

Trusted. Tested. Tough.®



CL0180  
0321  
Supersedes  
0817

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

Register your Zoeller Pump Company Product on our website:  
<http://reg.zoellerpumps.com/>



MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347  
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961  
TEL: (502) 778-2731 • 1 (800) 928-PUMP • FAX: (502) 774-3624

Visit our website:  
[zoellerpumps.com](http://zoellerpumps.com)

U.S. Patent No.  
5,897,777.

## 5220 SERIES Z-Cell® OWNER'S MANUAL

### OWNER'S MANUAL

Congratulations on the purchase of the Zoeller Pump Company Z-Cell®. This onsite wastewater treatment system will provide years of trouble-free service when installed and maintained according to the manufacturer's recommendations.

This manual incorporates the installation, operation, maintenance, and service instructions into one document to aid in the ownership of a Zoeller Pump Company Treatment System. Please read and review this manual

before installing the product. Follow the steps and procedures listed within for a proper start-up. The notes and instructions listed here, when followed correctly, will not only ensure a long and problem-free life for the system, but also save time and money during installation. Should further assistance be necessary, please call our Product Support Department at 1-800-928-7867.

### Table of Contents

Safety Instructions .....	1
Limited Warranty .....	2
Troubleshooting & Service Checklist .....	2
Preinstallation Checklist .....	3
System Installation .....	4-9
System Start-Up & Typical Float Settings .....	10
System Start-Up Report .....	11
Operation & Maintenance .....	12

### Owner's Information

Model Number: \_\_\_\_\_

Job Name: \_\_\_\_\_

Distributor: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Contractor: \_\_\_\_\_

Date of Installation: \_\_\_\_\_

System Readings During Operation: Voltage \_\_\_\_\_ Amps \_\_\_\_\_

See System Start-Up Report On Page 11.

### Safety Instructions

**TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND WITH THE PUMP.**

**THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND SHOULD BE KEPT IN A SAFE PLACE FOR FUTURE REFERENCE.**



This is a **SAFETY ALERT SYMBOL**.

When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.

**▲ DANGER**

Warns of hazards that **WILL** cause serious personal injury, death or major property damage.

**▲ WARNING**

Warns of hazards that **CAN** cause serious personal injury, death or major property damage.

**▲ CAUTION**

Warns of hazards that **CAN** cause personal injury or property damage.

**▲ NOTICE**

INDICATES SPECIAL INSTRUCTIONS WHICH ARE VERY IMPORTANT AND MUST BE FOLLOWED.

**THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.**

**MAINTAIN ALL SAFETY DECALS.**

**REFER TO WARRANTY ON PAGE 2.**

## Limited Warranty

Manufacturer warrants, to the purchaser and subsequent owner during the warranty period, every new product to be free from defects in material and workmanship under normal use and service, when properly used and maintained, for a period of one year from date of purchase by the end user, or 18 months from date of original manufacture of the product, whichever comes first. Parts that fail within the warranty period, one year from date of purchase by the end user, or 18 months from the date of original manufacture of the product, whichever comes first, that inspections determine to be defective in material or workmanship, will be repaired, replaced or remanufactured at Manufacturer's option, provided however, that by so doing we will not be obligated to replace an entire assembly, the entire mechanism or the complete unit. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to and there shall be no warranty for any material or product that has been disassembled without prior approval of Manufacturer, subjected to misuse, misapplication, neglect, alteration, accident or act of God; that has not been installed, operated or maintained in accordance with Manufacturer's installation instructions; that has been exposed to outside substances including but not limited to the following: sand, gravel, cement, mud, tar, hydrocarbons, hydrocarbon derivatives (oil, gasoline, solvents, etc.), or other abrasive or corrosive substances, wash towels or feminine

sanitary products, etc. in all pumping applications. The warranty set out in the paragraph above is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products.

Contact Manufacturer at, 3649 Cane Run Road, Louisville, Kentucky 40211, Attention: Customer Service Department to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

**MANUFACTURER EXPRESSLY DISCLAIMS LIABILITY FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR BREACH OF EXPRESSED OR IMPLIED WARRANTY; AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY.**

Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

## Troubleshooting and Service Checklist



**▲ WARNING** ELECTRICAL PRECAUTIONS- Before servicing a system, always shut off the main power breaker and then disconnect the pump - making sure you are not standing in water. Wear insulated protective sole shoes. Under flooded conditions, contact your local electric company or a qualified licensed electrician for disconnecting electrical service prior to pump removal.

CONDITION	COMMON CAUSES
<b>A. Treatment not as expected</b>	System hydraulically overloaded, homeowner inputs too taxing, pump timer improperly adjusted, poor installation, distribution piping needs cleaning, chemicals have killed the system, not a watertight installation, system not maintained.
<b>B. Water ponding on surface</b>	Media clogged, drain piping clogged, lateral field not operating properly.
<b>C. Effluent filter clogging frequently</b>	Homeowner is not controlling inputs correctly, septic tank needs cleaning, chemicals have killed the system, bad septic tank, poor system management.
<b>D. Production of odor</b>	Z-Cell <sup>®</sup> experiencing a disruption, lids not gas-tight, roof vent odor could be confused with filter, system not maintained correctly.
<b>E. System aesthetics</b>	Rodent burrowing or weeds must be removed from system immediately, landscaping not maintained, plants poorly established.
<b>F. Pump not operating properly- Alarm condition</b>	Float switch or timer incorrectly set, incorrect or low voltage, pump mechanically bound, defective electrical components, debris on or under float switch(es), check panel fuses and breakers.
<b>G. Pump operates but delivers little or no water</b>	Clogged pipe or orifices, timer set incorrectly, increased pipe friction, shut off valve closed, low or incorrect voltage, discharge head exceeds pump capacity, clogged pump strainer, worn out pump.

