

5020 TRACEWOOD CT

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marliwr

Groundwater and Wastewater Services File Imaging Project
May 2007
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Soil & Environmental Consultants, PA

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www.SandEC.com

Attached is a proposed design for a Pressure Manifold Septic System for a 3 bedroom single family residence at North Lake Subdivision in Mecklenburg County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1

Design Information

- Design Specifications---------- 2-3
- Layout Specifications---------- 4
- System Tapsheet---------- 5

Site Plan/System Plan---------- 6

Septic Tank Diagram---------- 7

Pump Tank Diagram---------- 8

Pressure Manifold Diagram---------- 9

Control Panel Specifications---------- 10-14

Pump Specifications---------- 15-16

Calculations---------- 17

May 29, 2003
S & EC Project No. 5-1202
Design By: Wendell Overby

10/27/03

APPROVED 6-16-03

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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 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.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- 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.
- 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.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as an EZ Flow gravelles trench
- Repair is specified as at-grade LPP
- A French Drain above and beside the drainfield is required by Meck Co Health Dept. System requires 10" County approved soil cover

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Bob Mills
Address:	7209 E. Harris Blvd Charlotte, NC 28227
Phone:	704.309.6230
County:	Mecklenburg
Location:	North Lake Subdivision
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	48.55gpm

Design Specifications

Drainfield Size:	463 linear feet
Loading Rate:	0.2 gpd/ft.^{2}
Depth of Gravel in Trench:	NA (EZ-Lay)
Gravel Size:	NA (EZ-Lay)
Trench Depth:	12 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	230
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	40.02 gal
Dosing Volume:	211.64 gal
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	10.01 ft
Elevation Head:	15 ft
Total Dynamic Head:	31.06 ft
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Recommended Pump:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering 31 ft.of Head at 48.55 gpm Total Flow
Additional Comments:	Soil suitability was performed by the S&EC and Mecklenburg County

BOB MILLS / NORTH LAKE
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	360
SOIL APPLICATION RATE:	0.2gpd/ft2
TOTAL AREA TRENCH BOTTOM:	1389
TOTAL LATERAL LENGTH:	463
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	450 (EZ FLOW)
SUPPLY LINE LENGTH:	230 ft
TOTAL DYNAMIC HEAD:	31.06 ft
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	211.64
PUMP TANK DRAW DOWN*:	10.1
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.
RECOMMENDED PUMP:	Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering 31 ft.of Head at 48.55 gpm Total Flow

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

Bob Mills/North Lake

Project No. 5-1202

LAYOUT FOR 3 BEDROOM HOME — May 23, 2003

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH
TBM		0.0			100.00	
INSTR. 1			100.00			
			SYSTEM			
***1**	**YELLOW**			**2.70**	**97.30**	**55**
***2**	**BLUE**			**4.30**	**95.70**	**70**
***3**	**PINK**	**6.1**		**3.60**	**93.90**	**60**
***4**	**RED**			**4.40**	**93.10**	**115**
***5**	**BLUE**			**4.70**	**92.80**	**53**
***6**	**ORANGE**			**5.40**	**92.10**	**110**
			REPAIR			
7	REDORNGE			6.00	91.50	110
8	PINK/BLUE			6.20	91.30	75
9	BLUE			6.30	91.20	110
10	PINK			6.70	90.80	110
11	RED			7.10	90.40	95
12	ORANGE			7.50	90.00	95
13	YELLOW			7.80	89.70	55

	LINE LENGTH	LTAR GPD/FT²	SYSTEM TYPE	SOIL LTAR GPD/FT²	INNOVATIVE SYSTEM	DISTRIBUTION
*** System**	**463'**	**0.19**	**INNOV.**	**0.20**	**EZ-LAY**	**PRESSURE MANIFOLD**
Repair	650'	0.11	ATGRADE LPP	0.10	N/A	LPP

Notes:

** TBM located on top flagged white oak stump near line 1

**TBM is assumed to be 100'

**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**BS, HI, and FS indicate rod readings

Bob Mills/North Lake
SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	gpd	Trench Area	Line LTAR
1	YELLOW	97.3	55	SCH 80 1/2	5.48	40.63	165	0.25
2	BLUE	95.7	70	SCH 40 1/2	7.11	52.72	210	0.25
3	PINK	96.4	60	SCH 80 1/2	5.48	40.63	180	0.23
4	RED	95.6	115	SCH 40 3/4	12.5	92.69	345	0.27
5	BLUE	95.3	50	SCH 80 1/2	5.48	40.63	150	0.27
6	ORANGE	94.6	110	SCH 40 3/4	12.5	92.69	330	0.28
	total	feet =	460	gal/min =	48.55			
			Des. Flow	360				
			Pump Run=	7.42				
			soil LTAR	0.2				
			(EZLAY ltar +5%)	0.21				
			LTAR with INNOV. + 5%	0.27				
			MAX. LTAR with INNOV.	0.28				

5% variability due to limited number of tap sizes available.
Design tries to target within 5% of soil ltar per line.

GRAPHIC SCALE
1" = 50'

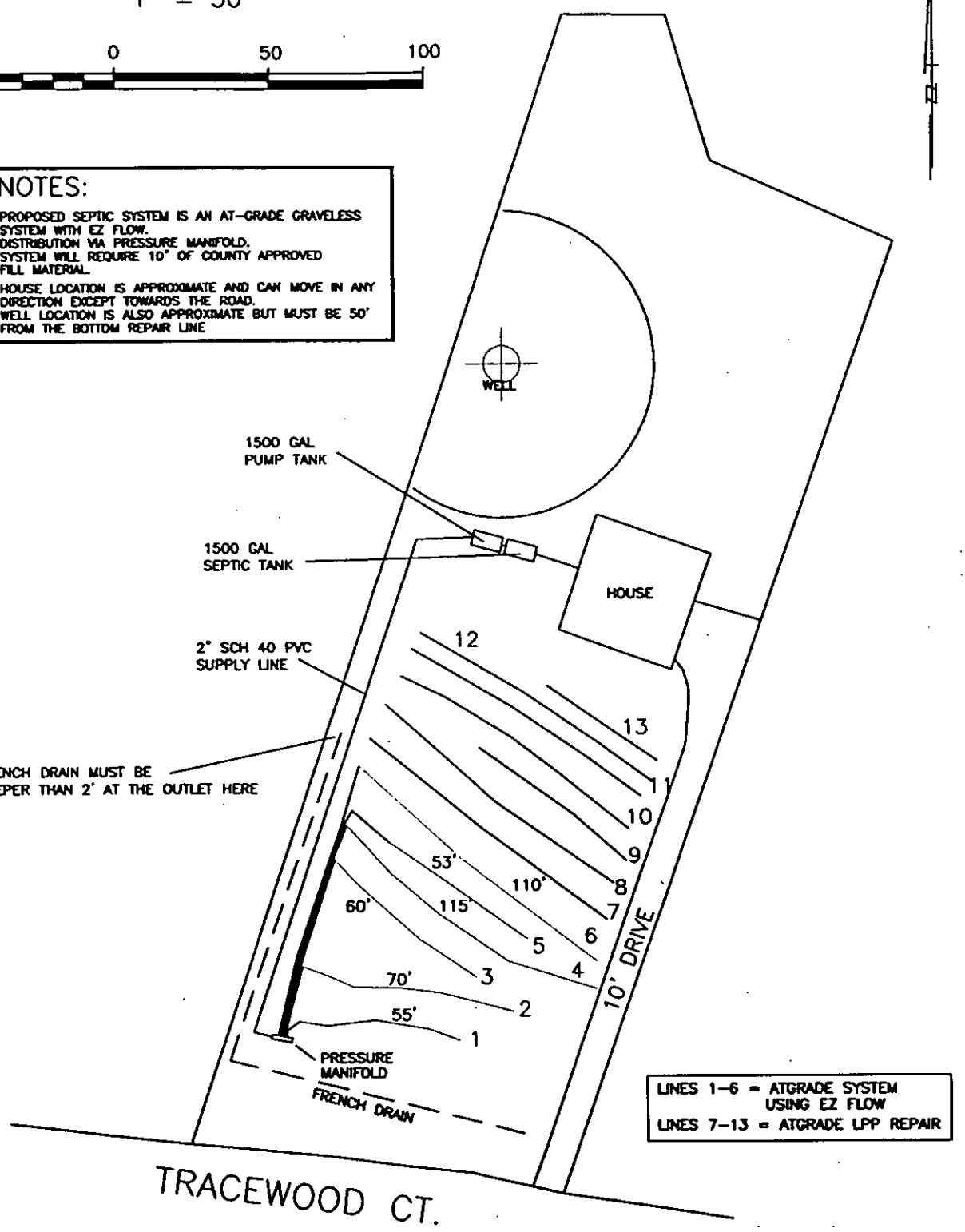
50 0 50 100

N

NOTES:

PROPOSED SEPTIC SYSTEM IS AN AT-GRADE GRAVELESS SYSTEM WITH EZ FLOW.
DISTRIBUTION VIA PRESSURE MANIFOLD.
SYSTEM WILL REQUIRE 10" OF COUNTY APPROVED FILL MATERIAL.

HOUSE LOCATION IS APPROXIMATE AND CAN MOVE IN ANY DIRECTION EXCEPT TOWARDS THE ROAD.
WELL LOCATION IS ALSO APPROXIMATE BUT MUST BE 50' FROM THE BOTTOM REPAIR LINE



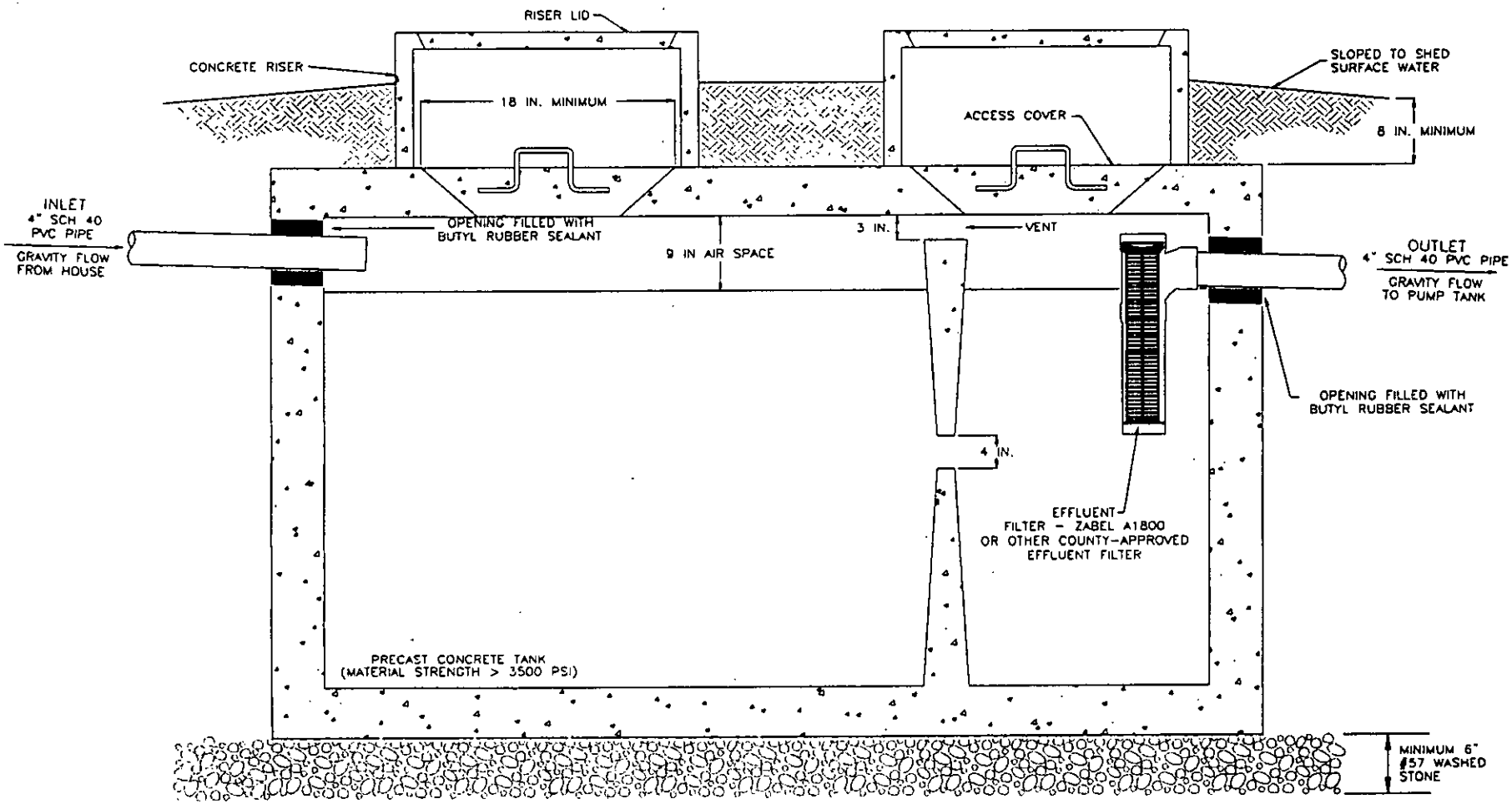
LINES 1-6 = ATGRADE SYSTEM USING EZ FLOW
LINES 7-13 = ATGRADE LPP REPAIR

