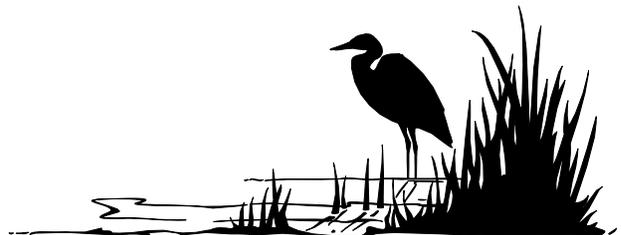




**WHITEWATER[®]
PRE-ENGINEERED DRIP DISPOSAL SYSTEM**

MODEL WWSFA-115V / WWSFA-230V

P.O. BOX 969, DENHAM SPRINGS, LA 70727
800-219-9183 504-664-9467<FAX>
www.deltaenvironmental.com
OH 4-16-07



HOW THE WHITEWATER[®] FILTER SYSTEM WORKS

The Whitewater[®] Filter/Drip System consists of the following basic items:

1. Pre-Treatment/Trash Tank
2. Whitewater[®] Aerobic Treatment Plant
3. Dose Tank
4. Pump
5. Filter System
6. Valves
7. Controls and Alarm Panel
8. Wastewater Grade Emitter Line and Accessories

Treated effluent water from the Whitewater[®] aerobic wastewater treatment plant spills into an underground dose tank that is sized in accordance with State requirements. Treated water is temporally stored in the dose tank until disposal in the drip disposal field.

The control panel contains a programmable logic controller (PLC) that periodically turns the pump, located inside the dose tank, on and off. The pump pumps water from the dose tank to the filter located inside a ground level box. The filter removes all particles greater than 100 microns (150 mesh) in size. At the beginning of each pumping cycle, the PLC turns the pump on, and sequentially opens and closes the flush valve that allows the filter to wash for a set period of time, after which the water is pumped through the filter to the disposal system. Approximately once per week (field adjustable), the system field flush valve opens to flush the disposal system of any solids that have built up. Sequential flushing is done for each zone during subsequent pump cycles. The flush water along with any impurities removed by the filter is returned to the pre treatment tank for further treatment. The control panel is furnished with a Hand-Off-Auto switch located in the panel. The hand mode overrides the PLC timer so the pump can be manually turned on for inspection and or servicing the system. When the level of water in the dosing tank is below a safe operational level, the pump float switch will be in the off position, thus disabling the pump, preventing dry run damage. The control panel also contains a high level alarm that will sound if a high level is reached in the dose tank.

The filtered effluent is pumped through the supply line to flexible emitter tubing with containing pressure compensating emitters uniformly spaced along the line. Effluent is uniformly distributed over the entire absorption field using a low flow rate.

Absorption field size is determined by, soil type, site characteristics and daily wastewater flow. The field size varies depending on soil texture and permeability. The absorption field should be situated on the best soil and landscape position of the site. Separation between the bottom of the emitter pipe and any underlying restrictive horizons (seasonably high water table) can be as little as 6 inches or as regulations require. The emitter lines should be installed between 6 and 18 inches deep depending on soil and site characteristics.

An absorption field installed on slopes should be carefully designed to take into consideration elevation changes and emitter line placement due to gravitational pressures. The pretreatment tank, treatment plant, dosing tank and filter unit should not be placed in low areas in order to prevent subsurface or surface runoff from returning or flooding the units.

Once the soil and site evaluation has been completed, the most suitable location and size of the absorption field is selected. Depending on the hydraulic loading rate of the soil, the linear feet of emitter pipe and number of zones are determined. It is also important that each zone is placed along the ground contour. The configuration of each zone may vary due to changes in slope.

The PLC controller must be set in the field as system flow based on the emitter selected and the number of emitters per zones will vary from site to site. The pump on and off time as well as the numbers of zones must be field set as per regulatory requirements.

Example Using Geoflow WFPC 16-4-24, Nominal 1GPH Drip Line:

System flow - 480 gallons per day (GPD)

Total area required as determined by ODH criteria = 2800 sq.ft.

Minimum emitter pipe required = 1400 ft.

Total length of emitter pipe supplied - 1500 feet

Number of zones - 2 at 750 feet each

1 gallon/hour ÷ .25 gallon/dose cycle = .25 hour (15 minutes) maximum run time/dose

1 gallon/day ÷ .25 gallons/day = 4 dose cycles/day maximum @15 minutes/cycle, per Zone

Number of pump cycles per day, 2 zones X 4 cycles/per zone = 8 (field set)

Zone capacity – 750 feet per zone ÷ 2 foot (emitter spacing) = 375 emitters/zone

375 emitters X 1pgh ÷ 60 minutes/hour = 6.25 gallons per minute (GPM)

Timer setting - 480gpd ÷ 6.25gpm/per zone = 76.8 minutes (Total Daily Run Time)

76.8 minutes/day ÷ 8 cycles/day = 9.6 minutes/cycle

Pump on = 10 minutes (field set)

Pump off = 170 minutes (field set)

Float switch setting - 10 minutes/cycle X 6.25gpm = 62.5 gallons per cycle

Using a safety factor of 1.5, 1.5 X 62.5 gallons per cycle = 93.75 gallons

Set pump operational float at 95 gallons

Set high water alarm float switch per code.

**FILTER SYSTEM SPECIFICATIONS
MODEL WWSFA-115V**

OPERATING PARAMETERS

Motor/pump size	1/2 H.P.(Standard)
Pressure regulator	40-PSI nominal
Filtration	100 microns
Pump cycles	Set in Field (Factory set to 12 times per day)
Field flush	Factory at 84 (once per week, field adjustable)
Filter wash	Each pump cycle (field adjustable for duration)
Electrical requirements	115Volts, 1 Phase , 60 Hertz, 20 Amps

COMPONENTS AND MATERIALS

Pump/motor	Stainless steel submersible
Piping system	Schedule 40 PVC
Valves	Glass reinforced nylon
Pressure regulator	Thermoplastic with stainless steel hardware
Control panel	NEMA 4X Fiberglass
Solenoid valves	24 VAC Encapsulated
Filter	100 Micron Auto Wash
Flow Meter	Multi-jet for reclaimed water
Dripline	Geoflow or Netafim pressure compensating

PARTS LIST

<u>Item</u>	<u>Item No.</u>
Dose tank	1
Pump	2
Pump on/off permissive float switch	3
High level alarm float switch	4
Air/Vacuum release valve	5
Pump access riser	6
Filter system box	7
Filter	8
Filter flush valve	9
Flow meter	10
Field flush valve	11
Control panel	12

**FILTER SYSTEM SPECIFICATIONS
MODEL WWSFA-230V**

OPERATING PARAMETERS

Motor/pump size	1 H.P.(Standard)
Pressure regulator	40-PSI nominal
Filtration	100 microns
Pump cycles	Set in Field (Factory set to 12 times per day)
Field flush	Factory at 84 (once per week, field adjustable)
Filter wash	Each pump cycle (field adjustable for duration)
Electrical requirements	230Volts, 1 Phase , 60 Hertz, 15 Amps

COMPONENTS AND MATERIALS

Pump/motor	Stainless steel submersible
Piping system	Schedule 40 PVC
Valves	Glass reinforced nylon
Pressure regulator	Thermoplastic with stainless steel hardware
Control panel	NEMA 4X Fiberglass
Solenoid valves	24 VAC Encapsulated
Filter	100 Micron Auto Wash
Flow Meter	Multi-jet for reclaimed water
Dripline	Geoflow or Netafim pressure compensating

PARTS LIST

<u>Item</u>	<u>Item No.</u>
Dose tank	1
Pump	2
Pump on/off permissive float switch	3
High level alarm float switch	4
Air/Vacuum release valve	5
Pump access riser	6
Filter system box	7
Filter	8
Filter flush valve	9
Flow meter	10
Field flush valve	11
Control panel	12

Pre-Engineered Subsurface Drip Disposal Systems
By
Delta Environmental Products

TABLE 1

WWSFA -115V

Drip Tubing	Drip Tube per Zone	Laterals per Zone	Length per Lateral	Max. Number of Zones per System	Pressure Regulator	Zone Discharge in GPM
Geoflow PC .53	1320	6	220	6	40 PSI	5.8
Geoflow PC 1.01	750	3	250	6	40 PSI	6.3
Netafim Bio-Line PC .61	1200	3	400	6	40 PSI	6

WWSFA – 230V

Drip Tubing	Drip Tube per Zone	Laterals per Zone	Length per Lateral	Max. Number of Zones per System	Pressure Regulator	Zone Discharge in GPM
Geoflow PC .53	2400	8	300	6	40 PSI	10.6
Geoflow PC 1.01	1750	6	250	6	40 PSI	14.6
Netafim Bio-Line PC .61	2100	7	300	6	40 PSI	10.7

Consult Delta Environmental Products for alternate designs.

1. Prepare an excavation with an opening approximately one foot larger than the dose tank and a depth that will allow water to freely flow from the treatment plant into the dose tank. Backfill with a 6 inch layer of sand or gravel if otherwise unable to provide a smooth, level, compact base. Install the pump access pipe into the dose tank through the top of the tank and seal. Provide a sufficient length of pipe to extend into the pump access riser about 4 inches. While working with open pits we recommend that the hole be roped off in some fashion to prevent injury to passers by.
2. Fill the dose tank with clean water before back filling; fill around the tank approximately 12 inches below ground level. Backfill material should be placed in 12 inch layers and tamped to insure maximum skin friction between dose tank and surrounding ground.
3. Position the electrical conduit in the ground between the pump access riser and the filter. Drill a 1-3/4 inch hole (or as needed based on pipe size) in the pump access riser for the pump outlet pipe and a 7/8 inches hole for the electrical conduit. Install pump access riser and filter system so they are at least flush with ground level, and high enough to prevent surface water from entering.
4. Install a schedule 40 PVC pipe of sufficient length to extend from the pump into the pump access riser and have enough room to attach the vacuum release valve and union. Install the vacuum release valve and union using appropriate fittings.
5. Attach the float switches to the discharge pipe using clamps furnished by Delta. Adjust the position of the clamps as shown on the drawings or as required to insure that the pump stops at the minimum operating water level and turns on above this level, and that the alarm sounds at high level position.
6. Install the entire pump assembly through the pump access riser. Install the electrical cables and connect the union from the pump outlet to the filter system. Use silicon to seal around exiting piping.
7. Connect the filter system outlet pipe to the drip line pressure regulator that attaches to the supply manifold. Connect the drip line return manifold to field flush valve, located in the filter assembly. Connect the outlet of the field flush valve to the inlet of the treatment system.
8. Attach control panel to suitable mounting surface using all four mounting holes on back of box. Use proper screws of sufficient length to insure a secure and permanent mounting.
9. Control panel is rated for outdoor service, however do not place it where it can be immersed in rising water or where run-off water such as from a roof will fall on it. Also do not mount it where it is subject to wetting from sprinklers, hoses, etc. **Mount control panel where there is a minimum working space 30" wide and 6' high.**
10. The control panel must never be connected to a circuit that is not properly grounded. Never plug the unit into a receptacle that has a 2 pole to 3 pole grounding adapter attached. If there is any doubt, have a qualified electrician check for proper grounding. The control panel must be connected to an electric source equipped with a ground fault current interrupter (GFCI) circuit breaker or GFCI receptacle. A standard receptacle can be replaced with a GFCI receptacle. GFCI breakers and receptacles can be obtained from most stores that sell electrical supplies.
11. The wire from the filter system to the control panel if direct buried **MUST BE TYPE UF** rated for

underground service. It must be buried a minimum of 2 feet below the final grade and must be protected by conduit where it exits the ground. Conduit must extend a minimum of 1'-6" below ground where the wires rise from the ground to the control panel. These requirements are per the National Electric Code. Check with local authorities to see if they have more stringent requirements. Schedule 40 PVC is shown; note this is conduit not water pipe. However, if the conduit is subject to physical damage, you must use schedule 80 PVC conduit and appropriate fittings.

12. Wire the solenoid valves as shown on the drawings.
13. Verify that all electrical systems are connected and secure.
14. Close cover on control panel and connect control panel to a ground fault current interrupter (GFCI) circuit.
15. Verify proper pump operation by observing pump while manually operating pump float switch. Pump must not be run unless immersed in water. Verify alarm system by manually operating alarm float switch. Pump and dispose of all clean water in the tank. Verify that 14 inches of water remains inside the tank when pump stop float switch turns pump off. Verify operation of the floats by observing PLC input screen.
16. Install a 2-inch layer of gravel in the filter access boxes and complete back filling the site.
17. Install drip line 6 to 8 inches deep, but not to exceed 18" below ground. The drip line should not be stretched during installation or damage may occur.
18. Install the system header first: Typical layout will be Filter Unit, Zone Valve (if required) and pressure regulator at each individual Drip Zone. Then install the PVC schedule 40 supply lines. These should be buried at a depth of 12 to 18 inches minimum, 4 to 12 inches below the depth of the drip lines. If there is a risk of freezing, bury mainlines below the frost line. At all times avoid getting debris into the system; it may be necessary to cover the ends of exposed pipes with tape. Flush main lines, test for leaks and leave them full of water. Larger diameter pipes left full of air in a trench that has not been compacted may "float". System must be installed per drip line layout drawings.
19. Open trenches for the sub-main manifold and flush line manifold. These trenches should be 8 to 10 inches deep, minimum. At the beginning of the drip line trench construct an earth damp above drip line elevation and lay drip line over earth damp to manifold. This will prevent water from draining from drip line.
20. Clean sub-main and flush line manifold trenches, moisten and compact the bottom of the trench. (If this is not done, the manifolds may "settle" and slowly pull out the couplings). Assemble the sub-main manifold outside the trench if practical. Connect to main PVC lines and to the system header. Flush these lines. A high water velocity is required to carry away debris that may have entered the pipes before or during installation. Place the sub-main and flush manifolds into the trench.
21. Install drip lines on contour, not perpendicular or up and down, etc. to the slope.
22. Maximum lateral length, for standard zones are as indicated in Table 1, consult Delta Environmental Products for alternative zone designs.

