

# NATURAL WONDERS WATERFALLS



This waterfall MUST be installed as specified by these instructions. Please follow ALL of the instructions enclosed with this waterfall. It is recommended to keep the unit in its original packaging until the site is prepared for installation. NOTE: Only use with filtered water.

The Natural Wonders line of waterfalls is available in varying sizes. The units use 1 gallon of water per inch of waterfall per minute - please size the pump accordingly. Note: Natural Wonders Waterfalls are available in white, gray, and tan in most sizes. Each waterfall comes with a protective tongue for the water outlet (Fig. 1) and also a protective cap for the water inlet. These prevent debris from entering the unit during the installation process. These caps are not to be removed from the unit until the equipment is ready to run. Failure to do so can cause permanent damage to the waterfall. In addition, each unit comes with an optional screen that can snap into the water inlet for additional filtration if desired. We do not recommend using the screen due to hair or debris build-up which can affect the performance of the waterfall.

Once the area of installation is determined, mark the area with stakes, ribbon, or string prior to construction. When ready for rebar, mark the exact location of the waterfall. The steel pattern should be offset by 3" to the bottom and by 1" outside the length of the waterfall (if the waterfall is 24" long, the steel pattern should offset to 3" down from the top and 26" in length - see Fig. 2).

NOTE: Do not stand on, drop, or step on waterfall.

A notch must be cut in the inner edge of the bond beam in the area of the offset. The notch should be cut 3-1/2" deep by 2-1/2" wide and 2" longer than the length of the waterfall - 1" longer on either side. An additional notch must be cut perpendicular to the first. It must be located in the center of the first notch to allow for the waterfall to be plumbed to the 1-1/2" water line. The perpendicular notch for plumbing should be 3-1/2" wide by 3-1/2" deep. Once the beam is marked, cut the notches to the correct sizes (Fig 3).

NOTE: Flush the pipe line before installing the waterfall.

To assist in securing the waterfall until the concrete cures, cover the finished setting with a piece of plywood (1/2" or 3/4" thick). Then place heavy blocks evenly across the top of the plywood. This will also protect the waterfall from heat and sunlight which may cause warping.

