

22824 TORRENCE CHAPEL RD

00155114

5/29/2007

duponbj

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

MECKLENBURG COUNTY HEALTH DEPARTMENT
Environmental Health Division
Groundwater & Wastewater Services

April 19, 2005

Robert Ravich
22824 Torrence Chapel Rd.
Cornelius, NC 28031

Dear Mr. Ravich:

Re: Bacteriological Well Sample Results / Septic Inspection Report

Enclosed you should find a copy of the laboratory analysis of the well water sample that was collected at 22824 Torrence Chapel Road on April 14, 2005. The laboratory analysis of the well water sample was reported to be NEGATIVE for total coliform bacteria.

Enclosed you should also find a copy of the report for the septic system inspection that was conducted on April 11, 2005.

Please contact me at (704) 336-5568 if you have any questions.

Sincerely,

Trevor Thomason, R.S.I.
Managed Systems Program Coordinator
Groundwater & Wastewater Services

Enclosures: (2)

CHARLOTTE

Laboratory Analysis Report
Report Date: 4/15/2005 04:32 PM

LABORATORY SERVICES DIVISION

LOCATION: Robert Ravich -22824 Torrence
LOC ID: G-GWS
SAMPLE DATE-TIME: 4/14/2005 10:00
SAMPLE DESCRIPTION: Grab

SAMPLE ID: AB33382
CHAIN OF CUSTODY #: 05040276

	Parameter	Result	Units	RL	Method	Start Date/ Time	Analyst
AB33382	E. COLI-PA	Absent	P/A		SM 9223B	4/14/2005 11:30	RDW
AB33382	Total Coliform	Absent	P/A		SM 9223B	4/14/2005 11:30	RDW

Comment:

Laboratory Supervisor: _____

Laboratory Certifications: McAlpine NC DENR No.148; Brookshire NC DENR No.162; Hal Marshall N.C. DENR No. 192, N.C. DHHS Laboratory No. 37527

CHARLOTTE-MECKLENBURG UTILITIES - LABORATORY SERVICES DIVISION

Hal Marshall Laboratory, 700 North Tryon St., Charlotte, NC 28202, 704/336-5460

CHAIN OF CUSTODY RECORD

COC#: 3504027 6 PAGE 1 OF 1

CLIENT: MECKLENBURG COUNTY, LUESA - HEALTH DEPT.
FACILITY: **Potable Water**
PROJECT: Robert Ravich
22824 Torrence Chapel Road, Cornelius, NC 28031

Send Report To: Trevor Thomason
700 N Tryon St. Ste. 205
Charlotte, NC 28202

Sampled By (Print Name): Cina Buchanan

SAMPLE ID	Sample Collector's Initials	Collection Date and Time	Chlorinated System	Collection Temp	Relinquished Temp	Receipt Temp	Sample Type: Depth Composite	Sample Type: Auto Composite	Sample Type: Hand Comp	Sample Type: Grab	Sample Containers: Plastic	Sample Containers: Glass	Sample Containers: # Containers	Preservative: None	Preservative: HNO3	Preservative: H2SO4	Preservative: NaOH	Preservative: HCl	Preservative: Na2S2O3	Preservative: pH Correct	Chemical: BOD5	Chemical: CBOD5	Chemical: COD	Chemical: TOC	Chemical: TSS	Chemical: TDS	Chemical: TS	Chemical: Nutrients	Chemical: NOX	Chemical: Nitrite	Chemical: Alkalinity	Chemical: Hardness	Chemical: Turbidity	Chemical: Lead	Chemical: Total Coliform	Chemical: Fecal Strep	Chemical: Pest/PCB, EPA 608	Chemical: Herb, EPA 8151	Chemical: VOA, EPA 8260	Chemical: Semis, EPA 8270	Chemical: HEM 1164
22824	CAB	4/14/2005 0:00 10:00 AM	N						X		100 ml		X	X					X														X						

041405
AB33376
AB33378

Relinquished By: (Signature)	Received By: (Signature)	Date & Time
Cina Buchanan	Rick Williams	4/14/05 11:1
Relinquished By: (Signature)	Received By: (Signature)	Date & Time
Relinquished By: (Signature)	Received By: (Signature)	Date & Time
Relinquished By: (Signature)	Received By: (Signature)	Date & Time

N.C. Department of Environment and Natural Resources
Division of Environmental Health

Inspection of Engineered Subsurface Wastewater System

Mecklenburg County **Health Department**	Ravich Residence **Name of Establishment**	4930A **Permit/Project No.**
22824 Torrence Chapel Rd., Cornelius NC **Location**	4-Bedroom House ***Type of Establishment***	480 GPD **Design Flow**
Robert & Lucy Ravich **Owner/Agent**	Same as location address **Address**	(704) 896-0345 **Phone**
Tri-County Wastewater **Operator**	N/A **Address**	N/A **Phone**
IV **System Type**	4/22/2008 **Next Inspection Due**	

	Yes	No	N/A	Comments:
1. ESTABLISHMENT:				
a. Type, size, and sewage flow in accordance with permit?	☒	☐	☐	
2. *COLLECTION SYSTEM:*				
a. No evidence of leaks into or out from sewer lines/manholes?	☒	☐	☐	
b. Free of blockages/solids buildup in lines or manholes?	☒	☐	☐	
3. TANKAGE: (Grease Traps/Lift Stations/Septic/Dosing Tanks)				
a. Tank risers accessible and surface water diverted?	☒	☐	☐	
b. Tanks and access manholes structurally sound, watertight?	☒	☐	☐	
c. Sanitary tee(s) in good working condition?.....	☐	☐	☒	3.c. Sanitary tee not inspected.
d. Tanks pumped, cleaned out as needed?.....	☒	☐	☐	
4. RAW SEWAGE LIFT STATION (if present):				
a. Required pumps present, operating, and cycling properly	☐	☐	☒	
b. High-water alarm present and operating properly?	☐	☐	☒	
c. Floats/pipe/valves/disconnects in good condition?	☐	☐	☒	
5. EFFLUENT DOSING SYSTEM:				
a. Effluent appears clear, free of excess solids?	☒	☐	☐	5.a. *Measured <2" of solids in pump tank.*
A. PUMP SYSTEMS:				
a. Required pumps present, operating, and cycling properly?	☒	☐	☐	
b. High-water alarm present and operating properly?	☒	☐	☐	5.A.b. Alarm box inside house.
c. Floats/pipe/valves/disconnects in good working condition?	☒	☐	☐	
d. Control panel enclosure/components in good condition?	☐	☒	☐	5.A.d. Control box below/at grade.
e. Elapsed time readings: _____ _____ _____ _____				
B. SIPHON SYSTEMS:				
a. No evidence of overflow or siphon leakage?	☐	☐	☒	
b. Siphon(s) appear to be working/alternating properly?	☐	☐	☒	
c. Bells and vents free of debris and in good condition?	☐	☐	☒	

6. GROUND ABSORPTION FIELDS:

a. No evidence of effluent surfacing/reaching surface waters?	☒	☐	☐	
b. Minimal ponding in subsurface trenches?	☒	☐	☐	
c. Surface water being effectively diverted away?	☒	☐	☐	
d. Diversions/ditches/swales/tiles drains properly maintained?	☒	☐	☐	
e. Line cover/vegetation adequate/maintained as needed?	☒	☐	☐	
f. Protected from traffic, destructive uses?	☒	☐	☐	
g. Distribution devices in good condition, working properly?	☒	☐	☐	6.h. Deck extended off of house
h. Repair area properly reserved, maintained?	☐	☒	☐	into repair area.

A. LOW PRESSURE PIPE DRAIN FIELDS:

a. Turnups/cleanouts/valves intact and accessible?	☐	☒	☐	6.A.a. Could not locate valves
b. No effluent standing in lower laterals?	☒	☐	☐	or turnups.
c. Laterals free of excess solids, cleaned out as needed?	☐	☐	☒	6.A.c.d. Maintenance to be performed
d. Pressure head is properly adjusted?	☐	☐	☒	by a Certified Operator.

OVERALL CONDITION AND OPERATION OF SYSTEM:

No problems detected with system operation at the time of inspection.

No effluent on ground surface at the time of inspection.

SUMMARY OF REPAIRS REQUIRED AT THIS TIME:

None

***REPAIR WITHIN N/A DAYS.**

SYSTEM MAINTENANCE/IMPROVEMENTS REQUIRED:

*The MCHD recommends having the tanks (septic & pump) pumped out every 3 to 5 years to remove excess solids.

1. Certified Operator is responsible for performing maintenance on the system.
   Work should include locating all valves and turnups, flushing the lines, and setting the system pressure.
2. Do not cover pump tank riser. Leave uncovered to allow for inspection and service.
3. Raise electical junction box to 12" above grade.

DATE: 4/12/2005

SIGNED: _____ AGENT
Division of Environmental Health

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date: 03/21/05
Receipt #: 33374
Check / Auth #: CHECK 3754
Received By: WALKEVA

Amount: 85.00
Tendered: 85.00
Returned: 0.00

Account Information

Account #: 200000
Contractor: RAVICH ROBERT J.
Attn:
Address: 22824 TORRENCE CHAPEL ROAD
Address:
City/State/Zip: CORNELIUS, NC 28031

Item	Description	Permit#	Quantity	Unit Price	Total Price
0743	Hmeownr Maint Inspec-Type IIIB FILE #4930A 704-896-0345		1	85.00	85.00

Outstanding Balances

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

Mecklenburg County
Health Department

June 11, 2002

Bob and Lucy Ravich
22824 Torrence Chapel Rd.
Cornelius, NC 28031

Dear Mr. and Mrs. Ravich:

The State required inspection of the Type IVa septic system, which serves as the wastewater treatment and disposal system for the residence located at 22824 Torrence Chapel Road, Cornelius, North Carolina, was completed on 5/20/02. The results of this inspection are enclosed.

During our inspection a bacteriological as well as two inorganic water samples were taken of your private water supply. The laboratory analysis of the well water sample was reported to be negative for coliform bacteria. The results of the inorganic samples were within the acceptable private well guidelines.

Thank you for your time and cooperation. If you have any further questions you can contact me at (704) 336-5571.

Sincerely,

David Cornelius, R.S.I, Coordinator
Managed Systems Program
Individual Water and Wastewater Systems

Enclosure: Inspection Report
Microbiological/ Inorganic Analysis Results
Septic System Owner's Guide

N. C. Department of Environment and Natural Resources
Division of Environmental Health

INSPECTION OF ENGINEERED SUBSURFACE WASTEWATER SYSTEM

MECKLENBURG COUNTY — Health Department
4930A — Permit/Project No.
Name of Establishment
22824 TORRENCE CHAPEL RD. — Location
RESIDENCE — Type of Establishment
Design Flow
BOB & LUCY RAUCH 22824 TORRENCE CHAPEL RD. CORNELIUS, NC 28031 — Owner/Agent / Address
Phone
CLAY OAKS — Operator / Address
Phone
Remarks N/A

	Yes	No	REMARKS
1. ESTABLISHMENT: Type, size, and sewage flow in accordance with permit?	☑	☐	
2. COLLECTION SYSTEM: No evidence of leaks into or out from sewer lines/manholes?	☐	☐	
Free of blockages/solids buildup in lines or manholes?	☐	☐	
3. TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):			
Tank risers accessible and surface water diverted?	☑	☐	
Tanks and access manholes structurally sound, watertight?	☑	☐	
Sanitary tee(s) in good working condition?	☑	☐	
Tanks pumped, cleaned out as needed?	☑	☐	
4. RAW SEWAGE LIFT STATION (if present):			
Required pumps present, operating, and cycling properly?	☐	☐	
High-water alarm present and operating properly?	☐	☐	
Floats/pipe/valves/disconnects in good working condition?	☐	☐	
Control panel enclosure/components in good condition?	☐	☐	
5. EFFLUENT DOSING SYSTEM: Effluent appears clear, free of excess solids?	☑	☐	
PUMP SYSTEMS:			
Required pumps present, operating, and cycling properly?	☑	☐	
High-water alarm present and operating properly?	☑	☐	
Floats/pipe/valves/disconnects in good working condition?	☑	☐	
Control panel enclosure/components in good condition?	☑	☐	
Elapsed time readings: _____ _____			
SIPHON SYSTEMS:			
No evidence of overflow or siphon leakage?	☐	☐	
Siphon(s) appear to be working/alternating properly?	☐	☐	
Bells and vents free of debris and in good condition?	☐	☐	
6. GROUND ABSORPTION FIELDS:			EVERYTHING LOOKS GOOD!
No evidence of effluent surfacing/reaching surface waters?	☑	☐	
Minimal ponding in subsurface trenches?	☑	☐	
Surface water being effectively diverted away?	☑	☐	
Diversions/ditches/swales/tile drains properly maintained?	☑	☐	
Line cover/vegetation adequate/maintained as needed?	☑	☐	
Protected from traffic, destructive uses?	☑	☐	
Distribution devices in good condition, working properly?	☑	☐	
Repair area properly reserved, maintained?	☑	☐	
LOW-PRESSURE PIPE DRAIN FIELDS:			
Turnups/cleanouts/valves intact and accessible?	☑	☐	
No effluent standing in lower laterals?	☑	☐	
Laterals free of excess solids, cleaned out as needed?	☑	☐	
Pressure head is properly adjusted?	☑	☐	

OVERALL CONDITION AND OPERATION OF SYSTEM: NO EFFLUENT SURFACING

* WELL ANALYSIS

SUMMARY OF IMPROVEMENTS NEEDED:

Improvement	Repair Within (Days)

DATE: 5/20/02 SIGNED: [signature] RSI AGENT
Division of Environmental Health

DENR 3702 (Revised 3/98)
On-Site Wastewater Section (Review 12/98)

– over –

Mecklenburg County Health Department Laboratory

Environmental Health Section

249 Billingsley Road • Charlotte, NC 28211

Microbiological Analyses

Owner, System, or Establishment: BOB & LUCY RANCH

Address: 22824 TORRENCE CHAPEL RD.

CORNELIUS, NC Zip: 28031

Collected By: DAVID L. CORNELIUS

WELL HEAD

Date Collected: 5/20/02 Time: 12:30 AM/PM

Delivered To Lab By: DAVID L. CORNELIUS

Date Delivered To Lab: 5-21-02 Time: 8:40 AM/PM

Sample Contains Sodium Thiosulfate

☐ This is a compliance sample and the data will be reported to:

_____

Treatment:

☒ Initial Sample ☐ Chlorinated ☒ Nonchlorinated

☐ Recheck (Chlorinated) ☐ Recheck (Nonchlorinated) ☐ Other (Specify)_____

Type of Sample:

Potable Water

☒ Individual Well ☐ Community

☐ Non-community ☐ City

☐ Other (Specify)_____

Nonpotable Water

☐ Surface ☐ Monitoring Well

☐ Storm ☐ Other (Specify)_____

Temp Upon Collection:_____ °C Initials_____

Temp Upon Receipt In Lab:_____ °C Initials_____

Analysis Requested:

☒ Total Coliform ☐ Fecal Coliform ☐ Fecal Strep ☐ Enterococcus

☐ Sulfate Reducing Bacteria ☐ Pseudomonas aeruginosa ☐ Other (Specify)_____

Comments:_____

Laboratory Analysis Report

Method: Membrane Filter_____ Colilert ✓

Total Coliform Absent /100 ml

Fecal Coliform Absent /100 ml

Fecal Strep_____ /100 ml

Enterococcus_____ /100 ml

Plate Count_____ /gm or ml

Pseudomonas aeruginosa_____ /100 ml

Laboratory Comments:

Date Received: 5/21/02

Date Reported: 5/22/02

Received By: NCB

Analyst: NCB Lab #: 310

Laboratory Identification #: 37518 DEHNR

#: 449 DWQ

Rev. 2/01 White—Lab Report Copy Yellow—Lab File Copy

North Carolina State Laboratory of Public Health
Department of Health and Human Services
P. O. Box 28047 -- 306 N. Wilmington St. -- Raleigh, N. C. 27611-8047

INORGANIC CHEMICAL ANALYSIS - PRIVATE WATER SYSTEM

Name of System: Rauich, Bob & Lucy
Address: 22824 Torrence Chapel Rd.
Cornelius, NC **Zip:** 28031

Source of Water: Ground
Source of Sample:
Type of Sample: Raw
Type of Treatment: None
Type of Analysis Private

County: MECKLENB

Report To: Mecklenburg Co. Env. Health
700 North Tryon Street
Charlotte, NC 28202
Courier: 05-16-21

ATTN: David Cornelius
(704) 336-5101

Collected By: D. CORNELIUS **Date:** 5/20/02 **Time:** 12:30:00 PM

Location of sampling point: Well Head

Remarks:

Parameters	Results	Units	Date Analyzed:
Acidity as CaCO3	7	mg/l	5/22/02
Silver	<0.05	mg/l	5/22/02
Alkalinity as CaCO3	28	mg/l	5/22/02
Arsenic	<0.001	mg/l	5/22/02
Barium	<0.1	mg/l	5/22/02
Calcium	4.1	mg/l	5/22/02
Cadmium	<0.005	mg/l	5/22/02
Chloride	<5	mg/l	5/22/02
Chromium	<0.01	mg/l	5/22/02
Copper	<0.05	mg/l	5/22/02
Fluoride	<0.20	mg/l	5/22/02
Iron	<0.05	mg/l	5/22/02
Hardness as CaCO3 (Ca,Mg)	12	mg/l	5/22/02
Mercury	<0.0005	mg/l	5/22/02
Magnesium	0.5	mg/l	5/22/02
Manganese	<0.03	mg/l	5/22/02
Sodium	6	mg/l	5/22/02
Lead	<0.005	mg/l	5/22/02
pH	7.1	Std. unit	5/22/02
Selenium	<0.005	mg/l	5/22/02
Zinc	1.54	mg/l	5/22/02

Date Received: 5/22/02 **Report Date:** 6/4/02 **Reported By:** DJM
Today's Date: 6/5/02 **Ref:** 7013 **Login Batch:** 02050053 **Sample Number:** AA76961

North Carolina State Laboratory of Public Health
Department of Health and Human Services
P. O. Box 28047 -- 306 N. Wilmington St. -- Raleigh, N. C. 27611-8047

INORGANIC CHEMICAL ANALYSIS - NITRATE ONLY

Name of System: Rauich, Bob & Lucy
Address: 22824 Torrence Chapel Rd.
Cornelius, NC **Zip:** 28031
County: MECKLENB

Report To: Mecklenburg Co. Env. Health
700 North Tryon Street
Charlotte, NC 28202
Courier: 05-16-21

ATTN: David Cornelius
(704) 336-5101

Source of Water: Ground
Source of Sample:
Type of Sample: Raw
Type of Treatment: None
Type of Analysis: Nitrate
Category: Other

Collected By: D. CORNELIUS **Date:** 5/20/02 **Time:** 12:30:00 PM
Location of sampling point: Well Head
Remarks:

Parameters	Results	Units	Date Analyzed:
Nitrite as N	<0.10	mg/l	5/22/02
Nitrate as N	<1.0	mg/l	5/22/02

EXPLANATION OF RESULTS:

Foster/Therapeutic Homes: Nitrate-N level acceptable if less than or equal to 10 mg/l
Private Well Guidelines: Nitrite-N level should be ≤ 1.0 mg/l and Nitrate-N ≤ 10.0 mg/l

Sample Temperature on Receipt: 2.5 °C
Date Received: 5/22/02 **Report Date:** 6/4/02
Today's Date: 6/5/02 **Reference:** 7026 **Login Batch** 02050053

Reported By:
Sample Number: AA76974

COPY

Rec'd $85 Check # 2951 5/23/02 gc

INSPECTION STATEMENT
MECKLENBURG COUNTY HEALTH DEPARTMENT

Bob Ravich
22824 Torrence Chapel Road
Cornelius, NC 28031

Please Make Check Payable To:

Mecklenburg County Health Department
700 N. Tryon Street Suite 211
Charlotte, NC 28202

Note: THIS COMPLETED FORM MUST ACCOMPANY PAYMENT!

DESCRIPTION OF PROPERTY

Name	Site Address	Tax Parcel	File Number	System Type
Bob Ravich	22824 Torrence Chapel Rd.	00155114	4930A	IVa
				Total Amount Due: $85.00

Please use the following space below, to make any corrections to property information.

Name _____

Site Address _____

_____

# of Bedrooms 4

BILL INFORMATION

Billing Date: 4/2/02

Payment Due Date: 5/2/02

Direct Questions Concerning This Bill to .....(704) 336-5571

☑ *Please check if you have a well.*

Make Check Payable To Mecklenburg County Health Department
Your Cancelled Check Is Your Receipt

DO NOT SEND CASH

D743

CLAY'S WASTEWATER SERVICES
INSPECTION OF ENGINEERED SUBSURFACE SEWAGE SYSTEM

Name of Establishment	Permit/Project No.
22824	

Location	Type of Establishment
B.B Ranch	22824 Trailer Park MP

Owner	Address	Phone
Clay Gray		

Operator

	YES	NO
1. ESTABLISHMENT:		
Type, size, and sewage flow in accordance with permit?	✓	
2. COLLECTION SYSTEM:		
No evidence of leaks into or out from sewer lines/manholes?	✓	
Free of blockage/solids buildup in lines or manholes?	✓	
3. TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):		
Tank rises accessible and surface water diverted?	✓	
Tanks and access manholes structurally sound, watertight	✓	
Sanitary tee(s) in good working condition?	✓	
Tanks pumped, cleaned out as needed?	✓	
4. RAW SEWAGE LIFT STATION (If Present):		
Required pumps present, operating, and cycling properly?	✓	
High-water alarm present and operating properly?	✓	
Floats/pipe/valves/disconnects in good working condition?	✓	
Control panel enclosure/ components in good condition?	✓	
5. EFFLUENT DOSING SYSTEM:		
Effluent appears clear, free of excess solids?	✓	
PUMP SYSTEMS:		
Required pumps present, operating, and cycling properly?	✓	
High-water alarm present and operating properly?	✓	
Floats/pipe/valves/disconnects in good working condition?	✓	
Control panels enclosure/ components in good condition?	✓	
Elapsed time readings: ____ ____ ____ ____		
SIPHON SYSTEM:		
No evidence of overflow or siphon leakage?		
Siphon(s) appear to be working/ alternating properly?		
Bells and vents free of debris and in good condition?		
6. GROUND ABSORPTION FIELDS:		
No evidence of effluent surfacing/ reaching surface waters?		✓
Minimal ponding in subsurface trenches?	✓	
Surface water being effectively diverted away?	✓	
Diversions/ ditches/ swales/ tile drains properly maintained?	✓	
Line cover/ vegetation adequate/ maintained as needed?	✓	
Protected from traffic, destructive uses?	✓	
Distribution devices in good condition, working properly?	✓	
Repair area properly reserved, maintained?	✓	
LOW-PRESSURE PIPE DRAIN FIELDS:		
Turnups/ cleanouts/ valves intact and accessible?	✓	
No effluent standing in lower laterals?	✓	
Laterals free of excess solids, cleaned out as needed?	✓	
Pressure head is properly adjusted?	✓	

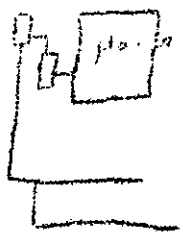
INSPECTION FREQUENCY

Annual — Quarterly

(Bi-Annual) — Yearly

Other

SITE LOCATION MAP



OVERALL CONDITION AND OPERATION OF SYSTEM: Compliant 7-17-14

IMPROVEMENT:

DATE: 7-17-14 **SIGNED:**

Mecklenburg County
Health Department

June 20, 1999

Robert Ravich
22824 Torrence Chapel Road
Cornelius, NC 28031

Dear Mr. Ravich:

This letter is in reference to the Type IVa septic system that serves as the wastewater treatment and disposal system for the residence located at 22824 Torrence Chapel Road, Cornelius, North Carolina.

Tri-County Wastewater has notified this office that the required maintenance contract for this system has been canceled. Periodic maintenance of this type wastewater system is an important factor in extending the life of the drain field as well as a requirement found in the General Statutes of North Carolina to protect public health. Section .1900 of the North Carolina Administrative Code, North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, Subchapter 10A, Sanitation, states in part: " System management in accordance with Tables V(a) and V(b) of this Rule shall be required for all systems installed or repaired after July 1, 1992."

Enclosed is a copy of the information that we have on file. Please submit a new contract with a certified operator to our office by August 19, 1999.

A list of certified operators in the immediate vicinity of Mecklenburg County is attached. If I can be of further assistance in this matter please feel free to contact me at (704) 336-5568 between 8:00 and 9:00 a.m., Monday through Friday, or leave a message on my voice mail.

Sincerely,

Larry B. Thompson, Jr., R.S., Coordinator
Managed Systems Program
Individual Water and Wastewater Systems

Enclosure: Certified Operators List
Expired Maintenance Contract

cc: Tri-County Wastewater

SUBSURFACE WASTEWATER DISPOSAL SYSTEM
MONITORING REPORT FORM

RANCH 22821 TOBACCO CH. RD 7/16/99
me and Location — Date of Inspection — Permit No.

MECK — IVP
County — System Classification

CLAY OAKS
9001 SINGING PL. RD CLT 28214
Name and Address of ORC — Name and Address of Owner

Phone No. 704 393-9270

Areas Evaluate During Inspection

	YES	NO	
LIFT STATION (if present):			
Required pumps present & operating properly?	✓		
High water alarm operating properly?	✓		
Floats, pipes, valves, disconnects in good condition?	✓		4. m. in BRADBURN TIP
Control panel enclosure/components in good condition?	✓		
EFFLUENT DOSING STATION:			
Required pumps present & operating properly			
High water alarm operating properly?			
Floats, pipes, valves, disconnects in good condition?			
Control panel enclosure/components in good condition?			
Effluent appears clear and free of solids?			____"solids
Zone valve sequencer operating properly?			
GROUND ABSORPTION FIELDS (general):			
Evidence of effluent surfacing?		✓	
Surface water being effectively diverted away?	✓		
Vegetative cover maintained properly?	✓		
Protected from traffic, destructive uses?	✓		
Distribution devices in good working condition? (manual valves, manifolds, etc.)	✓		
Repair area properly reserved, maintained?	✓		
Field free of settled or low areas?	✓		
LOW PRESSURE PIPE SYSTEM:			
Turnups/cleanouts/valves intact and accessible?		✓	will install next visit 1/16/99
Laterals free of excess solids?			
Laterals flushed this inspection?		✓	
Electric zone valves operating properly?			
Pressure head is properly adjusted?			

