

10521 LORELEI PL

13927134

6/21/2007

duponbj

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

Mecklenburg County
Health Department

January 19, 1991

Keith R. Moore
c/o Haney Construction
P.O. Box 25311
Charlotte, NC 28229

RE: Property located at 10521 Lorelei Place
FILE: 6762A
PARCEL: 139-271-34

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
Individual Water and Wastewater Systems

GV/kjb

Enclosures - 3 Septic Tank Agreement Forms

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

Date: December 18, 1990

From: T J Systems
P.O. Box 73
Scotts, N.C. 28699

To: Keith Moore c\o Joe Haney
P.O. Box 25311
Charlotte, N.C. 28229
Phone 704-

10531

Subject: Lot on Lorelei Road Mecklenburg County
File # : 6762A
Parcel : 13927134

System type: 16 inch T & J Panel System with pressure distribution.

This system is designed for a three bedroom house at an application rate of .3 gpd. 360/.3 = 1200/3 = 400 LF of conventional drainfield multiplied by .5 = 200 LF of 16 inch T & J Panel System. This system shall be installed in accordance with all state and local rules and regulations and in compliance manufacturer's installation guidelines. Soil evaluation was supplied by the county.

House placement on this lot is very critical as to the site approval for a T & J panel system due to space restrictions. House shall be place as noted on the drawing to insure proper space requirements.

Layout Approved 1-17-91

Line	# Panel	# Hole Per Panel	Size Hole	Line Head	Line Length	Hole Flow	Per Panel Line Flow min
A	8	one	5/32	3.0ft	35 '	.50	4.00
B	9	one	5/32	3.0ft	40 '	.50	4.50
C	16	one	5/32	3.0ft	70 '	.50	8.00
D	8	one	5/32	3.0ft	35 '	.50	4.00
E	5	one	5/32	3.0ft	20 '	.50	2.50
G	repair				40 '		
H	repair				60 '		
		NOTE: Only 50% repair space available					
Totals	46				200'		23.00

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 1.98
Total lift = 14.60 (103.10 + 3 - 91.50 = 14.60) elev.

TDH = 16.58
20% margin = 21 ft (16.58 / .8 = 20.73 = 21 ft)

Pump Size: 29 (23.0/.8) gallon per minute at 21 feet of head.

Pump cycle should be 7.2 min or 165 gallons.

Note: Each line shall have a globe valve at the start of the line for pressure adjustment. Each valve or gruop of valves shall be placed inside a plastic valve box with a lid at ground level. Turn ups shall be cut off just below ground surface and covered with a plastic cup and cover. The line shall be capped with a threaded fitting and plug. The ends that are used for setting the heads shall be marked as to the line that they go to and saved for future system adjustment. Mark each valve and turn up end with marker to show what valve goes with what turn up.

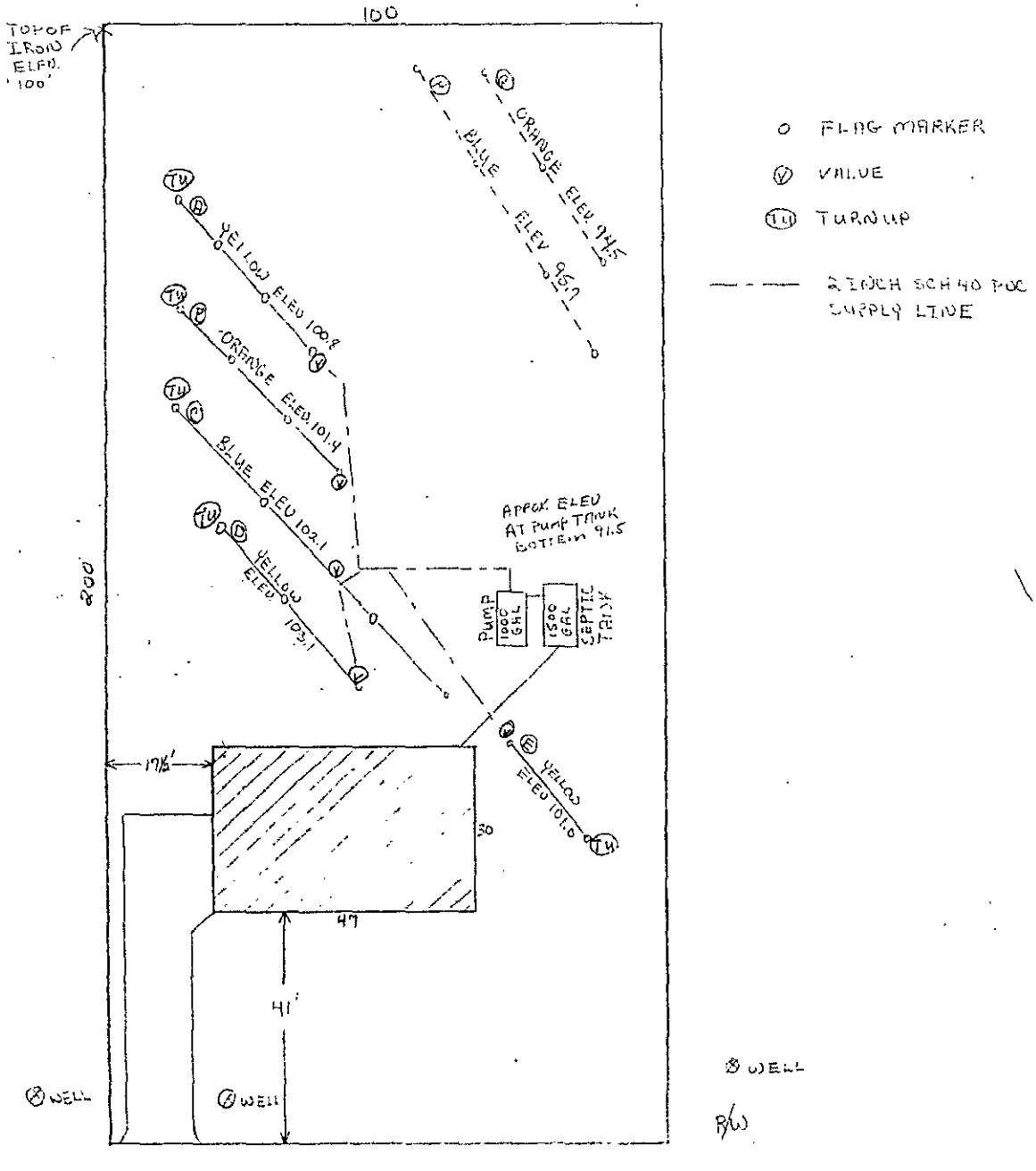
Friction loss:

supply line = 150 lf = 1.50 * 1.10 = 1.65

fittings = 1.65 * .2 = 0.33

total 1.98

MECKLENBURG COUNTY
FILE # 6762A
DATE 12-16-90



RG

6/16/94

ATION REPORT
UMBER 17930

Parcel: 139-271-34

☐ PC

on: 10521 Lorelei Place

ubdivision: Butterfield Park

Lot: Block: 55 Acres: .46

Owner: Keith R. Moore
Address: % Haney Realty Co.
P. O. Box 25311
Charlotte, N. C. 28229

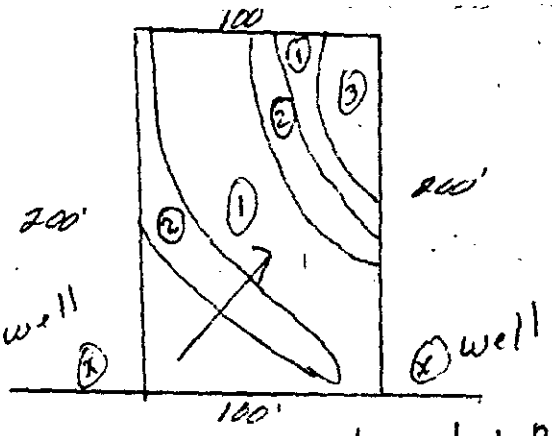
Comments: _____

Described by: William B. Hardin

Date: 6-1-94

This Property has a Chain link Fence around it with no GATE. Right front Corner is tied so it can be Undone to go in

Thanks
Joe



***** 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 6-15%	S PS (U) complex slopes	S PS (U) Depression	S PS U	S PS U	S PS U
Texture	S (PS) U Clay	S PS U —	S PS U —	S PS U	S PS U	S PS U
Structure	S (PS) U Blocky	S PS U —	S PS U —	S PS U	S PS U	S PS U
Drainage	S (PS) U 7-36" To water	S PS U —	S PS U —	S PS U	S PS U	S PS U
Depth	S (PS) U 7-36"	S PS U —	S PS U —	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U 7-36"	S PS U —	S PS U —	S PS U	S PS U	S PS U
Available Space	S PS (U) Restricted	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	III Cecil/Ush	complex slopes	Depression			
Area Classification	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

DESIGN, INSTALLATION AND MAINTENANCE

OF THE

T & J PANEL WASTEWATER TREATMENT SYSTEM

FOR

SANITARIANS

AND

SEPTIC TANK INSTALLERS

Although this manual is sectioned for specific user groups, we at T & J Panel suggest that you familiarize yourself with the complete manual.

Sanitarians

In the early days of the T & J Panel System, when it was still considered an experimental system, the primary reason for permitting the Panel System was because of insufficient space for a conventional system. Now with inclusion in the Sewage Regulations(10NCAC 10A .1956(3)(a)(ii)), the Panel System should be considered when a quality effluent may be needed, space is limited, usable soil is limited, or there are indications that at some future time, space may be needed for other uses. When there is a trend for added development such as additions to homes, pools, or other special landscaping development the T & J Panel System may prevent insufficient space later. As an example, there was a subdivision where three of five homes in the same block added in-ground pools. Each of these pools impacted the existing nitrification lines. As a sanitarian, if you can foresee such a trend developing, discuss the Panel System with the home owner.

As noted in the regulations, the PPBPS is only permitted where soils are suitable for a conventional system, however, only one-half of the space is needed. The Panel System will allow the use of the best soils on the lot. This system may be gravity fed or pumped using the LP Panel System as described. Most of the concepts for a T & J Panel layout are the same as for a conventional system. The biggest differences are areal area needs and quality of effluent being introduced into the soil.

Conversion

A three bedroom house with a 0.4 gpd application rate. (First three steps are the same as the conventional line)

1) 120 gallons per bedroom x 3 bedrooms = 360 gallons per day design flow rate.

2) 360 flow rate/0.4 application rate = 900 sq. ft. of trench bottom.

3) 900 sq. ft./3 ft. wide trench = 300 lineal feet of conventional system.

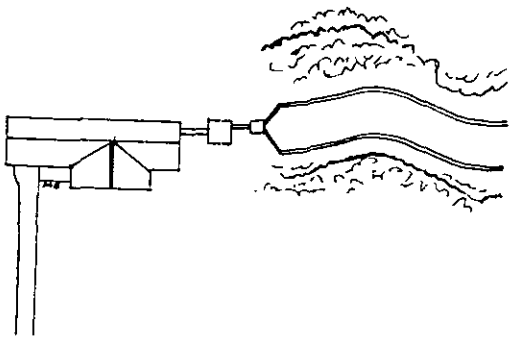
This conventional layout requires 2700 sq. ft. of area on the lot and equal space for repair for a total of 5400 sq. ft. of suitable and usable area. To calculate the T & J Panel System size, the above calculations must be made with an additional fourth step as described in 10NCAC 10A .1956 (3)(a)(ii)(B) for a PPBPS (the T & J Panel System)

4) 300 lineal feet of conventional system x 0.5 for a 16 inch high Panel System = 150 lineal feet of T & J Panel trench.

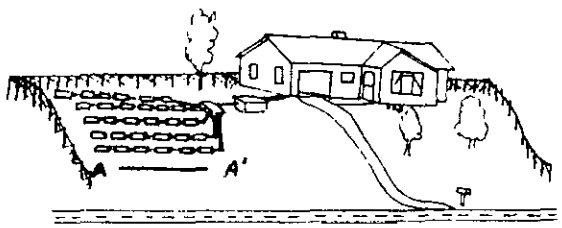
A Panel System requires only a 1200 sq. ft area on the lot for the system and equal area for repair. With the Panel System the installation and repair can go into the same space as the initial area required by a conventional gravel trench system.

Window Effect

Areal space should always be a consideration for any system, however, it is especially notable with the Panel System as with any system that reduces the size of the areal area drainfield. The following is a simplistic example of this concept.



RIGHT

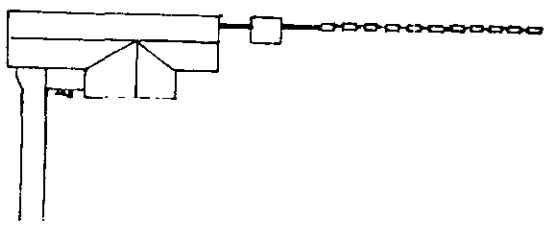


WRONG

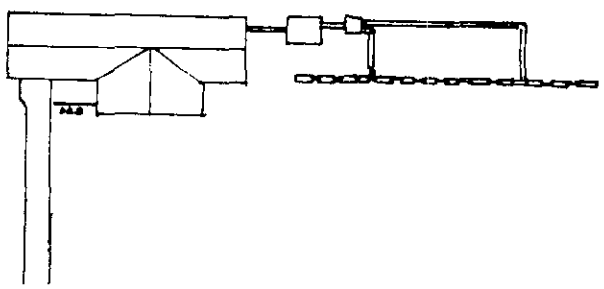
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

Distribution

Another extreme would be the use of a long single trench fed from only one end. In the first example, below the areal space is good and the chance of hydraulic overloading is greatly reduced. However downline distribution in the panel line will not give optimum treatment.



WRONG



RIGHT

In the lower example we see that the trench has been feed from multiple points. Because the Panel lines are put in as level as possible, never exceeding 1/4 inch of fall in 10 feet of run, they feed both ways equally. T & J recommends that no gravity line exceed 50 feet, unless it is fed from multiple points. In both of these examples, we are specifying the Panel System, but the logic applies to the conventional system as well.

COUNTY HEALTH DEPARTMENT

(SEPTIC TANK) IMPROVEMENTS PERMIT AND CERTIFICATE OF COMPLETION
(Ground Absorption Sewage Disposal System -- G. S. Chapter 130-A-Article 11)

OWNER OR CONTRACTOR _____ DATE ____ PERMIT NO. _____

PHONE: Business _____ Home _____

LOCATION _____

_____ S. R. No. _____

SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

House (✓) Mobile Home ( ) Business ( ) Other _____

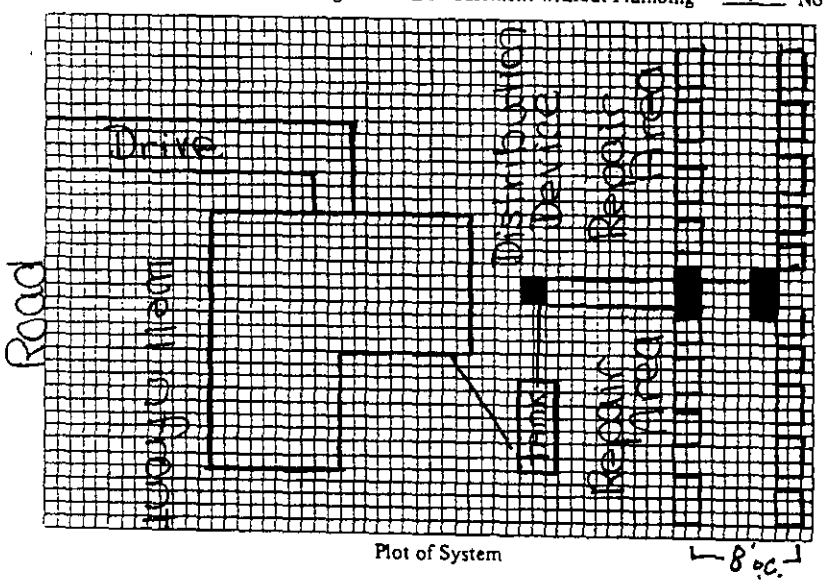
No. Bedrooms 3 No. Bathrooms 2 1/2

Garbage Disposal Unit	N/A	Yes ( )	No ( )	
Auto. Dishwasher		Yes (✓)	No ( )	
Auto. Wash. Machine		Yes (✓)	No ( )	
Site Suitable		Yes (✓)	No ( )	

Character & Porosity of Soil clay loam over clay
Percolation Rate 0.4 gal/ft²/day
Topography 6% slope
Depth to Water Table > 60"
Rock or other impervious formations none

Lot Area _____

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement



Plot of System

Size of Tank 1000 Gals.
Nitrification Field:
No. of Lines (2) 75' lines of
Sq. Ft. 900 Linear Ft. 150 panels
Depth of Stone in Lines 24" of Stone
Water Supply: Individual (✓)
Public ( )

Installed by _____

I understand and agree to install septic tank system as specified on this Improvements Permit.

