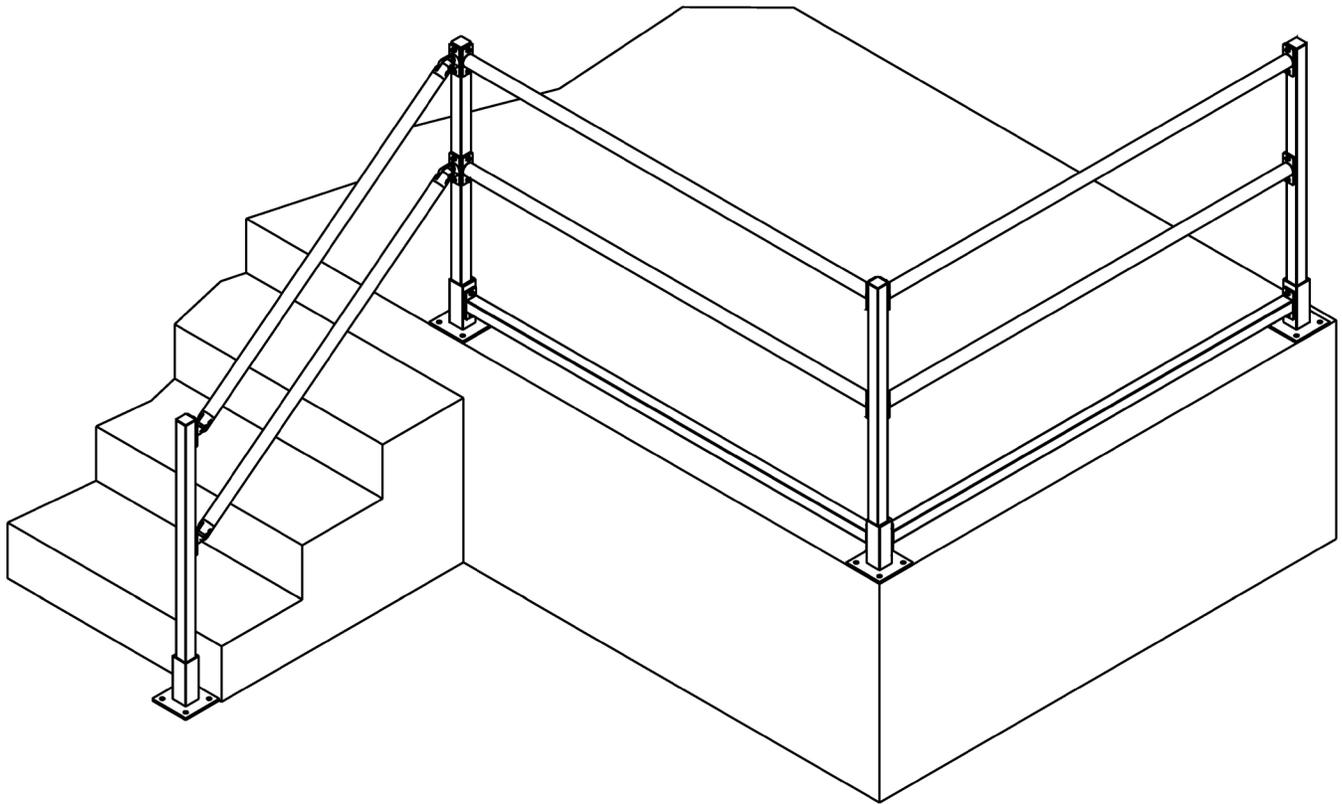


# Instructions

## RAILWAY™ Modular Handrail System



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Manufactured in the USA



21234 REV 4-4-2024

## **INTRODUCTION**

The RAILWAY™ Modular Handrail System provides a quick and easy way to add handrails and barriers to almost any deck or porch and is available in 3 kits. These kits are designed to be combined and configured to create the layout you need, and can be easily mounted to an existing structure for an added level of safety. Throughout these instructions, the RAILWAY Modular Handrail System is also referred to as ‘handrail system’ and includes the handrails and any/all components and hardware that are intended to be assembled on the handrail system.

## **SYMBOLS**

- ⚠ The **WARNING** symbol indicates a potentially hazardous condition/situation. The warnings throughout this document, and on your equipment, if any, are for the protection of people and property. Failure to abide by warnings will result in a waiver of all liabilities, loss of your warranty, and could result in equipment damage and or failure, property damage, risk of serious bodily injury, and or death to operators, riders, and those nearby. The symbol may appear in various colors and in conjunction with other symbols.
- 👉 The **NOTE** symbol indicates important information. Failure to obey all notes could result in improper operation, less-than-optimum equipment performance, and at the sole discretion of the equipment manufacturer, may void your warranty. The symbol may appear in various colors and in conjunction with other symbols.

## **WARNINGS**

- ⚠ Rated Load is 200 lbs.; never exceed Rated Load.
- ⚠ Prior to assembly and use, read and follow all instructions, warnings, and labels. Following all instructions and obeying all warnings before and during use is necessary for safe operation. Do not remove labels. For additional information or to obtain copies of instructions or labels, call 1-800-451-1903.
- ⚠ For residential use only.
- ⚠ Do not use the handrail system, or its components, for anything other than the intended purpose of grasping by hand for guidance.
- ⚠ If needed, use a qualified helper when using the handrail system.
- ⚠ Only use components supplied by the manufacturer with the handrail system.
- ⚠ This product must be installed by a qualified installer and maintained as specified in this manual and per your applicable local codes.
- ⚠ Before each use, check the handrail system for worn, loose, or damaged parts. If you find any of these conditions, do not use the handrail system and contact your installer for service or repairs. Failure to do so may result in serious injury.
- ⚠ Do not use the handrail system if it is damaged or unstable.
- ⚠ Do not tamper with, attempt to repair, or modify any portion of the handrail system.
- ⚠ Ensure that the mounting surfaces the handrail system will be attached to are substantial and of sound construction.
- ⚠ Before each use, confirm the handrail system is secure and assembled per the instructions. Contact your installer for any necessary adjustments.
- ⚠ The handrail system may be slippery in wet conditions; use caution as grip may be reduced.
- ⚠ Do not lean on or otherwise bear weight on the handrail system until assembly is complete.
- ⚠ Do not sit, stand, or climb on handrails or gates.
- ⚠ Do not place anything on, under, or attach anything to the handrail system including, but not limited to, planters, lights, decorations, etc.
- ⚠ Improper use of the handrail system could result in serious injury.
- ⚠ Always exercise caution when handling, assembling, and or using the handrail system.
- ⚠ Aluminum conducts electricity. Do not use the handrail system during electrical storms or in proximity to damaged or exposed wiring.
- ⚠ For additional care, usage, or general safety information, please call 1-800-451-1903.

## **TOOLS AND HARDWARE TYPICALLY REQUIRED**

- ✓ 3/8" SOCKET
- ✓ POWER DRILL SOCKET ADAPTER
- ✓ POWER DRILL
- ✓ RUBBER Mallet
- ✓ 3/16" ALLEN WRENCH
- ✓ TOOLS FOR CHOSEN ATTACHMENT HARDWARE (SEE ‘MOUNTING POST BASES’ SECTION)

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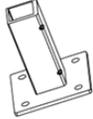
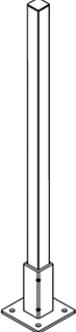
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## 1. GETTING STARTED

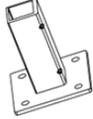
- 1.1. Read this instruction manual in its entirety before use and follow all instructions before and during use.
- 1.2. Confirm that all package contents are present. Open the shipping box(es) and inspect for damaged or missing parts. If damaged or missing parts are noted, do not assemble or use the handrail system.
- 1.3. Before each use, check the handrail system for worn, loose, or damaged parts. If you find any of these conditions, do not use the handrail system and contact your installer for service or repairs. Failure to do so may result in serious injury.
- 1.4. Before each use, confirm the handrail system is secure and assembled per the instructions. Contact your installer for any necessary adjustments.