SPECIAL CONDITIONS:

COMMENTS: _____

COMPLIANCE STATUS: Compliant ✓ NON-COMPLIANT____

____ CHECK IF PRESSURE HEAD EVALUATION SHEET IS ATTACHED.

DATE: 7/16/99 SIGNATURE OF "ORC": _____

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

INSPECTION AND MAINTENANCE AGREEMENT (rev. 3/91)

this agreement is made and entered into this 16 day of JULY, 1999 by and between MR. RANCH (hereinafter the "Owner") and CLAY OAKS (hereinafter the "Contractor").

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system") is installed, such system being designated a Type IV-A system under the Rules for Sanitary Sewage Collection, Treatment and Disposal found at 15A N.C. Adm. Code 18A.1900 et seq.; and

WHEREAS, 15A N.C. Admin. Code 18A.1961 requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit for said system; and

WHEREAS, 15A N.C. Admin Code 18A.1961 requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity shall be in effect for as long as the system is in use; and

WHEREAS, the Contractor is a management entity of a type authorized by 15A N.C. Admin. Code 18A.1961 to manage a Type IV-A system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below.

1. The Contractor's Obligations. The Contractor shall perform the following services on the Owner's system located at 228 HARVEST CHAPEL RD CORNELIUS NC.

a. The contractor shall inspect the system at least at the frequency required in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV-A System.

b. The Contractor shall perform the following routine maintenance procedures in accordance with the conditions of the Operation Permit:

(1) [from operation permit]
(2) INSPECT & REPORT TO CMHO 2X PER YR.
(3)

c. The Contractor shall report the results of its inspections to the local health department at the frequency specified in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV-A System.

d. If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.

e. The Contractor shall notify the Owner of needed repairs which are outside of the scope of routine maintenance described in subparagraph (b) above. The Contractors shall perform necessary repairs to the system at the request of the Owner and shall be entitled to payment therefor at the Contractor's normal charge for services and materials.

f. The Contractors shall employ or shall contract with a certified operator(s) if required by Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV-A System.

g. The Contractor shall respond to a request for a nonscheduled service or maintenance call within 24 hours after receipt of such request.

2. The Owner's Obligations.

a. The Owner shall pay to the Contractor the sum of $200.00 per year for periodic inspections, routine maintenance procedures and periodic reports. The annual fee may be amended upon sixty (60) days advance notice to the Owner but may not be increased more than 10% percent per year. The Owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. All fees are due and payable within thirty (30) days of billing. Payments due to the Contractor and unpaid by the Owner after thirty (30) days shall accrue interest from the due date until paid at a rate of 1% percent per month.

b. Within 10 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

c. The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement.

3. Term. This Agreement shall remain in effect until terminated.

a. Automatic Termination.
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or time for taking an appeal has passed.

b. Termination by Mutual Consent.
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination.

c. Termination by the Owner.
The Owner may terminate this Agreement by giving notice to the Contractor and to the local health department thirty (30) days in advance of the date of termination.

d. Termination by the Contractor.

(1) The Contractor may terminate this Agreement for cause by giving written notice of intent to terminate this Agreement to the Owner and to the local health department thirty (30) days in advance of the date of termination. Cause shall be defined as:

(a) failure to remit payment for any bill for services performed under and in accordance with this Agreement if said bill is not paid within thirty (30) days of receipt by the Owner of the bill. If said bill is paid after notice of termination of this Agreement, the Agreement shall continue in effect; or

(b) failure of the Owner to provide to the Contractor authorization to complete needed repairs or satisfactory evidence that needed repairs to the system were completed by another entity within 10 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above. If said authorization to complete needed repairs or evidence of completion of said repairs is provided after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect;

(c) failure of the Owner to allow the Contractor such access to the system as is reasonably necessary in order for the Contractor to comply with the terms of this Agreement.

(2) The Contractor may not terminate this Agreement without cause, but may assign its rights and duties under this Agreement as provided in paragraph 4, below.

4. Assignment.

a. Assignment by the Owner. The Owner shall notify the Contractor of the name and address of any purchaser of the property on which the system is located. The Owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser.

b. Assignment by the Contractor. The Contractor may assign its rights and duties under this Agreement to another management entity which is qualified pursuant to 15A N.C. Admin. Code 18A.1961 to manage a Type IV A system upon thirty (30) days written notice to the Owner and to the local health department.

5. Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers and contractors as it deems desirable to perform any of the Contractor's duties under this Agreement. The Contractor shall at all times remain responsible for the performance of and payment for all work performed by all subcontractors.

6. Representations. The Parties represent to each other that each has the power, authority and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future.

8. No Implied Waiver. The waiver by either Party of the default or a breach by the other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision; and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement.

9. Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows:

To the Owner:

_____

_____

To the Contractor:

_____

_____

To the Local Health Department:

_____

_____

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted deliver, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party.

10. Place of Agreement. This Agreement and any questions concerning its validity, construction or performance shall be governed by the laws of the State of North Carolina.

notwithstanding the place of execution, or the order in which the signatures of the Parties are affixed.

11. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, any amendment or modification to this Agreement must be in writing and must be signed by the Parties.

12. Severability. In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal or unenforceable in any respect, the Parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as shall, to the maximum practicable in light of such determination, implement and give effect to the intentions of the Parties as reflected in this Agreement, and the other provisions of this Agreement shall, as so amended, modified, supplemented or otherwise affected by such actions, remain in full force and effect.

IN TESTIMONY WHEREOF, the Parties hereto have executed this Agreement in duplicate originals, one of which is retained by each of the Parties, the day and year first above written.

(Owner)

Attest:

Contract Terms (Check one)

Begin Date/End Date

( ) 1 Year
(✓) 3 Years
( ) 5 Years
( ) Other

(Contractor)

Attest:

TRI-COUNTY WASTEWATER

July 14, 1999

Robert Ravich
22824 Torrence Chapel Road
Cornelius, NC 28031

Contract date: 3-18-99

NOTICE OF CANCELLATION

Effective August 13, 1999 your fpp septic system maintenance contract will cancel without further notice pursuant to item 3.e. of the inspection and maintenance agreement dated March 18, 1999. A copy of this cancellation will be sent to the Department of Environmental Health as required by law.

Tri-County Wastewater prides itself on quality workmanship and professionalism. However, without cooperation of our customers to provide the necessary access to perform the state required procedures, we cannot provide adequate service. At this time we feel someone else might better serve you of your needs. The loss of your business will be missed. A full refund of your premium is included.

Tim Bannister
Tri-County Wastewater Management

8037 Fairview Road
Suite G
Charlotte, NC 28227

704.545.1711
800.448.1298
Fax: 704.545.1765
E-Mail: wwm@
interlink-cafe.com

INSPECTION AND MAINTENANCE AGREEMENT

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

THIS AGREEMENT is made and entered into this 18th day of March, 1999, by and between Robert Ravich (hereinafter the "Owner") and Tri-County Wastewater Management (hereinafter the "Contractor").

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system") is installed, such system being designated a Type IV system under the Rules for Sanitary Sewage Collection, Treatment and Disposal found at 15A N.C. Admin. Code 18A.1900 et seq.; and

WHEREAS, 15A N.C. Admin. Code 18A.1961 requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit for said system; and

WHEREAS, 15A N.C. Admin. Code 18A.1961 requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity shall be in effect for as long as the system is in use; and

WHEREAS, the Contractor is a management entity of a type authorized by 15A N.C. Admin. Code 18A.1961 to manage a Type IV system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below.

1. The Contractor's Obligations. The Contractor shall have performed the following services on the Owner's system located at 22824 Torence Chapel Rd. Cornelius NC 28031

a. The Contractor shall have an inspection of the system performed twice a year in accordance with Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

b. The Contractor shall have performed the following routine maintenance procedures in accordance with the conditions of the Operation Permit:

(1) [see attachments]

c. The Contractor shall report the results of its inspections to the local health department at the frequency specified in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

d. If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.

e. The Contractor shall notify the Owner of needed repairs which are outside of the scope of routine maintenance described in subparagraph (b) above. The Contractor shall perform necessary repairs to the system at the request of the Owner and shall be entitled to payment therefor at the Contractor's normal charge for services and materials.

f. If the Contract is terminated by the Contractor prior to both inspections being completed during a year the annual fee will be pro rated and refunded to the Owner. If any monies are owed to the Contractor by the Owner for any work performed to the system, the refund for cancellation will be deducted.

g. The Contractor shall employ or contract with a Certified Operator to perform the maintenance procedures if required by table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

h. If the Contractor makes a change in Certified Operators, the Contractor shall notify the local health department within 48 hours of the change and will have a replacement within thirty (30) days.

2. The Owner's Obligations.

a. The Owner shall pay to the Contractor the sum of $250.00 per year for periodic inspections, routine maintenance procedures and periodic reports. The initial annual fee is payable upon the execution of the contract. Annual billings will be made thereafter and payable within fifteen (15) days of billing. The annual fee may be amended upon sixty (60) days advance notice to the Owner. The Owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. These fees are due and payable within fifteen (15) days of billing. Payments due to the Contractor and unpaid by the Owner after fifteen (15) days shall accrue interest from the due date until paid at a rate of 1.5 percent per month.

b. Within thirty (30) days of receipt of notice of needed repairs pursuant to paragraph 1.e. above, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

c. The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement.

3. Term. This Agreement shall remain in effect until terminated.

a. Automatic Termination.
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or time for taking an appeal has passed.

b. Automatic Termination for Cause.
This agreement shall automatically terminate if the Owner fails to pay any fees or charges to the Contractor within the terms specified in paragraph 2.a.

c. Termination by Mutual Consent.
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination.

d. Termination by the Owner.
The Owner may terminate this Agreement by giving written notice to the Contractor and to the local health department thirty (30) days in advance of the date of termination.

e. Termination by the Contractor.
The Contractor may terminate this Agreement by giving written notice to the Owner and to the local health department thirty (30) days in advance of the date of termination.

4. Assignment.

a. Assignment by the Owner. The Owner shall notify the Contractor of the name and address of any purchaser of the property on which the system is located. The Owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser.

b. Assignment by the Contractor. The Contractor may assign its rights and duties under this Agreement to another management entity which is qualified pursuant to 15A N.C. Admin. Code 18A.1961 to manage a Type IV system upon thirty (30) days written notice to the Owner and to the local health department.

5. Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers and contractors as it deems desirable to perform any of the Contractor's duties under this Agreement. The Contractor shall at all times remain responsible for the performance of and payment for all work performed by all subcontractors.

6. Representations. The Parties represent to each other that each has the power, authority and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future.

8. No Implied Waiver. The waiver by either Party of a default of a breach by the other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision; and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement.

9. Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows:

To the Owner:
Robert Ravich
22824 Torrence Chapel Rd. Cornelius NC 28031

To the Contractor:
Tri-County Wastewater Management
~~712 South Hayne Street, Monroe, NC 28112~~
8037 Fairview Rd. St G Char. NC 28227

To the Local Health Department:
Mecklenburg County Environmental Health Department
700 N. Tryon St., Suite 211, Charlotte, NC 28202

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted delivery, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party.

10. Place of Agreement. This Agreement and any questions concerning its validity, construction or performance shall be governed by the laws of the State of North Carolina, notwithstanding the place of execution, or the order in which the signatures of the Parties are affixed.

11. Effective Date / Unoccupied Property. If the property is unoccupied at the time of the execution of this agreement, the effective date of this agreement may be changed to the date of occupancy with the mutual consent between all parties. This change resets the annual billing structure and the calender for periodic inspections. Fees that are paid upon the execution of this agreement will be held by the Contractor and applied at the date of the change. An attachment showing proof of the occupancy date must be provided by the Owner to the Contractor and the local health department at the time the change is to be made.

12. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, any amendment or modification to this Agreement must be in writing and must be signed by the Parties.

13. Severability. In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal or unenforceable in any respect, the Parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as shall, to the maximum extent practicable in light of such determination, implement and give effect to the intentions of the Parties as reflected in this Agreement, and the other provisions of this Agreement shall, as so amended, modified, supplemented or otherwise affected by such action, remain in full force and effect.

IN TESTIMONY WHEREOF, the Parties hereto have executed this Agreement in duplicate originals, one of which is retained by each of the Parties, the day and year first above written.

(Owner)

Attest:

(Contractor)

Attest:

(Certified Operator)

Attest:

(Office use only)

Change of effective date for unoccupied property:_____
(If applicable; refer to paragraph 11.)

(LPPCRNTC-05694)

MAINTENANCE PROCEDURES

1. Inspect ground cover and landscaping to insure proper water runoff over system.

2. SEPTIC TANK

a. Check sludge depths yearly (if applicable). Recommendation will be made to have tank pumped when sludge depth comes within 8 inches of the bottom of the outlet tee.

3. PUMP TANK

a. Inspect riser connection and conduit connections to make sure they are not allowing surface water into the pump tank.

b. Activate the pump to insure that it is functional.

c. Inspect and test all float switches to insure that they are functional.

d. Activate and test all components of the alarm system including high water alarm float, control box, audible and visible alarms.

e. Add water if necessary to test pumping controls, pump, piping, and all components of the pumping system. Measure and record draw down and calculate dosing volume and running time of the pump. Adjust float controls, if necessary, to achieve specified gallons/dose.

f. Inspect pump tank for sludge. Pump tank shall be pumped out if 6 inches of sludge are present.

4. DISTRIBUTION SYSTEM

a. Activate system and check for any breaks or cracks in supply manifold, distribution manifold, pipe connections, valves or valve connections, lateral piping, and turn-ups.

b. Check lines for correct pressure head.

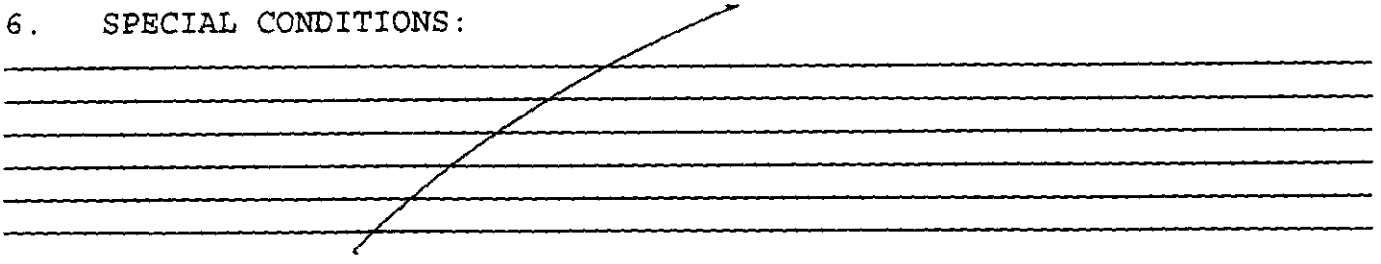
c. Check caps on clean-out connections and stand pipes.

d. Inspect all valve boxes and protective sleeves of turn-ups.

e. Cut off and cap turn-ups after initial six weeks of use as prescribed in permit (if applicable).

5. Inspect all required curtain, interceptor, or french drains to insure that they are functioning as designed to insure proper water runoff around system.

6. SPECIAL CONDITIONS:



Mecklenburg County
Health Department

March 19, 1999

Robert J. Ravich
22824 Torrence Chapel Road
Davidson, NC 28036

RE: 22824 Torrence Chapel Road

Dear Mr. Ravich:

A review of our files reveals that the required maintenance contract for the wastewater treatment and disposal system that serves the residence located at 22824 Torrence Chapel Road has been canceled. Periodic maintenance of this type wastewater system is an important factor in extending the life of the drain field as well as a requirement found in the General Statutes of North Carolina to protect public health. Section .1900 of the North Carolina Administrative Code, North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, Subchapter 10A, Sanitation, states in part: " System management in accordance with Tables V(a) and V(b) of this Rule shall be required for all systems installed or repaired after July 1, 1992."

Enclosed is a copy of the information that we have on file. Please submit a new contract with a certified operator to our office by April 23, 1999.

A list of certified operators in the immediate vicinity of Mecklenburg County is attached. If I can be of further assistance in this matter please feel free to contact me at (704) 336-5568 between 8:00 and 9:00 a.m., Monday through Friday, or leave a message on my voice mail.

Sincerely,

Larry B. Thompson, Jr., R.S.

Larry B. Thompson, Jr., R.S.
Environmental Health Specialist
Individual Water and Wastewater Systems

Enclosure: Certified Operators List
Contract Termination Letter

Febuary 15, 1999

From: Tim Johnson
Septic system operator

Subject: Termination of service contract.

Dear Client:

Due to other business demands I will no longer be able to preform scheduled maintance checks on your system. It is required by state rules that systems with design such as yours have a licensed operator under contract to preform required maintance and report back to the county.

Below are two of the possible choices that you may contact for service. The county will have a complete list of all system operators doing work in your area.

Tim Banister	704- 545-1711	704-613-5758 pager
Lori Watts	704-827-6789	704-827-3514 fax
Mecklenburg County Env. Health Section	704-336-5568	

When you have selected an operator you may have them call me at 704-924-8600 and I will be happy to share all system design and settings to aid them with your system.

Sincerely

Tim Johnson

N. C. Department of Environment, Health, and Natural Resources/Division of Environmental Health

ON-SITE WASTEWATER VIOLATION NOTICE

Owner Robert J. Ravich

Mailing Address 22824 Torrence Chapel Rd., Cornelius 2803

Occupant _____

Location Same

☒ Residence ☐ Business ☐ Other tax parcel # 001-551-14

You are hereby notified that you are violating the Rules adopted by the North Carolina Commission for Health Services or Article 11 of Chapter 130A of the General Statutes of North Carolina by owning or controlling a residence, place of business, or place of public assembly which is not provided with an approved wastewater system. Your wastewater system is not in compliance; the following corrections must be made. Consult your Local Health Department for advice and required permits by calling telephone number 336-5568/336-5102.

☐ Install/Repair wastewater system. You must obtain an Improvement Permit from the local health department prior to repairing your system.

☐ Eliminate wastewater discharge and connect to an approved wastewater system.

☐ Pit Privy must be repaired/constructed.

☒ Other Per our telephone conversation, please disregard previous notice issued Dec. 30, 1997

☒ Perform Maintenance (*specify*) Provide this office with a copy of a current maintenance contract with a certified operator for your wastewater disposal system.

If the wastewater violation is not brought into compliance by February 4, 1998, appropriate legal action will be taken.

Notice Issued January 5, 1998 (Date) Signed Larry B. Thompson, Jr., R.S. Division of Environmental Health Agent

Compliance 1-21-98 (Date) Signed _____ Division of Environmental Health Agent

DEHNR 1108 (Revised 10/96)
On-Site Wastewater Section (Review 10/98)

Tim Johnson has submitted an inspection form for this system.

N. C. Department of Environment, Health, and Natural Resources/Division of Environmental Health

ON-SITE WASTEWATER VIOLATION NOTICE

Owner Robert J. Ravich

Mailing Address 22824 Torrence Chapel Rd. Cornelius 28031

Occupant _____

Location Same

☒ Residence ☐ Business ☐ Other tax parcel # 001-551-14

You are hereby notified that you are violating the Rules adopted by the North Carolina Commission for Health Services or Article 11 of Chapter 130A of the General Statutes of North Carolina by owning or controlling a residence, place of business, or place of public assembly which is not provided with an approved wastewater system. Your wastewater system is not in compliance; the following corrections must be made. Consult your Local Health Department for advice and required permits by calling telephone number 336-5568/336-5102.

☒ ~~Install/Repair wastewater system. You must obtain an Improvement Permit from the local health department prior to repairing your system.~~

☐ Eliminate wastewater discharge and connect to an approved wastewater system.

☐ Pit Privy must be repaired/constructed.

☐ Other Repairs (*specify*) Per our conversation, please disregard previous Notice dated 12/30/97

☒ Perform Maintenance (*specify*) Provide this office with a copy of a ~~current~~ maintenance contract ~~with a certified operator~~ ~~detailed~~ for your wastewater disposal system

If the wastewater violation is not brought into compliance by January 29, 1998, appropriate legal action will be taken.

Notice Issued December 30, 1997 (Date) Signed Larry B. Thompson, Jr., R.S. (Division of Environmental Health) L. Thompson, R.S. Agent

Compliance _____ (Date) Signed _____ (Division of Environmental Health) Agent

DEHNR 1108 (Revised 10/96)
On-Site Wastewater Section (Review 10/98)

T J Systems

Date 1-98

Inspection of Subsurface Sewage System

County Mecklenburg Permit Number 4930A (File #)

Owner Lucy + Robert Rawich

Location 22824 Torrance Chaple Road Davidson, NC.

Operator Tim Johnson

Remarks

	Yes	No	REMARKS
1. ESTABLISHMENT:			
Type, size, and sewage flow in accordance with permit?	☑	☐	4 Bedroom
2. COLLECTION SYSTEM:			
No evidence of leaks into or out from sewer lines/manholes?	☐	☑	
Free of blockages/solids buildup in lines or manholes?	☑	☐	
3. TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):			
Tank risers accessible and surface water diverted?	☑	☐	
Tanks and access manholes structurally sound, watertight?	☑	☐	
Sanitary tee(s) in good working condition?	☑	☐	
Tanks pumped, cleaned out as needed?	☑	☐	
4. RAW SEWAGE LIFT STATION (If Present):			
Required pumps present, operating, and cycling properly?	☐	☐	
High-water alarm present and operating properly?	☐	☐	
Floats/pipe/valves/disconnects in good working condition?	☐	☐	N/A
Control panel enclosure/components in good condition?	☐	☐	
5. EFFLUENT DOSING SYSTEM:			
Effluent appears clear, free of excess solids?	☑	☐	
PUMP SYSTEMS:			
Required pumps present, operating, and cycling properly?	☑	☐	
High-water alarm present and operating properly?	☑	☐	
Floats/pipe/valves/disconnects in good working condition?	☑	☐	
Control panel enclosure/components in good condition?	☑	☐	
Elapsed time readings: _____ _____ _____ _____			
SIPHON SYSTEMS:			
No evidence of overflow or siphon leakage?	☐	☐	
Siphon(s) appear to be working/alternating properly?	☐	☐	N/A
Bells and vents free of debris and in good condition?	☐	☐	
6. GROUND ABSORPTION FIELDS:			
No evidence of effluent surfacing/reaching surface waters?	☐	☑	
Minimal ponding in subsurface trenches?	☑	☐	
Surface water being effectively diverted away?	☑	☐	
Diversions/ditches/swales/tile drains properly maintained?	☑	☐	
Line cover/vegetation adequate/maintained as needed?	☑	☐	
Protected from traffic, destructive uses?	☑	☐	
Distribution devices in good condition, working properly?	☑	☐	
Repair area properly reserved, maintained?	☑	☐	
LOW-PRESSURE PIPE DRAIN FIELDS:			
Turnups/cleanouts/valves intact and accessible?	☑	☐	
No effluent standing in lower laterals?	☐	☑	
Laterals free of excess solids, cleaned out as needed?	☑	☐	
Pressure head is properly adjusted?	☑	☐	Grass was plugged and replaced

OVERALL CONDITION AND OPERATION OF SYSTEM:

System is in Good Order

SUMMARY OF IMPROVEMENTS NEEDED:

Improvement	Repair Within (Days)

DATE: 1-14-98 SIGNED: T J Johnson AGENT

T J Systems

Date 1-26-95

Inspection of Subsurface Sewage System

County Mecklenburg Permit Number 4930 A

Owner Lucy & Radich Robert Radich

Location 22824 Torrance Chaple Road Davidson, N.C.

