

8727 KEENAN COURT

12/19/2007

duponbj

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

Mecklenburg County

Health Department

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

March 24, 1993

John V. Burke
2919 Olde Whitehall Road
Charlotte, NC 28273

Re: Property located at 8727 Keenan Court
File: 899B/8770A
Parcel: 113-302-02

Dear Mr. Burke:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. The results of this investigation showed the property to be classified **UNSUITABLE** for the installation of such a system. A copy of the site evaluation report (Serial No. 19277) is enclosed for your information.

State regulations provide that sites originally classified unsuitable may be utilized for the installation of alternate or modified sewage disposal systems provided the requirements of 15A NCAC 18A .1957 (c) are met. A reprint of this section is enclosed for your information.

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

If you need any assistance, please feel free to call Mr. Bill Marlin at 336-5574.

Sincerely,

Kelly Randall

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

KR:LW
Enclosure (2)

MECKLENBURG COUNTY HEALTH DEPARTMENT
SITE EVALUATION REPORT
SERIAL NUMBER 19277 ~~24~~00

File: 899B/8710A Action 2

Parcel: 113-302-02 ☐PC

Location: 8721 Keenan Ct.

Subdivision:

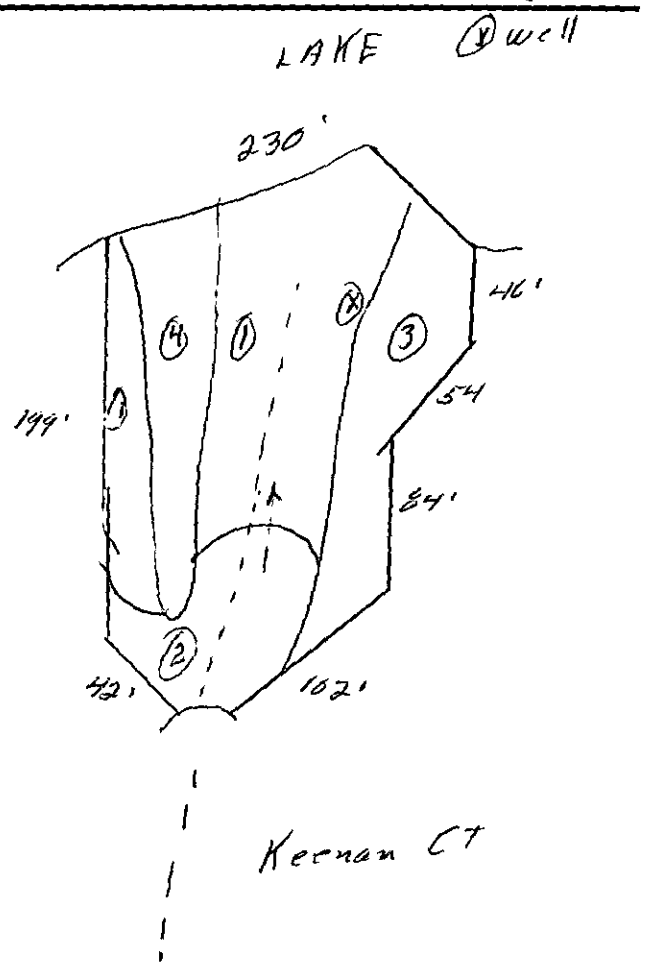
Lot: Block: Acres: 1.0

Owner: John V. Burke
Address: 2919 Old Whitehall Rd.
Charlotte, NC. 28273

Comments: 3gal/ft 7day LTAR
Would need borings in area proposed for drainfield if application for improvement permit made

Described by: William A. Marlin

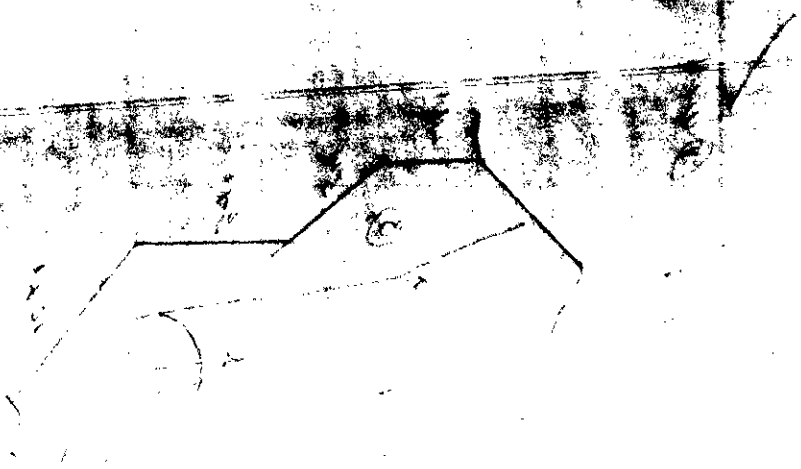
Date: 3-22-93



***** 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 15-30%	S (PS) U 15-30%	S PS (U) complex slopes	S PS (U) Depression	S PS U	S PS U
Texture	S (PS) U Slightly Expansive clay	S (PS) U slightly clay Expansive	S PS U —	S PS U	S PS U	S PS U
Structure	S (PS) U Sub ∠ Blocky	S (PS) U Sub ∠ Blocky	S PS U	S PS U	S PS U	S PS U
Drainage	S (PS) U >36" To water	S (PS) U >36" To water	S PS U —	S PS U —	S PS U	S PS U
Depth	S PS (U) 24-36"	S (PS) U 36-40"	S PS U —	S PS U —	S PS U	S PS U
Restrictive Horizons	S (PS) U >36"	S (PS) U >36"	S PS U —	S PS U —	S PS U	S PS U
Available Space	S PS (U) Restricted	S PS (U) Restricted	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	IV Pacolet L.Ho	IV Cecil-L.Ho	Complex Slopes	Depression		
Area Classification	S PS (U)	S PS (U)	S PS (U)	S PS (U)	S PS U	S PS U



899B

THE INFILTRATOR™

SEPTIC SYSTEM INSTALLATION INSTRUCTIONS

1 Excavate and level 3' wide trenches.

2 Prepare trench bottom and sides in accordance with state and local regulations. (Infiltrator Systems recommends raking sidewall and bottom infiltrative surfaces to eliminate smearing.)

3 Screw splash plate on bottom of open end plate.

4 Screw open end plate into inlet end (without interlocks) of first INFILTRATOR™ chamber with splash plate extending into unit.



5 Place first unit in the inlet end of trench with interlocks downstream.

6 Run distribution pipe through inlet opening in end plate but not beyond splash plate. Single screw may be used to hold in place. **Pipe does not normally run the length of system.**



7 Connect INFILTRATOR™ units together, fully engaging interlocks to form desired trench length.

a. The joints may be screwed together for ease in construction.

b. Trench grade should be checked with a level or surveying equipment.

8 Screw closed end plate in downstream end of last unit to hold in place. **NOTE:** For serial distribution, or to loop the trenches together, use an open end plate at the downstream end of the trench, and run a pipe from the opening to the next trench.

9 Fill side wall area to top of slots with native soil. "Walk" fill into place to give proper support of sides. **THIS IS VERY IMPORTANT TO ACHIEVE FULL STRENGTH.**



10 Backfill to a minimum of 12" of cover after compaction and settling for H-10 units and 18" for H-20 units. Avoid large rocks in the backfill material. **CAUTION:** Avoid vehicle traffic on system during construction since soil has not settled. This is particularly important in sand, since loose sand offers very little structural support. Most states advise avoiding vehicle traffic to prevent compaction of the infiltrative surface. (After proper depth of cover is compacted and settled, INFILTRATOR™ leaching chambers will then support vehicle weight not to exceed 16,000 lbs. per axle for H-10 units and 32,000 lbs. per axle for H-20 units.)



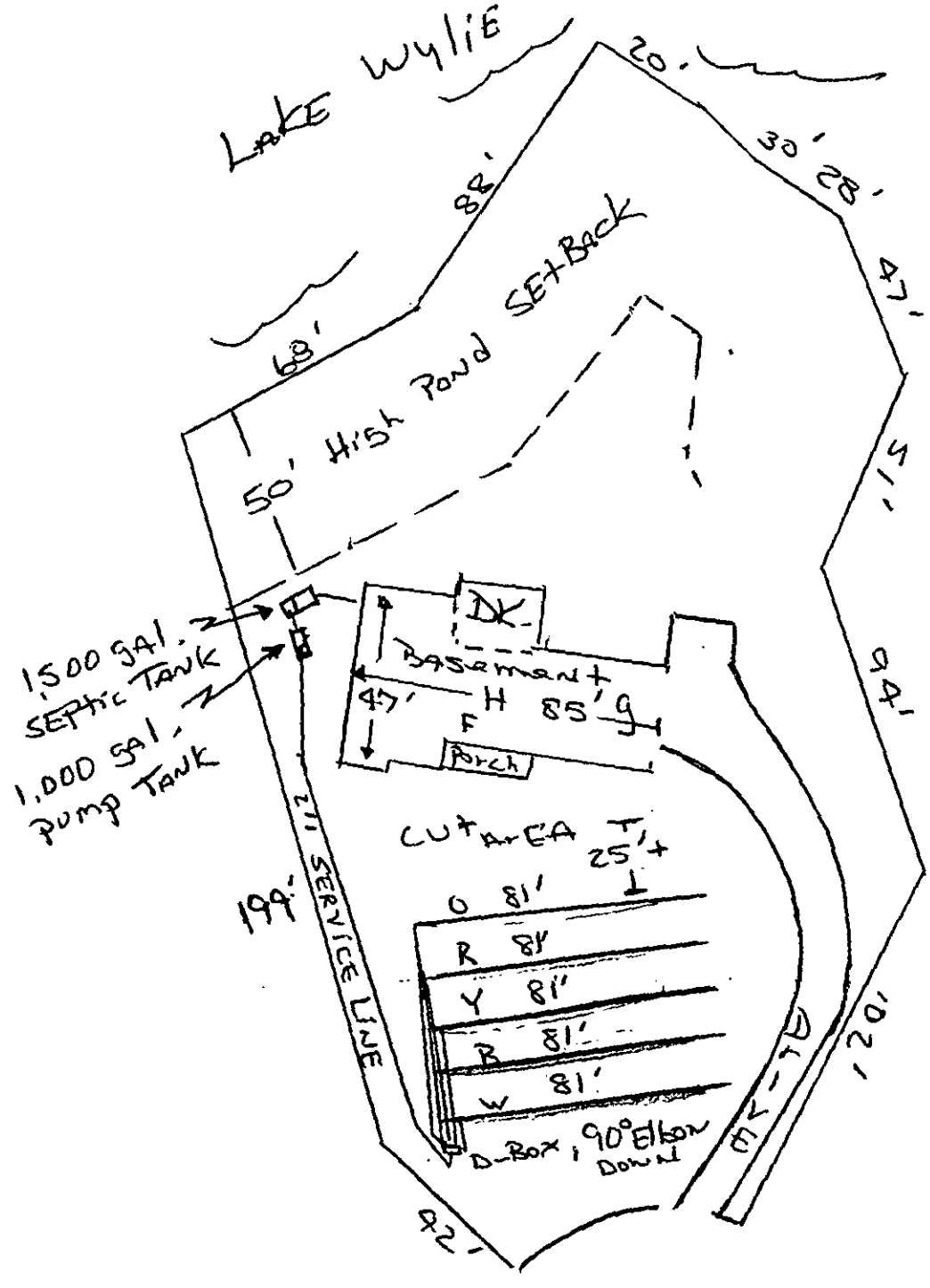
INFILTRATOR™ is a trademark of Infiltrator Systems, Inc.

(4) Bedrm. Pumped Chamber (Infiltrator) SEPTIC PLAN.

MCHD

File: 899B

(8727 KEENAN Court)
Lot 2



Myrtle Hook

* Attn: Kelly Randall

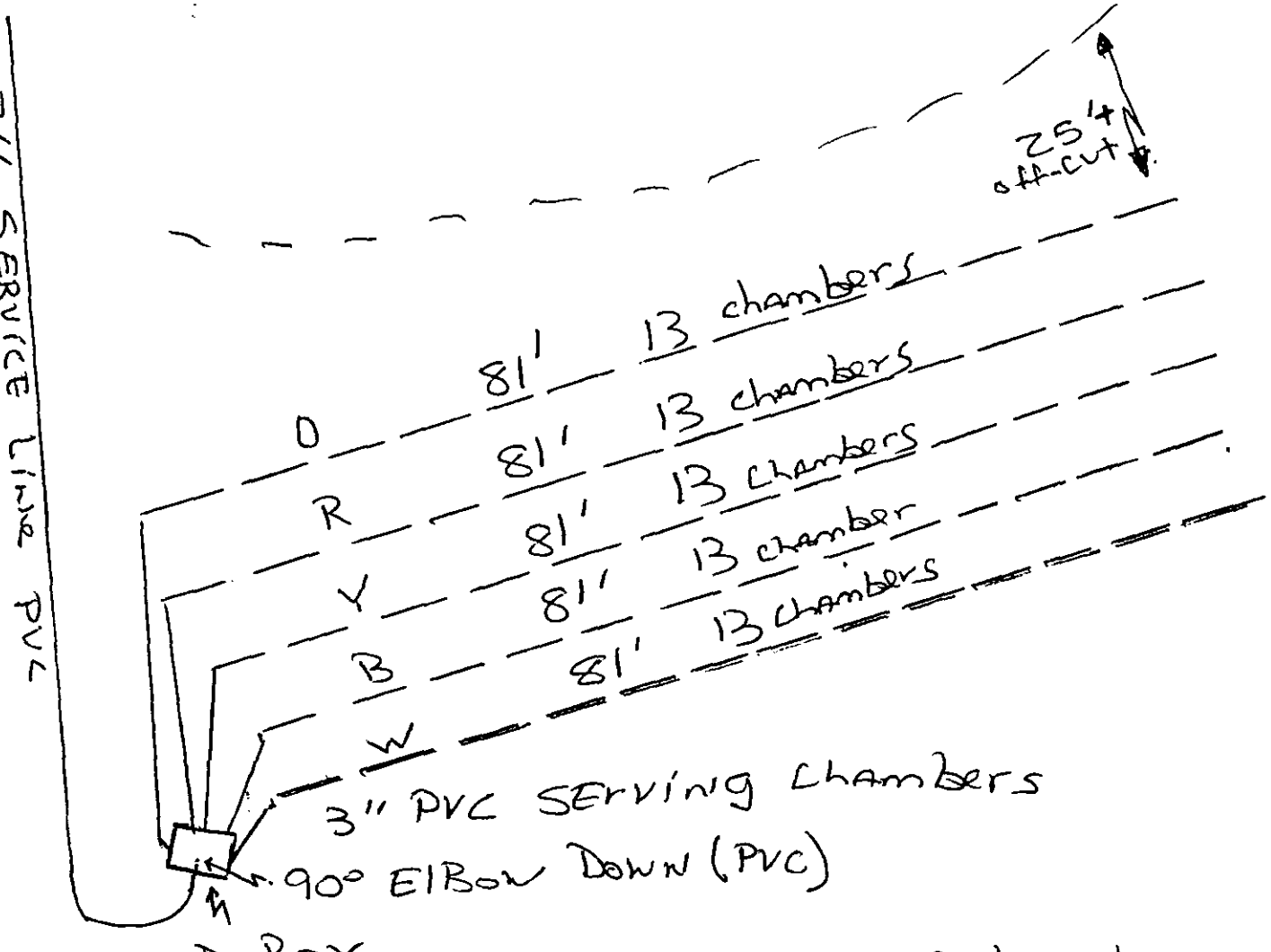
T. Whittaker
866-9540
Scale
50

(4) Bedrm. Pumped Chamber SEPTIC System SPECS:

File: 899B

(8727 KEENAN Court) Lot 2

1,500 gal. SEPTIC TANK
1,000 gal. PUMP TANK
(5) 81' CHAMBER LINES = 405'
(13) CHAMBERS PER LINE = 65 CHAMBERS
(1) D-BOX, (MAY REQUIRE PUMPING INTO 75 GAL. WASH BOX)
(5) SPEED LEVELS AS REQUIRED



* MAY REQUIRE (5) SPEED LEVELS

Rec'd $10 ck # 3313 10/1/97 gc

CERTIFICATE OF COMPLETION/OPERATION PERMIT

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

FILE: 899B DATE: 7/29/97

TC: 113-302-02 ☒ L ☒ CRT

SERIAL Nº 17232

Name of Owner BRIAN LAMOND Juris.: _____

Address of Property 8727 Keenan Court

Inspection Data:

Tank Material PCC

Total Length of Drainfield 405'

Number of Lines 5 @ 81

Cover Depth 12-24"

Water Supply Source _____

Distance to Water Source _____

Excavation Inspected 7/29/97

Tank(s) Inspected 7/29/97

Wash Line Inspected _____

High Water Alarm Inspected _____

PLOT

Design 1500 S, 1000 PT, 25% REDUCTION system 93-2-R CTR# STANLEY SEPTIC

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: Type III e -4 BEDROOM

NOTE: System was installed prior to receiving Installation Approval from this Health Department.

