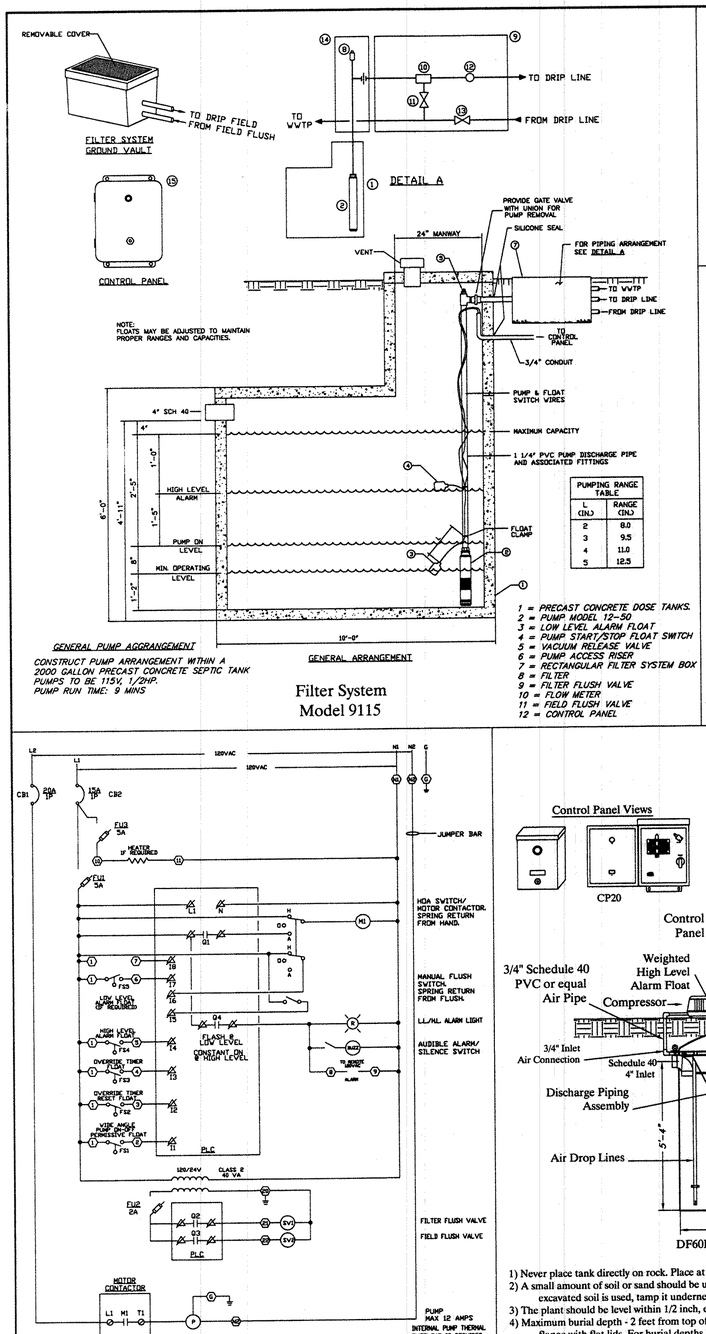
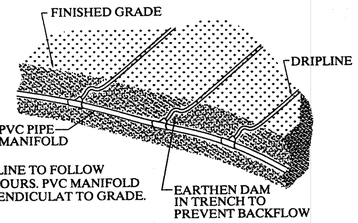


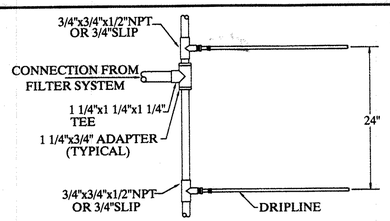
PUMPING RANGE TABLE	
L (IN.)	RANGE (IN.)
2	8.0
3	9.5
4	11.0
5	12.5

1 = PRECAST CONCRETE DOSE TANKS.
2 = PUMP MODEL 12-50
3 = LOW LEVEL ALARM FLOAT
4 = PUMP START/STOP FLOAT SWITCH
5 = VACUUM RELEASE VALVE
6 = PUMP ACCESS RISER
7 = RECTANGULAR FILTER SYSTEM BOX
8 = FILTER
9 = FILTER FLUSH VALVE
10 = FLOW METER
11 = FIELD FLUSH VALVE
12 = CONTROL PANEL

