8022B

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES 4191

APPLICATION FOR A RESIDENTIAL SITE IMPROVEMENT PERMIT/ CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER SYSTEM, NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

1. SEPTIC / TYPE APPLICATION: ☐ N/A ☐ NEW SYSTEM ☒ ALTERATION ☐ REPAIR ☐ MODIFIED PLOT PLAN

2. WELL / TYPE APPLICATION: ☐ N/A ☐ NEW WELL ☐ MAJOR REPAIR ☐ ABANDONMENT

3. JOB LOCATION INFORMATION:
TAX PARCEL NUMBER: 21731117
STREET ADDRESS: 18110 VARIETY LANE
CITY: CHARLOTTE N. C.
STATE: NC ZIP: 28278
SUBDIVISION NAME:
LOT #: LOT SIZE (acres):
TOWNSHIP:
☒ 0-MECKLENBURG ☐ 3-CORNELIUS ☐ 6-HUNTERSVILLE
☐ 1-CHARLOTTE ☐ 4-PINEVILLE ☐ 7-MINT HILL
☐ 2-DAVIDSON ☐ 5-MATTHEWS

4. BUILDING INFORMATION:
BUILDING TYPE:
☐ SINGLE MOBILE HOME ☐ MODULAR HOME
☐ DOUBLE WIDE ☐ MULTIPLE FAMILY
☒ HOUSE ☐ OTHER _____
HEATED SQUARE FOOTAGE: 960
NUMBER OF BEDROOMS: 1
NUMBER OF OCCUPANTS: 2
FOUNDATION TYPE:
☐ CONCRETE SLAB ☐ BASEMENT WITH PLUMBING
☒ CRAWL SPACE ☐ BASMENT WITH NO PLUMBING

5. IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM PLEASE COMPLETE THE FOLLOWING SECTION: ☐ N/A
NUMBER OF BEDROOMS TO BE ADDED: 2 NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE: N/A

6. WATER SUPPLY: ☐ MUNICIPAL ☒ PRIVATE WELL ☐ PUBLIC WELL ☐ SHARED WELL ☐ OTHER _____

7. PROPOSED USE OF WELL: ☐ N/A ☐ IRRIGATION ☐ POTABLE (DRINKING WATER) ☐ OTHER _____

8. PLEASE INDICATE AND RANK DESIRED SEPTIC SYSTEM TYPE(S) IN ORDER OF PREFERENCE *(1-MOST DESIRED 5-LEAST DESIRED)*:
☐ N/A ☒ ANY TYPE ☐ CONVENTIONAL ☐ ACCEPTED ☐ INNOVATIVE ☐ ALTERNATIVE ☐ OTHER _____

8A. RANK: ____ ____ ____ ____ ____

9. DO ANY OF THE FOLLOWING APPLY TO THE PROPERTY IN QUESTION? IF "YES" PLEASE ATTACH SUPPORTING DOCUMENTATION.

BURIED CABLES, LANDFILLS, STUMPHOLES	☐ YES ☒ NO	GRADING/SOIL REMOVAL PERFORMED	☐ YES ☒ NO
EXISTING WASTEWATER (SEPTIC) SYSTEMS	☒ YES ☐ NO	JURISDICTIONAL WETLANDS	☐ YES ☒ NO
WELLS, SPRINGS, OR WATER LINES	☒ YES ☐ NO	APPROVAL REQUIRED BY ANY OTHER PUBLIC AGENCY	☐ YES ☒ NO
EASEMENTS OR RIGHT-OF-WAYS	☐ YES ☒ NO	WASTEWATER OTHER THAN DOMESTIC SEWAGE	☐ YES ☒ NO
CHEMICAL/PETROLEUM STORAGE TANKS	☐ YES ☒ NO	KNOWN UNDERGROUND CONTAMINATION	☐ YES ☒ NO
WASTE STORAGE	☐ YES ☒ NO	GROUNDWATER USE RESTRICTIONS/VARIANCES	☐ YES ☒ NO

10. WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? _____ ☐ UNKNOWN

11. WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? _____ ☐ N/A

12. PROPERTY OWNER:
NAME: AL EDWARDS
ADDRESS: 453 FENTON PLACE
CITY: CHARLOTTE
STATE: NC ZIP: 28207
HOME PHONE: 704-375-2091
WORK PHONE: 704-375-2212
MOBILE PHONE:
FAX: 704-375-9400

13. OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:
NAME:
ADDRESS:
CITY:
STATE: ZIP:
HOME PHONE:
WORK PHONE:
MOBILE PHONE:
FAX:

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 7/1/08

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

AE (Initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for a period of twelve (12) months from the date of issuance.

_____ (Initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. A proper signature is required in order to process your application. Please review the application carefully and sign in the space provided below.

Jill Edwards
Property Owner's or Owner's Legal Representative Signature

5/13/09
Date

OFFICE USE ONLY

☐ SURVEY PLAT TO SCALE SUBMITTED ☐ SCALED SITE PLAN SUBMITTED ☐ UN-SCALED SITE PLAN SUBMITTED

SEPTIC APPLICATION FEES RECEIVED: $ 300.00 CC 04590B DATE FEE RECEIVED: 5/13/09

WELL APPLICATION FEES RECEIVED: $ _____ DATE FEE RECEIVED: _____

APPLICATION PROCESSED BY: JC

GWS FILE NUMBER ASSIGNED: 8022B

APPLICATION ID NUMBER ASSIGNED: 4191

COMMENTS:

Tony Jacobs is working on septic plan for alteration.

