


4542 PERKINS RD

04539118

1/2/2008

duponbj

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

MIKE WARD [DEVELOPER/BUILDER/OWNER

4542 PERKINS ROAD - MECKLENBURG COUNTY

NORTH CAROLINA

[MCHD File: 32858]

by

Toney C. Jacobs
Consulting Soil Scientist
168 Broadbill Drive
Mooresville, N.C. 28115

September 19, 1994

copy: Kelly Randall, R.S.
Mecklenburg County Health Dept.
Charlotte, N. C. 28202

SOIL SCIENCE SOCIETY OF N.C. CERTIFIED PROFESSIONAL CERT. #53 SOIL SCIENTIST TONEY C. JACOBS

Toney C. Jacobs, CPSS

Michael Ward Lot - 4542 Perkins Road

Shallow Placed Gravity Fed Modified System .1956(3)(A)(II)
(Prefabricated Permeable Block Panel system - T & J Panels)

Design Considerations

This system is proposed for a single family residential house on a small lot (70 x 270). The system is designed for a small (app. 1056 sq.ft.) 3 bedroom home. The proposed drainfield system does require a 100% repair area, and this has been evaluated and flagged. The site will be served by a shared well in the front yard. This is >100' and up gradient of any part of the septic system. One off-site well is approximately 75' from septic line 3 as noted on site plan. This well must be abandoned in approved manner as described in T15A: 02C.0100. A copy GW-3C is provided with this plan for use by the owner. This should be checked as a part of the Operation Permit completion process. The soil on most of the lot is of good quality clay or heavy clay loam (Cecil-like) for ground absorption. The main limitations for the lot are the available space. The repair area has one old field terrace which can and will be shaped for future use. At the time of evaluation equal consideration was given to both areas for primary system.

Of greatest importance to site serviceability will be the management of both surface and subsurface waters. A French drain to protect from subsurface lateral flow on the long lineal slope above the house, yard, road, and across the street is needed. This drainage system must be in place before the Type III System Operation Permit is completed. This drain will also help control moisture in the crawl space.

Only panesl were considered permittable with the above criteria. A caution to the installer includes no cutting or leveling of the soil, except by fill added to the surface. A 42" deep French drain into the surface swail along the side of the lot e required as shown on the plan. This interceptor drain must be checked by inspector before trench is closed because of importance to the system.

Location

The approximately 0.43 Ac building lot is on the left of Perkins Road near Gibbon Road, Mecklenburg County, N. C. The community is served by individual or shared private wells.

Reference Materials

(1) *Laws and Rules for Ground Absorption Disposal Systems 15A NCAC 18A. 1900,* NCDEHNR-DEH.

(2) *Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System.*

Recommendation

Two hundred and five (205) lineal feet of T & J lines with 205 feet repair.

Ownership/Contractor/Builder Responsibility for a Modified System

Conservation measures should be undertaken in plumbing fixture specifications to minimize the volume of wastewater entering the disposal system, including, but not limited to the following precautions:

(a) Provide water conserving plumbing fixtures within the facility. Waterclosets shall be 1.6 gallon flush maximum. Shower heads should also have restrictions or be of low volume design.

(b) Monitor and maintain the system as necessary for proper operation. Although a Certificate of Completion will not require a maintenance contract to be filed with the Mecklenburg County Health Department, it is recommended that the owner consider utilizing such a service because of its importance to system longevity.

System must be properly installed by a qualified and competent contractor following the requirements of the Mecklenburg County Department of Environmental Health, DEH, the N. C. Building Code, Plumbing Code, and Electrical Code. This plan, as any, is a guide to a minimum standard, but cannot take the place of experience and common sense.

Components of System

1. Two compartment septic tank - ~~1000~~ 1500 gallon
2. A speed level distribution box or precast box with speed level inserts.
3. Supply pipe.
4. Laterals with T & J Panels In ground absorption trenches, 2 foot wide, level end to end.
5. Four to 6 inches of cover over panels - no more because of soil depth.

Construction Sequence

1. Lines have been flagged as noted on drawing. French drain should be installed as shown.

2. Install trenches per cited reference material and this plan. Top grade on panels to be "level" from end to end.

3. The installation contractor shall stabilize the area of construction by planting and mulching with Kentucky 31 Fescue. Area to be limed and fertilized with 2 each 50# bags of lime and 2 each 40# bags of 10-10-10 granular fertilizer, evenly broadcast and incorporated into fill material.

4. The septic tank shall consist of a ~~1000~~ 1500 gallon capacity reinforced, precast concrete tank with full baffle and shall have easy access to each chamber from ground level for inspection. The first chamber of the septic tank shall consist of 2/3 to 3/4 of the volume of the total tank and the baffle shall contain a horizontal opening across the tank at about midway its height. Locate the septic tank at such height as to provide approximately 8" of cover soil over top of the tank.

6. Final Landscaping: After the system is installed, the following should be checked to insure that the system will not be overloaded with excess rainwater and runoff:

(a) The distribution field is shaped to shed rainwater and is free of low areas.

(b) Surface swail must be stabilized.

Concluding Note:

This plan was done to facilitate permitting by the Mecklenburg County Health Department as a service to the county by the property owner. Any additions, or additional requirements, or deletions to enhance design or workability which will facilitate a permit are welcomed and may be made by note on this plan without returning entire design. The designer realizes a plan can be changed and/or improved upon. Any change by the installer must be approved by the Health Department.

# DESIGN SPECIFICATIONS

Ward Lot - 4542 Perkins Road

| | |
|---|---|
| Daily design flow: | 360 gpd - 3 bedroom house |
| Septic tank size: | ~~1000~~ 1500 gal (2 compartments) |
| Effluent loading rate: | 0.29 gpd/sf T & J |
| Total length and laterals: | 5 ea 40' long with same repair, min. 8' o.c. but 9' o.c. |
| Distribution: | speed levelers-equal for all five lines |
| Special requirements: | French drain into existing surface diversion |

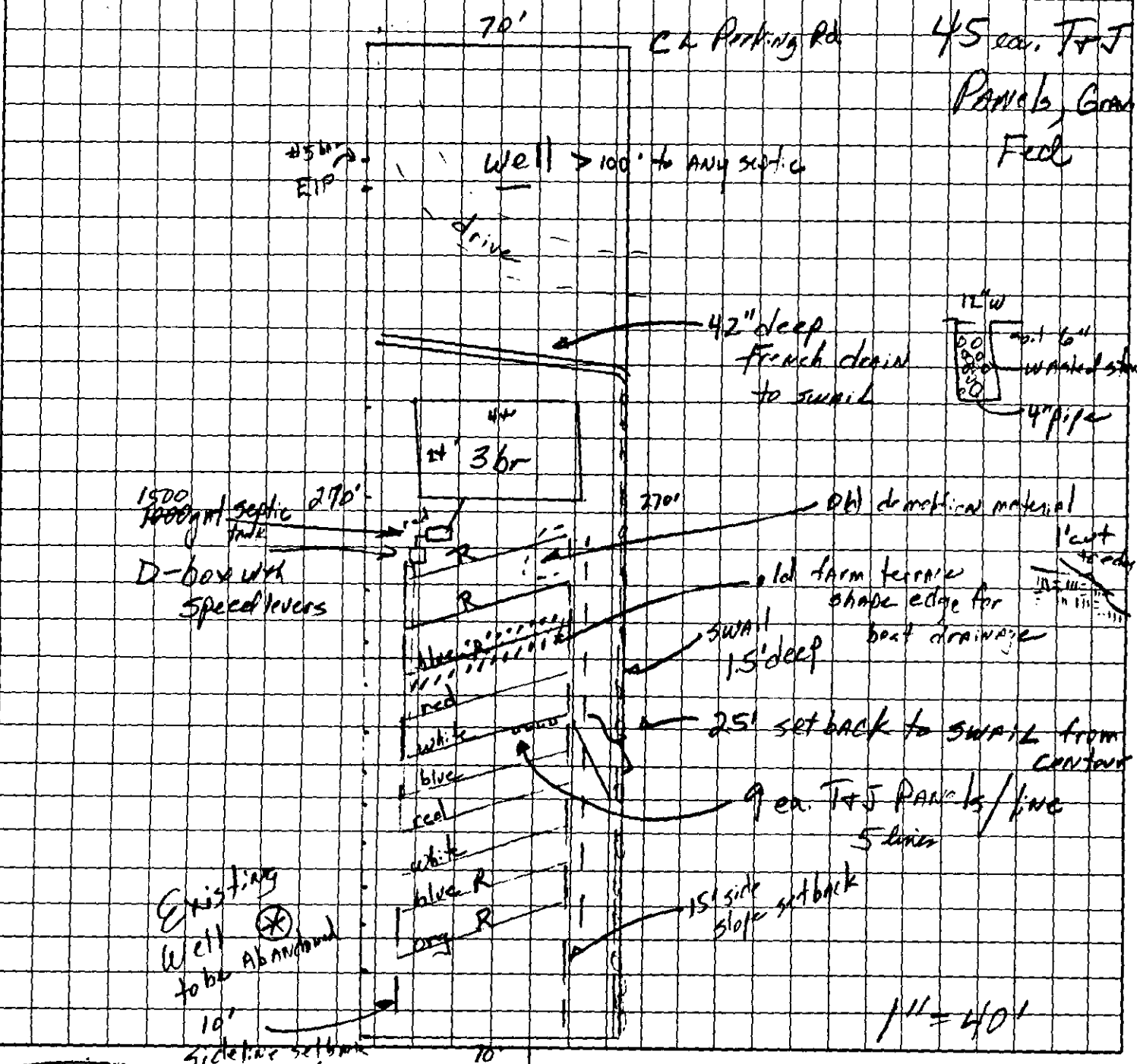
# PROPOSED PLOT PLAN

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

FILE: 3285B

TC: 045-391-06

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




OWNER/AGENT SIGNATURE Tonya Crawford

DATE 9/20/94

APPROVAL DATE _____

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

North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management

P. O. Box 27687 - Raleigh, N. C. 27611

# WELL ABANDONMENT RECORD

CONTRACTOR _____ REG. NO. _____

1. WELL LOCATION: (Show a sketch of the location on back of form.)
   Nearest Town: _____ County _____
   _____ Quadrangle No. _____
   (Road, Community, Subdivision, Lot No.)
2. OWNER: _____
3. ADDRESS: _____
4. TOPOGRAPHY: draw, slope, hilltop, valley, flat
5. USE OF WELL: _____ DATE: _____
6. TOTAL DEPTH: _____ DIAMETER: _____
7. CASING REMOVED:

| feet | diameter |
|---|---|
| | |
| | |

8. SEALING MATERIAL:

| Neat cement | Sand cement |
|---|---|
| bags of cement ___ | bags of cement ___ |
| gals. of water ___ | yds. of sand ___ |
| | gals. of water ___ |