Operator Timothy Johnson

Remarks

	Yes	No	REMARKS
1. ESTABLISHMENT:			
Type, size, and sewage flow in accordance with permit?	☐	☐	4 Bedroom Home 480 gpd
2. COLLECTION SYSTEM:			
No evidence of leaks into or out from sewer lines/manholes?	☐	☑	
Free of blockages/solids buildup in lines or manholes?	☑	☐	
3. TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):			
Tank risers accessible and surface water diverted?	☑	☐	
Tanks and access manholes structurally sound, watertight?	☑	☐	
Sanitary tee(s) in good working condition?	☑	☐	
Tanks pumped, cleaned out as needed?	☑	☐	
4. RAW SEWAGE LIFT STATION (If Present):			
Required pumps present, operating, and cycling properly?	☐	☐	
High-water alarm present and operating properly?	☐	☐	
Floats/pipe/valves/disconnects in good working condition?	☐	☐	
Control panel enclosure/components in good condition?	☐	☐	N/A
5. EFFLUENT DOSING SYSTEM:			
Effluent appears clear, free of excess solids?	☐	☐	
PUMP SYSTEMS:			
Required pumps present, operating, and cycling properly?	☑	☐	
High-water alarm present and operating properly?	☑	☐	
[illegible] pipe/valves/disconnects in good working condition?	☑	☐	
Co[illegible]ol panel enclosure/components in good condition?	☑	☐	
Elapsed time readings: _____ _____ _____			
SIPHON SYSTEMS:			
No evidence of overflow or siphon leakage?	☐	☐	
Siphon(s) appear to be working/alternating properly?	☐	☐	N/A
Bells and vents free of debris and in good condition?	☐	☐	
6. GROUND ABSORPTION FIELDS:			
No evidence of effluent surfacing/reaching surface waters?	☐	☑	
Minimal ponding in subsurface trenches?	☑	☐	
Surface water being effectively diverted away?	☑	☐	
Diversions/ditches/swales/tile drains properly maintained?	☑	☐	
Line cover/vegetation adequate/maintained as needed?	☑	☐	
Protected from traffic, destructive uses?	☑	☐	
Distribution devices in good condition, working properly?	☑	☐	
Repair area properly reserved, maintained?	☑	☐	
LOW-PRESSURE PIPE DRAIN FIELDS:			
Turnups/cleanouts/valves intact and accessible?	☑	☐	under cover of grass did uncover
No effluent standing in lower laterals?	☑	☐	
Laterals free of excess solids, cleaned out as needed?	☑	☐	
Pressure head is properly adjusted?	☑	☐	

OVERALL CONDITION AND OPERATION OF SYSTEM: Good

SUMMARY OF IMPROVEMENTS NEEDED:

Improvement	Repair Within (Days)

DATE: 1-26-95 SIGNED: Timothy R Johnson AGENT

T J Systems

Date 4-96

Inspection of Subsurface Sewage System

County Mecklenburg Permit Number 4930A

Owner Lucy & Robert Rauch

Location 22824 Torrance Chapel Road Davidson

Operator Tim Johnson

Remarks

	Yes	No	REMARKS
ESTABLISHMENT:			
Type, size, and sewage flow in accordance with permit?	☐	☐	4 Bedroom Home
COLLECTION SYSTEM:			
No evidence of leaks into or out from sewer lines/manholes?	☐	☑	
Free of blockages/solids buildup in lines or manholes?	☑	☐	
TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):			
Tank risers accessible and surface water diverted?	☑	☐	
Tanks and access manholes structurally sound, watertight?	☑	☐	
Sanitary tee(s) in good working condition?	☑	☐	
Tanks pumped, cleaned out as needed?	☑	☐	
RAW SEWAGE LIFT STATION (If Present):			
Required pumps present, operating, and cycling properly?	☐	☐	
High-water alarm present and operating properly?	☐	☐	
Floats/pipe/valves/disconnects in good working condition?	☐	☐	
Control panel enclosure/components in good condition?	☐	☐	N/A
EFFLUENT DOSING SYSTEM:			
Effluent appears clear, free of excess solids?	☐	☐	
PUMP SYSTEMS:			
Required pumps present, operating, and cycling properly?	☑	☐	
High-water alarm present and operating properly?	☑	☐	
F pipe/valves/disconnects in good working condition?	☑	☐	
C ol panel enclosure/components in good condition?	☑	☐	
Elapsed time readings: ____ ____ ____ ____			
SIPHON SYSTEMS:			
No evidence of overflow or siphon leakage?	☐	☐	
Siphon(s) appear to be working/alternating properly?	☐	☐	N/A
Bells and vents free of debris and in good condition?	☐	☐	
GROUND ABSORPTION FIELDS:			
No evidence of effluent surfacing/reaching surface waters?	☐	☑	
Minimal ponding in subsurface trenches?	☑	☐	
Surface water being effectively diverted away?	☑	☐	
Diversions/ditches/swales/tile drains properly maintained?	☑	☐	
Line cover/vegetation adequate/maintained as needed?	☑	☐	
Protected from traffic, destructive uses?	☑	☐	
Distribution devices in good condition, working properly?	☑	☐	
Repair area properly reserved, maintained?	☑	☐	
LOW-PRESSURE PIPE DRAIN FIELDS:			
Turnups/cleanouts/valves intact and accessible?	☑	☐	
No effluent standing in lower laterals?	☐	☑	
Laterals free of excess solids, cleaned out as needed?	☑	☐	
Pressure head is properly adjusted?	☑	☐	Grass Plugged and removed then replaced

OVERALL CONDITION AND OPERATION OF SYSTEM: Good

Improvement	SUMMARY OF IMPROVEMENTS NEEDED:	Repair Within (Days)

DATE: 4-12-96 SIGNED: Tim Johnson AGENT

N. C. DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

INSPECTION OF ENGINEERED SUBSURFACE SEWAGE SYSTEM

Mecklenburg County — 4930 A
Health Department — Permit/Project No.

22824 Torrence Chapel Road — Private Residence — 480
Location — Name of Establishment — Type of Establishment — Design Flow

Robert S. Ravich — 22824 Torrence Chapel Road, Cornelius
Owner/Agent — Address — Phone

Operator — Address — Phone

Remarks: No current inspection reports - current contract?

	Yes	No	REMARKS
1. ESTABLISHMENT:			
Type, size, and sewage flow in accordance with permit?	☑	☐	
2. COLLECTION SYSTEM:			
No evidence of leaks into or out from sewer lines/manholes?	☐	☐	
Free of blockages/solids buildup in lines or manholes?	☐	☐	
3. TANKAGE (Grease Traps/Lift Stations/Septic/Dosing Tanks):			
Tank risers accessible and surface water diverted?	☐	☑	Pump tank riser at grade
Tanks and access manholes structurally sound, watertight?	☑	☐	
Sanitary tee(s) in good working condition?	☐	☐	
Tanks pumped, cleaned out as needed?	☐	☐	
4. RAW SEWAGE LIFT STATION (If Present):			
Required pumps present, operating, and cycling properly?	☐	☐	
High-water alarm present and operating properly?	☐	☐	
Floats/pipe/valves/disconnects in good working condition?	☐	☐	
Control panel enclosure/components in good condition?	☐	☐	
5. EFFLUENT DOSING SYSTEM:			
Effluent appears clear, free of excess solids?	☐	☐	
PUMP SYSTEMS:			
Required pumps present, operating, and cycling properly?	☑	☐	
High-water alarm present and operating properly?	☑	☐	Did not see alarm
Floats/pipe/valves/disconnects in good working condition?	☑	☐	Control panel at and partially below grade
Control panel enclosure/components in good condition?	☑	☐	
Elapsed time readings: _____ _____ _____ _____			
SIPHON SYSTEMS:			
No evidence of overflow or siphon leakage?	☐	☐	
Siphon(s) appear to be working/alternating properly?	☐	☐	
Bells and vents free of debris and in good condition?	☐	☐	
6. GROUND ABSORPTION FIELDS:			
No evidence of effluent surfacing/reaching surface waters?	☑	☐	
Minimal ponding in subsurface trenches?	☑	☐	
Surface water being effectively diverted away?	☑	☐	
Diversions/ditches/swales/tile drains properly maintained?	☑	☐	
Line cover/vegetation adequate/maintained as needed?	☑	☐	
Protected from traffic, destructive uses?	☑	☐	
Distribution devices in good condition, working properly?	☑	☐	
Repair area properly reserved, maintained?	☐	☐	
LOW-PRESSURE PIPE DRAIN FIELDS:			
Turnups/cleanouts/valves intact and accessible?	☐	☑	Did not find valves/turnups
No effluent standing in lower laterals?	☐	☐	
Laterals free of excess solids, cleaned out as needed?	☐	☐	
Pressure head is properly adjusted?	☐	☐	

OVERALL CONDITION AND OPERATION OF SYSTEM: _____

SUMMARY OF IMPROVEMENTS NEEDED:

Improvement	Repair Within (Days)

DATE: 12-12-97 SIGNED: Larry B. Thompson, Jr. R.S. AGENT
Division of Environmental Health

DEHNR 3702 (Revised 9/91)
Environmental Health Services Section (Review 9/95)

SUMMARY OF IMPROVEMENTS NEEDED (*Continued*)

Improvement	Repair Within (Days)

INTENT TO SUSPEND OR REVOKE PERMIT

This is to notify you of intent to suspend/revoke *(circle one)* your operation permit/certificate of completion *(circle one)* 60 days from this date for the following violations:

_____
[Law or Rule(s)]

If suspended, the operation permit or certificate of completion remains suspended until violations are corrected. A hearing will be held prior to suspension or revocation if you file a petition for a hearing with the Office of Administrative Hearings, P. O. Drawer 27447, Raleigh, NC 27611-7447, in writing within the number of days specified above of your intent to attend the hearing. If you do not petition the Office of Administrative Hearings, the operation permit or certificate of completion will be suspended or revoked.

IMMEDIATE SUSPENSION OR REVOCATION OF PERMIT

This is to notify you of immediate suspension/revocation *(circle one)* of your operation permit/certificate of completion *(circle one)* for the following violations: _____
[Law or Rule(s)]

If suspended, the permit or certificate remains suspended until the violations are corrected. You will be notified of the day and location of a hearing on this suspension or revocation by a hearing officer from the Office of Administrative Hearings.

This the _____ day of _____, 19 ____.

_____ Agent
DIVISION OF ENVIRONMENTAL HEALTH

INSTRUCTIONS

Purpose: Article 11 of Chapter 130A requires the Commission for Health Services to adopt rules governing the design, construction, and operation of sanitary sewage systems. 15A NCAC 18A .1937 specifies that the local health department shall determine whether systems with an Operation Permit are operating properly at a frequency specified in Rule .1961, Table V(a), and that systems which exceed 3,000 gallons per day and other systems which are required to be designed by a professional engineer shall be reinspected annually. This form is developed to be used in making inspections of engineered subsurface sewage systems.

Preparation: Local environmental health specialists shall complete the form every time they conduct an inspection. Prepare an original and two copies for:

1. Original to be left with the responsible person.
2. Copy for the local health department.
3. Copy for the Environmental Health Services Section, Division of Environmental Health.

In the event the permit is suspended or revoked, complete the portion above.

Disposition: This form may be destroyed in accordance with Standard 7, Inspection Records, of the *Records Disposition Schedule* published by the N. C. Division of Archives and History.

Additional forms may be ordered from: Environmental Health Services Section
Division of Environmental Health
P. O. Box 27687
Raleigh, NC 27611-7687
(Courier 52-01-00)

CERTIFICATE OF COMPLETION/OPERATION PERMIT

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

FILE: 4930A DATE: 4/22/93

TC: 001 551 14 ☐ L ☒ CRT

SERIAL Nº 15184

Name of Owner E. KNOX (Robert Ravich) Juris.:

Address of Property 22824 Torrence Chapel Rd

Inspection Data:

Tank Material PCC

Total Length of Drainfield 267' PPBPS

Number of Lines 4 @ vary

Cover Depth 8"

Water Supply Source com well

Distance to Water Source 7100'

Excavation Inspected 4/15/93

Tank(s) Inspected 4/14/93

Wash Line Inspected NA

High Water Alarm Inspected 4/14/93

PLOT

Design: 1993, 1500ST, 1000DT, PI, MOD, 267'PPBPS cecil CTR# 74

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☒ installed or constructed ☐ altered or repaired

☒ in accordance with the permit issued ☐ as detailed in the plot above

and meets the provisions of 10 NCAC 10A .1900, "Laws And Rules For Sanitary Sewage Collection, Treatment, And Disposal" in effect on the date of issuance of the permit. The issuance of this

☐ Certificate of Completion ☒ Operation Permit

does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 10 NCAC 10A .1900 in addition to those listed below under "COMMENTS." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

COMMENTS: septic system designed for 4 bedroom house.
Type IV

Philo S. Walker R.S.
Environmentalist

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

Date: Aug. 04, 1992

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

To: Speck Builders Inc.
!947 Miller Road
China Grove, N.C. 28023
Phone 704-857-6622 Attn. Wesley Stokes

Subject: Lot 10 Knox Landing Mecklenburg County
File # : 4930A
Parcel : 00116107 PO

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

This system is designed for a four bedroom house at an application rate of .3 gpd. 480/.3 = 1600/3 = 534 LF of conventional drainfield multiplied by .5 = 267 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.

Appr

APPROVED
ENVIRONMENTAL HEALTH
DIVISION
MECKLENBURG COUNTY
HEALTH DEPARTMENT
Date 8-17-92

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 15506

File: 4930 A Action 1

Parcel: 00001-161-07 ☐ PC

Location: Torrence Chapel Road

Subdivision:

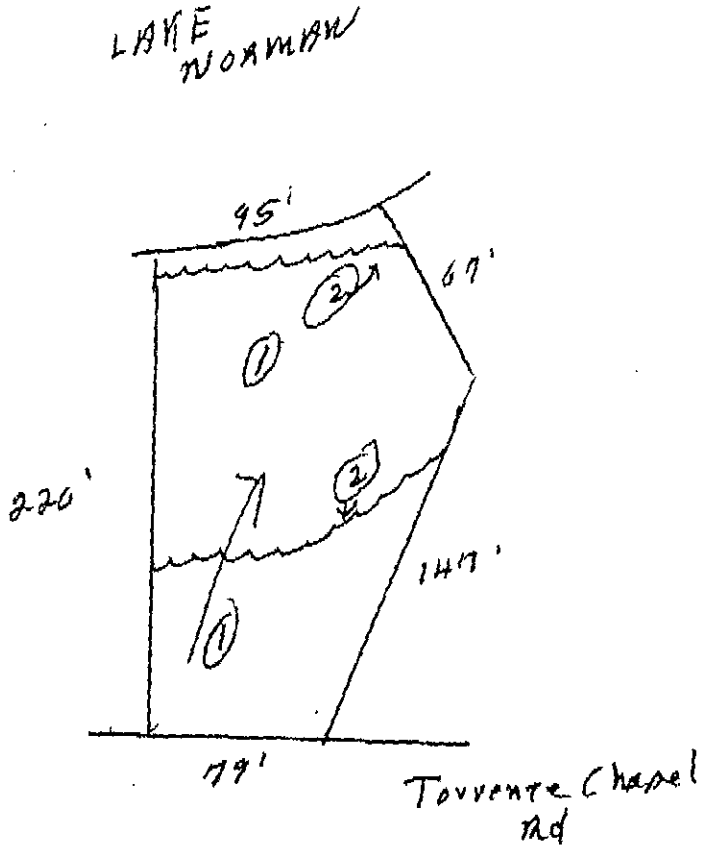
Lot: 10 Block: Acres: Approx .6

Owner: H. Edward Knox
Address: 22821 Torrence Chapel Road
Davidson, N. C. 28036

Comments: 100% Repairs

Described by: William A. Mullis

Date: 9-6-88

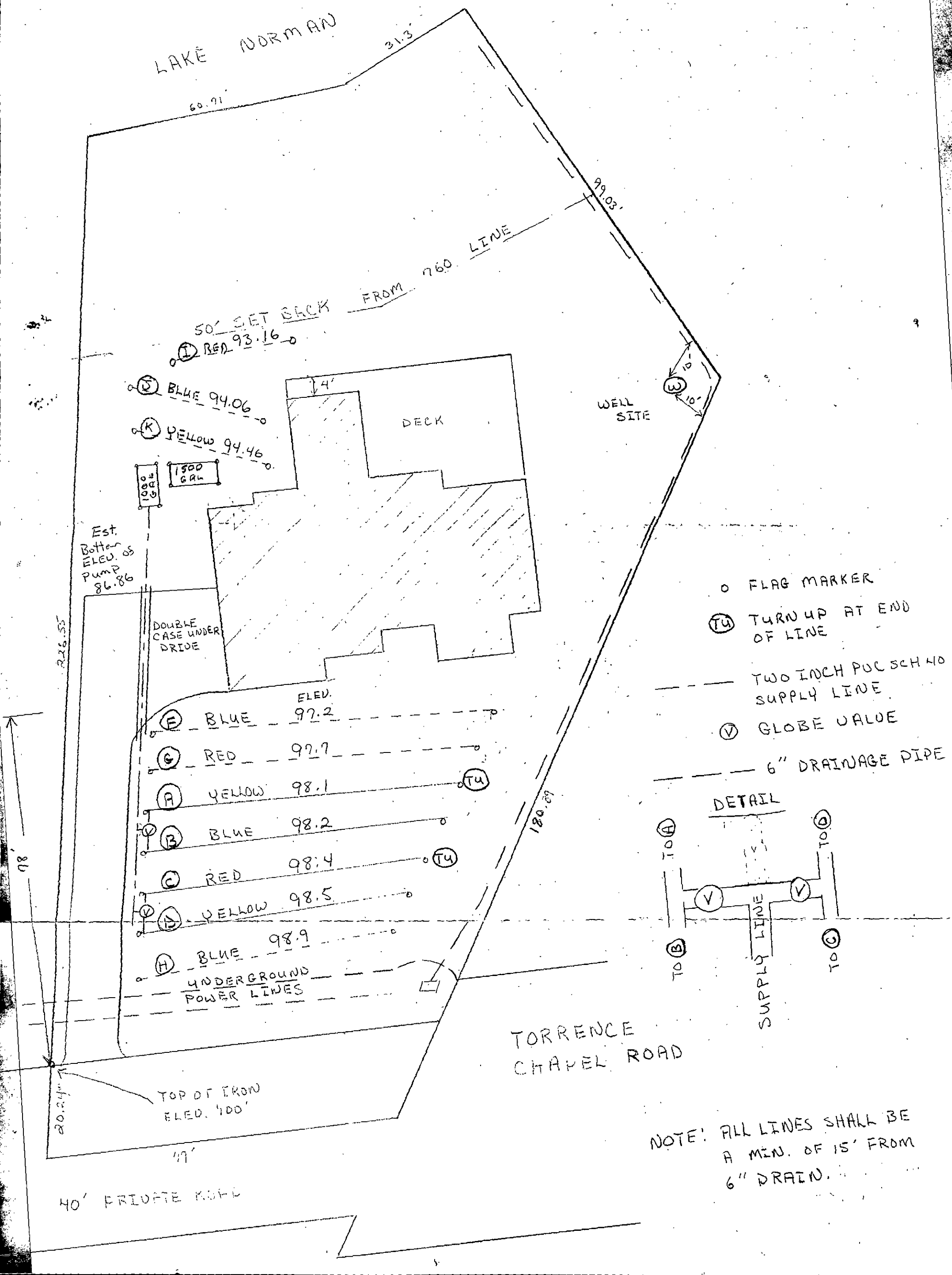


*** EVALUATION KEY ***

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

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U 2-10%	S PS (U) Complex Slopes	S PS U	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 >36" To water	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U limited	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	WA Cecil-Like	Complex Slopes				
Area Classification	S (PS) U	S PS (U)	S PS U	S PS U	S PS U	S PS U

LOT 10 KNOX LANDING
FILE # 4930A
DATE 8-3-92
SCALE 1" = 20'



NOTE: ALL LINES SHALL BE A MIN. OF 15' FROM 6" DRAIN.

$11.79\ (d)^2\ \sqrt{H}$

Line	# Panel	# Hole Per Panel	Size Hole	Line Head	Line Length	Hole Flow	Per Panel Line Flow min
A	17	one	3/16	2.0ft	72 '	.59	10.03
B	16	one	3/16	2.0ft	68 '	.59	9.44
C	15	one	3/16	2.0ft	65 '	.59	8.85
D	14	one	3/16	2.0ft	62 '	.59	8.26
F		repair			80 '		
G		repair			76 '		
H		repair			58 '		
I		repair			25 '		
J		repair			30 '		
K		repair			30 '		
Totals	62				267		36.58

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 3.77
Total lift = 13.64 (98.50 + (2) - 86.86 = 13.64) elev.
TDH = 17.41
20% margin = 22 ft (17.41 / .8 = 21.76 = 22 ft)

Pump Size: 46 (36.58/.8) gallon per minute at 22 feet of head.

Pump cycle should be 6.1 min or 223 gallons.

Note: Each line shall have a globe valve as shown in the detail for pressure adjustment. Each valve or group 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 = 120lf = 1.20 * 2.62 = 3.14

fittings = 3.14 * .2 = 0.63

total 3.77

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. Fourth Edition.

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.

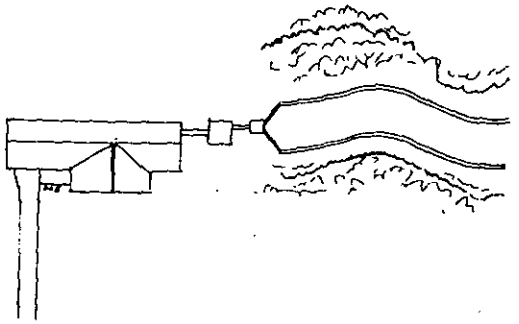
This conventional layout requires 2700 sq. ft. of area on the lot and equal space for repair for a total of 5400 sq. ft. of suitable and usable area. To calculate the T & J Panel system size, the above calculations must be made with an additional fourth step as described in 10NCAC 10A .1956 (3)(a)(ii)(B)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

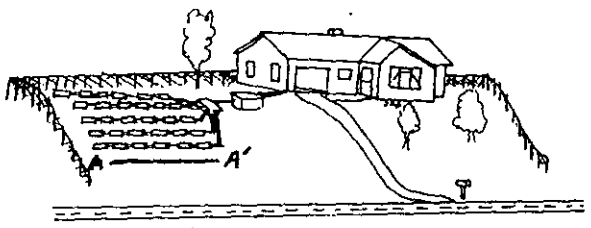
A Panel System requires only a 1200 sq. ft area on the lot for the system and equal area for repair. with the Panel System the installation and repair can go into the same space as the initial area required by a conventional gravel trench system.

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

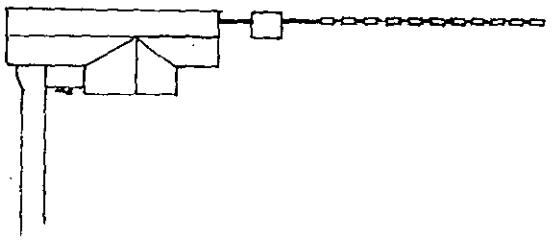


WRONG

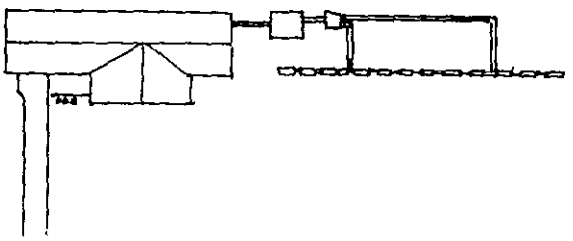
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

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 _____

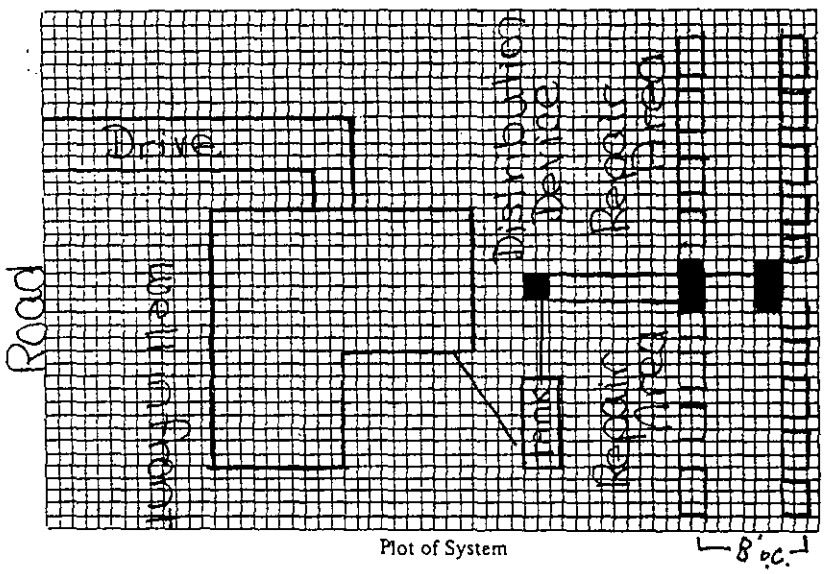
No. Bedrooms 3 No. Bathrooms 2 1/2

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 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: 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. _____

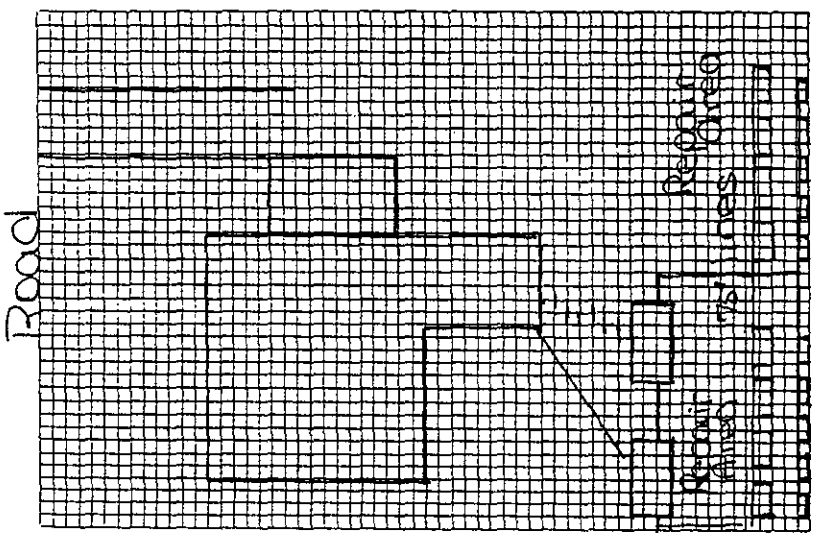
House (✓) Mobile Home ( ) Business ( ) Other _____

No. Bedrooms 3 No. Bathrooms 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 >100"
Rock or other impervious formations _____

Lot Area 20,000

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



Plot of System

Size of Tank 1000 septic/ 1000 pump Gals.
Nitrification Field:
No. of Lines 2 (75') 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.

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

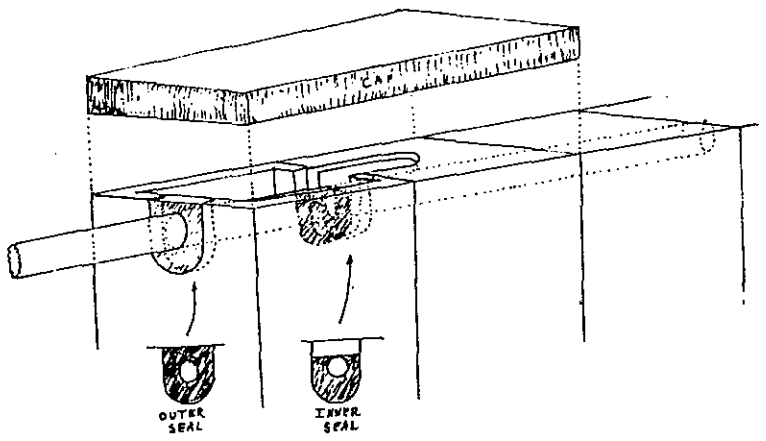
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One 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 to as near to original structure as possible. A light dusting of lime on the side walls will help the system to continue the brake down of solids.