Joni Higgins Bunn, R.N.
Environmental Health Specialist

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

Permit Number: 859-13

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number: 113-302-02

The IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling or disturbance of the soil in the area of the septic tank system or repair area.

CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is NOT transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.

Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

Basement	✓ Yes	___ No	___ Partial Basement	
Type Primary Wastewater System Type (circle one): I II III IV V VI	___ Conventional ___ Prefabricated, permeable block panel system ___ Shallow Placed Conventional	___ Low Pressure Pipe ___ Large Diameter Pipe ___ Fill ___ Other	✓ Innovative or Experimental: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
.5 Long-term acceptance rate	480 Max gallons/day wastewater flow	1200 Absorption Area (sq ft)	9 Trench spacing (min. on centers)	
yes Serviced by private well	1500 Gallon septic tank	400 Total trench length (ft)	36" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)	
4 Bedrooms in residence	1000 Gallon pump tank	___ Depth of stone		
Any surface waters present: yes Type: Lake Wylie Minimum separation distance: 50 ft				
Site modifications required:				
Additional Conditions: - install w/ plan on file - agreement forms on file - certified operator required when if repair w/ Type IV System				
Repair Area System Type Type (circle one): I II III IV V VI	___ Conventional ✓ Prefabricated, permeable block panel system ___ Shallow Placed Conventional	___ Low Pressure Pipe ___ Large Diameter Pipe ___ Fill ___ Other	___ Innovative or Experimental: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
~~840~~ 270 Absorption Area (Sq ft) 270 Total Trench Length (Ft)	30" Depth of ~~Stone~~ Trench	0' Trench spacing (min. on centers)	31" Maximum Trench Depth	
For existing system, enter the year originally installed:				

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 Sewage, 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 Improvement permit is transferable.

* AMENDED ~~PROP PLAN~~ IMPROVEMENT PERMIT DATED & ISSUED BY KELLY RANDALL FOR PPBPS. This plan has been changed and updated to a 25% REDUCTION TYPE SYSTEM THAN ANOTHER DESIGN PLAN FROM TIM WHITTAKER. SEE FILE.

DEHNR Authorized Agent Date

Owner/Agent Signature Date

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR.
SUITE 211
700 N. TRYON ST.
CHARLOTTE, N.C. 28202.
(704) 336-5102

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

CALLED 11/4/97
LEFT MESSAGE
10:00 ON MY
LAMOND'S VOICE
MAIL - TO NEED
AGREEMENT FORUMS.

Permit Number 899-B

Tax Number 113-302-02

The IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling or disturbance of the soil in the area of the septic tank system or repair area

CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is NOT transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.

Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

Basement	✓ Yes	___ No	___ Partial Basement	
Type Primary Wastewater System Type (circle one): I II III (IV) V VI	___ Conventional ✓ Prefabricated, permeable block panel system ___ Shallow Placed Conventional	___ Low Pressure Pipe ___ Large Diameter Pipe ___ Fill ___ Other	___ Innovative or Experimental: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
.3 Long-term acceptance rate	480 Max gallons/day wastewater flow	540 Absorption Area (sq ft)	8 Trench spacing (min. on centers)	
yes Serviced by private well	1500 Gallon septic tank	276 Total trench length (ft)	40" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)	
4 Bedrooms in residence	1000 Gallon pump tank	30" Depth of ~~stone~~ SAND		

Any surface waters present: yes Type: Lake Wylie Minimum separation distance: 50'+

Site modifications required:

Additional Conditions: - certified operator required
- agreement forms ~~on file~~ must be recorded prior to installation approval

Repair Area System Type Type (circle one): I II III (IV) V VI	___ Conventional ✓ Prefabricated, permeable block panel system ___ Shallow Placed Conventional	___ Low Pressure Pipe ___ Large Diameter Pipe ___ Fill ___ Other	___ Innovative or Experimental: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
540 Absorption Area (Sq ft) 270 Total Trench Length (Ft)	30" Depth of ~~Stone~~ Trench SAND	8 Trench spacing (min. on centers)	30' Maximum Trench Depth	

For existing system, enter the year originally installed:

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 Sewage, 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 Improvement permit is transferable.

Kelly Powell 3-4-97
DEHNR Authorized Agent Date

x [signature] 4/16/97
Owner/Agent Signature Date

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR.
SUITE 211
700 N. TRYON ST.
CHARLOTTE, N.C. 28202.
(704) 336-5102

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

$50.00 Chk#1721 Chg in Plot Plan 40.00 Chk# 1654

FEE: 100.00 AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION
DATE: 4/11/97 VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE

DATE: 3-5-97 PERMIT NO: 899-B
PARCEL NO: 113-302-02

JOB LOCATION ADDRESS: 8727 Keenan Ct.
PROPERTY OWNER: John Burke
BUILDING CONTRACTOR: _____
SUBDIVISION NAME: _____
AUTHORIZATION ISSUED BY: Kelly Russell DATE: _____
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 899-B, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN INSTALLATION, CONSTRUCTION, ALTERATION AND/OR REPAIR APPROVAL MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH MECKLENBURG COUNTY HEALTH DEPARTMENT.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. OTHER CONDITIONS: - certified operator required
- agreement forms must be recorded before installation approval

OWNER CERTIFICATION

I CERTIFY THAT THERE HAVE BEEN NO ALTERATIONS IN SITE OR SOIL CONDITIONS OR MODIFICATIONS TO FACILITY, WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS FROM THOSE SPECIFIED IN THE ORIGINAL APPLICATION OR ASSOCIATED IMPROVEMENT PERMIT UNLESS AUTHORIZED IN WRITING BY THE MECKLENBURG COUNTY HEALTH DEPARTMENT. I ALSO UNDERSTAND THAT ANY SUCH ALTERATIONS, MODIFICATIONS, OR FALSE INFORMATION ARE GROUNDS FOR REVOCATION OF PERMITS AND AUTHORIZATION TO CONSTRUCT.

X _____ 4/16/97
SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE DATE

FEE: 100.00

DATE: 11-26-96 CK# 1558

APPLICATION FOR IMPROVEMENT PERMIT
FOR RESIDENTIAL SITE
INDIVIDUAL WATER AND WASTEWATER
SYSTEMS PROGRAM 0400

T.B #2

1 1 CRT

TYPE APPLICATION: __ NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT,
HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

FILE #: 899B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 113-302-02

STREET ADDRESS: 8727 KRINAN CT, CHAR, NC 282

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER:

TOWNSHIP (CHECK ONE):

- ✓ 0 MECKLENBURG
- __ 1 CHARLOTTE
- __ 2 DAVIDSON
- __ 3 CORNELIUS
- __ 4 PINEVILLE
- __ 5 MATTHEWS
- __ 6 HUNTERSVILLE
- __ 7 MINT HILL

TYPE OF BUILDING (CHECK ONE):

- __ SINGLE MOBILE HOME(S)
- __ DOUBLE WIDE (D)
- __ HOUSE (H)
- ✓ MODULAR HOME (M)
- __ MULTIPLE FAMILY (U)
- __ OTHER (O)

HEATED SQUARE FOOTAGE: 1800

NUMBER OF BEDROOMS: 3 | NUMBER OF OCCUPANTS: 2

FOUNDATION FOR RESIDENCE:

__ BASEMENT
__
__
__
✓ WITH BASEMENT (PLUMBING
/NO

CLOSING DATE

also enter entire report.

IF

CRIBE THE PROPOSED BUILDING ADDITION:

report.

My system out
spot bore to
check soils
lot my new
mowing

: ✓ YES __ NO TYPE: REAL ESTATE

(C) __ MUNICIPAL (M) ✓ PRIVATE WELL (P)

L (S) __ OTHER 'SPRINGS' (O)

PROPERTY, PLEASE SHOW LOCATION ON PLAT:

S ✓NO WELL, SPRINGS OR WATERLINES ✓ YES __ NO
S ✓NO DESIGNATED WETLANDS __ YES ✓ NO
ES ✓NO

PROPERTY OWNER:

NAME: BURKE (LAST) JOHN (FIRST) V. (MI)

ADDRESS: 2919 OLDE WATERHALL RD

CITY: CHARLOTTE STATE: NC ZIP:

DAYTIME PHONE: (704) 523-3776 after 2:30 p.m.

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: LAMIND (LAST) BRIAN (FIRST) M (MI)

DAYTIME PHONE: (704) 531-7941 / 532-2251

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 9/17/82 DEEDED TO JOHN BURKE / ORIGINALLY 68-70

An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. 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: John V. Burke / Brian Lamond (Buyer) DATE: 11/24/96

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

Left message to Brad [illegible]
[illegible] Kelly [illegible]
to [illegible] engineering consultant to design
a plat and submit it to the
office

DATE
2/19/96

FEE: 105.00
DATE: 11-26-96 CK# 1558

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

[ ] CRT

TYPE APPLICATION: __ NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT,
HEALTH, AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

FILE #: 899B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 113-302-02

STREET ADDRESS: 8727 KERNAN CT, CHAR, NC 28213

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER:

TYPE OF BUILDING (CHECK ONE):

__ SINGLE MOBILE HOME(S)
__ DOUBLE WIDE (D)
__ HOUSE (H)
✓ MODULAR HOME (M)
__ MULTIPLE FAMILY (U)
__ OTHER (O)

TOWNSHIP (CHECK ONE):

✓ 0 MECKLENBURG
__ 1 CHARLOTTE
__ 2 DAVIDSON
__ 3 CORNELIUS
__ 4 PINEVILLE
__ 5 MATTHEWS
__ 6 HUNTERSVILLE
__ 7 MINT HILL

HEATED SQUARE FOOTAGE: 1800

NUMBER OF BEDROOMS: 3 NUMBER OF OCCUPANTS: 2

FOUNDATION FOR RESIDENCE: as per TJ plan (62)

__ WITHOUT BASEMENT
__ ON SLAB
__ CRAWL SPACE
✓ WITH BASEMENT /PLUMBING
__ WITH BASEMENT /NO PLUMBING

CLOSING DATE

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: ✓ YES __ NO TYPE: REAL ESTATE

WATER SUPPLY (CHECK ONE):
__ COMMUNITY (C)
__ MUNICIPAL (M)
✓ PRIVATE WELL (P)
__ SHARED WELL (S)
__ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES ✓ NO
EXISTING WASTEWATER SYSTEMS __ YES ✓ NO
EASTMENTS OR RIGHT-OF-WAYS __ YES ✓ NO
WELL, SPRINGS OR WATERLINES ✓ YES __ NO
DESIGNATED WETLANDS __ YES ✓ NO

PROPERTY OWNER:

NAME: BURKE (LAST) JOHN (FIRST) V. (MI)

ADDRESS: 2919 OLDE WHITEHALL RD

CITY: CHARLOTTE STATE: NC ZIP:

DAYTIME PHONE: (704) 523-3776 AFTER 2:30 P.M.

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: LAMIND (LAST) BRIAN (FIRST) M (MI)

DAYTIME PHONE: (704) 531-7941 / 532-2251
394-4416

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 9/14/82 DEEDED TO John BURKE / ORIGINALLY 68-70

An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. 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: John V. Burke / Brian Lamond (Buyer) DATE: 11/24/96

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

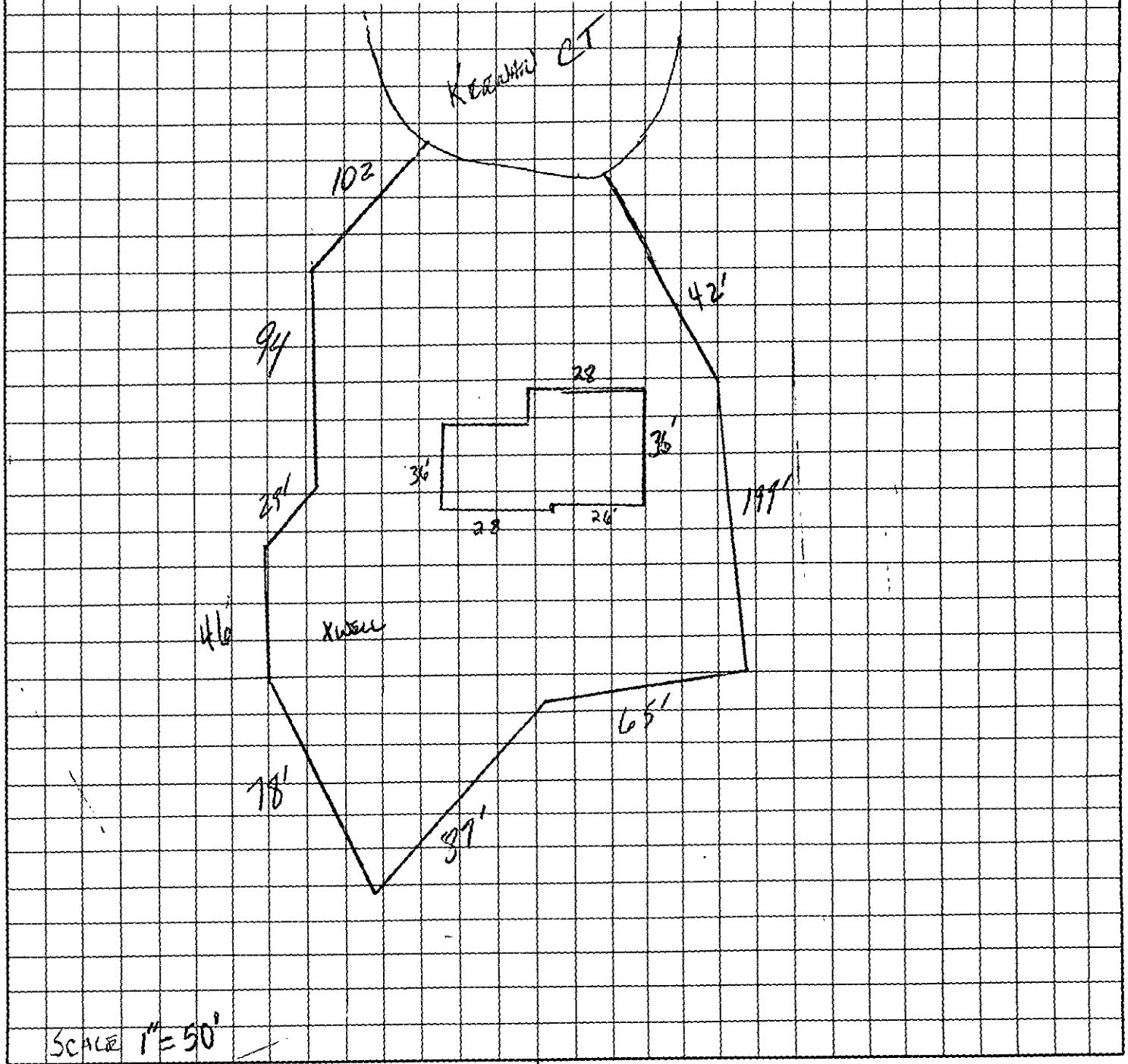
PROPOSED PLOT PLAN

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

FILE: 899B

TC: 113-302-02

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.