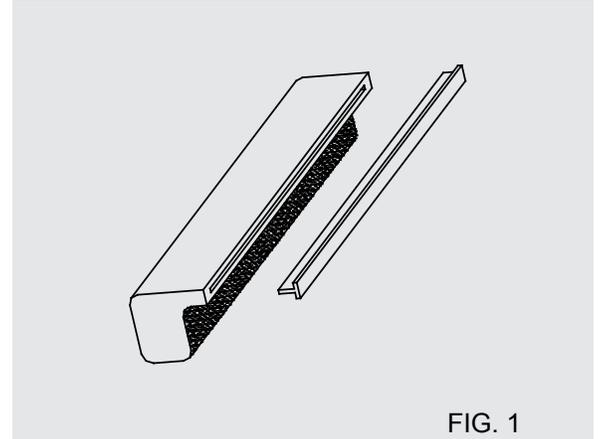


FIG. 1

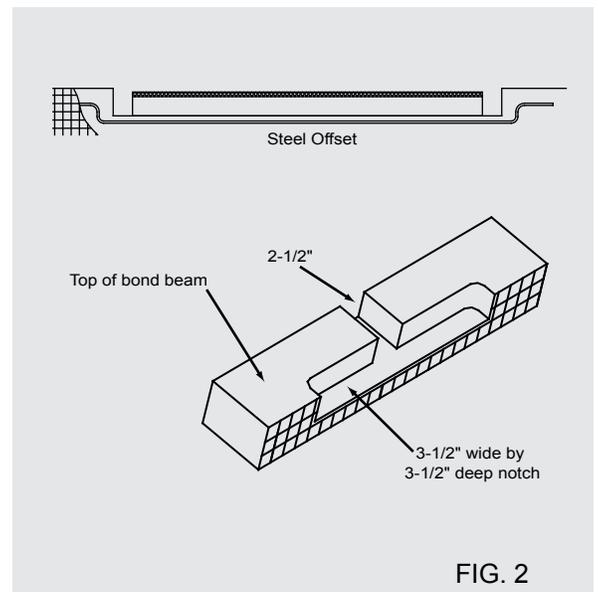


FIG. 2

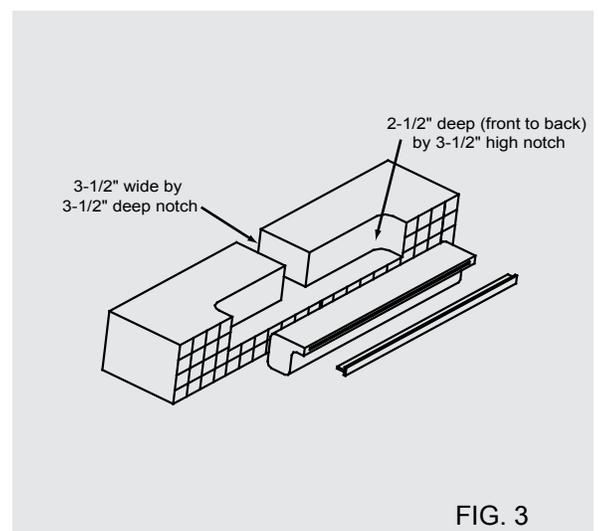


FIG. 3

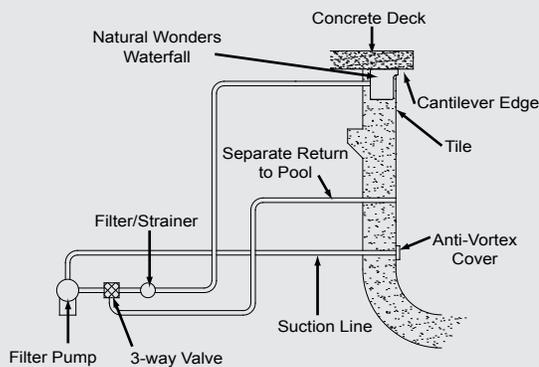


FIG. 4

### PLUMBING GUIDELINE CHART

Use a min. of 1-1/2" pipe  
 Use a min. of 2" pipe for runs over than 60' or for waterfalls over 5'  
 Dedicated plumbing lines are recommended  
 Maximum recommended flow:  
 1-1/2" pipe for 60 GPM  
 2" pipe for 100 GPM  
 2-1/2" pipe for 140 GPM  
 3" pipe for 225 GPM

### TYPICAL PERFORMANCE AT 50' OF HEAD

|        |   |         |
|--------|---|---------|
| 1/2 HP | = | 26 GPM  |
| 3/4 HP | = | 58 GPM  |
| 1 HP   | = | 68 GPM  |
| 1-1/2  | = | 93 GPM  |
| 2 HP   | = | 106 GPM |
| 3 HP   | = | 140 GPM |

If multiple waterfalls are installed, a separate pump is recommended. This will also require a separate suction line to be plumbed. The dedicated pump and suction should be plumbed with a minimum of 2" schedule 40 pipe. At least two anti-vortex suction cover must be used to prevent possible entrapment. It is recommended to mount the anti-vortex cover 18" above the bottom of the pool. A filter/strainer is also required between the pump and the waterfall in this plumbing situation. Installations requiring more than 60 gallons per minute may require two or more filters plumbed in parallel. A separate line with a 3-way valve must be used to balance the water between the waterfalls (Fig. 4).

The water feed line from the pump should use a minimum of 1-1/2" PVC pipe. The feed line should terminate near the center of the waterfall at the back of the bond beam. The Plumbing Guideline Chart to the left on this page will aid in the plumbing of the waterfalls.

It is recommended to use a 3-way valve as a "T" from the return line of the pool to the waterfall to allow the flow to be regulated. The recommended location for this valve is after the filter near the equipment pad (Fig. 5). All water to the waterfalls must be filtered.

When plumbing two or more waterfalls, follow all of the previous instructions with the addition of a 2-way ball valve for each waterfall. The valve is necessary to balance the water flow between the units. Proper placement of the valve is shown in Fig. 6. Ball valve part numbers are 25800-151-000 for 1-1/2" and 25800-210-000 for 2".

The waterfall must be installed before the deck and coping. Place the waterfall in the notch cut in the bond beam. Using shims of tile, make sure the top of the waterfall is level with the upper edge of the bond beam. Fill gaps around the unit and coat the face of the waterfall with concrete or similar material in preparation for the tiles. Cut the tile to fit under the lip of the waterfall using thin set or similar substance to secure in place (Fig. 7).