Filter System
Model 9115

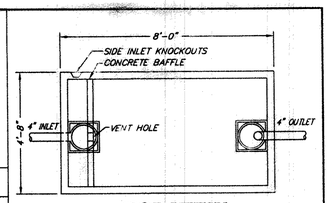


TYPICAL DRIPLINE INSTALLATION DETAIL

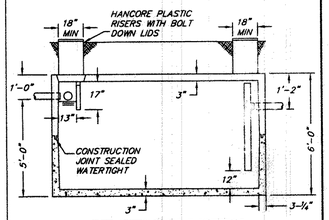


TYPICAL DRIPLINE CONNECTION TO PVC

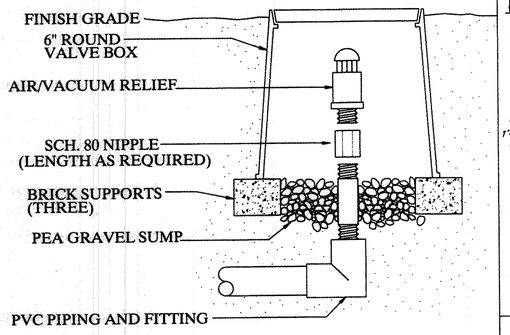
TYPICAL ATTACHMENT DETAIL



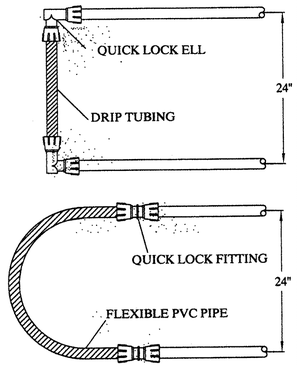
TOP VIEW



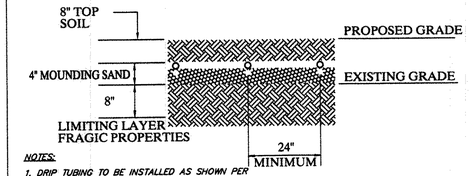
SECTION VIEW
1000 GAL. TRASH TRAP



1" AIR/VACUUM RELIEF PLUMBED TO PVC ELL

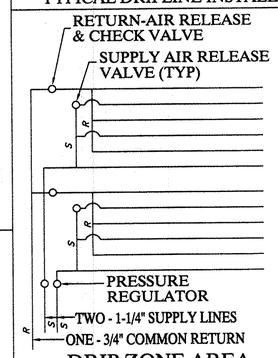


TYPICAL DRIPLINE CONNECTION IN TURN OR LOOP

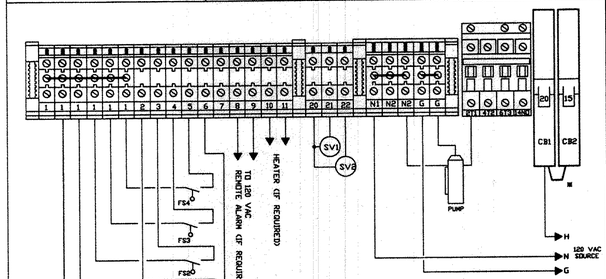


NOTES:
1. DRIP TUBING TO BE INSTALLED AS SHOWN PER MANUFACTURERS RECOMMENDATION.
2. SEED AND MULCH DISTURBED AREAS WITH OWNERS PREFERRED BRAND UPON COMPLETION.

TYPICAL DRIPLINE INSTALLATION DETAIL

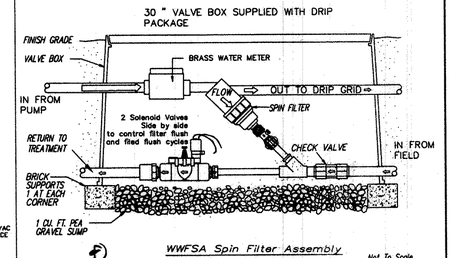


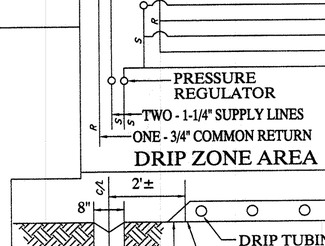
DRIP ZONE AREA



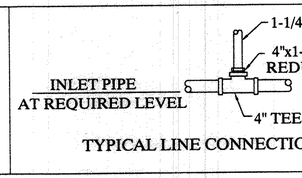
Filter System
Model 9115-1/2 HP
External Connections