23. Minimum lateral spacing must be 2 feet, except for special design.
24. Lateral spacing of three feet or more should be used for slopes of 20% or greater.
25. Install air vent/vacuum breakers at the high end of each drip zone supply and return manifold. Air vents/vacuum breakers to be placed in protective enclosure to prevent an accumulation of substances that could prevent their proper operation and they must have a grade level access.
25. The size of the installation, type of soil, slope, availability of labor and cost will determine the best installation method. During installation cover all open pipe ends including drip lines to avoid getting dirt or debris into the system. Leave enough length at the beginning and end of each drip line for connections. It may be more convenient to finish the last foot or so of the trench by hand. This gives more room for connections. Beware of bending the drip tubing tight during installation. When doing looped systems, care must be taken if the tubing is bent to create the loop as it can kink and reduce flow. An alternate method is to use flexible PVC or drip line ells and a straight run of drip tube between. The drip line may elongate at high temperatures, do not store in direct sun light. To prevent stress due to contraction always leave tube snaked from side to side of trench (1' per 100') or when plowing leave slack at supply and return manifold. Connect drip lines to sub-main and flush manifolds. Flush again. Run the system before covering and check for leaks.
27. Install schedule 40 PVC for return flush line. Run return line back to the filter system. The electric solenoid valve that operates the flush line is part of the filter system. Install schedule 40 PVC drip flush line and filter flush line back to the treatment system as shown on the drawings.
28. To compensate for a lack of depth to a restrictive horizon/layer and/or seasonal water table a clean fill material of loamy sand, sandy loam or light loam may be used as fill. The fill material shall consist of a minimum of 70% sand particles equal to or greater than 0.25 mm, and clay content shall be 20% or less, be sure to check local codes for specific requirements on fill and where they exist follow them. Organic matter should be removed prior to placing fill material. If not the site must be plowed to prevent an organic sealing layer from forming. Fill material should be applied over the entire area in a shallow layer (3 inches) and then be tilled into the natural soil to prevent a textural interface from forming. When fill is used, the entire area must be covered with sod to prevent erosion or other erosion control measures taken.
29. Whenever possible, spend time with your customer. Review operating instructions; be sure that the customer has a manual to keep with them as this may prevent an unnecessary return visit.

CARE AND OPERATION INSTRUCTIONS

The Whitewater® System has been designed and built to provide long term, reliable and efficient service. Once the unit has been installed (see installation instructions) the unit will operate with a minimum amount of attention.

The following checks should be made periodically as described:

CAUTION: USE LATEX PROTECTIVE GLOVES WHEN HANDLING EFFLUENT WASTEWATER. AVOID GETTING ANY EFFLUENT WATER ON YOU. WASH UP WITH ANTI-BACTERIAL SOAP WHEN FINISHED.

Daily: - Owner/Operator
Check the alarms on both the treatment plant and dosing system. The treatment plant alarm comes on when the air supply system has malfunctioned. If the alarm is activated, check for a blown fuse or thrown circuit breaker. Check air compressor to be sure it is operating. Once accustomed to the soft humming sound of a properly operating unit, any unusual noise is an indication of malfunction. If an unusual noise is detected or total failure is observed, call your local dealer for service.

Weekly: - Owner/Operator
Check the treatment plant for offensive odor.

Check for water leakage at the ground level boxes that house the components of the filter system.

If such conditions should develop, call your local dealer for service.

6 Months: - Dealer Service
Check the air filter on the air compressor. Rinse with warm water if necessary.

Check the screen filter in the filter system. Rinse with clean water if necessary.

Periodically: Solids Removal - Refer to the Whitewater® Treatment Plant Maintenance Manual

DURING THIS PROCEDURE IT IS IMPORTANT THAT CARE IS TAKEN TO PREVENT ANY SOLIDS FROM DISCHARGING INTO THE DOSING TANK.

During pump out of treatment plant, pump out the lower 25 percent of the dosing tank to remove any solids that would have accumulated on the bottom. **Any sludge removed from system must be disposed of according to all state, local, and federal regulatory requirements.** The alarm to the dosing tank is activated when there is a high water situation in the dosing tank. This could indicate a problem with the filter system, dosing pump, or pump float level switches. Observe if dosing pump is operational. Turn the Hand-Off-Auto switch located in the control panel to the hand position. This will override the PLC timer and turn the pump on if operational; there is a 2 minute delay before pump start. Observe the water meter located in the filter box for flow. If the flow is less than that at the time of installation, it is possible the filter requires cleaning. **Disconnect power from the filter control panel.** The filter is located in the filter box. Unscrew the filter canisters and remove the filter element in the filter housing. Wash filter element with clean water and reinstall into the canister. Turn the

switch to the hand position and observe the water meter, again there is a 2 minute time delay before pump run. Flow would have been reduced if the filter were excessively dirty. After a period of time, observe if alarm stops sounding. This will indicate whether or not the system has returned to normal operation. **Turn the switch back to the automatic position.**

(One revolution of the water meter is 10 gallons)

If no flow has been observed, call your local dealer for service.

CAUTION: EXCESSIVE MANUAL OVERRIDE MAY CAUSE WATER TO SURFACE AT THE GRID SYSTEM. MANUAL OVERRIDE MUST NOT EXCEED 10 MINUTES EVERY 2 HOURS.

Note - To keep maintenance to a minimum and ensure high effluent quality, the following items should not be permitted to enter the system.

-Strong disinfectants or bleaches, other than small amounts normally utilized in day to day cleaning and laundry (be conservative). Use low-sudsing, low phosphates and biodegradable laundry detergents.

-Discharge from water softener.

-Any type of oils, greases, or other chemical wastes.

-Disposable baby diapers and wipes.

-Sanitary napkins, condoms or other similar devices.

-Hair, bandages, rags, or string.

-Latex, plastic, or metallic objects.

-Coffee grounds or cigarette butts.

-Mud or sticks.

-Paper towels, napkins or Kleenex.

-Excessive use of water over the design flow of the system, or organic overloading in excess of design parameters.

The proper operation of this or any other home sewage system depends upon proper organic loading and the life of the microorganisms inside the system. Delta is not responsible for the in-field operation of the system, other than the mechanical and structural workings of the system itself. We cannot control the amount of harsh chemicals or other harmful substances that may be discharged into the system by the occupants of a household.

**DELTA ENVIRONMENTAL PRODUCTS
FILTER SERVICE POLICY**

INITIAL POLICY:

The manufacturer or the distributor through the dealer shall furnish a two-year initial service policy to the user. This policy is included in the original purchase price and shall provide the following:

1. **An inspection/service call every six months**, which includes inspection, adjustment, and servicing of the mechanical and electrical component parts as necessary to ensure proper function.
2. If any improper operation is observed which cannot be corrected at that time, the user shall be notified immediately in writing of the conditions and the estimated date of correction.

CONTINUING SERVICE POLICY:

An annually renewable service policy affording the same coverage as the Initial Service Policy is available. Consult your dealer for pricing information.

PARTS:

Replacement parts or components may be obtained from your local distributor or directly from Delta Environmental Products

COMPLAINTS:

In order for Delta Environmental Products to properly address any complaints we require that you put in writing the date and nature of the complaint as detailed as possible. This must include the Serial Number of your system.

Send to: Delta Environmental Products
P. O. Box 969
Denham Springs, La. 70727-0969

LIMITED WARRANTY

Delta Environmental Products warrants the parts supplied by Delta in each system for a period of two (2) years. All warranty questions shall be resolved through Delta Environmental Products. The warranty on the device is that the device is free from defects in material and workmanship from the date of installation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. Sole obligation under this warranty is as follows: Delta Environmental Products shall fulfill this warranty by repairing or exchanging any component part, F.O.B. factory that in Delta Environmental Products judgment shows evidence of defects, provided said component part has been paid for and is returned through an authorized dealer, transportation prepaid. The warrantee must also specify the nature of the defect to the manufacturer.

The warranty does not cover processes/devices that have been flooded by external means, or that have been disassembled by unauthorized persons, improperly installed, subjected to external damage or damaged due to altered or improper wiring or parts not supplied by Delta.

This warranty applies only to the processes/devices and does not include any of the house wiring, plumbing, drainage, or other disposal systems. Delta Environmental Products is not responsible for any delay or damages caused by defective components or material, or for loss incurred because of interruption of service, or for any other special or consequential damages or incidental expenses arising from the manufacture, sale or use of this process/device.

Delta Environmental Products reserves the right to revise, change or modify the construction and design of the process/device for household wastewater or any component part or parts thereof without incurring any obligation to make changes or modifications in previously sold equipment. Delta Environmental Products also reserves the right, in making replacements of component parts under this warranty, to furnish a component part which, in its judgment is equivalent to the part replaced.

Under no circumstances will Delta Environmental Products be responsible to the warrantee for any other direct or consequential damages, including but not limited to lost profits, lost income, labor charges, delays in production, and/or idle production, which damages are caused by a defect in material and/or workmanship in its parts. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty is expressly in lieu of any other express or implied warranty, excluding any warranty of merchantability or fitness and of any other obligation on the part of Delta Environmental Products

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

GENERAL DESCRIPTION OF OPERATION

1. Upon power up at panel there is a 2 minute time delay before the pump starts.
2. After this time delay, the pump will start and run for a set period of time, then turn off for another set period of time.
3. When the pump starts, the filter flush valve will open for a set period of time then close.
4. After a set number of pump starts, the field flush valve will open for a set period of time after the pump starts and after the filter flush valve closes.
5. The field flush cycle will repeat itself on each subsequent pump cycle for the number of fields connected to the system before resetting.
6. In a normal cycle, the field flush valve can be opened for a period of 60 seconds by momentarily pushing the "Field Flush" toggle switch up then releasing it. This can be repeated for additional flushes.
7. At the end of each pumping cycle, after the pump shuts off, both the filter flush and field flush valves will open for a set period of time then close.

DESCRIPTION OF CONTROL FLOATS

1. Float FS1 is a wide angle float that when up, permits the pump to run and when down, keeps the pump from running and pumping dry. Note that by placing the HAND-OFF-AUTO switch in HAND position, you by-pass all floats and the pump will run without regard to the level of water in the pump tank. The switch is spring loaded and returns to OFF when released. After FS1 activates, there is a one minute delay before the pump will start if being called to run by the PLC before the float switch activated.
2. Float FS4 is the high level alarm float. When the water level reaches this float, the high level alarm light illuminates continuously, and the audible alarm sounds continuously. The audible alarm can be silenced by the silence switch. When the high level water level recedes, the alarm will stop.

Delta Environmental Products offers our Pre-Engineered system with a variety of control options; consult the factory for available options.

DISTRIBUTOR AND HOMEOWNER NOTES

The Delta Environmental Products Whitewater® Filter/Drip System is designed to filter effluent water discharged from an aerobic treatment plant that is listed by the National Sanitation Foundation (NSF) in accordance with ANSI/NSF Standard 40, Class 1 effluent requirements. It is designed for use with drip systems, spray irrigation systems, or other systems that may require highly filtered water. The Delta Environmental Products Whitewater® DF series aerobic treatment plants are listed by NSF in accordance with ANSI/NSF Standard 40, Class 1 and makes a perfect combination when used with the Whitewater® Filter/Drip System and drip line designed for Class 1 effluent water.

Consult your local Sanitarian/Environmentalist prior to installation.

HOMEOWNER RECORDS	
S/N: _____	Date: _____
Installed By: _____	
Distributor: _____	
Timer Setting: On for _____ minutes off _____ hours.	
Flow through meter at time of installation: _____ GPM	
Timer DOES NOT need to be reset after power outage. (PLC must be field adjusted for run/off time)	

Whitewater® is a trademark of Delta Environmental Products

PROGRAMING THE PLC SETTINGS

In the event that the PLC settings were changed and it is desired to return to the factory settings or you to change the factory settings proceed as follows:

STEP 1: Press both of the ESC and OK buttons simultaneously.

STEP 2: Press the ▼ down cursor button once.

STEP 3: Press OK

STEP 4: The PLC now displays the first parameter to set. You should see:

B 02: Par	< Parameter B02
TH= 00:12h	< Pump run time
TL= 02:00h	< Pump off time
Ta= 00:00h	< Current time in PLC

(Not settable, could be another number, may be changing continuously). Disregard.

STEP 5: Press OK

STEP 6: Flashing cursor moves to the settings. ◀& ▶ buttons moves flashing cursor left and right. ▲& ▼ buttons changes numbers under flashing cursor. Set until display numbers appear like the B02 window shown in step 4.

STEP 7: Press OK

STEP 8: Press ▼ button.
You should see:

B 10: T	< Parameter B10
T= 01:00m	< Period of time that filter flush valve is open when pump starts.
Ta= 00:00	< Disregard

STEP 9: Press OK

STEP 10: Using same procedure as in step 6, set until display numbers appear like the B10 window shown in step 8.

STEP 11: Press OK

STEP 12: Press ▼ button.
You should see:

B11: T	< Parameter B11
T= 02:00m	< Period of time that filter flush valve is open when pump stops.
Ta = 00:00	< Disregard

STEP 13: Press OK

STEP 14: Using same procedure as in step 6, set until display numbers appear like the B11 window shown in step 12.

STEP 15: Press OK

STEP 16: Press ▼ button.
You should see:

B13: T	< Parameter B13
T= 02:00m	< Period of time that field flush valve is open during normal operation.
Ta = 00:00	< Disregard

STEP 17: Press OK

STEP 18: Using same procedure as in step 6, set until display numbers appear like the B13 window shown in step 16.

STEP 19: Press OK

STEP 20: Press ▼ button.
You should see:

B14: Par	< Parameter B14
Lim= 000084	< Number of pump starts before field flush valve opens for a field flush.
Cnt= 000000	< Disregard

STEP 21: Press OK

STEP 22: Using same procedure as in step 6, set until display numbers appear like the B14 window shown in step 20.