**NOTE: IT IS ALWAYS RECOMMENDED TO PLUMB THE NATURAL WONDERS WATERFALLS WITH A ROCK TRAP JUST BEFORE THE LINE REACHES THE WATERFALL.**

Once the pool construction is complete and the pool is filled with water remove the protective tongue. Next check the spillway for debris and activate the waterfall. If the waterfall is plumbed with the main filter pump turn on the pump and let in run for 5 about minutes to clear the lines of air and debris. Open the regulating valve to slowly to adjust the flow of the water until the sheeted water reaches the desired location on the pool surface. If the waterfall is plumbed with a separate pump first open all the valves and make sure all the lines are free and clear of debris. Start the dedicated pump and let the water circulate through the system for about 5 minutes to clear the lines of air and debris. Adjust the valve to each waterfall slowly to the desired setting.

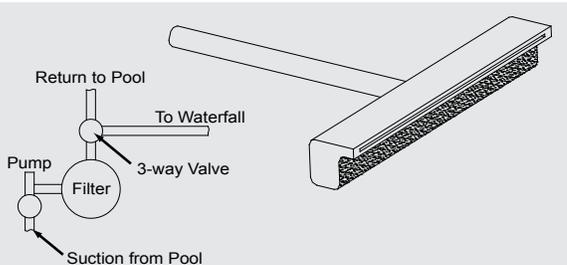


FIG. 5

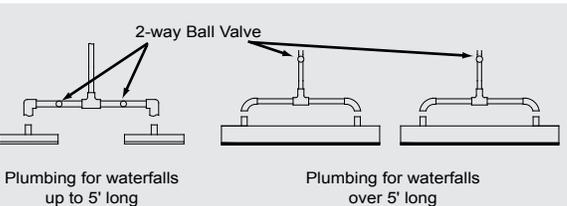


FIG. 6

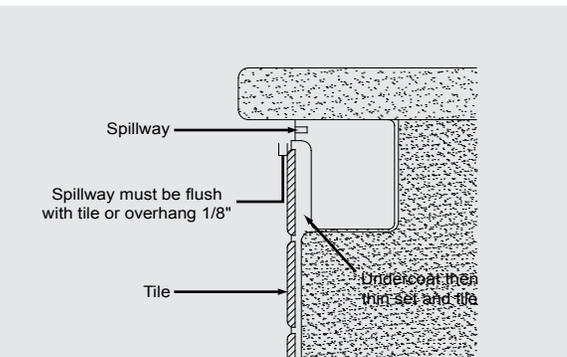


FIG. 7

The plumbing system must be designed to allow water to easily drain out to prevent damage from freezing. The Natural Wonders waterfalls are designed to minimize the amount of water that remains in the unit when not in use if the system is plumbed correctly. Blow all the lines and follow the standard winterizing procedure when necessary.

Some applications will require the use of the Natural Wonders Waterfall with Extended Lip (such as mounting in a radius or when using brick, blocks, etc.). The standard lip is 1" while the extended version is 6", 9" or 12". Installation of the extended version is the same as outlined in the previous pages of these instructions, but the dimensions of the notch in the bond beam may need to be altered. It must also be noted that the entire span of the extended lip must be supported when installed (Fig. 8). NOTE: Mortar will not adhere to the unit. Please consult a decking or concrete professional to find the appropriate materials for installation.

The extended lip model can be cut to custom shapes for different applications. Determine how much of the lip to remove. Be sure to allow room for the tile and thin set so the lip will still be flush or protrude slightly beyond the tile line. A minimum of 1-1/2" of length must be left in the lip after cutting. Remove the tongue before cutting the lip, but be sure to replace it before installation. Cut the lip with a coarse tooth blade. Cut carefully to avoid any jagged edges on the lip. After cutting, use the rib removal tool included in the package to remove the ends of the exposed ribs at the edge of the cut. All ribs within 1" of the opening should be removed. Do not leave the broken pieces in the unit. Next sand the edge using a sanding block to get the cut as smooth as possible. Then replace the tongue and continue with the standard installation. NOTE: Each extended lip model comes with two tongues to allow for the appropriate length after the cut. For curves, cut the tongues with "V" shaped notches. Be sure to close the entire opening installation (Figs. 9 & 10).

