

FSI

Home Products Division

Installation Manual

Aluminum Decking & Railing Systems

Please Read Carefully



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- I. Overview & Tools
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Always wear safety
equipment when
cutting, drilling, &
installing components.

**LOCK DRY®**

FSI Home Products Division

Railing Works™
ARCHITECTURAL RAILING SYSTEMS
FSI Home Products Division

FSI Home Products Division
2700 Alabama Highway 69 South • Cullman, Alabama 35057
1-800-711-1785 • Fax: 256-287-0417
www.lockdry.com • www.railingworks.com

TOOLS AND MATERIALS NEEDED FOR DECKING INSTALLATION

<u>Required for Installation</u>	<u>Optional - May Be Required</u>
<ul style="list-style-type: none"> - Caulking Gun - Tape Measure - Carpenters' Pencil - Sheet Metal Snips or Hacksaw - 3/8" Drive Power Drill - 13/64" Drill Bits - T-25 Torx Bits - Phillips Head (+) Bits - Clean Rags - Silicone Sealant** 	<ul style="list-style-type: none"> - Sawzall or Jigsaw - Miter Saw or Band Saw - Non-Ferrous Saw Blades - Denatured Alcohol - Flashing - Condensation Barrier

TOOLS AND MATERIALS NEEDED FOR RAILING INSTALLATION

<u>Required for Installation</u>	<u>Optional - May Be Required</u>
<ul style="list-style-type: none"> - Caulking Gun - Tape Measure - Carpenters' Pencil - 3/8" Drive Power Drill - 5/32" Drill Bits - 3/8" Drill Bits - T-25 Torx Bits - 7/32" Allen Wrench - 9/16" Socket & Driver or Wrench - Anti-Seize - Clean Rags - Silicone Sealant** 	<ul style="list-style-type: none"> - Miter Saw - Non-Ferrous Saw Blades - Denatured Alcohol - C-Clamps <li style="padding-left: 40px;">(Cable Railings) - Hack Saw or Sawzall - Pliers or Visegrips - 7/16" Socket and Driver or Wrench

** FSI recommends using PERMATEX® Clear Silicone Adhesive Sealant Part # 80855.
It is available through most major hardware supply stores.

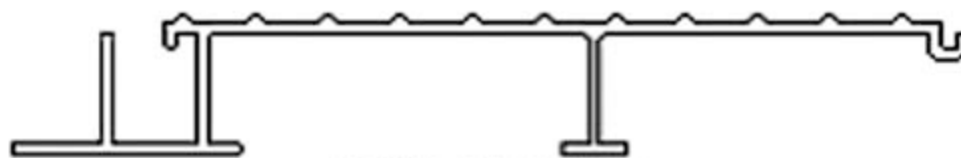
NOTE: Non-Ferrous blades are required for cutting aluminum. Please consult with your equipment manufacturers or local hardware stores for recommendations.

CAUTION: Serious injury or death can occur from non-recommended cutting procedures.

Descriptions of LockDry® Decking Materials



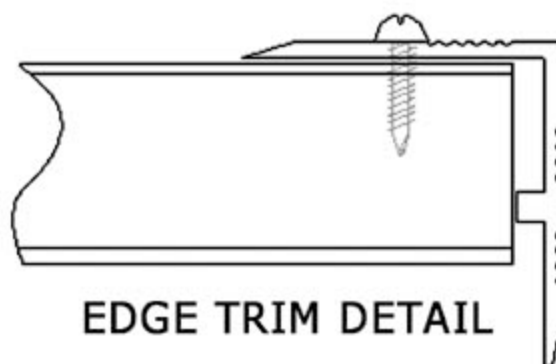
STARTER DECKING



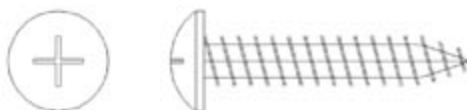
MAIN DECKING



FINISHER DECKING



EDGE TRIM DETAIL



#10 X 1 1/2" S.S. DECKING SCREW

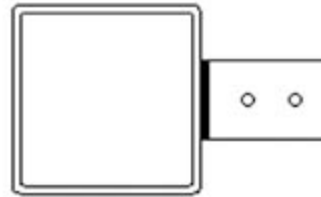


#10 X 3/4" PANTORX SCREW

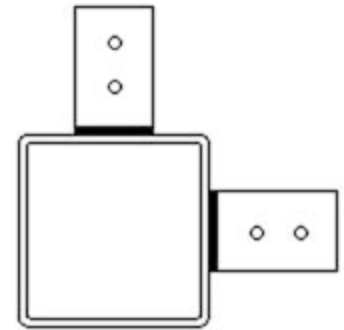
Descriptions of RailingWorks™ Aluminum Railings



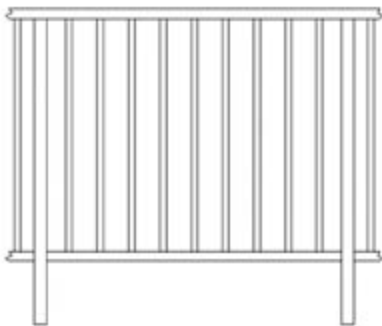
End to End Post



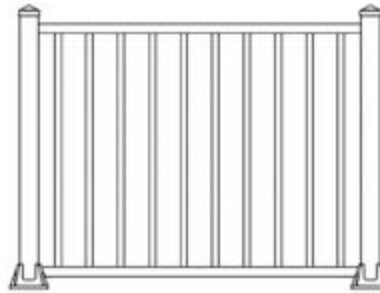
Dead End Post



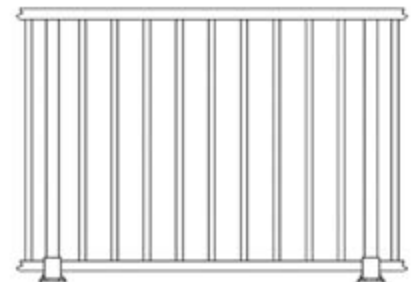
Corner Post



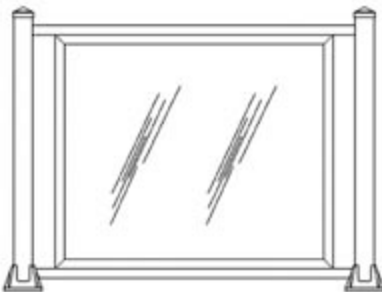
**2" Post Continuous Rail
Fascia Mount**



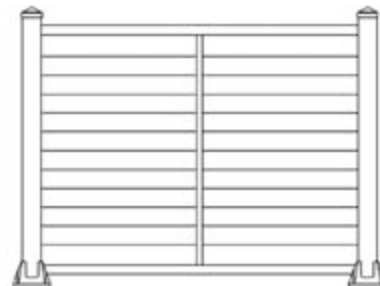
**3" Post Standard Rail
Deck Mount**



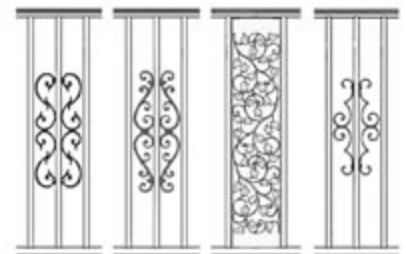
**2" Post Continuous Rail
Deck Mount**



Glass Infill



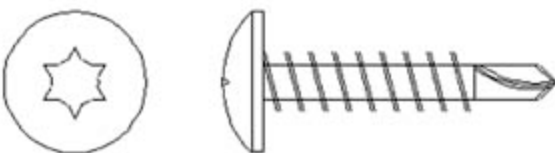
Cable Infill



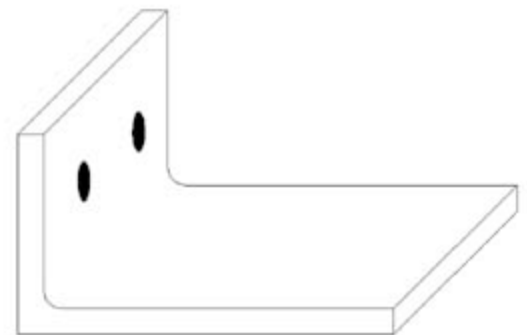
Decorative Infill



3/8" x 3" S.S. Pedestal Bolt



#10 x 3/4" S.S. Pantorx Screw



Railing Clip
(Fastens Rail to Post)

LockDry® Decking Standard Installation

Please read all instructions before assembly.

Important Notes:

- Check all materials and dimensions of the decking you receive against the quote and drawings to ensure you have received all of the correct materials.
- Prior to installation, check all materials for any significant color variations.
- Rafters and/or joist must maintain flatness within 1/4".
- Decking should extend past fascia by 2". When fascia mount railings are used, the decking should extend past fascia by 1 3/4".
- LockDry® decking has a built in expansion joint. It is very important that the decking is not cheated by pushing or pulling to compensate for misalignment.
- To aid in alignment, mark the framework in 2' increments prior to installing the decking.
- 24" spans on center recommended.
- A minimum 1/8" per foot drop is required for understructure in the direction of water drainage. 1/4" per foot drop is recommended.