SHEET TITLE:
PROPOSED SITE PLAN
SKETCH MAP

PROJECT NAME:
BOB MILLS
NORTH LAKE
MECK. COUNTY, NORTH CAROLINA
MAY 2003

S&EC
Soil & Environmental Consultants, PA

FILE C:\PHONDA\
SCALE 1" = 50'
W.O.
FIELD WORK
DRAWN BY
W.O.
PROJECT MGR.
PROJECT NO. S-1472

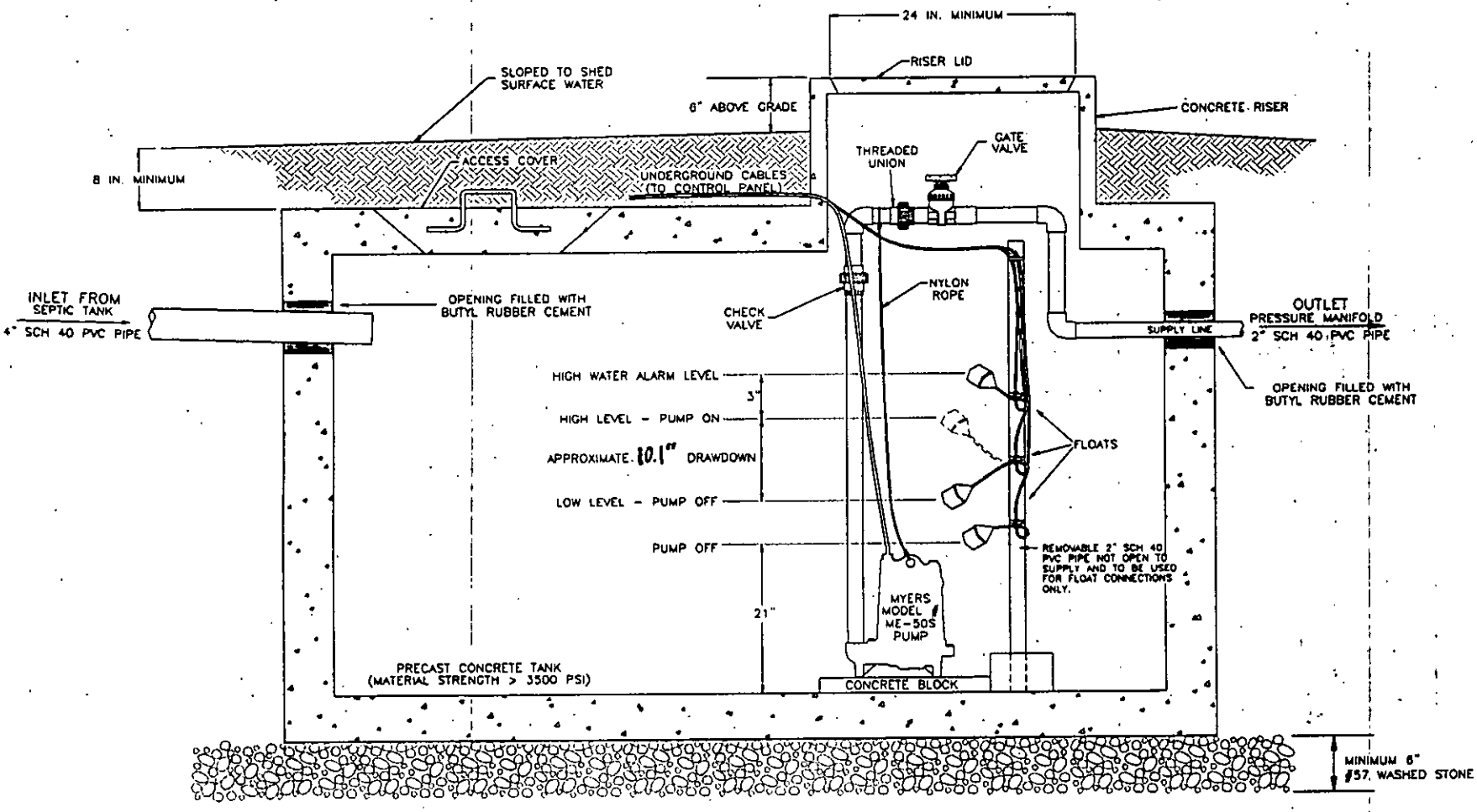


NOTES

1. TANK DIMENSIONS VARY BY MANUFACTURER.

1500 GALLON SEPTIC TANK

PROJECT NO: 4591	PROJECT NAME: **Bob Mills/North Lake**	S&EC Soil & Environmental Consultants, Inc.
PROJECT MGR:	SHEET TITLE: SEPTIC TANK DIAGRAM	
SCALE: NTS		



NOTES

1. TANK DIMENSIONS VARY BY MANUFACTURER.
2. DRAWDOWN WILL VARY WITH TANK DIMENSIONS. DRAWDOWN SHOWN BASED ON 21 GALLONS PER INCH.

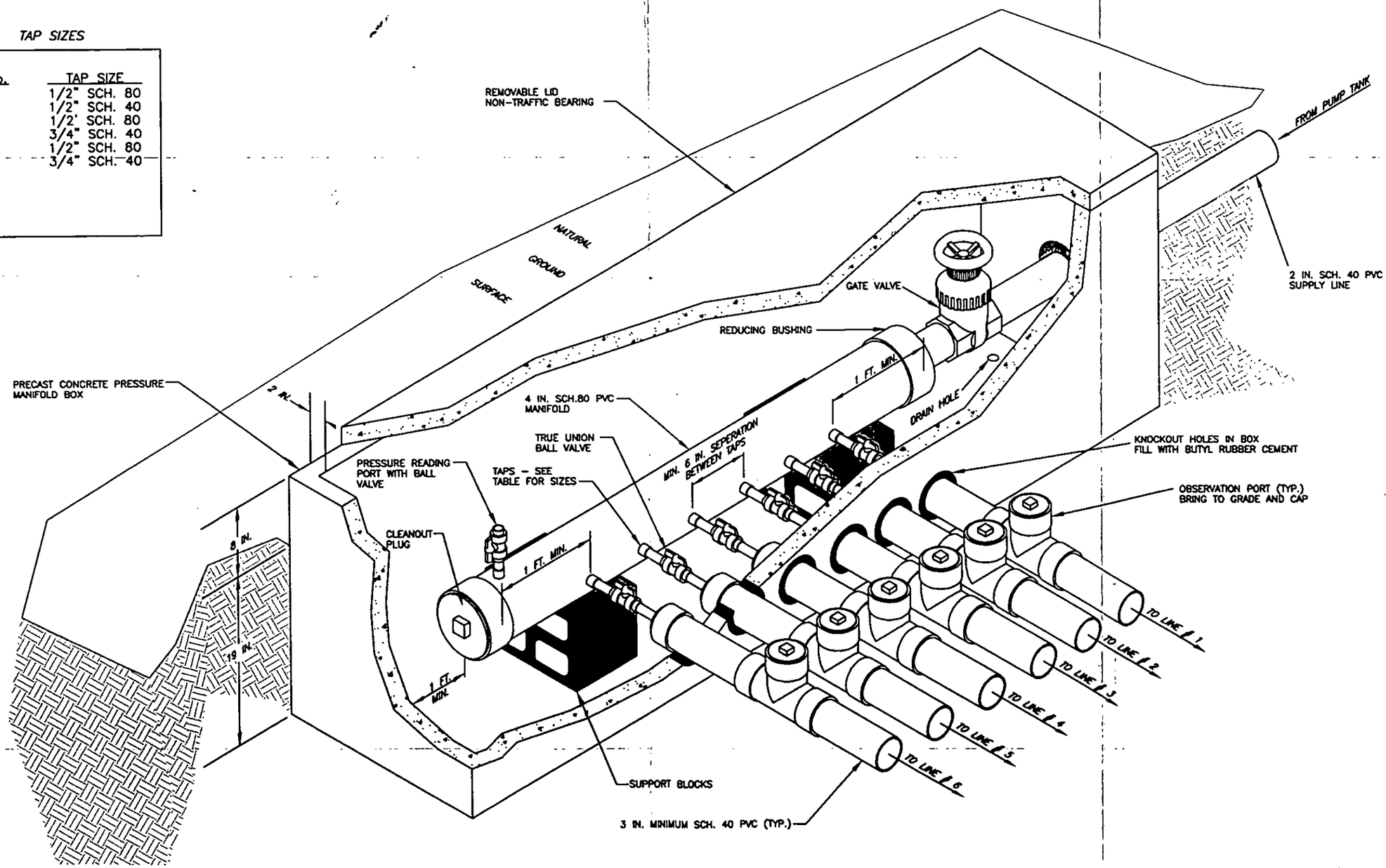
1500 GALLON PUMP TANK

PROJECT NO: 5-1202	PROJECT NAME: Bob Mills/North Lake	S&EC Soil & Environmental Consultants, Inc.
PROJECT MGR:		
SCALE: NTS	SHEET TITLE: PUMP TANK DIAGRAM	

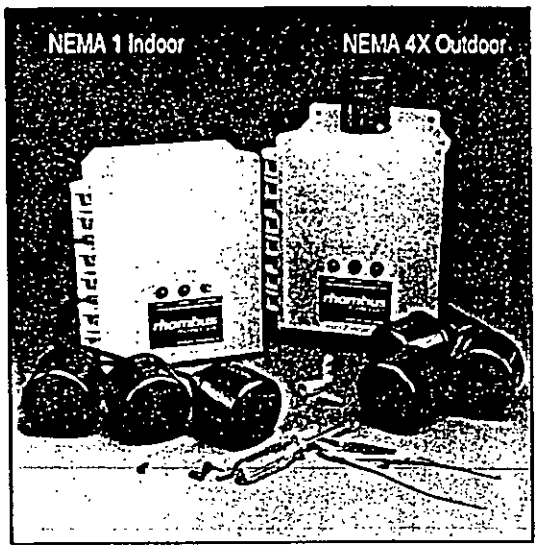
PRESSURE MANIFOLD DETAILS
FOR
BOB MILLS/NORTH LAKE SUBDIVISION

TAP SIZES

LINE No.	TAP SIZE
1	1/2" SCH. 80
2	1/2" SCH. 40
3	1/2" SCH. 80
4	3/4" SCH. 40
5	1/2" SCH. 80
6	3/4" SCH. 40



rhombus™ TECHNOLOGY

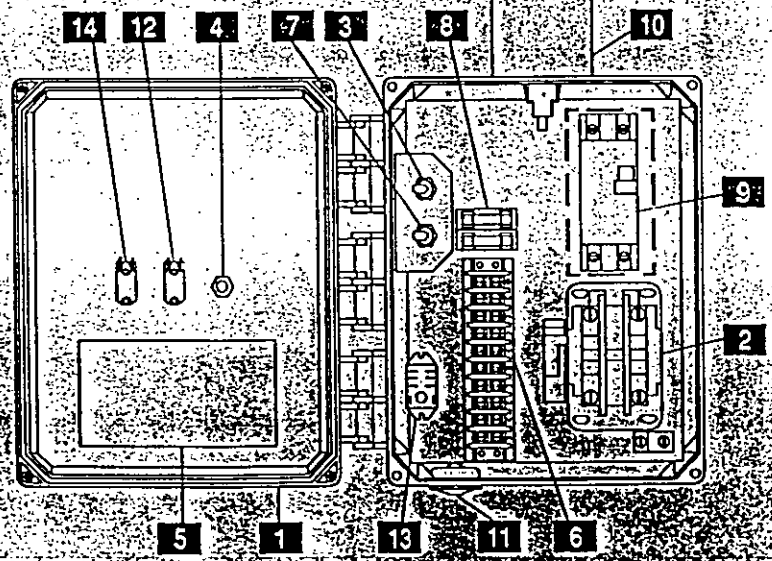


Type 112 control panels are single-phase, simplex pump control systems.

The Rhombus Type 112 control panel provides residential and commercial customers with a reliable means of controlling one 120V, 208V, or 230V single-phase pump in water and sewage installations. 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. Common applications include pump chambers, sump pump basins, irrigation systems, and lift stations.

Type 112 control panels have a dual safety certification for the United States and Canada.

Model Shown 1121W114X



TYPE 112 FEATURES

Float Switches (optional) - complete package assures quality of entire control/alarm system.

UL Labeled - ENTIRE control system (panel and switches) meets and/or exceeds industry standards for safety.

Installation Instructions - complete step-by-step instructions are included for easy installation.

2 YEAR LIMITED WARRANTY - ensures commitment to customer satisfaction.

1 Enclosure - comes with removable mounting flanges. Choice of Nema 1 - engineered thermoplastic for indoor use, or Nema 4X - weathertight engineered thermoplastic for outdoor use.

2 Magnetic Motor Contactor - controls the pump by switching both electrical lines.

3 HOA Switch - offers manual control of the pump.

4 Green Pump Run Indicator Light

5 Schematic/Wiring Diagram

6 Terminal Block

7 Control ON/OFF Switch

8 Control and Alarm Fuses

9 Circuit Breaker (optional) - provides pump disconnect.

ALARM PACKAGE (OPTIONAL)

10 Alarm Beacon - large red light provides 360° visual check of alarm condition.

11 Alarm Horn - loud horn provides audio warning of alarm condition.

12 Horn Silence Switch - exterior switch allows alarm horn to be silenced.

13 Horn Silence Relay - automatically resets alarm after alarm condition has been resolved.

14 Test Switch - exterior switch allows testing of horn and light to assure proper operation of alarm system.

TYPE 112 FEATURES

All Type 112 control panels include a 10" x 8" enclosure, 120V control circuit, 120/208/230V pump circuit, magnetic motor contactor, pump run light, HOA switch, terminal block, fuses, and control on/off switch.