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

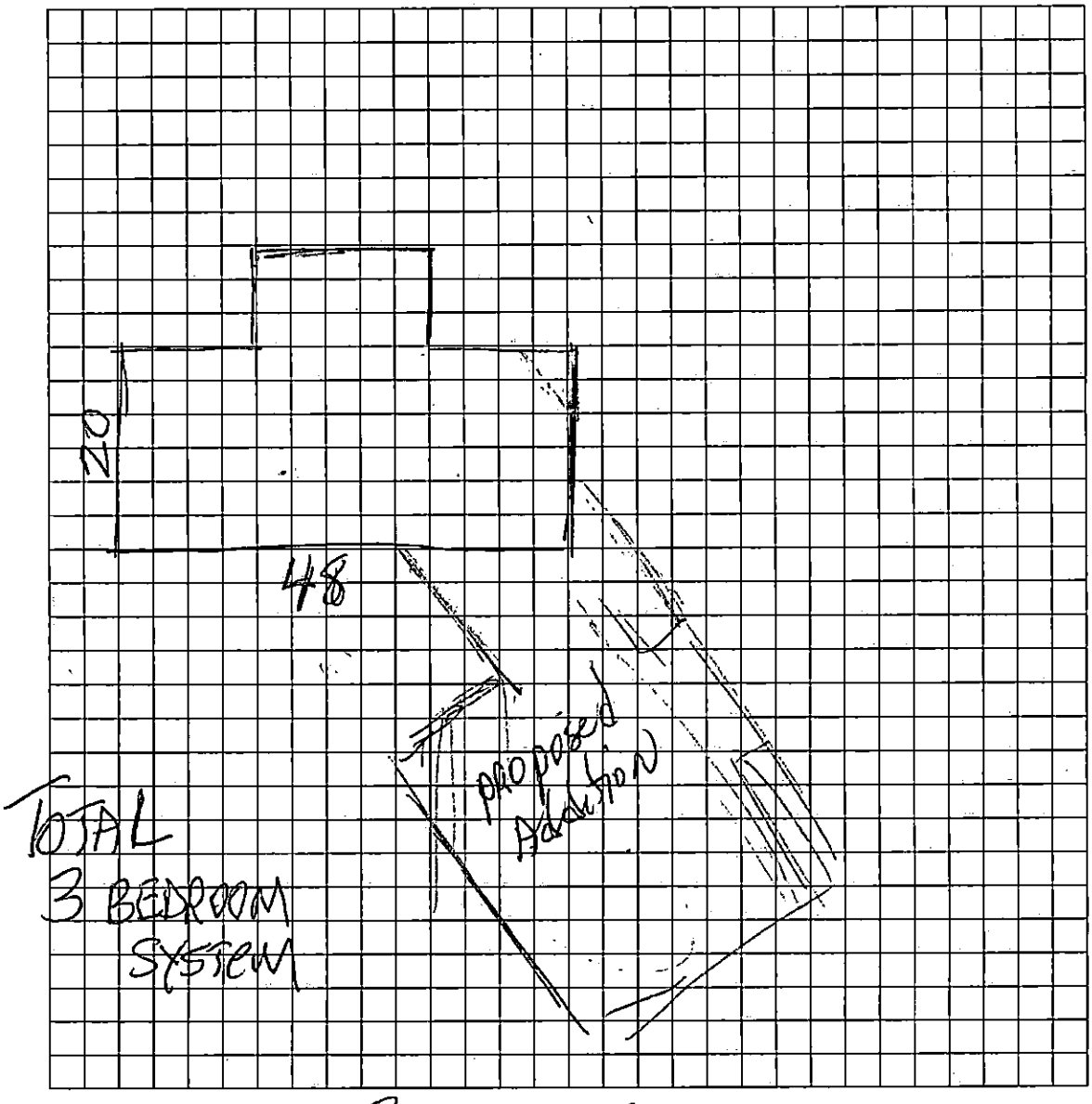
Revised on: 7/1/08

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

File #_____
Date_____

PROPOSED PLOT PLAN

A map showing existing and proposed property lines and easements with dimensions, the location of the single family residence, non-single family residence, or other facility, and appurtenances, the site for the proposed well, and the location of existing or proposed sewer lines and/or sewage disposal systems, surface water bodies, aboveground or underground storage tanks. Name all roads adjoining the property. If this a repair indicate the type of repair.



Owner/Agent Signature	
Date	5/13/09

LBC 12/15/04

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	05/13/09	**Amount:**	300.00
Receipt #:	62782	**Tendered:**	0.00
Check / Auth #:	VISA 04590B	**Returned:**	0.00
Received By:	CRAIGGY		

Account Information

Account #:	200000
Contractor:	EDWARDS AL
Attn:	
Address:	453 FENTON PLACE
Address:	
City/State/Zip:	CHARLOTTE, NC 28207

Item	Description	Permit#	Quantity	Unit Price	Total Price
0706	MH Exc/Add/Repl w/System Mod 18110 VARIETY LANE		1	300.00	300.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
10.00					

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

Sheet: 1 of 2
Property ID: 21731117
Lot #: 1
File #: 8022B
AppID: 4191

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Al Edwards
Applicant: Al Edwards
Address: 453 Fenton Place, Charlotte, NC 28207
Date Evaluated: 05/18/2009
Proposed Facility: residence
Design Flow (.1949): 360gpd
Property Size:
Location of Site: 18110 Variety Ln Charlotte, NC 28278
Property Recorded:
Water Supply: [ ] Public [ ] 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	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	L.S	0-7	GR/L	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	N/A	NONE	P.S IV
	12%	7-13	GR-SBK/SCL	FR-FI,SS,SP,SXP					.35GPD/FT^2
		13-24	SBK/SC	FI-FR,S,P,SXP					
		24-48	SBK/SCL	FR-FI,SS,SP,SXP					
2	L.S	0-6	GR/L	FR,SS,SP,SXP	"	"	"	"	"
	16%	6-12	GR-SBK/L	FR-FI,SS,SP,SXP					
		12-20	SBK/SC	FI,S,P,SXP					
		20-30	SBK-GR/SCL	FI-FR,SS,SP,SXP					
		30-40	GR/SL	FR,SS,SP,SXP					
		40-48	GR-SBKSCL	FR-FI,SS,SP,SXP					
3	L.S	0-4	GR/L						
	10%	4-9	SBK-GR/SCL						
		9-30	SBK/SC						
		30-48	SBK-GR/SCL						
				PROFILE 4, 5 NEXT PAGE	Site LTAR .35GPD/FT^2				

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

Other Factors (.1946):
Soil Evaluation By: Jason Jackson
Others Present: Tony Jacobs
Site Classification (.1948): Provisionally Suitable
Site Evaluation By:
Others Present:

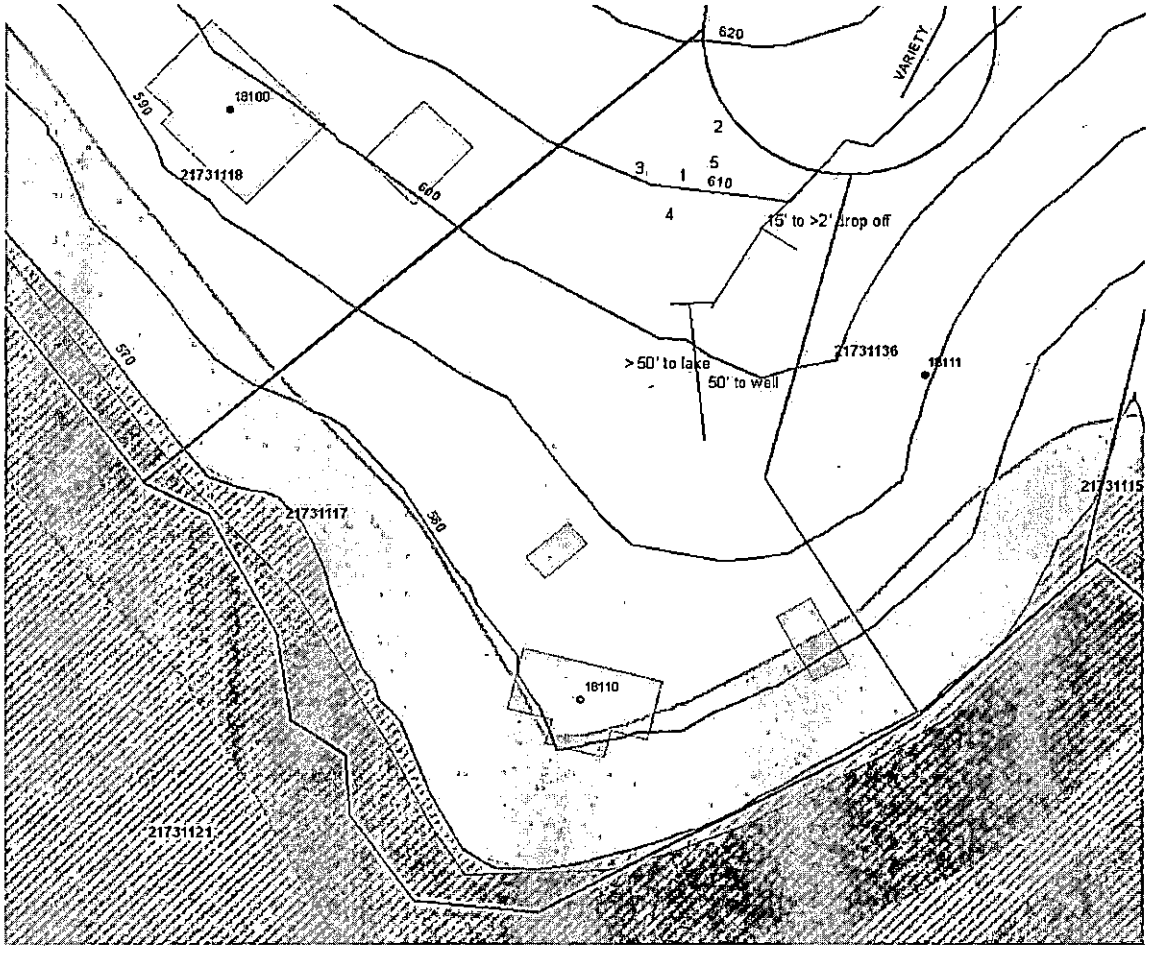
COMMENTS: Pre 1977

FILE #:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	SEXP-Slightly Expansive
FR-Friable	SS-Slightly Sticky	EXP-Expansive
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



