

21215 ISLAND FOREST DR

00111120

1/7/2008

duponbj

Groundwater and Wastewater Services File Imaging Project
May 2007
Barcode Font = IDAutomationHC39M

Need

fees
signatures
Agreement forms before C.A. Release
Certified Operator before O.P. Release

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

DATE: _____ PERMIT NO: 4950B

PARCEL NO: 001-111-18

JOB LOCATION ADDRESS: 2515 Island Forest Drive

PROPERTY OWNER: Sid Carpenter

BUILDING CONTRACTOR: _____

SUBDIVISION NAME: Island Forest

AUTHORIZATION ISSUED BY: Jenny P. Mechlin DATE: 6/17/02

DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 4950B, 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: Four Bedroom Residence
Install according to submitted plans.
Agreement forms on file before C.A. Release
Certified operator agreement before O.P. release
3' wide trenches

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.

Sid D. Carpenter 6/18/02

SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE DATE

Permit Number: 49508

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number: 001-111-18

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 ✓ 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
- ___ Innovative or Experimental:
  - ___ IWWS-93-1
  - ___ IWWS-93-2
  - ___ IWWS-94-1

0.3 Long-term acceptance rate	480 Max gallons/day wastewater flow	822' Absorption Area (sq ft)	9 Trench spacing (min. on centers)
NO Serviced by private well	1500 Gallon septic tank	274 Total trench length (ft)	24" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)
4 Bedrooms in residence	1500 Gallon pump tank	N/A Depth of stone	

Any surface waters present: Yes Type: Lake Norman Minimum separation distance: 50'

Site modifications required:

Additional Conditions: Property does not require 100% Repair
Install lines in 3 foot trenches
Agreement forms needed / Certified Operator Agreement

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
- ___ Innovative or Experimental:
  - ___ IWWS-93-1
  - ___ IWWS-93-2
  - ___ IWWS-94-1

348 Absorption Area (Sq ft) 116' Total Trench Length (Ft)	N/A Depth of Stone Trench	9' Trench spacing (min. on centers)	24" 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 th 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 effe 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.

Tommy P. Mecklenburg R.S. 6/17/02
DEHNR Authorized Agent Date

Owner/Agent Signature 6/18/02
Date

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

FILE COPY

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

Attached is a proposed design for a 4 bedroom Prefabricated Permeable Block Panel System using pressurized distribution for Sid Carpenter Lot 60 Island Forest Subdivision, Mecklenburg County, NC.

Contents: **Page**

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Signature on page (4)

Project #: 5-1140
Date: June 10th, 2002
Designed by: Samuel A. Rollans, L.S.S.

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

Hickory Area Office:
710 Boston Road
Taylorsville, NC 28681
Phone: (828) 635-5820
Fax: (828) 635-5820

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

Please Scan

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.

- 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.

- 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.

- Backfill 4 – 6" of material (County Approved) over panels.

- Rake trench walls.

- Lime sidewalls of trench.

- Install 1 – 2" gatevalve at start of each lateral.

- 1 hole (5/32") per panel drilled at top of line.

- Trenches shall be 36" wide and have no more than ¼" fall in 10 feet.

PPBPS SYSTEM FOR WASTEWATER TREATMENT

Owner's agent's name: Sid Carpenter **Phone:** 704 907-8107
Mailing address: 7001 Summerlin Place
Charlotte, NC 28226
System location: 21515 Island Forest Drive (Lot 60 Island Forest Subdivision) Lake Norman
Tax ID #: 001-111-18 **Deed Book:** 2746, pg. 159
Township: **County:** Mecklenburg
Source of Wastewater Flow: 4-bedroom home
Estimated Daily Wastewater Production: 480 gpd
System Flow: 38.28 gpm

DESIGN PARAMETERS

Drainfield size: 274 linear ft. **Loading rate:** .29 gpd/ft²
Number of Panels 64
Trench depth: 24" below natural soil surface **Hole size** 5/32"
Trench width: 36" **Hole spacing:** 1 per panel
Septic tank size: 1500 gal **Pump tank size:** 1500 gal
Supply line volume: 9.57 gal **Pump tank dimensions:**Stay Rite 10.5'x5' (or other NCDENR approved 1500 gal pump tank
Supply line length: ~55' **Approx. pump tank draw down:** Stay Rite is 32.7 gal/in-will vary based on tank dimensions
Supply line diameter: 2" **Combined lateral line volume:** 21.4 gal
Supply line pressure rating: SCH 40 **Dosing volume:** 230 gal
Supply manifold: 3"sch40
Supply manifold length: Total Length ~65'
Supply manifold volume: 24.98 gal **Elevation head:** 11.0'
Recommended float controls: SJE Pumpmaster **Pressure head:** 2.0'
Threaded union: in tank **Friction head:** 6.5'
Gate valves: 1 per lateral in protective box, 1 in tank **Total dynamic head:** 19.5'
Check valves: 1 in tank,
Anti-siphon hole: No
Recommended high water alarm: SJE Rhombus panel and floats
Recommended Pump: Myers, effluent pump, series ME50, 1/2hp or approved equal
Additional Comments: Soil suitability performed by Soil and Environmental Consultants, PA and Mecklenburg County Health Department.

Sid Carpenter/Island Forest Drive Lot #60

JOB #: 05-1140

LAYOUT FOR 4 BEDROOM HOME - 480gpd June-02

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	LINE LENGTH
TBM		2.5			100.0	
INSTR. 1			102.5			
1	***RED***			***2.30***	***100.2***	***35***
2	***ORANGE***			***3.70***	***98.8***	***33***
3	***YELLOW***			***4.20***	***98.3***	***41***
4	***BLUE***			***5.00***	***97.5***	***42***
5	***PINK***			***5.40***	***97.1***	***38***
6	***RED***			***5.90***	***96.6***	***45***
7	***ORANGE***			***6.10***	***96.4***	***40***
8	YELLOW			6.50	96.0	40
9	BLUE			7.00	95.5	35
10	PINK			8.10	94.4	32
					Total	**381**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	PROPOSED LTAR GPD/FT^2	INNOVATIVE SYSTEM	DISTRIBUTION
****System***	***274'***	***0.29***	***INNOV.***	***0.300***	***PPBPS (50% reduction)***	***LPP***
Repair	116'	N/A	INNOV.	0.30	PPBPS (50% reduction)	LPP

Notes:

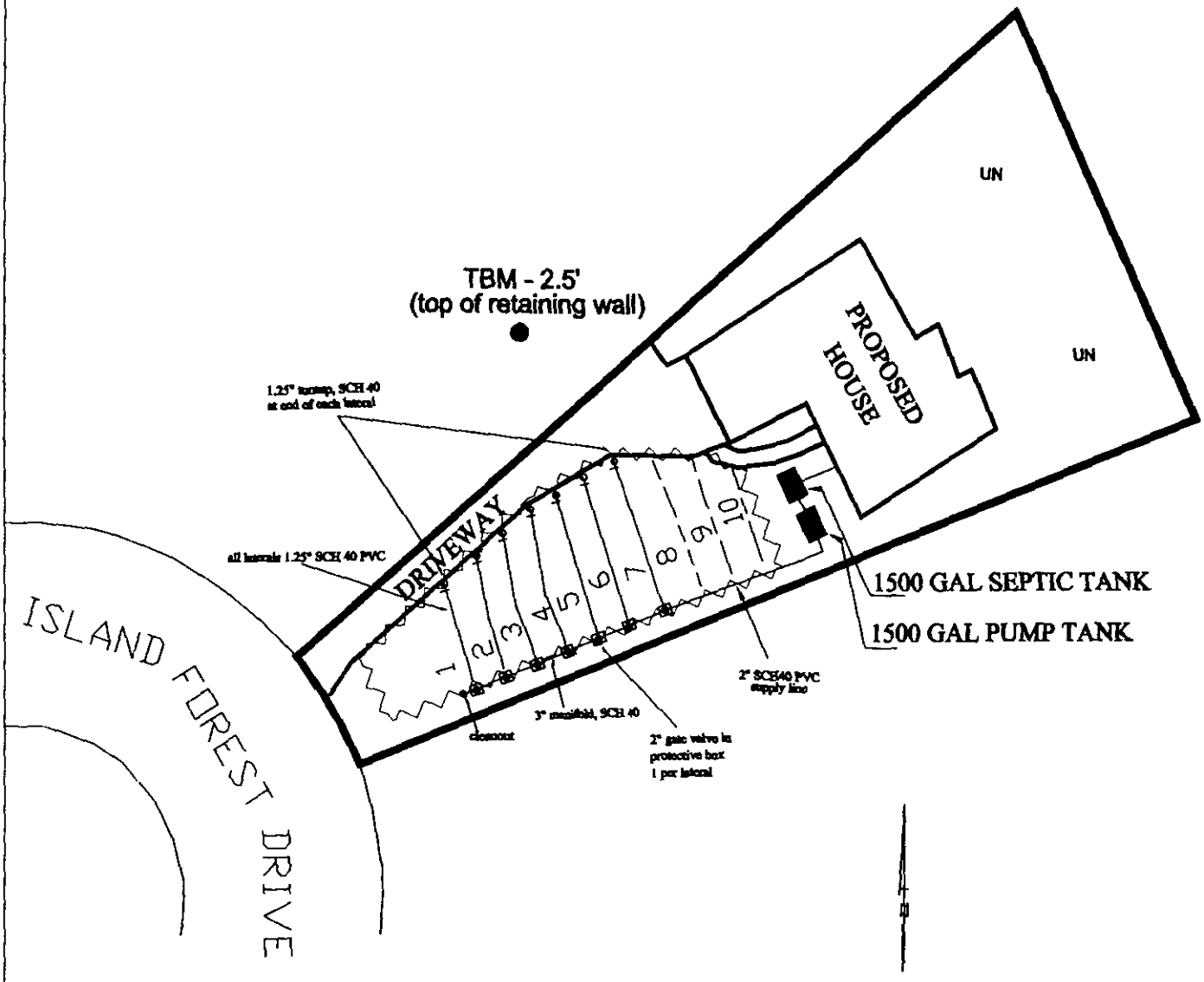
** Repair not required (lot recorded prior to 1983 & daily flow <480gpd)
** TBM located on top of brick retaining wall (see Site Plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
** House and driveway location illustrated 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.



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DESIGN SPECIFICATIONS

LINE	# PANELS	#HOLES/ PANEL	HOLE SIZE	LINE HEAD	LINE LENGTH	LINE FLOW
1	8	1	5/32"	2.00	35	3.28
2	8	1	5/32"	3.40	33	4.24
3	10	1	5/32"	3.90	41	5.7
4	10	1	5/32"	4.70	42	6.2
5	9	1	5/32"	5.10	38	5.85
6	10	1	5/32"	5.60	45	6.8
7	9	1	5/32"	5.80	40	6.21
TOTALS	71				274	38.28



LEGEND

- Areas contain soils with 36 inches or more of useable material and have potential for conventional septic systems.
- Septic and Pump Tanks.
- UN — Unsuitable areas.
- System lines.
- Repair lines.

