

1/4/2008

duponbj

Groundwater and Wastewater Services File Imaging Project

May 2007

Barcode Font = IDAutomationHC39M

Hold For

1) Maintainance Agreement
2) Fees & Signatures
3) Have new owner fill out new application for 2 bedroom house

MAKE HIM FILL OUT NEW APP

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30001916** GWS File #: **4198B** Tax Parcel #: **227-027-52**

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be **NO** grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is **NOT** transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 2/15/2012

Type of Installation: Residential - New System Lot Number: 7

Structure Type: HOUSE Size (ft^2): 2400 # Bedrooms: 2 # Occupants: 4

Building Foundation: Crawl Space Water Supply: Municipal

II. Initial System Type: Pretreatment with LPP **System Classification:** Vd

Initial System Specifications:

Design Flow (gpd):	240	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1000
Trench Width (ft):	1	Trench Spacing (ft):	5	Absorption Area (ft^2):	192	Total Trench Length (ft):	192
Maximum Trench Depth (in):	12	Depth of Media (in):	8	Distribution Device:	Manifold (LPP Distri		

III. Repair System Type: Pretreatment with LPP **System Classification:** Vd

Repair System Specifications:

Design Flow (gpd):	240	LTAR (gpd/ft^2):	0.225	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1000
Trench Width (ft):	1	Trench Spacing (ft):	5	Absorption Area (ft^2):	213	Total Trench Length (ft):	213
Maximum Trench Depth (in):	12	Depth of Media (in):	8	Distribution Device:	Manifold (LPP Distri		

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Philo Walker Owner/Legal Agent: _____
Print Name

Signature: Philo Walker RS Signature: _____

Date Issued: 2/15/2007

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Permit #: **30001916** GWS File #: **4198B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every year by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- PRETREATMENT WITH TWO PURAFLOW PEAT BIOFILTERS IN ACCORDANCE TO APPROVED PLAN. CERTIFIED OPERATOR REQUIRED

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DENR Authorized Agent: Philo Walker

Signature: Philo Walker RS

Date Issued: 2/15/2007

Owner/Legal Agent: _____
Print Name

Signature: _____

EHS PW

Reviewer (R)

_____ County Permit Review Worksheet

Rule or Law	Permit Application	1	2	3	4	5	6	7	8	9	10
.1937(d)	Is the Application complete	Y									
.1937(d)	Is there a Site plan/Plat with application	Y									
.1937(d)	Is the Facilityshown?	Y									
.1937(d)	Are appurtenances shown	Y									
	Site Evaluation Information										
.1939 (a)(1)	Topography and Landscape Position Recorded?	N									
.1940 (a-g)	Slope % Recorded?	N									
.1939 (a)(2)	Texture Class Recorded?	N									
.1939 (a)(2)	Structure type Recorded?	N									
.1939 (a)(2)	Consistence Recorded?	N									
.1939 (a)(2)	Mineralogy Recorded?	N									
.1939 (a)(3)	Soil Wetness Condition Recorded?	N									
.1939 (a)(4)	Soil Depth to Rock or Parent Material Recorded When Encountered?	N									
.1939 (a)(5)	Depth to Restrictive Horizons Recorded When Encountered?	N									
.1939 (a)(6)	Sufficient Available Space Recorded?	N									
.1937(m)	Are the Profile Locations Shown?	N									
.1939(a) & .1945(b)	Are the S/PS Profiles in system & in repair area?	N									
	Number of auger borings made:	N									
	Were sufficient auger borings made?	N									
.1939(d), .1955, .1956, .1957	LTAR	?									
	IP/CA										
G.S. 130A-336(a) & .1937(g)	Proposed System Type stated-Initial										
.1945(b)	Proposed System Type stated-Repair										
G.S. 130A-336(a)(3)	System location identifiable by setbacks - Initial										
.1937(g) & .1945(b)	System components shown - Initial										
.1945(b)	Repair area shown										
.1937 (f)(g)	Does System design match facility, flow & WW characteristics?										
.1937 (f)(g)	**Is System design consistent with soil/site conditions?**										
.1937 (f)(g)	Is the System located in the approved area?										
G.S. 130A-336(a)	Is the Design flow (gpd) indicated?										
G.S. 130A-336(a)	**Number of Bedrooms, employees, seats, etc. indicated?**										
.1937(g)	Trench depth indicated?										
.1937(g)	Trench width indicated?										
.1937(g)	Trench length indicated?										
G.S. 130A-336(a)(1)	Proposed/existing well shown?										
G.S. 130A-336(a)(1)	Property line lengths shown?										
G.S. 130A-336(a)	**Facility/appurtenance setbacks shown from fixed points?**										
	OP										
.1937(i)	System type as described in table V(a) of rule .1961										
.1937(i)	Conditions for system performance, operation, maintenance, monitoring and reporting.										

If system design is incorrect or inconsistent with site conditions, indicate why for each below

NEED SOIL REPORT

OFFICE COPY 2-8-07

Soil & Environmental Consultants, PA

236 LePhillip Court, Suite C • Concord, North Carolina 28025 • Phone: (704) 720-9405 • Fax: (704) 720-9406
www.SandEC.com

APPROVED ON 2-8-07 TCR

OVERVIEW

Attached is a proposed design for a 2-bedroom Pretreated, Low Pressure Pipe (LPP) Septic System to be located on **226 Bubbling Well Road**, in Mecklenburg County, NC. The proposed method of pretreatment is the **PURAFLO Peat Biofilter**, manufactured by **Bord Na Mona**. The following design was performed by following their guidelines.

System Design

1. Treatment system size: 2 bedroom house so 2 modules
2. Disposal system: Type B
3. System size: utilize LTAR of 0.21 gpd/ft^2 NEED KSAT REPORT TO USE THIS LTAR.
4. Layout configuration: 3 lines, 235 linear feet * Attached 2/8/07
5. Module Configuration: Must use modules without weep holes. Modules should be placed on level 6" gravel bed for support and arranged similar to attached map. The treated effluent will be piped to a second pump tank, which will pressure dose the septic field. Module lids must remain at least 6" above grade.
6. Installation depth: Trench depth will be 12"
7. Pump Requirements: 1st and 2nd pump tanks, ½ HP Myers pumps or approved equal.
8. Panel Requirements: attached are the specs for a SJE Rhombus panel. Timer settings should be: **1 minute "ON" and 2 hours "OFF"**
9. ~~Septic~~ and 2 Pump Tanks: 1,000 gallons 1500 GAL SEPTIC TANK
10. Sampling option: samples should be taken via a drop box on the line to the second pump tank.

TYPE IV d SYSTEM - CO REQUIRED.
(PRE-TREATMENT)

Greensboro Office:
3817-E Lawndale Drive
Greensboro, NC 27455
Phone: (336) 540-8234
Fax: (336) 540-8235

Raleigh Office:
11010 Raven Ridge Road
Raleigh, NC 27614
Phone: (919) 846-5900
Fax: (919) 846-9467

V RCT 2-8-07

S&EC

Soil & Environmental Consultants, PA

236 LePhillip Court, Suite C • Concord, North Carolina 28025 • Phone: (704) 720-9405 • Fax: (704) 720-9406
www.SandEC.com

December 17, 2006
Project #: 5-1772

SATURATED HYDRAULIC CONDUCTIVITY OF SOIL ON BUBBLING WELL LOT-MINT HILL, NC

Mr. Trevor Thomason
Mecklenburg County Health Department
700 N. Tryon Street
Charlotte, NC 28202

In December 2006, Steven Price and Wendell Overby of S&EC evaluated the hydraulic characteristics of the upper and lower Bt horizons at 3 locations within our previously identified usable soil area at 226 Bubbling Well Road in Mecklenburg County (Pin 22702752). The purpose of the evaluation was to determine the saturated hydraulic conductivity of the unsaturated zone in designing a proposed septic system, namely pretreatment of a LPP system. More specifically we propose via pretreatment to increase the loading rate for a 2-bedroom (240gpd) LPP system (following .1970 rules). The use of pretreatment for a proposed system stems from the result of our earlier soil evaluation in which usable soil area is limited on the property. The following is a brief report of the methods utilized in this evaluation and the results obtained.

Methods:

Hydraulic Conductivity

Saturated hydraulic conductivity of the unsaturated zone was measured in situ at three locations by the constant head well permeameter technique (also known as shallow well pump-in technique and bore hole permeameter). Detailed description of this method can be found in Amoozegar and Warrick, 1986, Hydraulic Conductivity of Saturated Soils: Field Methods, Chapter 29 in Methods of Soil Analysis, Part 1; and in Amoozegar and Wilson, 1999, Methods for Measuring Hydraulic Conductivity and Drainable Porosity, in Agricultural Drainage, Monograph No. 38; both published by the Soil Science Society of America, Madison, WI. The results of the tests are shown in Table 1.

Results:

A total of five in-situ conductivities were measured within the usable soil area (see map). Two measurements were made at 3 locations, except for one location, where only one measurement was made (5 meters used). Three measurements were taken at the proposed trench depth (5" to 12") and two a foot below the proposed trench bottom (24" to 30"), respectively. A typical soil profile description was also taken within the usable soil area (see attached). Due to the small area of usable soil we felt the number of ksat readings taken was sufficient for representing the proposed performance of the soils.

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Phone: (919) 846-5900
Fax: (919) 846-9467

The state will typically allow utilization of 10 percent of the measured Ksat on untreated effluent. If the effluent is pretreated (i.e. sand filter or peat filter) the state will typically allow a higher percentage of the Ksat to be utilized (~25%). Since we will propose pretreatment in the form of a Bord Na Mona peat filter we propose using a higher percentage of the measured Ksat. The average Ksats for the measured portion of the upper Bt horizon and lower Bt horizon were 7.75 gpd/ft^2 and 1.89 gpd/ft^2, respectively. Ten percent of the most restrictive horizon, the lower Bt, would result in an LTAR of 0.189 gpd/ft^2. Since the effluent will be pretreated the LTAR could be as high as 0.4725 gpd/ft^2 or 25% of the measured Ksat. We propose using a design LTAR of 0.21 gpd/ft^2.

We seek approval of our methodology and results in order to prepare a final design and site plan for approval of an Improvements Permit. Please contact us with your opinion of the material presented and plans to proceed.

Sincerely,

Wendell Overby
NC Licensed Soil Scientist

Steven Price
NC Licensed Soil Scientist



Table 1
Unsaturated Zone Saturated Hydraulic Conductivity Data

	Horizon	Depth (in)	cm/hr	ft/day	gpd/sq. ft
site 1					
	Bt	6-12	0.23	0.18	**1.35**
	Bt	24-30	0.14	0.11	**0.82**
site 2					
	Bt	5-12	1.57	1.24	**9.25**
site 3					
	Bt	5-12	2.15	1.69	**12.66**
	Bt	24-30	0.5	0.39	**2.95**

Average Ksat values for:

shallow Bt	**7.75**	**gpd/sq ft**
deeper Bt	**1.89**	**gpd/sq ft**

Profile Description

226 Bubbling Well Road
Mecklenburg County
Job #5-1772

Horizon	Depth	Color	Mottles	Texture	Structure
A	0-4"	10YR 4/3		Sandy clay loam	W/F/Sbk
Bt1	4-21"	5YR 4/6		Clay	M/M/Sbk Fi SS SP SExp
Bt2	21-27"	5YR 4/6	2.5YR 4/8 10YR 6/6	Clay	W/M/Sbk Fi SS SP SExp
Bt3	27-34L	7.5YR 6/ 6	5YR 4/ 6 10YR 6/ 2	Clay	W/ M/ Sbk Fi S P SExp
BC	34-48L	2.5YR 4/ 8	10YR 6/ 6 10YR 6/ 2	Clay Loam	W/ F/ Sbk Fr SS SP



typicalsoilprofile.tbl

LEGEND

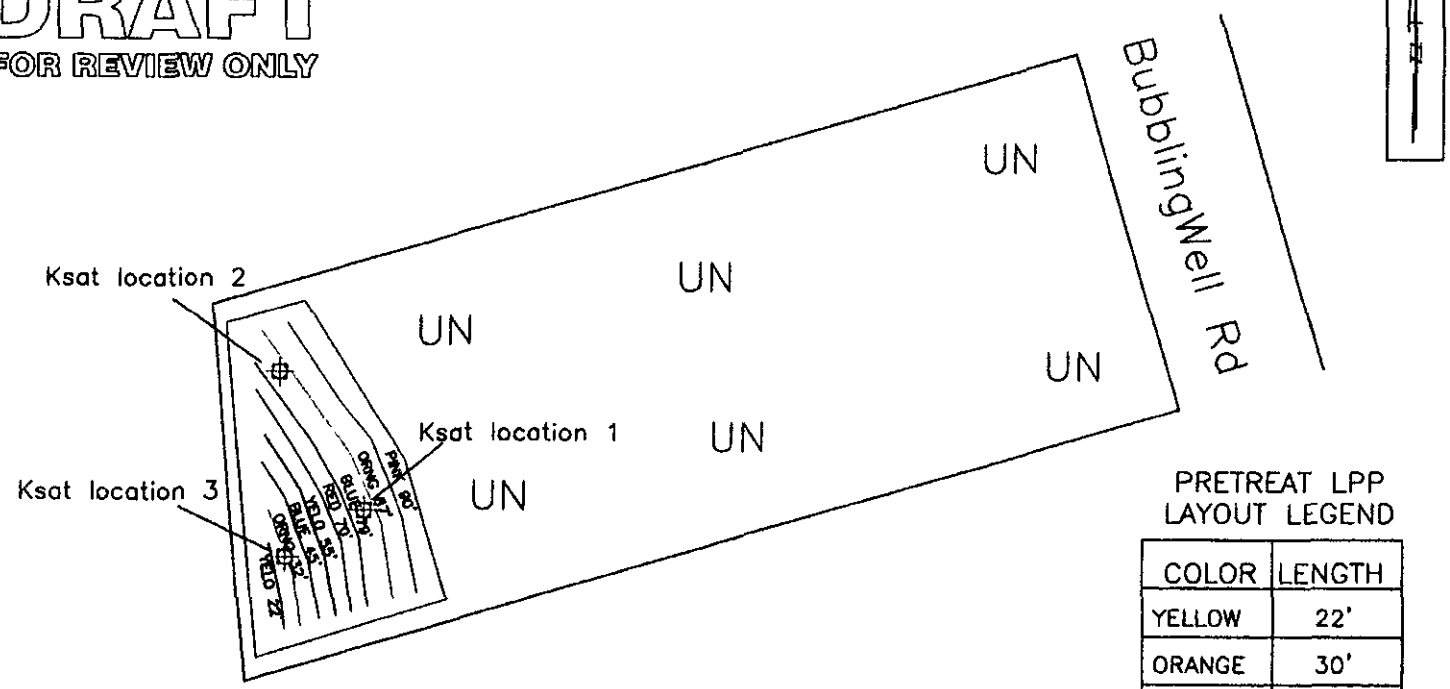
	Areas contain soils with 24 inches or more of useable material and have potential for at-grade conventional or LPP septic systems.
UN	Areas generally unsuitable for subsurface septic systems.

**SUITABLE FOR PRELIMINARY PLANNING PURPOSES ONLY. ALL LOTS WILL REQUIRE APPROVAL BY THE COUNTY HEALTH DEPARTMENT ON A LOT BY LOT BASIS. THIS MAP SHOULD BY USED AS A GENERAL GUIDE, SOME ADJUSTMENTS WILL BE NECESSARY IN THE FIELD DUE TO SOIL VARIABILITY AND TOPOGRAPHIC IRREGULARITIES.
THIS MAP ONLY REFLECTS EXISTING SOIL SUITABILITY FOR ON-SITE SEPTIC TANK SYSTEMS. SOME OTHER CONSIDERATIONS THAT AFFECT SITE SUITABILITY THAT SHOULD BE CONSIDERED IN DEVELOPMENT DESIGN ARE:

1) 10' SETBACK FROM PROPERTY LINE
2) 100' SETBACK FROM ANY WELL
3) 50' SETBACK FROM STREAMS, PONDS OR LAKES.

See accompanying S&EC report.

DRAFT
FOR REVIEW ONLY



GRAPHIC SCALE
1" = 50'

50 0 50 100

PRETREAT LPP LAYOUT LEGEND

COLOR	LENGTH
YELLOW	22'
ORANGE	30'
BLUE	44'
YELLOW	58'
RED	70'
BLUE	75'
ORANGE	83'
PINK	86'
	468'

S&EC Soil & Environmental Consultants, PA

PROJECT NAME: BUBBLING WELL ROAD, MECKLENBURG COUNTY, NORTH CAROLINA

SHEET TITLE: PRELIMINARY SITE/SOILS SUITABILITY & SEPTIC LAYOUT SKETCH MAP

INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.

- Tanks shall be approved by DEHNR, and certification supplied by the manufacturer.

- Tanks shall be water tested prior to installation.

- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.

- The supply trench shall be compacted to eliminate cavities left during initial fill placement.

- Installation of the system shall be during dry conditions in order to protect the soil structure.

- All pipes shall be schedule 40 PVC.

- All fittings shall be pressure rated fittings.

- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.

- Trenches shall be carefully excavated so the bottom is within 2" from the highest to the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench.

- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.

- All tanks shall be properly back filled and compacted to prevent slump at a later date.

- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.

- Turn-ups, as indicated on the drawings, shall be placed in larger diameter pipe and either cut off just below the surface and placed in meter pits or left above grade and highly visible.

- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.

- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.

- Where required by the County Health Department, post installation inspections by the designer must be scheduled 5 week days in advance.

Design Aspects (from Bord Na Mona)

- Dosing is typically regulated from a control panel with programmable timer, low water cut-off float switch and high water alarm/timer override float switch.

- The low water cut-off switch should ensure that the pump remains covered at all times.

- When possible, a draw down test should be done in the field to verify the expected pump performance.

Biofilter Modules (from Bord Na Mona)

- Effluent from the supply line is distributed to the modules via a flow splitting manifold with pressure equalizing orifice plates. Effluent is distributed over the peat media by a pre-installed rectangular grid with large diameter openings to prevent clogging. The effluent charges the grid using the velocity generated by the orifice plates; it is not a pressurized distribution grid.

- Minimum depth of stone for the pad is 6 inches, and must have a minimum of 6" of soil cover over the gravel pad.

Biofibrous Peat Specifications (from Bord Na Mona)

- Peat fiber is residue of Eriophorum (cotton grass) plants, extracted from raised bog peats.

- Moisture content on wet basis is 50-70%.

- Minimum organic content on anhydrous basis is 95%.

- Water adsorption capacity, 72 hr. test, is 400-700%.

- Average air filled porosity (AFP) is 51%.