■ EXISTING JUMPER LEAVE UNDISTURBED UNLESS MULTIPLE CIRCUITS REQUIRED

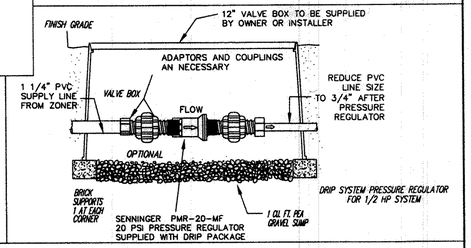




TYPICAL INTERCEPTOR DRAIN



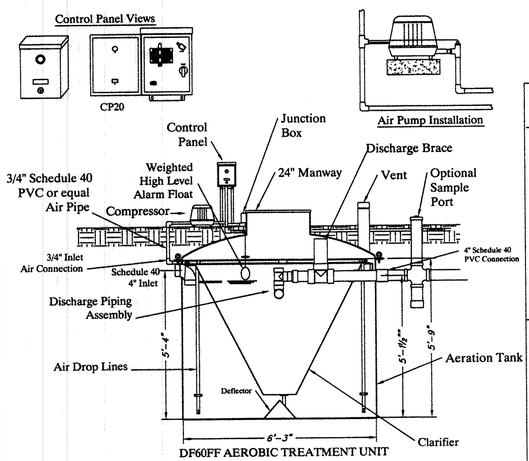
TYPICAL LINE CONNECTION DETAIL



DELTA ENVIRONMENTAL PRODUCTS, INC.–INSTALLATION INSTRUCTIONS

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. 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. BACKFILL AROUND THE TANK APPROXIMATELY 12 INCHES ABOVE 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 BOX. DRILL 1–¾" HOLE IN PUMP ACCESS RISER FOR PUMP OUTLET PIPE AND ⅞" HOLE FOR ELECTRICAL CONDUIT. INSTALL ROUND PUMP ACCESS RISER AND RECTANGULAR FILTER SYSTEM ACCESS BOX SO THAT THEY ARE FLUSH WITH GROUND LEVEL, AND HIGH ENOUGH TO PREVENT SURFACE WATER FROM ENTERING THEM.
4. INSTALL A SCHEDULE 40 PVC PIPE OF SUFFICIENT LENGTH TO EXTEND FROM THE PUMP INTO THE ROUND PUMP ACCESS PIPE 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 TO INSURE THAT THE PUMP STOPS AT THE MINIMUM OPERATING WATER LEVEL AND TURNS ON AT ABOUT 1'–0" ABOVE THIS LEVEL, AND THAT THE ALARM SOUNDS AT HIGH LEVEL POSITION. SET THE OTHER FLOATS IN DOSE TANK WHERE SHOWN ON DETAIL.
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 AS SHOWN ON DRAWING 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 DON NOT MOUNT IT WHERE IT IS SUBJECT TO WETTING FROM SPRINKLERS, HOSES, ETC.
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 GROUND FAULT CURRENT INTERRUPTER (GFCI) CIRCUIT BREAKER OR GFCI RECEPTACLE. A STANDARD RECEPTACLE CAN BE REPLACED WITH A GFCI CIRCUIT.
11. 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 NATIONAL ELECTRIC CODE. CHECK WITH CCBD FOR LOCAL APPLICABLE REQUIREMENTS. SCHEDULE 40 PVC IS SHOWN, NOTE THIS IS CONDUIT NOT WATER PIPE. HOWEVER, IF THE CONDUIT IS SUBJECT TO PHYSICAL DAMAGE, SCHEDULE 80 PVC CONDUIT AND APPROPRIATE FITTINGS MUST BE USED.
12. WIRE SOLENOID VALVES AS SHOWN IN DELTA INSTALLATION MANUAL, "ELECTRICAL COMPONENT INFORMATION/DRAWINGS" SECTION.
13. VERIFY PROPER ELECTRICAL SYSTEMS ARE CONNECTED AND SECURE.
14. CLOSE COVER ON CONTROL PANEL AND CONNECT CONTROL PANEL TO GROUND FAULT CURRENT INTERRUPTER (GFCI) CIRCUIT.
15. VERIFY PROPER PUMP OPERATION BY OBSERVING PUMP WHILE MANUALLY OPERATING PUMP FLOAT SWITCH. PUMP MUST NOT BE FUN 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 1'–2" 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 2 INCH LAYER OF GRAVEL IN THE ACCESS BOXES AND COMPLETE BACK FILLING THE SITE.
17. INSTALL DRIP LINE 6 INCHES MAXIMUM BELOW EXISTING GRADE. DRIP LINE SHOULD NOT BE STRETCHED DURING INSTALLATION AS DAMAGE MY OCCUR.
18. INSTALL SYSTEM HEADER FIRST. TYPICAL LAYOUT WILL FILTER UNIT, ZONE VALVE, AND PRESSURE REGULATOR FOR EACH OF THE TWO DRIP ZONES. INSTALL PVC SCHEDULE 40 SUPPLY LINES BELOW FROST LINE, 4 TO 12 INCHES BELOW DEPTH OF THE WASTEFLOW. 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". SYSTEMS MUST BE INSTALLED PER DRIP LINE LAYOUT DRAWINGS.
19. OPEN TRENCHES FOR THE SUB–MAIN MANIFOLD AND FLUSH LINE MANIFOLD. THESE TRENCHES SHALL BE 36 INCHES DEEP. AT THE BEGINNING OF 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 DOWN" AND SLOWLY PULL OUT THE COUPLINGS). ASSEMBLE THE SUBMAIN 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. DRIP LINES SHALL BE INSTALLED ALONG CONTOUR AS SHOWN ON DRAWING, NOT ACROSS SLOPE.
22. LATERAL SPACING OF TUBING FOR THIS SITE SPECIFIC SLOPE OF 1–5% PER THE SOILS REPORT SHALL BE 2 FEET ON CENTER.
23. 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 SHALL BE AT GRADE LEVEL ACCESS.
24. 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. BEWARE OF BENDING THE DRIP TUBING TO TIGHT DURING INSTALLATION. DO NOT BEND TUBING AT END OF LATERALS. USE ¼" FLEXIBLE PVC PIPE AND FITTINGS TO LOOP EMITTER PIPE. DRIP LINE WILL 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 AGIAN. RUN SYSTEM BEFORE COVERING AND CHECK FOR LEAKS.
25. INSTALL SCHEDULE 40 PVC FOR RETURN FLUSH LINE. RUN RETURN LINE BACK TO THE FILTER SYSTEM. THE ELECTRIC SOLENOLD VALVE THAT OPERATES THE FLUSH LINE IS PART OF FILTER SYSTEM. INSTALL SCHEDULE 40 PVC DRIP FLUSH LINE AFTER FILTER FLUSH LINE BACK TO THE TREATMENT PLANT AS SHOWN ON DRAWING.