STEP 23: Press OK

STEP 24: Press ▼ button.
You should see:

B18: Par	< Parameter B18
Lim= 000004	< Number of fields
Cnt= 000000	< Disregard

STEP 25: Press OK

STEP 26: Using same procedure as in step 6, set until display numbers appear like the B18 window shown in step 24.

STEP 27: Press OK

STEP 28: Press ▼ button.
You should see:

B21: T	< Parameter B21
T= 02:00m	< Period of time that field flush valve is open after pump stops.
Ta= 00:00m	< Disregard

STEP 29: Press OK

STEP 30: Using same procedure as in step 6, set until display numbers appear like the B21 window shown in step 28.

STEP 31: Press OK

STEP 32: Press ▼ button.
PLC display returns to block B02 shown in step 4.

STEP 33: If you wish to review the settings press ▼ button for 6 times to scroll through settings. Keep pressing to keep scrolling. When finished go to next step.

STEP 34: Press ESC

STEP 35: Press ▲ button

STEP 36: Press OK

STEP 37: You can now set the clock if you desire. A correct clock setting is not required to run this program. Use the same procedure as in step 6.

STEP 38: Press OK

STEP 39: Press ESC

PLC is now operating using the new parameters.

To review the parameters, repeat the procedure.

A factory supplied module can be supplied that will automatically reload the program with the factory default settings.

PLC PARAMETERS
CPWWSFA-VERSION 1.0

BLOCK	DESCRIPTION	NON-ADJUST	FACTORY SETTING	PLC NOMENCLATURE
BO2	TH=Run time TL=Off time		12 Minutes 2 Hours	00:12h 02:00h
BO4	Time delay on power up	X	2 Minutes	02:00m
B10	Open filter flush valve when pump turns on		1 Minute	01:00m
B11	Open filter flush valve when pump turns off		2 Minutes	02:00m
B13	Open field flush valve on field flush cycle		2 Minutes	02:00m
B14	Number of pump starts until field flush valve opens		84	84
B18	Numbers of fields		4	4
B21	Open field flush valve when pump turns off		2 Minutes	02:00m
B23	Open field flush valve after manual switch operation	X	1 Minute	01:00m

Note:

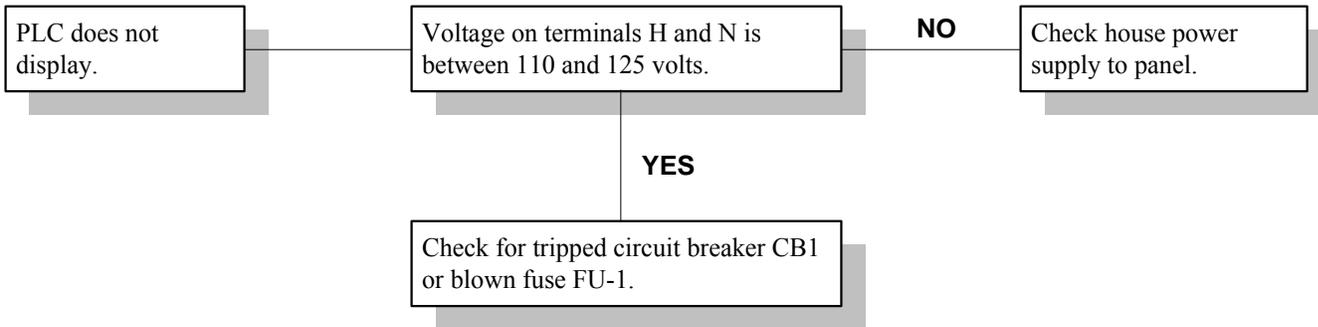
Minute settings are in minutes and seconds. For example 02:00m is 2 minutes, 02:10m is 2 minutes and 10 seconds. Hour settings are in hours and minutes. For example 02:00h is 2 hours and no minutes, 02:10h is 2 hours and 10 minutes.

Troubleshooting the CPWWSF Control Panel

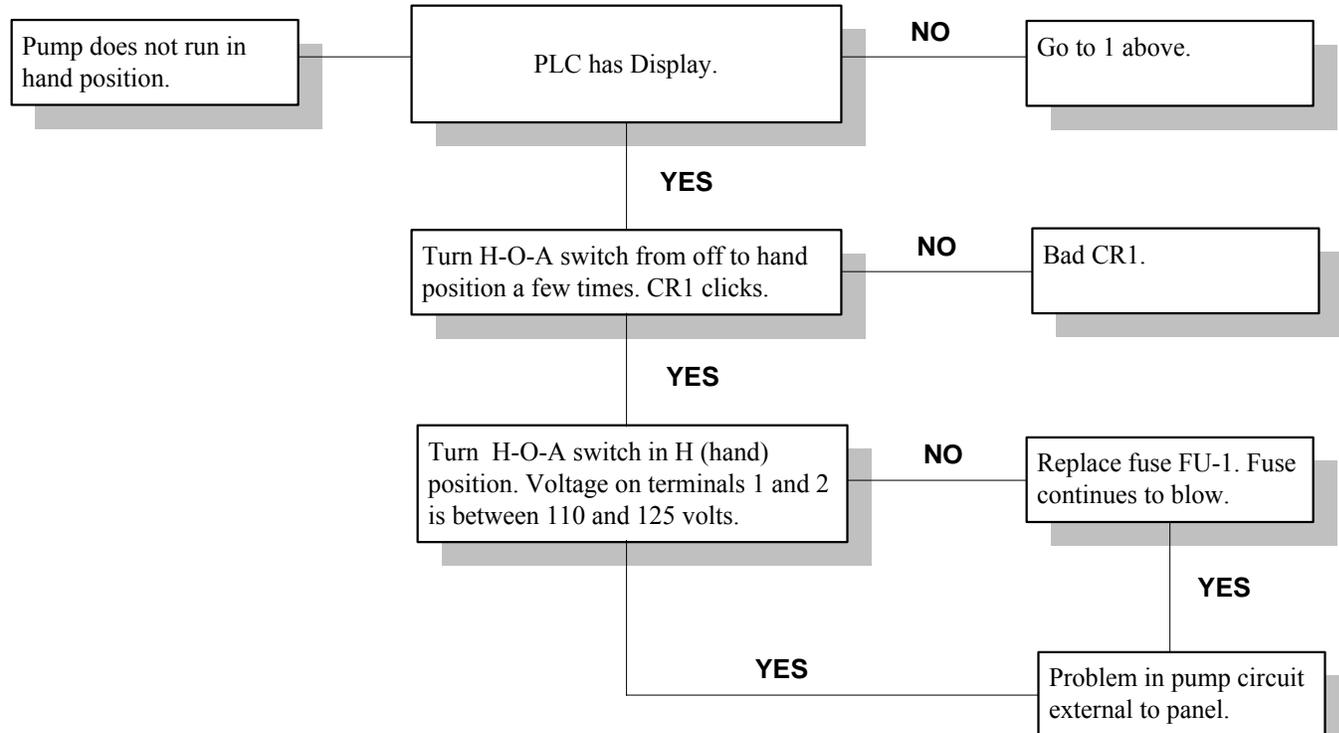
Caution: High voltage service by qualified personnel only

Before beginning to troubleshoot panel, verify that there is enough water in the dosing tank to activate pump float switch and (or) high level alarm switch or have a method of simulating those float switches proper operation. Recheck all external wires that are connected to the panel and make sure that they are connected to the proper terminals and not cross-wired. If you cannot solve the problem using the troubleshooting procedure, we will assist you by phone. You will need a portable cell phone and a voltmeter. Before traveling to the site, call and make sure that someone will be in our office to assist you at the desired time.