STEPS

1. Ensure the decking has a minimum slope of 1/8" per foot running away from the structure to provide proper drainage.
2. Layout the decking to ensure no significant color variations are present.
3. Prepare the wall or house for installation if necessary.
 - Stone, Brick, and Stucco: Decking will butt against the wall. Clean the area where the decking will meet the wall. After decking installation, a layer of silicone sealant should be applied to the gap between the wall and decking.
 - Vinyl and other lap siding: A (L) shaped flashing will be needed to seal the wall to the deck. Please consult with your siding manufacturer for specific flashing recommendations. It is necessary to run a layer of silicone sealant between the decking and the flashing. (See page 8)
4. Make any necessary cuts to the decking.
5. Lay out the starter piece of decking. Drill the 13/64" holes through the decking only. Only drill and fasten the decking through the outermost flanges against the framework. There is a small guide in the material to aid in alignment. Square the Starter decking and fasten using #10 x 1 1/2" S.S. wood screws. Squareness should be maintained on a piece-by-piece basis, requiring only minor adjustments. It helps to interlock the next few decking pieces to aid in squaring the Starter.
6. Fill the end of the channel where the decking butts against the wall with silicone sealant**. Filling the channel 2"-2 1/2" long will be sufficient. Also seal the upper groove of the opposite piece of decking 2"-2 1/2" long on each end. This prevents water from backing up in the channel to the wall and leaking. Be sure to only fill the big channel that butts to the wall. (See page 9)



7. Review pages 7 & 8 and incorporate them into the next steps below if installation will be over a heated living space. If your application is not over a heated living space, continue with steps 8-11.
8. With the channel filled, interlock the decking. Important: Caution should be taken when interlocking and fastening. The decking has an expansion joint incorporated into the top groove of the decking. It is possible to cheat or twist the decking to compensate for misalignment, but not recommended. The decking needs to be interlocked and fastened in a natural method, not forced or cheated. Drill a 13/64" hole as previously done and fasten down. Wipe away excess sealant. Denatured alcohol can aid in clean up.
9. Repeat steps 6-8 for the remaining decking pieces. Silicone end, interlock, drill hole, and fasten.
10. After all the decking is installed, ensure the outside of the decking boards are straight. Straightness is required for edge trim installation. The edge trim acts as a drip edge for water running out from the channels of the decking. The edge trim must be placed against the decking boards and touching. The outside decking boards can be easily cut with a circular saw and proper blade to achieve straightness.
11. Clean the outside perimeter of the decking boards where the edge trim will be placed. Apply a layer of silicone sealant** on top of the decking boards about 1" from the end where the edge trim will be placed. This layer of silicone will seal the bottom of the edge trim to the top of the deck permitting water to drain over the top of the edge trim. Install the edge trim along the open, outside edge of the decking. Ensure the nib leg of the trim is on the outside of the decking. Fasten the edge trim with #10 x 3/4" Pantorx screws every 6" on top. (See page 3)
12. Seal or flash the gap between the wall and deck. (See step 2 and page 9)

Installation Over Heated Living Spaces

FSI Home Products Division can only provide recommendations as to installation over heated living spaces. Heated living spaces would include insulated and non-insulated ceilings over semi-heated areas such as; garages, sunrooms, enclosed spaces under decks, and so forth. These types of installation have been done many times with success, but due to the variance of application and quality of installation, FSI does not warrant the end result. If these recommendations do not pertain to your application, please skip the information below.

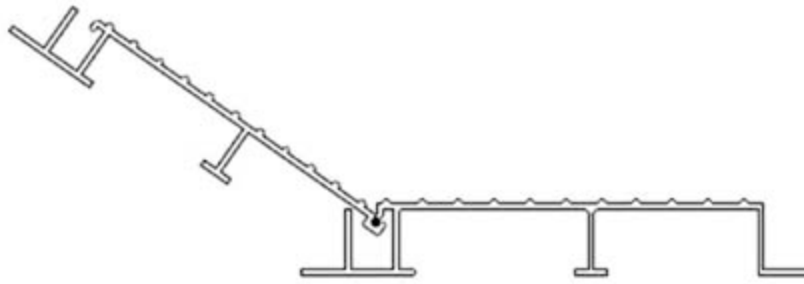
Recommendations

1. Install a moisture barrier such as CertainTeed® WinterGuard™ or equivalent between LockDry® decking and the supporting structure.
2. LockDry® decking can be sealed to help prevent water from entering the built-in gutter system. This can be accomplished by running a bead of silicone sealant** along the top narrow groove of the decking that interlocks with the previously installed decking board. Only a small bead of silicone sealant is required. The bead of silicone sealant should be no more than 1/8" in diameter and should be flush with the top of the outside lip. A continuous bead the entire length of the decking piece is recommended. This should be repeated for all of the decking boards. These recommendations should also include the steps required in the standard installation instructions on the previous pages. (Photos below and page 8)
3. If any excess silicone sealant is present, wipe off immediately with a clean rag. Denatured Alcohol can help aid in clean up.
4. It is not recommended for holes to be drilled through the top surface of LockDry® decking. If safety railings are required with the installation of the deck, we recommend using a railing system that allows fastening to the fascia of the supporting structure.
5. If it is necessary to butt LockDry® decking into a structure that is in the direction of water drainage such as post or columns, an alternate drainage method may be required. (Photos on pages 15 & 16)

Where short lengths of decking may be used, it is recommended to fill the entire gutter system with silicone sealant**.



Bead should be flush with outside lip.

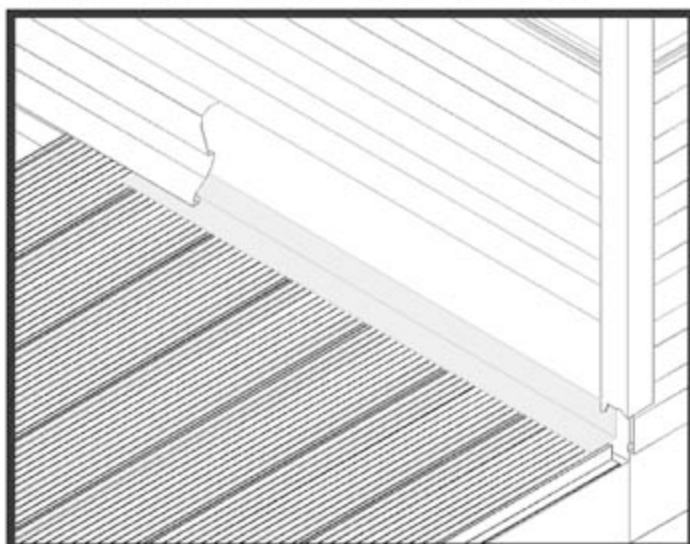
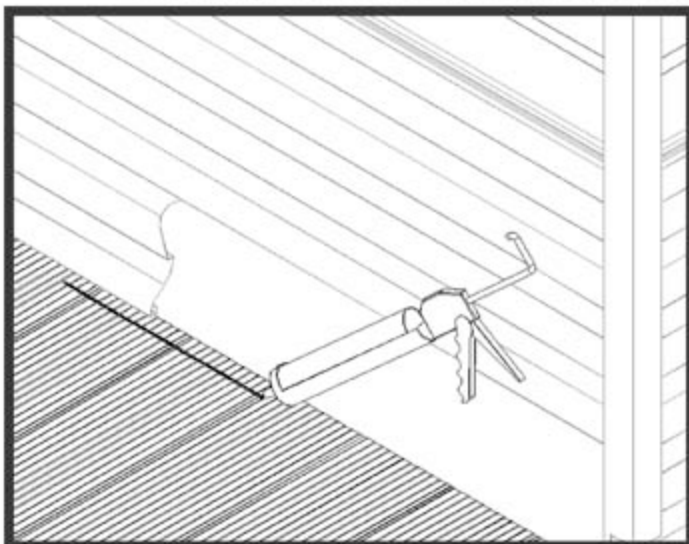


Interlock decking and fasten down.