Other
Type material _____
Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL.

_____

_____

_____

_____

I do hereby certify that this well abandonment record is true and exact.

_____
Signature of Contractor or Agent Date

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

**Submit original to the Division of Environmental Management, one copy to the Driller, and one copy to the Owner.**

GW-3C Revised 10/1/80

# CERTIFICATE OF COMPLETION/OPERATION PERMIT

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 3205 B DATE: 3 13 96

TC: 045-391-06 L X CRT

SERIAL Nº 16538

Name of Owner Mike Ward Juris.: _____

Address of Property ~~4600~~ 4345 Perkins Rd

**Inspection Data:**

Tank Material PCC

Total Length of Drainfield 200

Number of Lines 5 @ _____

Cover Depth 6''

Water Supply Source CMUD

Distance to Water Source _____

Excavation Inspected 3-13-96

Tank(s) Inspected 3-13 96

Wash Line Inspected —

High Water Alarm Inspected —

PLOT

Design 1996 TYPE III PRBPS CTR# Ice Painter

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 15A NCAC 18A. 1900, "Laws And Rules For Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. This 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 15A NCAC 18A. 1990 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.

**Notice:** Disturbance of the designated repair area may result in the suspension/revocation of this permit.

COMMENTS: _____

Environmental Health Specialist

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

Division of Environmental Management
Groundwater Section
P.O. Box 27687 - Raleigh, N.C. 27611

# WELL ABANDONMENT RECORD

CONTRACTOR Michael Ward REG. NO.

1. WELL LOCATION: (Show a sketch of the location on back of form.)
Nearest Town: CHARLOTTE County Mck
PERKINS Rd.
(Road, Community, Subdivision, Lot No.) Quadrangle No.

2. OWNER: FRANCES JONES

3. ADDRESS: 4520 PERKINS RD.

4. TOPOGRAPHY : draw, slope, hilltop, valley, (flat)

5. USE OF WELL: 15 yrs. DATE: 3-8-96

6. TOTAL DEPTH: 92 ft DIAMETER: 2"

7. CASING REMOVED:

| feet | diameter |
|---|---|
| 4 ft | 2" |
| | |

8. SEALING MATERIAL:

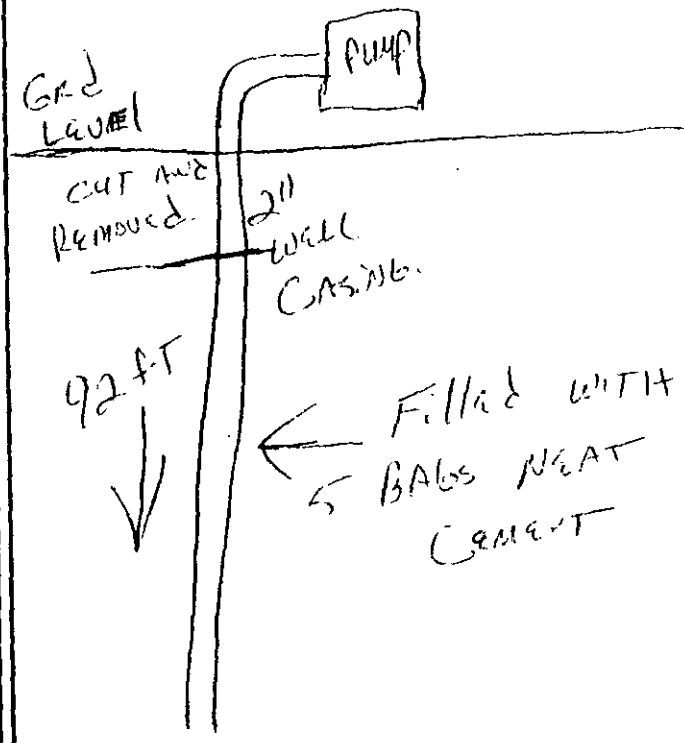
| Neat cement | Sand cement |
|---|---|
| bags of cement 5 | bags of cement |
| gals. of water 2.5 | yds. of sand |
| | gals. of water |

Other
Type material

Amount

9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL
POURED IN CASING

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.




I do hereby certify that this well abandonment record is true and exact.

Signature of Contractor or Agent [signature] Date 3-8-96

WELL LOCATION: Draw a location sketch on the reverse of this sheet, showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersections and streams. Identify roads with State Highway road identification numbers.

Submit original to the Division of Environmental Management, one copy to the Driller, and one copy to the owner.

GW-30 Revised 3/8/90


270'
WELL
ABANDONED
240 FT TO Rd.
X530
65'
PERKINS Rd.
2/10 of MILE
Gibbon Rd

(d) National Science Foundation (NSF) approved PVC pipe rated at 160 PSI may be used for liner casing. The annular space around the liner casing shall be at least five-eighths inches and shall be completely filled with neat-cement grout.

*History Note: Statutory Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 1984.*

**.0113 ABANDONMENT OF WELLS**

(a) Any well which has been abandoned, either temporarily or permanently, shall be abandoned in accordance with one of the following procedures:

(1) Procedures for temporary abandonment of wells:

(A) Upon temporary removal from service or prior to being put into service, the well shall be sealed with a water-tight cap or seal compatible with casing and installed so that it cannot be removed easily by hand.

(B) The well shall be maintained whereby it is not a source or channel or contamination during temporary abandonment.

(C) Every temporarily abandoned well shall be protected with a casing.

(2) Procedures for permanent abandonment of wells:

(A) All casing and screen materials may be removed prior to initiation of abandonment procedures if such removal will not cause or contribute to contamination of the groundwaters. Any casing not grouted in accordance with Rule .0107 Paragraph (d) of this Section shall be removed or properly grouted.

(B) The entire depth of the well shall be sounded before it is sealed to ensure freedom from obstructions that may interfere with sealing operations.

(C) The well shall be thoroughly disinfected prior to sealing.

(D) In the case of gravel-packed wells in which the casing and screens have not been removed, neat-cement shall be injected into the well completely filling it from the bottom of the casing to the top.

(E) "Bored" wells shall be completely filled with cement grout, dry clay or material excavated during drilling of the well and then compacted in place.

(F) Wells constructed in unconsolidated formations other than "bored" wells shall be completely dilled with cement grout by introducing it through a pipe extending to the bottom of the well which can be raised as the well is filled.

(G) Wells constructed in consolidated rock formations or that penetrate zones of consolidated rock may be filled with cement, sand, gravel or drill cuttings opposite the zones of consolidated rock. The top of the sand, gravel or cutting fill shall be at least five feet below the top of the consolidated rock. The remainder of the well shall be filled with cement grout only.

(H) Test wells less than 20 feet in depth which do not penetrate the water table shall be abandoned in such manner as to prevent the well from being a channel allowing the vertical movement of water or a source of contamination to the groundwater supply. Test wells or borings that penetrate the water table shall be abandoned by completely filling with cement grout.

(b) Any well which acts as a source or channel of contamination shall be repaired or permanently abandoned within 30 days or receipt of notice from the department.

(c) The drilling contractor shall permanently abandon any well in which the casing has not been installed or from which the casing has been removed, prior to removing his equipment from the site.

(d) The owner shall be responsible for permanent abandonment of a well except:

(1) As otherwise specified in these Regulations; or

(2) If well abandonment is required because the driller improperly locates, constructs, or completes the well.

*History Note: Statutory Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 1984; April 20, 1978.*

**.0114 DATA AND RECORDS REQUIRED**

(a) Well Cuttings

LATE

code 4548 $150.00 10/4/95 32858

# INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
## APPLICATION FOR SERVICES

$150.00 CK 3728 9/1/94 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

PERSON FILING APPLICATION:
NAME: WARD (last) Michael (first) W (mi)
ADDRESS: 4600 ~~4600~~ PERKINS RD. PHONE: ~~704~~ 596-6699
CITY: CHARLOTTE STATE: N.C. ZIPCODE: 28269

Date: 9-1-94

PROPERTY OWNER:
NAME: SAME (last) (first) (mi)
ADDRESS: _____ PHONE: (___) _____
CITY: STATE: ZIPCODE:

PROPERTY INFORMATION (FROM ENGINEERING FORM):
TAX/PARCEL NUMBER: 045-391-06
STREET ADDRESS: 4542 Perkins Rd
ZONING:

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

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: LOT SIZE (in acres):

TYPE APPLICATION (check one):
[X] SOIL TEST - INDIVIDUAL LOT (D)
[ ] 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: 3 NUMBER OCCUPANTS: 1
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) [X] Shared Well (S)
[ ] Municipal (M) [ ] Other 'spring' (O)
[X] 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: Michael W Ward Date: 9-1-94

NOTICE:

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

...No work shall be conducted on the septic tank system until an installation, Construction, Alteration and/or Repair approval is granted by this Department.

