



# BROCKWELL INCORPORATED

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4728 SCARBOROUGH PLACE ▪ STONE MOUNTAIN, GEORGIA 30087 ▪ PHONE: 980-282-8383 ▪ E-MAIL: [sales@columnsdirect.com](mailto:sales@columnsdirect.com)

## INSTALLATION INSTRUCTIONS

### *Premium Synthetic Classic Stone Balustrade Systems*

#### Tools & materials needed for installation:

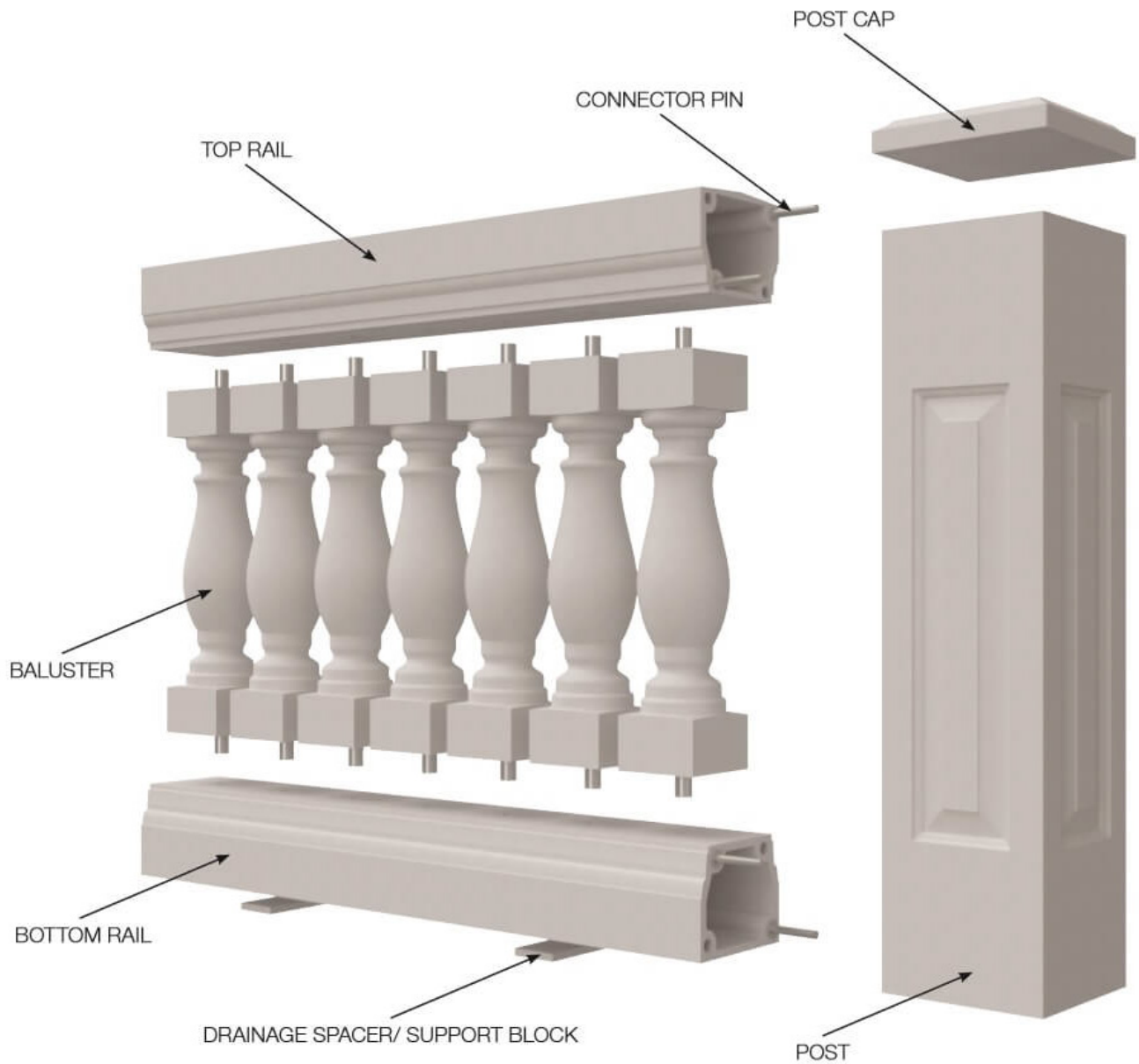
Pencil	Sand paper (50 grit)
Circular saw w/ masonry blade	Wooden shims
Heavy duty carbide-toothed hole saw 7/8" & 1-1/8"	Hammer
Segmented rim diamond saw blade (8")	Level
Diamond disc for grinder (4')	Utility knife
Reciprocating saw	Hammer drill (1/2" chuck)
Angle square/angle measurement tool	Grinder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

\* BASF MasterSeal Np-1 or TX-1 Caulk can be used. Colors come close to Brockwell's Classic Stone balustrade colors.

