



Island County Public Health
Coupeville Annex PO Box 5000 Coupeville WA 98239
Camano Annex 121 NE Camano Dr. Camano Island WA 98282
Whidbey 360-679-7350 Camano Island 360-678-8261

ICPH Date Stamp

PERMIT TO CONSTRUCT A SEWAGE DISPOSAL SYSTEM - PAGE 1

Receipt Number : _____ Permit/Asbuilt Number: _____

Applicant Name:	HURLEY	Parcel Number:	R13333-286-4080
Address of Construction Site:	Airline Road	City:	Oak Harbor
Property Length:	329	Property Width:	141
Area:			
Off-site Drainfield Parcel Number (if applicable):	AF#		
Name of Water System:	2 party well	Private Well	☐ Res. Covenant ☐ Yes ☐ No AF#

Permit Type (Only check one in each of the two columns below)		Check if Applicable	
☒ New Installation	☒ Single Family Residence	☐ Repair Permit	☐ Tank Only Repair
☐ Redesign	☐ Commercial	☐ Table IX Repair (non-conforming)	
☐ Alteration	☐ Community	Cause of failure: _____	
☐ Tank Only - New			
☐ Auxiliary Building Connection		☐ Owner/Installer (additional fee required)	

Onsite Sewage System Type:	☐ Conventional	☒ Alternative
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Onsite Sewage System Components (Check all that apply)		
☐ Bottomless Sandfilter	☐ Aerobic Treatment Unit	☐ Low Pressure Distribution
☐ Intermittent Sandfilter	☒ Drip Distribution	☐ Gravity
☐ Sandlined Sandfilter	☐ Oscar	☐ Trench ☐ Bed
☐ Recirculating Filter	☐ Glendon	☐ Conv. Pump to D-Box
☐ Packed Bed Filter	☐ Mound	☐ Other _____

Inspection Frequency:	☐ Every Three Years (Conventional Gravity)	☒ Annual (All Others)
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Number of Bedrooms:	5	Design Flow:	750	Operating Flow:	563
Soil Class/Type:	SL / 4	Loading Rate:	.48	Site Registration #:	2018-152
Drainfield Required: Size:	1920	ft², Length	60	Width	32
Drainfield Reduction: Size:		ft², Length		Width	
Percentage Reduction	%				
Trench Depth:	6	in	Septic/Trash Tank Size:	2@1000	gal
Pump Chamber Size:	1500	gal			

Septic Designers Comments:	
Drip lines on contour. Uphill curtain drain	
Septic Designer/PE Stamp	

Public Health Comments:

SEPTIC INSTALLER IS REQUIRED TO CALL IN A START CARD A MINIMUM OF 24 HOURS IN ADVANCE

Water Approved: [] Yes [] No	By: _____	Other Covenant(s): [] Yes [] No	AF# _____
Permit Approved: _____	Permit Disapproved: _____	Date: _____	Waiver Attached: []
Permit Number: _____	Expiration Date: _____		
System Installed by: _____	Construction Inspection date(s): _____		
Final Inspection: _____	Rejected: _____	Date: _____	
As-built Approval: Approved: _____	Rejected: _____	Date: _____	



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PERMIT TO CONSTRUCT A SEWAGE DISPOSAL SYSTEM - PAGE 2

Plot Plan and Summary Page - Add supporting specifications and details as required

Parcel Number: see below

Permit/Asbuilt Number:

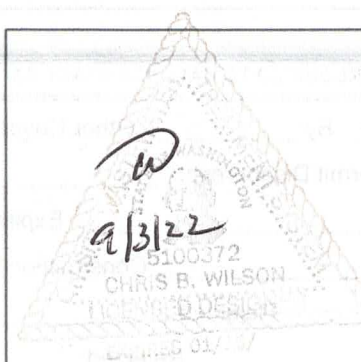
Scale 1 inch = ft

(Indicate North)



See Pg 3 of 3

Pump Information	
Lead Pump Dose Timed:	☒ Yes ☐ No
HP: 1/2	Total Head: 66 ft
GPM: 20.3	Dose Vol: 45 gal
Second Pump Dose Timed: ☐ Yes ☐ No	
HP:	Total Head: ft
GPM:	Dose Vol: gal
Pressure/Drip Distribution Information	
Transport Line Diameter:	1 in
Transport Line Length:	145 ft
Transport Line Material:	sch 40
Total Elevation Difference:	25 ft
Manifold Diameter:	1 in
Lateral/Line Lengths:	
#1 16	#2 @ #3 60
#4	#5 #6
Lateral Diameter:	Drip in
Lateral Material:	Drip
Orifice/Emitter Spacing:	1 ft
Orifice Diameter:	Drip in
Number of Orifices/Emitters:	960
Total Dripline Length:	960
Dripline Spacing:	2
Driptube Brand:	GeoFlow
Driptube Model:	WFPC 16-2-12
Mound/Oscar Information	
Depth of Sand Under Bed:	in
Upslope Fill Length:	ft
Downslope Fill Length:	ft
Endslope Fill Length:	ft
Finished Dimensions: L	ft x W ft
Sand-Filter Information	
Sand-Filter Dimensions:	
Manifold Diameter:	in
Lateral Diameter:	in
Lateral Length:	ft
Number of Laterals:	
Orifice Diameter:	in
Orifice Spacing:	ft
Total Number of Orifices:	
Glendon Information	
Basin Length:	ft
Basin Width:	ft
Basin Depth:	ft
Finished Dimensions: L	ft x W ft
Slope In Drainfield Area:	<5 %
Pre-Treatment Information	
Brand:	Whitewater
Model:	DF 75
UV Required:	☒ Yes ☐ No
UV Model:	Salcor 3G
Treatment Level:	B



Plan approved:

