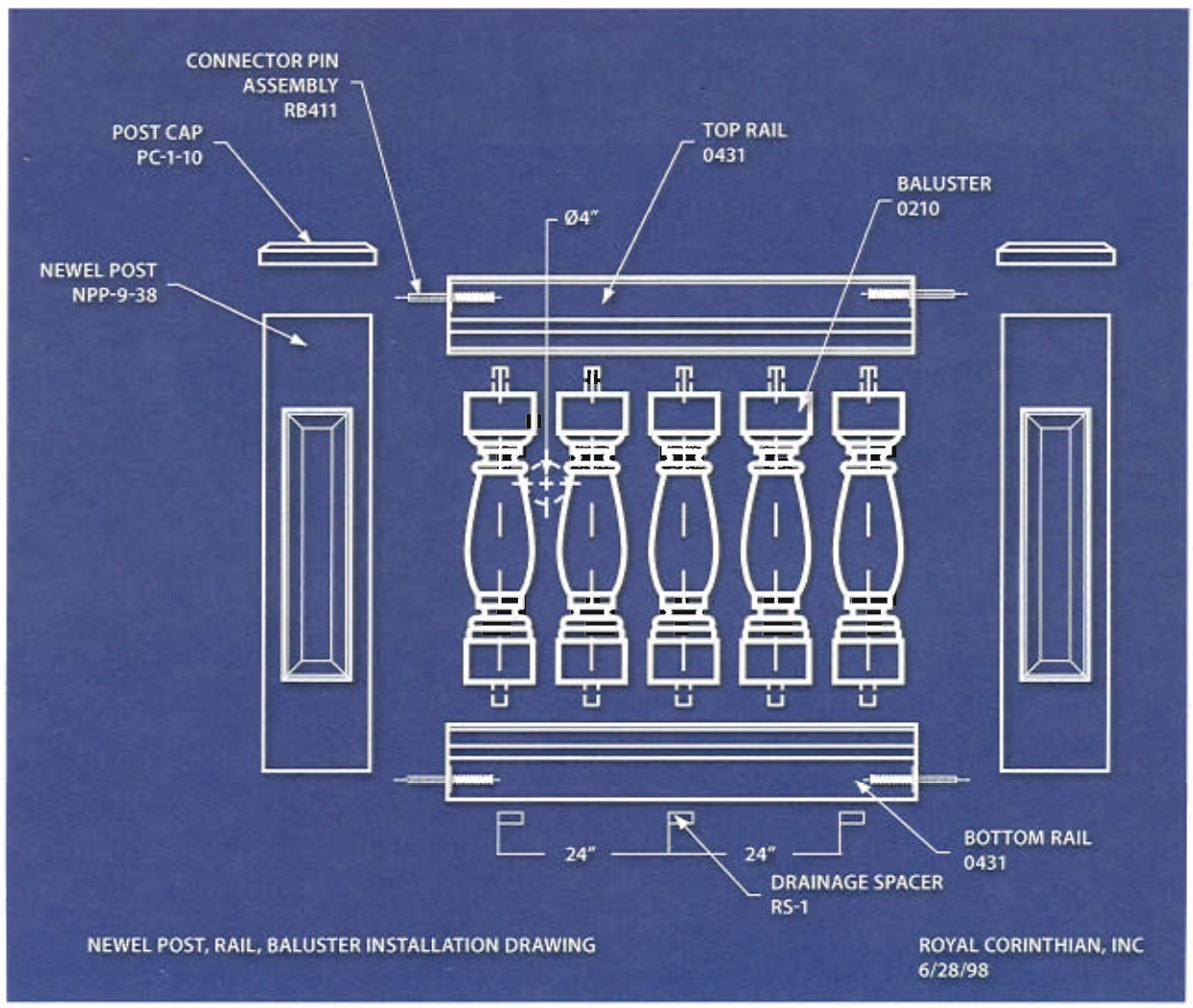


# BALUSTRADE INSTALLATION

## TOOLS NEEDED FOR INSTALLATION

- Pencil
- Circular saw
- Segmented rim diamond saw blade (8")
- Heavy duty carbide-toothed hole saw 7/8" and 1 1/8"
- Diamond disc for grinder (4")
- Reciprocating saw
- Utility knife
- Sandpaper (50 grit)
- Wooden shims
- Hammer
- Level
- Angle square/angle measurement tool
- Hammer drill (1/2" chuck)
- Grinder (4")
- Tape measure 25-30 ft
- Caulk gun
- Rags
- Construction adhesive