SCALE 1" = 50'

OWNER/AGENT SIGNATURE

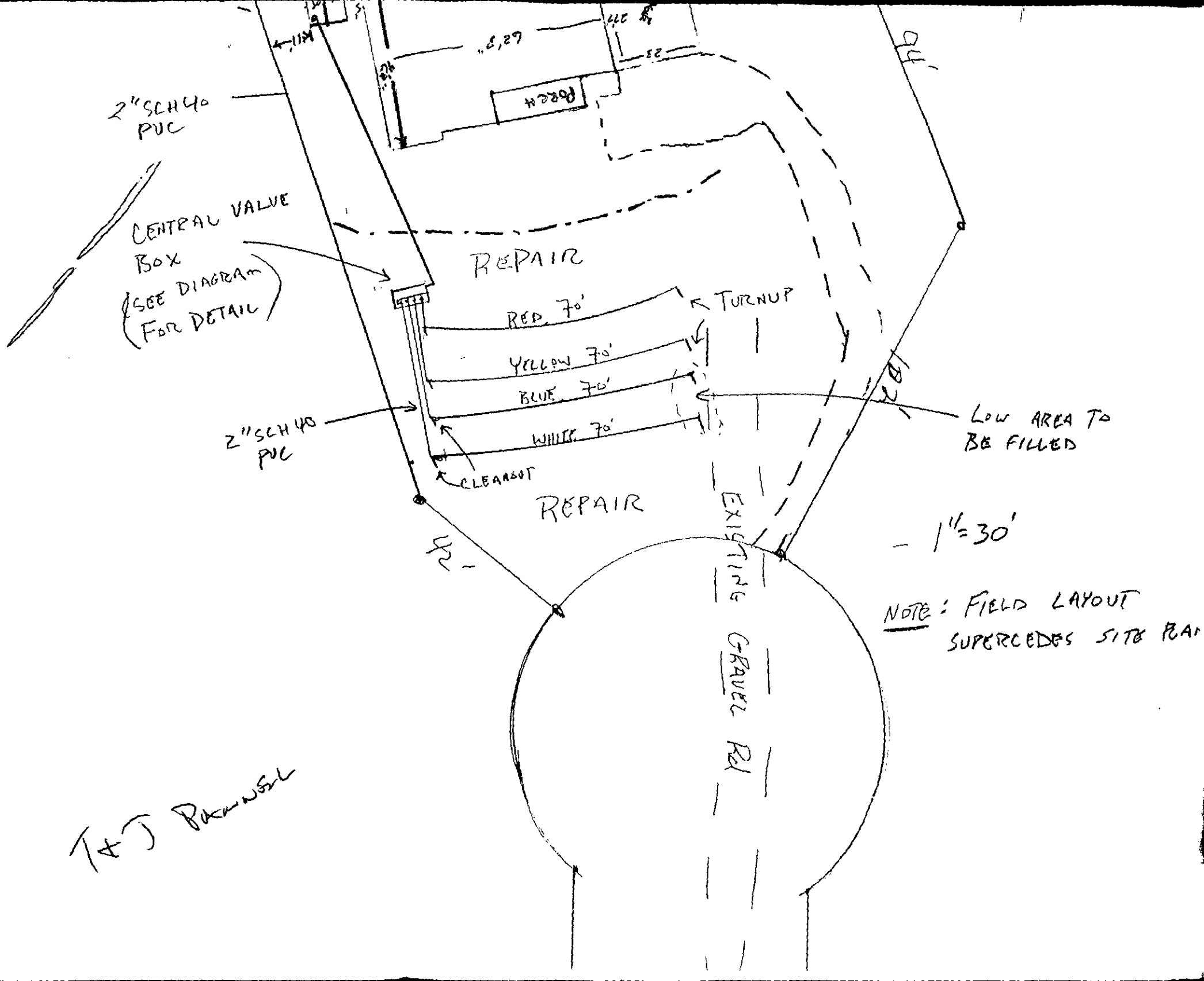
DATE 11/25/96

APPROVAL DATE _____

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

BRIAN LAMOND
532-2251

Figure 1. Lot 2 Kerry Ct.


2" SCH 40 PVC
CENTRAL VALVE BOX (SEE DIAGRAM FOR DETAIL)
REPAIR
RED 70'
YELLOW 70'
BLUE 70'
WHITE 70'
TURNUP
2" SCH 40 PVC
CLEANOUT
LOW AREA TO BE FILLED
REPAIR
EXISTING GRAVEL RD
1" = 30'
NOTE: FIELD LAYOUT SUPERCEDES SITE PLAN
T & J PACKWOOD

File # 8998

LOW PRESSURE T&J PANEL SYSTEM

FOR

8727 KEENAN COURT

MECKLENBURG COUNTY - NORTH CAROLINA

by

Toney C. Jacobs & Associates, Inc.
Consulting Soil Scientists
168 Broadbill Drive
Mooresville, N. C. 28115

Janaury 24, 1997

AMERICAN REGISTRY OF CERTIFIED PROFESSIONALS
ARCPACS
TONEY C. JACOBS
CERTIFIED PROFESSIONAL SOIL SCIENTIST
No. 2830 EXP. 12/98

Submitted to: Mr. Brian Lamond
4008 Piney Grove Road
Charlotte, N. C. 28212

Mr. Kelly Randall, R.S.
Mecklenburg County Health Dept.
Charlotte, N. C.

LICENSED SOIL SCIENTIST
TONEY C. JACOBS
1063
STATE OF NORTH CAROLINA

Paul G. Penninger

Toney C. Jacobs

8727 Keenan Court

PRESSURE DISTRIBUTION T & J PANEL SYSTEM

Design Considerations

The proposed system is for a 4-bedroom home in an older subdivision of waterfront and waterview single family homes in Mecklenburg County. Lot 2 is an approximately 1 acre waterfront lot and has greater than 40" of provisionally suitable soil across the front of the lot.

Soils were evaluated by Mr. Bill Marlin of the Mecklenburg County Health Department. The system layout was by Toney C. Jacobs & Associates. Because of space limitations, the panel block system was considered as the best suited system for the lot. The septic system drainfield was flagged in the field as shown in Figure 1. The system will be a pressure dosed panel block system. 100% repair area is not required, but repair areas have been designated on Figure 1. During construction precautions should be taken to prevent damaging the system area. Flagging or fencing the area would keep traffic off the system area during construction.

Location

The 1 acre building lot is at the end of the cul-de-sac at Kennan Court.

Reference

(1) *Design and Installation of Low Pressure Wastewater Treatment Systems,* by Craig Cogger, Bobby L. Carlisle, Dennis Osborne, and Ed Holland. UNC Sea Grant UNC-SC-82-03, May 1982.

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

(3) *Design, Installation and Maintenance of the T & J Panel Wastewater treatment System for Sanitarians and Septic Tank Installers,* 1988.

Recommendation

Two Hundred and eighty (280) lineal feet of pressure T & J lines.

Ownership Responsibility for a LPP Distribution 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 must be 1.6 gal. flush (per code). Shower head should also have restrictions or be of low volume design.

(b) Develop conservative water use habits.

(c) Monitor and maintain the system as necessary for proper operation. An Operation Permit will require a maintenance contract to be filed with the Mecklenburg County Health Department. It is recommended that the owner aggressively utilize this requirement because of its importance to system longevity. The management entity (certified operator) should be a part of installation process. If installed by other, it would be best if operator was consulted for a preclosure inspection.

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 the Electrical Code. This plan, as any, is a guide to a minimum standard, but cannot take the place of experience and common sense. County inspector should allow additional inspection time because of complexity of system and need for exacting levels.

Components of System

1. Two compartment septic tank - 1500 gal.
2. Pumping tank - 1500 gal.
3. Submersible effluent pump and level controls - SSOMA certified
4. High water alarm signals which are UL approved
5. Supply pipe
6. Gate valves
7. Laterals with LPP distribution and T & J Panels in ground absorption trenches, 2 feet wide, level end to end. If the installer does not understand this or its importance, he should not begin construction until certain of all requirements.

Construction Sequence

1. Lines have been flagged as noted on drawing and in specifications.

2. Clear the area of all organic material with minimum soil disturbance (DO NOT GRADE). There is one small area noted on the site plan that is to be filled.

3. Install trenches per cited reference material and this plan. There should be one hole near the center of each panel, pointed up. Top grade on pipes to be "level" from end to end and vertically from manifold and checked by sanitarian. (Note: This is a four valve designed system and uses one size hole). Sanitarian must check that correct drill bit is on site.

4. All joints in lateral manifold piping shall be watertight connections to insure that the only source of water seepage from the system is through the orifices as designed. Carefully install manifold and lateral network according to the attached design layout. Protect valves with valve box. A larger diameter protective sleeve with cap or approved box with lid shall be placed over the turned up lateral and positioned level with the ground surface (so as not to be damaged by mowing machine). Turn-up with two 45 degree elbows, not one 90. Area around pipe should be stabilized with crushed stone, both inside and outside of riser. Stone allows for infiltration of waste and wash water when system is maintained.

5. Carefully backfill manifold trenches to grade with clean clay or clay loam which is carefully placed and compacted.

6. The installation contractor shall stabilize the area of construction by planting with Kentucky 31 tall Fescue and mulching. Area to be limed and fertilized with 0.5 tons lime, 75 units of N, 150 units P, and 100 units of K per disturbed acre.

7. The septic tank shall consist of an approved 1500 gallon capacity reinforced, precast watertight, 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 . Locate the septic tank at such height as to provide approximately 8" of cover soil over top of the tank.

8. The dosing tank shall consist of an approved 1500 gallon capacity, reinforced, precast, watertight concrete tank without baffle and shall have a concrete mounting pad (concrete blocks) for accommodating the pump. Test for leakage per regulations. Provide access for entry into the tank directly over the pump location, and extending 6" above final grade. Use a 30" diameter concrete well casing or equivalent and concrete well cap or other approved type cover. There must be a seal (masonry or seal rope) between well tile and top of tank.

9. All piping and fitting shall be SCH 40 PVC. Glue for all PVC pipe joints shall be as recommended by the pipe manufacturer. Note: On the distal end of each lateral turn-up should be 2 each, 45 degree elbows, rather than one 90 to facilitate maintenance.

10. Pump: The submerged pump shall be Model ME 100 manufactured by Myers or equal, 115 or 230 v/1 phase; capable of pumping 32 gallons per minute at 62' of head.

11. Pump controls and alarm to meet specifications of .1952, all being compatible.

12. A "Warning Sign" shall be located within the house to inform the occupants of action to take in case the "High Water Alarm" is activated. This sign shall contain the name, address, telephone number, and emergency telephone number of the person to contact upon malfunction of the system. This should be "management entity".

13. Pump and Controls: Details of pump installation are shown in the plan. The pump must be placed on concrete blocks on the bottom of the tank. This prevents the pumping of any solid particles which can clog the pipe system. A piece of nylon rope or other non-corrodible material should be attached to the pump and the outlet pipe for lifting the pump in and out of the chamber. Controls should be fastened to a "tree" or the outlet pipe with clamps or brackets supplied by the manufacturer. The lower level control or "pump-off" must be positioned above the pump, so that the pump remains submerged at all times. The level control "pump-on" is positioned to pump a specified volume of effluent. The high water control float is then mounted about 3" above the upper pump-on control. (Note: Care must be taken to insure that floats do not become fouled by other components in the tank, such as the electric power cord or the lifting rope. It is highly recommended that a telescoping "tree" be used for floats to facilitate adjustments.) The pump outlet pipe should be connected to the supply manifold with a threaded PVC union (or dresser coupling) to allow quick removal.

14. Electrical Connections: The pump and high water alarm must be placed on separate electrical circuits. (If the pump circuit fails, the alarm must still be able to operate). Follow the manufacturers recommendations for the proper fuses or circuit breakers. All electrical connections must be made outside the pumping chamber. Power cords from the pumps and controls should be plugged into a NEMA 4X approved outdoor receptacle. This must not be located inside the pumping chamber due to the corrosive and explosive gasses that may form from the sewage. This box must be a minimum of 1' above finished grade. Some level control switches have a box built into the housing, but are more expensive than the plug-in devices. Wiring between the pumping chamber and the station should meet State and local code requirements. A lightning arrester is recommended to protect the pump and controls from electrical surges.

15. Proper Operation Check: After all components have been installed and connected, the system should be checked for proper operation. With electrical power turned off, fill the pumping chamber with water from garden hose until the liquid rises to the level of the high-water alarm float. Turn on the electrical power. The alarm light

should go on in the house, and the pump should start operating. The alarm light should go off when the liquid reaches the lowest float control. Be sure the pump is still completely submerged.

16. Pressure Head Adjustment: The pressure head must be adjusted to match that specified in the design. The pressure head is measured as the height liquid will rise above the turn-up elbow when the pump is running. To adjust the head:

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

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

(c) Adjust the gate valves until the effluent reaches the desired height in the "test tube". This may also be done with a weep hole in solid pipe at the desired height. Strive to be within 1/8" accuracy. Remember to include the distance below the ground surface to the lateral line when measuring the height. The pressure head should be as specified for each line. This is the height above the lateral where the liquid should be in the temporary "test tube".

17. Final Landscaping: After the system is installed, the absorption field should be reshaped to shed rainwater and be free of low areas to insure that the system will not be overloaded with excess rainwater and run-on.

Concluding Note:

This plan was done to facilitate permitting by the Mecklenburg County Health Department by an agent of the owner. Any additions, or additional requirement(s), 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 that a plan with as many details as this can be changed and/or improved upon. The installer must realize that this is an exact plan and must be installed with exacting measurements. Should the installer desire a change, it must be approved by the health department in writing. Final inspection will also require more time and detail than a conventional system. If there are questions, please give me a call.

