

19401 MARY ARDREY CR

00151135

6/6/2007

duponbj

Groundwater and Wastewater Services File Imaging Project

May 2007

Barcode Font = IDAutomationHC39M

Mecklenburg County
Health Department

April 27, 1990

Stough Farm Development
19529 Weavers Circle
~~Charlotte, NC 28207~~ Huntersville N.C. 28078

RE: Property located at 19401 Mary Ardrey Circle
FILE: 5836A
PARCEL: 001-511-35

Gentlemen:

Receipt of your plans for a modified waste disposal system for the property referenced above is acknowledged.

Your plans for the modified system for the above property as submitted are approved with the following comments:

- The well should be located 100 feet or no less than 50 feet away from any part of the sewage disposal system and repair area.
- Water saving plumbing devices and low flush toilets should be installed when constructing the residence.
- Occupants to utilize maximum water conservation measures wherever possible.
- Effectively rake and lime all trench sidewalls
- Landscaping of repair area to be undisturbed. No grading, shaping, or altering in anyway.

Upon execution and recording with the Register of Deeds Office, Mecklenburg County, of the enclosed "Septic Tank Agreement Form", an Improvements Permit may be issued by this office.

Sincerely,

Gene Vaughan, R.S., Supervisor
On Premises Waste Disposal & Water Supply

GV/kat

Enclosures - 3 Septic Tank Agreement Forms

RECOMMENDED INDIVIDUAL RESIDENCE

T & J PANEL

GROUND ABSORPTION, WASTEWATER

DISPOSAL SYSTEM

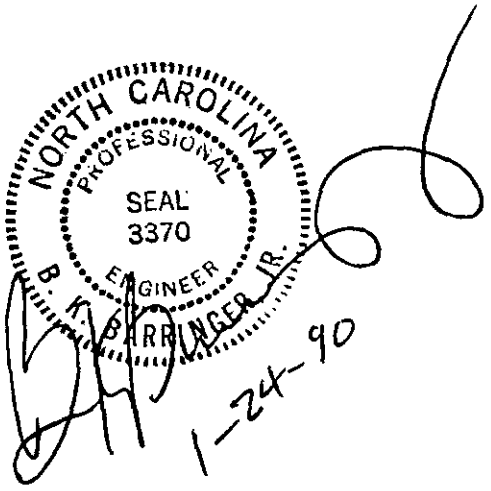
for

WILLIAM KIMBROUGH
MARY ARDREY CIRCLE - LOT 14
FILE NO. 5836A - PARCEL 001-511-14
PATRICK'S PURCHASE, PHASE II
MECKLENBURG COUNTY, N.C.

JANUARY 24, 1990

Owner:
William Kimbrough
19529 Weavers Circle
Huntersville, N.C. 28028

Prepared By:
B. K. Barringer, Jr., P.E.
N. C. Registration No. 3370
104 Westfield Center
Mooresville, N. C. 28115
Phone (704)664-7888
Fax (704)664-1778



T & J PANEL SYSTEM

DESIGN CONSIDERATIONS:

PROPOSED THREE BEDROOM HOME with two baths and a washing machine. The unit will be serviced by a water well located a minimum of 50' from the septic tanks.

LOCATION: The property is located on Mary Ardrey Circle, off Meta Road and north of Jetton Road. The proposed field is located to the south of the proposed house location.

TERRAIN The property, where the field is to be located, slopes south to north at approximately 6%.

REFERENCE MATERIAL:

(1) DESIGN AND INSTALLATION (Manual)
OF LOW PRESSURE PIPE WASTE WATER TREATMENT SYSTEMS
By: Craig Cogger; Bobby L. Carlisle; Dennis Osborne; Ed Holland
Published by: UNC Sea Grant College Pub. UNC-SC-82-03
May, 1982.

(2) LAWS AND RULES FOR GROUND ABSORPTION SEWAGE DISPOSAL SYSTEMS.
SECTION .1956 OF THE N.C. Administrative Code: Title 10 Health Services; Environmental Health; Subchapter 10a; Sanitation.
Published by: N.C. Dept. of Human Resources; July 1, 1982.
Paragraph .1956 (a)(ii)(B).

(3) EPA 625/1-80-012 Design Manual
Onsite Wastewater Treatment and Disposal System Oct.,1980;
Chapter 7.

RECOMMENDATIONS: Due to shallow soil depth, sloping lot, and limited area, a precast porous block panel system (PPBPS) - T & J - is recommended for the location.

OWNERSHIP RESPONSIBILITY:

It must be kept in mind that this system is designed to accept a moderate amount of waste water (which is called the EFFLUENT), in a minimal water absorbing soil.

Conservation measures must be undertaken by all members of the house hold to minimize the volume of waste water entering the disposal system, including, but not limited to, the following precautions:

(a) Provide water conserving plumbing fixtures within the facility; toilets shall be equal to Eljer "Ultra-One/G" or Sloan's "Flushmate".

(b) Develop conservative water use habits;

(c) Monitor and maintain the system as necessary for proper operation;

(d) Check and pump the septic tank sludge on a regular basis of approximately every year if garbage disposal is included in the residence, or approximately every three years otherwise.

(e) Make rapid repairs to leaking plumbing fixtures and faucets.

(f) Avoid excessive watering of the lawn in the vicinity of the disposal field.

CONSTRUCTION SEQUENCE AND COMPONENTS OF THE SYSTEM

Refer to T & J Panel System's manufacturing and installment manual. Furnish and install all items required for a complete system in accordance with plans and specifications; for requirements of the County Dept. of Environmental Health (CDEH); the N. C. Dept. of Environmental Health (NCDEH); the N. C. Building Code, Plumbing Code and Electrical Code; and the National Electric Code. System must be properly installed by a qualified, competent contractor.

COMPONENTS OF SYSTEM

1. Two compartment septic tank
2. Pumping chamber
3. Submersible effluent pump and level controls
4. High water alarm signals (audible and visible)
5. Supply pipe
6. Ball valves
7. T & J 16" high panels & distribution laterals

CONSTRUCTION SEQUENCE:

(1) Lay out T & J, 16" high, Panel System network area and repair area with stakes and flagging to ten feet (minimum) beyond the limits of the network. As soon as the absorption area is designated, it should be flagged, roped off and isolated from construction traffic. This barrier should be maintained until the system is accepted by the Owner. Refer to site plan for the size of absorption area. The Engineer has previously flagged the general limits of the nitrification field. See site plans for flag locations.

(2) Prior to actually beginning construction of the system, carefully locate, lay out and identify disposal site, manifolds and the lateral panel piping networks, using a tripod mounted engineer's leveling instrument to accurately establish each lateral along a level contour. Note: Lateral panel runs which conflict with cut-off-in-place stumps or trees shall "snake" by with a 12" minimum trench clearance and then continue along its projection run. (The 6' minimum trench separation must be maintained.)

(3) Excavate for and construct curtain drain (if shown on the plan.)

(4) Excavate lateral network trenches 24" wide by 28" deep (see detail). Remove loose soil from bottom of trench.

(5) Install sand in bottom of the lateral trench to the proper depth of approximately 22" below finish ground level.

(6) Follow the manufacturer's guidelines for installing the T & J Panel System.

(7) All joints in lateral and the manifold piping shall be water tight connections to insure that the only source of the water seepage from the system is through the orifices as designed. See layout and details. Carefully install manifold and lateral network according to the attached designed layout. A larger diameter protective sleeve with cap or approved box with lid shall be placed over the turned up lateral and positioned level with the ground surface (so as not to be damaged by mowing machine.)

(8) Carefully backfill manifold trenches to finish grade with clean (debris free earth (no stone).

(9) Leave absorption area with a raked surface, ready for grassing.

(10) The installation contractor shall stabilize the area of construction by planting and seeding with Kentucky 31 tall fescue and shall keep the planted area watered and mulched until such time that a hardy stand of grass is established. (See Seeding Specification.)

(11) The septic tank shall consist of a 1,500 gallon capacity, reinforced, precast concrete tank with full baffle and shall have easy access to each chamber from ground level for checking and pumping. The first chamber of the septic tank shall consist 2/3 to 3/4 of the volume of the total tank and the baffle shall contain a horizontal opening across the tank at about midway its height. Locate the septic tank at such height as to provide approximately 8" of cover soil over top of the tank.

(12) The dosing tank shall consist of a 1,000 gallon capacity, reinforced, precast concrete tank without baffle and shall have a concrete mounting pad (concrete blocks) for accommodating the pump. Provide access for entry into the tank directly over the pump location, and extending 6" above final grade. Use a 30" diameter concrete well casing and concrete well cap.

(13) All piping and fittings shall be PR160 PVC. Glue for all PVC pipe joints shall be as recommended by the pipe manufacturer.

(14) PUMP: The submerged pump shall be Model WHRH5 manufactured by F.E.Meyers Co., Ashland, OH, or equal, 1/2 hp, 115v/1ph; capable of pumping 26.5 gallons per minute at an 20.8' head.

(15) PUMP ON-OFF water level control switch shall by Myers, Model MLC-20, mercury switch, with three prong, piggy back plug.

(16) HIGH WATER ALARM SWITCH shall be equal to Myers, model FLCA-30, mercury switch, red colored ball with support bracket.

(17) HIGH WATER ALARM CONTROL BOX shall be equal to Myers, model FLCA CA-SS4 with connection box having buzzer alarm, on, off, test switch with terminal block for all connections. Control box shall be supplied by two separate 115 volt circuits, one plug circuit, and one alarm circuit.

(18) A "HOME OWNER'S WARNING SIGN" shall be located within the house to inform the owner of what action to take in case the "High Water Alarm" is activated. This sign shall contain the name, address, telephone number, and emergency telephone number of the person to contract immediately upon malfunction of the system.

(19) PUMP AND CONTROLS: Details of pump installation are shown on the plan. The pump must be placed on two concrete blocks next to each other on the bottom of the tank. This prevents the pumping of any solid particles which can clog the LPP system. A piece of nylon rope or other non corrodible material should be attached to the pump and to the outlet pipe for lifting the pump in and out of the chamber. (The PVC outlet pipe is too fragile to support the pump.)

Controls are fastened to the outlet pipe with clamps or brackets supplied by the manufacturer. The lower level control or "pump-off" must be positioned above the pump, so that the pump remains submerged at all times. The upper level control "pump-on" is positioned to pump a specified volume of effluent. The high water control float is then mounted about 3" above the upper pump-on control. (Note: Care must be taken to insure that floats do not become fouled by other components in the tank such as the electric power cord or the lifting rope.)

The pump outlet pipe should be connected to the supply manifold with a threaded PVC union (or dresser coupling) to allow quick removal. The gate valve must also be installed in the supply line (within the pump-chamber) to allow final adjustment of the pressure. If effluent will be pumped down hill, a 1/4" siphon-breaker hole must be drilled in the bottom of the supply line before it leaves the pump tank. This breaks any vacuum in the system and prevents the inadvertent siphoning of effluent out of the tank. This hole is very important.

(20) ELECTRICAL CONNECTIONS: The pump and high water alarm must be placed on separate electrical circuits. (If the pump circuit fails, the alarm must still be able to operate.) Follow the manufacturers' recommendations for the proper fuses or circuit-breakers. All electrical connections must be made outside the pumping chamber. Power cords from the pumps and controls should be plugged into a NEMA approved outdoor receptacle mounted outside of the pumping chamber. The receptacle must not be located inside the pumping chamber due to the corrosive and explosive gasses that may form from the sewage.

Electrical connections may be made inside the pumping tank only if wired inside a sealed, water tight box. Some level control switches have a box built into the housing, but are more expensive than the plug-in devices.

Wiring between the pumping chamber and the house should meet State and local code requirements. A lightning arrester is recommended to protect the pump and controls from electrical surges.

(21) PROPER OPERATION CHECK: After all components have been installed and connected, the system should be checked for proper operation. With electrical power turned off, fill the pumping chamber with water from a garden hose (or allow effluent to accumulate) until the liquid rises to the level of the high-water alarm float. Turn on the electrical power. The alarm light should go on in the house, and the pump should start operating. 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.

(22) PRESSURE HEAD ADJUSTMENT: The pressure head must be adjusted to match that specified in the design. The pressure head is measured as the height liquid will rise above the turn-up elbow when the pump is running. To adjust the head:

(a) Glue a 4' length of pipe (preferably clear) to a threaded adapter that will screw onto the turn-up adapters. (Call this the "test tube".)

(b) Replace the turn-up cap with the "test tube".

(c) Turn the power on to allow liquid to rise in the "test tube".

(d) Adjust the ball valve beginning at the end of each lateral until the effluent reaches the desired height in the "test tube". Remember to include the distance below the ground surface to the lateral line when measuring the height. The pressure head should be 3' for each line. This is the height above the lateral the liquid should be in the temporary "test tube". Continue to adjust valves until all test tubes have an equal amount of liquid.

(23) FINAL LANDSCAPING: After the T & J System is installed, the following should be checked to insure that the system will not be over-loaded with excess rain water and run off:

(a) The distribution field is shaped to shed rain water and is free of low area.

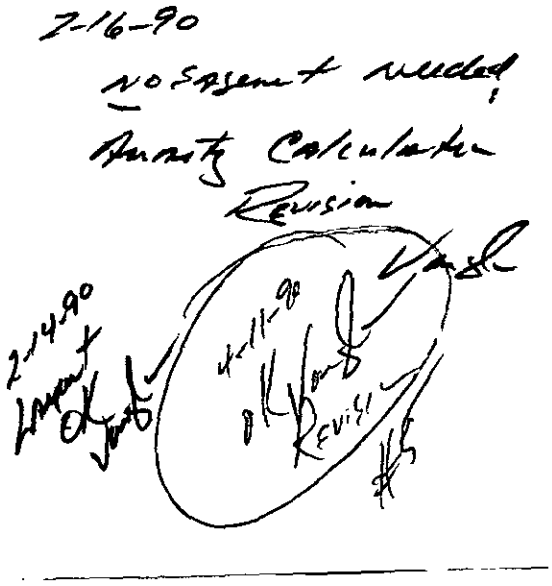
(b) Gutter and downspout drains are directed away from the system.

Any problems should be corrected before approving the system.

Finally, the entire area should be planted with grass according to specifications.