# BALUSTRADE INSTALLATION

## BALUSTRADE SYSTEM INSTALLATION MANUAL

Installation instructions based on 0210 baluster and 0431 rails. Installation may vary with a combination other than listed.

### Step 1: Post installation

Required tools: screw driver, pencil, 3/4" diameter concrete drill bit for installation over concrete. Place newel post in position on flooring as specified on architectural plans and as adjusted by field measurements. Center newel post accordingly. Mark flooring around edges of newel post. Put newel post aside until later.

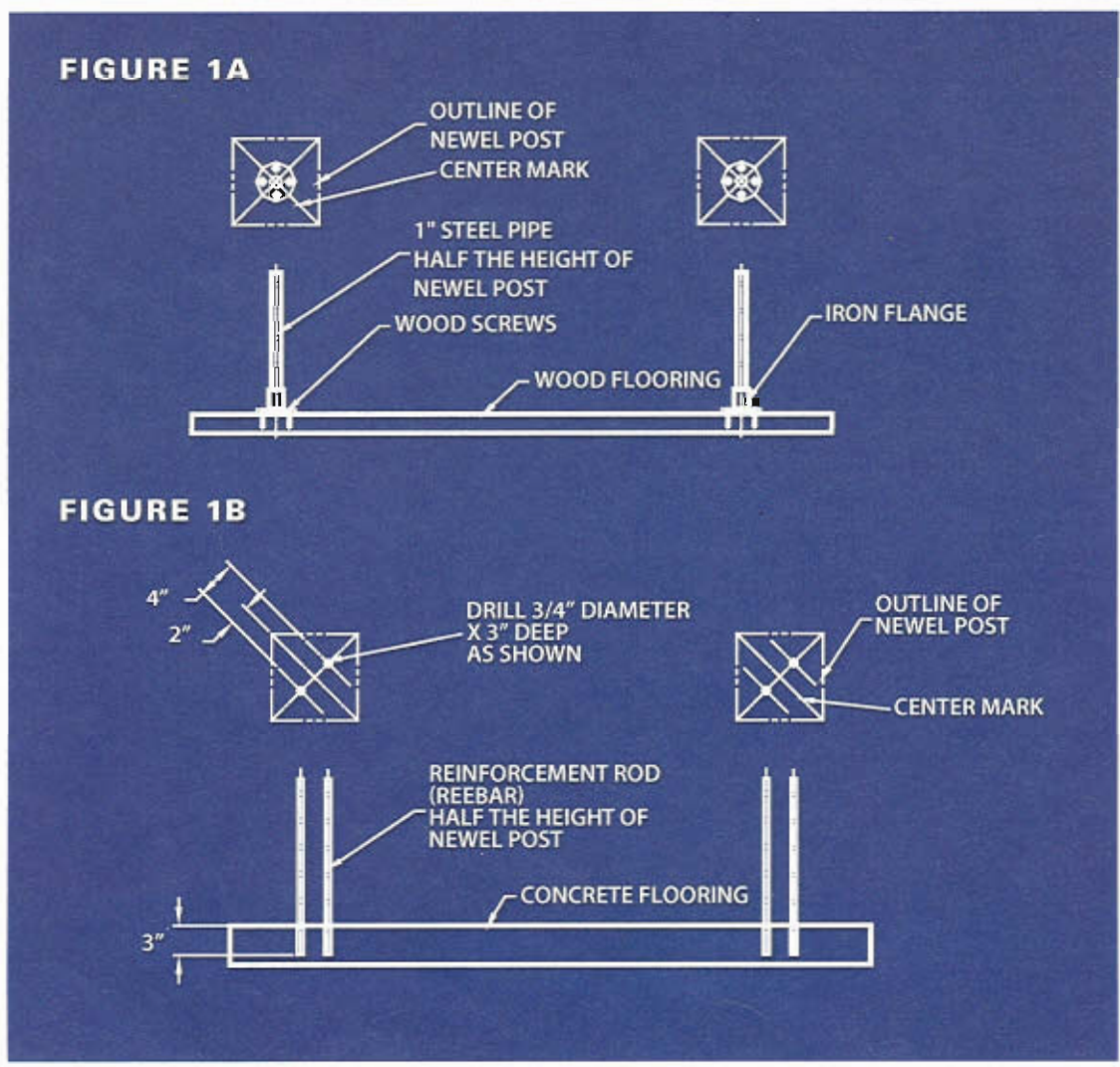
#### 1. Installation over wood flooring: (see figure 1A)