MODEL NUMBER ORDERING INFORMATION

See sample at bottom of page to help complete your model number.

112			1				

TYPE 112

ALARM PACKAGE
- 0 - selected options or no alarm package
- 1 - alarm package-includes silence & test switches, red light, horn, and alarm float

ENCLOSURE RATING
- I - Indoor (NEMA 1)
- W - Weatherproof (NEMA 4X)

STARTING DEVICE
- 1 - magnetic motor contactor

PUMP FULL LOAD AMPS

If pumps do not have integral overload protection, you must specify overloads as an option.
- 0 - 0-15 FLA
- 1 - 15-20 FLA
- 2 - 20-25 FLA
- 3 - 25-30 FLA
- 4 - 30-40 FLA
- 5 - 40-50 FLA

PUMP DISCONNECT
- 0 - no pump disconnect
- 1 - pull-out with safety deadfront
- 2 - through door fused (fuses not included)
- 3 - through door non-fused
- 4 - circuit breaker

FLOAT SWITCH APPLICATION

Two 20' pipe clamp floats are standard. For alternate float switches see the option pages. Designate H or L for all floats ordered.
- H - high level pump down/normally open
- L - low level pump up/normally closed
- X - no alarm or control floats

OPTIONS AVAILABLE

Select the options your application requires, then refer to the option pages. The option pages will provide details and specific numbers needed to complete your model number. Panels ordered with an option or multiple options may require larger enclosure sizes.

Please call the factory if you need help building your model number.

OPTIONS

SEE OPTION PAGES FOR MODEL NUMBERS

- ☐ Alarm Beacon
- ☐ Alarm Bell
- ☐ Alarm Horn
- ☐ Alternate Beacon Color
- ☐ Red Beacon With Guard
- ☐ Flasher
- ☐ Manual Alarm Reset
- ☐ High and Low Alarm Indicators
- ☐ Auxiliary Contacts
- ☐ Low Level Cutout (redundant off)
- ☐ Pump Failure Indicator
- ☐ Seal Failure Indicator
- ☐ Thermal Cutout
- ☐ Thermal Cutout Indicator
- ☐ Power-On Indicator
- ☐ Anti-Condensation Heater
- ☐ Elapsed Time Meter
- ☐ Event (Cycle) Counter
- ☐ Remote Devices
- ☐ Pump Control Timer
- ☐ Delay Timer
- ☐ Deadfront
- ☐ Lockable Latch
- ☐ Pilot Breaker
- ☐ Lightning Arrestor
- ☐ Surge Protection
- ☐ Overload Protection
- ☐ Overload Reset Through Door
- ☐ GFI Convenience Receptacle
- ☐ Main Disconnect
- ☐ Alternate Float Switches

Subject to change without notice.

rhombus™ TECHNOLOGY

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1003345B • Printed in USA

SSPMA MEMBER

SWPA MEMBER

SAMPLE: MODEL #1121W114H3B15CE

112	1	W	1	1	4	H	3B	15CE

TYPE
ALARM PACKAGE
ENCLOSURE RATING
STARTING DEVICE
PUMP FULL LOAD AMPS
PUMP DISCONNECT
FLOAT SWITCH APPLICATION

PILOT BREAKERS
- 3 - Control Breaker
- B - Alarm Breaker

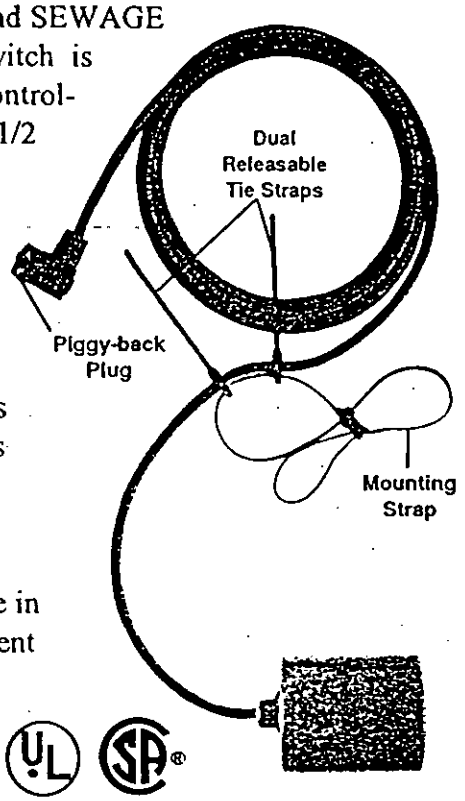
ALARM ACCESSORIES
- 15 - Manual Alarm Reset
- CE - Alternate Float Switches

SJE PUMPMASTER® Pump Switch

A wide angle mechanical pump switch designed for dependability and performance.

APPLICATIONS

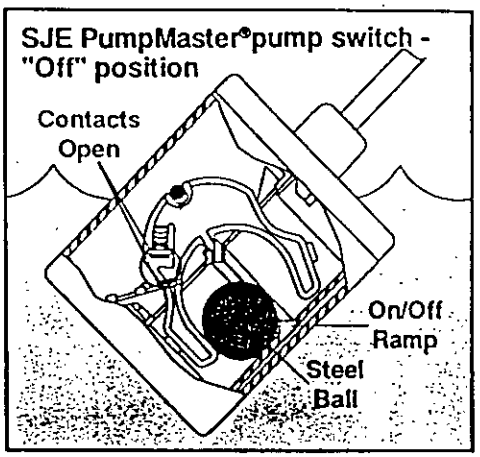
The **mechanically activated** SJE PumpMaster® pump switch provides automatic control of pumps in WATER and SEWAGE applications. This switch is capable of directly controlling pumps of up to 1/2 HP 120V and 1 HP 230V. The SJE PumpMaster® pump switch is designed to efficiently operate in applications with limited space, such as small sump chambers and laundry trays, as well as in large tank applications, and is recommended for use in both calm and turbulent conditions.

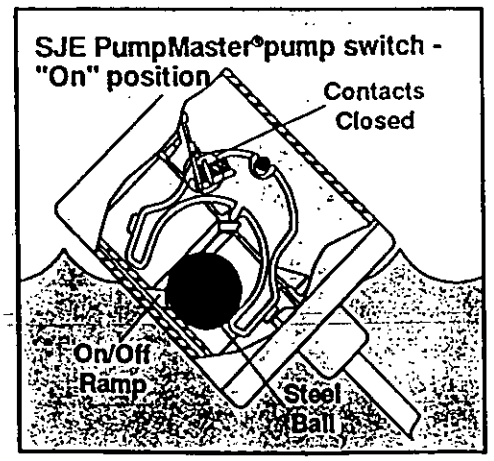


ADVANTAGES

- Mechanically activated
- UL Listed for use in water and sewage
- CSA Certified
- Heavy duty contacts
- Not sensitive to rotation
- Not sensitive to turbulence
- Adjustable pumping range from 5.5 inches to 36 inches
- UL & CSA horsepower rated
- Two year limited warranty

U.S. PATENT Nos. 5,087,801 & 5,142,108
CANADIAN PATENT Pending





SPECIFICATIONS

CORD: Flexible 16 gauge, 2 conductor SJOW-A (UL), SJOW (CSA) water-resistant, (CPE) Neoprene.
FLOAT: 3.05 inch (7.75cm) diameter x 3.56 inch (9.07cm) long, impact resistant, non-corrosive PVC plastic for use in liquids up to 140°F (60°C).

ELECTRICAL:

Voltage 60Hz, Single Phase	Maximum Pump Running Current	Locked Rotor* Amps	Recommended Pump HP
120 VAC	13 amps	85	1/2 HP or less
230 VAC	13 amps	85	1 HP or less

* Tested per UL 508 Industrial Control Equipment
NOTE: This pump switch must be used only with pumps equipped with integral thermal overload protection.

NOTES: Model WOP (for direct wiring) may be used in either 120V or 230V applications within specified amp ratings. Pump Down is a Normally Open switch, Pump Up is a Normally Closed switch.

SJE PumpMaster® Pump Switch Installation Instructions

Figure A

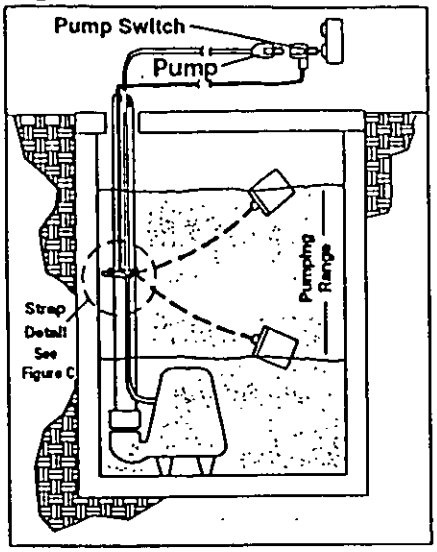
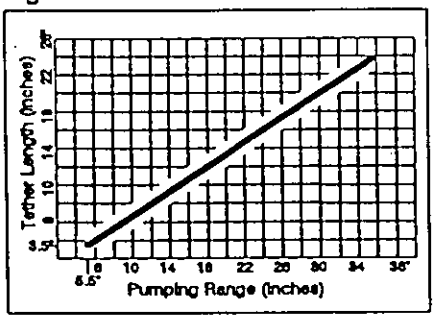


Figure B



The graph above is based on testing in non-turbulent conditions. USE ONLY AS A GUIDE. The solid black line represents average values; the gray area represents variance. For applications requiring a tether length other than shown on the chart, consult the factory.

Figure C

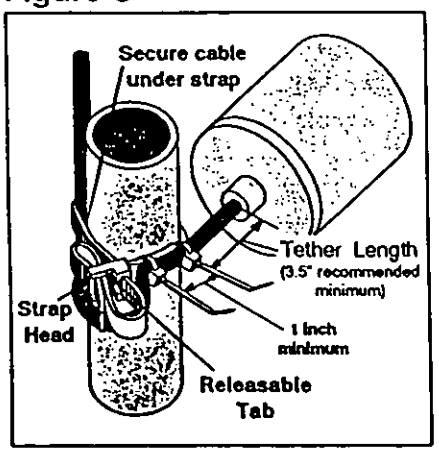
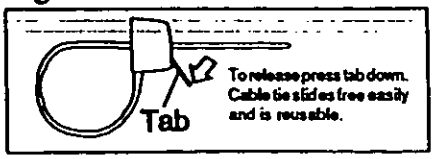


Figure D



WARNING: Turn off power source before installing or adjusting this device. Failure to turn off power could result in serious or fatal electrical shock.

- Read these instructions carefully.
- Check your local codes before installing. We recommend this product be installed in accordance with national and local electrical codes.
- Do not connect this product while you are standing on a wet or damp surface.
- Do not remove cord label from switch unit.
- Retain these instructions with warranty card when installation is complete.

MOUNTING FLOAT

1. Determine the pumping range for your installation. See Figure A. Pumping range is controlled by the tether length. See Figure B.
2. Tighten the mounting strap around the discharge pipe keeping the float cable between the strap and pipe to help prevent slippage. Space the small ties approximately one inch apart. See Figure C.
3. Lock the releasable tab of the mounting strap by running the remaining strap between the releasable tab and head, pulling tightly. Tuck the strap back through the head to complete installation. See Figure C.
4. Ties are releasable to permit readjustment. See Figure D.

PIGGY-BACK PLUG INSTALLATION

To avoid electrical hazards, follow these precautions:

- Electrical outlet must not be located in pump chamber.
- Electrical outlet voltage, piggy-back plug voltage, and pump plug voltage must match. (All 120V or 230V)

1. Plug piggy-back plug into outlet.
2. Plug pump into piggy-back plug.

DIRECT WIRE INSTALLATION

NOTE: Piggy-back plug may be removed for direct wire option. See Figure E.

Check your installation. Allow pump to cycle several times to insure proper pumping range.

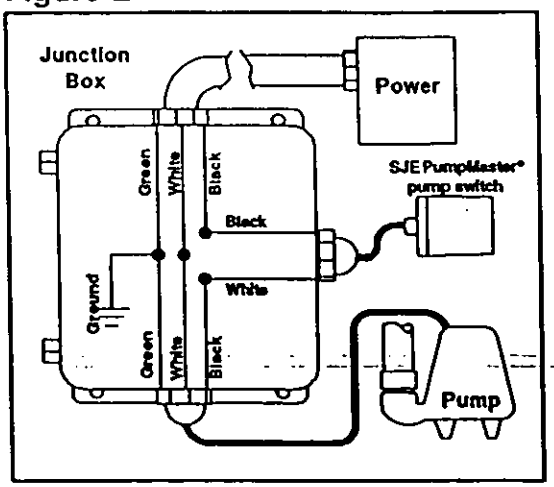
CAUTION

In a 230V pump installation, one side of the line going to the pump is always "hot". This condition exists regardless of whether the float switch is on or off.

WP (with plug) INSTALLATIONS - Remove piggy-back plug from receptacle BEFORE installing or servicing pump and/or switch.

WOP (without plug) INSTALLATIONS - To avoid hazards when installing or servicing, install a double pole disconnect near pump installation.