Final Inspection

The following list of points are things that an inspector should look for when 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

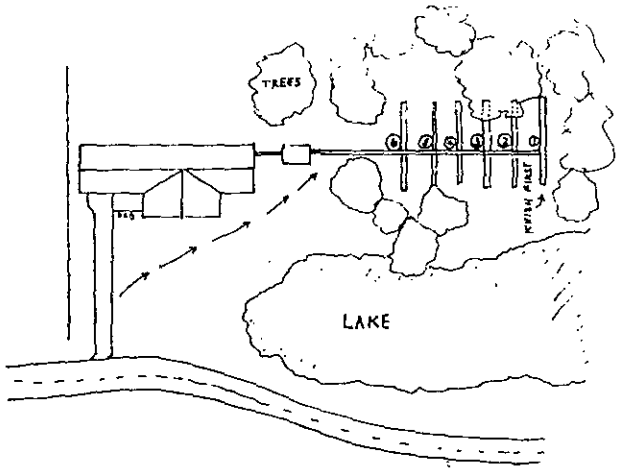
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more 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.

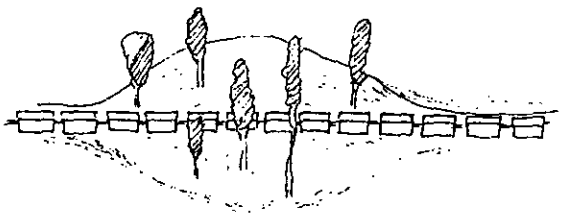
Installation Tips

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

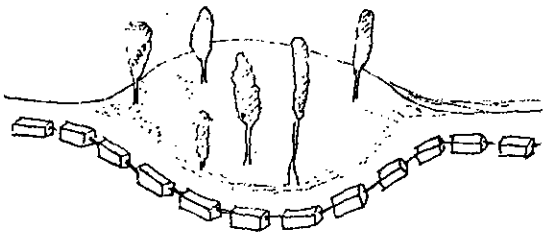


Above is an example of a multiple line installation. As you can see the installation should begin with the line marked 1 and proceed to 2, 3, then 4. This procedure will greatly ease material handling and backfilling. (Note sections of the drainlines should be left uncovered to allow for inspection of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

_____

_____

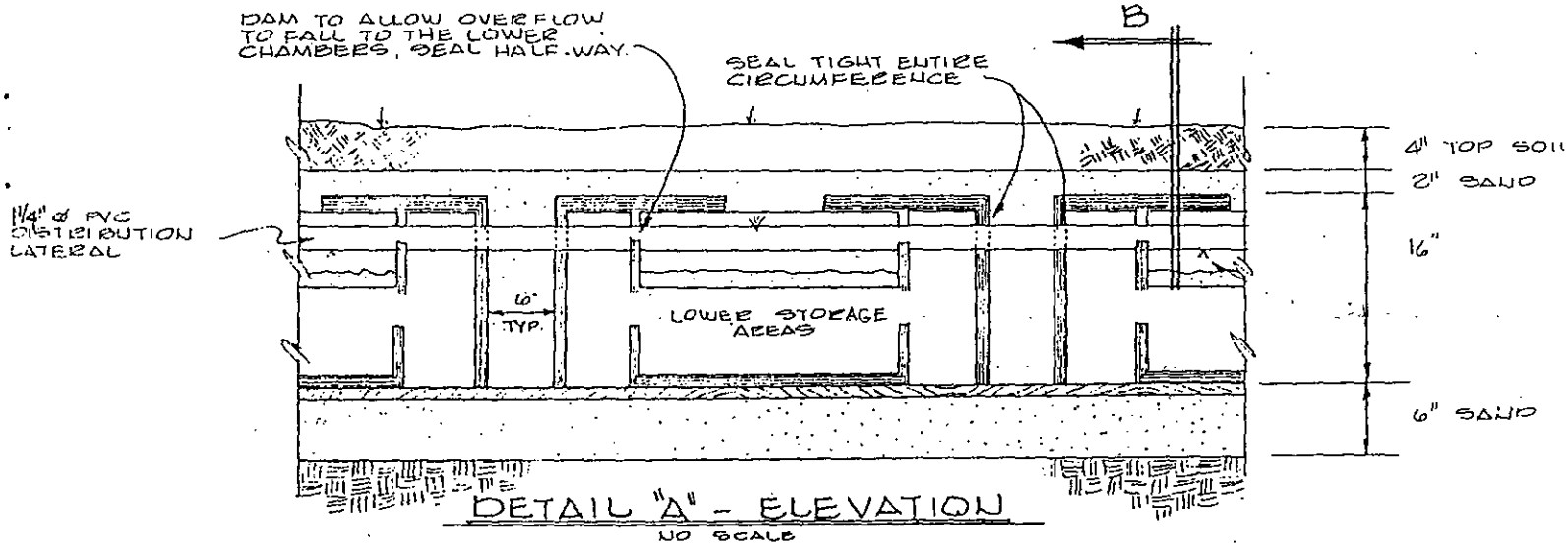
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partical Sand (100 lbs per 8 Panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____	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 is applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects a LP Panel is similar to a LPP with the holes discharging into the panels.

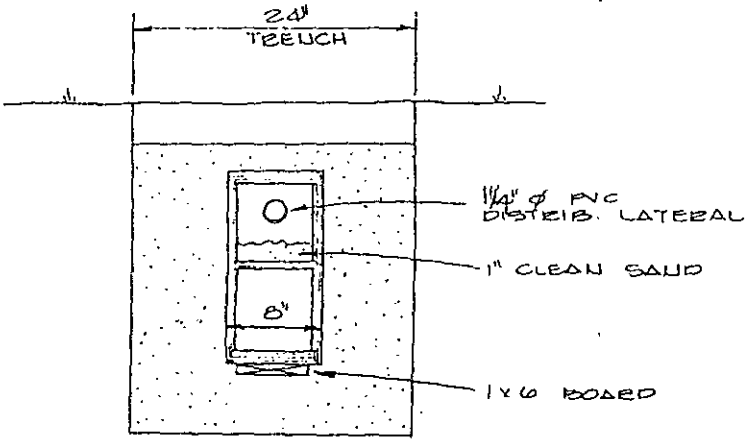
The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel holds 3.6 gallons. when the system has 34 panels and all the holes are the same size, then you would multiply 34 X 3.6 to get 122 gallon 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 in the system the the pump cycle is set by the 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 constructed as shown in the drawing as to allow for service and repairs.

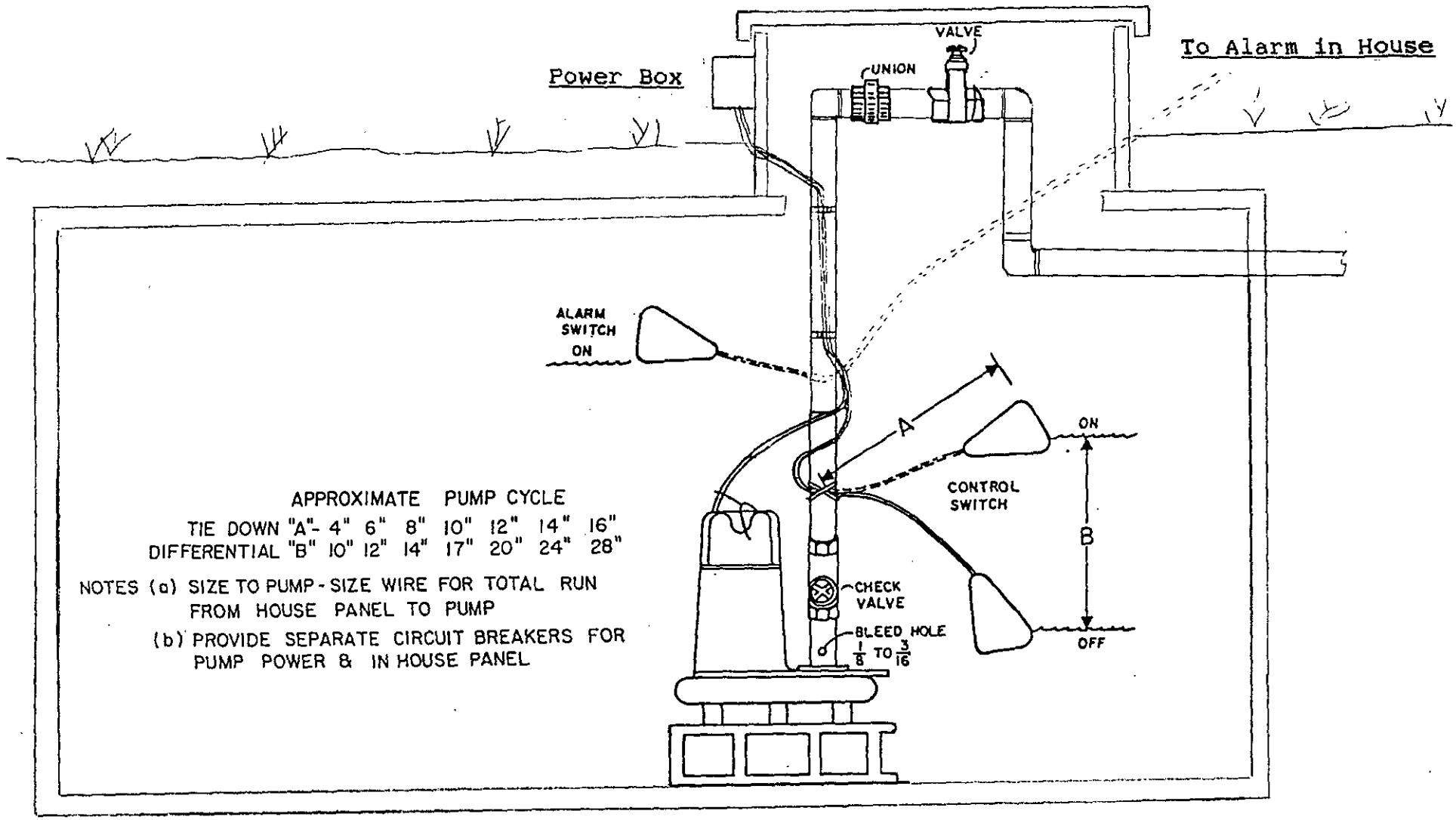


DETAIL "A" - ELEVATION

NO SCALE



DETAIL "B" - SECTION



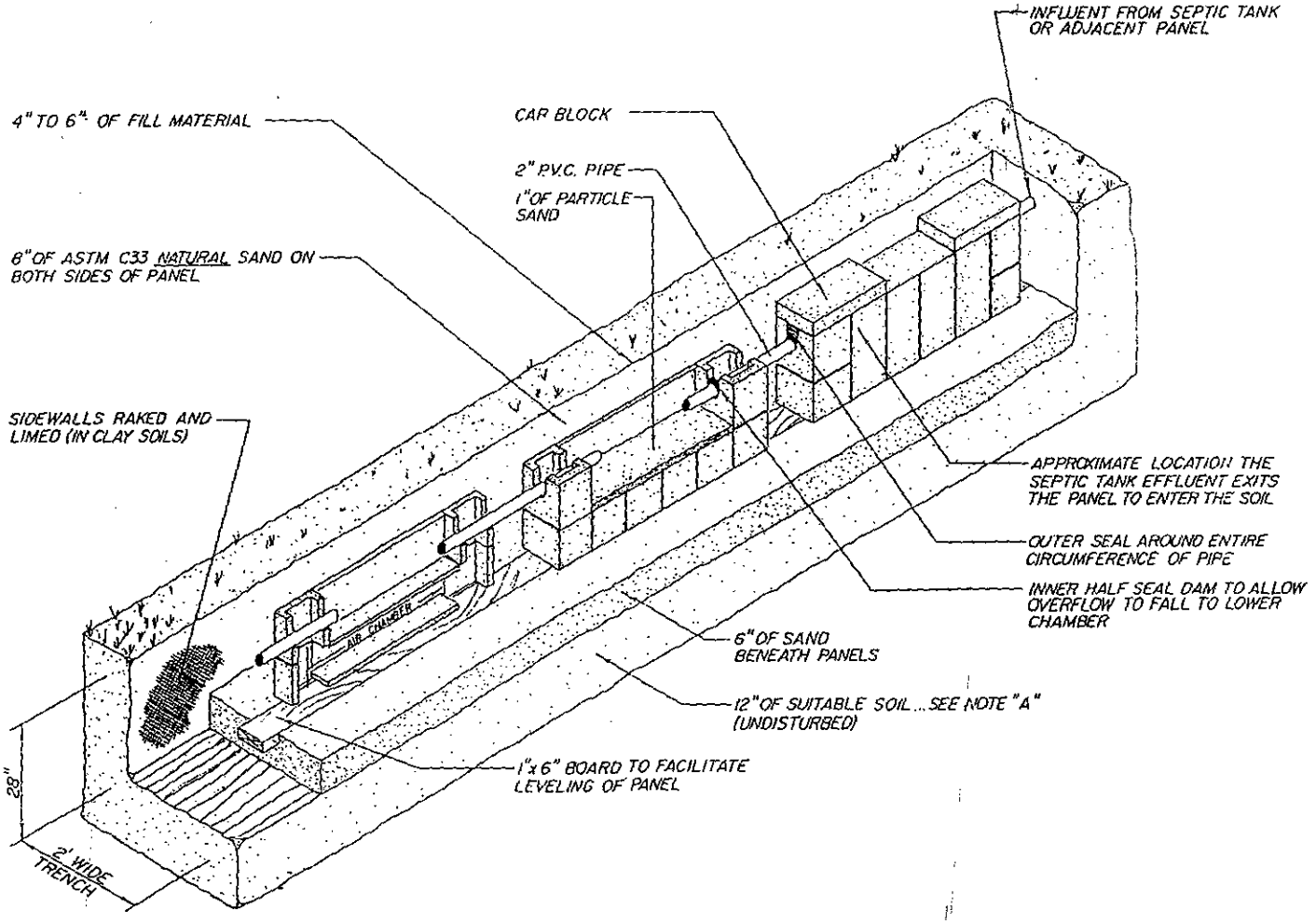
APPROXIMATE PUMP CYCLE

TIE DOWN "A"	4"	6"	8"	10"	12"	14"	16"
DIFFERENTIAL "B"	10"	12"	14"	17"	20"	24"	28"

NOTES (a) SIZE TO PUMP - SIZE WIRE FOR TOTAL RUN FROM HOUSE PANEL TO PUMP

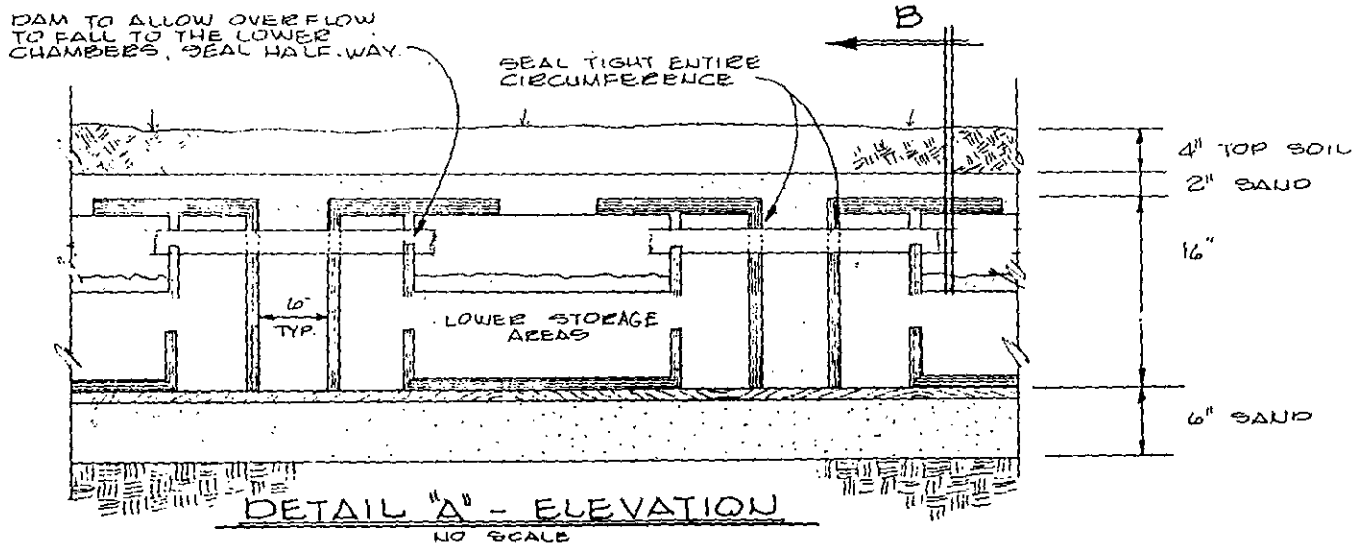
(b) PROVIDE SEPARATE CIRCUIT BREAKERS FOR PUMP POWER & IN HOUSE PANEL

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

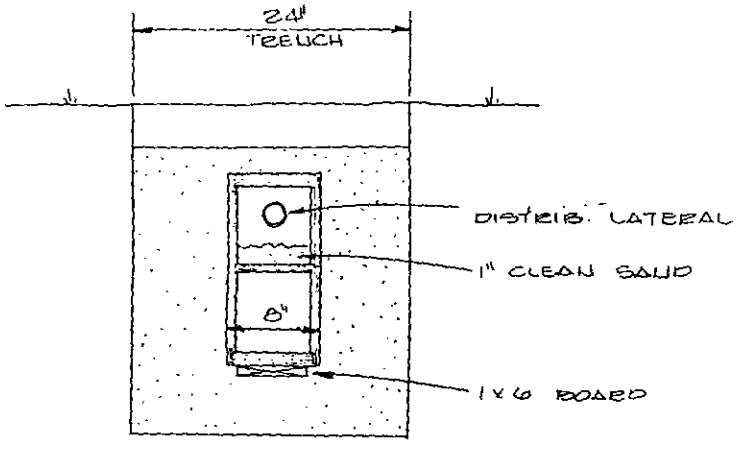


THE T. & J. PANEL
WASTE WATER TREATMENT SYSTEM
PATENT NUMBER 4013559

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

Credit transfer of $50.00 paid 5-11-92

fill #4930A. 14400

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

#100 06/10/92 WPK

CRT

Mecklenburg County Health Dept.
Environmental Health Division
c/o Hal Marshall Ctr., Suite 211
700 N. Tryon St.
Charlotte, NC 28202

(704)336-5102

Date:

PERSON FILING APPLICATION:

NAME: RAVICH (last) ROBERT (first) J (mi)

ADDRESS: 1016 4TH CRK LNDG DR PHONE: (704) 873-3929

CITY: STATESVILLE STATE: NC ZIPCODE: 28677

PROPERTY INFORMATION (FROM ENGINEERING FORM):

TAX/PARCEL NUMBER: 00155114

STREET ADDRESS: 22824 TORRENCE CHAPEL RD

ZONING:

PROPERTY OWNER:

NAME: KNOX (last) EDWARD (first) (mi)

ADDRESS: 22821 TORRENCE CHAPEL RD PHONE: (704) 892-1578

CITY: DAVIDSON STATE: NC ZIPCODE:

SUBDIVISION OR MOBILE HOME PARK NAME:

Township (check one):
[X] 0 Mecklenburg County [ ] 2 Davidson [ ] 4 Pineville [ ] 6 Huntersville
[ ] 1 Charlotte [ ] 3 Cornelius [ ] 5 Matthews [ ] 7 Mint Hill

TYPE APPLICATION (check one):

LOT NUMBER: 10 LOT SIZE (in acres): 0.6091

[ ] SOIL TEST - INDIVIDUAL LOT (D)
[X] NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)
[ ] EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
[ ] ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)
[ ] COMMERCIAL OR INDUSTRIAL (N)
[ ] SOIL TEST DEVELOPMENT (P)
[ ] ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (X)
[ ] MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)
[ ] REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):
[ ] SINGLE MOBILE HOME (S) [X] HOUSE (H) [ ] MULTIPLE FAMILY (U)
[ ] DOUBLE WIDE (D) [ ] MODULAR HOME (M) [ ] OTHER _____ (O)

NUMBER BEDROOMS: 4 NUMBER OCCUPANTS: 2

SYSTEM CLASSIFICATION:

COMMERCIAL/INDUSTRIAL PROPERTY:
Type Business _____ # Employees ___ Per Shift __ __ __
Industrial Wastes (Y/N) __
Underground Storage Tanks On Property (Y/N) __ Type _____

WATER SUPPLY (check one):
[ ] Community (C) [ ] Shared Well (S)
[ ] Municipal (M) [ ] Other 'spring' (O)
[X] Private Well (P)

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):
[X] Swimming Pool [ ] Jacuzzi [ ] Stable/Barn [ ] Workshop [ ] None
[ ] Garage [ ] Storage Building [ ] Deck/Patio [ ] Bedrooms [ ] Other

The undersigned, owner, or legal agent for the owner, of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY HEALTH DEPARTMENT to enter onto the property for the purpose of processing this request.

Signed: Larry J Ravich Date: May 7, 1992

NOTICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the 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 approval is granted by this Department.

...This permit is not transferable.

...Lot disapproved for conventional system | Letter mailed 5/26/92
Robert Walker 5/21/92

PPBPS | MANAGEMENT FORM ON FILE

[X] IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE
[ ] MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE
[ ] ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

Environmentalist Date

Director or Authorized Section Head 7-2-92 Date

WWATER : 122791

STATE OF NORTH CAROLINA

INSPECTION AND MAINTENANCE
SAMPLE AGREEMENT (rev. 3/91)

COUNTY OF _____

THIS AGREEMENT is made and entered into this 2 day of July, 1992, by and between _____ (hereinafter the "Owner") and Timothy H Johnson DBA T.J. Systems (hereinafter the "Contractor").

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system") is installed, such system being designated a Type IV system under the Rules for Sanitary Sewage Collection, Treatment and Disposal found at 15A N.C. Admin. Code 18A.1900 et seq.; and

WHEREAS, 15A N.C. Admin. Code 18A.1961 requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit for said system; and

WHEREAS, 15A N.C. Admin. Code 18A.1961 requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity shall be in effect for as long as the system is in use; and

WHEREAS, the Contractor is a management entity of a type authorized by 15A N.C. Admin. Code 18A.1961 to manage a Type IV system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below.

1. The Contractor's Obligations. The Contractor shall perform the following services on the Owner's system located at 22824 Torrance Chapel Rd.

a. The Contractor shall inspect the system at least at the frequency required in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

b. The Contractor shall perform the following routine maintenance procedures in accordance with the conditions of the Operation Permit:

(1) [from operation permit]
(2)
(3)

c. The Contractor shall report the results of its inspections to the local health department at the frequency specified in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

d. If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.

e. The Contractor shall notify the Owner of needed repairs which are outside of the scope of routine maintenance described in subparagraph (b) above. The Contractor shall perform necessary repairs to the system at the request of the Owner and shall be entitled to payment therefor at the Contractor's normal charge for services and materials.

f. The Contractor shall employ or shall contract with a certified operator(s) if required by Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type IV System.

g. The Contractor shall respond to a request for a nonscheduled service or maintenance call within 72 hours after receipt of such request.

2. The Owner's Obligations.

a. The Owner shall pay to the Contractor the sum of $_____ per year for periodic inspections, routine maintenance procedures and periodic reports. The annual fee may be amended upon sixty (60) days advance notice to the Owner but may not be increased more than ____ percent per year. The Owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. All fees are due and payable within thirty (30) days of billing. Payments due to the Contractor and unpaid by the Owner after thirty (30) days shall accrue interest from the due date until paid at a rate of ____ percent per month.

b. Within 30 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

c. The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement.

3. Term. This Agreement shall remain in effect until terminated.

a. Automatic Termination.
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or time for taking an appeal has passed.

b. Termination by Mutual Consent.
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination.

c. Termination by the Owner.
The Owner may terminate this Agreement by giving notice to the Contractor and to the local health department thirty (30) days in advance of the date of termination.

d. Termination by the Contractor.

(1) The Contractor may terminate this Agreement for cause by giving written notice of intent to terminate this Agreement to the Owner and to the local health department thirty (30) days in advance of the date of termination. Cause shall be defined as:

(a) failure to remit payment for any bill for services performed under and in accordance with this Agreement if said bill is not paid within thirty (30) days of receipt by the Owner of the bill. If said bill is paid after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect; or

(b) failure of the Owner to provide to the Contractor authorization to complete needed repairs or satisfactory evidence that needed repairs to the system were completed by another entity within 30 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above. If said authorization to complete needed repairs or evidence of completion of said repairs is provided after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect;

(c) failure of the Owner to allow the Contractor such access to the system as is reasonably necessary in order for the Contractor to comply with the terms of this Agreement.

4. Assignment.

a. Assignment by the Owner. The Owner shall notify the Contractor of the name and address of any purchaser of the property on which the system is located. The Owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser.

b. Assignment by the Contractor. The Contractor may assign its rights and duties under this Agreement to another management entity which is qualified pursuant to 15A N.C. Admin. Code 18A.1961 to manage a Type

IV system upon thirty (30) days written notice to the Owner and to the local health department.

5. Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers and contractors as it deems desirable to perform any of the Contractor's duties under this Agreement. The Contractor shall at all times remain responsible for the performance of and payment for all work performed by all subcontractors.

6. Representations. The Parties represent to each other that each has the power, authority and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future.

8. No Implied Waiver. The waiver by either Party of a default or a breach by the other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision; and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement.

9. Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows:

To the Owner:
1016 4th CREEK LANDING DR.
STATESVILLE, NC 28677

To the Contractor:
Timothy H Johnson
Rt 2 Box 207 Stony Point, NC. 28678

To the Local Health Department:

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted delivery, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party.

10. Place of Agreement. This Agreement and any questions concerning its validity, construction or performance shall be governed by the laws of the State

of North Carolina, notwithstanding the place of execution, or the order in which the signatures of the Parties are affixed.

11. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, any amendment or modification to this Agreement must be in writing and must be signed by the Parties.

12. Severability. In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal or unenforceable in any respect, the Parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as shall, to the maximum extent practicable in light of such determination, implement and give effect to the intentions of the Parties as reflected in this Agreement, and the other provisions of this Agreement shall, as so amended, modified, supplemented or otherwise affected by such action, remain in full force and effect.

