WPI 12/3/96
12/31/96 co. ST+PC only
1/7/97 - check soils for SM begin @1:00-1:30 ē Ingram
12/27/96 set ST+PC (with state)
1/8/97 - Plow + Begin S.M. Construction co

PERMIT

SEWAGE DISPOSAL SYSTEM

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

P 57614

A 56568

DISTRICT 4th

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

INDEXED

DATE 12/27/96

DATE SYSTEM APPROVED 3/6/97

INSPECTOR [signature]

Farm & Home Excavating (Bill Ingram) IS PERMITTED TO INSTALL X ALTER ____

ADDRESS 901 Driver Road, Marriottsville, MD 21104 PHONE 410-442-2139

SUBDIVISION ____ LOT ____ ROAD 19001 Windsor Forest Road

PROPERTY OWNER Timothy and Bonnie Bird

ADDRESS ____

SAND MOUND TYPE SEPTIC SYSTEM

4 Bedrooms - Design Flow 600 Gallons Per Day on 12%/Slope Site. It's OK to Make Sand Mound longer + Narrower than designed ; to keep bed away from steeper slope Break. site is Staked out, & agreed a bed length up to 125' long is OK (= 4' wide bed)

INSTALL:

1 - 1500 Gallon Top Seamed, 2 Chambered Septic Tank

1 - 1500 Gallon Top Seamed Pump Chamber - Dual pump system with controls & alarms * - Must have a center feed dist. pipe layout. single pumps system may be allowed with Health Department approval.

Install sand mound system based on approved sand mound plans (i.e. plot plan for building Permit) (space perforations farther apart to keep same # as given in plans)

- Additional details and specifications, and sand analysis to be submitted to Health Department for approval prior to beginning construction.
- 48 Hour Notice to Health Department prior Sand Mound site staked out and beginning of Sand Mound construction required.
- NOTE: See plans for construction sequence for 5 keys points requiring Health Department inspection and approval before proceeding with construction.

RJP 10/31/96

OK to Make S.M. Longer & Narrower - (Stake out OK) can have 125' long. RJP 12/31/96