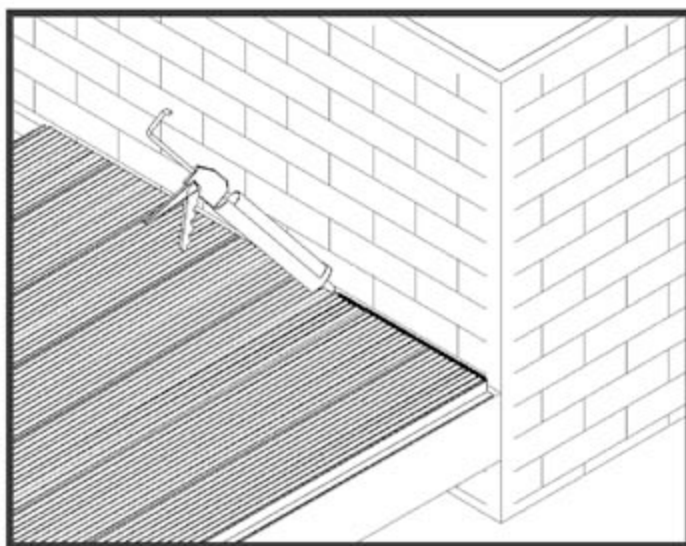
Sealing recommendation photos



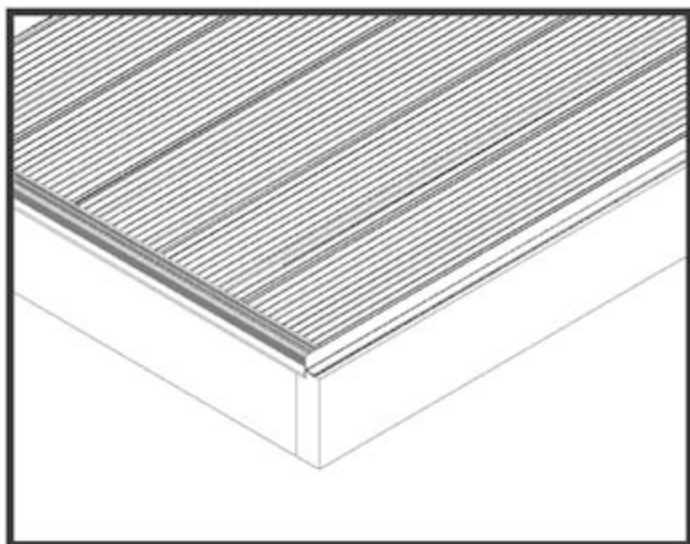
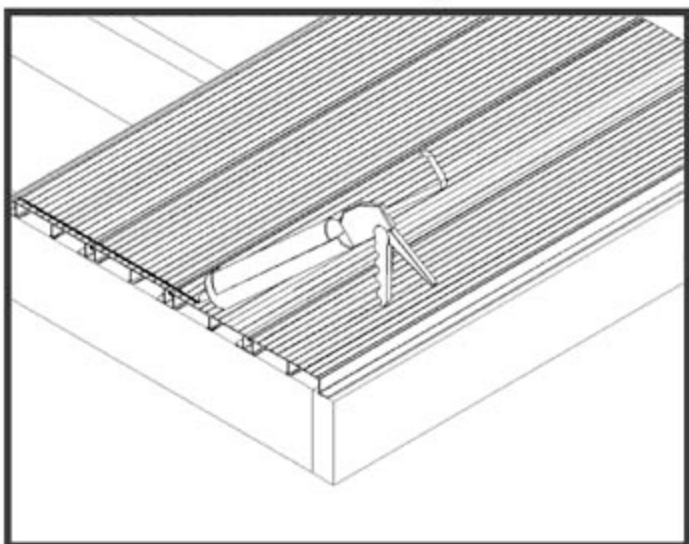
Sealing recommendations for Vinyl and Other Lap Siding



Sealing recommendations for Stone, Brick, & Stucco



Sealing recommendations for Edge Trim



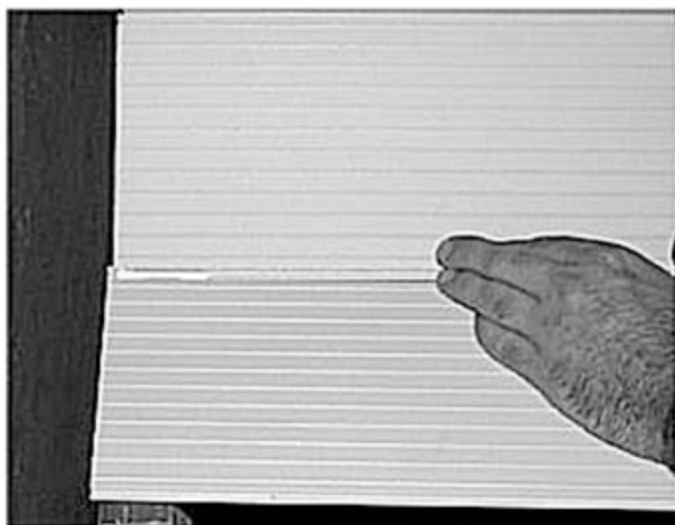
Sealing Instructions for all Applications



1. Fill end of channel 2"-2 1/2" where decking butts against wall or structure only. Opposite end of decking must remain open for drainage.



2. Fill upper groove of decking 2"-2 1/2" long on each end.



3. Interlock decking and wipe away excess sealant. Denatured Alcohol can aid in removal.

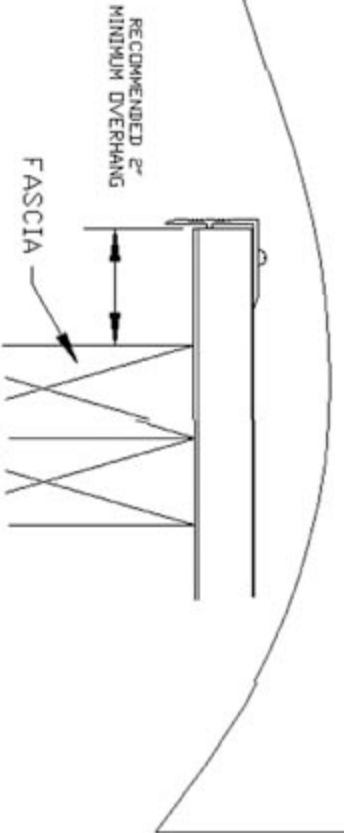
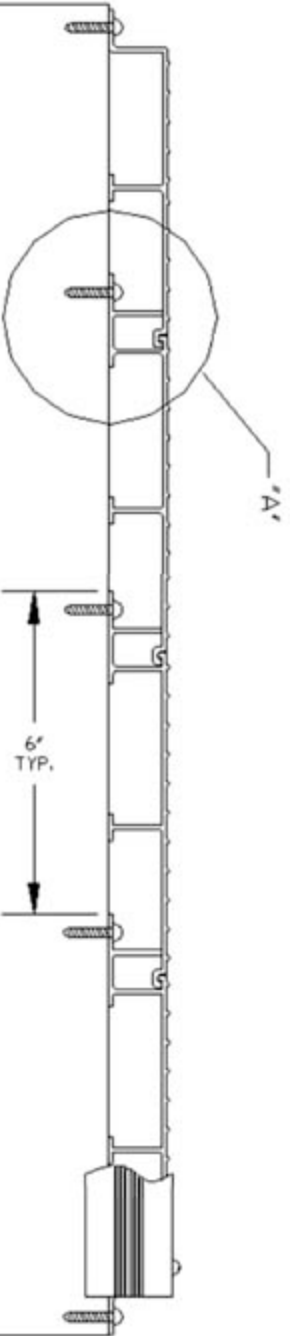


4. Repeat steps for the remaining decking boards.

FINISHER

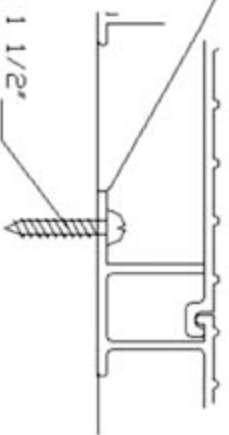
MAIN

STARTER

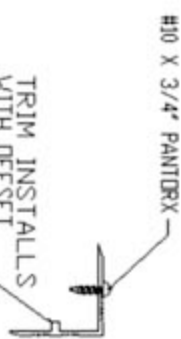


DRILL A 13/64" PILDOT HOLE THROUGH ALUMINUM ONLY

#10 X 1 1/2" S.S. WOOD SCREW



VIEW IN CIRCLE 'A'



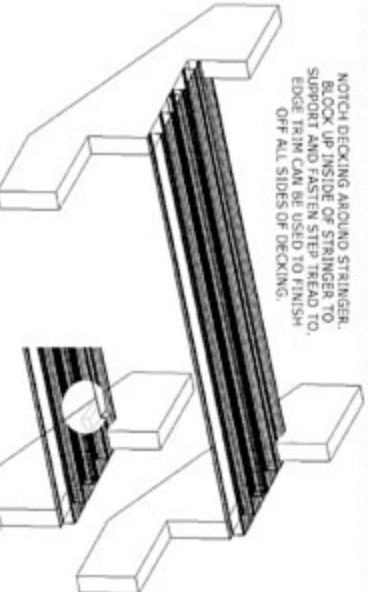
TRIM INSTALLS WITH OFFSET NIB LEG DOWN PROVIDING A DRIP EDGE AND DRAINAGE.

1 1/2" X 1 1/2" EDGE TRIM USED TO COVER THE OPEN END OF THE FLOORING.

