

7/28/00 10AM

PERMIT

SEWAGE DISPOSAL SYSTEM

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

P 513106

A 510220

DISTRICT _____

DATE _____

DATE SYSTEM APPROVED 7/28/00

INSPECTOR BB

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
~~XXXXXXX~~ 410-313-2640

05-431182

INDEXED

Fogle's Septic Service IS PERMITTED TO INSTALL ALTER _____

ADDRESS 580 Obrecht Road Sykesville, MD 21784 PHONE 410-795-5670

SUBDIVISION Highland Meadows LOT 19 ROAD 13336 Long Leaf Drive

PROPERTY OWNER Warren Matzen

ADDRESS _____

SEPTIC TANK CAPACITY 1500 GALLONS - TOP SEAMED

NUMBER OF BEDROOMS 3

N/A SQUARE FEET PER BEDROOM

LINEAR FEET OF TRENCH REQUIRED N/A

SAND MOUND SEPTIC SYSTEM - CALL FOR LAYOUT INSPECTION PRIOR TO INSTALLATION

SEE APPROVED PLANS FOR DESIGN SPECIFICATIONS

PLANS APPROVED BY _____ DATE _____

COVER NO WORK UNTIL INSPECTED AND APPROVED

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM

NOTE: CLEANOUT REQUIRED EVERY 70 FEET OF SEWER LINE AND/OR AT 90° SWEEPS IN LINES FROM HOUSE TO DRAIN FIELDS, 90° ELBOWS NOT ACCEPTABLE.

NOTE: ALL PARTS OF SEPTIC SYSTEMS (I.E. TANK, DISTRIBUTION BOX TRENCHES) TO BE 100 FEET FROM WELL (UNLESS OTHERWISE SPECIFICALLY AUTHORIZED)

NOTE: IF DEEP TRENCH(ES) ARE USED CALL FOR INSPECTION BEFORE AND AFTER PLACING GRAVEL IN TRENCH(ES)

NOTE: NO DRY WELL SHALL EXCEED 15 FOOT IN DIAMETER NO ABSORPTION TRENCH TO EXCEED 100 FEET IN LENGTH

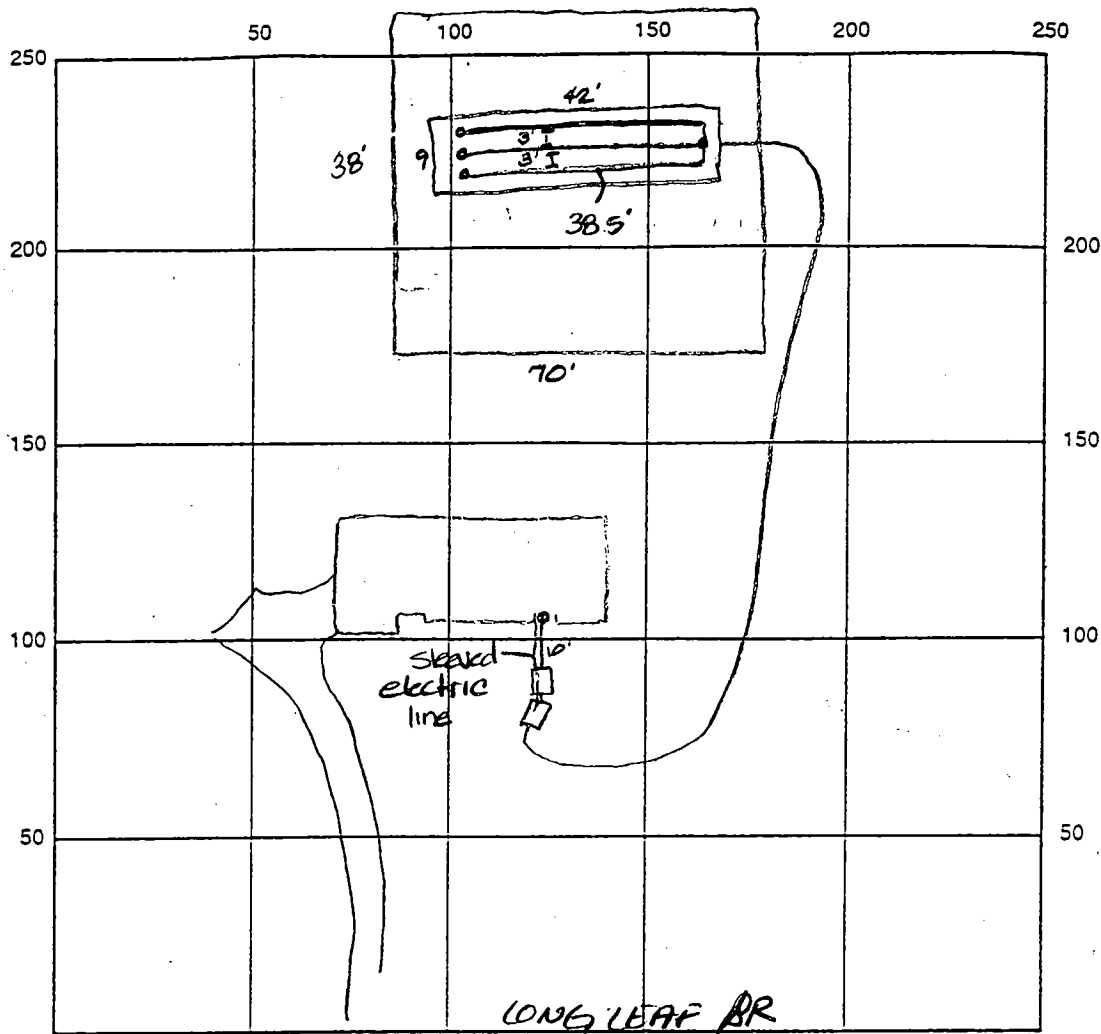
NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 35/40 PVC OR ABS

PERMIT VOID AFTER TWO YEARS

NOTE: INSTALL STAND PIPE ON SEPTIC TANK AND DRY WELL STAND PIPES MUST BE 6 INCHES IN DIAMETER CAST IRON, CONCRETE OR TERRA COTTA OR PVA OR ABS ACCEPTED. IF TOP OF SEPTIC TANK IS DEEPER THAN 3 FEET, MANHOLE TO GRADE REQUIRED.

NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES

***INSTALLER IS RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT**



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE

Pump chamber 1500 gal top sealed

SEPTIC TANK LEVEL 1500 gal top sealed

CLEANOUTS @ house & manhole risers on septic tank and pump chamber

DISTRIBUTION BOX LEVEL N/A

DRAIN FIELD/TITLE DEPTH N/A FT.

TRENCH WIDTH FT.

INLET DEPTH FT.

EFFECTIVE GRAVEL DEPTH N/A FT.

TOTAL LENGTH FT.

NUMBER OF TRENCHES N/A

ONE SIDEWALL/BOTTOM AREA SQ. FT.

DRYWALL INSIDE DIAMETER FT.

EFFECTIVE DEPTH BELOW INLET FT.

ABSORBENT AREA SQ. FT.

REMARKS: 11/18/99 Plowing and sand OK to continue 11/19/99 Gravel bed formed to specs - tanks set - pressure line installed - laterals installed OK to proceed w/ clay top and geotextile fabric. - take pictures, clay & fabric set on Saturday - Septic pump/pressure test needed A McMell 7/28/00 Alarm Working. Pressure Test O.K. BB

DATE SYSTEM APPROVED 7/28/00

INSPECTOR B. Baker

5/2/01

ATTN: DAVE

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
WATER AND SEWERAGE PROGRAM
TEL: (410)313-2640 FAX: (410)313-2648

Information Form for the Installation of the Well Pump, Pitless Adapter, and Supply Piping

NOTE: The installer is responsible for requesting an inspection prior to 9 am on the day of the desired inspection. No work is to be covered until approved by the Health Department. All installations must comply with the National Standard Plumbing Code (NSPC, as amended locally) and COMAR 26.04.04 (MD Well Construction Regulations). Submission of a complete form is required prior to Use and Occupancy approval.

Company Name: Foales Well Drilling Telephone #: 410-795-5670
Address: 580 Obrecht Rd
Sykesville, Md 21784

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer
License # and name of individual responsible for the field installation:
Name (Print): Allen Compton License# MSD009
*A licensed individual must perform the actual installation. Apprentices must be under the direct supervision of a licensed journeyman or master plumber, pump installer or well driller. Licenses may be subjected to field verification.

Name of Property Owner: Warren Matzen Telephone #: _____
Subdivision: Highland Meadows Lot #: 28 Well Tag #: HO-94-1967
Site Address: ~~6815 Reading Drive Lane~~ 13326 Long Leaf Drive (F)

Submersible Pump Data Pitless Adapter Well Cap and Electric Conduit
Make: Jacuzzi Make: Campbell Two piece watertight cap:
Model #: _____ Model#: _____ Screened, vented well cap:
Pump Capacity _____ GPM Depth: 4' (36" min) Cap secured to casing:
Well Yield: _____ GPM NSF approved: _____ Conduit min 1 1/2" B.G.:
Depth of well encountered at time of pump installation: _____ (feet) Conduit secured to well cap:
If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.3.4
Torque arrestors or Cable guards are required - Must circle one
Safety rope, if used, attached to inside of well casing with eye bolt _____

Piping to house House Connection
Type: 1" Black Plastic PVC sleeved to undisturbed soil at wall penetration: YES
PSI: 160 (160 psi min) Approximate length of sleeve: 50'
Depth of supply line: 4 (36" min) Sleeve caulked and sealed properly: yes

The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

Signature of company representative responsible for installation: Allen Compton date 10-31-00

For Health Department Use Only - Not to be completed by Installer

Date Insp. Requested: 3/3/00 Date Insp. Approved: 3/3/00
Inspection Data: Pitless adapter and water supply line at least 36" below grade
Two piece cap installed and attached to casing securely
Elec. conduit extends at least 18" below grade/attached to cap properly
Safety rope installed inside of well casing
Correct well tag attached properly and casing 8" above finished grade
Water supply line sleeved adequately at house connection
Adequate grout observed below pitless adapter
(DKS)
BB

C 1 9346

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

THIS REPORT MUST BE SUBMITTED AFTER WELL IS COMPLETED.

COUNTY NUMBER A510220

ST/CO USE ONLY DATE Received 12/31/98

DATE WELL COMPLETED

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-94-1967

OWNER Matzen Warren STREET OR RFD Long Leaf Dr TOWN Clarksville SUBDIVISION Highland Meadows SECTION LOT 2

WELL LOG

Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

Table with columns: DESCRIPTION, FEET (FROM, TO), check if water bearing. Includes entries for Sand and Gray Mica Rock.

GROUTING RECORD

WELL HAS BEEN GROUTED (Y/N) TYPE OF GROUTING MATERIAL (Cement, Bentonite Clay) NO. OF BAGS, NO. OF POUNDS, GALLONS OF WATER, DEPTH OF GROUT SEAL

CASING RECORD

Other casing (if used) diameter, depth. MAIN CASING TYPE (ST, CO, PL, OT) Nominal diameter, Total depth

SCREEN RECORD

screen type or open hole (ST, BR, HO, PL, OT) DEPTH (nearest ft.)

C 3

PUMPING TEST 3 HOURS PUMPED (nearest hour) 12 PUMPING RATE (gal. per min.) 12 METHOD USED TO MEASURE PUMPING RATE Bucket WATER LEVEL (distance from land surface) BEFORE PUMPING 82 WHEN PUMPING 120 TYPE OF PUMP USED (for test) S submersible

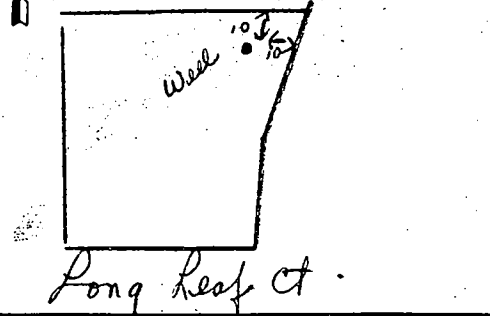
PUMP INSTALLED

DRILLER INSTALLED PUMP (YES/NO) IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS. TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 PUMP HORSE POWER 37 PUMP COLUMN LENGTH (nearest ft.) 43 CASING HEIGHT (circle appropriate box and enter casing height) + above LAND SURFACE 2 (nearest foot)

C 2

DEPTH (nearest ft.) 138, 320. A C H S C 3 R E N SLOT SIZE 1 2 3 DIAMETER OF SCREEN (NEAREST INCH) 56 60 from to

LOCATION OF WELL ON LOT SHOW PERMANENT STRUCTURES AND INDICATE NOT LESS THAN TWO DISTANCES (MEASUREMENTS TO WELL)



CIRCLE APPROPRIATE LETTER A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE

DRILLERS LIC. NO. 1 MS D024 Joseph L. Mayo DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. 1 MS D022 Larry Mayo

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q 70 72 74 75 76 TELESCOPE CASING LOG INDICATOR OTHER DATA

B 1 0392

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND PERMIT TO DRILL WELL please print or type

STATE PERMIT NUMBER

HD-94-1967

Date Received (APA) 11/17/98

OWNER INFORMATION

Matzen Warren, 10750 R Hode Island Ave, Beltsville md 20705

LOCATION OF WELL

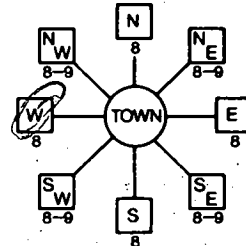
Howard County, Highland Meadows, Clarksville

MILES FROM TOWN (enter 0 if in town) 2 M

DRILLER INFORMATION

Joseph R. Morgan, MS D 24, 5512 Ridge Rd, Mt. Airy, Md. 31771

DIRECTION OF WELL FROM TOWN (CIRCLE BOX)



Long Leaf Ct, NEAR WHAT ROAD

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH, WEST, EAST, SOUTH

TAX MAP: 34 BLK: PARCEL 169

WELL INFORMATION

APPROX. PUMPING RATE 5 GAL. PER MIN., AVERAGE DAILY QUANTITY NEEDED 500 GAL. PER DAY

USE FOR WATER (CIRCLE APPROPRIATE BOX)

- DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION, FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION), INDUSTRIAL, COMMERCIAL, DEWATERING, PUBLIC WATER SUPPLY WELL, TEST, OBSERVATION, MONITORING, GEO-THERMAL

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard CO, A510220, DATE ISSUED 11/17/98, CO SIGNATURE A McMillan, EXP. DATE 11/17/99

APPROXIMATE DEPTH OF WELL 300 FEET

APPROXIMATE DIAMETER OF WELL 6 INCH

METHOD OF DRILLING (circle one)

- BORED (or Augered), JETTED, Jetted & DRIVEN, AIR-ROTary, AIR-PERCussion, ROTARY (Hydraulic Rotary), CABLE, REVerse-ROTary, Drive-POINT

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

- THIS WELL WILL NOT REPLACE AN EXISTING WELL, THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED, THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON-STANDBY WELLS, THIS WELL WILL DEEPEM AN EXISTING WELL

PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE)

Not to be filled in by driller (MDE OR COUNTY USE ONLY)

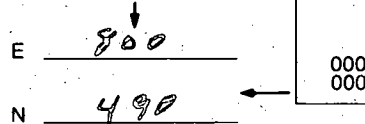
APPROX. PERMIT NUMBER

PERMIT No. HD-94-1967

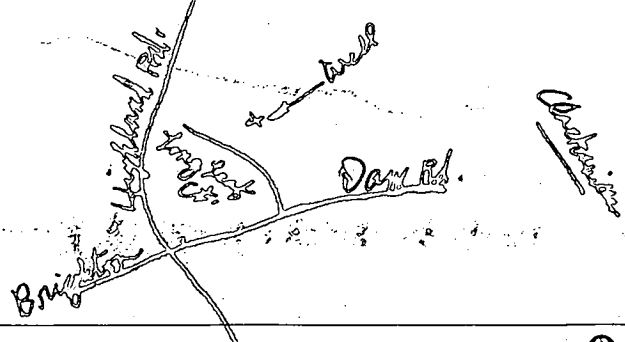
SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X