Septic Designer/PE Stamp



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PERMIT TO CONSTRUCT A SEWAGE DISPOSAL SYSTEM - PAGE 3

Plot Plan overview Page 3 is provided if needed

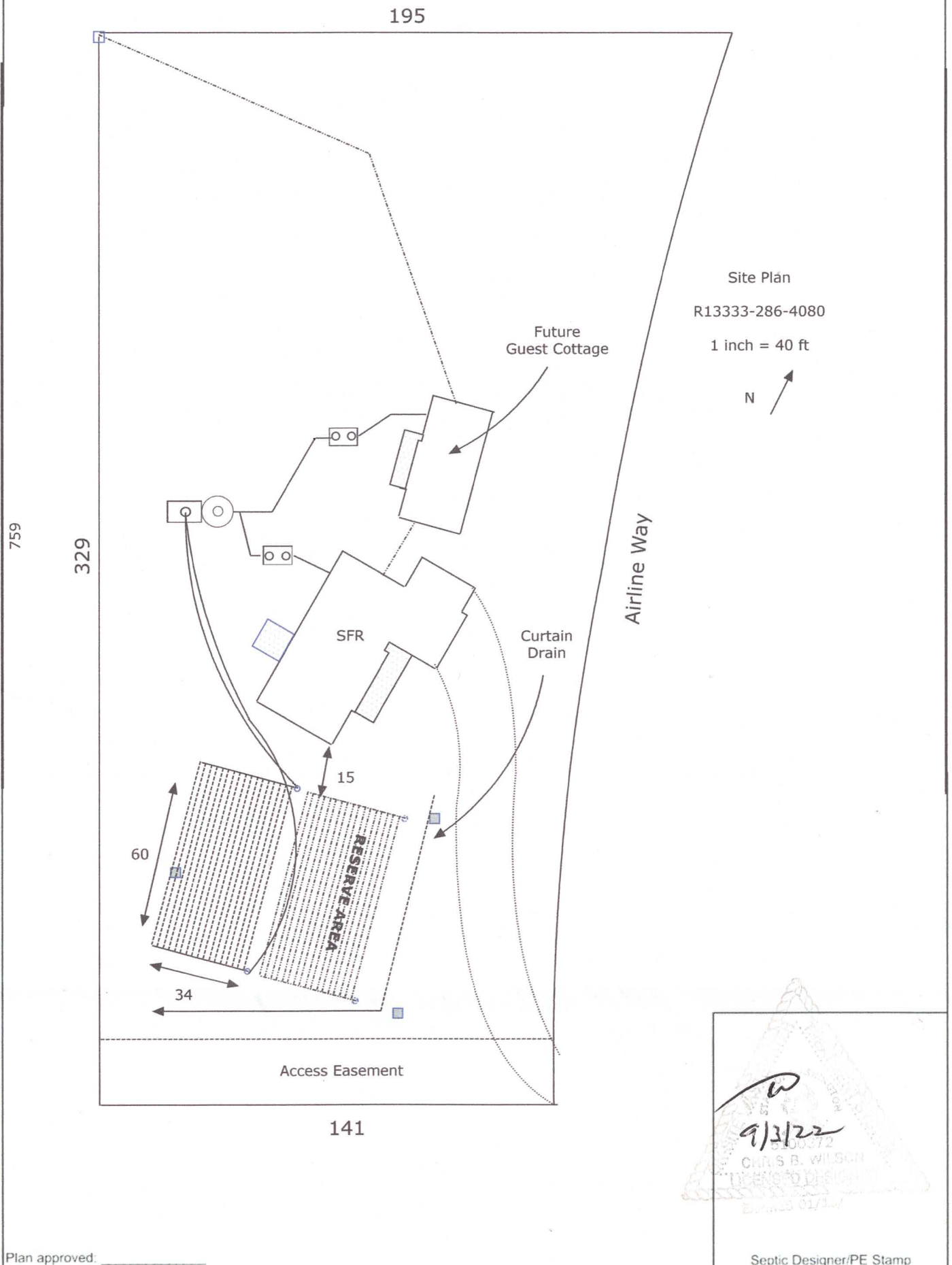
Parcel Number: _____ See below _____ Permit/Asbuilt Number: _____

Provide accurate plot plan to scale, including but not limited to:

Drainfields, wells, tanks, banks, buildings, roads, utilities, easements, property lines, critical areas, etc.

Scale 1 inch = _____ ft

(Indicate North)



Plan approved: _____

03/04/2020

Septic Designer/PE Stamp

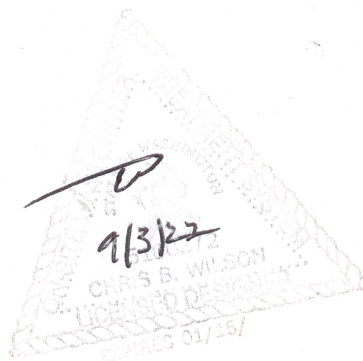
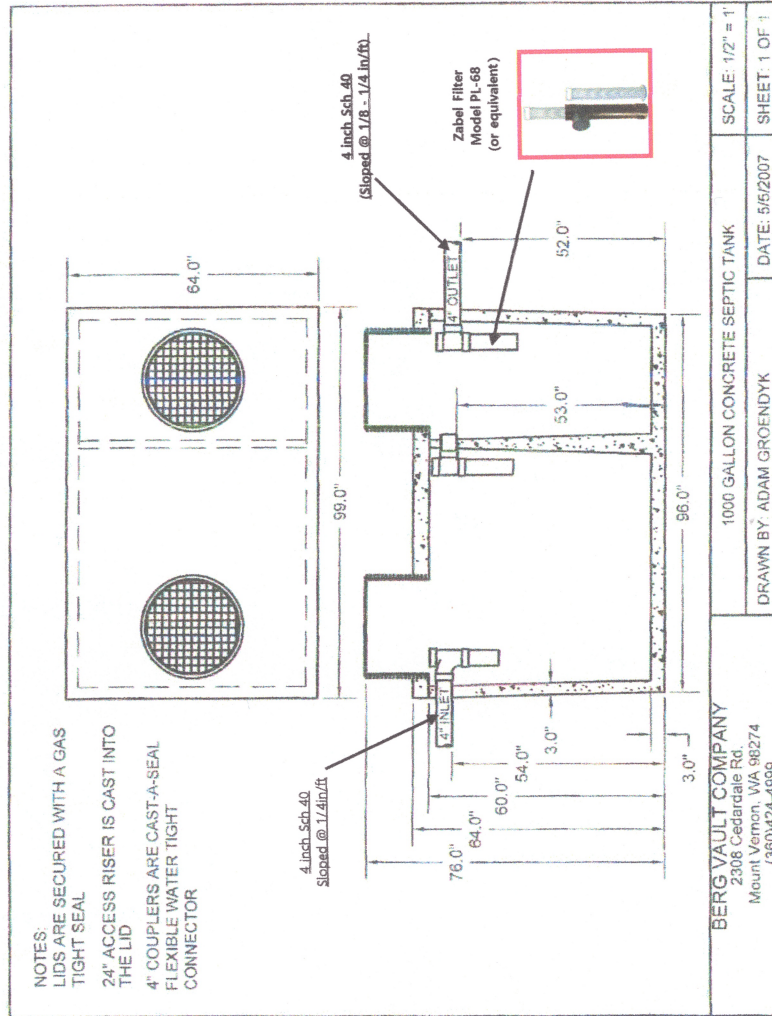
2 Tanks (one SFR & one Guest Cottage) Septic Tank Detail (TYPICAL)