PLANS APROVED BY Ronald J. Pinkley DATE 10/30/96

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

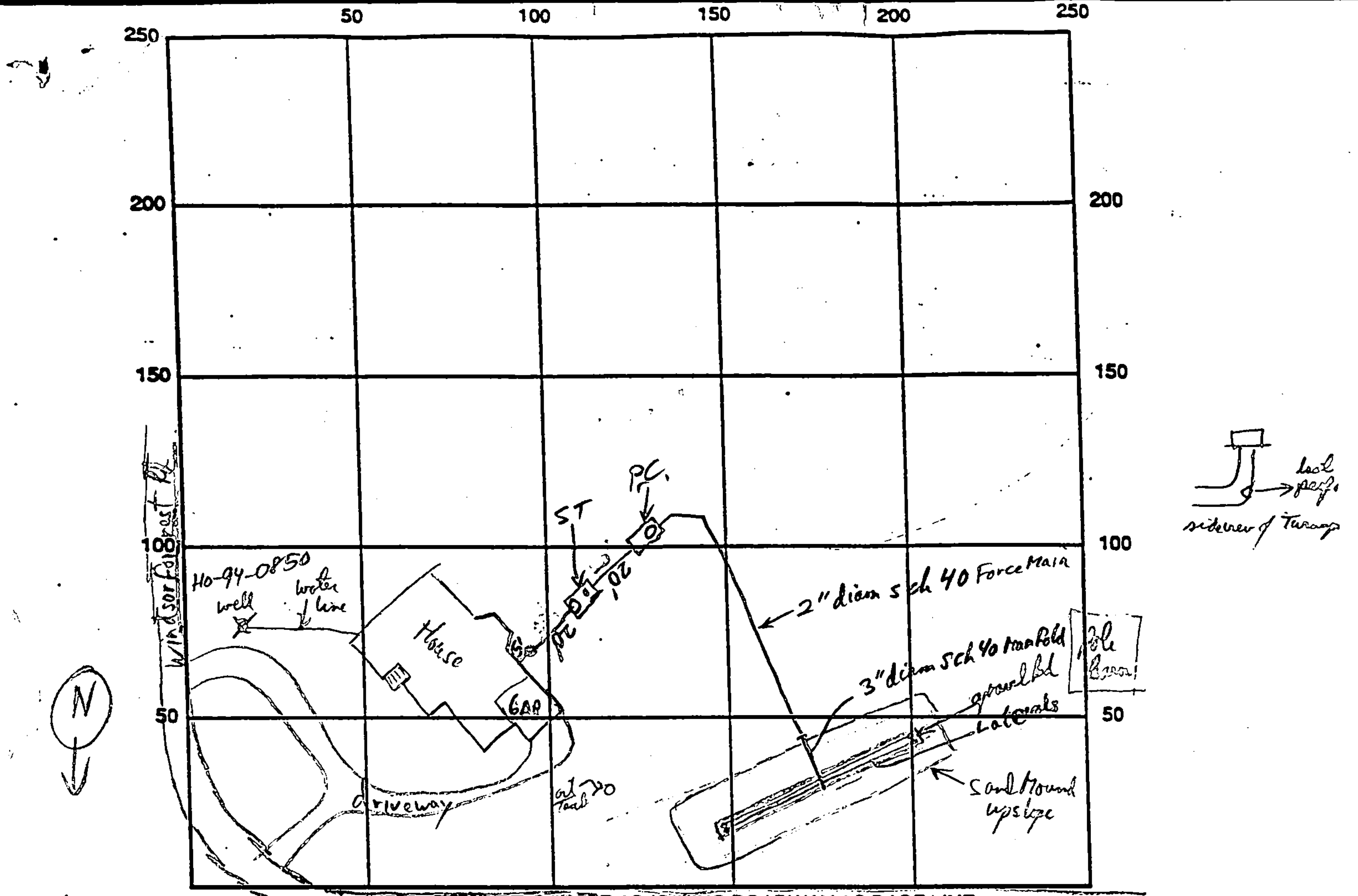
NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 35/40 PVC OR ABS

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 OF 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

Septic Tanks Level (T/5' below grade)	1500 gal Top Seamed, 2 chamber (Babylon)	~~Trench~~ Bed	(See attached plans)
Dosing Chamber Level	1500 gal Top Seamed, one chamber	Width	perf 5/16", spacing 3½ ft
~~Dual Pump~~	N/A	Length	
Controls	Simple Control (No Switches) Thru Circuit Breaker and adapter plugs at P.C. Manhole	Bottom	4 laterals, each 44' long, 2 ft turnups
Alarm	Separate Alarm Box – S...	Depth	
Pump Test	OK – got balanced flow at 1½ ft Head in Turnups. Not enough water for a sustained test. But acceptable. RP 2/4/97	Inlet	
Piezometers	NA	Depth	
Observation Ports	NA	Gravel	
Float Settings High ~~Off~~:	Alarm	Depth	
~~High On~~:			
~~Low~~ Off:	8" ~~difference in setting~~		
~~Low~~ On:			
Alarm Float:			

2" Supply line used gives approximately 34 gal + another 4 gal in 3" Manifold = Drain back to P.C. after dosing cycle ends. Equals approximately 200 gal/dose of which 150-160 gal will drain into Sand Mound each cycle – OK RP 2/4/97

3/6/97 Final site inspection OK – Mound nicely shaped & seeded. RP

Remarks: (Note: Pole Barn is far enough from Reserved Repair Sand Mound sites) 1st S.T. Not Sealed allowing around ~~and~~ Not Sealed Properly & Not Water Tight – Need to replace or reparch & seal Top. Resealing of Lid & Manhole ring on S.T. OK to cover (OK Manhole Front only, Cleanout pipe on outlet of S.T 1.5' below grade) Soil Tested & Consulted S.T. Contractor Now RP 12/30/96 Soil OK to direct flow 1/7/97 RP. Sand Mound installed More or less as per plan, gravel bed formed and ready for pipe (laterals have perforation proper size, spacing & smooth bored) Turnups have outlet as & elbow) OK to lay laterals & cover to prevent weather damage. RP 1/16/97

12/3/96 well line, D.A. 5' below grade. casing 12" above grade. OK to cover.