DESIGN SPECIFICATIONS - T & J PANEL SYSTEM
William Kimbrough - Lot 14 Mary Ardrey Cir.
Mecklenburg County January 24, 1990

Daily design waste flow:	360 gpd
Square footage	1200 sf
Septic tank size:	1,500 gal. (2 compartment)
Pumping tank size:	1,000 gal.
Effluent loading rate:	0.30 gpd/sf
Total linear feet and diameter of laterals	236 ft. of 1-1/4" dia. PVC and T & J 16" high panels
Total length and diameter of supply manifold:	80 lf - 1-1/2" dia. PVC
Number and length of laterals:	1 lateral at 84 lf; 1 lateral at 771f 1 lateral at 75 lf
Number of panels:	53
Hole size:	5/32"
Hole spacing:	1 hole per panel
Total number of holes:	53
Flow per hole at 3' head	0.50 gpm
Flow rate through the system:	26.5 gpm
Elevation head (pump to end of manifold):	14'
Pressure head:	3'
Friction head:	3.8'
Total head:	20.8'
Pump requirements:	26.5 gpm at 20.8'; use Myers 1/2 hp WHRH5 pump
Pump sized for system & repair	Yes
Dosing volume:	191 gal.
Depth of water pumped per dose:	7.6"
Pump run per dose:	7.2 min.
Check valve:	no
Syphon break hole:	no


7-16-90
No Easement needed
Density Calculation
Revision
2-14-90
4-11-90
Revised

SEEDING SPECIFICATIONS

3:1 SLOPES OR FLATTER

1. Apply agricultural lime at the rate of 30 lbs/1000 sf.
2. Apply 10-10-10 commercial fertilizer at the rate of 20 lb/1000 sf.
3. Seed in accordance with the following schedule & application rate:

DATE	TYPE	PLANTING RATE
8/15 - 11/1	Tall Fescue	200 lb/ac or 7 lb/1000 sf
11/1 - 3/1*	Tall Fescue and	200 lb/ac or 7 lb/1000 sf
	Abruzzi Rye	25 lb/ac or 1/2 lb/1000 sf
3/1 - 4/15	Tall Fescue	200 lb/ac or 7 lb/1000 sf
4/15 - 7/30	Mulled Common or	30 lb/ac or 1 lb/1000 sf
	Bermuda Grass	
7/15 - 8/15	Tall Fescue and	200 lb/ac or 7 lb/1000 sf
	Browntop Millet or	35 lb/ac or 7/8 lb/1000 sf
	Sorghum-Sudan	30 lb/ac or 3/4 lb/1000 sf
	Hybrids	

4. Mulch with straw applied at the rate of 75-100 lb/1000 sf.
* Heavily mulched during January - March period.

SLOPES GREATER THAN 3:1 TO 2:1 SLOPES

1. Apply agricultural lime at the rate of 50 lb/1000 sf.
2. Apply 10-10-10 commercial fertilizer at the rate of 20 lb/1000 sf.
3. Seed in accordance with the following schedule & application rate:

DATE	TYPE	PLANTING RATE
3/1 - 6/1	Sericea Lespediza	50 lb/ac or 11 lb/1000 sf
	(scarified) and	
3 - 4	Add Tall Fescue	150 lb/ac or 3-1/2 lb/1000 sf
	or	
3 - 6	Add Weeping	5 lb/ac or 1/8 lb/1000 sf
	Lovegrass	
6 - 9/1**	Tall Fescue and	60 lb/ac or 1-1/2 lb/1000 sf
	Brown Top Millet	35 lb/ac or 7/8 lb/1000 sf
	or Sorghum	30 lb/ac o 3/4 lb/1000 sf
	Sudan Hybrids	
9 - 3/1	Sericea Lespediza	70 lb/ac or 1-3/4 lb/1000 sf
	(unhulled-unscarified)	
	Tall Fescue	150 lb/ac or 3-1/2 lb/1000 sf
	Millet or Sudan	20 lb/ac or 1/2 lb/1000 sf

** Temporary - Reseed September 1 at recommended rates.
4. Mulch with 3" straw applied at the rate of 50-90 lb/1000 sf and anchor with asphalt emulsion tack coat applied at the rate of 14-28 gal/1000 sf or 800-1200 gal/ac.

Mecklenburg County
Health Department

Basil G. Delta, M.D., M.P.H.
Health Director

July 21st, 1989

William Kimbrough
19529 Weavers Circle
Huntersville, NC 28078

RE: Property located at 19401 Mary Ardrey Circle
FILE: 5836A
PARCEL: 001-511-14

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. Results of the investigation revealed that the lot contains soils which have been classified as PROVISIONALLY SUITABLE in accordance with the provisions of 10 NCAC 10A .1900. A copy of the Site Evaluation Report (Serial Number 16218) deliniating the soil types and their respective classifications is enclosed.

While this classification indicates the site is acceptable for the installation of a septic tank system, no specific system or plans have been approved. The area available for such an installation may impose limitations on the size and/or type construction permitted on the lot. Specific plan approval will be provided upon submission of an Application For An Improvement Permit with an ACCURATELY dimensioned plot plan detailing the location of current and/or proposed buildings, wells and sewage disposal systems and determination that the area is adequate to accomodate the proposed construction.

Please note that this classification may be revoked if any filling, grading or construction (including the drilling of a well) is performed on the lot which in the opinion of this Department renders any area previously designated suitable for system installation, unsuitable. Futhermore, this approval may be revoked should any changes occur in the regulations under which it was granted, if such changes would have prevented its approval had they been in effect on the date of issuance.

If there are any questions concerning this matter, do not hesitate to contact me.

Very truly yours,

Jim Ericson

Jim Ericson, R.S., Supervisor
On Premises Waste Disposal & Water Supply

Enclosure

Environmental Health Division
1200 Blythe Boulevard • Charlotte, North Carolina 28203 • (704) 376-4603

...BURG COUNTY ENVIRONMENTAL HEALTH
TE EVALUATION REPORT
ERIAL NUMBER 16218

File: 5836A Action 4
Parcel: 001-511-14

cation: 19401 Mary Ardrey Circle

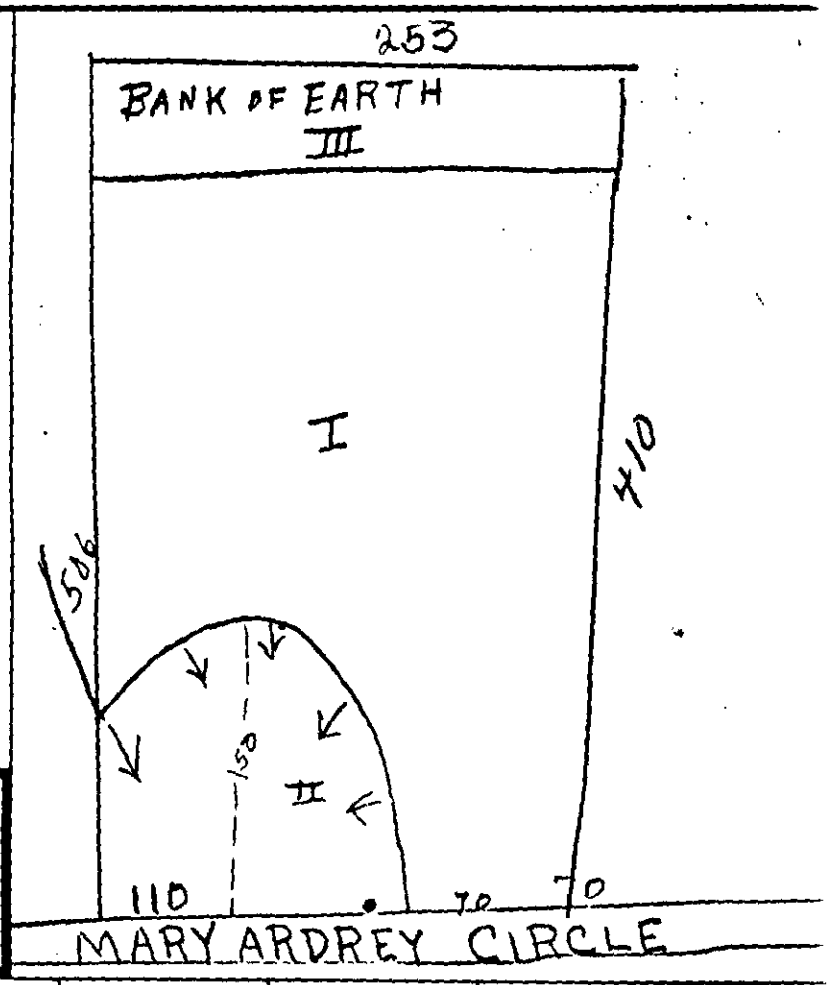
bdivision:

t: 14 Block: Acres: 2.21

vner: William Kimbrough
dress: 19529 Weavers Circle
Huntersville, NC 28078

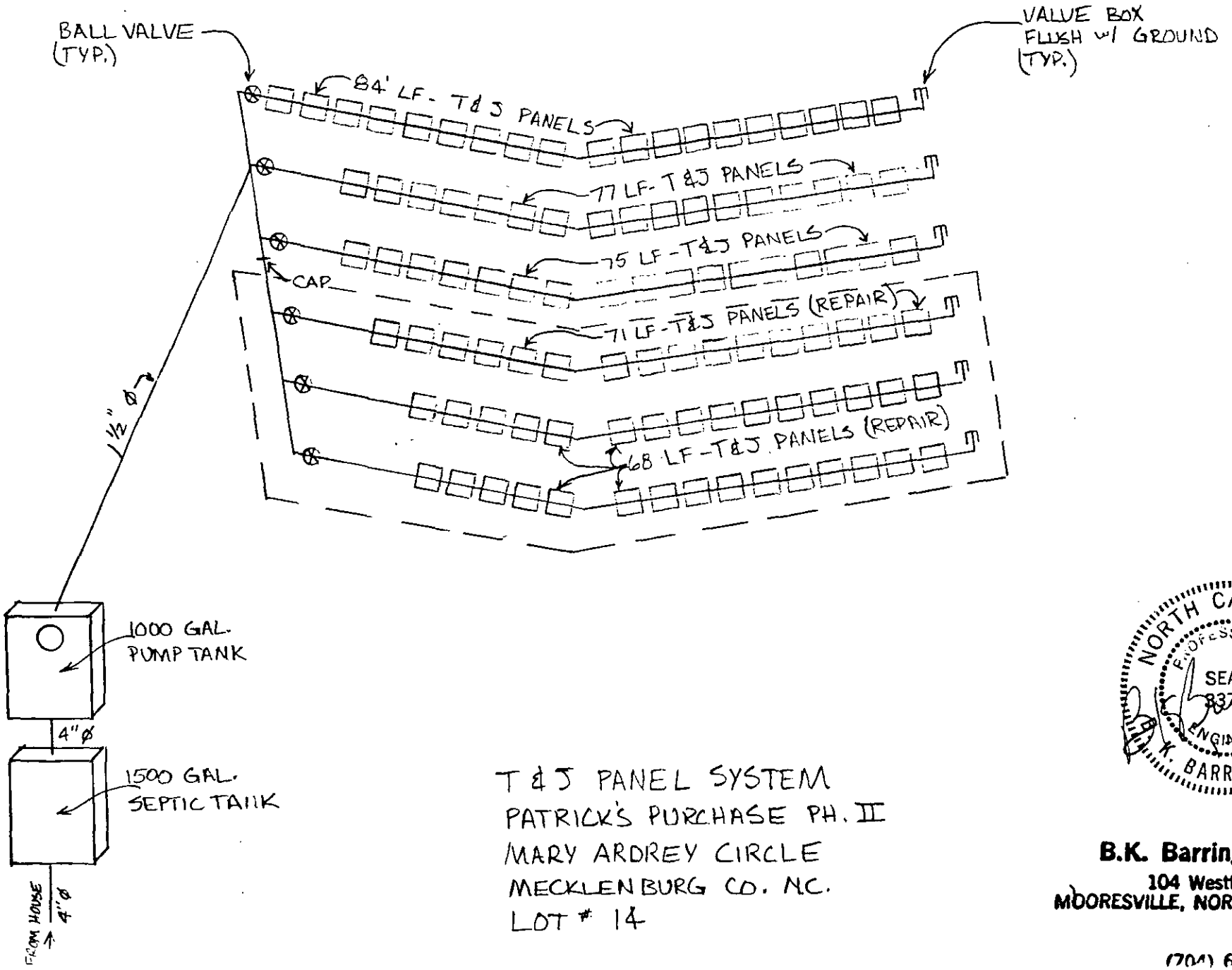
nments:

cribed by: Willard B. Ramsey
7-9-89



*** EVALUATION KEY ***
= Suitable U = Unsuitable
= Provisionally Suitable
"Area Classification" below indicates the suitability of as in the diagram.

CTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA
ography	S (PS) U 2-8	S PS (U) Head of DRAW	S PS (U) EARTH Mound	S PS U	S PS U	S PS
ture	S (PS) U	S (PS)	S PS (U)	S PS U	S PS U	S PS
icture	S (PS) U	S (PS)	S PS (U)	S PS U	S PS U	S PS
inage	S (PS) U	S (PS) U	S PS (U)	S PS U	S PS U	S PS
th	S (PS) U 48+	S PS (U) VARIous	S PS (U) UNKNOWN	S PS U	S PS U	S PS
trictive Horizons	S (PS) U	S (PS) U	S (PS) U	S PS U	S PS U	S PS
ilable Space	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS
er (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS
Group/Series	IVa CECIL	IVa ERODED CECIL	IVa under EARTH			
Classification	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS

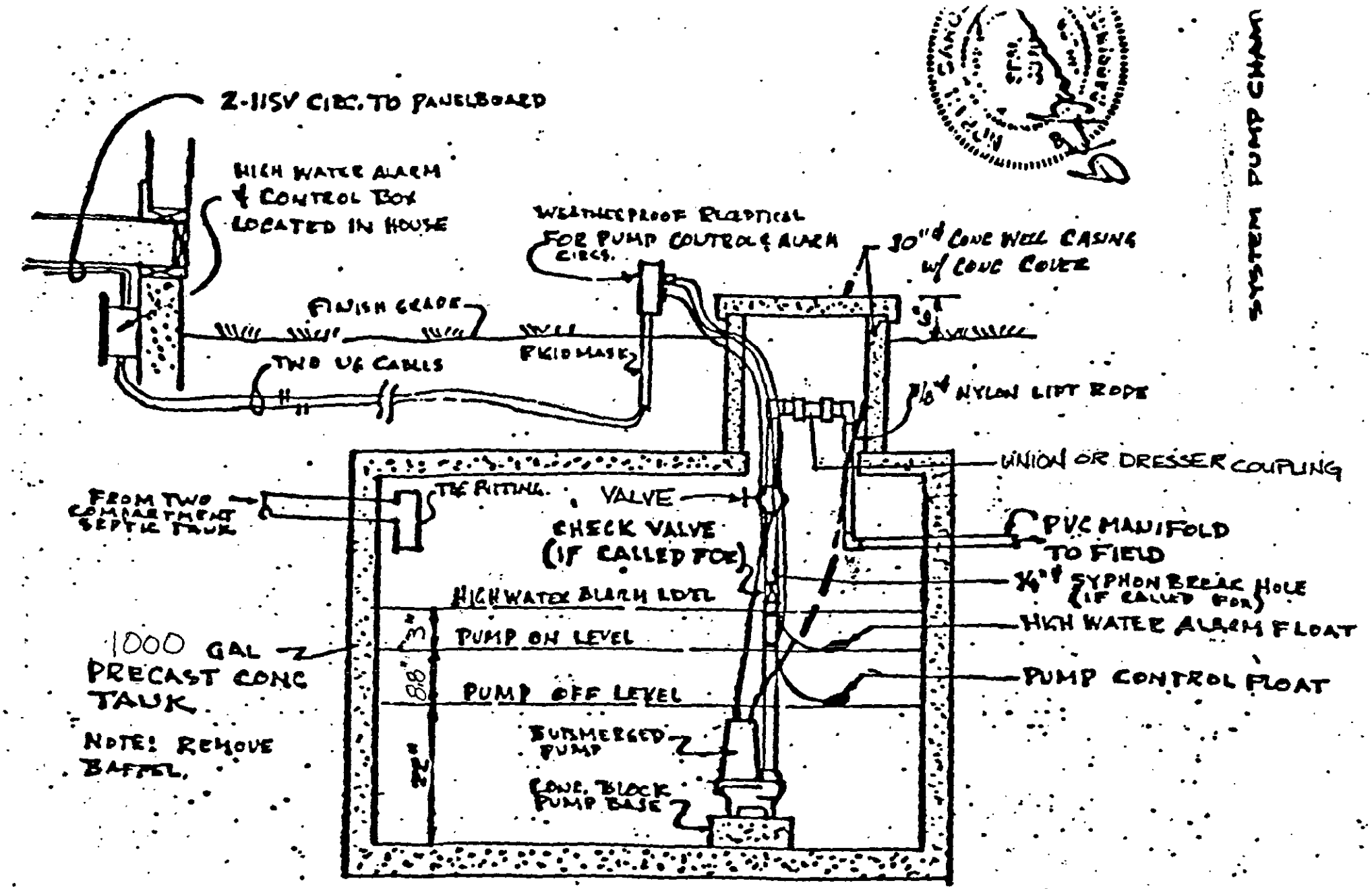


T & J PANEL SYSTEM
PATRICK'S PURCHASE PH. II
MARY ARDREY CIRCLE
MECKLENBURG CO. NC.
LOT # 14

NORTH CAROLINA PROFESSIONAL SEAL 8370 ENGINEER B. K. BARRINGER, JR.

B.K. Barringer, Jr. P.E.
104 Westfield Center
MOORESVILLE, NORTH CAROLINA 28115

(704) 664-7888



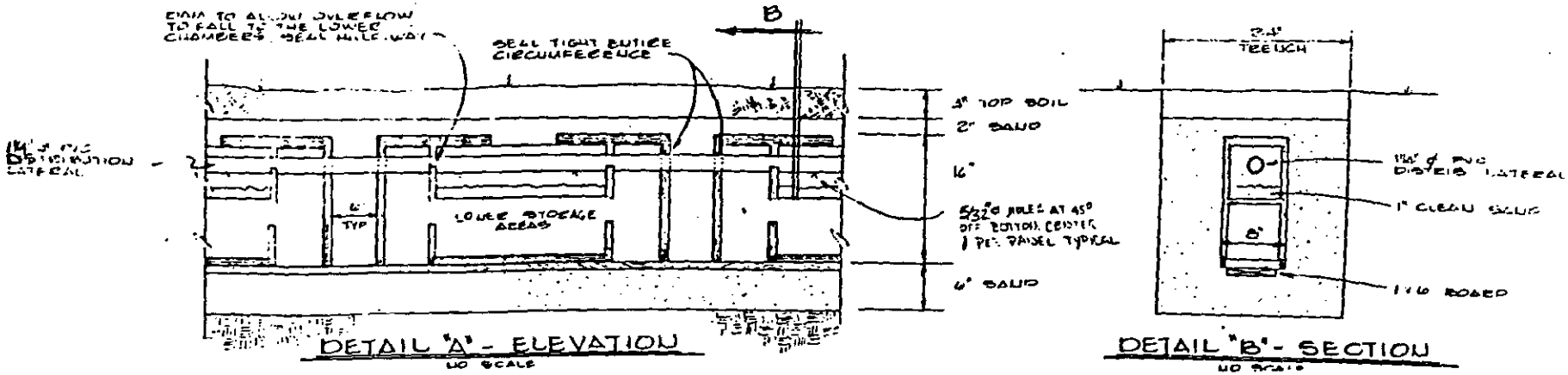
PUMPING CHAMBER DIAGRAM

NO SCALE

1000 GAL TANK

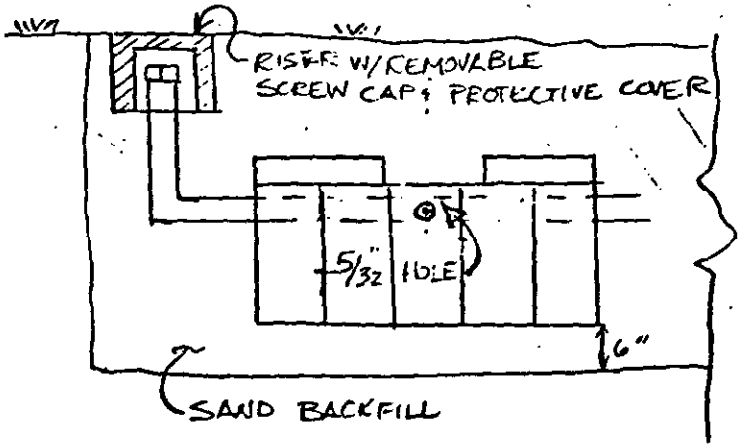
PUMP CHAMBER SYSTEM

T & J PANEL AS MFG'D
BY STATESVILLE
CONCRETE PRODUCTS



DETAIL "A" - ELEVATION
NO SCALE

DETAIL "B" - SECTION
NO SCALE



B.K. Barringer, Jr. P.E.
104 Westfield Center
MOORESVILLE, NORTH CAROLINA 2811

LAKE NORMAN

MARY ARDREY CIRCLE (60' R/W)

SR 2151

Lot 9
0.83 AC.

Lot 10
1.77 AC.

Lot 11
2.08 AC.

Lot 12
1.97 AC.

Lot 13
1.79 AC.

Lot 14
0.78 AC.

Lot 15
2.27 AC.

Lot 33
4.20 AC.
Water access Lot

Lot 34
(ON SITE)

Lot 35

Lot 36
0.50 AC.

Lot 37
0.99 AC.

Lot 38
0.78 AC.

Lot 39
0.86 AC.

Lot 40
1.23 AC.

Lot 41
0.97 AC.

Lot 42
0.73 AC.

Lot 43
0.59 AC.

LOT 33

4 BR. HOUSE

5 BR. HOUSE

LOT 36A
0.49 AC

LOT 35A
0.94 AC

LOT 33A
0.37 AC

REPAIR AREA

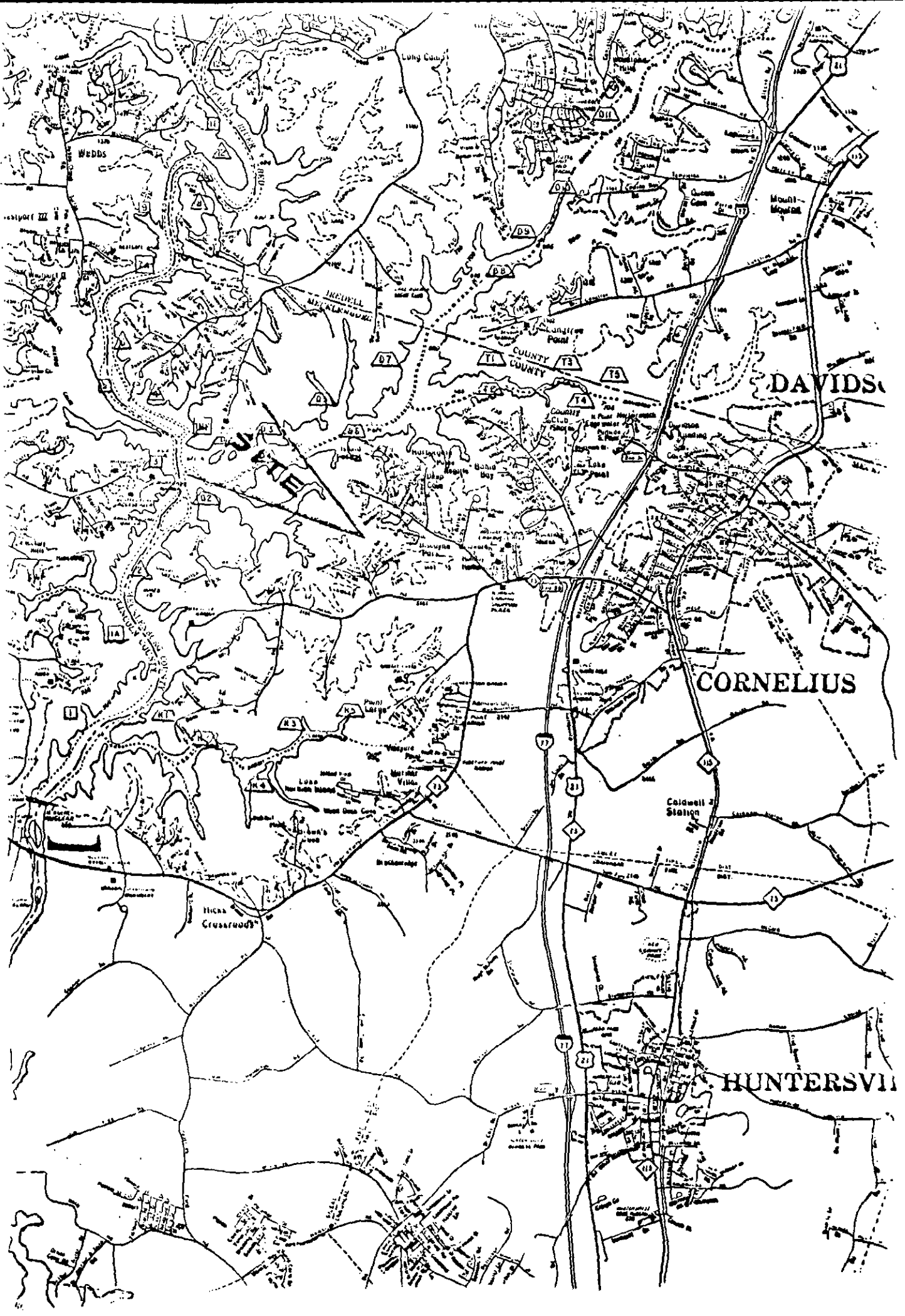
20' PUBLIC STORM DRAINAGE EASEMENT

20' UTILITY EASEMENT

30' PUBLIC STORM DRAINAGE ESMT

30' MIN BLDG SETBACK

NORTH


CORNELIUS
HUNTERSVI

William Kimbrough
T & J Panel Sys.
3 BR
Lot 14

→ No. of panels in 84' line = $84 \times 12/52 = 19$
No of panels in 77' line = $77 \times 12/52 = 17$
No of panels in 75' line $75 \times 12/52 = 17$
TOT PANELS = 53

→ DOSING VOL = 53×3.6 GAL = 191 GAL/DOSE
DOSNG DEPTH = $\left(191 \text{ GAL/DOSE}\right)\left(\frac{CF}{7.48 gal}\right) \div \left(\left(\frac{54}{12}\right)\left(\frac{108}{12}\right)\right) = 0.163' = 7.57"$

NO. OF HOLES = 53, FLOW RATE = 0.50 GPM @ 3' Hd
@ 5/32" Hole

Dosing Rate = 0.50 gpm $\times$ 53 = 26.5 gpm

→ Pump: Press. Hd = 3' (MIN)
ELEV. Hd = 14' 1½"ø
Friction Hd = $1.2\left(\frac{80}{100}\right)(3.95) = 3.8'$
TOT Hd = 20.8'
USE MYERS WHS - ½ HP PUMP

CHECK VALVE
$V_{STORAGE} = 80/100\,(9.2) + (236/100)(6.4) = 22$ GAL
¼ Daily Vol = 360/4 = 90 GAL > 22 GAL
∴ NO CHECK VLV.

LOT 14

Friction Loss of Water (In Feet of Pipe) Thru 100 Feet of Schedule 40 Plastic Pipe

Figures underlined indicate maximum recommended velocity in ft./sec. which should never exceed 5.0 ft./sec.