Signed: _____

IMPROVEMENTS PERMIT BY _____

COMMENTS: 2 lines with 17 panels each line. flow split by flow divider. 2' wide and 75' long each split in middle by D-box. 25 tons sand

CERTIFICATE OF COMPLETION BY _____ DATE _____

EXISTING SYSTEM CHECKED BY: _____ DATE _____

CONSTRUCTION MUST COMPLY WITH ALL OTHER APPLICABLE STATE AND LOCAL REGULATIONS.

Permit is VOID if any unauthorized changes are made in installation of system and/or if any false information is supplied in making Improvements Permit.

Health Dept. Copy: White Inspection Dept. Copy: Yellow Sanitarian's Copy: Pink Owner's Copy: Gold

COUNTY HEALTH DEPARTMENT

(SEPTIC TANK) IMPROVEMENTS PERMIT AND CERTIFICATE OF COMPLETION
(Ground Absorption Sewage Disposal System -- G. S. Chapter 130-A-Article 11)

OWNER OR CONTRACTOR _____ DATE _____ PERMIT NO. _____

PHONE: Business _____ Home _____

LOCATION _____

_____ S. R. No. _____

SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

House (✓) Mobile Home ( ) Business ( ) Other _____

No. Bedrooms 3 No. Bathrooms 2½

Garbage Disposal Unit n/a Yes ( ) No ( )

Auto. Dishwasher Yes (✓) No ( )

Auto. Wash Machine Yes (✓) No ( )

Site Suitable Yes (✓) No ( )

Lot Area 20,000

Character & Porosity of Soil clay loam over clay

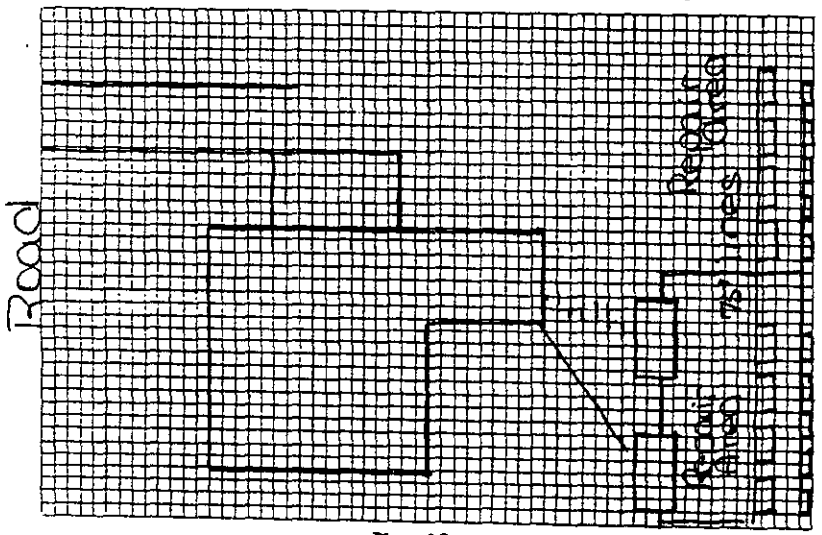
Percolation Rate 0.4 gal/ft²/day

Topography 10% slope

Depth to Water Table >60"

Rock or other impervious formations _____

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement Pressure Distribution



Plot of System

Size of Tank 1,000 septic / Gals.

Nitrification Field: 1000 pump

No. of Lines 3(75') lines of T-5

Sq. Ft. 900 Linear Ft. 150

Depth of Stone in Lines 24" sand

Water Supply: Individual ( )
Public ( )

Installed by _____

I understand and agree to install septic tank system as specified on this Improvements Permit.

Signed: _____

IMPROVEMENTS PERMIT BY _____

COMMENTS: pump sized by head 2-4' at turn up

CERTIFICATE OF COMPLETION BY _____ DATE _____

EXISTING SYSTEM CHECKED BY: _____ DATE _____

CONSTRUCTION MUST COMPLY WITH ALL OTHER APPLICABLE STATE AND LOCAL REGULATIONS.

Permit is VOID if any unauthorized changes are made in installation of system and/or if any false information is supplied in making Improvements Permit.

Health Dept. Copy: White Inspection Dept. Copy: Yellow Sanitarian's Copy: Pink Owner's Copy: Gold

How Many Panels Do You Need?

To calculate the number of 16 inch high panels needed for a 150 foot line, multiply 150'x 12" = 1800" then divide by 52" which is 46 inches for the panel and 6 inches for the space between the panels in the trench. 1800" /52" = 34.6 panels, so you would call for 34 panels. (A material order chart is included in the installer section of this manual.) If there is to be more than one trench, the sizing of the lines should be as equal as possible with as close to the same number of panels in each trench as is practical. A permit will normally show the panel as small blocks on the line. The following two pages are sample copies of permits for Panel systems.

Gravity or Pressure

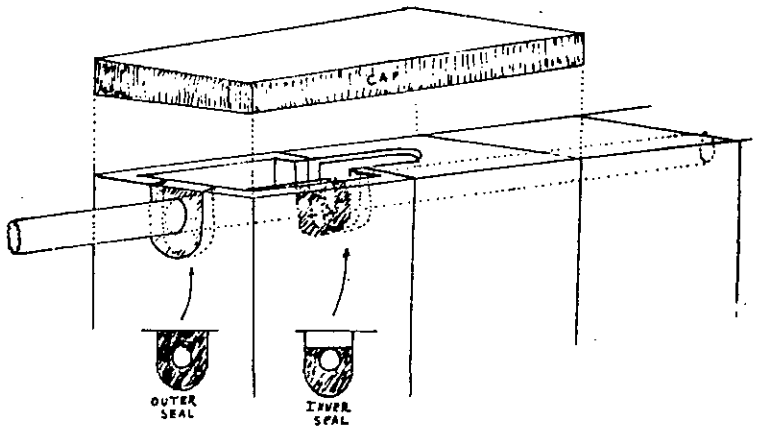
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One of the attached permits is for a LP Panel drainfield.

Backfill

Backfill sand shall be a clean, washed, medium sand that is naturally occurring and falls within the gradation of ASTM C-33 specification. This specification is one that is used in the ready mix industry and is readily available in all areas. The second type of sand that you will need is a clean particle sand to coat the bottom of each panel's top chamber with a bed of sand one inch thick. This sand is a medium grade of sand blasting sand. Each one hundred pound bag should cover eight panels. Backfill sand calculations should be taken from the material sheet.

Tar Seals

The two drawings below illustrate the inner and outer seal. Note that while the outer seal is a complete seal, the inner seal is only up to the top of the connecting pipe. This is to allow for over flow of the effluent at peak use periods into the lower air chambers. At this point the air chambers become additional storage chambers for the effluent.



Trench Preparation

Trench grade should be established so that backfill cover will be four to six inches over the tops of the panels. (Note on severe slopes system depth should be adjusted to protect against brakeout of effluent) In clay type soils the trench side walls should be raked to bring slicked over areas back as near to original structure as possible. A light dusting of lime on the side walls is required to promote the soil structure.

Final Inspection

The following list of points are things that an inspector should look for before issuing an completion permit.

1) Is depth of the panels within guidelines?

2) Are drain lines level or less than 1/4 inch fall in ten feet?

3) Have seals been properly constructed?

4) Was the proper sand used in the trench backfill?

5) If in clay type soils were the side walls raked and limed?

(For Pumped Systems)

6) Have pump size, head pressure, and dose cycle been properly sized and set?

(Set dose cycle for 3.6 gallons per 16 inch high panel.)

Installer

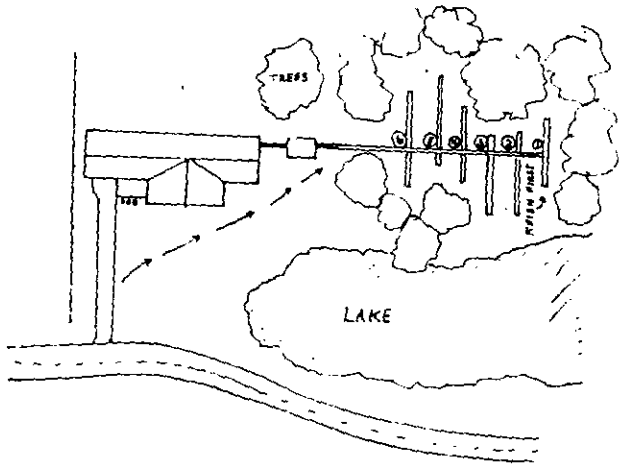
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more time. Many installers enjoy the change of working with panels, not handling gravel, and the satisfaction of knowing a system is being installed where previously a conventional system was not possible.

Ordering Materials

Enclosed on following two pages you will find an order sheet for the T & J Panel System and a materials chart for 16 inch high Panel System. The distributor in your area will lead you through these sheets when ordering or pricing the system. For information on the distributor located closest to you call 1-800-222-2577 (inside N.C.) or 704-872-9566. After ordering, your panels will be shipped to the job site banded together on pallets.

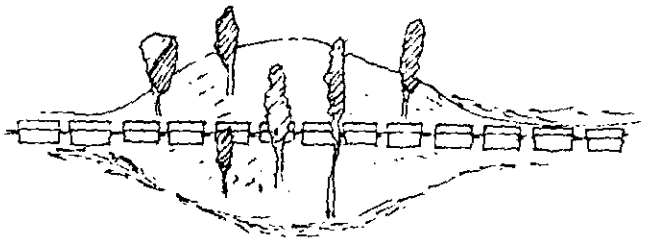
Installation Tips

Installation for multiple line systems should begin in the most confining area and be worked to the more open areas.

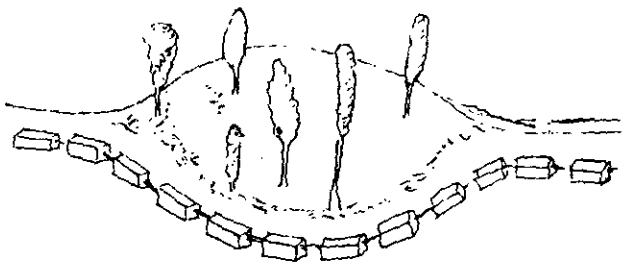


Above is an example of a multiple line installation. As you can see the installation should begin with the line marked 1 and proceed to 2, 3, then 4. This procedure will greatly ease material handling and backfilling. (Note sections of the drainlines should be left uncovered to allow for inspection of lines when area is confined and return access to lines is limited.)

On the following page are two examples of drain lines on sloping lots. The first drawing shows the drainline going through a slope making the center of the line deeper in the ground. This is not a desirable situation. The second drawing shows the drainline going around the slope keeping the trench depth and cover uniform for the entire length of the line. On slopes care should be given to avoid cutting away valuable top soil in an effort to make straight lines. Panel lines can be curved to almost any degree.



Wrong



Right

Digging The Trench

Start by shooting the grade and marking the contour. Then for a 16 inch panel add 28 inches to the shallowest or lowest grade that the trench must cross to obtain the trench bottom grade. Now dig the trench at the elevation derived, checking the grade frequently. The trench should be a minimum of two feet wide. With the trench open all sidewalls shall be raked to bring smeared areas back to their original structure before a light dusting of lime is applied. Now place a 6 inch layer of backfill sand in the trench and level to grade, then place a 1 x 4 or 6 inch board flat on it's side on top of the 6 inch layer of sand. Once more check the grade of the trench by shooting the top of the board. Once the grade boards have been set, the panels may be set into the ditch by hand or using the backhoe. Each panel weights about 155 pounds and placement by hand goes quickly. The panels should be placed about 6 inches apart in the trench to obtain equal spacing. Now place 10 to 12 pounds of clean particle sand (medium sand blasting sand) in the top chamber of each panel to form a bed of sand about one inch thick. Tar seal rope should be placed in the U outs to form seals as shown in earlier drawings. Once the tar rope is in place, a 24 inch section of two inch PR160 pipe is cut to span from the upper middle top chamber of the first panel to the upper middle chamber of the next panel. The tar seal rope that is used should be of tar or butyl that is soft and pliable to obtain a water tight seal. Now that the connection and sealing is complete a block cap is placed on each end of the panel covering all openings.(These will be delivered with the panels.) The cap block may well serve as an inspection port at some future date. The trench is ready to be backfilled to the top of the panel with the same backfill sand used in the trench bottom. With the sand to the top of the panel, trenches should be left for the sanitarian to inspect. Soil cover should be added after the final inspection.

Most Panel Systems are currently used due to space considerations and caution should be taken to preserve suitable soil structure and site conditions.

Materials Chart For 16 Inch Panels

Materials needed per panel:

- Three feet of half inch tar seal rope per panel.
- Two feet of two inch PR160 pipe per panel or same linear feet as line layout of pressure system of one and a quarter inch pipe. Add pipe for tie in of lines to tank and house.
- One hundred pounds of partical sand (sand blasting sand fine texture) per eight panels.
- Same linear feet of one by six boards as line length.
- Bag powder lime when in clay soils.

Panel and C-33 Sand fill

50 LF - 11 panels
8¼ tons sand

60 LF - 14 panels
10 tons sand

70 LF - 16 panels
11½ tons sand

80 LF - 18 panels
13¼ tons sand

90 LF - 21 panels
15 tons sand

100 LF - 23 panels
16½ tons sand

110 LF - 25 panels
18¼ tons sand

120 LF - 27 panels
20 tons sand

130 LF - 30 panels
21½ tons sand

140 LF - 32 panels
23 tons sand

150 LF - 34 panels
25 tons sand

160 LF - 37 panels
26½ tons sand

170 LF - 39 panels
28 tons sand

180 LF - 41 panels
30 tons sand

190 LF - 43 panels
31½ tons sand

200 LF - 46 panels
33 tons sand

T & J Panel Material Worksheet

Homeowner _____ County _____

Address _____

_____

Description of System _____

_____

_____

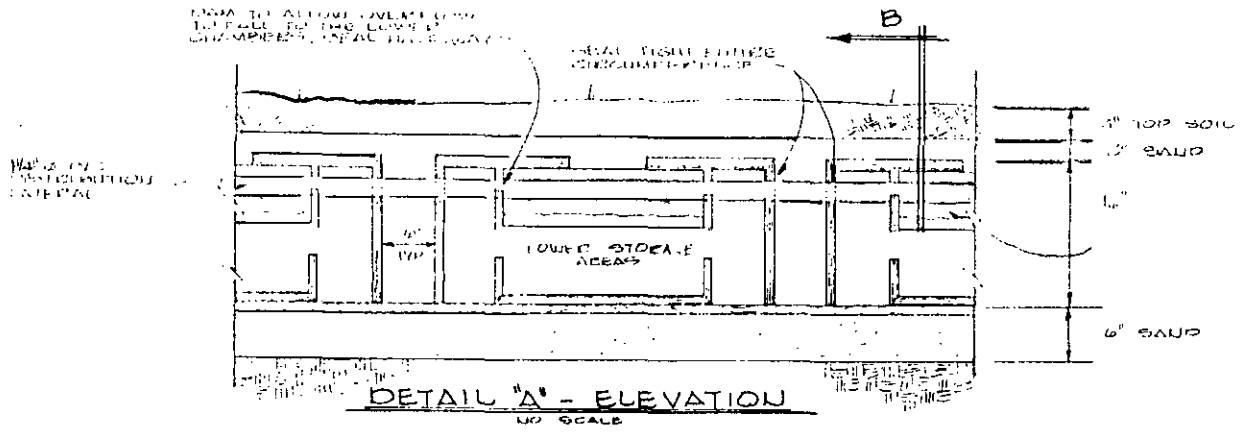
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partical Sand (100 lbs per 8 Panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____	1x4 or 1x6 Boards	_____
_____	Power Lime	_____
_____	Sep Tank _____ Gallon	_____
_____	Tar Seal for Tank	_____
_____	4" PVC Pipe Schedule 40	_____
_____	Distrobution Box	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Sub-total	_____
	Delivery Charge	_____
	Tax	_____
	Total	_____

Panels With Pressure Distribution

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

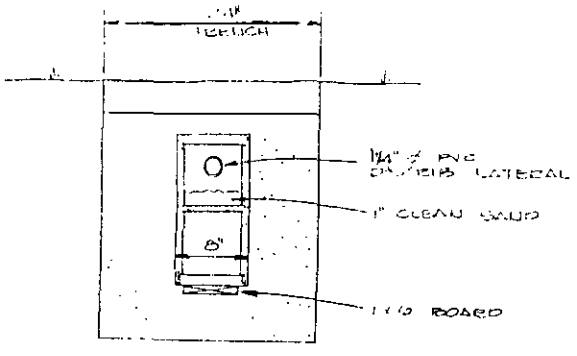
The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel holds 3.6 gallons. When the system has 34 panels and all the holes are the same size, then you would multiply 34 X 3.6 to get 122 gallon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

All valves and turn ups should be neatly capped, covered, and labled for future service. Pump tanks should be constructed as shown in drawing as to allow for service and or repairs.