**If the above checklist does not uncover the problem, consult the factory - Do not attempt to service or otherwise disassemble system or pump. Service must be by Zoeller Authorized Maintenance Personnel.**

## General Preinstallation Checklist

1. Inspect your Z-Cell® package. Occasionally products are damaged during shipment. If the unit is damaged, contact your dealer before using. Do Not remove the test plugs from the switch cover or the motor housing of the pump.
2. Carefully read all literature provided to familiarize yourself with specific details regarding installation and use. These materials should be retained by the end user for future reference.
3. Total septic system design is critical to the operation of the system. A Licensed Professional Engineer or a professional as prescribed in your local code should design ALL systems. A site plan should be developed that includes the placement and elevations of all components. If an engineer is not involved with the system you are working on, Zoeller highly recommends that one be contacted to review the installation. Zoeller can provide technical help and help locate regional engineering services for system design by calling our Product Support Department at 1-800-928-7867.
4. Your Z-Cell® kit contains most of the components needed for installation. However the installing contractor must provide a few items. Refer to the list below for additional materials required.

### Kit Includes:

- Patented WW septic tank effluent filter.
- Factory assembled dose tank discharge assembly.
- Orifice shields.
- Cleanout risers.
- EPDM rubber liner.
- Distribution piping system.
- Timed dosing control panel and switches.
- Under liner protection blanket.
- Zoeller proven quality effluent pump.
- Slotted discharge assembly.
- Multizone valve, riser and lid.

### Optional:

- Prewired conduit assembly and junction box (ordered separately) see CL0001 Zoeller Pump Company Systems Price Sheet.

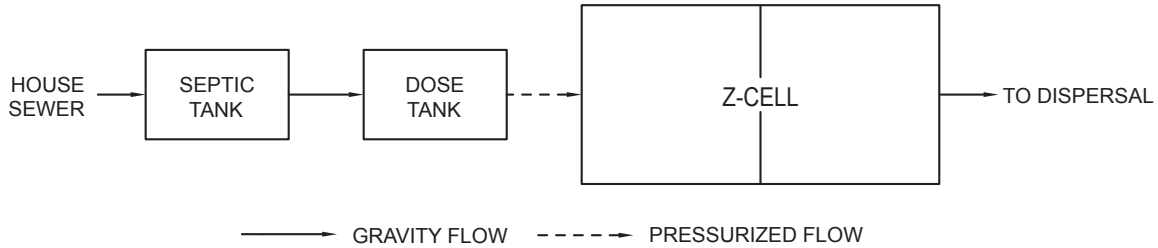
### Contractor Provides:

- House sewer line.
  - Septic tank and dose tank.
  - All piping outside dose tank and Z-Cell®.
  - Drain field components.
  - Frame for media filter (treated 2x10s recommended).
  - Z-Cell® media.
5. Most residential kits include a Zoeller model N153 pump. This pump is 1/2 HP, 115V, single phase unit capable of delivering the proper flow and head for most installations. Verify which pump your system is engineered to use. Follow the instructions in the pump box (FM2676) to install the pump properly.
  6. Check to be sure that your power source is capable of handling the voltage requirement of the pump motor, as indicated on the pump nameplate. Make sure the pump electrical supply circuit is equipped with fuses or circuit breakers of proper capacity. A separate branch circuit is recommended, sized according to the "National Electrical Code" for the current shown on the pump nameplate.
  7. The installation of pumps with variable level float switches is the responsibility of the installing party and care should be taken that the tethered floats will not hang up on the pump apparatus or pit peculiarities and is secured so that the pump will operate properly.

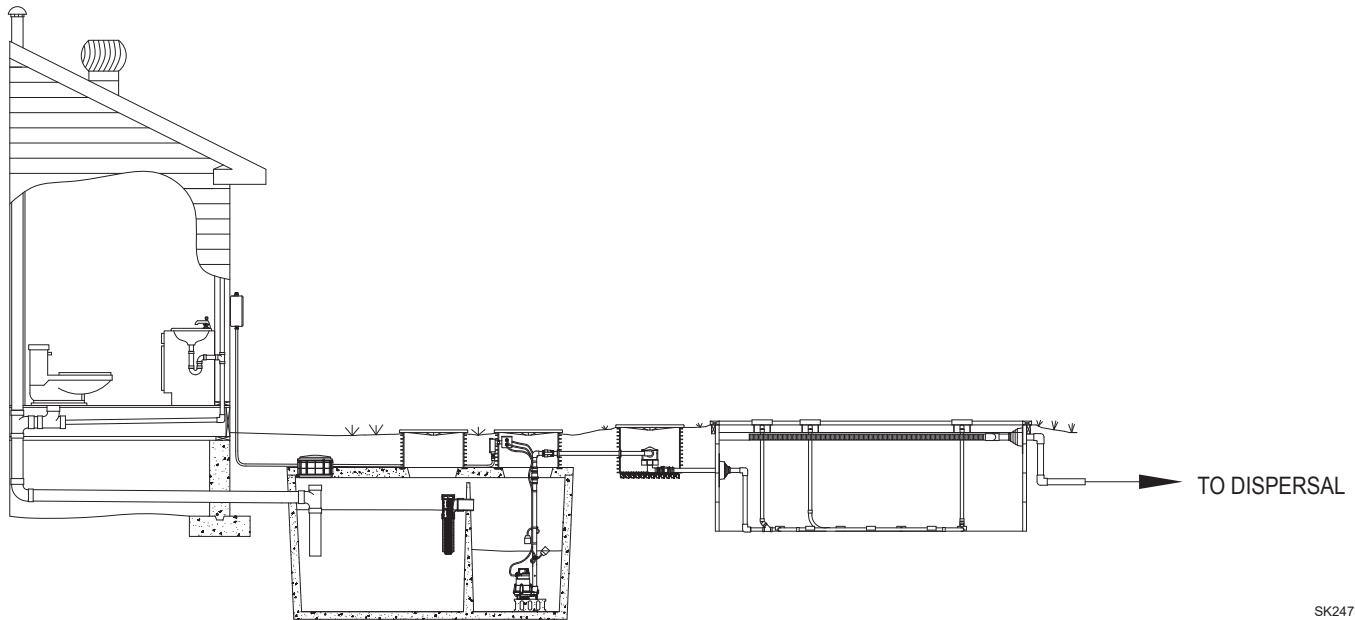
# System Installation

The Zoeller Pump Company Z-Cell® filter is designed as a secondary treatment device. It works in conjunction with the septic tank (primary treatment) and the drain field (water dispersal and final polishing) to provide excellent overall wastewater treatment of the on-site effluent. Refer to the diagram below to see the overall flow of effluent through the system.