MUST USE DRIVE OVER LIDS WHERE LOCATED IN TRAFFIC AREA

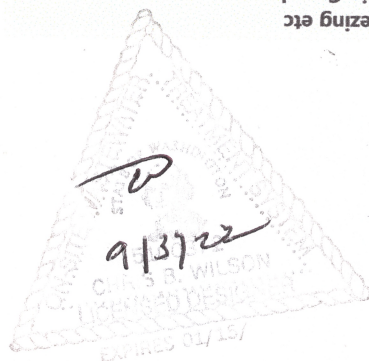
Any approved tank meeting
local and state requirements
may be substituted for this manufacturer's tank.

Tank may be moved to locations determined in field
provided all setbacks described in WAC246-272A.0210 are met

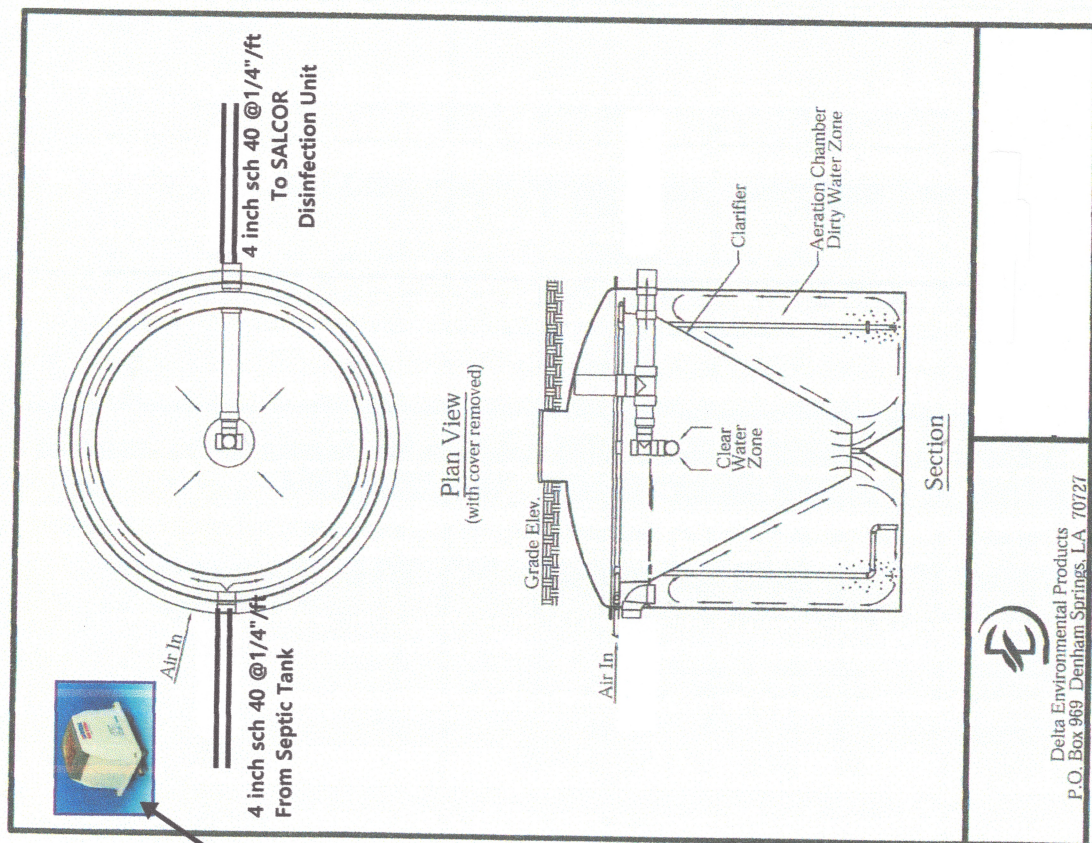
Tanks to be water tested per
local and state requirements