## 2. PACKAGE CONTENTS

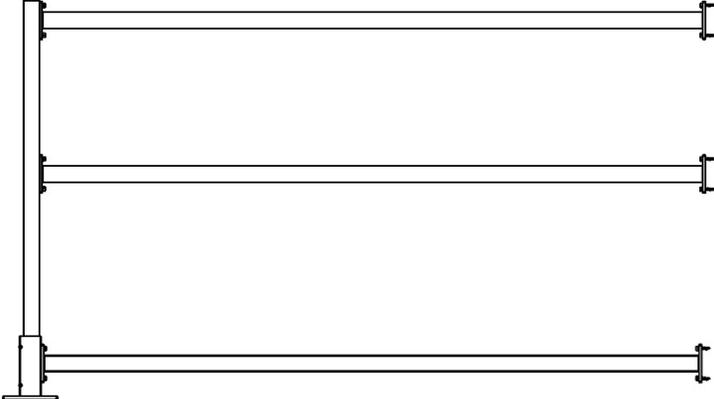
Contents may vary depending on kit purchased.

KIT 1 – RAILWAY POST KIT		
QTY	DESCRIPTION	IMAGE (NOT SHOWN TO ACTUAL SIZE)
1	SQUARE POST 1-1/2" x 1-1/2" x 36"	
1	TOP MOUNT POST BASE 5" x 5" x 5-3/4"	
1	SQUARE PLUG 1-1/2"	
1	WARNING LABEL 1-2/5" x 4-3/4"	
1	INSTRUCTIONS	
		

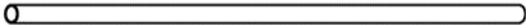
**KIT 2 – RAILWAY POST WITH 5' HANDRAIL AND BARRIER KIT**

QTY	DESCRIPTION	IMAGE (NOT SHOWN TO ACTUAL SIZE)
1	SQUARE POST 1-1/2" x 1-1/2" x 36"	
2	ROUND HANDRAIL TUBE 1-1/2" x 60"	
1	SQUARE BARRIER 1-1/2" x 1-1/2" x 59-1/2"	
1	TOP MOUNT POST BASE 5" x 5" x 5-3/4"	
1	SQUARE PLUG 1-1/2"	
6	HANDRAIL ATTACHMENT PLATE 1-1/2" x 3-1/2" x 1/4"	
4	THREADED TUBE INSERT (ROUND) 5/16"-18	
2	THREADED TUBE INSERT (SQUARE) 5/16"-18	
6	SCREW 5/16"-18 x 1" FLAT HEAD SOCKET CAP	
12	SCREW 1/4"-14 x 1" SELF-DRILLING, SELF-TAPPING HEX WASHER HEAD	
1	WARNING LABEL 1-2/5" x 4-3/4"	

**KIT 2 – RAILWAY POST WITH 5’ HANDRAIL AND BARRIER KIT (CONT’D.)**

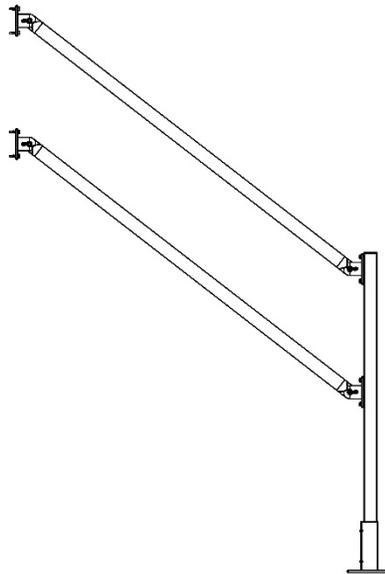
QTY	DESCRIPTION	IMAGE (NOT SHOWN TO ACTUAL SIZE)
1	INSTRUCTIONS	
		

**KIT 3 – RAILWAY 5’ STAIR HANDRAIL KIT**

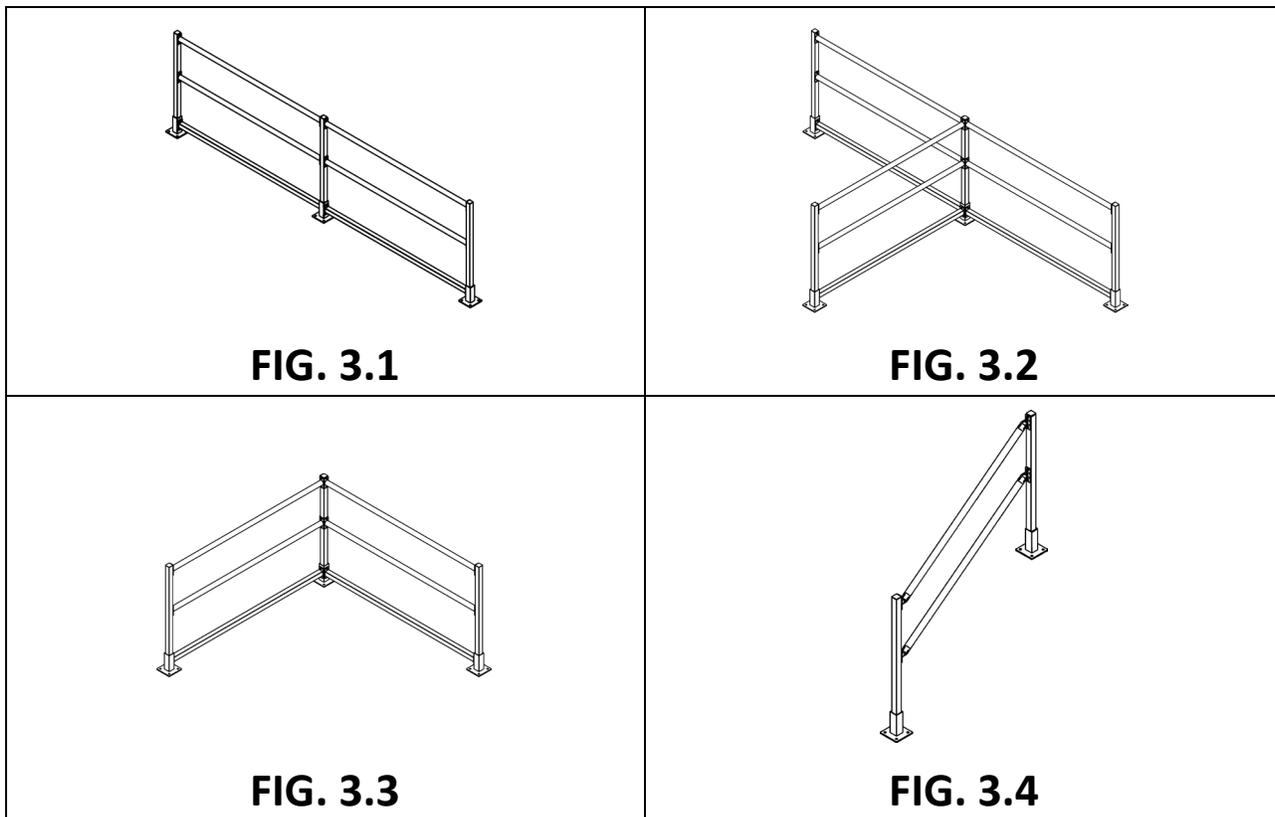
QTY	DESCRIPTION	IMAGE (NOT SHOWN TO ACTUAL SIZE)
1	SQUARE POST 1-1/2" x 1-1/2" x 36"	
2	ROUND HANDRAIL TUBE 1-1/2" x 60"	
1	TOP MOUNT POST BASE 5" x 5" x 5-3/4"	
1	SQUARE PLUG 1-1/2"	
4	HANDRAIL ATTACHMENT PLATE 1-1/2" x 3-1/2" x 1/4"	