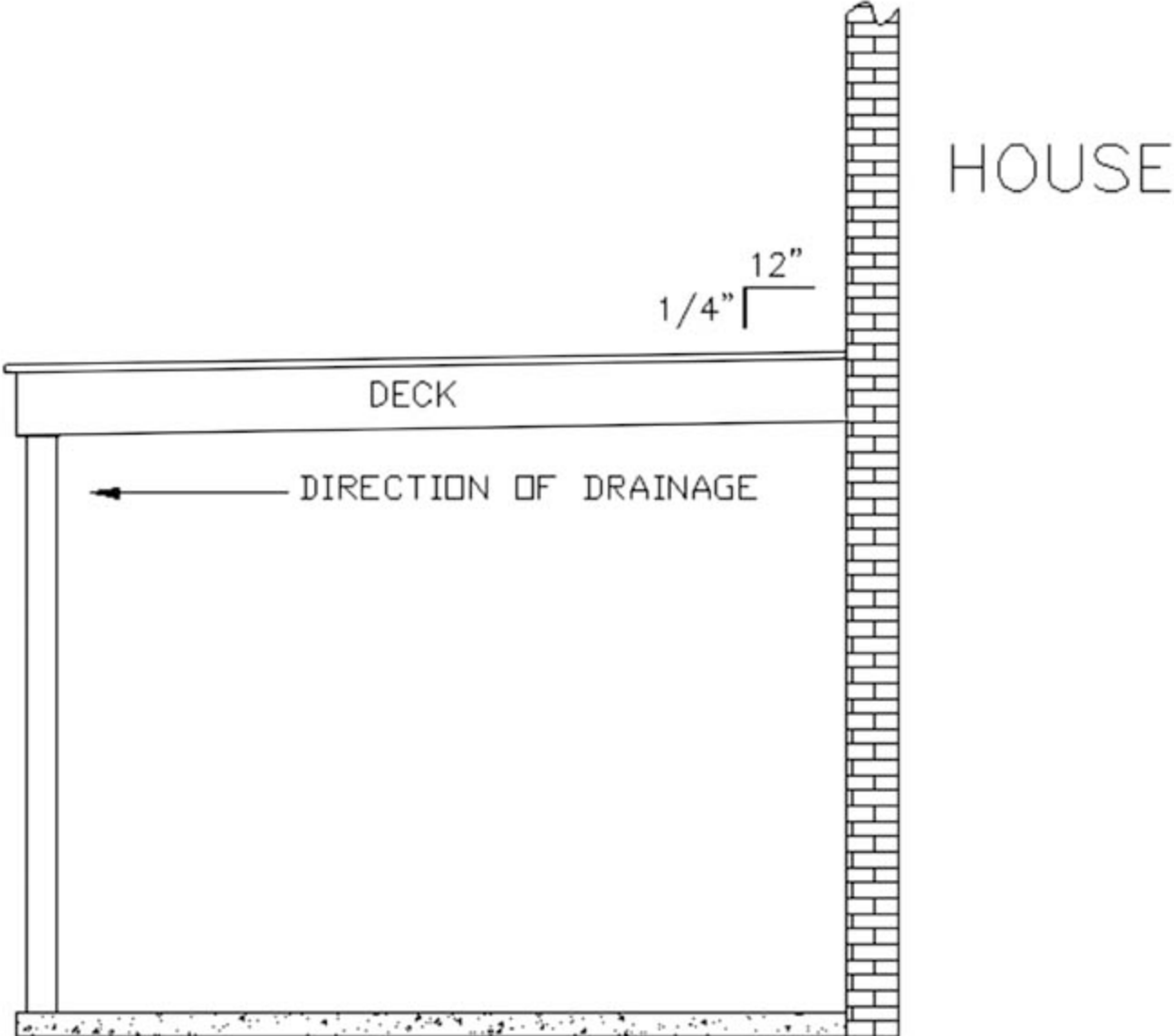
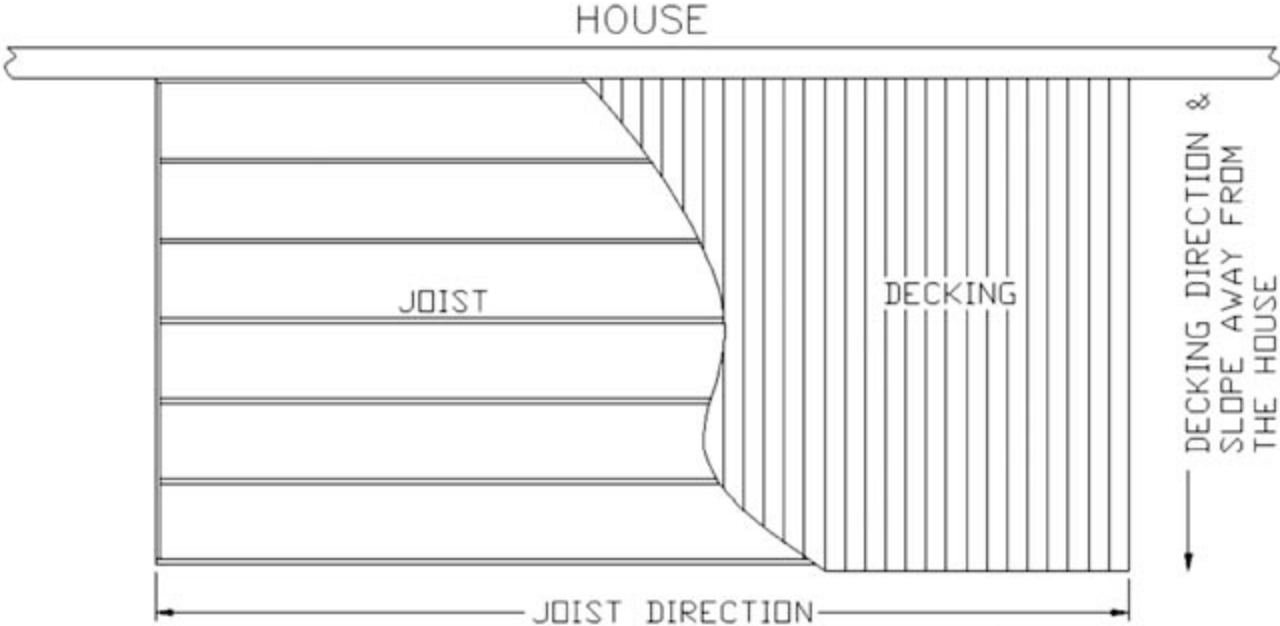
NOTE: 1/8" DROP PER FOOT AWAY FROM THE STRUCTURE IS REQUIRED

NOTE: TO AVOID WATER POOLING ON DECK SURFACE, RAFTERS AND/OR JOIST MUST REMAIN FLAT TO WITHIN 1/4"

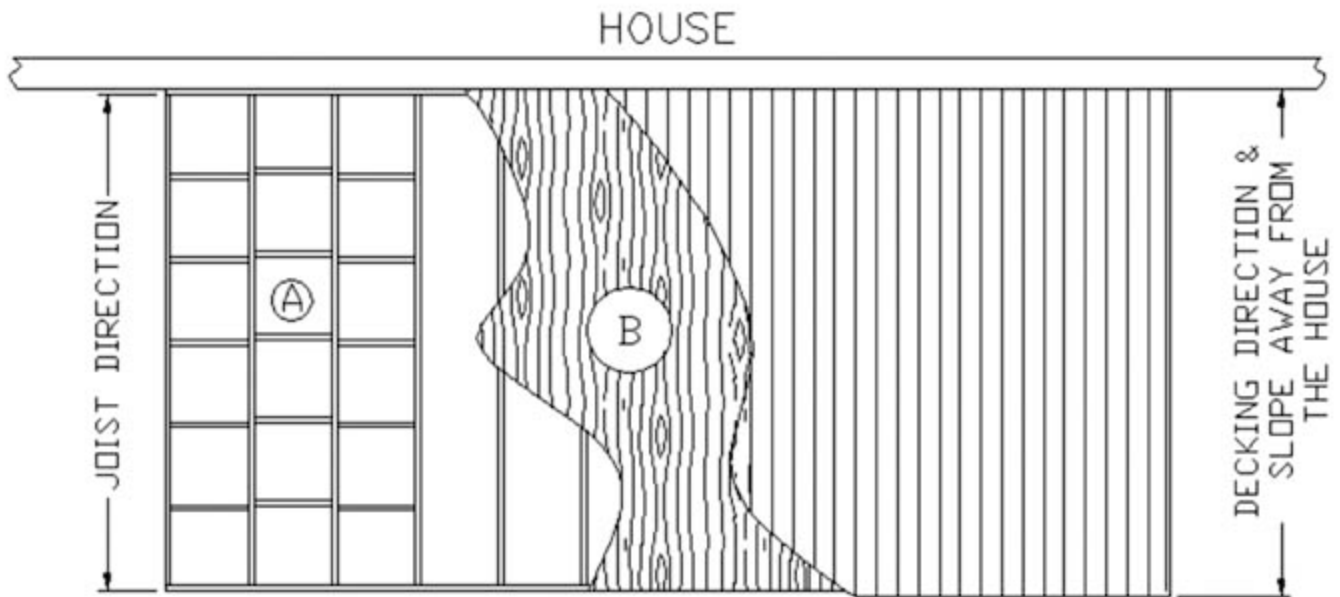
STARTER AND FINISHER STEP TREAD INSTALLATION FOR STEP TREAD RUNS LESS THAN 12" NOTCH DECKING AROUND STRINGER. BLOCK UP INSIDE OF STRINGER TO SUPPORT AND FASTEN STEP TREAD TO. EDGE TRIM CAN BE USED TO FINISH OFF ALL SIDES OF DECKING.