Puraflo®

PEAT BIOFILTER *for Wastewater Treatment*

DESIGN REFERENCE MATERIAL

For Single Family Systems

INTRODUCTION

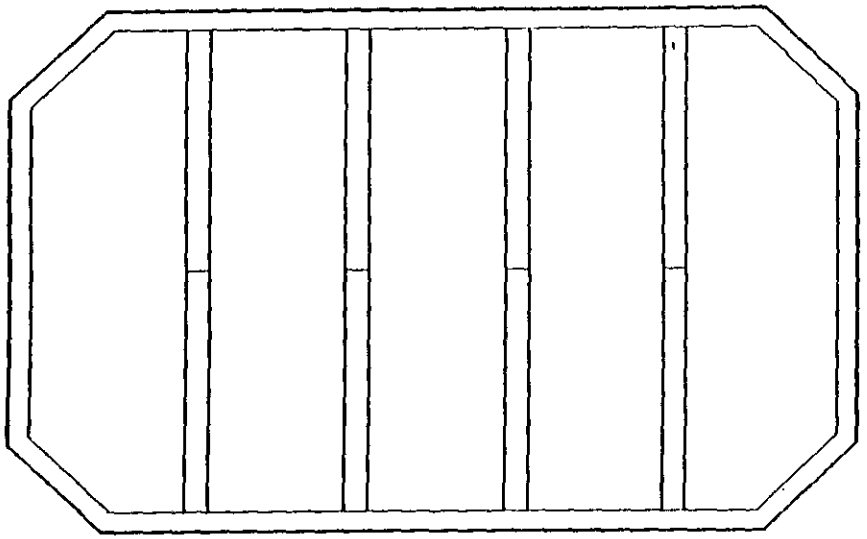
The Puraflo® Peat Biofilter is a secondary treatment system that purifies septic tank effluent to an extremely high degree before effluent disposal. A typical Puraflo® Peat Biofilter consists of:

1. A standard septic tank fitted with an effluent filter on the outlet pipe
2. A dosing tank (pump tank) to dose the septic tank effluent onto the peat biofilter media
3. Modules containing the peat biofilter treatment media - where advanced treatment occurs due to physical, chemical and microbial processes that are optimized in the peat biofilter media
4. Some form of disposal system - typically onsite, subsurface, gravity disposal - however, with simple modifications, the Puraflo® Peat Biofilter can also be used as a stand alone secondary treatment system for use in conjunction with pressure disposal systems, more advanced collection systems or discharge systems as applicable

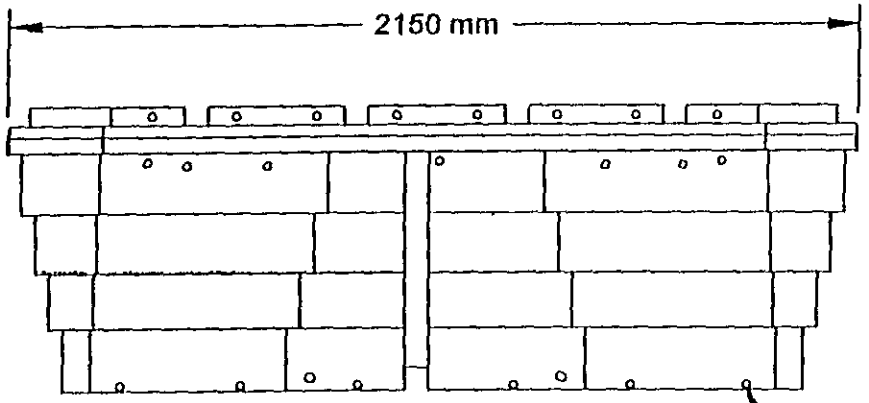
Due to the high quality of the peat biofilter effluent, the siting and sizing requirements for effluent disposal are less stringent than for conventional systems or other systems that do not provide the same degree of pre-treatment. As a result, the Puraflo® Peat Biofilter can be used for repairs and on sites that would otherwise be unsuitable for development.

This document is intended to assist the designer prepare a design in accordance with manufacturer recommended and standard industry practice. Designer should be familiar with any Local and State regulations/practices that supersede this document and modify the system design accordingly.

QUESTIONS? - PLEASE CALL YOUR LOCAL DISTRIBUTOR OR OUR CENTRAL OFFICE AT 1-800-PURAFLO (1-800-787-2356)

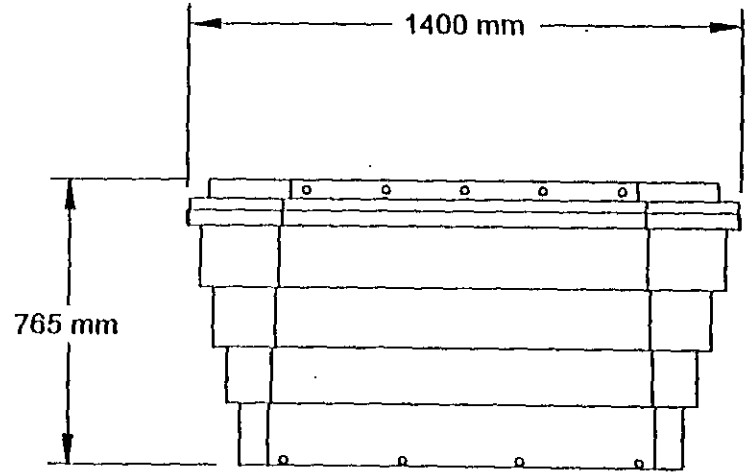


Plan View



Elevational View

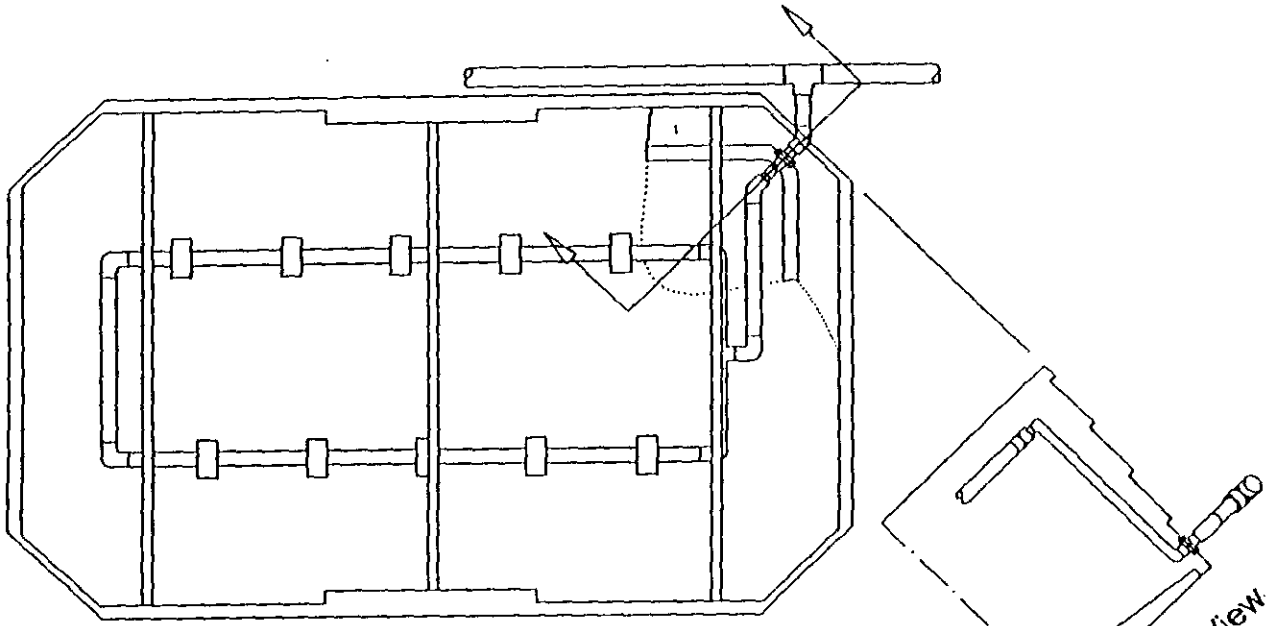
Sealed Modules are without Weep-holes



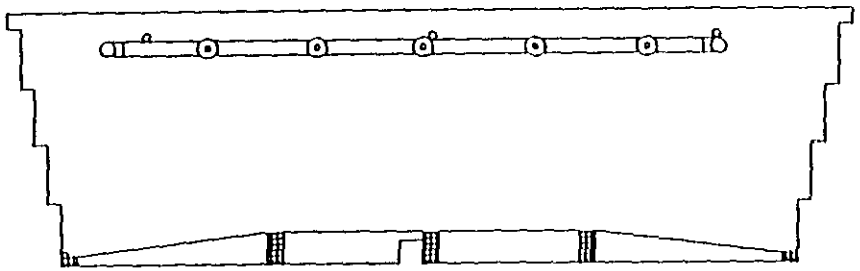
End View

6

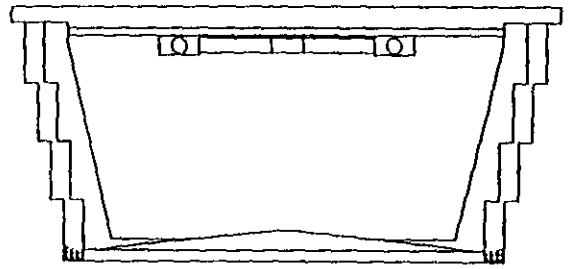
JAN. 15, 1998 DWG. BY: GMO'D	Scale 1:20	Drawing Title: **ASSEMBLED MODULE DETAIL**	Project Reference: **PURAFLO PEAT BIOFILTER**



Plan View



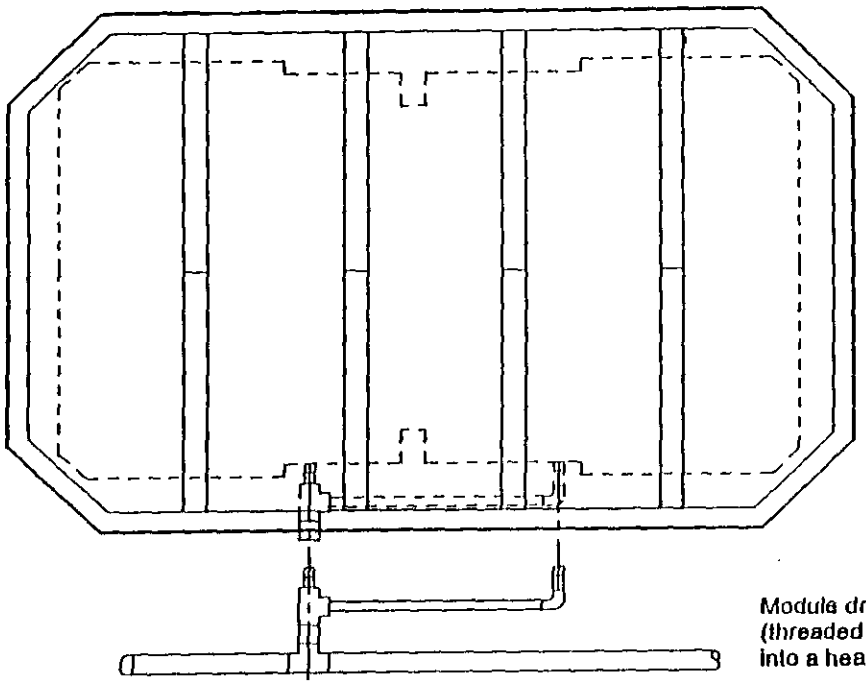
Sectional Elevation View



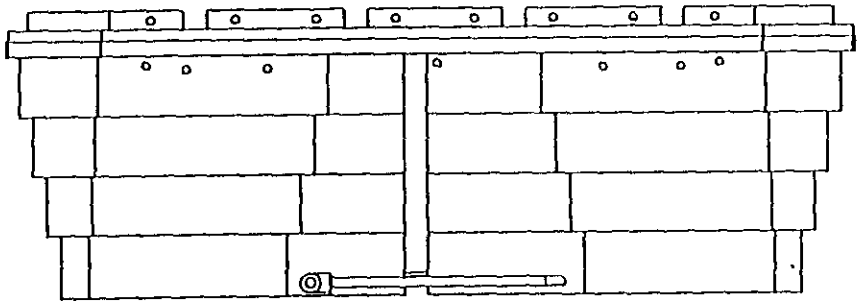
Sectional End View

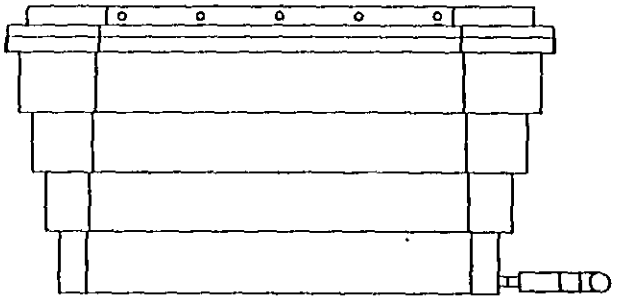
JAN. 15, 1998 DWG. BY: GMO'D	Scale 1:20	Drawing Title: MODULE GRID DETAIL	Project Reference: PURAFLO PEAT BIOFILTER

Threaded inserts not used for drainage
(oppsite those in use) should be plugged



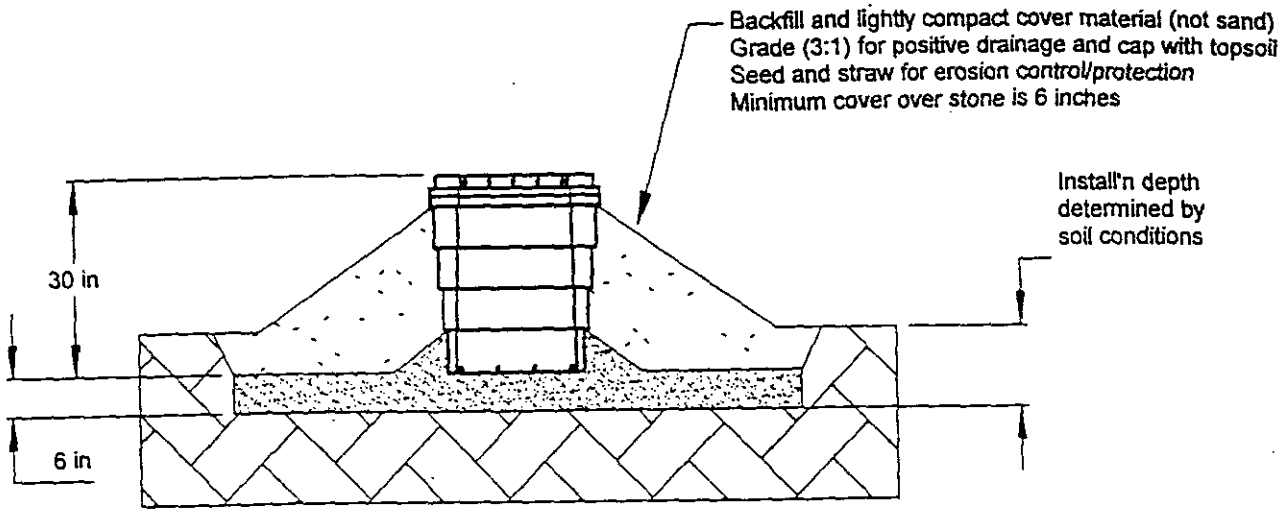
Module drained through 2 openings
(threaded inserts) at the base of the module
into a header/collection line

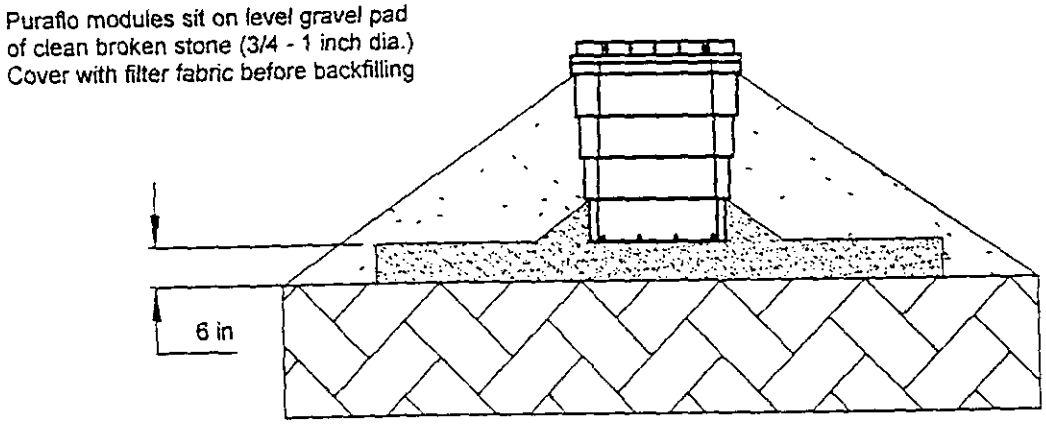




Sealed module has no weep-holes
around the base, all effluent exits the
module through drain-pipe assembly
as shown

JAN. 15, 1998 DWG. BY: GMO'D	Scale 1:20	Drawing Title: **DRAIN PIPE DETAIL**	Project Reference: **PURAFLO PEAT BIOFILTER**





Puraflo Sectional Views

Horizontal Scale 1:60
Vertical Scale 1:30

Puraflo®

PEAT BIOFILTER *for Wastewater Treatment*

INSTALLATION REFERENCE MATERIAL

For Single Family Systems

INSTALLATION RECORD

Name: _____

Site Location: _____

Telephone No. _____

Date: dd/mm/yy

Job No./Serial No.

Item	Name/Number
Contacts:	
Contractor/installer	
Phone No.	
Engineer	
Phone No.	
Electrician	
Phone No.	
Call-out contact	
Phone No.	
Distributor (if applic.)	
Phone No.	
Manufacturer	Bord na Mona
Phone No.	1-800-PURAFLO
Comments:	

Item	Units	Comment/Condition
Design/Site Details:		
Tax map No.		
Facility type		
Design flow	gpd	
Avg. No. occupants	ea.	
No. of bed rooms	ea.	
Soil texture	Group	
Design perc rate	mpi	
Depth to SHWT	in.	
System Details:		
Septic tank - type/size	/gpd	
Eff. filter - type/size		
Pump tank - type/size	/gpd	
Pump size/type	hp/	
Pump serial No./MGF date		
Alarm type/location		
Sump control panel type		
Size/type of force main	in./	
Length of force main	ft./	
Number of modules	ea.	
Max. pad/trench depth	in.	
Percolation pad dim.		
Percolation trench dim.		
No. monitoring wells/ports	ea.	

SKETCH OF SYSTEM:

INSTALLATION GUIDE FOR THE PURAFLO® SINGLE HOME SYSTEM

A. CONTRACTOR QUALIFICATIONS

1. Contractor should have recent and continuous experience installing conventional septic tank drainfield absorption systems and/or alternative onsite treatment/disposal systems.

2. Contractor should be certified if certification is available for the onsite industry in the State in question.

3. Contractor should be knowledgeable of applicable state regulations governing onsite waste disposal systems.

4. Contractor should have the necessary equipment and suitably qualified labor to efficiently install a septic tank drainfield absorption system.

5. Contractor should be familiar with the physical components of septic tank drainfield absorption systems and their assembly/installation, including but not limited to;

   - septic tank and riser requirements
   - pump tank and riser requirements
   - piping material requirements and joints
   - plumbing fixtures
   - pumps and alarms
   - programmable timers
   - float switch dosing mechanisms
   - electrical requirements and connections
   - force main and gravity piping requirements.

6. Contractor should be knowledgeable and understand the importance of basic septic tank drainfield absorption system design/installation considerations including but not limited to;

   - clearing site with minimum disturbance of soil structure
   - avoiding installation under wet site conditions
   - maintaining grade in trench lines and/or absorption pad
   - maintaining vertical separation distance from the SHWT (seasonal high water table)
   - keeping machinery off the percolation area
   - raking/roughing exposed excavated percolation pad and/or trench prior to backfilling with stone
   - correctly grading the percolation area to divert surface water
   - stabilizing backfilled area with vegetation to prevent erosion.