IN TESTIMONY WHEREOF, the Parties hereto have executed this Agreement in duplicate originals, one of which is retained by each of the Parties, the day and year first above written.

(Owner)

Attest:

(Contractor)

Attest:

(hr:mecontract.gm)

400

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR PERMIT

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

FILE: 4930A DATE: 3/26/93

TC: 001 551 14 ☐ L

SERIAL Nº 15453

Permission is hereby given to ✓ Install or Construct, _____ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 5/7/93. All work shall be completed on or before 4/26/93, after which date this permit shall be null and void. The system shall meet all of the construction requirements of 10 NCAC 10A .1900 which are in effect on the date of the granting of this permit. A Certificate of Completion or an Operation Permit must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

Septic System to be installed IN accord with approved plot plan. PSW

PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1500 gallons

Liquid Capacity of Dosing Tank 1000 gallons

Tank Construction PCC

Absorption and/or Nitrification Lines:

Trench Width 2 feet

Total Line Length 267'PPBPS feet

Number of Lines 4

Depth of Stone — inches

Distance from House 5 feet

Distance from Property Line 710 feet

Distance from Well com. well feet

NAME OF OWNER E. Knox (Robert Ravich)

LOCATION OF PROPERTY 22824 Torrence Chapel Rd

Comments: Septic system to be installed in accord with approved plot plan

Kelly Randall
Division or Section Head

Phile S. Walker R.S.
Environmentalist

* If this permit is for the installation or construction of a new system, it must be signed by the division or a section head of the Mecklenburg County Health Department in order to be valid. Only the signature of the Environmentalist is required where an existing system is being altered or repaired.

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

VOID

Date: June 29, 1992

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

To: Speck Builders Inc.
!947 Miller Road
China Grove, N.C. 28023
Phone 704-857-6622 Attn. Wesley Stokes

Subject: Lot 10 Knox Landing Mecklenburg County
File # : 4930A
Parcel : 00116107 PO

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

This system is designed for a four bedroom house at an application rate of .3 gpd. 480/.3 = 1600/3 = 534 LF of conventional drainfield multiplied by .5 = 267 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.

Rec. 6-29-92

APPROVED
ENVIRONMENTAL HEALTH
DIVISION
MECKLENBURG COUNTY
6-30-92
Date

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 15506

File: 4930 A Action 1

Parcel: 00001-161-07 ☐ PC

Location: Torrence Chapel Road

Subdivision:

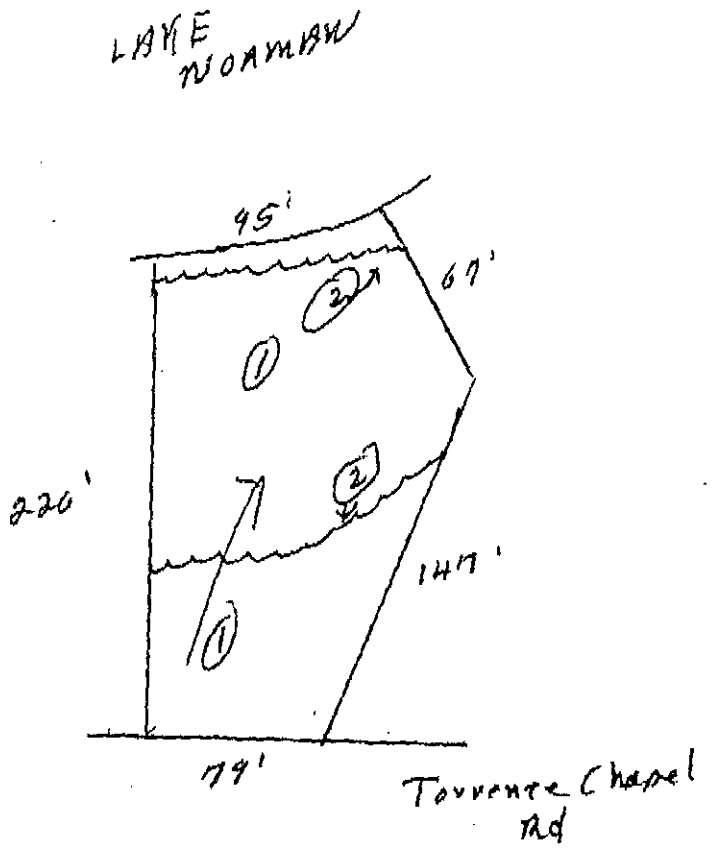
Lot: 10 Block: Acres: Approx .6

Owner: H. Edward Knox
Address: 22821 Torrence Chapel Road
Davidson, N. C. 28036

Comments: 100% Repairs

Described by: William A. Marlin

Date: 7-6-88



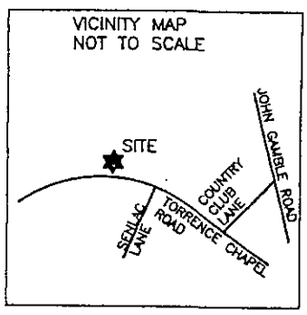
*** EVALUATION KEY ***
S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

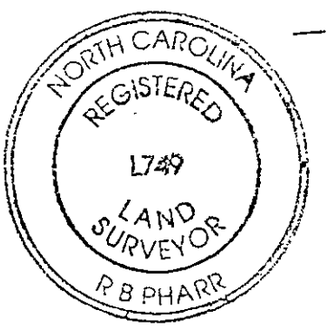
FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U 2-10%	S PS (U) complex slopes	S PS U	S PS U	S PS U	S PS U
Texture	S (PS) U clay	S PS U —	S PS U	S PS U	S PS U	S PS U
Structure	S (PS) U blocky	S PS U —	S PS U	S PS U	S PS U	S PS U
Drainage	S (PS) U >36" to water	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U limited	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	WA Cecil-Lille	complex slopes				
Area Classification	S (PS) U	S PS (U)	S PS U	S PS U	S PS U	S PS U

THIS IS TO CERTIFY THAT ON THE 23 DAY OF APRIL 19 92 AN ACTUAL SURVEY WAS MADE UNDER MY SUPERVISION OF THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE BOUNDARY LINES AND THE IMPROVEMENTS IF ANY ARE AS SHOWN HEREON. THIS PLAT DOES NOT MEET NCGS 47-30 STANDARDS AND IS NOT FOR RECORDING.

SIGNED R. B. Pharr

R. B. PHARR & ASSOCIATES, REGISTERED SURVEYORS
212 EAST INDEPENDENCE BLVD.
CHARLOTTE, N.C. 28204
TEL. (704) 376-2186





LAKE NORMAN

(NOW OR FORMERLY)
O.T. HARMON, JR.
DEED: 5159-127

N 89° 4' 0" E 60.71'

N 67° 38' 47" E 31.30'

S 24° 59' 0" E 99.03'

AREA: 24,865 SQ. FT.
0.571 ACRE

50' REAR SETBACK

LOT 10

9

10' SIDE SETBACK

N 12° 33' 20" E 226.55'

206.31'

72.00 (TOTAL)
16.00
20.00
20.00
65.00 (TOTAL)
12.00
4.00
10.00
16.00
4.00
18.00
41.00
30.00
PLOT PLAN
12.00
7.00
14.00
16.00
WALK
6.50
17.00
8.50
22.00
5.00

10' SIDE SETBACK

S 34° 17' 00" W 180.89'

11.18'

plot plan used for survey purpose only. House location Not Applicable

DRIVEWAY
50' FRONT SETBACK
DRIVEWAY
DRIVEWAY
60.0

MAPBOOK: 22-645

COUNTRY CLUB SHORE
NUMBER: 1
MAPBOOK: 12-19

20.24'

R/W AREA: 1,667 SQ. FT.
0.038 ACRE

33.78'

N 86° 13' 31" W 79.00'

(40' PRIVATE ROAD)

TORRENCE CHAPEL ROAD
(60' R/W)

SURVEY OF: LOT 10, KNOX LANDING
CORNELIUS, N.C.

TOTAL AREA: 26,532 SQ. FT.
0.609 ACRE

THE PROPERTY OF LUCY RAVICH

SCALE 1"=30'

MAP BOOK 22 PAGE 645

DEED BOOK _____ PAGE _____

FLOOD CERTIFICATION

THIS IS TO CERTIFY THAT THE SUBJECT PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON MAPS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION, DATED JUNE 1, 1981

22629

TAX NUMBER: 001-551-14

Line	# Panel	# Hole Per Panel	Size Hole	Line Head	Line Length	Hole Flow	Per Panel Line Flow min
A	15	one	5/32	3.0ft	67 '	.50	7.50
B	14	one	5/32	3.0ft	62 '	.50	7.00
C	13	one	3/16	2.0ft	56 '	.59	7.67
D	12	one	3/16	2.0ft	51 '	.59	7.08
K	8	one	5/32	3.0ft	35 '	.50	4.00
E		repair			70 '		
F		repair			70 '		
G		repair			20 '		
H		repair			32 '		
I		repair			25 '		
J		repair			29 '		
L		repair			32 '		
Totals	62				271		33.25

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 1.97
Total lift = 12.50 (99.86 + 2 - 89.36 = 28.90) elev.
TDH = 14.47
20% margin = 19 ft / (14.47 / .8 = 18.09 = 19 ft)

Pump Size: 42 (33.25/.8) gallon per minute at 19 feet of head.

Pump cycle should be 6.1 min or 202 gallons.

Note: Each line shall have a globe valve as shown in the detail for pressure adjustment. Each valve or group 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:

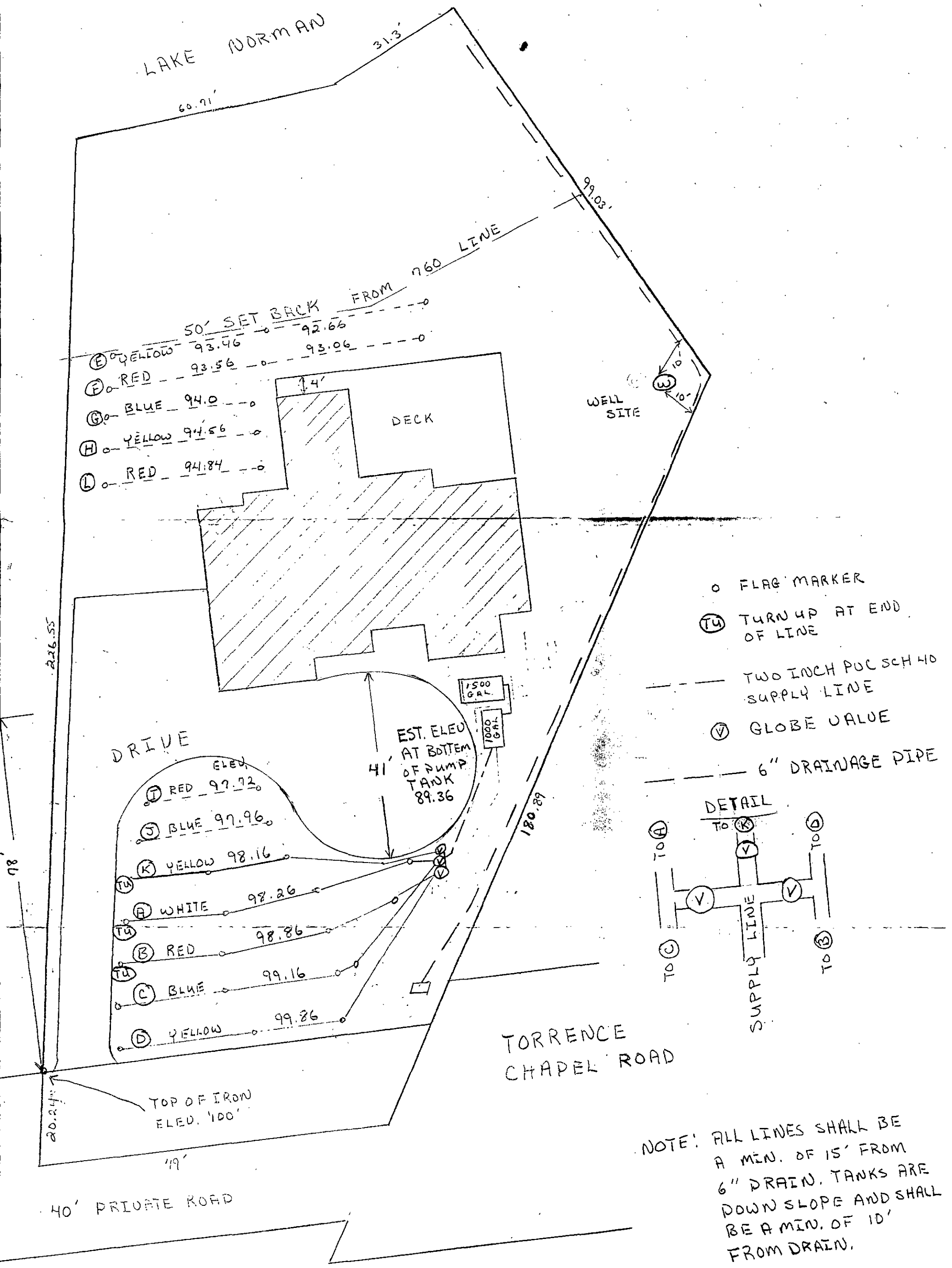
supply line = 80 lf = .80 * 2.05 = 1.64

fittings = 1.64 * .2 = 0.33

total 1.97

LOT 10 KNOX LANDING
FILE # 4930A
DATE 6-28-92
SCALE 1" = 20'

876-3992



NOTE: ALL LINES SHALL BE A MIN. OF 15' FROM 6" DRAIN. TANKS ARE DOWN SLOPE AND SHALL BE A MIN. OF 10' FROM DRAIN.

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.

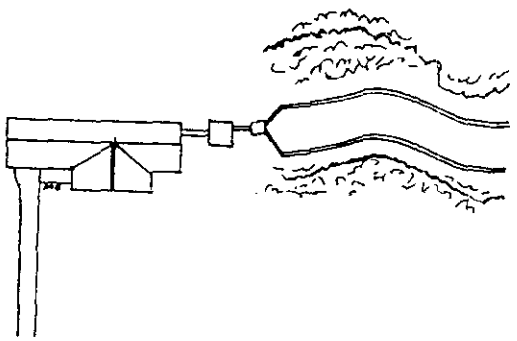
This conventional layout requires 2700 sq. ft. of area on the lot and equal space for repair for a total of 5400 sq. ft. of suitable and usable area. To calculate the T & J Panel System size, the above calculations must be made with an additional fourth step as described in 10NCAC 10A .1956 (3)(a)(ii)(B)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

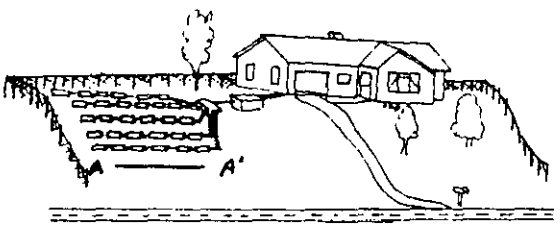
A Panel System requires only a 1200 sq. ft area on the lot for the system and equal area for repair. With the Panel System the installation and repair can go into the same space as the initial area required by a conventional gravel trench system.

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

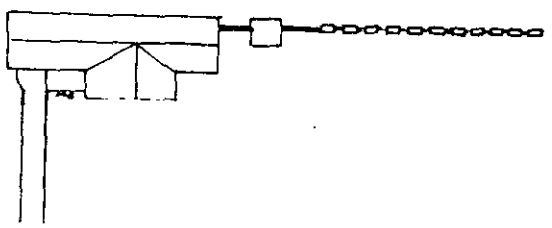


WRONG

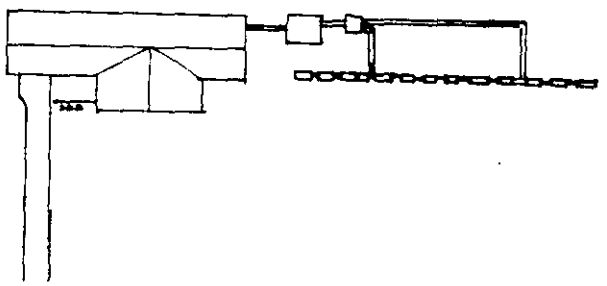
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

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 _____

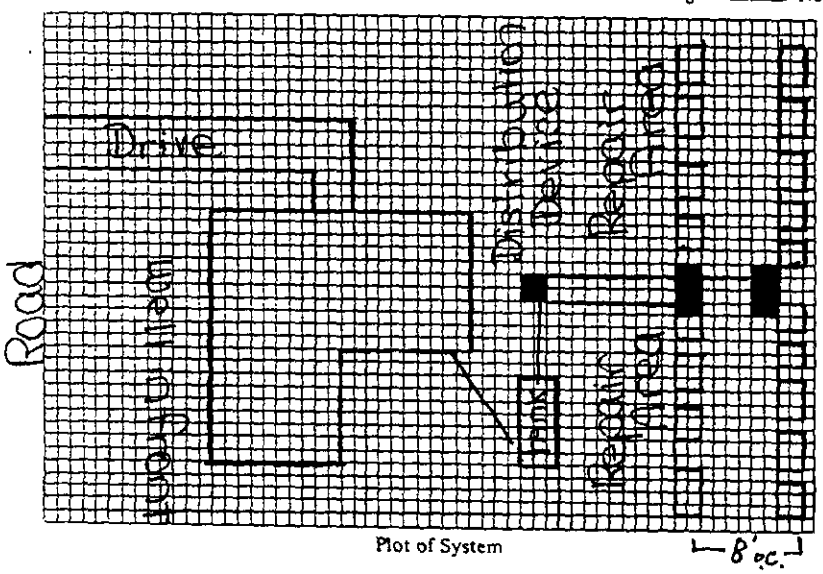
No. Bedrooms 3 No. Bathrooms 2 1/2

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 Gently Slope
Depth to Water Table > 60"
Rock or other impervious formations none

Lot Area _____

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement



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 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: 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

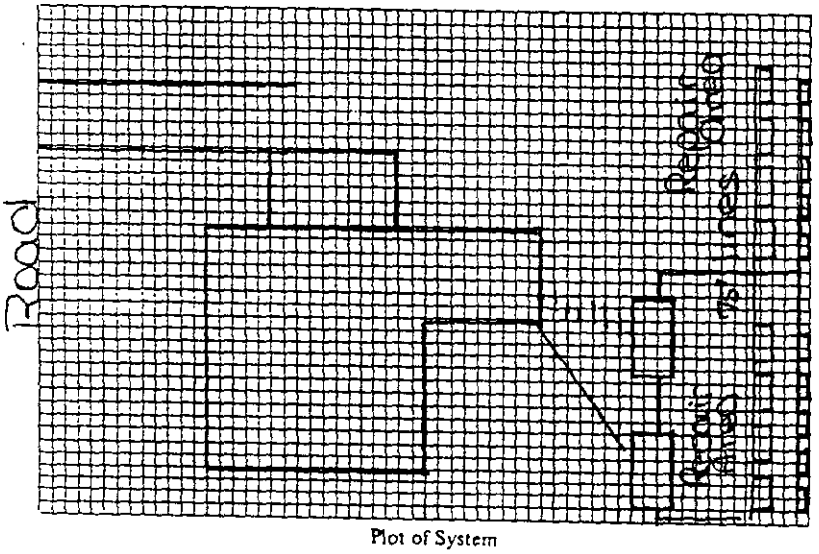
Percolation Rate 0.4 gal ft²/day

Topography 0-40 % 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 1000 septic / 1000 pump Gals.

Nitrification Field:

No. of Lines 3 (5') 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

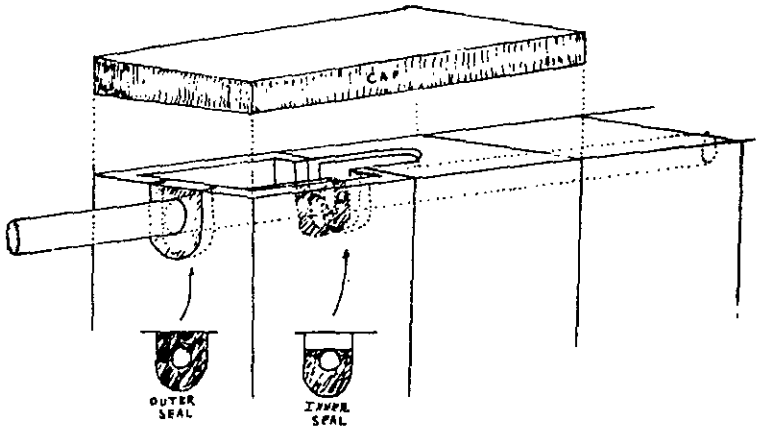
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One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

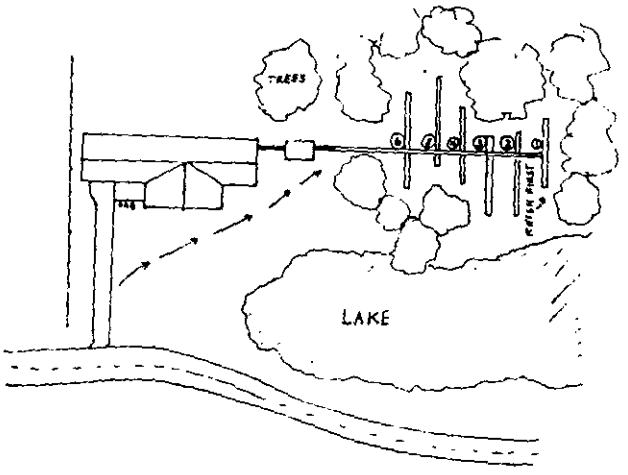
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more 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.

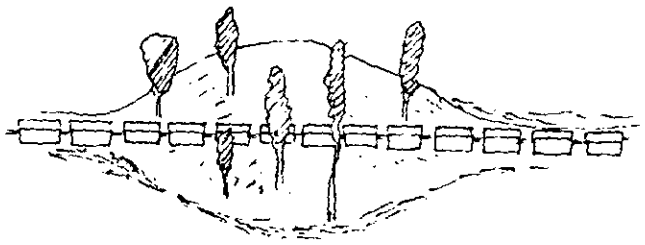
Installation Tips

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

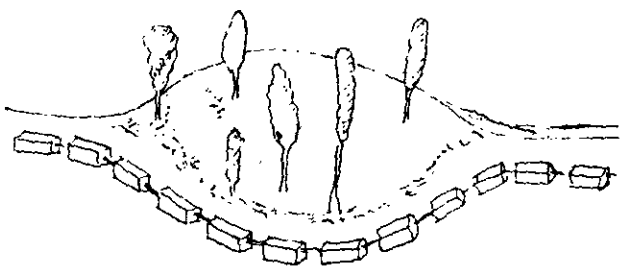


Above is an example of a multiple line installation. As you can see the installation should begin with the line marked 1 and proceed to 2, 3, then 4. This procedure will greatly ease material handling and backfilling. (Note sections of the drainlines should be left uncovered to allow for inspection of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

_____

_____

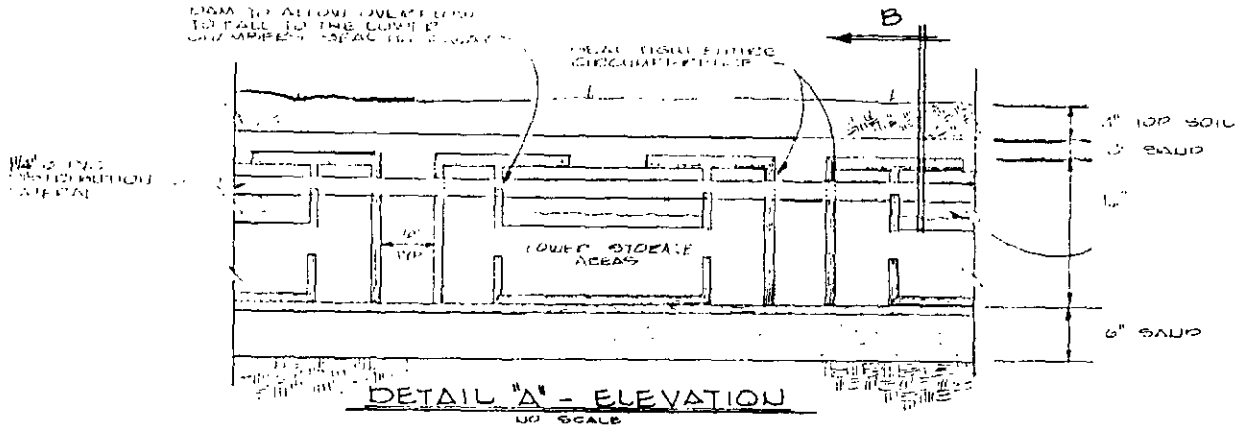
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partical Sand (100 lbs per 8 Panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____	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.