GRAPHIC SCALE
1" = 50'

50 0 50 100

** 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.

SHEET 1 OF 1

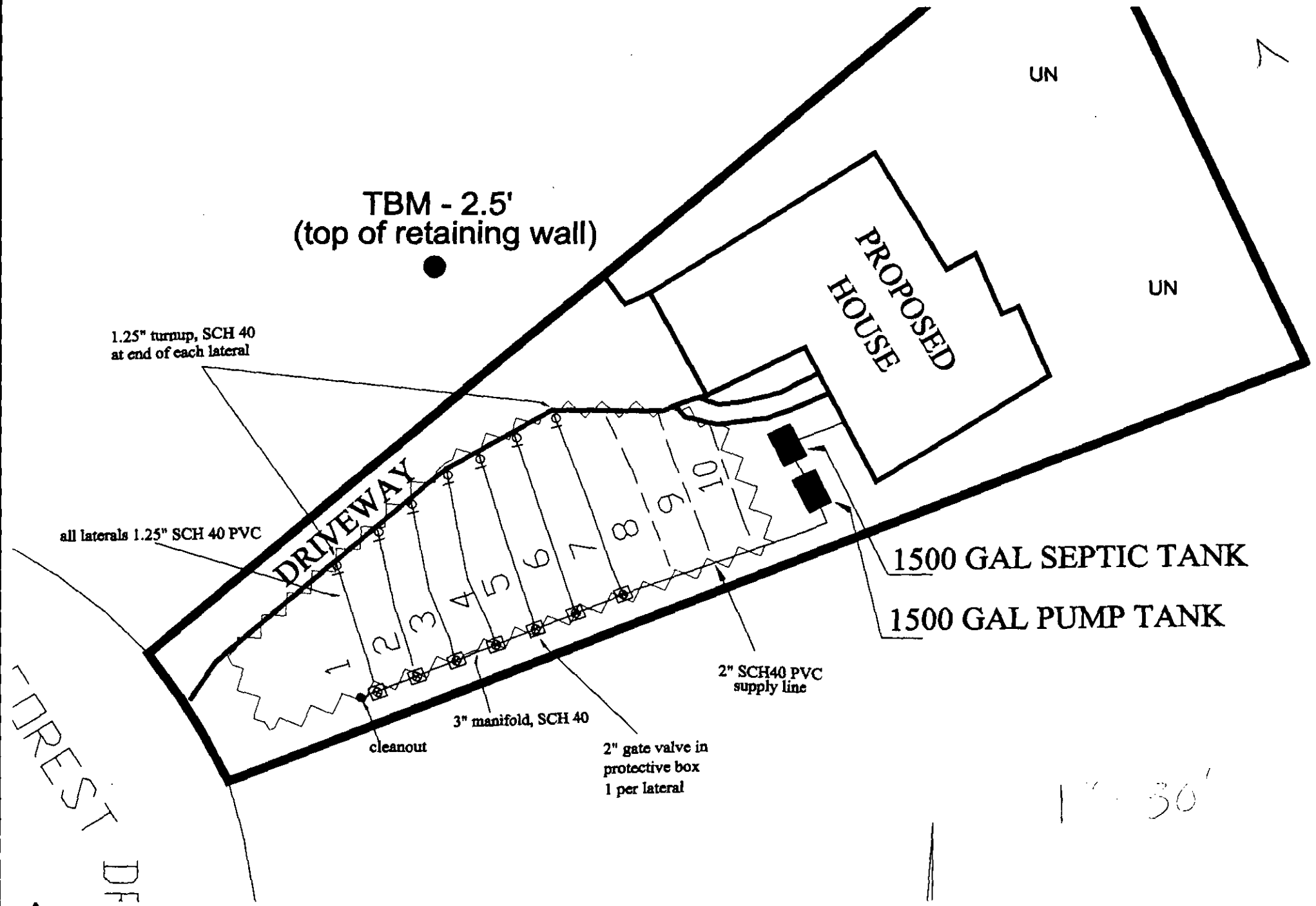
SHEET TITLE:
DETAILED SOIL EVALUATION & DRAINFIELD LAYOUT

PROJECT NAME:
- ISLAND FOREST LOT 60 -
BARROW COUNTY, NORTH CAROLINA
MAY 1998

S&EC Soil & Environmental Consultants, PA
[illegible] Court, Suite C • Concord, North Carolina 28027 • Phone (704)782-3492 • Fax (704) 782-3495

TITLE	DETAILED SOIL EVALUATION & DRAINFIELD LAYOUT
CHECKED BY	J.P.
DATE	1" = 50'
SCALE	5-11-98
FIELD WORK	B.A.R.
DRAWN BY	B.A.R.
PROJECT MGR.	B.A.R.
PROJECT NO.	98-1-60

6

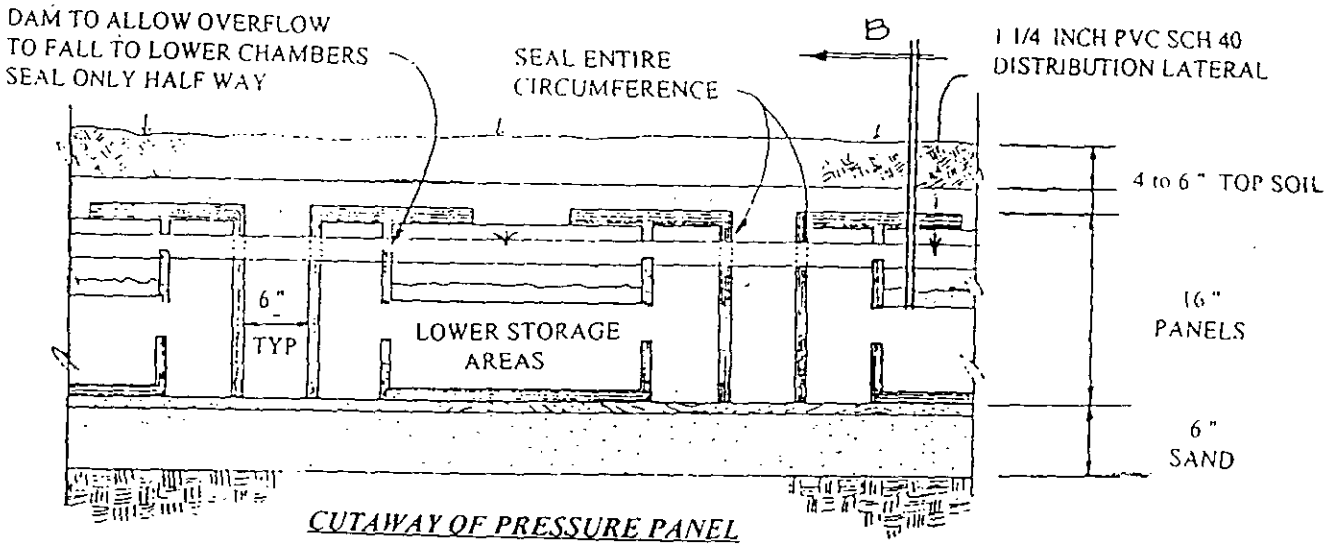

TBM - 2.5'
(top of retaining wall)
UN
UN
PROPOSED HOUSE
1.25" turnup, SCH 40
at end of each lateral
DRIVEWAY
all laterals 1.25" SCH 40 PVC
1 2 3 4 5 6 7 8 9 10
1500 GAL SEPTIC TANK
1500 GAL PUMP TANK
2" SCH40 PVC
supply line
3" manifold, SCH 40
cleanout
2" gate valve in
protective box
1 per lateral
FOREST DR
1" = 30'

Panels With Pressure Distribution

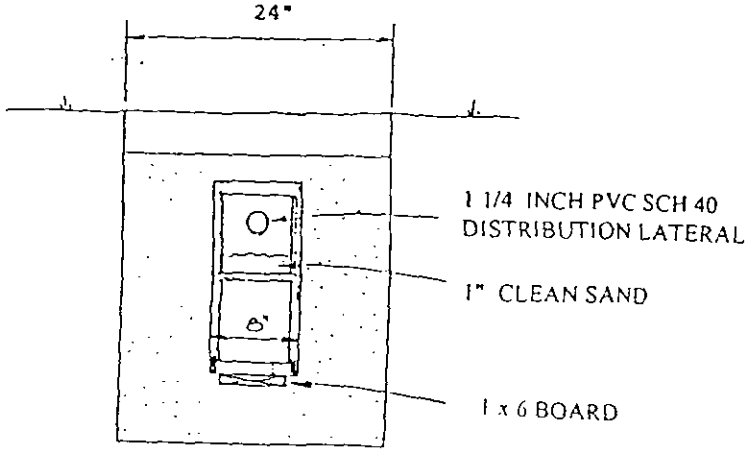
The LP Panel uses Technology similar to that of Low Pressure Pipe (LPP) System. The tables and distribution design described in the LPP manual is applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects a LP Panel is similar to a LPP with the holes discharging into the panels.

The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel hold 3.6 gallons. When the system has 34 panels and all holes are the same size, then you would multiply 34 x 3.6 to get 122 gallon per dose cycle. The holes are drilled in the distribution pipe at the 10 and the 2 o'clock position. These are then placed so that the effluent is pumped into the top chamber of the panel. If the hole sizing changes in the system the pump cycle is set by the hole that is discharging the fastest.