B. MATERIALS & INSTALLATION SCOPE

Installation of the *Puraflo®* system is straight forward and can usually be completed in less than a day. The cost of installation is not included in the cost of the *Puraflo®* system (unless otherwise noted). The contractor/installer is required to provide the following:

- Mechanical excavator (back-hoe) with operator
- Licensed electrician (the electrician will be required to connect the pump and alarm to the control panel/junction box, set timer as required, and connect the control panel/junction box with the main power supply
- Provide and supervise the installation of underground cable from the control panel/junction box to the main circuit board
- Gravity and force main Sch. 40 PVC piping
- Clean No. 5 ($^3/_4$ to 1 inch) broken stone as required
- Additional/imported fill material (not sand) and topsoil as required
- Labor necessary to install the system
- Necessary supervision to ensure the system is installed per design

For a typical installation, the contractor/installer is required to perform the following general activities:

A. Clear site vegetation as required (minimize site disturbance - hand clear wooded areas) and provide sufficient access to proposed system - this can be done prior to *Puraflo®* installation

B. Supply and install septic tank and pump tank (unless otherwise noted or unless Bord na Móna's polyethylene pump tank is specified) with risers as required - this can be done prior to *Puraflo®* installation

1. Install filter on septic tank outlet pipe and connect to pump tank
2. Install, connect and test pump assembly and electrics
3. Install and connect the force main
4. Excavate for and place the stone based pad percolation area and trenches as required per design
5. Install the modular assembly (and sampling chamber where applicable)
6. Install and connect the distribution system
7. Place filter fabric or approved equivalent

8. Backfill with suitable fill material (not sand), cover with 6 inches of topsoil, grade and seed in accordance with the intentions of the design

The contractor must exercise due care to identify and avoid all utility lines during installation.

Electrical Requirements

The homeowner must make the following electrical facilities available at the site:

Independent electrical supply to power the control panel/electrical junction box - (120 volts and 20 amps typical)

These requirements may change when a duplex panel, a larger pump or a high head pump is required per design - please refer to site specific design to verify electrical requirements.

C. INSTALLATION GUIDE

1.0 Introduction

1.1 These instructions are only intended to be used as a guideline for installing a septic tank and Puraflo® peat biofilter system for a single dwelling. It does not attempt to address every scenario. Site specific plans supersede these guidelines.

2.0 Septic Tank and Sewer Pipe from Dwelling

2.1 Supply and install septic tank and sewer pipe from dwelling in accordance with applicable State regulations. Septic tank must be watertight against ground and surface water infiltration.

2.2 Fit a Zabel filter (Model A300) on the outlet pipe. Ensure easy access (manhole riser) to service filter.

3.0 Pump Tank Installation

3.1 Supply and install the pump tank in accordance with applicable State regulations. Pump tank must be watertight against ground and surface water infiltration.

3.2 Install gravity main from septic tank to pump tank in accordance with applicable State regulations.

3.3 Excavate a trench 18 inches deep (minimum) from the pump tank to the location of the modules. In colder climates the force main may be buried deeper (below frost line).

3.4 Place sufficient risers on top of the pump tank to reach slightly above grade level. It is extremely important to ensure a watertight seal between the pump tank and the first riser and between individual risers. To achieve this where a polyethylene pump tank is used, the first riser is bedded in silicone sealer at the riser-pump tank interface. Subsequent risers should be bedded in mortar. Rapid hardening cement should be used and backfilling delayed as long as possible to avoid disturbance of risers.

Similarly, if a concrete tank is used all connections/seals should be made water tight with mortar. Follow manufacturers recommendations when specialty risers/adapters are used.

3.5 When a concrete pump tank is used, use the knock-out for the forced main outlet (the polyethylene pump tank has a built-in outlet for the force main). Seal all entree and exit points with mortar (seal with silicone when a polyethylene is used). Leave an opening between risers below surface level for electrical duct/conduit.

3.6 Backfill around pump tank below outlet pipe and electrical cable points of entry. Ensure backfill material is free of stones and other material that could damage the pump tank.

4.0 Preparation of Site for Installation of Modules

4.1 The required vertical separation distance between bottom of trench and seasonal high water table must be maintained. The minimum required vertical separation distance is usually between 6 and 12 inches depending on soil characteristics.

4.2 Excavate to the required installation depth over the area specified in the plans. The pad and/or trench bottom must be level. Fill and level the excavated area (also referred to as the foot-print area) with clean No. 5 (3/4 to 1 inch) broken stone to a minimum depth of 6 inches.

5.0 Percolation Trenches

5.1 There are two basic types of stone trenches used in conjunction with the Puraflo® system. Trenches can be:

(a) Contiguous with the pad, i.e., connected to and extending from the pad area: These trenches are level, on contour, with the same installation depth as the pad and as such can be considered as finger extensions of the pad.

Short (i.e., less than 25 feet) contiguous trenches may be used without perforated piping and have a stone depth equal to that of the adjoining pad. When longer contiguous trenches are required, the should be installed in the same manner as independent trenches. This means a 10 inch stone depth for pad and trench.

(b) Independent trenches installed level and on contour: Effluent from the module is usually piped directly or via a distribution box to the trench. In such cases, modules would not have weep holes around the base and a drop-box on the gravity line from the modules can be used as a sampling point instead of the polyethylene sample chamber. The rest of section 5 refers to installation of independent trenches.

(c) Other forms of approved gravity and pressure disposal systems can be used in conjunction with Puraflo®.

5.2 Excavate for trenches in accordance with design. Trenches are usually installed at a depth of 16 inches when possible (but may be shallower - always refer to specific design) and can vary from 1 to 3 feet wide. A minimum separation distance of three times the trench width should be maintained between adjacent trenches.

5.3 Backfill the trench with 4 inches of No. 5 broken stone; place 4 inch perforated piping in trench; cover the perforated piping with more broken stone to a depth of 2 inches over the perforated pipe.

5.4 Cover the exposed stone surface with filter fabric to prevent smaller soil particles from being washed into and subsequently clogging the percolation trench.

5.5 Backfill with topsoil to grade level or above, providing a minimum of 6 inches cover over stone in trench.

6.0 Modules Installation

6.1 Position the modules on the broken stone pad area. Connect forced main to manifold line. Glue one end of the flexible plastic piping to manifold outlet pipes and glue other end to distribution pipe protruding from each module. (Note; the flexible plastic feed lines have slightly different connections on either end. The end with the orifice plate is connected to the distribution pipe in the module.)

6.2 Where applicable, fit the sample chamber outlet pipes to the appropriate modules. Insert outlet pipes into sample chamber so that they extend 3 inches into sample chamber and are at least 5 inches off the base of the sample chamber. Cut a hole in the base/side of the sample chamber to allow effluent to enter the foot-print area when samples are not being collected. Effluent should not exit the sample chamber at a lower level than the pad installation depth.

6.3 Backfill with broken stone around the modules to a height of 6 inches above the drain holes around the base of the modules when applicable.

6.4 Cover remaining exposed stone surface around the outside of modules with filter fabric. This prevents smaller soil particles from being washed into and subsequently clogging the foot-print area.

6.5 If the effluent is being piped out of the modules to a distribution box for disposal in independent trenches, the pad area's primary function is to level and support the modules.

7.0 Pump Fittings and Pipework

7.1 Place the pump on a block approximately 6 inches above the base of the pump tank. When a polyethylene pump tank is used; place the pump on the stainless steel extendible pump bracket provided and suspend from bracket holder such that the pump is approximately 10 inches above the bottom of the sump.

7.2 Glue a length of PVC pump pipe into the fitting at the top of the pump. Install the required fittings (check valve, union, ball valve, etc... as required by the design). Note; in most cases a 2 inch forced main is specified so a bushing ($1^1/_2$ inch x 2 inch) may be required to connect the internal pump tank piping to the pump.

In some cases, the force main may be designed to drain back and a drain back hole will be required above the check valve. Install an air vent hole when required (built-in in some pumps) and an anti-siphon hole if the module grid is lower than the liquid level in the pump tank.

7.3 Install the 2 inch forced main in the previously excavated trench from the pump tank to the modules. Backfill trench once the line is correctly installed and connected. Be careful not to damage the installed force main line with heavy vehicle activity.

8.0 Electrical Connections

8.1 Select a location for the electrical control panel/junction box near the pump tank. Connect the pump cable and float switches to the control panel/electrical junction box. See design for float settings (and timer settings when a control panel is specified).

8.2 Excavate a trench for underground cable between power source and the control panel/electrical junction box.

8.3 Place electrical power cable(s) in the trench; leave un-stretched in bottom of trench. Connect each cable with corresponding cable coming from the pump tank in the electrical junction box or wire per wiring diagram if a control panel is specified. At a minimum, the cable between the pump tank and the control panel/junction box should be in conduit. Backfill trench once the cables are correctly installed and connected.

8.4 Connect the electrical power cable(s) to an independent electrical power supply of the specified voltage (usually 115 volts), terminating in a socket or junction box protected by an A.M.C.B. as required (usually 20 amps).

If a duplex control panel or high head pump is required the voltage and amperage requirements may increase.

8.5 All electrical work should be done by a licensed electrician.

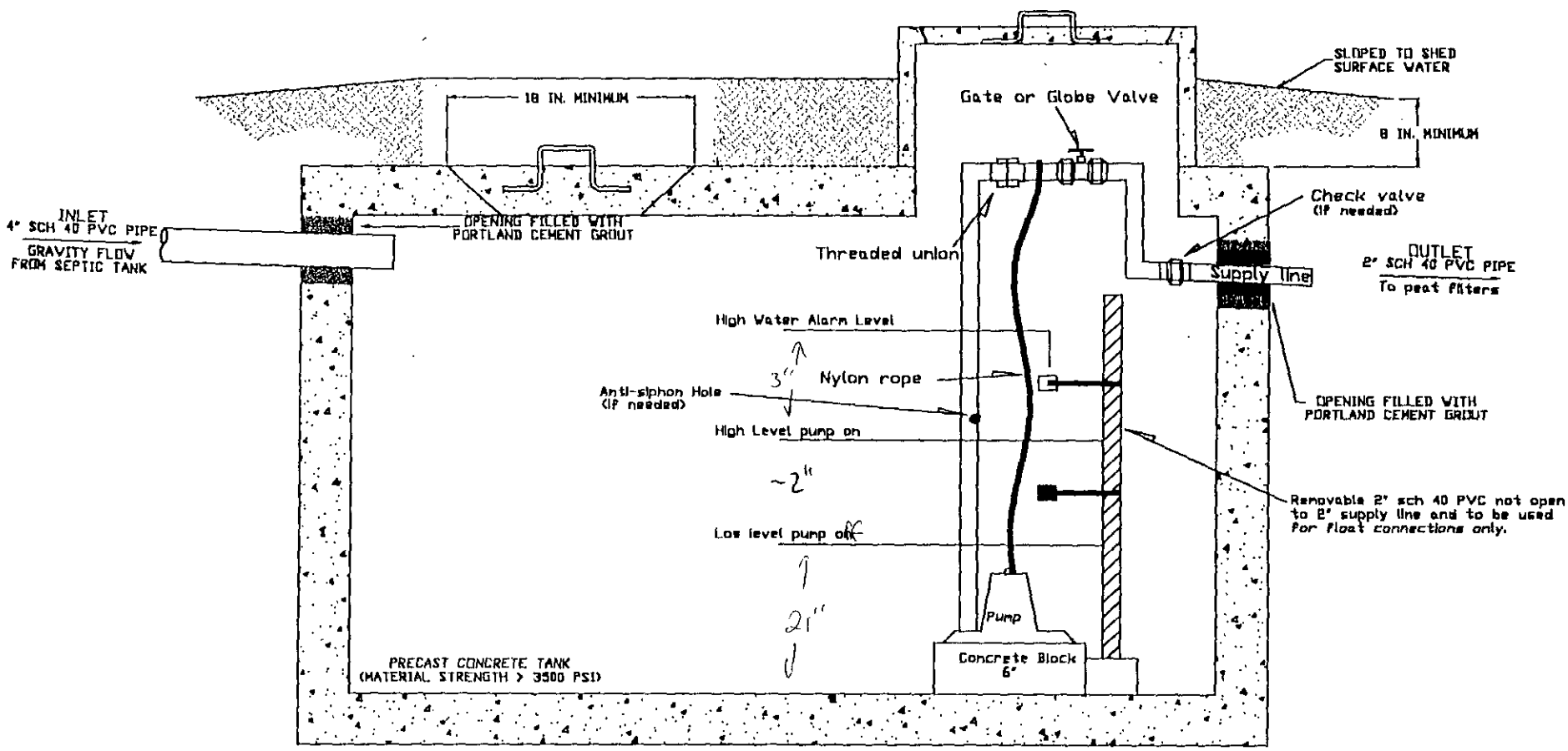
9.0 Site Restoration

9.1 Backfill around modules to a height just under the lid of the modules. Backfill should be suitable, loose, workable material (not sand). Compact backfill sufficiently to counteract settlement.

9.2 Grade the backfill to existing ground level on a slope no steeper than 1:1. Backfill should be graded to prevent infiltration of surface water and provide positive drainage away from the drainfield. Ensure a 6 inch minimum cover over drainfield stone. Final layer (6 inches) of fill material should be suitable topsoil capable of supporting vegetative growth.

9.3 Grass seed and straw the sloped backfill area and trench excavation lines with suitable indigenous variety. In some cases, sodding for immediate stabilization may be specified.

9.4 Provide erosion protection as required per plan.



1000 GALLON PUMP TANK #1

SHEET 1 or 1

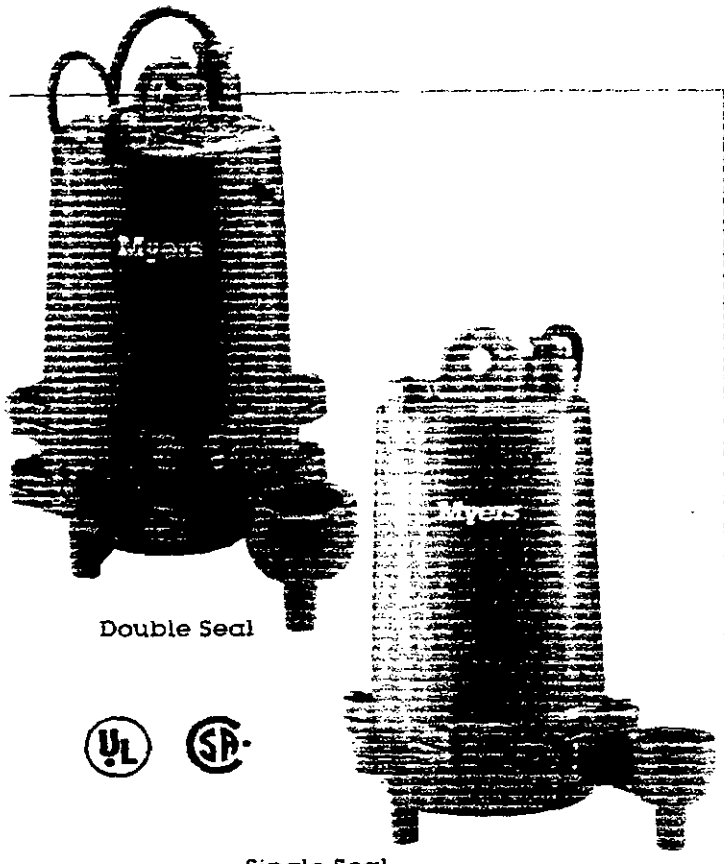
JOB NO.	PROJECT NAME	
PROJECT MGR.		
SCALE NTS	SHEET TITLE: PUMP TANK DIAGRAM	S&EC Soil & Environmental Consultants, Inc.

12

ME SERIES

Pumptalk #1
to pet filters

1/2 through 1-1/2 HP
Effluent Pumps



Double Seal

Single Seal

THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS. The ME Series effluent pumps with their efficient two vane, enclosed impellers, provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

ADVANTAGES BY DESIGN

IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full ¾ inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage.
- Motors have on winding current and temperature sensitive overload. (Single phase only.)

THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

PRODUCT CAPABILITIES

Capacities To	120 GPM	454 LPM
Heads To	95 ft.	28.9 m
Max. Spherical Solids	¾ in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp.	up to 140 F	up to 60 C
Motor Electrical Data	1/2 HP 115 volts, 1 ph 1/2 to 1 1/2 HP 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil-filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130 C)	
Third Party Approvals	UL, CSA	
Acceptable pH Range	6-9	
Specific Gravity	0-1.1	
Viscosity	29-35 SSU	
Discharge NPT	2 in.	50.8 mm
Min. Sump Dia. Simplex	24 in.	61 cm
Duplex	36 in.	91.4 cm
Construction Materials		
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76	
Enclosed Two Vane Impeller Standard	engineered thermoplastic	
Optional	bronze	
Impeller Wear Ring	304 SST	
Volute Sealing Ring	Buna-N	
Shaft	416 SST	
Power Cord		
1/2 HP 1 Ph	20 ft. 16/3 SJOW/SJOW-A	
3/4 - 1-1/2 HP 1 Ph	20 ft. 14/3 SJOW/SJOW-A	
All 3 Ph	20 ft. 14/4 SOW/SOW-A	
Shaft Seals Standard	single carbon & ceramic	
Optional	tandem carbon & ceramic	
Opt. Lower	tungsten carbide	
Fasteners	300 Series SST	

WHERE INNOVATION MEETS TRADITION

ISO 9001 Certified Company

Myers
PENTAIR PUMP GROUP

ME SERIES

Pump Tank #1
to peat filters

1/2 through 1-1/2 HP
Effluent Pumps

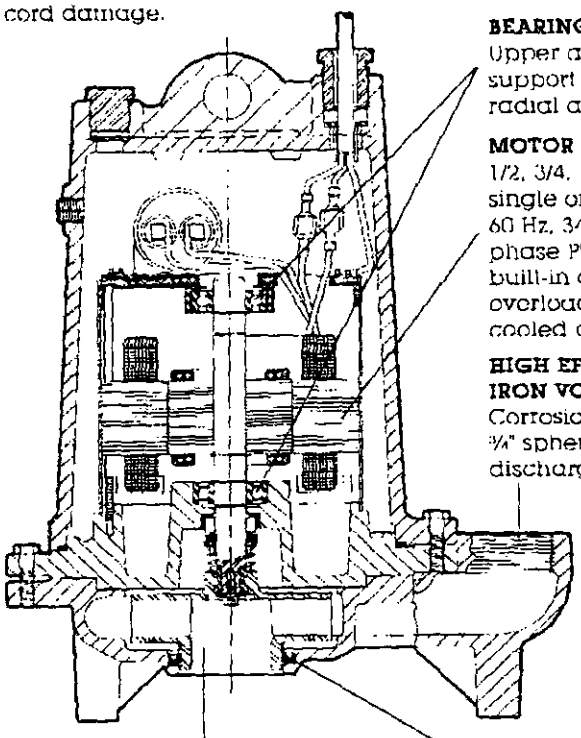
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

MOTOR HOUSING
Cast iron for efficient heat transfer and corrosion resistance.

BEARINGS
Upper and lower ball support rotor. Take radial and thrust loads.

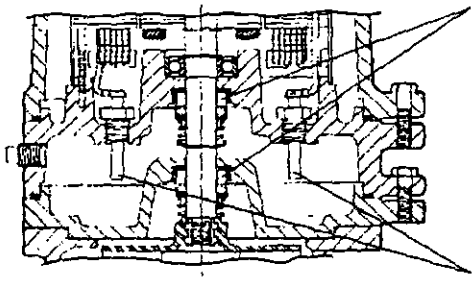
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

HIGH EFFICIENCY CAST IRON VOLUTE
Corrosion resistant. Passes ¾" spherical solids. 2" NPT discharge.