Preferred Decking and Joist Direction



Alternative Methods for Decking and Joist Directions



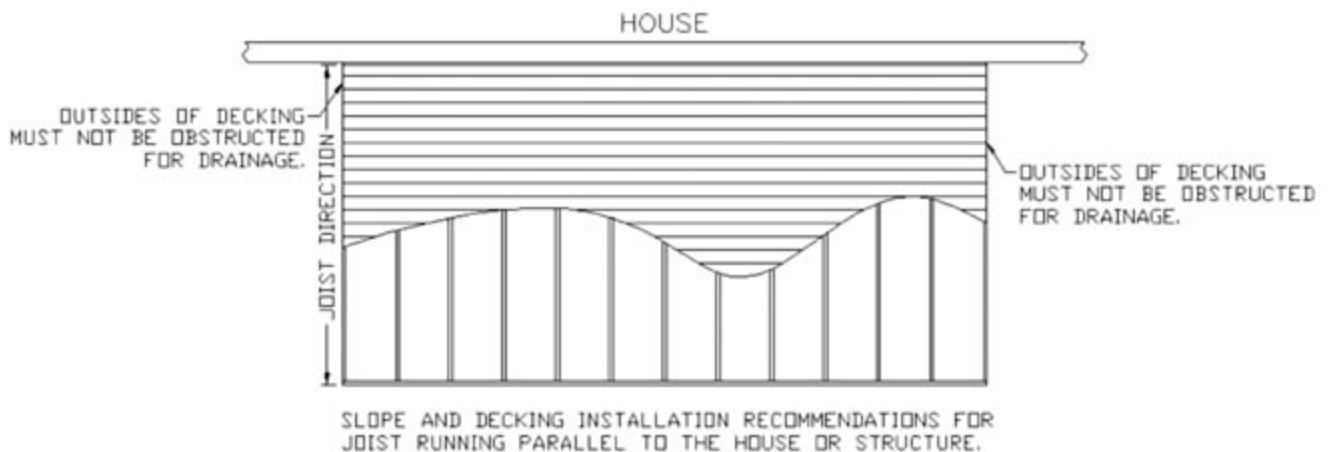
SUGGESTIONS IF THE JOIST ARE RAN IN THE SAME DIRECTION AS THE DECKING NEEDS TO RUN.

(A): BRIDGE BETWEEN JOIST TO FASTEN TO. 24' CENTERS RECOMMENDED.

(OR)

(B): COVER THE DECK WITH 3/4" PRESSURE TREATED PLYWOOD. A MOISTURE BARRIER BETWEEN THE PLYWOOD AND DECKING IS ADVISED.

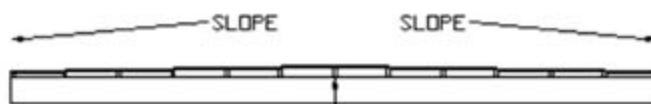
Suggestions For Running The Decking In The Same Direction As The House. (Use only when no other option is available.)



(Continued on the next page.)

Suggestions For Running The Decking In The Same Direction As The House.

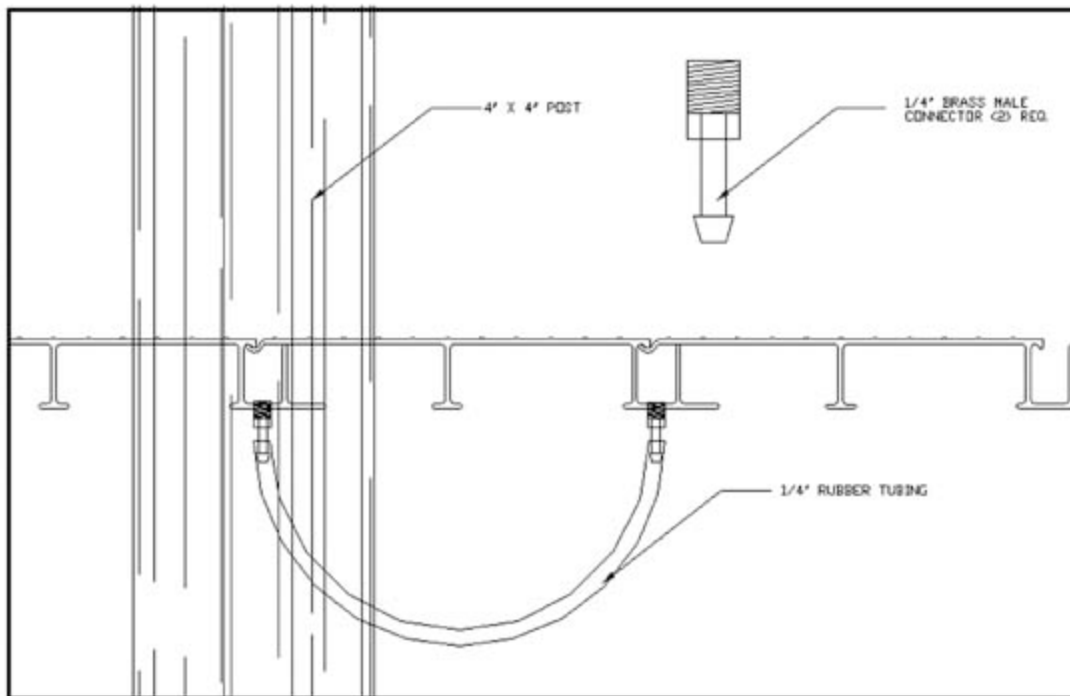
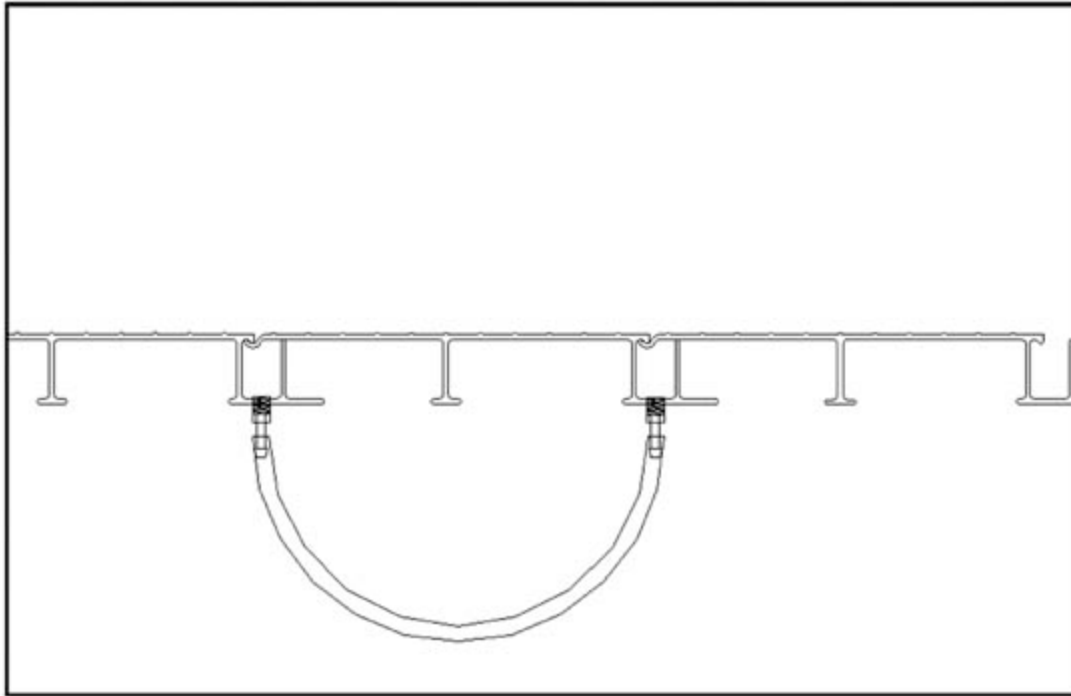
(Continued from previous page.)