**KIT 3 – RAILWAY 5’ STAIR HANDRAIL KIT (CONT’D.)**

QTY	DESCRIPTION	IMAGE (NOT SHOWN TO ACTUAL SIZE)
8	SCREW 1/4"-14 x 1" SELF-DRILLING, SELF-TAPPING HEX WASHER HEAD	
4	ADJUSTABLE CLOSURE ELBOW	
4	SCREW 5/16"-18 x 3/4" FLAT HEAD SOCKET CAP	
8	SCREW #8-18 x 3/4" SELF-DRILLING, SELF-TAPPING PAN HEAD PHILLIPS	
1	WARNING LABEL 1-2/5" x 4-3/4"	
1	INSTRUCTIONS	

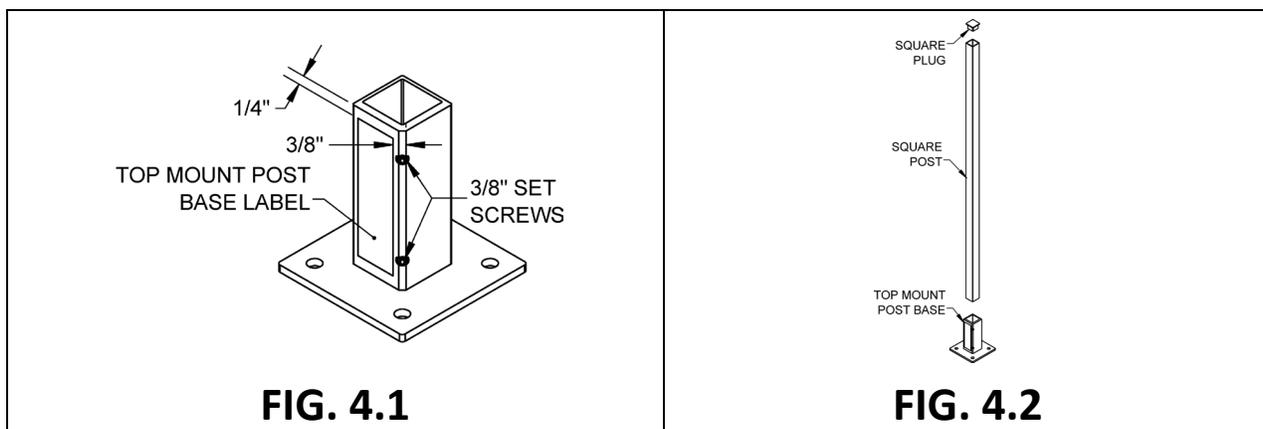


### 3. POPULAR CONFIGURATIONS



### 4. WARNING LABEL, POST, AND POST BASE ASSEMBLY

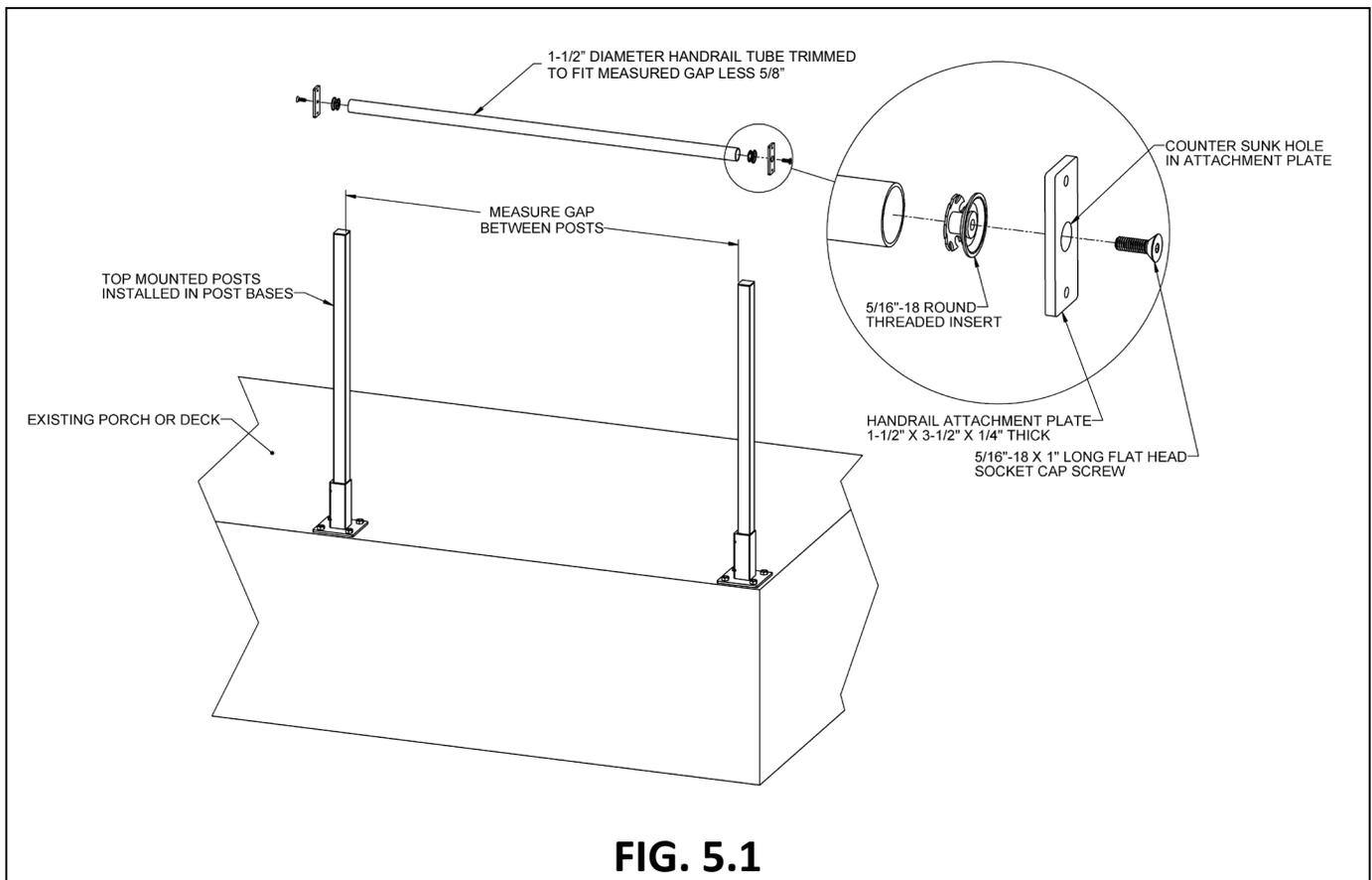
- ⚠ Excluding attaching to an existing structure, a post must be used at all locations where the handrail starts, stops, and or changes direction.
- 4.1. Begin installation by affixing the supplied warning label, found in the hardware bag, to the Top Mount Post Base ('post base') as shown in FIG. 4.1.
  - ⚠ The warning label alerts users to potential dangers and must be kept legible by handrail system owner.
- 4.2. Insert a Square Plug ('plug') into one end of the Square Post ('post') and use a rubber mallet to seat the plug against the post end (FIG. 4.2).
- 4.3. Insert open end of post into post base and use a 3/16" Allen wrench to firmly tighten two set screws against the post (FIG. 4.2).
  - 👉 Assembled posts are 62.094" center-to-center when assembled. Because this dimension is difficult to field measure, assemble the handrail posts and handrails before mounting bases to landings.