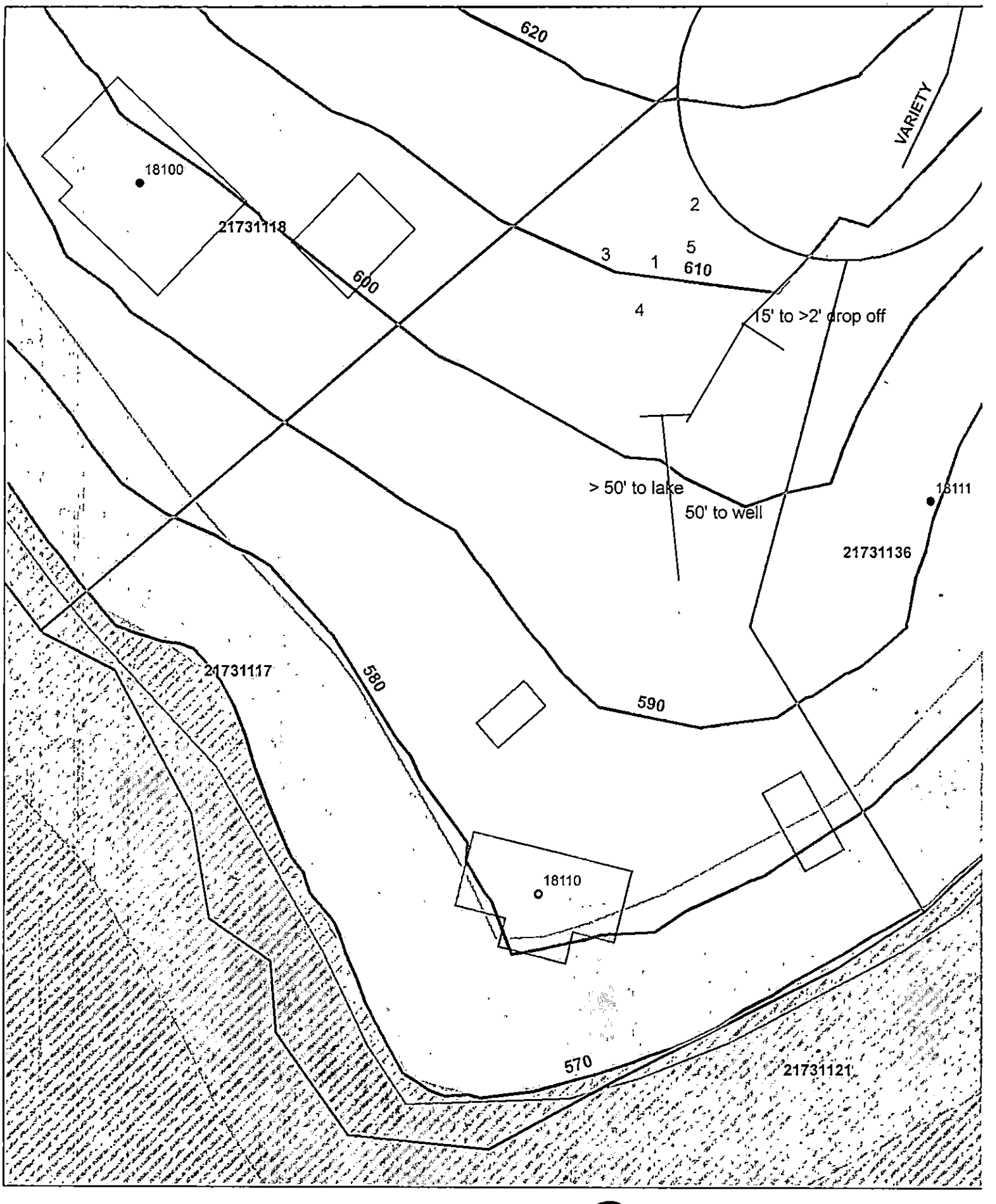
Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 2
File #: 8022B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941		OTHER PROFILE FACTORS				Profile Class & LTAR
			.1941 Structure/ Texture	.1941 Consistence Mineralogy	.1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	
4	L.S	0-6	GR/SL	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	N/A	NONE	P.S III
	10%	6-30	SBK/CL	FI-FR,S,P,SXP					.35GPD/FT^2
		30-48	SBK/SCL	FR-FI,S,SP,SXP					
5	L.S	0-3	GR/SL	FR,SS,SP,SXP	"	"	"	"	"
	12%	3-31	SBK/CL	FR-FI,S,SP,SXP					
		31-50	SBK/SCL	FR-FI,S,SP,SXP					

SOIL EVALUATION LOCATIONS FOR
18110 Variety Lane
WAPSPS APPLICATION # 4191



Map Created By: J. Jackson
Map Created On: 5/18/09

0 20 40 80 Fee

SOIL EVALUATION LOCATIONS FOR
18110 Variety Lane
WAPSPS APPLICATION # 4191



Map Created By: J. Jackson
Map Created On: 5/18/09

0 20 40 80 Fee

LOW PRESSURE MANIFOLD DISTRIBUTION TO 25% REDUCTION SEPTIC SYSTEM FOR SUBSURFACE WASTEWATER DISPOSAL

~~18110 Varsity Lane~~ ~~118~~ 18110 VARIETY LN.
Charlotte, North Carolina

PIN # 217-311-17
MCHD FILE # 8022B

Prepared for:
Al Edwards
453 Fenton Place
Charlotte, North Carolina 28207

GWS Septic System Design Review
GWS File #: 8022B
Design Review: 5/27/09 TJ ☒ Approved ☐ Disapproved
Field Review: _____ ☐
*Projects are not considered "APPROVED" until both sections above are completed and indicate an APPROVED status.

Prepared by:
Jacobs On-Site Development, Inc
168 Broadbill Drive
Mooresville, North Carolina 28117
office (704) 662-9845
cell (704) 662-8735
toneycjacobs@gmail.com

May 20, 2009

LICENSED SOIL SCIENTIST
TONEY C. JACOBS
1069
STATE OF NORTH CAROLINA

Toney C. Jacobs, LSS

Copy to: Jason Jackson, R.S.
Mecklenburg County Environmental Health

BACKGROUND

Jacobs On-Site Development has provided technical assistance with septic system design for Mr. Al Edwards associated with an approximate 1.1 acre lot off of Variety Lane (Mecklenburg County Property ID number 217-311-17). All ratings were determined in accordance with the "Laws and Rules for Sewage Treatment and Disposal Systems (15A NCAC 18A .1900)".

The soils on the 1.1 acre lot were evaluated on May 18, 2009 by Mr. Jason Jackson, RS of the Mecklenburg County Health Department (MCHD). Based on his evaluation, an LTAR of 0.35 was considered and area dictated a 25% reduction for the upgrade and proposed 3 bedroom system (soil notes enclosed). The MCHD has determined that no repair requirement is needed for the lot (enclosed).

Jacobs On-Site Development flagged the proposed 25% reduction septic system on May 18, 2009. Using the proposed LTAR of 0.35 gallons per day per square foot (gpd/ft^2) conventional rate, a 25% reduction system is recommended. The trenches shall be 36" wide. The system has been flagged in the field. The proposed house was located for the initial county visit. All lines are a minimum of 9.0' o.c. The bottom depth is 30" on the low side.

The proposed system will be a Type IIIb and require a Grade Level IV installer without a maintenance contract. No additional site meetings are required by this plan as a condition of the Improvement Permit and Authorization to Construct.

APPLICATION INFORMATION

1. Owner: Mr. Al Edwards
   453 Fenton Place
   Charlotte, North Carolina 28207

   Soil Scientist and Designer: Toney Jacobs, LSS
   Jacobs On-Site Development, Inc
   168 Broadbill Drive
   Mooresville, NC 28117
   (704) 662-9845
   (704) 582-9219 (cell)
   toneycjacobs@gmail.com

2. Water supply is provided by an existing 6' private well shown on the site plan
3. Facility to be served by the proposed system is a 3-bedroom single family residence
4. No repair is required, but there is a 100% repair area shown on site plan

LOCATION

The property is located on the right side of Variety Lane which is near the end of Bankhead Road.