ENCLOSED TWO VANE IMPELLER
high efficiency. Passes ¾" spherical solids with stainless steel wear ring. Optional bronze construction available.

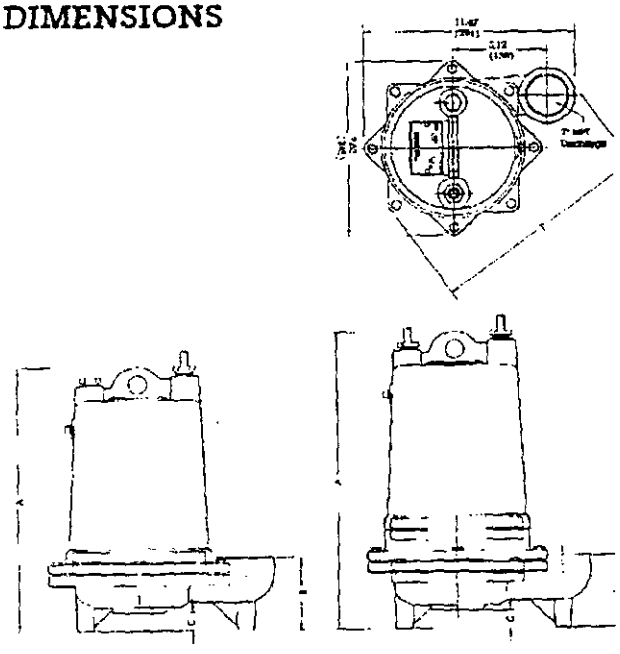
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.



SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

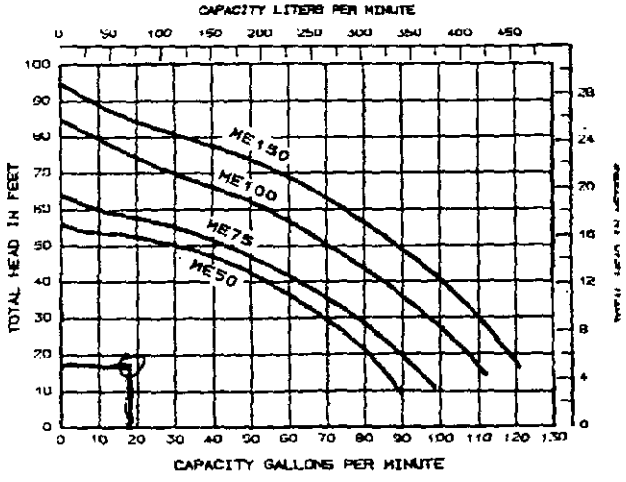
SEAL LEAK PROBES
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light.

DIMENSIONS



Model Series	Inches (millimeters) A	B	C	F
ME50S	16.8 (427)	4.09 (104)	1.03 (26)	12.13 (308)
ME50D	18.6 (472)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

PERFORMANCE CURVE



K3320 9/98
Printed in U.S.A.

Myers

F. E. Myers, 1101 Myers Parkway, Ashland, Ohio 44805-1969
419/289-1144, FAX: 419/289-6658, www.femyers.com
Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5

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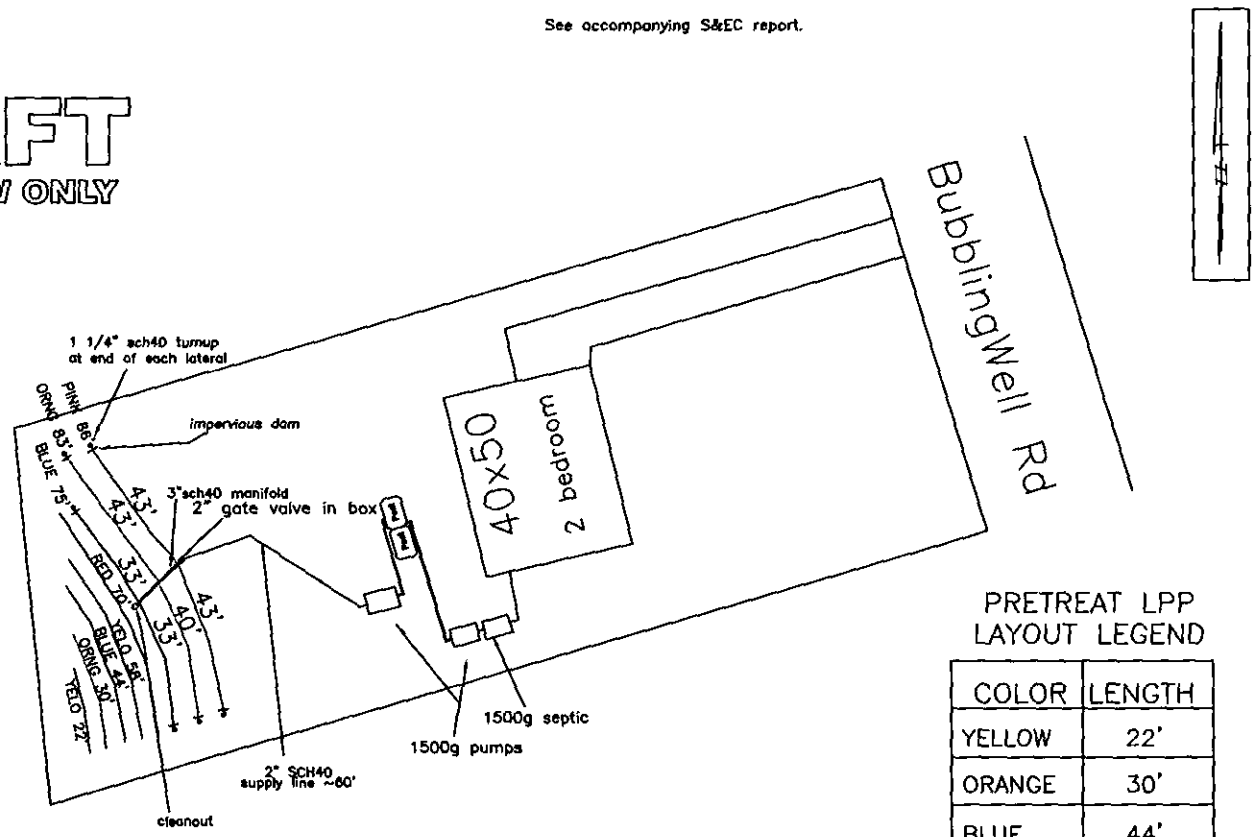
226 BUBBLING WELL RD.

**SUITABLE FOR PRELIMINARY PLANNING PURPOSES ONLY. ALL LOTS WILL REQUIRE APPROVAL BY THE COUNTY HEALTH DEPARTMENT ON A LOT BY LOT BASIS. THIS MAP SHOULD BY USED AS A GENERAL GUIDE, SOME ADJUSTMENTS WILL BE NECESSARY IN THE FIELD DUE TO SOIL VARIABILITY AND TOPOGRAPHIC IRREGULARITIES.
THIS MAP ONLY REFLECTS EXISTING SOIL SUITABILITY FOR ON-SITE SEPTIC TANK SYSTEMS. SOME OTHER CONSIDERATIONS THAT AFFECT SITE SUITABILITY THAT SHOULD BE CONSIDERED IN DEVELOPMENT DESIGN ARE:

1) 10' SETBACK FROM PROPERTY LINE
2) 100' SETBACK FROM ANY WELL
3) 50' SETBACK FROM STREAMS, PONDS OR LAKES.

See accompanying S&EC report.

DRAFT
FOR REVIEW ONLY



PRETREAT LPP LAYOUT LEGEND

COLOR	LENGTH
YELLOW	22'
ORANGE	30'
BLUE	44'
YELLOW	58'
RED	70'
BLUE	75'
ORANGE	83'
PINK	86'
	468'

GRAPHIC SCALE
1" = 50'

50 0 50 100

PROJECT NO. #5-17725I
PROJECT MGR. W.O.
DRAWN BY W.O.
FIELD WORK W.O.
SCALE 1" = 50'

Soil & Environmental Consultants, PA
236 LaPhillip Ct Suite C • Concord, North Carolina 28025 • Phone (704)720-9405 • Fax (704) 720-9406

S&EC

PROJECT NAME:
DAVE BARRY
BUBBLING WELL ROAD
MECKLENBURG COUNTY, NORTH CAROLINA
SEPT 2006

SHEET TITLE:
PRELIMINARY SITE/SOILS SUITABILITY & SEPTIC LAYOUT SKETCH MAP

File # 4198B 2-8-07

Bubbling Well

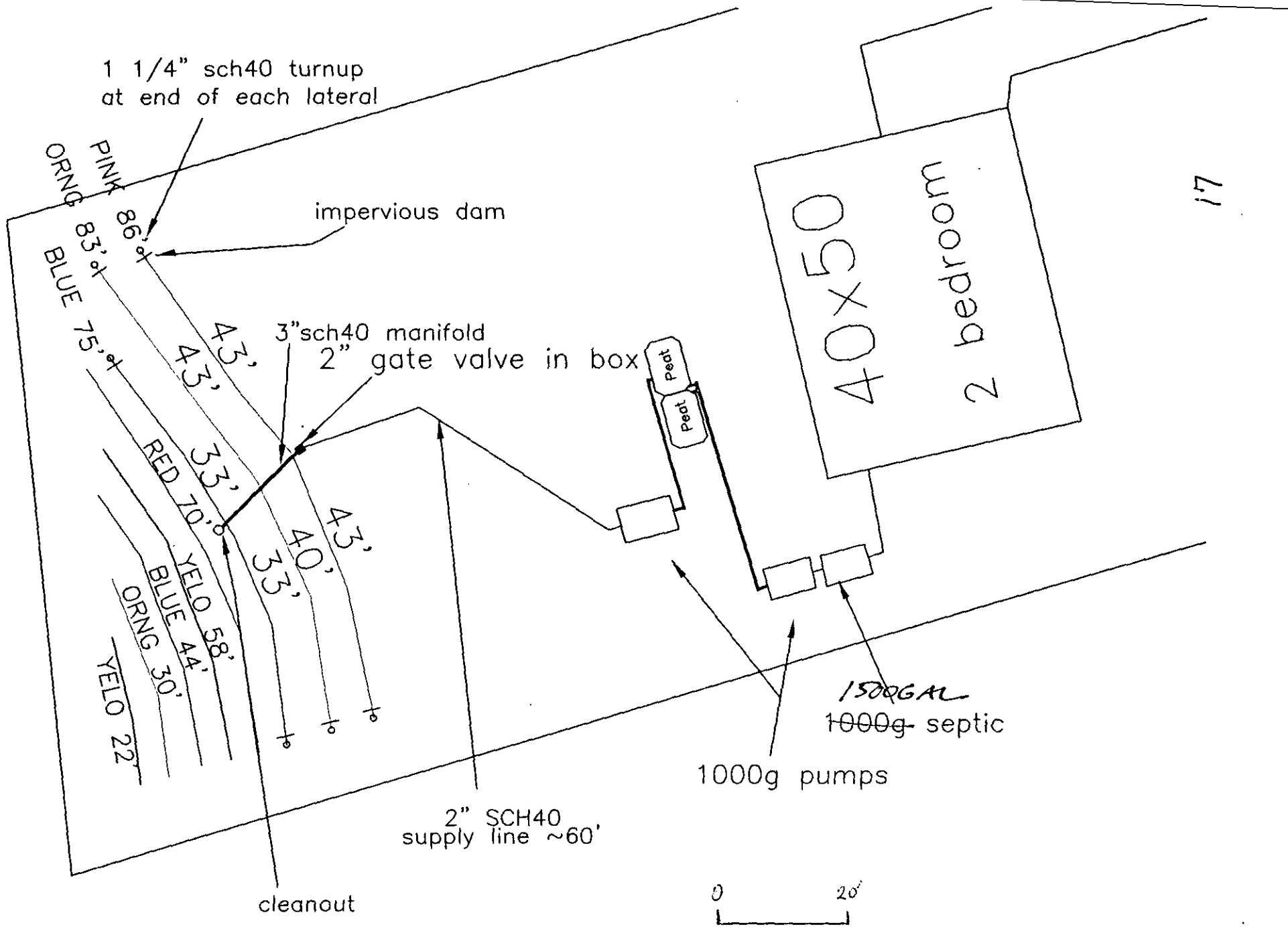
Project No. 5-1772

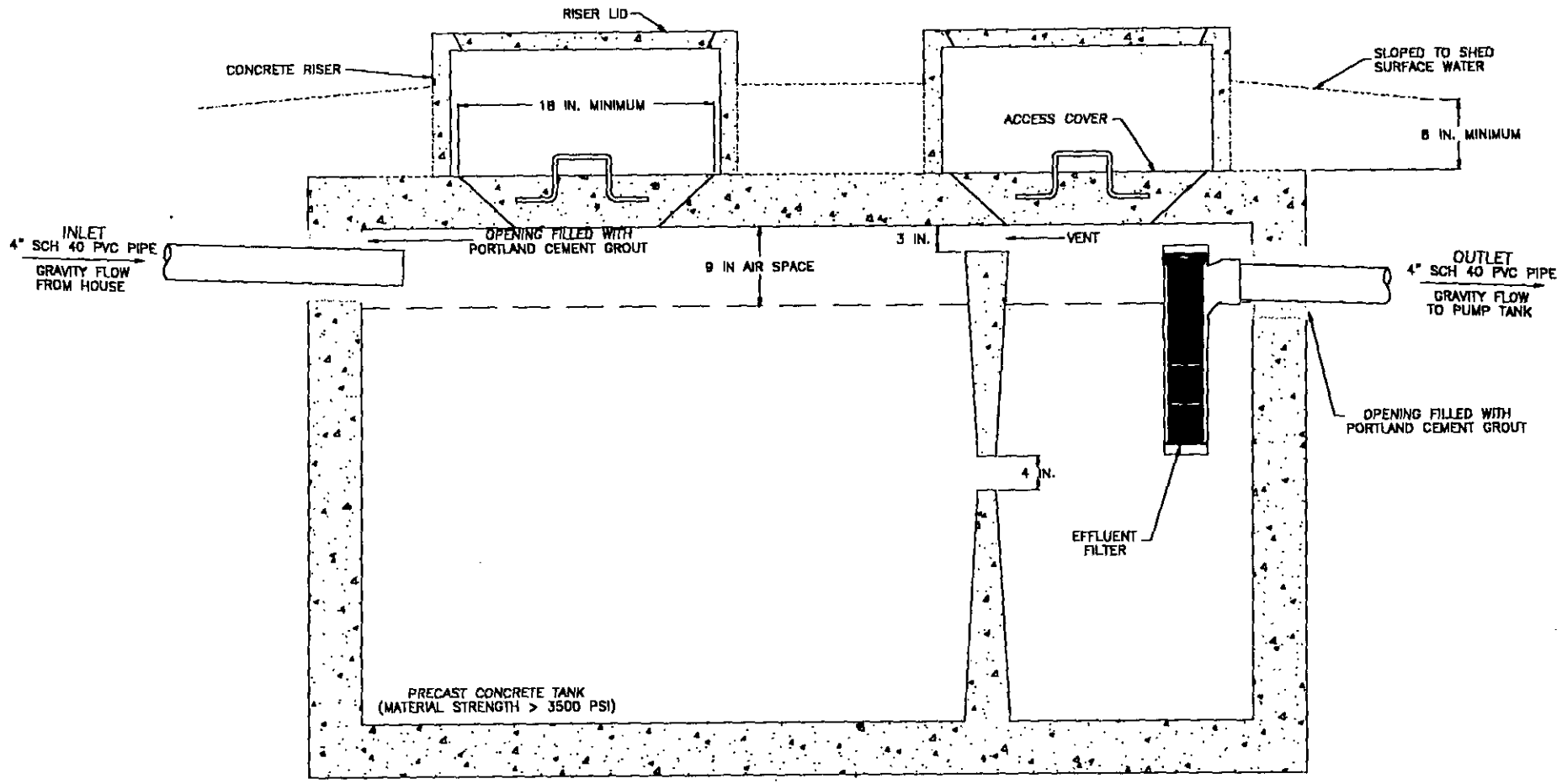
LAYOUT FOR 2 BEDROOM HOME — Sep-06

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH
TBM		1.8			100.0	
INSTR. 1			101.8			
1	YELLOW			2.40	98.2	22
2	ORANGE			3.30	97.3	30
3	BLUE			3.80	96.8	44
4	YELLOW			6.20	96.1	58
5	RED			6.50	95.3	70
6	BLUE			7.60	94.2	75
7	ORANGE			8.40	93.4	83
8	PINK			9.40	92.4	86
					Total	**468** ✓

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	DISTRIBUTION
SYSTEM	*235*	*0.21*	*PRETREAT LPP*	**LPP**
REPAIR	233	0.21	PRETREAT LPP	**LPP**

Notes:
** TBM located top of EIP
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS and FS indicate rod readings


1 1/4" sch40 turnup
at end of each lateral
PINK
ORNG
86'
83'
BLUE 75'
impervious dam
3"sch40 manifold
2" gate valve in box
43'
43'
33'
RED 70'
YELO 58'
BLUE 44'
ORNG 30'
YELO 22'
43'
40'
33'
Peat
Peat
40X50
2 bedroom
1500GAL
1000g septic
1000g pumps
2" SCH40
supply line ~60'
cleanout
0
20'



1500
~~1000~~ GALLON SEPTIC TANK

SHEET 1 OF 1

JOB NO. 0000	PROJECT NAME:
PROJECT MGR. KK	SHEET TITLE: SEPTIC TANK DIAGRAM
SCALE NTS	

S&EC Soil & Environmental Consultants, Inc.
244 West Millbrook Road ☐ Raleigh, North Carolina 27609 ☐ (919) 846-5900 ☐ Fax (919) 846-9467

02

PRETREATED, LPP SYSTEM FOR WASTEWATER TREATMENT FOR PUMP TANK #2 (TO DRAINFIELD)

Owner's name: KPL Partners (Dave Barbin) **Phone (H)**
Mailing address: PO Box 21234 **(W) 704 540-9995**
Charlotte, NC 28277
System location: 226 Bubbling Well Rd

Tax Map #: **Parcel**: **Town**: **County**: Mecklenburg
Source of Wastewater Flow: 2 Bedroom house
Estimated Daily Wastewater Production: 240 gpd
System Flow: 14.64 gpm

DESIGN PARAMETERS

TRENCH SPACING? 5' O.C.

Drainfield size: 235 linear feet
Depth of gravel in trench: 8"
Trench depth: 12"

Loading rate: 0.21 gpd/sq ft w/pretreat
Gravel size: 3, 4, 5, 57 or 6 ASTM D-448
Trench width: 12"

Septic tank size: ~~1000~~ 1500 gal
Supply line volume: 23 gal
Supply line length: 60 ft
Supply line diameter: 2"
Supply line pressure rating: sch 40
Supply manifold: 3" sch 40
Supply manifold length: 16 ft
Supply manifold volume: 6 gal
Recommended float controls: SJE Rhombus
Threaded union: in tank
Gate valves: 1 in tank, 1 at field

Pump tank size: 1000 gal
Pump tank dimensions: 48" lq. depth
Approx. pump tank drawdown: 6"
Combined lateral line volume: 18.3 gal
Dosing volume: 120 gal

Elevation head: 10 ft
Pressure head: 2 ft
Friction head: 3.5 ft
Total dynamic head: 15.5 ft

Check valves: 1 in tank
Anti-siphon hole: not needed
Recommended high water alarm: SJE Rhombus panel and floats,

Recommended Pump: Myers, effluent pump, ME series, ME 50, or approved equal.