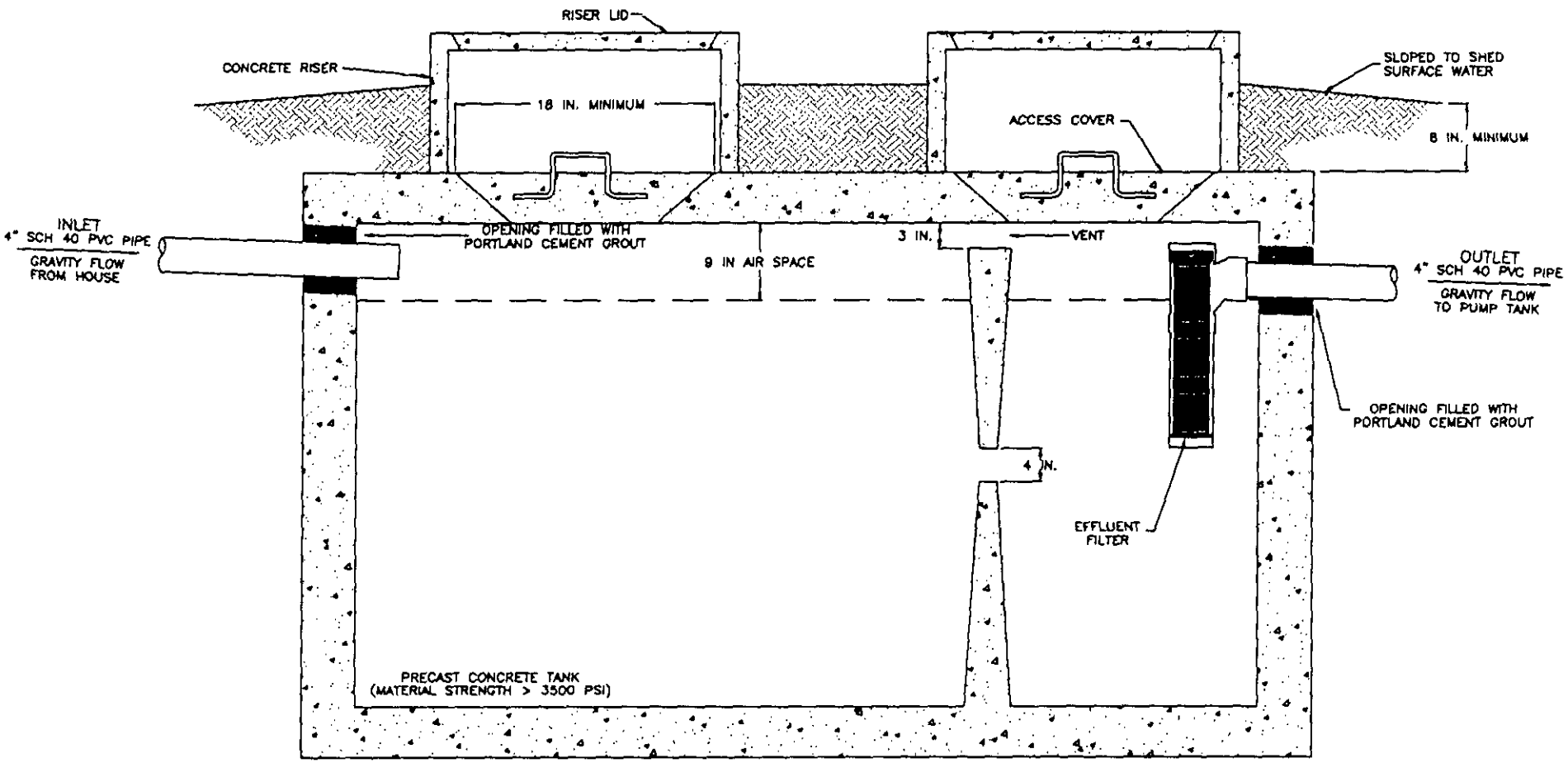
All valves and turnups should be neatly capped, covered and labeled for future service. Pump tanks should be constructed as shown in the drawing as to allow for service and repairs.



CUTAWAY OF PRESSURE PANEL



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1500 GALLON SEPTIC TANK

SHEET 1 OF 1

JOB NO. 98-3746	PROJECT NAME:
PROJECT MGR. W.O.	SHEET TITLE: SEPTIC TANK DIAGRAM
SCALE NTS	

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Soil & Environmental Consultants, Inc.
344 West Millbrook Road ■ Raleigh, North Carolina 27609 ■ (919) 846-5900 ■ Fax (919) 846-9467

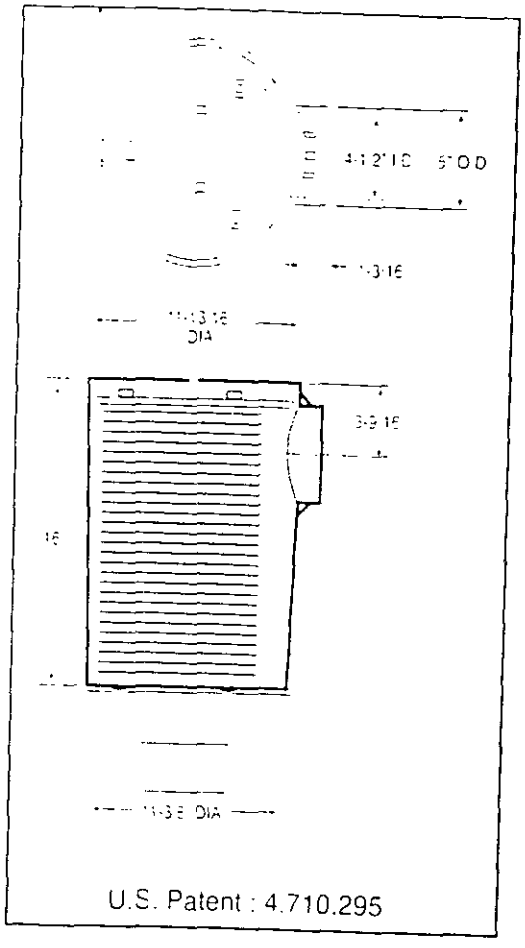
Zabel A300 Series High Strength
Industrial & Commercial Effluent Filter
Product Specification

1. Product Name: Zabel A300 Industrial & Commercial Wastewater Filter, U.S. Patent: 4,710,295
2. Model Numbers: A300 Case & Cartridge & Reducer; A301 Cartridge Only; A300-HIP Case & Cartridge & Reducer; A301-HIP Cartridge Only
3. Applications: Grease: restaurants; Hair: dog kennels, beauty shops, zoo facilities; Lint: Laundromats: Food processing: wineries, bakeries; Animal wastes: poultry, hog & cattle farms; Apartments, trailer parks, schools, churches, shopping centers, and offices; Septic dump stations and community treatment plants; Single and Multi-family homes
4. Performance Specification
   - 4.1. Model A300: Maximum daily flow - 3,500 gpd, 7.5 gpm
   - 4.2. Model A300-HIP: Maximum daily flow - 4,500 gpd, 11.25 gpm
   - 4.3. Multiple Filters may be installed in manifolds to handle larger flows than those shown above. A Zabel Flow Control Plate Model FC100 is available to set the effluent flow of a single filter to pre-determined limits.
   - 4.4. TSS: Reductions in TSS within six months of installation - 50 to 90 percent. The higher the unfiltered TSS, the greater the percentage of reduction.
   - 4.5. BOD_5: Reduction in BOD_5 within six months of installation - 20 to 45 percent is dependent on the make up of the wastewater.
5. Materials: All materials are non-corrosive.
   - 5.1. Case & Lid - PVC; Filter discs - Polystyrene; Rods - Polyethylene; Nuts - Nylon
6. New System Installation: Center the top of the 12 inch Filter Case under an Outlet Access Lid opening at least 16 inches in diameter. PVC solvent weld the bell coupling connection to the 4 inch Schedule 40 PVC pipe of the tank as required by local code. Add 4 inch Schedule 40 pipe to the bottom of the reducer as needed. The PVC outlet pipe should extend at least 18 inches beyond the outside face of the tank wall. A riser to grade is recommended for all commercial and industrial installations. All filters installed in grease interceptor tanks will require additional support.
7. Existing System Installation: The filter may be installed in an existing tank if an Outlet Access Lid opening already exists and the filter can be installed without damaging the existing tank. The filter can also be installed utilizing a Zabel Filter Installation Adapter Ring Model FAR-RNG. If the existing tank cannot be used, the filter can be installed in existing systems using a Zabel Container Assembly Model CA100.
8. Service: A professional onsite service company should perform all onsite system service.
9. Service Method: Grasp the filter handle and pull the filter cartridge upward. A Zabel 36" T-Handle is available if required to reach filters below grade. The filter may be cleaned with a steam wand, chemical degreaser or disassembled for further cleaning.
10. Service Frequency: The A300 is designed to be installed in high strength waste applications. Each application will have to be monitored to determine proper service cycles. See article on "Restaurant Applications for Zabel Filters" for recommended guidelines.
11. Warranty: The A300 is warranted to be free from defects in material and workmanship for the life of the original purchaser. Zabel's liability is limited to repair or replacement of the part and in no event shall Zabel be liable for any consequential damages of any kind.

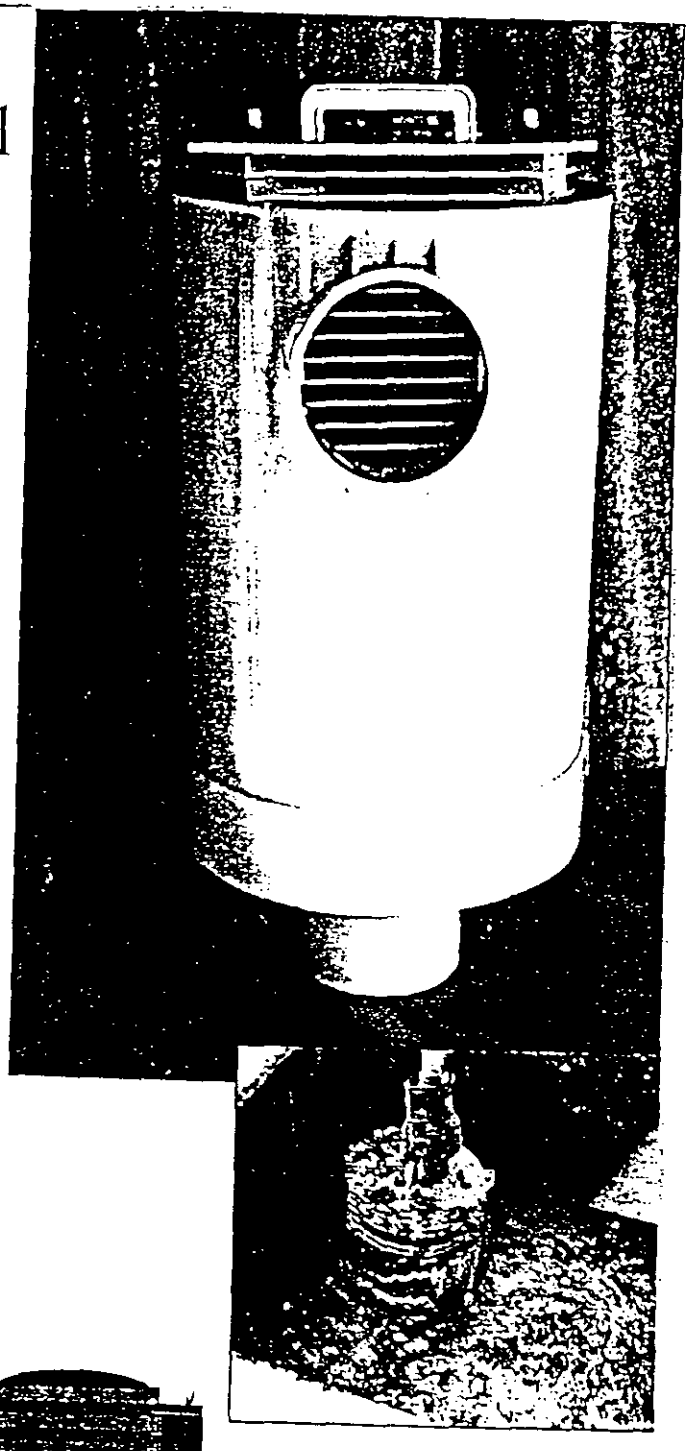
10. Dimensions:

