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**INSTALLATION GUIDE**

1. **Introduction**

The following specifications describe the components, general functions, and applications of **smartPONDbw**. The system functions as an electronically controlled stormwater management device, providing precision management capabilities and real-time in-field data. Using sensors, solar power, an electronic actuator, camera, and an internet-based control interface, **smartPONDbw** connects to a drainpipe to enable managers to precisely control surface water retention and detention remotely. The 24” rotary valve allows precise water level management with 1” resolution and only releases water from the surface. The control panel can be configured for full automation, real-time remote control, or scheduling of future events. Detention times, dewatering rates, dewatering depths and more can all be managed with the ARBDS. Constructed of ¼” powder-coated steel, **smartPONDbw** is built to last in harsh environments.

1. **smartPONDbw Applications in Stormwater Management**

**smartPONDbw** is a device for active Stormwater management. As opposed to passive devices like a floating skimmer, active water management dramatically increases the efficiency and effectiveness of a detention pond. Where a passive skimmer or weir allows water to leave immediately upon collection, **smartPONDbw** can detain newly caught Stormwater and allow it to settle for a period of 12 hours before automatically dewatering. By releasing water only from the surface, settling pond characteristics can be maintained during dewatering.

1. **Installation**

**smartPONDbw** can be installed in a near-completely assembled configuration. Only the battery and solar panel should be removed during the installation process. There are several ways to install **smartPONDbw** but these key points must be met to ensure proper function:

* 1. **Leveling**

**smartPONDbw** must be level when welded to the drainpipe, especially perpendicular to the levee or embankment.

* 1. **Pipe Placement**

To attach the drainpipe to **smartPONDbw**, first position the back plate against the drainpipe in the position it will be installed. When positioning **smartPONDbw** against the pipe, make sure that the bottom of the drainpipe aligns with the bottom of the **smartPONDbw** 24” drum. Use soapstone to trace the pipe against the back plate so that the hole may be cut out with a torch. With the hole cut out, **smartPONDbw** may be realigned with the pipe and welded.

* 1. **Height Configuration**

Depending on the site, **smartPONDbw** may require spacers to achieve the desired detention depth. Always allow at least 12” of space between the maximum valve height and levee height. The control box of **smartPONDbw** should never be configured less than 6” above the levee or embankment height.

* 1. **Structure Support**

If **smartPONDbw** is being installed on a pipe measuring less than 16” in diameter, permanent structural support such as a concrete pad or steel frame must be installed beneath the base of the device. Pipes larger than 16” in diameter can support the weight of **smartPONDbw** and therefore a permanent support structure beneath the device is optional. The standard fully assembled **smartPONDbw** weights 600 pounds. This does not include spacers or trash guards.

# Quality Assurance and Performance Specifications

The quality of all system components and all other appurtenances and their assembly process shall be subject to inspection upon delivery of the system to the work site.

Installation is to be performed only by skilled work people with satisfactory record of performance on earthworks, pipe, welding, chamber, or pond/landfill construction projects of comparable size and quality.