SOURCES OF DRILLING WATER 1. WELL

WRITE THE BOX NUMBER FROM THE MAP HERE



DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO NEARBY TOWNS AND ROADS AND GIVE DISTANCE FROM WELL TO NEAREST ROAD JUNCTION



SPECIAL CONDITIONS

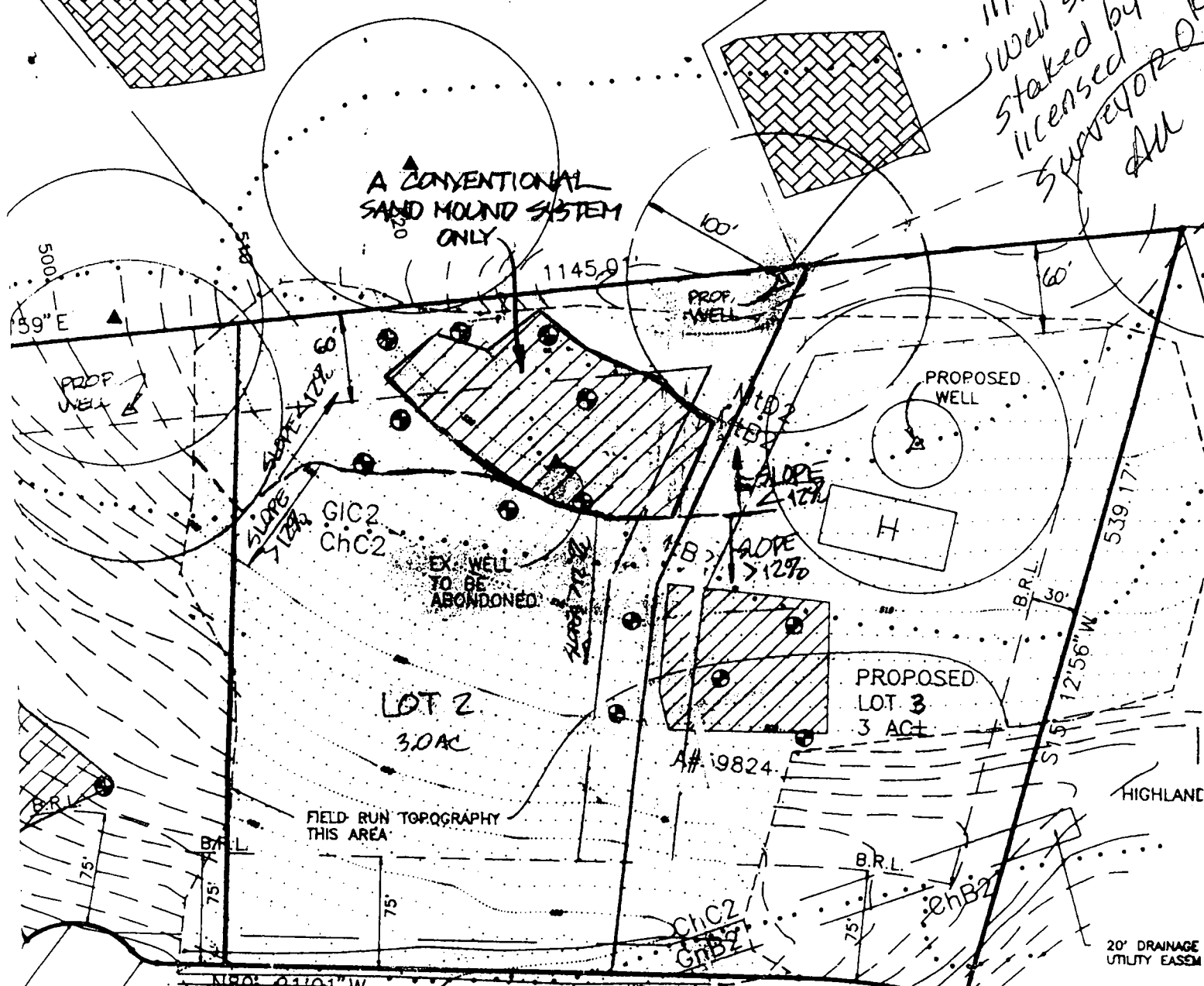
NOTE - APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

LOT 12

BRIERLY
LOT 11

11/18/98
well site
staked by
licensed by
surveyor OK
AM

A CONVENTIONAL
SAND MOUND SYSTEM
ONLY



LONG LEAF COURT (50' R/W)

R=435.00'
L=110.59'

HIGHLAND MEADOWS
LOT 7

HIGHLAND MEADOWS
LOT 9

HIGHLAND MEADOWS
LOT 8

20' DRAINAGE
UTILITY EASEM

 WATER WELL ABANDONMENT-SEALING REPORT FORM

SUBMIT COPIES OF COMPLETED FORM TO:

- * COUNTY ENVIRONMENT AGENCY (contact MDE, WMA if address needed)
- * WELL OWNER
- * MDE, WATER MANAGEMENT ADMINISTRATION, WELL PROGRAM

*Tag Destroyed
 12.31.98*

DATE WELL ABANDONED: 12/21/98 (month/day/year)

* PERMIT NUMBER OF ABANDONED WELL (if any)

Ho - 94 - 1543

* PERMIT NUMBER OF REPLACEMENT WELL

Ho - 94 - 1967

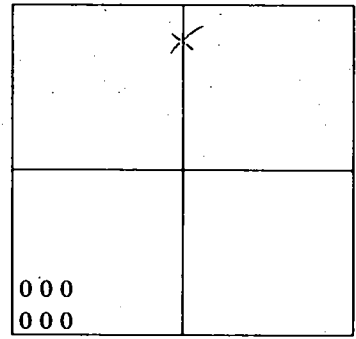
* PERSON ABANDONING WELL: Joseph Mayne

WELL DRILLERS LICENSE NUMBER: 024

* OWNER'S NAME: Warren Matzen

CIRCLE: MWD/MSD/MGD

* WELL LOCATION:
 COUNTY: Howard
 NEAREST TOWN: Clarksville
 TAX MAP BLOCK _____ PARCEL _____
 SUBDIVISION: Highland Meadows
 SECTION: 1 LOT: 22
 NEAREST ROAD: Longleaf Ct.



SHOW WELL LOCATION BY X WITHIN BOX

MARYLAND GRID COORDINATES

BOX NUMBER
 E 800
 N 49

* TYPE OF WELL BEING ABANDONED:

- DRILLED
- BORED/AUGURED
- OTHER (specify) _____
- JETTED
- HAND DUG

* USE CODE:

- DOMESTIC
- IRRIGATION
- TEST/OBSERVATION
- MUNICIPAL/PUBLIC
- INDUSTRIAL

* TYPE OF CASING:

- STEEL
- CONCRETE
- PLASTIC
- OTHER (specify) _____

* SIZE OF CASING: 6 5/8 INCHES IN DIAMETER

* DEPTH OF WELL: 250 FEET DEEP

* WAS ANY CASING REMOVED? YES NO
 if yes, length removed, in feet: _____

* WAS CASING RIPPED OR PERFORATED? YES NO

LOG OF SEALING MATERIAL

| MATERIAL | FEET | |
|----------------------|------------|------------|
| | FROM | TO |
| <i>Cement</i> | <i>0</i> | <i>126</i> |
| <i>Washed gravel</i> | <i>126</i> | <i>250</i> |

SIGNATURE-MASTER WELL DRILLER OR SUPERVISING SANITARIAN: Joseph Mayne LICENSE # 024 CIRCLE ONE MWD/MSD/MGD DATE 12/30/98

C 1 05041 SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

(THIS NUMBER IS TO BE PUNCHED IN COLS 3-6 ON ALL CARDS)

FILL IN THIS FORM COMPLETELY PLEASE PRINT OR TYPE

COUNTY NUMBER A 59937

ST/CO USE ONLY

DATE WELL COMPLETED

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL"

DATE Received 06/18/98

DATE 6/16/98

22 250 26 (TO NEAREST FOOT)

HO-94-1543

OWNER Warren Matzen STREET OR RFD Long Leaf Drive TOWN Clarksville SUBDIVISION Highland Meadows SECTION LOT Pres. Pct. "A"

WELL LOG

Not required for driven wells

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box)

TYPE OF GROUTING MATERIAL (Circle one)

CEMENT [CM] BENTONITE CLAY [BO]

NO. OF BAGS 64 NO. OF POUNDS 3076

GALLONS OF WATER 382

DEPTH OF GROUT SEAL (to nearest foot)

from 0 ft. to 115 ft. TOP BOTTOM

CASING RECORD

MAIN CASING TYPE [ST] [CO] [PL] [OT]

Nominal diameter top (main) casing of main casing (nearest inch) 128

OTHER CASING (if used)

diameter inch depth (feet) from to

SCREEN RECORD

screen type or open hole [ST] [BR] [HO] [PL] [OT]

DEPTH (nearest ft.)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76

DIAMETER OF SCREEN (NEAREST INCH) 56 to 60

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)

TELESCOPE CASING LOG INDICATOR OTHER DATA

PUMPING TEST

HOURS PUMPED (nearest hour) 3

PUMPING RATE (gal. per min.) 20

METHOD USED TO MEASURE PUMPING RATE Bucket

WATER LEVEL (distance from land surface)

BEFORE PUMPING 67 ft.

WHEN PUMPING 68 ft.

TYPE OF PUMP USED (for test)

[A] air [P] piston [T] turbine

[C] centrifugal [R] rotary [O] other (describe below)

[J] jet [S] submersible

PUMP INSTALLED

DRILLER WILL INSTALL PUMP (CIRCLE) (YES or NO) YES [NO]

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29

CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 35

PUMP HORSE POWER 37 41

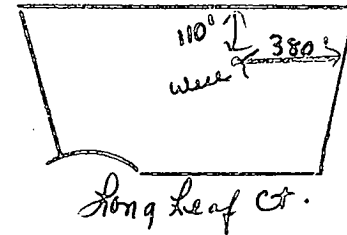
PUMP COLUMN LENGTH (nearest ft.) 43 47

CASING HEIGHT (circle appropriate box and enter casing height)

[+] above [] below LAND SURFACE 49 51 (nearest foot)

LOCATION OF WELL ON LOT

SHOW PERMANENT STRUCTURE SUCH AS BUILDING, SEPTIC TANKS, AND /OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCES (MEASUREMENTS TO WELL)



NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED YES [Y] NO [N]

CIRCLE APPROPRIATE LETTER A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO. 1 M S D O 2 7

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. 1 M S D O 2 7

SITE SUPERVISOR (sign of driller or journeyman responsible for sitework if different from permittee)

B 1 9421
1 2 3 4 5 6
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND
PERMIT TO DRILL WELL
please print or type

STATE PERMIT NUMBER

40-94-1543
70 fill in this form completely 79

Date Received (APA)

4-13-98
8 MM DD YY 13

OWNER INFORMATION

15 Last Name Warren Owner First Name 34
6813 Maiden Lane Street or RFD 55
Clarksville Md. 21029
57 Town 70 State 72 Zip 76

B 3 LOCATION OF WELL

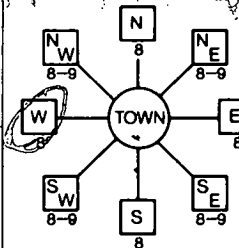
Howard
8 COUNTY 21
Highland Meadows
23 SUBDIVISION 42
SECTION 44 46 LOT 48 50 Parcel A
Clarksville
52 NEAREST TOWN 71

MILES FROM TOWN (enter 0 if in town) 2 MI
73 76 77 78

DRILLER INFORMATION

Joseph L. Mays MS D 29
Driller's Name 76 License No. 81
Joseph L. Mays Well Drilling
Firm Name
5512 Ridge Rd. Mt. Airy Md
Address
Joseph L. Mays 4/10/98
Signature Date

B 4
1 2
DIRECTION OF WELL FROM TOWN (CIRCLE BOX)



Long Leaf Ct.
11 NEAR WHAT ROAD 30
ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)
NORTH
WEST EAST
SOUTH
34 500 37
DISTANCE FROM ROAD ENTER FT OR MI 38 39
TAX MAP: 34 BLK: PARCEL 189

B 2 WELL INFORMATION

1 2
APPROX. PUMPING RATE (GAL. PER MIN.) 5
8 12
AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) 500
14 20

USE FOR WATER (CIRCLE APPROPRIATE BOX)

- HOME (SINGLE OR DOUBLE HOUSEHOLD UNIT ONLY)
- FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)
- INDUSTRIAL, COMMERCIAL, STATE AND FEDERAL GOV. OTHER (REQUIRES APPROPRIATION PERMIT)
- PUBLIC OR PRIVATE WATER COMPANY (REQUIRES APPROPRIATION PERMIT AND STATE APPROVAL)
- TEST, OBSERVATION, MONITORING (MAY REQUIRE APPROPRIATION PERMIT)

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard Co A 59937
COUNTY NAME COUNTY NO.
STATE SIGNATURE INSERT S → 41
DATE ISSUED 05/04/98 A McMiller 5/4/99
43 MM DD YY 48 CO SIGNATURE EXP. DATE
NORTH GRID 500 000 EAST GRID 805 000
50 55 57 63

APPROXIMATE DEPTH OF WELL 300 FEET
24 28

APPROXIMATE DIAMETER OF WELL 6 INCH
NEAREST INCH

METHOD OF DRILLING (circle one)

- BORED (or Augered) JETTED Jetted & DRIVEN
- AIR-ROTARY AIR-PERCussion ROTARY (Hydraulic Rotary)
- CABLE REVERSE-ROTARY DRIVE-POINT
- other

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

- THIS WELL WILL NOT REPLACE AN EXISTING WELL
 - THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED
 - THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS
 - THIS WELL WILL DEEPEMED AN EXISTING WELL
- PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 52

Not to be filled in by driller (MDE OR COUNTY USE ONLY)

APPROP. PERMIT NUMBER 54 GAP 63
WRITE INITIALS IN BOX PERMIT No. 40-94-1543
FORCE 67 68

SPECIAL CONDITIONS

NOTE - APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED -

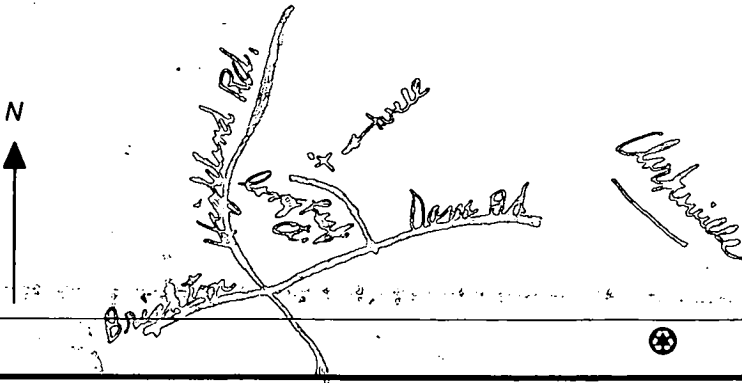
SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X

- SOURCES OF DRILLING WATER
- 1. WELL
- 2.
- 3.