DETAIL "A" - ELEVATION

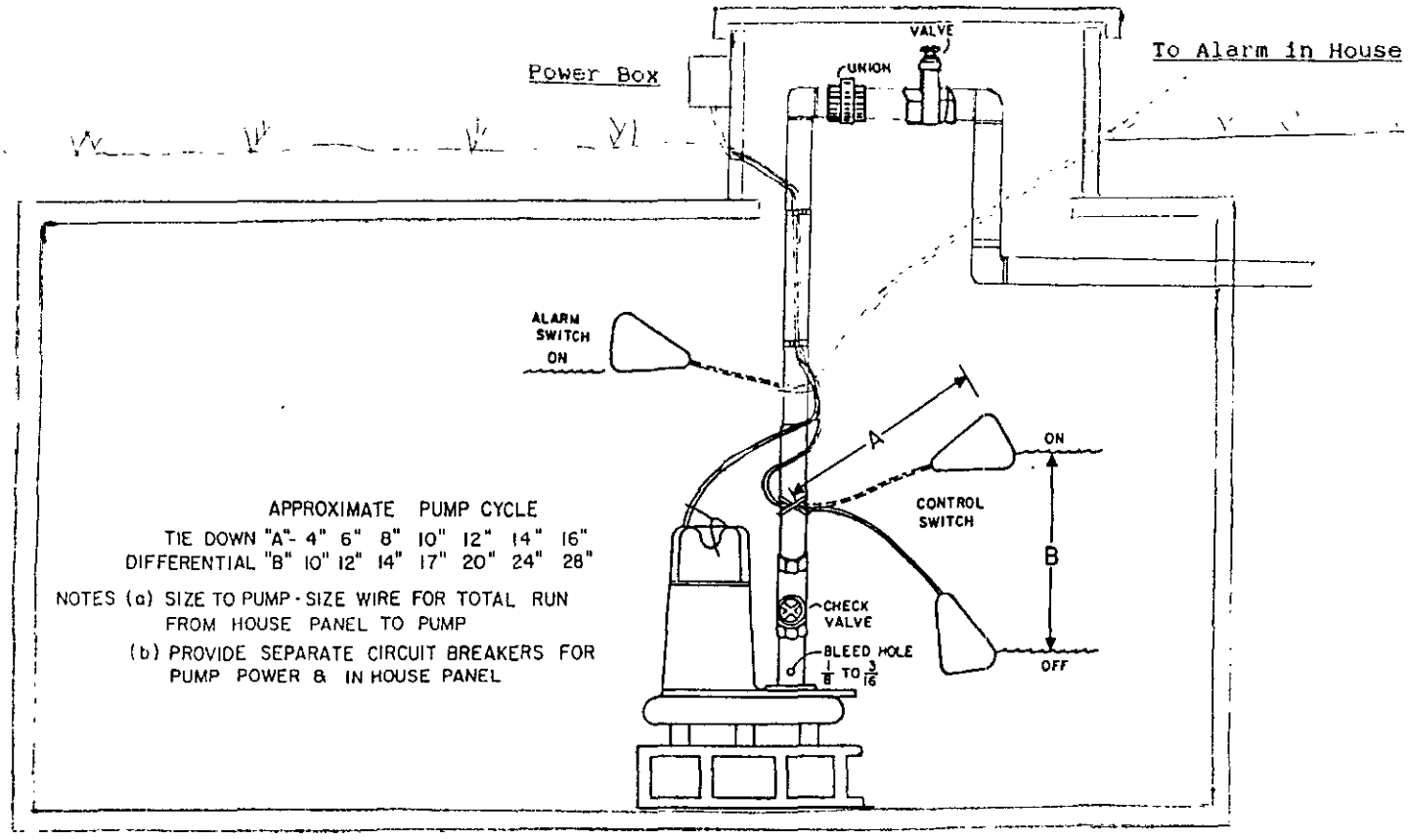
NO SCALE



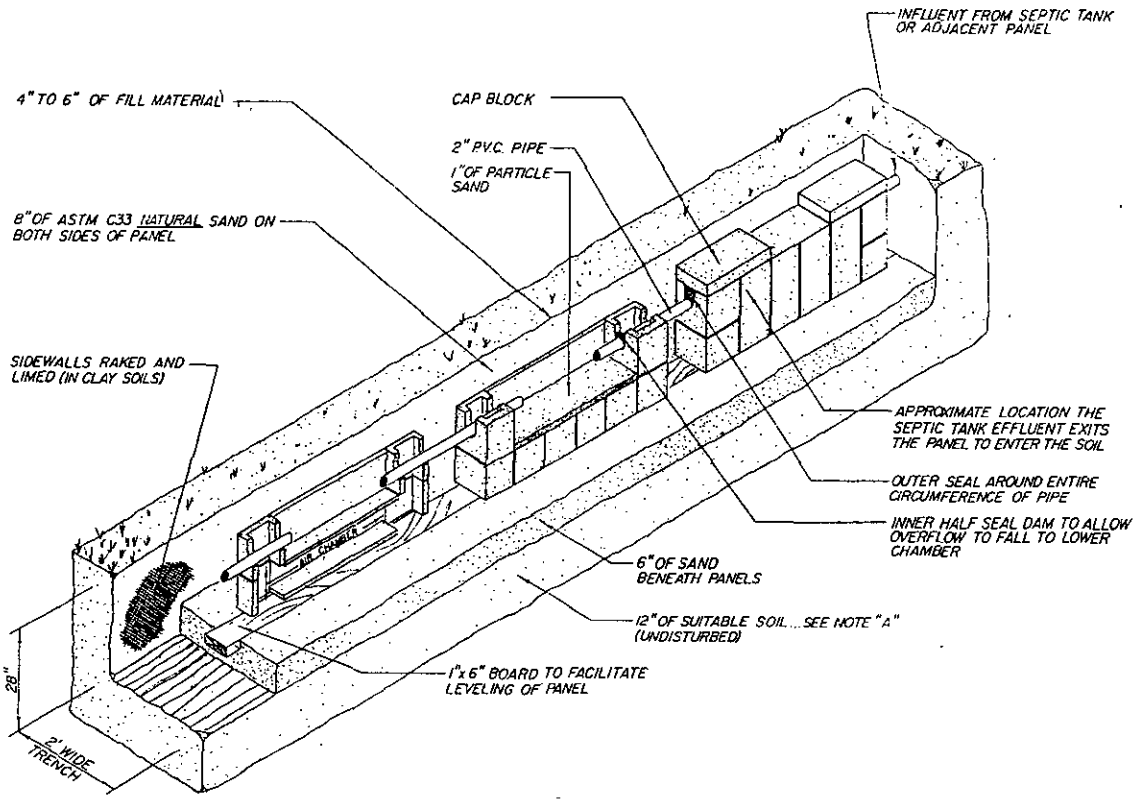
DETAIL "B" - SECTION

NO SCALE

Pump Tank Drawing

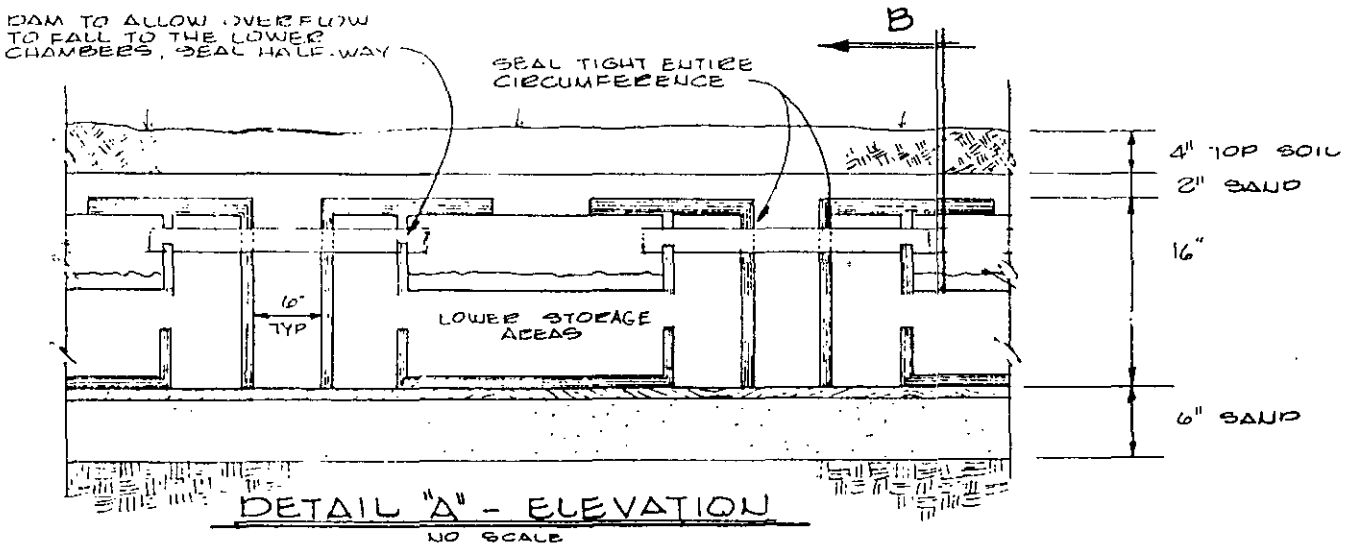


Isometric Drawing of a Segment of 16" T&J Panel Drainfield

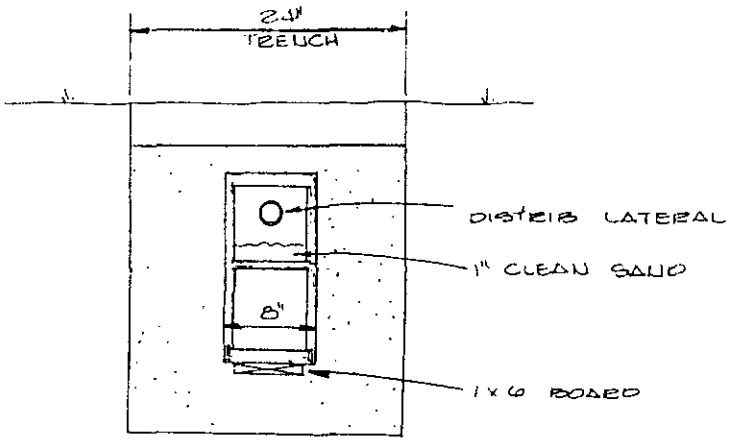


THE T. & J. PANEL
WASTE WATER TREATMENT SYSTEM
PATENT NUMBER 4013559

P.O. Box 288 • Statesville, North Carolina 28677
N.C. WATS 1-800-222-2577 • (704)872-9566



DETAIL "A" - ELEVATION
NO SCALE



DETAIL "B" - SECTION
NO SCALE

APPLICATIONS FOR IMPROVEMENT PERMITS
(NEW APPLICATIONS ONLY!)

FILE NUMBER: 6762A DATE RECEIVED: 11-6-90

SANITARIAN: Judy Kirk

INFORMATION TO COMPLETE FILE

Soil Report: Already in File ✓ Date Filed _____ Time _____

Charge Slip: Date Filed 11-7-90 Time 1:21

Applications (white only!): Date Filed 11-7-90 Time 1:21

Plot Plan: Date Filed _____ Time _____

Site Plan: Date Filed _____ Time _____

Address Form (Cty. Eng.): Date Filed 11-7-90 Time 1:21

Zoning Form: Date Filed _____ Time _____

Verification of Lot Division: Date Filed _____ Time _____

DataBase: Date Logged 11-7-90 Time 8:00

Lotus: Date Logged 11-7-90 Time @ 12:51

FILE AVAILABLE/COMPLETE FOR SANITARIAN: Date _____ Time _____

System Designed Received
Calculations Approved 1-14-91
Layout Approved 1-16-91

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: 6762 A

TC: 139-271-34

SERIAL: № 18871 ☐ L ☐ CRT

JOB LOCATION

① ADDRESS: 10521 (STREET NO.) LORELEI (STREET) PL. ② FILE:

③ JURISDICTION: MECK. Co. ④ TAX PARCEL NO.:

⑤ SUBDIVISION: BUTTERFIELD PARK ⑥ LOT: 55 ⑦ BLOCK:

OWNER

⑧ NAME: KEITH (FIRST) R. (MIDDLE) MOORE (LAST)

⑨ MAILING ADDRESS: C/O HANEY CONST. CO. P.O. BOX 25311

⑩ CITY: CHARLOTTE. ⑪ STATE: N.C. ⑫ ZIP: 28229

⑬ PHONE: (WORK) 536-2100 ⑭ (HOME)

REQUEST

This request is for a(n):

⑮ ☒ New permit ⑰ ☐ Authorization for mobile home exchange

⑯ ☐ Repair or alteration permit 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? 6 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: Joel F. Haney Agent

Date:

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
ENVIRONMENTAL HEALTH DIVISION

CHARGE SLIP

Date: 11-6-90

Name/Company: Keith R. Moore

Sanitation _____

Vector Control _____

O.P.W.D. ✓

Service: Dup Permit - New
10521 Lovelii Rlace
Tax # 139-271-34
File # 67624

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
PAID
NOV 6 1990

Fee: $ 200.00 CC

NOTICE:

A processing fee of $15.00 will be charged for all returned checks in accordance with N.C. General Statute 25-3-512.

Completed by

Collected by

TO: ENVIRONMENTAL HEALTH DEPT.
BUILDING STANDARDS DEPT.
DEPT. OF ENVIRONMENTAL PROTECTION/
SOLID AND HAZARDOUS WASTE

DATE 11/20/89

6762A

FROM: COUNTY ENGINEERING DEPARTMENT

EHD FILE _____ JURISDICTION CODE Mck

PARCEL NUMBER #139-271-34

ASSIGNED ADDRESS 10521 Lorelei Pl

EXISTING ADDRESS _____

PROJECT NAME VIA

THE ABOVE DESCRIBED LOCATION HAS BEEN CHECKED CONCERNING:

		APPROVED	DISAPPROVED
1.	SUBDIVISION REGULATIONS	/ /	/ /*
2.	FLOODWAY REGULATIONS	/ /	/ /*
3.	EROSION CONTROL REGULATIONS	/ /	/ /*
4.	PUBLIC UTILITY EASEMENT	/ /	/ /*
		PRESENT	NOT PRESENT
5.	PUBLIC UTILITY EASEMENT	/ /*	/ /
6.	PROPERTY FRONTS ON THOROUGHFARE	/ /*	/ /
7.	DRIVEWAY PERMIT REQUIRED	/ /*	/ /

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

REMARKS: Septic Tank

NOTE: THIS FORM MUST BE TURNED IN AT THE CASHIER'S 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

OPWEAR 06-88

NEW ADDRESS / /*

FORM 100

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: 6762 A

TC: 139-271-34

SERIAL: NC 18871 ☐ L ☐ CRT

JOB LOCATION

① ADDRESS: 10521 (STREET NO.) LORELEI (STREET) PL ② FILE:

③ JURISDICTION: MECK. CO. ④ TAX PARCEL NO.:

⑤ SUBDIVISION: BUTTERFIELD PARK ⑥ LOT: 55 ⑦ BLOCK:

OWNER

⑧ NAME: KEITH (FIRST) R. (MIDDLE) MOORE (LAST)

⑨ MAILING ADDRESS: C/O HANEY CONST. CO. P.O. BOX 25311

⑩ CITY: CHARLOTTE. ⑪ STATE: N.C. ⑫ ZIP: 28229

⑬ PHONE: (WORK) 536-2100 ⑭ (HOME)

REQUEST

This request is for a(n):

⑮ ☒ New permit ⑰ ☐ Authorization for mobile home exchange

⑯ ☐ Repair or alteration permit 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? 6 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: Jack F. Haney Agent

Date:

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.