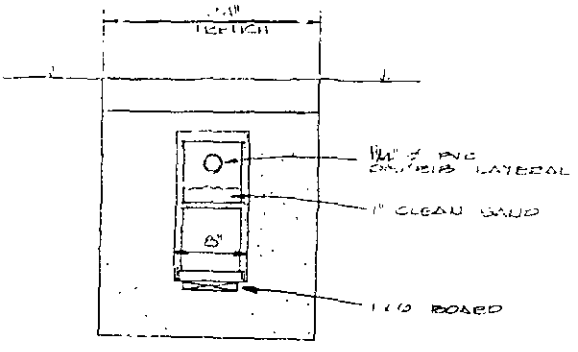
The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel holds 3.6 gallons. When the system has 34 panels and all the holes are the same size, then you would multiply 34 X 3.6 to get 122 gallon 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

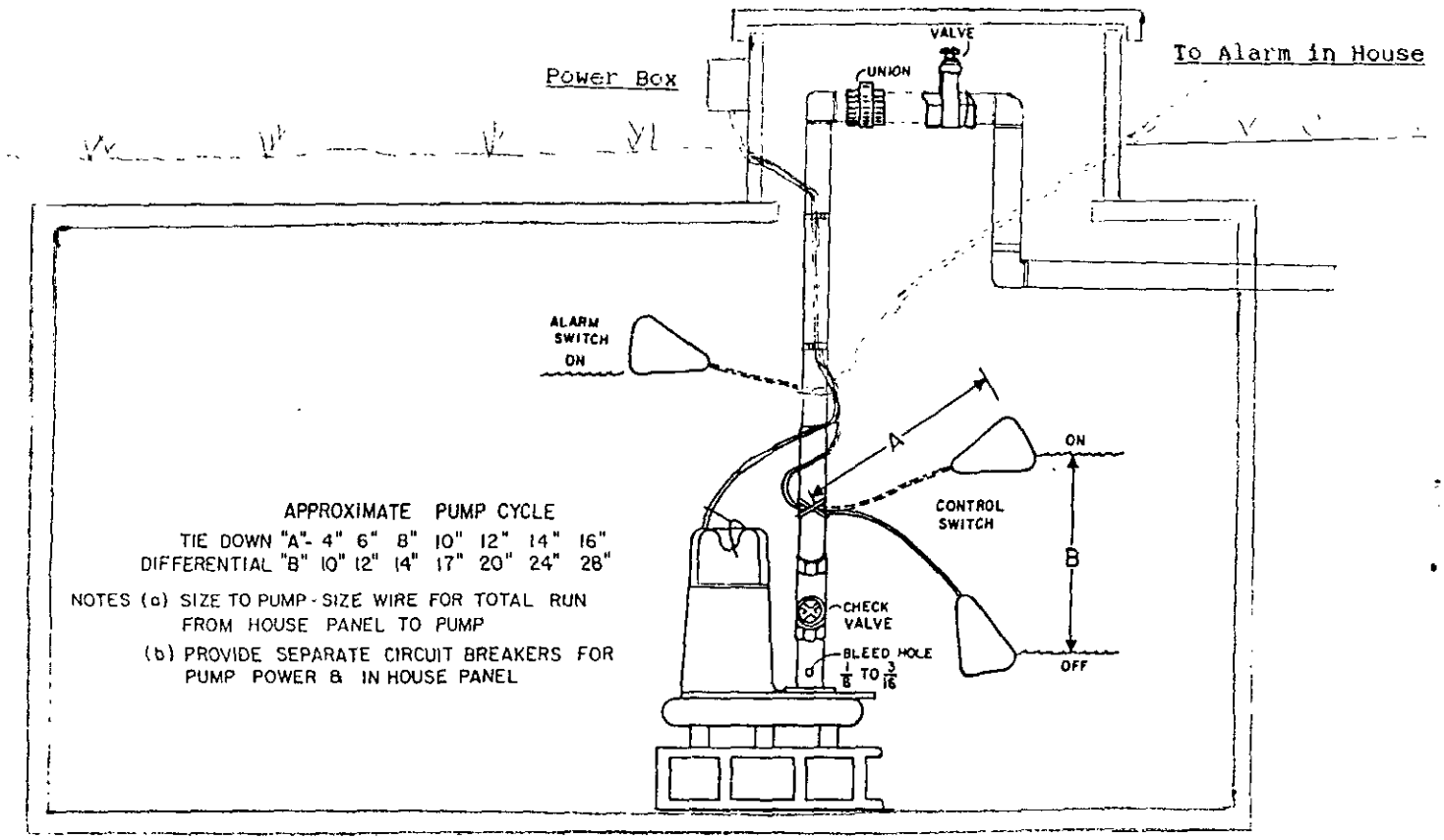
NO SCALE



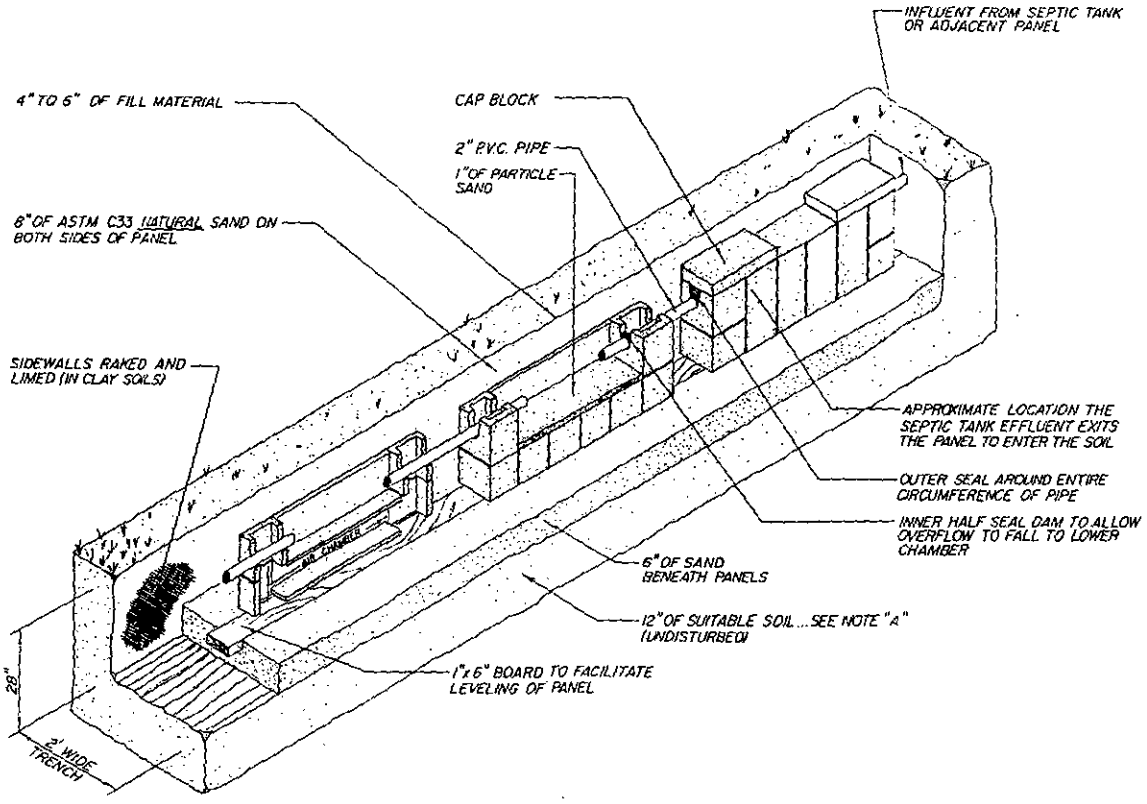
DETAIL "B" - SECTION

NO SCALE

Pump Tank Drawing

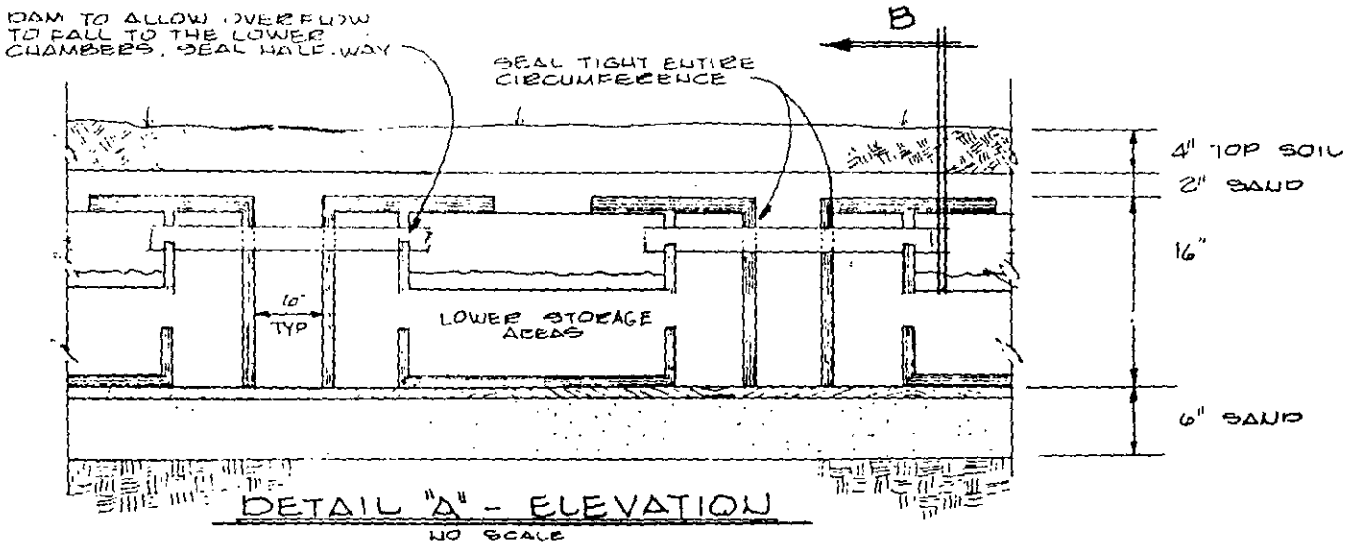


Isometric Drawing of a Segment of 16" T&J Panel Drainfield

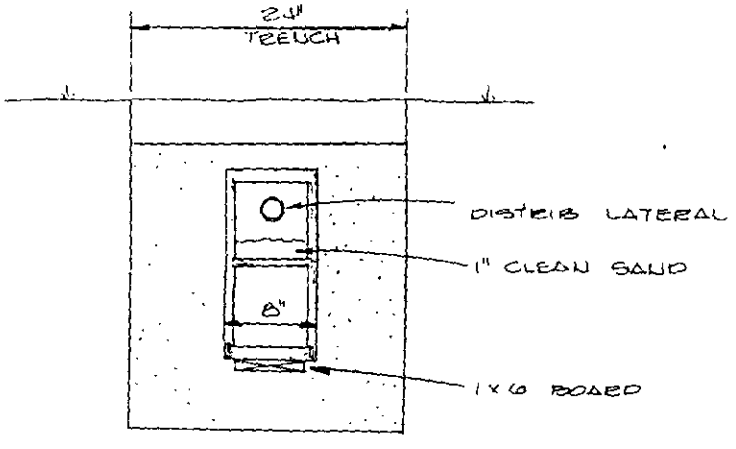


THE T. & J. PANEL
WASTE WATER TREATMENT SYSTEM
PATENT NUMBER 4013559

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

Mecklenburg County
Health Department

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

August 18, 1992

Mr. Wesley Stokes
Speck Builders, Inc.
1947 Miller Road
China Grove, NC 28023

Re: 22824 Torrence Chapel Road
File: 4930-A
Parcel: 001-161-07PO

Dear Mr. Stokes:

Receipt of your revised plans dated August 04, 1992 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 Division Office, Mecklenburg County, of the enclosed "Septic Tank Agreement Form", an Improvements Permit may be issued by this office.

Sincerely,

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

Mecklenburg County
Health Department

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

FAX # (704) 336-6894 IWWS (704) 336-5102

TO: JACKIE SHANNON

FROM: Kelly Randell

DATE: 7-2-92

NUMBER PAGES AFTER COVER PAGE 1

COMMENTS

Copy of Improvement Permit

22824 Torrence Ch. Rd

TAX # 001-551-14

700 North Tryon Street • Suite 211 • Charlotte, North Carolina 28202-2236

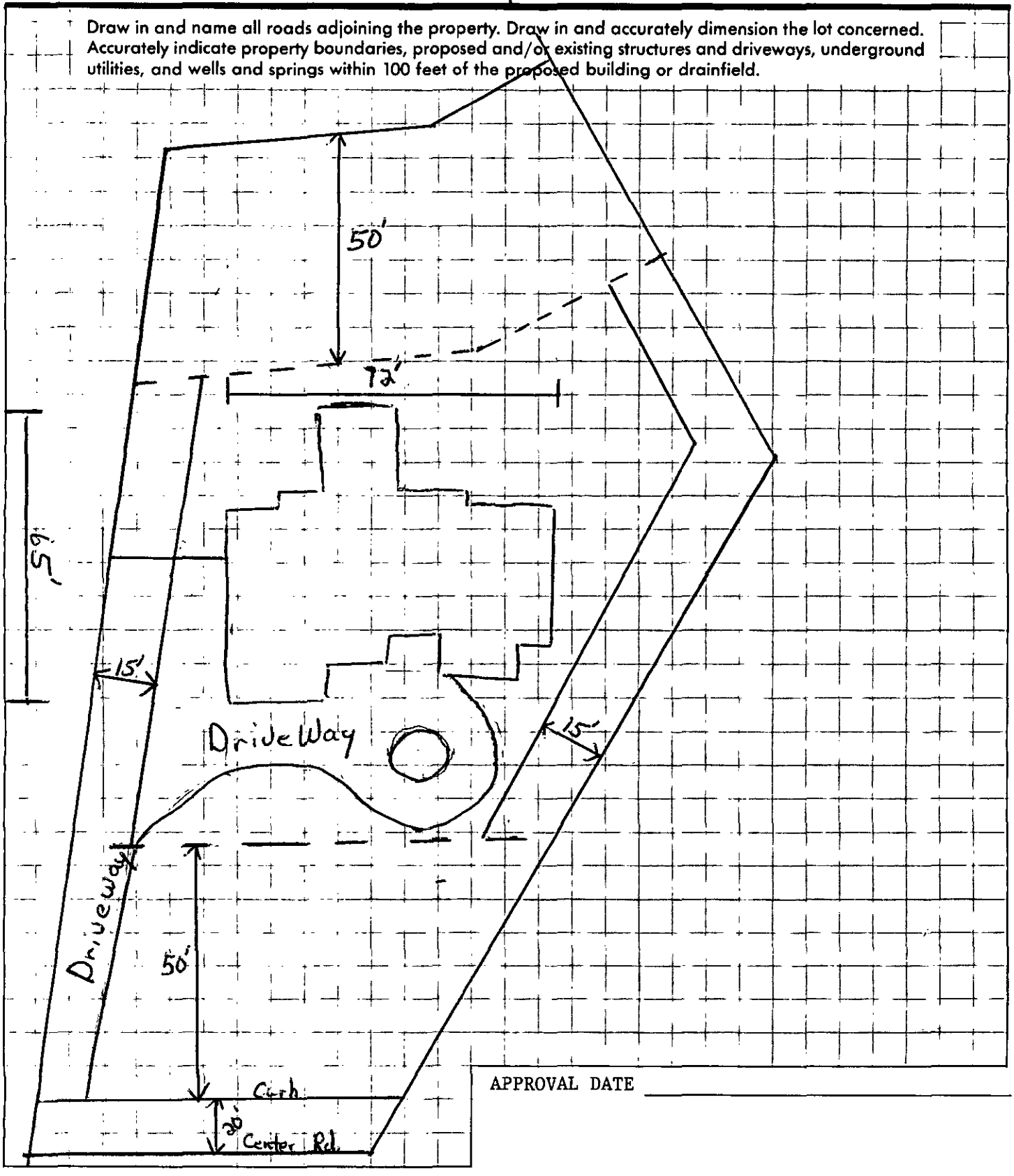
PROPOSED PLOT PLAN

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

FILE: 4930 A.

TC: 001-551-14

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.



APPROVAL DATE _____

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

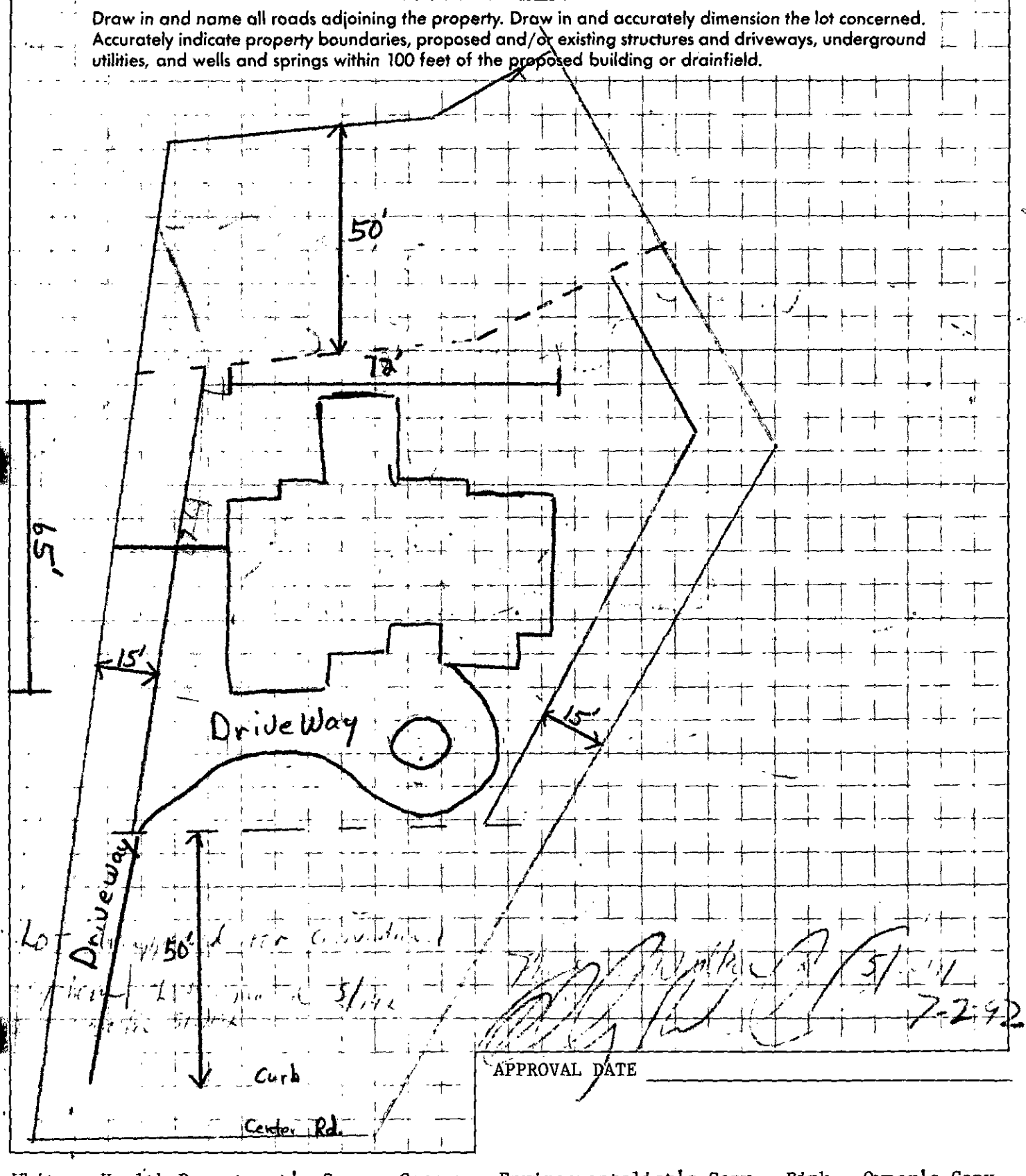
PROPOSED PLOT PLAN

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

FILE: 4120 A

TC: 001-551-14

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.



7-2-92

APPROVAL DATE _____

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

Mecklenburg County
Health Department

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

June 22, 1992

Speck Builders, Inc.
Attn: Wesley Stokes
1947 Miller Road
Union Grove, NC 28023

File: 4930-A
Subject: 22824 Torrence Chapel Road

Dear Mr. Stokes:

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

1). The system as proposed on the site is encroaching on the 10 feet horizontal setback distance from the front property line. It is also encroaching the drainage system which was along the right side property line. The minimum horizontal setback from the drainage system is 25 feet (down slope). The minimum horizontal setback from the property line is 10 feet. Please revise the plans to accommodate these horizontal setback distances.

2). The minimum hole size shall be 5/32 inch for at least two-thirds of the field lateral lines. Please redesign the hole sizing on the lateral lines to reflect this minimum hole size requirement.

3). Please include in your re-submittal of the plans the specifications on the field lateral line diameters.

For these reasons, the plans as submitted are disapproved. If you have any questions regarding these matters, please do not hesitate to contact me.

Sincerely,

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

Enclosure
cc: Tim Johnson
P.O. Box 288
Statesville, NC 28677

BK: 06907 PG: 0673/0673 #:0096 6.00

REGISTERED JUN/12/1992 11:31AM ANNE A. POWERS REGISTER OF DEEDS MECK. CO. N.C.

FILE NO. 4930-A

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, Robert J. Ravich & Lucy J. Ravich

owner of property located at 22824 Torrence Chapel Rd, Cornelius, N.C. (lot 10),

("the site") and described in an instrument recorded in Book 225758 at Page 645706, 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 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 he 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 10th day of June, 19 1992.

Robert J. Ravich (SEAL)

Lucy J. Ravich (SEAL)

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG IREDELL

I, LINDA SUE SMITH, a Notary Public for said County and State, do hereby certify that Robert J. Ravich & Lucy J. Ravich personally appeared before me this date and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 10th day of June, 1992.

Linda Sue Smith
Notary Public

My Commission Expires Nov 27, 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

My Commission Expires

4930A 4000A 8224A (3328) 4930A

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

Pd $50 CK#183 4-30-92 [] CRT*

Mecklenburg County Health Dept.
Environmental Health Division
c/o Hal Marshall Ctr., Suite 211
700 N. Tryon St.
Charlotte, NC 28202

(704)336-5102

Date:

PERSON FILING APPLICATION:

NAME: RAVICH (last) ROBERT (first) J (mi)

ADDRESS: 1016 4TH CRK LNG DR PHONE: (704) 873-3929

CITY: STATESVILLE STATE: NC ZIPCODE: 28677

PROPERTY INFORMATION (FROM ENGINEERING FORM):

TAX/PARCEL NUMBER: 00155114

STREET ADDRESS: 22824 TORRENCE CHAPEL RD

ZONING:

PROPERTY OWNER:

NAME: KNOX (last) EDWARD (first) (mi)

ADDRESS: 22821 TORRENCE CHAPEL RD PHONE: (704) 892-1578

CITY: DAVIDSON STATE: NC ZIPCODE:

SUBDIVISION OR MOBILE HOME PARK NAME:

Township (check one):
[X] 0 Mecklenburg County [] 2 Davidson [] 4 Pineville [] 6 Huntersville
[] 1 Charlotte [] 3 Cornelius [] 5 Matthews [] 7 Mint Hill

TYPE APPLICATION (check one):

LOT NUMBER: 10 LOT SIZE (in acres):

[X] SOIL TEST - INDIVIDUAL LOT (D)
[X] NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)
[] EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
[] ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)
[] COMMERCIAL OR INDUSTRIAL (N)
[] SOIL TEST DEVELOPMENT (P)
[] ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (X)
[] MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)
[] REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):
[] SINGLE MOBILE HOME (S) [] HOUSE (H) [] MULTIPLE FAMILY (U)
[] DOUBLE WIDE (D) [] MODULAR HOME (M) [] OTHER _____ (O)

NUMBER BEDROOMS: 4 NUMBER OCCUPANTS: 2

SYSTEM CLASSIFICATION:

COMMERCIAL/INDUSTRIAL PROPERTY:
Type Business _____ # Employees ___ Per Shift ___ ___ ___
Industrial Wastes (Y/N) ___
Underground Storage Tanks On Property (Y/N) ___ Type _____

WATER SUPPLY (check one):
[] Community (C) [] Shared Well (S)
[] Municipal (M) [] Other 'spring' (O)
[] Private Well (P)

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):
[] Swimming Pool [] Jacuzzi [] Stable/Barn [] Workshop [] None
[] Garage [] Storage Building [] Deck/Patio [] Bedrooms [] Other

The undersigned, owner, or legal agent for the owner, of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY HEALTH DEPARTMENT to enter onto the property for the purpose of processing this request.

Signed: Lucy J Ravich Date: April 30, 1992

NOTICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the 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 approval is granted by this Department.

...This permit is not transferable.

...

[] IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE
[] MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE
[] ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

Environmentalist Date

Director or Authorized Section Head Date

WWATER : 122791

Soil pit already completed
apply $50.00 toward improvement permit on 5/11/92 See ck#195

Date: June 4, 1992

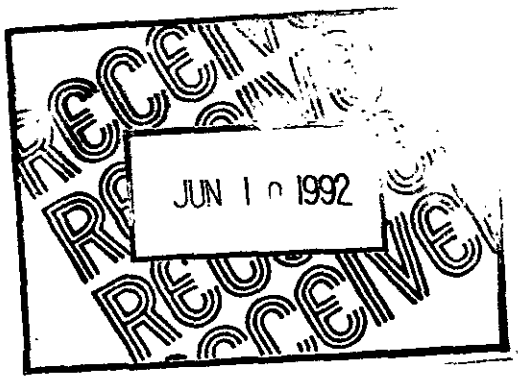
From: T J Systems
P.O. Box 73
Scotts, N.C. 28699

To: Speck Builders Inc.
!947 Miller Road
China Grove, N.C. 28023
Phone 704-857-6622 Attn. Wesley Stokes

Subject: Lot 10 Knox Landing Mecklenburg County
File # : 4930A
Parcel : 00116107 PO

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

This system is designed for a four bedroom house at an application rate of .3 gpd. 480/.3 = 1600/3 = 534 LF of conventional drainfield multiplied by .5 = 267 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.