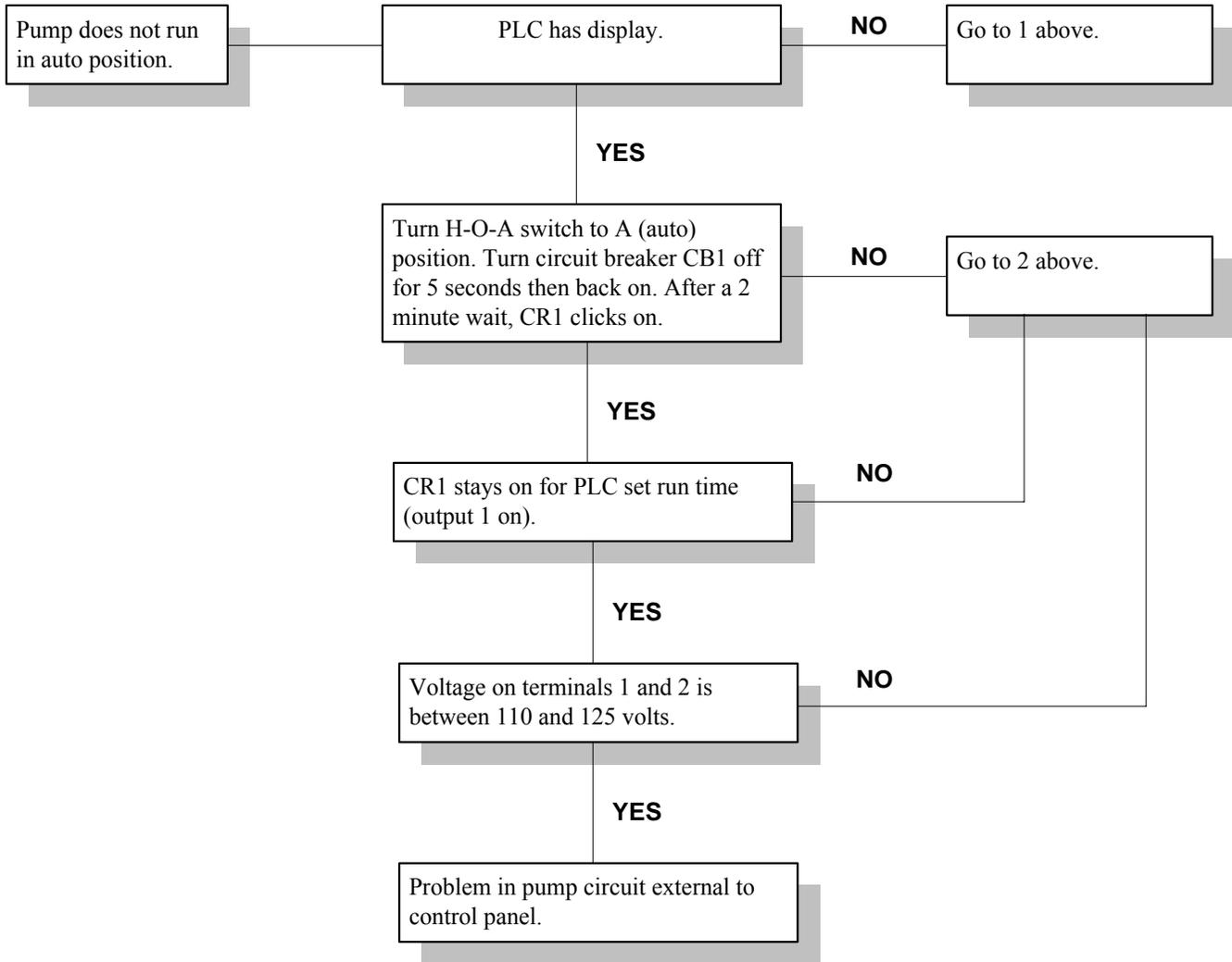
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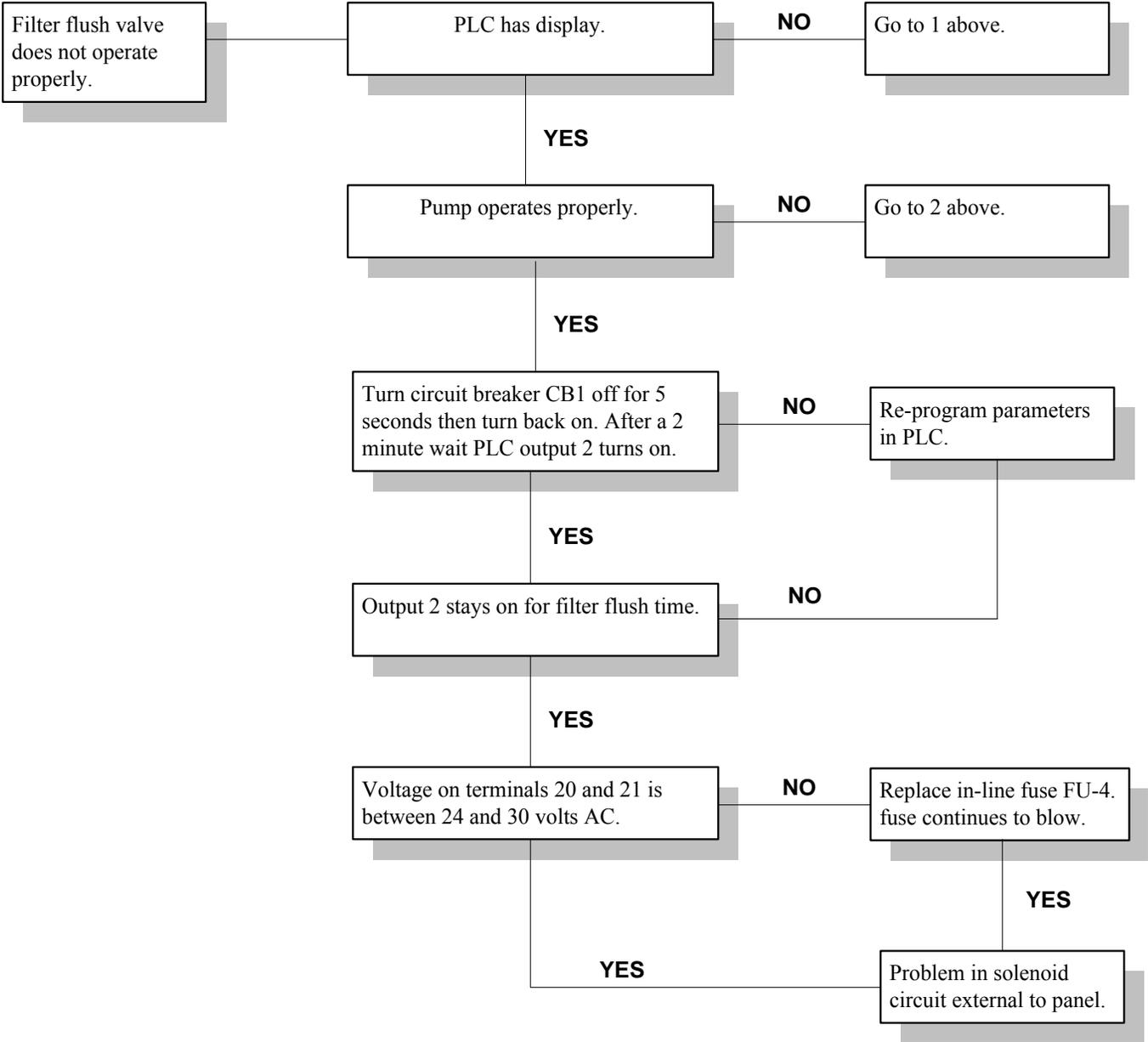
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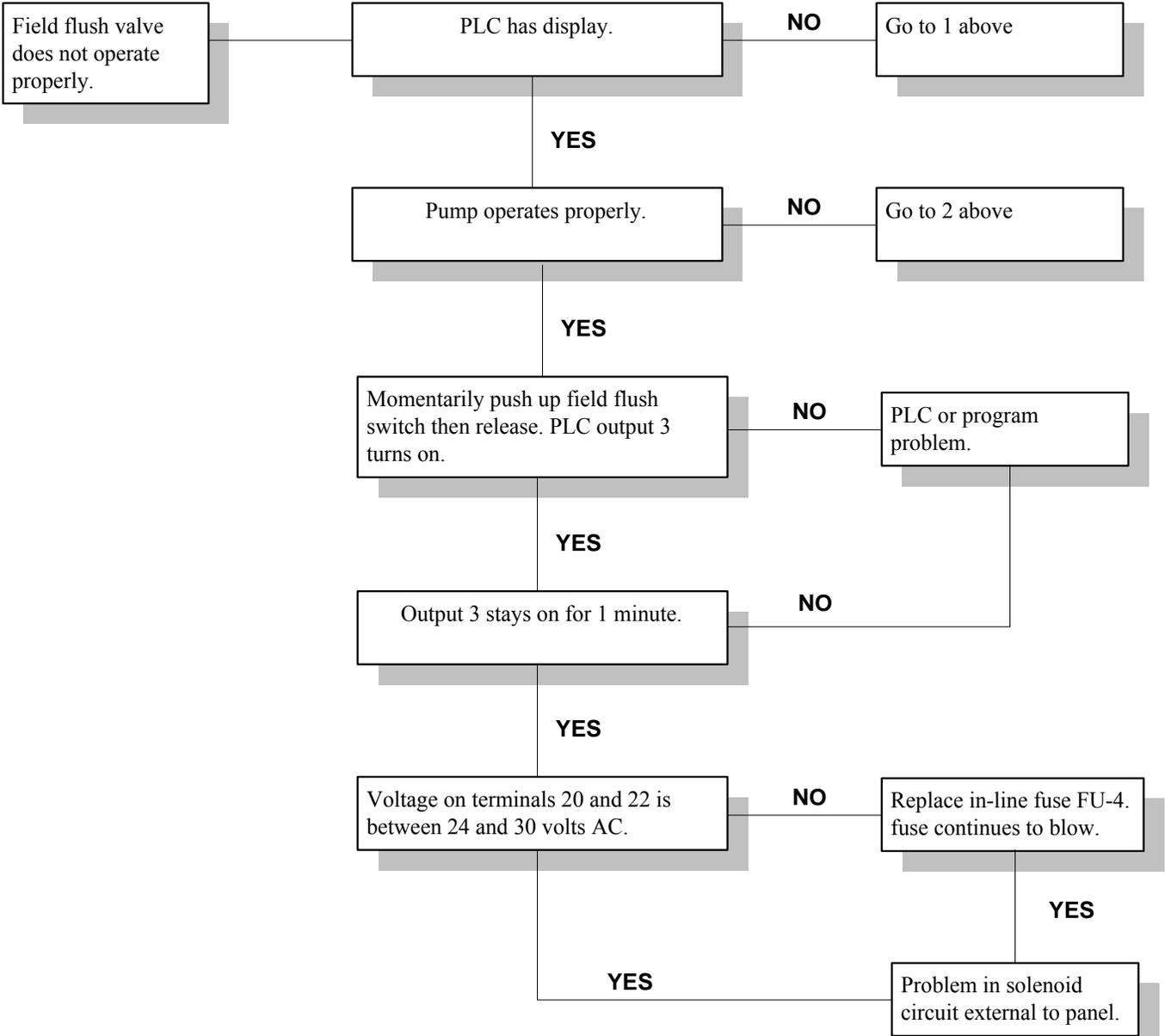
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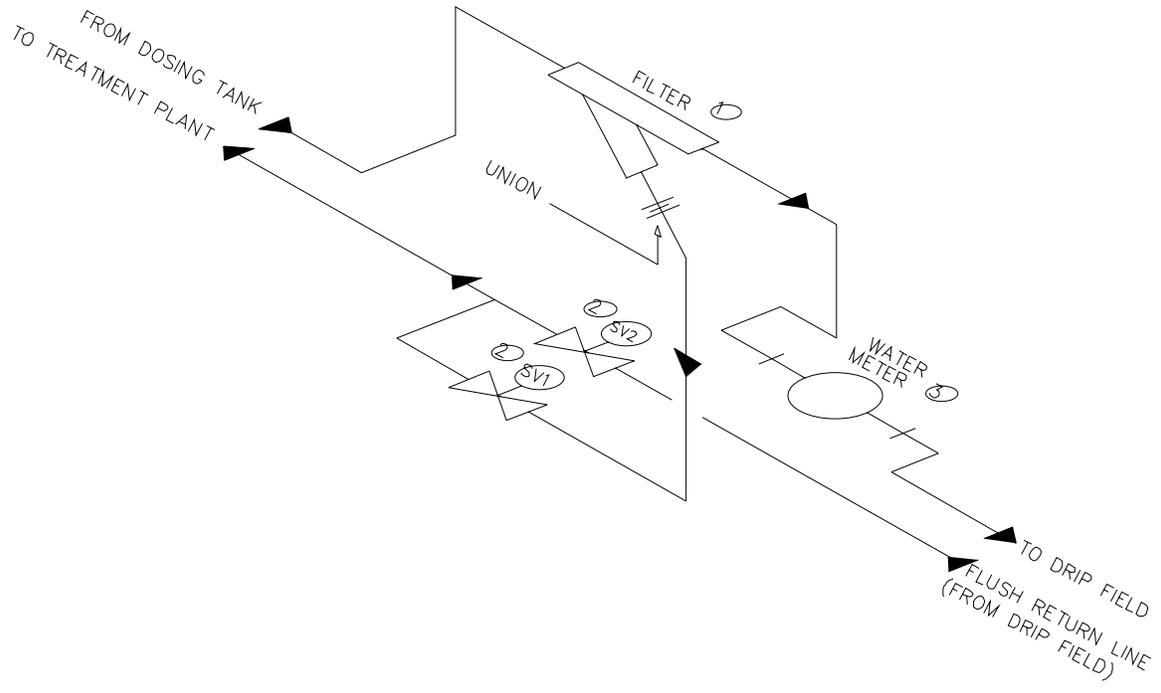


4



5





PARTS LIST

1. 100 MICRON FILTER
2. DW SERIES SOLENOID VALVE
3. EFFLUENT WATER METER

NOTE:

- SV1 – FILTER FLUSH VALVE
- SV2 – FIELD FLUSH VALVE

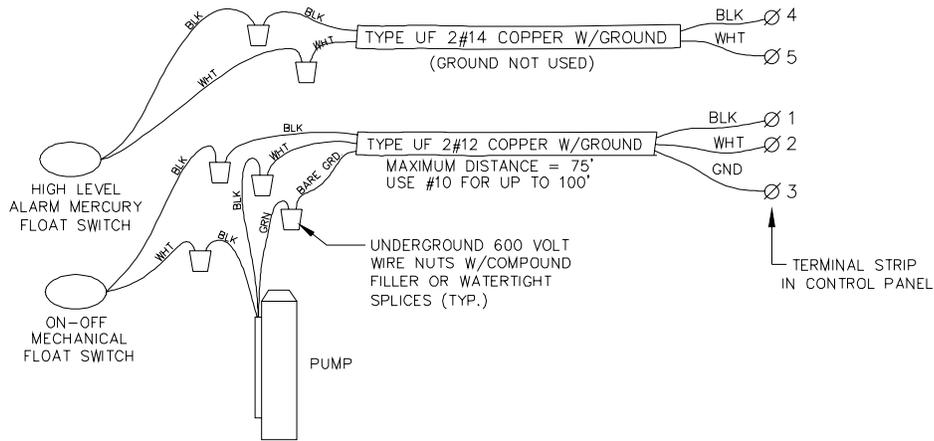
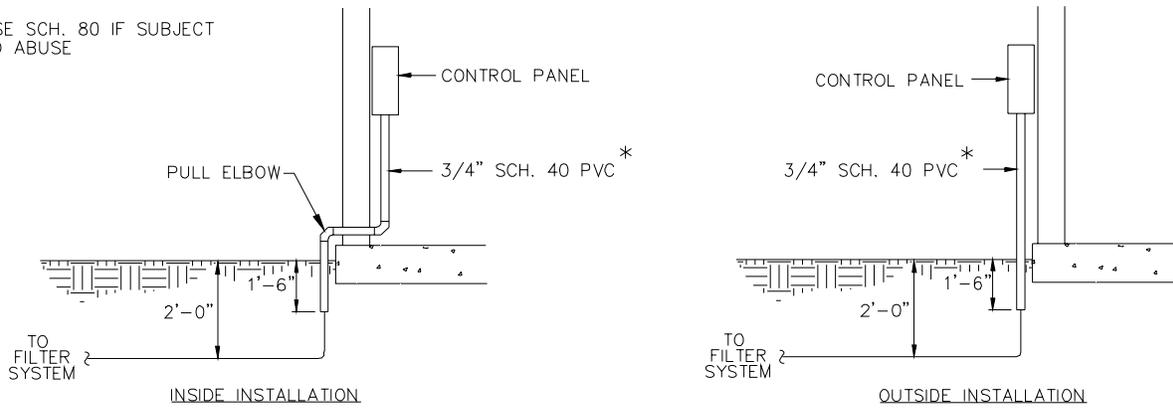


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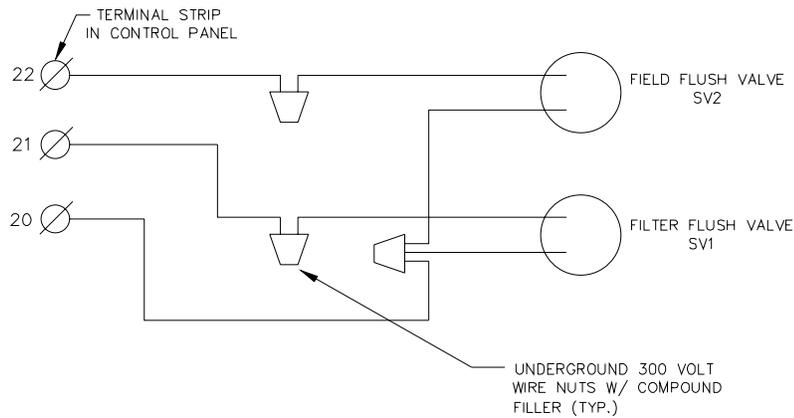
Filter System Model WWSFA 115V & 230V

DWN BY: D MORGAN	DATE: 3/9/07	SCALE: N.T.S.	DWG. NO.: CRT178	JOB NO.: N/A
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* USE SCH. 80 IF SUBJECT TO ABUSE



CONNECTIONS OF UNDERGROUND WIRE TO MOTOR AND FLOAT SWITCHES



SOLENOID VALVE WIRING DIAGRAM



Delta Fiberglass & Environmental Products
P.O. Box 969 Denham Springs, LA 70727

Filter System Electrical Installation Drawings MODEL CPWWSFA-115V

DWN BY:
D MORGAN

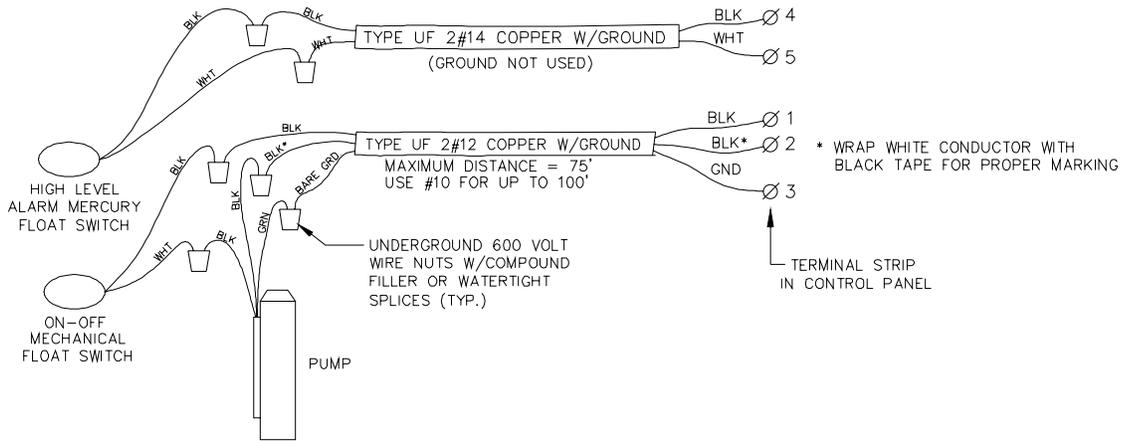
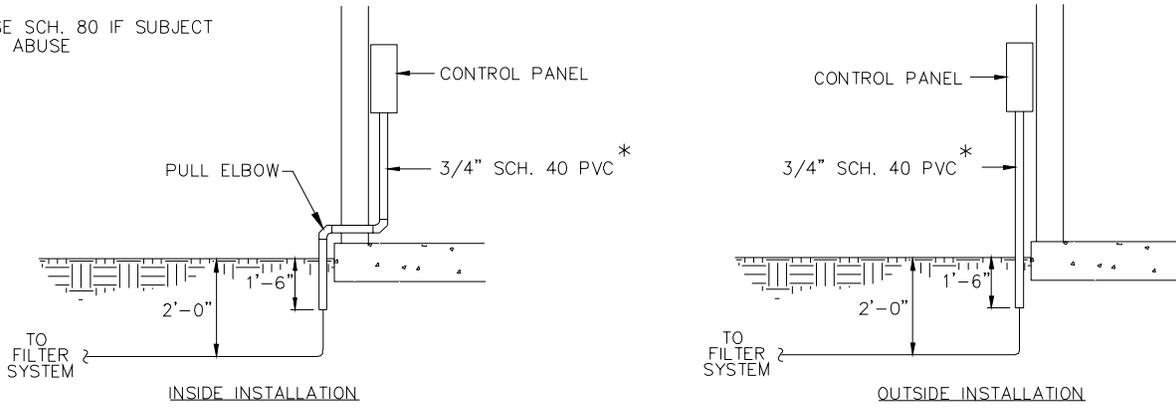
DATE:
3/9/07

SCALE:
N.T.S.