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: 6762 A

TC: 129-271-34

SERIAL: 18879 ☐ L ☐ CRT

JOB LOCATION

① ADDRESS: 10521 (STREET NO.) LORELEI (STREET) Pl. ② FILE:

③ JURISDICTION: MECK. Co. ④ TAX PARCEL NO.:

⑤ SUBDIVISION: RITTERFIELD PARK ⑥ LOT: 55 ⑦ BLOCK:

OWNER

⑧ NAME: KEITH (FIRST) R. (MIDDLE) MOORE (LAST)

⑨ MAILING ADDRESS: % HANEY CUST. CO. P.O. BOX 75311

⑩ CITY: CHARLOTTE. ⑪ STATE: N.C. ⑫ ZIP: 28229

⑬ PHONE: (WORK) 536-3100 ⑭ (HOME)

REQUEST

This request is for a(n):

⑮ ☒ New permit ⑰ ☐ Authorization for mobile home exchange

⑯ ☐ Repair or alteration permit 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?

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WATER SUPPLY

㉘ Water supply from (present or proposed):

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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: Joel E. Keith Agent

Date:

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 as SIR, ICAR(S) or 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.

㉒-㉖ .....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.**

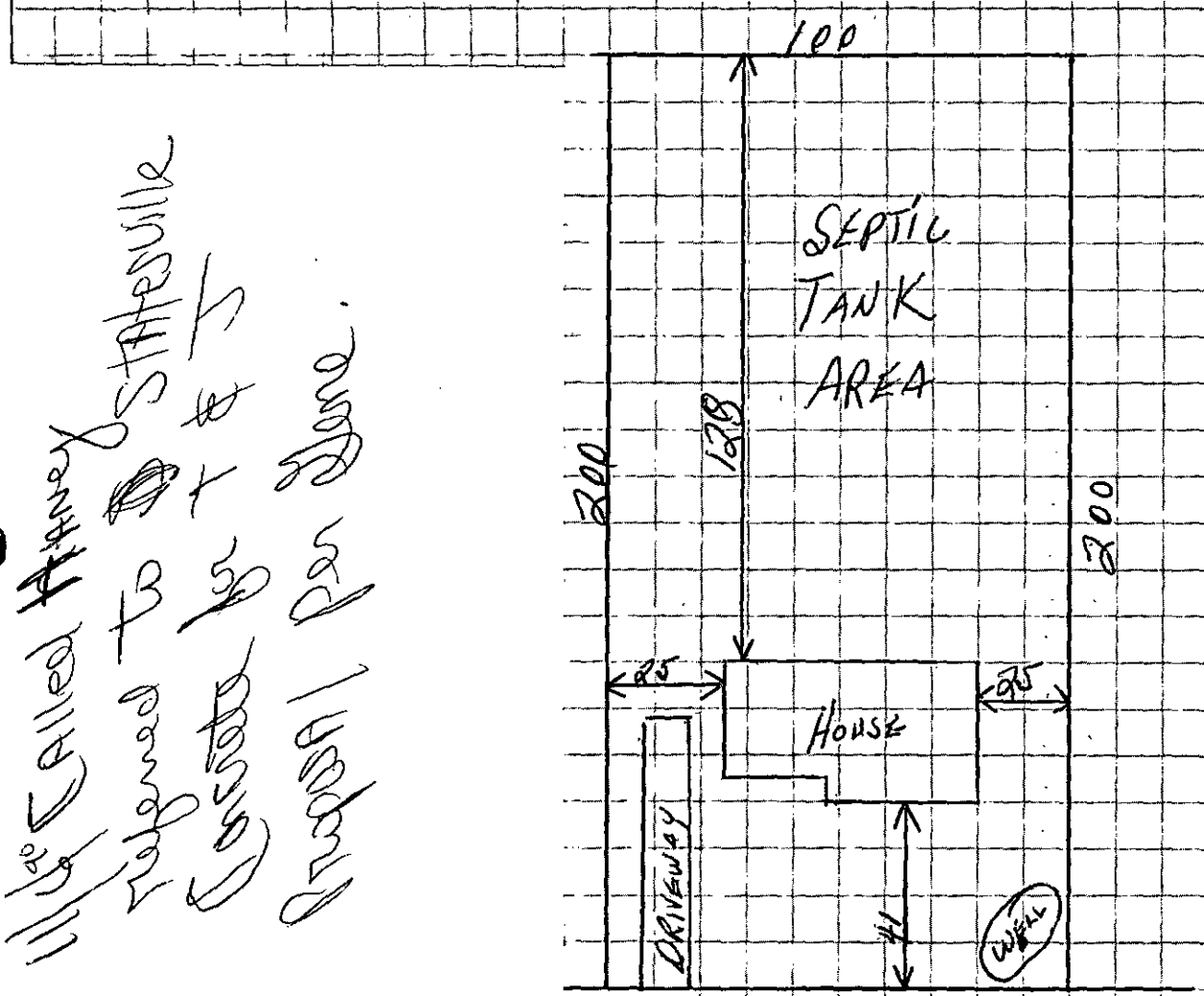
PROPOSED PLOT PLAN

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

FILE: 6762 A

TC: 139-271-34

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



LORELEI Pl.

APPROVAL DATE _____

White - Health Department's Copy Canary - Environmentalist's Copy Pink - Owner's Copy

Mecklenburg County
Health Department

June 5th, 1990

Keith Moore
PO Box 25311
Charlotte, NC 28229

RE: Property located at Lorelei Road
FILE: 6762A
PARCEL: 13927134

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. The results of this investigation showed the property to be classified UNSUITABLE for the installation of such a system. A copy of the Site Evaluation Report (Serial Number 17930) is enclosed.

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

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

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

Very truly yours,

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

Enclosure (2)

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

APPLICATION FOR SOIL INVESTIGATION

MECKLENBURG COUNTY · ENVIRONMENTAL HEALTH ·

1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

(OFFICE USE ONLY)

FILE: 6762 A

TC: 129-271-34

☐ PC ☐ REPT

JOB LOCATION

① ADDRESS: 10521 LORELEI Rd.

② SUBDIVISION: BUTTERFIELD PARK ③ LOT: 55 ④ BLOCK:

⑤ PARCEL REFERENCE: BOOK NO.: PAGE NO.: PARCEL NO.:

⑥ DEED REFERENCE: BOOK NO.: PAGE NO.:

OWNER

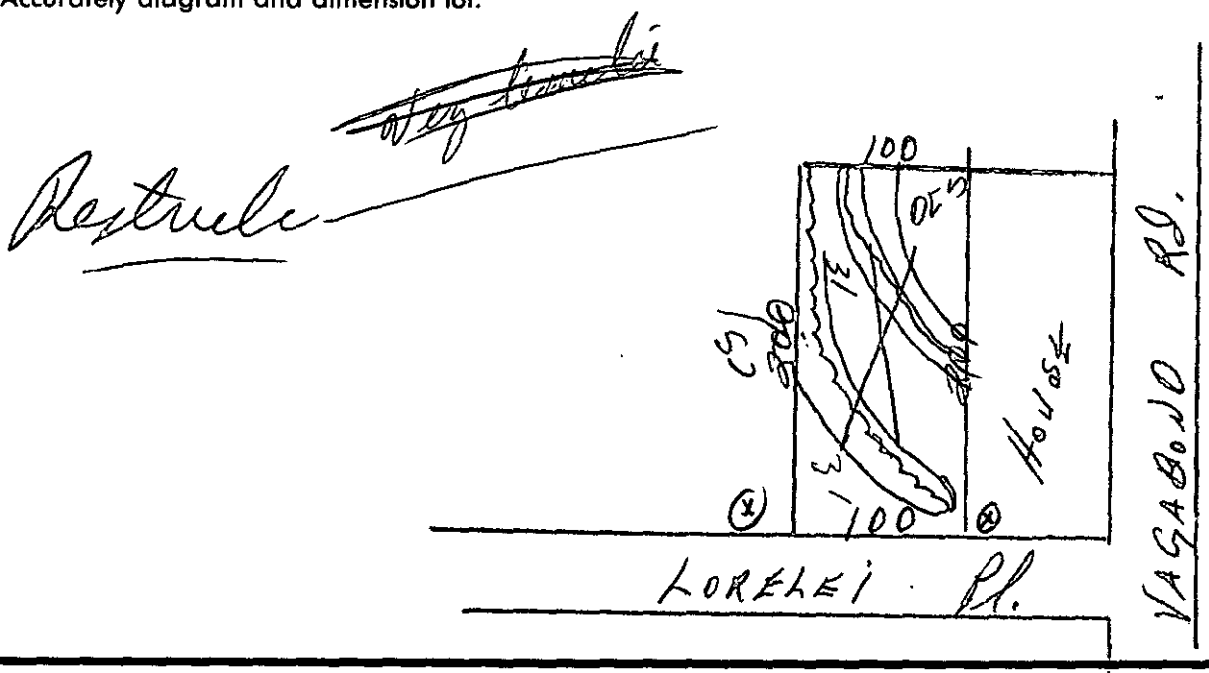
⑦ NAME: KEITH (FIRST) R. (MIDDLE) MOORE (LAST)

⑧ MAILING ADDRESS: c/o HANEY REALTY Co. P.O. Box 25311

⑨ CITY: CHARLOTTE ⑩ STATE: N.C. ⑪ ZIP: 28229

⑫ PHONE: (WORK) 536-2100 (HOME)

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 DEPARTMENT OF ENVIRONMENTAL HEALTH to enter onto the property for the purpose of processing this request.

Signed: Keith R. Moore
by Joe F. Haney Agent

Date: May 16, 1990

WHITE - ENVIRONMENTAL HEALTH DEPARTMENT'S COPY ● CANARY - ENVIRONMENTALIST'S COPY ● PINK - OWNER'S COPY

MECKLENBURG COUNTY HEALTH DEPARTMENT
SITE EVALUATION REPORT
SERIAL NUMBER 17930

File: 6762A Action 2

Parcel: 139-271-34 ☐ PC

Location: 10521 Lorelei Place

Subdivision: Butterfield Park

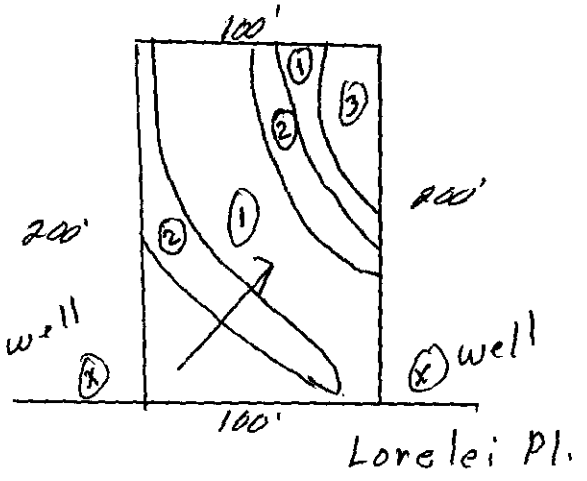
Lot: Block: 5-5 Acres: .46

Owner: Keith R. Moore
Address: % Haney Realty Co.
P. O. Box 25311
Charlotte, N. C. 28229

Comments: _____

Described by: William B. Marlin

Date: 6-1-90



*** 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 6-15%	S PS (U) complex slopes	S PS (U) Depression	S PS U	S PS U	S PS U
Texture	S (PS) U Clay	S PS U —	S PS U —	S PS U	S PS U	S PS U
Structure	S (PS) U Blocky	S PS U —	S PS U —	S PS U	S PS U	S PS U
Drainage	S (PS) U 7-36" To water	S PS U —	S PS U —	S PS U	S PS U	S PS U
Depth	S (PS) U 7-36"	S PS U —	S PS U —	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U 7-36"	S PS U —	S PS U —	S PS U	S PS U	S PS U
Available Space	S PS (U) Restricted	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	III Cecil-Urban	complex slopes	Depression			
Area Classification	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

MECKLENBURG COUNTY HEALTH DEPARTMENT
SITE EVALUATION REPORT
SERIAL NUMBER 17930

File: Action 2

Parcel: ☐ PC

Location: 10521 Loreloi Place

Subdivision: Butterfield Park

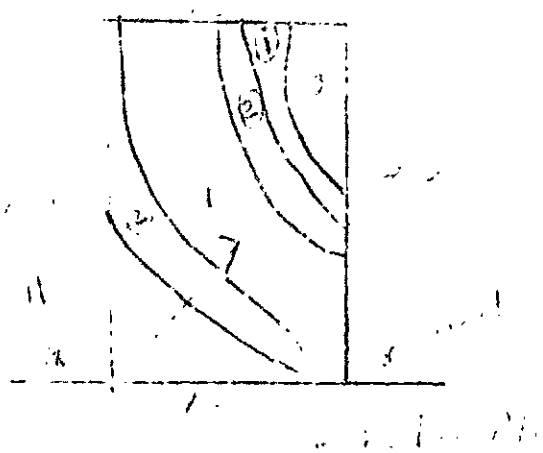
Lot: Block: Acres:

Owner: Keith R. Moore
Address: % Perry Realty Co.
P. O. Box 35311
Charlotte, N. C. 28229

Comments: _____

Described by: _____

Date: _____



***** 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	S PS U	S PS U	S PS U	S PS U	S PS U
Texture	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Structure	S PS U	S PS U	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	S PS U	S PS U	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						
Area Classification	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U

APPLICATION FOR SOIL INVESTIGATION

MECKLENBURG COUNTY · ENVIRONMENTAL HEALTH ·

1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

(OFFICE USE ONLY)

FILE: 6762A

TC: 129-271-34

☐ PC ☐ REPT

JOB LOCATION

① ADDRESS: 10521 LORELEI Rd.

② SUBDIVISION: BUTTERFIELD PARK ③ LOT: 55 ④ BLOCK: _____

⑤ PARCEL REFERENCE: BOOK NO.: _____ PAGE NO.: _____ PARCEL NO.: _____

⑥ DEED REFERENCE: BOOK NO.: _____ PAGE NO.: _____

OWNER

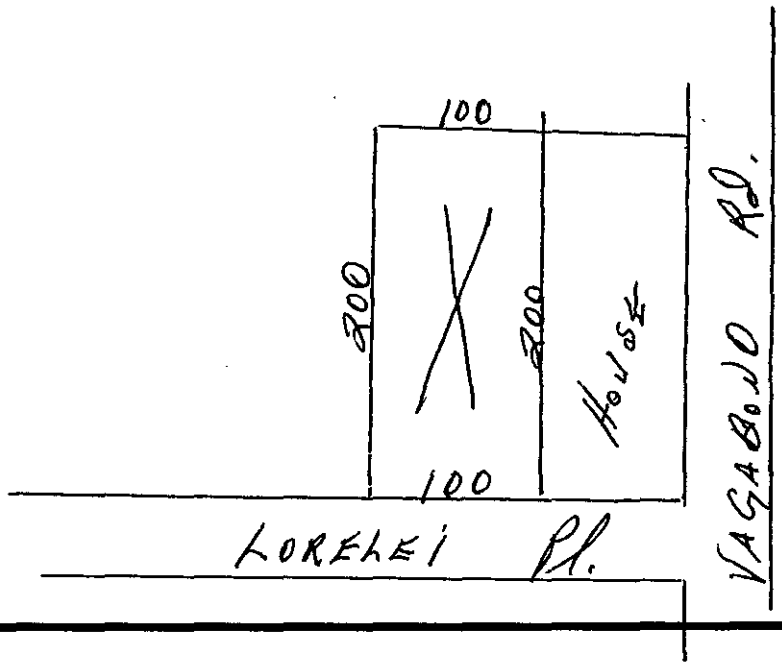
⑦ NAME: KEITH (FIRST) R. (MIDDLE) MOORE (LAST)

⑧ MAILING ADDRESS: c/o HANEI REALTY Co. P.O. Box 25311

⑨ CITY: CHARLOTTE ⑩ STATE: N.C. ⑪ ZIP: 28229

⑫ PHONE: (WORK) 536-2100 (HOME) _____

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 DEPARTMENT OF ENVIRONMENTAL HEALTH to enter onto the property for the purpose of processing this request.