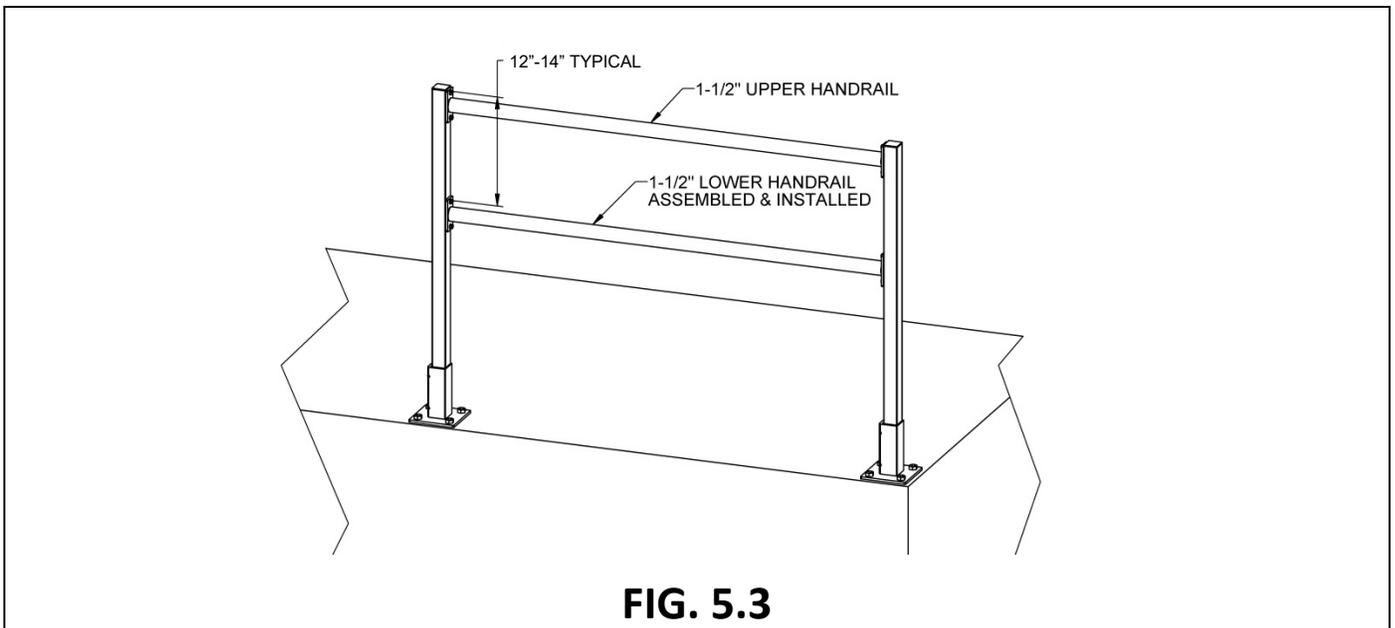
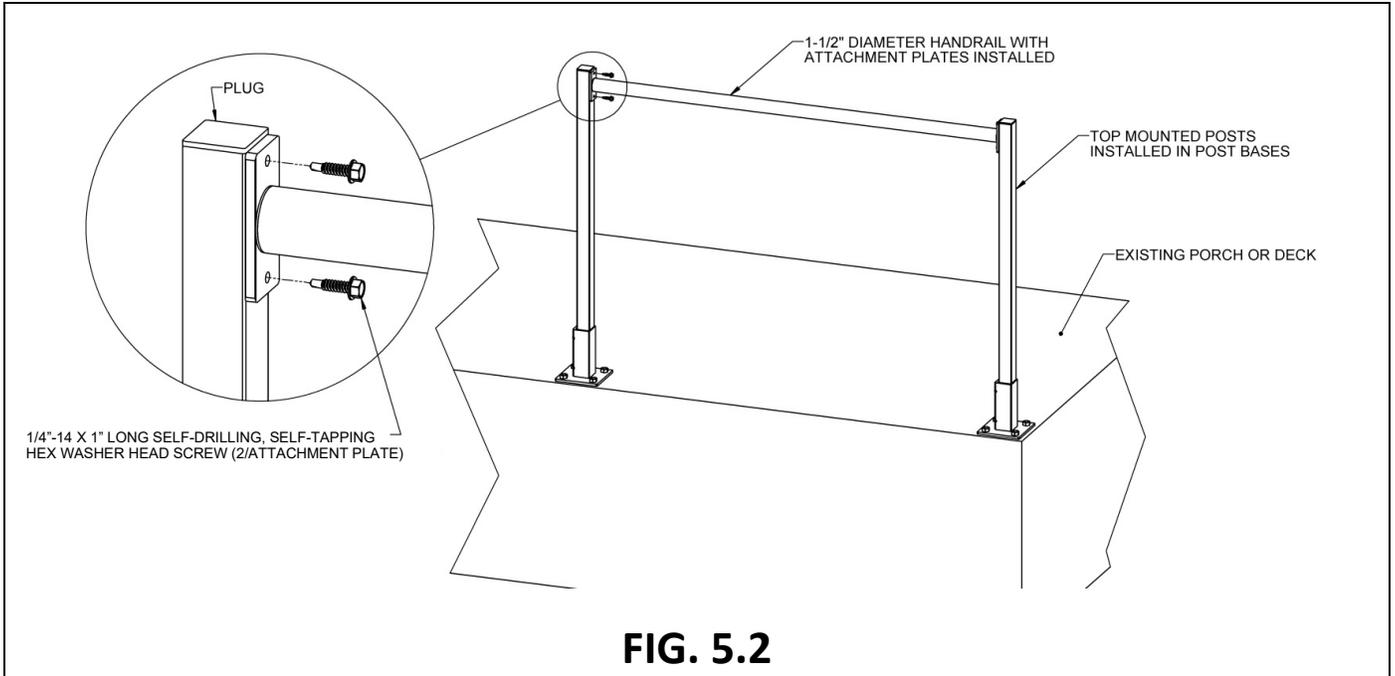
## 5. HANDRAIL SYSTEM ASSEMBLY AND INSTALLATION

### 5.1. LANDING HANDRAILS:

- ✎ The following steps outline the assembly and installation instructions for combining Kit 1 (RAILWAY Post Kit) and Kit 2 (RAILWAY Post with 5' Handrail and Barrier Kit) to create a handrail system.
- 5.1.1. The handrail system uses 1-1/2" x 60" round tubes for handrails and includes the hardware for post attachment. After assembling the posts and post bases as described in Section 4, measure the gap between posts then trim the 1-1/2" diameter tube to the measured distance less 5/8" to account for the threaded tube inserts and handrail attachment plates which will be installed in the following steps (FIG. 5.1).
  - ✎ Measure all gaps between posts separately to account for dimensional and mounting surface variations before trimming tubes.
  - ⚠ Deburr all field trims.
- 5.1.2. Insert a 5/16"-18 Round Threaded Tube Insert ('round threaded insert') into each end of the trimmed tube. Use a rubber mallet or similar tool to fully seat the round threaded insert (FIG. 5.1).
- 5.1.3. Secure a handrail attachment plate ('attachment plate') to each end of the Round Handrail Tube ('handrail tube') using provided 5/16"-18 x 1" flat head socket cap screws. Loosen and retighten the flat head socket cap screws if needed as they will not be accessible once the handrail is installed.
  - ✎ The flat head screws must be fully engaged in the countersunk hole in the attachment plate and the flat side must face the round threaded insert as shown.
  - ⚠ 5/16"-18 x 1" flat head socket cap screws are used on landing handrails, and the 5/16"-18 x 3/4" flat head socket cap screws are used on closure elbows.