**Figure 1: Gravity Discharge Z-Cell® System Flow Schematic**



SK2471



SK2473

In new construction, the Z-Cell® filter can be installed at the same time as the other onsite wastewater treatment system components. Use the following outline as a guide to install the overall system:

## General System Installation Outline

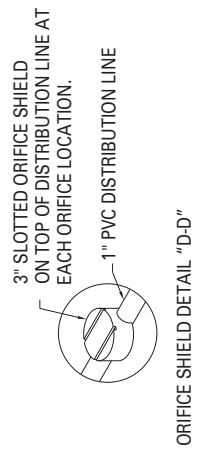
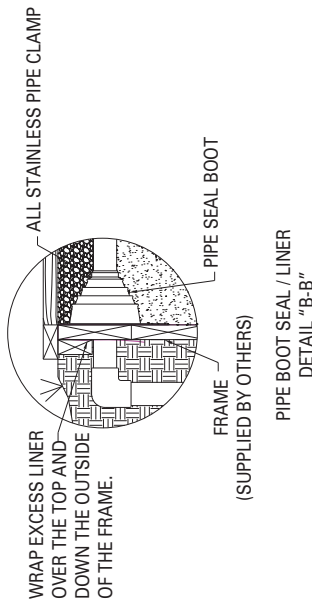
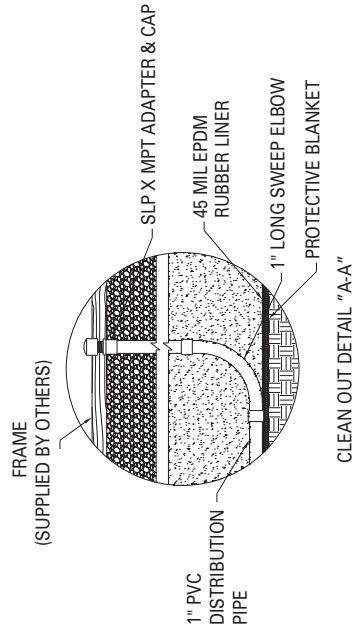
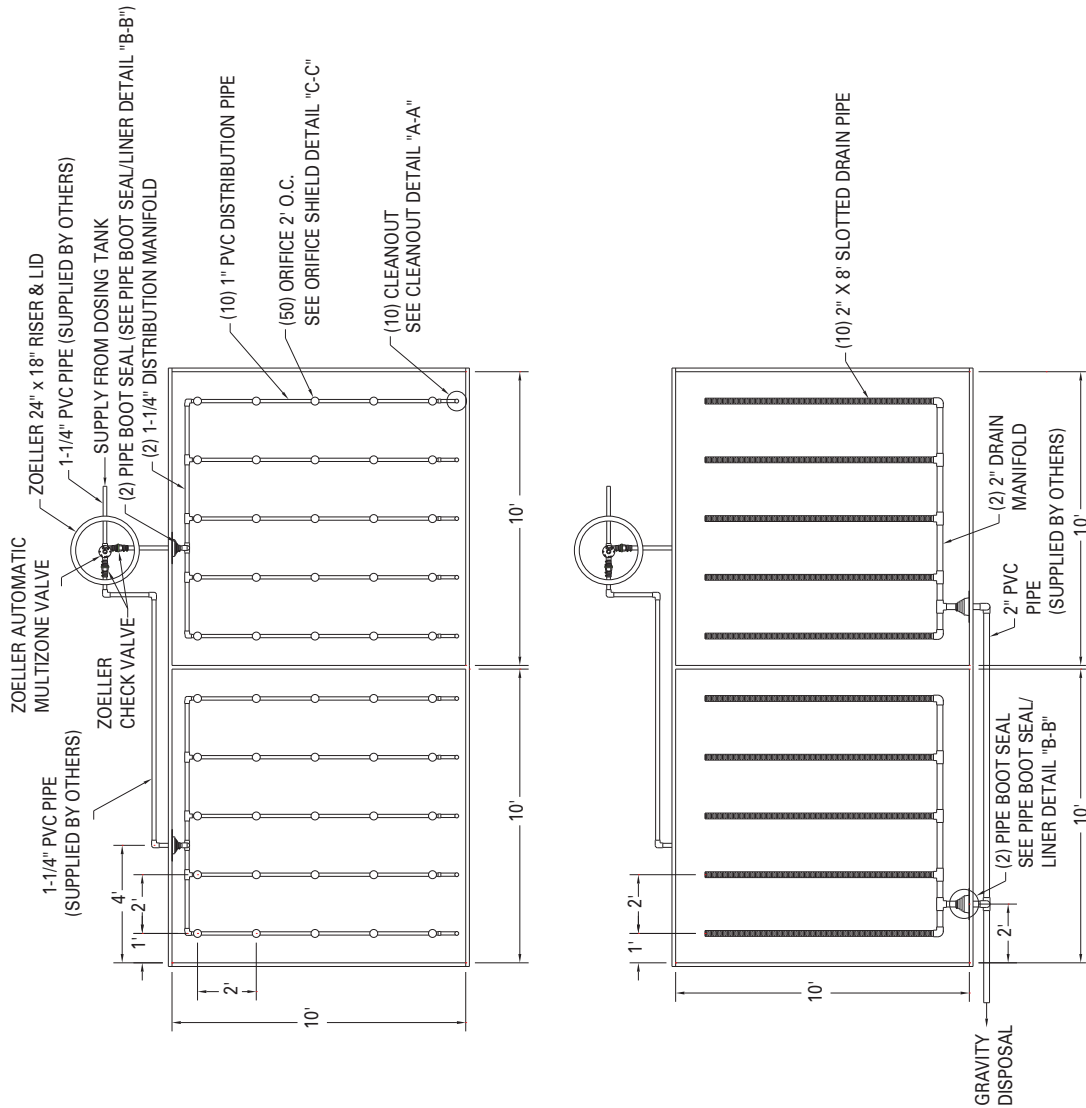
1. Install septic tank.
2. Install building sewer line as required to septic tank.
3. Install dosing tank (unless two chambered tank is used).
4. Install piping between septic tank and dosing tank.
5. Install dosing tank pump.
6. Install wiring from dosing pump to control panel (see FM1990 prewired conduit installation).
7. Install Z-Cell® (see detailed instructions below).
8. Install force main from dosing tank to multizone valve to Z-Cell®.
9. Install piping from Z-Cell® to dispersal area.