Additional Comments:

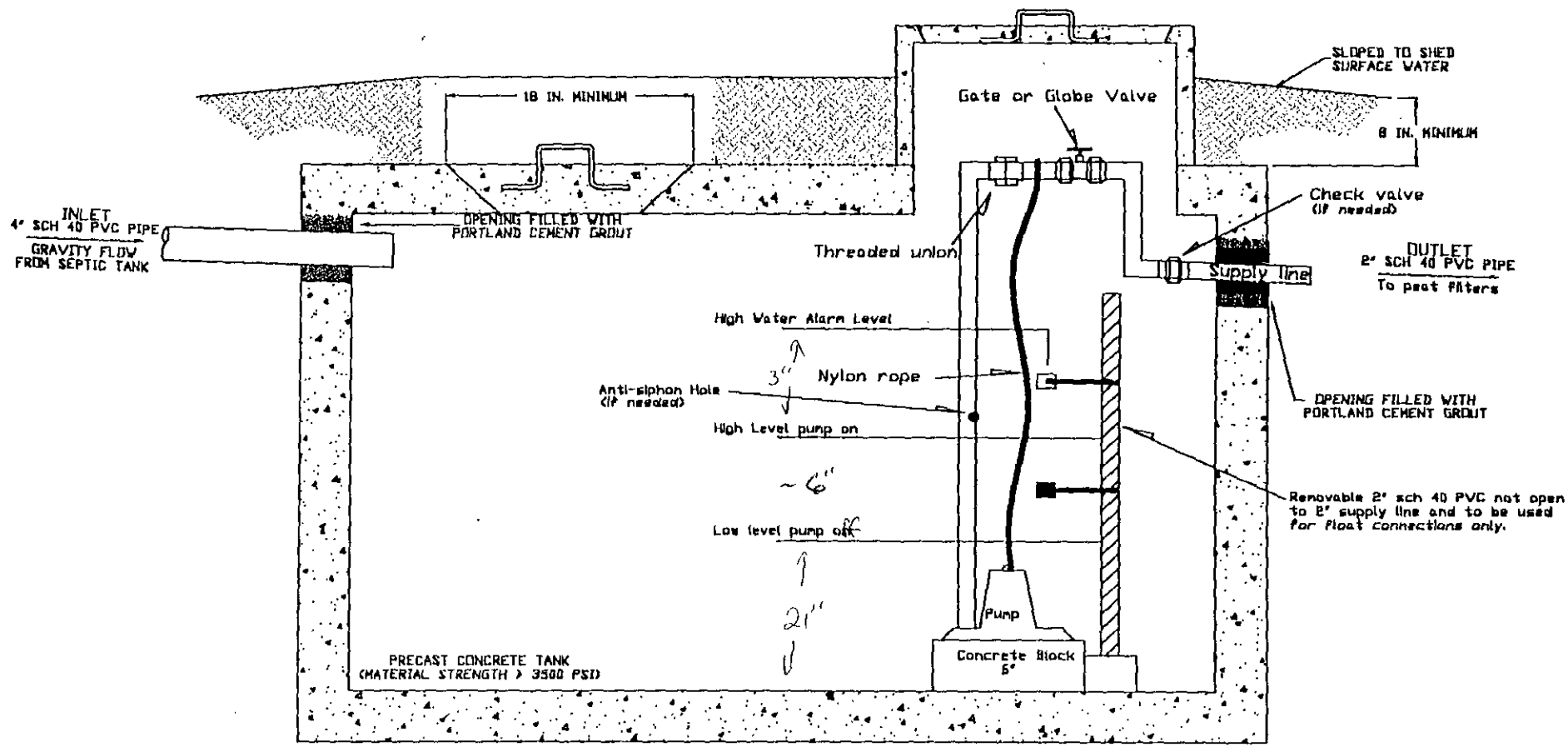
BUBBLING WELL

Lateral Number	Color	Elevation (ft)	Head (ft)	Hole size (in)	Flow per hole (gpm)	Length (ft)	Spacing (ft)	Number of holes	Flow per lateral (gpm)	Inst. flow rate (gpm/ft)
					FIELD	# 1				
1	blue	94.2	2	5/32	0.41	33	4.71	6	2.44	0.0740
2	blue	94.2	2	5/32	0.41	33	4.71	6	2.44	0.0740
3	orange	93.4	2.8	5/32	0.48	40	6.67	5	2.4	0.0600
4	orange	93.4	2.8	5/32	0.48	43	6.14	6	2.88	0.0670
5	pink	92.4	3.8	5/32	0.56	43	8.60	4	2.24	0.0521
6	pink	92.4	3.8	5/32	0.56	43	8.60	4	2.24	0.0521
									%change	29.61%
		total flow/min							14.64	
		pump run time		16.39	minutes					
		PROPOSED LTAR			0.21					
		SYSTEM LTAR			0.210					

TOTAL LATERAL LINE LENGTH = 235 ft

TOTAL SYSTEM FLOW = 14.64 gpm

TOTAL SYSTEM REDUCTION FROM LINE 1 TO LINE 6 = 30%



1000 GALLON PUMP TANK #2

SHEET 1 OF 1

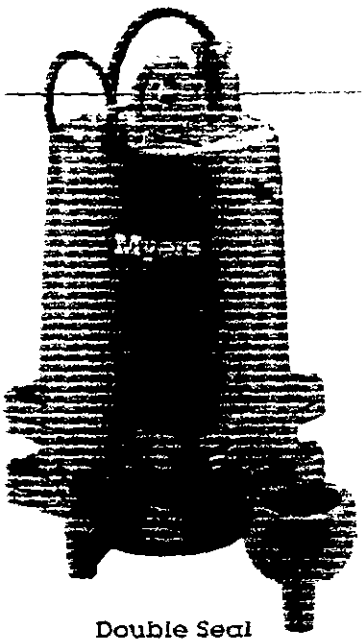
JOB NO.	PROJECT NAME	S&EC Soil & Environmental Consultants, Inc.
PROJECT MGR.	SHEET TITLE: PUMP TANK DIAGRAM	
SCALE: NTS		

26

ME SERIES

Pump tank #2 to field

1/2 through 1-1/2 HP
Effluent Pumps



Double Seal



Single Seal

THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS. The ME Series effluent pumps with their efficient two vane, enclosed impellers, provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

ADVANTAGES BY DESIGN

IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full ¾ inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage.
- Motors have on winding current and temperature sensitive overload. (Single phase only.)

THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

PRODUCT CAPAILITIES

Capacities To	120 GPM	454 LPM
Heads To	95 ft.	28.9 m
Max. Spherical Solids	¾ in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp.	up to 140° F	up to 60° C
Motor Electrical Data	1/2 HP 115 volts, 1 ph 1/2 to 1 1/2 HP 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil-filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130° C)	
Third Party Approvals	UL, CSA	
Acceptable pH Range	6-9	
Specific Gravity	9-1.1	
Viscosity	28-35 SSU	
Discharge NPT	2 in.	50.8 mm
Min. Sump Dia Simplex	24 in.	61 cm
Duplex	36 in.	91.4 cm
Construction Materials		
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76	
Enclosed Two Vane Impeller Standard	engineered thermoplastic	
Optional	bronze	
Impeller Wear Ring	304 SST	
Volute Sealing Ring	Buna-N	
Shaft	416 SST	
Power Cord		
1/2 HP 1 Ph	20 ft. 16/3 SJOW/SJOW-A	
3/4 - 1-1/2 HP 1 Ph	20 ft. 14/3 SJOW/SJOW-A	
All 3 Ph	20 ft. 14/4 SOW/SOW-A	
Shaft Seals Standard	single carbon & ceramic	
Optional	tandem carbon & ceramic	
Opt. Lower	tungsten carbide	
Fasteners	300 Series SST	

WHERE INNOVATION MEETS TRADITION

ISO 9001 Certified Company

Myers
PENTAIR PUMP GROUP

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ME SERIES

Pump table #2 to field

1/2 through 1-1/2 HP
Effluent Pumps

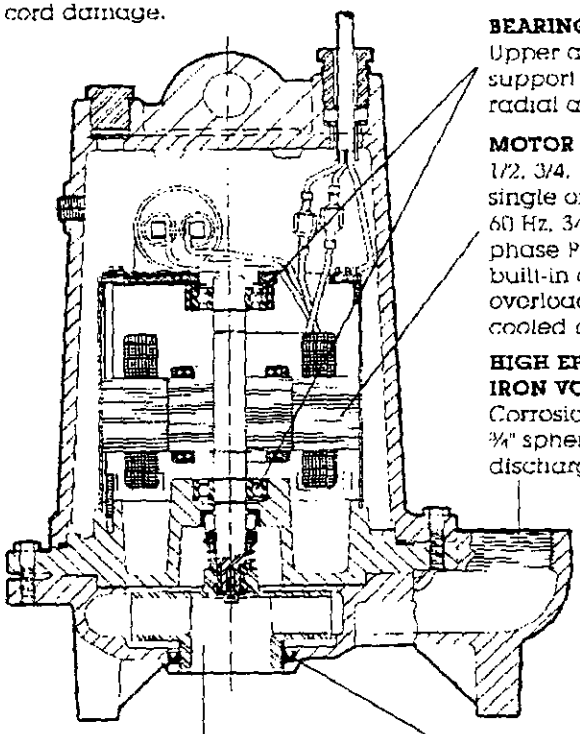
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

MOTOR HOUSING
Cast iron for efficient heat transfer and corrosion resistance.

BEARINGS
Upper and lower ball support rotor. Take radial and thrust loads.

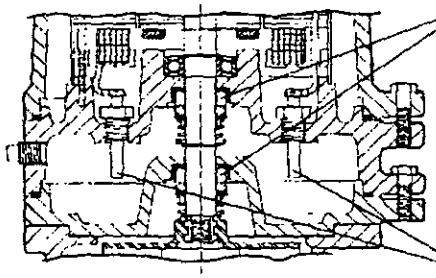
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

HIGH EFFICIENCY CAST IRON VOLUTE
Corrosion resistant. Passes ⅜" spherical solids. 2" NPT discharge.



ENCLOSED TWO VANE IMPELLER
high efficiency. Passes ⅜" spherical solids with stainless steel wear ring. Optional bronze construction available.

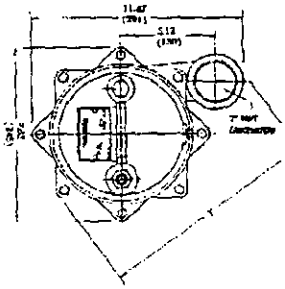
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.

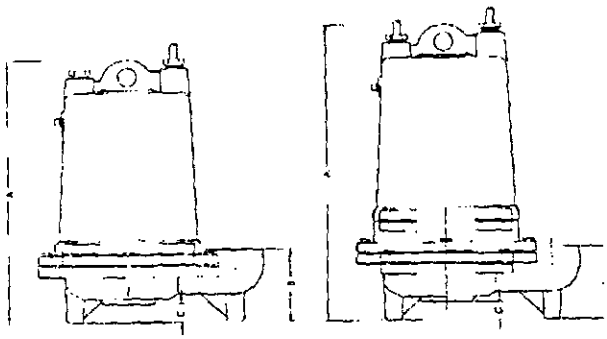


SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

SEAL LEAK PROBES
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light.

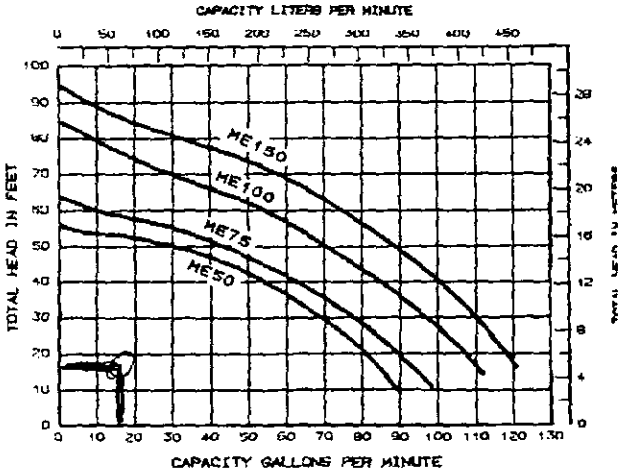
DIMENSIONS





Model Series	Inches (millimeters) A	B	C	F
ME50S	16.8 (427)	4.09 (104)	1.03 (26)	12.13 (308)
ME50D	18.6 (472)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

PERFORMANCE CURVE



K3320 9/98
Printed in U.S.A.

Myers

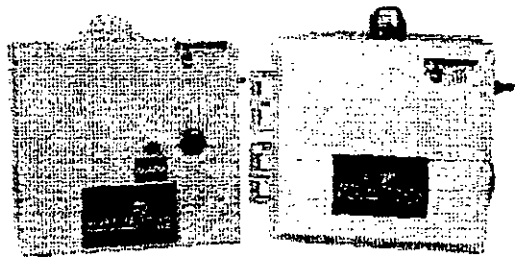
F. E. Myers, 1101 Myers Parkway, Ashland, Ohio 44805-1969
419/289-1144, FAX: 419/289-6658, www.femyers.com
Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5

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MODEL 112 Control Panel

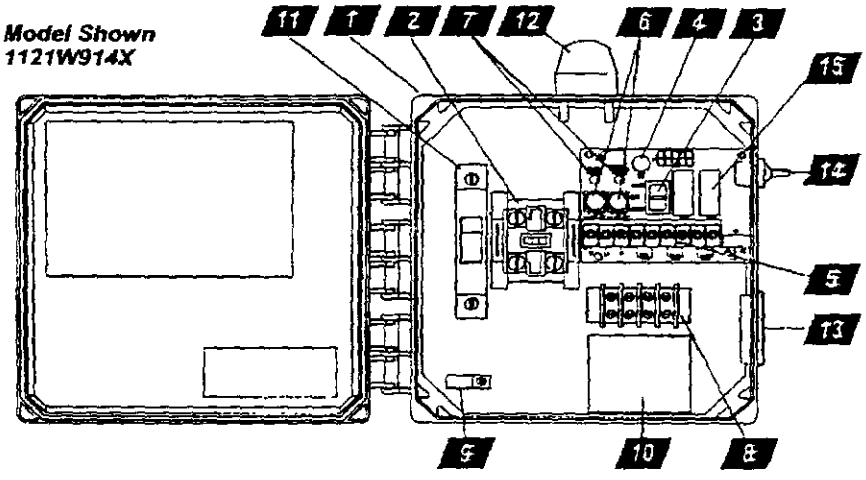
Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single-phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.



Indoor *Indoor/outdoor*

Model Shown
1121W914X



1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).

   * Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching hot electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
11. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.

STANDARD ALARM PACKAGE (other options available)

12. **Red Alarm Beacon** provides 360° visual check of alarm condition. **Note:** NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating). **Note:** NEMA 1 style utilizes an internally mounted buzzer (83 to 85 decibel) in lieu of horn.
14. **Exterior Horn Test/Normal/Silence Switch** allows alarm horn to be silenced and testing of horn and light to ensure proper operation of alarm system.
15. **Horn Silence Relay** automatically resets alarm after alarm condition has been resolved (mounted on circuit board).

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty

c UL us
LISTED

SJE Rhombus CONTROLS
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE / 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com



MODEL 112

ALARM PACKAGE
- 0 = select options or no alarm package
- 1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING
- I = Indoor, NEMA 1 (metal)
- W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE
- 1 = magnetic motor contactor 120/208/240V
- 9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS
- 0 = 0-7 FLA
- 1 = 8-15 FLA
- 2 = 16-20 FLA
- 3 = 21-30 FLA

PUMP DISCONNECTS
- 0 = no pump disconnect
- 1 = pull-out with safety deadfront in a 10"x8" enclosure
- 4 = circuit breaker

FLOAT SWITCH APPLICATION
- H or L = pump down or pump up
- X = no floats

OPTIONS *Listed below*

★ Options selected may increase enclosure size and change component layout.

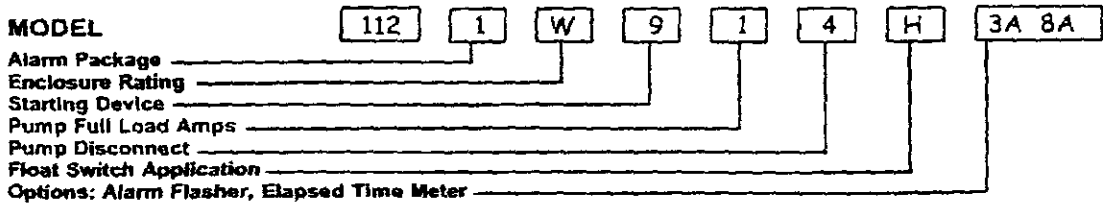
If additional features are required, call the factory for a quote on either a Pro-Line or Engineered Custom control panel system.