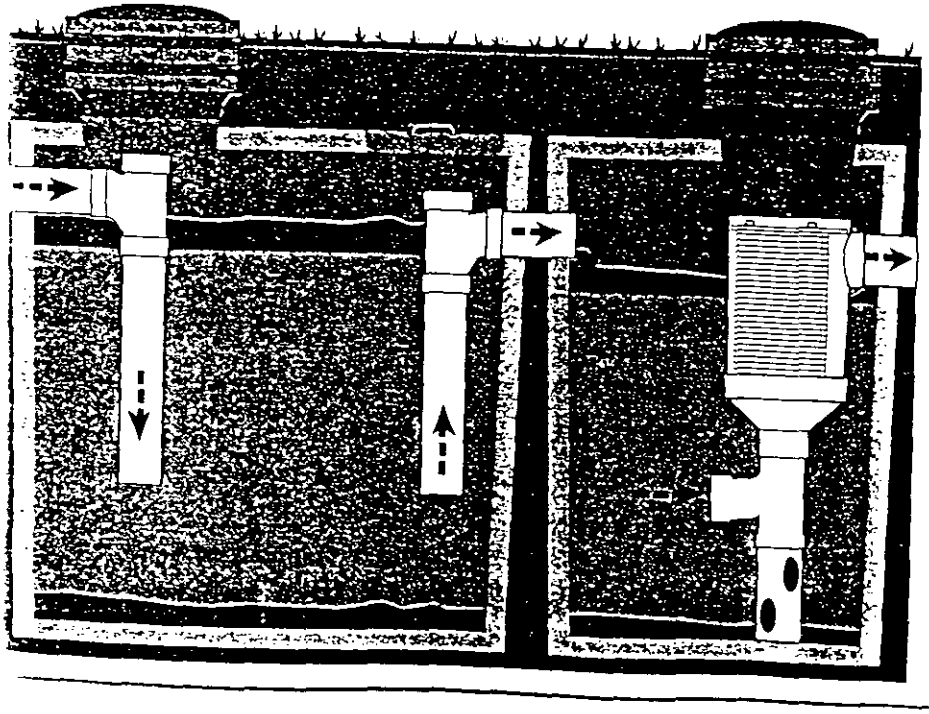
	Diameter	Height	Filtration	Settling Area	Total Filter Surface	Total Flow Area
A300	12"	18"	1/32"	624.69 in²	1,857.6 in²	206
A300-HIP	12"	28"	1/32"	1,067.04 in²	2,908.8 in²	312

A300
Commercial&Residential Wastewater Filter

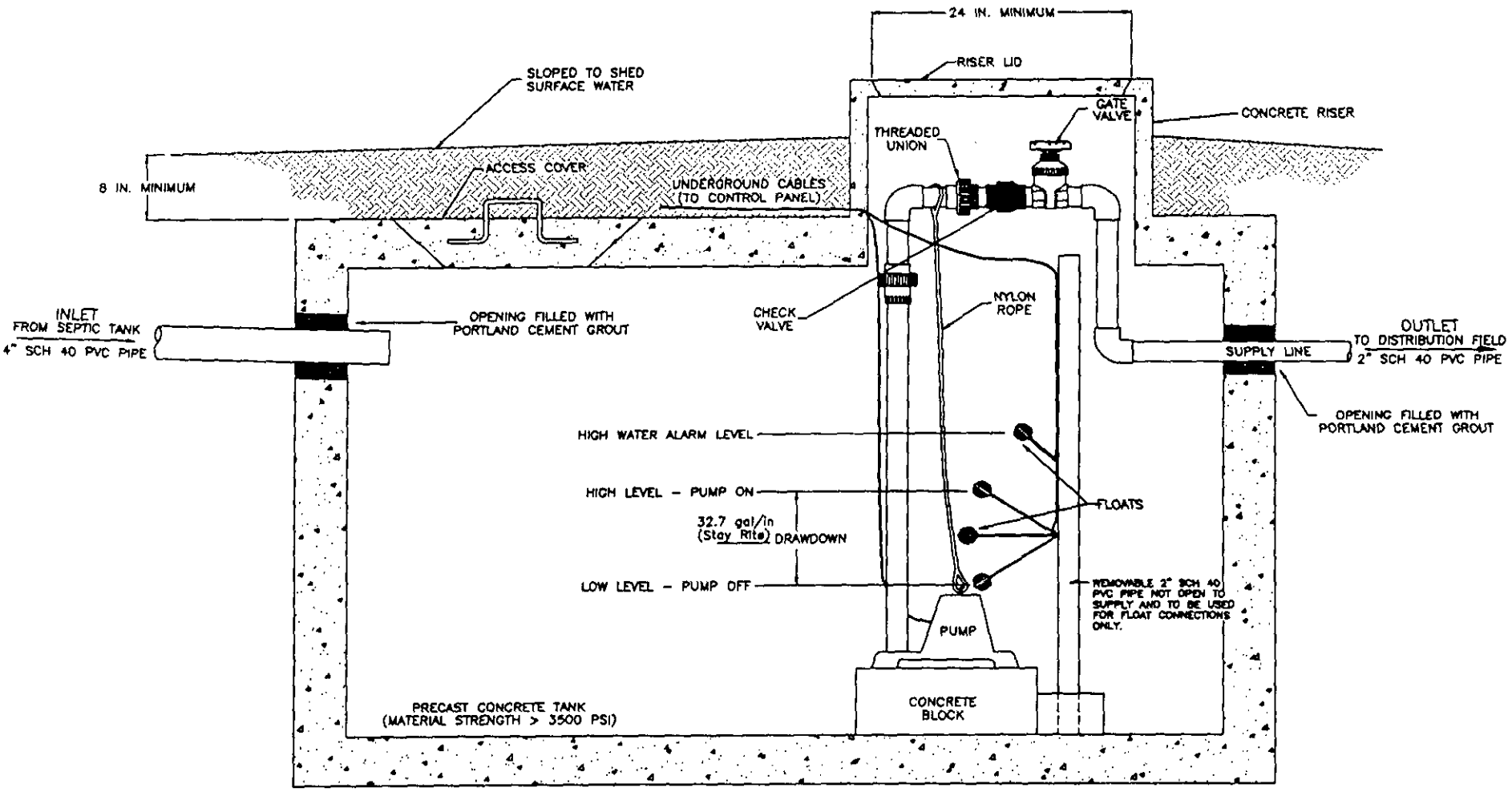


U.S. Patent : 4.710.295





A-300 PRICES ON PAGE 60



1500 GALLON PUMP TANK

SHEET 1 OF 1

JOB NO. 98-3748 PROJECT MGR.	PROJECT NAME: JOHN L. HAYES
W.O.	SHEET TITLE: LOT 38 CHANDLER POINTE
SCALE NTS	PUMP TANK DIAGRAM

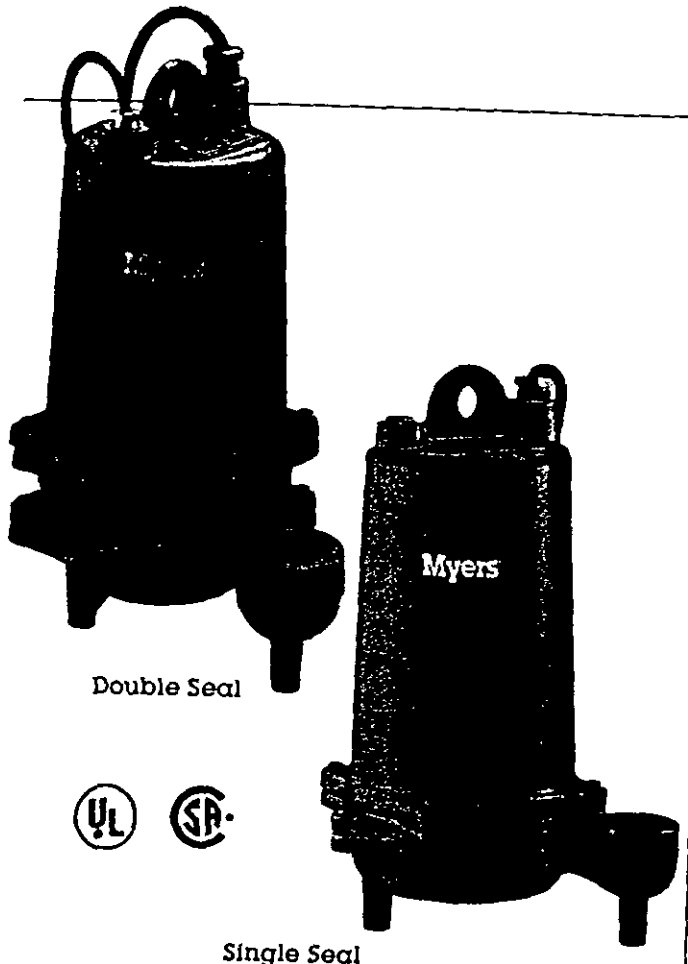
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Soil & Environmental Consultants, Inc.
344 West Millbrook Road ■ Raleigh, North Carolina 27609 ■ (919) 846-5900 ■ Fax (919) 846-9467

21

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

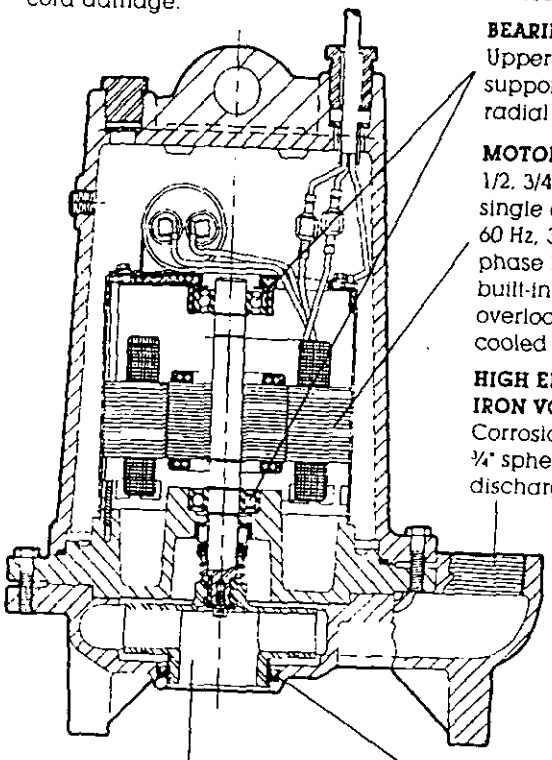
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

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

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

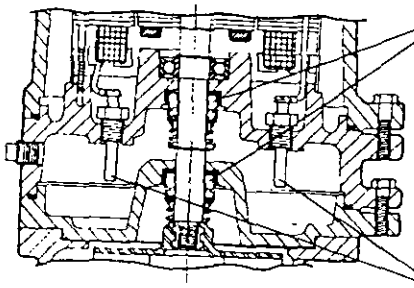
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

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.