...This permit is not transferable.

... PPBPS TYPE III

AGREEMENT FORM ON FILE

WELL MUST BE ABANDONED PRIOR TO OPERATION PERMIT

[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
Kelly Randall 10-4-95
Director or Authorized Section Head Date

WATER : 122791

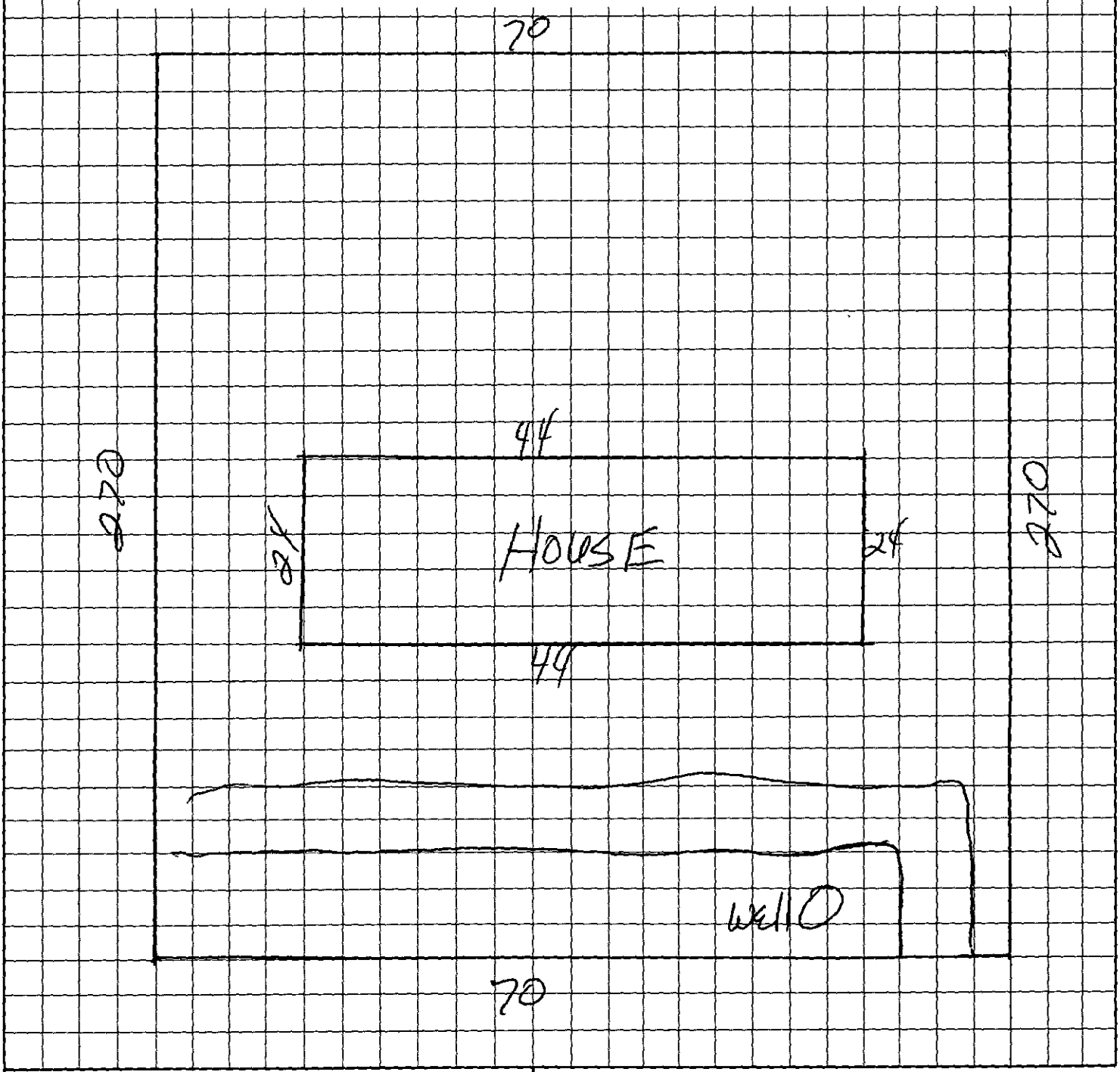
# PROPOSED PLOT PLAN

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

FILE: 3285B

TC: 045-391-06

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 _____

OWNER/AGENT SIGNATURE

DATE

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

DATE 9/1/94

TO: CHARLOTTE-MECKLENBURG BUILDING STANDARDS
PERMIT ISSUING SECTION

FROM: MECKLENBURG COUNTY ENGINEERING

JURISDICTION Mck

045-391-06
PARCEL NUMBER

4542 Yukins Rd
ASSIGNED STREET ADDRESS (ADDRESS OF RECORD)

EXISTING STREET ADDRESS (IF DIFFERENT FROM ASSIGNED)

NA
PROJECT NAME (IF APPLICABLE)

**THE ABOVE DESCRIBED LOCATION HAS BEEN CHECKED CONCERNING:**

| | | |
|---|---|---|
| 1. SUBDIVISION REGULATIONS | APPROVED | NOT APPROVED |
| 2. FLOODWAY REGULATIONS | APPROVED | NOT APPROVED |
| 3. WATERSHED PROTECTION | APPROVED | NOT APPROVED |
| 4. COMMERCIAL DRAINAGE PLAN | APPROVED | NOT APPROVED |
| 5. PUBLIC UTILITY EASEMENT | PRESENT | NOT PRESENT |
| 6. PROPERTY FRONTS ON THOROUGHFARE | YES | NO |
| 7. DRIVEWAY PERMIT REQUIRED | YES | NO |
| 8. DOES PROJECT CONFLICT WITH ROAD PROJECT? | YES | NO |

REMARKS: Septic

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

ALL OTHER FORMS OBSOLETE

☐ NEW ADDRESS

SIGNED: [signature]

REVISED 1/91

# Mecklenburg County
Health Department

November 30, 1994

Michael Ward
4600 Perkins Road
Charlotte, NC 28269

Re: 4542 Perkins Road
File: 3285B

Dear Mr. Ward:

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

The plans as submitted are approved with the following comments:

- Water saving plumbing devices and low flush toilets should be installed when constructing the residence.
- Effectively rake and lime all trench sidewalls.
- Landscaping of original system area and the repair area is prohibited. No grading, shaping, or altering in any way.
- The well should be located 100 feet, but in no case less than 50 feet from the sewage system and repair area.

A provision of the improvement permit is for the adjoining well to be properly abandoned. Prior to the issuance of the Operation Permit the well must be abandoned. Please submit proof of abandonment on the Well Abandonment Record (form GW-3C) from the North Carolina Department of Natural Resources and Community Development, Division of Environmental Management.

Upon execution and recording of the enclosed "Septic Tank Agreement Form" an improvement permit can be issued by this Department.

If you have any questions concerning this matter please contact me at 336-5575.

Sincerely,

Kelly Randall

Kelly Randall, R.S.

Enclosures

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

BK: 08318 PG: 0474/0476 #:0536 13.05
JUDITH A GIBSON REG OF DEEDS MECK NC
FILED FOR REGISTRATION 10/04/95 14:46

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

**ACKNOWLEDGEMENT OF REQUEST BY OWNER FOR RECLASSIFICATION OF SITE FROM *"UNSUITABLE" TO "PROVISIONALLY SUITABLE"* UNDER 15A NCAC 18A .1948 AND ANY OF THE FOLLOWING RULES: .1956; .1957(a); .1957(b); or .1957(c)**

FILE # 32850
PARCEL # 045-391-06

The undersigned, Michael Wayne Ward, owner of property located at 4542 Perkins Rd, (the "site") and described in an instrument recorded in Book 3144 at Page 526, Mecklenburg Public Registry, hereby acknowledges that the undersigned applied to the Mecklenburg County Health Department (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 15A NCAC 18A .1900 et seq.; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requested 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 is allowed by the rules; 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 acknowledges that the following conditions will apply to the site:

- Any changes on the property may make the Improvement Permit Null and void and may make the Improvement Permit subject to revocation.

*This instrument was prepared by:* Michael W Ward
*Mail after recording to:* 4600 Perkins Rd.
Charlotte N.C. 28269



RBCWM:2662_1/3-14-94

- Do not grade, cut, fill, pave, construct a building or deck, dig a well, install a swimming pool or otherwise cover or disturb the soil (except for planting and maintaining grass or other ground covers) in a manner which will adversely affect the repair area or area where the septic tank system is located.

- When a private certified operator is required, no improvement permit for the designated repair shall be issued unless there is a private certified operator to carry out this management program in the service area where the proposed system is to be located. (Refer to Rule .1961, "Maintenance of Sewage Systems," for further information.)