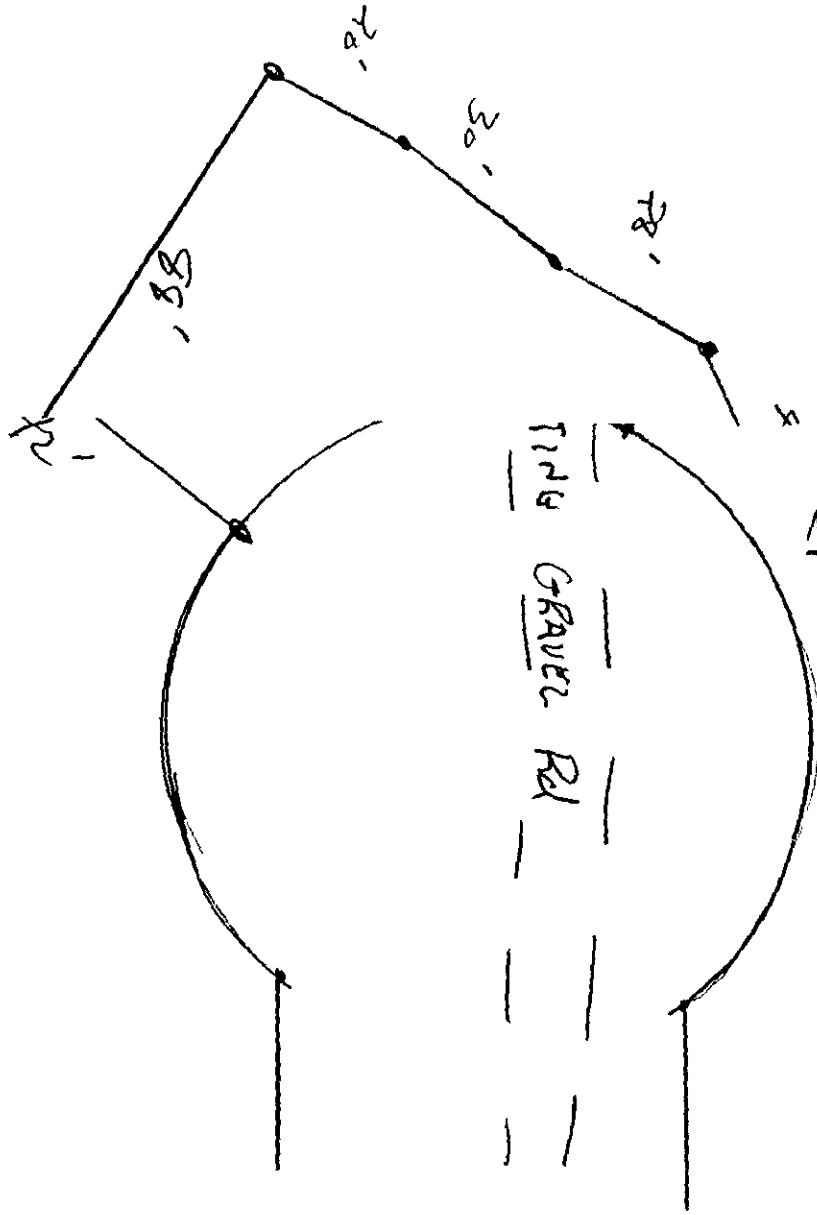
Design Specifications

8727 Keenan Court

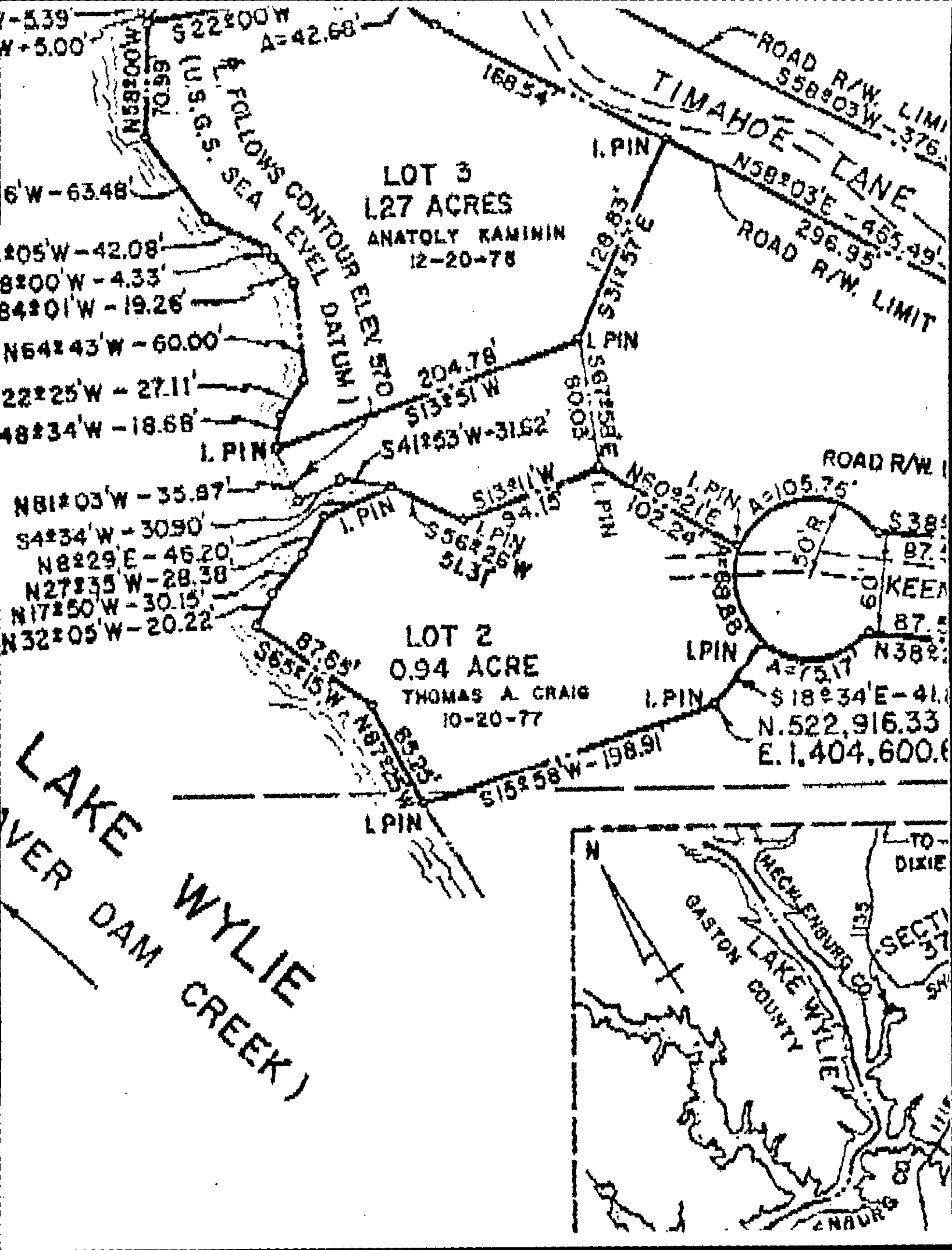
Daily design flow:	480 gpd. - 4 - bedroom house
Septic tank size:	1500 gal. (2 compartments)
Pumping tank size:	1500 gal.
Effluent loading rate:	0.3 gpd/sf
Total length and diameter of supply manifold:	app. 195' lf 2" sch 40 PVC
Number and length of laterals:	4 @ 70', ¼" sch 40 PVC.
Hole size:	5/32"
Hole spacing:	1 per panel
Total number of holes:	16 per line - total of 64(one in each T & J Panel near the center with the hole turned up)
Flow rate through the system:	32 gpm
Elevation head:	43.2'
Pressure head:	3.0'
Friction head:	approx. 5.0'
20% contingency	10.2'
Total head:	61.4'
Pump requirements:	32 gpm at 62' of head; use Myers "ME 100" pump or equivalent with compatible electrical
Dosing volume:	230.4 gal. - 2.1 doses/day at design flow*
Depth of water pumped per dose:	calculated to specific tank by measure or dealer engineering specifications(1 cubic ft. of water equals 7.48 gals.)
Pump run per dose:	approx. 7.2 min.
Check valve:	No
Siphon break hole:	No

* Before placement of cap block, one panel on each line near the center of the field should be observed filling to make certain that it does not overflow top chamber into air chambers of panel. If overflow occurs, reduce floats by 25 gallons and reset until no overflow is observed.

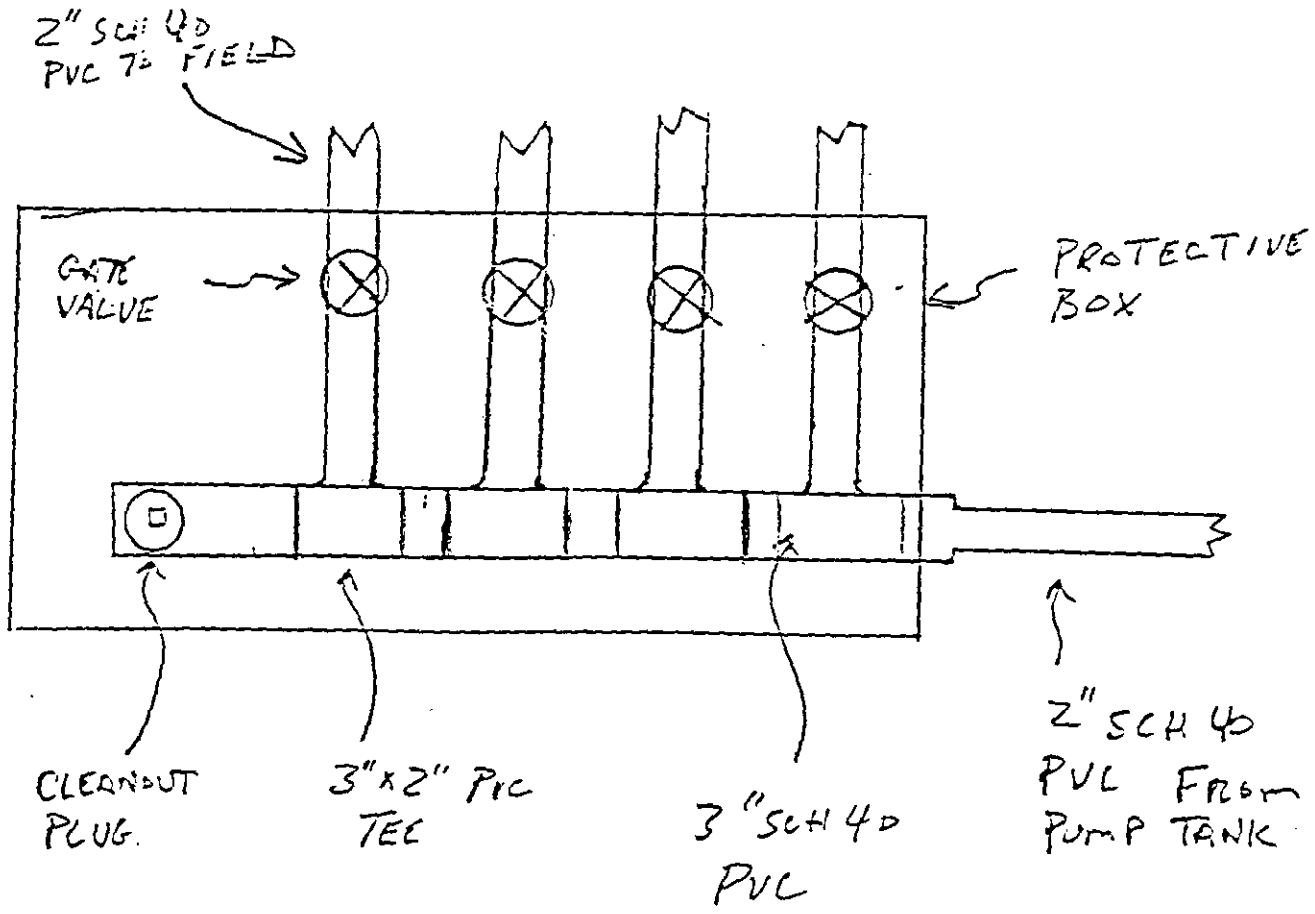
Figure 1. Lot 2 Keenan Ct.