Figure E



SJE™ **S.J. ELECTRO SYSTEMS, INC.**

Built with Pride - Employee Owned

PO Box 1619 County Rd 6 Detroit Lakes, MN 56502

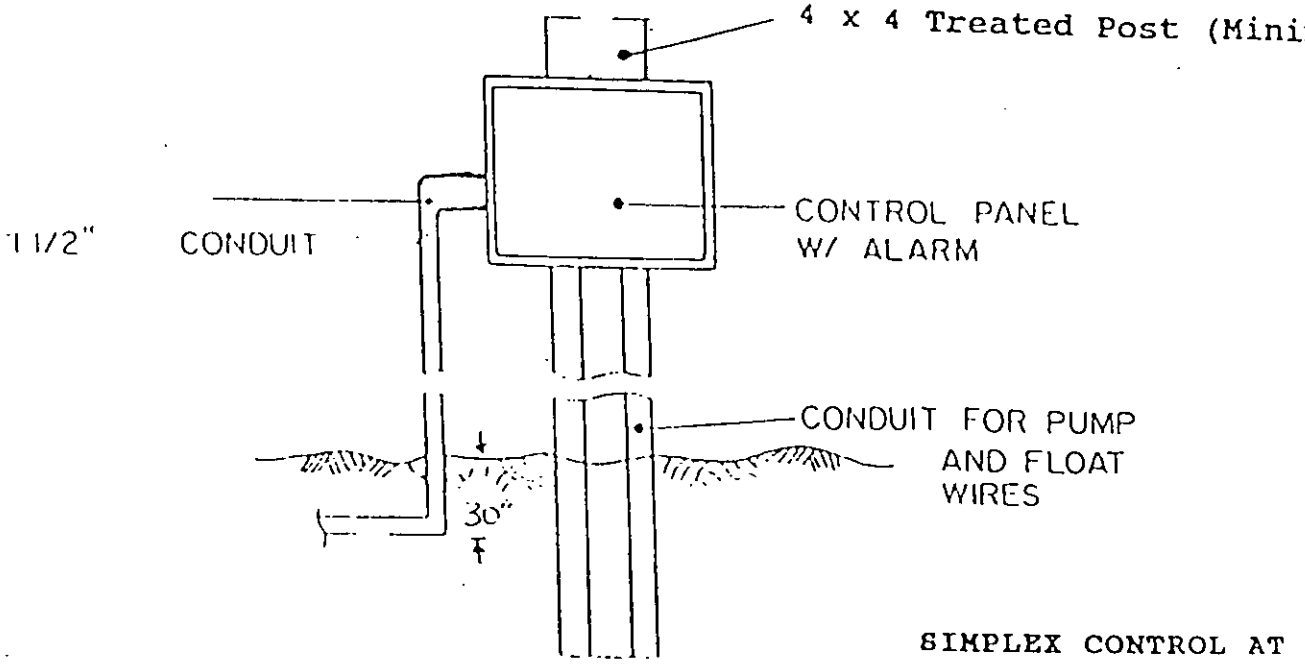
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SSPMA MEMBER

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Installation Inst. 1002627F

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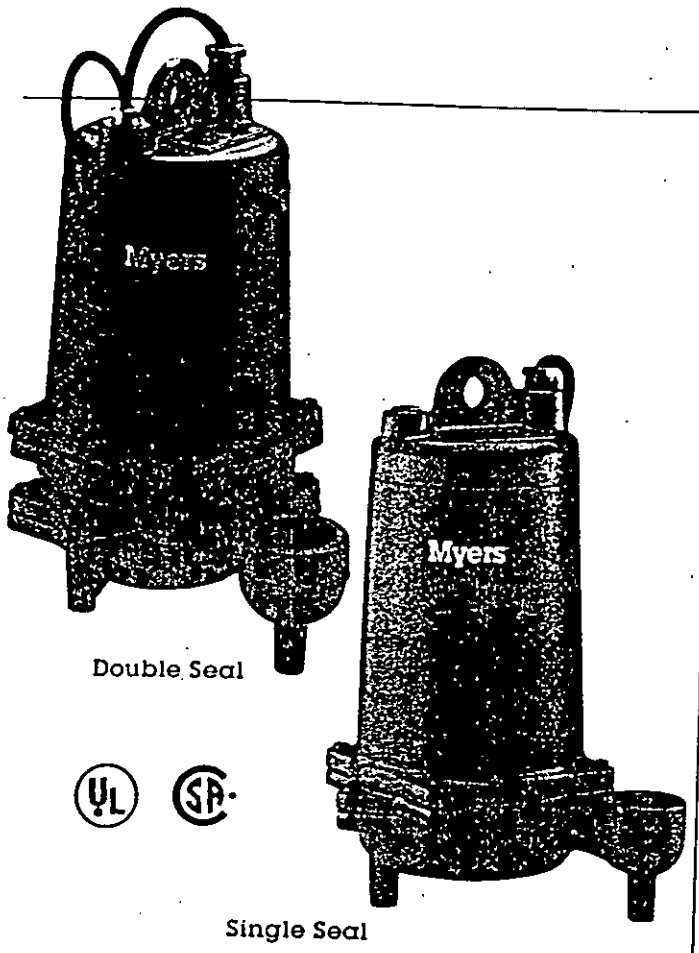


ELECTRIC BOX

NOTE: ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE #12 MINIMUM, RATED FOR DIRECT BURY. PROVIDE GROUNDING AS REQUIRED AND, PROVIDE 30" MINIMUM BURY ON CABLES. PROVIDE ONE 20 AMP, 2 POLE, 230 V CIRCUIT BREAKER (FOR PUMP) AND, ONE 20 AMP ONE POLE, 115 V CIRCUIT BREAKER (FOR ALARM) IN MAIN PANEL.

ME SERIES

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

Myers

ISO 9001 Certified Company

ME SERIES

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

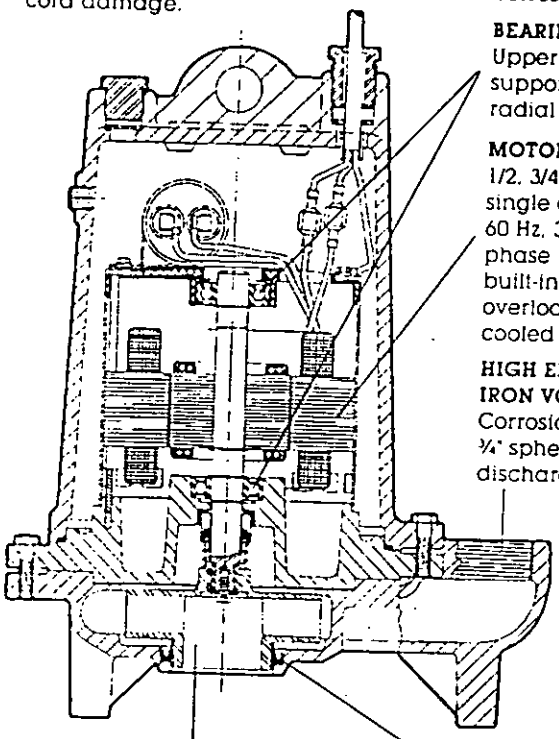
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

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

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

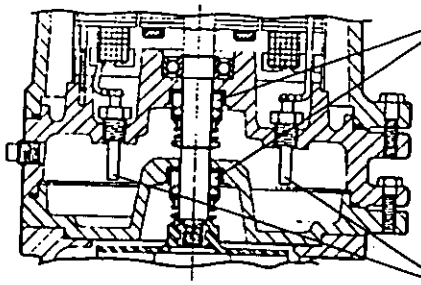
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

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.

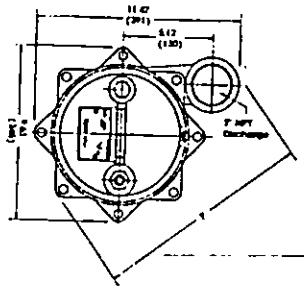
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.

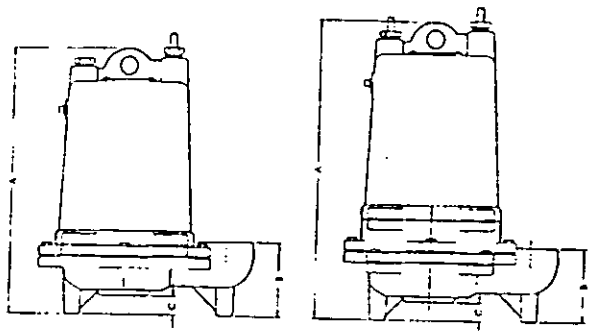


SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

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

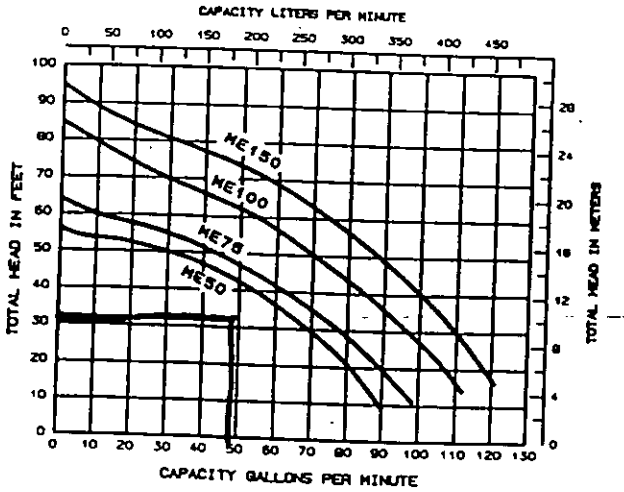
DIMENSIONS





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 1/98
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
519/748-5470, FAX: 519/748-2553

CALCULATIONS

Location Bob Mills

Project Number 5-1202

Lot No: n/a

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.2	$^{gal}/_{ft^2 day}$
EZ-Lay? (YES OR NO)	YES	
Supply Line Length	230	ft.
Supply Line Volume	40.02	gal.
Required Feet of Line	600	ft.
Amount of Line from Layout	463	ft.
Gallons per Minute	48.55	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Lateral Line Volume	302.339	gal.
Dosing Volume	211.64	gal.

Note: Dosing Volume based on 70% of the lateral line volume.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.55	4.35
50	4.58
57.11	5.89
60	6.42

Tank Draw Down	10.1	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	4.36	minutes
Elevation Head	15	ft.
Pressure Head	2	ft.
Friction Factor	4.35	ft./100 ft. *(From the interpolater.)*
Friction Head	10.01	ft.
Total Dynamic Head (+15%)	31.06	ft.

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number: 111-321-54

mit Number: 3333A

The 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.

Basement: ___ Yes X No ___ Partial Basement

Type Primary Wastewater System Type (circle one): I II (III) IV V VI

___ Conventional
___ Prefabricated, permeable block panel system
___ Shallow Placed Conventional
___ Low Pressure Pipe
___ Large Diameter Pipe
___ Fill
___ Other
X Innovative or Experimental:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

.2 Long-term acceptance rate	360 Max gallons/day wastewater flow	1500 Absorption Area (sq ft)	9' Trench spacing (min. on centers)
gps Serviced by private well	1500 Gallon septic tank	463 Total trench length (ft)	12" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)
3 Bedrooms in residence	1000 Gallon pump tank	24 Depth of stone	

Any surface waters present: Type: Minimum separation distance:

Site modifications required:

Additional Conditions: (1) REQUIRES ACCEPTANCE FORMS

Repair Area System Type Type (circle one): I II (III) IV V VI

___ Conventional
___ Prefabricated, permeable block panel system
___ Shallow Placed Conventional
___ Low Pressure Pipe
___ Large Diameter Pipe
___ Fill
___ Other
X Innovative or Experimental:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

~~1500~~ 3250 Absorption Area (Sq ft) ~~3250~~ 650 Total Trench Length (Ft)	12" Depth of Stone Trench	5' Trench spacing (min. on centers)	12" Maximum Trench Depth

For existing system, enter the year originally installed:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws and Rules For Sewage, Treatment and Disposal in effec at the time of issuance of the permit and is subject to the following provisions:

... No work shall be conducted on the septic tank system until an Installation, Construction, Alteration and/or Repair Approval is granted by this Departmen

... This Improvement permit is transferable.

DEHNR Authorized Agent — Date 6/19/03

X Owner/Agent Signature — X Date 10/27/03

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

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

FEE: _____ **AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION** ACS
DATE: _____ **VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE**

DATE: 6-19-03 PERMIT NO: 3333A
PARCEL NO: 111-321-21

JOB LOCATION ADDRESS: 5620 TRACE WOOD CT
PROPERTY OWNER: ~~BOB MILLS~~ Traci Boggs
BUILDING CONTRACTOR:
SUBDIVISION NAME: NORTH LAKE
AUTHORIZATION ISSUED BY: _____ DATE: 6-19-03
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 3333A, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN INSTALLATION, CONSTRUCTION, ALTERATION AND/OR REPAIR APPROVAL MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH MECKLENBURG COUNTY HEALTH DEPARTMENT.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. OTHER CONDITIONS: REQUIRES AGREEMENT FORMS PRIOR TO OBTAINING CONSTRUCTION AUTHORIZATION

OWNER CERTIFICATION

I CERTIFY THAT THERE HAVE BEEN NO ALTERATIONS IN SITE OR SOIL CONDITIONS OR MODIFICATIONS TO FACILITY, WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS FROM THOSE SPECIFIED IN THE ORIGINAL APPLICATION OR ASSOCIATED IMPROVEMENT PERMIT UNLESS AUTHORIZED IN WRITING BY THE MECKLENBURG COUNTY HEALTH DEPARTMENT. I ALSO UNDERSTAND THAT ANY SUCH ALTERATIONS, MODIFICATIONS, OR FALSE INFORMATION ARE GROUNDS FOR REVOCATION OF PERMITS AND AUTHORIZATION TO CONSTRUCT.