Date System Approved 3/6/97 Inspector [signature]

Miles Fpsan
for
1/7/97

Byrd Property Sand Mound — Windsor Forrest Rd
Bill Ingram Installer

Soils are ok to begin sand Mound Construction, if he can get soil chisel plowed (using "Toothed" Backhoe Bucket is ok) and covered before it rains (or snows) again. If he can't get at least 6" of sand cover, have him spread plastic sheet over the uncovered portion until he can cover the area with sand (he already knows this)

Check the Sand being Delivered and if its too "dirty," you may reject it. The Sand should have few gravels (up to 5% ¼" or so is acceptable), and less than 10% finer than 0.25mm. (ideally at least half is between 0.25 and 0.5mm). This should look like Concrete sand to Beach Sand (But Masonry Sand is too Fine)

Once you inspected the plowed Sand Mound Area (already staked out) and ok the Sand, they can proceed to cover the area, working from the upslope or side slopes only. Only Tracked vehicles can go over the Sand Mound area, Tired Vehicles will have to work off the sides until the Sand Depth is enough to keep from compacting the soil structure (This means at least 6" deep sand with Tracked Vehicles, Double that for light Tires; when in doubt, keep the machines off the Sand) Also when They're scooping Sand to pile on mound make them remove any soil clods that get picked up in it.

I should be back before they get past this phase. Stay and watch them work for a while, until you get a feel for their method. Then its ok to leave, but check up on their progress several times during the day. Make sure they've covered the plowed sand mound bed (with Sand or plastic, before they leave for the day.

Best of Luck for

1/16/97 Discussed supply line matter with Mr Fagrom and said I'd check discrepancy ~~with~~ 1 1/4" diameter Supply line.

2/7/97 Pump Test OK — Control Mechanism + alarm setup provisionally accepted

[illegible]

Page ____ of ____
Date July 15, 1996

Review OK AB 9/30/96

FIELD DATA SHEET
HOWARD COUNTY WELL YIELD TEST

Well Permit No. HO - 94-0850
Location of property (road) Windsor Forrest Rd (now Bird Property)
Subdivision (Formerly Hobart Mullinex Prop) Lot ____ Block ____ Plat ____ Sec. ____
Well Driller R Rupe Owner Sielbridge Builders

Depth of well 260
Distance of measuring point (M.P.) above ground 2'
Static water level (S.W.L.) below M.P. 44

I. *High rate pumping -- reservoir drawdown*

Time pump started 1:45 Pumping rate 12 GPM
Total time 15 min to reach pumping water level 60 ft. below M.P.

II. *Recovery pump test data - observations to be recorded every 15 minutes*

TIME (in 15 minute intervals	WATER LEVEL below M.P.	PUMPING RATE time to fill 5 gallon bucket	FLOW METER READING (if used)	CALCULATED FLOW (gallons per minute)
2:00	60 "	6 Sec		10 GPM
2:15	60 "	6 Sec		10 GPM
2:30	60 "	6 Sec		10 GPM
2:45	60 "	6 "		10 "
3:00	60 "	6 "		10 "
3:15	60 "	6 "		10 "
3:30	60 "	6 Sec		10 GPM
3:45	60 "	6 Sec		10 GPM
4:00	60 "	6 Sec		10 GPM
4:15	60 "	6 "		10 "
4:30	60 "	6 "		10 "
4:45	60 "	6 Sec		10 GPM
5:00	60 "	6 Sec		10 GPM