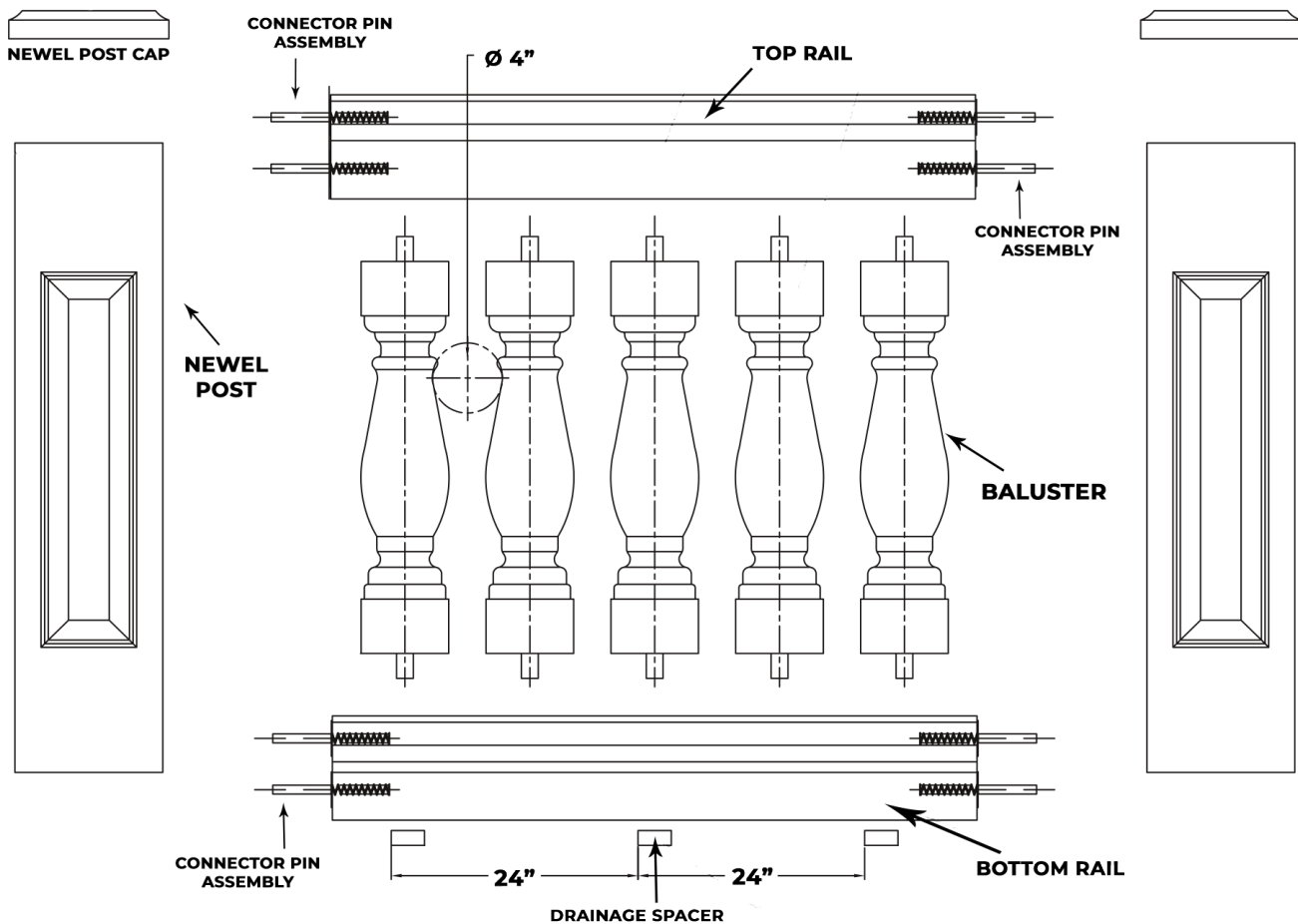
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### BALUSTRADE DIAGRAM:



Newel Post, Rail, Baluster Installation Drawing



**STEP 1: POST INSTALLATION**

**Required tools:** screw driver, pencil, 3/4 dia. 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. **Note:** pipe length should be approximately 1/2 the height of the newel post.

**2. Installation over concrete flooring: (see Figure 1B)**

Drill (2) – 3/4 dia. holes x 3" deep in concrete, centered 4" apart, in the area marked for the newel post. Insert reinforcement rod. **Note:** rod length is approximately 1/2 height of the newel post. Align newel post as marked on deck. Pour light weight concrete to a level approximately 1/3 the height of the newel post. Do not place newel caps on posts until handrails 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.