U.S GALS. MIN. PER	½" PIPE Vel ft./sec	½" PIPE Loss in Feet	¾" PIPE Vel ft/sec	¾" PIPE Loss in Feet	1" PIPE Vel ft/sec	1" PIPE Loss in Feet	1¼" PIPE Vel ft/sec	1¼" PIPE Loss in Feet	1½" PIPE Vel ft/sec	1½" PIPE Loss in Feet	2" PIPE Vel ft/sec	2" PIPE Loss in feet	2½" PIPE Vel ft/sec	2½" PIPE Loss in Feet	3" PIPE Vel ft/sec	3" PIPE Loss in Feet	3½" PIPE Vel ft/sec	3½" PIPE Loss in feet	4" PIPE Vel ft/sec	4" PIPE Loss in Feet	U.S GALS. PER MIN.
2	2.10	3.47	1.20	0.89																	2
4	4.21	12.7	2.41	3.29	1.49	1.01	.86	.27	.63	.12											4
6	6.31	26.8	3.61	6.91	2.23	2.14	1.29	.57	.94	.26	.61	.09									6
8	8.42	46.1	4.81	11.8	2.98	3.68	1.72	.95	1.26	.45	.82	.16	.52	.05							8
10	10.5	69.1	6.02	17.9	3.72	5.50	2.14	1.44	1.57	.67	1.02	.24	.65	.08	.45	.03					10
12			7.22	24.9	4.46	7.71	2.57	2.02	1.39	.94	1.23	.37	.78	.11	.54	.05					12
15			9.02	37.6	5.60	11.8	3.21	3.05	2.36	1.41	1.53	.51	.98	.17	.68	.07	.50	.03			15
18			10.8	50.9	6.69	16.5	3.86	4.28	2.83	1.99	1.84	.70	1.18	.24	.82	.10	.59	.04			18
20	8" PIPE		12.0	63.9	7.44	19.7	4.29	5.21	3.15	2.44	2.04	.86	1.31	.29	.91	.12	.67	.05	.51	.03	20
25					9.30	30.1	5.36	7.80	3.80	3.43	2.55	1.28	1.63	.43	1.13	.18	.84	.08	.64	.04	25
30	.49	.02			11.15	41.8	6.43	10.8	4.72	5.17	3.06	1.80	1.96	.61	1.36	.25	1.00	.11	.77	.06	30
35	.57	.03			13.02	55.9	7.51	14.7	5.51	6.91	3.57	2.40	2.29	.81	1.59	.33	1.17	.15	.89	.08	35
40	.65	.04	8" PIPE		14.88	71.4	8.58	18.8	6.30	8.83	4.08	3.10	2.61	1.03	1.82	.43	1.34	.19	1.02	.10	40
45	.73	.04					9.65	23.5	7.08	10.9	4.60	3.85	2.94	1.32	2.04	.54	1.51	.24	1.15	.13	45
50	.82	.05	.57	.02			10.7	28.2	7.87	13.3	5.11	4.65	3.27	1.56	2.27	.65	1.67	.29	1.28	.16	50
55	.90	.06	.62	.02			11.8	33.8	8.66	16.0	5.62	5.55	3.59	1.88	2.45	.74	1.79	.34	1.41	.19	55
60	.98	.07	.68	.03			12.9	40.0	9.44	18.6	6.13	6.53	3.92	2.19	2.72	.90	2.01	.40	1.53	.22	60
65	1.06	.09	.74	.04			13.9	46.7	10.2	21.6	6.64	7.56	4.24	2.53	2.89	1.02	2.11	.47	1.66	.25	65
70	1.14	.10	.79	.04			15.0	53.1	11.0	24.9	7.15	8.64	4.58	2.91	3.18	1.21	2.34	.54	1.79	.30	70
75	1.22	.11	.85	.05			16.1	60.6	11.8	28.2	7.66	9.82	4.91	3.33	3.33	1.41	2.43	.60	1.91	.34	75
80	1.31	.13	.91	.05			17.2	68.2	12.6	32.0	8.17	11.1	5.23	3.71	3.63	1.54	2.68	.69	2.04	.38	80
85	1.38	.15	.96	.06			18.2	77.0	13.4	35.3	8.68	12.5	5.56	3.81	3.78	1.66	2.76	.76	2.17	.42	85
90	1.47	.16	1.02	.07			19.3	84.6	14.7	39.5	9.19	13.8	5.88	4.61	4.09	1.92	3.01	.85	2.30	.47	90
95	1.55	.18	1.08	.07					14.9	43.7	9.70	15.3	6.21	5.07	4.22	2.04	3.10	.96	2.42	.53	95
100	1.63	.19	1.13	.08					15.7	47.9	10.2	16.8	6.54	5.64	4.54	2.33	3.33	1.03	2.55	.57	100
110	1.79	.23	1.25	.10					17.3	57.3	11.2	20.2	7.18	6.81	5.00	2.82	3.57	1.25	2.81	.69	110
120	1.96	.27	1.36	.11	8" PIPE				18.9	67.2	12.2	23.5	7.84	7.89	5.45	3.28	3.99	1.45	3.06	.80	120
130	2.12	.31	1.47	.13					20.5	78.0	13.3	27.3	8.48	8.78	5.91	3.81	4.22	1.68	3.31	.93	130
140	2.29	.36	1.59	.15	.90	.04			22.0	89.3	14.3	31.5	9.15	10.5	6.35	4.32	4.56	1.93	3.57	1.07	140
150	2.45	.41	1.70	.17	.96	.04					15.3	35.7	9.81	12.0	6.82	4.93	4.67	2.19	3.82	1.23	150
160	2.61	.46	1.82	.19	1.02	.05					16.3	40.4	10.5	13.6	7.26	5.54	5.18	2.47	4.08	1.37	160
170	2.77	.51	1.92	.21	1.08	.05					17.4	45.1	11.1	16.0	7.71	6.25	5.52	2.75	4.33	1.53	170
180	2.94	.57	2.04	.24	1.15	.06					18.4	50.3	11.8	16.8	8.17	6.58	5.85	3.07	4.60	1.70	180
190	3.10	.63	2.16	.26	1.21	.07	10" PIPE				19.4	55.5	12.4	18.6	8.63	7.28	6.17	3.39	4.84	1.88	190
200	3.27	.70	2.27	.29	1.28	.07					20.4	60.6	13.1	20.3	9.08	8.36	6.50	3.73	5.11	2.06	200
220	3.59	.83	2.50	.34	1.40	.08	.90	.03			22.5	72.4	14.4	24.9	9.99	10.0	7.14	4.45	5.62	2.44	220
240	3.92	.98	2.72	.41	1.53	.10	.98	.03			24.5	85.5	15.7	28.7	10.9	11.8	7.79	5.22	6.13	2.91	240
260	4.25	1.13	2.95	.47	1.66	.12	1.06	.04			26.6	99.2	17.0	33.0	11.8	13.7	8.44	6.07	6.64	3.28	260
280	4.58	1.30	3.18	.54	1.79	.13	1.15	.04					18.3	38.1	12.7	15.7	9.09	6.95	7.15	3.85	280
300	4.90	1.48	3.40	.62	1.91	.15	1.22	.05					19.6	43.2	13.6	17.8	9.74	7.90	7.66	4.37	300
320	5.23	1.66	3.64	.69	2.05	.17	1.31	.06					20.9	48.4	14.5	20.1	10.4	8.88	8.17	4.93	320
340	5.54	1.87	3.84	.76	2.18	.19	1.39	.07	12" PIPE				22.2	54.5	15.4	22.5	11.0	9.96	8.68	5.50	340
360	5.87	2.07	4.08	.86	2.30	.21	1.47	.07					23.5	60.2	16.3	24.9	11.7	11.0	9.19	6.15	360
380	6.19	2.28	4.31	.94	2.43	.24	1.55	.08	1.08	.03			24.8	66.7	17.2	27.7	12.3	12.2	9.69	6.58	380
400	6.54	2.5	4.55	1.03	2.60	.25	1.63	.09	1.14	.04			26.1	73.3	18.2	30.6	13.0	13.4	10.2	7.52	400
450	7.35	3.1	5.11	1.29	2.92	.32	1.84	.11	1.26	.05					20.4	36.7	14.6	16.7	11.5	9.31	450
500	8.17	3.8	5.68	1.56	3.19	.39	2.04	.13	1.42	.05					22.7	46.1	16.2	20.3	12.8	11.3	500
550	8.99	4.5	6.25	1.86	3.57	.46	2.24	.16	1.56	.06					24.9	55.0	17.8	24.3	14.0	13.5	550
600	9.80	5.3	6.81	2.19	3.84	.54	2.45	.18	1.70	.07					27.2	64.4	19.5	28.5	15.3	15.8	600
650	10.6	6.2	7.38	2.53	4.16	.63	2.65	.21	1.84	.09							21.1	33.0	16.6	18.3	650
700	11.4	7.1	7.95	2.92	4.46	.72	2.86	.24	1.99	.10							22.7	37.9	17.9	21.1	700
750	12.3	8.1	8.50	3.35	4.80	.82	3.06	.28	2.13	.11							24.4	43.0	19.1	24.0	750
800	13.1	9.1	9.08	3.74	5.10	.88	3.26	.31	2.27	.13							26.0	48.4	20.4	26.8	800
850	13.9	10.2	9.65	4.21	5.48	1.03	3.47	.35	2.41	.15							27.6	54.1	21.7	30.1	850
900	14.7	11.3	10.2	4.75	5.75	1.16	3.67	.39	2.56	.16									23.0	33.6	900
950	15.5	12.5	10.8	5.26	6.06	1.35	3.88	.43	2.70	.18											950
1000	16.3	13.7	11.3	5.66	6.38	1.40	4.08	.48	2.84	.19											1000
1100	18.0	16.4	12.5	6.84	7.01	1.65	4.49	.56	3.13	.23											1100
1200	19.6	19.2	13.6	8.04	7.66	1.96	4.90	.66	3.41	.27											1200
1300			14.7	8.6	8.30	2.28	5.31	.76	3.69	.31											1300
1400			15.9	10.6	8.55	2.59	5.71	.88	3.98	.37											1400
1500			17.0	12.0	9.58	2.93	6.12	1.00	4.26	.42											1500
1600			18.1	12.6	10.2	3.29	6.53	1.12	4.55	.46											1600
1800					11.5	4.13	7.35	1.39	5.11	.57											1800
2000					12.8	5.03	8.16	1.69	5.68	.70											2000
2200					14.0	6.00	8.98	1.99	6.25	.85											2200
2400					15.3	6.7	9.80	2.37	6.8	.96											2400
2600							10.6	2.73	7.38	1.14											2600
2800							11.4	3.15	7.95	1.29											2800
3000							12.2	3.56	8.52	1.48											3000
3200							13.0	4.0	9.10	1.65											3200
3500							14.3	4.74	9.95	1.96											3500
3800							15.5	6.3	10.8	2.30											3800
4200									11.9	2.76											4200
4500									12.8	3.24											4500
5000									14.2	3.85											5000
5500																					5500
6000																					6000

FIGURE 17

CONSTRUCTION FEATURES

Power Cord – Single phase cord is 20 ft. long with SJTW insulation and has molded on grounding-type plug. Plugs directly into standard receptacle, requires no control box. Used with ALC or AWS level controls for automatic operation.

Cord Seal Bushing – Cord is potted into steel connector with polyurethane resin for leak proof seal. A cord nut and rubber grommet clamp the cord into the bushing. Cord can withstand a pull of 100 lbs. without loosening connection.

Motor – Permanent split capacitor-type is oil filled for best heat transfer and bearing and seal lubrication. Operates at 3450 RPM and has built-in automatic reset overload protection. Motor voltage 200 or 230 volts single phase also 115 volts for ½ HP size unit.

Capacitor Housing – A separate housing permits mounting of the permanent oil capacitors. Can replace capacitors without dismantling motor or pump.

Motor Housing – Cast iron stator is pressed in for best heat transfer and alignment.

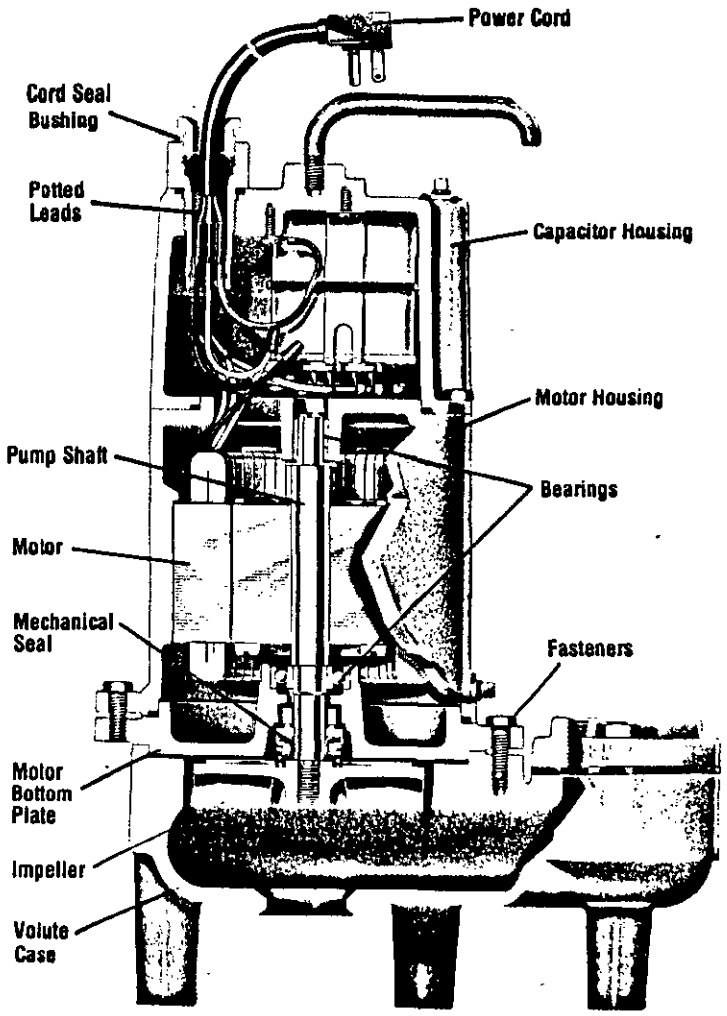
Impeller – Bronze, Tornado non-clogging type. Has back pump out vanes to protect seal and reduce thrust.

Mechanical Seal – Heavy duty type has carbon and ceramic faces lapped to a flatness of one light band. Spring and all seal parts stainless steel. Rubber seal bellows is Buna N.

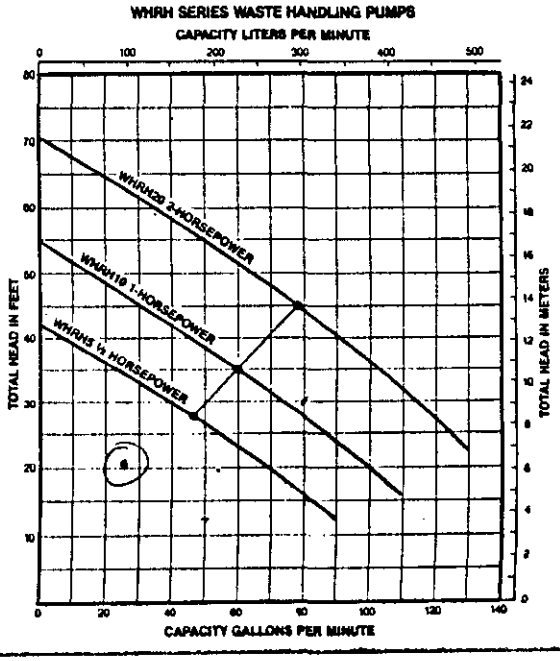
Volute Case – Cast iron has 1½" full open volute to pass solids. Support legs provide proper clearance for pump inlet.