WRITE THE BOX NUMBER FROM THE MAP HERE

E 9005
500
N 800

DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO NEARBY TOWNS AND ROADS AND GIVE DISTANCE FROM WELL TO NEAREST ROAD JUNCTION



4/24/98
 NO STAKE
 LEFT MESSAGE
 BY BETTY MARINE

5/4/98
 Site approved -
 NO SITE INSPECTION -
 JMM

McMullen

PROPOSED PRIVATE SEWAGE EASEMENT AS REQUIRED
 DEPARTMENT OF THE ENVIRONMENT FOR
 IMPROVEMENTS OF ANY NATURE IN THIS
 PUBLIC SEWAGE IS AVAILABLE. THIS
 AND VOID UPON CONNECTION TO A PUBLIC
 HEALTH OFFICER SHALL HAVE THE AUTHORITY
 TO REVERSE ANY CHANGES TO THE PRIVATE SEWAGE
 EASEMENT. MODIFIED SEWAGE EASEMENT SHALL NOT BE
 LESS THAN 10' S.F. MINIMUM RESTRICTION ON THE

AREAS WITH THE MINIMUM OWNERSHIP AND LOT AREA
 AS REQUIRED BY THE DEPARTMENT OF THE ENVIRONMENT.

EXISTING SEWER SYSTEMS WITHIN 100 FEET OF THE
 PROPOSED SYSTEMS SHOWN HEREON.

HOUSE SITE
 AREAS FROM AVAILABLE
 INFORMATION

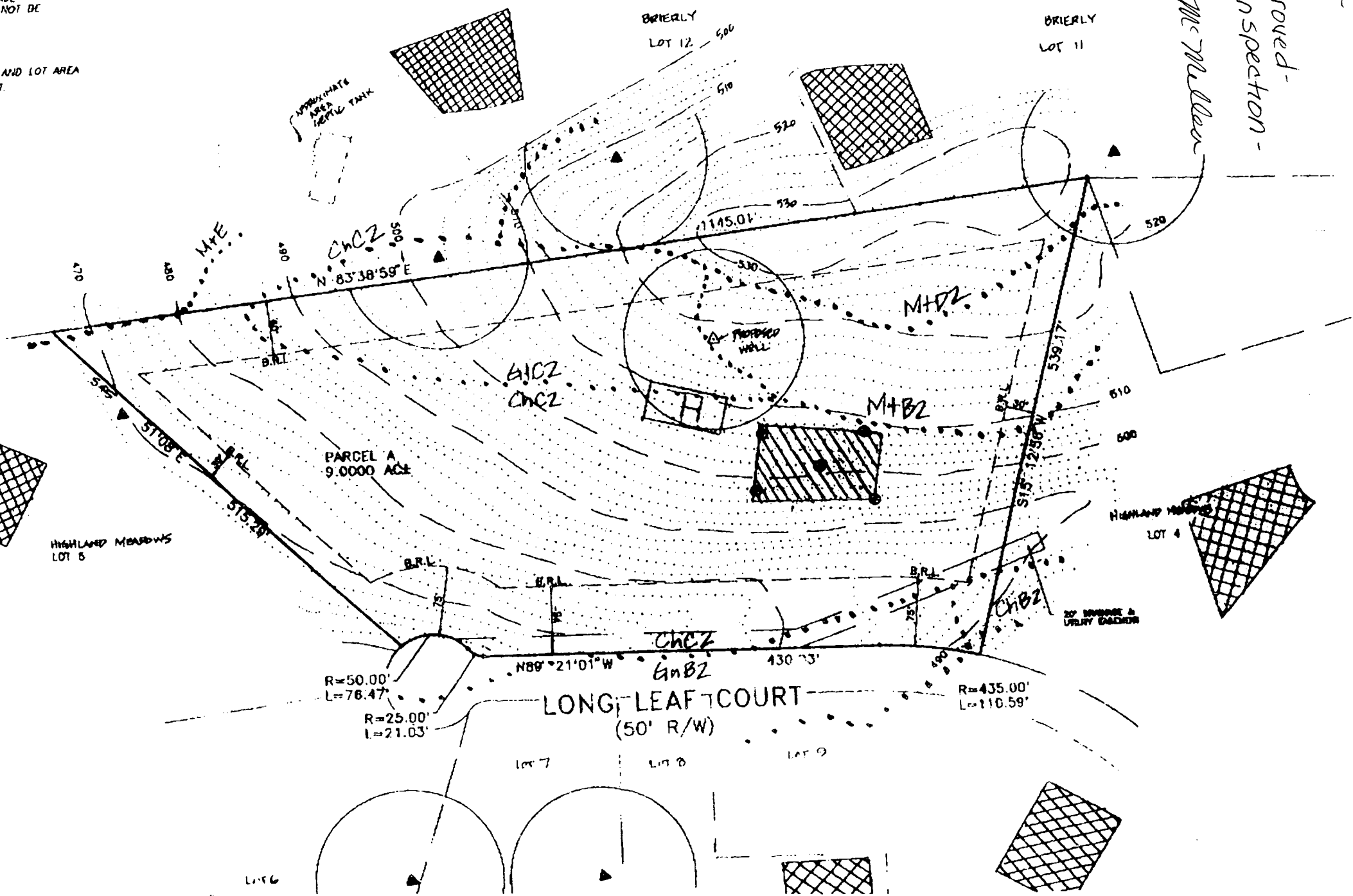
AVAILABLE
 INFORMATION

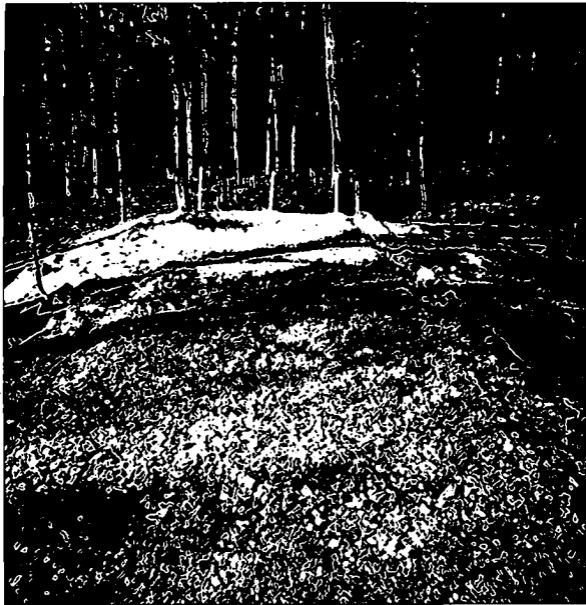
MATZEN R.E. INC.

8837 8942

09:01

04.10.88





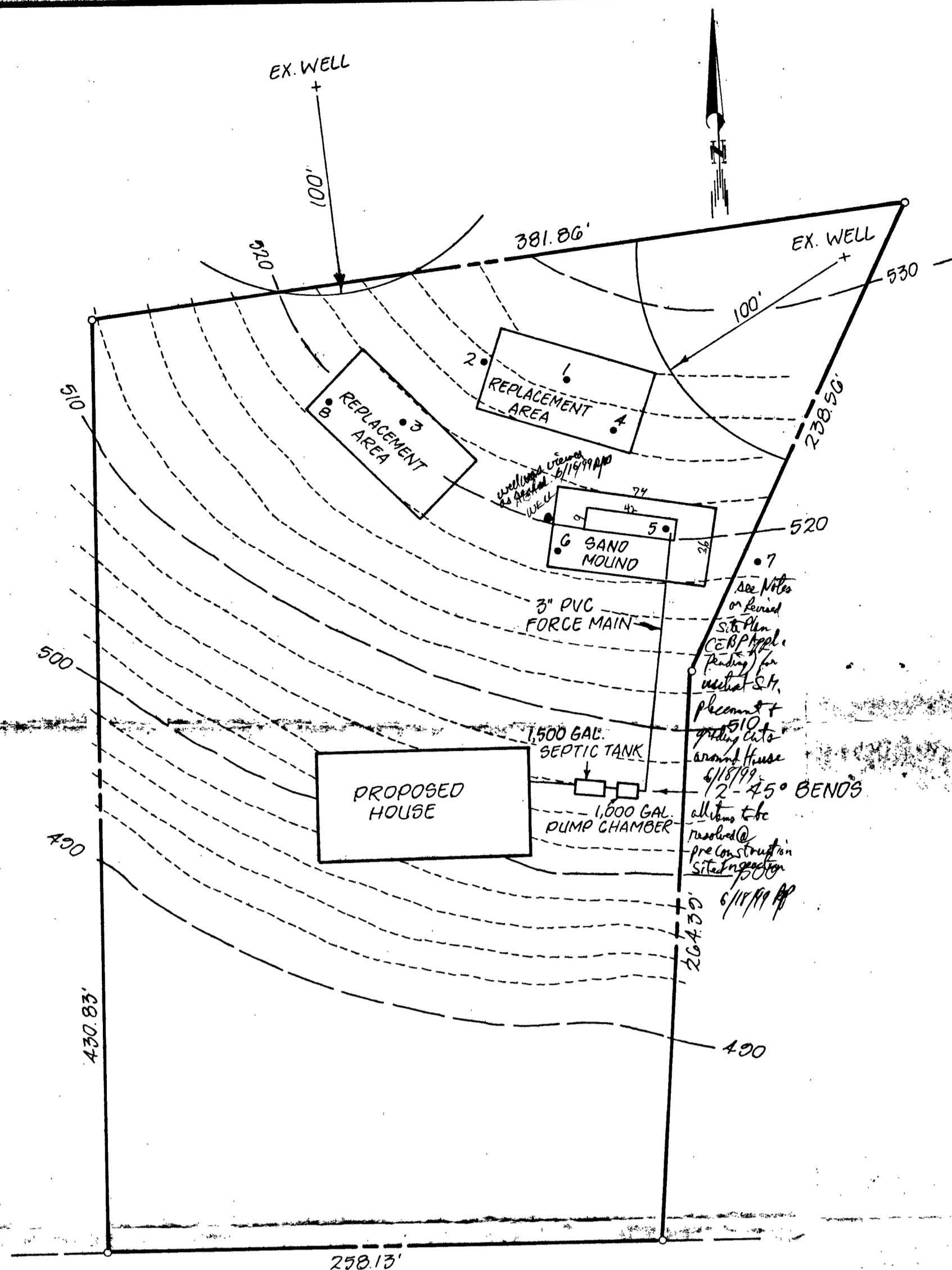
Highland Meadows
Sand Mound



Highland Meadows
Sand mound

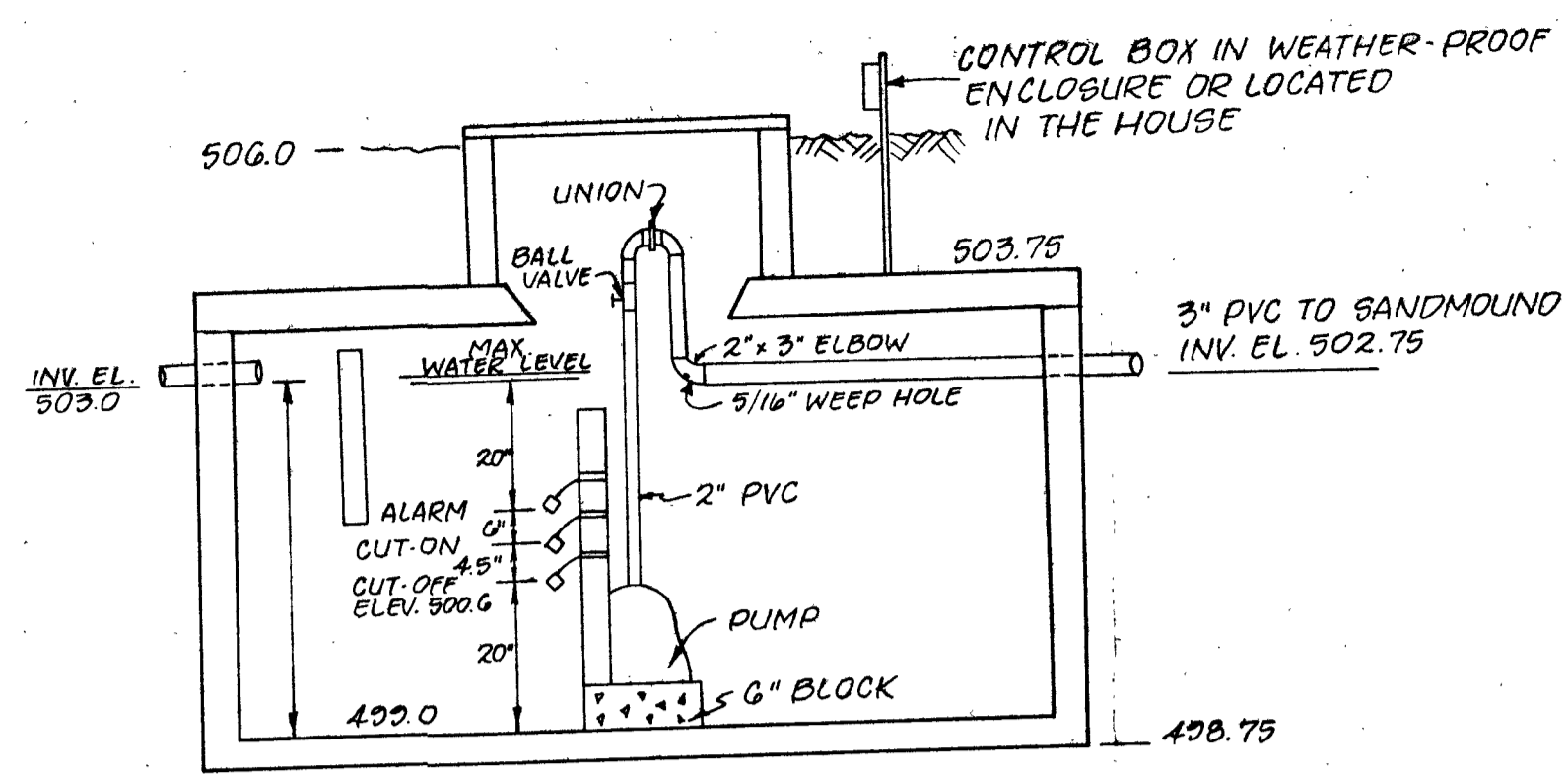


Highland Meadows
Sand mound

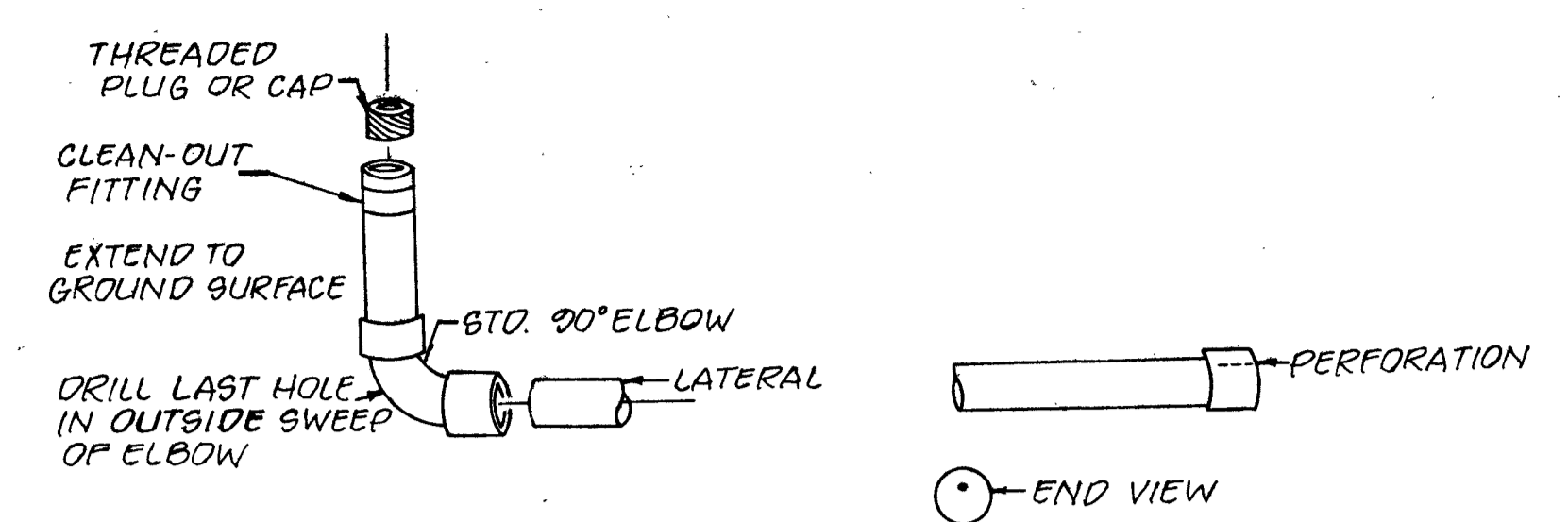


LONG LEAF COURT

SITE PLAN
Scale: 1" = 50'