Fasten iron flange for 1" pipe, with appropriate wood, in the center of the area marked for newel post. Thread 1" steel pipe into the iron flange.

#### 2. Installation over concrete flooring: (see figure 1B)

Drill two 3/4" diameter holes x 3" deep into concrete, centered 4" apart, in the area marked for the Newel post. Insert reinforcement rod. *Note: rod length is approximately half the height of the newel post. Align newel post as marked on deck. Pour light weight concrete to a level of approximately 5". Do not place newel caps on posts until hand rails are installed.*

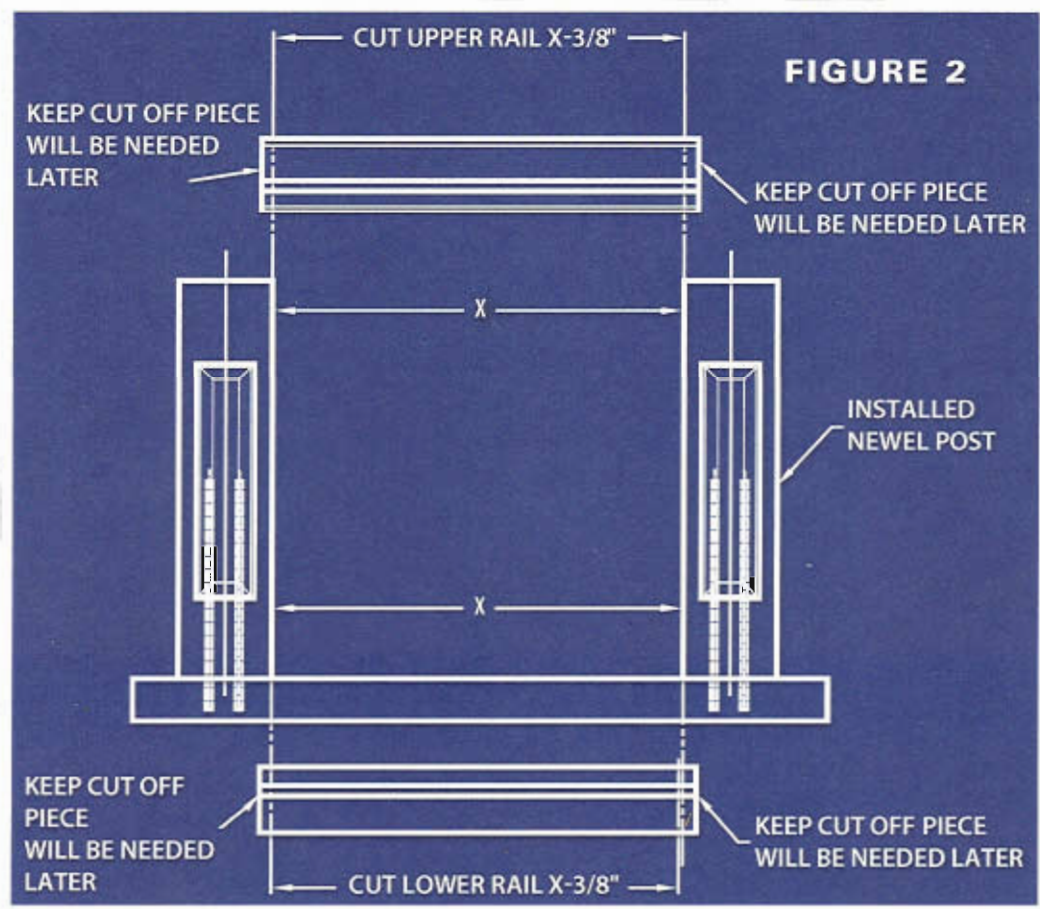
*Tip: If there is a concern of the alignment or accuracy of the entire assembly, pour light weight concrete between steps 8 and 9. This will enable a final adjustment and alignment.*