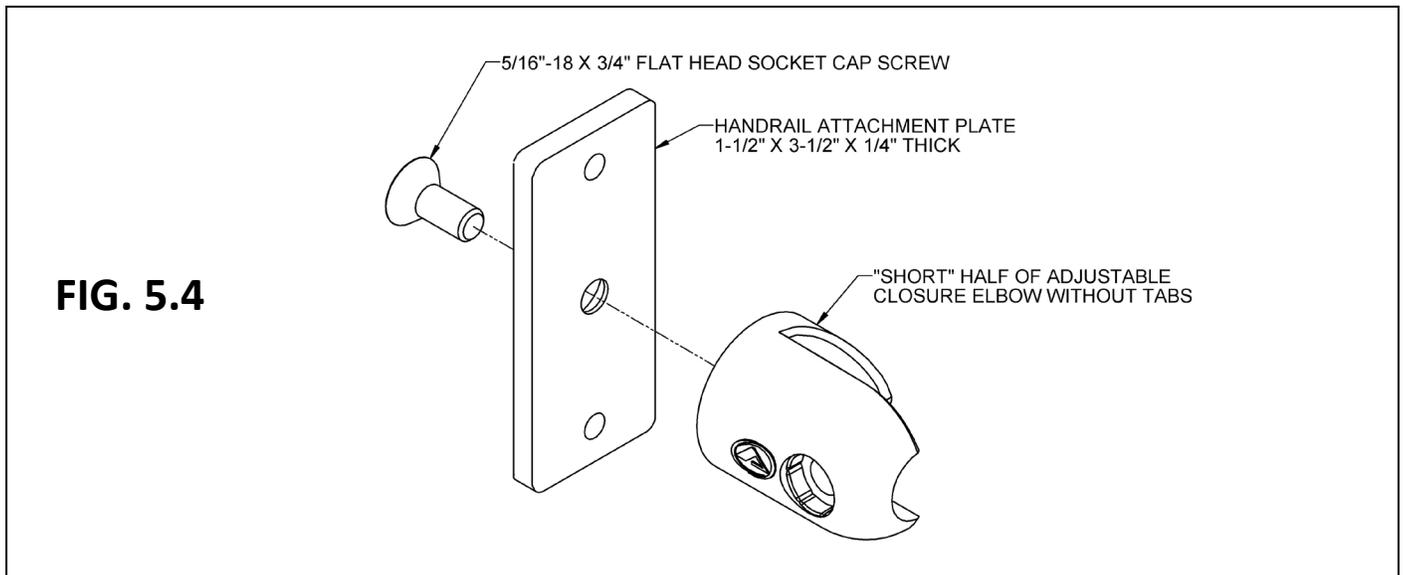


- 5.1.4. Place the assembled handrail between the posts just below the plugs in the top of the posts.
- 5.1.5. If desired, use the holes in the attachment plate as a template to drill 1/8" diameter pilot holes through one wall of the post.
  - ✎ Drilling pilot holes is optional.
- 5.1.6. Secure the attachment plates to the posts using the provided 1/4" x 1" long self-drilling, self-tapping hex washer head screws (FIG. 5.2).
  - ✎ You may find it easier to install the remainder of the handrail system if the fasteners attaching the plate to the post are not fully tightened until the handrail run is complete.
- 5.1.7. Repeat the steps in Section 5 for all remaining handrails (including lower handrails if used).
- 5.1.8. The lower handrail, if present, can be placed at any height but is commonly placed 12" to 14" below the upper rail (FIG. 5.3).