HD-224

22 ø Casing 20 open 7 BAY's

C 1 | 7968 | SEQUENCE NO. (MDE USE ONLY)

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

STATE OF MARYLAND
WELL COMPLETION REPORT

FILL IN THIS FORM COMPLETELY
PLEASE PRINT OR TYPE

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

COUNTY NUMBER 13-A56568

ST/CO USE ONLY
DATE Received

DATE WELL COMPLETED 09 15 96

Depth of Well 260 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-99-0850

OWNER Selfridge Builders (last name) (first name)

STREET OR RFD Windsor Forrest Rd TOWN Long Corner

SUBDIVISION (Former Ho. Mullinear - Now Bird Property) SECTION LOT

WELL LOG

Not required for driven wells

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

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Top Soil	0	2	
Brown Shale	2	9	
Brown Slate	9	15	
Blue Slate	15	40	
Brown Slate	40	45	✓
Blue Slate	45	90	
Flint Rock	90	95	✓
Blue Slate	95	260	

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED yes [Y] no [N]

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.

TYPE: MWD/MSD/MGD

DRILLERS LIC. NO. 116

Ralph Mayer

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO. 117

Ralph E. Mayer

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

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box) yes [Y] no [N]

TYPE OF GROUTING MATERIAL (Circle one)

CEMENT [CM] BENTONITE CLAY [BC]

NO. OF BAGS ____ NO. OF POUNDS 500

GALLONS OF WATER 42

DEPTH OF GROUT SEAL (to nearest foot)

from 0 ft. to 20 ft. (enter 0 if from surface)

CASING RECORD

casing types insert appropriate code below

[ST] STEEL [CO] CONCRETE [PL] PLASTIC [OT] OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL	6	22

OTHER CASING (if used)

EACH CASING	diameter inch	depth (feet) from	depth (feet) to

SCREEN RECORD

screen type or open hole insert appropriate code below

[ST] STEEL [BR] BRASS BRONZE [HO] OPEN HOLE [PL] PLASTIC [OT] OTHER

C 2

EACH SCREEN		DEPTH (nearest ft.)	
1	HO	20	260
2			
3			

SLOT SIZE 1 ____ 2. ____ 3 ____

DIAMETER OF SCREEN ____ (NEAREST INCH)

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

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

T ____ (E.R.O.S.) ____ W Q ____

TELESCOPE CASING | LOG INDICATOR | OTHER DATA

C 3

PUMPING TEST

HOURS PUMPED (nearest hour) 3

PUMPING RATE (gal. per min.) 10.

METHOD USED TO MEASURE PUMPING RATE Bucket

WATER LEVEL (distance from land surface)

BEFORE PUMPING 44 ft.

WHEN PUMPING 60 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)

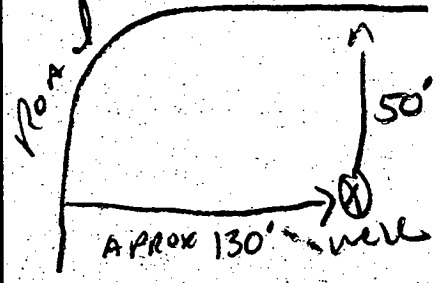
PUMP HORSE POWER

PUMP COLUMN LENGTH (nearest ft.)