# BALUSTRADE INSTALLATION

## Step 2: Bottom and top rail preparation

Required tools: circular saw, and carbide or diamond saw blade. Use carbide saw blade or diamond disc. Cut rails  $3/8"$  shorter than measured distance between newel posts.



## Step 3: Drilling of holes in rails

Tools required: drill, 1-1/8" diameter with 1/4" diameter pilot hole saw, pencil

Note: Check baluster spacing with blueprint and municipal code before proceeding.

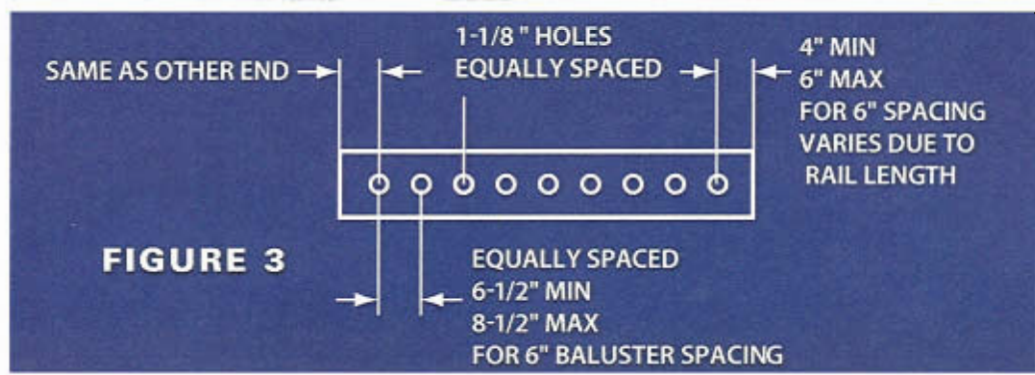
-4" (sphere) spacing:

Mark the first hole on each side, 4" to 6" from each end, divide the remaining space between the two end holes equally. The center distances may not exceed 6.5" (On center spacing varies with each baluster).

-6" (sphere) spacing: (see figure 3)

Mark the first hole on each side, 4" to 6" from each end, divide the remaining space between the two end holes equally. The center distances must be between 6.5" and 8.5" for each baluster (baluster# 0210, 0210-1, 0209 and 0219).

Space between baluster centers may not exceed 7.5" for baluster# 0225.