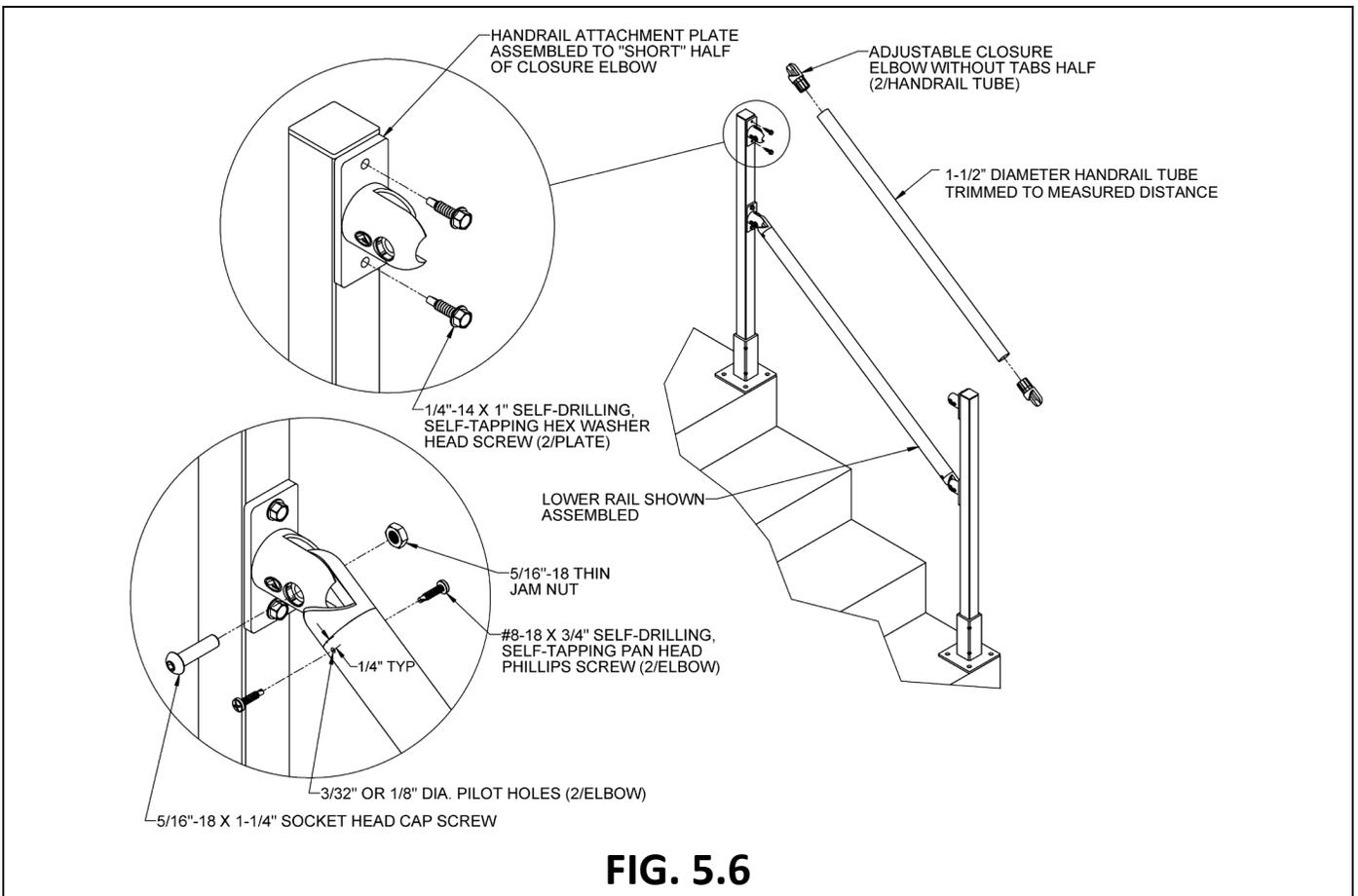
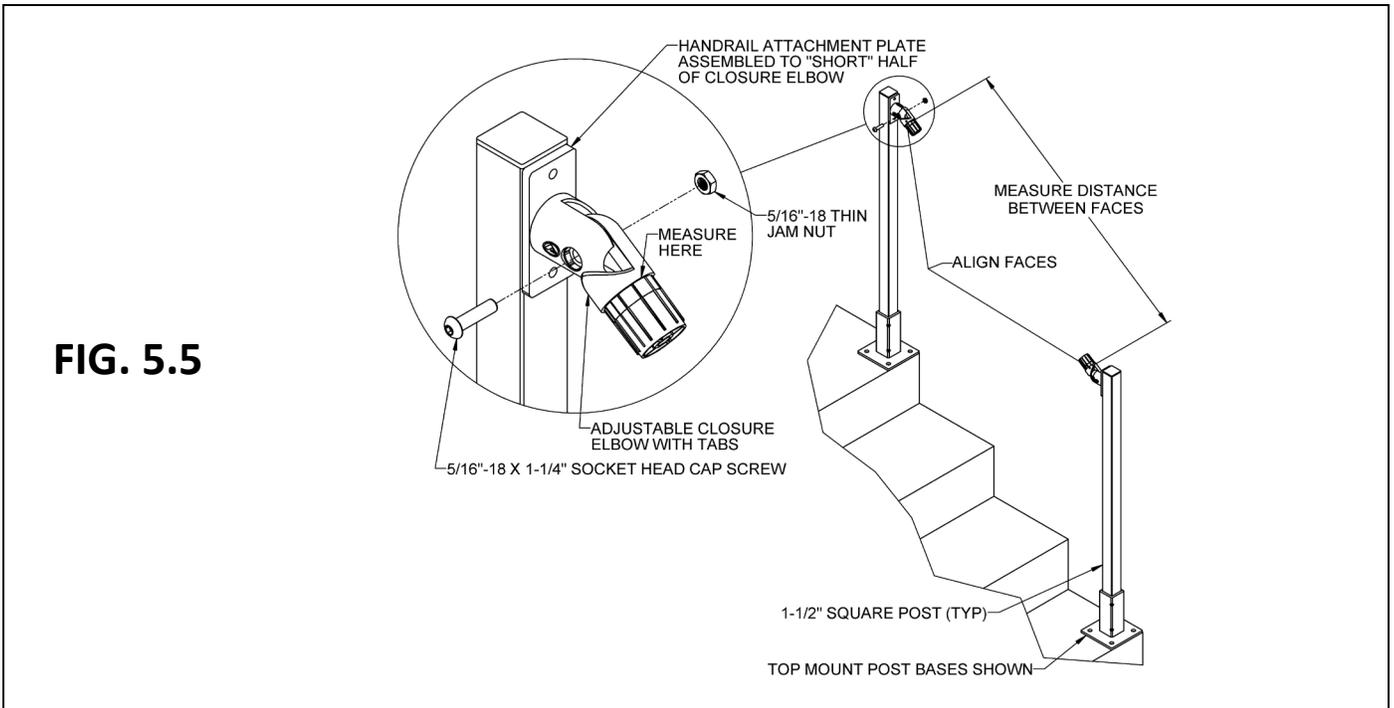
## 5.2. STAIR HANDRAILS:

- 5.2.1. The handrail system uses 1-1/2" x 60" round tubes for handrails and includes the hardware for post attachment. If you require a shorter handrail, field trim the tubes as needed.
  - ▲ Deburr all field trims.
- 5.2.2. If desired, use the holes in the attachment plate as a template to drill 1/8" diameter pilot holes through one wall of the post.
  - ✎ Drilling pilot holes is optional.
  - ✎ To drill pilot holes for a single rail, place the assembled handrail between the posts just below the plugs in the top of the posts.
  - ✎ To drill pilot holes for a second rail, the attachment plate can be placed at any height but is commonly placed 12" to 14" below the upper rail.
- 5.2.3. Assemble all handrail mounts by first removing the Adjustable Closure Elbow ('closure elbow') assembly screws. Attach the shorter half of the closure elbow to an attachment plate by inserting a 5/16"-18 x 3/4" flat head socket cap screw into the center countersunk hole of the plate and into the 5/16"-18 round threaded insert in the elbow half. Tighten the screw enough to hold the elbow half in place but still allow it to rotate (FIG. 5.4).
  - ✎ The flat head screws must be fully engaged in the countersunk hole in the attachment plate and the flat side must face the closure elbow as shown.