Bearings – Lower ball bearing takes radial and down-thrust loads. Upper sleeve bearings take radial loads and have thrust washer to absorb any up-thrust.

Corrosion Resistance – All iron parts are coated inside and out with baked-on epoxy paint. All machined surfaces are re-coated with epoxy after machining.



PERFORMANCE CURVES



LOT 14

RECOMMENDED INDIVIDUAL RESIDENCE

T & J PANEL

GROUND ABSORPTION, WASTEWATER

DISPOSAL SYSTEM

for

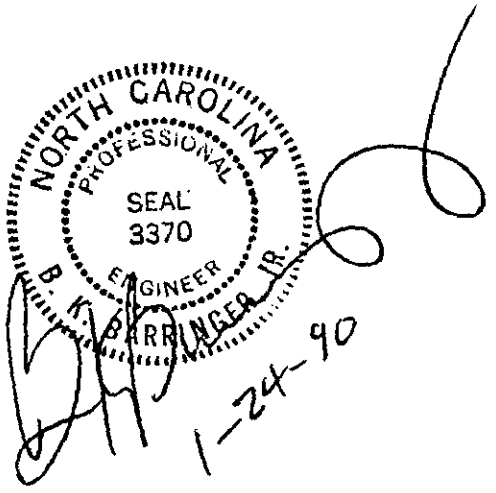
WILLIAM KIMBROUGH
MARY ARDREY CIRCLE - LOT 14
FILE NO. 5836A - PARCEL 001-511-14
PATRICK'S PURCHASE, PHASE II
MECKLENBURG COUNTY, N.C.

001 511 [redacted] 35

JANUARY 24, 1990

Owner:
William Kimbrough
19529 Weavers Circle
Huntersville, N.C. 28028

Prepared By:
B. K. Barringer, Jr., P.E.
N. C. Registration No. 3370
104 Westfield Center
Mooresville, N. C. 28115
Phone (704)664-7888
Fax (704)664-1778



T & J PANEL SYSTEM

DESIGN CONSIDERATIONS:

PROPOSED THREE BEDROOM HOME with two baths and a washing machine. The unit will be serviced by a water well located a minimum of 50' from the septic tanks.

LOCATION: The property is located on Mary Ardrey Circle, off Meta Road and north of Jetton Road. The proposed field is located to the south of the proposed house location.

TERRAIN The property, where the field is to be located, slopes south to north at approximately 6%.

REFERENCE MATERIAL:

(1) DESIGN AND INSTALLATION (Manual)
OF LOW PRESSURE PIPE WASTE WATER TREATMENT SYSTEMS
By: Craig Cogger; Bobby L. Carlisle; Dennis Osborne; Ed Holland
Published by: UNC Sea Grant College Pub. UNC-SC-82-03
May, 1982.

(2) LAWS AND RULES FOR GROUND ABSORPTION SEWAGE DISPOSAL SYSTEMS.
SECTION .1956 OF THE N.C. Administrative Code: Title 10 Health Services; Environmental Health; Subchapter 10a; Sanitation.
Published by: N.C. Dept. of Human Resources; July 1, 1982.
Paragraph .1956 (a)(ii)(B).

(3) EPA 625/1-80-012 Design Manual
Onsite Wastewater Treatment and Disposal System Oct.,1980;
Chapter 7.

RECOMMENDATIONS: Due to shallow soil depth, sloping lot, and limited area, a precast porous block panel system (PPBPS) - T & J - is recommended for the location.

OWNERSHIP RESPONSIBILITY:

It must be kept in mind that this system is designed to accept a moderate amount of waste water (which is called the EFFLUENT), in a minimal water absorbing soil.

Conservation measures must be undertaken by all members of the house hold to minimize the volume of waste water entering the disposal system, including, but not limited to, the following precautions:

(a) Provide water conserving plumbing fixtures within the facility; toilets shall be equal to Eljer "Ultra-One/G" or Sloan's "Flushmate".

(b) Develop conservative water use habits;

(c) Monitor and maintain the system as necessary for proper operation;

(d) Check and pump the septic tank sludge on a regular basis of approximately every year if garbage disposal is included in the residence, or approximately every three years otherwise.

(e) Make rapid repairs to leaking plumbing fixtures and faucets.

(f) Avoid excessive watering of the lawn in the vicinity of the disposal field.

CONSTRUCTION SEQUENCE AND COMPONENTS OF THE SYSTEM

Refer to T & J Panel System's manufacturing and installment manual. Furnish and install all items required for a complete system in accordance with plans and specifications; for requirements of the County Dept. of Environmental Health (CDEH); the N. C. Dept. of Environmental Health (NCDEH); the N. C. Building Code, Plumbing Code and Electrical Code; and the National Electric Code. System must be properly installed by a qualified, competent contractor.

COMPONENTS OF SYSTEM

1. Two compartment septic tank
2. Pumping chamber
3. Submersible effluent pump and level controls
4. High water alarm signals (audible and visible)
5. Supply pipe
6. Ball valves
7. T & J 16" high panels & distribution laterals

CONSTRUCTION SEQUENCE:

(1) Lay out T & J, 16" high, Panel System network area and repair area with stakes and flagging to ten feet (minimum) beyond the limits of the network. As soon as the absorption area is designated, it should be flagged, roped off and isolated from construction traffic. This barrier should be maintained until the system is accepted by the Owner. Refer to site plan for the size of absorption area. The Engineer has previously flagged the general limits of the nitrification field. See site plans for flag locations.

(2) Prior to actually beginning construction of the system, carefully locate, lay out and identify disposal site, manifolds and the lateral panel piping networks, using a tripod mounted engineer's leveling instrument to accurately establish each lateral along a level contour. Note: Lateral panel runs which conflict with cut-off-in-place stumps or trees shall "snake" by with a 12" minimum trench clearance and then continue along its projection run. (The 6' minimum trench separation must be maintained.)

(3) Excavate for and construct curtain drain (if shown on the plan.)

(4) Excavate lateral network trenches 24" wide by 28" deep (see detail). Remove loose soil from bottom of trench.

(5) Install sand in bottom of the lateral trench to the proper depth of approximately 22" below finish ground level.

(6) Follow the manufacturer's guidelines for installing the T & J Panel System.

(7) All joints in lateral and the manifold piping shall be water tight connections to insure that the only source of the water seepage from the system is through the orifices as designed. See layout and details. Carefully install manifold and lateral network according to the attached designed layout. A larger diameter protective sleeve with cap or approved box with lid shall be placed over the turned up lateral and positioned level with the ground surface (so as not to be damaged by mowing machine.)

(8) Carefully backfill manifold trenches to finish grade with clean (debris free earth (no stone).

(9) Leave absorption area with a raked surface, ready for grassing.

(10) The installation contractor shall stabilize the area of construction by planting and seeding with Kentucky 31 tall fescue and shall keep the planted area watered and mulched until such time that a hardy stand of grass is established. (See Seeding Specification.)

(11) The septic tank shall consist of a 1,500 gallon capacity, reinforced, precast concrete tank with full baffle and shall have easy access to each chamber from ground level for checking and pumping. The first chamber of the septic tank shall consist 2/3 to 3/4 of the volume of the total tank and the baffle shall contain a horizontal opening across the tank at about midway its height. Locate the septic tank at such height as to provide approximately 8" of cover soil over top of the tank.

(12) The dosing tank shall consist of a 1,000 gallon capacity, reinforced, precast concrete tank without baffle and shall have a concrete mounting pad (concrete blocks) for accommodating the pump. Provide access for entry into the tank directly over the pump location, and extending 6" above final grade. Use a 30" diameter concrete well casing and concrete well cap.

(13) All piping and fittings shall be PR160 PVC. Glue for all PVC pipe joints shall be as recommended by the pipe manufacturer.

(14) PUMP: The submerged pump shall be Model WHRH5 manufactured by F.E.Meyers Co., Ashland, OH, or equal, 1/2 hp, 115v/1ph; capable of pumping 26.5 gallons per minute at an 19.7' head.

(15) PUMP ON-OFF water level control switch shall by Myers, Model MLC-20, mercury switch, with three prong, piggy back plug.

(16) HIGH WATER ALARM SWITCH shall be equal to Myers, model FLCA-30, mercury switch, red colored ball with support bracket.

(17) HIGH WATER ALARM CONTROL BOX shall be equal to Myers, model FLCA CA-SS4 with connection box having buzzer alarm, on, off, test switch with terminal block for all connections. Control box shall be supplied by two separate 115 volt circuits, one plug circuit, and one alarm circuit.

(18) A "HOME OWNER'S WARNING SIGN" shall be located within the house to inform the owner of what action to take in case the "High Water Alarm" is activated. This sign shall contain the name, address, telephone number, and emergency telephone number of the person to contract immediately upon malfunction of the system.

(19) PUMP AND CONTROLS: Details of pump installation are shown on the plan. The pump must be placed on two concrete blocks next to each other on the bottom of the tank. This prevents the pumping of any solid particles which can clog the LPP system. A piece of nylon rope or other non corrodible material should be attached to the pump and to the outlet pipe for lifting the pump in and out of the chamber. (The PVC outlet pipe is too fragile to support the pump.)

Controls are fastened to the outlet pipe with clamps or brackets supplied by the manufacturer. The lower level control or "pump-off" must be positioned above the pump, so that the pump remains submerged at all times. The upper level control "pump-on" is positioned to pump a specified volume of effluent. The high water control float is then mounted about 3" above the upper pump-on control. (Note: Care must be taken to insure that floats do not become fouled by other components in the tank such as the electric power cord or the lifting rope.)

The pump outlet pipe should be connected to the supply manifold with a threaded PVC union (or dresser coupling) to allow quick removal. The gate valve must also be installed in the supply line (within the pump-chamber) to allow final adjustment of the pressure. If effluent will be pumped down hill, a 1/4" siphon-breaker hole must be drilled in the bottom of the supply line before it leaves the pump tank. This breaks any vacuum in the system and prevents the inadvertent siphoning of effluent out of the tank. This hole is very important.

(20) ELECTRICAL CONNECTIONS: The pump and high water alarm must be placed on separate electrical circuits. (If the pump circuit fails, the alarm must still be able to operate.) Follow the manufacturers' recommendations for the proper fuses or circuit-breakers. All electrical connections must be made outside the pumping chamber. Power cords from the pumps and controls should be plugged into a NEMA approved outdoor receptacle mounted outside of the pumping chamber. The receptacle must not be located inside the pumping chamber due to the corrosive and explosive gasses that may form from the sewage.

Electrical connections may be made inside the pumping tank only if wired inside a sealed, water tight box. Some level control switches have a box built into the housing, but are more expensive than the plug-in devices.

Wiring between the pumping chamber and the house should meet State and local code requirements. A lightning arrester is recommended to protect the pump and controls from electrical surges.

(21) PROPER OPERATION CHECK: After all components have been installed and connected, the system should be checked for proper operation. With electrical power turned off, fill the pumping chamber with water from a garden hose (or allow effluent to accumulate) until the liquid rises to the level of the high-water alarm float. Turn on the electrical power. The alarm light should go on in the house, and the pump should start operating. 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.

(22) PRESSURE HEAD ADJUSTMENT: The pressure head must be adjusted to match that specified in the design. The pressure head is measured as the height liquid will rise above the turn-up elbow when the pump is running. To adjust the head:

(a) Glue a 4' length of pipe (preferably clear) to a threaded adapter that will screw onto the turn-up adapters. (Call this the "test tube".)

(b) Replace the turn-up cap with the "test tube".

(c) Turn the power on to allow liquid to rise in the "test tube".

(d) Adjust the ball valve beginning at the end of each lateral until the effluent reaches the desired height in the "test tube". Remember to include the distance below the ground surface to the lateral line when measuring the height. The pressure head should be 3' for each line. This is the height above the lateral the liquid should be in the temporary "test tube". Continue to adjust valves until all test tubes have an equal amount of liquid.

(23) FINAL LANDSCAPING: After the T & J System is installed, the following should be checked to insure that the system will not be overloaded with excess rain water and run off:

(a) The distribution field is shaped to shed rain water and is free of low area.

(b) Gutter and downspout drains are directed away from the system.

Any problems should be corrected before approving the system.

Finally, the entire area should be planted with grass according to specifications.