REFERENCES

Law and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment Health and Natural Resources, April 17, 2002

Product information and depth specifics

PLANS AND SPECIFICATIONS FOR SPECIFIC SYSTEM COMPONENTS

Septic Tank

1. The septic tank receives wastewater directly from new old and new structure
2. A septic tank shall be watertight, structurally sound, and not subject to excessive corrosion or decay.
3. The septic tank must be of two-compartment design for maximum solids retention The inlet compartment of two-compartment tank shall hold between two-thirds and three-fourths of the total tank capacity.
4. Effluent from the two-compartment septic tank flows by gravity through a State approved effluent filter and a four-inch solid PVC modified to the pumping tank
5. Both the septic tank and pumping tank must be provided with above ground approved manhole risers to provide easy access for clean-out and pump service
6. When prefabricated concrete tanks or tanks of other material are used, they shall be constructed in accordance with the plans which have been approved by the State and shall comply with all requirements of Section .1953 of 15A NCAC 18A.
7. On the outlet tee of the septic tank an effluent filter must be installed This filter should be a State approved unit supplied by the tank manufacturer.

Pumping Tank

1. The pumping tank shall have an access manhole extending at least 6 inches above finished grade.

2. A septic tank effluent pump that will not be corroded by sewage shall be used in the pumping tank.
3. The pump must be placed on two concrete blocks set next to each other on the bottom of the tank. This prevents the pumping of any solid particles that can clog the system
4. A piece of nylon rope or other non-corrodible material should be attached to the pump and to the outlet modified for lifting the pump in and out of the chamber
5. The lower level control or "pump-off" must be positioned above the pump, so that the pump remains submerged at all time.

6. The pump outlet modified should be connected to the supply manifold with a threaded PVC union to allow quick removal.
7. Pump and Simplex control circuits shall be provided with manual circuit disconnects within a watertight, corrosion-resistant, outside enclosure (NEMA 4X or equivalent) adjacent to the pump tank, securely mounted at least 12 inches above finished grade Pump control (Simplex) may be mounted on side of house if long cord pump is used The pump shall be manually operable without requiring the use of special tools or entrance into the tank for testing purposes. Conductors shall be conveyed to the disconnect enclosure through water proof, gas proof, and corrosion-resistant conduits, with no splices or junction boxes provided inside the tank. Wire grips, duct seal or other suitable material shall be used to seal around wire and wire conduit openings inside the pump tank and disconnect enclosure. There shall be two electric circuits for controls: one for pump power, one for the alarm. These will require 2 circuit breakers
8. The pump tank shall have a properly functioning high-water alarm The alarm circuit shall be supplied ahead of any pump overload and short circuit protective devices It should be on a separate electrical circuit from the pump power line The alarm shall be audible and visible by system users and included in the pump and control enclosure. The alarm is activated if the water level in the pump tank rises above the "pump-on" float control. The tank provides at least one day or more of excess storage capacity (depending on water use in the house) during which time the system must be repaired.
9. Float switch for the high water alarm shall be set no more than 3 inches above the high water level of pump cycle.
10. Float switch tie downs to be made of corrosion resistant material, no tape or metal hose clamps. For maintenance flexibility, tree must be used to set floats Alternative electronics may be used.
11. Watertight testing per .1900 rules shall be required on two piece pump tanks
12. Wiring between the pumping tank and the house should meet State and local code requirements.

Modified and Fittings

1. All modified and fittings should be made of SCH 40 PVC.
2. All joints must be sealed with appropriate PVC-solvent cement.
3. There should be a threaded PVC union above the pump to allow easy removal or replacement.
4. A gate valve for final pressure adjustment is installed in the supply line inside the pumping tank.
5. Six tap manifold and valves as shown in specifications. The proposed system uses 6 laterals and 6 gate valves at the valve box for each of the lines.

CONSTRUCTION INSTALLATION

Site Preparation

1. One of the most important concerns for an on-site system is to protect the site from soil disturbance by heavy equipment.

2. Now that the absorption area has been designed and flagged, **it should be barricaded off and protected from construction traffic**. No site preparation or construction work should occur if the soil is wet. **Do Not Grade!**
3. After the area has been cleared and shaped, the location of the lateral lines and supply manifold should be accurately re-flagged according to design specifications. Each lateral line must be laid out along a level contour using a transit or laser level. This step can be completely avoided if flags are protected during clearing.

Tank Installation

1. The two-compartment septic tank is installed.
2. The pumping tank is installed next to the septic tank.
3. The tanks are connected with an appropriate length of solid, four-inch PVC modified.

Supply Manifold

1. The supply manifold conveys effluent from the pump to the distribution laterals
2. Design of the manifold is shown on attached diagrams.
3. After the supply manifold has been placed and lateral lines connected, it should be backfilled with tightly tamped soil. The supply manifold trench must not be backfilled with gravel, or the trench may become a conduit for downslope flow effluent from the laterals.

Lateral Lines

1. 25% reduction lateral lines.

PROPER OPERATION CHECK AND PRESSURE HEAD ADJUSTMENT

1. After all connections have been installed and connected, the system should be checked for proper operation. With electrical power turned off, fill the pump tank with a garden hose until the liquid rises to the level of the high-water alarm float
2. Turn on the electrical power. The alarm light should go off when the liquid level falls below the high-water float. The pump should turn off when the liquid reaches the lowest float control. Be sure the pump is still completely submerged.
3. The pressure head is measured as the height liquid will rise above manifold when the pump is running. To set or check the pressure head:

FINAL LANDSCAPING

After the system is installed, the following should be checked to ensure that the system will not be overloaded with excess rainwater and runoff:

1. The distribution field should be shaped to shed rainwater and is free of low areas
2. The entire area should be planted with shade tolerant grass in order to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized before

planting. After applying an appropriate grass seed, the area should be mulched with straw or other suitable material.

QUALITY ASSURANCE REQUIREMENTS

The system must be installed by a qualified, Grade Level IV contractor that is on the Mecklenburg County list of competent contractors (review introduction about installer) Critical stages of the installation, which should be checked, are:

1. System layout
2. Septic and pump tank installation prior to backfilling.
3. Manifold and lateral installation prior to backfilling.
4. Final landscaping, operation and pressure head check.

The system design is based on a maximum waste flow of 360 gallons per day. The homeowner should pay particular attention to the section titled Homeowner Suggestions for ways to minimize the burden on the system.

OPERATION AND MAINTENANCE PROCEDURE

The system is classified as **Type IIIb and does not require a maintenance contract** with a certified operator.

For optimum use the following schedule should be followed either by a hired professional or by the owner. Operating, maintenance and inspection procedures shall include, but not be limited to the following:

- Minimum inspection/maintenance frequency shall be 2 times per year, with reporting frequency every 6 months to the local health department.
- Septic system shall be pumped every 4 years or when solids accumulate to 1/3 the volume of the tank.
- At 6 month intervals, inspect the effluent filter. When washing the filter, debris must be sprayed directly back into the septic tank and not onto the lawn
- All laterals shall be checked and if necessary, flushed annually with clean water.
- Pressure head for laterals should be checked and adjusted one month after installation and semi-annually thereafter.
- All piping and fittings shall be checked annually for damage and/or proper operation and corrections made immediately.
- The property should be inspected to insure all surface water is diverted away from the fields and tank. Any ponding of surface water should be corrected.
- Grasses shall be mowed and maintained and any erosion shall be corrected promptly.
- The nitrification field area shall be checked for leakages, blowouts or malfunction, indications of damp or mushy areas compared to surrounding area or evidence of noticeable odor of sewage. Repairs shall be made immediately
- The pump electrical should be checked to insure tight, clean connections with

no corrosion and proper operation.

- Pump switches shall be checked for free operation and proper level set
- Pump draw down depth and delivery rate shall be checked each year.
- Check septic tank and pump tank for evidence of damage or leakage Check the quality of effluent including grease and sludge accumulation

OWNER SUGGESTIONS

Most systems do not require much effort to operate and maintain. Even though the effort is small, the system must be maintained properly so that it operates reliably and at a minimum cost. Following are suggestions for the owner to minimize the burden on the septic system.