FIGURE 1A

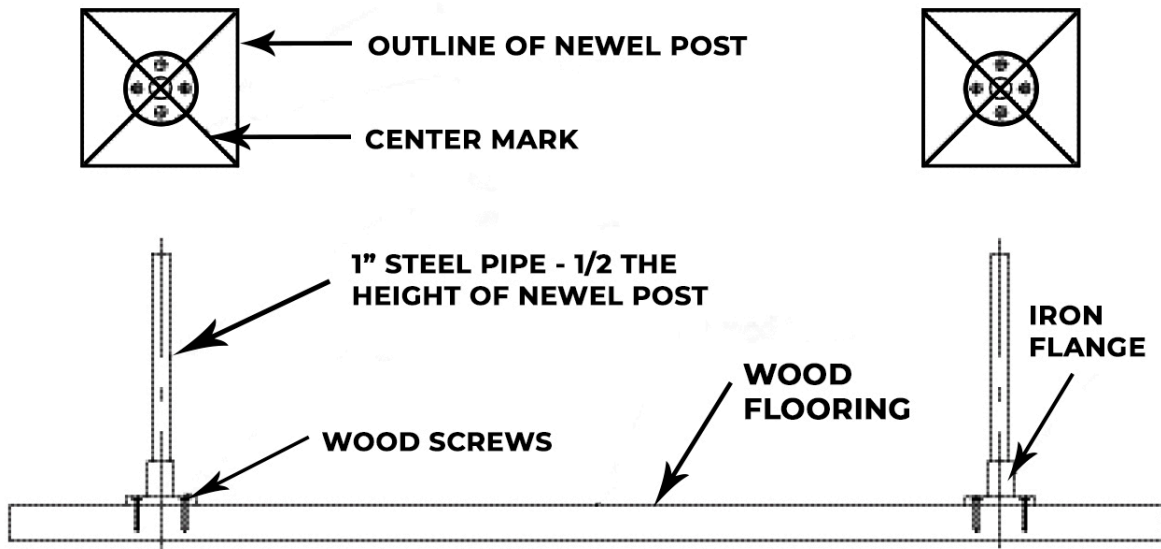
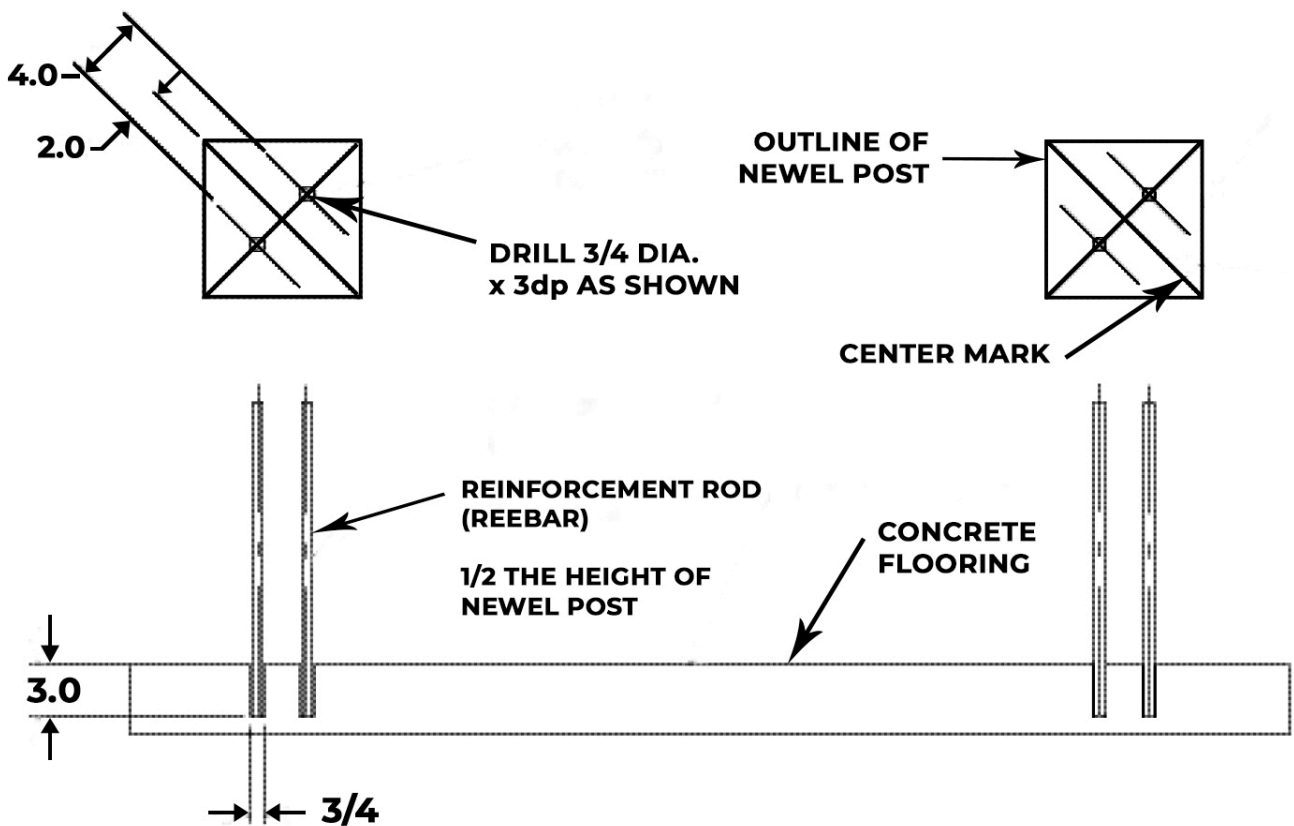