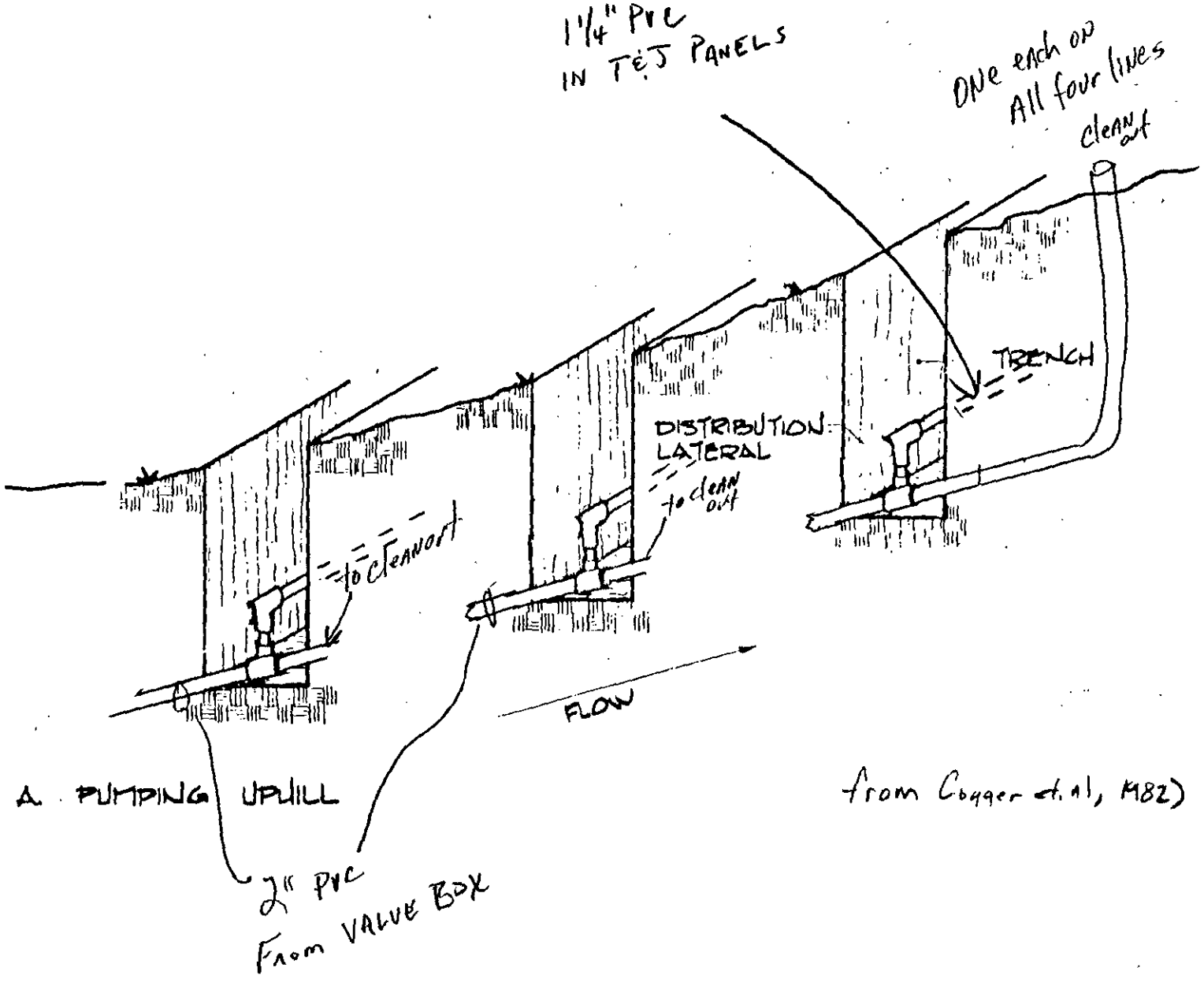


NOTE: FIELD LAYOUT SUPERCEDES SITE PLAN


TIMAHOE LANE
ROAD R/W LIMIT
LOT 3
1.27 ACRES
ANATOLY KAMININ
12-20-78
LOT 2
0.94 ACRE
THOMAS A. CRAIG
10-20-77
I. PIN
L PIN
L. FOLLOWS CONTOUR ELEV 570 (U.S.G.S. SEA LEVEL DATUM)
S22°00'W
A=42.68'
168.54'
N58°03'W
70.98'
S31°25'E
128.85'
N38°03'E - 465.49'
296.95'
S67°58'E
60.03'
S13°51'W
204.78'
S41°53'W-31.62'
S13°11'W
94.15'
S56°26'W
51.31'
N50°21'E
102.29'
A=105.76'
R=88.88'
50.0'
60'
87.65'
S63°15'W
N87°58'W
65.53'
S15°58'W - 198.91'
A=75.17'
S 18°34'E - 41.
N.522,916.33
E.1,404,600.
N6°39'W - 5.39'
N58°00'W - 5.00'
6'W - 63.48'
105'W - 42.08'
8°00'W - 4.33'
84°01'W - 19.26'
N64°43'W - 60.00'
22°25'W - 27.11'
48°34'W - 18.68'
N81°03'W - 35.87'
S4°34'W - 30.90'
N8°29'E - 46.20'
N27°35'W - 28.38'
N17°50'W - 30.15'
N32°05'W - 20.22'
LAKE WYLIE
VER DAM CREEK)
N
TO DIXIE
MECKLENBURG CO
GASTON COUNTY
LAKE WYLIE
SECT
ANDR

CENTRAL VALVE BOX DETAIL

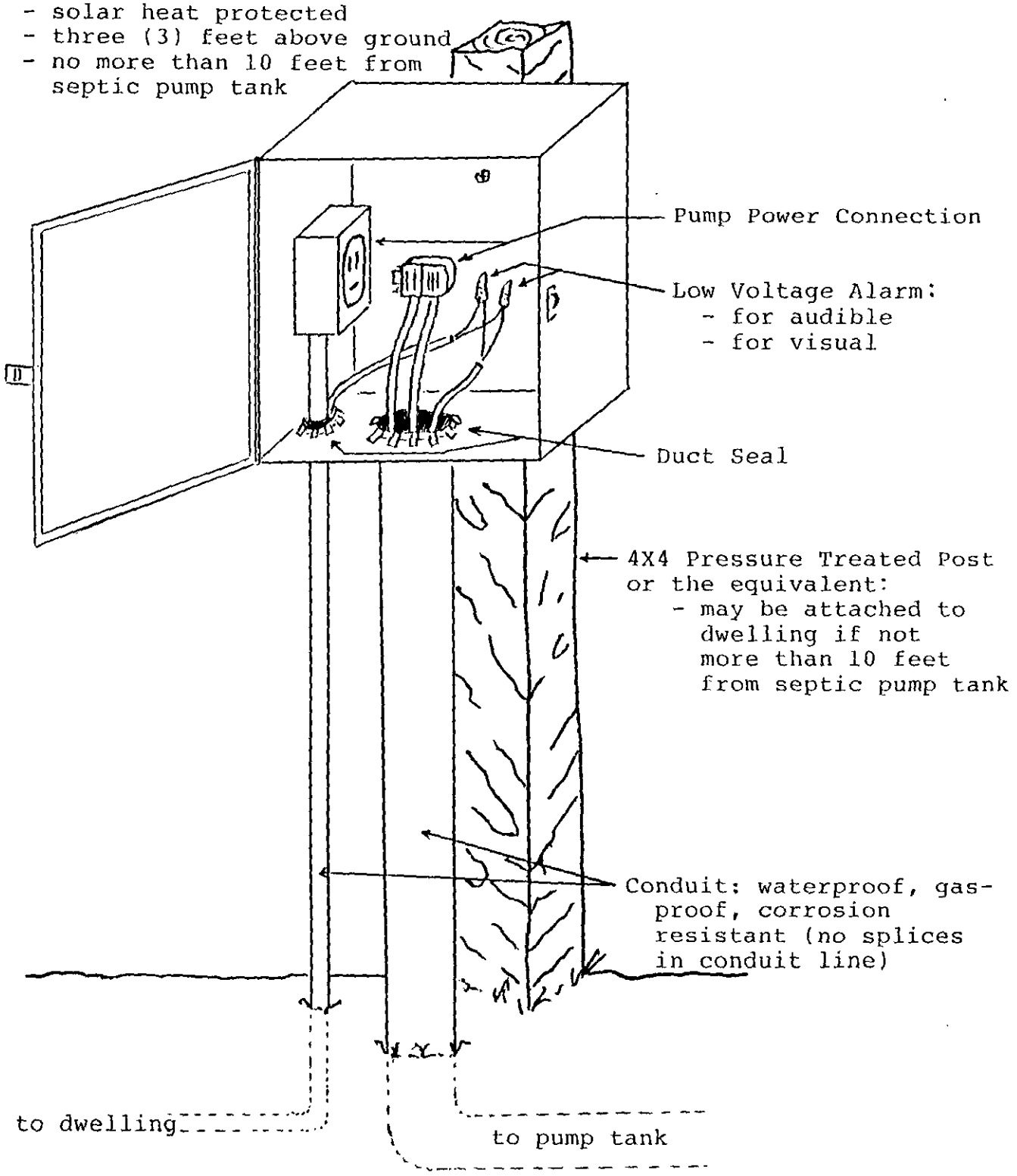


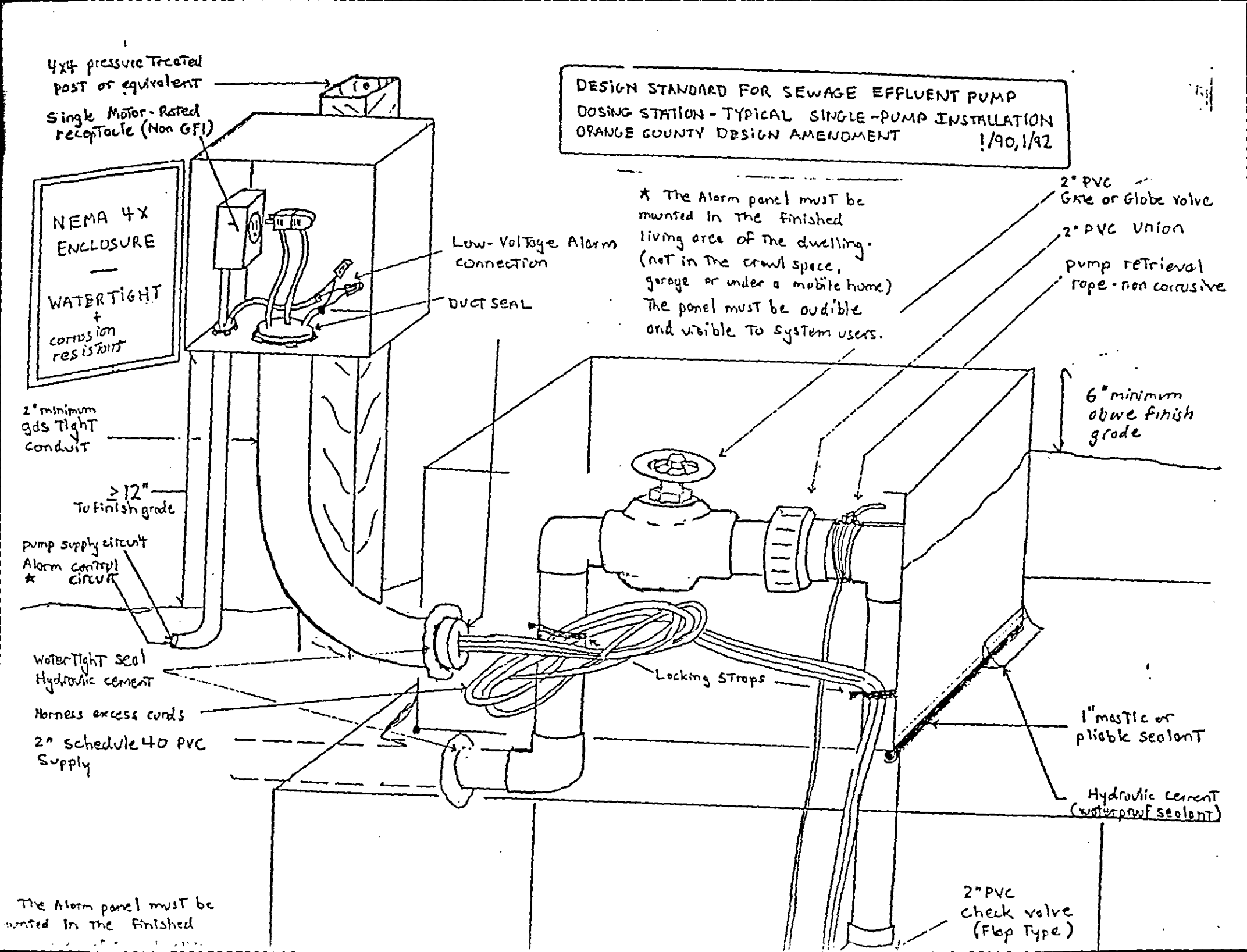


from Cogger et al, 1982)

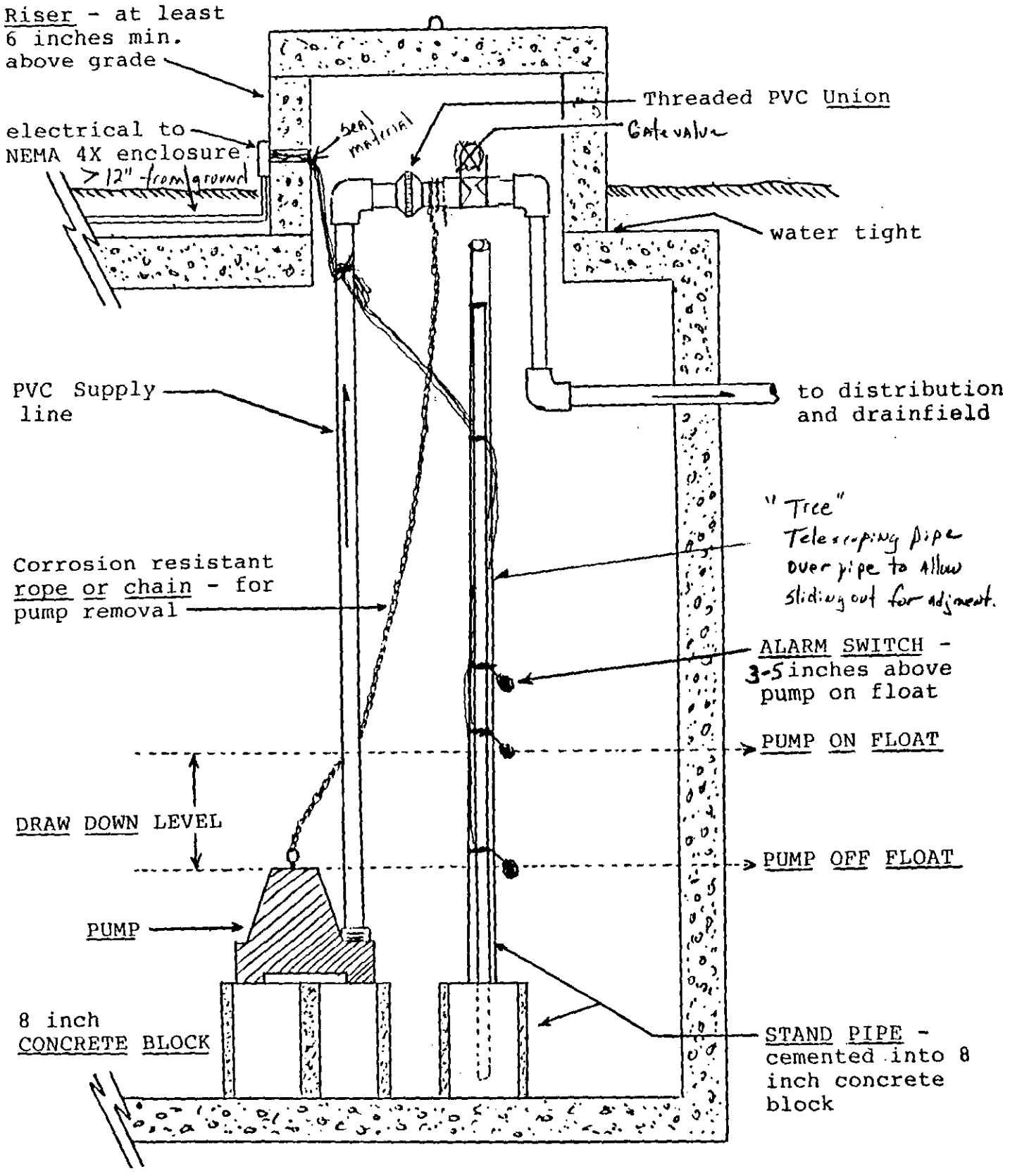
NEMA 4X ENCLOSURE must be:

- water tight
- corrosion resistant
- solar heat protected
- three (3) feet above ground
- no more than 10 feet from septic pump tank