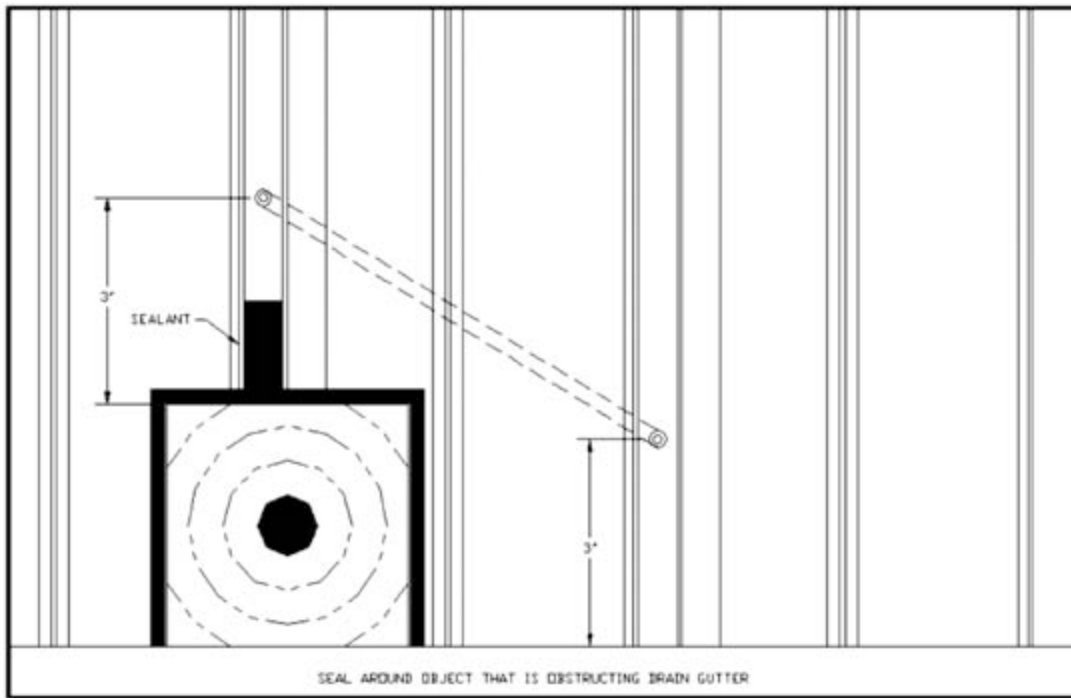
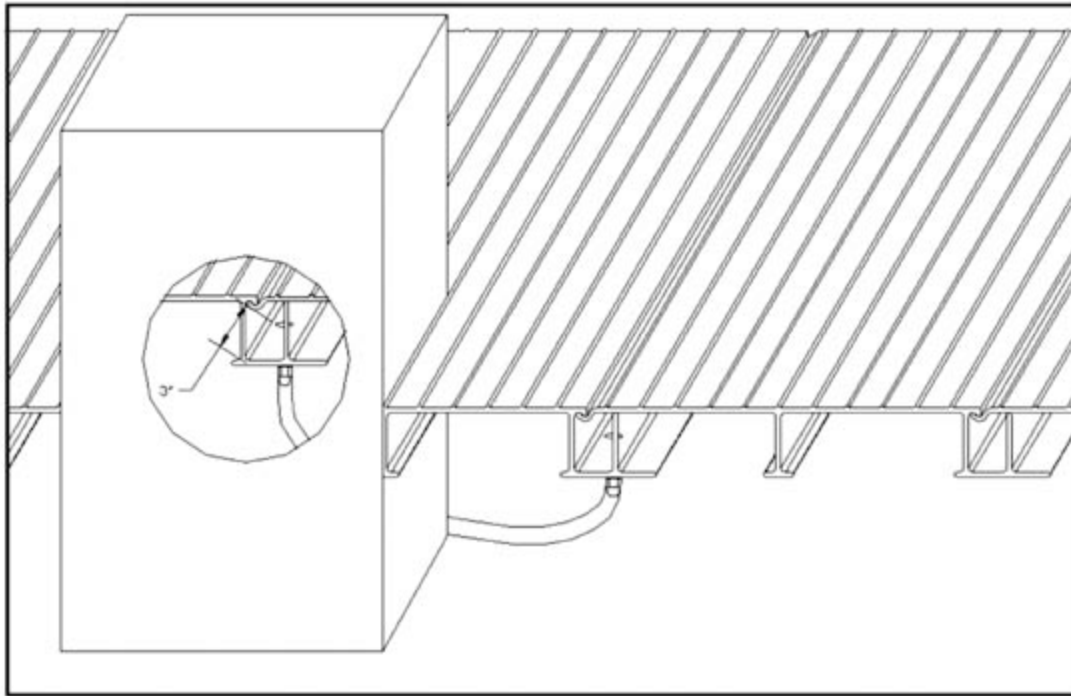
PURLINS SHOULD BE INSTALLED ON TOP OF THE JOIST. THE PURLIN HEIGHT SHOULD BE HIGHEST IN THE CENTER OF THE DECK AND GRADUALLY REDUCE HEIGHT ON EACH SIDE TO OBTAIN SLOPE.

Suggestions For Running The Decking Into a Column or Post That Blocks a Gutter.

(Continued on next page.)



Suggestions For Running The Decking Into a Column or Post That Blocks a Gutter. (Continued from previous page.)



RailingWorks™ Aluminum Railing Installation

Please read all instructions before assembly.

Important Notes:

- Pilot drill all holes.
- Do not fasten the pedestals through the channel in LockDry® decking.
- Be sure to install the rubber gaskets under the pedestals and bolts if a waterproof installation is desired. Silicone sealant** may also be required to help with sealing.
- Check all materials and dimensions of the decking you receive against the quote and drawings to ensure you have received all of the correct materials.

STEPS FOR STRAIGHT RAILING RUNS

1. According to the drawings, layout the posts and rails on the deck in the correct locations.
2. POSTS:
 - Pedestal Mount: Insert all posts into pedestals. Be sure the post is all the way down against the deck. Pilot drill (5/32") holes through the pedestal and post. Fasten using #10 x 3/4" Pantorx screws. (Photos page 21-22)
 - Fascia Mount: Fasten all the corner posts and rail assemblies first using 3/8" x 6" lag bolts with washers. Be sure to square the posts with the deck. (Photos page 20)

(Note:) Cable Railing Posts have pre-drilled holes for the cable to pass through. Ensure that the post with the larger holes (3/8") is positioned where the cable run will end.
3. RAILING INFILLS:
 - All Railing In-fills: Snap all bottom caps onto bottom plates of in-fill areas before fastening in-fills to posts.
 - Cable Railings: The cable railing in-fill area will consist of a single picket centered between the two plates that connect the posts together and support the top and bottom handrail caps. Slide the first in-fill area inside the mounting clips up against the post. Pilot drill two (5/32") holes from inside the in-fill area through the mounting clips on the posts. Fasten each connection using two #10 x 3/4" Pantorx screws.
 - Glass Railings: The glass railing in-fill area comes pre-assembled to size. The glass is fully framed with our standard plates fastened to the top and bottom of the glass frame. These plates will connect the posts together and support the top and bottom handrail caps. Slide the first in-fill area inside the mounting clips up against the post. Pilot drill two (5/32") holes from inside the in-fill area through the mounting clips on the posts. Fasten each connection using two #10 x 3/4" Pantorx screws. Be sure to support and stabilize the opposite end of the in-fill area.
 - Picket Railings: The picket railing in-fill area will consist of a line of vertical pickets fastened to a top and bottom plate. Slide the first in-fill area inside the mounting clips up against the post. Pilot drill two (5/32") holes from inside the in-fill area through the mounting clips on the posts. Fasten each connection using two #10 x 3/4" Pantorx screws.

RailingWorks™ Aluminum Railing Installation

STEPS

4. POST:

- Pedestal Mount: Slide the next post in place against the railing in-fill plates. Pilot drill a hole through the plate and mounting clip and fasten using Pantorx screws. (Photos page 21-22)
- Fascia Mount: Slide the next post in place against the railing in-fill plates. Square post with the deck and fasten to the fascia with 3/8" x 6" lag bolts and washers. Pilot drill the holes through the plate and mounting clip and fasten using Pantorx screws. (Photos page 20)

5. Repeat Steps 3 & 4 for the remainder of railings.

6. POST:

- Pedestal Mount: Align all rails with deck and drawings. Drill 3/8" holes through decking and reinforcement channel, using the pedestal holes as a guide. Do not drill a hole through any channels in LockDry® decking. Lift post and insert the pedestal gasket if the railings will be used with LockDry® decking or other waterproof flooring surfaces. Insert all the 3/8" x 3" bolts with metal washers under the head through the decking and aluminum channel. Fasten using metal washers and locknuts. If the installation of the railings will be used on LockDry® decking or other watertight decking surfaces, install the rubber washers under the metal washer below the bolt head. Be sure to apply anti-seize to all of the bolt threads prior to installing the locknuts. The anti-seize must be applied!

7. Snap all top handrail caps on in the correct location.

8. CABLE RAILING INFILLS:

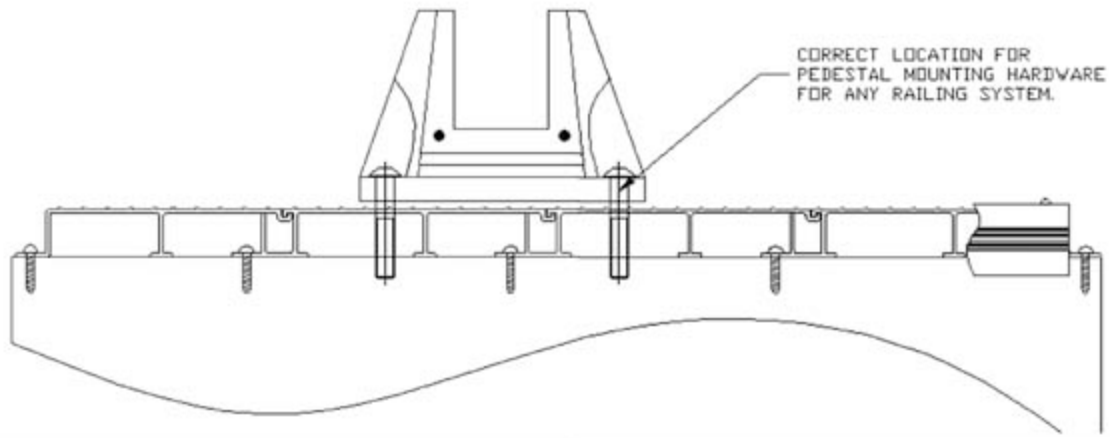
- Pass the threaded terminals through the starting posts and attach a flat nylon washer and washer-nut. Tighten until the nut is flush with the terminal. Lightly coat all threads with Fluid Film® lubricant provided. Lace the cable through the remaining posts. Slide a washer and Quick-Connect™ fitting on each cable end until they rest against the post. Be sure to squirt some Fluid Film® lubricant into the ends of each Quick-Connect™ fitting. Hold the Quick-Connect™ with one hand and pull the cable tight with the other. The Quick-Connect™ automatically locks when you release the cable. Using a 7/16" wrench, tighten the locknuts at the threaded terminals until you can't flex the cables more than 4 inches apart. Hold the shaft of the threaded terminals with Vise-Grip pliers while tightening. After all the cables are fully tightened, trim-off the excess threads on the threaded terminal fittings as close to the locknut as possible using a hack saw or a reciprocating saw. Use cable cutters to trim the excess cable, and grind flush the exposed cable ends with an electric grinder. Snap-on colored end caps over the exposed Quick-Connect™ fittings and the threaded terminal locknuts. (Photos page 23)