Delta White Water DF 75



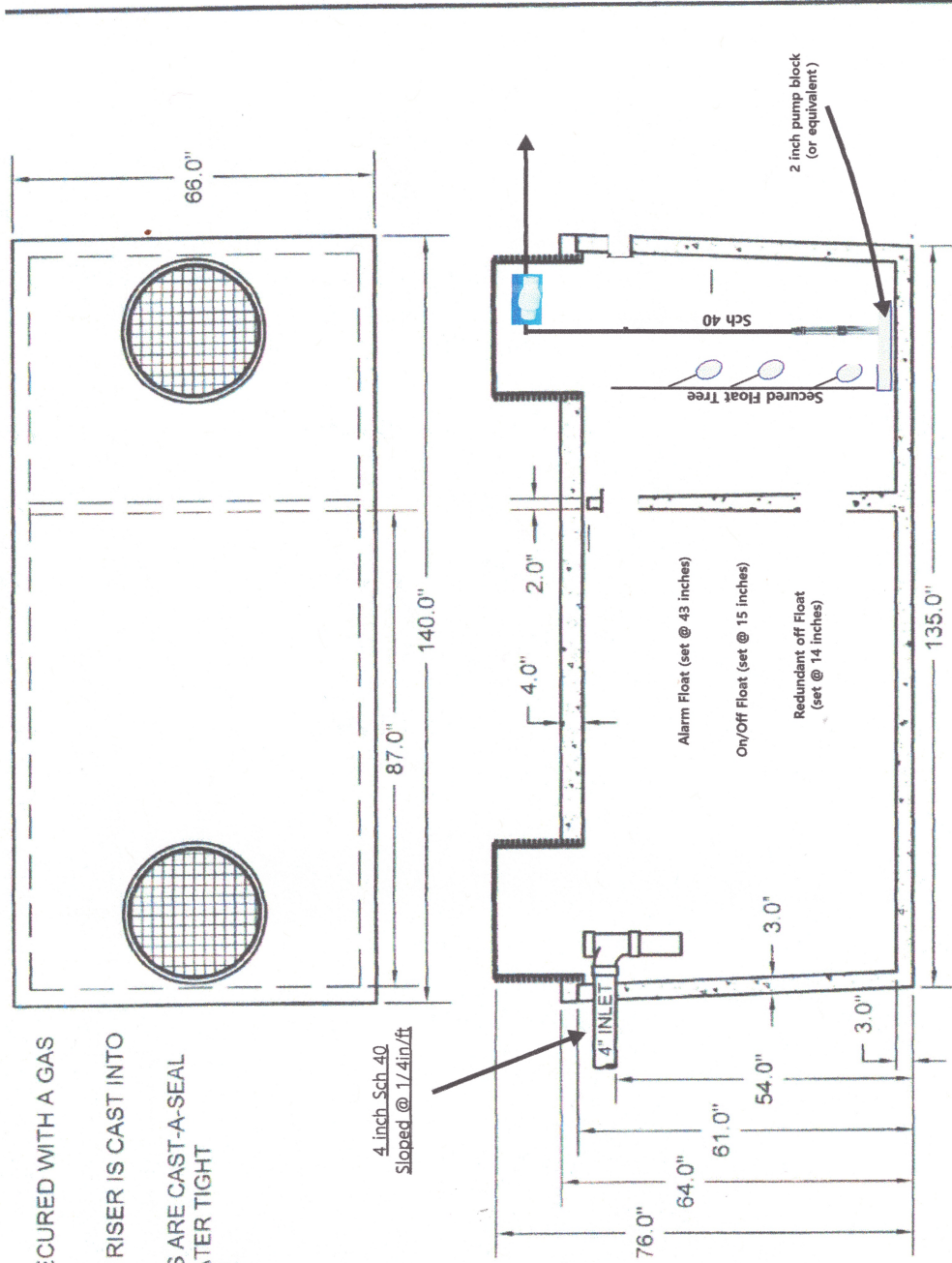
Typical Air-Pump
To be protected from flooding freezing etc
Must be installed in Riser, Bedded in Gravel



NOTE: This is not an installation manual and is not intended as such. Installation to meet all recommendations of Delta Environmental Products as well as State and Local Standards.

Pump Tank Detail (TYPICAL)

NOTES:
LIDS ARE SECURED WITH A GAS
TIGHT SEAL
24" ACCESS RISER IS CAST INTO
THE LID
4" COUPLERS ARE CAST-A-SEAL
FLEXIBLE WATER TIGHT
CONNECTOR



BERG VAULT COMPANY 2308 Cedardale Rd. Mount Vernon, WA 98274 (360)424-4999	1500 GALLON DBL. COMPARTMENT CONCRETE SEPTIC TANK	SCALE: 1/2" = 1'
DRAWN BY: ADAM GROENDYK	DATE: 5/6/2007	SHEET: 1 OF 1



Job Description:	
Contact:	
Prepared by:	
Date:	24-Jul-09

Please fill in the shaded areas and drop down menus:

This spreadsheet serves as a guide, and is not a complete hydraulic design.

Worksheet 1- Field Flow

Total field

Total Quantity of effluent to be disposed per day	750	gallons / day
Hydraulic loading rate	0.48	gallons / sq.ft. / day
Minimum Dispersal Field Area	1,920	square ft.
Total Dispersal Field Area	1,920	square ft.

Flow per zone

Number of Zones	1	zone(s)
Dispersal area per zone	1,920	square ft.
Choose line spacing between WASTEFLOW lines	2	ft.
Choose emitter spacing between WASTEFLOW emitters	1	ft.
Total linear ft. per zone (minimum required)	960	ft. per zone
Total number of emitters per zone	960	emitters per zone
Select Wasteflow dripline (16mm)	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	10	psi
Feet of Head at the beginning of the dripfield	23.1	ft.
What is the flow rate per emitter in gph?	0.53	gph
Dose flow per zone	8.48	gpm

Note: A few States or Counties require additional flow for flushing. Please check your local regulations.

Flush velocity calculation below is for PC dripline. Classic dripline requires less flow to flush than PC.