DESIGN SPECIFICATIONS - T & J PANEL SYSTEM
William Kimbrough - Lot 14 Mary Ardrey Cir.
Mecklenburg County January 24, 1990

Square Footage

Daily design waste flow:	360 gpd
Septic tank size:	1,500 gal. (2 compartment)
Pumping tank size:	1,000 gal.
Effluent loading rate:	0.30 gpd/sf
Total linear feet and diameter of laterals	236 ft. of 1-1/4" dia. PVC and T & J 16" high panels
Total length and diameter of supply manifold:	80 lf - 1-1/2" dia. PVC
Number and length of laterals: 10	1 lateral at 84 lf; 1 lateral at 77 lf 1 lateral at 75 lf
Number of panels: 20	53
Hole size:	5/32"
Hole spacing:	1 hole per panel
Total number of holes:	53 53 @ .41
Flow rate through the system:	26.5 gpm 21.73
Elevation head (pump to end of manifold):	14'
Pressure head:	~~2.3~~ 3'
Friction head:	2.7'
Total head:	19.7'
Pump requirements:	26.5 gpm at 18.7'; use Myers 1/2 hp ~~WHRH5 pump~~ Cut Sheet
Dosing volume:	191 gal. ✓
Depth of water pumped per dose:	8.8" ✓
Pump run per dose:	7.2 min. ✓
Pump Sized and System and Pump Check valve:	yes/no? no
Syphon break hole:	no

Void Dwg 11-12-90 Show Design Info. for Approval Area

Flow/Hole

Show Calculations (✓)

SEEDING SPECIFICATIONS

3:1 SLOPES OR FLATTER

1. Apply agricultural lime at the rate of 30 lbs/1000 sf.
2. Apply 10-10-10 commercial fertilizer at the rate of 20 lb/1000 sf.
3. Seed in accordance with the following schedule & application rate:

DATE	TYPE	PLANTING RATE
8/15 - 11/1	Tall Fescue	200 lb/ac or 7 lb/1000 sf
11/1 - 3/1*	Tall Fescue and	200 lb/ac or 7 lb/1000 sf
	Abruzzi Rye	25 lb/ac or 1/2 lb/1000 sf
3/1 - 4/15	Tall Fescue	200 lb/ac or 7 lb/1000 sf
4/15 - 7/30	Mulled Common or	30 lb/ac or 1 lb/1000 sf
	Bermuda Grass	
7/15 - 8/15	Tall Fescue and	200 lb/ac or 7 lb/1000 sf
	Browntop Millet or	35 lb/ac or 7/8 lb/1000 sf
	Sorghum-Sudan	30 lb/ac or 3/4 lb/1000 sf
	Hybrids	

4. Mulch with straw applied at the rate of 75-100 lb/1000 sf.
* Heavily mulched during January - March period.

SLOPES GREATER THAN 3:1 TO 2:1 SLOPES

1. Apply agricultural lime at the rate of 50 lb/1000 sf.
2. Apply 10-10-10 commercial fertilizer at the rate of 20 lb/1000 sf.
3. Seed in accordance with the following schedule & application rate:

DATE	TYPE	PLANTING RATE
3/1 - 6/1	Sericea Lespediza	50 lb/ac or 11 lb/1000 sf
	(scarified) and	
3 - 4	Add Tall Fescue	150 lb/ac or 3-1/2 lb/1000 sf
	or	
3 - 6	Add Weeping	5 lb/ac or 1/8 lb/1000 sf
	Lovegrass	
6 - 9/1**	Tall Fescue and	60 lb/ac or 1-1/2 lb/1000 sf
	Brown Top Millet	35 lb/ac or 7/8 lb/1000 sf
	or Sorghum	30 lb/ac o 3/4 lb/1000 sf
	Sudan Hybrids	
9 - 3/1	Sericea Lespediza	70 lb/ac or 1-3/4 lb/1000 sf
	(unhulled-unscarified)	
	Tall Fescue	150 lb/ac or 3-1/2 lb/1000 sf
	Millet or Sudan	20 lb/ac or 1/2 lb/1000 sf

** Temporary - Reseed September 1 at recommended rates.
4. Mulch with 3" straw applied at the rate of 50-90 lb/1000 sf and anchor with asphalt emulsion tack coat applied at the rate of 14-28 gal/1000 sf or 800-1200 gal/ac.

Mecklenburg County
Health Department

Basil G. Delta, M.D., M.P.H.
Health Director

July 21st, 1989

William Kimbrough
19529 Weavers Circle
Huntersville, NC 28078

RE: Property located at 19401 Mary Ardrey Circle
FILE: 5836A
PARCEL: 001-511-14

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. Results of the investigation revealed that the lot contains soils which have been classified as PROVISIONALLY SUITABLE in accordance with the provisions of 10 NCAC 10A .1900. A copy of the Site Evaluation Report (Serial Number 16218) deliniating the soil types and their respective classifications is enclosed.

While this classification indicates the site is acceptable for the installation of a septic tank system, no specific system or plans have been approved. The area available for such an installation may impose limitations on the size and/or type construction permitted on the lot. Specific plan approval will be provided upon submission of an Application For An Improvement Permit with an ACCURATELY dimensioned plot plan detailing the location of current and/or proposed buildings, wells and sewage disposal systems and determination that the area is adequate to accomodate the proposed construction.

Please note that this classificatinn may be revoked if any filling, grading or construction (including the drilling of a well) is performed on the lot which in the opinion of this Department renders any area previously designated suitable for system installation, unsuitable. Futhermore, this approval may be revoked should any changes occur in the regulations under which it was granted, if such changes would have prevented its approval had they been in effect on the date of issuance.

If there are any questions concerning this matter, do not hesitate to contact me.

Very truly yours,

Jim Ericson

Jim Ericson, R.S., Supervisor
On Premises Waste Disposal & Water Supply

Enclosure

Environmental Health Division
1200 Blythe Boulevard • Charlotte, North Carolina 28203 • (704) 376-4603

...BURG COUNTY ENVIRONMENTAL HEALTH
...TE EVALUATION REPORT
...ERIAL NUMBER 16218

File: 5836A Action 4

Parcel: 001-511-14

...cation: 19401 Mary Ardrey Circle

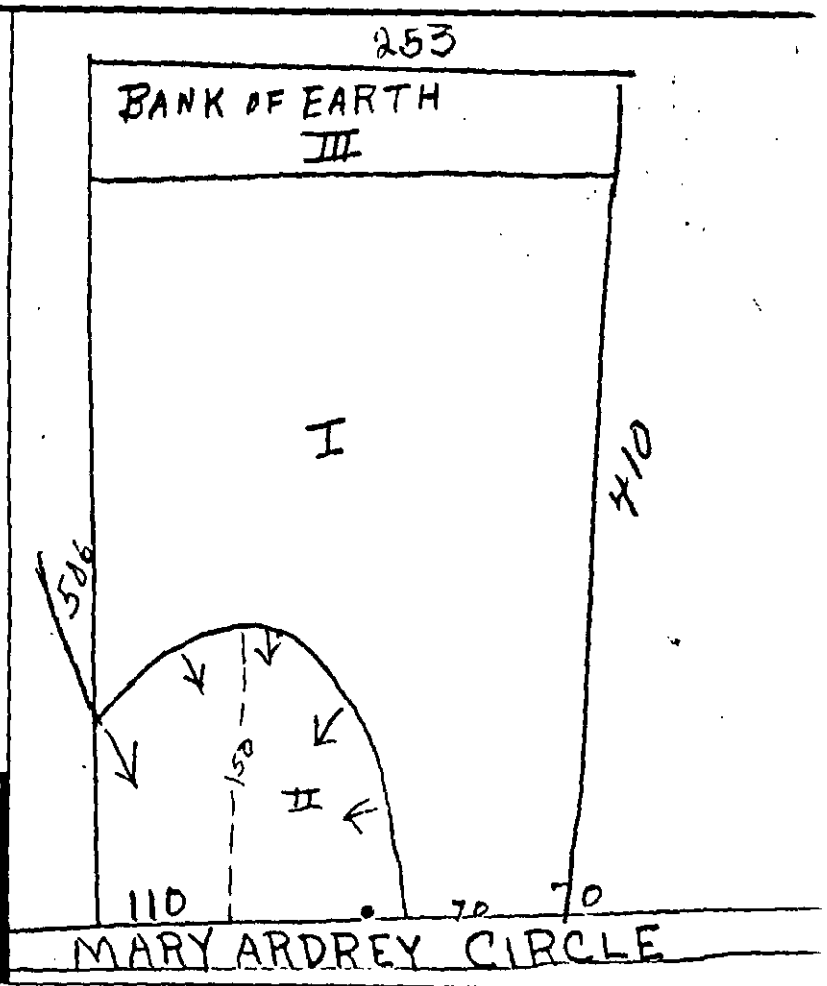
...bdivision:

...t: 14 Block: Acres: 2.21

...vner: William Kimbrough
...ddress: 19529 Weavers Circle
Huntersville, NC 28078

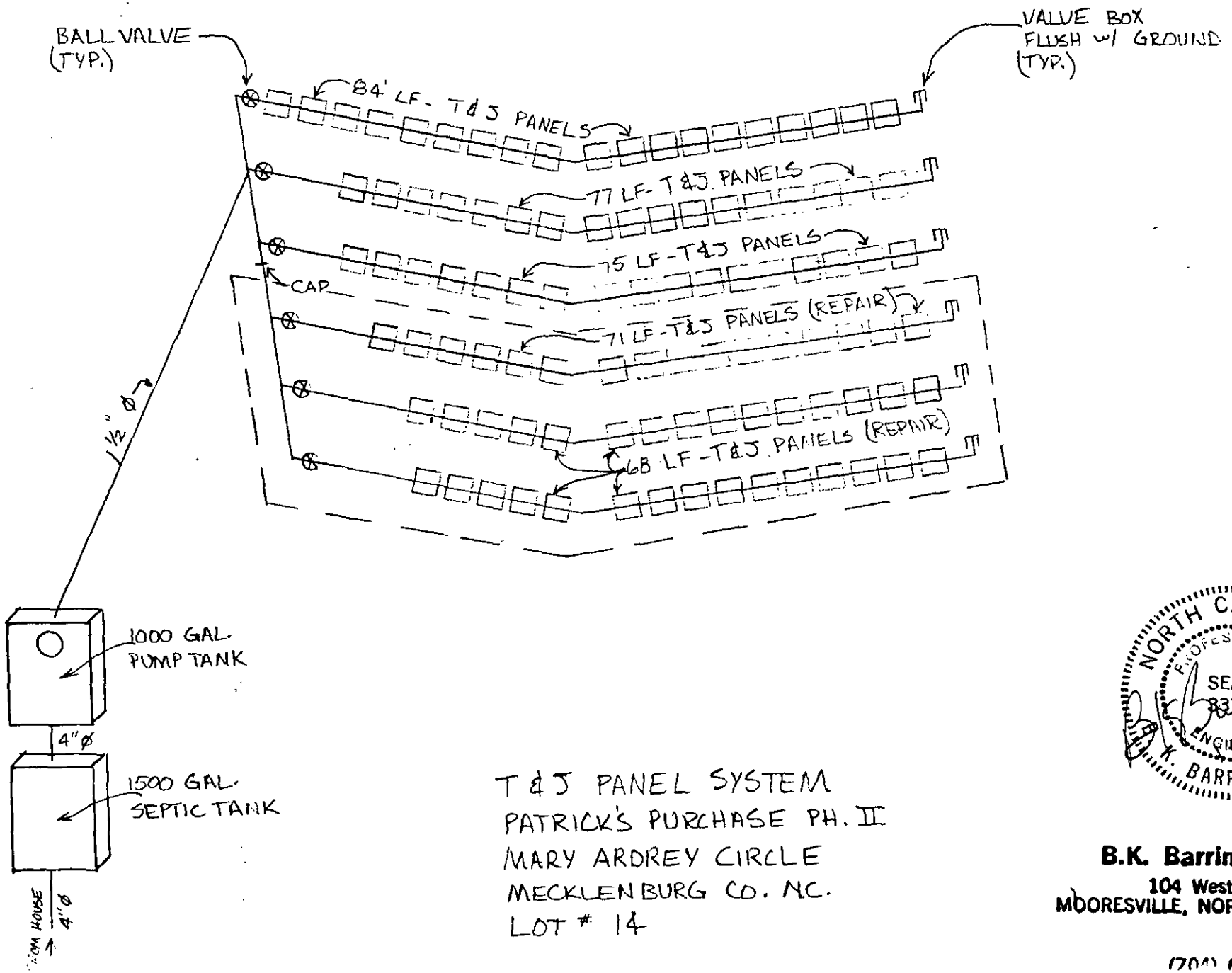
...nments:

...cribed by: Willard B. Ramsey
...: 7-9-89



*** EVALUATION KEY ***
= Suitable U = Unsuitable
= Provisionally Suitable
..."Area Classification" below indicates the suitability of ...as in the diagram.

...CTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA
...ography	S (PS) U 2-8	S PS (U) Head of DRAW	S PS (U) EARTH Mound	S PS U	S PS U	S PS
...ture	S (PS) U	S (PS) U	S PS (U)	S PS U	S PS U	S PS
...icture	S (PS) U	S (PS) U	S PS (U)	S PS U	S PS U	S PS
...inage	S (PS) U	S (PS) U	S PS (U)	S PS U	S PS U	S PS
...th	S (PS) U 48+	S PS (U) VARIOUS	S PS (U) UNKNOWN	S PS U	S PS U	S PS
...trictive Horizons	S (PS) U	S (PS) U	S (PS) U	S PS U	S PS U	S PS
...ilable Space	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS
...er (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS
...Group/Series	IVa CECIL	IVa ERODED CECIL	IVa under EARTH			
...Classification	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS

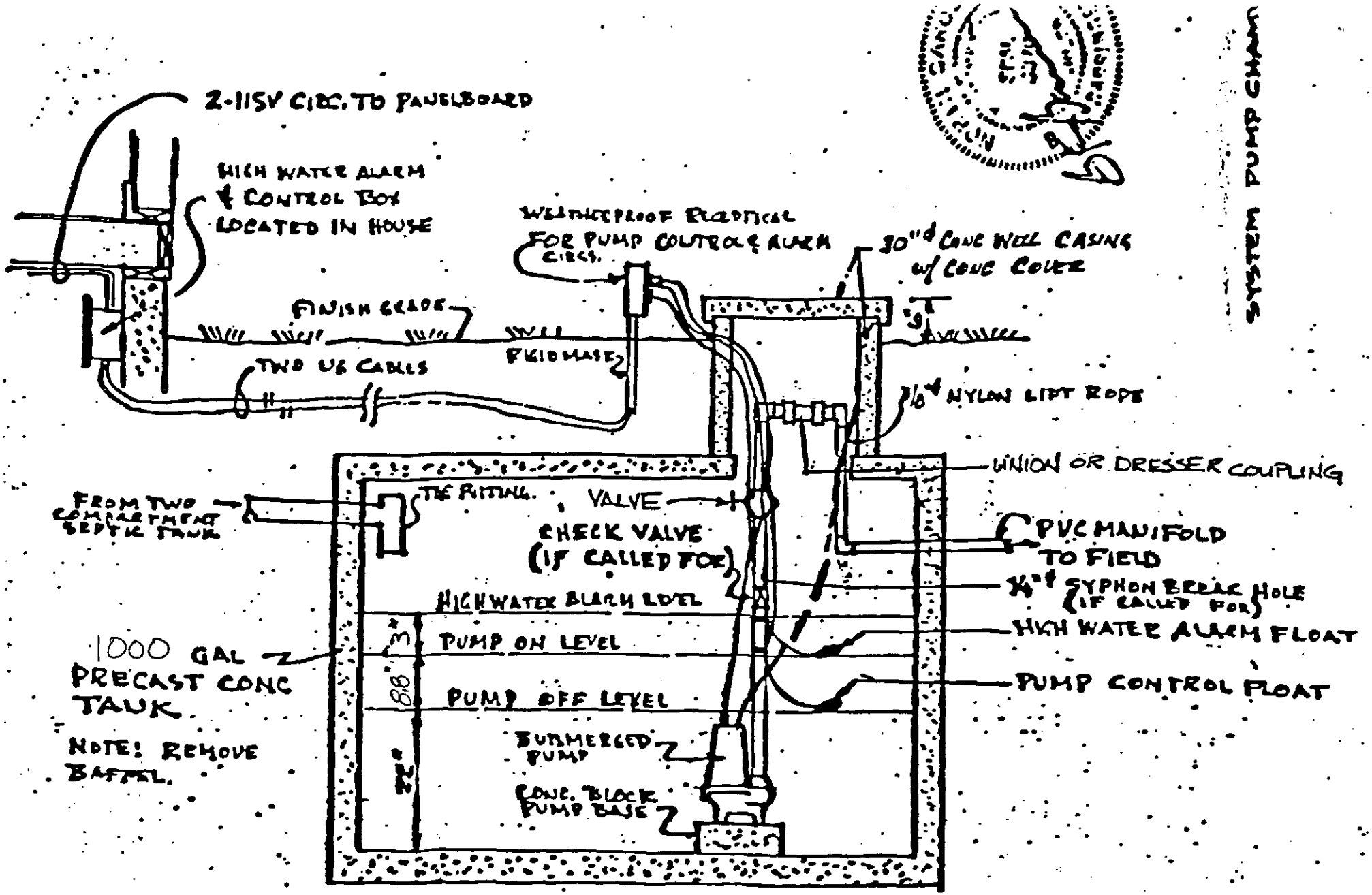


T & J PANEL SYSTEM
PATRICK'S PURCHASE PH. II
MARY ARDREY CIRCLE
MECKLENBURG CO. NC.
LOT # 14

NORTH CAROLINA PROFESSIONAL SEAL 8370 ENGINEER B. K. BARRINGER, JR.