RailingWorks™ Aluminum Railing Installation

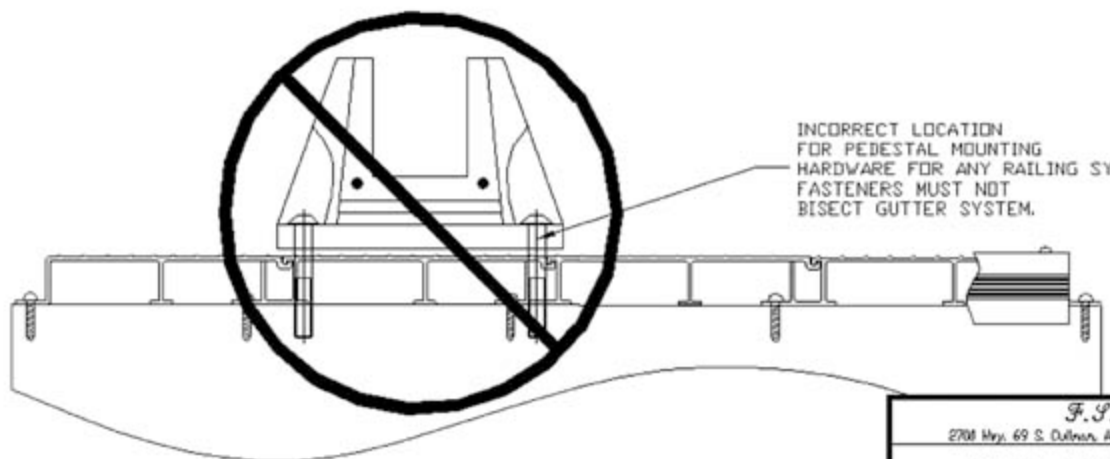
Please read all instructions before assembly.

STEPS FOR STAIR RAILING RUNS

1. According to the drawings, layout the posts and rails on the deck in the correct locations.
2. POSTS:
 - Pedestal Mount: Insert all posts into pedestals.
 - Fascia Mount: Fasten the top starting post. (Photos page 20)(Note:) Cable Railing Posts have pre-drilled holes for the cable to pass through. Ensure that the post with the larger holes (3/8") is positioned where the cable run will end.
3. RAILING INFILLS:
 - Stair Railings: The picket railing in-fill area will consist of a line of vertical pickets fastened to a top and bottom plate. Slide the first in-fill area inside the mounting clips up against the post. Pilot drill two (5/32") holes from inside the in-fill area through the mounting clips on the posts. Fasten each connection using two #10 x 3/4" Pantorx screws. A C-Clamp may be necessary to hold the clip to the plate for drilling. A long drill bit or bit extension may also help in drilling.
4. POST:
 - Pedestal Mount: Slide the next post in place against the railing in-fill plates. Pilot drill a hole through the plate and mounting clip and fasten using Pantorx screws. (Photos page 21-22)
 - Fascia Mount: Slide the next post in place against the railing in-fill plates. Square post with the deck and fasten to the fascia with 3/8" x 4" lag bolts and washers. Pilot drill the holes through the plate and mounting clip and fasten using Pantorx screws. (Photos page 20)
5. Repeat Steps 3 & 4 for the remainder of railings.
6. Installation of Bottom Caps:
 - Pedestal Mount: Pick up the stair railing in-fills and post out of the pedestals enough to install the bottom caps. Snap in place and let the assembly back down into the pedestals.
7. Snap all top handrail caps on in the correct location.
8. POSTS:
 - Pedestal Mount: Insert all posts into pedestals. Be sure the post is all the way down against the deck. Pilot drill (5/32") holes through the pedestal and post. Fasten using #10 x 3/4" Pantorx screws. (Photos page 21-22)
6. POST:
 - Pedestal Mount: Align all rails with deck and drawings. Drill 3/8" holes through decking and reinforcement channel, using the pedestal holes as a guide. Lift the post and insert the pedestal gasket. Insert all the 3/8" x 3" bolts with metal then rubber washers through the decking and aluminum channel. Fasten using metal washers and locknuts. Be sure to apply anti-seize to all of the bolt threads prior to installing the locknuts. The anti-seize must be applied!

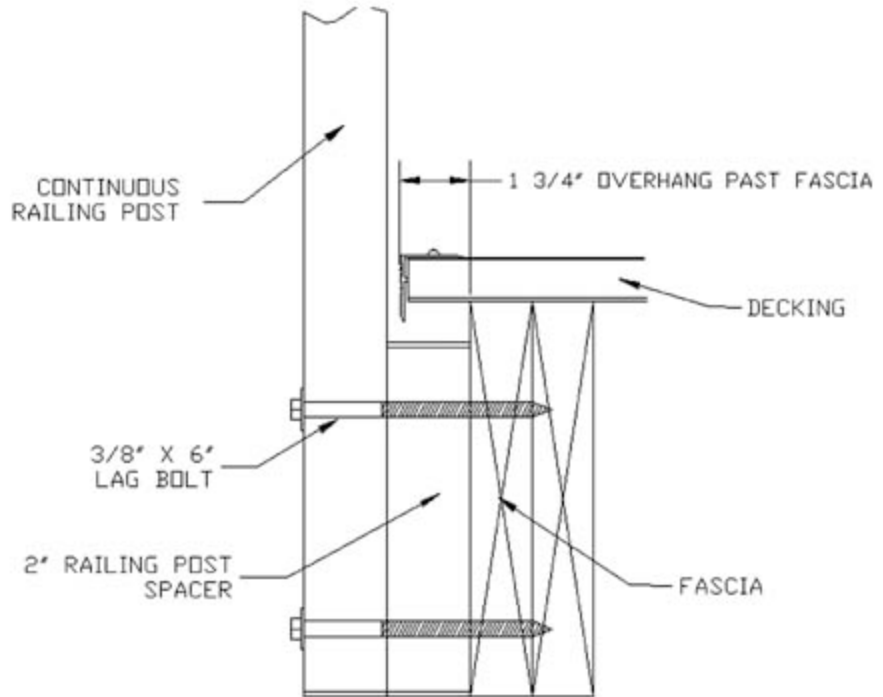


CORRECT LOCATION FOR PEDESTAL MOUNTING HARDWARE FOR ANY RAILING SYSTEM.



INCORRECT LOCATION FOR PEDESTAL MOUNTING HARDWARE FOR ANY RAILING SYSTEM. FASTENERS MUST NOT BISECT GUTTER SYSTEM.

