gives you 1 3/8″ past the last picket. It is a good idea to try both ways, to see which method will give you the best spacing.

TRAINING TIPS: Step-by-step Details

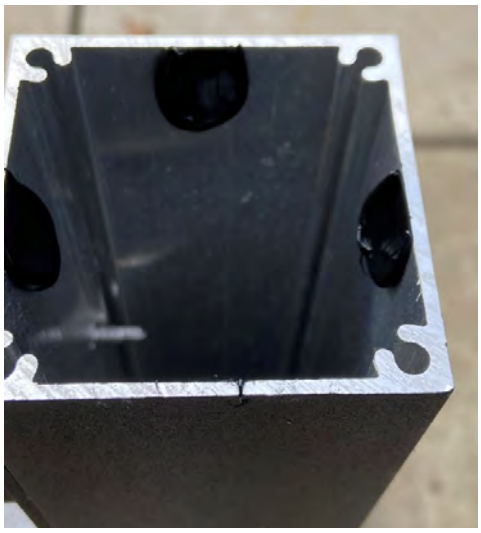
- After inserting the end of the rails into the wall mount still attached to the post, position the other side to line up with the original holes and attach the top wall mount with the ¾″ screws.
- This set screw will be put in place after ensuring the posts are still plumb and the spacing is equal on both ends of the rail.
- Pre-drill the hole for the set screw with a 1/8″ bit to make this easier.

- Install the bottom wall mounts.
- Center them in the post and attach them using the self tapping ¾″ screws.
- The set screw goes on the outside of the wall mount facing the drip edge. It is put in place after ensuring the spacing on your pickets is the same on both sides.

TRAINING TIPS: Step-by-step Details

The last thing to install are your pyramid caps.

- On the inside of the post, put a small dab of NP1 caulk on each of the 4 sides.
- Then place the tabs of the pyramid cap inside the post.
- Tap down with the handle of your hammer so you don't damage the cap.
- The caulk keeps the caps from falling off or getting knocked off the post. If you don't use the caulk, the caps will fall off. The caulk does an excellent job of securing the pyramid caps.



The finished rails should look like this.

Remember, code is no bigger than 4″ between the rails and the post.

This section has a gap of 3 $^{7}/_{8}$″ from the last picket to the post, which is within code and looks much better than a the picket ending up 1″ away from the post.

But there will be times given the size of the deck and the post spacing that all the pickets may end up very close to the post. Typically you will find that the spacing between the last picket and the post will be 2 $^{1}/_{2}$″ - 3 $^{1}/_{2}$″ in most cases.

Just remember to space the pickets evenly.