# BALUSTRADE INSTALLATION

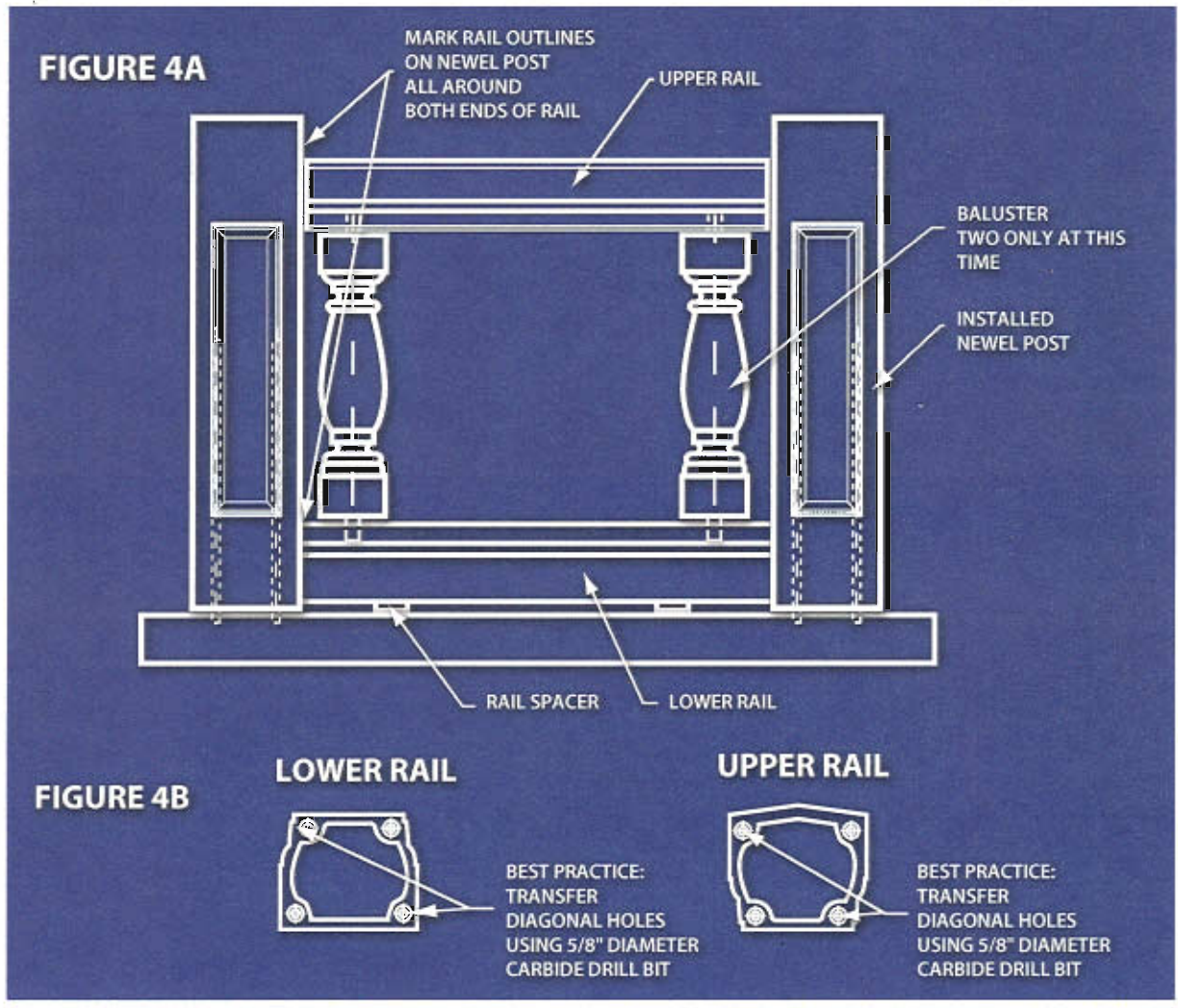
## Step 4: Newel post holes for rail connection

Required tools: drill, 5/8" diameter carbide drill bit, level and pencil.

Install rail spacers at 2 ft or 3 ft spacing if necessary. Position lower rail between newel posts. Install two balusters into pre drilled side holes. Level bottom rail, install, position and level upper rail.

Scribe rail outlines on newel post (at all four rail ends). Remove rails & balusters (see figure 4A).

Using rail end cut off pieces, match scribed outlines and transfer holes into newel posts, using 5/8" carbide drill bit.

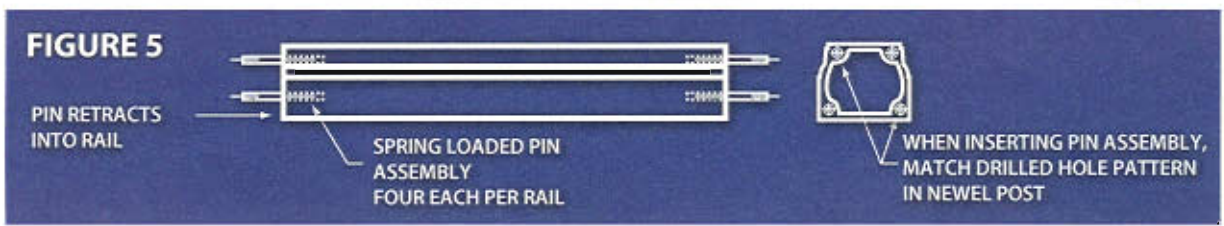


## Step 5: Spring loaded pin installation

Inspect pvc pipe ends. Clean ends, if necessary, using a round file. Do not force pin into pipe!