FIGURE 1B

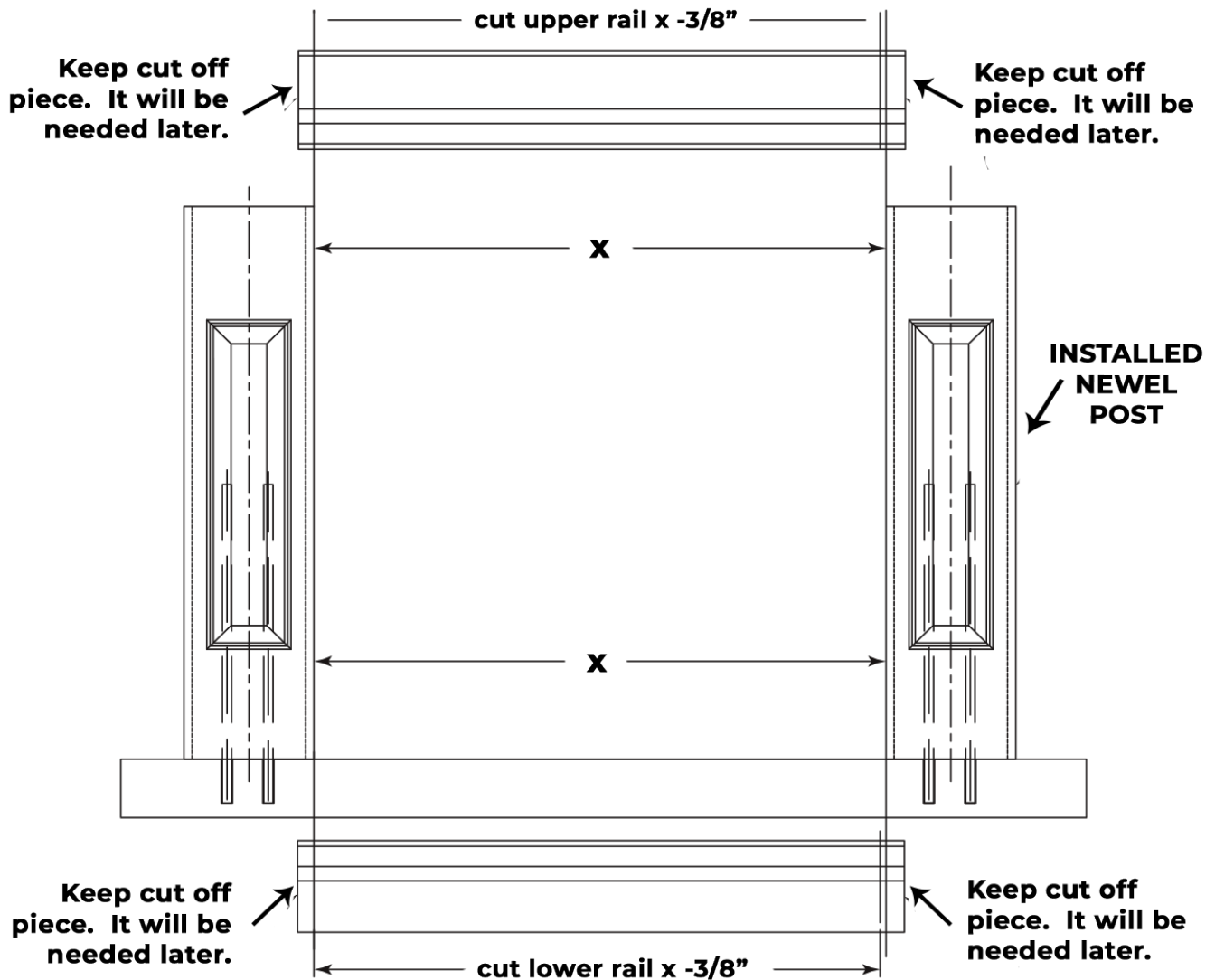


**STEP 2: BOTTOM & TOP RAIL PREPARATION**

**Required tools:** circular saw, and carbide or diamond saw blade

Use carbide saw blade or diamond disc. Cut rails  $\frac{3}{8}$ " shorter than measured distance between the newel posts. ( see Figure 2 )

**FIGURE 2**



**STEP 3: DRILLING OF HOLES IN THE RAILS**

**Required tools:** drill, 1-1/8" dia. with 1/4 diam pilot hole saw, and a pencil

**NOTE:** be sure to check baluster spacing with blueprint and municipal code before proceeding.

**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 2 end holes equally.

The center distances must be between 6.5" and 8.5" for each baluster.  
Space between baluster centers may not exceed 7.5".

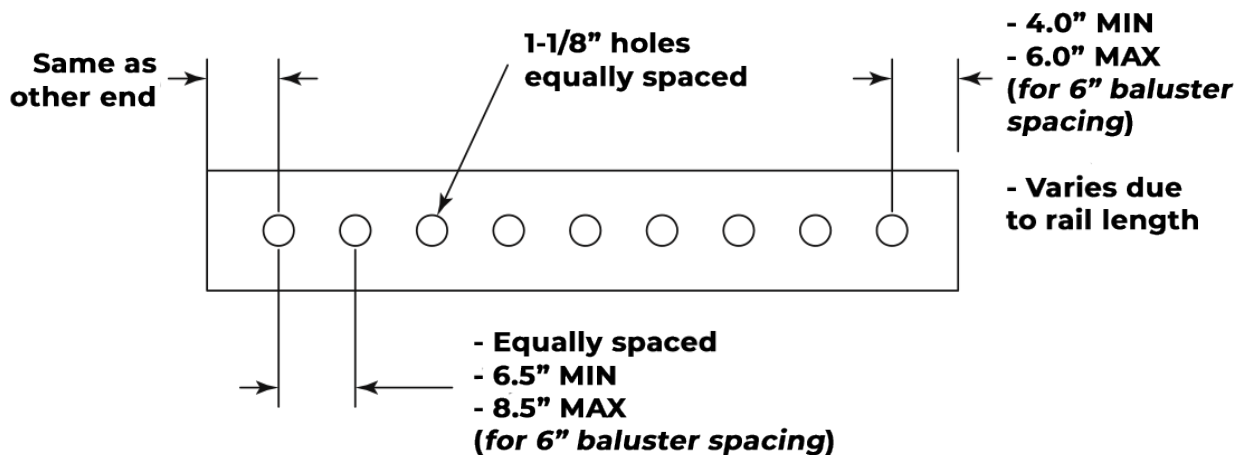
**4" (SPHERE) SPACING:**

Mark the first hole on each side, 4" to 6" from each end, divide the remaining space between the 2 end holes equally.

The center distances may not exceed 6.5".

**TIP:** During hole drilling, rotate the drill a few degrees to ease cut out removal from tool.

**FIGURE 3**



**STEP 4: NEWEL POST HOLES FOR RAIL CONNECTION**

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

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

Scribe rail outlines on newel posts (at all 4 rail ends). Remove rails and balusters. ( see *Figure 4A* )