X Traci Boggs — X 12/27/03
SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE — DATE

3333A

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

FACSIMILE SHEET
FAX NO. (704) 720-9406

DATE: 12/4/02 Project Number: 5-1202

TO: Name: Bill Marlin CC:

Company: Meck. Co. Env. Health

Fax Number: (704) 336-6894

FROM: Wendell Overby SUBJECT: North Lake Development Lot

The following items are being faxed. Number of pages including transmittal sheet: 3

x For Your Comments/Approval	x For Your Information
___ Per Our Conversation	___ Per Your Request
___ Please Advise	___ Please Call
___ Would Like To Discuss	___ Please Handle

HARD COPY SENT:

___ US Regular Mail	___ Hand Delivery
___ Overnight	x No Hard Copy Sent

REMARKS: Bill: Attached are specs for the 3 bedroom layout at North Lake Development off Camp Stewart Road. We propose an at-grade EZFLOW initial at 0.19 gpd/ft^2 with an at-grade LPP repair at 0.11 gpd/ft^2. French drain along the front and west property lines needed as we discussed.

Wendell

IF YOU HAVE ANY QUESTIONS OR PROBLEMS WITH THIS TRANSMISSION,

PLEASE CONTACT Wendell AT (704) 720-9405.

CONFIDENTIALITY NOTICE

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BOB MILLS/NORTH LAKE DEVELOPMENT

JOB #: 5-1202

LAYOUT FOR 3 BEDROOM HOME

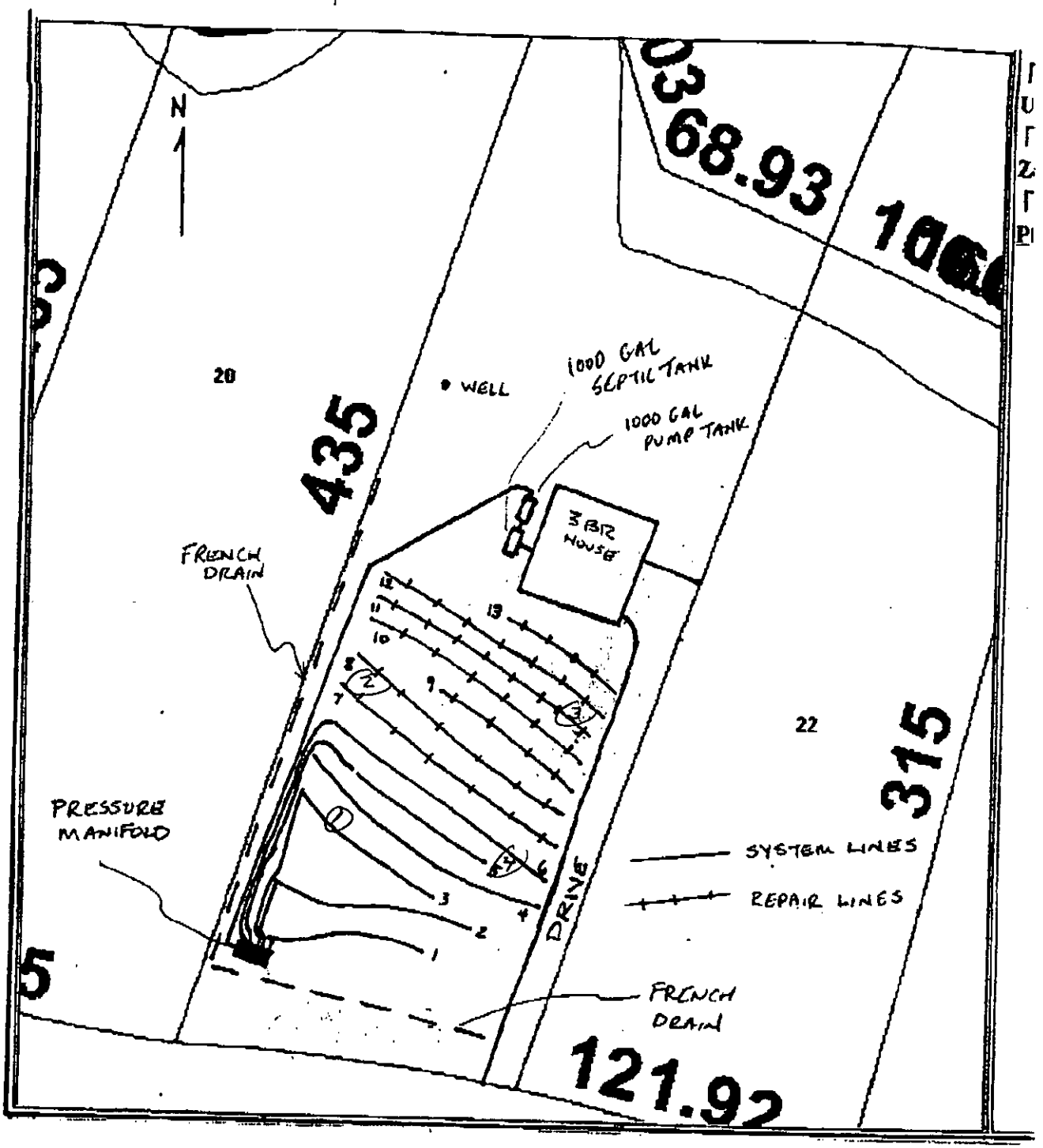
December-02

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	LINE LENGTH
TBM		0.0			100.0	
INSTR. 1			100.0			
			SYSTEM			
1	YELLOW			2.70	97.3	55
2	BLUE			4.30	95.7	70
3	PINK	6.1		3.60	93.9	60
4	RED			4.40	93.1	115
5	BLUE			4.70	92.8	53
6	ORANGE			5.40	92.1	110
			REPAIR			
7	REDORANGE			6.00	91.5	110
8	PINKBLUE			6.20	91.3	75
9	BLUE			6.30	91.2	110
10	PINK			6.70	90.8	110
11	RED			7.10	90.4	95
12	ORANGE			7.50	90.0	95
13	YELLOW			7.80	89.7	55
					Total	1113

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	PROPOSED LTAR GPD/FT^2	INNOVATIVE SYSTEM	DISTRIBUTION
SYSTEM	463	0.19	INNOVATIVE	~.2	EZ-FLOW	PUMP TO MANIFOLD
REPAIR	650	0.11	ATGRADE LPP	~0.1	N/A	ATGRADE LPP

Notes:

** TBM located on top flagged white oak stump near first drain line
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
** House and driveway location illustrated on the attached map
**BS and FS indicate rod readings
**Lines flagged in field may be longer than lengths shown.
Install at lengths shown on this sheet.



3 BEDROOM SEPTIC SYSTEM LAYOUT
BOB MILLS - NORTH LAKE DEVELOPMENT
DEC. 2002
S&EC #5-1202
1" = 50'

4 Borings made 5-23-03 after 3" + rain event 5-22-03
Locations approximate. Only one boring showed water moving
1 - No water running in @30" (SW) into hole during boring
2 - No water @ 26" (SW) activity.
3 No water @ 40" 4 - water @ 32" WAM 5-23-03

North Carolina
Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

NCDENR

June 9, 2003

Memorandum

To: Sylvia Daniel RS, MPA Environmental Health Program Chief
Mecklenburg County Environmental Health

From: Gene Young, Regional Soil Specialist
On-Site Wastewater Section

Subject: Soil / Site Evaluation of Bob Mills
Location-North Lake Development Lot 46
Property Size-1.2 acres

On May 19 2003 Bill Marlin, Drew Walker and I did a soil / site evaluation of the aforementioned property to determine its suitability for the installation of a sub-surface sewage treatment and disposal system for a three-bedroom residence. A well will be drilled for the water supply.

The soils on the site have 4 to 14 inches of a sandy clay loam surface layer over 24 to 37 inches of a clay subsoil. The subsoil has slightly expansive clay mineralogy due to firm moist soil consistence and a plastic wet soil consistence. Soil wetness was also documented on the site at depths ranging from 24 to 26 inches from the surface in the proposed system area. An at grade 25% reduction system with a long term acceptance rate of .15 gpd/ft2 should be used for the initial system. The replacement system will be an at grade low-pressure pipe system at a long-term acceptance rate of .1 gpd/ft2.

The following Improvement Permit and site modifications will be required for this site:

1. The drive must be placed on the right side of the lot.
2. The house must be constructed on the lot rear and meet all septic system separation distances.
3. The well location should be 100 feet away from the system and replacement areas or the maximum feasible distance, but in no case less than 50 feet.
4. A surface diversion must be installed and maintained to keep all surface water off the system and system replacement areas (this must be constructed before the system is installed).

127 Creek Ridge Drive, Lexington, NC 27295 Telephone 336 764-9067
Fax 336 764-9067

11/30/27

North Carolina
Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

NCDENR

June 9, 2003

6. A subsurface drain must be installed to a depth of at least two feet below the bottom elevation of the first line in the initial system. The drain must be filled with clean washed gravel to within one foot of the surface. A filter fabric must then be placed over the gravel and soil then brought to the ground surface. This will aid in the removal of laterally moving ground water from the site (this must be constructed before the system is installed).
7. All the tankage must be 24-hour water tested after installation.
8. The system installation must be done during dry to moist soil conditions.
9. The initial 25% reduction system should be designed with a pressure manifold for equal line distribution.
10. After the 25% reduction system has been installed at least 12 inches of soil cover must be placed over the entire system area.
11. The field area must be seeded with grass or sod and landscaped to shed all surface water.

If you have any further questions, please feel free to call me.

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Fax 336 764-9067

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

Sheet: 1
Property ID: 111-321-21
Lot #: 46
File #: 3333A
Code: 3

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: R. A. Mills Construction, LLC
Applicant: David Lee Kinney
Address: 7209 East Harris Blvd., Charlotte, N. C. 28227
Date Evaluated: 11/20/2002
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: 1.02a
Location of Site: 5020 Tracewood Court
Property Recorded:
Water Supply: [ ] Public [x] Individual [x] 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	.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	0-4	GR/SCL	FR/.SEXP/SS/SP	2.5Y6/2@30"	33	N/A	NONE	US, III
		4-33	SBK/SCL	"					
2	"	0-3	GR/SCKL	"	2.5Y7/1@13"	15	"	"	US, IV
		3-15	SBK/SC	FI/SEXP/S/P					
3	"	0-5	GR/SCL	FR/SEXP/SS/SP	2.5Y6/1@20"	24	"	"	US, III
		5-24	SBK/SCL	"					
4	"	0-4	GR/SCL	"	2.5Y7/1@33"	37	"	"	US
		4-32	SBK/SCL	"					
		33-37	M/SC	VFI/EXP/VS/VP					
5	"	0-5	GR/SCL	FR/SEXP/SS/SP	>36" TO SOIL WETNESS	36	"	"	"
		5-24	SBK/SCL	"					
		24-36	M/SC	VFI/EXP/VS/VP					
6	"	0-4	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@34"	37	"	"	US, IV .15GPD/FT^2
		4-28	SBK/SCL	"					
		28-37	SBK/SC	FI/SEXP/S/P					
7	LS, 10	0-5	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@32"	"	"	"	US, 1V .15GPD/FT^2
		5-37	SBK/SC	FI/SEXP/S/P					

Description	Initial System	Repair System
Available Space (.1945)	US	US
System Type(s)		
Site LTAR		

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Marlin, LSS, 11/21/02, W. R. Marlin
Others Present:

FILE # 3333A

COMMENTS 1017 Repair

LANDSCAPE POSITION	GROUP	TEXTURE	.1955 LTAR
R-RIDGE	I	S-SAND	1.2-0.8
S-SHOULDER SLOPE		LS-LOAMY SAND	
L-LINEAR SLOPE			
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.8-0.6
N-NOSE SLOPE		L-LOAM	
H-HEAD SLOPE			
CC-CONCLAVE 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	
		O-ORGANIC	

CONSISTENCE MOIST	WET
VFR-VERY FRIABLE	NS-NON-STICKY
FR-FRIABLE	SS-SLIGHTLYSTICKY
FI-FIRM	S-STICKY
VFI-VERY FIRM	VS-VERY STICKY
EFI-EXTREMELY FIRM	NP-NON-PLASTIC
	SP-SLIGHTLYSTICKY
	P-PLASTIC
	VP-VERY PLASTIC