Please refer to Geoflow's spreadsheet "Design Flow and Flush Curves" at www.geoflow.com or call 800-828-8282

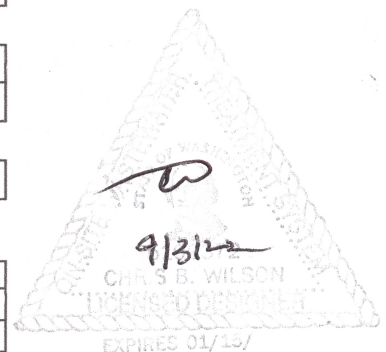
If required, choose flush velocity	1	ft/sec
How many lines of WASTEFLOW per zone?	16	lines
Fill in the actual length of longest dripline lateral	60	ft.
Flush flow required at the end of each dripline	0.74	gpm
Total Flow required to achieve flushing velocity	11.84	gpm
Total Flow per zone- worst case scenario	20.32	gpm

Select Filters and zone valves

Select Filter Type	BioDisc Filter	
Recommended Filter (item no.)	BioDisc-150	1.5" Disc Filter 0-30gpm
Select Zone Valve Type	None	-
Recommended Zone Valve (item no.)	0	0

Dosing

Number of doses per day / zone:	12	doses
Timer ON. Pump run time per dose/zone:	5:50	mins:secs
Timer OFF. Pump off time between doses	1:54	hrs:mins
Per Zone - Pump run time per day/zone:		hrs:mins
All Zones - Number of doses per day / all zones		doses / day



		Pump Size
Job Description:		0
Contact:		0
Prepared by:		0
Date:		7/24/2009

Pressure losses may be grossly overstated, particularly if designing with WASTEFLOW Classic
The letters on the diagram(right) match the letters in section 2 below.

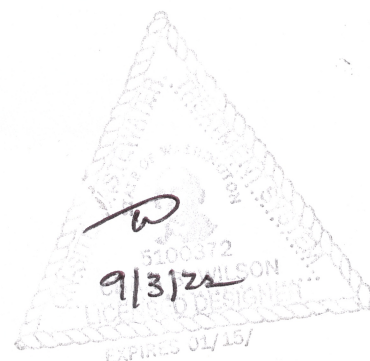
Worksheet - Pump Sizing

Section 1 - Summary from Worksheet 1

Flow required to dose field	8.48	gpm
Flow required to flush field	11.84	gpm
Flow required to dose & flush field	20.32	gpm
Filter	BioDisc-150	
No. of Zones	1	zones
Zone valve	-	
Dripline	Wasteflow PC - 1/2gph	
Dripline longest lateral	60.00	ft.

Section 2

	Ft of head	Pressure
A. Flush line - Losses through return line		
Size of flush line in inches	1.25 inch	
Length of return line	90 ft.	
Equivalent length of fittings	5 ft.	
Elevation change. (if downhill enter 0)	15 ft.	
Pressure loss in 100 ft. of pipe	3.67 ft.	1.59 psi
Total pressure loss from end of dripline to return tank	18.5 ft.	8.00 psi
B. Dripline - Losses through Wasteflow dripline		
Length of longest dripline lateral	60 ft.	
Minimum dosing pressure required at end of dripline	23.10 ft.	10.00 psi
Loss through dripline during flushing	6.70 ft.	2.90 psi
Total minimum required dripline pressure	29.80 ft.	2.90 psi
A+B. Minimum Pressure required at beginning of dripfield		
CALCULATED pressure required at beginning of dripfield	48.28 ft.	20.90 psi
SPECIFIED pressure at beginning of dripfield (from worksht 1)	23.1 ft.	10.00 psi
!!! Urgent revision required SPECIFIED pressure must be greater than CALCULATED pressure and lower		
C. Drip components - Losses through headworks		
Filter	4.6 ft.	2.00 psi
Zone valve pressure loss (not in diagram)	1.00 ft.	- psi
Flow meter pressure loss (not in diagram)	1.00 ft.	0.43 psi
Other pressure losses	1.00 ft.	0.43 psi
Total loss through drip components	7.62 ft.	2.87 psi
D. Supply line - Minimum Pressure head required to get from pump tank to top of dripfield		
Size of supply line in inches	1.25 inch	
Length of supply line	145 ft.	
Equivalent length of fittings	5 ft.	
Height from pump to tank outlet	5 ft.	
Elevation change. (if downhill enter 0)	15 ft.	
Pressure loss/gain in 100 ft. of pipe	9.97 ft.	4.32 psi
Total gain or loss from pump to field	35.0 ft.	15.13 psi
Total dynamic head	65.7 ft.	28.43 psi
Pump capacity *	20.3 gpm	
Pump Model Number		
Voltz / Hp / phase		