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

**TIP:** It is always the best practice to drill ( 2 ) holes diagonal to each other ( see *Figure 4B* )

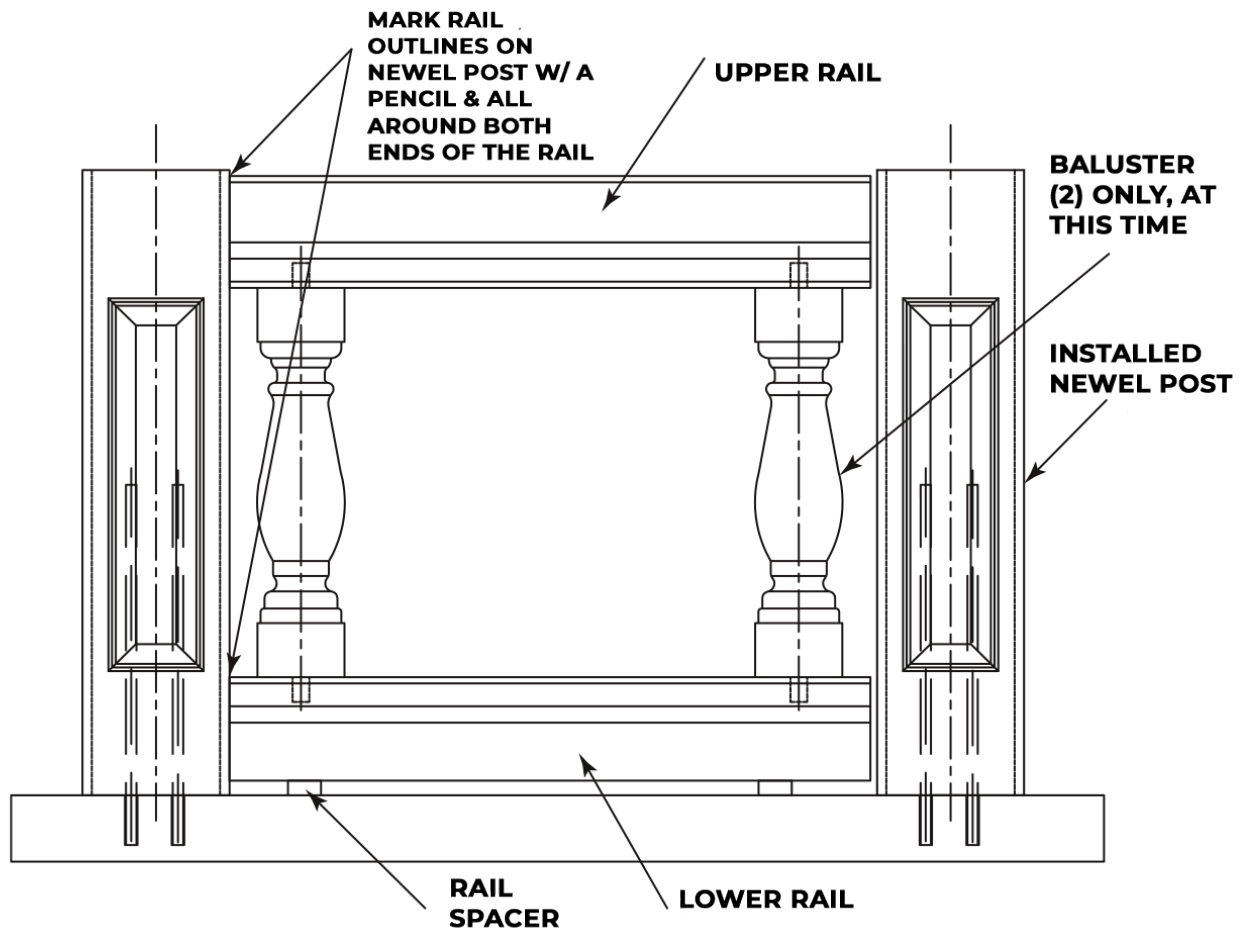
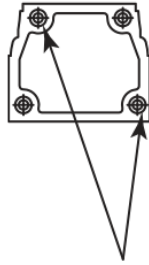
**FIGURE 4A**

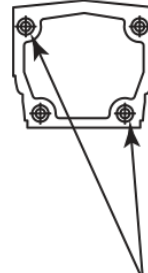
FIGURE 4B

**LOWER RAIL**



**BEST PRACTICE:** Transfer diagonal holes using 5/8" dia. carbide drill bit.

**UPPER RAIL**



**BEST PRACTICE:** Transfer diagonal holes using 5/8" dia. carbide drill bit.

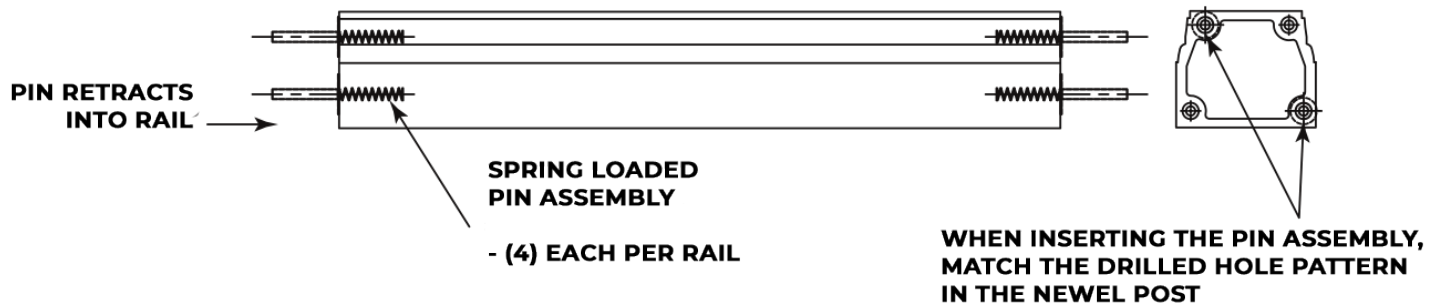
**STEP 5: SPRING LOADED PIN INSTALLATION**

Inspect PVC pipe ends. Clear 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 ( 2 ) 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* )