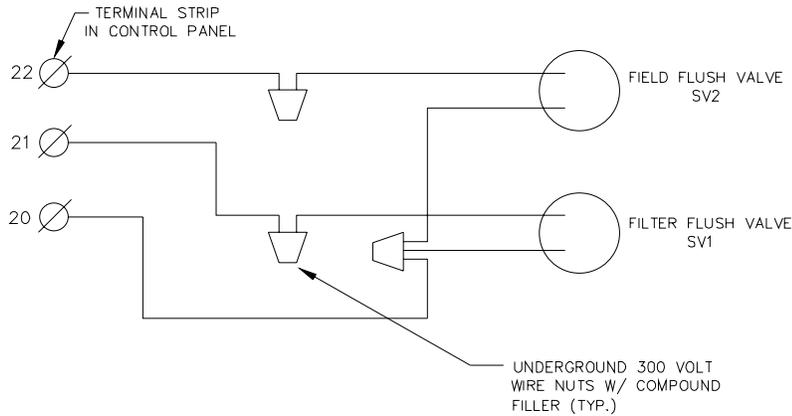
DWG. NO.:
CRT179

JOB NO.:

* USE SCH. 80 IF SUBJECT TO ABUSE



CONNECTIONS OF UNDERGROUND WIRE TO MOTOR AND FLOAT SWITCHES



SOLENOID VALVE WIRING DIAGRAM



Filter System Electrical Installation Drawings MODEL CPWWSFA-230V

Delta Fiberglass & Environmental Products
P.O. Box 969 Denham Springs, LA 70727

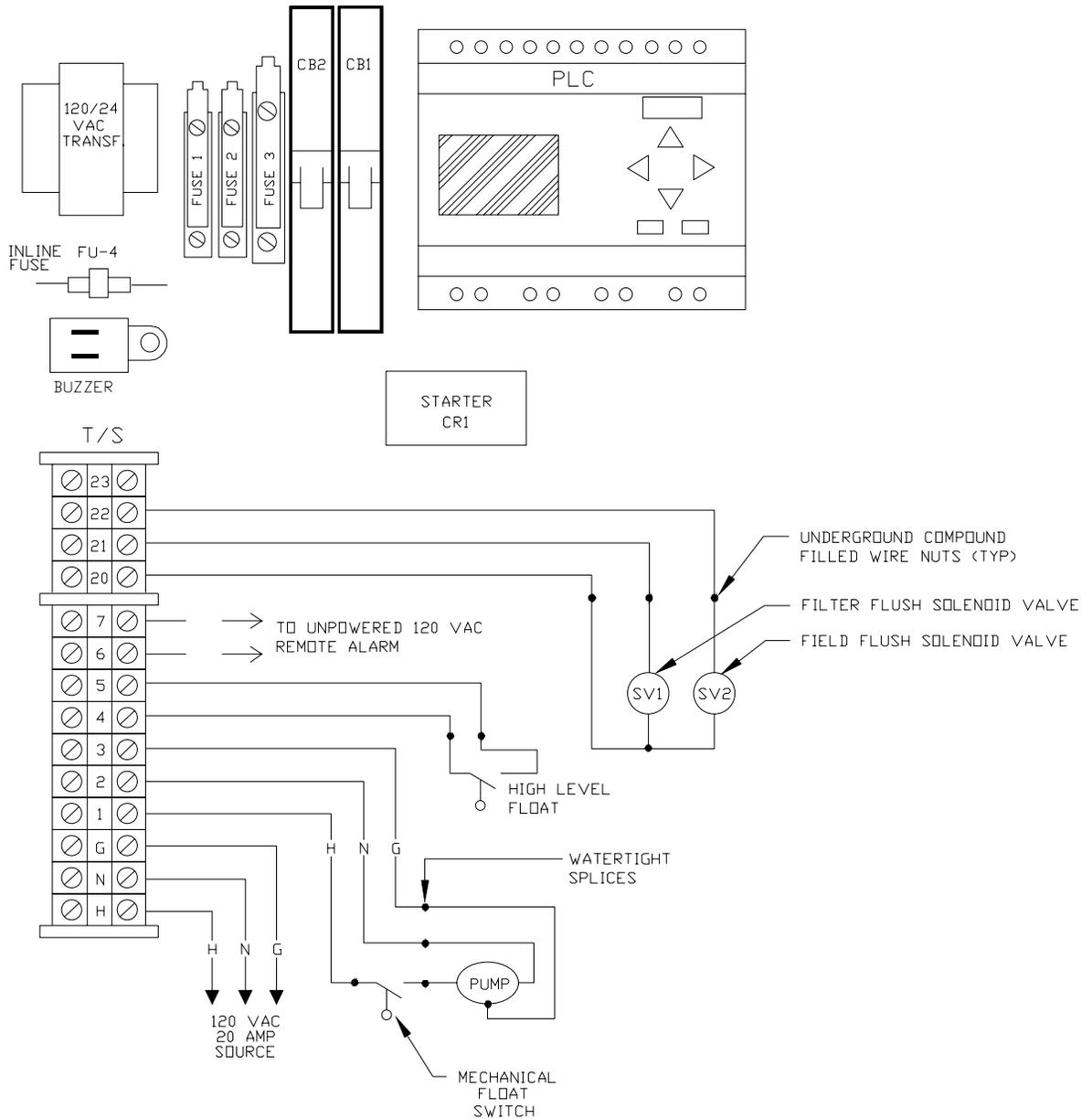
DWN BY:
DMORGAN

DATE:
3/9/07

SCALE:
N.T.S.

DWG. NO.:
CRT183

JOB NO.:



Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Filter System Model CPWWSFA-115V External Connections

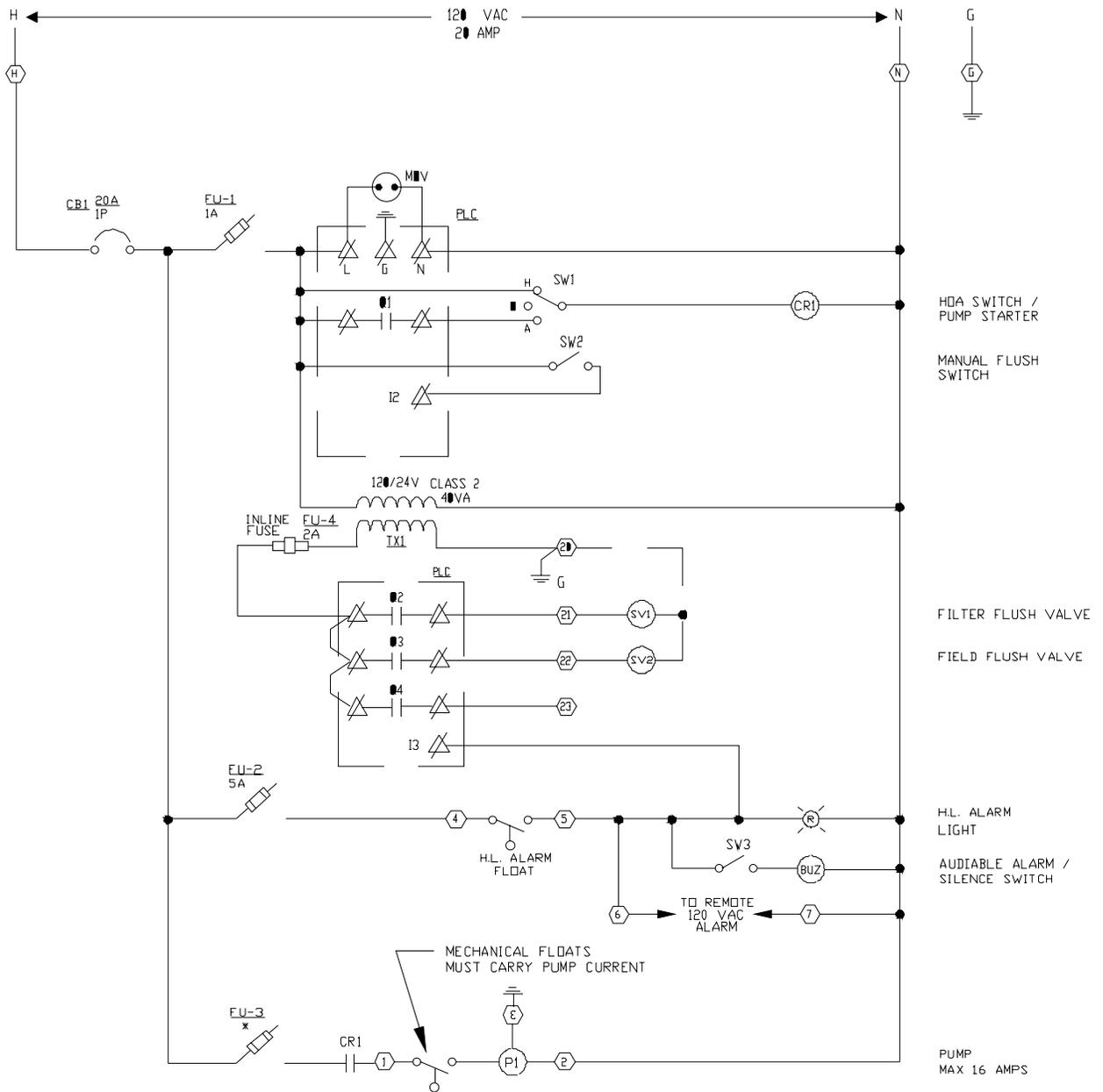
DWN BY:
D MORGAN

DATE:
3/9/07

SCALE:
N.T.S.

DWG. NO.:
CRT181

JOB NO.:



LEGEND

—	WIRING BY VENDOR
—	WIRING BY CUSTOMER

NOTE
 1. INTERNAL PUMP THERMAL OVERLOAD IS RECOMMENDED.

* SIZED PER NEC
 MAXIMUM 20 AMPS
 SHIPPED WITH
 15A FUSES

FUSE	CRT PART NO.
FU1	AE-798-0132
FU2	AE-798-0146
FU3	AE-845-4187 (15 AMP)
FU4	AE-798-0138



Delta Environmental Products, Inc.
 P.O. Box 969 Denham Springs, LA 70727

Filter System Model CPWWSFA-115V Schematic Diagram

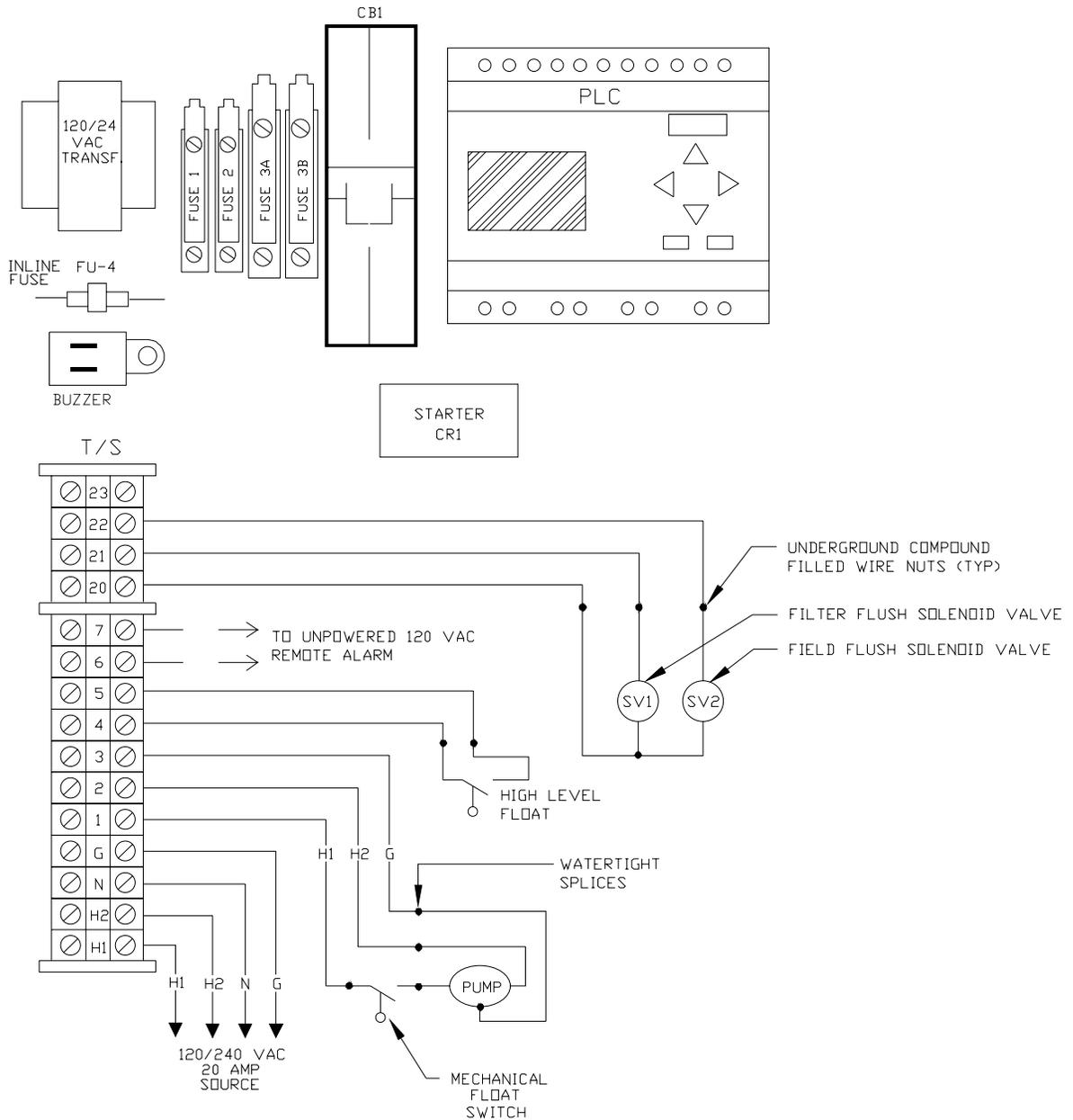
DWN BY:
 D MORGAN

DATE:
 3/9/07

SCALE:
 N.T.S.