B.K. Barringer, Jr. P.E.
104 Westfield Center
MOORESVILLE, NORTH CAROLINA 28115

(704) 664-7888

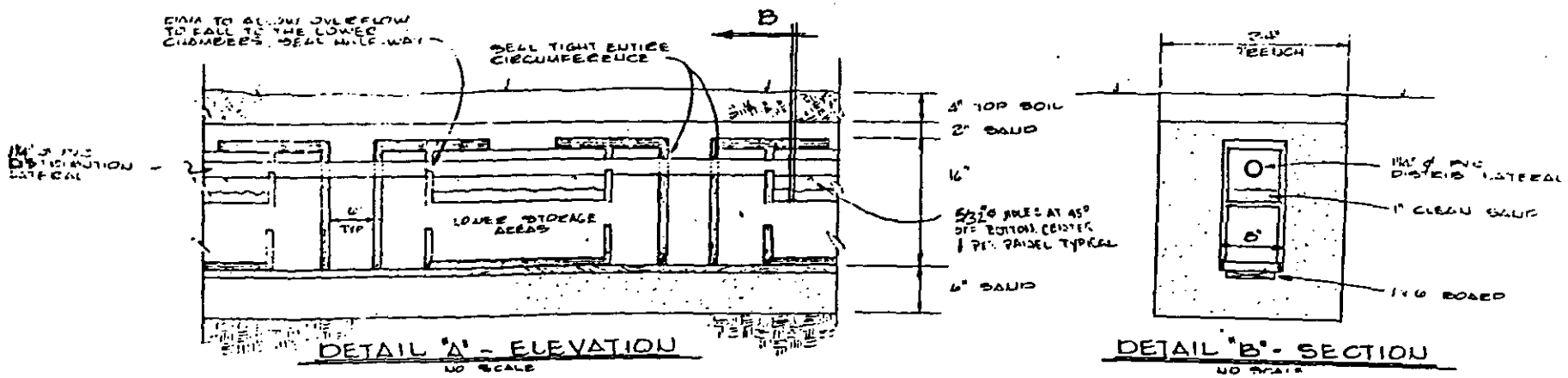


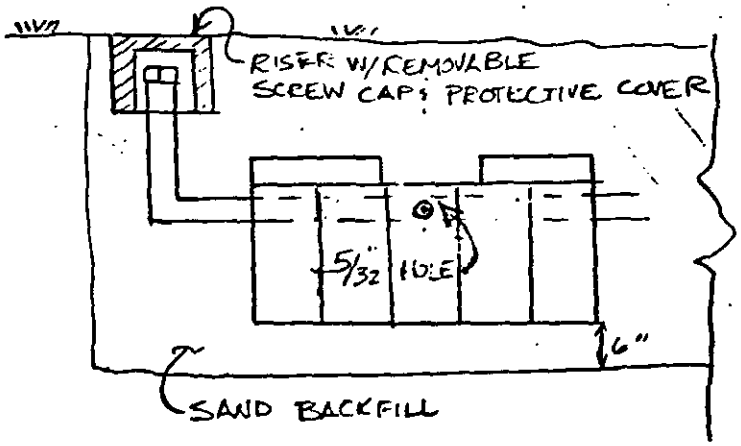
PUMPING CHAMBER DIAGRAM

NO SCALE

1000 GAL TANK

T & J PANEL AS MFG'D
BY STATESVILLE
CONCRETE PRODUCTS





B.K. Barringer, Jr. P.E.
104 Westfield Center
MOORESVILLE, NORTH CAROLINA 2811

LAKE NORMAN

MARY ARDREY CIRCLE (60' R/W)

SR 2151

Lot 43 0.59 AC.

Lot 42 0.73 AC.

Lot 41 0.97 AC.

Lot 9 0.83 AC.

Lot 10 1.77 AC.

Lot 11 2.08 AC.

Lot 12 1.97 AC.

Lot 13 1.79 AC.

Lot 40 1.23 AC.

Lot 39 0.86 AC.

Lot 38 0.78 AC.

Lot 37 0.99 AC.

Lot 36 0.50 AC.

LOT 35

LOT 34 (ON SITE)

LOT 33

LOT 14 0.78 AC

Lot 15 2.27 Ac

Lot 32 4.20 AC. "Water access Lot"

REPAIR AREA LOT 36A 0.49 AC

REPAIR AREA LOT 35A 0.44 AC

REPAIR AREA LOT 33A 0.37 AC

4 BR. HOUSE

5 BR. HOUSE

4 BR. HOUSE

20' PUBLIC STORM DRAINAGE EASEMENT

20' PUBLIC STORM DRAINAGE EASEMENT

20' PUBLIC STORM DRAINAGE EASEMENT

30' PUBLIC STORM DRAINAGE ESMT.

30' PUBLIC STORM DRAINAGE ESMT.

20' UTILITY EASEMENT

20' UTILITY EASEMENT

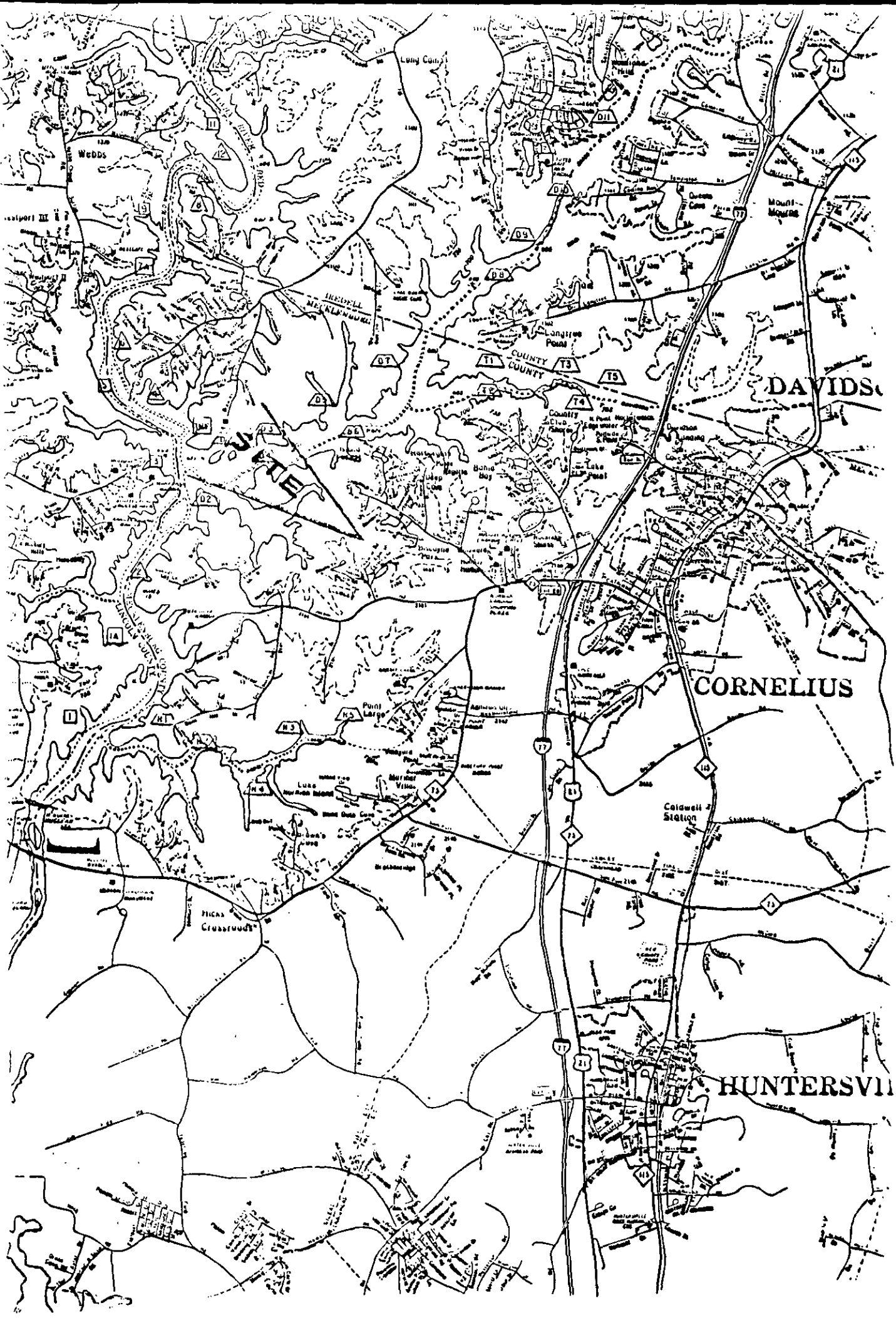
30' MIN BLDG SETBACK

30' MIN BLDG SETBACK

36" RCP

18" RCP

NORTH


DAVIDS
CORNELIUS
HUNTERSVI
Webbs
Long Cove
Langtree Point
Country Club
Lake Point
Bahia Bay
Point Largo
Caldwell Station
Mount Mourne
Pecks Crossroads

APPLICATION FOR AN IMPROVEMENT PERMIT

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

(OFFICE USE ONLY)
FILE: 5836-A
TC: _____
SERIAL: 20146 ☐ L ☐ CRT

JOB LOCATION

① ADDRESS: 19401 MARY ARDREY CIRCLE (STREET NO. / STREET) ② FILE: 5836 A
③ JURISDICTION: _____ ④ TAX PARCEL NO.: 001 511 35
⑤ SUBDIVISION: PATRICIA PURCHASE PHASE II ⑥ LOT: 14 ⑦ BLOCK: _____

OWNER

⑧ NAME: STOUGH FARMS DEVELOPMENT COMPANY
WILLIAM (FIRST) ARDREY (MIDDLE) KINNBROUGH U.P. (LAST)
⑨ MAILING ADDRESS: 19529 WEAVERS CIRCLE
⑩ CITY: HUNTERSVILLE ⑪ STATE: N.C ⑫ ZIP: 28078
⑬ PHONE: (WORK) 892 3683 ⑭ (HOME) 892 3683

REQUEST

This request is for a(n):

⑮ ☒ New permit
⑯ ☐ Repair or alteration permit
⑰ ☐ Authorization for mobile home exchange
⑱ ☐ Other (specify) _____

DESIGN CRITERIA

System will serve:

⑲ ☒ Residence ⑳ ☐ Mobile home ㉑ ☐ Business or place of public assembly
㉒ Number of bedrooms? 3 ㉕ Type? _____
㉓ Maximum occupancy? _____ ㉖ Maximum number of employees? _____
㉔ Basement? ☐ yes ☐ no ㉗ Maximum number of seats? _____

WATER SUPPLY

㉘ Water supply from (present or proposed):

A ☒ Individual well
B ☐ Municipal system
C ☐ Community well
D ☐ Community system

㉙ The undersigned, 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: William A. Kinnbrough
Date: 01-29-90

IMPROVEMENT PERMIT

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect 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 permit is issued by this Department.

... This permit is not transferable, and shall become null and void 36 months from the date of issuance.

_____ / _____
Environmentalist Date

_____ / _____
Director or Authorized Section Head Date

*This permit must be signed by the Director of Mecklenburg County Health Department or an authorized section head in order to be valid.

INSTRUCTIONS

PLEASE PRINT OR TYPE ALL REQUESTED INFORMATION

ITEM(S) ....INSTRUCTIONS

① .....Indicate location of property for which the request is being made. Give **street number** and street or road name. If you do not know the street number, you must contact the Mecklenburg County Engineering Department to have one assigned.

② .....If a soil investigation has been run, copy the file number from the report. This may appear [illegible] APT numbers on older reports.

③ .....Indicate the jurisdiction in which the property is located. The jurisdiction is assigned by County Engineering.

④ .....Indicate the tax account or parcel number for the property (example 000-000-00). If the property is comprised of a portion of a large tract, precede the parcel number with the letters "PO."

⑤-⑦ .....Indicate the subdivision name and the lot and block numbers in the subdivision if applicable.

⑧-⑭ .....Indicate, in the requested format, the information as it pertains to the person to whom the permit should be issued.

⑮-⑱ .....Indicate the purpose of the request by placing an "X" in the appropriate box.

⑲-㉑ .....Indicate the type structure the system will serve by placing an "X" in the appropriate box.

- Residence means a single or multi-family dwelling (duplex, apartment, hotel, motel) or any other place where people reside.
- Mobile home means a trailer used as a residence that is designed without a permanent foundation and is capable of being moved to another location.
- Business or place of public assembly means non-residential use of buildings such as manufacturing, office space, warehousing operations, place of amusement or recreation, church, fairground, stadium, campground or any other place where people work or assemble.