FIGURE 5





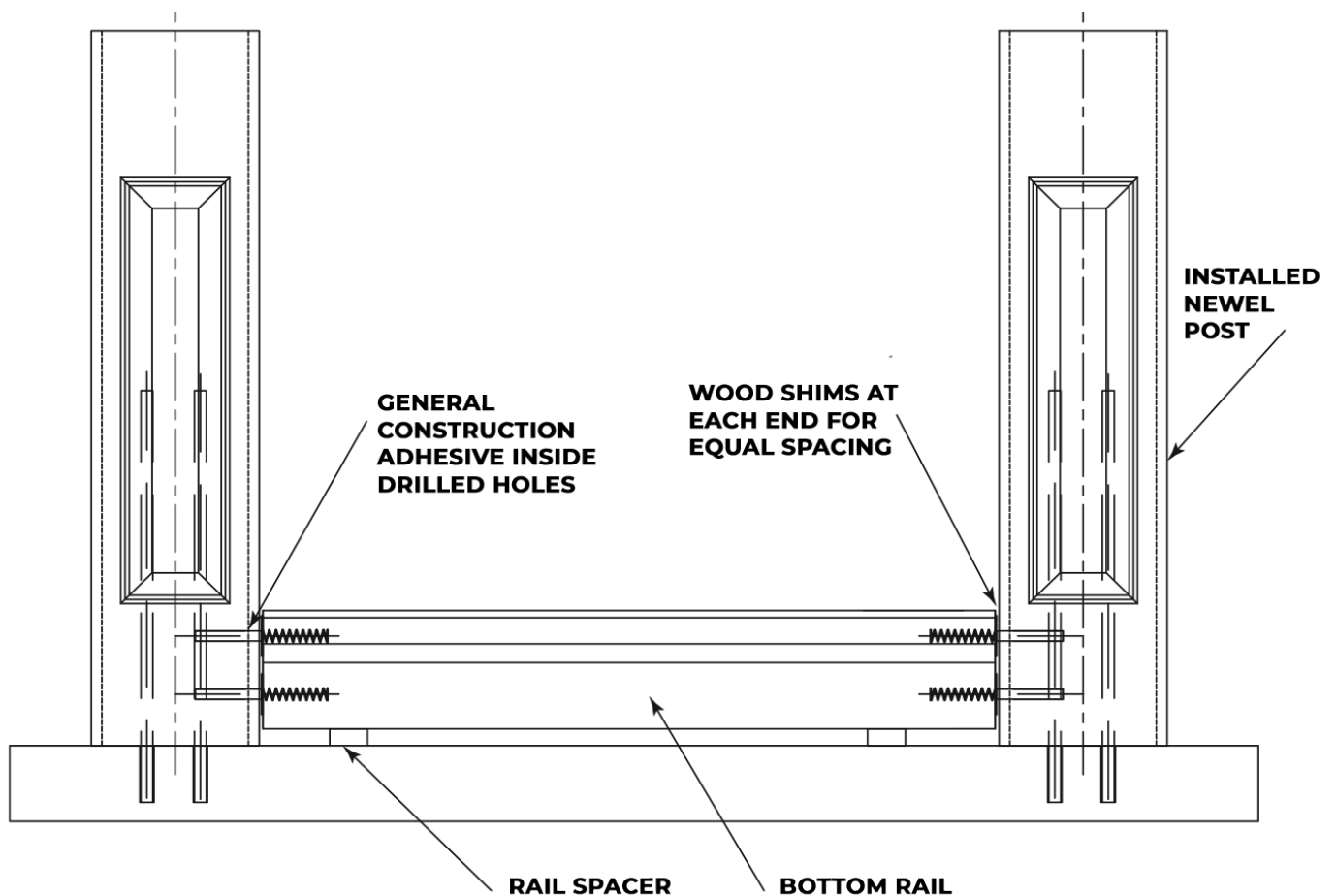
**STEP 6: INSTALLATION OF THE BOTTOM RAIL**

**Required accessories:** general construction adhesive, and wood shims

Place rail spacers, if used, at approximately 2 ft. spacing for each other. Apply glue. If under 4 ft. post distance, use at least ( 2 ) spacers.

Place general construction adhesive inside the holes at the bottom of the newel post prior to placement and installation of the 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 )