- Additional fees will be required according to the Mecklenburg County user fee schedule applicable at the time for the issuance of a repair permit for any subsequent repairs to the sewage treatment and disposal system or for installation of a replacement system.

- At the time repairs to the sewage treatment and disposal system are to be made or a replacement system installed, the regulations in effect at that time will govern the repairs or installation of a replacement 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.

IN WITNESS WHEREOF, the undersigned has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, this 4 day of OCT, 1995.

_____ (SEAL)

_____ (SEAL)

_____ (SEAL)

_____ (SEAL)

_____
(Corporate Name)

By: _____

_____ President

ATTEST:

_____

_____ Secretary

(Corporate Seal)

STATE OF NORTH CAROLINA
COUNTY OF _____

I _____, a Notary Public for said County and State, do hereby certify that _____ personally appeared before me this date and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 4th day of October, 1995.

_____
Notary Public

My Commission Expires:
Dec 1, 1998



RBCWM:2662_1/3-14-94

MIKE WARD (DEVELOPER/BUILDER/OWNER

4542 PERKINS ROAD - MECKLENBURG COUNTY

NORTH CAROLINA

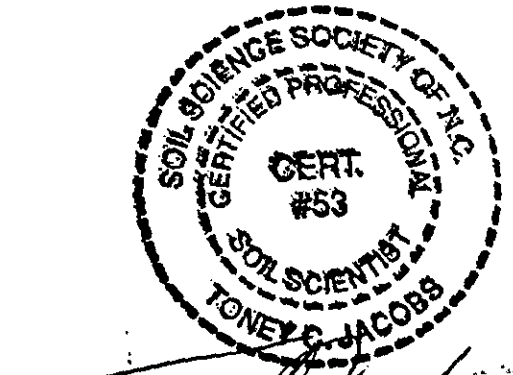
(MCHD File: 32858)

by

Toney C. Jacobs
Consulting Soil Scientist
168 Broadbill Drive
Mooresville, N.C. 28115

September 19, 1994

copy: Kelly Randall, R.S.
Mecklenburg County Health Dept.
Charlotte, N. C. 28202




Toney C. Jacobs, CPSS

Michael Ward Lot - 4542 Perkins Road

Shallow Placed Gravity Fed Modified System .1956(3)(A)(II)
(Prefabricated Permeable Block Panel system - T & J Panels)

Design Considerations

This system is proposed for a single family residential house on a small lot (70 x 270). The system is designed for a small (app. 1056 sq.ft.) 3 bedroom home. The proposed drainfield system does require a 100% repair area, and this has been evaluated and flagged. The site will be served by a shared well in the front yard. This is >100' and up gradient of any part of the septic system. One off-site well is approximately 75' from septic line 3 as noted on site plan. This well must be abandoned in approved manner as described in T15A: 02C.0100. A copy GW-3C is provided with this plan for use by the owner. This should be checked as a part of the Operation Permit completion process. The soil on most of the lot is of good quality clay or heavy clay loam (Cecil-like) for ground absorption. The main limitations for the lot are the available space. The repair area has one old field terrace which can and will be shaped for future use. At the time of evaluation equal consideration was given to both areas for primary system.

Of greatest importance to site serviceability will be the management of both surface and subsurface waters. A French drain to protect from subsurface lateral flow on the long lineal slope above the house, yard, road, and across the street is needed. This drainage system must be in place before the Type III System Operation Permit is completed. This drain will also help control moisture in the crawl space.

Only panesl were considered permittable with the above criteria. A caution to the installer includes no cutting or leveling of the soil, except by fill added to the surface. A 42" deep French drain into the surface swail along the side of the lot e required as shown on the plan. This interceptor drain must be checked by inspector before trench is closed because of importance to the system.

Location

The approximately 0.43 Ac building lot is on the left of Perkins Road near Gibbon Road, Mecklenburg County, N. C. The community is served by individual or shared private wells.

Reference Materials

(1) *Laws and Rules for Ground Absorption Disposal Systems 15A NCAC 18A. 1900,* NCDEHNR-DEH.

(2) *Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System.*

Recommendation

Two hundred and five (205) lineal feet of T & J lines with 205 feet repair.

Ownership/Contractor/Builder Responsibility for a Modified System

Conservation measures should be undertaken in plumbing fixture specifications to minimize the volume of wastewater entering the disposal system, including, but not limited to the following precautions:

(a) Provide water conserving plumbing fixtures within the facility. Waterclosets shall be 1.6 gallon flush maximum. Shower heads should also have restrictions or be of low volume design.

(b) Monitor and maintain the system as necessary for proper operation. Although a Certificate of Completion will not require a maintenance contract to be filed with the Mecklenburg County Health Department, it is recommended that the owner consider utilizing such a service because of its importance to system longevity.

System must be properly installed by a qualified and competent contractor following the requirements of the Mecklenburg County Department of Environmental Health, DEH, the N. C. Building Code, Plumbing Code, and Electrical Code. This plan, as any, is a guide to a minimum standard, but cannot take the place of experience and common sense.

Components of System

1,500

1. Two compartment septic tank ~~1000~~ gallon
2. A speed level distribution box or precast box with speed level inserts.
3. Supply pipe.
4. Laterals with T & J Panels In ground absorption trenches, 2 foot wide, level end to end.
5. Four to 6 inches of cover over panels - no more because of soil depth.

Construction Sequence

1. Lines have been flagged as noted on drawing. French drain should be installed as shown.

2. Install trenches per cited reference material and this plan. Top grade on panels to be "level" from end to end.

3. The installation contractor shall stabilize the area of construction by planting and mulching with Kentucky 31 Fescue. Area to be limed and fertilized with 2 each 50# bags of lime and 2 each 40# bags of 10-10-10 granular fertilizer, evenly broadcast and incorporated into fill material.

4. The septic tank shall consist of a ~~1000~~ 1500 gallon capacity reinforced, precast concrete tank with full baffle and shall have easy access to each chamber from ground level for inspection. The first chamber of the septic tank shall consist of 2/3 to 3/4 of the volume of the total tank and the baffle shall contain a horizontal opening across the tank at about midway its height. Locate the septic tank at such height as to provide approximately 8" of cover soil over top of the tank.

6. Final Landscaping: After the system is installed, the following should be checked to insure that the system will not be overloaded with excess rainwater and runoff:

(a) The distribution field is shaped to shed rainwater and is free of low areas.

(b) Surface swail must be stabilized.

Concluding Note:

This plan was done to facilitate permitting by the Mecklenburg County Health Department as a service to the county by the property owner. Any additions, or additional requirements, or deletions to enhance design or workability which will facilitate a permit are welcomed and may be made by note on this plan without returning entire design. The designer realizes a plan can be changed and/or improved upon. Any change by the installer must be approved by the Health Department.

# DESIGN SPECIFICATIONS

Ward Lot - 4542 Perkins Road

| | |
|---|---|
| Daily design flow: | 360 gpd - 3 bedroom house |
| Septic tank size: | /500 ~~1000 gal~~ (2 compartments) |
| Effluent loading rate: | 0.29 gpd/sf T & J |
| Total length and laterals: | 5 ea 40' long with same repair, min. 8' o.c. but 9' o.c. |
| Distribution: | speed levelers-equal for all five lines |
| Special requirements: | French drain into existing surface diversion |

North Carolina
Department of Natural Resources and Community Development
Division of Environmental Management

P. O. Box 27687 - Raleigh, N. C. 27611

**WELL ABANDONMENT RECORD**

CONTRACTOR _____ REG. NO. _____

1. WELL LOCATION: (Show a sketch of the location on back of form.)

Nearest Town: _____ County _____

_____ Quadrangle No. _____
(Road, Community, Subdivision, Lot No.)

2. OWNER: _____

3. ADDRESS: _____

4. TOPOGRAPHY: draw, slope, hilltop, valley, flat

5. USE OF WELL: _____ DATE: _____

6. TOTAL DEPTH: _____ DIAMETER: _____

7. CASING REMOVED:

| feet | diameter |
|---|---|
| | |
| | |

8. SEALING MATERIAL:

| Neat cement | Sand cement |
|---|---|
| bags of cement ___ | bags of cement ___ |
| gals. of water ___ | yds. of sand ___ |
| | gals. of water ___ |

Other
Type material _____
Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL

_____

_____

_____

_____

I do hereby certify that this well abandonment record is true and exact.