㉒-㉔ .....If the system will serve a residence or a mobile home, indicate the number of bedrooms, the maximum occupancy of the residence and whether or not the structure will have a basement. When calculating the number of bedrooms include all rooms which are intended to be used as bedrooms or might later be furnished or converted to bedroom use and any additional bedrooms to be constructed in the future.

㉕-㉗ .....If the system will serve a business, indicate the type business, the maximum number of employees and the maximum number of seats to be provided. Include in these figures projections for future expansions.

㉘ .....Indicate the type water supply by placing an "X" in the appropriate box.

- Individual well means a well located on the lot, serving a building occupied by only one family or one business establishment and will not be a public place, a place of public gathering, or business which processes or manufactures any product which is used as, or is used in a food product.
- Municipal system means a water supply furnished by a city, county, town or other governmental authority.
- Community well means a privately owned water system originating from a well source.
- Community system means a privately owned water system originating from a source other than a well.

㉙ .....Once you have completed the application, read the certification statement in the lower, left hand corner. The statement must be signed, dated, and returned to the Department along with a Proposed Plot Plan and a copy of the Engineering Address Record prior to the issuance of any permits. **IN ORDER FOR YOU TO RECEIVE A COPY OF THE COMPLETED PERMIT FOR CONSTRUCTION, ALL COPIES OF THIS FORM MUST BE RETURNED TO THE ADDRESS LISTED ON THE FRONT OF THE APPLICATION.**

100 02 1CRT

APPLICATION FOR AN IMPROVEMENT PERMIT

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

(OFFICE USE ONLY)
FILE: 5836A
TC: 001 511-35
SERIAL: Nº 20446
☐ L ☐ CRT

JOB LOCATION

① ADDRESS: 19401 MARY ARDREY CIRCLE (STREET NO. / STREET) ② FILE: 5836A
③ JURISDICTION: ④ TAX PARCEL NO.: 001 511 35
⑤ SUBDIVISION: PATRICKS PURCHASE PHASE III ⑥ LOT: 14 ⑦ BLOCK:

OWNER

STOUGH FARMS DEVELOPMENT COMPANY
⑧ NAME: WILLIAM (FIRST) ARDREY (MIDDLE) KUMBROUGH V.P. (LAST)
⑨ MAILING ADDRESS: 19529 WEAVERS CIRCLE
⑩ CITY: HUNTERSVILLE ⑪ STATE: N.C ⑫ ZIP: 28078
⑬ PHONE: (WORK) 892 3683 ⑭ (HOME) 892 3683

REQUEST

This request is for a(n):

⑮ ☒ New permit
⑯ ☐ Repair or alteration permit
⑰ ☐ Authorization for mobile home exchange
⑱ ☐ Other (specify)

DESIGN CRITERIA

System will serve:

⑲ ☒ Residence ⑳ ☐ Mobile home ㉑ ☐ Business or place of public assembly
㉒ Number of bedrooms? 3 ㉕ Type?
㉓ Maximum occupancy? ㉖ Maximum number of employees?
㉔ Basement? ☐ yes ☐ no ㉗ Maximum number of seats?

WATER SUPPLY

㉘ Water supply from (present or proposed):

A ☒ Individual well
B ☐ Municipal system
C ☐ Community well
D ☐ Community system

㉙ The undersigned, 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: William A. Kumbrough
Date: 01-29-90

IMPROVEMENT PERMIT

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect 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 permit is issued by this Department.

... This permit is not transferable, and shall become null and void 36 months from the date of issuance.

Environmentalist / Date

Director or Authorized Section Head / Date

*This permit must be signed by the Director of Mecklenburg County Health Department or an authorized section head in order to be valid.

Mecklenburg County
Health Department

Basil G. Drita, M.D., M.P.H.
Health Director

July 21st, 1989

William Kimbrough
19529 Weavers Circle
Huntersville, NC 28078

RE: Property located at 19401 Mary Ardrey Circle
FILE: 5836A
PARCEL: 001-511-14

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. Results of the investigation revealed that the lot contains soils which have been classified as PROVISIONALLY SUITABLE in accordance with the provisions of 10 NCAC 10A .1900. A copy of the Site Evaluation Report (Serial Number 16218) deliniating the soil types and their respective classifications is enclosed.

While this classification indicates the site is acceptable for the installation of a septic tank system, no specific system or plans have been approved. The area available for such an installation may impose limitations on the size and/or type construction permitted on the lot. Specific plan approval will be provided upon submission of an Application For An Improvement Permit with an ACCURATELY dimensioned plot plan detailing the location of current and/or proposed buildings, wells and sewage disposal systems and determination that the area is adequate to accomodate the proposed construction.

Please note that this classification may be revoked if any filling, grading or construction (including the drilling of a well) is performed on the lot which in the opinion of this Department renders any area previously designated suitable for system installation, unsuitable. Futhermore, this approval may be revoked should any changes occur in the regulations under which it was granted, if such changes would have prevented its approval had they been in effect on the date of issuance.

If there are any questions concerning this matter, do not hesitate to contact me.

Very truly yours,

Jim Ericson, R.S., Supervisor
On Premises Waste Disposal & Water Supply

Enclosure

DATE: _____

TO: HEALTH DEPARTMENT - ENVIRONMENTAL HEALTH

FROM: COUNTY ENGINEERING

EHD FILE _____ JURISDICTION CODE _____

PARCEL NUMBER 001 511 35

ASSIGNED ADDRESS _____

EXISTING ADDRESS 19401 MARY AUDREY CIRCLE, HUNTERSVILLE, NC 28078

PROJECT NAME PATRICKS PURCHASE PHASE II

THE ABOVE DESCRIBED LOCATION HAS BEEN CHECKED CONCERNING:

	APPROVED	NOT APPROVED
1. SUBDIVISION REGULATIONS	☐	☐ *
2. FLOODWAY REGULATIONS	☐	☐ *
3. EROSION CONTROL REGULATIONS	☐	☐ *
4. COMMERCIAL DRAINAGE PLAN	☐	☐ *

	PRESENT	NOT PRESENT
5. PUBLIC UTILITY EASEMENT	☐ *	☐

	YES	NO
6. PROPERTY FRONTS ON THOROUGHFARE	☐ *	☐
7. DRIVEWAY PERMIT REQUIRED	☐ *	☐

*** If checked, further investigation will be required to determine whether a building permit may be issued by Building Standards for the site.**

REMARKS: _____

_____

_____

NOTE: THIS FORM MUST BE TURNED IN AT THE CASHIERS OFFICE AT BUILDING STANDARDS WHEN PAYING PERMIT FEES.
A CERTIFICATE OF OCCUPANCY WILL NOT BE GRANTED UNTIL THE TRANSPORTATION DIVISION GRANTS FINAL APPROVAL ON DRIVEWAY(S).

SIGNED: _____

OPWEAR 02/86

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 16218

File: 5836A Action 4

Parcel: 001-511-14 ☐ PC

Location: 19401 Mary Ardrey Circle

Subdivision:

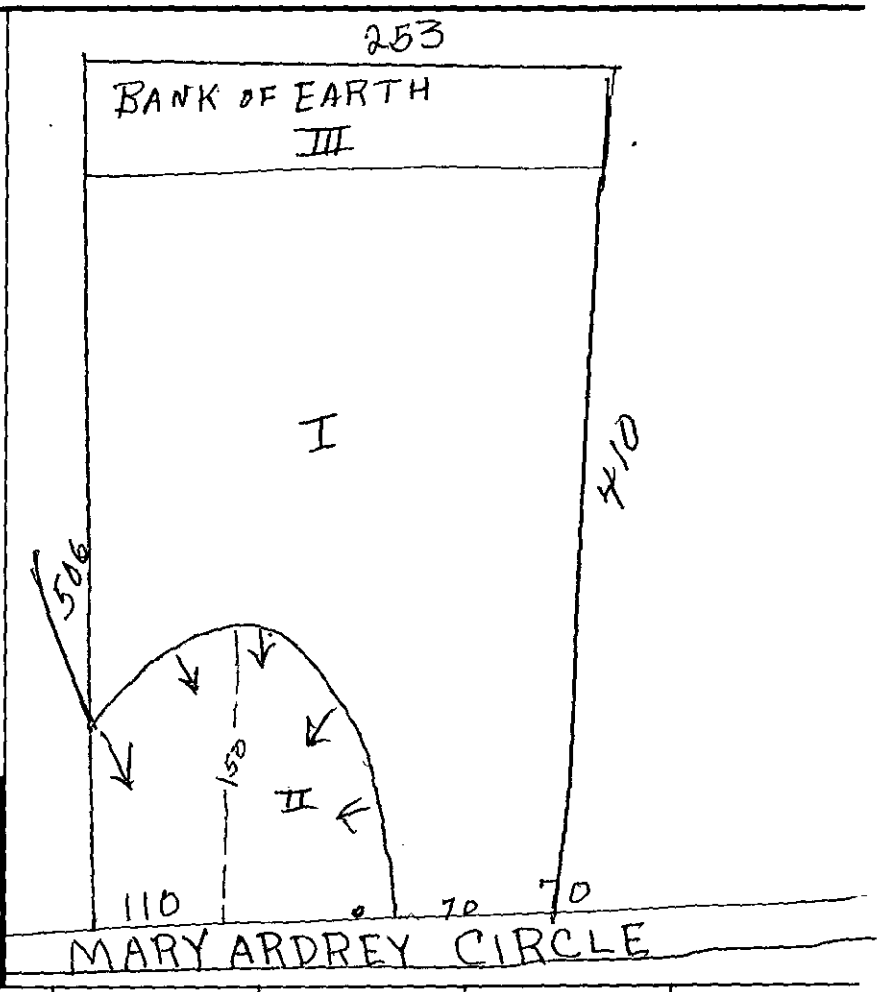
Lot: Block: Acres: 2.21

Owner: William Kimbrough
Address: 19529 Weavers Circle
Huntersville, NC 28078

Comments: _____

Described by: Willard B. Ramsey

Date: 7-9-89



***** EVALUATION KEY *****

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

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	S (PS) U 2-8	S PS (U) Head of DRAW	S PS (U) EARTH Mound	S PS U	S PS U	S PS U
Texture	S (PS) U	S (PS)	S PS (U)	S PS U	S PS U	S PS U
Structure	S (PS) U	S (PS)	S PS (U)	S PS U	S PS U	S PS U
Drainage	S (PS) U	S (PS) U	S PS (U)	S PS U	S PS U	S PS U
Depth	S (PS) U 48+	S PS (U) VARIOUS	S PS (U) UNKNOW	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U	S (PS) U	S (PS) U	S PS U	S PS U	S PS U
Available Space	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IVa CECIL	IVa ERODED CECIL	IVa under EARTH			
Area Classification	S (PS) U	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

APPLICATION FOR SOIL INVESTIGATION

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

(OFFICE USE ONLY)

FILE: 5836A

TC: _____

☐ PC ☐ REPT

see 5834A for chart

JOB LOCATION

① ADDRESS: 19401 MARY ARDREY CIRCLE

② SUBDIVISION: PATRICKS PURCHASE PHASE II ③ LOT: 14 ④ BLOCK: _____

⑤ PARCEL REFERENCE: BOOK NO.: _____ PAGE NO.: _____ PARCEL NO.: 001-511-14

⑥ DEED REFERENCE: BOOK NO.: 5123 PAGE NO.: 663

OWNER

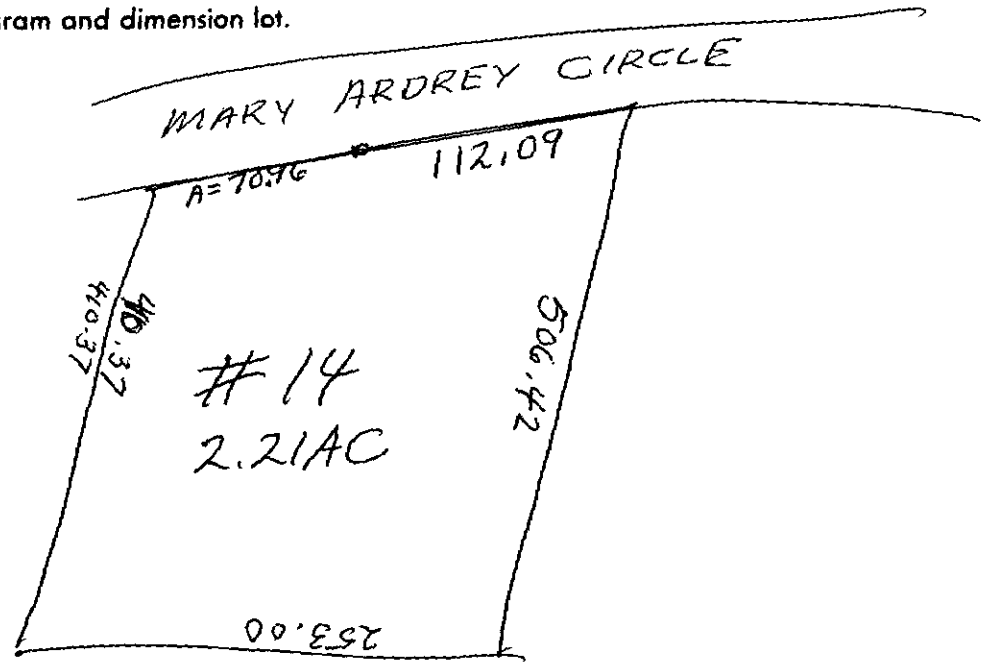
⑦ NAME: STOUGH FARM DEVELOPMENT COMPANY
WILLIAM ARDREY KIMBROUGH
(FIRST) (MIDDLE) (LAST)

⑧ MAILING ADDRESS: 19529 WEAVERS CIRCLE

⑨ CITY: HUNTERSVILLE ⑩ STATE: N.C ⑪ ZIP: 28078

⑫ PHONE: (WORK) 892 3683 (HOME) 8923683

⑬ Accurately diagram and dimension lot.



⑭ The undersigned, 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: William A. Kimbrough

Date: 6-22-89

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

WHITE - HEALTH DEPARTMENT'S COPY • CANARY - ENVIRONMENTALIST'S COPY • PINK - OWNER'S COPY