Insert steel pin into open end of spring. Insert this spring loaded pin assembly into two of the small holes matching the holes drilled into the newel posts. If bracket becomes jammed, slowly turn pin clockwise and gently push.

(see figure 5).



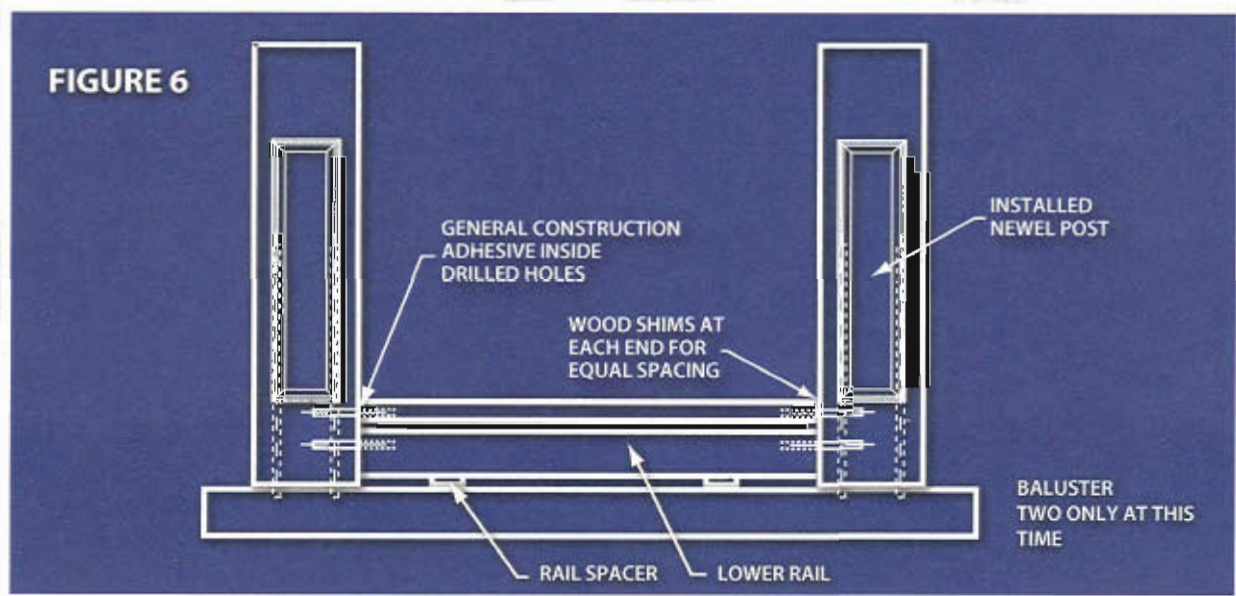
# BALUSTRADE INSTALLATION

## Step 6: Installation of bottom rail

Accessories required: general construction adhesive, wood shims

Place general construction adhesive inside holes at bottom of newel post prior to placement and installation of bottom rail. Place rail to have 3/16" gap at each end. Use wooden shims to lock rail into position until glue hardens.

(see figure 6).