Disapproved June 22. 92

(15)

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 15506

File: 4930 A Action 1

Parcel: 00001-161-07 ☐ PC

Location: Torrence Chapel Road

Subdivision:

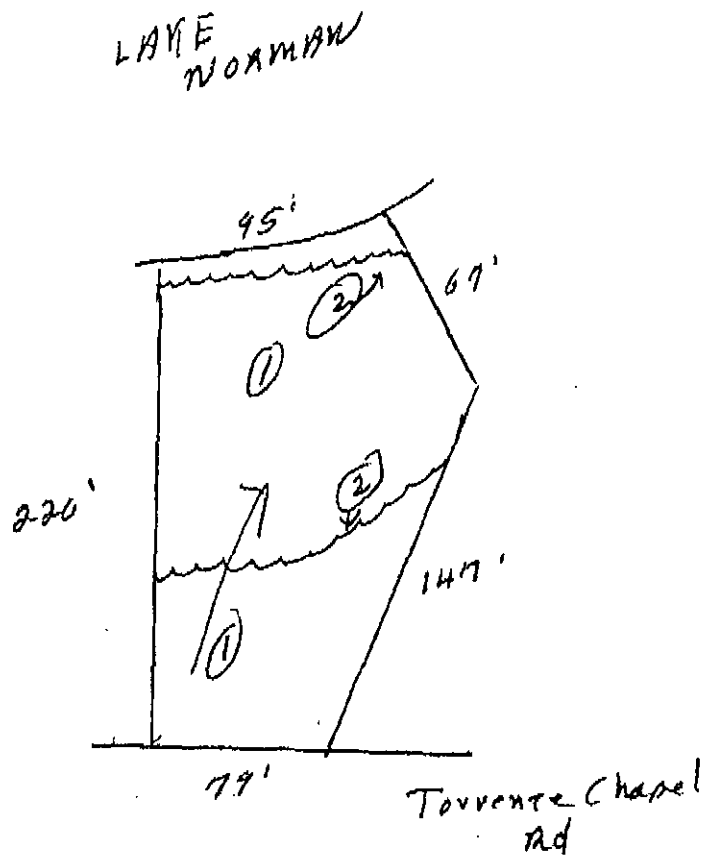
Lot: 10 Block: Acres: Approx .6

Owner: H. Edward Knox
Address: 22821 Torrence Chapel Road
Davidson, N. C. 28036

Comments: 100% Repairs

Described by: William A Mueller

Date: 7-6-88



*** EVALUATION KEY ***

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

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U 2-10%	S PS (U) complex slopes	S PS U	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 >36" to water	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U limited	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	WA Cecil-Lille	complex slopes				
Area Classification	S (PS) U	S PS (U)	S PS U	S PS U	S PS U	S PS U

$11.79 (d^2)(\sqrt{H})$

Line	# Panel	# Hole Per Panel	Size Hole	Line Head	Line Length	Hole Flow	Per Panel Line Flow min
A	10	one	5/32	3.0ft	43 '	.50	5.00
B	22	one	5/32.	3.0ft	95 '	.50	11.00
C	17	one	3/16	2.0ft	72 '	.59	10.03
D	14	one	3/16	2.0ft	60 '	.59	8.26
E		repair			70 '		
F		repair			70 '		
G		repair			20 '		
H		repair			20 '		
I		repair			25 '		
J		repair			29 '		
K		repair			35 '		
Totals	63				270 '		34.26

CALCULATIONS FOR PUMPED SYSTEMS:

Head: Friction loss = 1.97
Total lift = 12.50 (99.86 + 2 - 89.36 = 28.90) elev.
TDH = 14.47
20% margin = 19 ft (14.47 / .8 = 18.09 = 19 ft)

Pump Size: 43 (34.26/.8) gallon per minute at 19 feet of head.

Pump cycle should be 6.1 min or 210 gallons.

Note: Each line shall have a globe valve as shown in the detail 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.

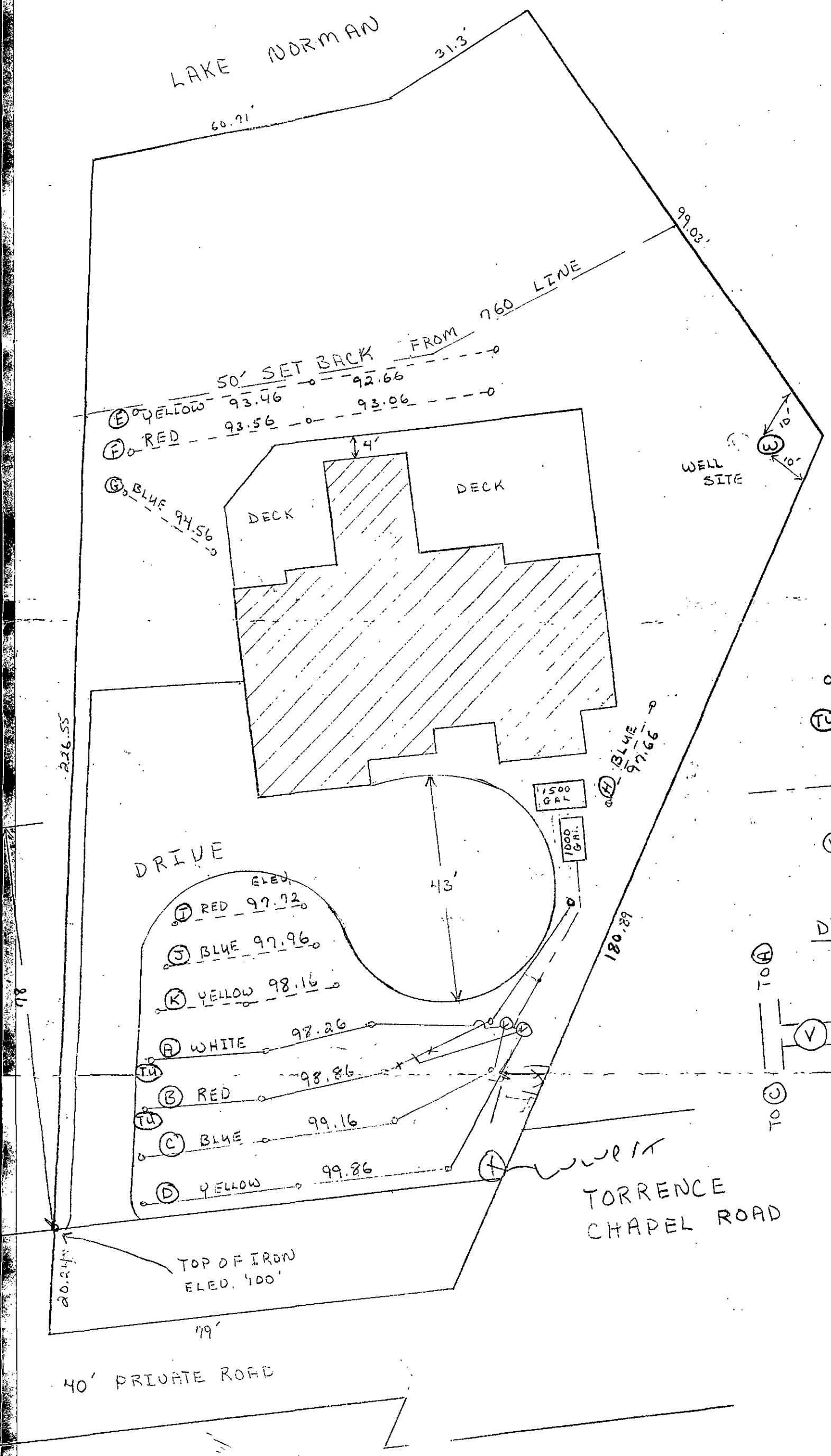
Friction loss:

supply line = 80 lf = .80 * 2.05 = 1.64

fittings = 1.64 * .2 = 0.33

total 1.97

LOT 10 KNOX LANDING
FILE # 4930A
DATE 6-11-92
SCALE 1" = 20'



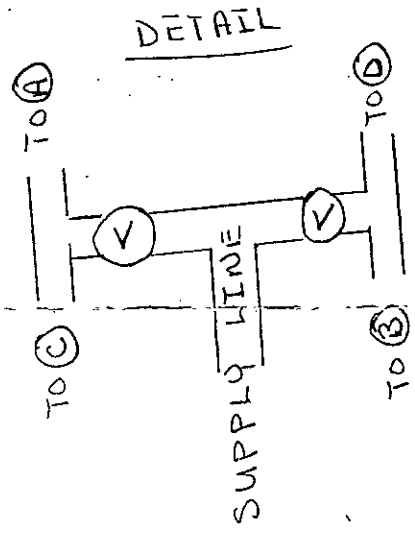
o FLAG MARKER

(TH) TURN UP AT END OF LINE

——— TWO INCH PVC SCH 40 SUPPLY LINE

(V) GLOBE VALVE

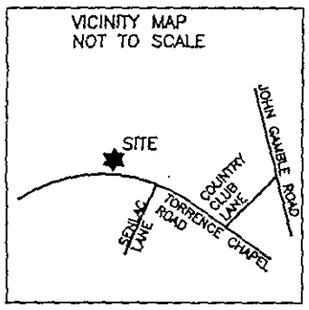
DETAIL

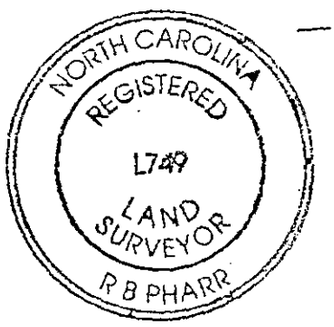


THIS IS TO CERTIFY THAT ON THE 23 DAY OF APRIL 19 92 AN ACTUAL SURVEY WAS MADE UNDER MY SUPERVISION OF THE PROPERTY SHOWN ON THIS PLAT, AND THAT THE BOUNDARY LINES AND THE IMPROVEMENTS IF ANY ARE AS SHOWN HEREON. THIS PLAT DOES NOT MEET NCGS 47-30 STANDARDS AND IS NOT FOR RECORDING.

SIGNED R. B. Pharr

R. B. PHARR & ASSOCIATES, REGISTERED SURVEYORS
212 EAST INDEPENDENCE BLVD.
CHARLOTTE, N.C. 28204
TEL. (704) 376-2186





LAKE NORMAN

N 89° 4' 0" E 60.71'

N 67° 38' 47" E 31.30'

(NOW OR FORMERLY)
O.T. HARMON, JR.
DEED: 5159-127

S 24° 59' 0" E 99.03'

AREA: 24,865 SQ. FT.
0.571 ACRE

50' REAR SETBACK

LOT 10

9

10' SIDE SETBACK

N 12° 33' 20" E 226.55'

206.31'

72.00 (TOTAL)
16.00
20.00
20.00
16.00
12.00
4.00
10.00
4.00
18.00
65.00 (TOTAL)
41.00
30.00

PLOT PLAN

12.00
7.00
14.00
5.00
WALK
6.50
8.50
17.00
22.00
5.00

DRIVEWAY
50' FRONT SETBACK
DRIVEWAY
DRIVEWAY
60.0

10' SIDE SETBACK

S 34° 17' 00" W 180.89'

11.19'

MAPBOOK: 22-645

1
COUNTRY CLUB SHORE
NUMBER: 1
MAPBOOK: 12-19

20.24'

R/W AREA: 1,667 SQ. FT.
0.038 ACRE

33.78'

N 86° 13' 31" W 79.00'

(40' PRIVATE ROAD)

TORRENCE CHAPEL ROAD
(60' R/W)

SURVEY OF: LOT 10, KNOX LANDING
CORNELIUS, N.C.

TOTAL AREA: 26,532 SQ. FT.
0.609 ACRE

THE PROPERTY OF LUCY RAVICH

SCALE 1"=30'

MAP BOOK 22 PAGE 645

DEED BOOK _____ PAGE _____

FLOOD CERTIFICATION

THIS IS TO CERTIFY THAT THE SUBJECT PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON MAPS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION, DATED JUNE 1, 1981.

22629

TAX NUMBER: 001-551-14

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. Fourth Edition.

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.

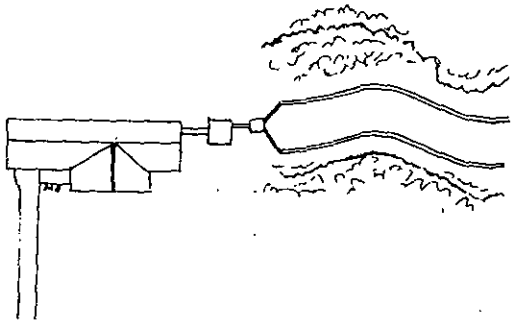
This conventional layout requires 2700 sq. ft. of area on the lot and equal space for repair for a total of 5400 sq. ft. of suitable and usable area. To calculate the T & J Panel system size, the above calculations must be made with an additional fourth step as described in 10NCAC 10A .1956 (3)(a)(ii)(B)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

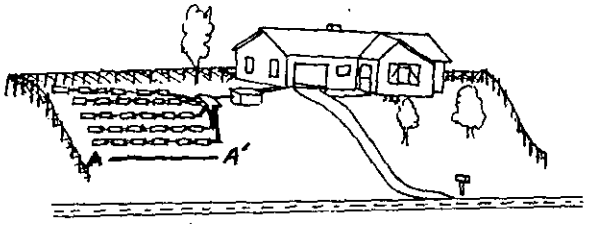
A Panel System requires only a 1200 sq. ft area on the lot for the system and equal area for repair. with the Panel System the installation and repair can go into the same space as the initial area required by a conventional gravel trench system.

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

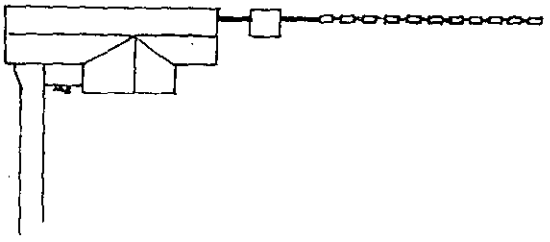


WRONG

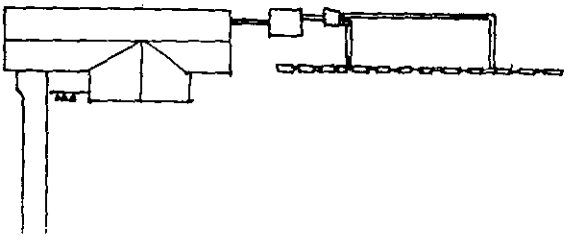
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

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. _____

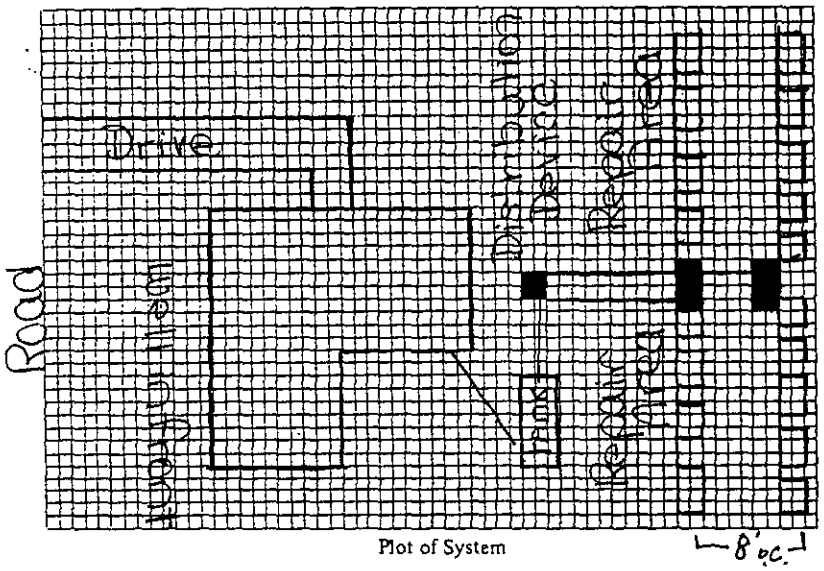
House (✓) Mobile Home ( ) Business ( ) Other _____

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 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: 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. _____

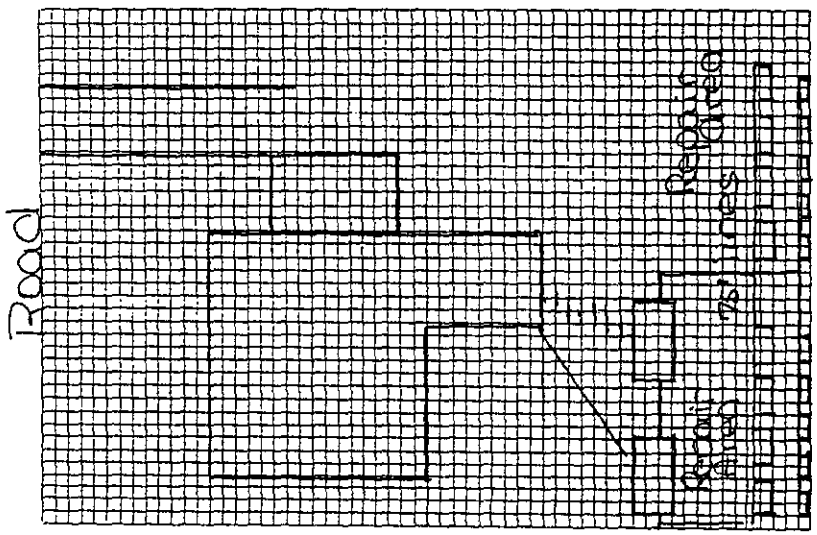
House (✓) Mobile Home ( ) Business ( ) Other _____

No. Bedrooms 3 No. Bathrooms 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 mod slope
Depth to Water Table >60"
Rock or other impervious formations _____

Lot Area 20,000

_____ 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 (75') 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.

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

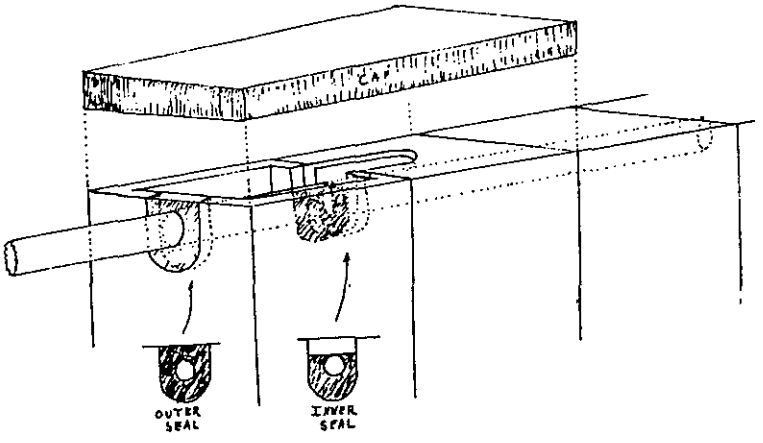
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One 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 to as near to original structure as possible. A light dusting of lime on the side walls will help the system to continue the brake down of solids.

Final Inspection

The following list of points are things that an inspector should look for when 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

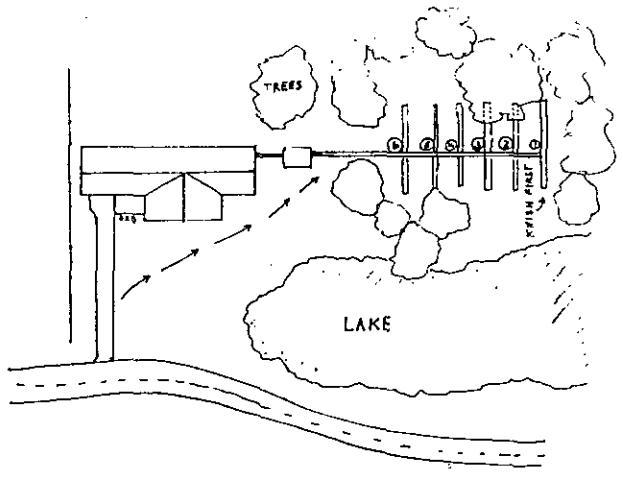
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more 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.

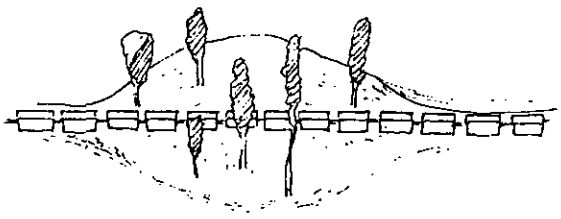
Installation Tips

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

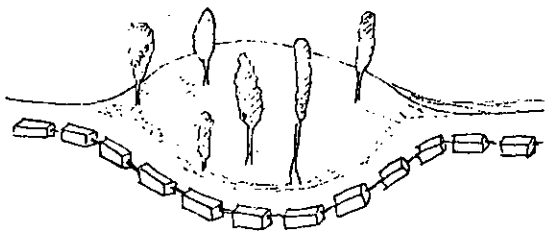


Above is an example of a multiple line installation. As you can see the installation should begin with the line marked 1 and proceed to 2, 3, then 4. This procedure will greatly ease material handling and backfilling. (Note sections of the drainlines should be left uncovered to allow for inspection of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

_____

_____

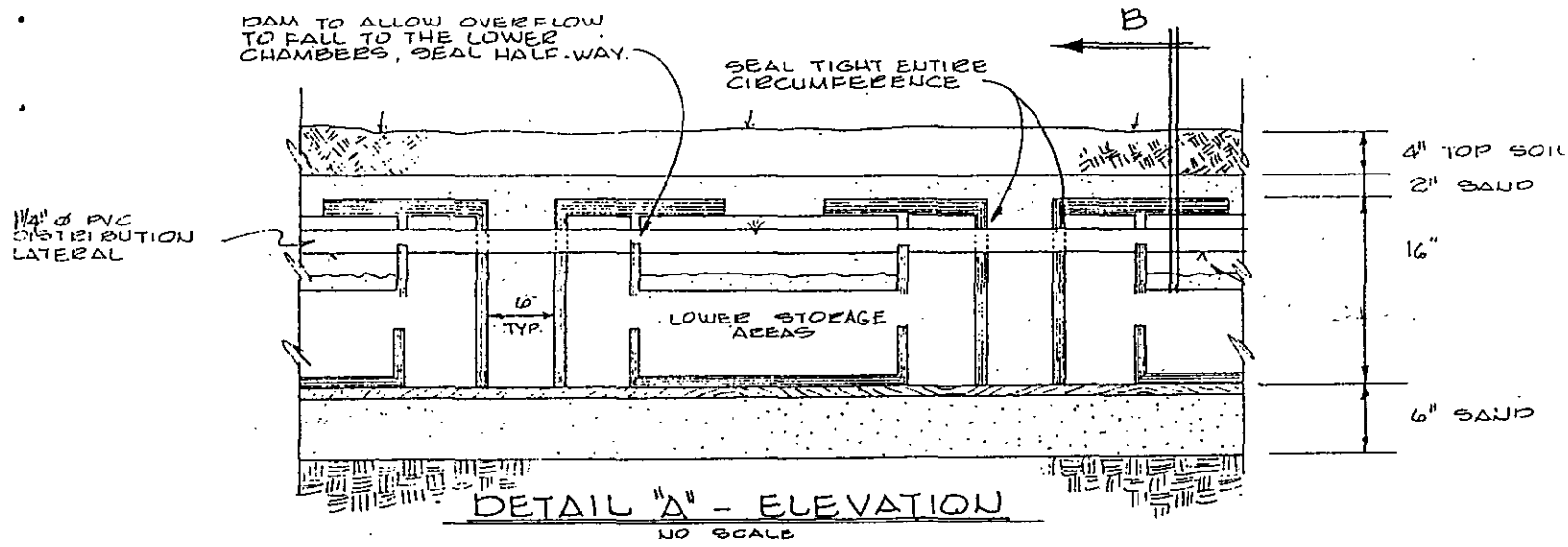
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partical Sand (100 lbs per 8 Panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____	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

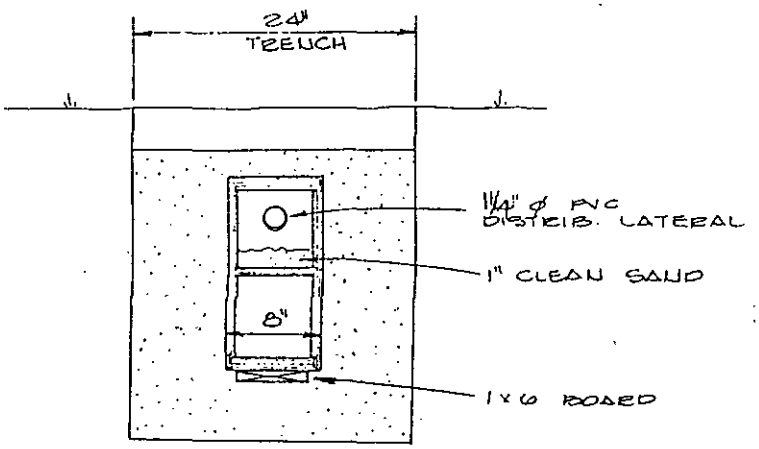
The LP Panel uses Technology similar to that of Low Pressure Pipe (LPP) System. The tables and distribution design described in the LPP manual is applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects a LP Panel is similar to a LPP with the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

The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel 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 in the system the the pump cycle is set by the the hole that is discharging the fastest.

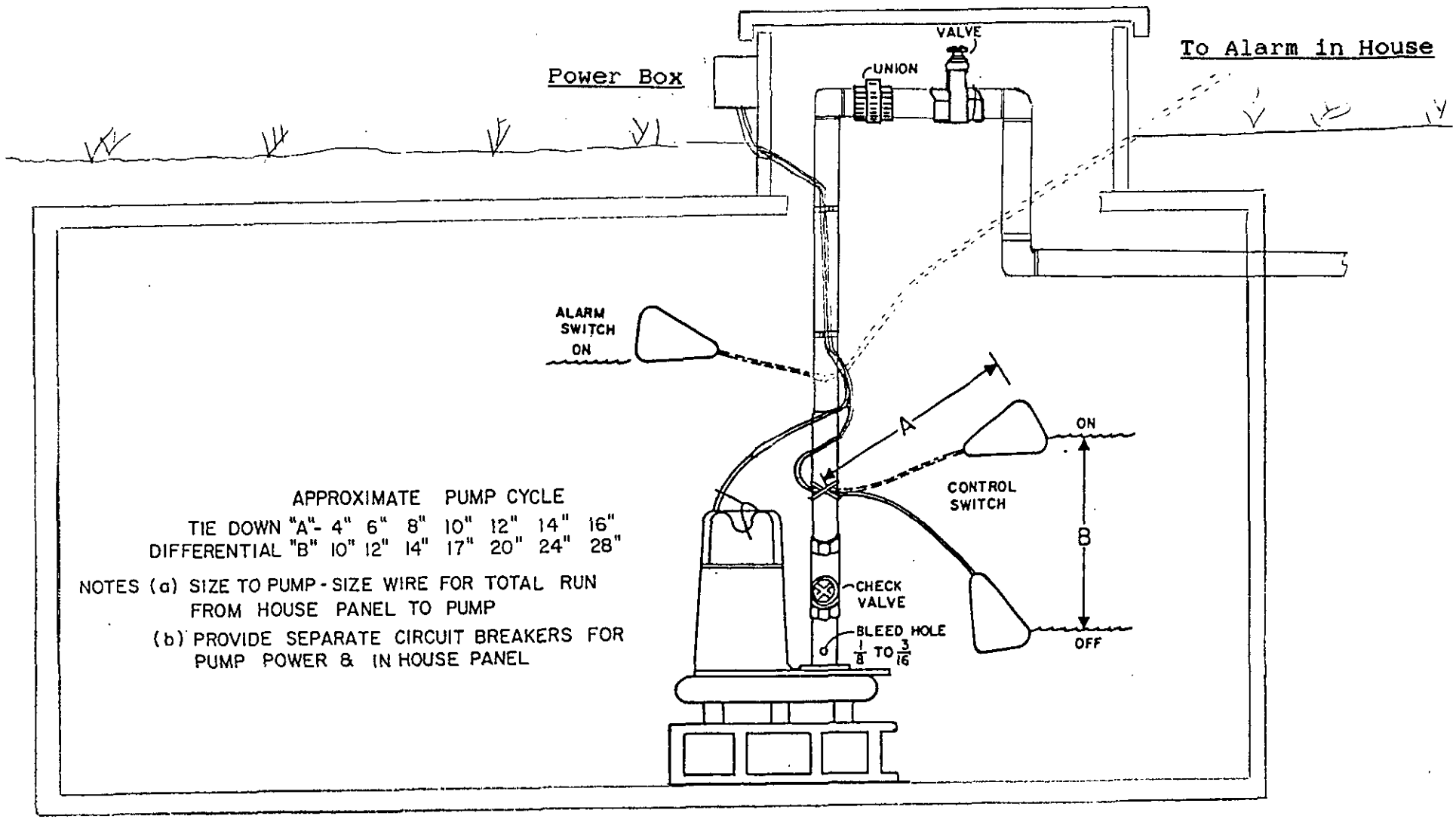
All valves and turn ups should be neatly capped, covered and labled for future service. Pump tanks should constructed as shown in the drawing as to allow for service and repairs.