## Z-Cell® Installation Instructions

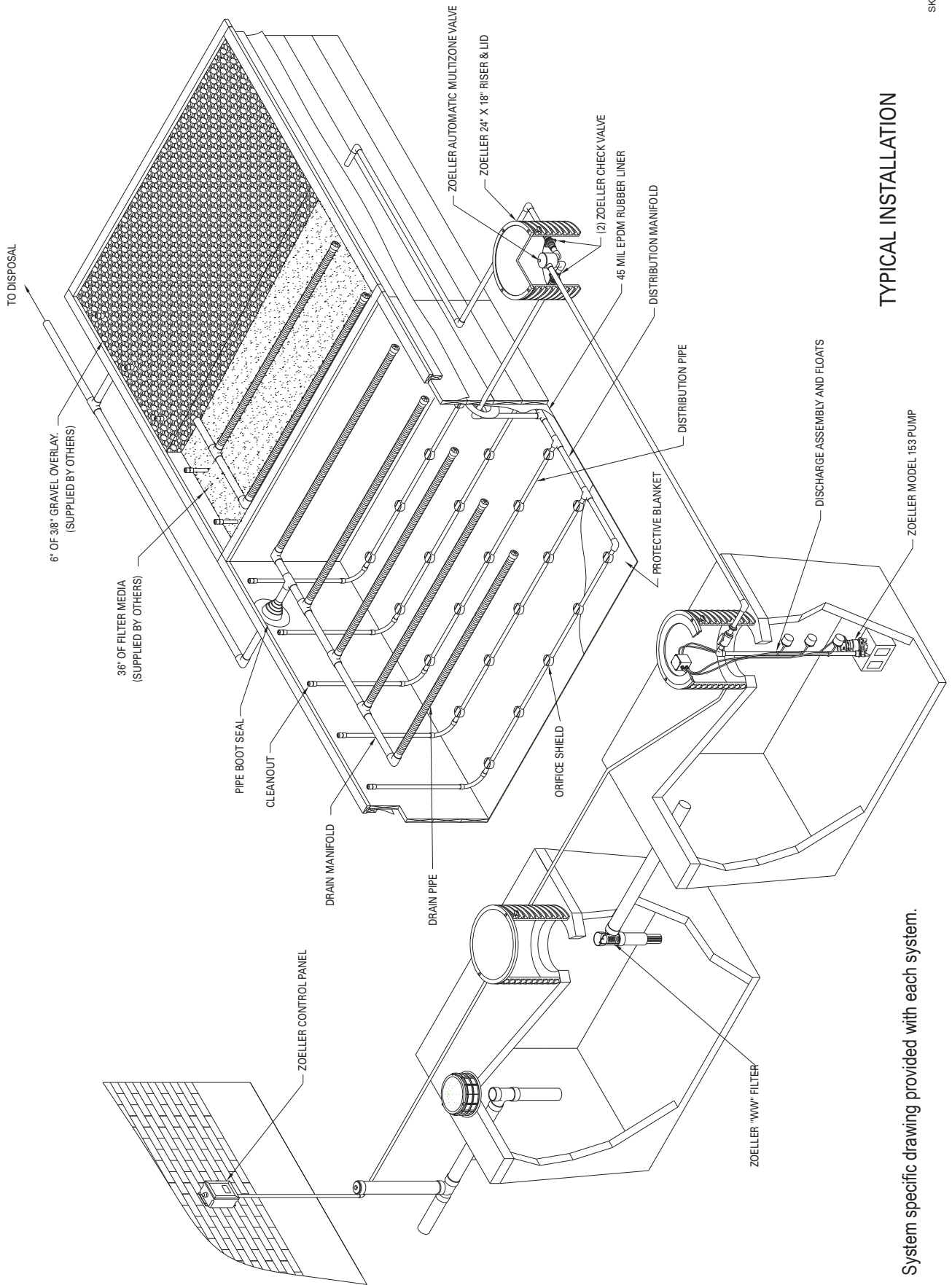
See figures 2 and 3 for 10' x 20' Z-Cell®. See figures 4 and 5 for 12' x 24' Z-Cell®.