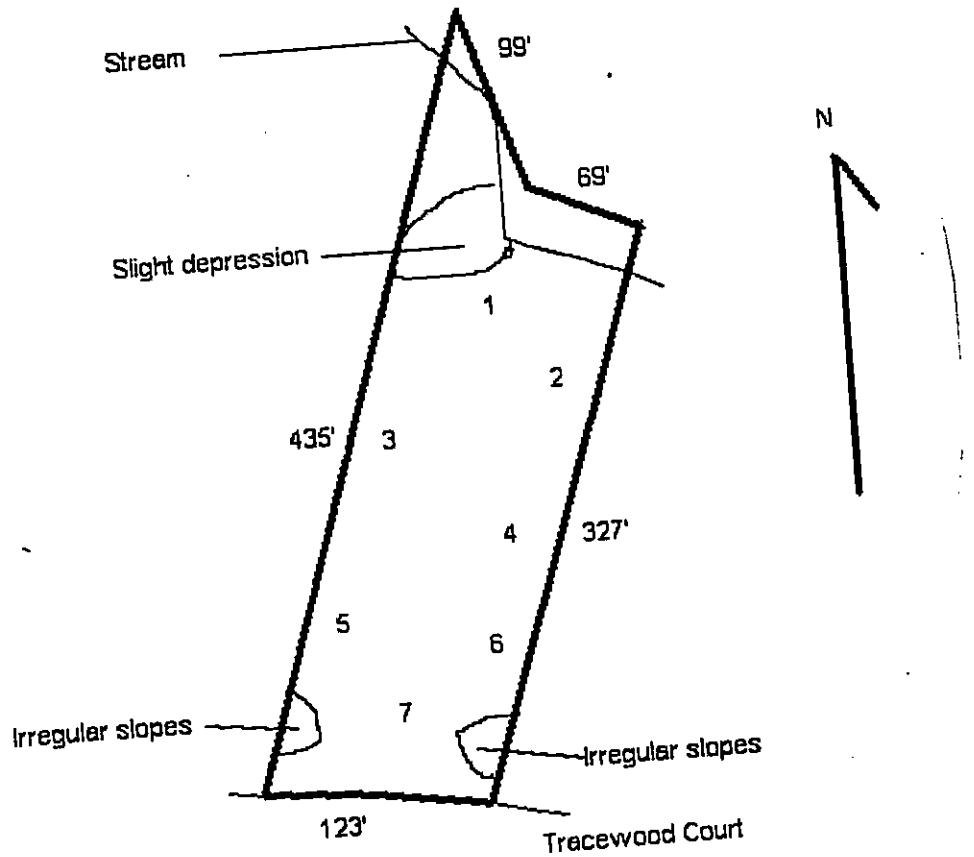
STRUCTURE

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

MINERALOGY

SLIGHTLY EXPANSIVE

EXPANSIVE



GIS Real Estate System

Mecklenburg County, NC Geographic Information Systems

Tax Parcel & Map Sheet Search | Road Name & Intersection Search | Market Analysis Search Menu
Return to Full Map Extent | How to Use the System | Return to GIS Homepage

Click here to submit questions or comments about the information shown on this page.
Additional Tax Information (Tax Bills, Real and Personal Property, etc.) is available through the:
Tax Information System

Date and Time Stamp 1/30/2003 2:35:06 PM EST	This tax record is prepared for the inventory of real property within Mecklenburg County and is compiled from recorded deeds, plats, tax maps, surveys and other public records. Users of this data are hereby notified that the aforementioned public primary information sources should be consulted for verification. Mecklenburg County assumes no legal responsibility for the information contained herein.

Tax Real Estate Information

Note:This information is no longer current. Values Shown below do not reflect the 2003 Values sent out January 17, 2003.

BUILDING PHOTOS ARE NOW AVAILABLE! SEE MAJOR IMPROVEMENT SECTION BELOW FOR LINK.

*** Images of real estate documents from the Register of Deeds are available from 11/9/1998 to the present. ***

Parcel-Id#: 11132121 **GIS Map#:** 11132121 **Account Type:** DOMESTIC CORPORATION **Owner:** R A MILLS CONSTRUCTION LLC **Add. Owner:** **Mailing:** 201 E WINDSOR ST **Address:** **City:** MONROE **State:** NC **ZIP:** 28112 **Location:** 5020 TRACEWOOD CT Get Directions **Municipality:** MECKLENBURG COUNTY	**Legal Desc.:** L46 B1 M21-916 **Deed Book/Page:** 11721/115 GET DEED! **Date:** 11/16/2000 **Sales Price:** $13000 **Sales Date:** 11/16/2000 **Qualified Sale:** N **Neighborhood Code:** 11122 **Historic Desig.:** **Farm Desig.:** **Deed Acreage:** 0 **Assessed Acreage:** 1.022 **Assessed Land Value:** $21000 **Total Assessed Value:** $21000 **Tax Bill Information:** Click Here!

Site Location Information

Zoning: CALL THE APPROPRIATE AGENCY **Fire District:** ROBINSON **Voter District:** Click to Find Out **School District:** Click to Find Out **Reg. Watershed Class:** AVAILABLE WITH MAP DISPLAY ONLY	**Parks Within 3 Miles:** Click to Find Out **FEMA Flood Panel#:** AVAILABLE WITH MAP DISPLAY ONLY More Flood Information **FEMA Flood Zone:** OUT **FEMA Flood Map Date:** N/A **Census Tract Number:** AVAILABLE WITH MAP DISPLAY ONLY

Major Improvement Information

Parcel-Id# & Card#: 11132121-001 **Land-Use Type:** VACANT **Building Type:** SINGLE FAMILY RESIDENTIAL	**Situs Location:** 5020 TRACEWOOD CT Get Directions **Ext. Type:**

MECKLENBURG COUNTY
Health Department

January 31, 2003

R A Mills Construction LLC
201 E. Windsor Street
Monroe, NC 28112

Re: Application for improvement permit for
Property Site: 5020 Tracewood Court
Health Department file no. 3333A

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on November 22, 2002 evaluated the above-referenced property at the site designated on the plat/site plan that accompanied your improvement permit application. According to your application the site is to serve a 3-bedroom residence, with a design wastewater flow of ___360____gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

Based on the criteria set out in Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rules .1940 through .1948, the evaluation indicated that the site is **UNSUITABLE for** a ground absorption sewage system. Therefore, your request for an improvement permit is **DENIED.** A copy of the site evaluation is enclosed. The site is unsuitable based on the following:

____X____Unsuitable soil topography and/or landscape position (Rule .1940)
____X____Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
____X____Unsuitable soil wetness condition (Rule .1942)
____X____Unsuitable soil depth (Rule .1943)
_____Presence of restrictive horizon (Rule .1944)
____X____Insufficient space for septic system and repair area (Rule .1945)
_____Unsuitable for meeting required setbacks (Rule .1950)
_____Other (Rule .1946)

These severe soil or site limitations could cause premature system failure, leading to the discharge of untreated sewage on the ground surface, into surface waters, directly to ground water or inside your structure.

The site evaluation included consideration of possible site modifications, and modified, innovative or alternative systems. However, the Health Department has determined that none of the above options will overcome the severe conditions on this site. A possible option might be a system designed to dispose of sewage to another area of suitable soil or off-site to additional property.

For the reasons set out above, the property is currently classified **UNSUITABLE,** and an improvement permit shall not be issued for this site in accordance with Rule .1948 (c).

However, the site classified as **UNSUITABLE** may be classified as **PROVISIONALLY SUITABLE** if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as **PROVISIONALLY SUITABLE.**

You have a right to an informal review of this decision. You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an informal review by the N. C. Department of Environment and Natural Resources regional soil specialist. A request for informal review must be made in writing to the local health department.

You also have a right to a formal appeal of this decision. To pursue a formal appeal, you must file a petition for a contested case hearing with the Office of Administrative Hearings, 6714 Mail Center, Raleigh, NC 27699-6714. To get a copy of a petition form, you may write the Office of Administrative Hearings or call the office at (919) 733-0926 or from the OAH web site at www.oah.state.nc.us/form.htm. The petition for a contested case hearing must be filed in accordance with the provision of North Carolina General Statutes 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B. N. C. General Statue 130A-335(g) provides that your hearing would be held in the county where your property is located.

Please note: If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER.** The date of this letter is January 31, 2003. Meeting the 30-day deadline is critical to your right to a formal appeal. Beginning a formal appeal within 30 days will not interfere with any informal review that you might request. Do no wait for the outcome of any informal review if you wish to file a formal appeal.

If you file a petition for a contested case hearing with the Office of Administrative Hearings, you are required by law (N.C. General Statute 150B-23) to send a copy of your petition to the North Carolina Department of Environment and Natural Resources. Send the copy to: Office of General Counsel, N. C. Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, NC. 27699-1601. Do **NOT** send the copy of the petition to your local health department. Sending a copy of your petition to the local health department will **NOT** satisfy the legal requirement in N.C. General Statute 150B-23 that you send a copy to the Office of General Counsel, NCDENR.

You may call or write the local health department if you need any additional information or assistance.

Sincerely,

J. Andrew Walker, R.S.
Authorized Agent - DENR

Encl: (2)

MECKLENBURG COUNTY
Health Department

January 31, 2003

R A Mills Construction LLC
201 E. Windsor Street
Monroe, NC 28112

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However, the site classified as **UNSUITABLE** may be classified as **PROVISIONALLY SUITABLE** if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as **PROVISIONALLY SUITABLE.**

You have a right to an informal review of this decision. You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an informal review by the N. C. Department of Environment and Natural Resources regional soil specialist. A request for informal review must be made in writing to the local health department.

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Sincerely,

J. Andrew Walker, R.S.
Authorized Agent - DENR

Encl: (2)

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

Sheet: 1
Property ID: 111-321-21
Lot #: 46
File #: 3333A
Code: 3

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: R. A. Mills Construction, LLC
Applicant: David Lee Kinney
Address: 7209 East Harris Blvd., Charlotte, N. C. 28227
Date Evaluated: 11/20/2002
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: 1.02a
Location of Site: 5020 Tracewood Court
Property Recorded:
Water Supply: [ ] Public [x] Individual [x] 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	.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	0-4	GR/SCL	FR/.SEXP/SS/SP	2.5Y6/2@30"	33	N/A	NONE	US, III
		4-33	SBK/SCL	"					
2	"	0-3	GR/SCKL	"	2.5Y7/1@13"	15	"	"	US, IV
		3-15	SBK/SC	FI/SEXP/S/P					
3	"	0-5	GR/SCL	FR/SEXP/SS/SP	2.5Y6/1@20"	24	"	"	US, III
		5-24	SBK/SCL	"					
4	"	0-4	GR/SCL	"	2.5Y7/1@33"	37	"	"	US
		4-32	SBK/SCL	"					
		33-37	M/SC	VFI/EXP/VS/VP					
5	"	0-5	GR/SCL	FR/SEXP/SS/SP	>36" TO SOIL WETNESS	36	"	"	"
		5-24	SBK/SCL	"					
		24-36	M/SC	VFI/EXP/VS/VP					
6	"	0-4	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@34"	37	"	"	US, IV .15GPD/FT^2
		4-28	SBK/SCL	"					
		28-37	SBK/SC	FI/SEXP/S/P					
7	LS, 10	0-5	GR/SCL	FR/SEXP/SS/SP	2.5Y7/1@32"	"	"	"	US, 1V .15GPD/FT^2
		5-37	SBK/SC	FI/SEXP/S/P					

Description	Initial System	Repair System
Available Space (.1945)	US	US
System Type(s)		
Site LTAR		

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Marlin, LSS, 11/21/02. W. R. Marlin
Others Present:

FILE # 333134

COMMENTS 1017 Repair

LANDSCAPE POSITION	GROUP	TEXTURE	1955 LTAR	CONSISTENCE MOIST	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			

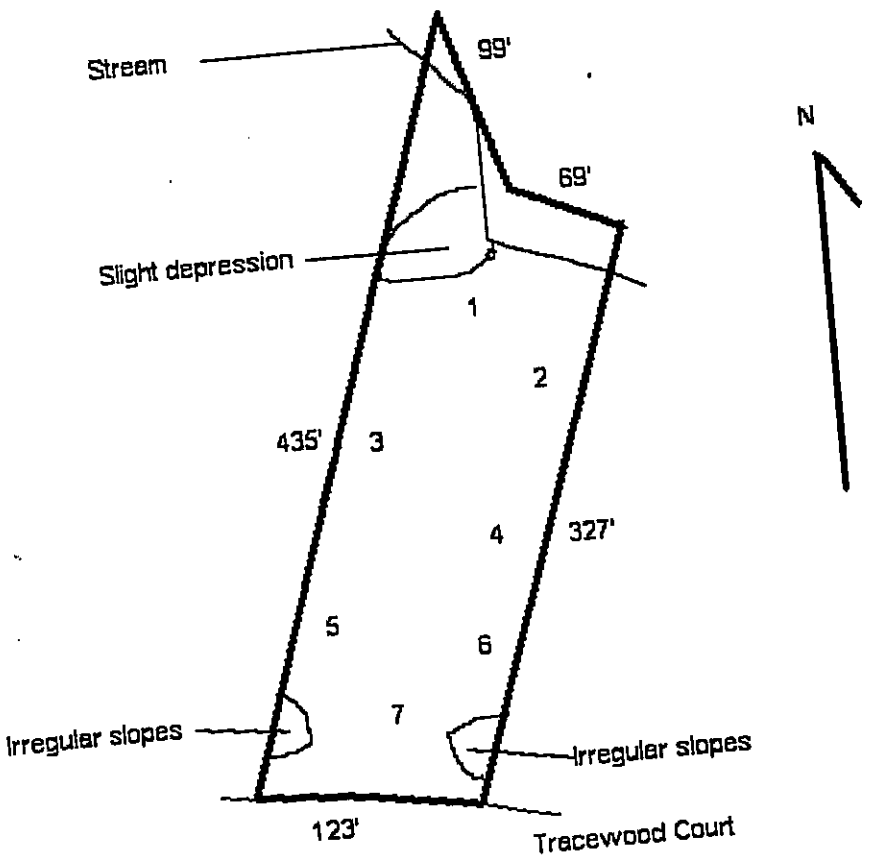
STRUCTURE

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

MINERALOGY

SLIGHTLY EXPANSIVE

EXPANSIVE



Eff. July 1, 1982;
Amended Eff. February 1, 1992; July 1, 1983; January 1, 1983.