Signed: Keith R. Moore

Date: by Jan F. Edney Agent
May 16, 1990

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

WHITE - ENVIRONMENTAL HEALTH DEPARTMENT'S COPY ● CANARY - ENVIRONMENTALIST'S COPY ● PINK - OWNER'S COPY

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION

CHARGE SLIP

Date: 5-16-90

Name/Company: Keith or Terry Moore

Sanitation _____

Vector Control _____

O.P.W.D. ✓

Service: S/T - 1 AC

10521 Lorelei Pl.

MECKLENBURG COUNTY
DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
PAID
MAY 16 1990

File # 6762A

CK # 5366

Fee: $ 40.00 $40.00

NOTICE:

A processing fee of $15.00 will be charged for all returned checks in accordance with N.C. General Statute 25-3-512.

Jackie Abernethy
Completed by

Collected by

BK: 06488 PG: 0444/0444 #:0378 6.00

REGISTERED MAR/28/1991 03:49PM ANNE A. POWERS REGISTER OF DEEDS MECK. CO. N.C.

FILE NO. 6762A

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

ACKNOWLEDGEMENT OF REQUEST BY OWNER FOR RECLASSIFICATION OF SITE FROM "UNSUITABLE" TO "PROVISIONALLY SUITABLE" UNDER 10 NCAC 10A .1948(c)

The undersigned, Zoe N. Schmidt

owner of property located at 10521 LORELEI PL. CHARLOTTE NC. 28227

(the site") and described in an instrument recorded in Book 6470 at Page 0144/0145, Mecklenburg Public Registry,

hereby acknowledges that he applied to the Mecklenburg County Department of Environmental Health ("the Department") for a permit to install a septic tank sewage disposal system on the site; that the Department evaluated the site for suitability for such a system in accordance with the regulations promulgated by the North Carolina Commission for Health Services at 10 NCAC 10A .1934 et seq; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requested pursuant to 10 NCAC 10A .1948(c) that the Department reclassify the site as "provisionally suitable" in light of the particular septic tank system proposed by the undersigned; that the Department considered various studies, data and other information which indicate to the Department that the septic tank system proposed by the undersigned can reasonably be expected to function satisfactorily and thus that the limitations specified in 10 NCAC 10A .1948(c)(1), (2), and (3) can be made; and that the Department therefore reclassified the site as "provisionally suitable" and issued an appropriate permit for such proposed septic tank system.

The undersigned further acknowledges that the proper design, construction, operation and maintenance of such septic tank system is his responsibility and that neither the Department nor its officials, employees or agents warrant or guarantee that the said system installed pursuant to the permit issued by the Department will function in a satisfactory manner for any given period of time or that the Department, its officials, employees or agents assume any liability for any damages of any kind which are caused, or which may be caused, by a malfunction of such system.

The undersigned further agrees for himself, his heirs and assigns that he shall indemnify and hold harmless the Department, its employees and officials, as well as Mecklenburg County and its employees and officials, for any damages or other claims of any person or persons whatsoever arising out of the installation, operation, or failure of said septic tank system.

The undersigned further agrees for his heirs and assigns that, in the event any septic tank system installed under authority of the aforesaid permit fails to perform adequately in any respect, he will take whatever measures are required to correct same; or if such is impossible will discontinue use of said system immediately.

Use of the singular masculine pronoun forms herein shall be deemed to also include the plural and feminine forms as the context may require.

This document shall be placed on the public records of the Register of Deeds of Mecklenburg County and indexed therein under the grantor index in the name or names of the undersigned, and the foregoing acknowledgements shall henceforth be binding on all persons having any right, title, or interest in the site.

This 28th day of March, 1991.

Zoe N. Schmidt (SEAL)

(SEAL)

NOTARY PUBLIC

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, Martha S. Clark, a Notary Public for said County and State, do hereby certify that Zoe N. Schmidt personally appeared before me this date and acknowledged the execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 28th day of March, 1991.

Martha S. Clark
Notary Public

Commission Expires: August 23, 1995

State of North Carolina, County of Mecklenburg
The foregoing Certificate(s) of Martha S. Clark

Notary(ies) Public is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

ANNE A. POWERS, REGISTER OF DEEDS

By Mary H. Casey Deputy - Register of Deeds

Notary Public

Commission Expires:

DRAWN BY & MAIL TO
ROBERT SCHMIDT
8512 FATIMA PL.
CHARLOTTE, N.C. 28227

ENVIRONMENTAL HEALTH
DIVISION
APR 1 [illegible] 199[illegible]

2/1/91

5/20/91

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Date: December 18, 1990

From: T J Systems
P.O. Box 73
Scotts, N.C. 28699

To: Keith Moore c\o Joe Haney
P.O. Box 25311
Charlotte, N.C. 28229
Phone 704-

Subject: ~~Lot on~~ Lorelei Road Mecklenburg County
File # : 6762A
Parcel : 13927134

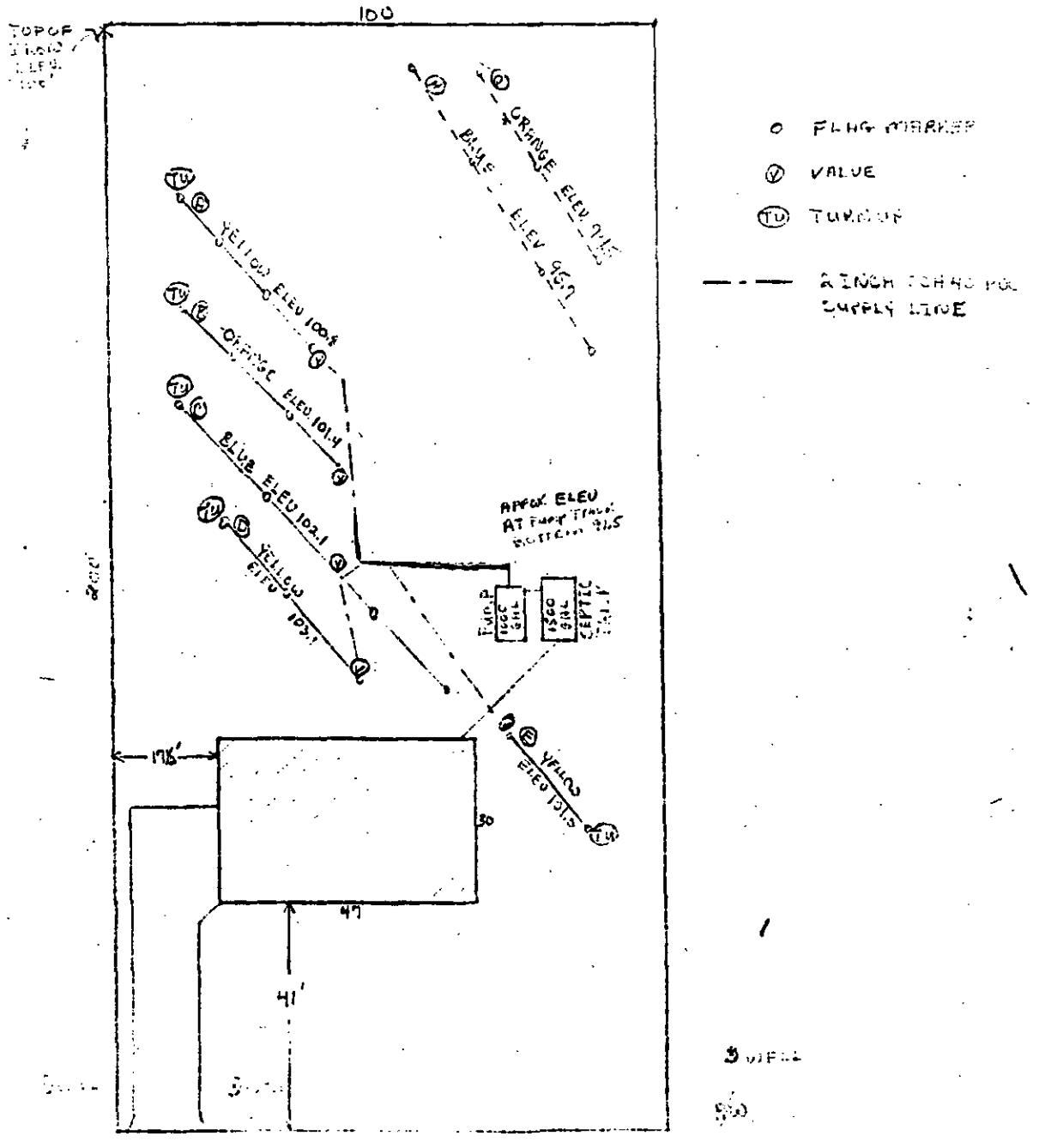
System type: 16 inch T & J Panel System with pressure distribution.

This system is designed for a three bedroom house at an application rate of .3 gpd. 360/.3 = 1200/3 = 400 LF of conventional drainfield multiplied by .5 = 200 LF of 16 inch T & J Panel System. This system shall be installed in accordance with all state and local rules and regulations and in compliance manufacturer's installation guidelines. Soil evaluation was supplied by the county.

House placement on this lot is very critical as to the site approval for a T & J panel system due to space restrictions. House shall be place as noted on the drawing to insure proper space requirements.

FILE # 6762A
DATE 12-16-90

Yellow Canal



Line	# Panel	# Hole Per Panel	Size Hole	Line Head	Line Length	Hole Flow	Per Panel Line Flow min
A	8	one	5/32	3.0ft	35 '	.50	4.00
B	9	one	5/32	3.0ft	40 '	.50	4.50
C	16	one	5/32	3.0ft	70 '	.50	8.00
D	8	one	5/32	3.0ft	35 '	.50	4.00
E	5	one	5/32	3.0ft	20 '	.50	2.50
G	repair				40 '		
H	repair				60 '		
		NOTE: Only 50% repair space available					
Totals	46				200'		23.00

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 1.98
Total lift = 14.60 (103.10 + 3 - 91.50 = 14.60) elev.
TDH = 16.58
20% margin = 21 ft (16.58 / .8 = 20.73 = 21 ft)

Pump Size: 29 (23.0/.8) gallon per minute at 21 feet of head.

Pump cycle should be 7.2 min or 165 gallons.

Note: Each line shall have a globe valve at the start of the line for pressure adjustment. Each valve or gruop of valves shall be placed inside a plastic valve box with a lid at ground level. Turn ups shall be cut off just below ground surface and covered with a plastic cup and cover. The line shall be capped with a threaded fitting and plug. The ends that are used for setting the heads shall be marked as to the line that they go to and saved for future system adjustment. Mark each valve and turn up end with marker to show what valve goes with what turn up.

Friction loss:

supply line = 150 lf = 1.50 * 1.10 = 1.65

fittings = 1.65 * .2 = 0.33

total 1.98

Mecklenburg County
Health Department

June 5th, 1990

Keith Moore
PO Box 25311
Charlotte, NC 28229

RE: Property located at Lorelei Road
FILE: 6762A
PARCEL: 13927134

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. The results of this investigation showed the property to be classified UNSUITABLE for the installation of such a system. A copy of the Site Evaluation Report (Serial Number 17930) is enclosed.

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

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

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

Very truly yours,

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

Enclosure (2)

...ATION REPORT
JMBER 17930

Parcel: 139-271-34

☐ PC

.on: 10521 Lorelei Place

.bdivision: Butterfield Park

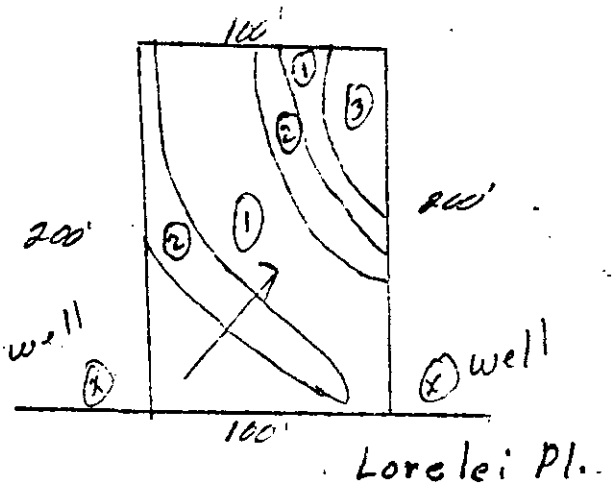
ot: Block: 5-5 Acres: .46

)wner: Keith R. Moore
ddress: % Haney Realty Co.
P. O. Box 25311
Charlotte, N. C. 28229

omments: _____

escribed by: William R. Meeks

ate: 6-1-90



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

ACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
opography	(S) PS U 6-15%	S PS (U) complex slopes	S PS (U) Depression	S PS U	S PS U	S PS U
exture	S (PS) U Clay	S PS U —	S PS U —	S PS U	S PS U	S PS U
ructure	S (PS) U Blocky	S PS U —	S PS U —	S PS U	S PS U	S PS U
rainage	S (PS) U 7-36" To water	S PS U —	S PS U —	S PS U	S PS U	S PS U
epth	S (PS) U 7-36"	S PS U —	S PS U	S PS U	S PS U	S PS U
estrictive Horizons	S (PS) U 7-36"	S PS U —	S PS U —	S PS U	S PS U	S PS U
ailable Space	S PS (U) Restricted	S PS U —	S PS U —	S PS U	S PS U	S PS U
ther (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
oil Group/Series	IIIe Cecil-Urban	complex slopes	Depression			
ea Classification	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

Lorraine Whitlock

Date: December 18, 1990

From: T J Systems
P.O. Box 73
Scotts, N.C. 28699

To: Keith Moore c\o Joe Haney
P.O. Box 25311
Charlotte, N.C. 28229
Phone 704-

Subject: Lot on Lorelei Road Mecklenburg County
File # : 6762A
Parcel : 13927134

System type: 16 inch T & J Panel System with pressure distribution.

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House placement on this lot is very critical as to the site approval for a T & J panel system due to space restrictions. House shall be place as noted on the drawing to insure proper space requirements.

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G	repair				40 '		
H	repair				60 '		
		NOTE: Only 50% repair space available					
Totals	46				200'		23.00

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 1.98
Total lift = 14.60 (103.10 + 3 - 91.50 = 14.60) elev.
TDH = 16.58
20% margin = 21 ft (16.58 / .8 = 20.73 = 21 ft)

Pump Size: 29 (23.0/.8) gallon per minute at 21 feet of head.

Pump cycle should be 7.2 min or 165 gallons.

Note: Each line shall have a globe valve at the start of the line for pressure adjustment. Each valve or gruop of valves shall be placed inside a plastic valve box with a lid at ground level. Turn ups shall be cut off just below ground surface and covered with a plastic cup and cover. The line shall be capped with a threaded fitting and plug. The ends that are used for setting the heads shall be marked as to the line that they go to and saved for future system adjustment. Mark each valve and turn up end with marker to show what valve goes with what turn up.