1. Garbage disposals should not be used in on-site systems. The ground garbage adds large amounts of solids to a septic tank, causing sludge to build up at a quicker rate than without. If disposal is installed, use should be limited.
2. Grease, cooking oils and coffee grounds should never be put into a septic tank
3. Items such as disposable diapers, cigarettes, facial tissues and other solid or paper wastes should not be flushed into the on-site system.
4. Used motor oil and other such oily liquids should not be put into a septic tank
5. Using less water can reduce the amount of water flowing to the treatment and disposal field.
6. Water-saving fixtures and devices can be installed on sinks and toilets to reduce the rate at which the water flows from the fixture.
7. Leaky faucets and toilets can add large volumes of water to the daily flow of water into the on-site system. Repair the leaks to save water and give the treatment and disposal field a rest.
8. Roof drains, foundation drains, and other such drains should not empty into or onto the surface above the on-site system. These drains should be directed to another part of the lot away from the treatment and disposal field.
9. Dishwashers and washing machines should only be run with full loads.

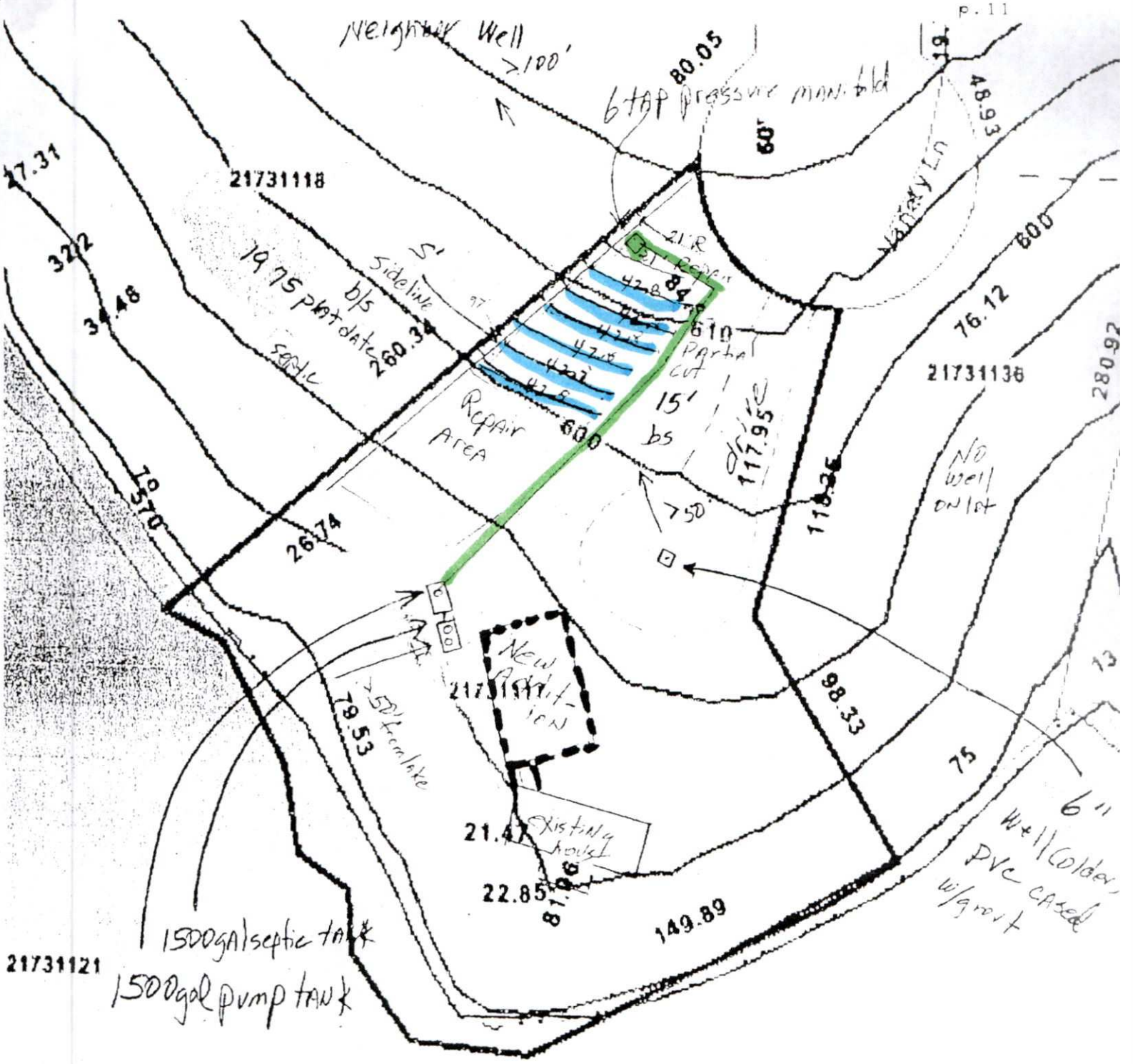
DESIGN SPECIFICATIONS FOR PRIMARY SYSTEM
18110 VARIETY LANE

Daily design flow:	360 gpd. (3-bedroom)
Septic tank size:	1500 gal. (2 compartments)
Pumping tank size:	1500 gal.
Effluent loading rate:	0.35 gpd/ft^2 for conventional with 25% reduction
Total length and diameter of supply modified:	approx 190' of 2" SCH 40 PVC
Number and length of laterals:	6 @ 42.8'
Pressure manifold:	6 tap at ½" SCH 80 PVC
Flow rate through the system:	approx. 33 gpm 32.88
Elevation head:	Approx. 40' **
Pressure head:	2.0'
Friction head:	Approx. 5.0'
20% contingency	9.4'
Total head:	59.4'
Pump requirements:	33 gpm at 60' of head; use Goulds WE15H pump or equivalent with compatible electrical
Dosing volume:	180 gal. – 2.0 dose/day at design flow
Depth of water pumped per dose:	calculated to specific tank by measure or dealer engineering specifications (1 cubic ft of water equals 7.48 gal.)
Pump run per dose:	approx. 5 45 min
Check valve:	yes
Siphon break hole:	no