**FIGURE 6**

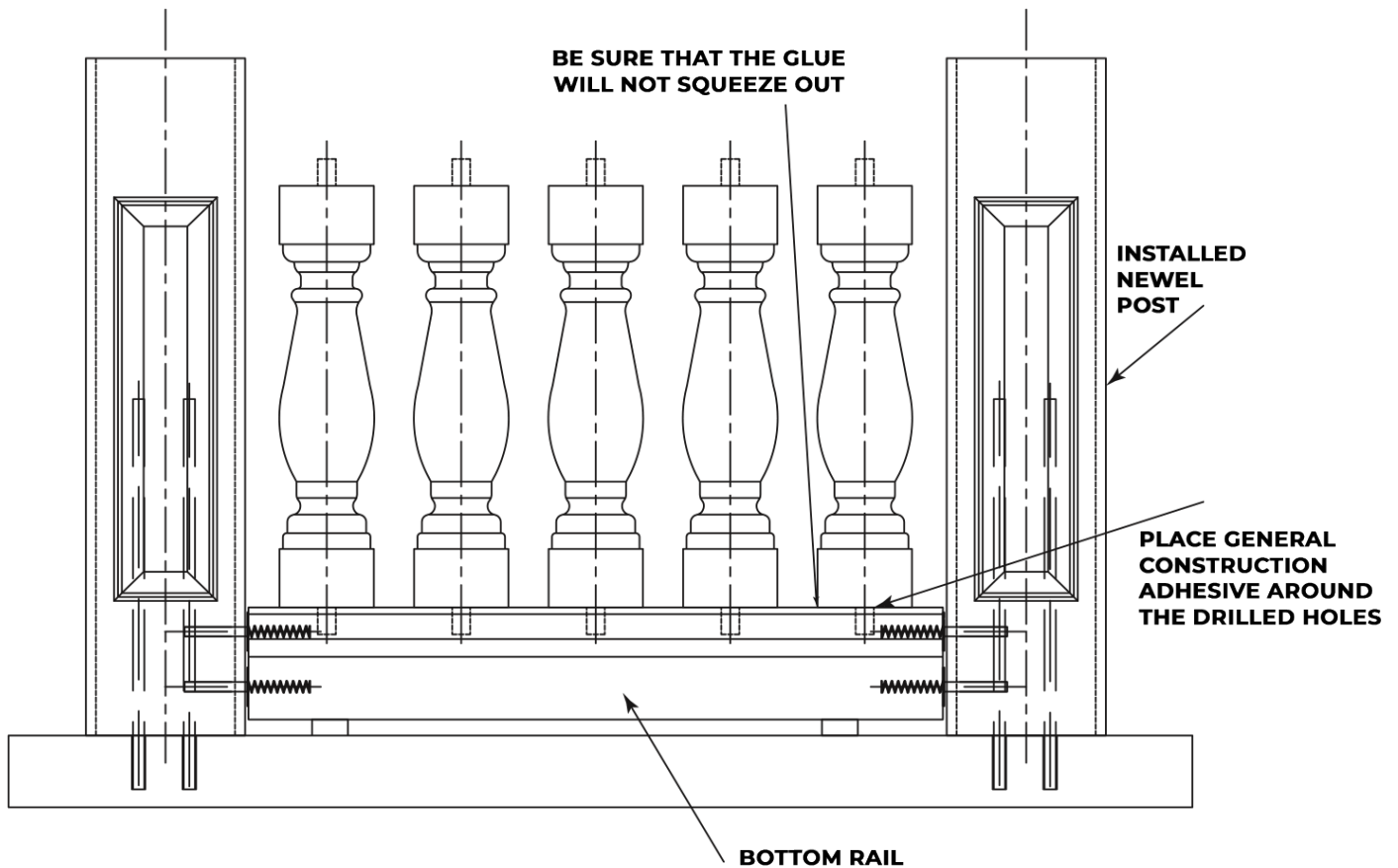
**STEP 7: POSITIONING THE BALUSTERS ON THE BOTTOM RAIL**

**Required accessories:** general construction adhesive

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

Insert and carefully position balusters into the holes.

**Note:** Be sure the glue does not squeeze out when positioning the balusters ( *see Figure 7* )

**FIGURE 7**

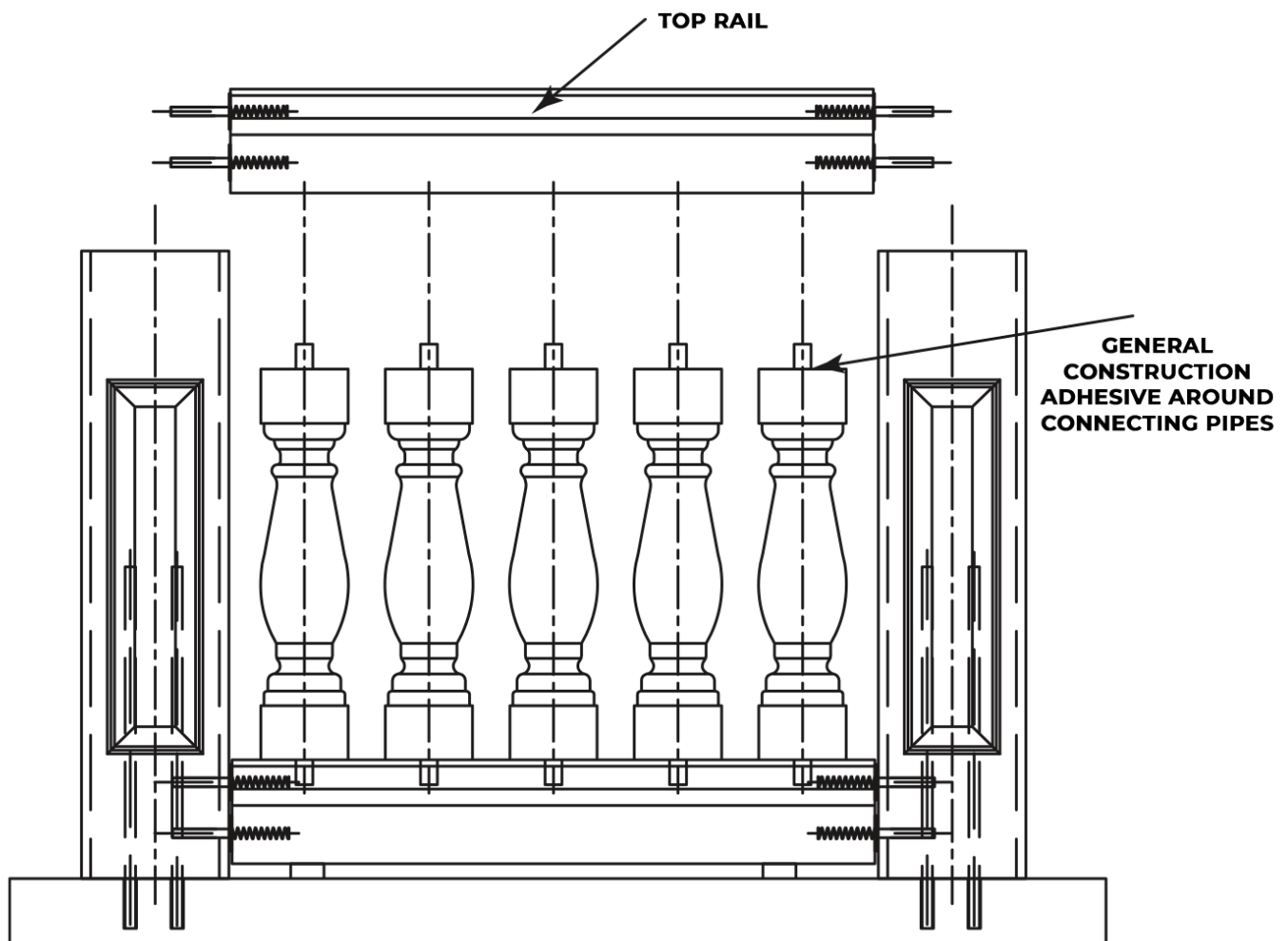
**STEP 8: INSTALLATION OF THE TOP RAIL**