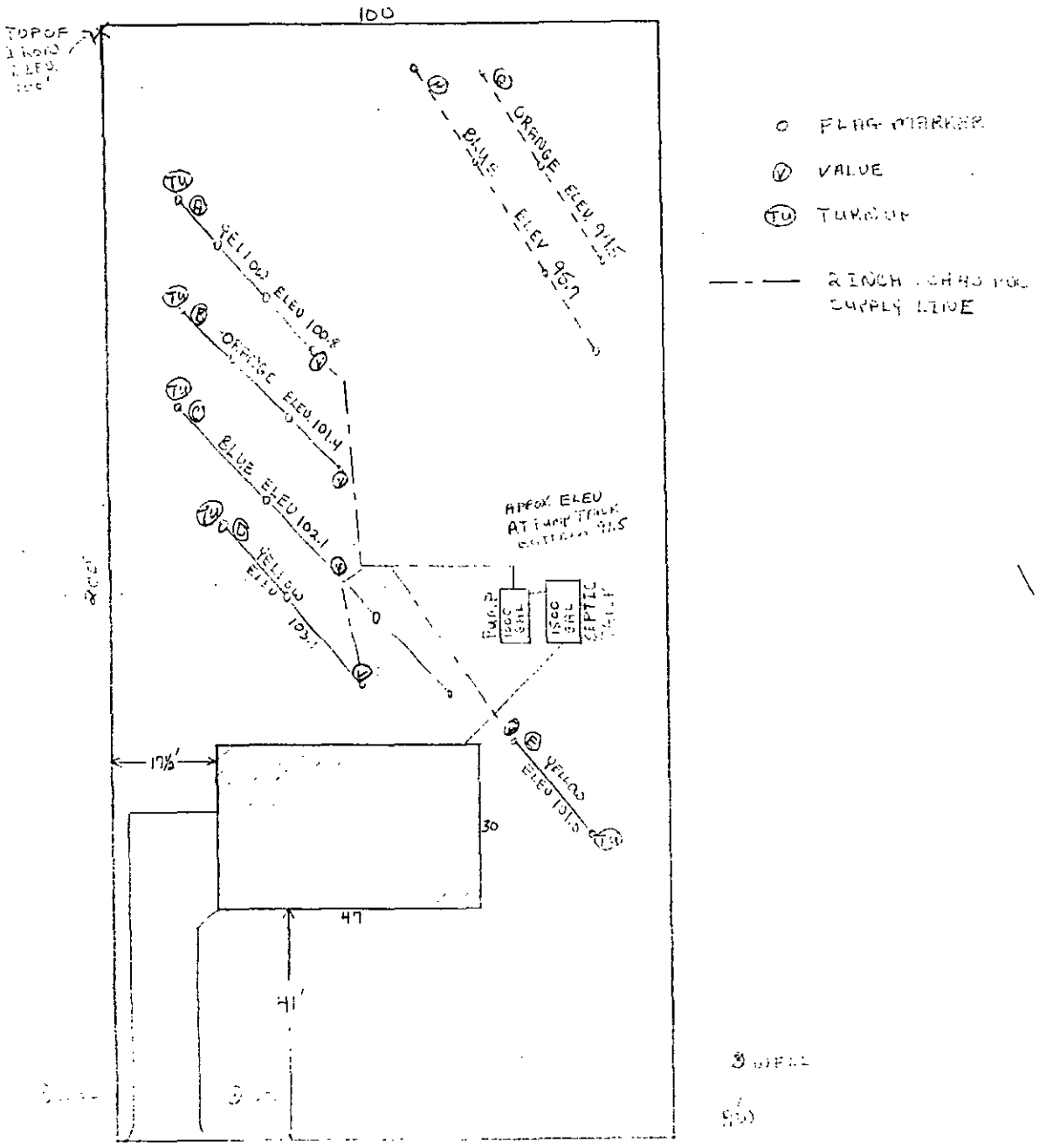
Friction loss:

supply line = 150 lf = 1.50 * 1.10 = 1.65

fittings = 1.65 * .2 = 0.33

total 1.98

MECKLENBURG COUNTY
FILE# 6962A
DATE 12-16-90



Mecklenburg County
Health Department

June 5th, 1990

Keith Moore
PO Box 25311
Charlotte, NC 28229

RE: Property located at Lorelei Road
FILE: 6762A
PARCEL: 13927134

Dear Sir:

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

Very truly yours,

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

Enclosure (2)

ATION REPORT
JMBER 17930

Parcel: 139-271-34

☐ PC

on: 10521 Lorelei Place

ubdivision: Butterfield Park

ot: Block: 5-5 Acres: .46

Owner: Keith R. Moore
ddress: % Haney Realty Co.
P. O. Box 25311
Charlotte, N. C. 28229

omments: _____

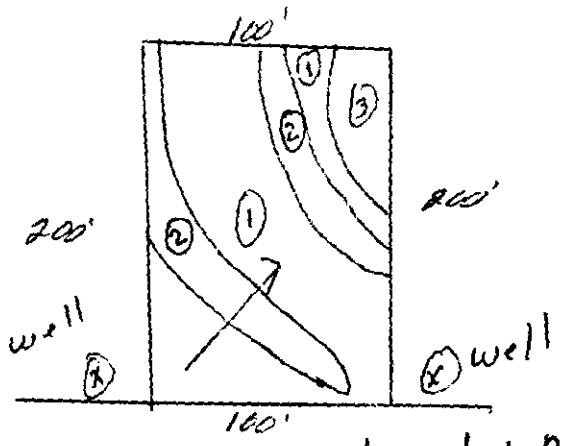
escribed by: William R. Meekins

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exture	S (PS) U Clay	S PS U	S PS U	S PS U	S PS U	S PS U
ructure	S (PS) U Blocky	S PS U	S PS U	S PS U	S PS U	S PS U
ainage	S (PS) U To 7-36" water	S PS U	S PS U	S PS U	S PS U	S PS U
epth	S (PS) U 7-36"	S PS U	S PS U	S PS U	S PS U	S PS U
estrictive Horizons	S (PS) U 7-36"	S PS U	S PS U	S PS U	S PS U	S PS U
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her (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
il Group/Series	III Cecil-Hills	complex slopes	Depression			
ea Classification	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U	S PS U

DESIGN, INSTALLATION AND MAINTENANCE

OF THE

T & J PANEL WASTEWATER TREATMENT SYSTEM

FOR

SANITARIANS

AND

SEPTIC TANK INSTALLERS

Although this manual is sectioned for specific user groups, we at T & J Panel suggest that you familiarize yourself with the complete manual.

Sanitarians

In the early days of the T & J Panel System, when it was still considered an experimental system, the primary reason for permitting the Panel System was because of insufficient space for a conventional system. Now with inclusion in the Sewage Regulations(10NCAC 10A .1956(3)(a)(ii)), the Panel System should be considered when a quality effluent may be needed, space is limited, usable soil is limited, or there are indications that at some future time, space may be needed for other uses. When there is a trend for added development such as additions to homes, pools, or other special landscaping development the T & J Panel System may prevent insufficient space later. As an example, there was a subdivision where three of five homes in the same block added in-ground pools. Each of these pools impacted the existing nitrification lines. As a sanitarian, if you can foresee such a trend developing, discuss the Panel System with the home owner.

As noted in the regulations, the PPBPS is only permitted where soils are suitable for a conventional system, however, only one-half of the space is needed. The Panel System will allow the use of the best soils on the lot. This system may be gravity fed or pumped using the LP Panel System as described. Most of the concepts for a T & J Panel layout are the same as for a conventional system. The biggest differences are areal area needs and quality of effluent being introduced into the soil.

Conversion

A three bedroom house with a 0.4 gpd application rate. (First three steps are the same as the conventional line)

1) 120 gallons per bedroom x 3 bedrooms = 360 gallons per day design flow rate.

2) 360 flow rate/0.4 application rate = 900 sq. ft. of trench bottom.

3) 900 sq. ft./3 ft. wide trench = 300 lineal feet of conventional system.

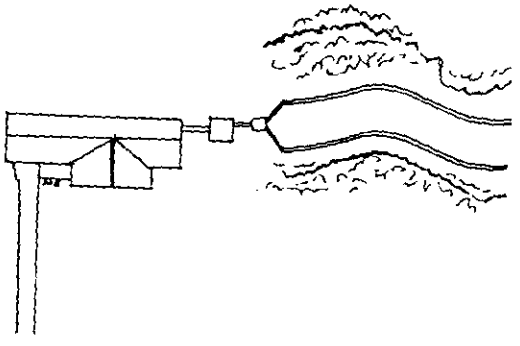
This conventional layout requires 2700 sq. ft. of area on the lot and equal space for repair for a total of 5400 sq. ft. of suitable and usable area. To calculate the T & J Panel System size, the above calculations must be made with an additional fourth step as described in 10NCAC 10A .1956 (3)(a)(ii)(B) for a PPBPS (the T & J Panel System)

4) 300 lineal feet of conventional system x 0.5 for a 16 inch high Panel System = 150 lineal feet of T & J Panel trench.

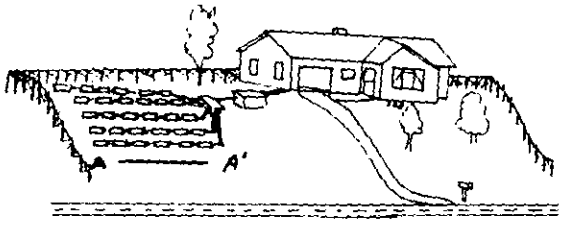
A Panel System requires only a 1200 sq. ft area on the lot for the system and equal area for repair. With the Panel System the installation and repair can go into the same space as the initial area required by a conventional gravel trench system.

Window Effect

Areal space should always be a consideration for any system, however, it is especially notable with the Panel System as with any system that reduces the size of the areal area drainfield. The following is a simplistic example of this concept.



RIGHT

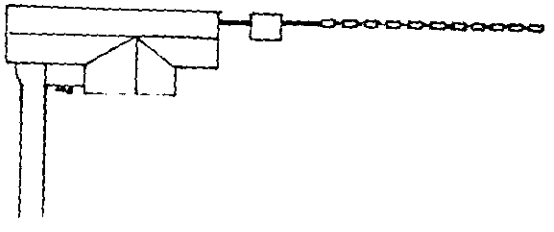


WRONG

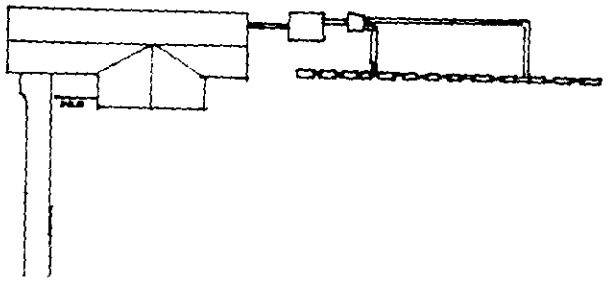
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

Distribution

Another extreme would be the use of a long single trench fed from only one end. In the first example, below the areal space is good and the chance of hydraulic overloading is greatly reduced. However downline distribution in the panel line will not give optimum treatment.



WRONG



RIGHT

In the lower example we see that the trench has been feed from multiple points. Because the Panel lines are put in as level as possible, never exceeding 1/4 inch of fall in 10 feet of run, they feed both ways equally. T & J recommends that no gravity line exceed 50 feet, unless it is fed from multiple points. In both of these examples, we are specifying the Panel System, but the logic applies to the conventional system as well.

COUNTY HEALTH DEPARTMENT

(SEPTIC TANK) IMPROVEMENTS PERMIT AND CERTIFICATE OF COMPLETION
(Ground Absorption Sewage Disposal System -- G. S. Chapter 130-A Article 11)

OWNER OR CONTRACTOR _____ DATE _____ PERMIT NO. _____

PHONE: Business _____ Home _____

LOCATION _____

_____ S. R. No. _____

SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

House (✓) Mobile Home ( ) Business ( ) Other _____

No. Bedrooms 3 No. Bathrooms 2 1/2

Garbage Disposal Unit N/A Yes ( ) No ( )

Auto. Dishwasher Yes (✓) No ( )

Auto. Wash. Machine Yes (✓) No ( )

Site Suitable Yes (✓) No ( )

Lot Area _____

Character & Porosity of Soil clay loam over clay

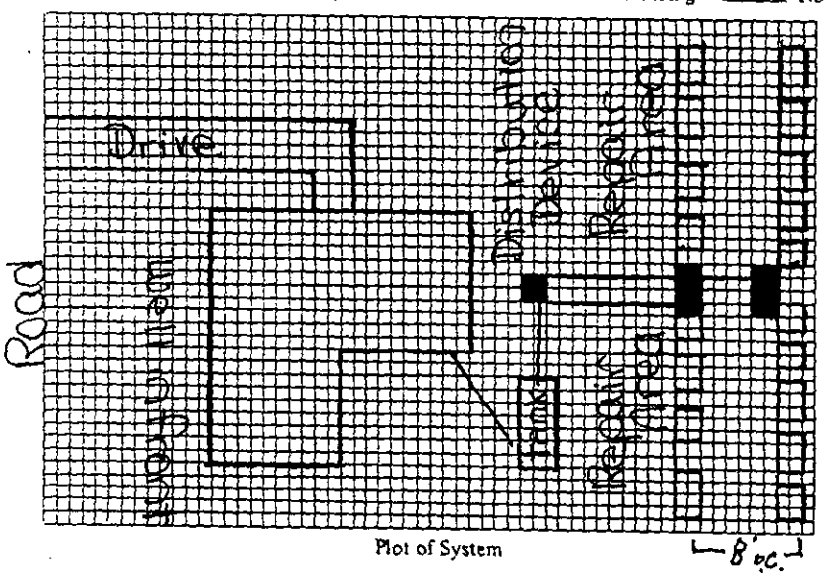
Percolation Rate 0.4 gal/ft²/day

Topography 6% slope

Depth to Water Table > 60"

Rock or other impervious formations none

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement



Plot of System

Size of Tank 1000 Gals.

Nitrification Field:
No. of Lines (2) 75' lines of
Sq. Ft. 900 Linear Ft. 150 trenches
Depth of Stone in Lines 24" of Stone

Water Supply: Individual (✓)
Public ( )

Installed by _____

I understand and agree to install septic tank system as specified on this Improvements Permit.

Signed: _____

IMPROVEMENTS PERMIT BY _____

COMMENTS: 2 lines with 17 panels each line. flow split by flow divider. 2' wide and 75' long each split in middle by D-box. 25 tons sand

CERTIFICATE OF COMPLETION BY _____ DATE _____

EXISTING SYSTEM CHECKED BY: _____ DATE _____

CONSTRUCTION MUST COMPLY WITH ALL OTHER APPLICABLE STATE AND LOCAL REGULATIONS.

Permit is VOID if any unauthorized changes are made in installation of system and/or if any false information is supplied in making Improvements Permit.

Health Dept. Copy: White Inspection Dept. Copy: Yellow Sanitarian's Copy: Pink Owner's Copy: Gold

COUNTY HEALTH DEPARTMENT

(SEPTIC TANK) IMPROVEMENTS PERMIT AND CERTIFICATE OF COMPLETION
(Ground Absorption Sewage Disposal System -- G. S. Chapter 130-A-Article 11)

OWNER OR CONTRACTOR _____ DATE _____ PERMIT NO. _____

PHONE: Business _____ Home _____

LOCATION _____

_____ S. R. No. _____

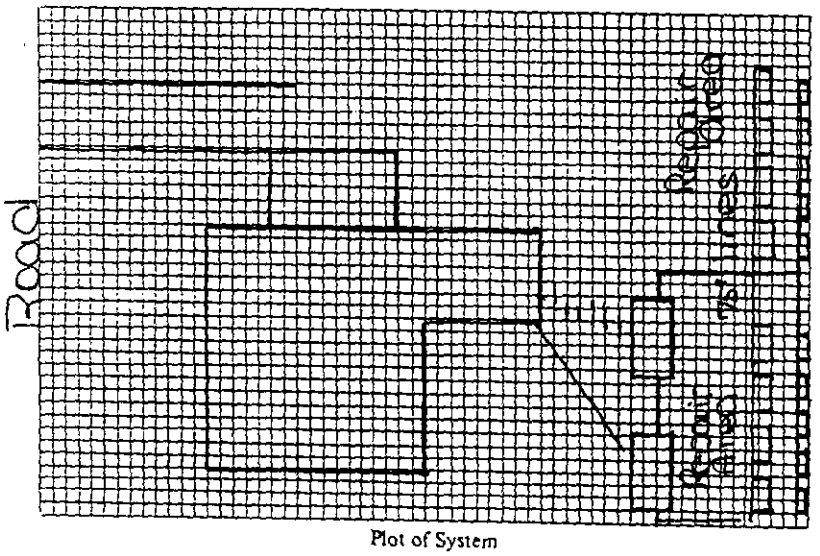
SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

House (✓) Mobile Home ( ) Business ( ) Other _____

No. Bedrooms 3 No. Bathrooms 2½
Garbage Disposal Unit N/A Yes ( ) No ( )
Auto. Dishwasher Yes (✓) No ( )
Auto. Wash. Machine Yes (✓) No ( )
Site Suitable Yes (✓) No ( )
Lot Area 20,000

Character & Porosity of Soil clay loam over clay
Percolation Rate 0.4 gal/ft²/day
Topography hgh slope
Depth to Water Table >60"
Rock or other impervious formations _____

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement Pressure Distribution



Plot of System

Size of Tank 1,000 septic / 1000 pump Gals.
Nitrification Field:
No. of Lines 3 (5') lines of T&J
Sq. Ft. 900 Linear Ft. 150
Depth of Stone in Lines 24" sand
Water Supply: Individual ( )
Public ( )

Installed by _____

I understand and agree to install septic tank system as specified on this Improvements Permit.