DWG. NO.:
 CRT181A

JOB NO.:



Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Filter System Model CPWWSFA-230V External Connections

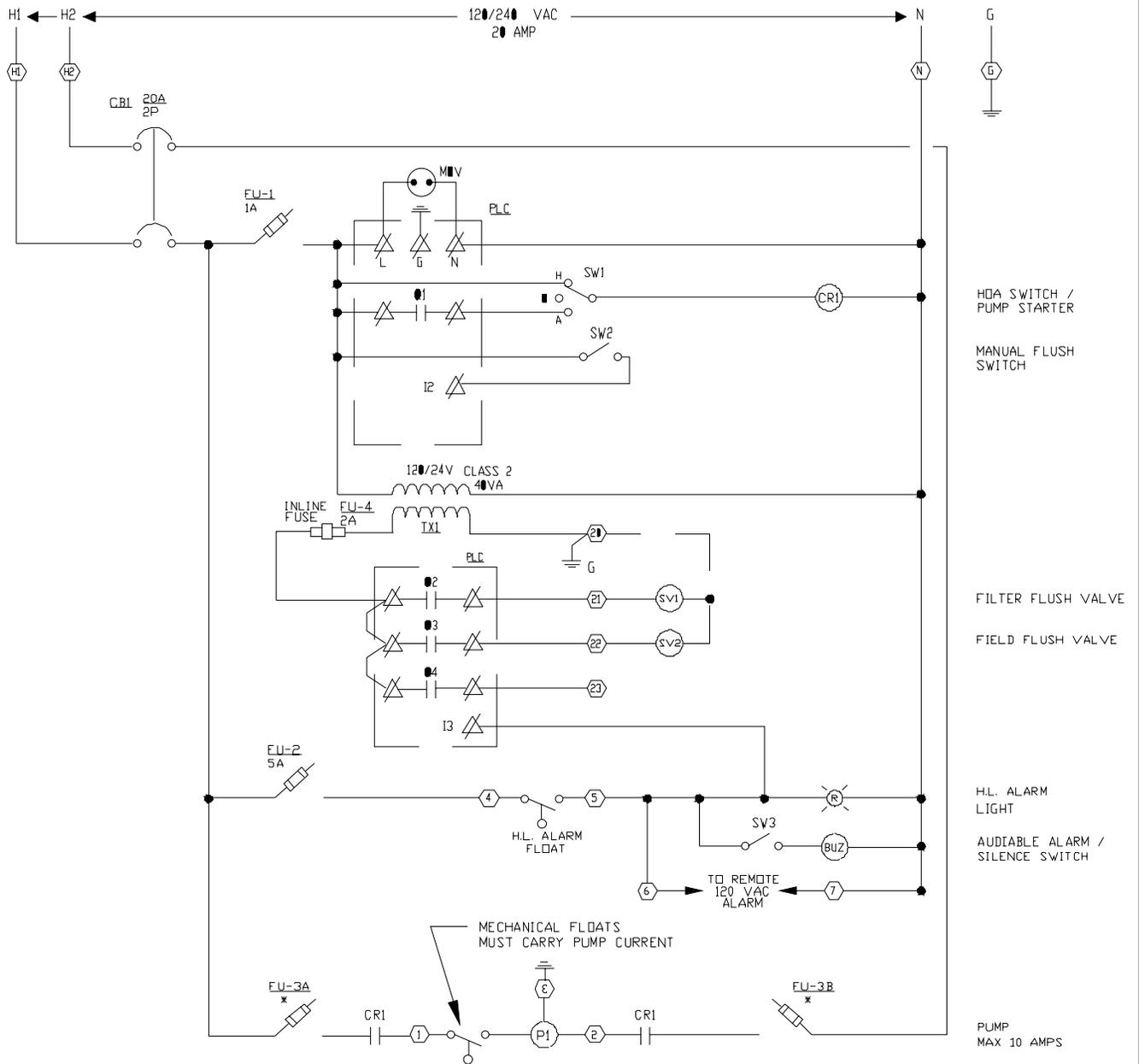
DWN BY:
D MORGAN

DATE:
3/9/07

SCALE:
N.T.S.

DWG. NO.:
CRT182

JOB NO.:



LEGEND

—	WIRING BY VENDOR
—	WIRING BY CUSTOMER

NOTE

1. INTERNAL PUMP THERMAL OVERLOAD IS RECOMMENDED.

* SIZED PER NEC
MAXIMUM 20 AMPS
SHIPPED WITH
15A FUSES

FUSE	CRT PART NO.
FU1	AE-798-0132
FU2	AE-798-0146
FU3	AE-845-4187 (15 AMP)
FU4	AE-798-0138



Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Filter System Model CPWWSFA-230V Schematic Diagram

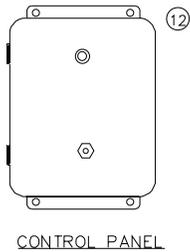
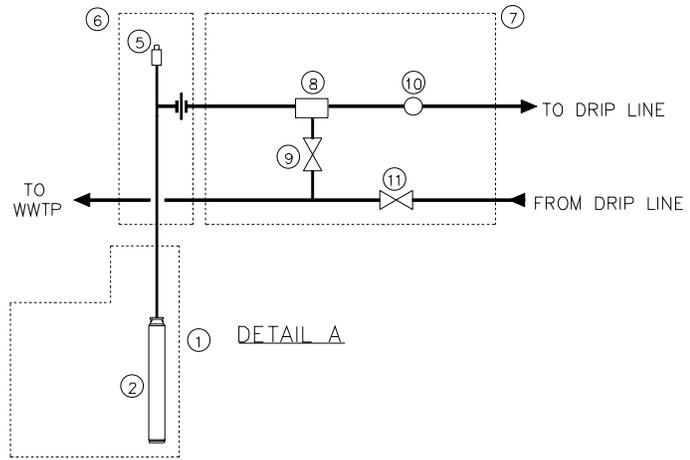
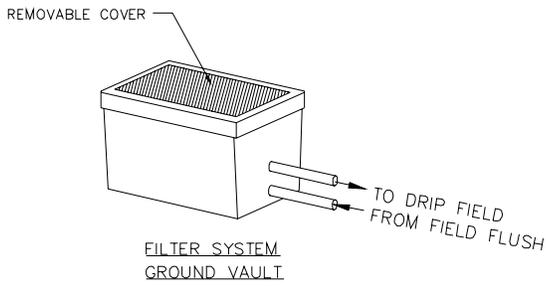
DWN BY:
D MORGAN

DATE:
3/9/07

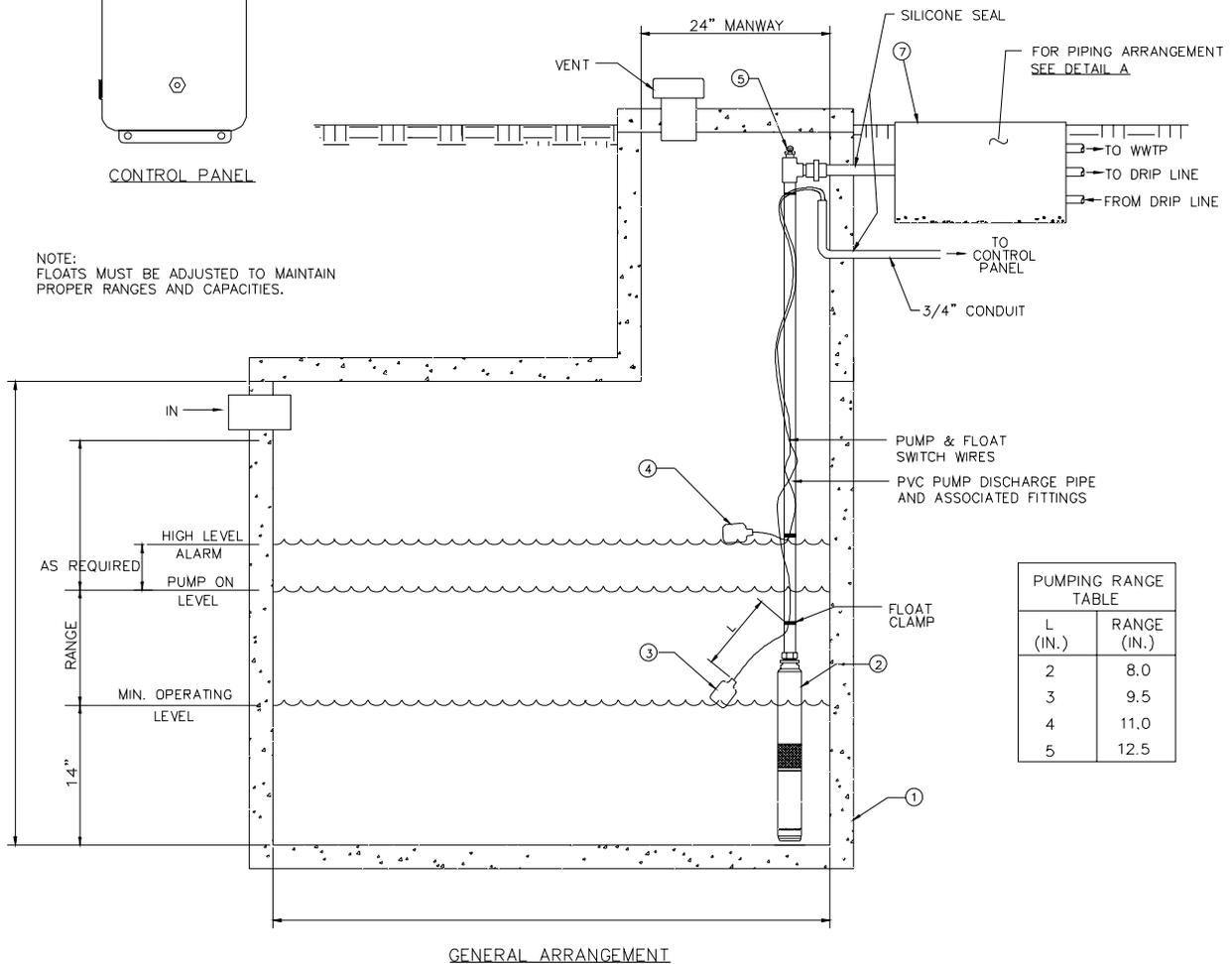
SCALE:
N.T.S.

DWG. NO.:
CRT182A

JOB NO.:



NOTE:
FLOATS MUST BE ADJUSTED TO MAINTAIN
PROPER RANGES AND CAPACITIES.