** to be verified by installer

List of Attachments

1. Overall Site Plan (1" = 50') with topography
2. Soil evaluation
3. System component diagrams



GWS Septic System Design Review

GWS File #: 8022B **Approved** ☒ **Disapproved** ☐

Design Review: 5/27/09 TCT ☒ ☐

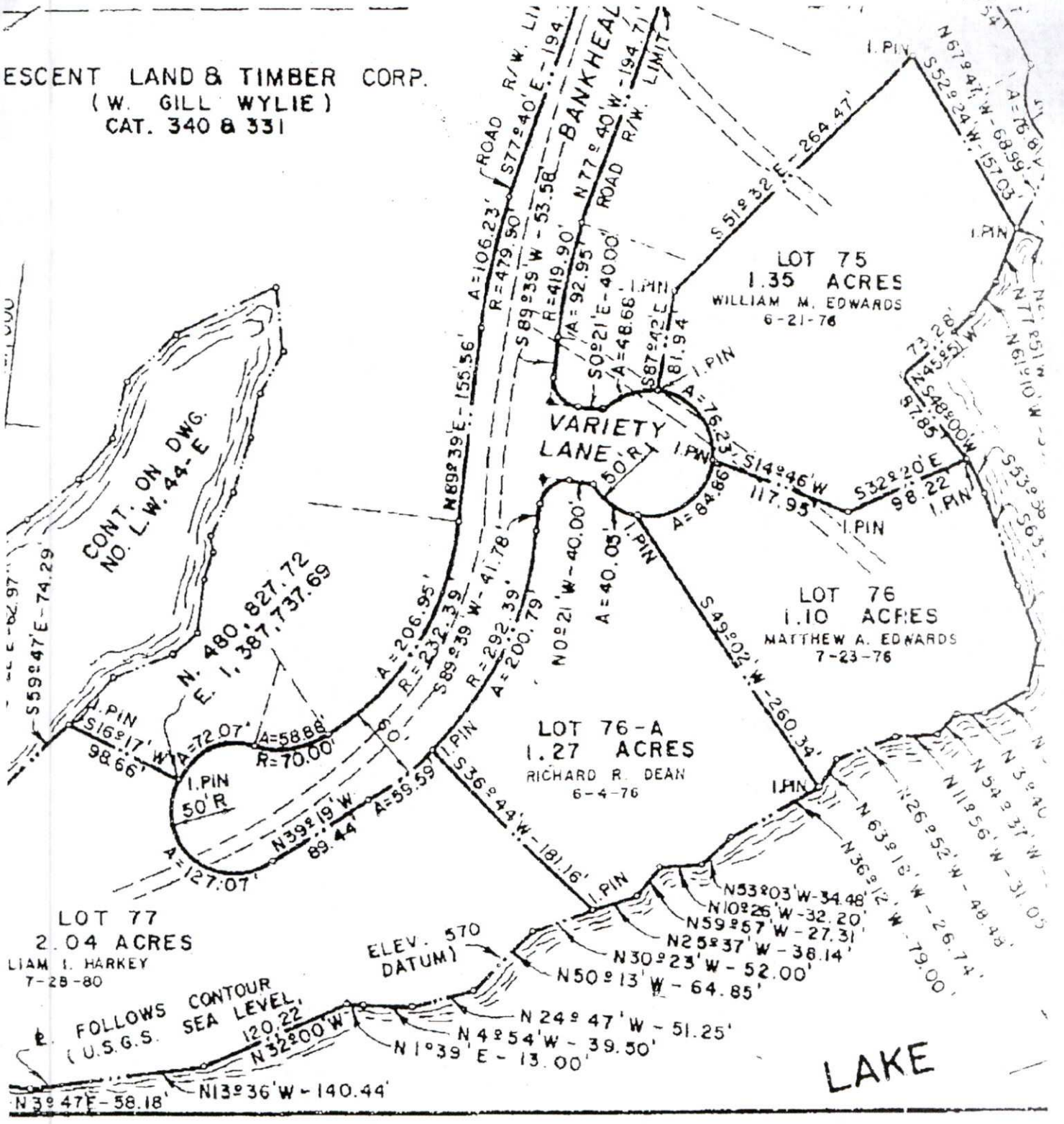
Field Review: _____ ☐ ☐

*Projects are not considered "APPROVED" until both sections above are completed and indicate an APPROVED status.

1" = 50'

G COUNTY, GIS

ESCENT LAND & TIMBER CORP.
(W. GILL WYLIE)
CAT. 340 & 331



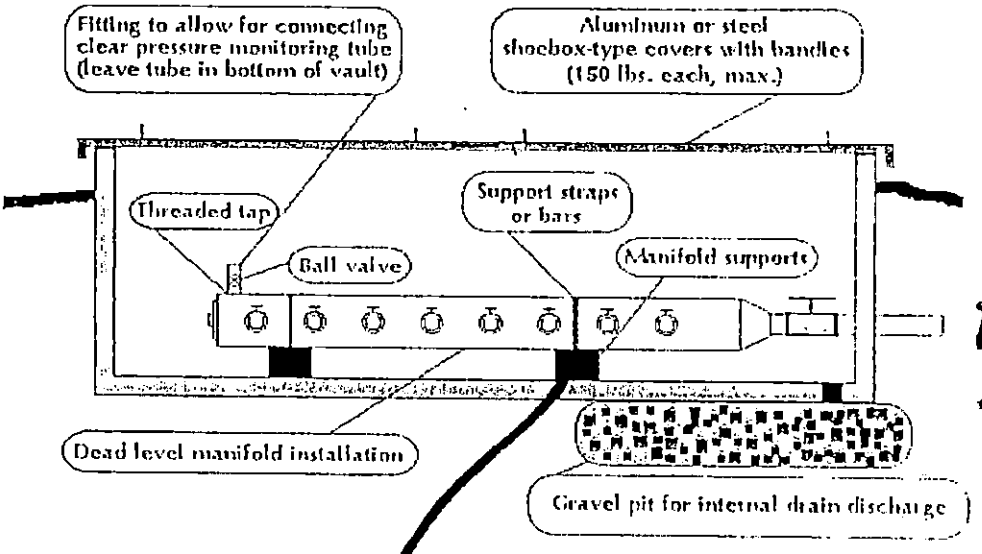
CRESCENT RESOURCES
LLC
www.crescent-resources.com

Bob Hartis
Director of Surveying & Engineering
Office: 980-321-6252
Mobile: 704-614-3451
Fax: 980-321-6260
Email: rghartis@crescent-resources.com

7810 Ballantyne Commons Parkway
Suite 200
Charlotte, NC 28277

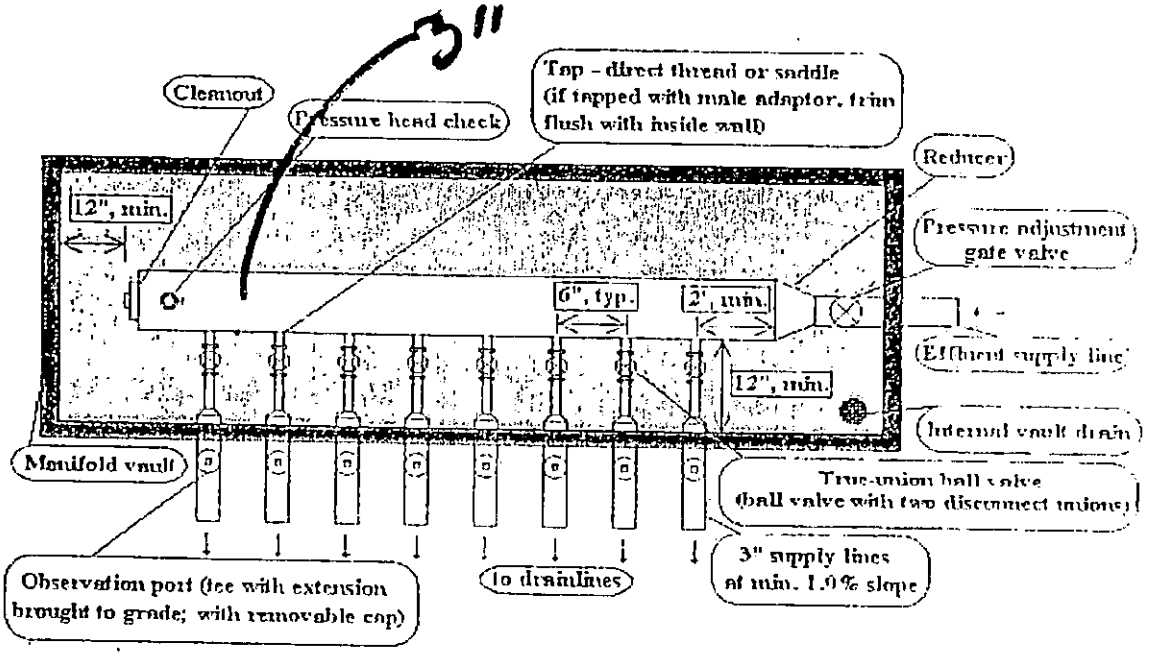
SHOW AUGER BORINGS ON THIS PLAN.