F.F.I.
 2708 Hwy. 69 S. Dulles, VA (256) 287-0417
 PEDESTAL ASSEMBLY SHEET 6



CONTINUOUS RAILING POST

1 3/4" OVERHANG PAST FASCIA

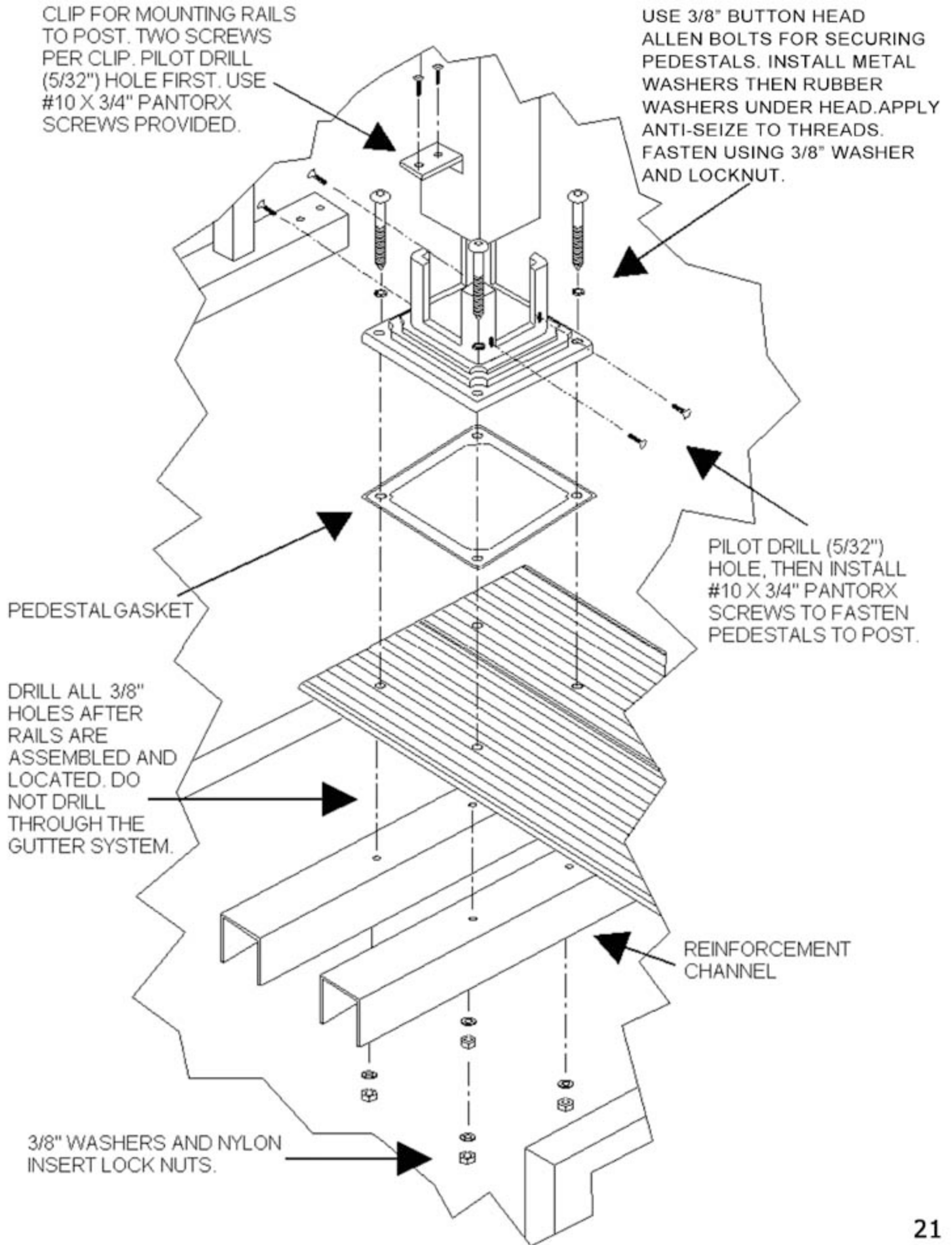
DECKING

3/8" X 6" LAG BOLT

2" RAILING POST SPACER

FASCIA

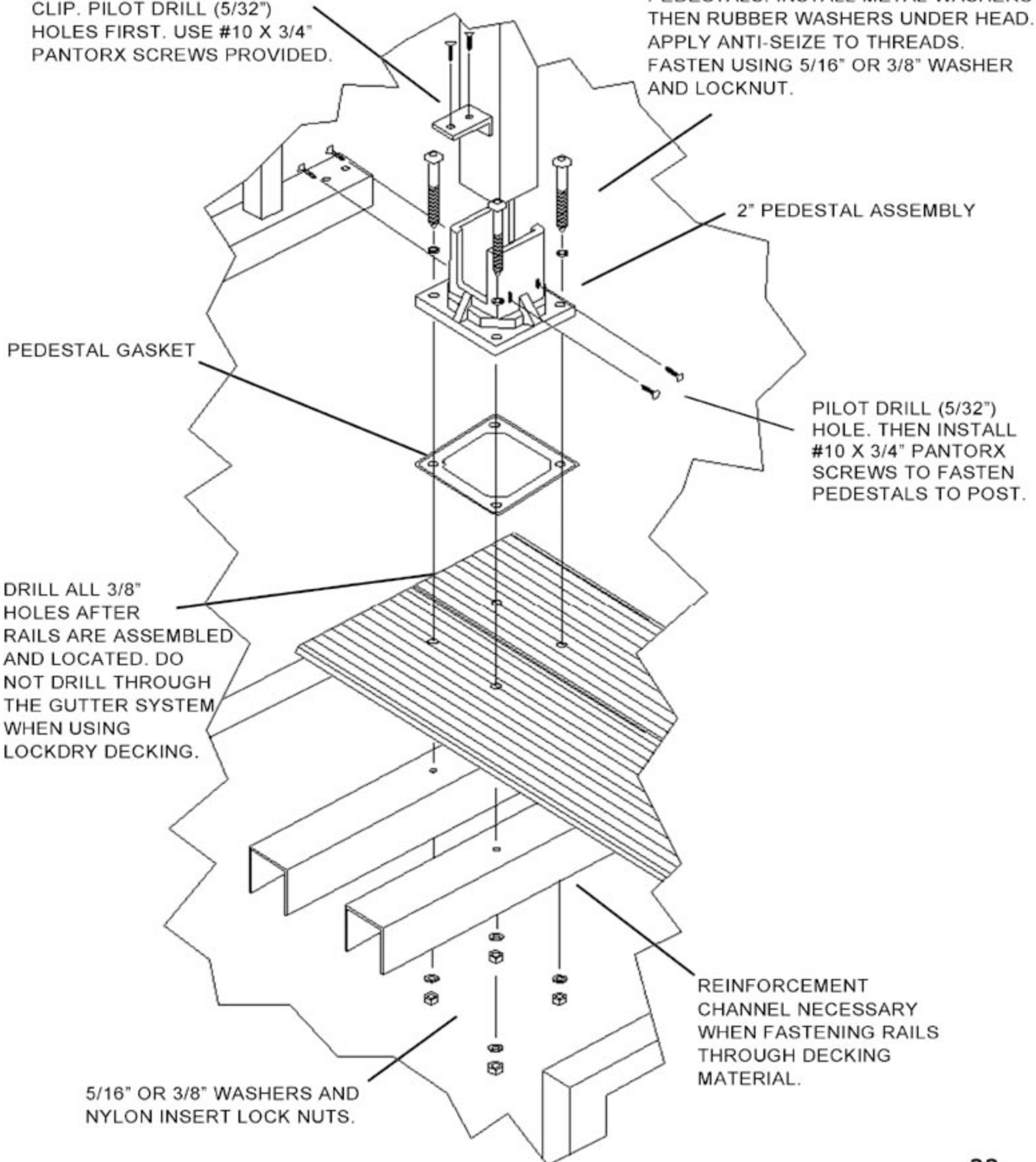
3" Post - Pedestal Assembly



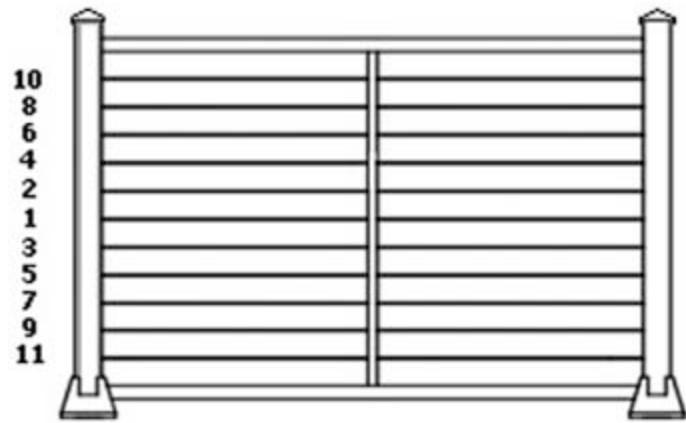
2" Post - Pedestal Assembly

CLIP FOR MOUNTING RAILS TO POST. TWO SCREWS PER CLIP. PILOT DRILL (5/32") HOLES FIRST. USE #10 X 3/4" PANTORX SCREWS PROVIDED.

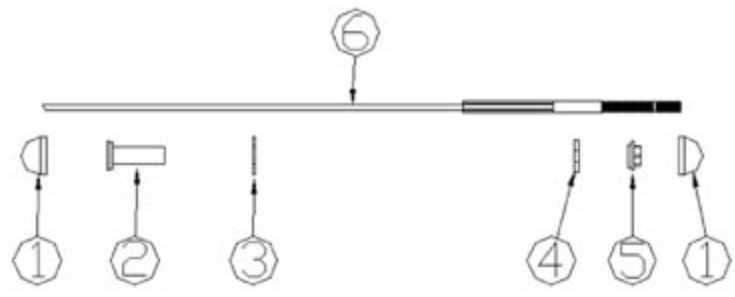
USE 5/16" OR 3/8" BUTTON HEAD ALLEN BOLTS FOR SECURING PEDESTALS. INSTALL METAL WASHERS THEN RUBBER WASHERS UNDER HEAD. APPLY ANTI-SEIZE TO THREADS. FASTEN USING 5/16" OR 3/8" WASHER AND LOCKNUT.



Cable Railing Assembly Details



Cable Tensioning Sequence



1:	COLORED END CAP
2:	S.S. QUICK CONNECT FITTING
3:	3/4" NYLON WASHER
4:	3/4" NYLON WASHER
5:	1/4" S.S. WASHER NUT
6:	1/8" S.S. CABLE ASSEMBLY