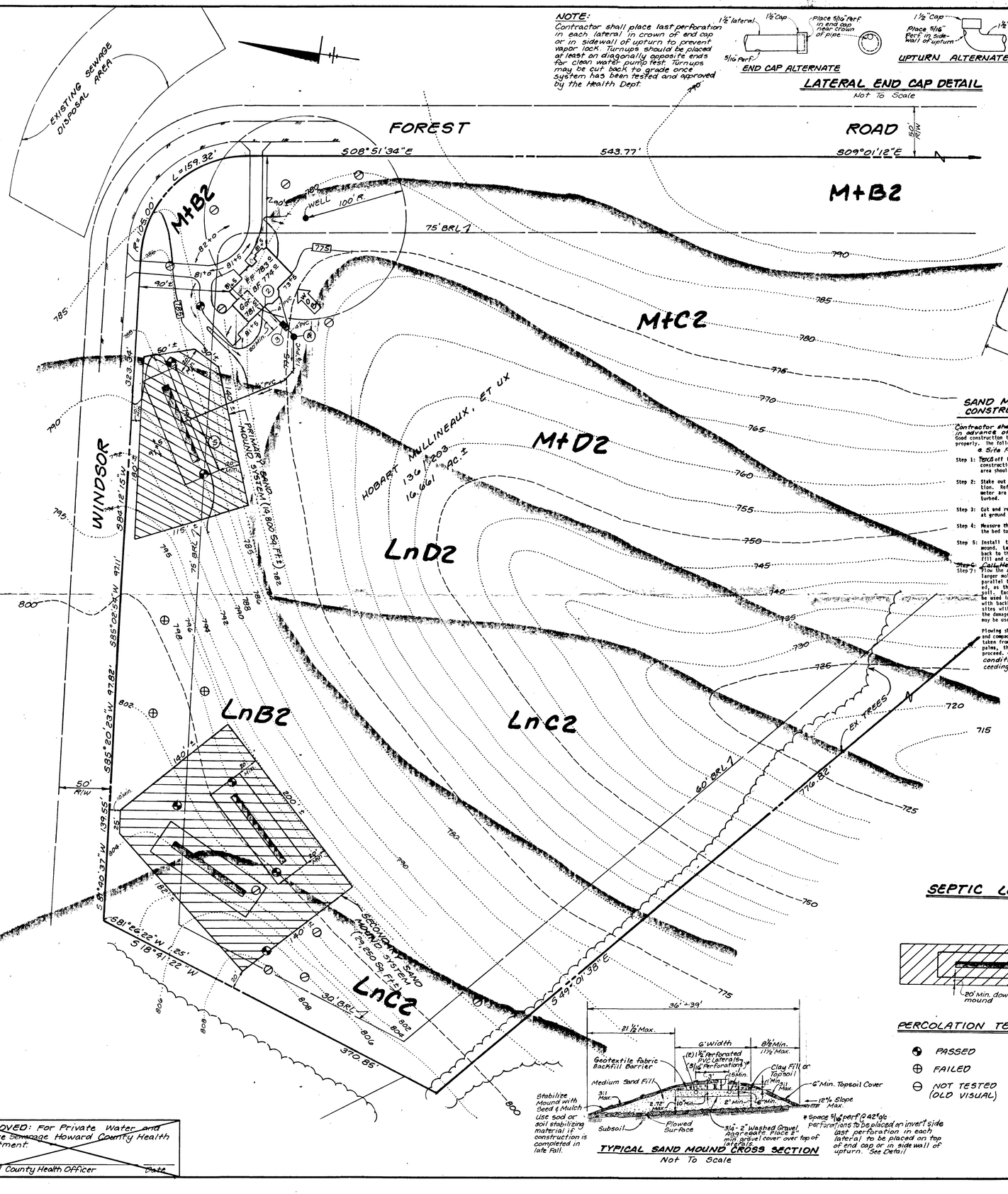
CASING HEIGHT (circle appropriate box and enter casing height) [+] above [−] below LAND SURFACE 2 (nearest foot)

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)