15A NCAC 18A .1946 OTHER APPLICABLE FACTORS

The site evaluation shall include consideration of any other applicable factors involving accepted public health principles, such as, but need not be limited to:

(1) The proximity of a large-capacity water-supply well, the cone of influence of which would dictate a larger separation distance than the minimum distance specified in Rule .1950 of this Section;

(2) The potential public health hazard due to possible failures of soil absorption systems when specifically identified, would dictate larger separation distances than the minimums specified in Rule .1950 and Rule .1955(m) of this Section;

(3) The potential public health hazard of possible massive failures of soil absorption systems proposed to serve large numbers of residences, as in residential subdivisions or mobile home parks;

(4) For sites serving systems designed to handle over 3,000 gallons per day, as determined in Rule .1949 (a) or (b) of this Section, which include one or more nitrification fields with a design flow of greater than 1500 gallons per day, the applicant shall submit sufficient site-specific data to predict the height of the water table mound that will develop beneath the field (level sites) and the rate of lateral and vertical flow away from the nitrification trenches (sloping sites). The data submitted may include soil borings to depths greater than 48 inches, permeability and hydraulic conductivity measurements, water level readings, and other information determined to be necessary by the local health department or the State. The site shall be considered UNSUITABLE if the data indicate that the groundwater mound which will develop beneath the site cannot be maintained two feet or more below the bottom of the nitrification trenches or it is determined that effluent is likely to become exposed on the ground surface within, or adjacent to, the nitrification field.

History Note: *Authority G.S. 130A-335(e);*
Eff. July 1, 1982;
Amended Eff. January 1, 1990.

15A NCAC 18A .1947 DETERMINATION OF OVERALL SITE SUITABILITY

All of the criteria in Rules .1940 through .1946 of this Section shall be determined to be SUITABLE, PROVISIONALLY SUITABLE, or UNSUITABLE, as indicated. If all criteria are classified the same, that classification will prevail. Where there is a variation in classification of the several criteria, the most limiting uncorrectable characteristics shall be used to determine the overall site classification.

History Note: *Authority G.S. 130A-335(e);*
Eff. July 1, 1982;
Amended Eff. January 1, 1990.

15A NCAC 18A .1948 SITE CLASSIFICATION

(a) Sites classified as SUITABLE may be utilized for a ground absorption sewage treatment and disposal system consistent with these Rules. A suitable classification generally indicates soil and site conditions favorable for the operation of a ground absorption sewage treatment and disposal system or have slight limitations that are readily overcome by proper design and installation.
(b) Sites classified as PROVISIONALLY SUITABLE may be utilized for a ground absorption sewage treatment and disposal system consistent with these Rules but have moderate limitations. Sites classified Provisionally Suitable require some modifications and careful planning, design, and installation in order for a ground absorption sewage treatment and disposal system to function satisfactorily.
(c) Sites classified UNSUITABLE have severe limitations for the installation and use of a properly functioning ground absorption sewage treatment and disposal system. An improvement permit shall not be issued for a site which is classified as UNSUITABLE. However, where a site is UNSUITABLE, it may be reclassified PROVISIONALLY SUITABLE if a special investigation indicates that a modified or alternative system can be installed in accordance with Rules .1956 or .1957 of this Section.
(d) A site classified as UNSUITABLE may be used for a ground absorption sewage treatment and disposal system specifically identified in Rules .1955, .1956, 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 groundwater 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.

History Note: *Authority G.S. 130A-335(e);*
Eff. July 1, 1982;
Amended Eff. April 1, 1993; January 1, 1990.

15A NCAC 18A .1949 SEWAGE FLOW RATES FOR DESIGN UNITS

(a) In determining the volume of sewage from dwelling units, the flow rate shall be 120 gallons per day per bedroom. The minimum volume of sewage from each dwelling unit shall be 240 gallons per day and each additional bedroom above two bedrooms shall increase the volume of sewage by 120 gallons per day. In determining the number of bedrooms in a dwelling unit, each bedroom and any other room or addition that can reasonably be expected to function as a bedroom shall be considered a bedroom for design purposes. When the occupancy of a dwelling unit exceeds two persons per bedroom, the volume of sewage shall be determined by the maximum occupancy at a rate of 60 gallons per person per day.
(b) Table No. I shall be used to determine the minimum design daily flow of sewage required in calculating the design volume of sanitary sewage systems to serve selected types of establishments. The minimum design volume of sewage from any establishment shall be 100 gallons per day. Design of sewage treatment and disposal systems for establishments not identified in this Rule shall be determined using available flow data, water-using fixtures, occupancy or operation patterns, and other measured data.

TABLE NO. I

TYPE OF ESTABLISHMENT	DAILY FLOW FOR DESIGN
Airports	5 gal/passenger

Mecklenburg County
Health Department
700 North Tryon Street
Suite 211
Charlotte, North Carolina 28202-2236

PRESORTED
FIRST CLASS

CHARLOTTE NC
FEB 05 03

PB PITNEY BOWES
7642760

$ 0.35 2
U.S. POSTAGE

R A Mills Construction LLC
201 E. Windsor Street
Monroe, NC 28112

A C S
☐ INSUFFICIENT ADDRESS
☑ ATTEMPTED NOT KNOWN
☐ NO SUCH NUMBER/ STREET
☐ NOT DELIVERABLE AS ADDRESSED - UNABLE TO FORWARD
☐ OTHER

RTS
RETURN TO SENDER

LALSSMP 28112

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 14021

File: 3333A Action 2

Parcel: 11109116PO ☐ PC

Location: Tracewood Court

Subdivision:

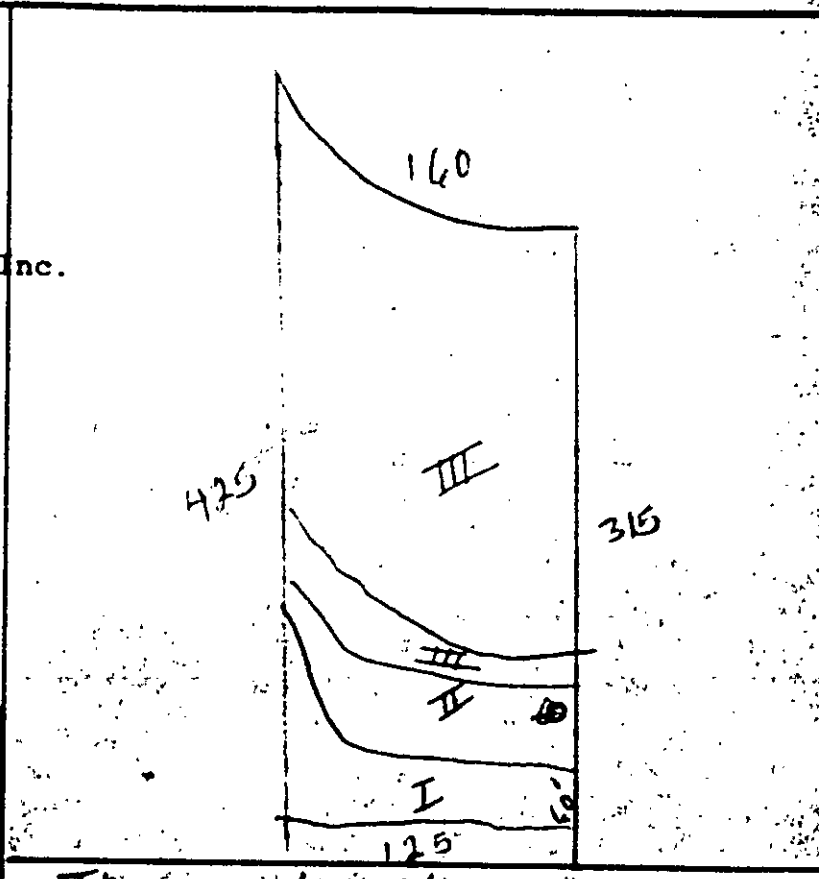
Lot: 46/1 Block: 5 Acres: 1.23

Owner: Northlake Development Group, Inc.
Address: 3345 Mintwood Drive
Charlotte, NC 28212

Comments: _____

Described by: W. B. Ramsey

Date: 7-1-77



*** EVALUATION KEY ***
S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	S (PS) U 2-8	S (PS) U 2-6	S (PS) U 2-4	S PS U	S PS U	S PS U
Texture	S (PS) U	S (PS) U To 30"	S (PS) U To 10"	S PS U	S PS U	S PS U
Structure	S (PS) U	S (PS) U To 30"	S (PS) U To 10 inch	S PS U	S PS U	S PS U
Drainage	S (PS) U	S PS (U) H2O At 30"	S PS (U) H2O Table At 10" or less	S PS U	S PS U	S PS U
Depth	S (PS) U 36-40	S (PS) U 36-38	S PS (U) 25-36	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U	S (PS) U	S (PS) U	S PS U	S PS U	S PS U
Available Space	S PS (U)	S (PS) U	S (PS) U	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IIa Cecil	IIa Cecil or Helena	IIa+ Cecil or Helena			
Area Classification	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

MECKLENBURG COUNTY
Department of Environmental Health

July 2nd, 1987

Northlake Development Group, Inc.
3345 Mintwood Drive
Charlotte, NC 28212

RE: Property located at Tracewood Court 46/1
FILE: 3333A
PARCEL: 11109116PO

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. The results of this investigation showed the property to be classified UNSUITABLE for the installation of such a system. A copy of the Site Evaluation Report (Serial Number 14021) is enclosed.

State regulations provide that sites originally classified unsuitable may be utilized for the installation of alternate or modified sewage disposal systems provided the requirements of 10 NCAC 10A .1948 (c) are met. A reprint of this section is enclosed for your information.

Should you desire to file for permission to install an alternate or modified sewage treatment system on the property, please submit an Application For An Improvement Permit with an ACCURATELY dimensioned plot plan detailing the location of current and/or proposed buildings, wells and sewage disposal systems to this office. They will be reviewed, and if it is determined that the proposed system may reasonably be expected to function satisfactorily, an Improvement Permit will be issued by the Department upon completion by you, of a formal request for lot reclassification.

If I may be of any assistance, please feel free to call.

Sincerely,

Sylvia D. Daniel, R.S.
Environmental Health Supervisor
Environmental Resources Division

Enclosure (2)

Mecklenburg County
Health Department

Betty S. Snow, R.N., M.A.
Health Director

June 1, 1994

Mr. Arjan Jagtiani
P.O. Box 333
Belle Meade, NJ 08502-0333

Re: 5020 Tracewood Court
File: 3333A

Dear Mr. Jagtiani:

Receipt of the plans and specifications for a modified system of sewage disposal for the above referenced property is hereby acknowledged. Upon receipt of the information, a review was made of the material on file and a site evaluation was conducted. The plan was then reviewed in conjunction with provisions of 15A NCAC 18A, .1900 "Laws and Rules for Sewage Treatment and Disposal Systems." Our comments are listed below:

1. The area where the system is staked out for installation has insufficient soil depths. The observed soil depths ranged from approximately 20 to 28 inches. A Prefabricated, Permeable Block Panel System (PPBPS) cannot be installed in soils with depths less than 40 inches. The soils in this area also exhibited signs of soil wetness conditions at depths less than 36 inches. Sites where soil wetness conditions are less than 36 inches below the naturally occurring soil surface shall be considered UNSUITABLE with respect to soil wetness.

2. The PPBPS system is pressure dosed. The maximum length a pressure dosed low pressure pipe nitrification line can be is 70 feet. The plan shows the length of those lines to be 90 feet.

3. The system lies in a low topographic position which will channel runoff surface water over the nitrification lines. A French drain or a surface water diversion swale would be needed to divert this surface water.

For these reasons, the plans as submitted are disapproved.

A possible way to develop this site exists under .1948 (d) SITE CLASSIFICATION.

Please be advised that you have the right to an informal review by this department, the right to appeal under G.S.130A-24, and to have the appeal held in the county in which the site for which the improvement permit was requested is located.

If you have any questions regarding this matter please do not hesitate to call me at 336-5575.