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Filter System Model WWSFA-115V

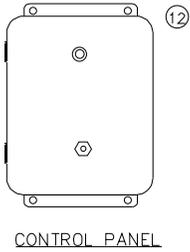
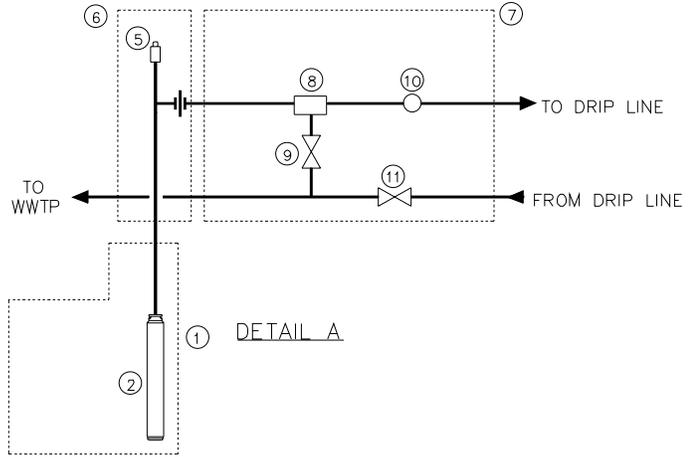
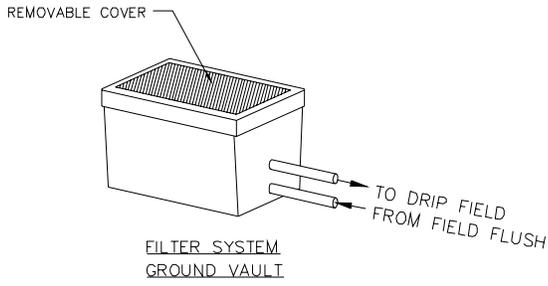
DWN BY:
D MORGAN

DATE:
3/9/07

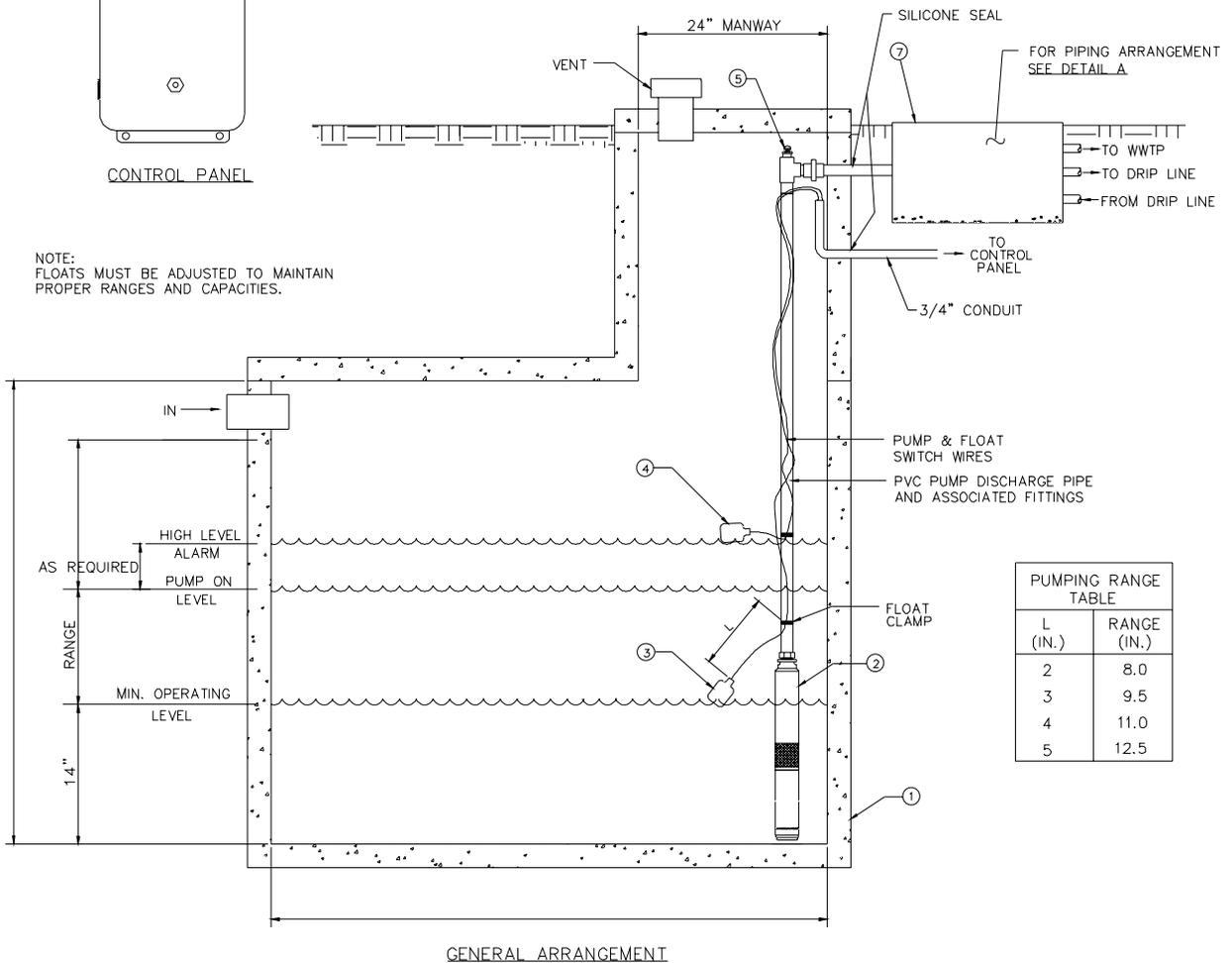
SCALE:
N.T.S.

DWG. NO.:
CRT180 A

JOB NO.:



NOTE:
FLOATS MUST BE ADJUSTED TO MAINTAIN
PROPER RANGES AND CAPACITIES.



PUMPING RANGE TABLE	
L (IN.)	RANGE (IN.)
2	8.0
3	9.5
4	11.0
5	12.5



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Filter System Model WWSFA-230V

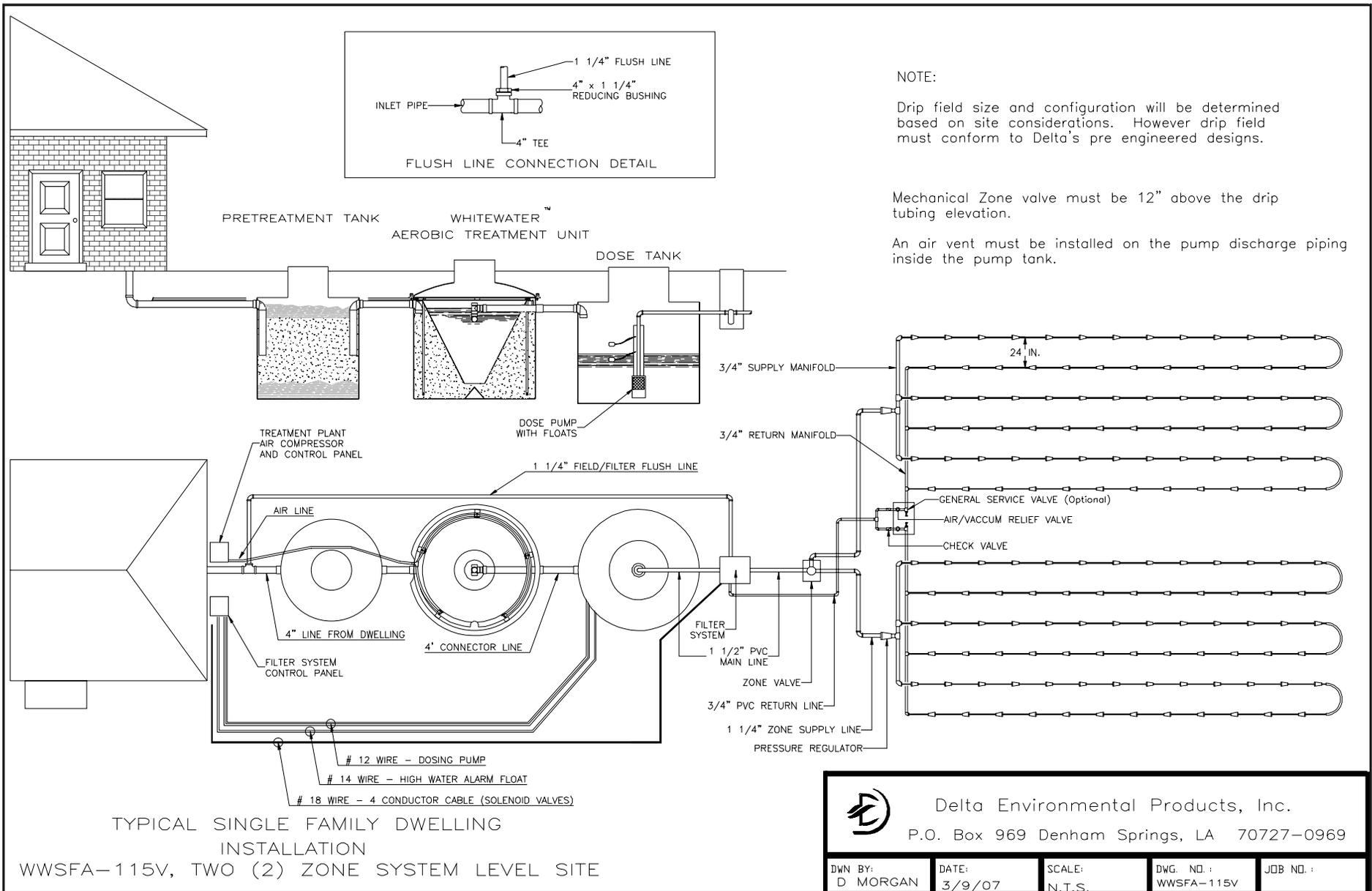
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D MORGAN

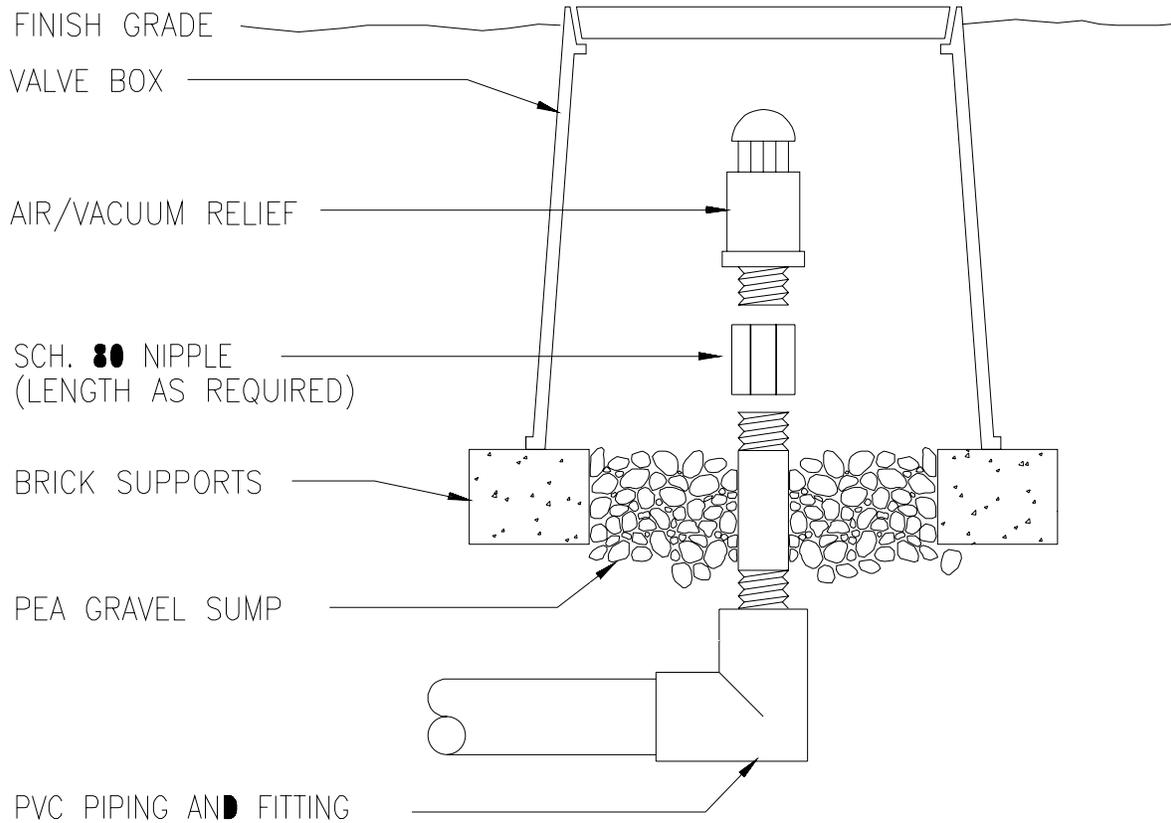
DATE:
3/9/07

SCALE:
N.T.S.

DWG. NO.:
CRT180

JOB NO.:





1" AIR/VACUUM RELIEF PLUMBED TO PVC ELL



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Drip System Air/Vacuum Relief