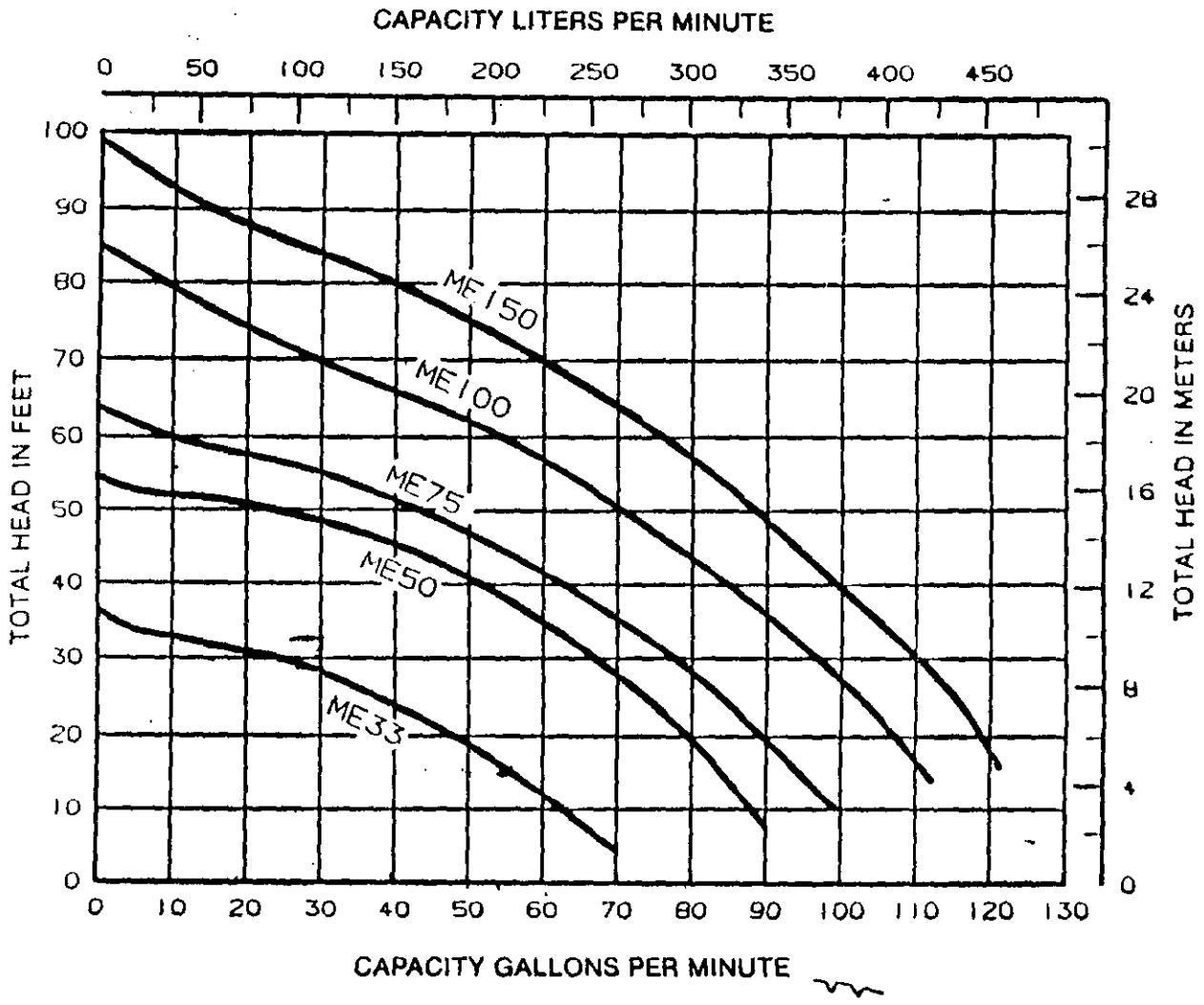

4x4 pressure Treated post or equivalent
Single Motor-Rated receptacle (Non GFI)
NEMA 4X ENCLOSURE
WATERTIGHT + corrosion resistant
Low-Voltage Alarm connection
DUCT SEAL
2" minimum gds Tight conduit
≥ 12" To finish grade
pump supply circuit
Alarm control * circuit
Watertight seal Hydraulic cement
Harness excess cords
2" schedule 40 PVC Supply
DESIGN STANDARD FOR SEWAGE EFFLUENT PUMP
DOSING STATION - TYPICAL SINGLE-PUMP INSTALLATION
ORANGE COUNTY DESIGN AMENDMENT 1/90, 1/92
* The Alarm panel must be mounted in the finished living area of the dwelling. (not in the crawl space, garage or under a mobile home) The panel must be audible and visible to system users.
2" PVC Gate or Globe Valve
2" PVC Union
pump retrieval rope - non corrosive
6" minimum above finish grade
Locking Straps
1" mastic or pliable sealant
Hydraulic cement (waterproof sealant)
2" PVC check valve (Flap Type)
The Alarm panel must be mounted in the finished

PUMP DIAGRAM



ME Series
1/3 through 1-1/2 HP
Effluent Pumps
Performance Curve

Myers



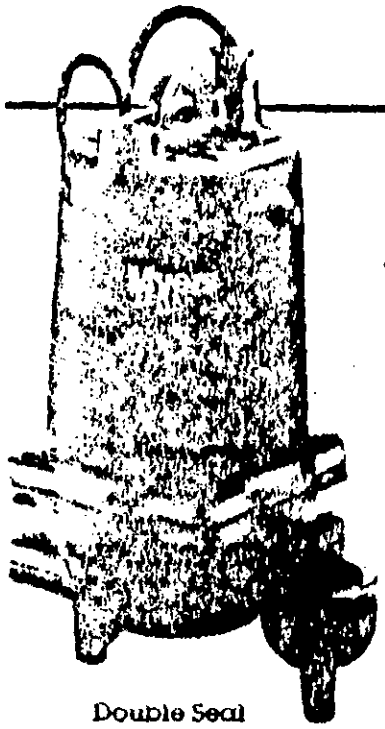
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419/289-1144 FAX 419/289-6658 Telex 98-7443

K3327 7/91

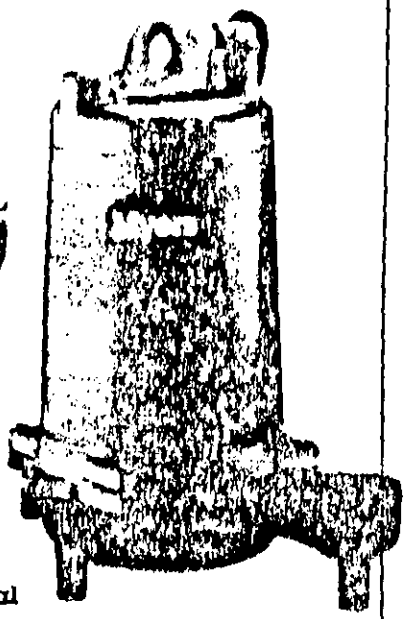
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ME SERIES

1/3 through 1-1/2 HP
Effluent Pumps



Double Seal



Single Seal

THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS. The ME Series effluent pumps with their efficient two vane, enclosed impellers provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

ADVANTAGES BY DESIGN

IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full ¾ inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage
- Motors have on winding current and temperature sensitive overload. (Single phase only)

THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

PRODUCT CAPABILITIES

Capacities To	120 GPM	454 LPM
Heads To	98 ft.	29.8 m
Max. Spherical Solids	¾ in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp.	up to 140° F	up to 60° C
Motor Electrical Data	1/3 & 1/2 HP, 115 volts, 1 ph 1/3 to 1-1/2 HP, 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil-filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130°C)	
Third Party Approvals	Pending	
Acceptable pH Range	6-9	
Specific Gravity	9-11	
Viscosity	28-35 SSU	
Discharge, NPT	2 in	50.8 mm
Min. Sump Dia. Simplex Duplex	24 in 36 in	61 cm 91.4 cm

Construction Materials	
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76
Enclosed Two Vane Impeller Standard Optional	engineered thermoplastic bronze
Impeller Wear Ring	304 SST
Volute Sealing Ring	Buna-N
Shaft	416 SST
Power Cord 1/3 & 1/2 HP, 1 Ph 3/4 - 1 1/2 HP, 1 Ph All 3 Ph	 20 ft. 16/3 SJOW/SJOW-A 20 ft. 14/3 SJOW/SJOW-A 20 ft. 14/4 SOW/SOW-A
Shaft Seals Standard Optional Opt. Lower	single carbon & ceramic tandem carbon & ceramic tungsten carbide
Fasteners	300 Series SST

WHERE INNOVATION MEETS TRADITION

Myers®

Lot 2 Keenan Ct.

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
70' WHITE			3,80	107.1
70' BLUE			6,05	104.8
70' YELLOW			8.1	102.8
70' RED			11,85	99.0
TANK			40,00	70,9
CROSS-ARM ON P.L.		110,85	10.85	100.00

SCS-29 (3-60)

GPO : 1960 OF—550816

Design, Installation and Maintenance

of the

T & J Panel Wastewater Treatment System

For

Environmental Health Specialist

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. Fifth Edition.

ENVIRONMENTAL HEALTH SPECIALISTS

System Design

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 development. 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 the environmental health specialist who is designing a system, and you can foresee such a trend of continued development, the Panel System may be an option the home owner would like to utilize.

As noted in the regulations a PPBPS is only permitted where soils are suitable, provisionability suitable, or reclassified provisionability suitable, however only one half of the area needed for a conventional system is required. This is one reason that the Panel System can help you use the best soils available on the lot. The system can be gravity fed, pumped to pressure manifold and gravity fed into the lines, or pumped to Low Pressure Panel lines. Most of the concepts for a Panel System layout are the same as for a conventional system. The biggest difference being the areal area needed and the quality of effluent being introduced into the ground.

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

Conversion

A three bedroom house with a 0.4 gpd application rate. (The first three steps are the same as for the conventional system.)

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

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

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

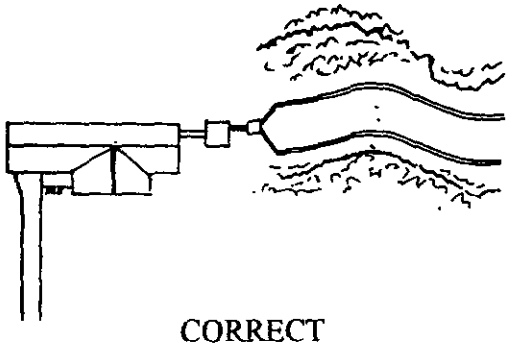
This conventional layout requires 2700 sq. ft. of area on the lot with another equal area of repair space for a total of 5400 sq. ft. of suitable usable area. To calculate the size of the T & J Panel system , the above calculations must be made with an additional fourth step as described in 10NCAC 10A .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 Pane System = 150 lineal feet of T & J Panel System.

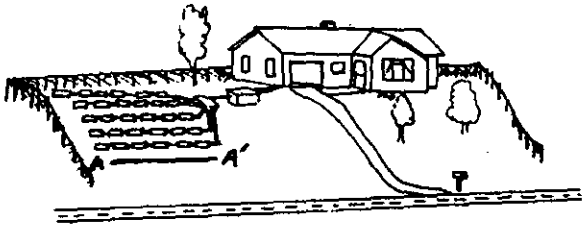
A Panel System requires only a 1200 sq. ft. area on the lot for the system with an equal area for repair, for a total of 2400 sq. ft. . With the panel system the installation and repair can go into the same area as the initial area required for a conventional gravel trench system.

Window Effect

To prevent hydraulic overload in the soil 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.



CORRECT

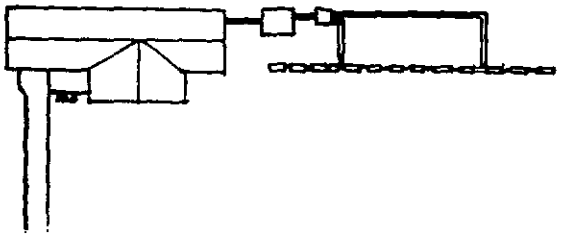


INCORRECT

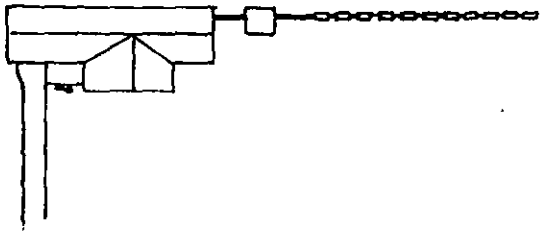
While both systems have the same lineal footage of trench the incorrect diagram is not a desirable design. The effluent must pass through the area A-A' which can cause a strain on that area and even a failure because of hydraulic overloading.

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 over loading is greatly reduced. However, downline distribution in the panel line will not give optimum treatment.



CORRECT



INCORRECT

In the lower example we see that the trench has been fed from multiple points. Because the Panel lines are put in as level as possible, never exceeding 1/4 inch of rainfall 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.

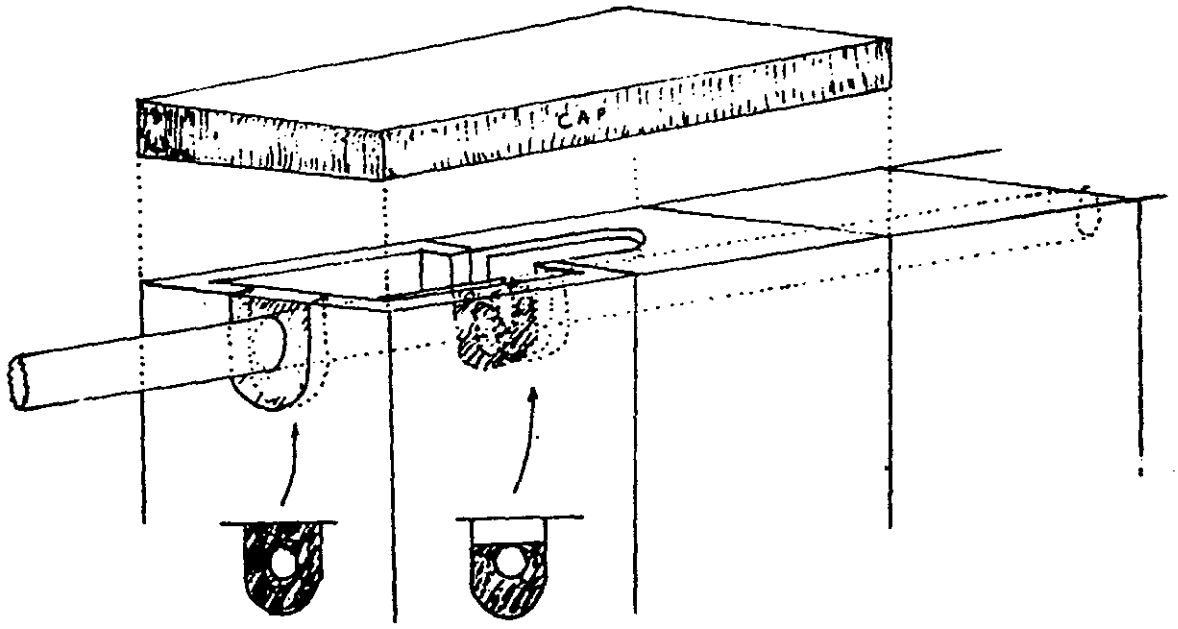
To calculate the number of 16 inch high panels needed for a 150 foot line, multiply 150' x 12" = 1800" then divide by 52" which is 46 inches for the panel and 6 inches for the space between the panels in the trench. 1800" /52" = 34.6 panels, so you would call for 34 panels. (A material order chart is 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. Environmental Health Specialists should show the panel as small blocks on the line of the trench.

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 chamber become additional storage chambers for the effluent. These seals can be inspected by lifting the caps at the ends of the panels while inspecting the system installation



INNER and OUTER SEALS

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 several 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 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 a 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?

7) Record field data on operations permit.