Plat date NOV 12, 1979



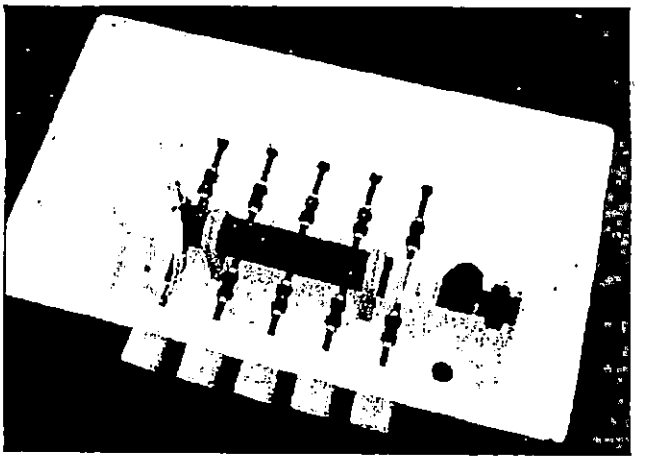
Profile View of Pressure Manifold for Sloping Site Installation

(not to scale)



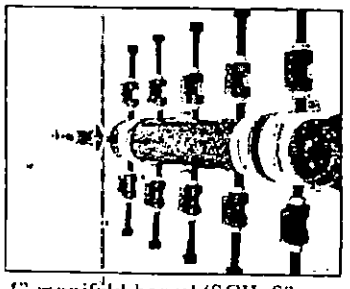
Tri-County Wastewater
Management, Inc.
P.O. Box 1330
Fraser Trail, NC 28079

pressbox
Pressure Manifold

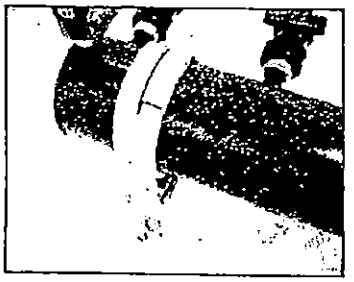


- Precise, uniform distribution
- Compact & Lightweight
- Easy extraction & fully serviceable
- Non-obtrusive to landscaping
- Competitively Priced
- Hook-Up ready
- No Assembly Required

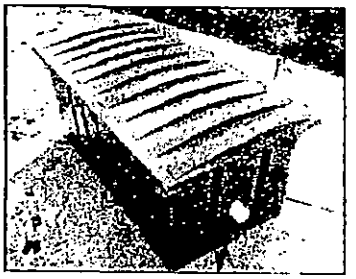
The score's in! For the first time, a fully fabricated pressure manifold, designed for residential and commercial application, is available to installers and developers to solve the problem of drainfield failures due to unequal distribution of effluent. Get on the winning team with PressBox Pressure Manifolds by Tri-County Wastewater Management, Inc.



4" manifold barrel (SCH. 80 drilled and tapped for 1/2" NPTF) (3/4" optional)



Manifold supports



Manifold vault with lid. (High density Polyethylene)



3" discharge supply lines (SCH. 40 coupling ready for quick hook-up)

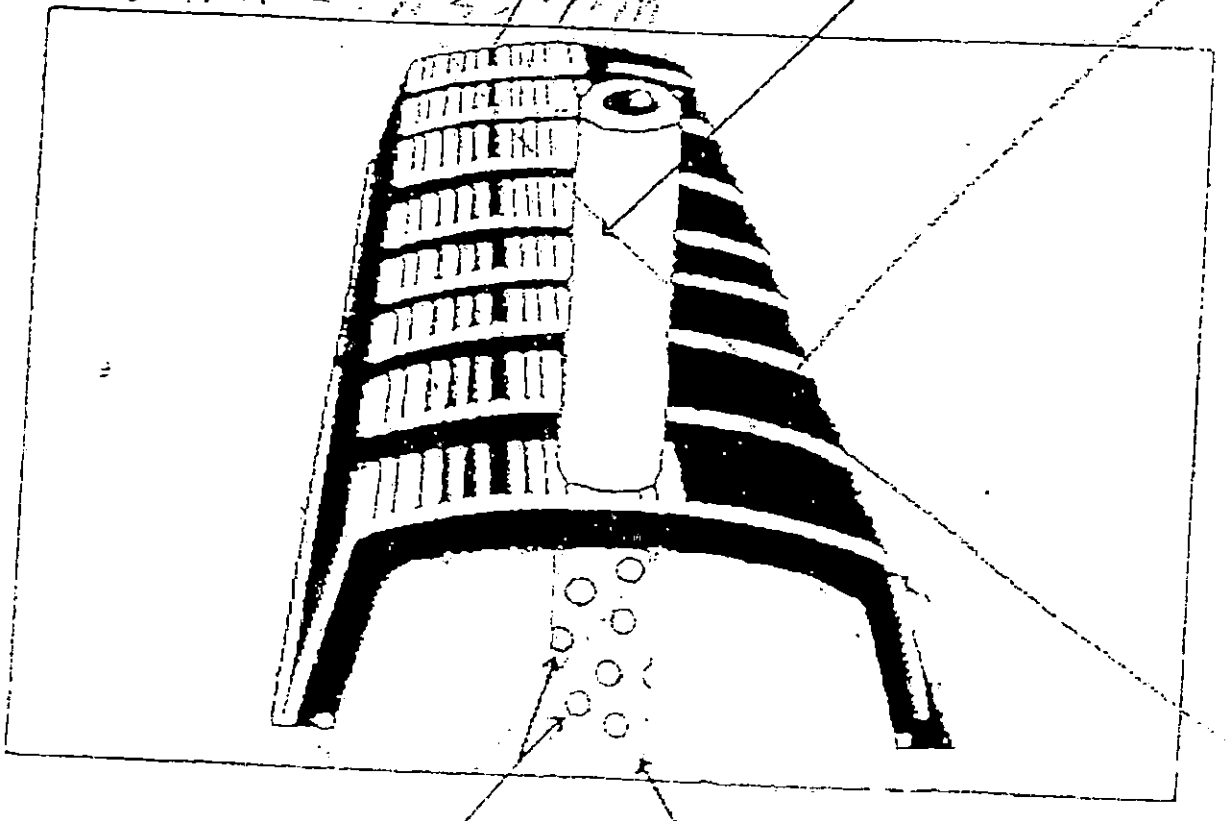
EZ Service

- EZ extraction of manifold barrel for service, expansions & replacement
- EZ accessed cleanout for barrel cleaning
- EZ replacement of all components. Fully replaceable by using "true unions" in all connections

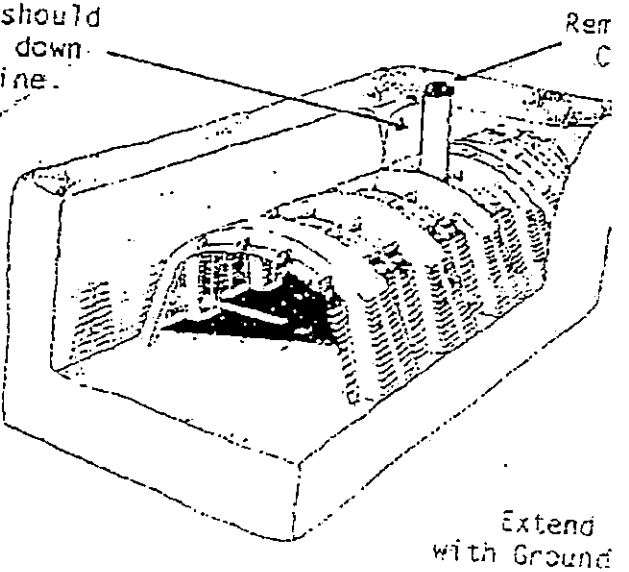
Be in the winner's circle!