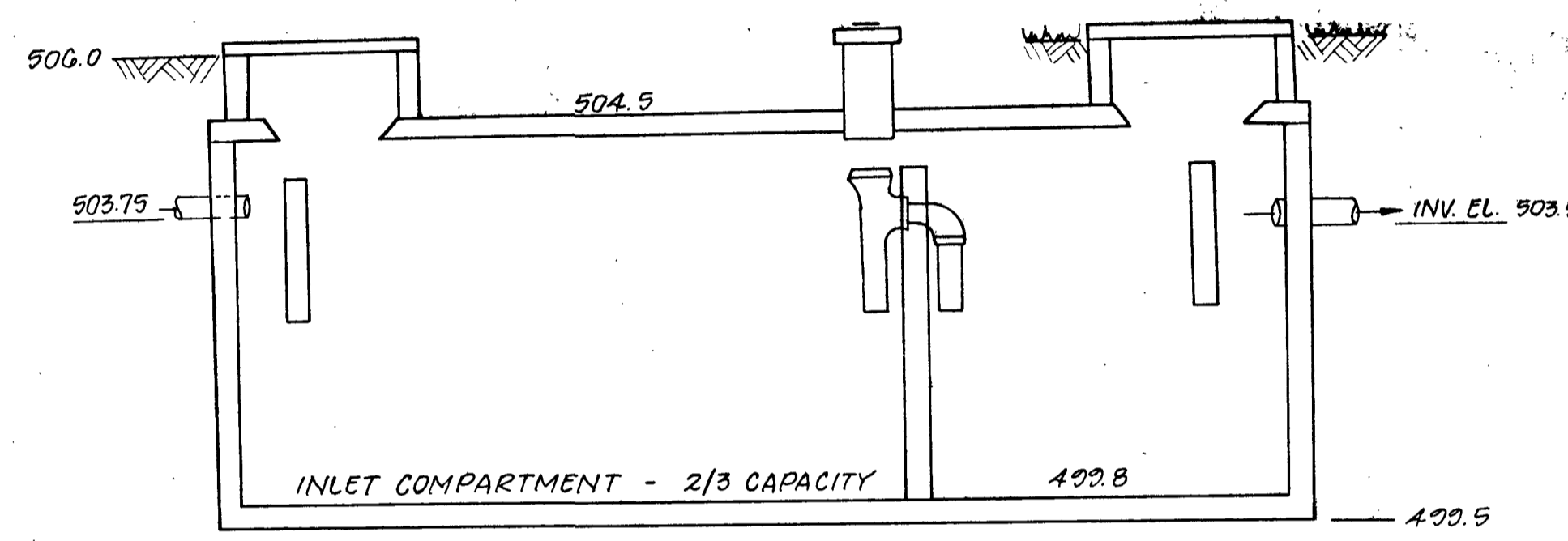


1,000 GALLON PUMP CHAMBER
Not To Scale

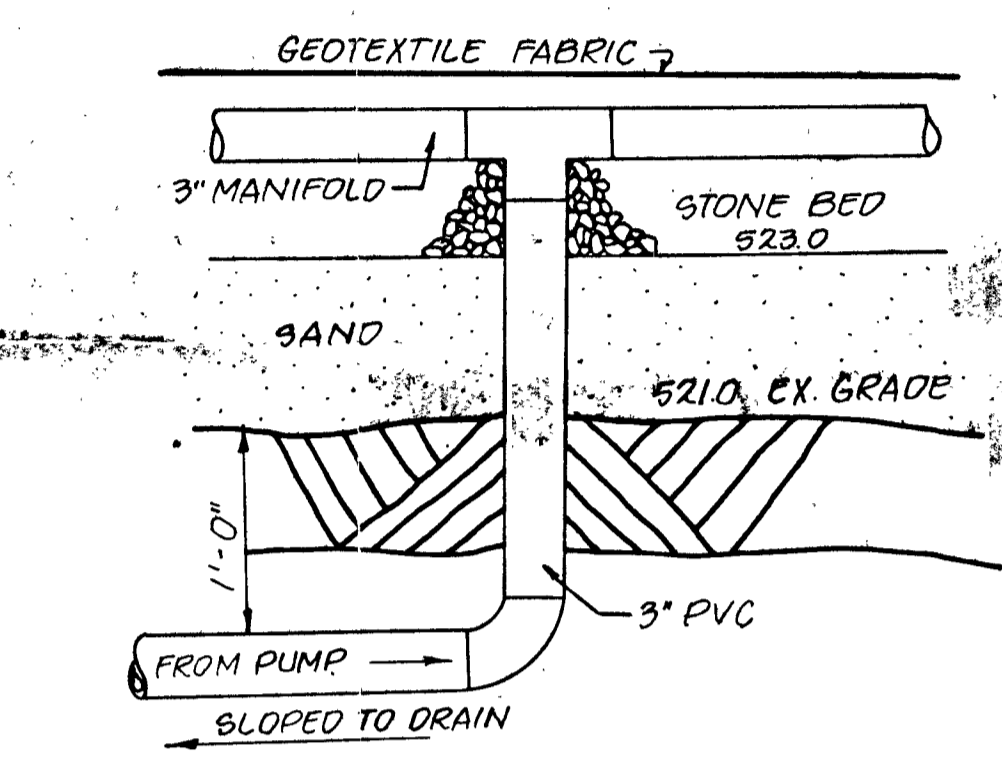


LATERAL END TURN-UP
USE ON LATERALS FARTHEST FROM PUMP
Not To Scale

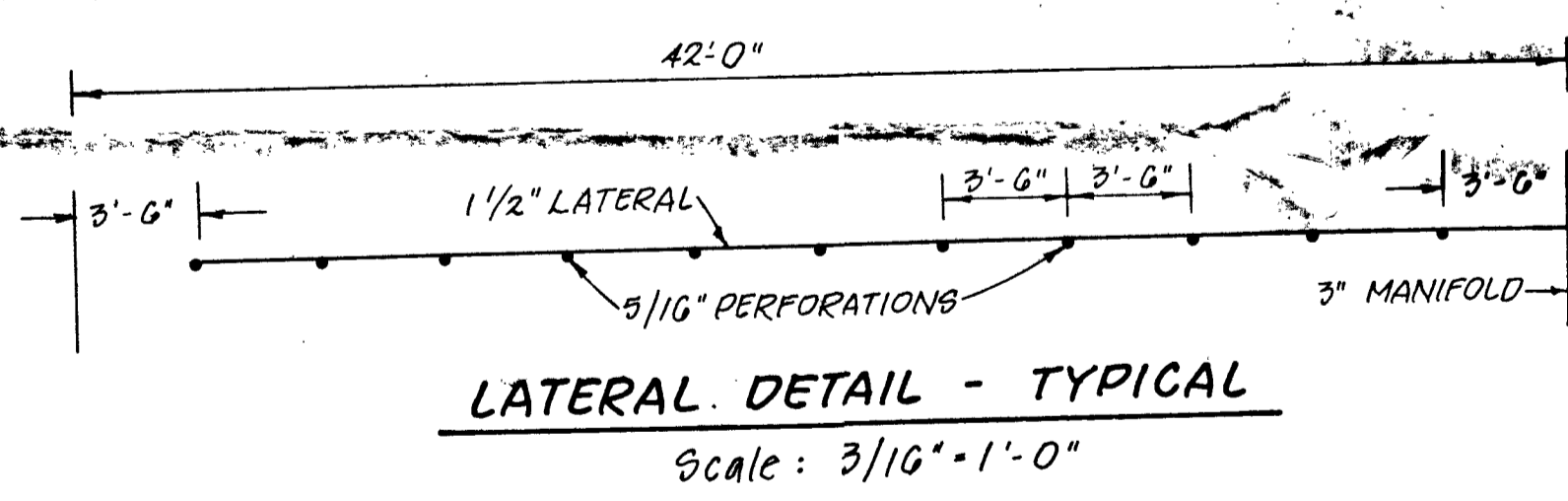
LATERAL END CAP
USE ON LATERALS NOT EQUIPPED WITH TURN-UP
Not To Scale



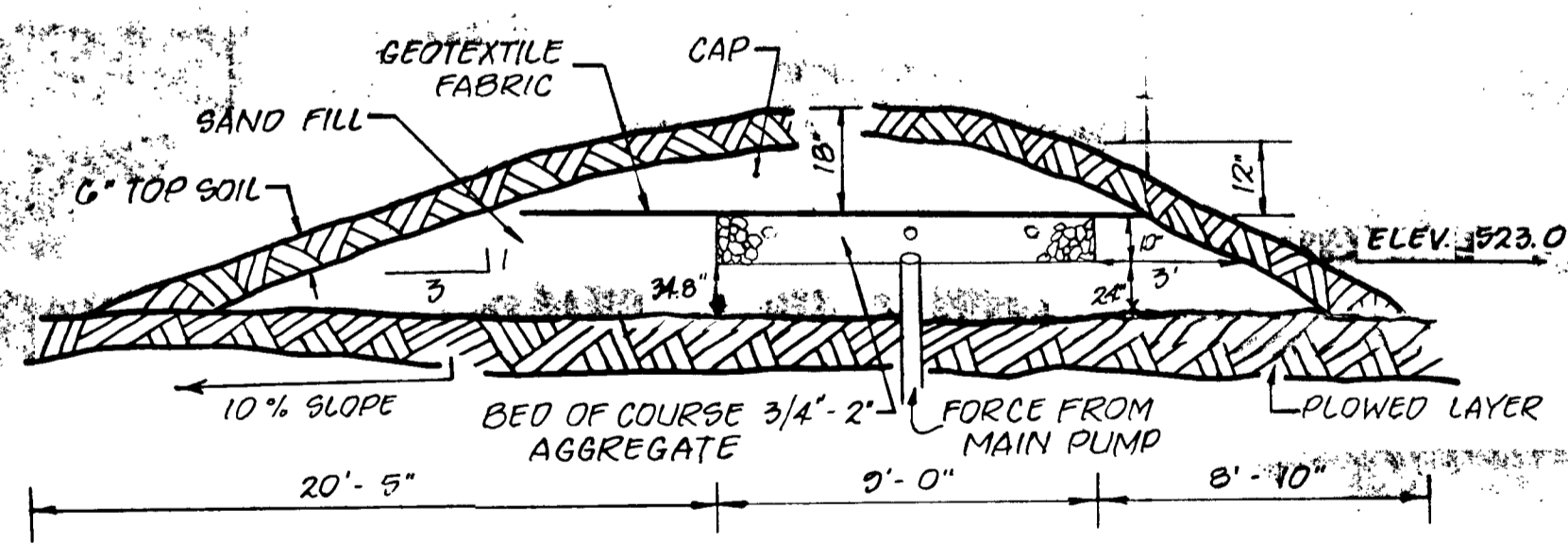
1,500 GALLON SEPTIC TANK
Not To Scale



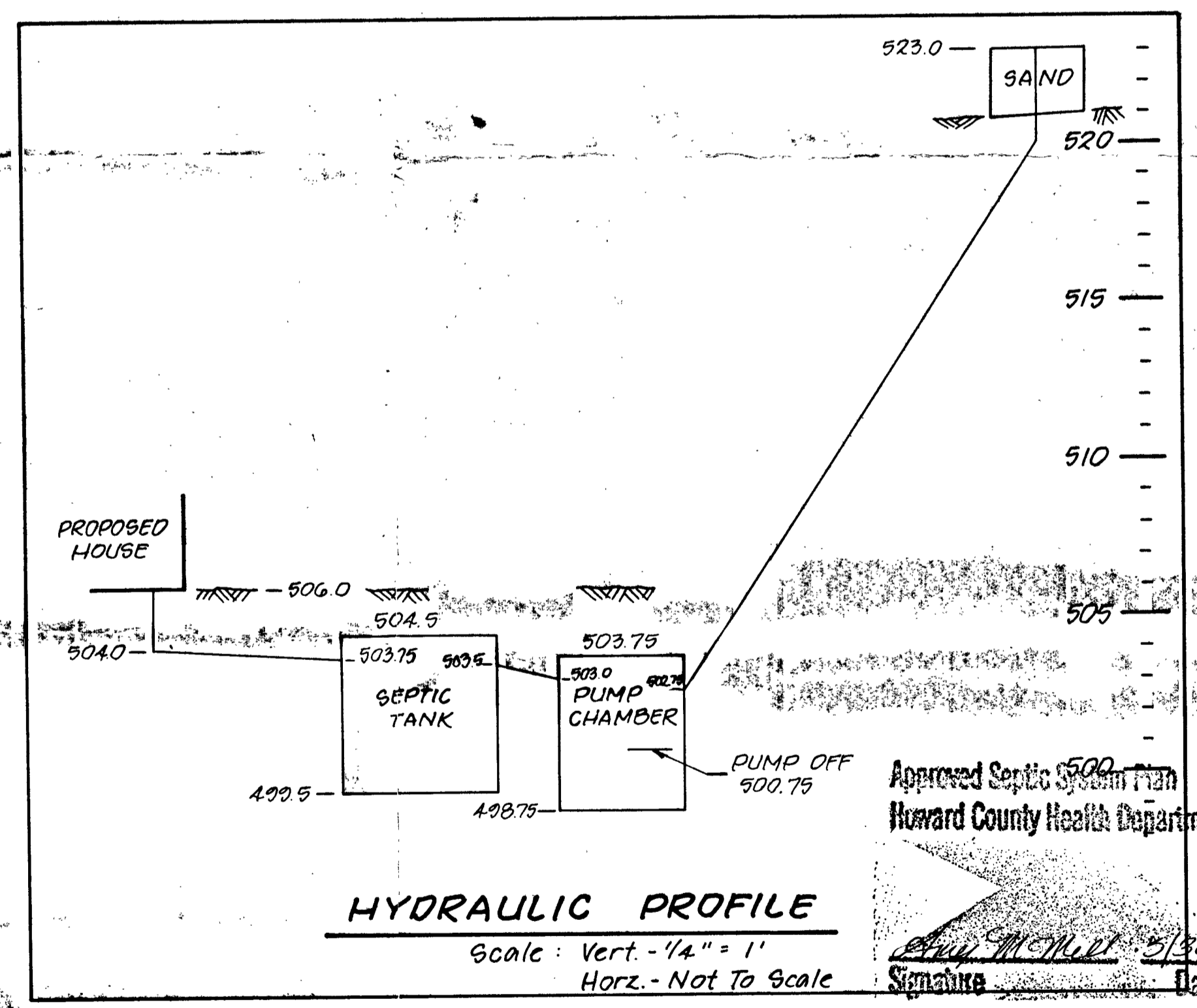
SUPPLY LINE / MANIFOLD DETAIL
Not To Scale



LATERAL DETAIL - TYPICAL
Scale: 3/16" = 1'-0"