1. Excavate a hole for the wetland Z-Cell®, large enough to build the liner support walls. NOTE: Support walls should extend a minimum of 3" above the original grade to allow surface water to be diverted away from the Z-Cell®.
2. Excavate a trench for the distribution and drain piping.
3. Smooth, rake, compact, and level the bottom of the excavation as required. If additional leveling material is required, use sand or an equivalent material.
4. Erect the support walls of approved material and size. Pressure treated 2x10s, framed walls or concrete are recommended.
5. Using a hole saw, locate and cut holes in the wall for the drain and distribution pipe penetrations. Note: hole saw size should not interfere with boot seal area.
6. Install the protective mat.
7. Install the liner, making bottom and corners smooth. Excess liner should be laid over the top and tucked down the outside of support walls.
8. Using a utility knife, cut a hole through the liner to match the holes cut in the support walls for the drain and distribution pipe penetrations.
9. Clean the area on the liner around the drain and distribution penetration holes with Firestone Quick Prime Plus (P/N 5060-0007). Apply the primer with a scrubber pad or clean cotton rag. Thoroughly scrub the area 3 times with the primer. Allow the primer to dry for 10 minutes. Remove the protective paper from seal boot adhesive. Do not touch the adhesive surface. Place boot adhesive against cleaned and smoothed liner surface. Press the boot with a roller or acceptable tool to ensure bubbles and wrinkles are removed. DO NOT PEEL BOOT BACK TO TEST SEAL.
10. Slide the 1-1/4" penetration pipes into the distribution seal boots. The pipe seal boots need to be trimmed to the appropriate diameter. The boots should fit snug with no wrinkles.
11. Place the hose clamp around the boot onto the 1-1/4" penetration pipe and tighten. Apply a bead of Firestone lap sealant caulk where the pipe meets the boot seal.
12. Install the distribution pipe configuration as illustrated in the design specification sheet and connect it to the penetration pipe. Cleanouts should extend above support walls.
13. Snap the orifice shields over the holes in the distribution pipes. Make sure the orifice shields are facing up.
14. Slide the 2" penetration pipes into the drain seal boots. The pipe seal boot may need to be trimmed to the appropriate pipe diameter. The boots should fit snug around the pipe with no wrinkles.
15. Place the hose clamp around the boot onto the 2" penetration pipe and tighten. Apply a bead of Firestone lap sealant caulk where the pipe seal meets the boot seal.
16. Install 36" of the appropriate media (see design specification sheet for details). While filling, be sure to position and level supply pipe properly. Make sure the supply pipe cleanouts are stubbed up. Backfill 36" of the excavated material outside as you fill inside never exceeding a 12" difference in the media fill and backfill depth.
17. Before installing the drain piping, level the fill media. Remove the protector plugs from the drain piping and attach the drain pipe to the drain manifold as illustrated in the design specification sheet.
18. Attach the drain pipes to the manifold ensuring the elbow end is in the same horizontal plane with all parallel pipes level relative to each other.
19. Install 3" to 6" of the appropriate overlay media. While filling, be sure the drain pipes stay positioned. The drain pipes should be fully covered by 2" or more of media.
20. Make final distribution and drain connections if this has not already been done.
21. Finish by backfilling and landscaping. Be sure there is a 3" (minimum) berm surrounding the media filter to ensure that no surface water enters the media filter system.
22. Plant locally approved plants in a completed Z-Cell® during the spring –summer season.