CODE	DESCRIPTION
1A	Red beacon only / no audio *must select 1E if floats included*
1C	Horn only / no visual *must select 1E if floats included*
1E	Alarm float
3A	Alarm flasher
★ 4A	Low level cutout *select option 4D if floats included*
★ 4B	Red low-level indicator & alarm *must select 4A also*
4D	Low-level float
6A	Auxiliary alarm contact, form C type
★ 8A	Elapsed time meter
★ 8C	Event (cycle) counter
10E	Lockable latch - NEMA 4X
10E	Lockable latch - NEMA 1
★10F	Lightning arrester
★10K	Anti-condensation heater

CODE	DESCRIPTION
11C	NEMA 1 alarm panel *must select option 6A*
11D	NEMA 4X alarm panel *must select option 6A*
15A	Control / alarm circuit breaker *Does not include the circuit board as in standard.*
16A	10' cord in lieu of 20'
16B	15' cord in lieu of 20'
16C	30' cord in lieu of 20'
16D	40' cord in lieu of 20'
17A	SJE SignalMaster® / mounting strap ●
17B	SJE SignalMaster® / externally weighted ●
17C	Sensor Float® / internally weighted ▲
17D	Sensor Float® / externally weighted ▲
17E	Sensor Float® Mini / pipe clamp ▲
17F	Sensor Float® Mini / externally weighted ▲
19X	Door mounted pump run indicator
21A	Pumpmaster® in lieu of on/off switches ●
21B	PumpMaster® Plus in lieu of on/off switches ●
21C	Super Single® in lieu of on/off switches ▲
21D	Double Float™ in lieu of on/off switches ▲

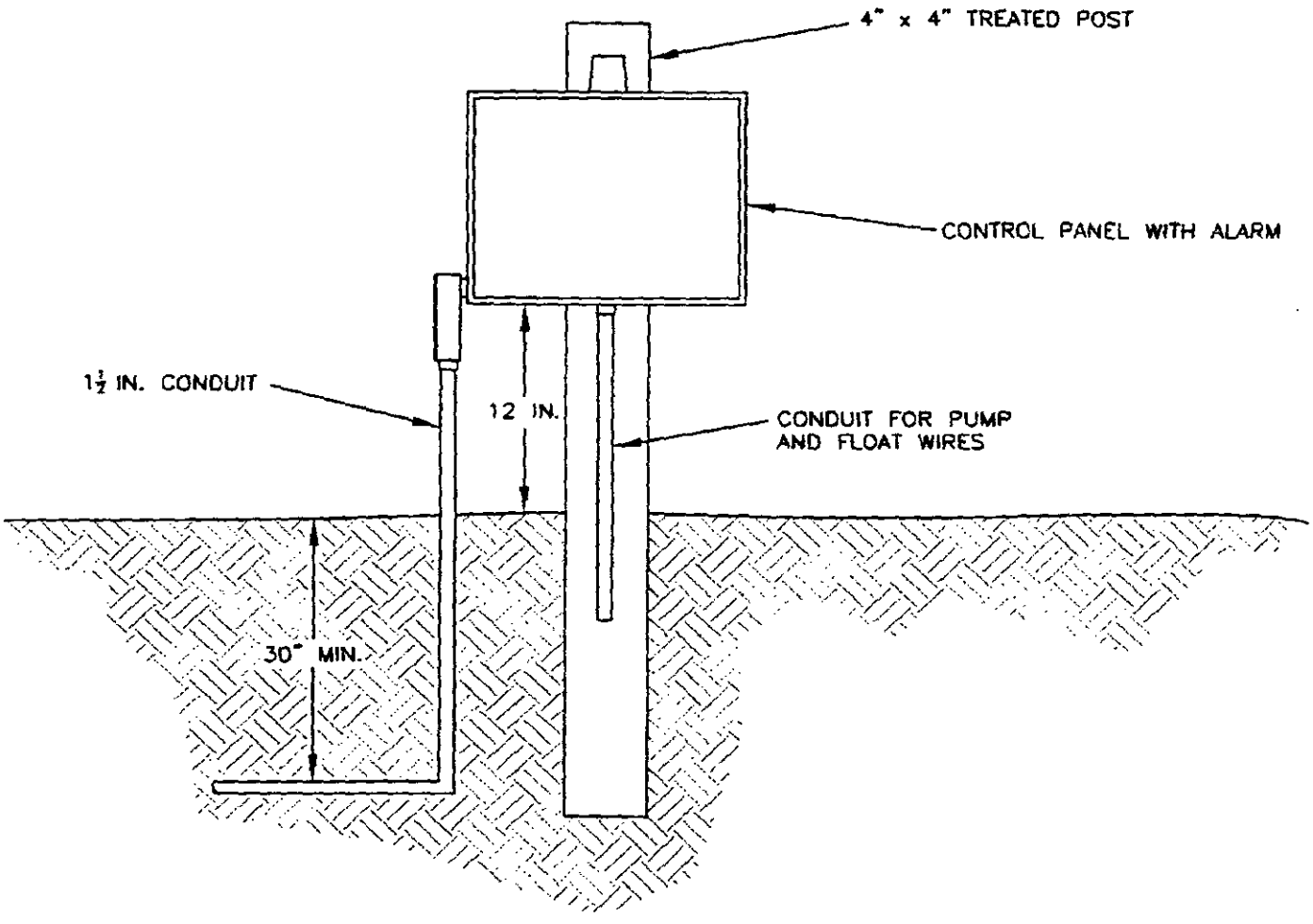
● Mechanically-activated ▲ Mercury-activated

SAMPLE



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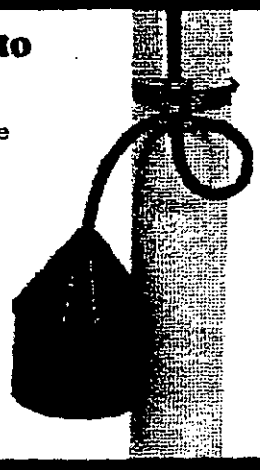
ELECTRIC BOX



NOTES: ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL COME. ALL WIRING SHALL BE #12 MINIMUM, AND RATED FOR DIRECT BURY. PROVIDE GROUNDING AS REQUIRED, AND PROVIDE 30" MINIMUM BURY ON CABLES. PROVIDE ONE 20 AMP, DOUBLE POLE, 230 VOLT CIRCUIT BREAKER (FOR PUMP), AND ONE 20 AMP, SINGLE POLE, 115 VOLT CIRCUIT BREAKER (FOR ALARM) IN MAIN PANEL.

SENSOR FLOAT® control switch

Mercury-activated, narrow-angle float switch designed to activate pump control panels and alarms.



This narrow-angle sensing device is used to accurately monitor liquid levels in sewage and non-potable water applications. The Sensor Float® control switch is not sensitive to rotation and is suitable for use with intrinsically safe circuits. Contact SJE-Rhombus regarding specific intrinsically safe applications.

Normally Open Model (high level)
The control switch turns on (closes) when the float tips slightly **above** horizontal signaling a high level, and turns off (opens) when the float drops slightly below horizontal.

Normally Closed Model (low level)
The control switch turns on (closes) when the float drops slightly **below** horizontal signaling a low level, and turns off (opens) when the float tips slightly above horizontal.

FEATURES

- Suitable for use with intrinsically safe circuits.
- Not sensitive to rotation.
- Control differential of .5 inches (1 cm) above or below horizontal.
- UL Listed for use in non-potable water and sewage.
- CSA Certified.
- Three-year limited warranty.

LR54245 LISTED 83N2

Hydraulic

OPTIONS

This switch is available:

- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters.
- with three mounting options that allow for flexibility in installation:

  Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

  Internally Weighted: for applications where the switch can be suspended from above.

  Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL,CSA) SJOW, water-resistant (CPE) jacket

FLOAT: 3.38 inch diameter x 4.55 inch long (8.58 cm x 11.56 cm), high-impact, corrosion resistant, PVC housing for use in sewage and non-potable water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

MERCURY TILT SWITCH: single pole, single throw, mercury-to-mercury contacts, hermetically sealed in a steel capsule and epoxy sealed in the float housing

ELECTRICAL: 5 amp, 120/230 VAC, 50/60 Hz

CONTROLS SJE Rhombus
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE (1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

Sensor Float® control switch installation instructions

⚠WARNING **ELECTRICAL SHOCK HAZARD**
Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠WARNING **EXPLOSION OR FIRE HAZARD**
Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

MOUNTING THE SWITCH

1. Place the cord into the clamp as shown in Figure B.
2. Locate clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. **Note:** Do not install cord under hose clamp.
3. Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
4. Bring cable leads back to control device and wire according to Figure C.
5. Check installation. Allow system to cycle to insure proper operation.

Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus supplier for replacements.

Figure A

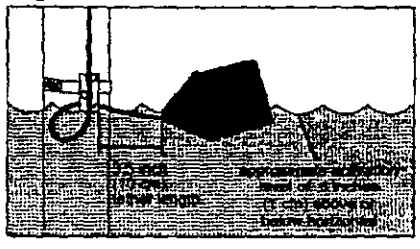
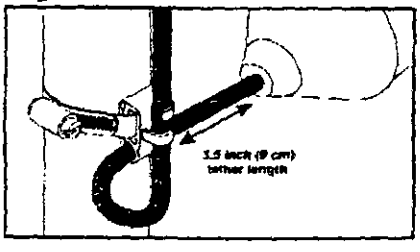


Figure B



INTERNAL WEIGHT

1. Determine desired activation level.
2. Suspend switch 7 inches (18 cm) below desired activation level as shown in Figure D. Switch remains partially submerged during the "on" tipping action. Switch can be totally submerged and still continue to operate properly.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Figure C - Wiring Diagram

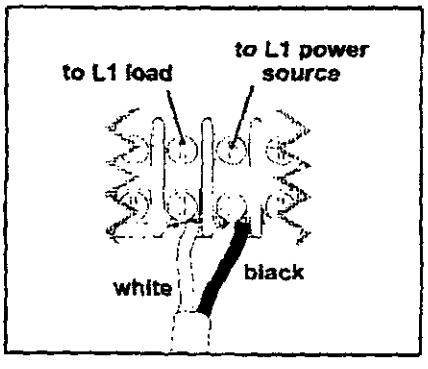
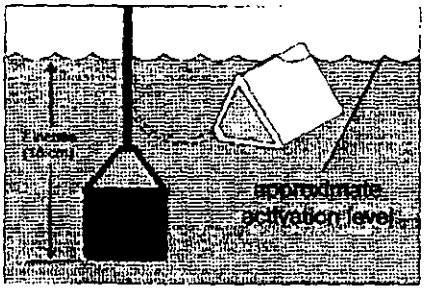


Figure D



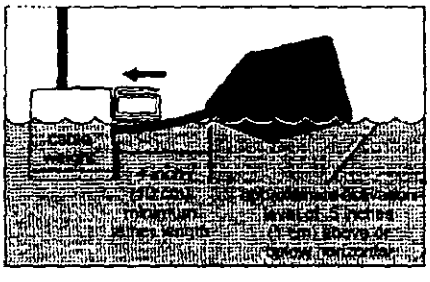
CABLE WEIGHT

1. Determine desired activation level.
2. Suspend switch and cable weight at desired activation level as shown in Figure E.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Cable weight is attached to switch cable at the factory. To adjust:

1. Release clip.
2. Adjust cable weight to desired position.
3. Lay switch cable in weight channel.
4. Align clip with weight channel and slide towards switch cable as shown in Figure E.
5. Snap clip snugly up to cable, moving clip to tightest possible position.

Figure E



CONTROLS
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SJ ELECTRO SYSTEMS, INC.
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1-888-DIAL-SJE (1-888-342-5753) ■ Phone: 218-847-1317 ■ Fax: 218-847-4617
e-mail: sjc@sjcrhombus.com

Instl. Instr. PN 1009646A
Cat. Page PN 1009509A

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Maintenance of Sewage Systems

15A NCAC 18A .1961 (b) states:

(b) System management in accordance with Tables V(a) and V(b) of this Rule shall be required for all systems installed or repaired after July 1, 1992. After July 1, 1992 system management in accordance with Tables V(a) and V(b) shall be required for all existing Type V and Type VI systems.

(1) After July 1, 1992, no Improvement Permit shall be issued for Type IV, Type V, or Type VI systems, unless a management entity of the type specified in Table V(b) is specifically authorized, funded, and operational to carry out this management program in the service area where the proposed system is to be located.

(2) A local health department may be a public management entity for systems classified Type IV, V(a) and V(b) only when specifically authorized by resolution of the local board of health.

(3) A contract shall be executed between the system owner and a management entity prior to the issuance of an Operation Permit for a system required to be maintained by a public or private management entity . The contract shall include the specific requirements for maintenance and operation, responsibilities of the owner and system operator, provisions that the contract shall be in effect for as long as the system is in use, and other requirements for the continued proper performance of the system. It shall also be a condition of the Operation Permit that subsequent owners of the system execute such a contract.

(4) Inspections of the system shall be performed by a management entity at the frequency specified in Table V(b). The management entity shall report the results of their inspections to the local health department at the specified reporting frequency. However, where inspections indicate the need for system repairs, the management entity shall notify the local health department within 48 hours in order to obtain an Improvement Permit for the repairs.

(5) The management entity shall be responsible for assuring routine maintenance procedures in accordance with the conditions of the Operation Permit and the contract.

(6) Sewage systems with multiple components shall be classified by their highest or most complex system type in accordance with Table V to determine local health department and management entity responsibilities.

(7) Sewage systems not identified in this Rule shall be classified by the Division of Environmental Health after consultation with the appropriate commission governing operators of pollution control facilities.

(8) The local health department shall routinely review the performance and operation reports submitted in accordance with Table V(b) of this Rule and shall perform an on-site inspection of the systems as required in Table V(a).

(9) Nothing in this Section shall preclude any requirements for system operators imposed in accordance with Article 3 of G.S. 90A.

Maintenance Responsibilities of Management Entity

System maintenance for Type IV and Type V a. (0-1500 GPD) systems as defined in 15A NCAC 18A .1961, Table V shall be performed in accordance with the following (Note: Results of inspections are to be reported to the Wake County Department of Health once per year and twice per year for Type IV and Type V a. systems, respectively):

System Component	Frequency	Maintenance
1. Septic Tank and Grease Trap (If so equipped)	6 months	Check riser condition (must be accessible from ground surface), excess in/exfiltration, entry of water at riser, and solids accumulation. Pump grease trap as needed.
	1-3 years	Pump septage (septage is to be pumped when 1/4 to 1/3 of liquid capacity is occupied by solids).
2. Pump or Dosing Tank	6 months	Check riser condition (must be accessible from ground surface), excess *in/exfiltration* , entry of water at riser, and solids accumulation. Pump sludge accumulation as required and when septic tank is pumped. Check pump(s), controls, floats, electrical connections, and alarm for proper operation. Measure delivery rate to disposal field. Wash (hose) sludge accumulation from pump housing. If so equipped, verify proper siphon function.
3. Sand Filter Pretreatment (If so equipped)	6 months	Any appropriate maintenance in item 2 above. Verify discharge and effluent quality from sand filter.
4. Supply lines (Manifold)	6 months	Check for settling, pipe exposure and leakage.
5. Distribution Devices	6 months	Check distribution boxes, valves, solenoids, etc. for proper function, leakage, and infiltration of surface or ground water into enclosures. Desludge and reset pressure head on pressure manifold. Remove sludge accumulation from all devices as required.
6. Ground Absorption field	1-4 weeks	Maintain vegetative cover (mow grass and remove weeds and brush, most grasses should be maintained at a height of 2-4 inches).
	6 months	Check for settling, erosion and surfacing of effluent. Repair any broken lateral turnups and make certain they are accessible from ground surface and are fitted with screw-on type caps. Lateral turn-ups must be sleeved for systems permitted after 1/1/90. For pressure distribution systems, check and reset pressure head and flush sludge from lateral lines (any discharge of sludge and effluent is to be treated with lime or chlorine solution). Check site drainage, eliminate low or settled areas and divert surface or shallow groundwater movement around fields.

7. General	At all times	Prohibit vehicular or equipment traffic on ground absorption field. Prohibit tillage (gardening) or other soil disturbance over ground absorption field. Practice water conservation to reduce waste water load on system. Do not permit entry of grease and non-domestic waste to system. Use of a garbage disposal is prohibited unless specifically permitted. Addition of chemical or biological additives has not been demonstrated to be necessary to maintain proper system function. Prevention of root intervention on lateral lines and trenches may be necessary on certain sites. Surface and groundwater diversion structures must be maintained.

Puraflo®

PEAT BIOFILTER *for Wastewater Treatment*

OPERATION & MAINTENANCE REFERENCE MATERIAL

For Single Family Systems

A. HOMEOWNER INFORMATION

Operation

The **Puraflo®** peat biofilter is a passive biological treatment system and as such there are no mechanical parts with the exception of the automatic pump and controls which dose the treatment modules. To assure the efficient operation of the **Puraflo®** system, it is important that the septic tank is well maintained and sludge carryover is avoided. Fire ants should be kept out of the treatment modules as the nests will allow the wastewater to short circuit or flow through without treatment. The measures recommended for a standard septic tank drainfield adsorption system also apply to the **Puraflo®** system which works on the same basic principles.

Maintenance Recommendations

Maintenance of the **Puraflo®** system itself is minimal and primarily involves the pump and alarm assembly. In the event of the alarm being activated, Bord na Móna typically request the installer/system operator to carry out routine maintenance as a matter of urgency (within 24 to 48 hours). To ensure optimum performance of the **Puraflo®** system, the following practices are recommended:

1. **Septic Tank**

   A well maintained septic tank is essential for most onsite treatment systems as the septic tank provides the first step in wastewater treatment. During a tank retention time of a day or more, the heavier solids settle to the bottom forming a sludge layer while the lighter solids, greases and oils float to the top to form a scum layer. The anaerobic conditions created in the septic tank by the scum layer allow anaerobic and facultative micro-organisms to break down (feed on) and reduce the sludge and scum volume. In this manner approximately 40 percent of sludge and scum volume can be reduced; however, the remaining solids accumulate in the tank and must be pumped out on a regular basis.

   The septic tank should be inspected every one to two years, depending on use, and desludged as required. The effluent filter installed with the **Puraflo®** system should be cleaned at the time of inspection. The inspection/desludging should be carried out by a certified septic tank contractor and should not be attempted by the homeowner.

   The septic tank should be desludged when the depth of sludge is greater than 1.5 feet. In a typical home, a sludge depth of 1.5 feet accumulates over two to three years. The importance of desludging can not be over-emphasized since the **Puraflo®** system is designed to treat effluent from a well functioning septic tank where a significant portion of insoluble solids have been allowed to settle out.

   A filter is installed on the septic tank outlet pipe to prevent the carryover of solids to the treatment system. If septic tank maintenance recommendations and practices are not followed and in particular, if large objects are disposed into the septic tank, the filter will clog causing wastewater to backup into the house.

2. **Pump Alarm**
   The indoor pump alarm should be checked on a monthly basis by briefly pushing the test switch on the alarm. This activates the audio alarm buzzer and visual alarm light for a short period before it reverts to its automatic position. If a control panel with outdoor alarm is used, there may not be an indoor alarm (outdoor panel may or may not have a test switch).

3. **Electrical Circuit Panel**
   In the event of an electrical storm or power failure, the circuit-breaker switches on the electrical lines feeding the **Puraflo®** pump and alarm should be checked to see if they tripped to the "off" position. If a circuit breaker switch is tripped, the power supply to the alarm/pump should be restored as soon as possible.

4. **Puraflo® Modules**
   No objects should be placed on top of the system as imposed loads can adversely effect the distribution and hence the performance of the system. Ideally, the modules should be camouflaged with plants and small shrubs; however, no soil or other obstruction should be placed within four inches from the top of the module where air is drawn into the system. Gaps between modules should remain covered with the cover plates provided to prevent accidents or damage to the system.