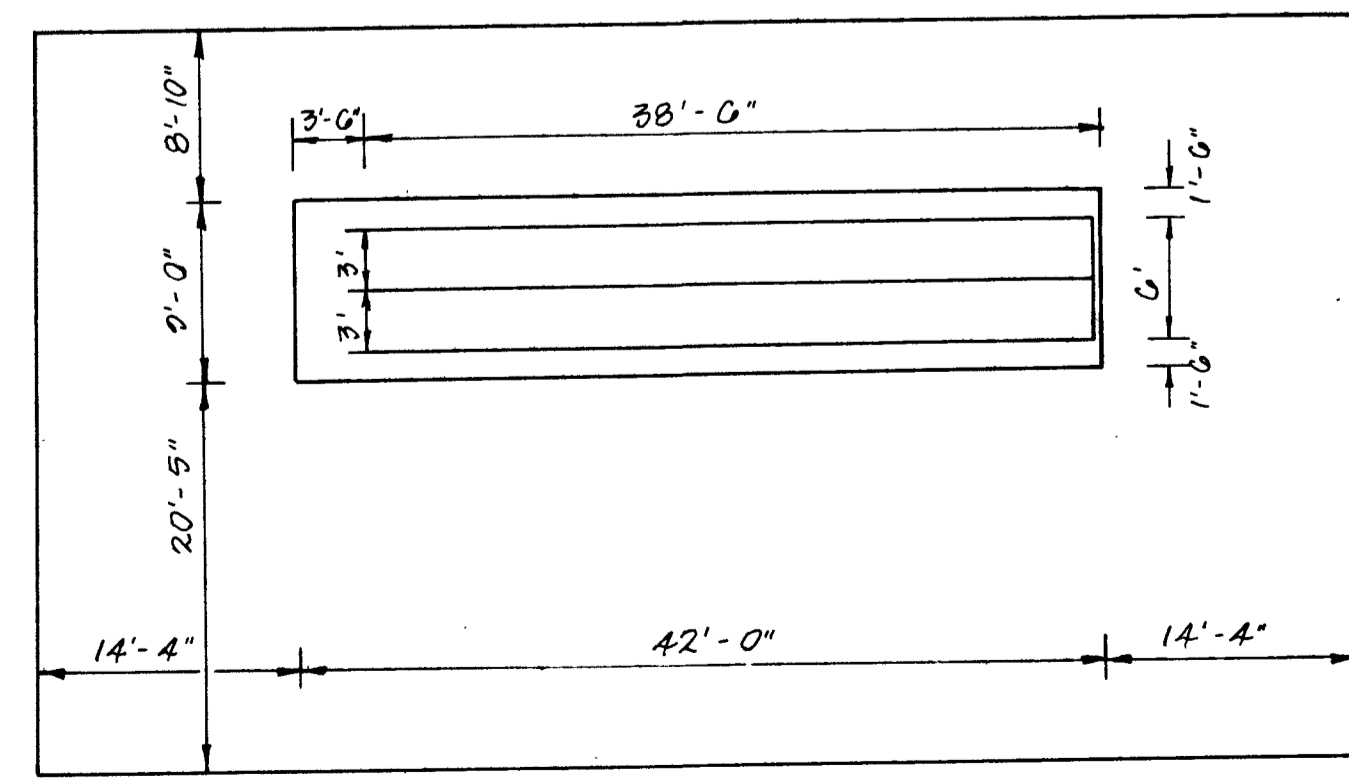
MOUND DESIGN
Not To Scale



HYDRAULIC PROFILE
Scale: Vert. - 1/4" = 1'
Horz. - Not To Scale

Approved Septic System Plan
Howard County Health Department

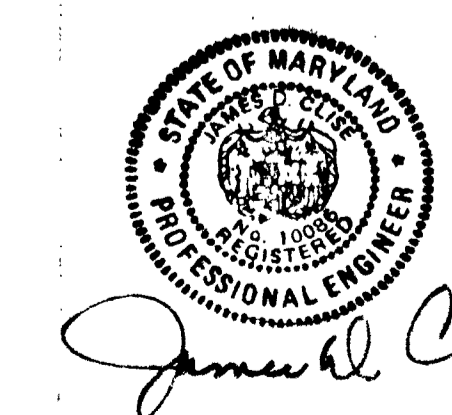
Signature: James H. Cliss
Date: 5/25/99



MOUND LAYOUT
Scale: 1" = 10'-0"





DESIGN CRITERIA
3 Bedroom House
Design flow - 450 gpd
1 - 1,500 gal. Compartmented Septic Tank (Top seam)
1 - 1,000 gal. Pump Chamber (Top seam)
110 gal. DOSE @ 54 gpm
Bed Area = 9' x 42' = 378 Sq. Ft.
Basal Area = 42' x 29.4' = 1,235 Sq. Ft.
Mound Area = 38.25' x 70.7' = 2,704 Sq. Ft.
TDH = 26.7'

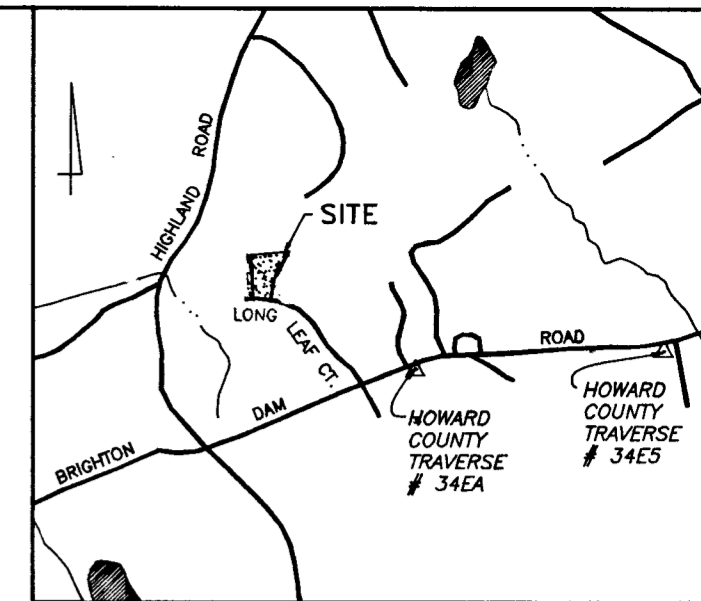
Note:
Written specifications accompany these plans and are to be followed by the Installer. Any proposed change to these plans or specifications is to be reviewed by the Engineer prior to submittal to the Health Department for final approval.



| | | |
|--|--|--------------------|
| APPROVED: FOR PRIVATE SEWERAGE SYSTEM BY THE HOWARD COUNTY HEALTH DEPARTMENT | | |
| COUNTY HEALTH OFFICER | DATE | |
| DATE | NO. | REVISION |
| S/E ENGINEERING, INC. | | |
| WESTMINSTER | | MARYLAND |
| SCALE: AS SHOWN | APPROVED BY: J.D.C. | DRAWN BY: ACK |
| DATE: JAN. 1999 | HIGHLAND MEADOWS - PARCEL A (LOT #2 - LONG LEAF COURT) | |
| WARREN & HELEN MATZEN SAND MOUND | | DRAWING NO. 1 OF 1 |

NOTES:

1. THE TOPOGRAPHY SHOWN HEREON WAS FIELD-RUN BY SHANABERGER & LANE ON SEPT. 23, 1998
2. THE BEARINGS, DISTANCES AND COORDINATES SHOWN HEREON ARE PER A BOUNDARY SURVEY BY SHANABERGER & LANE
3. TOTAL AREA DISTURBED: 20,100 ±
4.  DESIGNATES LIMIT OF DISTURBANCE
 DESIGNATES APPROVED SEPTIC AREA
 DESIGNATES PROPOSED SILT FENCE
 DESIGNATES WOODS LINE

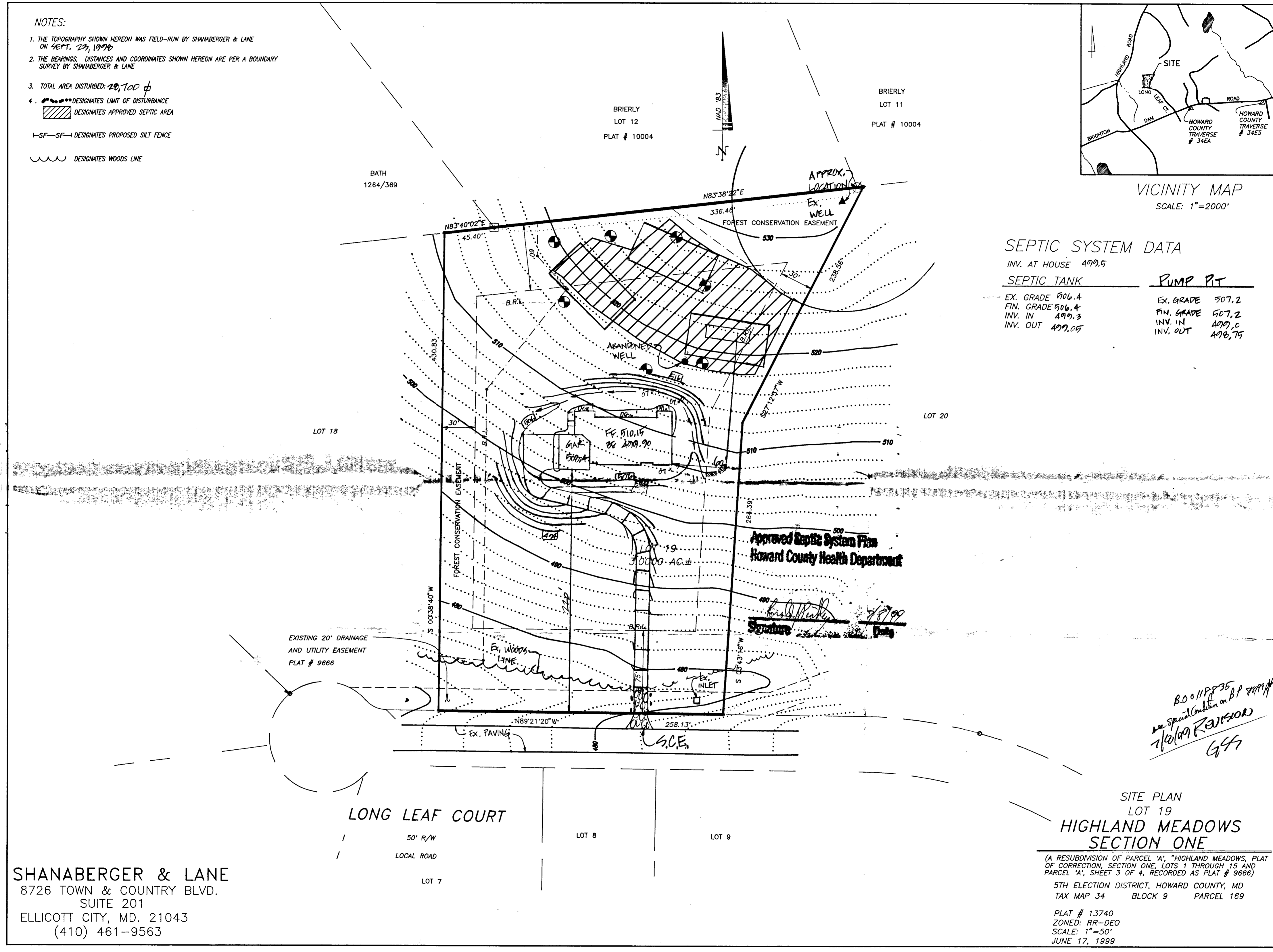


VICINITY MAP
SCALE: 1"=2000'

SEPTIC SYSTEM DATA

INV. AT HOUSE 499.5

| SEPTIC TANK | PUMP PIT |
|------------------|------------------|
| EX. GRADE 506.4 | EX. GRADE 507.2 |
| FIN. GRADE 506.4 | FIN. GRADE 507.2 |
| INV. IN 499.3 | INV. IN 499.0 |
| INV. OUT 499.05 | INV. OUT 498.75 |



EXISTING 20' DRAINAGE AND UTILITY EASEMENT PLAT # 9666

Approved Septic System Plan
Howard County Health Department

Handwritten signature
7/8/99

Handwritten notes:
B.O. 01/18/95
see Special Condition on B.P. 7/8/99
1/20/00 REVISION
GFF

LONG LEAF COURT

50' R/W
LOCAL ROAD
LOT 7

LOT 8 LOT 9

SITE PLAN
LOT 19
HIGHLAND MEADOWS
SECTION ONE

(A RESUBDIVISION OF PARCEL 'A', "HIGHLAND MEADOWS, PLAT OF CORRECTION, SECTION ONE, LOTS 1 THROUGH 15 AND PARCEL 'A', SHEET 3 OF 4, RECORDED AS PLAT # 9666)

5TH ELECTION DISTRICT, HOWARD COUNTY, MD
TAX MAP 34 BLOCK 9 PARCEL 169

PLAT # 13740
ZONED: RR-DEO
SCALE: 1"=50'
JUNE 17, 1999

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 201
ELLCOTT CITY, MD. 21043
(410) 461-9563

APPROVED 3/29/99

SANITARY/ENVIRONMENTAL ENG., INC.

Consulting Engineers
1414 Washington Road
WESTMINSTER, MARYLAND 21157
(410) 876-7740
FAX (410) 840-9924

JOB HIGHLAND MEADOWS

SHEET NO. LOT #2 HIGHLEAF COURT OF

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE 1/5/99

SCALE SHEET 1

3 Bd. Pm x 150 = 450 gpd.

Infiltrometer Test Results = 45-60 min

Bed area loading = 1.2 gal/day/sq. ft.

Basal loading = 0.5 gal/day/sq. ft.

Bed area required = 450/1.2 = 375 sq. ft.

Basal area required = 450/0.5 = 900 sq. ft.

Bed = 9' x 42' = 378 sq. ft.

10% slope

Sand depth high side = 24"

Low side = 24" + (0.1 x 108") = 24" + 10.8" = 34.8"

Side slope = $\frac{(24" + 34.8") + 28}{2} \times (3) = \frac{(58.8 + 28)(3)}{2} = 172"$

172" = 14'-4"

Up slope = (24" + 22")(3)(0.77) = 106" = 8'-10"

Down slope = (34.8 + 22)(3)(1.44) = 245" = 20'-5"

Basal area = (42')(9' + 20'-5") = 42' x 29.42' = 1235 sq. ft.

Mound length = 42' + 14'-4" + 14'-4" = 70'-8"

Mound width = 9' + 8'-10" + 20'-5" = 38'-3"

Dose = 3 - 1/2" laterals 38.5' x 5 = 577' of 1/2"

10.6 gal/100' = 10.6 x 5.77 = 61.2 gal

3" F.M. - 12.5' = 1.25 x 38.4 gal/100 ft = 48 gal

Dose = 61.2 + 48 = 109.2 (110) gal.

110 gal / 7.48 = 14.7 cu ft. - Tank bottom area = 40 sq. ft.

14.7 cu ft / 40 sq. ft. = 0.36' = 4.5"

SANITARY/ENVIRONMENTAL ENG., INC.

Consulting Engineers
1414 Washington Road
WESTMINSTER, MARYLAND 21157
(410) 876-7740
FAX (410) 840-9924

JOB HIGHLAND MEADOWS - PCL A

SHEET NO. Lot 02 HIGHLAND COURT

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

Pumping rate = 3 laterals x 11 perforations @ 1.63 gpm
 $3 \times 11 \times 1.63 = 54 \text{ gpm}$

TDH -

Elev. difference = $523' - 500.6' = 22.40'$

Distal Pressure = $2.00'$

F = 25 equiv. ft - 3" @ 4'/100' = $2.30'$

F = 4 x .25 = 1.0' 26.70' TDH

F = 162 equiv. ft - 3" @ 0.81'/100'

$1.62 \times 0.8 = 1.3'$

Total F = $1.0 + 1.3 = 2.3'$

Emergency Storage - in pump chamber - above alarm -

$20.5" = 1.7' \times 40 \text{ sq ft tank bottom area} = 68.3 \text{ cu ft}$

$68.3 \text{ cu ft} \times 7.48 = 511 \text{ gal (450 Required)}$

Pump - to remove 54 gpm against 26.7' TDH

Goulds WE 0712 H, 3/4 hp, 1 ph - 230V,

or equal.