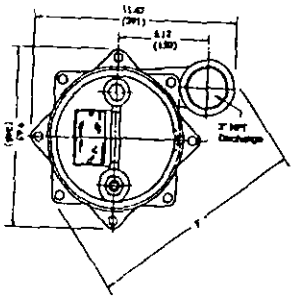
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.

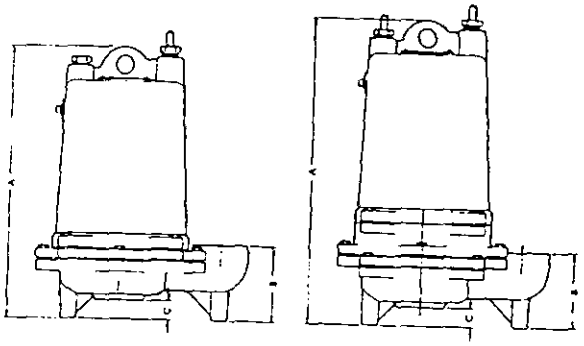


SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

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

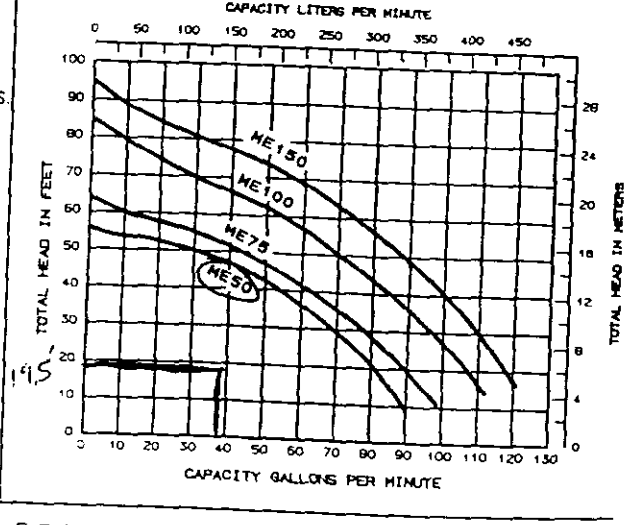
DIMENSIONS





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.

PRINTED WITH SOY INK

Myers

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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

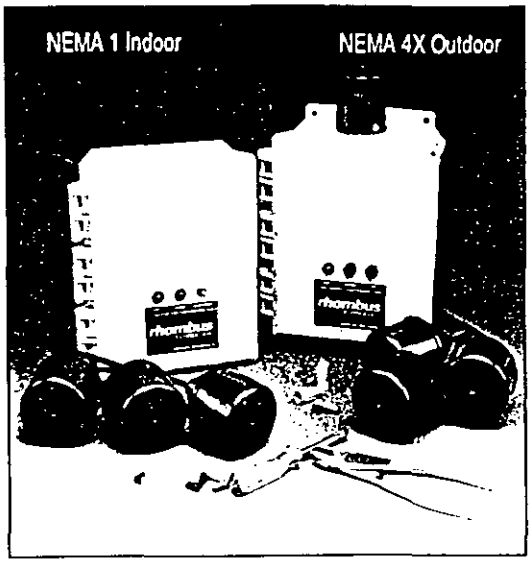
rhombus™ TECHNOLOGY

SINGLE-PHASE SIMPLEX
Motor Contactor Control
TYPE 112

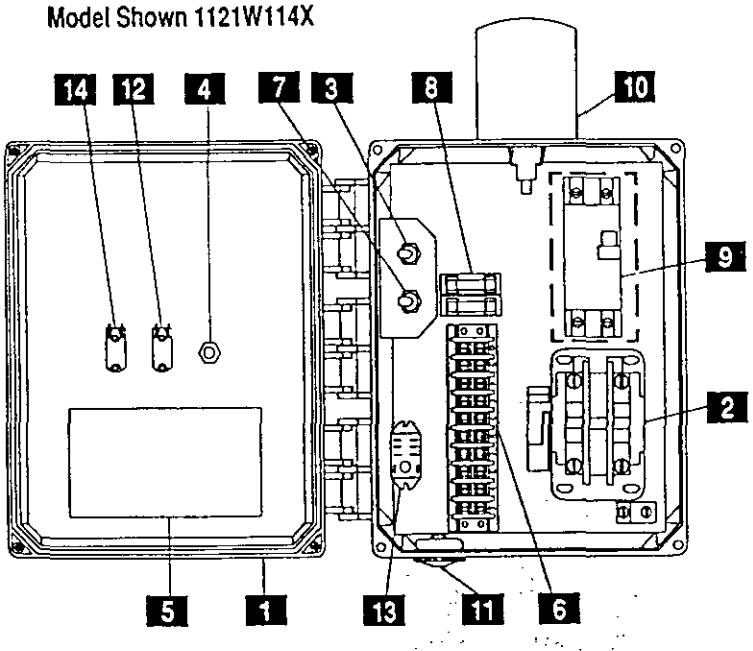
Type 112 control panels are single-phase, simplex pump control systems.

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

RHOMBUS TECHNOLOGY
P.O. Box 1619 • County Rd 6
Detroit Lakes MN 56502 USA
218-847-4786 • Fax 218-847-4801
a division of S.J. Electro Systems, Inc.

1003345B • Printed in USA

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
Control Breaker
Alarm Breaker

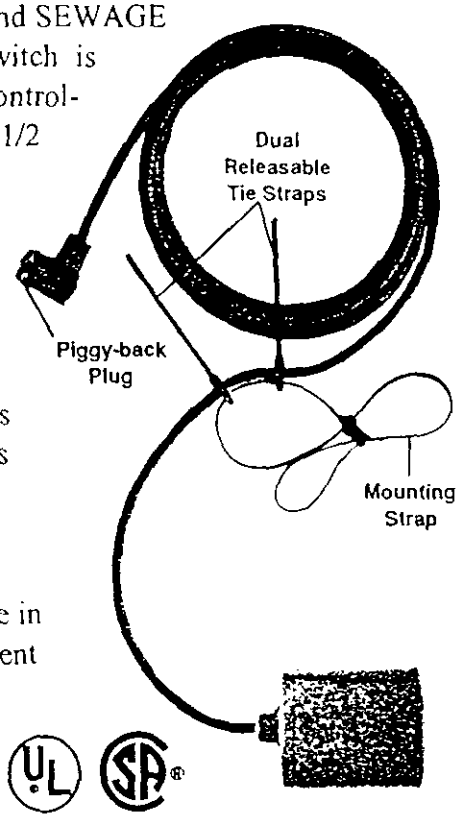
ALARM ACCESSORIES
Manual Alarm Reset

SJE PUMPMASTER® Pump Switch

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

APPLICATIONS

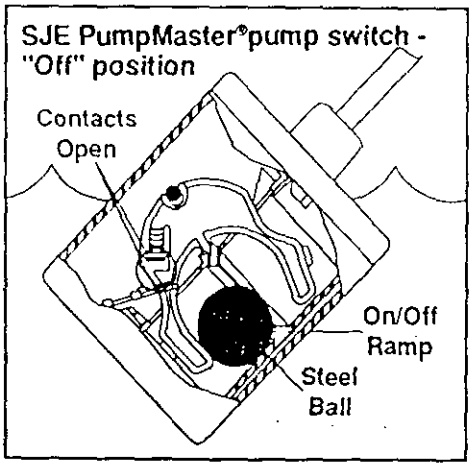
The **mechanically activated** SJE PumpMaster® pump switch provides automatic control of pumps in WATER and SEWAGE applications. This switch is capable of directly controlling pumps of up to 1/2 HP 120V and 1 HP 230V. The SJE PumpMaster® pump switch is designed to efficiently operate in applications 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.

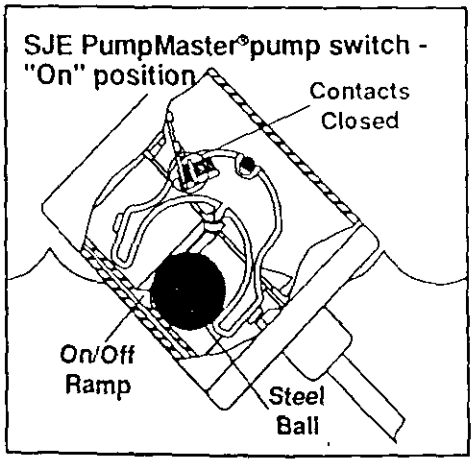


ADVANTAGES

- 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

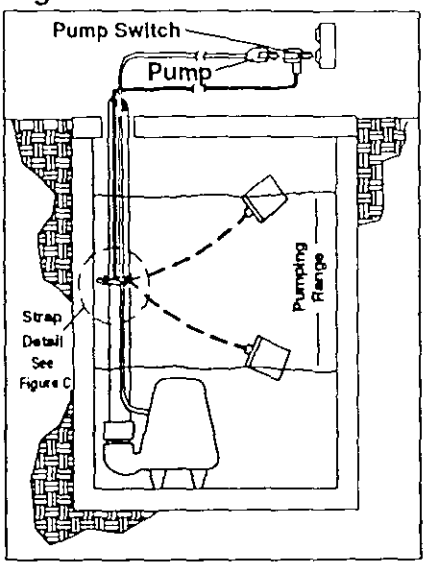
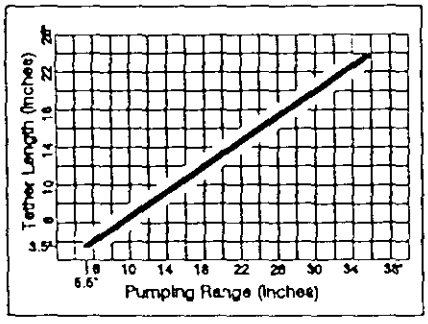


Figure B



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

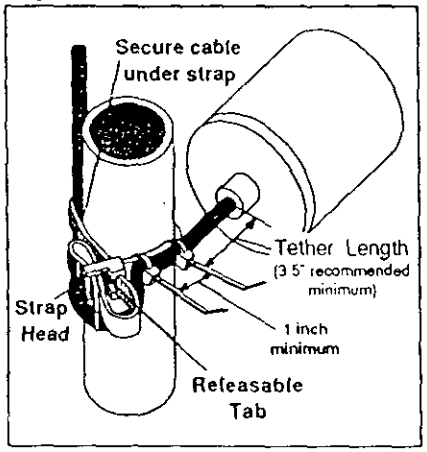
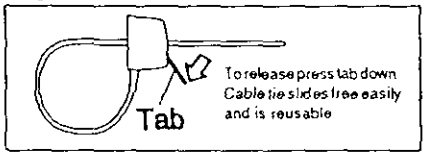


Figure D



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.