Homeowner Problem Checklist

DETECTION	CAUSE	ACTION
Experience slow flush but electrics are in good working order	1. Unacceptable level of solids in septic tank	1. Pump out septic tank and clean effluent filter
	2. Effluent filter blocked or matured (clogged naturally over time)	2. Pump out septic tank and clean effluent filter
Alarm sounds continuously and effluent level rises steadily in the pump tank - this can eventually lead to slow flush caused by sewage backing up and could eventually cause effluent to pond at the septic or pump tank	1. Pump failure due to circuit breaker switch being tripped to the off position by an electrical storm or power surge	1. Conserve water usage, reset circuit breaker and test the alarm - if the problem recurs call for maintenance
	2. Pump fails due to faulty system electrics or pump itself is faulty	2. Conserve water usage and call for maintenance
Alarm sounds periodically but resets itself (indicating that the pump is still operating)	1. High water usage above design capacity activates the alarm float switch	1. Reduce water usage to range within the design capacity -
Some alarms may not auto-reset themselves in which case it will not be possible to distinguish between an intermittent and continuos problem	2. Leaking plumbing fixtures	2. Repair leaking plumbing fixtures
	3. Leaking pump or septic tank	3. Repair leaks in septic or pump tank
	4. Broken timer or incorrect timer settings.	4. Conserve water usage and call for maintenance.
No alarm warning - effluent level rises continuously in the pump tank potentially leading to slow flush and/or effluent ponding around septic or pump tank	1. Pump and alarm failure due to circuit breaker switches being tripped to the off position by an electrical storm, power surge or power failure	1. Reset circuit breaker and test the alarm - if the problem recurs call for maintenance
	2. Pump and alarm fail concurrently due to faulty system electrics	2. Conserve water usage and call for maintenance

4D

To ensure optimum performance of the **Puraflo®** Peat Biofilter, the following Do's and Don'ts should be followed:

DO

- Conserve water to reduce the amount of wastewater that must be treated and disposed
- Repair any leaking faucets and toilets (very important)
- Maintain grass/vegetation around modules to prevent soil erosion (plants, shrubs and decking can also be used to enhance the look of the system)
- Keep ant nests out of the treatment modules by dosing externally with yard insecticides if necessary
- Only discharge biodegradable wastes into the system
- Divert down spouts 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
- Have the effluent filter hosed down when the septic tank is being desludged
- Call a professional when you have problems
- Compost your garbage or put it in the trash
- Test the pump alarm occasionally (as applicable) by briefly pushing the test switch on the alarm
- In the event of the alarm sounding after electrical storms or power failure, check if electrical circuit-breakers tripped off by first turning them off and the turn them back on again

DON'T

- Flush excessive amounts of grease, oil or fat into your septic system
- Dump excessive amounts of disinfectants or detergents (normal amounts will not harm the system)
- Allow storm water into your septic system (storm water drains should not be connected to the septic tank)
- Use additives (septic tank additives should not be introduced into the septic tank for grease reduction, stimulation of biological activity or other purpose)
- Use a garbage grinder
- Flush cigarettes, tea bags, sanitary napkins, tampons, disposable diapers, condoms and other non-biodegradable products capable of blocking pipes or filters into your system
- Dump solvents, oils, paints, thinners, pesticides or poisons down the drain which can disrupt the treatment process and contaminate the groundwater
- Dig in your drainfield or build anything permanent over it
- Plant anything over your drainfield except grass
- Drive over your drainfield or compact the soil in any way
- Attempt any homeowner maintenance to the septic tank, electrical controls or treatment modules
- Place heavy objects on top of the treatment modules
- Bury or cover the modules with soil as the treatment quality will suffer when vent holes are blocked

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Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 of 2
Property ID: 227-027-52, PO 227-027-53
Lot #: 7, PO 8
File #: 4198B
Code: 2

ACS

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Marilyn Slutsky & R. Bramblett
Applicant: Doug H. Swaim
Address: 6117 Turf Court, Gastonia, N. C. 28056
Date Evaluated: 11/9/2004
Proposed Facility: Residence
Design Flow (.1949): 480gpd
Property Size: .9a
Location of Site: Bubbling Well Road
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [x] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	SOIL MORPHOLOGY .1941 * .1941 Consistence Mineralogy	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	LS, 8	0-2	GR/SCL	FR/SEXP/SS/SP	>12" TO SOIL WETNESS	>12	N/A	NONE	US
		2-12	SBK/C	VFI/EXP/VS/VP					
2	LS, 12	0-4	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@32"	37	"	"	US, IV
		4-37	SBK/C	FI/SEXP/S/P					.225GPD/FT
3	"	0-8	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@35"	40	"	"	US, IV
		8-40	SBK/C	FI/SEXP/S/P					.25GPD/FT^2
4	LS, 10	0-6	GR/SCL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	"	"	PS, IV
		6-48	SBK/ABK/C	FI/SEXP/S/P					.3GPD/FT^2

Description	Initial System	Repair System
Available Space (.1945)	US	US
System Type(s)		
Site LTAR	.25GPD/FT^2	.225GPD/FT^2

Other Factors (.1946):
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Marlin, LSS, 11/10/2004, W. R. Marlin
Others Present:

Sheet:
FILE #: 4108B

COMMENTS:
100% repair, would need deep upslope subsurface interceptor drain

Landscape Position	Group	Texture	1955 LTAR
R-Ridge	I	S-Sand	1.2 - 0.8
SS-Shoulder Slope		LS-Loamy Sand	
LS-Linear Slope			
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6
NS-Nose Slope		L-Loam	
HS-Head Slope			
CC-Concave Slope	III	SI-Silt	0.6 - 0.3
CV-Convex Slope		SICL-Silty Clay Loam	
T-Terrace		CL-Clay Loam	
FP-Flood Plain		SCL-Sandy Clay Loam	
	IV	SC-Sandy Clay	0.4 - 0.1
		SIC-Silty Clay	
		C-Clay	

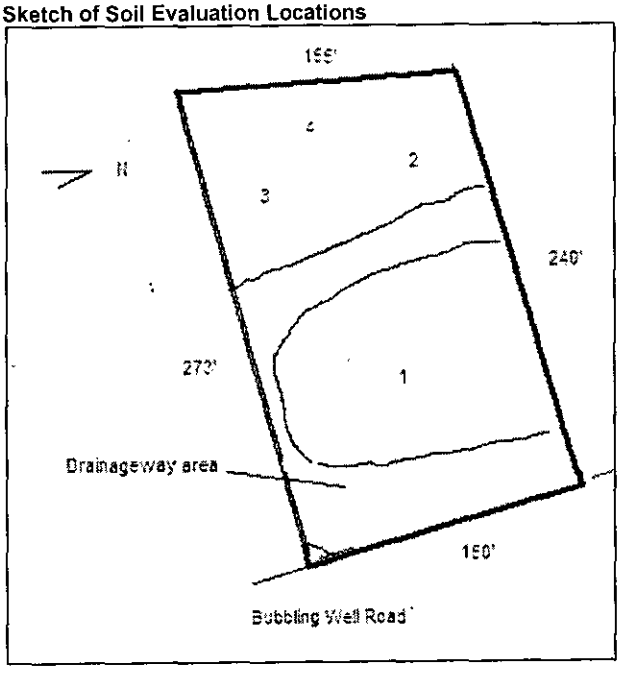
Structure
SG-Single Grain
M-Massive
CR-Crumb
GR-Granular
SBK-Subangular Blocky
ABK-Angular Blocky
PL-Platy
PR-Prismatic

Consistence
Moist
VFR-Very Friable
FR-Friable
FI-Firm
VFI-Very Firm
EFI-Extremely Firm

Consistence
Wet
NS-Non-Sticky
SS-Slightly Sticky
S-Sticky
VS-Very Sticky
NP-Non-Plastic
SP-Slightly Plastic
P-Plastic
VP-Very Plastic

Mineralogy
SEXP-Slightly Expansive
EXP-Expansive

Sketch of Soil Evaluation Locations



FEE: $200.00 CK# 233 | DATE: 11/2/04 GC

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

#1916 I J CRT

TYPE APPLICATION: __ NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT,
HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

FILE #: 4198D

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 22702752

STREET ADDRESS: BUBBLING WELL RD.

SUBDIVISION OR MOBILE HOME PARK NAME: SARDIS GROVE

LOT NUMBER: #7

TYPE OF BUILDING (CHECK ONE):

__ SINGLE MOBILE HOME(S) __ MODULAR HOME (M)
__ DOUBLE WIDE (D) __ MULTIPLE FAMILY (U)
X HOUSE (H) __ OTHER (O)

TOWNSHIP (CHECK ONE):

__ 0 MECKLENBURG __ 4 PINEVILLE
__ 1 CHARLOTTE X 5 MATTHEWS
__ 2 DAVIDSON __ 6 HUNTERSVILLE
__ 3 CORNELIUS __ 7 MINT HILL

HEATED SQUARE FOOTAGE: APPROX. 2400

NUMBER OF BEDROOMS: ~~X~~ 2 NUMBER OF OCCUPANTS: ~~X~~ 4

CLOSING DATE 12/1/04

FOUNDATION FOR RESIDENCE:

__ WITHOUT BASEMENT ON SLAB __ WITH BASEMENT /PLUMBING
X CRAWL SPACE __ WITH BASEMENT /NO PLUMBING

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: __ YES X NO TYPE: _____

WATER SUPPLY (CHECK ONE): __ COMMUNITY (C) X MUNICIPAL (M) __ PRIVATE WELL (P)
__ SHARED WELL (S) __ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES X NO
EXISTING WASTEWATER SYSTEMS __ YES X NO
EASTMENTS OR RIGHT-OF-WAYS X YES __ NO
WELL, SPRINGS OR WATERLINES __ YES X NO
DESIGNATED WETLANDS __ YES X NO
WET WEATHER CREEK

PROPERTY OWNER:

NAME: SLUTSKY MARILYN F. (ET AL)
(LAST) (FIRST) (MI)

ADDRESS: 6117 TURF CT.

CITY: GASTONIA STATE: NC ZIP: 28056

DAYTIME PHONE: (704) 865 - 0557

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: SWAIM DOUG H.
(LAST) (FIRST) (MI)

DAYTIME PHONE: (704) 442 - 8888

SEE ATTACHED AGENCY NOTE

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 1/18/63 OR BEFORE WITH ORIGINAL ~~BOUNDARY~~

An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: Doug H. Swaim DATE: 10/29/04

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION

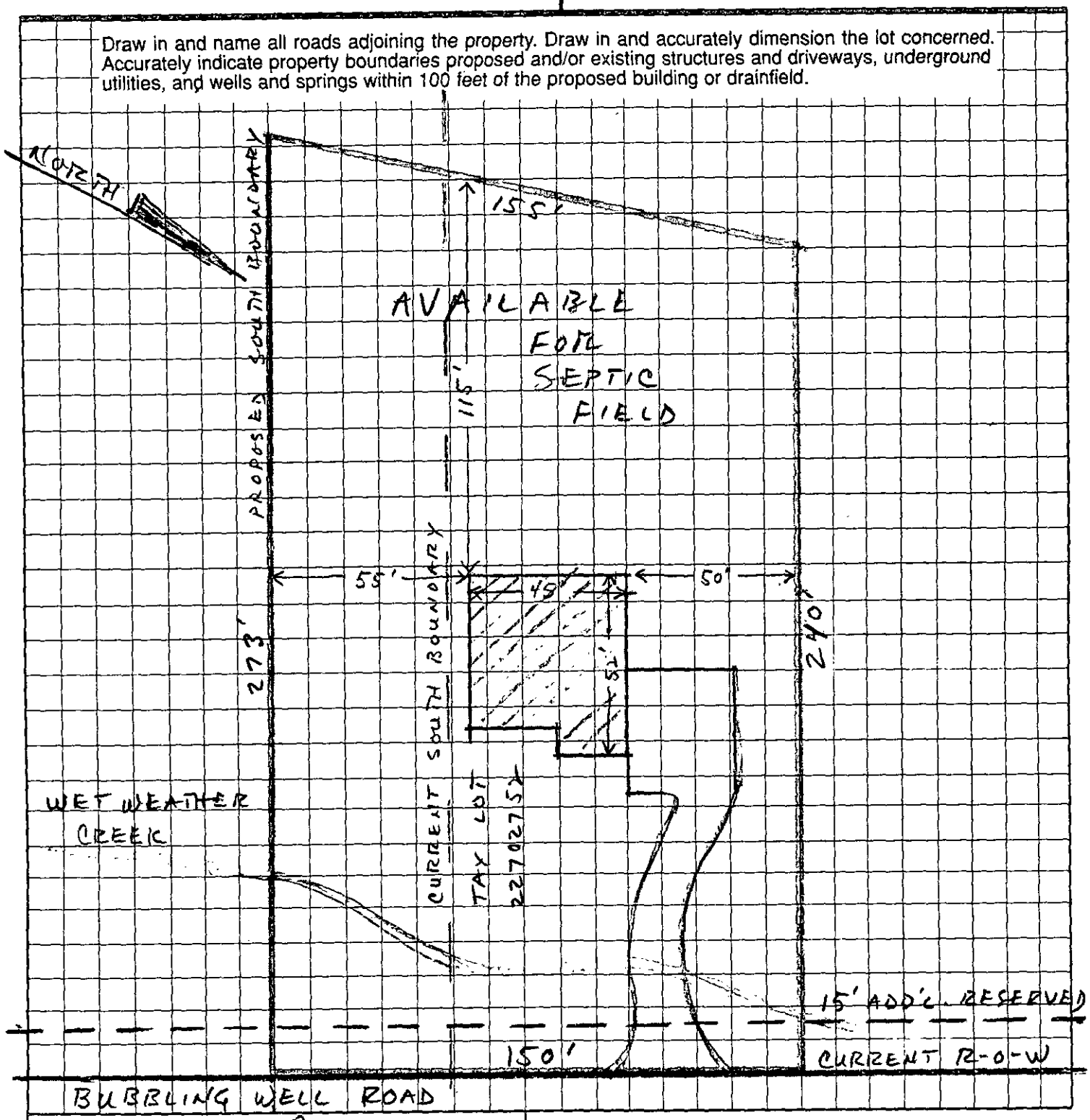
PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 4198

TC: 227-027-52

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



Doug H. Swann
OWNER/AGENT SIGNATURE

DATE 10/29/04

APPROVAL DATE _____

White - Health Department's Copy Canary - E.H.S. Copy Pink - Owner's Copy

Doug H. Swaim
1725 Wandering Way Drive
Charlotte, NC 28226
Tel: 704-442-8888
Cell: 704-488-4919
E-mail: d.swaim@earthlink.net

October 29, 2004

COVER NOTE FOR
APPLICATIONS FOR RESIDENTIAL WASTEWATER SYSTEM APPROVAL

Sirs:

I am submitting applications for approval of septic systems for two side-by-side lots on Bubbling Well Rd. in Matthews, tax lots 22702752 and 22702753. They are part of the Sardis Grove subdivision which was originally platted in 1955 with 100'-wide lots on the west side of Bubbling Well. At some point—1975 or earlier—two of the 100' lots were combined to form tax lot 22702753 with 200' frontage. I am proposing to combine that lot with the adjacent 100' lot (22702752) and re-subdivide into two 150' lots. Please help me determine the options available to me as I explore the feasibility of building single-family homes on each of the lots.

My first preference would be to create the two 150' lots as described above and build four-bedroom houses on each. At Bill Marlin's suggestion, I have completed the application forms based on this scenario.

However, I realize approval of this scenario depends both on how you apply the 100% repair rule and the availability of sufficient suitable soil. If you cannot approve the applications as submitted, please help me consider the following alternatives:

1. If 100% repair becomes an issue, what is the maximum I could build on each lot if I leave the boundaries "as is". Existing boundaries are pre-1983.
2. If 100% repair is not an issue, but the soil won't support four-bedroom homes, then what will it support?

I will do my best to have current and proposed boundaries clearly flagged, as well as the corners of the proposed houses, as described in the applications. If it would be helpful, I can also meet you at the site and help you get oriented. Just give me a call.

Thank you very much for your assistance exploring the possibilities for these lots.

Sincerely,

Doug H. Swaim

PERMISSION TO ENTER LAND

TO WHOM IT MAY CONCERN:

This is to confirm that I represent the owners of Lot 7 of the Sardis Grove subdivision on Bubbling Well Road in Matthews (GIS #22702752), and that I hereby give Mr. Doug Swaim and his agents permission to enter this property for the purpose of conducting soil tests and other investigations associated with determining the viability of building a single-family residence on the property. Such permission is granted between now and December 1, 2004.

In confirmation, signed:

Marilyn F. Slotsky 10/26/04

Marilyn F. Slotsky Date

FEE: 200.00 CK 4183
DATE: 2/4/02

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

[ ] CRT

TYPE APPLICATION: ✓ NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

FILE #: 4198B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 22702752

STREET ADDRESS: Lot 7 Bubblingwell Rd

SUBDIVISION OR MOBILE HOME PARK NAME: N/A

LOT NUMBER: 7 BB

TOWNSHIP (CHECK ONE):

__ 0 MECKLENBURG
__ 1 CHARLOTTE
__ 2 DAVIDSON
__ 3 CORNELIUS
__ 4 PINEVILLE
✓ 5 MATTHEWS
__ 6 HUNTERSVILLE
__ 7 MINT HILL

CLOSING DATE 2-28-2002

TYPE OF BUILDING (CHECK ONE):

__ SINGLE MOBILE HOME(S)
__ DOUBLE WIDE (D)
✓ HOUSE (H)
__ MODULAR HOME (M)
__ MULTIPLE FAMILY (U)
__ OTHER (O)

HEATED SQUARE FOOTAGE: 2000

NUMBER OF BEDROOMS: 4 NUMBER OF OCCUPANTS: 4

FOUNDATION FOR RESIDENCE:

✓ WITHOUT BASEMENT ON SLAB
__ CRAWL SPACE
__ WITH BASEMENT /PLUMBING
__ WITH BASEMENT /NO PLUMBING

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:
N/A - New home to be built

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: __ YES ✓ NO TYPE: _____

WATER SUPPLY (CHECK ONE):
__ COMMUNITY (C) ✓ MUNICIPAL (M) __ PRIVATE WELL (P)
__ SHARED WELL (S) __ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES ✓ NO
EXISTING WASTEWATER SYSTEMS __ YES ✓ NO
EASTMENTS OR RIGHT-OF-WAYS __ YES ✓ NO
WELL, SPRINGS OR WATERLINES __ YES ✓ NO
DESIGNATED WETLANDS __ YES ✓ NO
vacant land

PROPERTY OWNER: Arthur + Esther Frank

NAME: Webb Byron J (Purchaser)
(LAST) (FIRST) (MI)

ADDRESS: of Property Lot 7 Bubblingwell Rd

CITY: Matthews STATE: NC ZIP: 28105

DAYTIME PHONE: (704) 708-9372

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME:
(LAST) (FIRST) (MI)

DAYTIME PHONE: ( ) -

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? Existing deed: 7/1/2000

An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: Byron J. Webb DATE: 1/31/02

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: _____

TC: _____

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.

SEE
ATTACHED SURVEY
WITH HOUSE PROPOSAL

Michelle D. Hughes
OWNER/AGENT SIGNATURE

DATE 2-1-2002

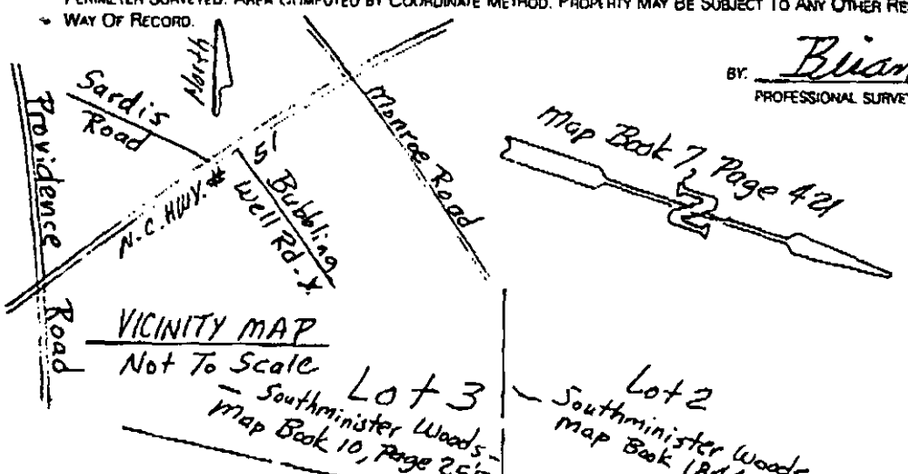
APPROVAL DATE _____

White - Health Department's Copy Canary - E.H.S. Copy Pink - Owner's Cop

THIS IS TO CERTIFY THAT ON THE 4th DAY OF October 99, I SURVEYED THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE PROPERTY LINES AND IMPROVEMENTS ARE SHOWN HEREON. THE RATIO OF PRECISION AS CALCULATED IS 1: 20,000 Ft. + OF PERIMETER SURVEYED. AREA COMPUTED BY COORDINATE METHOD. PROPERTY MAY BE SUBJECT TO ANY OTHER RESTRICTIONS, EASEMENTS AND/OR RIGHTS-OF-WAY OF RECORD.