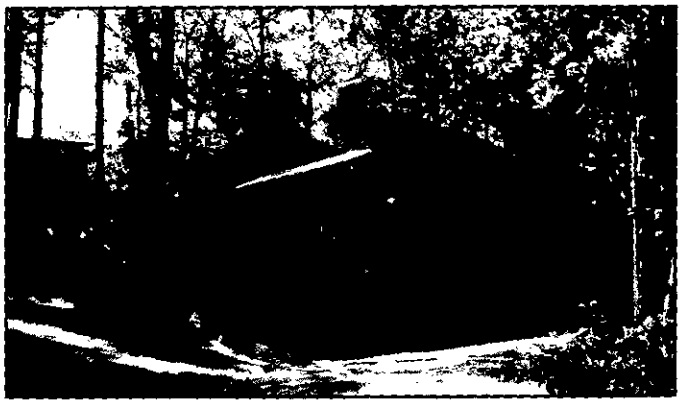
_____
Signature of Contractor or Agent Date

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

**Submit original to the Division of Environmental Management, one copy to the Driller, and one copy to the Owner.**

GW-3C Revised 10/1/80

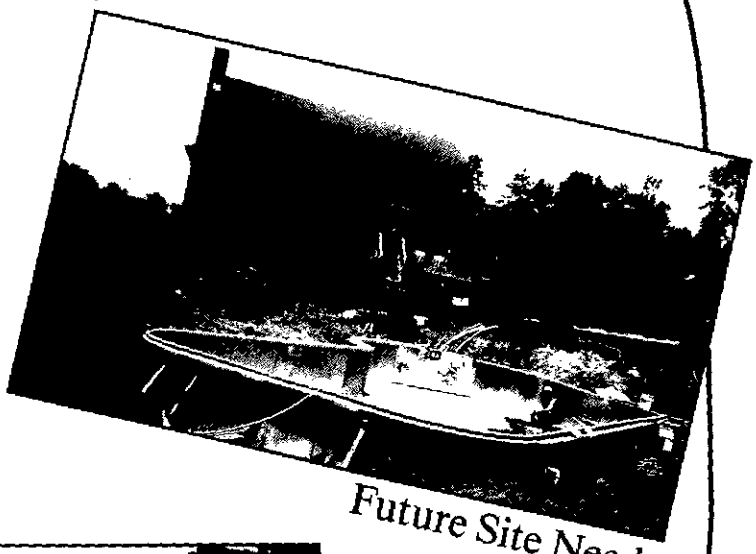
# When Your Problem in On-site Waste Is:



Topography and Vegetation



Special Landscaping Needs



Future Site Needs



Limited Suitable Area

Then consider the

# T&J Panel Wastewater Treatment System

A Better Quality Effluent Than With Conventional Systems

# THE T.&J. PANEL
## WASTEWATER TREATMENT SYSTEM

PATENT NUMBER 4013559

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

There are many new developments in ground absorption sewage disposal system on the market today. The T&J Panel System is designed to make the most out of the least amount of space possible. This is made possible by the fuller use of the more porous top soil and the limited effect of evapotransporation and the wicking action of the block as the effluent is kept close to the surface of the ground and fused through the pores of the block to the sidewall area of the drainfield lines. This more general distribution and wicking allows for the use of the entire sidewall area and helps prevent the sealing off of the bottom and lower sidewalls that often occurs in a conventional system.

A 16 inch high panel is 46 inches long, 8 inches wide, and weighs about 155 pounds. There is a 6 inch by 6 inch air chamber at each end of the panel which extends from top to bottom to ensure aerobic action in each level of the field lines. Each panel has a storage chamber just below the top chamber for storage during peak use periods. A 24 inch panel is also available for use in repair or specially engineered systems.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

**Limited Warranty**

The structural integrity of each T&J Panel, when installed in accordance with manufacturer's instructions, is warranted against defective materials and workmanship for one year from date of manufacture. Should a defect appear within the warranty period, purchaser must inform T&J Panel System of the defect before the warranty expires. T&J Panel System will supply a replacement unit. T&J Panel System's liability specifically excludes the cost of removal and/or installation of the panels. There are no other warranties with respect to the units, including no warranties of merchantability or of fitness for a particular purpose. The warranty does not extend to incidental, consequential, special or indirect damages. The company shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other loss or expense incurred by buyer. Specifically excluded from warranty coverage are: Damage to the panels due to ordinary wear and tear; alteration, accident, misuse, abuse or neglect of the panels; the panels being subjected to stresses greater than those prescribed in the installation instructions; the placement by buyer of improper materials into buyer's system; or any other event not caused by the company. Furthermore, in no event shall the company be responsible for any loss or damage to the buyer, the panels or any third party resulting from its installation or shipment. Buyer shall be solely responsible for ensuring that installation of the system is completed in accordance with all applicable laws, codes, rules and regulations. Any alteration of this warranty must be noted as "Warranty" in writing by the company.

**Engineering and Test Data by Law Environmental Services and Ayers and Associates is available from the manufacturer at the address below.**

THE T&J PANEL
WASTEWATER TREATMENT SYSTEM
PATENT NUMBER 4013559

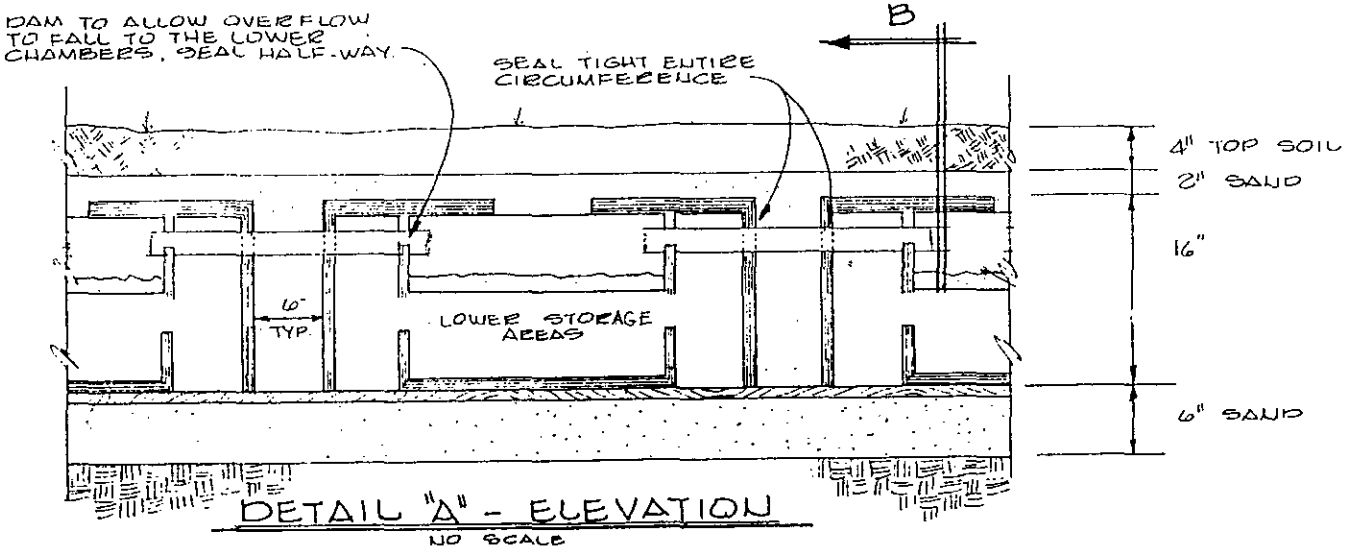
P.O. Box 288 • Statesville, North Carolina 28677
N.C. WATS 1-800-222-2577 • (704) 872-9566

**Distributed by**

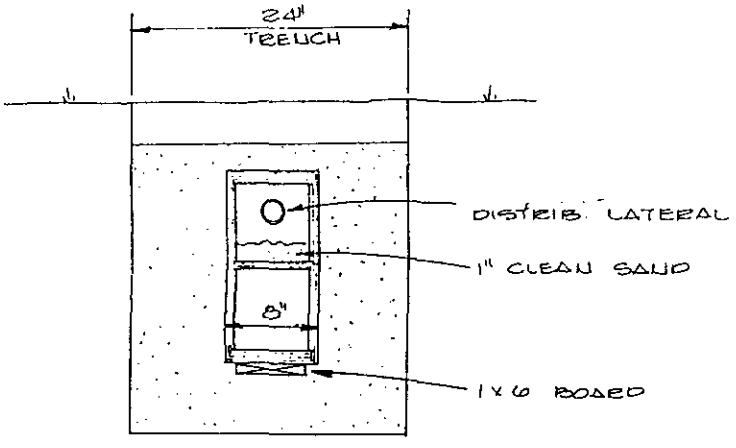
**Serving people with a better quality system**