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

Installer

The Panel Block System

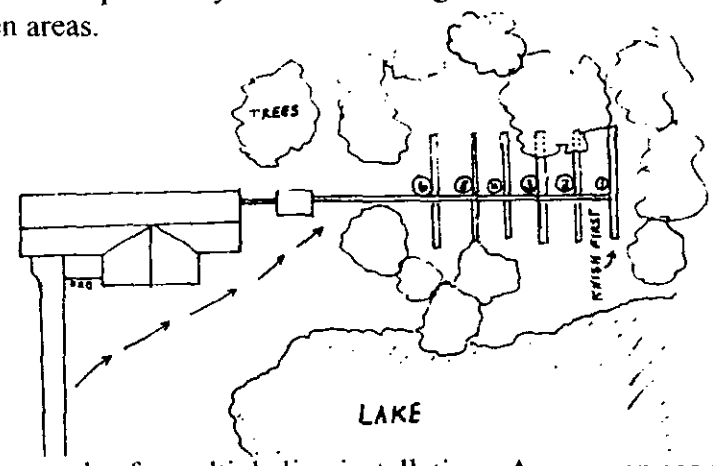
Generally, on level open land, a Panel System can be installed in about the same time as a conventional system; however traditionally, Panel Systems have been installed where space and topography have restricted use of a conventional system. For this reason Panel System installations have required more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

Ordering Materials

Inclosed 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 confiding 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 around the slope keeping the trench depth and cover uniform for the entire length o the line. On slopes, care should be given to avoid cutting away valuable top soil in an effort to make straight lines. The Panel line should be installed on grade with the contour of the natural slope. Panel lines can be curved to almost any degree.

T & J Panel Material Worksheet

Homeowner _____ County _____

Address _____

_____

Description of System _____

_____

_____

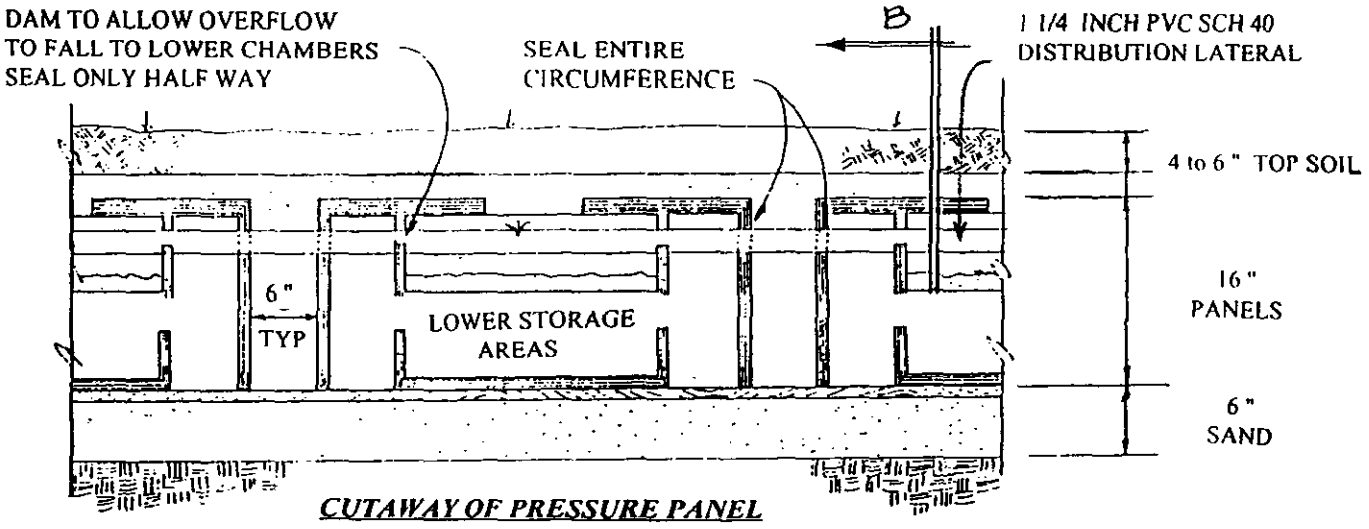
_____	T & J Panels _____ Inch (caps N/C)	_____
_____	2" Pipe	_____
_____	1 1/4" Pipe	_____
_____	Fittings for Pipe	_____
_____	Tar Seal Rope (3' per Panel)	_____
_____	Bag Partial Sand (100 lbs per 8 panels)	_____
_____	Pallets (Returnable)	_____
_____	Screened Creek Sand (FM 2.3 to 3.0)	_____
_____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

Panels With Pressure Distribution

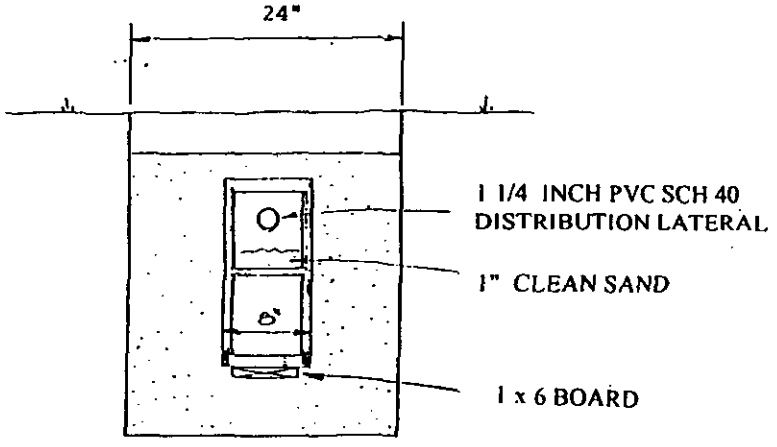
The LP Panel uses Technology similar to that of Low Pressure Pipe (LPP) System. The tables and distribution design described in the LPP manual is applicable to the pressure Panel System. The system should be used with two to four feet of head. In many respects a LP Panel is similar to a LPP with the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

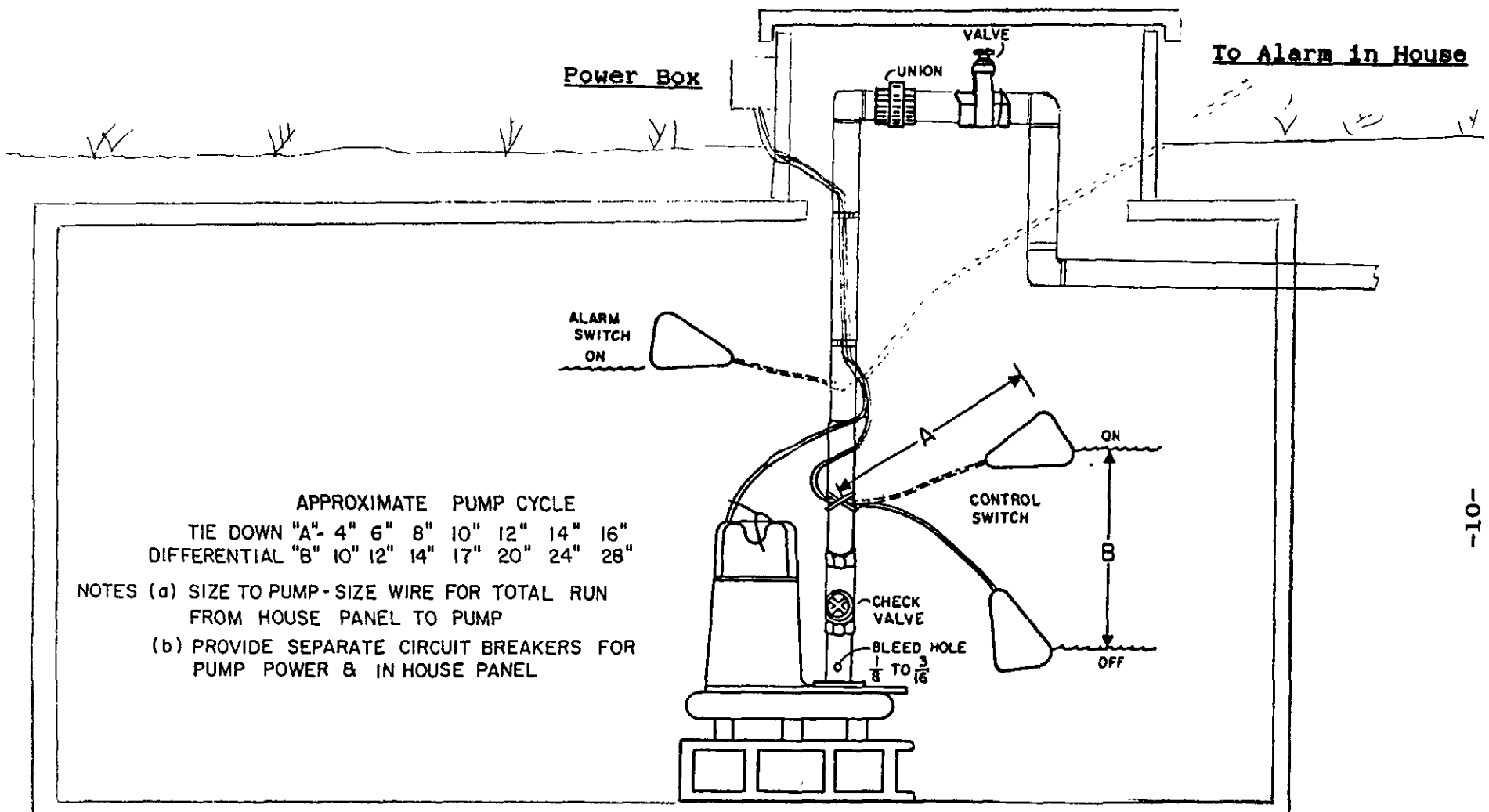
The dosing cycle for the Panel System is designed to pump enough effluent to fill the top chambers of all the panels in the system. The top chamber of a 16 inch panel hold 3.6 gallons. When the system has 34 panels and all holes are the same size, then you would multiply 34 x 3.6 to get 122 gallon per 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 chamber of the panel. If the hole sizing changes in the system the pump cycle is set by the hole that is discharging the fastest.

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



CUTAWAY OF PRESSURE PANEL





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

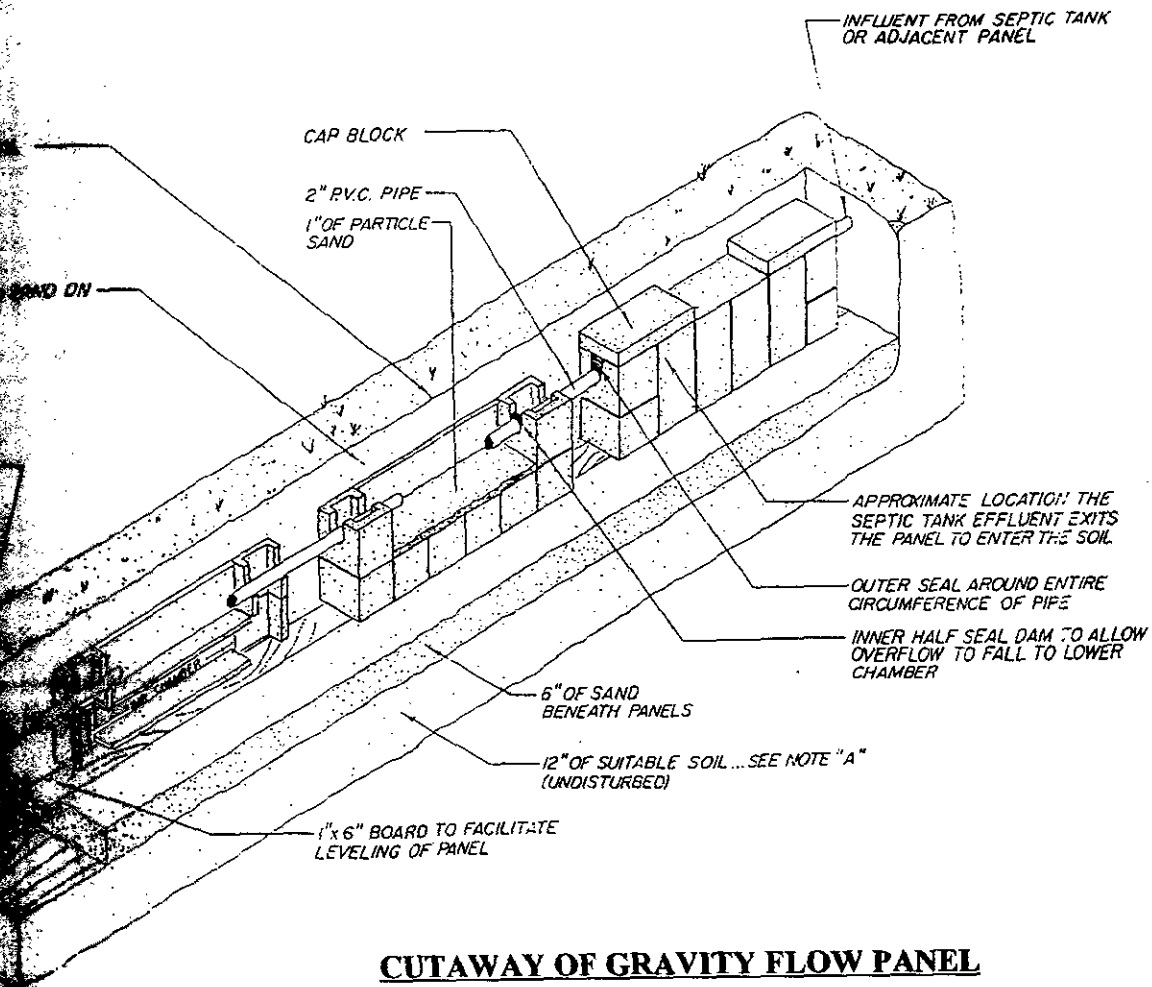
(b) PROVIDE SEPARATE CIRCUIT BREAKERS FOR PUMP POWER & IN HOUSE PANEL

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

ISOMETRIC DRAWING OF A SEGMENT OF 16" T & J PANEL SYSTEM DRAINFIELD



CUTAWAY OF GRAVITY FLOW PANEL

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

$30.00 3/4/93

899B/8770 A CK#6475 [] 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: BURKE (last) JOHN (first) V. (mi)
ADDRESS: 2919 OLDE WHITEHALL RD PHONE: (704) 521-8035
CITY: CHARLOTTE STATE: NC ZIPCODE: 28273

Date:

PROPERTY INFORMATION (FROM ENGINEERING FORM):
TAX/PARCEL NUMBER: 113-302-02
STREET ADDRESS: 8727 KEENAN CT
CHARLOTTE, NC 28214
ZONING:

PROPERTY OWNER:
NAME: SAME (last) (first) (mi)
ADDRESS: PHONE: (__) __
CITY: STATE: 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

LOT NUMBER: LOT #2 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: 4 NUMBER OCCUPANTS: 3
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):
[] 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: John V. Burke Date: 3-5-93