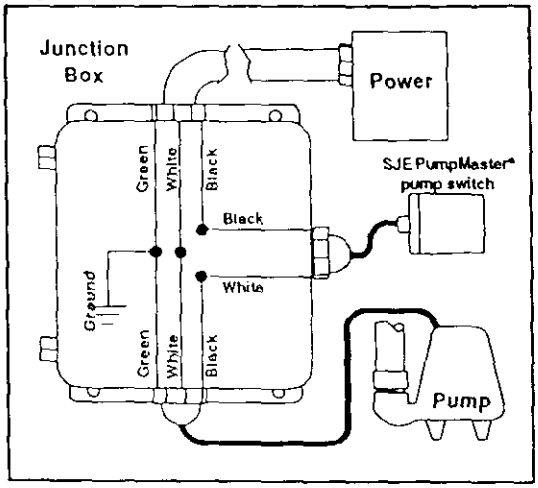
CAUTION

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



S.J. ELECTRO SYSTEMS, INC.

Built with Pride - Employee Owned

PO Box 1619 County Rd 6 Detroit Lakes, MN 56502

Telephone 218-847-1317 FAX: 218-847-4617

SSPMA MEMBER

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Installation Inst 1002627F

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18

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).

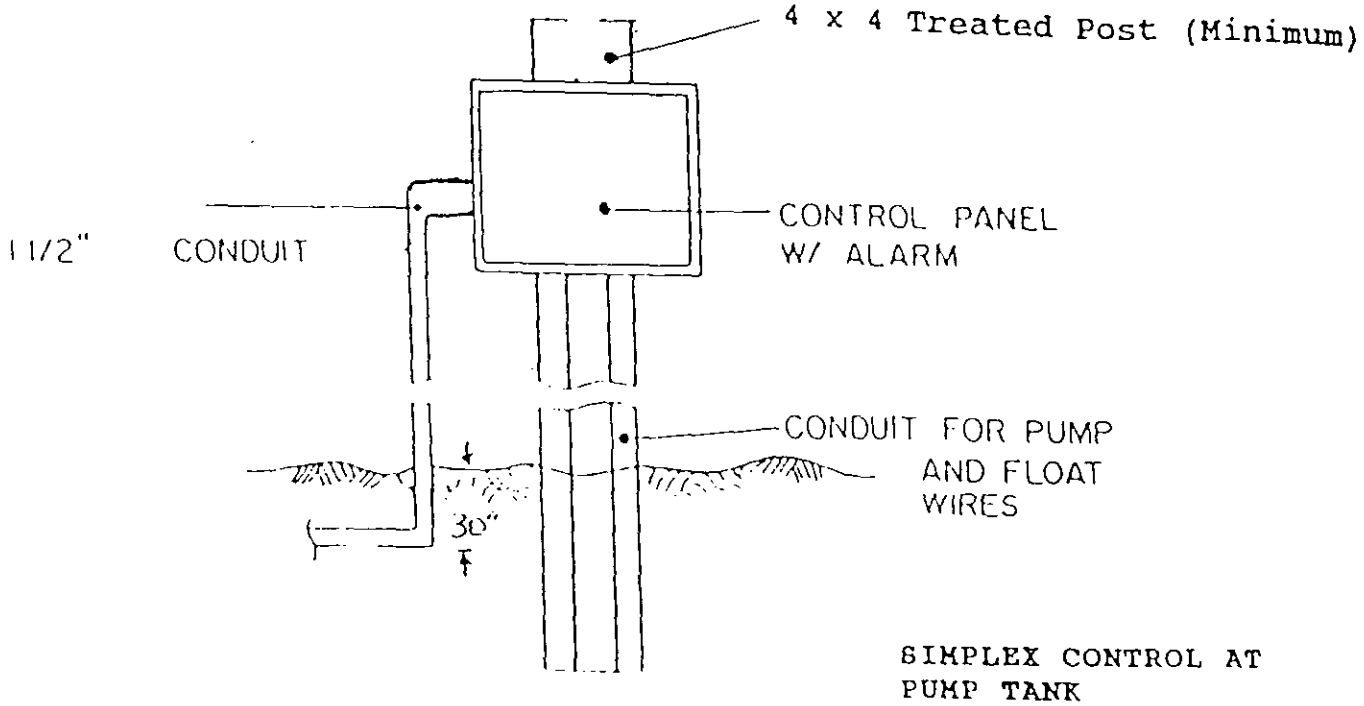
(9) Nothing in this Section shall preclude any requirements for system operators imposed in accordance with Article 3 of G.S. 90A.

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.



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.

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

Sheet: 1
Property ID: 001-111-20
Lot #: 60
File #: 4950B
Code: 2

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: Kate A. Carpenter Estate
Applicant: Sid A. Carpenter
Address: 7001 Summerlin Place, Charlotte, N. C. 28226
Date Evaluated: 05/10/2002
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: .51a
Location of Site: 21215 Island Forest Drive
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 Structure/ Texture	SOIL MORPHOLOGY .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/SL	FR/SEXP/NS/NP	>48" TO SOIL WETNESS	48+	N/A	NONE	PS, IV .3GPD/FT^2
		4-32	SBK/C	FI/SEXP/S/P					
		32-48+	SBK/CL	FR/SEXP/SS/SP					
2	"	0-6	GR/L	FR/SEXP/NS/NP	"	"	"	"	"
		6-40	SBK/C	FI/SEXP/S/P					
		40-48+	SBK/CL	FR/SEXP/SS/SP					
3	"	0-8	GR/SCL	FR/SEXP/SS/SP		"	"	"	"
		8-43	SBK/C	FI/SEXP/S/P					
		43-48+	SBK/CL	FR/SEXP/SS/SP					

Description	Initial System	Repair System
Available Space (.1945)	US	
System Type(s)		
Site LTAR	.3GPD/FT^2	

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Martin, LSS, 5/13/02. W. R. Martin
Others Present:

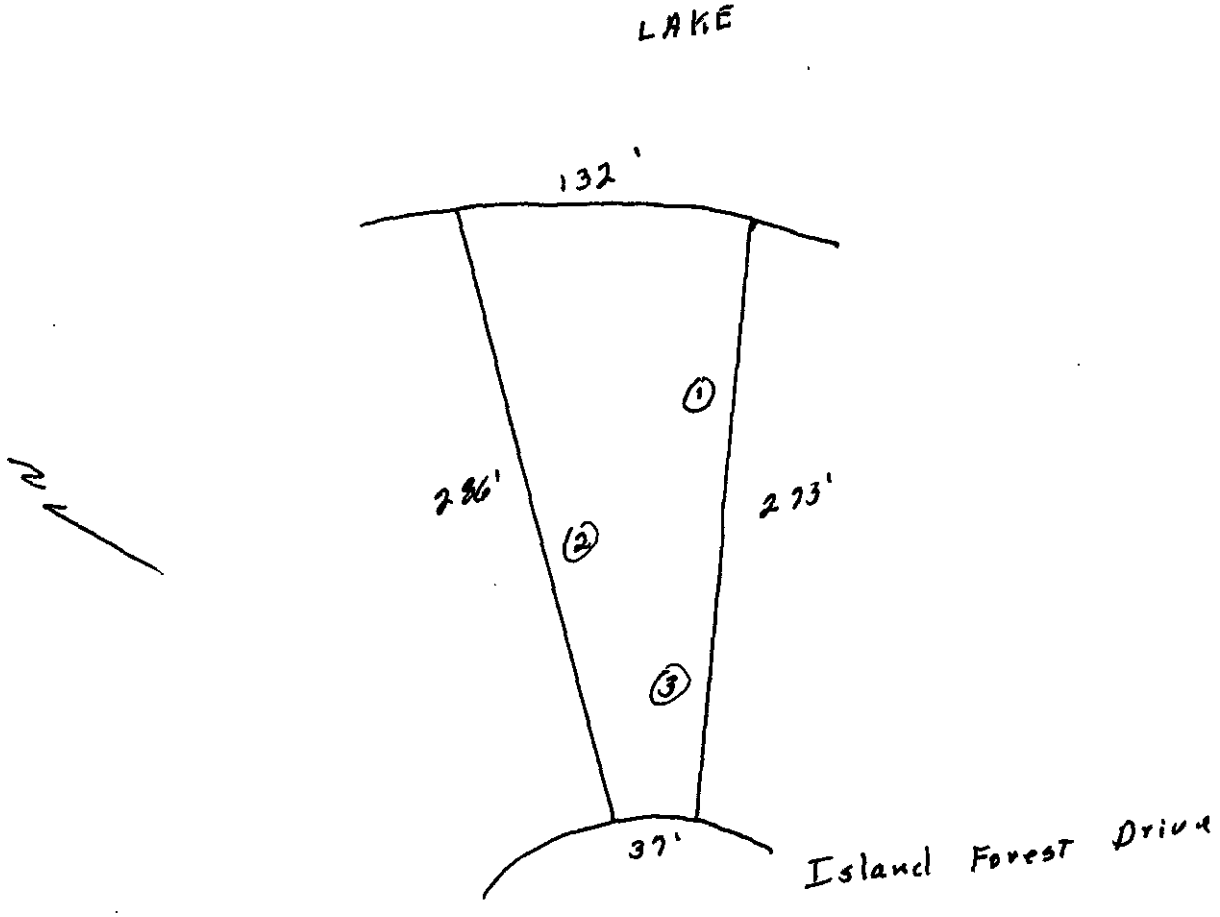
FILE # 49508

COMMENTS Lot not 100% Repair, does not appear to be wells present on adjacent properties

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



FEE: 200.00 CK# 1107
DATE: 5/8/02 SC

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 #: 4950B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 001-111-20

STREET ADDRESS: 21215 Island Forest Dr.

SUBDIVISION OR MOBILE HOME PARK NAME: Island Forest

LOT NUMBER: Lot 60

TYPE OF BUILDING (CHECK ONE):

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

TOWNSHIP (CHECK ONE):

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

HEATED SQUARE FOOTAGE: 3600

NUMBER OF BEDROOMS: 3 NUMBER OF OCCUPANTS: 5

CLOSING DATE _____

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:

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	WELL, SPRINGS OR WATERLINES	[ ] YES [✓] NO
EXISTING WASTEWATER SYSTEMS	[ ] YES [✓] NO	DESIGNATED WETLANDS	[ ] YES [✓] NO
EASTMENTS OR RIGHT-OF-WAYS	[ ] YES [✓] NO		

PROPERTY OWNER:	LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:
NAME: (LAST) Carpenter (FIRST) Kate (MI) A (estate)	NAME: (LAST) Carpenter (FIRST) Sid (MI) A. Co-excutor
ADDRESS: 7001 Sammerlin Pl.	DAYTIME PHONE: ( ) 704 - 907-8107
CITY: Charlotte STATE: NC ZIP: 28226	(same Address)
DAYTIME PHONE: 704 -907-8107	

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 1980 ?