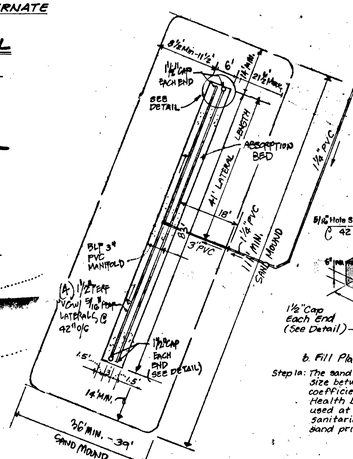


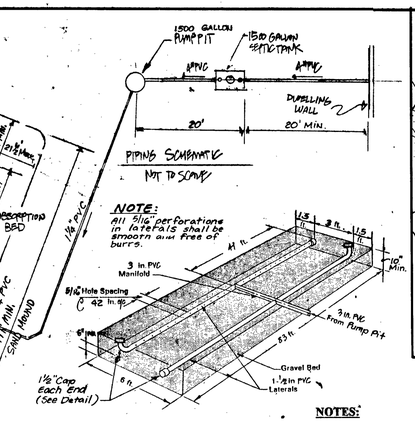
COUNTY

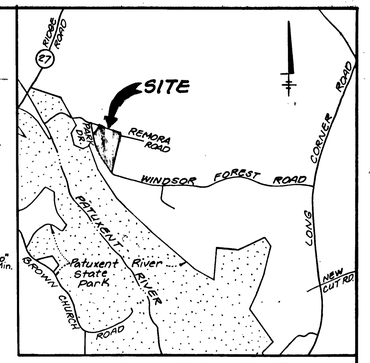


NOTE:
Contractor shall place last perforation in each lateral in crown of end cap or in sidewall of upturn to prevent vapor lock. Turnups should be placed at least at diagonally opposite ends for clean water pump test. Turnups may be cut back to grade once system has been tested and approved by the Health Dept.

LATERAL END CAP DETAIL
Not To Scale







VICINITY MAP
Scale: 1" = 2,000'

SAND MOUND CONSTRUCTION SEQUENCE:

Contractor shall contact Health Dept. (313-2640) 48 hours in advance of proceeding with any construction. Good construction techniques are essential if the mound is to function properly. the following techniques should be considered:

a. Site Preparation

Step 1: Fence off the site to gravent deseps to the area during other construction activity on the lot. Vehicular traffic over the area should be prohibited to avoid soil compaction.

Step 2: Stake out the mound perimeter and bed in the proper orientation. Reference stakes set some distance from the mound perimeter are also required in case the corner stakes are disturbed.

Step 3: Cut and remove any excessive vegetation. Trees should be cut at ground surface and the stumps left in place.

Step 4: Measure the average ground elevation along the upslope edge of the bed to determine the bottom elevation of the bed.

Step 5: Install the delivery pipe from the dosing chamber to the mound. Lay the pipe below the frost line or slope it uniformly back to the dosing chamber so it may drain after dosing. Back fill and compact the soil around the pipe.

Step 6: Call Health Dept. for inspection of mound area

Step 7: Plow the area within the mound perimeter. Use a two bottom or larger moldboard plow, plowing 7 to 8 in. (18 to 20 cm) deep parallel to the contour. Single bottom plows should not be used, as the trace wheel runs in every furrow, compacting the soil. Each furrow should be thrown upslope. A chisel plow may be used in place of a moldboard plow. Rototilling the surface with backhoe teeth may be satisfactory, especially in wooded sites with stumps. Rototilling is not recommended because of the damage it does to the soil structure. However, rototilling may be used in granular soils, such as sands.

Plowing should not be done when the soil is too wet. Smearing and compaction of the soil will occur. If a sample of the soil taken from the plow depth forms a wire when rolled between the palms, the soil is too wet. If it crumbles, plowing may proceed. Call Health Dept. for inspection of soil conditions from rain or snow prior to proceeding with plowing if in doubt.

b. Fill Placement

Step 1a: The sand beneath the bed shall be of an effective size between 0.25 and 0.50mm with a uniformity coefficient of 3.5 or less. Submit sample to Health Dept. for analysis of material to be used at site prior to construction or have sanitarian on site verify suitability of sand prior to placement.

Step 1b: Place the fill material on the upslope edges of the plowed area. Keep trucks off the plowed area. Minimize traffic on the downslope side.

Step 2: Move the fill material into place using a small track type tractor with a blade. Always keep a minimum of 6 in. 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.

Step 3: With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed, checking it for the proper elevation. Shape the sides to the desired slope.