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

WATER : 122791

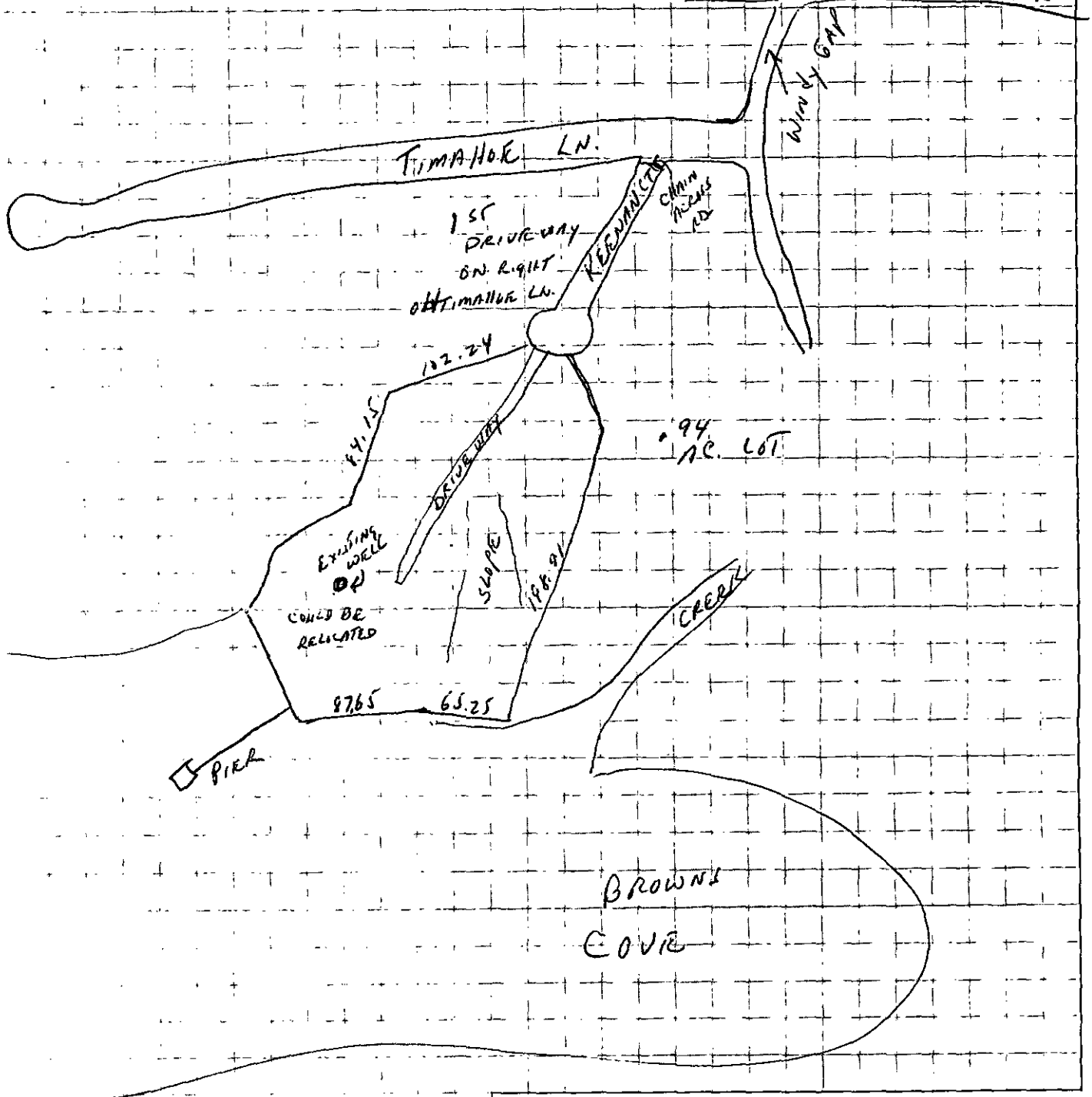
PROPOSED PLOT PLAN

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

FILE: 899B1

TC: 113-302-02

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

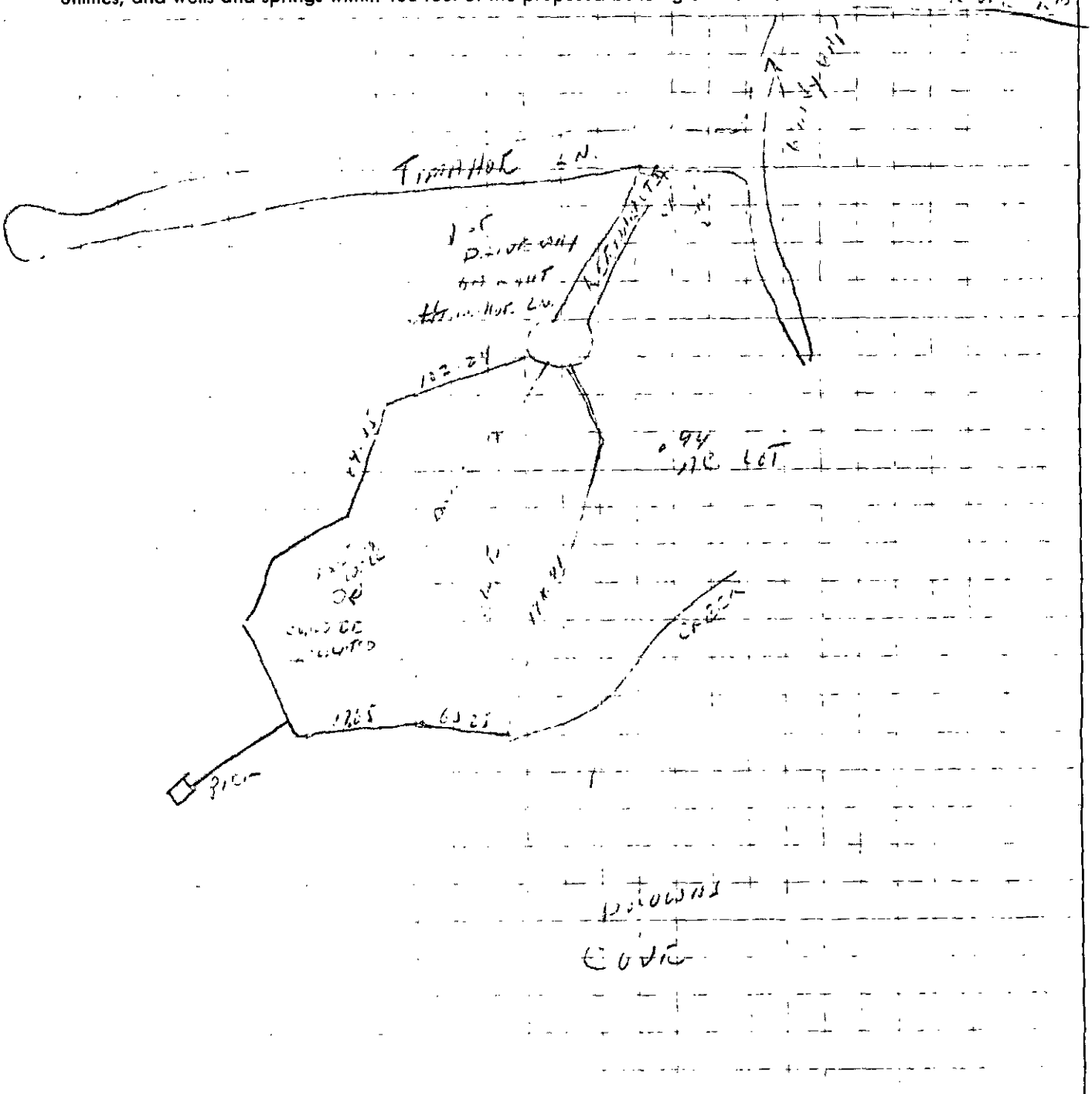
PROPOSED PLOT PLAN

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

FILE: S49B1

TC: 113-3(2)-C2

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

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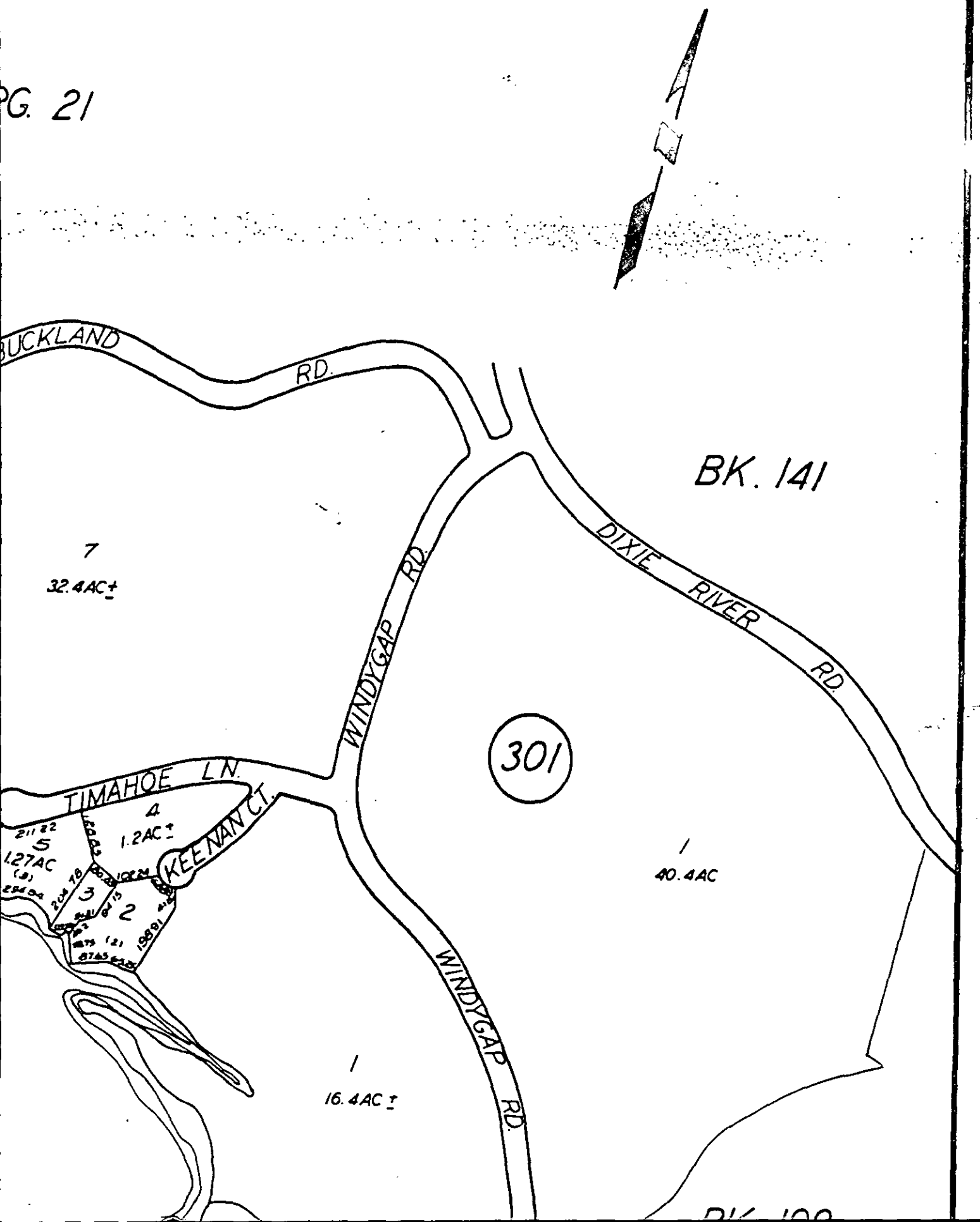
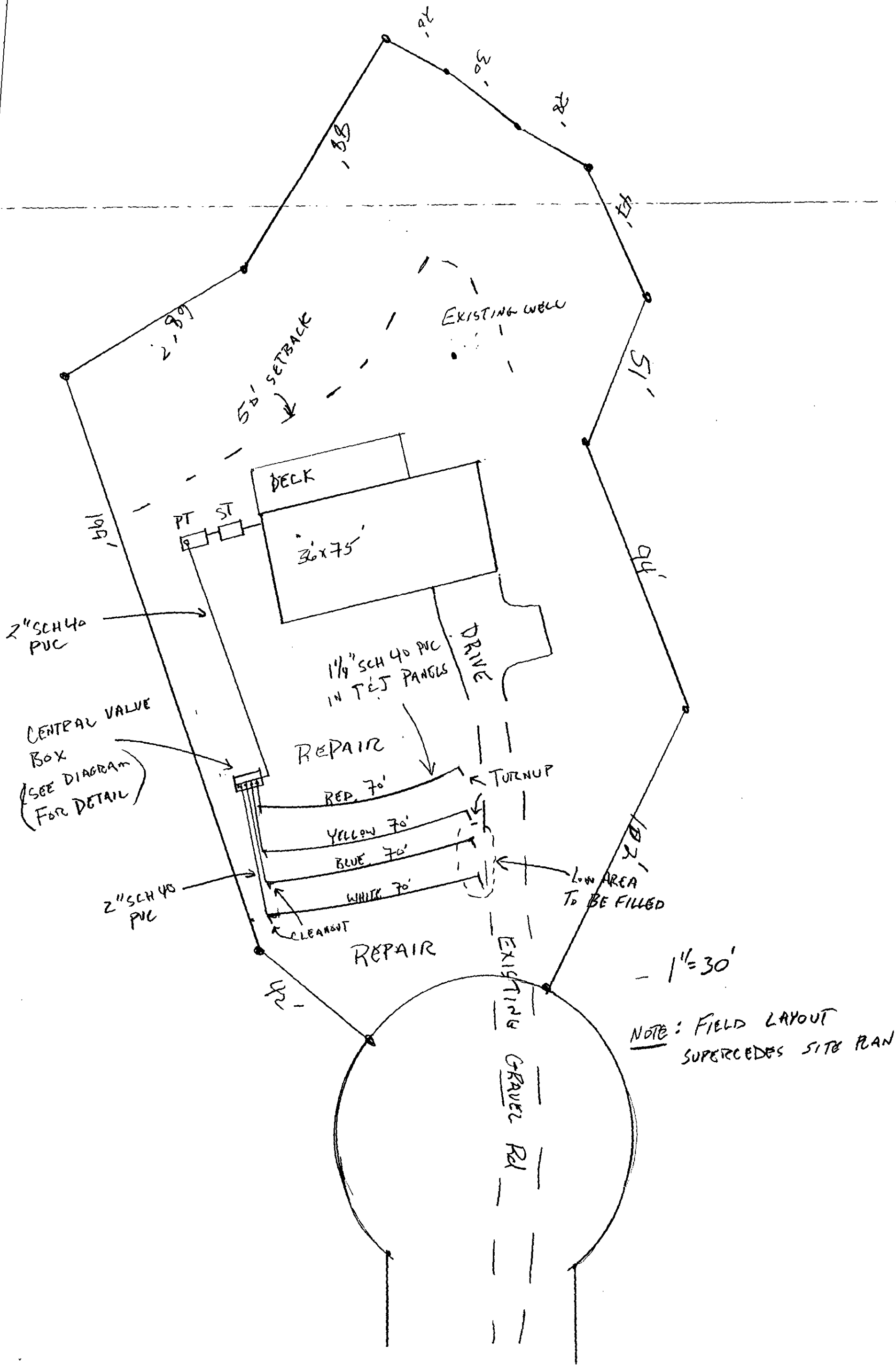

BUCKLAND RD.
BK. 141
7
32.4AC±
WINDYGAP RD.
DIXIE RIVER RD.
301
TIMAHOE LN.
KEENAN CT.
4
1.2AC±
5
1.27AC
3
2
1
40.4AC
1
16.4AC±
WINDYGAP RD.

Figure 1. Lot 2 Keenan Ct.



Jerad Lawson
532-2251

RECEIVED
APR 16 1997

Figure 1. Lot 2 Keenan Ct.