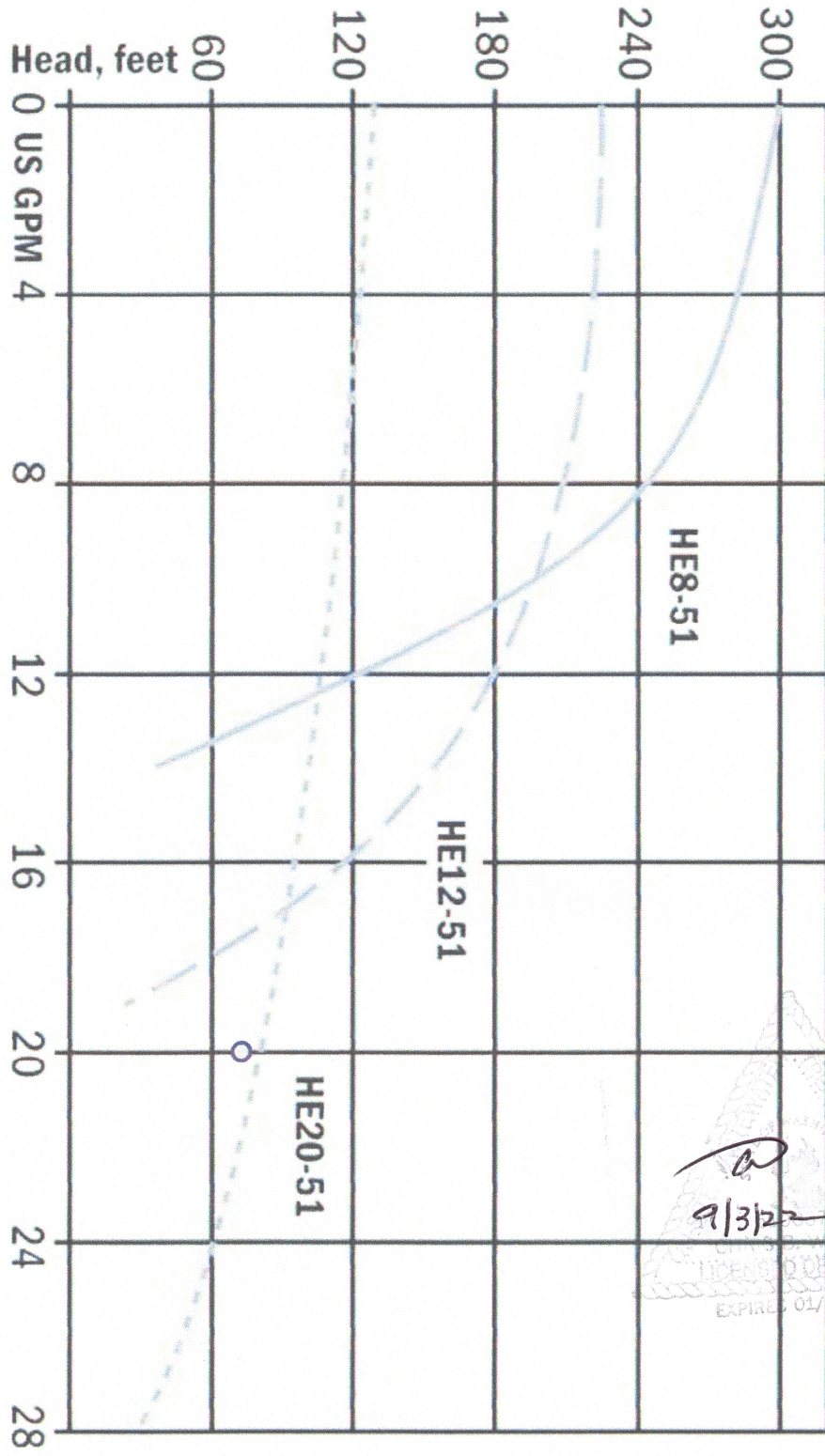


* Note: Pump capacity flow assumes flow in dripline does not change during a dose cycle. With Wasteflow For more accurate flows please see Geoflow's **Flushing worksheet**.

If you need assistance designing for this additional flow, please

a. See Geoflow flushing worksheet or

b. Contact Geoflow at 800-828-3388.

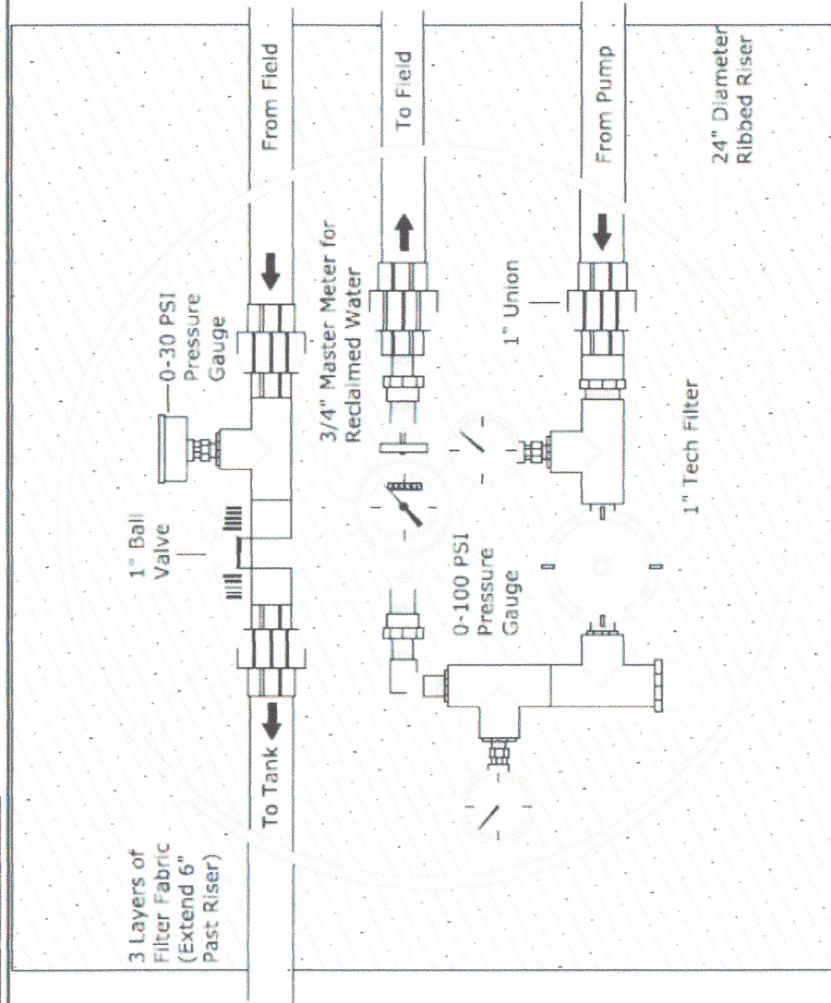


[Signature]
9/3/22
CHRISTOPHER L. NELSON
LICENSED DESIGNER
EXPIRES 01/15/23

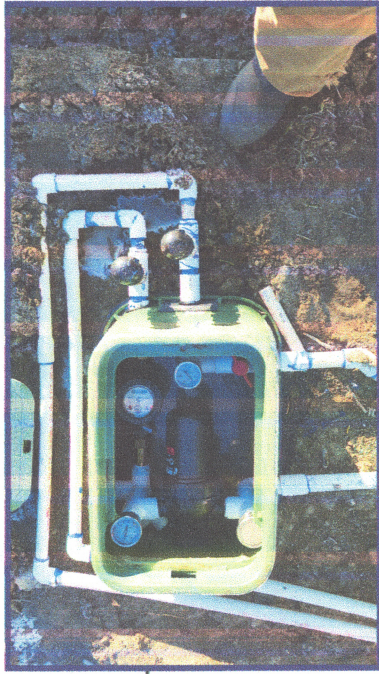
HD FOWLER MANUAL (CONTINUOUS) HEADWORKS (TYPICAL)