# 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

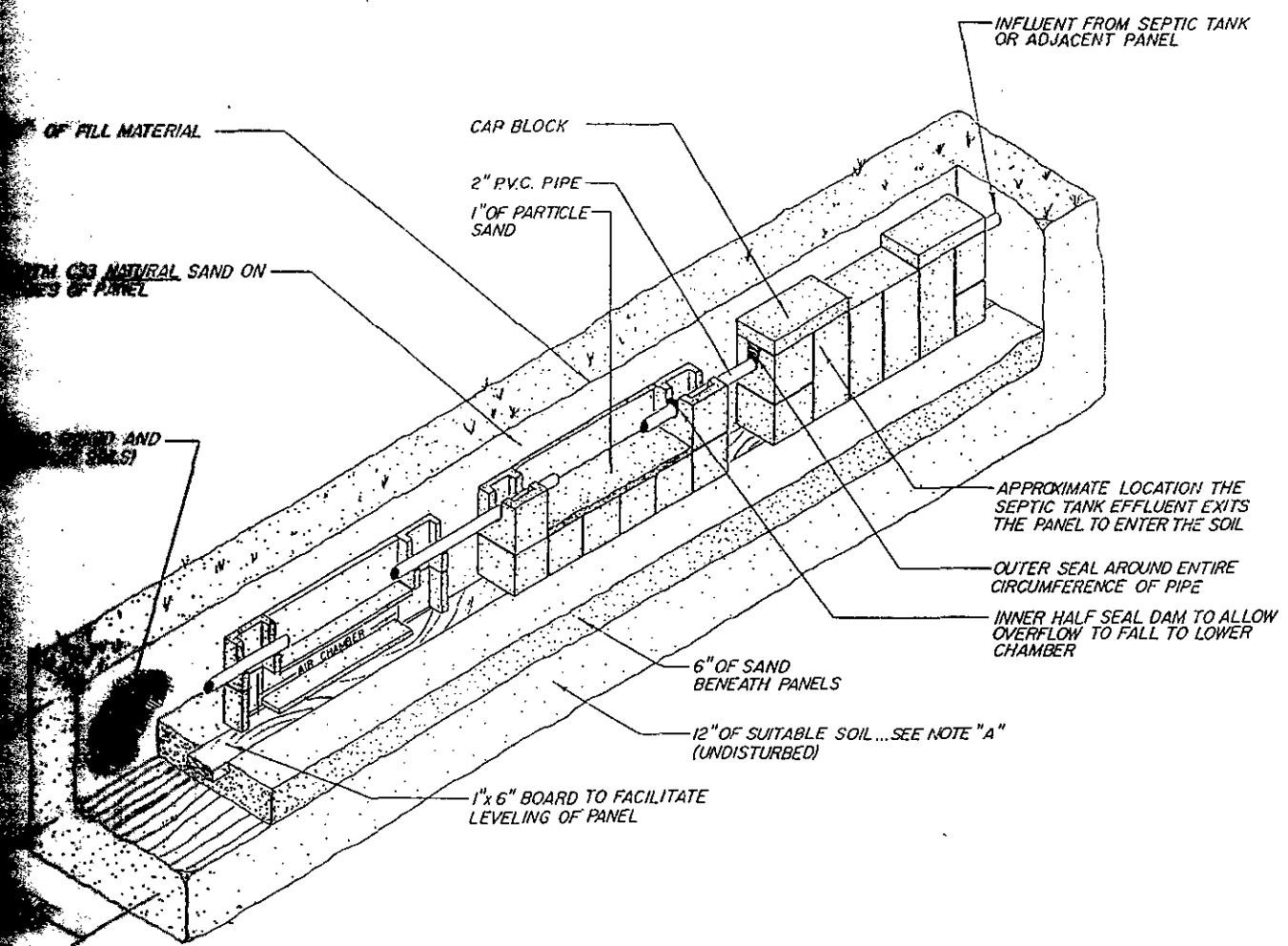


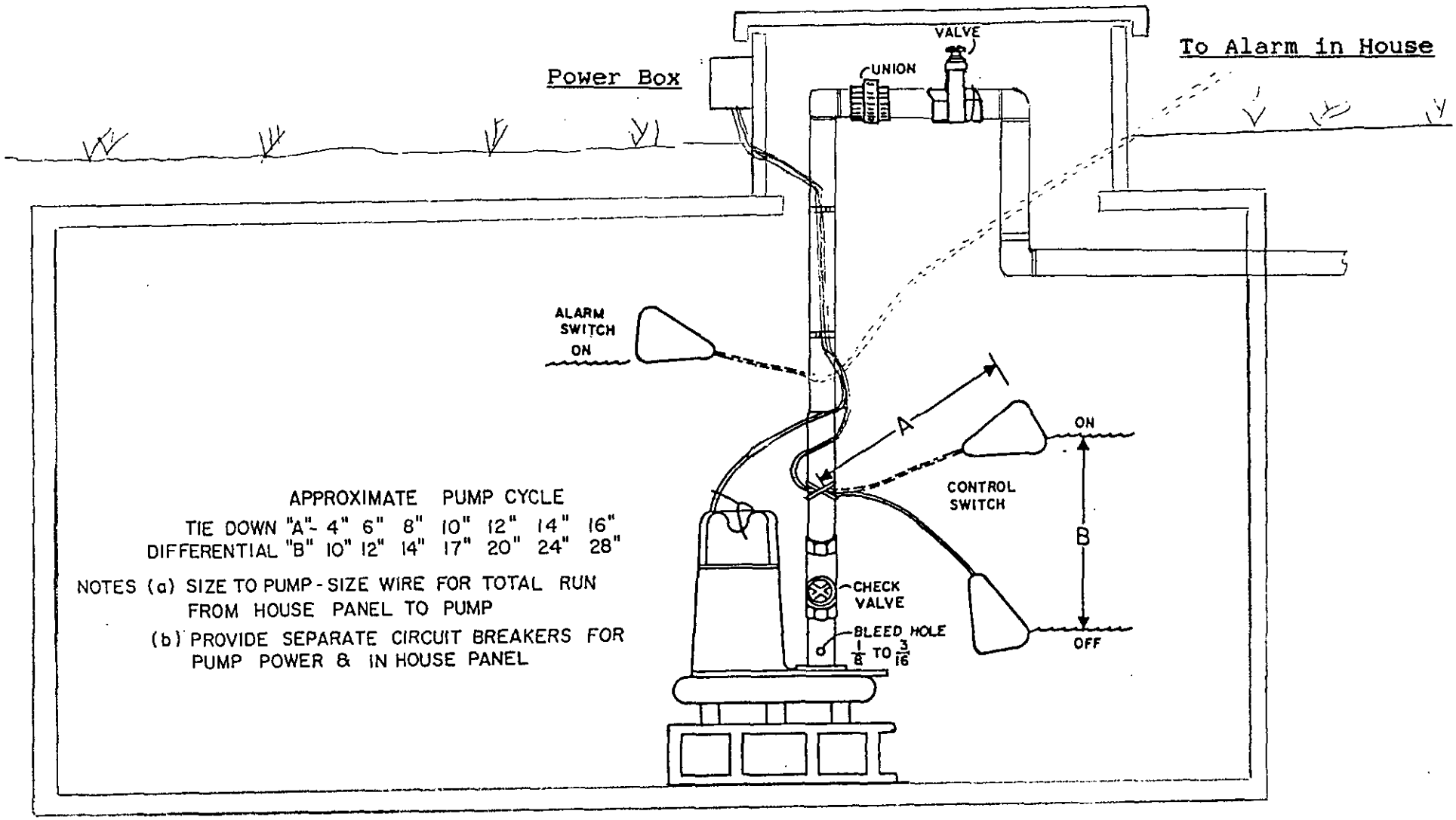

DETAIL "A" - ELEVATION
NO SCALE




DETAIL "B" - SECTION
NO SCALE

## ...metric Drawing of a Segment of ... T & J Panel System Drainfield






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

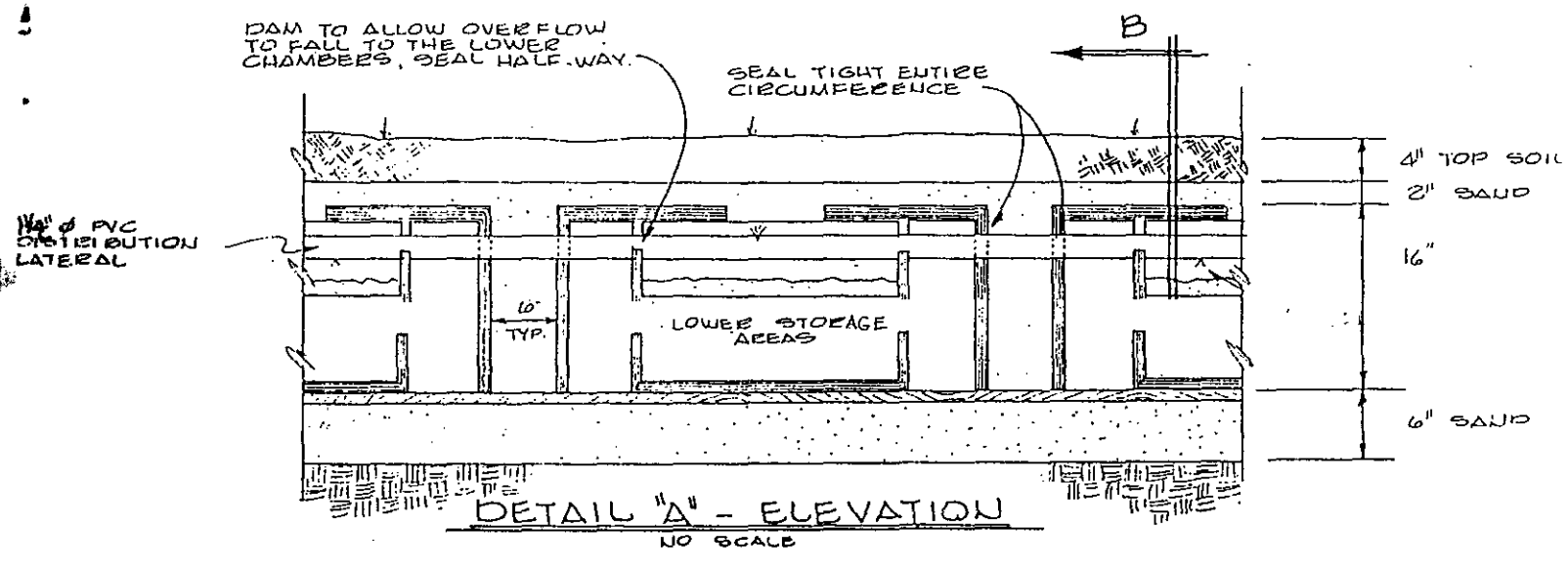
(b) PROVIDE SEPARATE CIRCUIT BREAKERS FOR PUMP POWER & IN HOUSE PANEL

# 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.

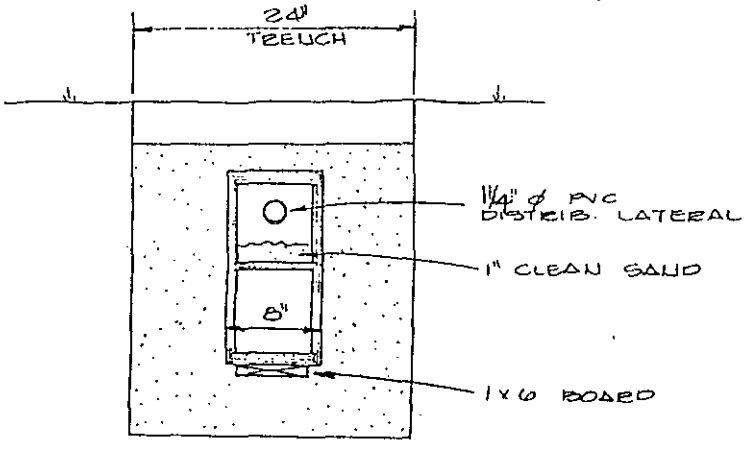
The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel holds 3.6 gallons. when the system has 34 panels and all the holes are the same size, then you would multiply 34 X 3.6 to get 122 gallon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