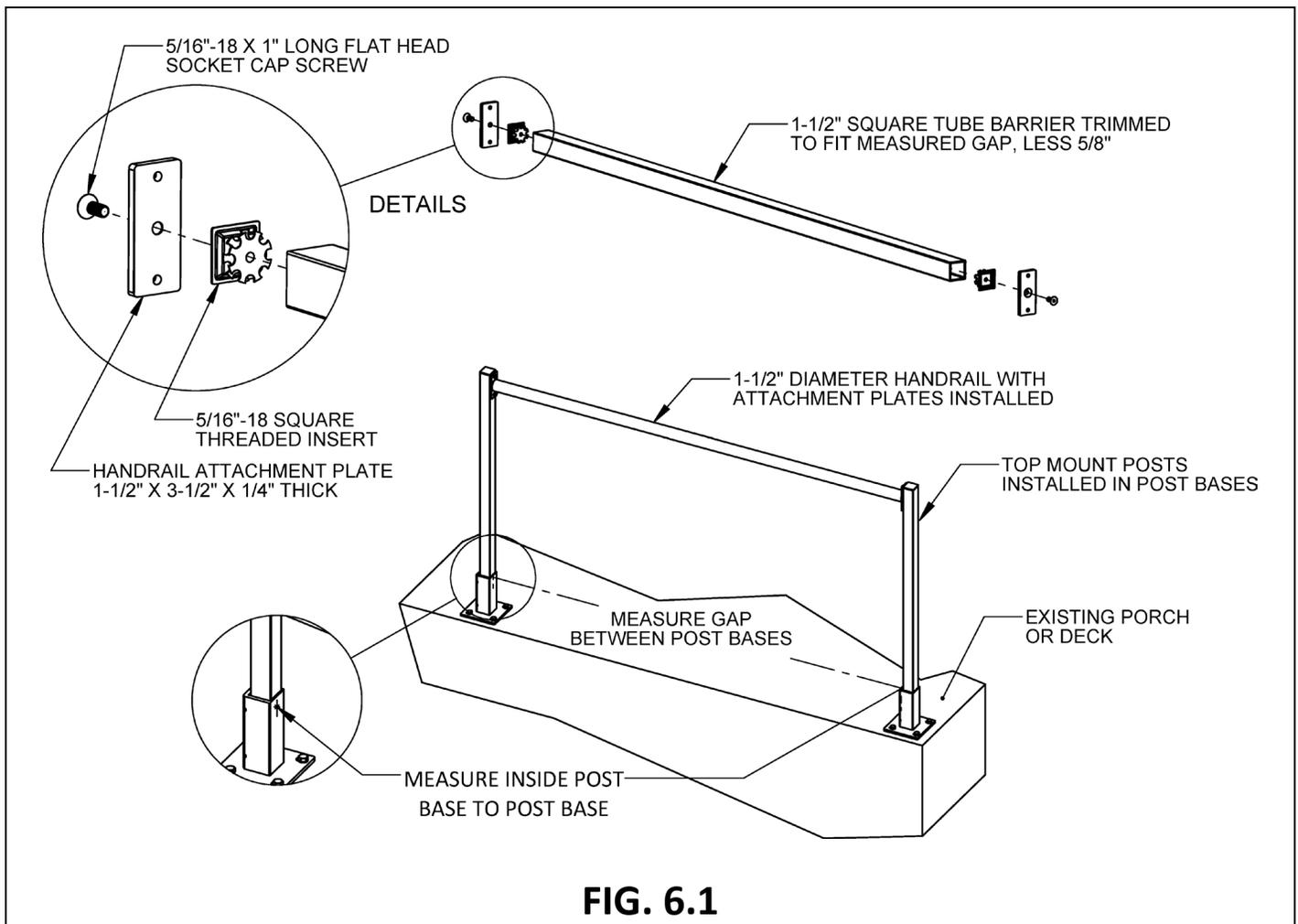
- 5.2.4. Reassemble the closure elbow then hold (clamp if needed) the assembled handrail mounts in the locations where they will be attached (FIG. 5.5).
- 5.2.5. Align the opposing faces of the closure elbows where the handrail will be installed. Loosen and retighten the closure elbow assembly screws and rotate the closure elbow with respect to the attachment plate as needed to align the elbows (FIG. 5.5).
- 5.2.6. Measure the distance between the opposing faces of the closure elbows and trim the 1-1/2" diameter handrail tubes to fit (FIG. 5.5).
  - ▲ Deburr all field trims.
- 5.2.7. Disassemble the closure elbow again, but do not remove the halves from the attachment plates, and insert the half not assembled to the plate into both sides of the trimmed 1-1/2" diameter handrail tube until fully engaged and align the flat faces of the closure elbows side to side (FIG. 5.5).
- 5.2.8. Tighten the 5/16"-18 x 3/4" flat head socket cap screws in the attachment plates securely then attach the handrail mounts onto the posts using 1/4" x 1" long self-drilling, self-tapping hex washer head screws in the pilot holes, if drilled previously (FIG. 5.6).
- 5.2.9. Attach the 1-1/2" diameter handrail tube with closure elbow halves installed by reassembling the closure elbows (FIG. 5.6).

- 5.2.10. If desired, drill 1/8" pilot holes through the 1-1/2" diameter tubes adjacent to the closure elbows. The holes should be in line with the assembly fasteners and approximately 1/4" from the closure elbow (FIG. 5.6).
- 5.2.11. Drive #8-18 x 3/4" self-drilling, self-tapping pan head Phillips screws through the pilot holes, if drilled in the previous step, and into the closure elbow. Tighten securely but use caution not to overtighten and strip threads (FIG. 5.6).

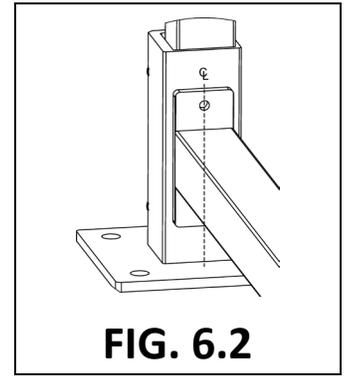


## 6. BARRIER INSTALLATION

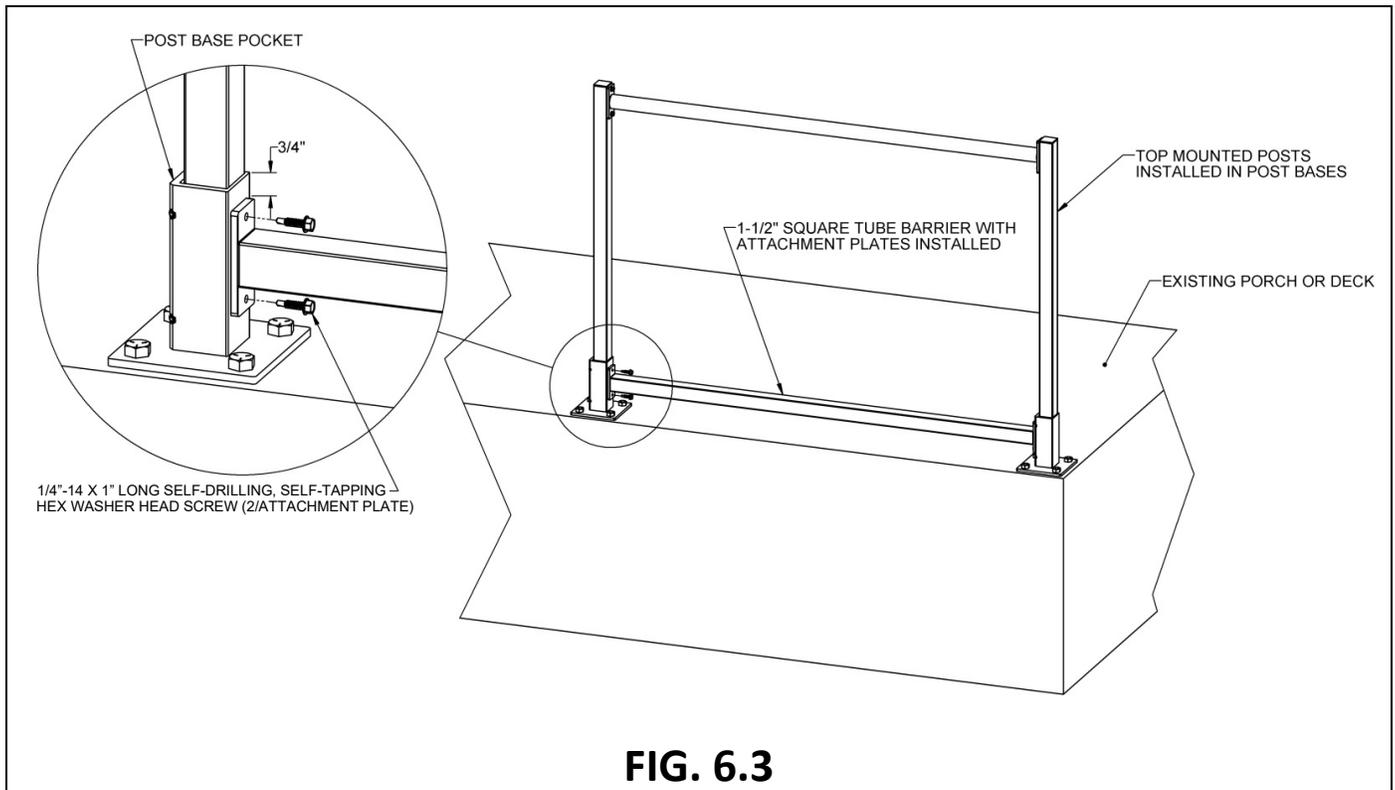
- 6.1. If ordering Kit 2, the handrail system will also include a 1-1/2" Square Barrier ("barrier"). The barrier is 60" long and includes the hardware for post attachment. If you require a shorter barrier, field trim as needed.
  - ⚠ Debur all field trims.
- 6.2. Place barrier between post bases so the top of the 1-1/2" square tube is 4" above the walking surface.
- 6.3. Install the posts, post bases, and handrails as described in Sections 4 and 5, then measure the gap between the post base pockets. Trim the 1-1/2" barrier to the measured distance less 5/8" to account for the threaded tube inserts and attachment plates which will be installed in the following steps (FIG. 6.1).
  - ⚠ Debur all field trims.
  - ✋ Measure all gaps between post bases separately to account for dimensional and mounting surface variations before trimming barrier.
- 6.4. Insert a 5/16"-18 Square Threaded Tube Insert ('square threaded insert') into each end of the trimmed tube. Use a rubber mallet or similar tool to fully seat the square threaded insert (FIG. 6.1).
- 6.5. Secure an attachment plate to each end of the barrier using the 5/16"-18 x 1" flat head socket cap screws provided. The flat head socket cap screw must be fully engaged in the countersunk hole in the attachment plate and the flat side must face the square threaded insert as shown. Make sure the sides of the attachment plate are aligned with the sides of the square tube.
- 6.6. Loosen and retighten the flat head socket cap screws if needed as they will not be accessible once the barrier is installed (FIG. 6.1).