Warren & Helen Matzen
Highland Meadows
Parcel A #2 Longleaf Ct.
Clarksville, MD 21029

SPECIFICATIONS SAND MOUND

1. Design Criteria

Design Flow - 450 GPD
1-1500 Gal. Compartmented Top Seam Septic Tank
1-1,000 Gal. Top Seam Pump Chamber
110 Gal. Dose @54 GPM
Bed Area - 9' x 42' = 378 Sq. Ft.
Mound Area - 28' x 63' = 2704 Sq. Ft.
TDH - 26.7'

2. Sewage Treatment

__One 1500 gallon compartmented septic tank is to be installed in series with a 1,000 gallon pump chamber. The pump chamber is to provide 20" of depth for pump submergence, 4.5" for pump cycle dose, and 6" for the high water alarm. The additional capacity of the pump chamber will provide 511 gallons of emergency storage above the high water alarm.

The above capacities and tank measurements and elevations as shown on the drawing are based upon septic tanks and pump chambers as manufactured by Mayer Bros., Elkridge, MD

3. A quick disconnect union and ball valve are to be provided on the pump discharge line as shown on the drawing.
4. Pressure piping from the pump chamber to the laterals is to be 3" Schedule 40 PVC.
5. Distribution laterals are to be 1-1/2" Schedule 40 PVC.
6. The pressure supply line, from the pump chamber to the absorption bed, is to be installed with a continuous slope back to the pump chamber to assure complete drainage of effluent from the supply line following each pump cycle
7. A submersible pump to remove 54 GPM against 26.7' TDH is to be provided. The pump should be a Goulds Model WE O7 H, 3/4 hp, 230v, single phase, or equal. The

pump control box is to be located above ground in a weatherproof enclosure or in the house.

8. The high water level sounding alarm is to be on a separate circuit. The alarm is to be located in the house.

9. Sand is to have an effective size between 0.25 and 0.50 mm with a uniformity coefficient no greater than 3.5. A list of suppliers of approved sand is available upon request from the Individual Wells & Septics Program, Md Department of the Environment.

10. Gravel for the bed is to be 3/4" to 2" in diameter, washed and free of fines. Gravel is to be inspected and approved prior to placement. Following covering of the laterals with gravel, a layer of geotextile fabric is to be applied. Crushed limestone is not an acceptable substitute for gravel.

11. A test of the pumping system and distribution piping is required prior to covering the system.

12. One and one half inch (1-1/2") laterals are to be of the lengths shown on the drawing with 5/16" perforations 3.5' apart.

13. The attached construction procedures as prepared by the Individual Wells & Septics Program, MD Department of the Environment, are included as a part of these specifications.

CONSTRUCTION PROCEDURES

5.1. GENERAL

Proper construction is extremely important if the sand mound is to function as designed. Installation of a sand mound system is prohibited when soils are frozen. Construction of the mound should not occur if the soil is too wet. Compaction and puddling of the soil in the location of the mound and downslope should be avoided. Soil is too wet for construction of the mound if a sample, taken anywhere within the upper eight inches, when rolled between the hands forms a wire. If the sample crumbles, the soil is dry enough for construction to proceed.

5.2. EQUIPMENT

The following special equipment is recommended:

1. A small track-type tractor with blade for placing and spreading the sand fill.
2. A cordless drill for drilling holes in the pipe on-site.
3. A moldboard or chisel plow for plowing the soil within the perimeter of the mound. A rototiller may be used on structureless soils with USDA sand textures.
4. A rod and level for determining bed elevations, slope on pipes, outlet elevation of septic tank, slope of site, etc.

5.3. MATERIALS

The following specifications are required:

1. Sand fill material must be approved by the local Approving Authority prior to hauling to the site. Submit a sample to the local Authority for analyses at least three weeks in advance of construction or select a sand fill from the list of potential sand suppliers. If a sample is submitted for analyses a fee will be charged. Sand fill shall have an effective size between 0.25 mm and 0.5 mm with a uniformity coefficient of 3.5 or less. A copy of the receipt from the sand supplier showing the company name, address, phone number, date and product name will be required.
2. Aggregate shall be clean aggregate free of fines and between 3/4 to 2 inches in diameter.
3. Geotextile fabric shall be of a type approved by the Approving Authority.
4. Cap material shall be soil relatively free of coarse fragments and preferably a clay loam or silt loam texture.

5.4. TANK INSTALLATION AND SITE PREPARATION

- 5.4.1 Locate and rope-off the entire sewage disposal area to prevent damage to the area during other construction activity on the site. Vehicular traffic over the disposal area should be prohibited to avoid soil compaction.
- 5.4.2 Install septic tank(s) and pumping chamber(s) and pump as shown on the drawings. Call for inspection.
- 5.4.3 Stake out the initial and recovery mound perimeters in their proper orientation as shown in the drawings. Reference stakes offset from the mound corner stakes are recommended. Locate the upslope edge of the absorption bed within the mound and determine the ground elevation at the highest location. Reference this elevation to a benchmark for future use. This is necessary to determine the bottom elevation of the absorption bed.
- 5.4.4 Excess vegetation should be cut and removed. Trees should be cut at ground level and stumps left in place.
- 5.4.5 Determine the location where the force main from the pumping chamber will connect to the distribution network manifold within the mound.
- 5.4.6 Install the force main from the pumping chamber to the proper location within the mound. Pipe should be laid with uniform slope back to the chamber so that it drains after dosing. Cut and stub off pipe one foot below existing grade within the proposed perimeter of the initial mound. Backfill trench and compact to prevent seepage along the trench.
- 5.4.7 Plow the soil within the perimeter of the mound to a depth of about eight inches, if the soil is not too wet. Moldboard or chisel plows may be used. Plowing should be done along the contour, throwing soil upslope. Use a two bottom or larger Moldboard plow. In wooded areas with stumps, roughening the surface to a depth of four to six inches with backhoe teeth may be satisfactory. However, all work should be done from the upslope or sides of the mound if at all possible. Rototilling may be used on soils with USDA textures of sand. After plowing, all foot and vehicular traffic shall be kept off the plowed area.

5.5. FILL PLACEMENT

- 5.5.1 Relocate and extend the force main several feet above the ground surface.
- 5.5.2 Place the approved sand fill material on the upslope edge(s) of the plowed area. Keep delivery trucks off the plowed area. Minimize traffic on the downslope side. Fill should be placed and spread immediately after plowing. Move the fill

material into place using a small track-type tractor with a blade. Work from the end and upslope side. Always keep a minimum of six inches of material beneath the tracks of the tractor to minimize compaction of the natural soil. The fill material should be worked in this manner until the height of the fill reaches the elevation of the top of the absorption bed.

- 5.5.3 With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed and check it for proper elevation. The bed should be level for proper functioning of the mound. Call for inspection.
- 5.5.4 Shape the sides of the sand fill to design slope (ie., 3:1 or flatter).

5.6. **BED AND DISTRIBUTION NETWORK**

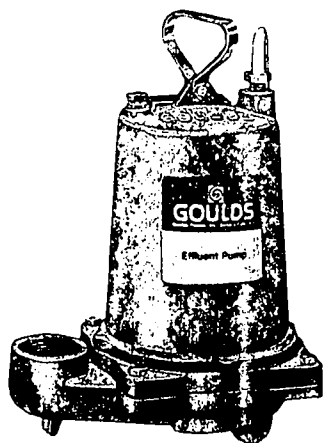
- 5.6.1 Carefully place the coarse aggregate in the bed. Do not create ruts in the bottom of the bed. Level the aggregate to a minimum depth of six inches.
- 5.6.2 The distribution network is assembled in place setting the manifold to ensure draining the laterals between doses. The laterals should be laid level with the holes directed downward. Call for inspection. Test the pumping chamber and distribution network with clean water.
- 5.6.3 Place additional aggregate to a depth of at least two inches over the crown of the pipe.
- 5.6.4 Place the approved geotextile fabric over the aggregate bed. The fabric may extend beyond the bed over the sand fill.

5.7. **COVER MATERIAL**

- 5.7.1 Place a finer textured soil material such as sandy clay loam, clay loam, or silt loam on top of the fabric over the bed. The minimum depth of this cap shall be six inches at the outer edges of the bed and 12 inches along the center.
- 5.7.2 Place a minimum of six inches of good quality topsoil over the entire mound surface including the sideslopes. Call for final inspection.

5.8. **VEGETATION**

- 5.8.1 Fertilize, lime, seed and mulch the entire surface of the mound. Grass mixtures adapted to the area should be used.
- 5.8.2 Consult the county extension agent or Soil Conservation Service for recommendations.



Goulds Submersible Effluent Pump

MODEL

3885

CANADIAN STANDARD ASSOCIATION



APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump:

- Solids handling capabilities: 3/4" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 128 GPM.
- Total heads: up to 123 feet TDH.
- Mechanical seal: silicon carbide-rotary seat/silicon carbide-stationary seat, 300 series stainless steel metal parts, BUNA-N elastomers.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- Fasteners: 300 series stainless steel.
- Capable of running dry without damage to components.

Motor:

- Single phase: 1/3 HP, 115 or 230 V 60 Hz, 1750 RPM; 1/2 HP, 115 V, 60 Hz, 3500 RPM; 1/2 HP - 1 1/2 HP, 230 V, 60 Hz, 3500 RPM. Built-in overload with automatic reset. Class B insulation.

- Three phase: 1/2 HP - 1 1/2 HP 200/230/460 V, 60 Hz, 3500 RPM. Class B insulation, overload protection must be provided in starter unit.
- Shaft: threaded, 400 series stainless steel.
- Bearings: ball bearings upper and lower.
- Power cord: 20 foot standard length (optional lengths available). Single phase: 1/3 and 1/2 HP - 16/3 SJTO with three prong plug. 3/4-1 1/2 HP - 14/3 STO with bare leads. Three phase: 1/2-1 1/2 HP - 14/4 STO with bare leads. On CSA listed models - 20 foot length SJTW and STW are standard.

FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge adaptable for slide rail systems.

Mechanical Seal: Silicon carbide vs. silicon carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant stainless steel. Threaded design. Locknut on three phase models to guard against component damage on accidental reverse rotation.

Motor: Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage.

Bearings: Upper and lower heavy duty ball bearing construction.

Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking.

O-ring: Assures positive sealing against contaminants and oil leakage.

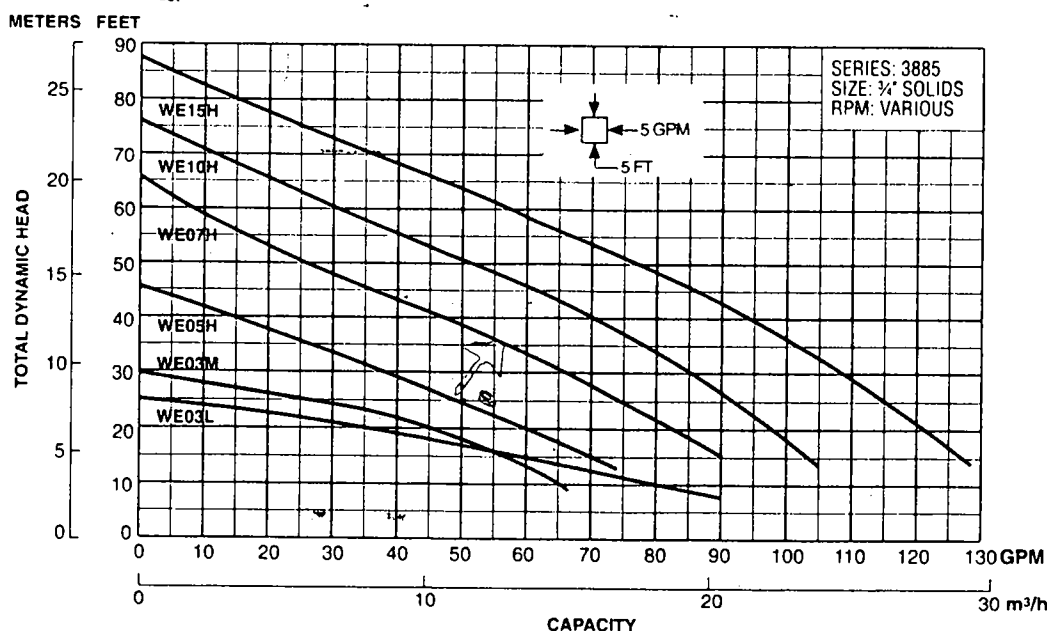


TABLE 3.1

EQUATIONS FOR CALCULATING SAND MOUND DIMENSIONS

Absorption bed ft.² (A × B) = $\frac{\text{Design flow}}{1.2 \text{ gpd/ft.}^2} = \frac{450 \text{ gpm}}{1.2 \text{ gpd/ft.}^2} \text{ ft.}^2 = 375 \text{ ft.}^2 \text{ of gravel bed}$

Bed length (B) = 42 ft. (21 ft. to 101 ft. dependent on site)

Bed width (A) = $\frac{\text{Bed } 375 \text{ ft.}^2}{B \text{ } 42 \text{ ft.}} = \underline{8.9}$ ft. (15 ft. or less)

Upslope sand fill depth (D) = 48 in. - $\frac{24}{Z}$ in. = 24 in. (12 in. min.)

Downslope sand fill depth (E) = $[12A \times \% \text{ slope}] + D$ in. = $[100 \times .10] + 24 = \underline{34.8}$ in.

Cap + topsoil at bed center (H) = 18 in.

Cap + topsoil at bed edge (G) = 12 in.

Total Bed Depth (F) = 10 in.

Sideslope setback (K) = $\frac{34.8 + 24}{2} + 28 \text{ in.}] \times 3 = \underline{172.2}$ in. 14.35'

Upslope setback (J) = $(22 \text{ in.} + \frac{24}{Z}) \times 3 \times \text{upslope corr. factor } .77 = \underline{106.26}$ in. 8.85'

Downslope setback (I) = $(22 \text{ in.} + \frac{34.8}{Z}) \times 3 \times \text{downslope corr. factor } 1.44 = \underline{245.38}$ in. 20.5'

Total Width of Mound (W) = 12A + J + I = $\frac{20'5''}{8'10''} = \underline{38'3''}$ in.

Total Length of Mound (L) = 12B + K + K = $\frac{42'}{14'4''} = \underline{70'8''}$ in.

DISTRIBUTION SYSTEM

$$\frac{\text{Absorb. bed length} - 1}{2} = \frac{38'6'' - 1}{2}$$

Dose

$$116 \times 450 = 75'$$

$$\Delta_{\text{distrib}} = 120 + 5 + 5 = \frac{135'}{100} = 1.35 \times 38.4 = 51.84 \text{ gallons}$$

$$\text{Laterals} - 38.5 \times 3 = 115.5 \times 5 = 577.5$$

SEPTIC SPECIFICATIONS WORK-SHEET

SUBDIVISION: _____

A: 510220

STREET NAME: Longleaf Dr

LOT NUMBER: 2

AVERAGE PERCOLATION RATE: _____ SQUARE FEET PER BEDROOM: _____

NUMBER OF BEDROOMS: _____ LINEAR FEET OF TRENCH PER BEDROOM: _____

TOTAL LINEAR FEET OF TRENCH: _____ SEPTIC TANK CAPACITY: _____

TOP SEAMED TANK REQUIRED? YES NO

COMPARTMENTED TANK REQUIRED? YES NO

TRENCH DIMENSIONS: Trench to be _____ feet wide. Inlet _____ feet below original grade. Bottom maximum depth _____ feet below original grade. Effective area begins at _____ feet below original grade. _____ feet of stone below distribution pipe.

===== PUMPED SYSTEM PROPOSED: YES NO

PUMPED SEPTIC SYSTEM DETAILS: _____ gallon pump chamber. YES NO Top seamed pump chamber required?

Note 1: Septic pump details to be provided by installer prior to issuance of septic permit.

Note 2: Pump performance test is necessary prior to Health Department approval of pumped septic system.