# 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 | _____ |

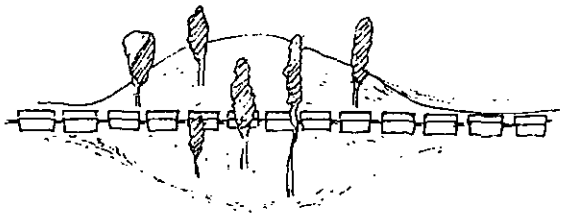
## Materials Chart For 16 Inch Panels

Materials needed per panel:

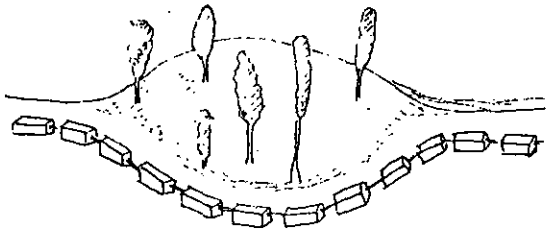
- Three feet of half inch tar seal rope per panel.
- Two feet of two inch PR160 pipe per panel or same linear feet as line layout of pressure system of one and a quarter inch pipe. Add pipe for tie in of lines to tank and house.
- One hundred pounds of partical sand (sand blasting sand fine texture) 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<br>8¼ tons sand | 130 LF - 30 panels<br>21½ tons sand |
| 60 LF - 14 panels<br>10 tons sand | 140 LF - 32 panels<br>23 tons sand |
| 70 LF - 16 panels<br>11½ tons sand | 150 LF - 34 panels<br>25 tons sand |
| 80 LF - 18 panels<br>13¼ tons sand | 160 LF - 37 panels<br>26½ tons sand |
| 90 LF - 21 panels<br>15 tons sand | 170 LF - 39 panels<br>28 tons sand |
| 100 LF - 23 panels<br>16½ tons sand | 180 LF - 41 panels<br>30 tons sand |
| 110 LF - 25 panels<br>18¼ tons sand | 190 LF - 43 panels<br>31½ tons sand |
| 120 LF - 27 panels<br>20 tons sand | 200 LF - 46 panels<br>33 tons sand |



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.

# Installer

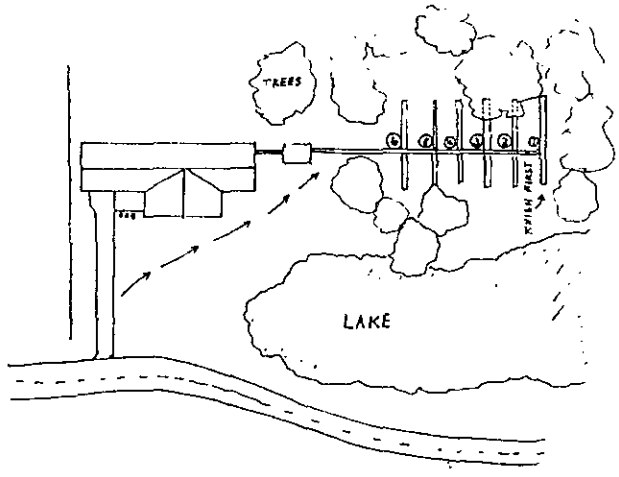
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however, traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more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

## 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.)

## 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

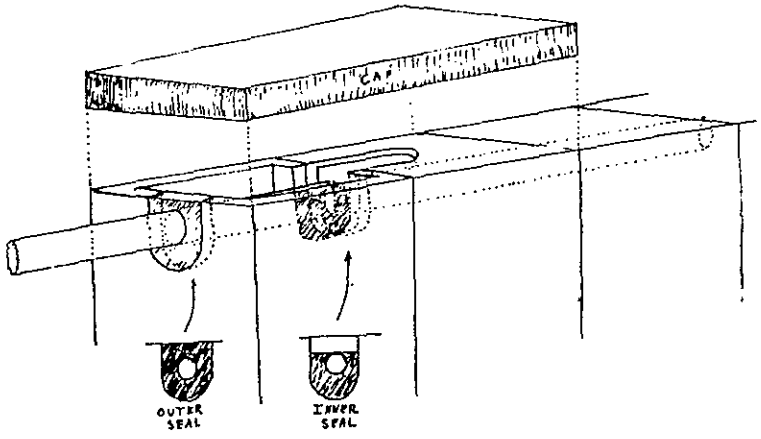
The T & J Panel System can be installed as either gravity or a low pressure distribution system. When designing a pressure system the principles of low pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual. One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



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. _____

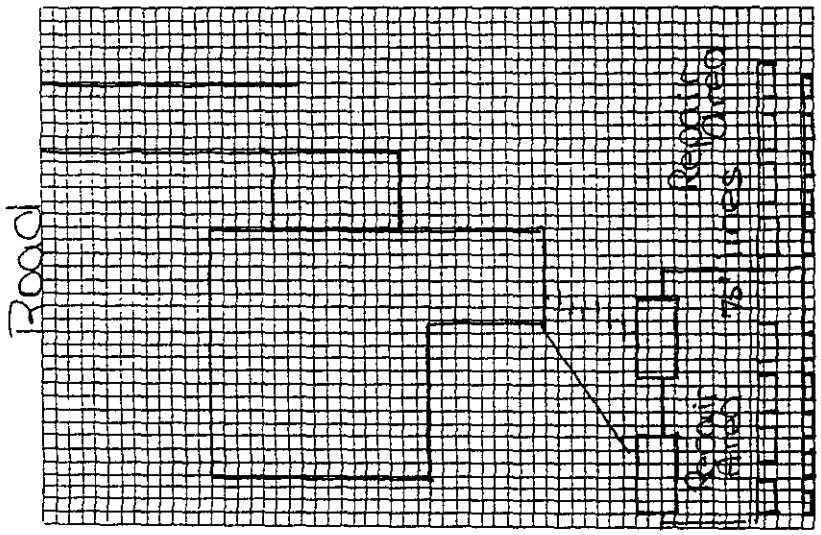
SUBDIVISION NAME _____ LOT NO. _____ SECTION OR BLOCK NO. _____

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 6% slope
Depth to Water Table >60"
Rock or other impervious formations _____

_____ Basement with Plumbing _____ Basement without Plumbing ✓ No Basement



Plot of System

Pressure Distributn
Size of Tank 1,000 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

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 _____

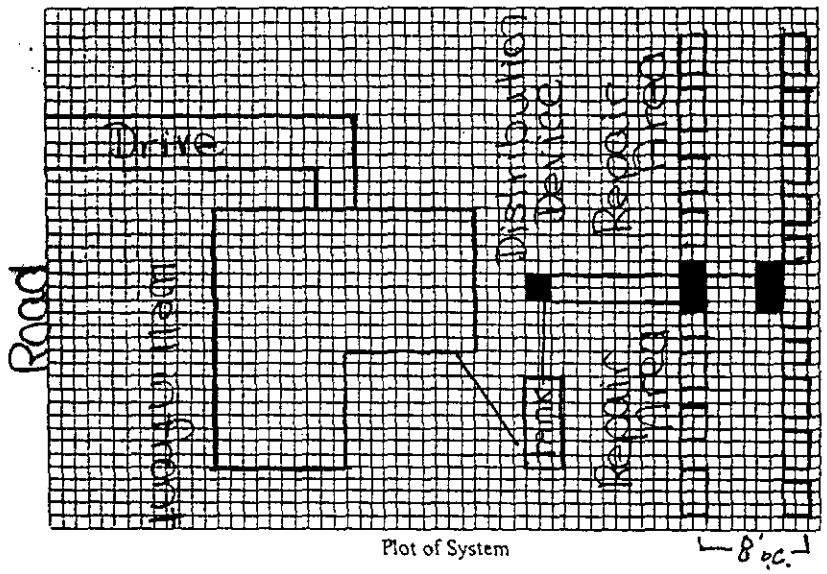
No. Bedrooms 3 No. Bathrooms 2 1/2

| | | | | | |
|---|---|---|---|---|---|
| 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' Trenches
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 _____

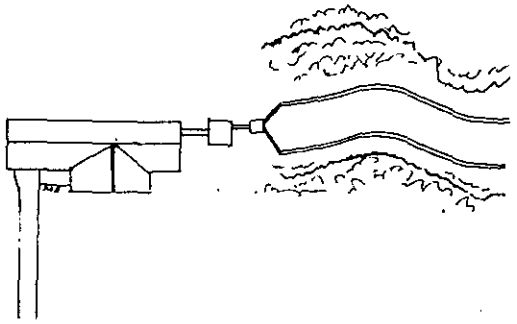
CONSTRUCTION MUST COMPLY WITH ALL OTHER APPLICABLE STATE AND LOCAL REGULATIONS.