### Extended Lip Model

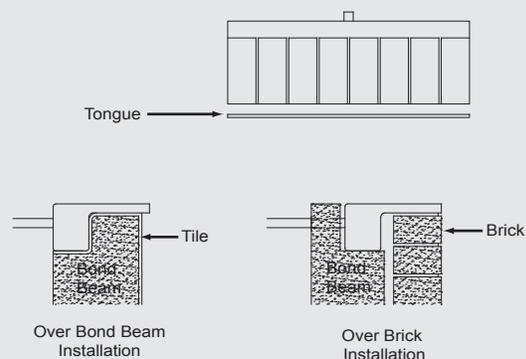


FIG. 8

### Convex Curves

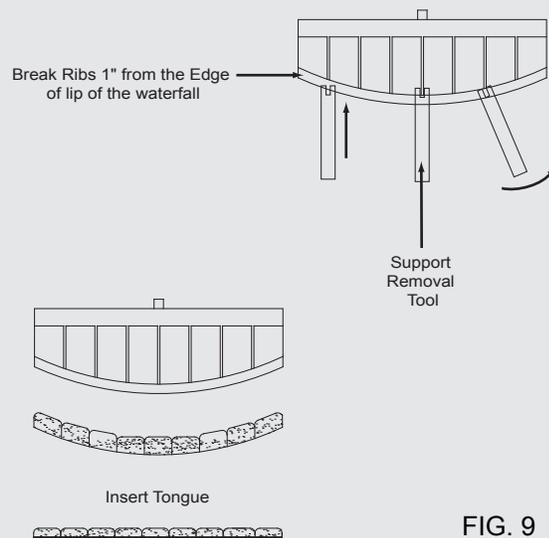


FIG. 9

### Concave Curves

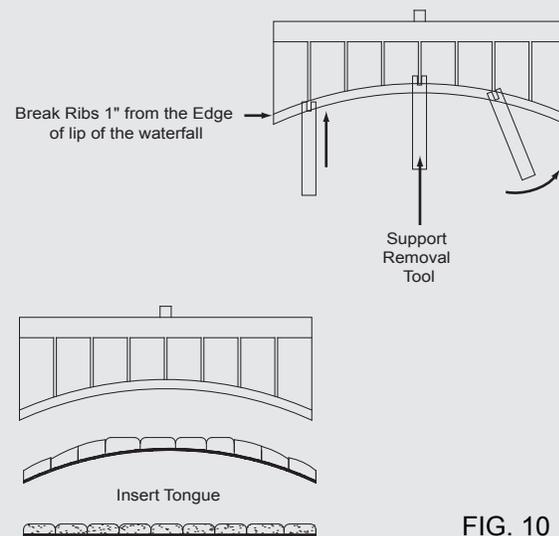


FIG. 10

## TROUBLESHOOTING GUIDE & FAQ

*Before attempting to correct any potential problems, be sure to activate the pump and ensure that all air has been purged from the plumbing lines.*

**NOTE: The water must be filtered before being used for the waterfall. If a filter has not been plumbed in the line the waterfall will not work due to the debris.**

**The water pattern is not smooth and has gaps in the water sheet.**

1. Debris may be lodged in the opening of the waterfall. Use a plastic card or other thin tool to clear the spillway. Carefully slide the tool across the opening to remove any debris that may have accumulated.
2. Check for burrs on supports in LED waterfalls. A thin hacksaw blade may be used to carefully smooth edges as needed. **NO NOT CUT THE SUPPORTS.**
3. GPM may be inaccurate. Too little flow or too much flow through waterfall prevent proper water flow. Reference the chart in this installation guide for proper GPM.

**One waterfall has more flow than the other waterfalls installed in the same pool.**

The supply of water is not balanced correctly. To get equal flow from each waterfall unit, adjust the valves at each waterfall until the desired flow is achieved.

**Can the lip be cut into a custom shape or radius?**

LED, Arch, and Rainfall style waterfalls may not be cut. Natural Wonders waterfalls and Streamfalls can be custom cut in the field or factor cut. Never cut to within less than 1.5" of the body.

**Do I always need to use the screen and rock trap that came with the waterfall?**

We do not recommend using the screen if possible. Pet hair and other fine debris can build up over time and impede the water flow.

The rock trap is always recommended. Using the rock trap will capture debris in the pipes, and prevent it from building up in the pool. . NOTE: During installation, do not "drag" the pipes along the ground or in the dirt. This fills the pipes with dirt and the waterfall will not work correctly after installation. (Yes, we have seen this happen before!)