Sincerely,

Kelly Randall, Soil Scientist, R.S.
Individual Water and Wastewater Systems

KR:gf

FEE: 200.00 CK# 1054 DATE: 6/21/02 GC

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

[ ] CRT

TYPE APPLICATION: X 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 #: 9333A

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 111-32-21

STREET ADDRESS: 5020 Tracewood CT

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: 46

TYPE OF BUILDING (CHECK ONE):

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

TOWNSHIP (CHECK ONE):

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

HEATED SQUARE FOOTAGE: 1800

NUMBER OF BEDROOMS: 3 NUMBER OF OCCUPANTS:

CLOSING DATE_____

FOUNDATION FOR RESIDENCE:

__ WITHOUT BASEMENT ON SLAB
X CRAWL SPACE
__ WITH BASEMENT /PLUMBING
__ 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)
__ MUNICIPAL (M)
X 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

PROPERTY OWNER:

NAME: Mills R.A. Construction LLC
(LAST) (FIRST) (MI)

ADDRESS: 7209 East Harris Blvd

CITY: Clt STATE: N.C. ZIP: 28227

DAYTIME PHONE: (704) 309 - 6230

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: David Lee Kinney
(LAST) (FIRST) (MI)

DAYTIME PHONE: (704) 567 - 9888

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? _____

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: Rob Mills DATE: 6-21-02

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

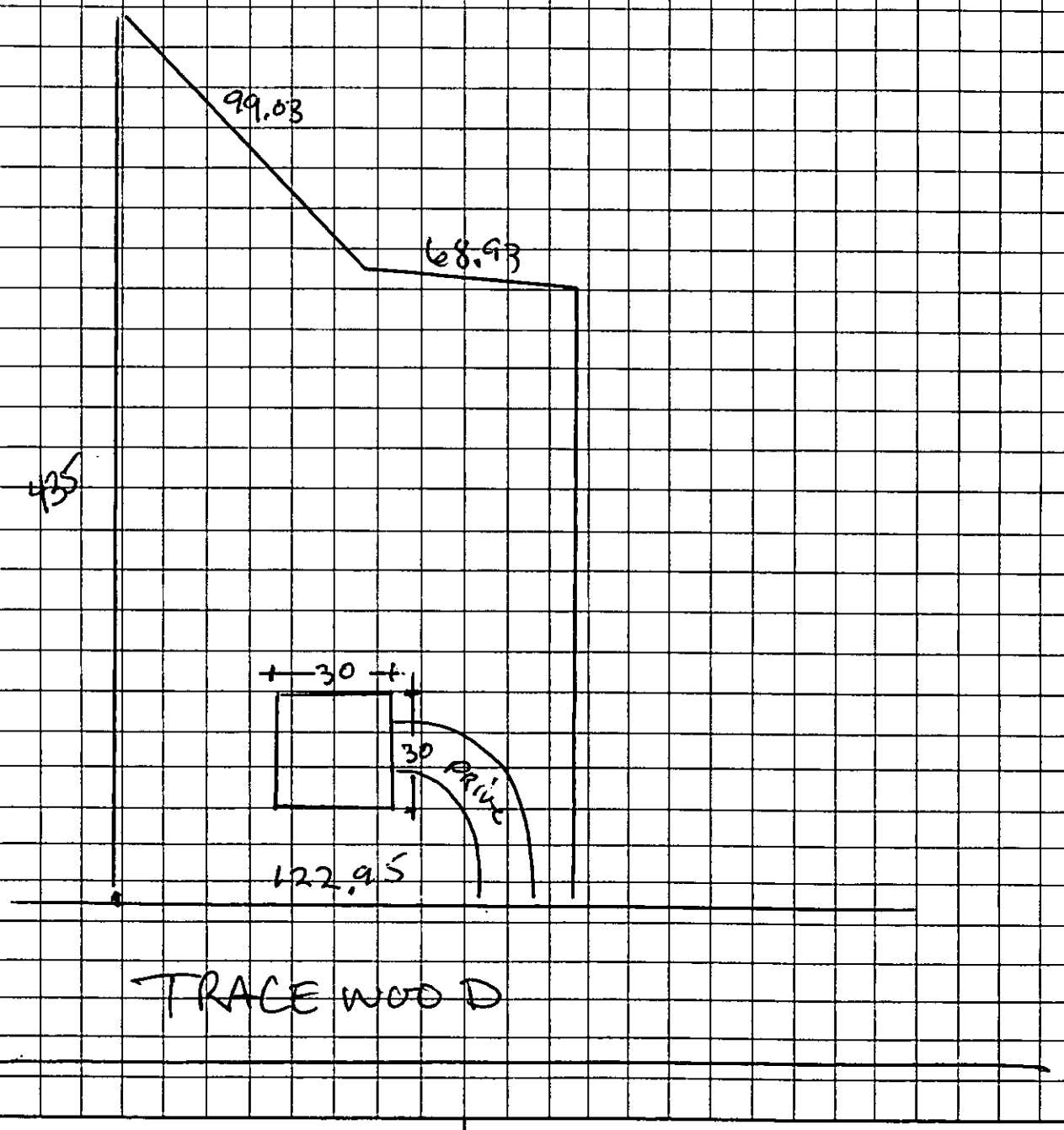
PROPOSED PLOT PLAN

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

FILE: 3333A

TC: 111-32-21

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.



R Timms
OWNER/AGENT SIGNATURE

DATE

APPROVAL DATE _____

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

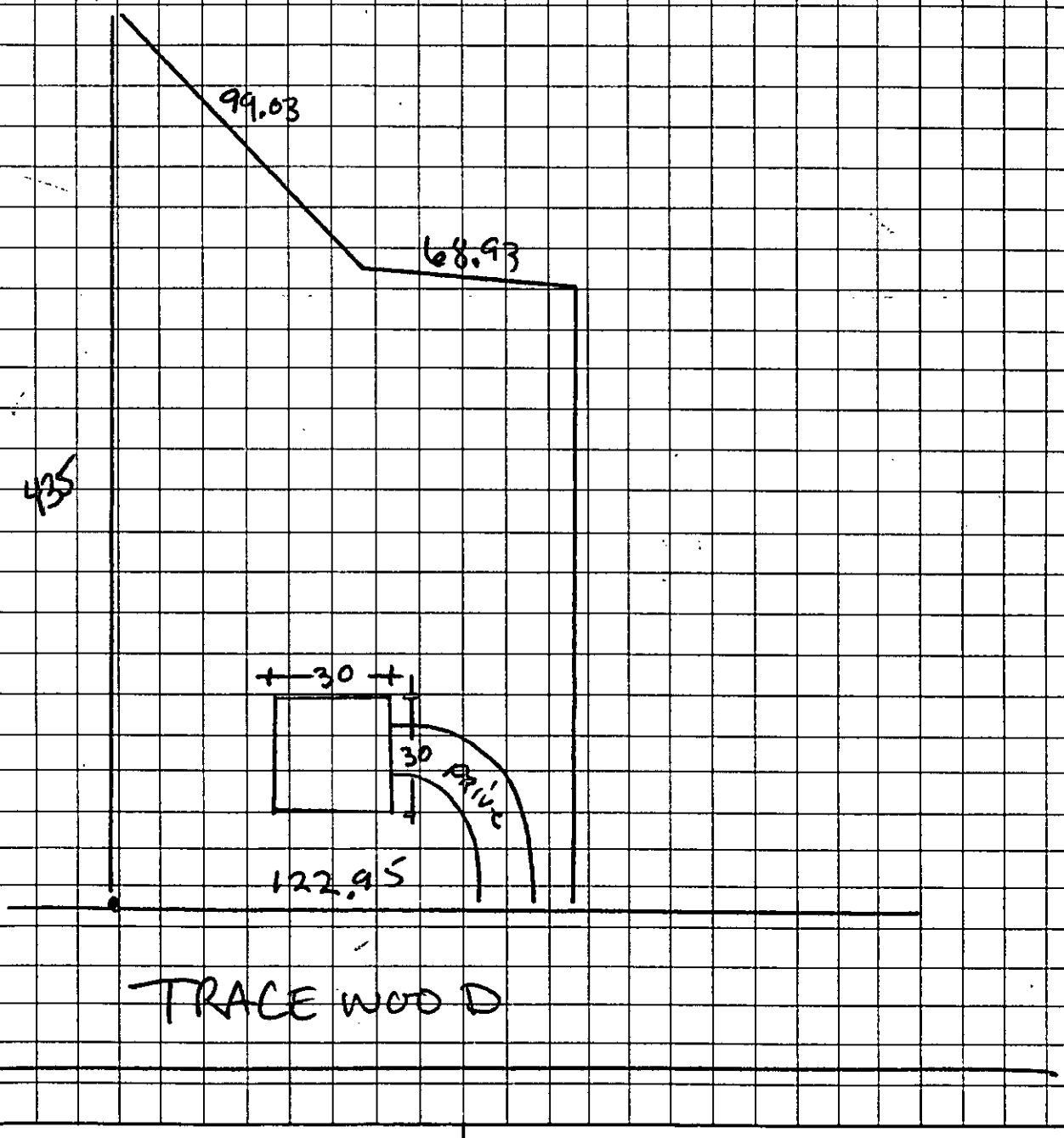
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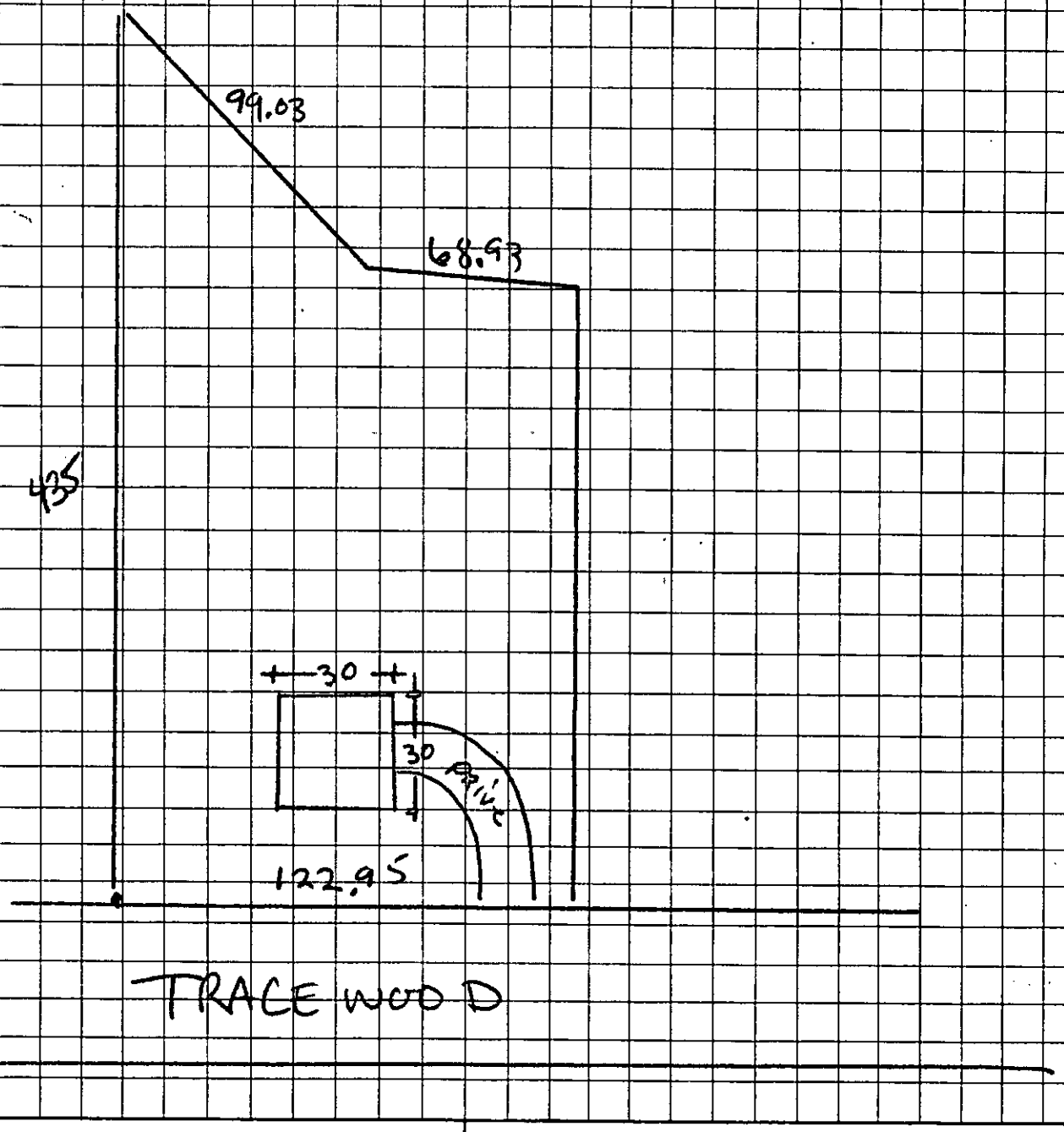
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111-321-21 33334

North Carolina
Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

NCDENR

June 9, 2003

Memorandum

To: Sylvia Daniel RS, MPA Environmental Health Program Chief
Mecklenburg County Environmental Health

From: Gene Young, Regional Soil Specialist
On-Site Wastewater Section

Subject: Soil / Site Evaluation of Bob Mills
Location-North Lake Development Lot 46
Property Size-1.2 acres

On May 19 2003 Bill Marlin, Drew Walker and I did a soil / site evaluation of the aforementioned property to determine its suitability for the installation of a sub-surface sewage treatment and disposal system for a three-bedroom residence. A well will be drilled for the water supply.

The soils on the site have 4 to 14 inches of a sandy clay loam surface layer over 24 to 37 inches of a clay subsoil. The subsoil has slightly expansive clay mineralogy due to firm moist soil consistence and a plastic wet soil consistence. Soil wetness was also documented on the site at depths ranging from 24 to 26 inches from the surface in the proposed system area. An at grade 25% reduction system with a long term acceptance rate of .15 gpd/ft2 should be used for the initial system. The replacement system will be an at grade low-pressure pipe system at a long-term acceptance rate of .1 gpd/ft2.

The following Improvement Permit and site modifications will be required for this site:

1. The drive must be placed on the right side of the lot.
2. The house must be constructed on the lot rear and meet all septic system separation distances.
3. The well location should be 100 feet away from the system and replacement areas or the maximum feasible distance, but in no case less than 50 feet.
4. A surface diversion must be installed and maintained to keep all surface water off the system and system replacement areas (this must be constructed before the system is installed).

127 Creek Ridge Drive, Lexington, NC 27295 Telephone 336 764-9067
Fax 336 764-9067

North Carolina
Department of Environment and Natural Resources

Michael F. Easley, Governor
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NCDENR

June 9, 2003

6. A subsurface drain must be installed to a depth of at least two feet below the bottom elevation of the first line in the initial system. The drain must be filled with clean washed gravel to within one foot of the surface. A filter fabric must then be placed over the gravel and soil then brought to the ground surface. This will aid in the removal of laterally moving ground water from the site (this must be constructed before the system is installed).
7. All the tankage must be 24-hour water tested after installation.
8. The system installation must be done during dry to moist soil conditions.
9. The initial 25% reduction system should be designed with a pressure manifold for equal line distribution.
10. After the 25% reduction system has been installed at least 12 inches of soil cover must be placed over the entire system area.
11. The field area must be seeded with grass or sod and landscaped to shed all surface water.

If you have any further questions, please feel free to call me.

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