Signed: _____

IMPROVEMENTS PERMIT BY _____

COMMENTS: pump sized by head 2-4' at turn up

CERTIFICATE OF COMPLETION BY _____ DATE _____

EXISTING SYSTEM CHECKED BY: _____ DATE _____

CONSTRUCTION MUST COMPLY WITH ALL OTHER APPLICABLE STATE AND LOCAL REGULATIONS.

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Health Dept. Copy: White Inspection Dept. Copy: Yellow Sanitarian's Copy: Pink Owner's Copy: Gold

How Many Panels Do You Need?

To calculate the number of 16 inch high panels needed for a 150 foot line, multiply 150'x 12" = 1800" then divide by 52" which is 46 inches for the panel and 6 inches for the space between the panels in the trench. 1800" /52" = 34.6 panels, so you would call for 34 panels. (A material order chart is included in the installer section of this manual.) If there is to be more than one trench, the sizing of the lines should be as equal as possible with as close to the same number of panels in each trench as is practical. A permit will normally show the panel as small blocks on the line. The following two pages are sample copies of permits for Panel systems.

Gravity or Pressure

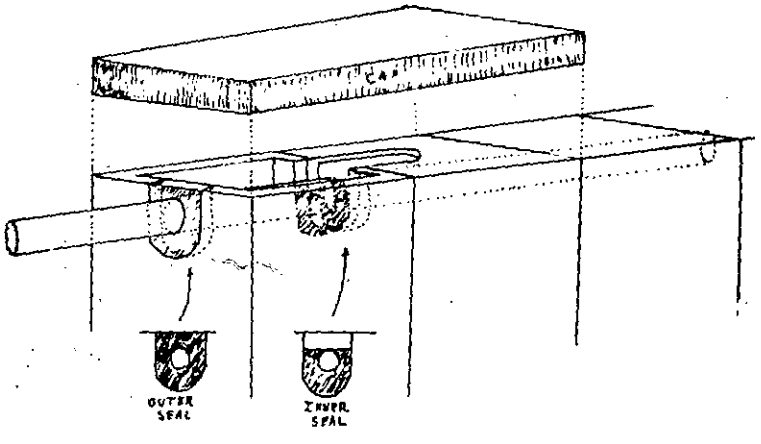
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One of the attached permits is for a LP Panel drainfield.

Backfill

Backfill sand shall be a clean, washed, medium sand that is naturally occurring and falls within the gradation of ASTM C-33 specification. This specification is one that is used in the ready mix industry and is readily available in all areas. The second type of sand that you will need is a clean particle sand to coat the bottom of each panel's top chamber with a bed of sand one inch thick. This sand is a medium grade of sand blasting sand. Each one hundred pound bag should cover eight panels. Backfill sand calculations should be taken from the material sheet.

Tar Seals

The two drawings below illustrate the inner and outer seal. Note that while the outer seal is a complete seal, the inner seal is only up to the top of the connecting pipe. This is to allow for over flow of the effluent at peak use periods into the lower air chambers. At this point the air chambers become additional storage chambers for the effluent.



Trench Preparation

Trench grade should be established so that backfill cover will be four to six inches over the tops of the panels. (Note on severe slopes system depth should be adjusted to protect against brakeout of effluent) In clay type soils the trench side walls should be raked to bring slicked over areas back as near to original structure as possible. A light dusting of lime on the side walls is required to promote the soil structure.

Final Inspection

The following list of points are things that an inspector should look for before issuing an completion permit.

1) Is depth of the panels within guidelines?

2) Are drain lines level or less than 1/4 inch fall in ten feet?

3) Have seals been properly constructed?

4) Was the proper sand used in the trench backfill?

5) If in clay type soils were the side walls raked and limed?

(For Pumped Systems)

6) Have pump size, head pressure, and dose cycle been properly sized and set?

(Set dose cycle for 3.6 gallons per 16 inch high panel.)

Installer

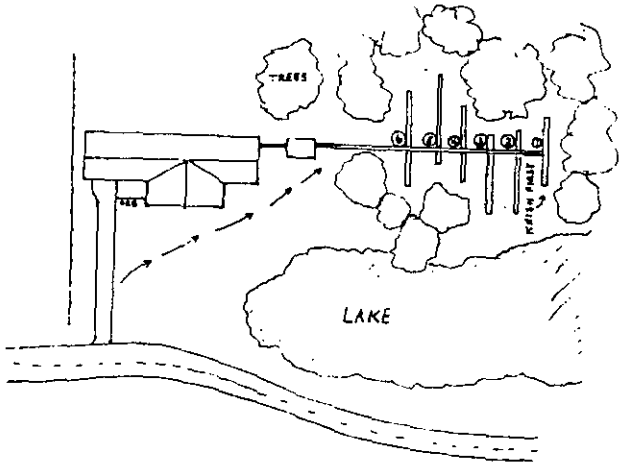
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more time. Many installers enjoy the change of working with panels, not handling gravel, and the satisfaction of knowing a system is being installed where previously a conventional system was not possible.

Ordering Materials

Enclosed on following two pages you will find an order sheet for the T & J Panel System and a materials chart for 16 inch high Panel System. The distributor in your area will lead you through these sheets when ordering or pricing the system. For information on the distributor located closest to you call 1-800-222-2577 (inside N.C.) or 704-872-9566. After ordering, your panels will be shipped to the job site banded together on pallets.

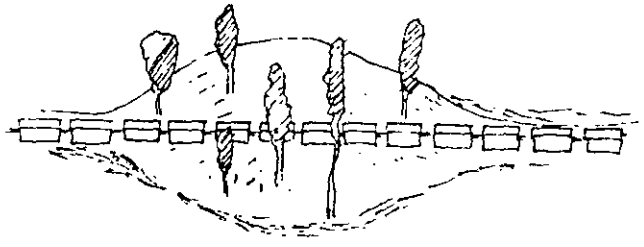
Installation Tips

Installation for multiple line systems should begin in the most confining area and be worked to the more open areas.

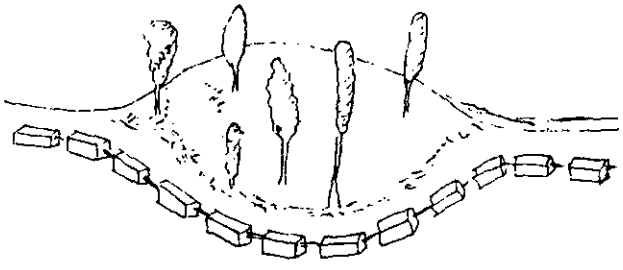


Above is an example of a multiple line installation. As you can see the installation should begin with the line marked 1 and proceed to 2, 3, then 4. This procedure will greatly ease material handling and backfilling. (Note sections of the drainlines should be left uncovered to allow for inspection of lines when area is confined and return access to lines is limited.)

On the following page are two examples of drain lines on sloping lots. The first drawing shows the drainline going through a slope making the center of the line deeper in the ground. This is not a desirable situation. The second drawing shows the drainline going around the slope keeping the trench depth and cover uniform for the entire length of the line. On slopes care should be given to avoid cutting away valuable top soil in an effort to make straight lines. Panel lines can be curved to almost any degree.



Wrong



Right

Digging The Trench

Start by shooting the grade and marking the contour. Then for a 16 inch panel add 28 inches to the shallowest or lowest grade that the trench must cross to obtain the trench bottom grade. Now dig the trench at the elevation derived, checking the grade frequently. The trench should be a minimum of two feet wide. With the trench open all sidewalls shall be raked to bring smeared areas back to their original structure before a light dusting of lime is applied. Now place a 6 inch layer of backfill sand in the trench and level to grade, then place a 1 x 4 or 6 inch board flat on it's side on top of the 6 inch layer of sand. Once more check the grade of the trench by shooting the top of the board. Once the grade boards have been set, the panels may be set into the ditch by hand or using the backhoe. Each panel weights about 155 pounds and placement by hand goes quickly. The panels should be placed about 6 inches apart in the trench to obtain equal spacing. Now place 10 to 12 pounds of clean particle sand (medium sand blasting sand) in the top chamber of each panel to form a bed of sand about one inch thick. Tar seal rope should be placed in the U outs to form seals as shown in earlier drawings. Once the tar rope is in place, a 24 inch section of two inch PR160 pipe is cut to span from the upper middle top chamber of the first panel to the upper middle chamber of the next panel. The tar seal rope that is used should be of tar or butyl that is soft and pliable to obtain a water tight seal. Now that the connection and sealing is complete a block cap is placed on each end of the panel covering all openings.(These will be delivered with the panels.) The cap block may well serve as an inspection port at some future date. The trench is ready to be backfilled to the top of the panel with the same backfill sand used in the trench bottom. With the sand to the top of the panel, trenches should be left for the sanitarian to inspect. Soil cover should be added after the final inspection.

Most Panel Systems are currently used due to space considerations and caution should be taken to preserve suitable soil structure and site conditions.

Materials Chart For 16 Inch Panels

Materials needed per panel:

- Three feet of half inch tar seal rope per panel.
- Two feet of two inch PR160 pipe per panel or same linear feet as line layout of pressure system of one and a quarter inch pipe. Add pipe for tie in of lines to tank and house.
- One hundred pounds of partical sand (sand blasting sand fine texture) per eight panels.
- Same linear feet of one by six boards as line length.
- Bag powder lime when in clay soils.

Panel and C-33 Sand fill

50 LF - 11 panels 8¼ tons sand	130 LF - 30 panels 21½ tons sand
60 LF - 14 panels 10 tons sand	140 LF - 32 panels 23 tons sand
70 LF - 16 panels 11½ tons sand	150 LF - 34 panels 25 tons sand
80 LF - 18 panels 13¼ tons sand	160 LF - 37 panels 26½ tons sand
90 LF - 21 panels 15 tons sand	170 LF - 39 panels 28 tons sand
100 LF - 23 panels 16½ tons sand	180 LF - 41 panels 30 tons sand
110 LF - 25 panels 18¼ tons sand	190 LF - 43 panels 31½ tons sand
120 LF - 27 panels 20 tons sand	200 LF - 46 panels 33 tons sand

T & J Panel Material Worksheet

Homeowner _____ County _____

Address _____

_____

Description of System _____

_____

_____

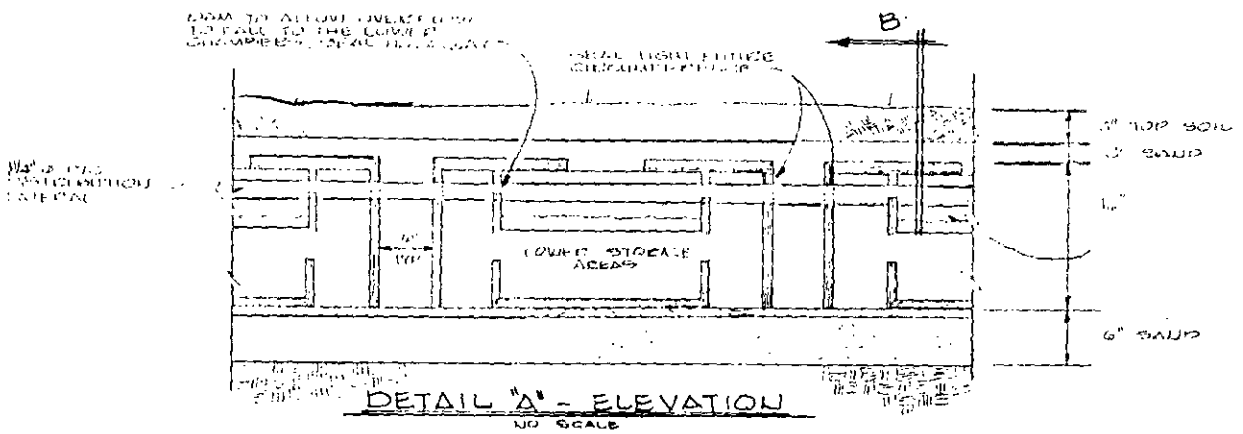
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partical Sand (100 lbs per 8 Panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____	1x4 or 1x6 Boards	_____
_____	Power Lime	_____
_____	Sep Tank _____ Gallon	_____
_____	Tar Seal for Tank	_____
_____	4" PVC Pipe Schedule 40	_____
_____	Distrobution Box	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Sub-total	_____
	Delivery Charge	_____
	Tax	_____
	Total	_____

Panels With Pressure Distribution

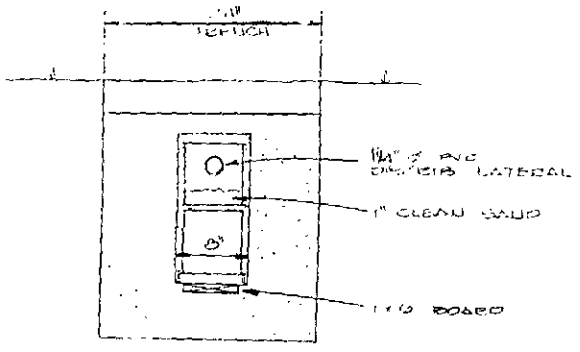
The LP Panel uses Technology similar to that of Low Pressure Pipe (LPP) System. The tables and distribution design described in the LPP manual are applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects an LP Panel is similar to an LPP with the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

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

All valves and turn ups should be neatly capped, covered, and labled for future service. Pump tanks should be constructed as shown in drawing as to allow for service and or repairs.