**Required accessories:** 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 the holes in top rail. Place rail to have 3/16" gap at each end. Use wooden shims to lock rail into position until the glue hardens.

**Note:** Be sure glue does not squeeze out when positioning the balusters ( *see Figure 8* )

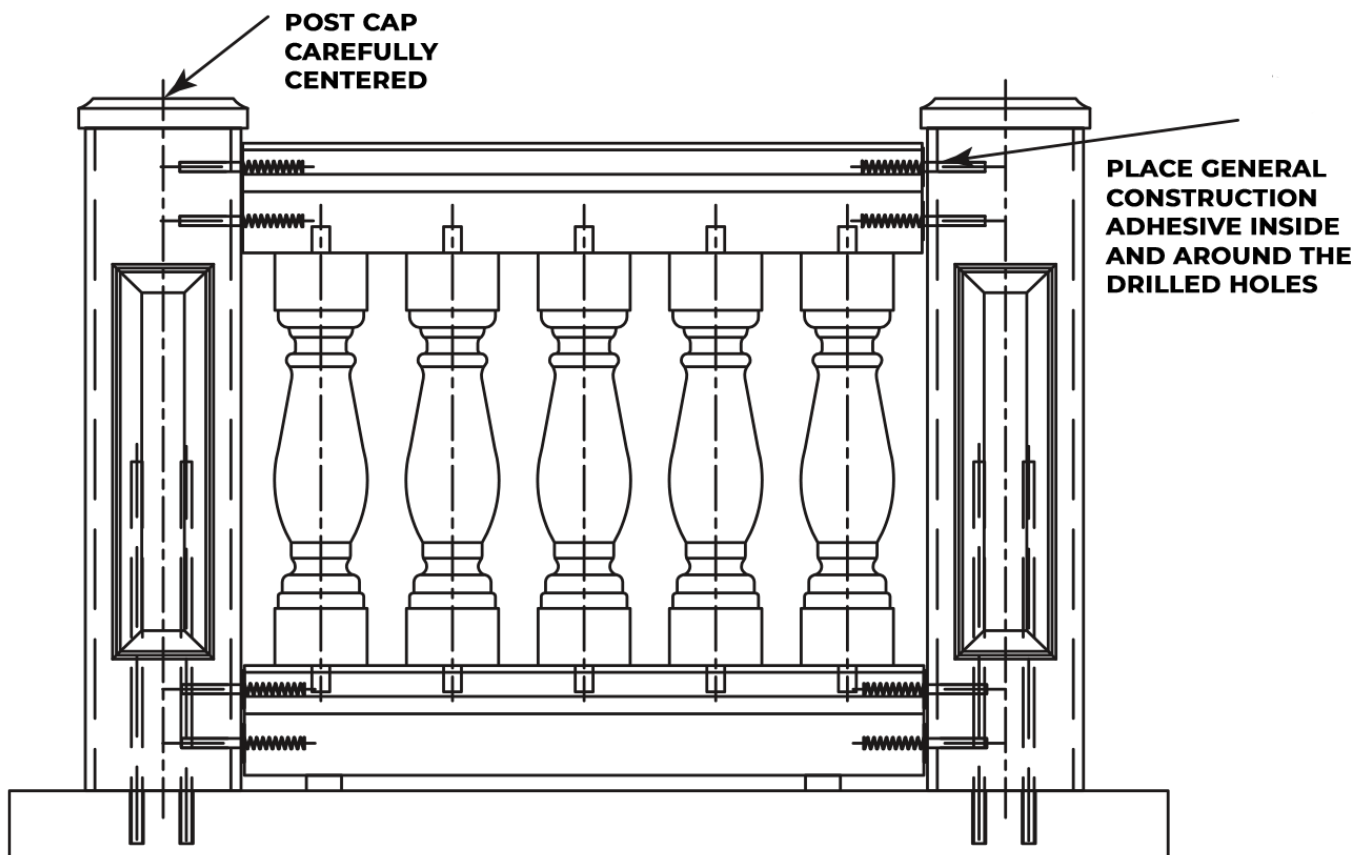
**FIGURE 8**

**STEP 9: INSTALLATION OF THE NEWEL POST CAPS**

**Required accessories:** general construction adhesive

Use general construction adhesive to glue the post caps on the newel posts.

Center cap over newel post. ( *see Figure 9* )

**FIGURE 9**

## STEP 10: CLEANING

**Required accessories:** soap, brush, and fine grain sand paper

Clean the balustrade system only if needed. Use soap and a brush. Gently use fine grain sand paper if necessary.

## STEP 11: CAULKING

**Required accessories:** matching color silicone caulk. We have found that **Sonneborn Sonalastic NP 1** works well with our Classic Stone products.

**Important:** Do not let any water to stay inside anywhere in the balustrade system, especially before freezing temperature. If installation is not complete before the end of the day, cover the system with tarp to prevent rain and moisture infiltration.

Cover all joints, with a silicone caulk, in the color to match the balustrade ( *see Figure 10* )

FIGURE 10