- 6.7. If you want the barrier to be 4" above the walking surface, center the attachment plate horizontally on the post base pockets and hold the assembled barrier at 3/4" below the top of the post base pocket (FIG. 6.2).
- 6.8. If desired, use the holes in the attachment plate as a template to drill 1/8" diameter pilot holes through one wall of the post base and through the corresponding wall of the post.
- ✎ Drilling pilot holes is optional.
- 6.9. Secure the barrier to the post bases using provided 1/4" x 1" long self-drilling, self-tapping hex washer head screws (FIG. 6.3).
- 6.10. Repeat the steps in Section 6 for all remaining barriers.



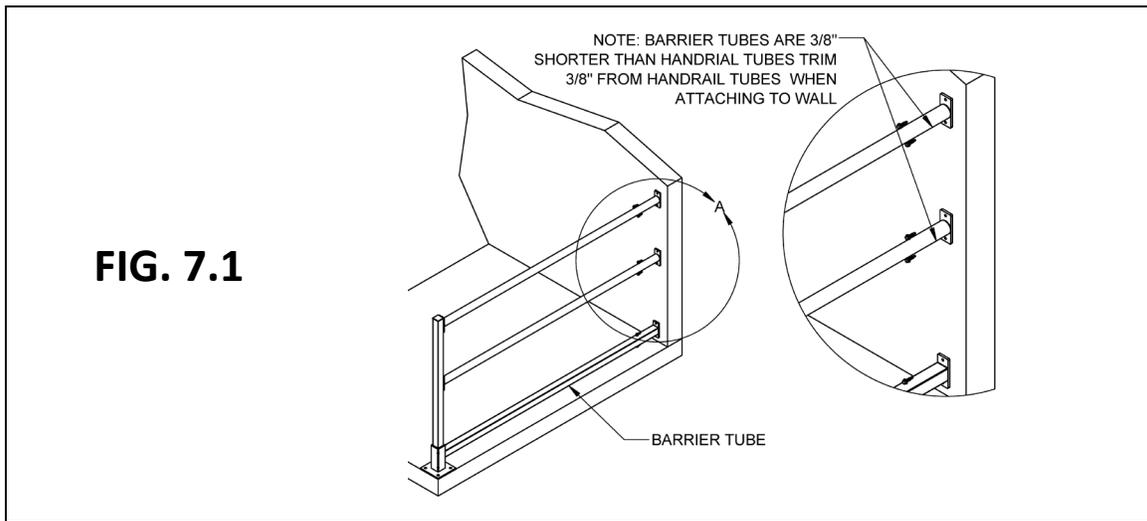
**FIG. 6.2**



**FIG. 6.3**

## **7. RETURNING HANDRAILS AND BARRIERS TO AN EXISTING STRUCTURE**

- 7.1 The handrail system can be attached to an existing structure.
  - ✎ Handrail tubes are 3/4" longer, overall, than the barriers. When connecting handrails flush against a flat wall, trim 3/8" from both handrail tubes to get the mounting hardware to set flush against the wall. Review Section 5 for tube trimming instructions.
- 7.2 First, measure, trim, and assemble the handrails and/or barriers as described in the preceding sections. The gap measured will be the distance between the last post in the run and the existing wall or post.
- 7.3 Align the handrail(s) and/or barrier(s) with the handrail(s) and/or barrier(s) previously attached to the handrail post and secure the attachment plates to the handrail post as described in the previous sections.
- 7.4 Secure the attachment plates to the existing wall or post using the appropriate fastener for the surface (FIG. 7.1).
  - ⚠ It is the installer's responsibility to secure the attachment plates to a structurally sound surface. Failure to attach to a structurally sound surface may result in property damage, serious injury, and or death.
- 7.5 Repeat the steps in Section 7 for all remaining handrails and barriers.



## 8. MOUNTING POST BASES

⚠ It is the installer's responsibility to attach post bases to a structurally sound surface. Failure to mount post bases to a structurally sound surface may result in property damage, serious injury, or death.

8.1. Place the handrail run in place and use the holes in the post bases as a template to drill the mounting holes.

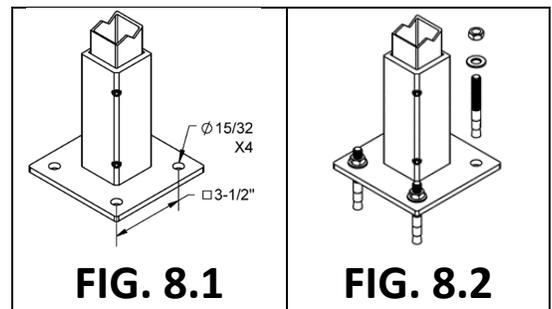
8.2. Attach the post bases using the chosen fasteners.

⚠ It is the installer's responsibility to choose the correct fastener for the material and surface to which the post bases and attachment plates will be attached. Follow the fastener manufacturer's instructions for proper installation. Improper installation of concrete anchors, screws, or other fasteners can damage the structural integrity of concrete and other surfaces and create a hazardous situation.

8.3. If final adjustment is desired, loosen the two 3/8"-16 set screws in the post base and insert the post into the base pocket with the plug on top. Tighten the set screws securely after installing posts.

8.4. Post bases have four 15/32" mounting holes for 3/8" fasteners (FIG. 8.1). Depending upon the mounting structure, appropriately sized lag bolts, concrete anchors, or concrete screws may be used. Consult a local professional for additional assistance.

👉 FIG. 8.2 shows use of concrete anchors.



## 9. FINAL STEPS

9.1. Tighten all fasteners securely, including the post base mounting bolts and set screws, the attachment plate screws, and closure elbow screws if present.

9.2. FINAL CHECKS:

9.2.1. Ensure that all fasteners are in place and secure.

9.2.2. Remove any debris, metal chips, and burrs.

## 10. MAINTENANCE AND SAFETY

10.1. PERIODIC MAINTENANCE:

10.1.1. Check the handrail system for damage and tighten any loose fasteners to ensure safety.

10.1.2. Clean the handrail system using a damp cloth or soft brush with soap and water. Avoid caustic, or alkaline detergents and solutions.

⚠ For the safety of all users, it is important to keep your handrail system clear of snow, ice, and other debris.

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