## Step 7: Positioning the balusters on the bottom rail

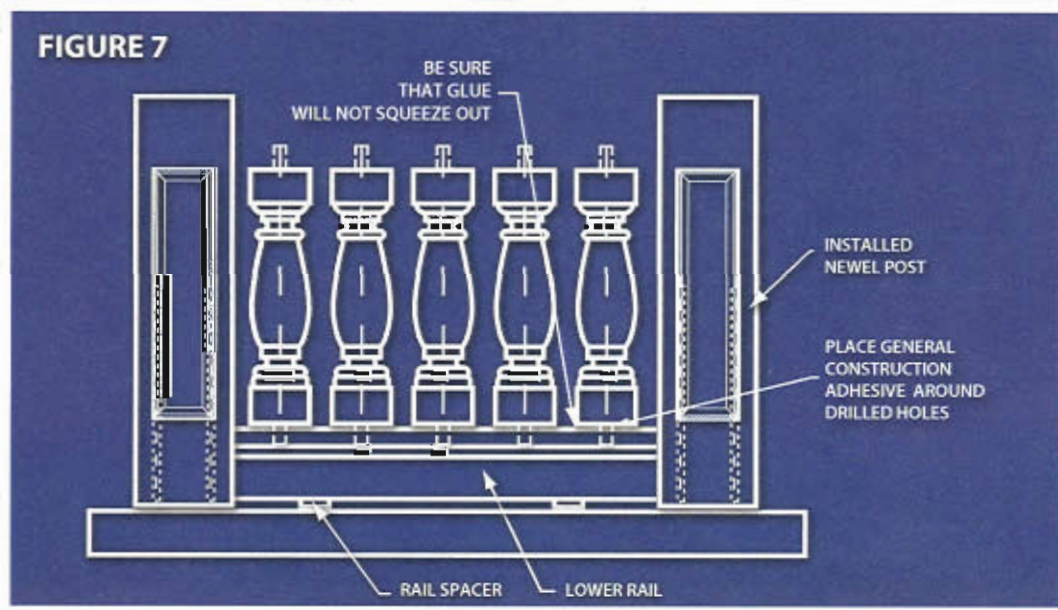
Accessories required: general construction adhesive

Place general construction adhesive 1/2" around pre-drilled holes of bottom rail.

Insert and carefully position balusters into holes.

*Note: Be sure glue does not squeeze out when positioning the balusters*

(see figure 7).



# BALUSTRADE INSTALLATION

## Step 8: Installation of top rail

Accessories required: general construction adhesive

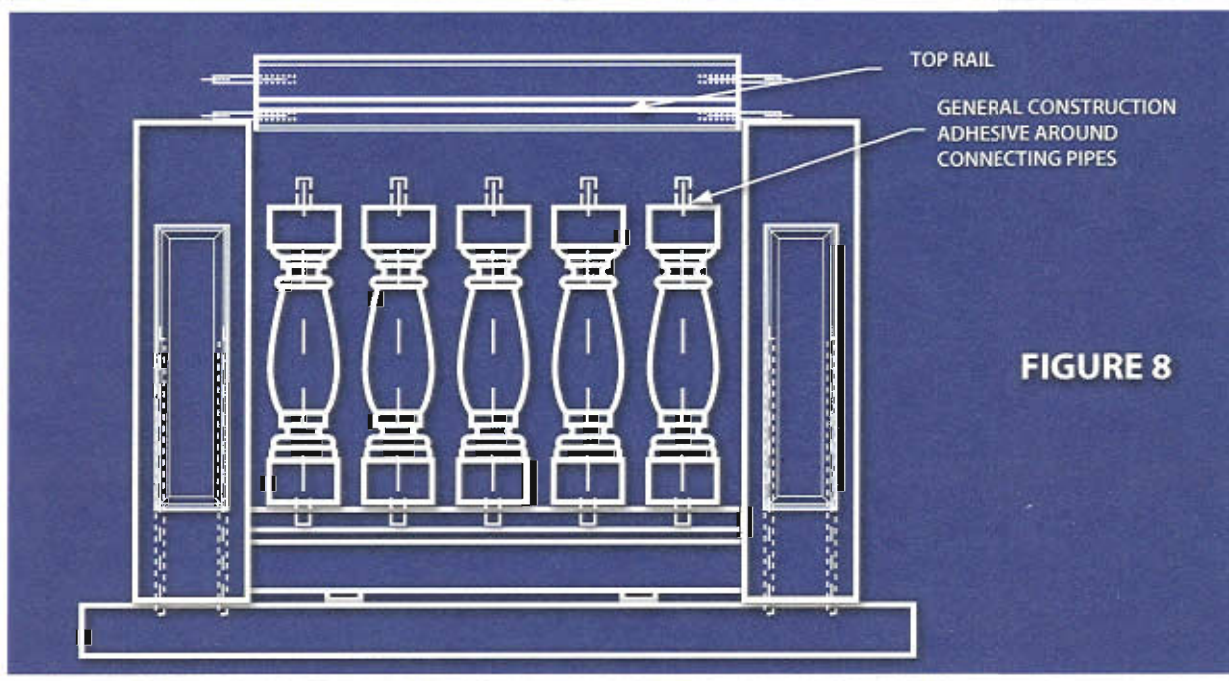
Place general construction adhesive around connecting pipes on top of baluster.