DETAIL "A" - ELEVATION
NO SCALE



DETAIL "B" - SECTION



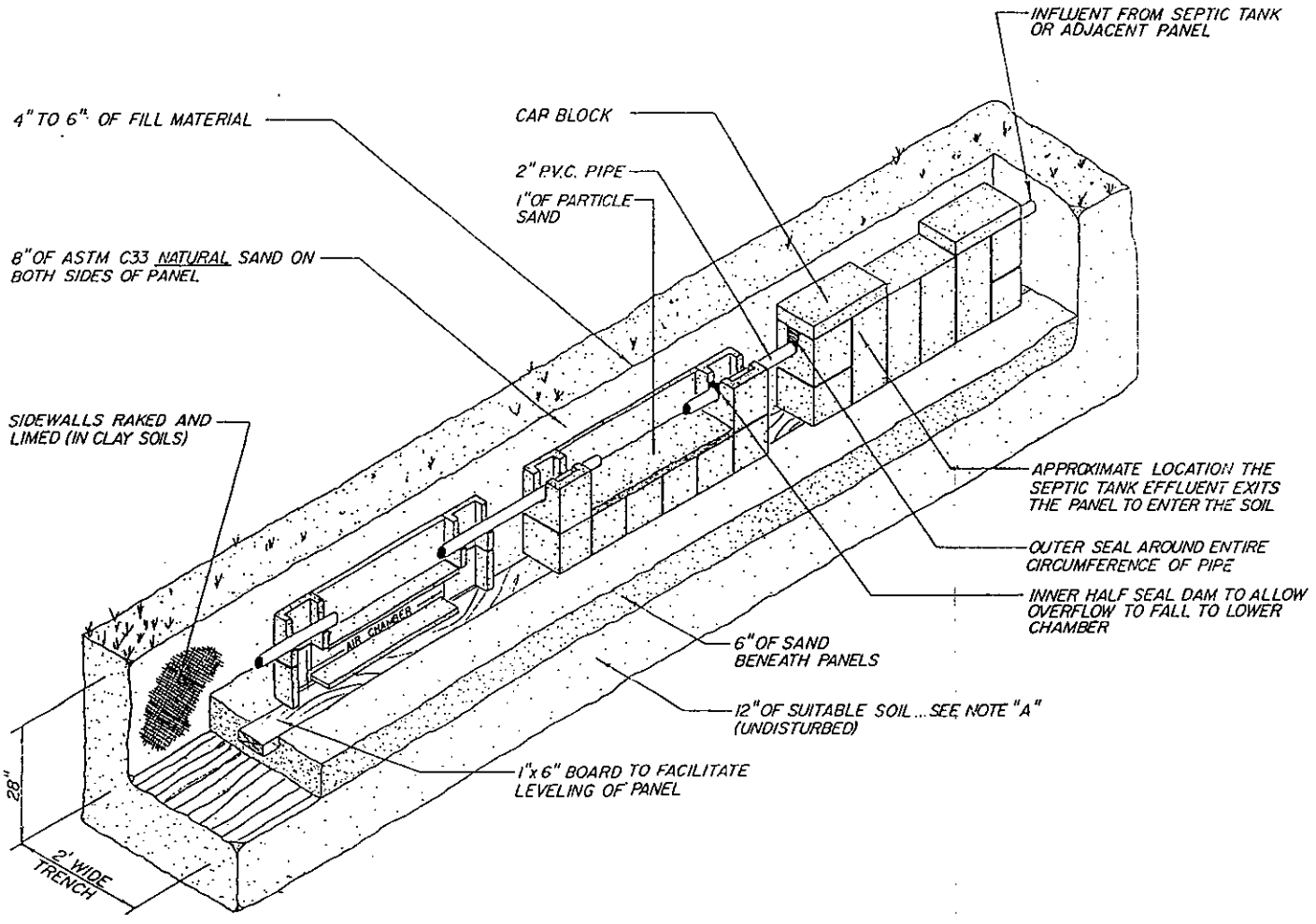
APPROXIMATE PUMP CYCLE

TIE DOWN "A"	4"	6"	8"	10"	12"	14"	16"
DIFFERENTIAL "B"	10"	12"	14"	17"	20"	24"	28"

NOTES (a) SIZE TO PUMP - SIZE WIRE FOR TOTAL RUN FROM HOUSE PANEL TO PUMP

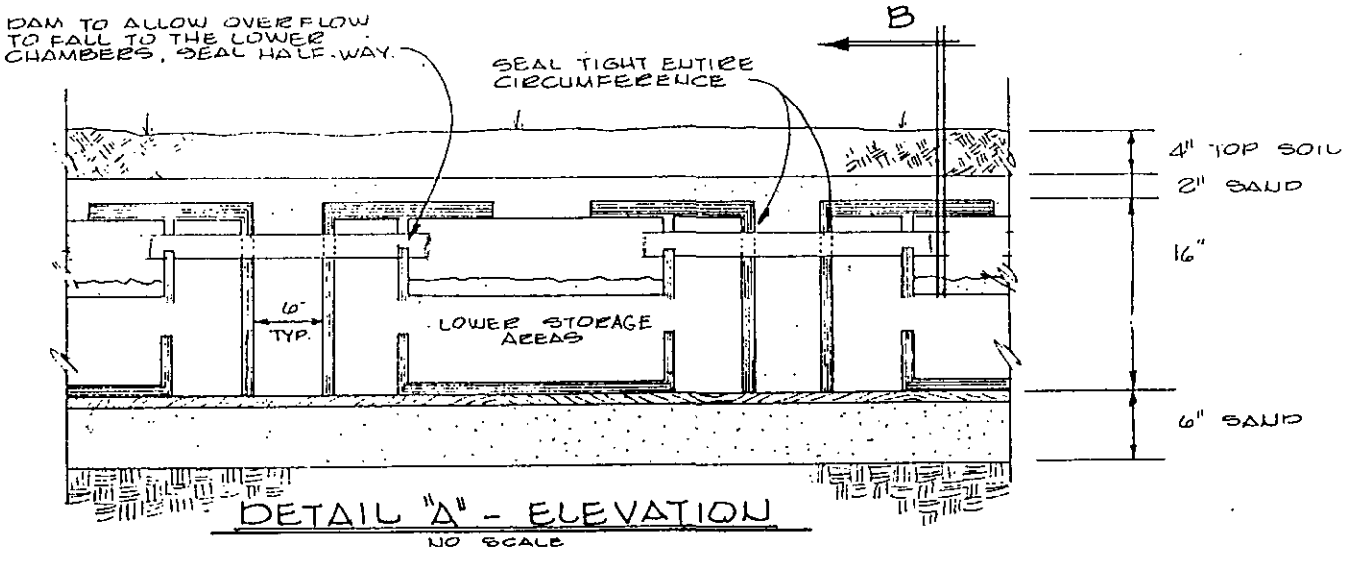
(b) PROVIDE SEPARATE CIRCUIT BREAKERS FOR PUMP POWER & IN HOUSE PANEL

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

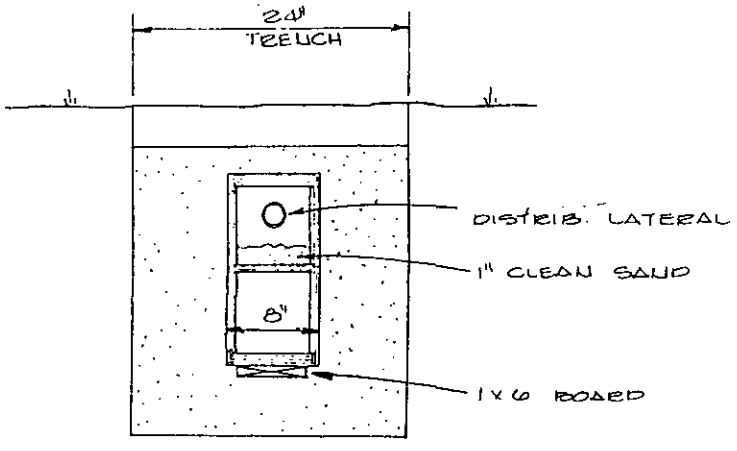


THE T. & J. PANEL
WASTE WATER TREATMENT SYSTEM
PATENT NUMBER 4013559

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

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

September 6th, 1988

H. Edward Knox
22821 Torrence Chapel Road
Davidson, NC 28036

RE: Property located at Torrence Chapel Road 10
FILE: 4930A
PARCEL: 00116101 PO

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 property was found to contain a limited area of soils which were classified as provisionally suitable for such an installation. A copy of the Site Evaluation Report (Serial Number 15506) is enclosed for your information.

Should you desire to file for permission to install a ground absorption sewage disposal system, 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. The plan will be reviewed and if it is found that the area of provisionally suitable soils is adequate for the proposed construction, an Improvement Permit will be issued by this Department.

If I may be of assistance, please do not hesitate to contact me.

Very truly yours,

Sylvia D. Daniel, R.S., Supervisor
On Premises Waste Disposal & Water Supply

Enclosure

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 15506

File: 413 9 Action 1

Parcel: 20401-101-01 ☐ PC

Location: Torrence Chapel Road

Subdivision:

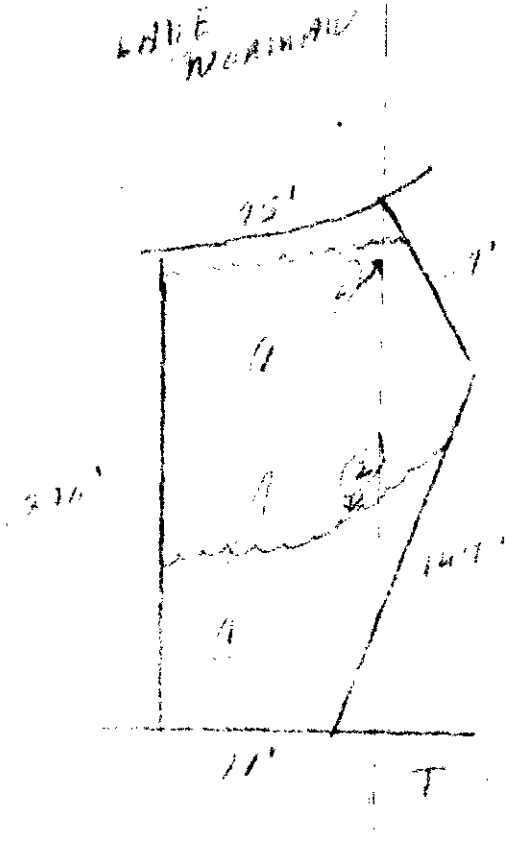
Lot: 10 Block: Acres: Approx .6

Owner: H. Edward Knox
Address: 22821 Torrence Chapel Road
Davidson, N. C. 28036

Comments: Lagoon

Described by: [signature]

Date: 7-2-88



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

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	S (PS) U 2 10%	S PS (U) Complex	S PS U	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 36" Water	S PS U —	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U 24"	S PS U —	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U 36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U Limited	S PS U —	S PS U	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IIA Cecil	Complex				
Area Classification	S (PS) U	S PS U	S PS U	S PS U	S PS U	S PS U

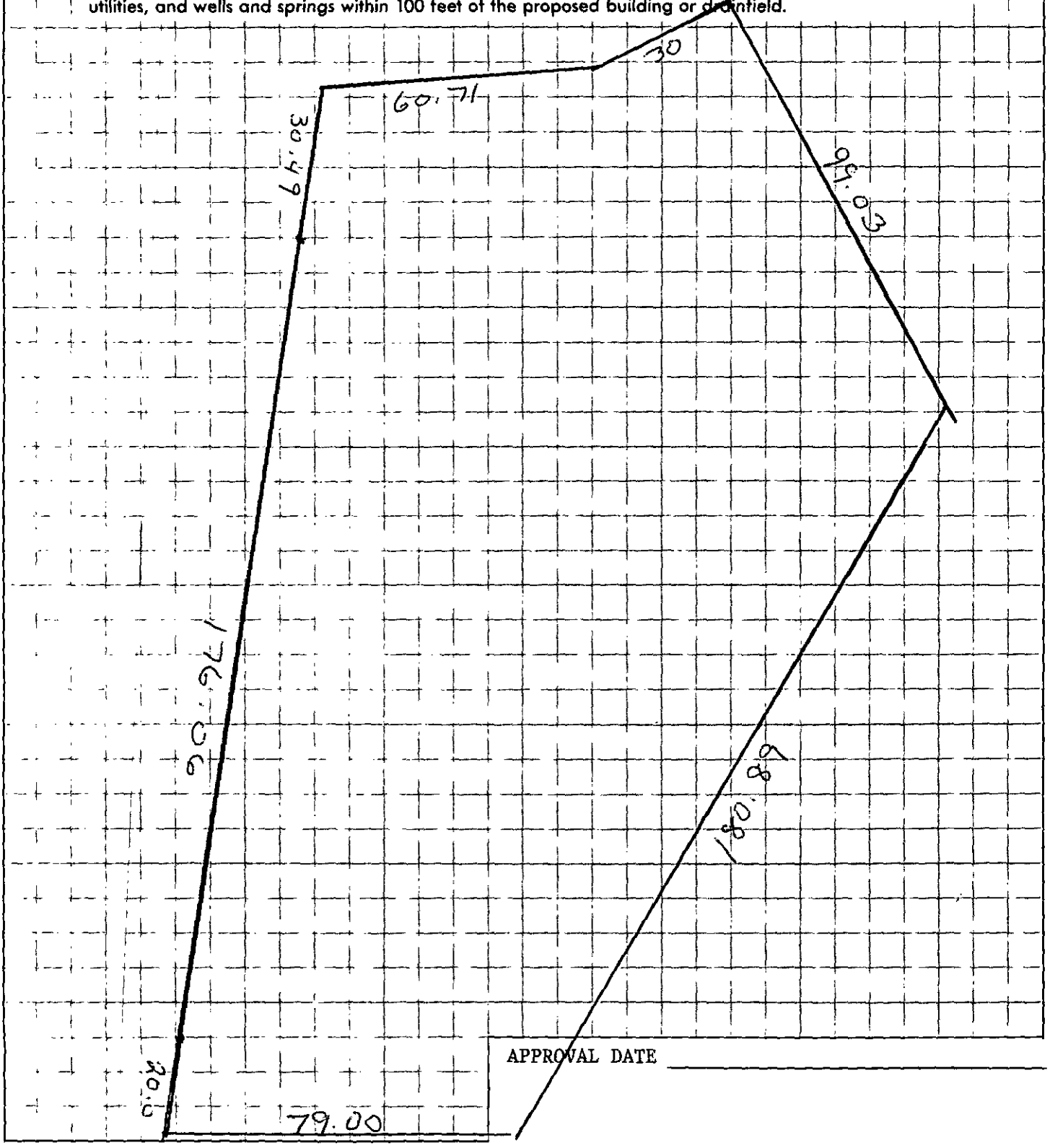
PROPOSED PLOT PLAN

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

FILE: _____

TC: 001551-14

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.



APPROVAL DATE _____

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

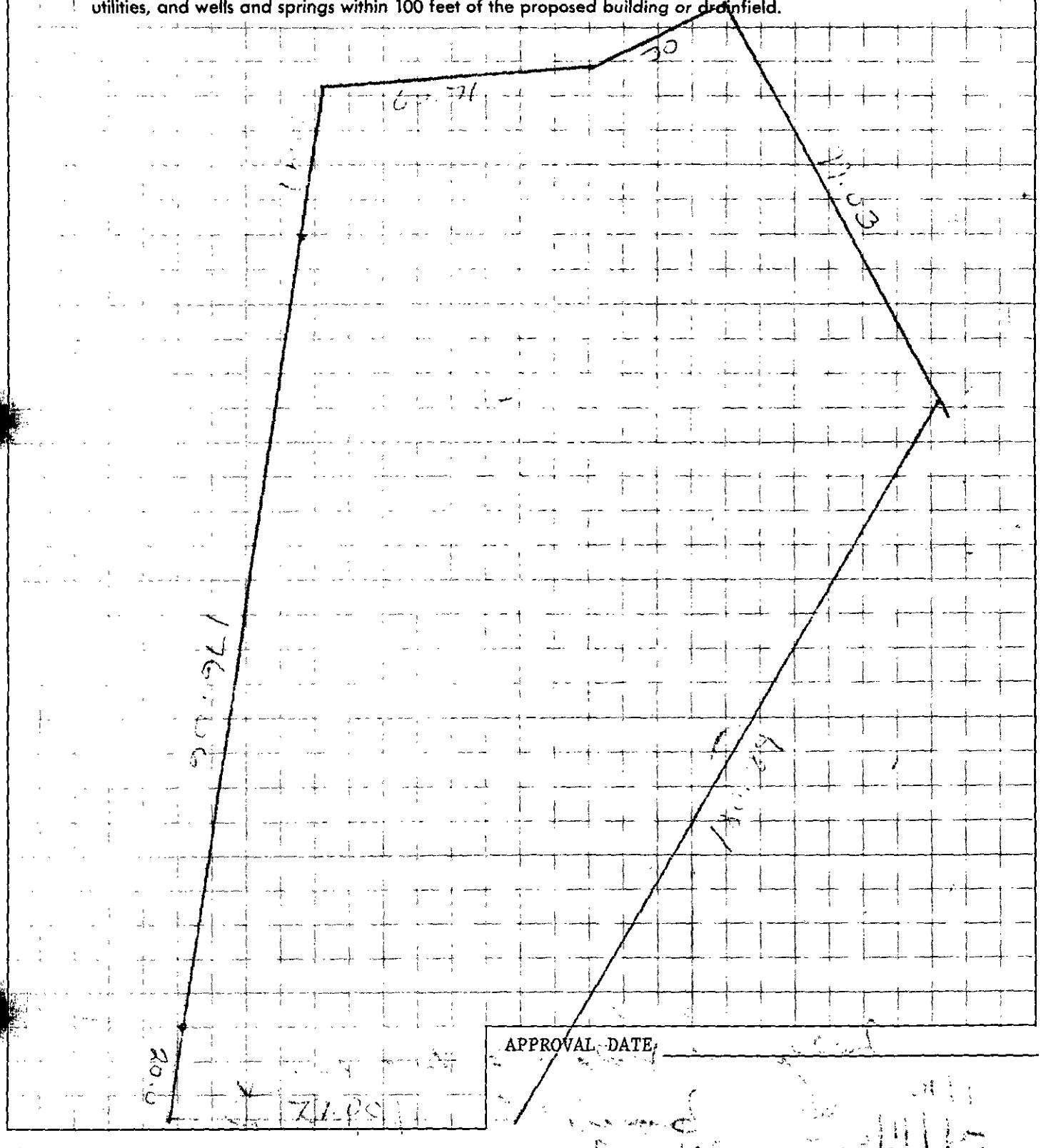
PROPOSED PLOT PLAN

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

FILE: _____

TC: C01551-14

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.



APPROVAL DATE: _____

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

Mecklenburg County
Health Department

May 07, 1992

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

Mr. Robert J. Ravich
1016 4th Creek Long Drive
Statesville, NC 28677

File #: 4930A (22824 Torrence Chapel Road)
Parcel #: 001-551-14
Subject: Improvement Application Denial

Dear Mr. Ravich:

Receipt of the plans and specifications for a conventional system of sewage disposal for the above property is hereby acknowledged. Upon receipt of the information, a review was made of the material on file and site evaluation was conducted. The plan was then reviewed in conjunction with provisions of 15 NCAC 18A, .1900, "Law and Rules for Sanitary Sewage Collection, Treatment and Disposal". The plans as submitted are disapproved because of failure to comply with the following rule(s):

(1) .1945 Available Space

a) Sites shall have sufficient available space to permit the installation and proper functioning of ground absorption sewage treatment and disposal systems, based upon the square footage of nitrification field required for the application rate determined in accordance with these rules.

b) Sites shall have sufficient available space for a repair area equal to the area determined in RULE .1945 (A) of this section.

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

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

Sincerely,

/for PHILO WALKER

Philo S. Walker, R.S
Individual Water and Wastewater Systems

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 15506

File: 4930 A Action 1

Parcel: 00001-161-07 ☐ PC

Location: Torrence Chapel Road

Subdivision:

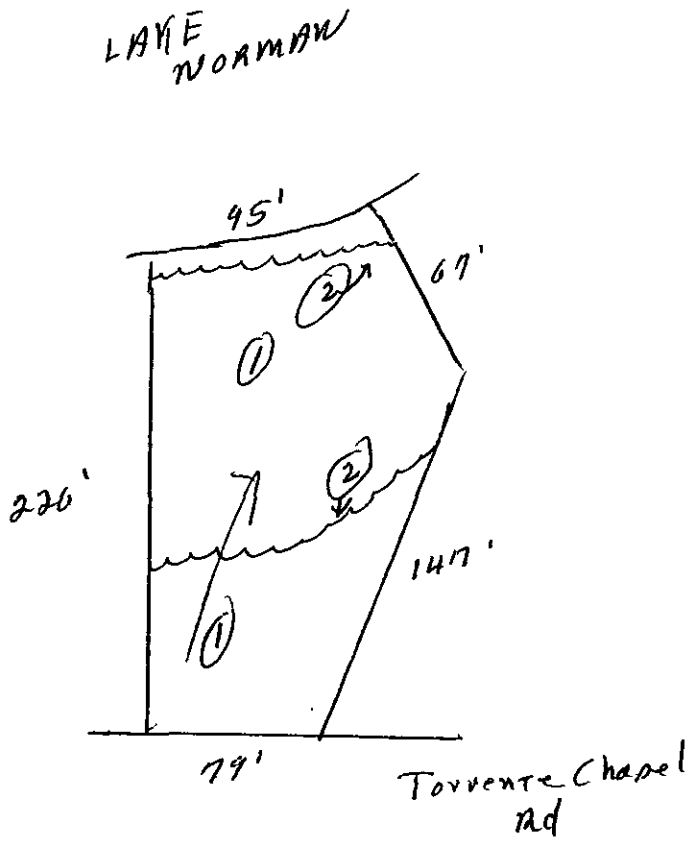
Lot: 10 Block: Acres: Approx .6

Owner: H. Edward Knox
Address: 22821 Torrence Chapel Road
Davidson, N. C. 28036

Comments: 100% Repairs

Described by: William A. Mueller

Date: 9-6-88



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

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

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U 2-10%	S PS (U) Complex slopes	S PS U	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 >36" to water	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U >36"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U limited	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	WA Cecil-Lille	complex slopes				
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
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION

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

(OFFICE USE ONLY)

PAID

FILE: 9 4830A

AUG 26 1988

TC:

#1850

☐ PC ☐ REPT

JOB LOCATION

① ADDRESS: 22821 Torrence Chapel Rd.

② SUBDIVISION: Knox Landing ③ LOT: 10 ④ BLOCK: 1

⑤ PARCEL REFERENCE: BOOK NO.: 021 PAGE NO.: 161 PARCEL NO.: 87

⑥ DEED REFERENCE: BOOK NO.: PAGE NO.:

OWNER

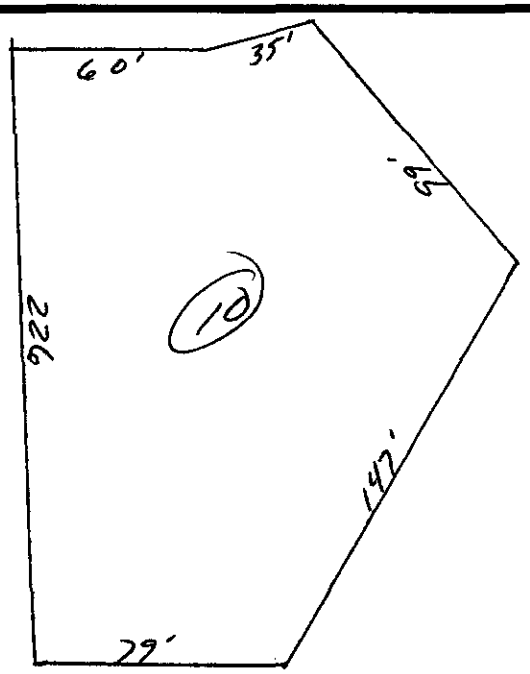
⑦ NAME: H. (FIRST) Edward (MIDDLE) Knox (LAST)

⑧ MAILING ADDRESS: 22821 Torrence Chapel Rd.

⑨ CITY: Davidson ⑩ STATE: N.C. ⑪ ZIP: 28036

⑫ PHONE: (WORK) 372-1360 (HOME) 892-1572

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: H. Edward Knox

Date: 8/26/88

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