** to be installed in pump tank riser **

Drawing of Headworks:



Typical Installation



DRIP IRRIGATION DETAIL

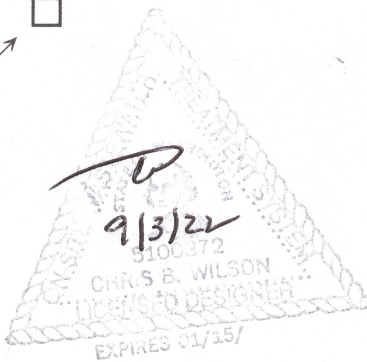
Feeder Manifold
(See Manifold
Detail Below)

Return Manifold
(See Manifold
Detail Below)

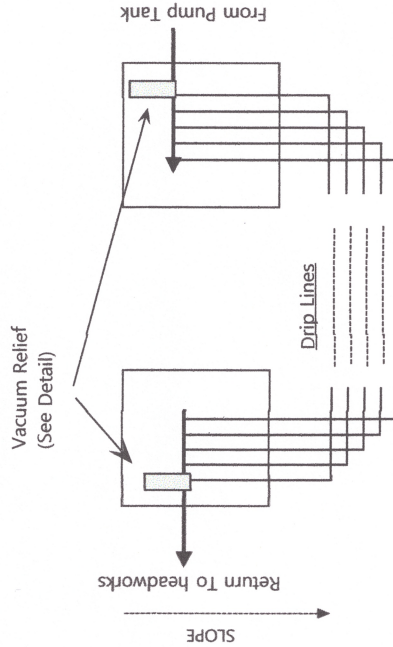
17 lines
1020 emitters
> 2 ft line spacing
1 ft emitter spacing