BY: Brian A. McRorie
PROFESSIONAL SURVEYOR STATE OF NORTH CAROLINA NO. 3712

NORTH CAROLINA PROFESSIONAL SEAL L-3712 LAND SURVEYOR BRIAN A. McRORIE



VICINITY MAP
Not To Scale

Lot 3 – Southminister Woods – Map Book 10, Page 255

Lot 2 – Southminister Woods Map Book 1844, Page 637

N.04-36-05W. 100.77'

21.08'

Old Iron Pipe

Old Iron Rebar 0.68' inside line

Old Iron Pipe

N. 10-49-45W. 80.50' (Tie)

Old Iron Pipe

264.84'

N.73-10-40E.

Lot 7
Block "B"
0.579 Acres (Total)

Lot 8

Lot 6

Subject home

S.73-25-45W.

NOTE: Bubbling Well Road Is Subject To Additional R/W on our side.

244.64'

Iron Rebar set

Open Drainage Ditches

S.16-10-00E. 199.40'

15' Reserved (Per Record Map)

Old Iron Rod

Original R/W

to Old Iron Pipe (Tie)

S 0°66'30 00-01-91"S (State Road #3476)

792.70' to Original R/W HWY. #51 (Per Record Map)

45' Original R/W

BUBBLING WELL ROAD
– Asphalt Paved –

Original R/W

Boundary SURVEY OF

LOT IN Charlotte TOWNSHIP MECKLENBURG COUNTY, NORTH CAROLINA IN THE CITY OF Charlotte

ON Bubbling Well Road HOUSE NO. _____ SHOWN AS LOT NO. 7 IN BLOCK NO. "B"

ON MAP OF Sardis Grove MAP RECORDED IN BOOK 7 PAGE 421

DEED RECORDED IN BOOK _____ PAGE _____ OFFICE OF THE REGISTER OF DEEDS FOR MECKLENBURG COUNTY, N.C.

THE PROPERTY OF Arthur B. Frank and wife, Esther R. Frank

TO BE CONVEYED TO _____

SCALE 1" = 40 FT.

DATE 10-28 19 99

BRIAN A. McRORIE, LAND SURVEYOR
5312 REA ROAD
CHARLOTTE, NC 28226
TELE: (704) 752-0800

LEGEND

R/W	= RIGHT-OF-WAY	←→	= BROKEN SCALE
C/L	= CENTERLINE	P/L	= PROPERTY LINE
REC.	= RECORD MAP OR DEED DESCRIPTION	U.G.U.	= UNDERGROUND UTILITIES

N000714

Mecklenburg County
Health Department

June 2, 2000

Re: Lot 7 Bubbling Well Road
File: 4198B
Parcel: 227-027-52

Arthur B. Frank
6604 Gaywind Drive
Charlotte, NC 28226

Dear Mr. Frank:

Receipt of your Application for Improvement Permit for the above referenced property is acknowledged. A soil evaluation and a site visit have been conducted. The results of the evaluation indicated that the site is **UNSUITABLE** under Rules: **.1941 Mineralogy, .1942 Soil Wetness, .1943 Soil Depth, .1945 Available Space**

A site classified as **UNSUITABLE** may be used for a ground absorption sewage treatment and disposal system specifically identified in Rules .1955, .1956, and or .1957 of this Section or a system approved under Rule .1969 if written documentation, including engineering, hydrogeologic, geologic or soil studies, indicates to the local health department that the proposed system can be expected to function satisfactorily. Such sites shall be reclassified as **PROVISIONALLY SUITABLE** if the local health department determines that the substantiating data indicate that:

(1) a ground absorption system can be installed so that the effluent will be non-pathogenic, non-infectious, non-toxic, and non-hazardous;
(2) the effluent will not contaminate ground or surface water; and
(3) the effluent will not be exposed on the ground surface or be discharged to surface waters where it could come in contact with people, animals, or vectors.

The State shall review the substantiating data if requested by the local health department.

Please be advised that you have the right to an informal review by this department. You also have the right to appeal under G.S. 130A-24, and to have the appeal held in Mecklenburg County.

If you have any questions regarding this matter, please call me at 336-5569.

Sincerely,

Joshua R. Sellers R.S.

Joshua R. Sellers R.S.
Mecklenburg County Health Department
Individual Water and Wastewater Section

Cc:Connie Nuttall
Enclosures

DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

#2

Sheet: _____
Property ID: 227-021-52
Lot #: 7
File #: 4198B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Archer B. Frank
APPLICANT: Connie Russell
ADDRESS: 6604 Hayward Dr., Charlotte
DATE EVALUATED: 2-18-00
PROPOSED FACILITY: residence
PROPOSED DESIGN FLOW (.1949) 440 gpd
PROPERTY SIZE: .57
LOCATION OF SITE: Bubbling Well Road
PROPERTY RECORDED: _____

WATER SUPPLY: ☐Private ☑Public ☐Well ☐Spring ☐Other _____

EVALUATION METHOD: ☐~~Augur~~ Boring ☐Pit ☐Cut

TYPE OF WASTEWATER: ☐Sewage ☐Industrial Process ☐Mixed

PROFILE #	Slopes 6-15% .1940 Landscape Position/ Slope %	Horizon Depth (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	OTHER PROFILE FACTORS .1943 SOIL DEPTH	OTHER PROFILE FACTORS .1956 SAPRO CLASS	OTHER PROFILE FACTORS .1944 RESTR HORIZ	PROFILE CLASS &LTAR
1	LS	0-3"	gr/cl	Fr/SE XPl SS/SP	31" TO soil wetness	31"	N/A	None	~~PS~~ US .391 fr IV
		3-27"	SBK/c	Fi/SE XPl S/P					
		27-31"	SBK/cl	Fr/SE XPl SS/SP					
2	LS	0-4"	gr/cl	Fr/SE XPl SS/SP	39" TO soil wetness	39"	N/A	None	PS .391 fr IV
		4-35"	SBK/c	Fi/SE XPl S/P					
		35-39"	SBK/cl	Fr/SE XPl SS/SP					
3	LS	0-6"	gr/cl	Fr/SE XPl SS/SP	49" TO soil wetness	49"	N/A	None	PS .391 fr IV
		6-49"	SBK/c	Fi/SE XPl S/P					
4	R	0-3"	gr/sl	Fr/SE XPl SS/SP	2.5Y7/1 @ 8"	37"	N/A	None	US
		3-37"	SBK/sc	VF:/MIXED ~~SE XPl~~ US/UP					
5	R	0-4"	gr/sl	Fr/SE XPl ~~SS/P~~ NS/NP	2.5Y6/1 @ 7"	20"	N/A	None	US
		4-20"	SBK/sc	VF:/MIXED/US/UP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	US	
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): Unsuitable
EVALUATED BY: W. R. Marlin LSS 2-21-00
OTHER(S) PRESENT: _____

FILE # 41983

COMMENTS Do not think lot is WCR Repair

LANDSCAPE POSITION	GROUP	TEXTURE	.1955 LTAR	CONSISTENCE MOIST	CONSISTENCE WET
R-RIDGE	I	S-SAND	1.2-0.8	VFR-VERY FRIABLE	NS-NON-STICKY
S-SHOULDER SLOPE		LS-LOAMY SAND		FR-FRIABLE	SS-SLIGHTLYSTICKY
L-LINEAR SLOPE				FI-FIRM	S-STICKY
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.8-0.6	VFI-VERY FIRM	VS-VERY STICKY
N-NOSE SLOPE		L-LOAM		EFI-EXTREMELY FIRM	NP-NON-PLASTIC
H-HEAD SLOPE					SP-SLIGHTLYSTICKY
CC-CONCLAVE SLOPE	III	SI-SILT	0.6-0.3		P-PLASTIC
CV-CONVEX SLOPE		SICL-SILTY CLAY LOAM			VP-VERY PLASTIC
T-TERRACE		CL-CLAY LOAM			
FP-FLOOD PLAIN		SCL-SANDY CLAY LOAM			
	IV	SC-SANDY CLAY	0.4-0.1		
		SIC-SILTY CLAY			
		O-ORGANIC			

STRUCTURE

SG-SINGLE GRAIN
M-MASSIVE
CR-CRUMB
GR-GRANULAR
SBK-SUBANGULAR BLOCKY
ABK-ANGULAR BLOCKY
PL-PLATY
PR-PRISMATIC

MINERALOGY

SLIGHTLY EXPANSIVE

EXPANSIVE



FEE: [redacted]
DATE: [redacted]

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

200.00 OK # 464
2-11-00
ORW
[ ] CRT

TYPE APPLICATION: ✓ NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

FILE #: N/A 4/1988

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION: N/A

TAX/PARCEL NUMBER: 22702752

STREET ADDRESS: Bubbling Well Road

TYPE OF BUILDING (CHECK ONE): VACANT LOT

__ SINGLE MOBILE HOME(S) __ MODULAR HOME (M)
__ DOUBLE WIDE (D) __ MULTIPLE FAMILY (U)
__ HOUSE (H) __ OTHER (O)

SUBDIVISION OR MOBILE HOME PARK NAME: S/D

LOT NUMBER: 7

TOWNSHIP (CHECK ONE): 1

__ 0 MECKLENBURG __ 4 PINEVILLE
__ 1 CHARLOTTE ✓ 5 MATTHEWS
__ 2 DAVIDSON __ 6 HUNTERSVILLE
__ 3 CORNELIUS __ 7 MINT HILL

HEATED SQUARE FOOTAGE: Proposed 3500 ±

NUMBER OF BEDROOMS: Proposed 4 | NUMBER OF OCCUPANTS: N/A

FOUNDATION FOR RESIDENCE:

__ WITHOUT BASEMENT __ ON SLAB ✓ CRAWL SPACE Proposed __ WITH BASEMENT /PLUMBING __ WITH BASEMENT /NO PLUMBING

CLOSING DATE N/A

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:
N/A

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: __ YES ✓ NO TYPE: _____

WATER SUPPLY (CHECK ONE): __ COMMUNITY (C) ✓ MUNICIPAL (M) __ PRIVATE WELL (P) __ SHARED WELL (S) __ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES ✓ NO
EXISTING WASTEWATER SYSTEMS __ YES ✓ NO
EASTMENTS OR RIGHT-OF-WAYS __ YES ✓ NO
WELL, SPRINGS OR WATERLINES __ YES ✓ NO
DESIGNATED WETLANDS __ YES ✓ NO

Real Estate

PROPERTY OWNER:

NAME: (LAST) FRANK (FIRST) ARTHUR (MI) B.

ADDRESS: 6604 GAYWIND DR.

CITY: Charlotte STATE: N.C. ZIP: 28226

DAYTIME PHONE: (704) 366 4248

AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: [redacted] Nuttall, Connie, Agent
(LAST) (FIRST) (MI) Allen Tate

DAYTIME PHONE: (704) 367-7249

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 1/21/63

An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: x Arthur B Frank DATE: 1/28/99

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

CONNIE B. NUTTALL

BROKER

Office 704-367-7249
Home 704-366-6645
Fax 704-365-6901
Toll Free 888-364-6401
Mobile 704-564-4603
Email cnuttall@bellsouth.net

Allen Tate Company

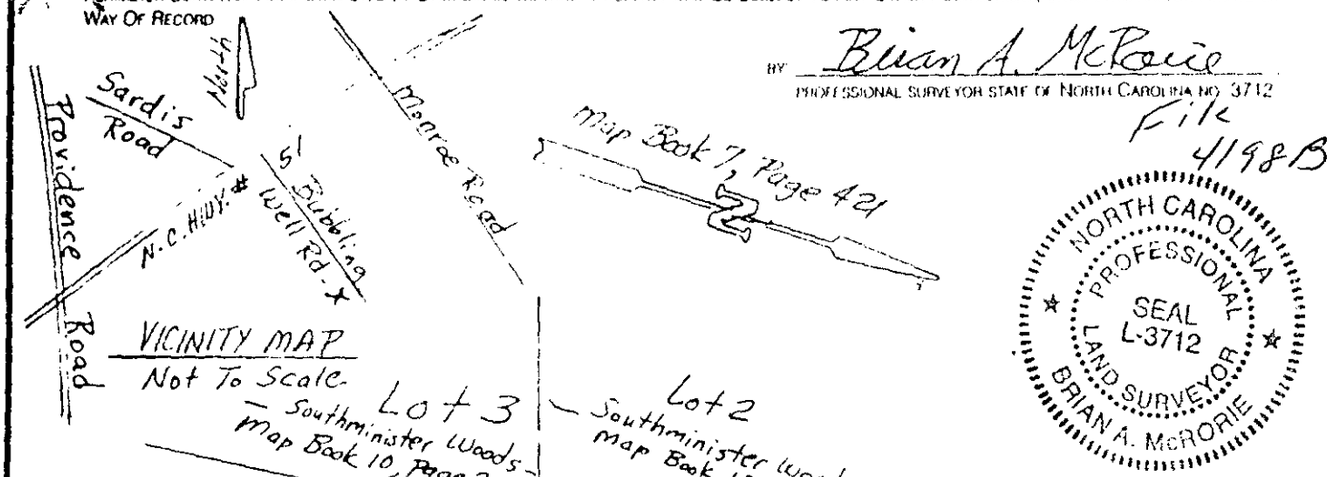
6618 FAIRVIEW ROAD • CHARLOTTE, NC 28210

THIS IS TO CERTIFY THAT ON THE 28th DAY OF October 19 99, I SURVEYED THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE PROPERTY LINES AND IMPROVEMENTS ARE SHOWN HEREON. THE RATIO OF PRECISION AS CALCULATED IS 1: 20,000 Ft. + OF PERIMETER SURVEYED. AREA COMPUTED BY COORDINATE METHOD. PROPERTY MAY BE SUBJECT TO ANY OTHER RESTRICTIONS, EASEMENTS AND/OR RIGHTS-OF-WAY OF RECORD.

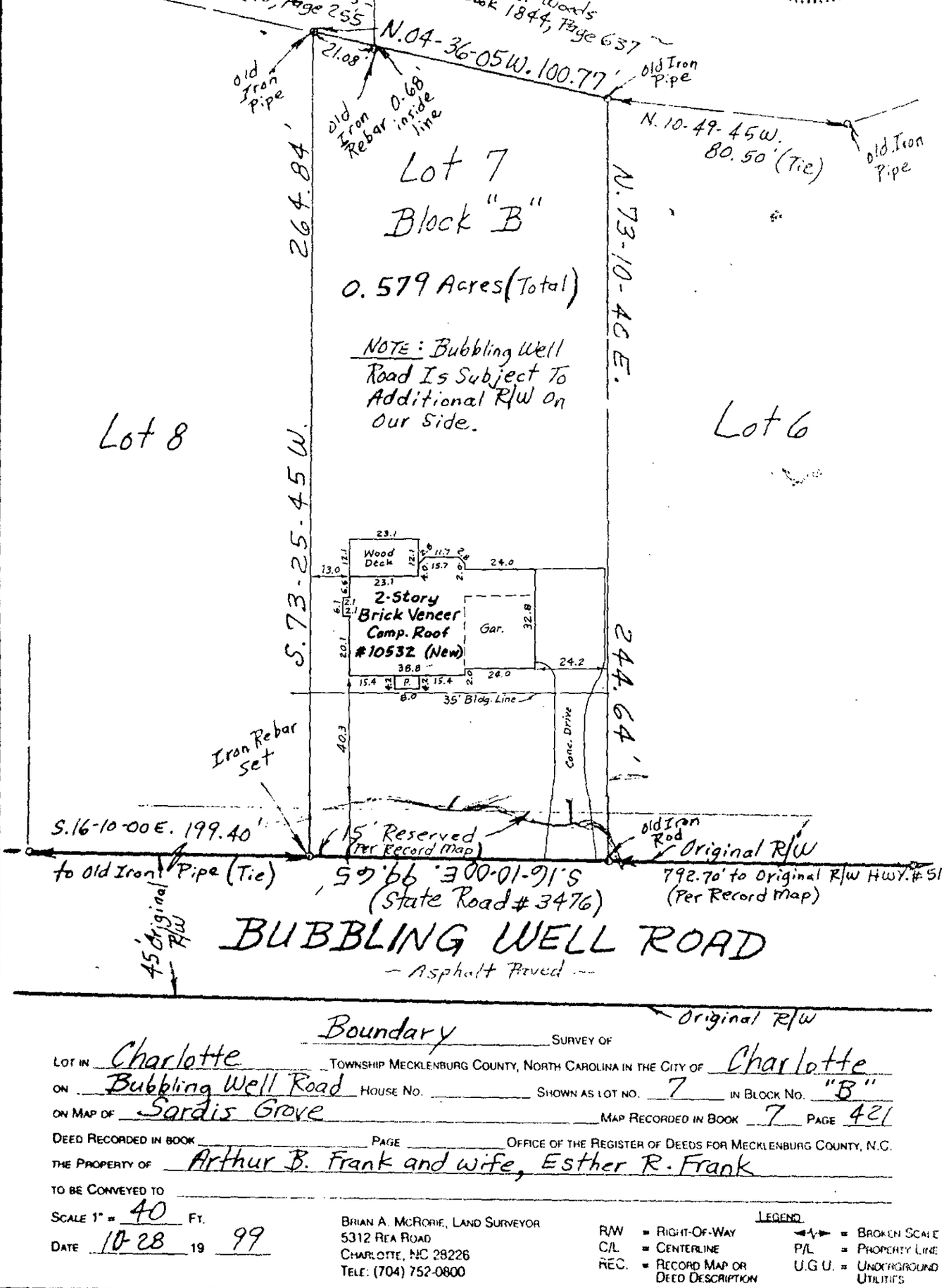
BY Brian A. McRorie
PROFESSIONAL SURVEYOR STATE OF NORTH CAROLINA NO. 3712

File 4198B

NORTH CAROLINA PROFESSIONAL SEAL L-3712 LAND SURVEYOR BRIAN A. McRORIE



VICINITY MAP
Not To Scale



Boundary SURVEY OF

LOT IN Charlotte TOWNSHIP MECKLENBURG COUNTY, NORTH CAROLINA IN THE CITY OF Charlotte

ON Bubbling Well Road HOUSE NO. _____ SHOWN AS LOT NO. 7 IN BLOCK NO. "B"

ON MAP OF Sardis Grove MAP RECORDED IN BOOK 7 PAGE 421

DEED RECORDED IN BOOK _____ PAGE _____ OFFICE OF THE REGISTER OF DEEDS FOR MECKLENBURG COUNTY, N.C.

THE PROPERTY OF Arthur B. Frank and wife, Esther R. Frank

TO BE CONVEYED TO _____

SCALE 1" = 40 FT.

DATE 10-28 19 99

BRIAN A. McRORIE, LAND SURVEYOR
5312 REA ROAD
CHARLOTTE, NC 28226
TELE: (704) 752-0800

LEGEND

R/W	= RIGHT-OF-WAY	◄-►	= BROKEN SCALE
C/L	= CENTERLINE	P/L	= PROPERTY LINE
REC.	= RECORD MAP OR DEED DESCRIPTION	U.G.U.	= UNDERGROUND UTILITIES

N0007716

MECKLENBURG HEALTH DEPARTMENT
615 EAST FOURTH STREET
CHARLOTTE 2, NORTH CAROLINA

TELEPHONE FRANKLIN 5-5754

March 19, 1959.

Mr. H. B. Walter Company
Matthews, N. C.

Dear Mr. Walter:

Percolation test conducted by you in Sardis Grove, Lot 7, Block B was within the minimum and any individual sewage disposal system located on this property should prove satisfactory.

Yours very truly,

John P. Jones
Senior Sanitarian

JPJ/csc

Book 177
89 444