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: [signature] co-excutor DATE: 5/7/02

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

21215 Island Forest Dr.
Cornelius, N.C. 28031

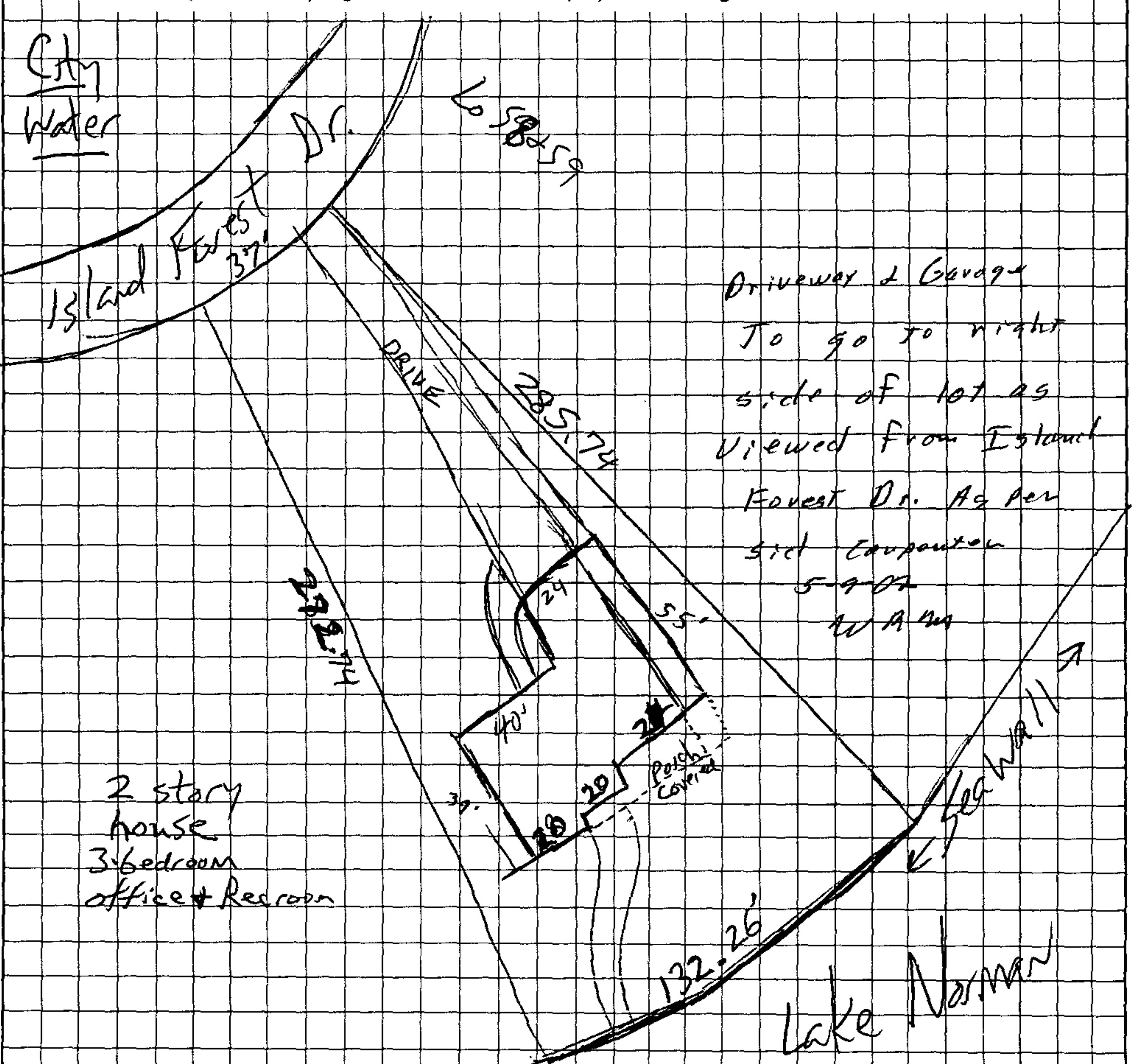
PROPOSED PLOT PLAN

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

FILE: 4950B

TC: 001-111-20

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.



OWNER/AGENT SIGNATURE: [signature], Co-executor

DATE: 5/2/02

APPROVAL DATE ____________

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

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: 6/5/02 Project Number: 05-1140

TO: Name: Jeremy Michelone, R.S. CC: _____

Company: Meck. County Environm. Health _____

Fax Number: (703) 336 – 6894 _____

FROM: Ashley Rollans, L.S.S. SUBJECT: Sid Carpenter/Island Forest Drive

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

X For Your Comments/Approval	____ 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	____ No Hard Copy Sent

DENIED

REMARKS: Jeremy,
Attached is a copy of our septic layout for this lot. There is a report and site plan attached that describes our findings. The dimensions of this lot along with a house and driveway placement limited us to using these short lines. I would like to discuss distribution with you since we have ten short lines in the system. Please call Wendell Overby or myself to discuss.

Thanks

IF YOU HAVE ANY QUESTIONS OR PROBLEMS WITH THIS TRANSMISSION,

PLEASE CONTACT Ashley Rollans, L.S.S. AT (704) 720-9405.

CONFIDENTIALITY NOTICE

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

Hickory Area Office:
710 Boston Road
Taylorsville, NC 28681
Phone: (828) 635-5820
Fax: (828) 635-5820

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

Jun. 05 2002 01:53PM P1 FAX NO. : 7047209406 FROM : SOILSENVIRONMENTALCONSULTANTS

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

June 6, 2002
Project #5-1140

CARPENTER PROPERTIES, LLC.
Attn: Sid Carpenter
7001 Summerlin Place
Charlotte, NC 28226

Re: Soil/Site Evaluation performed on Lots 60, a ±0.35-Acre Lot on Island Forest Drive – Mecklenburg County, NC

Dear Mr. Carpenter:

This letter details the findings of Soil & Environmental Consultants, Inc. (S&EC) in regards to a detailed soil and site evaluation performed on the above referenced lot. Included with this report is a profile description of the usable soil (performed by Mecklenburg County Environmental Health, Bill Marlin, L.S.S., R.S.), a septic system layout, a proposed site plan, and information for the design of a conventional system.

INITIAL FIELDWORK

S&EC received copies of Bill Marlin's site evaluation from the client. Bill's evaluation indicated that there were usable soils onsite, but available space was the limiting factor. S&EC then met with the client to discuss house and driveway location and other site constraints. We determined that the lot was recorded prior to 1983 and would not require a repair area. Once Bill's borings were located and the available area was delineated, Wendell Overby and myself performed an on-ground layout of the septic field.

LAYOUT

Due to the small amount of available space occupied by the usable soil, S&EC performed a septic system layout. S&EC was able to demonstrate placement of 381 linear feet of drainline on 9' centers. All of this area would be necessary to support a conventional system with innovative chamber drainline (35% reduction) to support a 4BR house (480 GPD). The specifications for the layout including line lengths, flag colors, line elevations, etc. are attached with this report. The elevation head between the house and the top drainline is approximately 10 feet, therefore a pump tank will be required. S&EC recommends that the form of distribution be discussed with Jeremy Michelone, R.S. prior to final approval. We have considered the possibility of coupling lines together using flow dividers (Tyson Tee's) and pumping to a distribution box or using some form of drop device (drop box or elbows). A pressure manifold is also a consideration.

DESIGN

Attached please find site plans showing placement of the proposed septic system including a 1500 gallon septic and pump tanks along with the proposed house site and driveway location. Additionally, specifications for the layout are enclosed along with information and drawings regarding conventional systems. Based on a 4-bedroom house that will produce 480 gal/day with an LTAR of 0.30gpd/ft^2 on 3' wide trenches, 533 linear feet of drainline will be needed to support the initial system.

Greensboro Office:
3817-E Lawndale Drive
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Phone (919) 846-5900
Fax: (919) 846-9467

Jun. 05 2002 01:54PM P2 FAX NO. : 7047209406 FROM : SOILSENVIRONMENTALCONSULTANTS

Design flow: 120gal/day * 4 bedrooms = 480gal/day ÷

LTAR: 0.30gpd/ft^2 = 1600ft^2 ÷

3' trench bottom = 533 linear feet x

0.65 (35% reduction) = 346 linear feet

Soil & Environmental Consultants, Inc. is pleased to be of service in this matter and we look forward to assisting in any site analysis needs you may have in the future. Please feel free to call with any questions or comments.

Sincerely,



Samuel A. Rollans
NC Licensed Soil Scientist

Encl: *Soil/Site Map*
Soil Profile Description
Layout Specifications
Attachment 1

*Cc: **Meck. County Health Dept.***
Attn: Jeremy Michelone, R.S.
Via: Facsimile

FROM : SOILSENVIRONMENTALCONSULTANTS FAX NO. : 7047209406 Jun. 05 2002 01:55PM P3

Attachment 1

.1950 Location of Sanitary Sewage Systems

(c) Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following:

(1)	any private water supply source including a well or spring	100 feet
(2)	any public water supply source	100 feet
(3)	streams classified as WS-I	100 feet
(4)	water classified as S.A.	100 feet from mean high water mark
(5)	Other coastal waters	50 feet from mean high water mark
(6)	any other stream, canal, marsh, or other surface waters	50 feet
(7)	any Class I or Class II reservoir	100 feet from normal pool elevation
(8)	any permanent storm water retention pond	50 feet from flood pool elevation
(9)	any other lake or pond	50 feet from normal pool elevation
(10)	any building foundation	5 feet
(11)	any basement	15 feet
(12)	any property line	10 feet
(13)	top of slope of embankments or cuts of 2 feet or more vertical height	15 feet
(14)	any water line	10 feet
(15)	drainage systems:	
	(A) Interceptor drains, foundation drains and storm water diversions	
	(i) upslope	10 feet
	(ii) sideslope	15 feet
	(iii) downslope	25 feet
	(B) Groundwater lowering ditched and devices	25 feet
(16)	any swimming pool	15 feet
(17)	any other nitrification field (except repair area)	20 feet

(b) Ground absorption sewage treatment and disposal systems may be located closer than 100 feet from a private well supply, except springs and uncased wells located downslope and used as a source of drinking water, repairs, space limitations and other site-planning considerations but shall be located the maximum feasible distance and, in no case, less than 50 feet.

(c) Nitrification fields and repair areas shall not be located under paved areas or areas subject to vehicular traffic. If effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe shall be used. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe.

Note: Systems over 3000 GPD or an individual nitrification fields with a capacity of 1500 GPD or more have more restrictive setback requirements, see .1950 (a) (17) (d) for specifics.