60

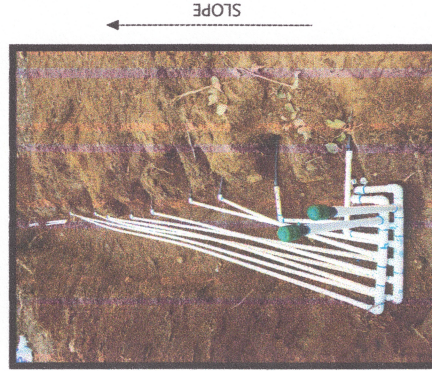
34



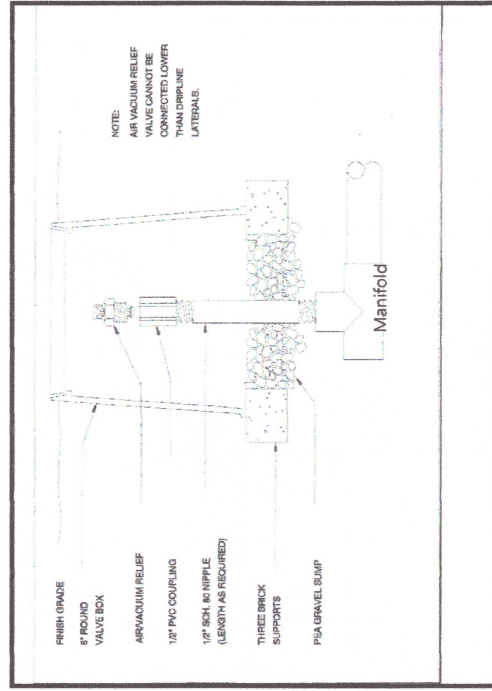
Manifold Detail



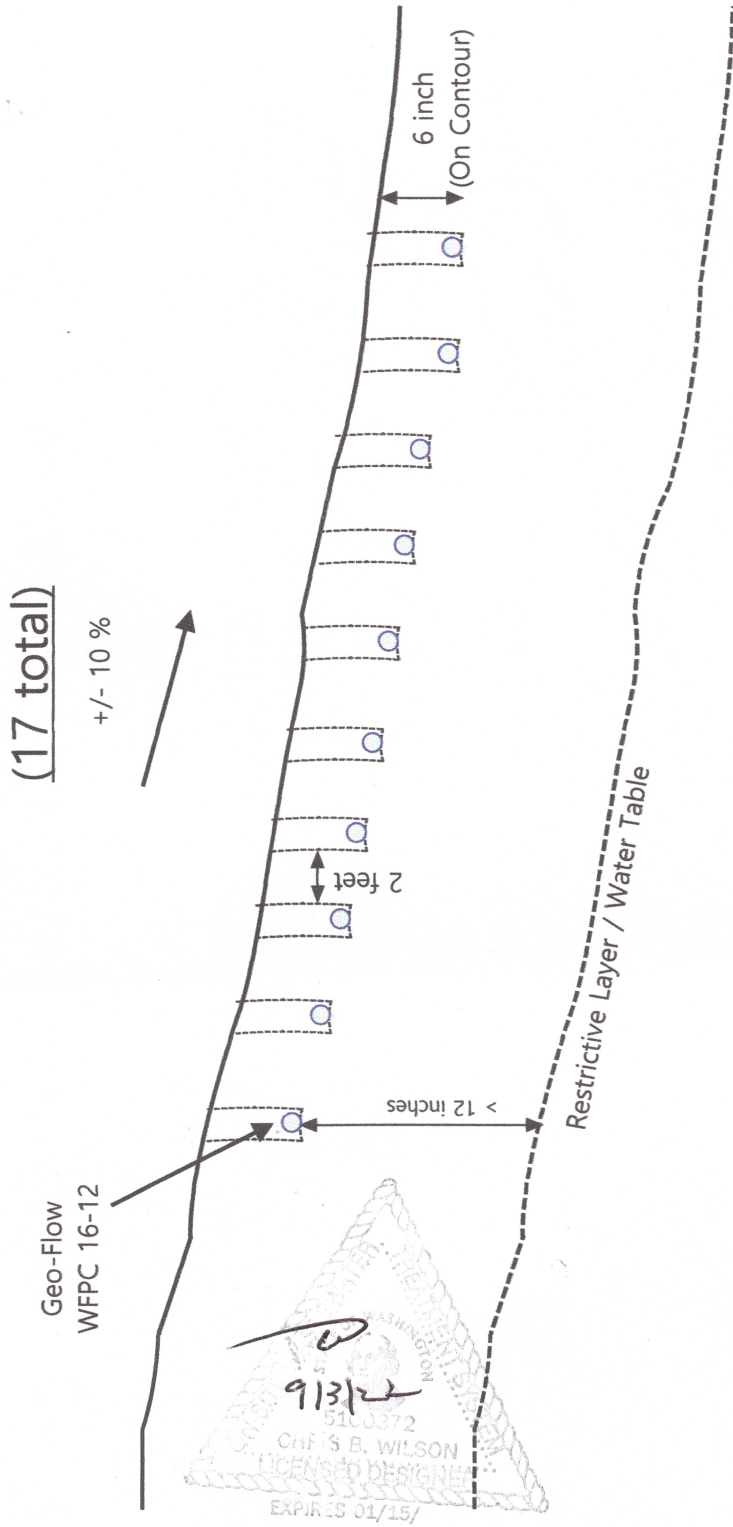
Manifold on
Sloping Site



Vacuum Relief Detail Set at Each Manifold



DRIP IRRIGATION CROSS SECTION



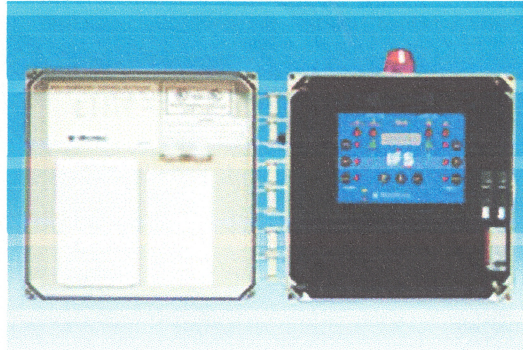
Typical Drip Installation



Typical Drip Installation



Timer / Alarm Panel (or equivalent)



INSTALLER FRIENDLY SERIES® - IFS Single Phase Duplex (Demand/TD)

Single phase, duplex demand dose or timed dose, float or C-Level™ sensor controlled system for pump control and system monitoring.

The IFS duplex control panel is designed to control two (alternating) 120, 208, 240 VAC single phase pumps in water and sewage installations. The panel features an easy-to-use touch pad with display on the inner door for programming and system monitoring. The panel configuration can be easily converted in the field to either a timed dose or demand dose.

The optional C-Level™ sensor is a pressure transducer that senses the liquid level in the tank and sends a signal to the IFS panel. Pump activation levels can be adjusted by using the panel touch pad. C-Level™ sensor operating range is 3-39.9 inches (7.6-101.3 cm).

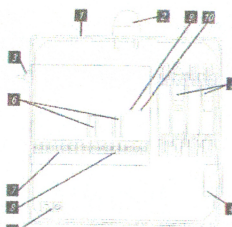
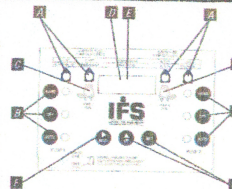
TOUCH PAD FEATURES

- Level Status Indicators** illuminate when floats or set points are activated. Alarm will activate if a float operates out of sequence.
- HOA (Hand-Off-Automatic) Buttons** control pump mode with indication. Hand mode defaults to Automatic when stop level or redundant off level is reached.
- Pump Run Indicators** will illuminate when pumps are called to run.
- Lead/Lag Selector** toggles pump operation (alternate 1-2 and 2-1).
- LED Display** shows system information including: level in inches or centimeters (C-Level™ only), mode, pumps elapsed time (hh:mm), events (cycles), alarm counter, float error count, timed dose override counter (timed dose only), and ON/OFF times (timed dose only).
- NEXT Push Button** toggles display.
- UP and SET Push Buttons** set pump ON/OFF times (timed dose only) and activation levels (C-Level™ only).

PANEL COMPONENTS

- Enclosure base measures 10 X 10 X 6 inches (25.4 X 25.4 X 15.24 cm). NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use). Note: Options, voltage, and amp range selected may change enclosure size and component layout.
- Red Alarm Beacon provides 360° visual check of alarm condition.
- Exterior Alarm Test/Normal/Silence Switch allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared.
- Alarm Horn provides audio warning of alarm condition (63 to 85 decibel rating).
- Circuit Breakers (optional) provide pump disconnect and branch circuit protection.
- Power Relays control pump by switching electrical lines. Definite purpose contactors used when pump full load amps are above 15.
- Float Connection Terminal Block
- Incoming Control/Alarm Power & Pump Terminal Block
- Control Power Indicator/Fuse indicator light illuminates if control power is present in panel. Alarm activates if control fuse is blown.
- Alarm Power Indicator/Fuse indicator light illuminates if alarm power is present in panel.
- Ground Lug

NOTE: Schematic/Wiring Diagram and Pump Specification Label are located inside the panel on enclosure cover



Model Shown IFS31W114X8AC

Reg. Can. Pat. & TM Off.

FEATURES

- Entire control system is UL Listed to meet and/or exceed industry safety standards.
- Dual safety certification for the United States and Canada.
- Standard package includes:
Demand Dose - three 20 SJE MilliAmpMaster™ control switches
Timed Dose - two 20 SJE MilliAmpMaster™ control switches
- Complete with step-by-step installation instructions.
- Three-year limited warranty.

SJE Rhombus

PO Box 1706, Detroit Lakes, MN 56502
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.