**Figure 2: 10' x 20' Zoeller Z-Cell®**



**Figure 3: 10' x 20' Zoeller Z-Cell®**

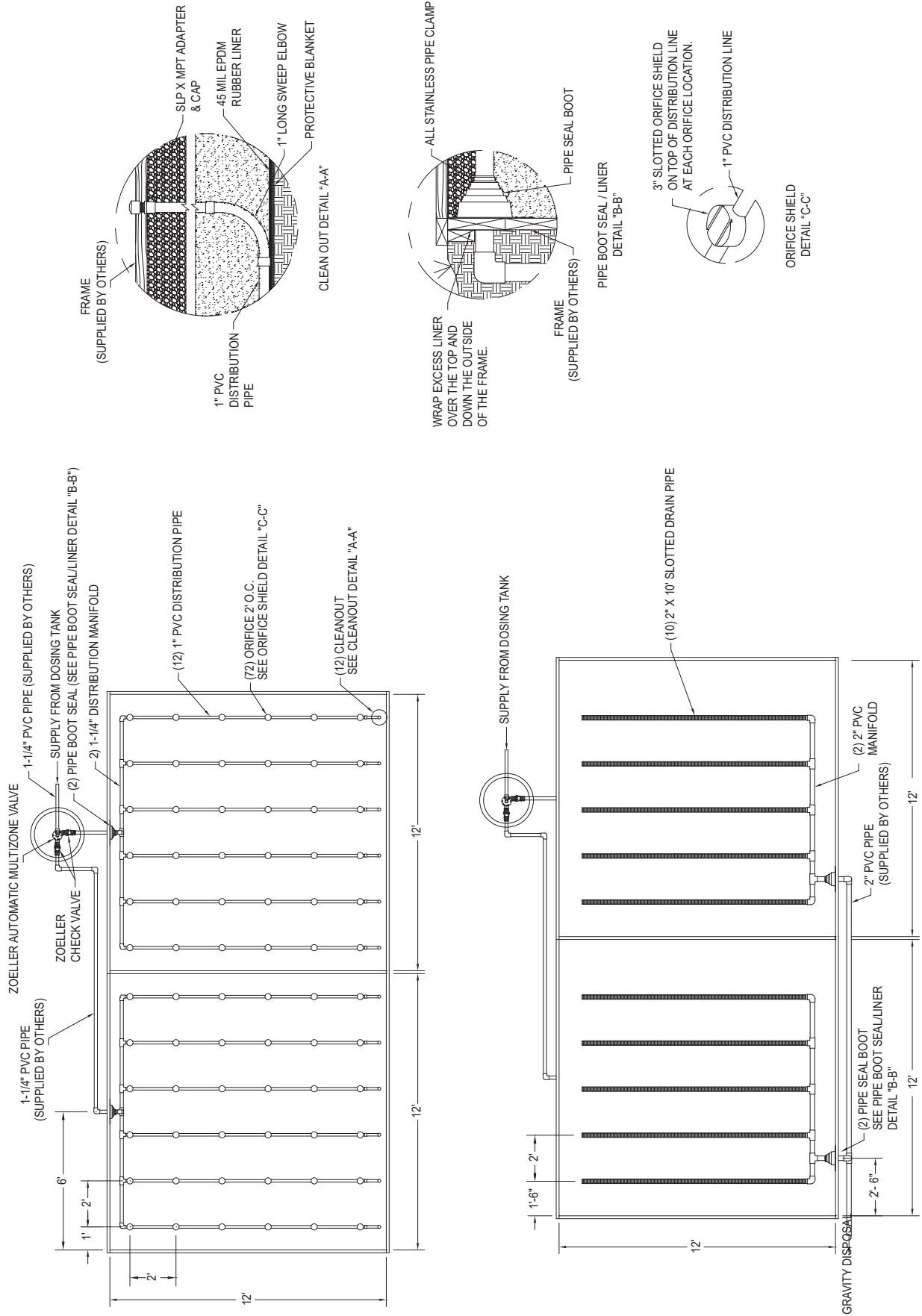


**TYPICAL INSTALLATION**

NOTE: System specific drawing provided with each system.



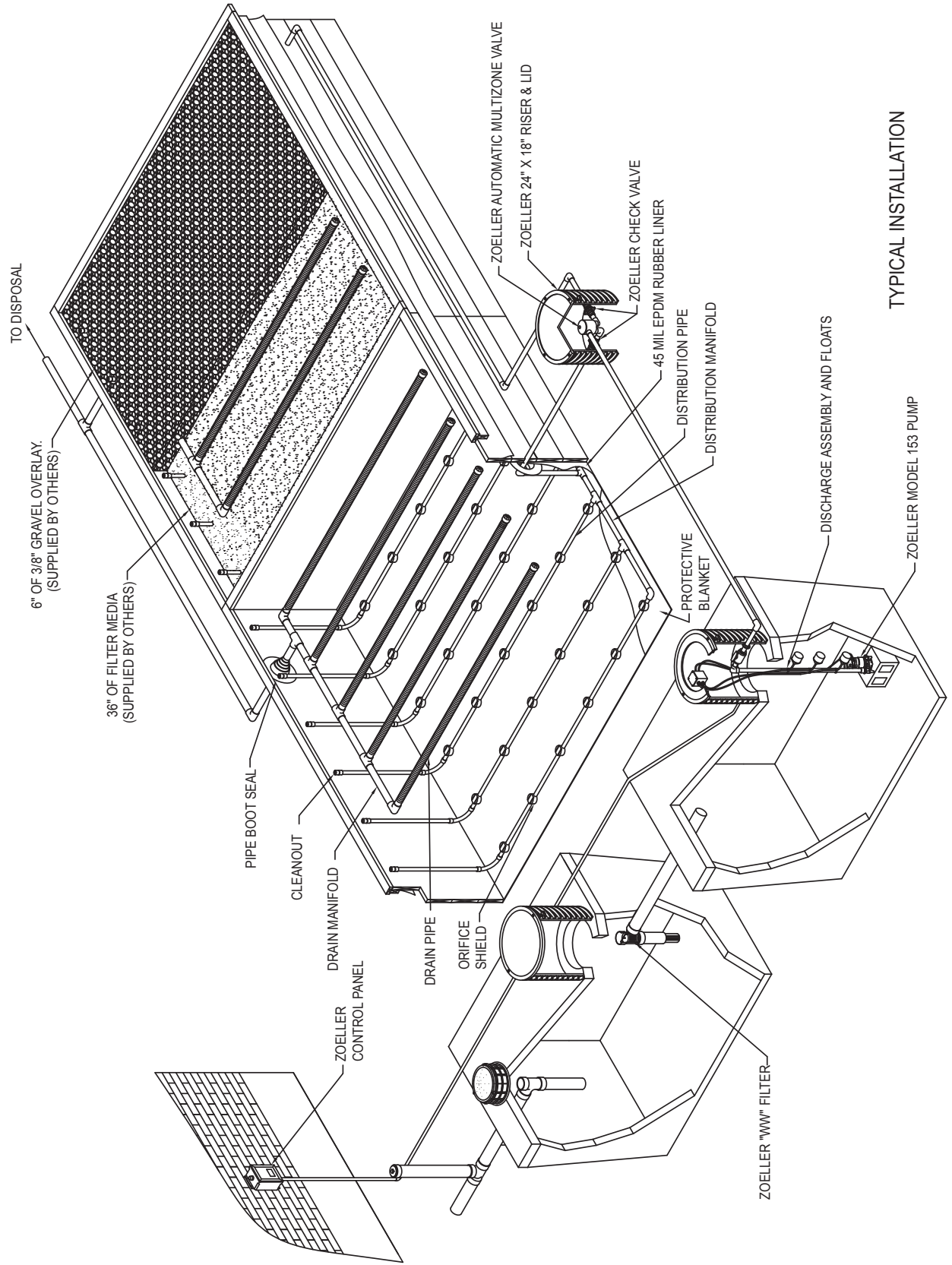
**Figure 4: 12' x 24' Zoeller Z-Cell®**



SK2338B



**Figure 5: 12' x 24' Zoeller Z-Cell®**



TYPICAL INSTALLATION

## System Start-up

Performing a good system start-up is crucial to having a long lasting trouble free system. A trained, qualified technician that understands the system's mechanical and electrical operation must do the system start-up. The system start-up report should be completed in coordination with the installing contractor, start-up technician, health department agent, homeowner, and the engineer. A Start-up Report is included to aid the system start-up procedure (page 11).

The timed dosing panel should be set up to dose 96 times per day. Consult the engineering site plan and/or control panel instructions to aid in the set up.