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.

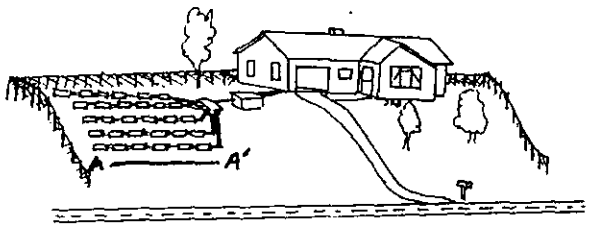
Health Dept. Copy: White Inspection Dept. Copy: Yellow Sanitarian's Copy: Pink Owner's Copy: Gold

## 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

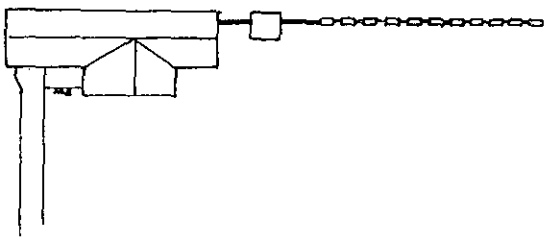



WRONG

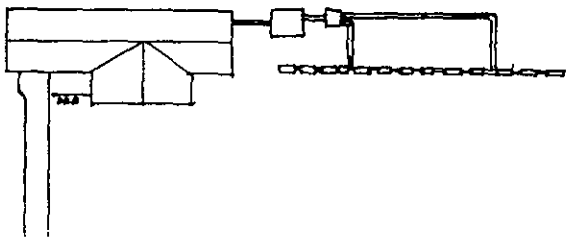
While both systems have the same lineal footage of trench the lower diagram is not a desireable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

## 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.

# 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.

# Design, Installation and Maintenance

Of The

# T & J Panel
# tewater Treatment System

For

## Sanitarians

And

## Septic Tank Installers

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

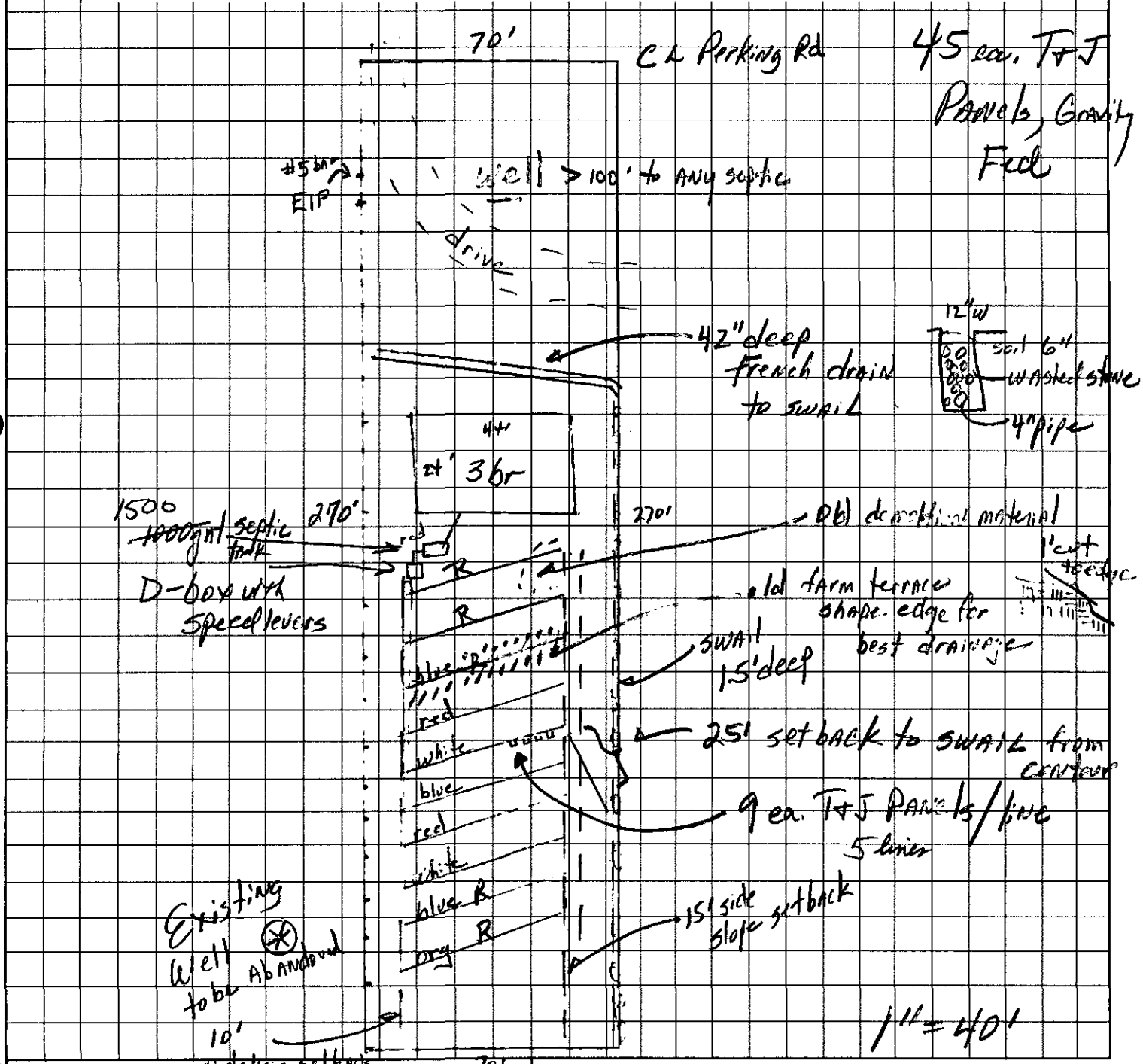
# PROPOSED PLOT PLAN

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

FILE: 3285B

TC: 045-391-06

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




OWNER/AGENT SIGNATURE James C. Smith, CPSS

DATE 9/20/94

APPROVAL DATE _____

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

**MECKLENBURG COUNTY HEALTH DEPARTMENT**
**SITE EVALUATION REPORT**
**SERIAL NUMBER** 20464

File: 32 85 B  Action: R

Parcel: PO 045-391-06  ☐ PC

Location: 4542 Perkins Road

Subdivision:

Lot: Block: Acres: .43

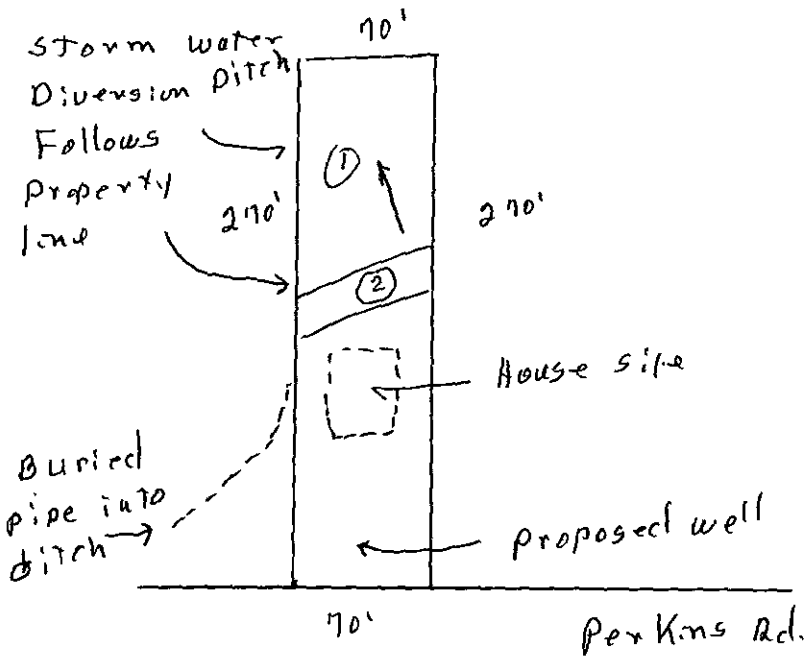
Owner: Michael W. Ward
Address: 4600 Perkins Road
Charlotte, N.C. 28269

Comments: 100% Repair, 3 gal/BR/day LTAR

Described by: William R. Marti

Date: 9-13-96

NV




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

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

| FACTORS | AREA 1 | AREA 2 | AREA 3 | AREA 4 | AREA 5 | AREA 6 |
|---|---|---|---|---|---|---|
| Topography | (S) PS U 2-8% | S PS (U) old Terrace | S PS (U) storm water Diversion | S PS U | S PS U | S PS U |
| Texture | S (PS) U slightly Expansive clay | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| Structure | S (PS) U subt Blocky | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| Drainage | (S) PS U 7-48" To Soil wetness | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| Depth | S (PS) U 43-48" | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| Restrictive Horizons | S (PS) U 7-48" | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| Available Space | S PS (U) Restricted | S PS U — | S PS U — | S PS U | S PS U | S PS U |
| (specify) | S PS U | S PS U | S PS U | S PS U | S PS U | S PS U |
| Soup/Series | IV Cecil-Like | old Terrace | storm water Diversion | | | |
| Classification | S PS (U) | S PS (U) | S PS (U) | S PS U | S PS U | S PS U |