LOCATION: _____

ADDITIONAL NOTES: _____

Reviewer: _____

Date: _____

CONVENTIONAL SAND SYSTEM MOUND ONLY

8/13/98
10:00

APPLICATION

PERCOLATION TESTING

A 510595

P _____

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
3525-H ELLICOTT MILLS DRIVE/ELLICOTT CITY, MARYLAND 21043
TELEPHONE: 313-2640

DISTRICT _____

DATE 7/30/98

TO: THE COUNTY HEALTH OFFICER
ELLICOTT CITY, MARYLAND

I HEREBY APPLY FOR THE NECESSARY TEST PRIOR TO APPLICATION FOR PERMIT TO CONSTRUCT (OR RECONSTRUCT) A SEWAGE DISPOSAL SYSTEM.

PROPERTY OWNER Warren and Helen Matzen

ADDRESS 6813 Maiden Lane, Clarksville MD 21029 PHONE 301 854-3366

AGENT OR PROSPECTIVE BUYER Warren Matzen

ADDRESS 6813 Maiden Lane, Clarksville, MD 21029 PHONE 301 854-3366

PROPERTY LOCATION:

SUBDIVISION Highland Meadows LOT NO. Part of parcel A

ROAD AND DESCRIPTION Highland and Brighton Dam Roads (13336 Long Leaf Drive)

Property located 3 blocks down Long Leaf Court on Right

TAX MAP 34 PARCEL # 169

SIZE OF LOT 3 acres TYPE BLDG. Single family dwelling

PERMITS SIGNATURE
AND RETURNED 7-8-99
Serial # B 10118833

(SINGLE FAMILY DWELLING OR COMMERCIAL)

THE SYSTEM INSTALLED UNDER THIS APPLICATION IS ACCEPTABLE ONLY UNTIL PUBLIC FACILITIES BECOME AVAILABLE. I FULLY UNDERSTAND THE

FEE CONNECTED WITH THE FILING OF THIS PERC TEST APPLICATION IS NON-REFUNDABLE UNDER ANY CIRCUMSTANCES. I ALSO AGREE TO

COMPLY WITH ALL M.O.S.H.A. REQUIREMENTS IN TESTING THIS LOT.

W Matzen
(SIGNATURE OF APPLICANT)

APPROVED BY _____ FOR _____ DATE _____

DISAPPROVED BY _____ FOR _____ DATE _____

HOLD PENDING FURTHER TESTS _____

REASONS FOR REJECTION OR HOLDING _____

PERCOLATION TEST PLAT/PRELIMINARY PLAT - TITLE OR I.D. # _____ DATE _____

SITE DEVELOPMENT PLAN/FINAL PLAT - TITLE OR I.D. # _____ DATE _____

THIS IS NOT A PERMIT

COUNTY #

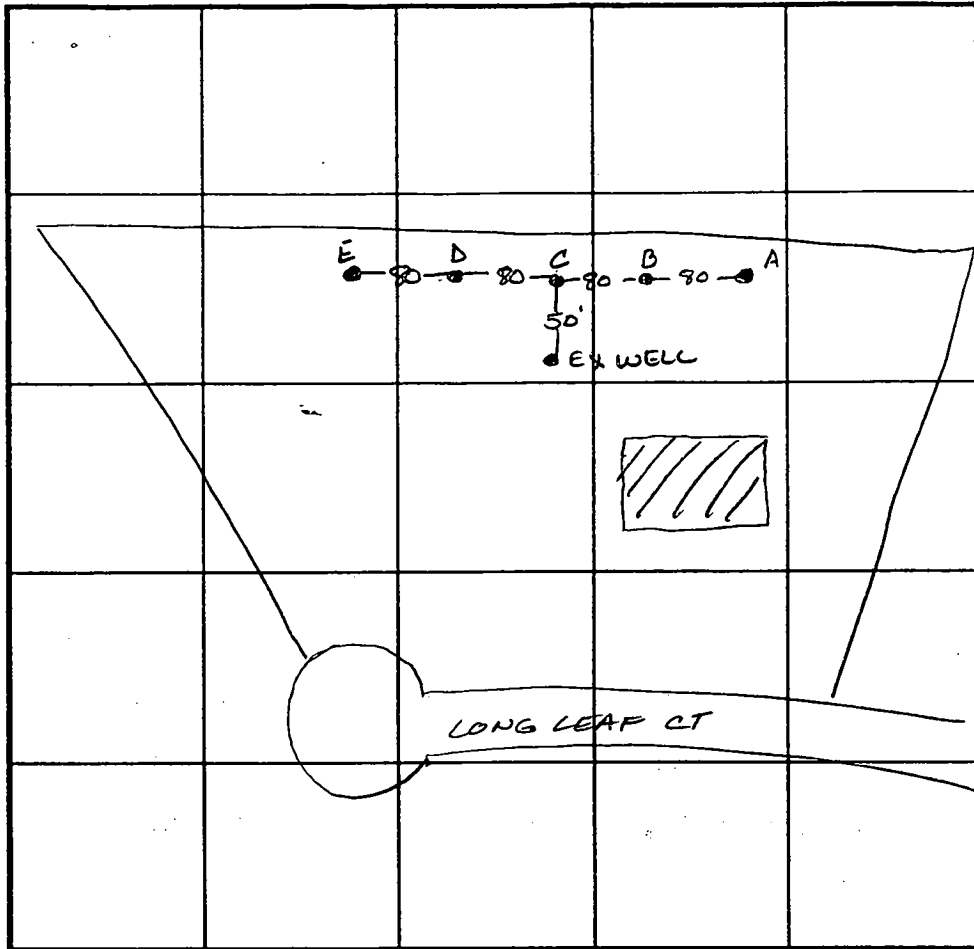
SOIL PROFILE

0'

Empty rectangular box for soil profile notes.

Empty rectangular box for soil profile notes.

Empty rectangular box for soil profile notes.



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

SOIL PROFILE

0'

Empty rectangular box for soil profile notes.

| DATE | TEST NO. | DEPTH | PRE-WET | | TEST - 1" DROP | | TIME |
|---------|----------|----------------------------|---------|------|----------------|------|------|
| | | | START | STOP | START | STOP | |
| 8-26-98 | A thro E | Refusal @ 4-5' | | | | | |
| | | in all test | | | | | |
| | | holes - insufficient depth | | | | | |
| | | to bedrock - all holes — | | | | | F |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

REMARKS _____

TYPE OF SOIL _____

TESTED BY Amy McMillen ALSO PRESENT Warren Matzen

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME _____ TRENCH WIDTH _____

INLET DEPTH _____ MAXIMUM BOTTOM DEPTH _____ SQ. FT./BEDROOM _____

Howard County Health Department

To: Army

Highland Meadows
Post Parcel "A"

Most holes are satisfactory.

Hole #9 is slightly shallow (but still realistically functional) as the test hole is near the side slope it cannot get much drainage anyway. Treat these 3 possible sites as acceptable and proceed with my recommendation but check with C.W. before sending out the O.K.

From: Ken

Date: 10/15/77

Highland Meadows 3 - Pres. Pcd. "A" - Proposed Lot 2

Testing
10-6-98

□ 18"

10:12 8" 26 min

10:15 7¹¹/₁₆ 32 min

10:17 7⁹/₁₆ 58 min

10:29 7⁵/₁₆ 42 min

10:34 7²/₁₆ 56 min

10:42 6¹⁴/₁₆ 52 min

10:53 6¹¹/₁₆ 53 min

11:01 6⁸/₁₆ 56 min

11:15 6⁴/₁₆ 56 min

11:22 6²/₁₆ 52 min

11:35 5¹⁴/₁₆

repour

11:35 8" 53 min

11:45 7¹³/₁₆ 54 min

12:02 7⁸/₁₆

Typical Soil Profile

0-20" bright orange
SiCLM
30% Rx frags
friable

20"-42" bright orange
SiLM
30-40% frags

42"-60" yellow
orange
SiSalm
60-70%
shale

Highland Meadows - Pres Pd. "A" - Proposed Lot 2

2 18"

| | | | |
|---------|-------|---------------------------------|--------|
| 10-6-98 | 10:19 | 8 | 22 min |
| | 10:30 | 7 ⁸ / ₁₆ | 40 min |
| | 10:35 | 7 ⁶ / ₁₆ | 42 min |
| | 10:43 | 7 ³ / ₁₆ | 40 min |
| | 10:48 | 7 ² / ₁₆ | 32 min |
| | 10:54 | 6 ¹⁵ / ₁₆ | 64 min |
| | 11:02 | 6 ¹³ / ₁₆ | 60 min |
| | 11:21 | 6 ¹⁰ / ₁₆ | 54 min |
| | 11:38 | 6 ⁵ / ₁₆ | 64 min |
| | 11:42 | 6 ⁴ / ₁₆ | 60 min |
| | 12:03 | 6 ¹ / ₁₆ | 60 min |
| | 12:22 | 5 ¹² / ₁₆ | |

3 18"

| | | | |
|--|-------|----------------------------------|--------|
| | 10:41 | 10 ¹⁴ / ₁₆ | 40 min |
| | 10:46 | 11 | 48 min |
| | 10:55 | 11 ³ / ₁₆ | 64 min |
| | 11:03 | 11 ⁵ / ₁₆ | 64 min |
| | 11:11 | 11 ⁷ / ₁₆ | 48 min |
| | 11:20 | 11 ¹⁰ / ₁₆ | 64 min |
| | 11:40 | 11 ⁹ / ₁₆ | 64 min |
| | 11:44 | 12 | 64 min |
| | 12:04 | 12 ⁵ / ₁₆ | 60 min |
| | 12:23 | 11 | |

Highland Meadows - Pres Pd "A" - Proposed Lot 2

10-6-98

4 18"

| | | |
|-------|----------------------------------|--------|
| 11:17 | 10 ² / ₁₆ | 24 min |
| 11:23 | 10 ⁶ / ₁₆ | 40 min |
| 11:33 | 10 ¹² / ₁₆ | 44 min |
| 11:44 | 11 | 72 min |
| 12:02 | 11 ⁴ / ₁₆ | 57 min |
| 12:20 | 11 ⁹ / ₁₆ | |

repour

| | | |
|-------|---------------------------------|--------|
| 12:39 | 80 | 58 min |
| 12:50 | 7 ¹³ / ₁₆ | 73 min |
| 1:13 | 7 ⁸ / ₁₆ | 69 min |
| 1:26 | 7 ⁵ / ₁₆ | 58 min |
| 1:37 | 7 ² / ₁₆ | |

5 18"

| | | |
|------|----------------------------------|--------|
| 1:11 | 10 ² / ₁₆ | 18 min |
| 1:26 | 11 ⁶ / ₁₆ | 22 min |
| 1:37 | 11 ¹⁴ / ₁₆ | 19 min |
| 1:48 | 12 ⁷ / ₁₆ | |

repour

| | | |
|------|---------------------------------|--------|
| 1:56 | 7 ¹⁴ / ₁₆ | 28 min |
| 2:10 | 7 ⁶ / ₁₆ | 30 min |
| 2:25 | 6 ¹⁴ / ₁₆ | 23 min |
| 2:41 | 6 ³ / ₁₆ | 43 min |
| 3:10 | 5 ⁸ / ₁₆ | 46 min |
| 3:33 | 5.0 | |

Highland Meadows - Pres Pcl "A" - Proposed Lot 2

6 18"

| | | | |
|---------|------|---------------------------------|--------|
| 10-6-98 | 1:19 | 4 ¹² / ₁₆ | 17 min |
| | 1:35 | 3 ¹³ / ₁₆ | 32 min |
| | 1:47 | 3 ⁷ / ₁₆ | 25 min |
| | 1:58 | 3 | |

| | | | |
|--|------|--------------------------------|--------|
| | 1:59 | 8 | 20 min |
| | 2:09 | 7 ⁸ / ₁₆ | 30 min |
| | 1:24 | 7 | |

| | | | |
|--|------|---------------------------------|--------|
| | 2:41 | 5 ¹³ / ₁₆ | 46 min |
| | 3:10 | 5 ⁵ / ₁₆ | 40 min |
| | 3:33 | 4 ¹¹ / ₁₆ | 40 min |
| | 3:43 | 4 ⁷ / ₁₆ | |

7 18"

| | | | |
|--|------|----------------------------------|--------|
| | 2:05 | 8 ¹⁵ / ₁₆ | 30 min |
| | 2:26 | 9 ¹⁴ / ₁₆ | 74 min |
| | 2:54 | 10 ⁴ / ₁₆ | 85 min |
| | 3:10 | 10 ⁷ / ₁₆ | 74 min |
| | 3:24 | 10 ¹⁰ / ₁₆ | 74 min |
| | 3:28 | 10 ¹³ / ₁₆ | |

Highland Meadows - Pres. Pcl "A" - Proposed Lot 2

10-6-98

8

18"

2:19

10⁹/₁₆

2:44

11¹⁵/₁₆

3:09

12¹/₁₆

60 min

3:28

12⁶/₁₆

53 min

3:38

12⁹/₁₆

56 min

3:52

12¹³/₁₆

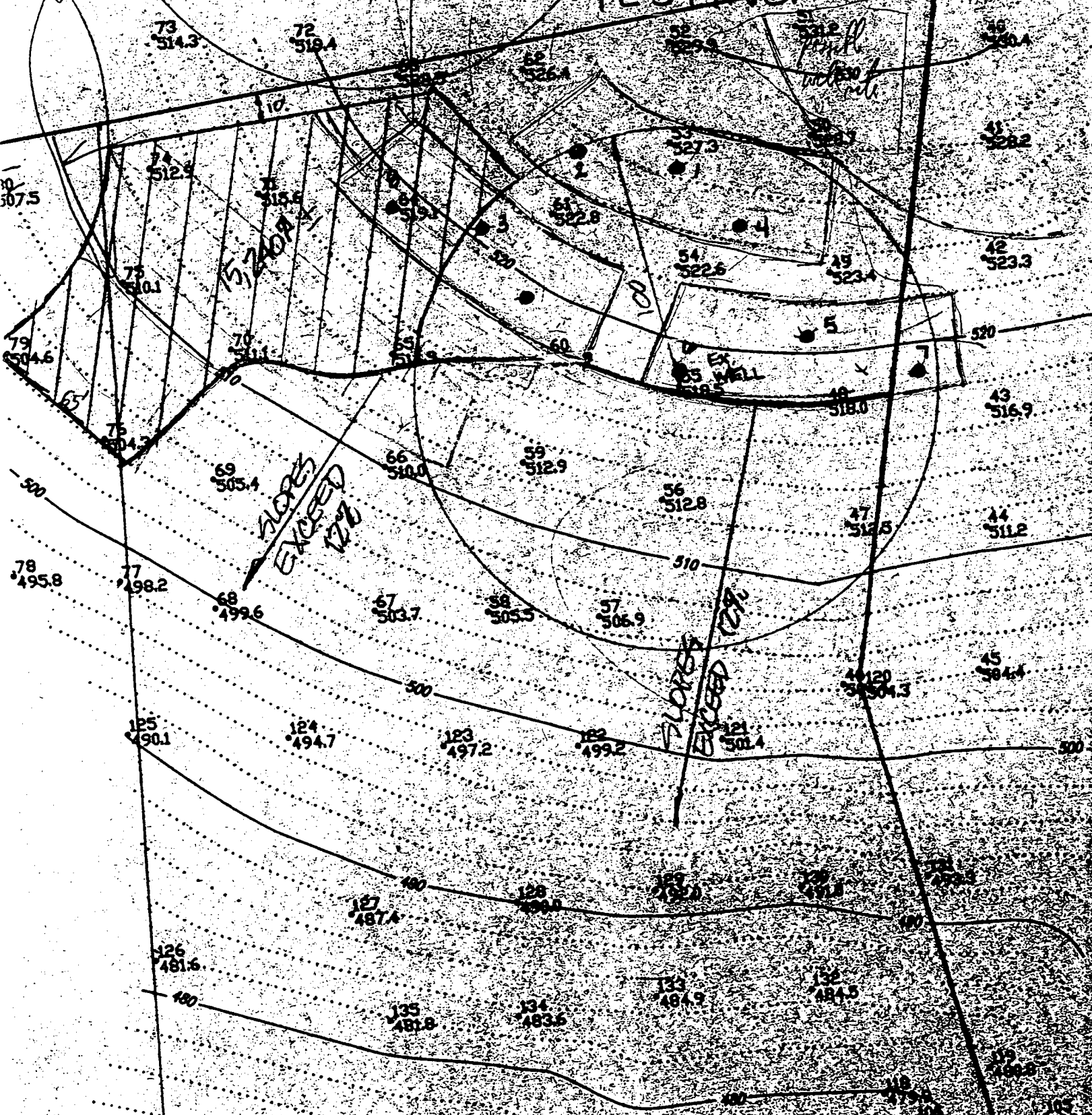
53 min

4:02

13

HIGHLAND MEADOWS PRES. PCL. "A" SAND MOUND TESTING

Pres Too Narrow for Sand Mounds



$11 \frac{00}{16}$
 $11 \frac{00}{16}$
 $11 \frac{00}{16}$
 $11 \frac{00}{16}$

$11 \frac{00}{16}$
 $11 \frac{00}{16}$
 $11 \frac{00}{16}$
 $11 \frac{00}{16}$

$.0625 \sqrt{5.000}$

$.5 \sqrt{11}$

$\frac{11 \text{ min}}{.5}$

1" = 60 min/in

1 OK

10:12 8"
 10:15 $7 \frac{1}{16}$
 10:17 $7 \frac{9}{16}$
 10:29 $7 \frac{5}{16}$
 10:34 $7 \frac{2}{16}$ >
 10:42 $6 \frac{14}{16}$ > 40 min
 10:47 $6 \frac{12}{16}$ > 96 min
 10:53 $6 \frac{11}{16}$ > 42 min
 11:01 $6 \frac{8}{16}$ > 56 min
 11:15 $6 \frac{4}{16}$ > 56 min
 11:22 $6 \frac{2}{16}$ >
 11:35 $5 \frac{14}{16}$ > 52 min