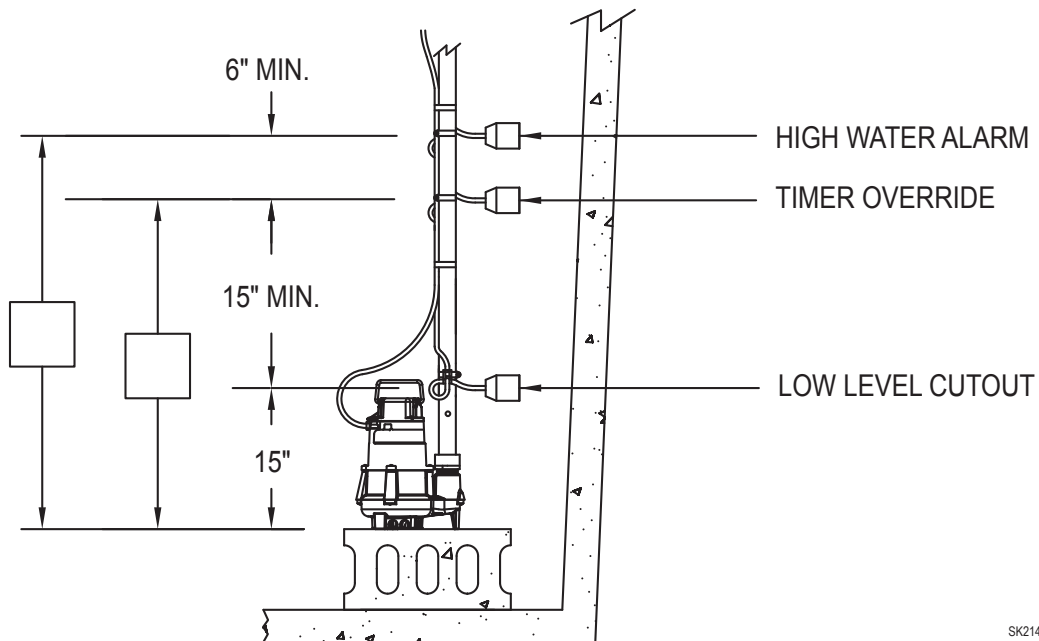
The homeowner and maintenance contract personnel must receive a copy of the following documents:

1. CL0068, Z-Cell® Catalog Sheet.
2. CL0180, 5220 Series Z-Cell® Owner's Manual.
3. Control Panel Wiring Diagram.
4. Control Panel Installation Instructions and Operation/Troubleshooting Manual.
5. Completed Start-Up Report (refer to page 11).
6. FM0447, Submersible Pump Installation Instructions.
7. CL0040 WWI Filter Owner's Manual.
8. CL0012 Onsite 101.

Record the float settings of the dose tank and recirculation basin on the drawings below.

## Typical Float Settings For Model N153 Pumps

### Z-Cell® DOSE TANK



# ZOELLER PUMP COMPANY Z-Cell® START-UP REPORT

## I. PROJECT INFORMATION - COMPLETED BY INSTALLING CONTRACTOR

JOB NAME: \_\_\_\_\_  
ENGINEER: \_\_\_\_\_  
CONTRACTOR: \_\_\_\_\_  
HEALTH DEPARTMENT: \_\_\_\_\_  
INSTALLATION DATE: \_\_\_\_\_

LOCATION: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
START-UP DATE: \_\_\_\_\_

## II. EQUIPMENT INFORMATION - COMPLETED BY INSTALLING CONTRACTOR

Z-Cell® FILTER SIZE: \_\_\_ 10' X 20' \_\_\_ 12' X 24' \_\_\_\_\_ OTHER

DOSING PUMP: P/N \_\_\_\_\_ MODEL NO. \_\_\_\_\_ VOLTAGE \_\_\_\_\_ PHASE \_\_\_\_\_ BHP \_\_\_\_\_ RATED FLA \_\_\_\_\_ MFR. DATE \_\_\_\_\_

## III. INSTALLER CHECKLIST

THE FOLLOWING SHOULD BE COMPLETED DURING START-UP BY A TRAINED, QUALIFIED TECHNICIAN.

### SEPTIC TANK

- PIPING COMPLETE FROM BUILDING TO SEPTIC TANK
- PROPER FALL IN LINE
- CLEAN OUT IN BUILDING LINE
- RISERS PROPERLY SEALED TO SEPTIC TANK
- FILTER INSTALLED ON SEPTIC TANK DISCHARGE LINE
- DISCHARGE AT PROPER HEIGHT
- SEPTIC TANK WATERTIGHT

### DOSING TANK

- PIPING COMPLETE FROM SEPTIC TANK TO DOSING TANK
- PROPER FALL IN LINE
- RISERS PROPERLY SEALED TO DOSING TANK
- DOSING PUMP INSTALLED AND PIPED
- PUMP WIRING COMPLETE TO CONTROLLER
- JUNCTION BOX WIRED AND SEALED
- LOW WATER AND ALARM FLOATS INSTALLED AND ADJUSTED
- DISCHARGE PIPE AND WIRING SEALED THROUGH RISER
- DOSING TIMER ADJUSTED \_\_\_\_\_ ON \_\_\_\_\_ OFF
- PUMP OPERATING PROPERLY
- DISCHARGE PIPE TO MEDIA FILTER COMPLETE
- DOSING TANK WATERTIGHT

### Z-Cell® TREATMENT SYSTEM

- PROPER LINER FRAME INSTALLED IN EXCAVATED AREA
- PROTECTIVE UNDERLAY BLANKET USED
- LINER IN PLACE WITH ALL PENETRATIONS SEALED
- MANIFOLD AND DISTRIBUTION PIPING ASSEMBLED AND GLUED
- ORIFICE SHIELDS INSTALLED IN PROPER LOCATIONS
- CLEANOUT RISERS FOR DISTRIBUTION PIPING INSTALLED
- PROPER FILTER MEDIA INSTALLED - SIZE \_\_\_\_\_
- 2" DRAIN LINE ASSEMBLED AND IN PLACE
- GRAVEL LAYER OVER DRAIN PIPING

### Z-Cell® TREATMENT SYSTEM (CONTINUED)

- GRAVEL LAYER OVER PROTECTIVE BARRIER
- PIPING COMPLETE FROM Z-Cell® TO SPLITTER SYSTEM
- PROPER FALL IN LINE
- SPLITTER SYSTEM INSTALLED AND PROPERLY ADJUSTED
- ACCESS RISER PIPE TO SPLITTER SYSTEM INSTALLED
- PIPING COMPLETE, WITH PROPER FALL, TO ABSORPTION FIELD
- SYSTEM FLUSHED OUT PROPERLY
- DISTAL PRESSURE ADJUSTED TO \_\_\_\_\_ FEET

## IV. ELECTRICAL READINGS AT PANEL

DOSING TANK:

VOLTAGE SUPPLY (PUMP OFF) L1 - L2 \_\_\_\_\_ V.