INSPECTION ACCESS DESIGN

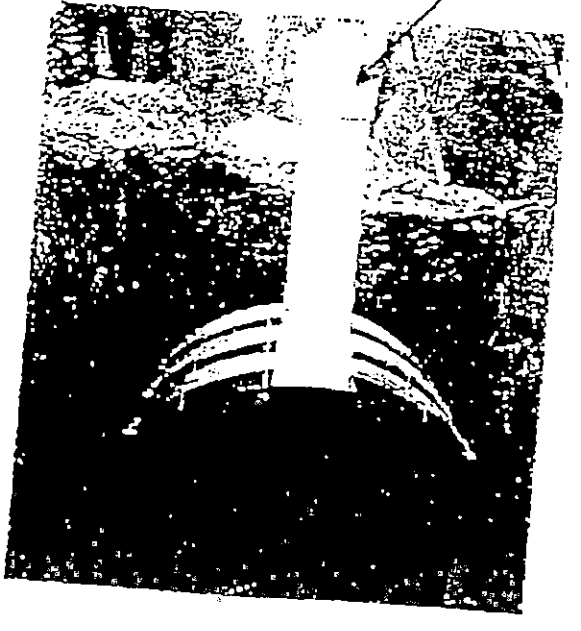
on lowest line
thru system to top
with 2" system



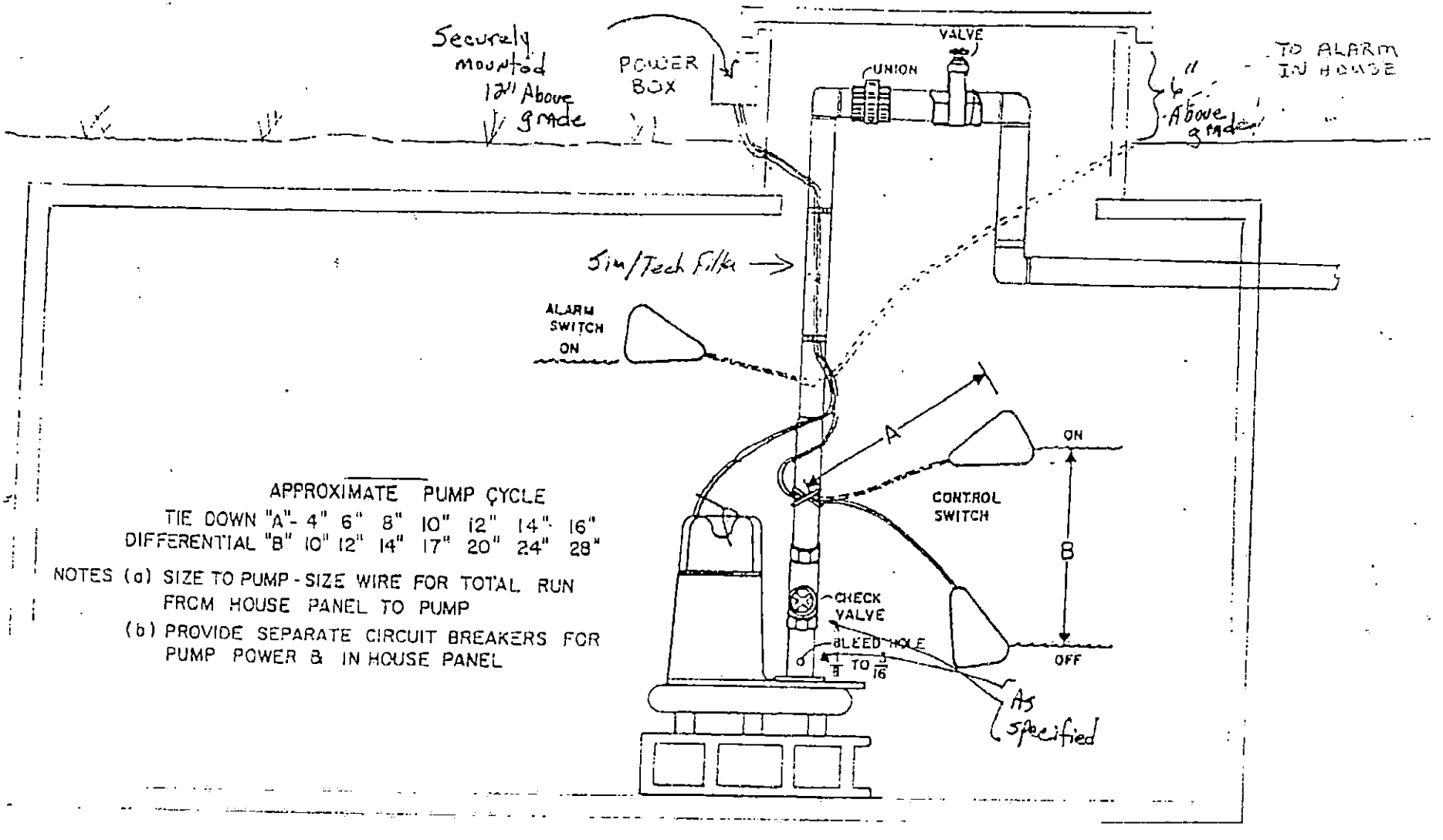
Inspection Port should
Be installed 2/3 down
length of each line.



Extend
with Ground



P.15


Securely mounted 12" Above grade
POWER BOX
VALVE
UNION
TO ALARM IN HOUSE
6" Above grade
Sim/Tech Filla
ALARM SWITCH ON
A
ON
CONTROL SWITCH
B
CHECK VALVE
BLEED HOLE
1/8 TO 5/16
OFF
As specified
APPROXIMATE PUMP CYCLE
TIE DOWN "A"- 4" 6" 8" 10" 12" 14" 16"
DIFFERENTIAL "B" 10" 12" 14" 17" 20" 24" 28"
NOTES (a) SIZE TO PUMP - SIZE WIRE FOR TOTAL RUN FROM HOUSE PANEL TO PUMP
(b) PROVIDE SEPARATE CIRCUIT BREAKERS FOR PUMP POWER & IN HOUSE PANEL

GOULDS PUMPS



Submersible Effluent Pump

MODEL 3885

WE Series

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:
- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump
- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

■ **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

■ **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.

■ **Mechanical Seal:** SILICON CARBIDE VS. SILICON CARBIDE sealing faces. Stainless steel metal parts, BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

■ **Fasteners:** 300 series stainless steel.

■ Capable of running dry without damage to components.

■ Designed for continuous operation when fully submerged.

MOTORS

■ Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

■ Class B insulation on ½-1½ HP models.

■ Class F insulation on 2 HP models.

Single phase (60 Hz):
- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ½ and ½ HP models have NEMA three prong grounding plugs.
- ¾ HP and larger units have bare lead cord ends.

Three phase (60 Hz):
- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.

■ **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

■ **Bearings:** Upper and lower heavy duty ball bearing construction

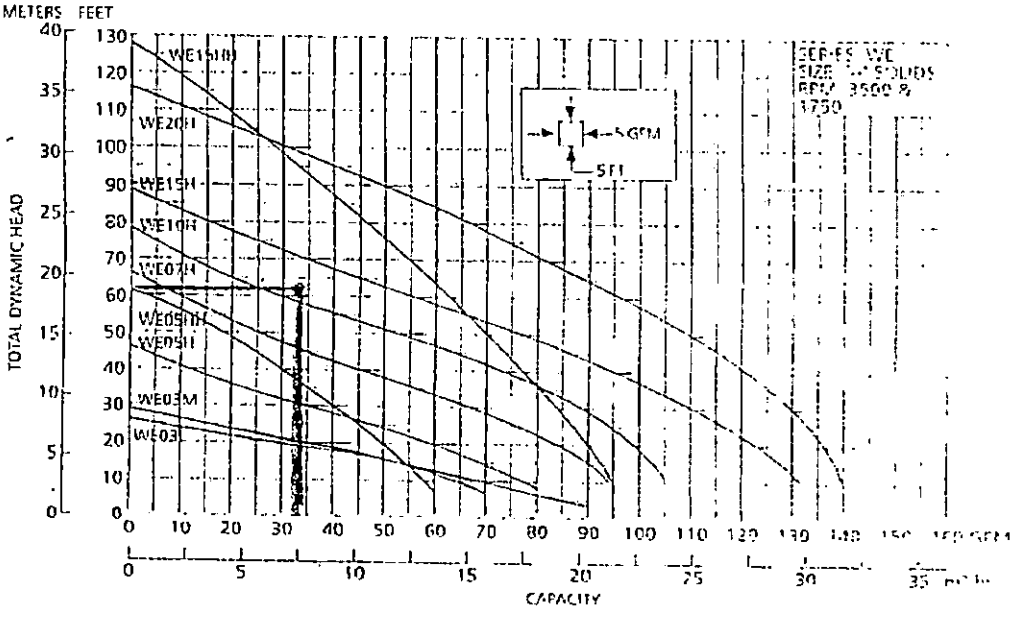
■ **Power Cable:** Severe duty rated, oil and water resistant Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.

■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards By Canadian Standards Association File #LR38510

Goulds Pumps is ISO 9001 Registered



Goulds Pumps

ITT Industries

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Effective July, 2003
B38BS