FROM : SOILSENVIRONMENTALCONSULTANTS FAX NO. : 7047209406 Jun. 05 2002 01:55PM P4

Sid Carpenter/Island Forest Drive Lot #60

JOB #: 05-1140

LAYOUT FOR 4 BEDROOM HOME - 480gpd — May-02

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	LINE LENGTH
TBM		2.5			100.0	
INSTR. 1			102.5			
1	***RED***			***2.30***	***100.2***	***35***
2	***ORANGE***			***3.70***	***98.8***	***33***
3	***YELLOW***			***4.20***	***98.3***	***41***
4	***BLUE***			***5.00***	***97.5***	***42***
5	***PINK***			***5.40***	***97.1***	***38***
6	***RED***			***5.90***	***96.6***	***45***
7	***ORANGE***			***6.10***	***96.4***	***40***
8	***YELLOW***			***6.50***	***96.0***	***40***
9	***BLUE***			***7.00***	***95.5***	***35***
10	***PINK***			***8.10***	***94.4***	***32***
					Total	**381**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	PROPOSED LTAR GPD/FT^2	INNOVATIVE SYSTEM	DISTRIBUTION
**** System***	***381'***	***0.27***	***INNOVATIVE***	***0.300***	***CHAMBER (35% reduction)***	***DROP BOXES*** (shown)

Notes:

** Repair not required (lot recorded prior to 1983 & daily flow <480gpd)

** TBM located on top of brick retaining wall (see Site Plan)

**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.

FROM : SOIL&ENVIRONMENTALCONSULTANTS_ FAX NO. : 7047209406 Jun. 05 2002 01:56PM P5

Department of Environment, Health, and Natural Resources
Division of Environmental Health
Onsite Wastewater Section

Sheet: 1
Property ID: 001-111-20
Lot #: 80
File #: 48509
Code: 2

21215 Island Forest Dr.

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Kate A. Carpenter Estate
Applicant: Sid A. Carpenter
Address: 7001 Summerlin Place, Charlotte, N. C. 28226
Date Evaluated: 05/10/2002
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: .81a
Location of site: 21216 Island Forest Drive
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

Pedon	Landform	Horizon	Texture	Structure	Restrictive Horizon	Depth to Seasonal Water Table	Depth to Bedrock	Depth to Saprolite	Soil Wetness Group & Soil Group
1	LS, S	0-4	GR/SL	FR/SEXP/NS/NP	>48" TO SOIL WETNESS	48+	N/A	NONE	PB, IV
		4-32	SBK/C	FI/SEXP/S/P					.3GPD/FT²
		32-48+	SBK/CL	FR/SEXP/SS/SP					
2		0-6	GR/L	FR/SEXP/NS/NP					
		6-40	SBK/C	FI/SEXP/S/P					
		40-48+	SBK/CL	FR/SEXP/SS/SP					
3		0-8	GR/SCL	FR/SEXP/SS/SP					
		8-43	SBK/C	FI/SEXP/S/P					
		43-48+	SBK/CL	FR/SEXP/SS/SP					

Description	Initial System	Repair System
Available Space (.1945)	US	
System Type(s)		
Site LTAR	.3GPD/FT²	

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Medlin, LSS 5/13/02
Others Present:

21213 Island Forest Dr

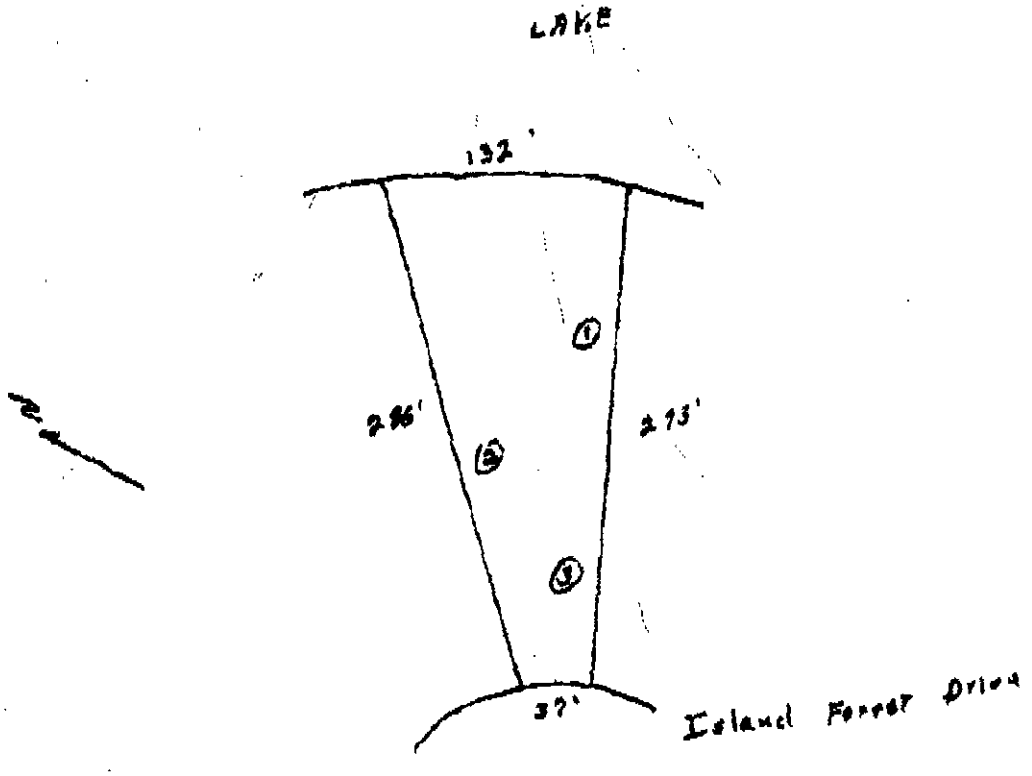
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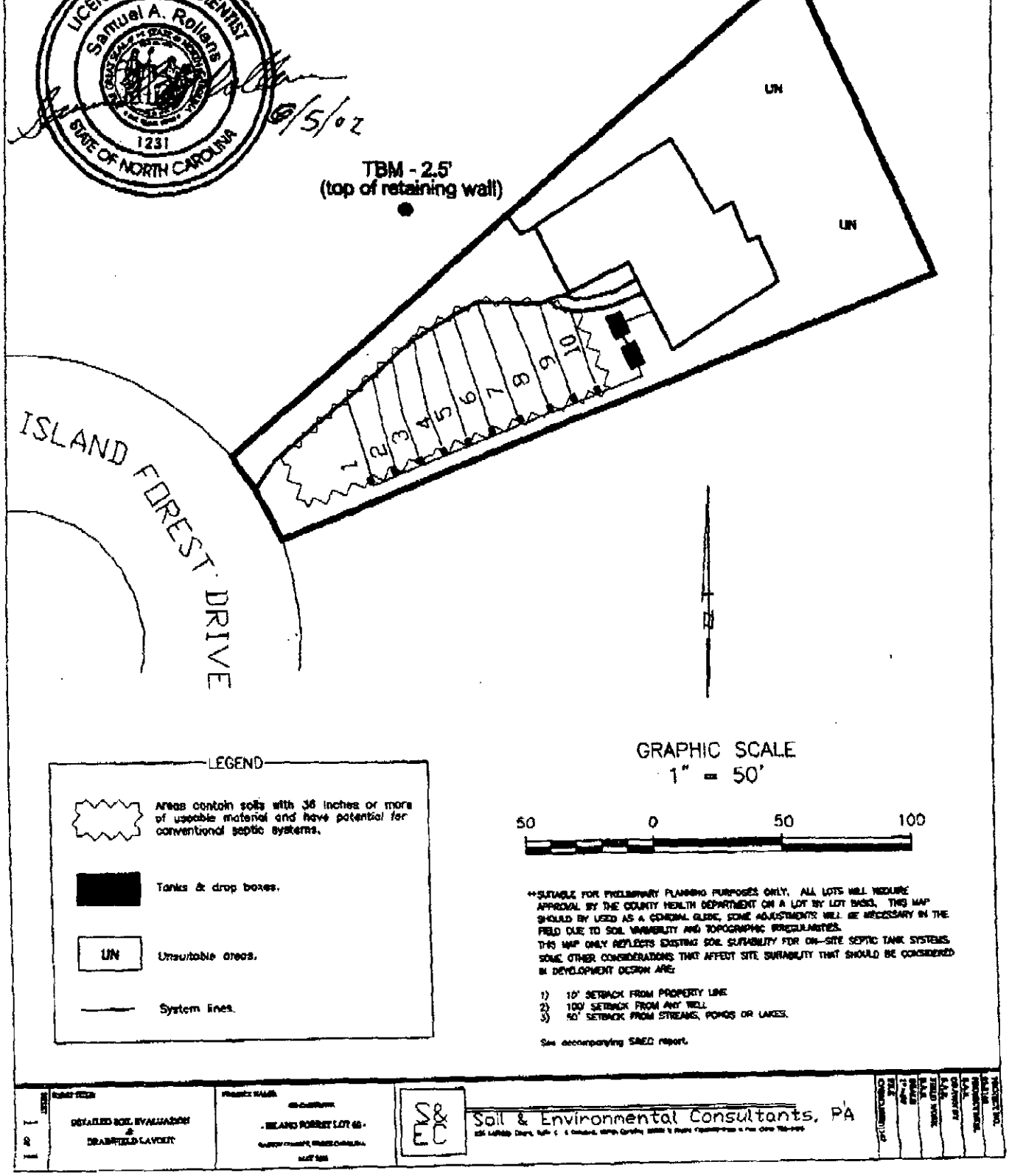
FILE # 99508

COMMENTS Lot not 100% Repair, does not appear to be suitable pursuant to adjacent properties

LANDSCAPE POSITION	GROUP	TEXTURE	1995 LTAR	CONSISTENCE MOIST	WET
R-RIDGE	I	S-SAND	1.2-0.8		
S-SHOULDER SLOPE		LS-LOAMY SAND		VFR-VERY FRIABLE	NS-NON-STICKY
L-LINEAR SLOPE				FR-FRIABLE	SS-SLIGHTLY STICKY
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.8-0.6	FI-FIRM	S-STICKY
N-NOSE SLOPE		L-LOAM		VFI-VERY FIRM	VS-VERY STICKY
H-HEAD SLOPE				EFI-EXTREMELY FIRM	NP-NON-PLASTIC
CC-CONCLAVE SLOPE	III	SI-SILT	0.6-0.3		SP-SLIGHTLY STICKY
CV-CONVEX SLOPE		SICL-SILTY CLAY LOAM			P-PLASTIC
T-TERRACE		CL-CLAY LOAM			VP-VERY PLASTIC
FP-FLOOD PLAIN		SCL-SANDY CLAY LOAM			
	IV	SC-SANDY CLAY	0.4-0.1		
		SIC-SILTY CLAY			
		O-ORGANIC			

STRUCTURE	MINERALOGY
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M-MASSIVE	
CR-CRUMB	EXPANSIVE
GR-GRANULAR	
SBK-SUBANGULAR BLOCKY	
ABK-ANGULAR BLOCKY	
PL-PLATY	
PR-PRISMATIC	





FROM : SOIL&ENVIRONMENTALCONSULTANTS FAX NO. : 7047209406 Jun. 05 2002 01:58PM P8