VOLTAGE SUPPLY (PUMP ON) L1 - L2 \_\_\_\_\_ V.

AMP DRAW (PUMP ON) L1 \_\_\_\_\_ A.

## V. ABSORPTION FIELD

ABSORPTION FIELD TO BE INSTALLED PER SITE CONDITIONS, LOCAL CODES AND APPROPRIATE GOVERNMENT REGULATIONS.

## VI. SUMMARIZATION

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I CERTIFY THIS START-UP REPORT TO BE ACCURATE:

\_\_\_\_\_  
\_\_\_\_\_

NAME \_\_\_\_\_ DATE \_\_\_\_\_

OTHERS PRESENT DURING START-UP:

- ENGINEER \_\_\_\_\_
- CONTRACTOR \_\_\_\_\_
- HEALTH DEPT. \_\_\_\_\_
- HOME OWNER \_\_\_\_\_

# Operation and Maintenance

Your Zoeller Pump Company Z-Cell® Wetland is one component of your on-site wastewater system. Your system consists of a primary treatment device (septic tank), secondary treatment device (Zoeller Pump Company Z-Cell®), and a soil distribution component (gravity or pressurized leach lines or a drip field). Your Z-Cell® Wetland requires periodic maintenance. Please read the maintenance instructions and be sure that each procedure is accomplished in the proper time frame. These instructions also include guidance for septic tank maintenance.

**These maintenance procedures should be carried out by a qualified professional on-site service person.**

## Input Inspection Schedule

Residents of every home discharging into an onsite system need to do an annual inspection of inputs to their onsite system. This includes organic (non-water) as well as hydraulic (water use) wastes. Note any changes in household habits and make corrections as needed.

Annual home inspection includes:

1. Review "Septic System Do's and Don'ts".

### DO

- Conserve water to reduce the amount of wastewater that must be treated and disposed.
- Repair any leaking faucets and toilets.
- Only discharge biodegradable wastes into the system.
- Minimize garbage disposal use.
- Divert downspouts and other surface water away from your drainfield.
- Keep your septic tank cover accessible for tank inspections and pumping.
- Have your septic tank pumped regularly and checked for leaks and cracks.
- Call a professional when you have problems.
- Compost food waste or put them in the trash.

### DON'T

- Flush sanitary napkins, tampons, disposable diapers, condoms, or other nonbiodegradable products into your system.
- Dump solvents, oils, paints, thinners, disinfectants, pesticides, or poisons down the drain which can disrupt the treatment process and contaminate groundwater.
- Dig in your drainfield or build anything over it.
- Plant anything over your drainfield except grass.
- Drive over your drainfield or compact the soil in any way.

2. Inspect all faucets and toilets in the house and make sure they are not leaking.

## Septic Tank Maintenance Procedures and Schedule

Each septic tank requires periodic maintenance. Maintenance includes:

1. Every 6 months - remove riser cover, inspect and clean effluent filter. The Zoeller "WW" Filter 170-0078 filter inner element is to be removed and rinsed off back into the tank. The filter outer sleeve (secondary filter) should remain in the septic tank outlet "T" and should not be removed. This filter is rinsed in place using a garden hose. Inspect all baffles, risers, and covers. After inspections, secure riser lid with tamper resistant screws or lock.
2. Annually - septic tank must have sludge level recorded and scum layer observations recorded. If the sludge layer is within 12 inches of the bottom of the effluent filter, the tank should be pumped. This will likely be every 3 to 5 years for most homes.

## Zoeller Pump Company Z-Cell® Wetland Maintenance Procedures and Schedule

Each Z-Cell® media filter requires periodic maintenance. Maintenance includes:

1. Every 6 months - inspect the surface of the Z-Cell® and remove any debris, dead plants, or unwanted weeds in the media. Replace plants as necessary. Any cleanout pipes that have been damaged or buried need to be replaced or brought back to original orientation. Inspect the valve chamber for proper working condition.
2. Annually – In addition to the items listed above, the wetland effluent distribution network should be flushed. To flush the distribution network, each cleanout pipe end cap (located within the wetland) must be located and removed sequentially. If necessary, each cleanout can be brushed with a snake. Flush by manually activating the dosing pump.

## Dosing Chamber Maintenance Procedures and Schedule

Each dosing and multizone valve chamber requires periodic maintenance; 3 months after start-up and annually thereafter.

1. The dosing and multizone valve chamber should be inspected annually. Power needs to be shut off at the breaker for this inspection.
2. Riser and lid integrity needs to be inspected.
3. Electrical connections need to be inspected for water and corrosion. Repairs need to be made when corrosion is found. The use of watertight wire nuts is required.
4. Float control operation needs to be inspected. Any hindrance to float movement must be corrected.
5. Excessive scum and sludge in the pump tank must be removed.

## Electrical Components Maintenance Procedures and Schedule

Each electrical component must be inspected annually.

1. Be sure each panel has a wiring diagram included.
  2. Inspect panel for corrosion and obvious problems such as water or odor in the panel.
  3. Note pump cycle and hour meter readings. These should be recorded in the panel and in the technicians log.
  4. Read voltages and amps and compare to start-up.
- With pump power on, float operation must be confirmed. Using a plastic rod, floats can be moved up or down and on/off and alarm switching tested.