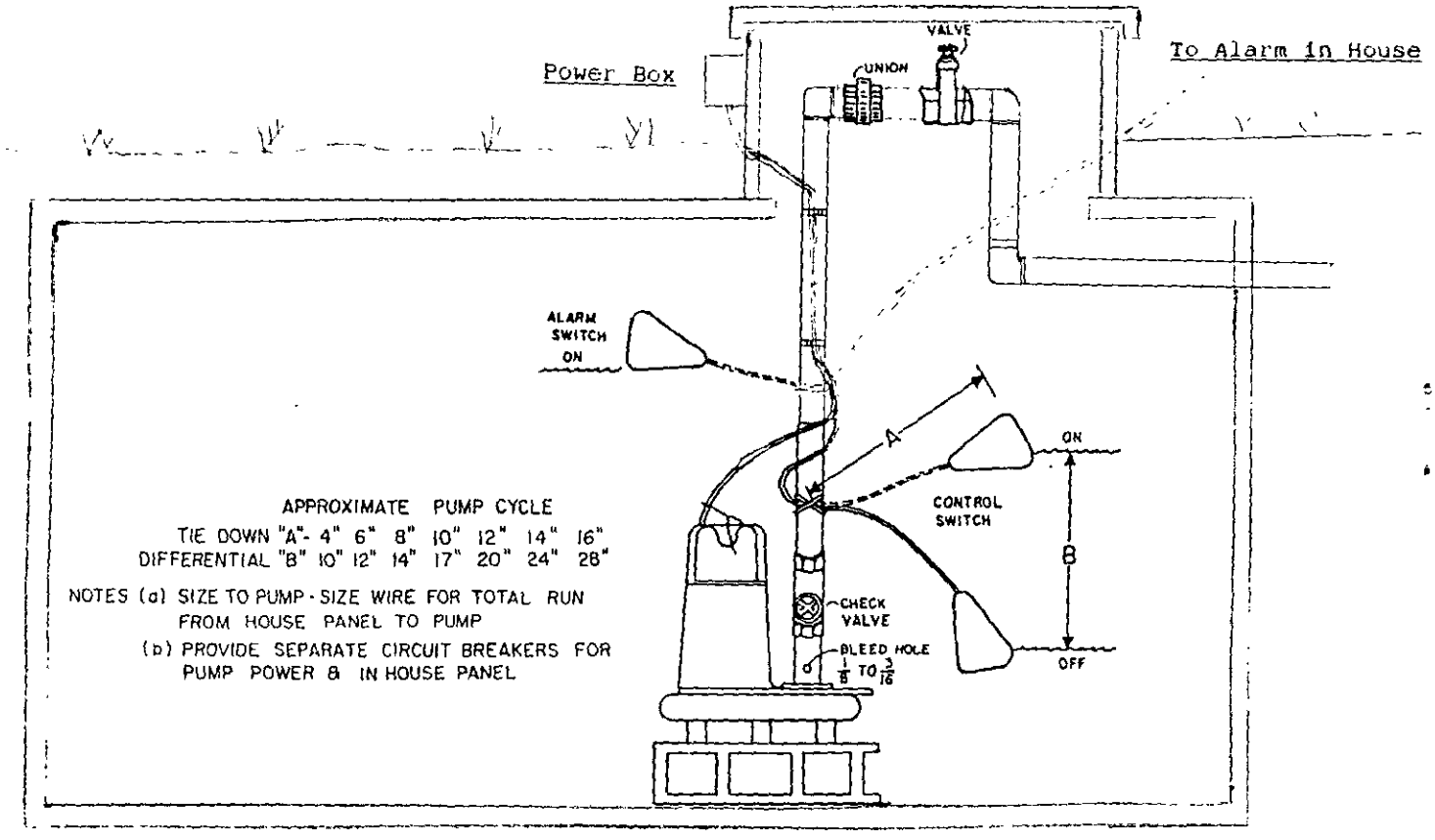


DETAIL "A" - ELEVATION
NO SCALE

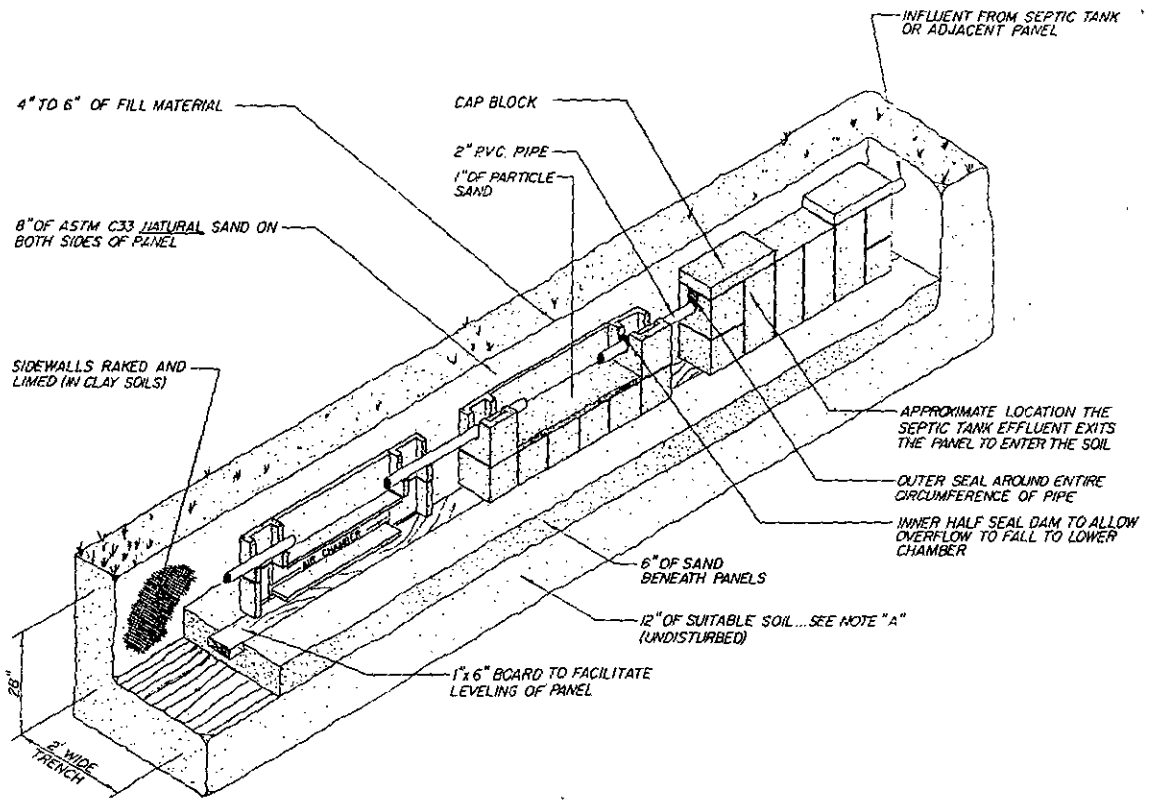


DETAIL "B" - SECTION

Pump Tank Drawing

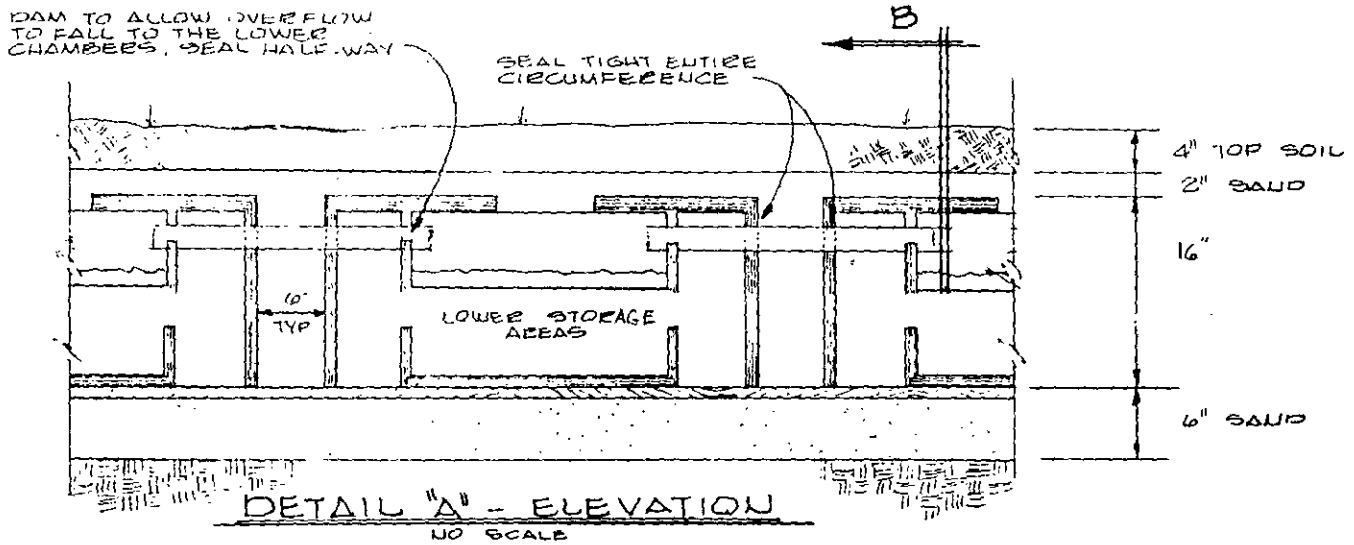


Isometric Drawing of a Segment of 16" T&J Panel Drainfield

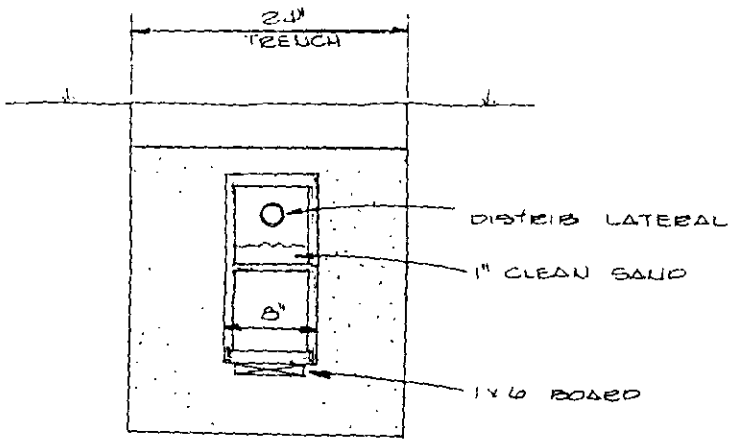


THE T. & J. PANEL
WASTE WATER TREATMENT SYSTEM
PATENT NUMBER 4013559

P.O. Box 288 • Statesville, North Carolina 28677
N.C. WATS 1-800-222-2577 • (704)872-9566



DETAIL "A" - ELEVATION
NO SCALE



DETAIL "B" - SECTION
NO SCALE

Mecklenburg County
Health Department

376-4603

4:30-5:00

5th Hall

January 19, 1991

Permit

3-2691
RCS in Monroe
283-7539
Kathy Hudson

Keith R. Moore
c/o Haney Construction
P.O. Box 25311
Charlotte, NC 28229

RE: Property located at 10521 Lorelei Place
FILE: 6762A
PARCEL: 139-271-34

6762A

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
Individual Water and Wastewater Systems

GV/kjb

Enclosures - 3 Septic Tank Agreement Forms

Planned

310

336-3839

Faxed to
Brenda
on 3/28/91
for temp release.
We need to release
as soon as we
have original
white copy of
file

BK: 06488 PG: 0444/0444 #:0378 6.00

COPY

FILE NO. 676dA

REGISTERED MAR/28/1991 03:49PM ANNE A. POWERS REGISTER OF DEEDS MECK. CO. N.C.

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

ACKNOWLEDGEMENT OF REQUEST BY OWNER FOR RECLASSIFICATION OF SITE FROM "UNSUITABLE" TO "PROVISIONALLY SUITABLE" UNDER 10 NCAC 10A .1948(c)

The undersigned, Zoe N. Schmitt

owner of property located at 10521 Lorelei Pl.

the site") and described in an instrument recorded in Book 6470 at Page 0144/0145, Mecklenburg Public Registry,

hereby acknowledges that he applied to the Mecklenburg County Department of Environmental Health ("the Department") for a permit to install a septic tank sewage disposal system on the site; that the Department evaluated the site for suitability for such a system in accordance with the regulations promulgated by the North Carolina Commission for Health Services at 10 NCAC 10A .1934 et seq; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requested pursuant to 10 NCAC 10A .1948(c) that the Department reclassify the site as "provisionally suitable" in light of the particular septic tank system proposed by the undersigned; that the Department considered various studies, data and other information which indicate to the Department that the septic tank system proposed by the undersigned can reasonably be expected to function satisfactorily and thus that the findings specified in 10 NCAC 10A .1948(c)(1), (2), and (3) can be made; and that the Department therefore reclassified the site as "provisionally suitable" and issued an appropriate permit for such proposed septic tank system.

The undersigned further acknowledges that the proper design, construction, operation and maintenance of such septic tank system is his responsibility and that neither the Department nor its officials, employees or agents warrant or guarantee that the said system installed pursuant to the permit issued by the Department will function in a satisfactory manner for any given period of time or that the Department, its officials, employees or agents assume any liability for any damages of any kind which are caused, or which may be caused, by a malfunction of such system.

The undersigned further agrees for himself, his heirs and assigns that he shall indemnify and hold harmless the Department, its employees and officials, as well as Mecklenburg County and its employees and officials, for any damages or other claims of any person or persons whatsoever arising out of the installation, operation, or failure of said septic tank system.

The undersigned further agrees for his heirs and assigns that, in the event any septic tank system installed under authority of the aforesaid permit fails to perform adequately in any respect, he will take whatever measures are required to correct same; or if such is impossible will discontinue use of said system immediately.

Use of the singular masculine pronoun forms herein shall be deemed to also include the plural and feminine forms as the context may require.

This document shall be placed on the public records of the Register of Deeds of Mecklenburg County and indexed therein under the names listed in the name or names of the undersigned, and the foregoing acknowledgements shall henceforth be binding on all persons having any right, title, or interest in the site.

This 28th day of March, 1991.

Zoe N. Schmitt (SEAL)

(SEAL)

NOTARY PUBLIC

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, Martha S. Clark, a Notary Public for said County and State, do hereby certify that Zoe N. Schmitt personally appeared before me this date and acknowledged the execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 28th day of March, 1991.

Martha S. Clark
Notary Public

Commission Expires August 23, 1995

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, _____, a Notary Public for said County and State, do hereby certify that _____ personally came before me this day and acknowledged that he is _____ of _____, and that by authority duly given and as the act and deed of said corporation, the foregoing instrument was signed in its name by its _____, sealed with its corporate seal and attested by _____.

WITNESS my hand and notarial seal, this _____ day of _____, 19__.

Notary Public

Commission Expires: _____

DRAWN BY + MAIL TO
ROBERT SCHMIAT
8512 FATIMA PL.
CHARLOTTE, N.C. 28227

MECKLENBURG COUNTY REGISTER OF DEEDS
ANNE A. POWERS - REGISTER

CUSTOMER RECEIPT: 03/28/91

Date	Time	Inst #	Type	Book	Page	Trx	Amount
03/28/91	03:49	378	PERMIT	6488	444	FEE	6.00
03/28/91	03:49					TDT	6.00
03/28/91	03:49					PAID	6.00



BK: 06488 PG: 0444/0444 #:0378 6.00

REGISTERED MAR/28/1991 03:49PM ANNE A. POWERS REGISTER OF DEEDS MECK. CO. N.C.

FILE NO. 6762A

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

ACKNOWLEDGEMENT OF REQUEST BY OWNER FOR RECLASSIFICATION OF SITE FROM "UNSUITABLE" TO "PROVISIONALLY SUITABLE" UNDER 10 NCAC 10A .1948(c)

The undersigned, Zoe N. Schmitt

owner of property located at 10521 LORELEI PL CHARLOTTE N.C. 28227

(the site") and described in an instrument recorded in Book 6476 at Page 0144/0145, Mecklenburg Public Registry,

hereby acknowledges that he applied to the Mecklenburg County Department of Environmental Health ("the Department") for a permit to install a septic tank sewage disposal system on the site; that the Department evaluated the site for suitability for such a system in accordance with the regulations promulgated by the North Carolina Commission for Health Services as 10 NCAC 10A .1934 et seq; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requests pursuant to 10 NCAC 10A .1948(c) that the Department reclassify the site as "provisionally suitable" in light of the particular septic tank system proposed by the undersigned; that the Department considered various studies, data and other information which indicate to the Department that the septic tank system proposed by the undersigned can reasonably be expected to function satisfactorily and thus that the findings specified in 10 NCAC 10A .1948(c)(1), (2), and (3) can be made; and that the Department therefore reclassified the site as "provisionally suitable" and issued an appropriate permit for such proposed septic tank system.

The undersigned further acknowledges that the proper design, construction, operation and maintenance of such septic tank system is his responsibility and that neither the Department nor its officials, employees or agents warrant or guarantee that the said system installed pursuant to the permit issued by the Department will function in a satisfactory manner for any given period of time or that the Department, its officials, employees or agents assume any liability for any damages of any kind which are caused, or which may be caused, by a malfunction of such system.

The undersigned further agrees for himself, his heirs and assigns that he shall indemnify and hold harmless the Department, its employees and officials, as well as Mecklenburg County and its employees and officials, for any damages or other claims of any person or persons whatsoever arising out of the installation, operation, or failure of said septic tank system.

The undersigned further agrees for his heirs and assigns that, in the event any septic tank system installed under authority of the aforesaid permit fails to perform adequately in any respect, he will take whatever measures are required to correct same; or if such is impossible will discontinue use of said system immediately.

Use of the singular masculine pronoun forms herein shall be deemed to also include the plural and feminine forms as the context may require.

This document shall be placed on the public records of the Register of Deeds of Mecklenburg County and indexed therein under the grantor index in the name or names of the undersigned, and the foregoing acknowledgements shall henceforth be binding on all persons claiming any right, title, or interest in the site.

This _____ day of _____, 198_____.

Zoe N. Schmitt (SEAL)

_____ (SEAL)

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, MARTHA S. CLARK, a Notary Public for said County and State, do hereby certify that Zoe N. Schmitt personally appeared before me this date and acknowledged the execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 28th day of March 1991, 19~~91~~.

Martha S. Clark
Notary Public

Commission Expires: May 23, 1995

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, _____, a Notary Public for said County and State, do hereby certify that _____ personally came before me this day and acknowledged that he is _____ and that by authority duly given and as the act and deed of said corporation, the foregoing instrument was signed in its name by its _____, sealed with its corporate seal and attested by _____.

WITNESS my hand and notarial seal, this _____ day of _____, 198___.

_____
Notary Public

Commission Expires: _____

DRAWN By
Mail to: ROBERT M. SCHMIDT
512 FATIMA PLACE
CHARLOTTE, N.C. 28227