2 OK

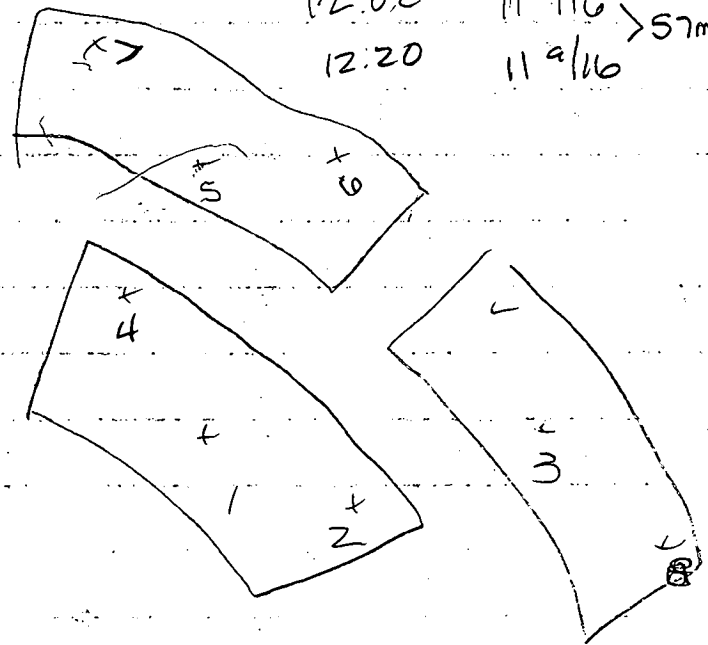
10:19 8" > 22 min/inch
 10:30 $7 \frac{8}{16}$ > 40 min
 10:35 $7 \frac{6}{16}$ > 42 min
 10:43 $7 \frac{3}{16}$ > 40 min
 10:48 $7 \frac{2}{16}$ > 32 min
 10:54 $6 \frac{10}{16}$ > 64 min
 11:02 $6 \frac{13}{16}$ > 192 min
 11:14 $6 \frac{12}{16}$ > 56 min
 11:21 $6 \frac{10}{16}$ > 54 min
 11:38 $6 \frac{5}{16}$ > 64 min
 11:42 $6 \frac{4}{16}$ > 60
 12:03 $6 \frac{1}{16}$ > 60 min
 12:22 $5 \frac{14}{16}$ > 60 min

3

10:41 $10 \frac{14}{16}$ > 40 min
 10:46 $11 \frac{0}{16}$ > 48 min
 10:55 $11 \frac{3}{16}$ > 64 min
 11:03 $11 \frac{5}{16}$ > 64 min
 11:11 $11 \frac{7}{16}$ > 72 min
 11:20 $11 \frac{9}{16}$ > 53 min
 11:40 $11 \frac{15}{16}$ > 64 min
 11:44 $12 \frac{0}{16}$ >
 12:04 $12 \frac{5}{16}$ > 101
 12:23 $12 \frac{7}{16}$ >

4

11:17 $10 \frac{2}{16}$ > 24 min
 11:23 $10 \frac{4}{16}$ > 26 min
 11:33 $10 \frac{12}{16}$ > 44 min
 11:44 $11 \frac{0}{16}$
 12:02 $11 \frac{4}{16}$ > 57 min
 12:20 $11 \frac{9}{16}$



1/25

#1 repair

- 1.0625
- 2.125
- 3.1875
- 4.25
- 5.3125

11:37 80/16 > 42 min
 11:45 713/16 > 54 min
 12:00 78/16
~~12:21 79/16~~

3

??

12:37 8.0 > 149
 12:51 714.5/16 .09375
 1:10 79.5/16 60.8
 1:26 77.5/16 128
 1:39 75.5/16 104

4

??

12:39 80 > 58 min
 12:50 713/16 > 92 min
 1:13 79/16 > 88 min
 1:26 77/16 > 88
 1:37 75/16
 1:52 72/16

21 min
 26 min
 4.7

10.5
 26.0

⑤

1:11 10²/₁₆ > 20

1:26 11⁶/₁₆ > 22

1:37 11¹⁴/₁₆ > 19.5

1:48 12²/₁₆

~~1:59 12¹⁰/₁₆~~

1:56 7¹⁴/₁₆ > 28 min

2:10 7⁴/₁₆ > 30 min

2:25 6¹⁴/₁₆ > min

2:41 6⁹/₁₆

3:10 6^{8.5}/₁₆

3:33 5.0

⑥ 1:19

1:35

1:47

1:58

1:59

2:09

1:24

2:41

3:10

3:33

3:43

4¹²/₁₆ > 17

3¹³/₁₆ > 32

3⁷/₁₆

3⁰/₁₆

8 > 25

7⁰/₁₆ > 25

7¹/₁₆

5^{14.5}/₁₆

5⁵/₁₆

4^{11.5}/₁₆

4⁷/₁₆

.0625
.125
.1875
.25
.3125
.375

75

40-94-1330

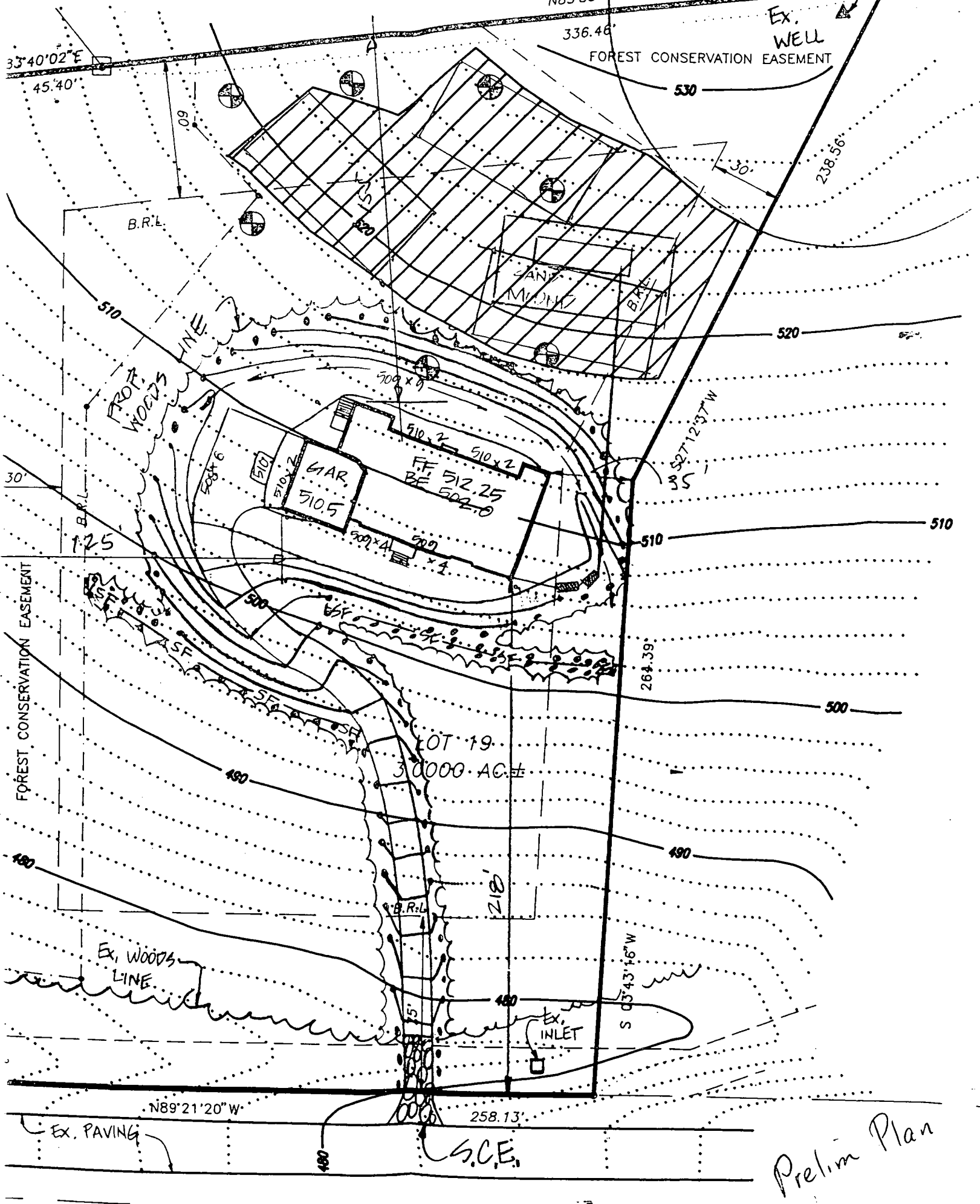
7

8

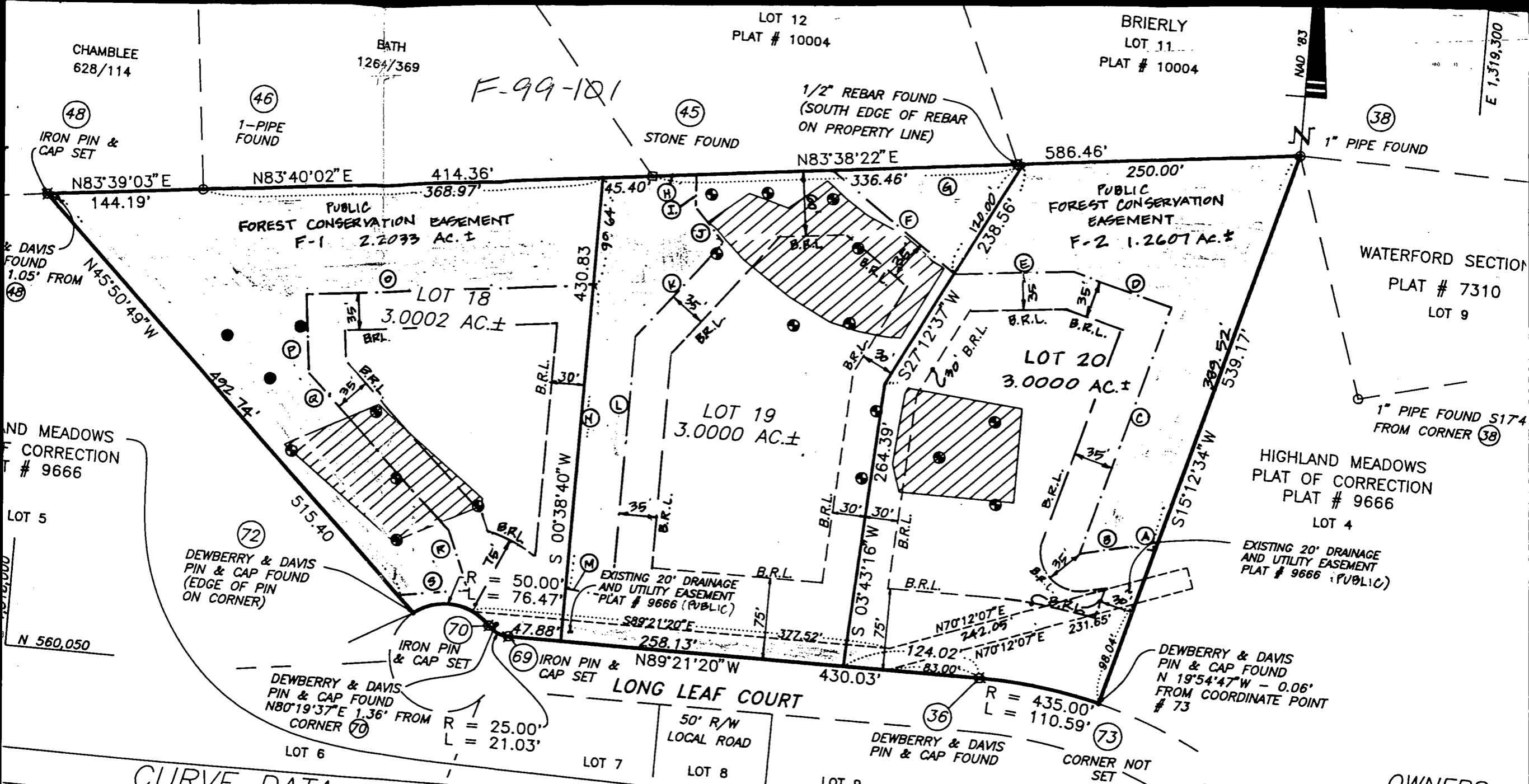
2:05 8⁵/₁₆
 2:26 9⁴/₁₆
 2:54 10⁴/₁₆
 3:10 10⁷/₁₆
 3:24 10¹⁰/₁₆
 3:28 10¹³/₁₆

2:19 10⁹/₁₆
 2:44 11¹⁵/₁₆
 3:09 12⁴/₁₆
 3:~~28~~ 12⁰/₁₆
 3:52 12¹³/₁₆
 4:02 13

EX ELEV 529
 INV IN 526
 INV OUT 227
 INV IN 527.3
 INV OUT (528)
 BE 529.5 -



Prelim Plan



CURVE DATA

| RADIUS | ARC | DELTA | TAN | CHORD BEARING & DIST. |
|---------|---------|-----------|--------|-----------------------|
| 435.00' | 110.59' | 14°33'59" | 55.59' | N82°04'21"E 110.29' |
| 25.00' | 21.03' | 48°11'23" | 11.18' | N65°15'39"E 20.41' |
| 50.00' | 76.47' | 87°37'43" | 47.97' | N84°58'42"E 69.23' |

OWNER'S CERTIFICATE
 JOHN M. MATZEN, OWNERS OF THE PROPERTY

THE PURPOSE OF THIS RESUBDIVISION PLAT IS TO CREATE THREE BUILDABLE LOTS.

OWNERS:
 WARREN AND HELM
 6813 MAIDEN LANE
 CLARKSVILLE, MD

RECORDED AS PLAT # _____
 ON _____
 RECORDS OF _____ AMONG TH