9115 CONTROL PANEL
SCHEMATIC DIAGRAM
DUEL CIRCUIT, 120VAC, SIMPLEX



DF60FF AEROBIC TREATMENT UNIT

1) Never place tank directly on rock. Place at least six inches of sand bedding between the tank and rock surface.
2) A small amount of soil or sand should be used around the bottom of the tank to hold it in place. Sand is best. If excavated soil is used, tamp it underneath the tank to provide a good base.
3) The plant should be level within 1/2 inch, edge to edge.
4) Maximum burial depth - 2 feet from top of tank flange with dome or 24" manways and 1 foot from top of tank flange with flat lids. For burial depths beyond 2 feet contact the factory.

WASTEWATER TREATMENT UNIT
MODEL DF-60-FF
RATED FOR 600 GPD

NO.	DATE	DESCRIPTION	BY

SITE PLAN FOR
RAFFAELE & ALIDA DIPIO
10823 ANGELA DRIVE
S/L 33 OF THE GREENBRIER ESTATES SUBDIVISION PH.2 PLAT VOLUME 39, PAGE 23
PLAT VOLUME 39, PAGE 23
CITY OF KIRTLAND, LAKE COUNTY
STATE OF OHIO

5425 WARNER ROAD – SUITE 12
VALLEY VIEW, OHIO 44125
440-602-9071
FAX 216-369-0259
AZTECH
ENGINEERING and SURVEYING
Civil Engineering · Land Surveying

HORIZ. SCALE:		VERT. SCALE:	
DRAWN BY:	CL	DATE:	6/18/2012
CHECKED BY:	SRL	DRAWING NO.:	20122601
JOB NO.:	20122601	SHEET	2 OF 3