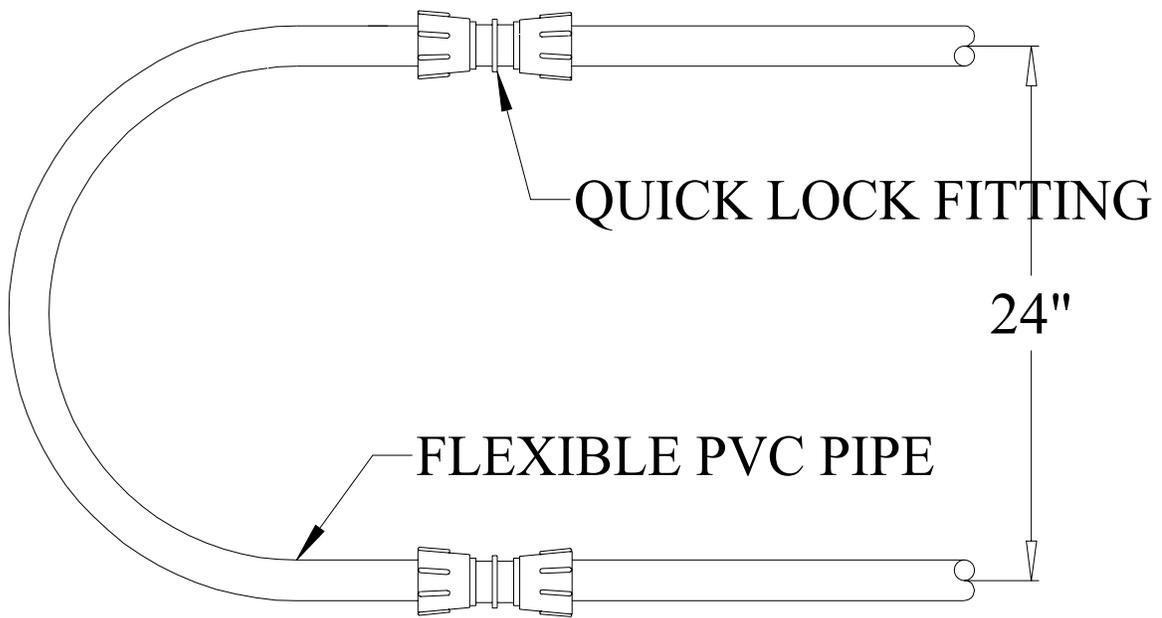
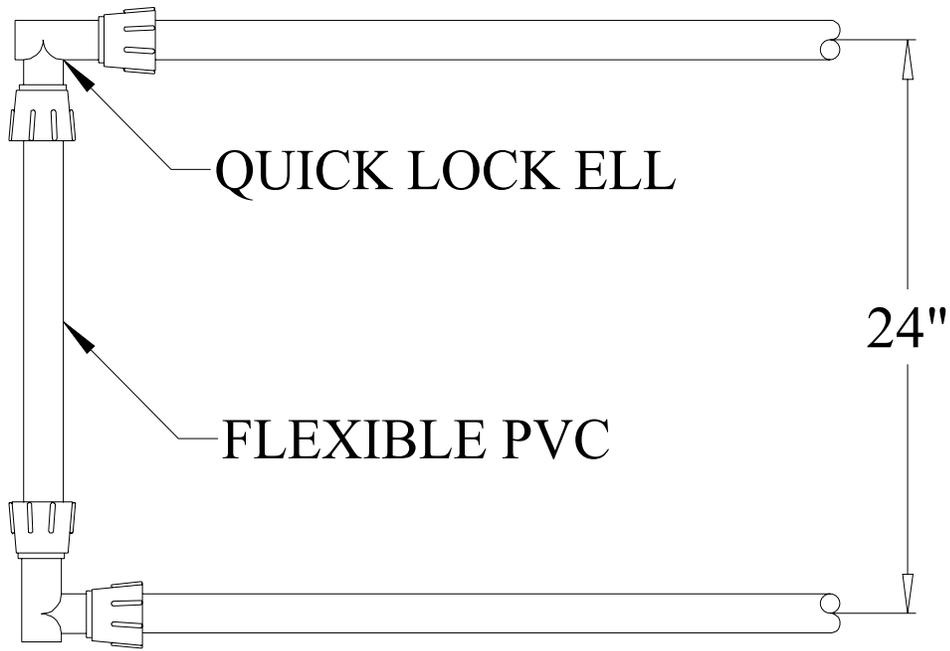
DWN BY:
D. Morgan

DATE:
3/16/07

SCALE:
N.T.S.

DWG. NO. :
DripAirVent

JOB NO. :



TYPICAL DRIPLINE CONNECTION IN TURN OR LOOP



Delta Environmental Products, Inc.
P.O. Box 969 Denham Springs, LA 70727

Drip System Typical Dripline Connections

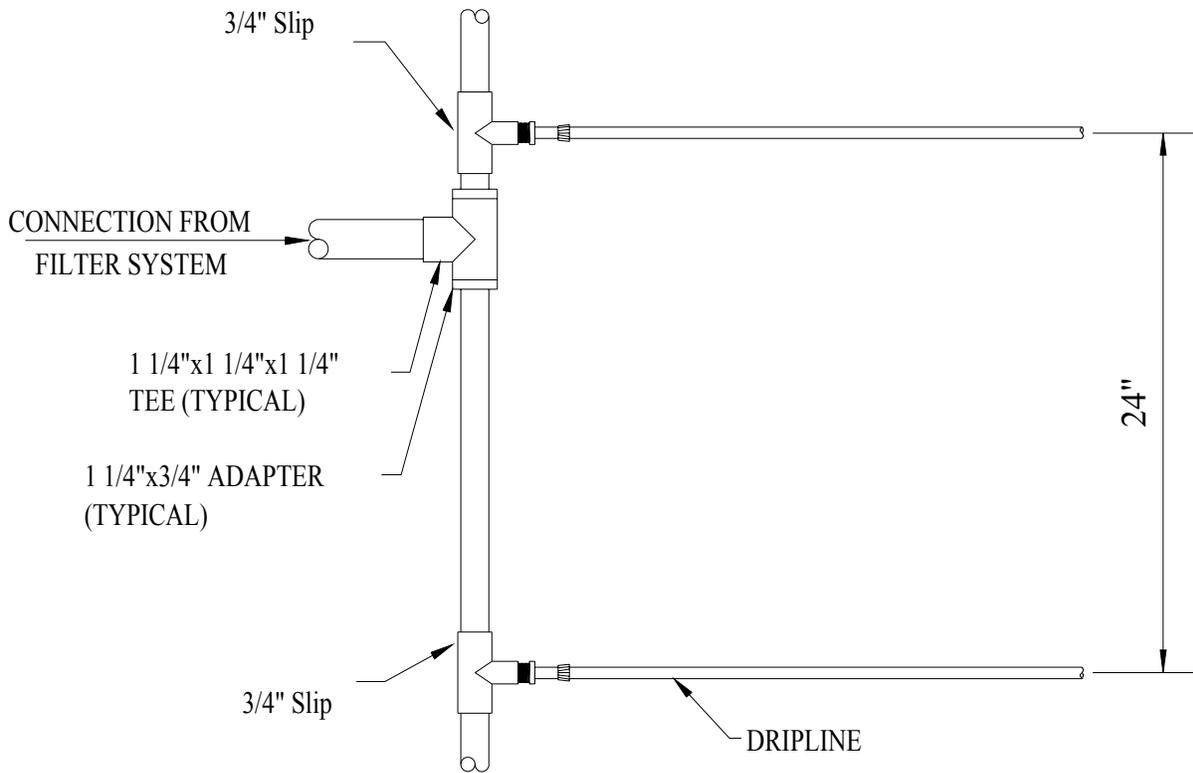
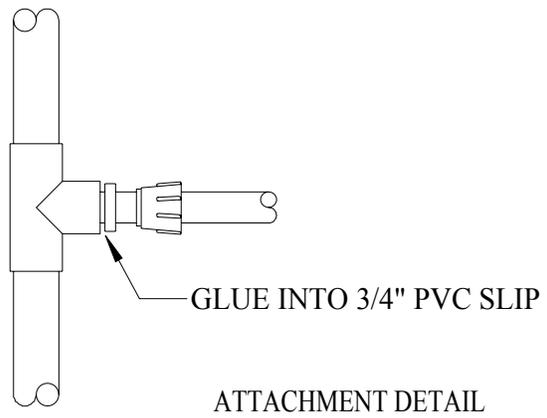
DWN BY:
D Morgan

DATE:
3/16/07

SCALE:
N.T.S.

DWG. NO. :
DripCLoop

JOB NO. :



TYPICAL DRIPLINE CONNECTION TO PVC



Delta Environmental Products, Inc.
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Drip System Typical Dripline Connections

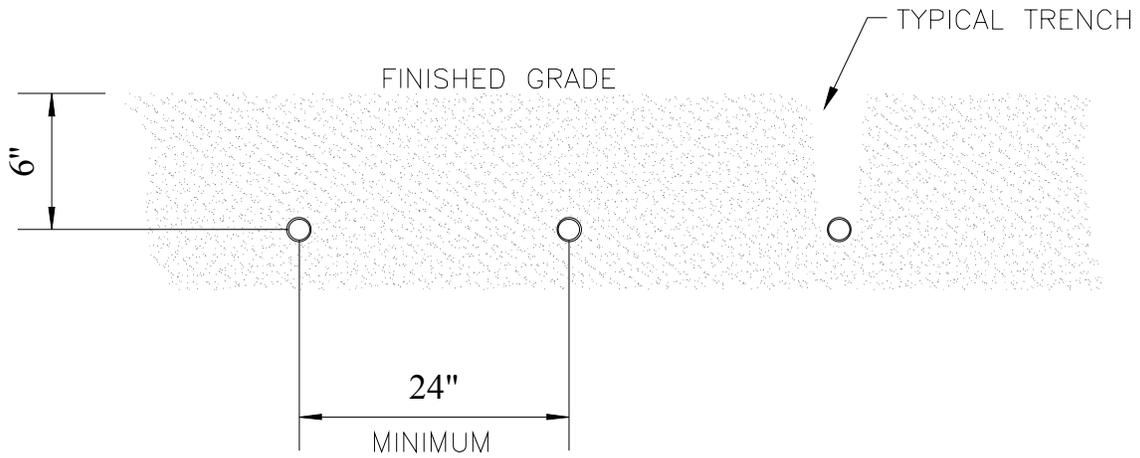
DWN BY:
D Morgan

DATE:
3/16/07

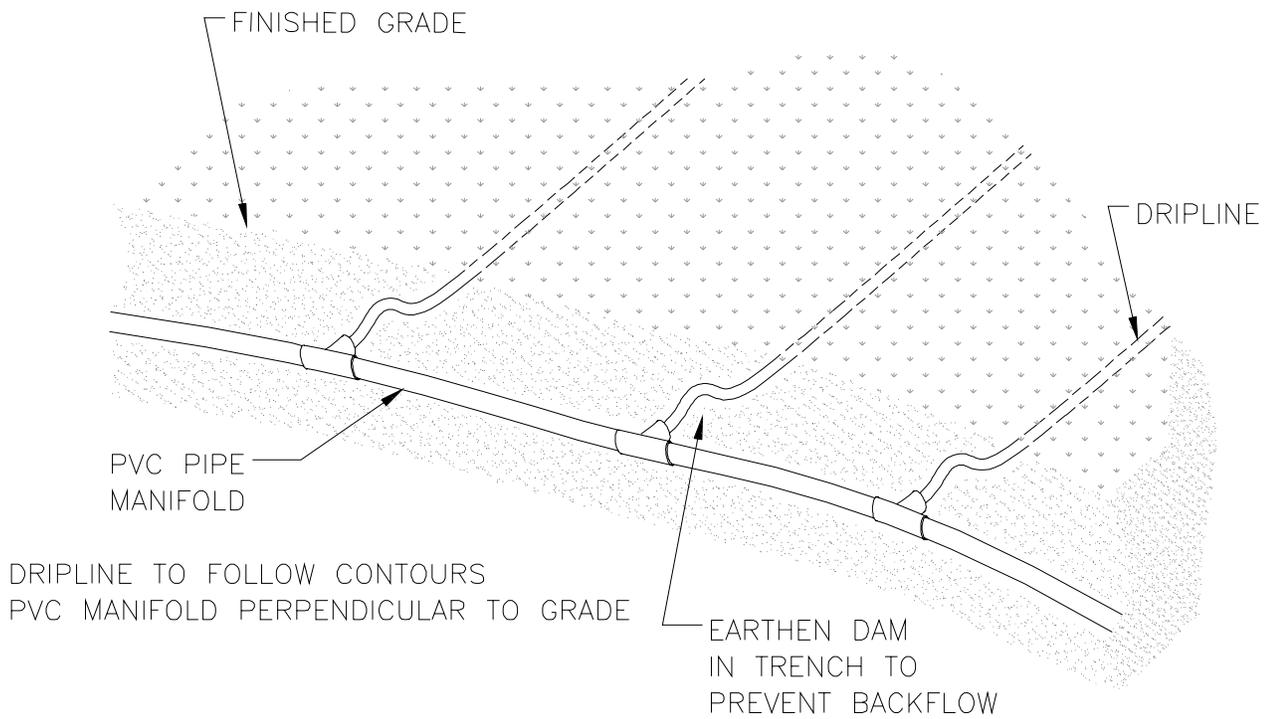
SCALE:
N.T.S.

DWG. NO.:
DripConPVC

JOB NO.:



TYPICAL DRIPLINE INSTALLATION DETAIL



TYPICAL DRIPLINE INSTALLATION DETAIL



Delta Environmental Products, Inc.
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Drip System Typical Dripline Installation

DWN BY:
D Morgan

DATE:
3/16/07

SCALE:
N.T.S.

DWG. NO. :
DriplnstDet

JOB NO. :

**CAPACITY OF ROUND TANKS
Per Foot of Depth**

Diameter	Gallons	Area Sq. Ft.	Diameter	Gallons	Area Sq. Ft.
2'	23.50	3.14	6'	211.51	28.27
2'6"	36.72	4.909	6'6"	248.23	35.18
3'	52.88	7.069	7'	287.88	38.48
3'6"	71.97	9.621	7'6"	330.48	44.18
4'	94.00	12.566	8'	376.01	50.27
4'6"	118.97	15.90	8'6"	424.51	56.75

Volume in gallons per foot of a Round Tank = Radius Square x 3.142 x 7.48 gallons per cubic foot.

**CAPACITY OF SQUARE OR RECTANGLE TANKS
Per Foot of Depth**

Length & Width	Gallons	Area Sq. Ft.	Length & Width	Gallons	Area Sq. Ft.
4' x 4'	119.68	16	9' x 9'	605.88	81
5' x 5'	187.00	25	10' x 10'	748.08	100
6' x 6'	269.28	36	11' x 11'	905.08	121
7' x 7'	366.52	49	12' x 12'	1077.12	144
8' x 8'	478.72	64	14' x 14'	1466.08	196

Volume in gallons per foot of a Square or Rectangular Tank = Length x Width x 7.48 gallons per cubic foot.

PERCOLATION – HYDRAULIC CHART

Soil Type	Percolation Rate Min./In.	Hydraulic Conductivity In./Hour	Hydraulic Loading Gal./Day/Ft. ²	Area Required Ft. ² /100Gal/Day
Coarse Sand	<5	>2	2.0	52
Fine Sand	5 – 10	1.5 – 2	1.6	65
Sandy Loam	10 – 20	1.0 – 1.5	1.3	80
Loam	20 – 30	0.75 – 1.0	0.9	115
Clay Loam	30 – 45	0.5 – 0.75	0.6	175
Silty Clay Loam	45 – 60	0.3 – 0.5	0.4	260
Clay, Non- Swell	60 – 90	0.2 – 0.3	0.2	520
Clay, Swell	90 – 120	0.1 – 0.2	0.1	1040
Clay, Poor	>120	>0.1	0.075	1380

The above table is provided as a guide only; you must follow all local, county and state code requirements.