One person should hold the top rail while the other person positions the baluster pipes into holes in top rail.

Place rail to have 3/16" gap at each end. Use wooden shims to lock rail into position until glue hardens.

*Note: Be sure glue does not squeeze out when positioning the balusters*

(see figure 8)

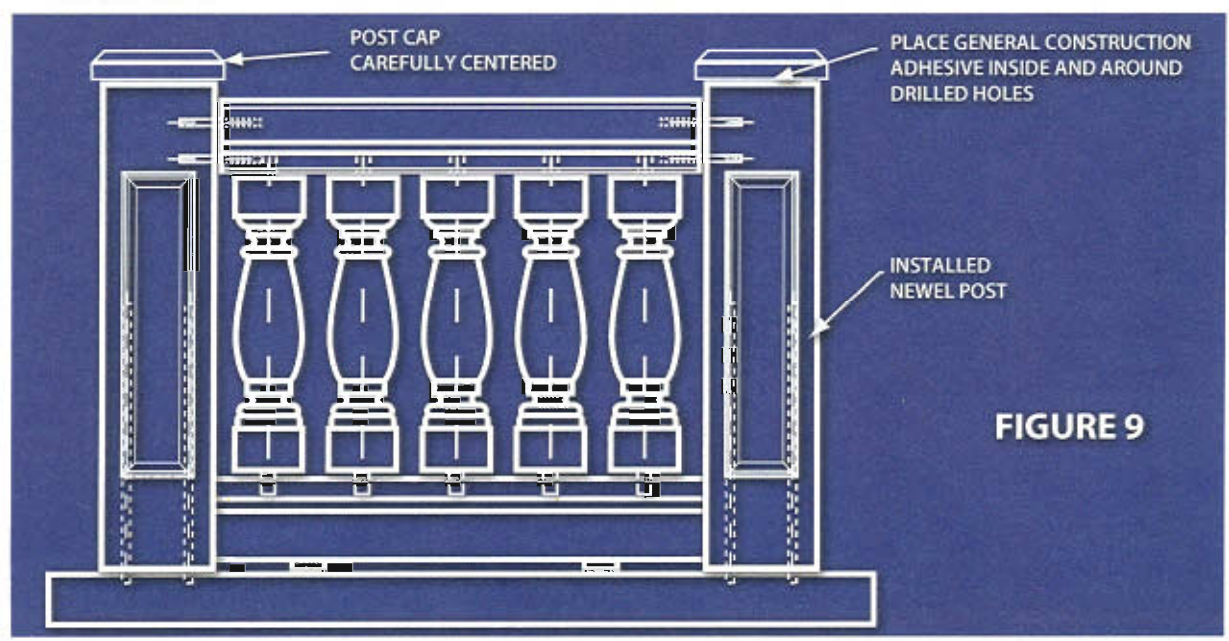


## Step 9: Installation of newel post caps

Accessories required: general construction adhesive

Use general construction adhesive to glue post caps on newel posts. Center cap over newel post.

(see figure 9)



# BALUSTRADE INSTALLATION

## Step 10: Cleaning

Accessories required: soap, brush, and fine grain sandpaper.  
Clean balustrade system only if needed. Use soap and brush.  
Gently use fine grain sandpaper if necessary.

## Step 11: Caulking

Accessories required: matching color silicone caulk.  
If installation is not complete before the end of the day, cover system with tarp to prevent rain and moisture infiltration.  
Cover all joints, with silicone caulk, in the color to match the balustrade.

(see figure 10)