Step 4: Call Health Dept. for inspection.

c. Distribution Network Placement

Step 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 6 in. (15 cm). Gravel shall be washed with a size variable of 3/4" to 2" Gravel shall be free of fines.

Step 2: Assemble the distribution network on the aggregate. The manifold should be placed so it will drain between doses, either out the laterals or back into the pump chamber. The laterals should be laid level.

Step 3: Place additional aggregate to a depth of at least 2 in. (5 cm) over the crown of the pipe.

Step 4: Place a suitable backfill barrier of geotextile fabric over the aggregate.

Step 5: Call Health Dept. for clean water pump test.

d. Covering

Step 1: Place a finer textured soil material such as clay or silt loam over the top of the bed to a minimum depth of 6 in. (15 cm).

Step 2: Place 6 in. (15 cm) of good quality topsoil over the entire mound surface.

Step 3a: Plant grass over the entire mound using grasses adapted to the area. Shrubs can be planted around the base and up the sideslopes. Shrubs should be somewhat moisture tolerant since the downslope perimeter may become moist during early spring and late fall. Plantings on top of the mound should be drought tolerant, as the upper portion of the mound can become dry during the summer.

Step 3b: Use sod or soil stabilizing material to prevent erosion until grass has had time to grow especially if construction is in late Fall.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt. Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

Denotes Soil Group delineation

SEPTIC LEGEND

NOTE: THE SEPTIC LEGEND SHOWN REPRESENTS A TYPICAL SAND MOUND SYSTEM. ACTUAL LOCATION OF THE SAND MOUND MAY VARY. SEE PLAN VIEW.

PERCOLATION TEST LEGEND

- PASSED
- FAILED
- NOT TESTED (OLD VISUAL)

NOTES:

1.) These two areas designate a private sewerage easement as required by the Maryland State Department of the Environment for individual sewerage disposal utilizing sand mound sewage system only. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3.) Existing Zoning: RC-DEO, per the 10/18/93 Comprehensive Zoning Plan.

4.) Provide manhole cleamont to finished grade at proposed septic tank and the pump chamber.

5) The proposed septic system for this lot requires a pump.

6) Details and specifications of the proposed pumps within the pump pit to be supplied by the contractor for review and approval by the Howard County Health Department prior to issuance of a Septic Permit.

7) See builder's architectural plans for building dimensions.

8) The sewage disposal area within the limit of disturbance for building construction is to be fenced during the entire building phase to prevent any disturbance of soils on the sand mound site. The Howard County Health Department reserves the right to require construction of the sand mound sewage disposal system prior to building construction.

9) The primary sand mound sewage disposal system shall be staked in the field and location inspected by the Howard County Health Department prior to beginning any construction of the sand mound.

Approved Septic System Plan
Howard County Health Department

HOWARD COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH
1996 OCT 12 A 8:47

Signature Date 10/9/96

SEPTIC SYSTEM DESIGN DATA:

(1) 4 Bedrooms, at 12% site slope / 600 GPD

(2) Invert @ wall : 771.50

(3) 1500 gallon two seamed two compartment septic tank required. Provide manhole to grade and cleanouts at the front and back of tank.
Ex. grade over tank : 775.50 Invert In : 770.80
Prop. grade over tank : 775.50 Invert Out: 770.50

(4) 1500 gallon two seamed pump pit with dual effluent pumps* required. Provide manhole to grade. Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Alarm system shall be installed on a separate electrical circuit. Install check valves as required.
Invert In : 770.00
Top Grade: 774.00
Not * (for H.D. only)
OK to allow single effluent pump if pump pit has 600 gallon storage capacity above alarm float. 10/10/96

NOTE: No grading of original soil surface other than plowing as described within the construction sequence shall be permitted within the limits of the sand mound.

(5) Sand Mound (See typical section)
Ex. grade @ ℄ mound : 792.3
Prop. grade @ ℄ mound : 791.2 (Top Elevation)
Invert 1½" PVC laterals : 790.5

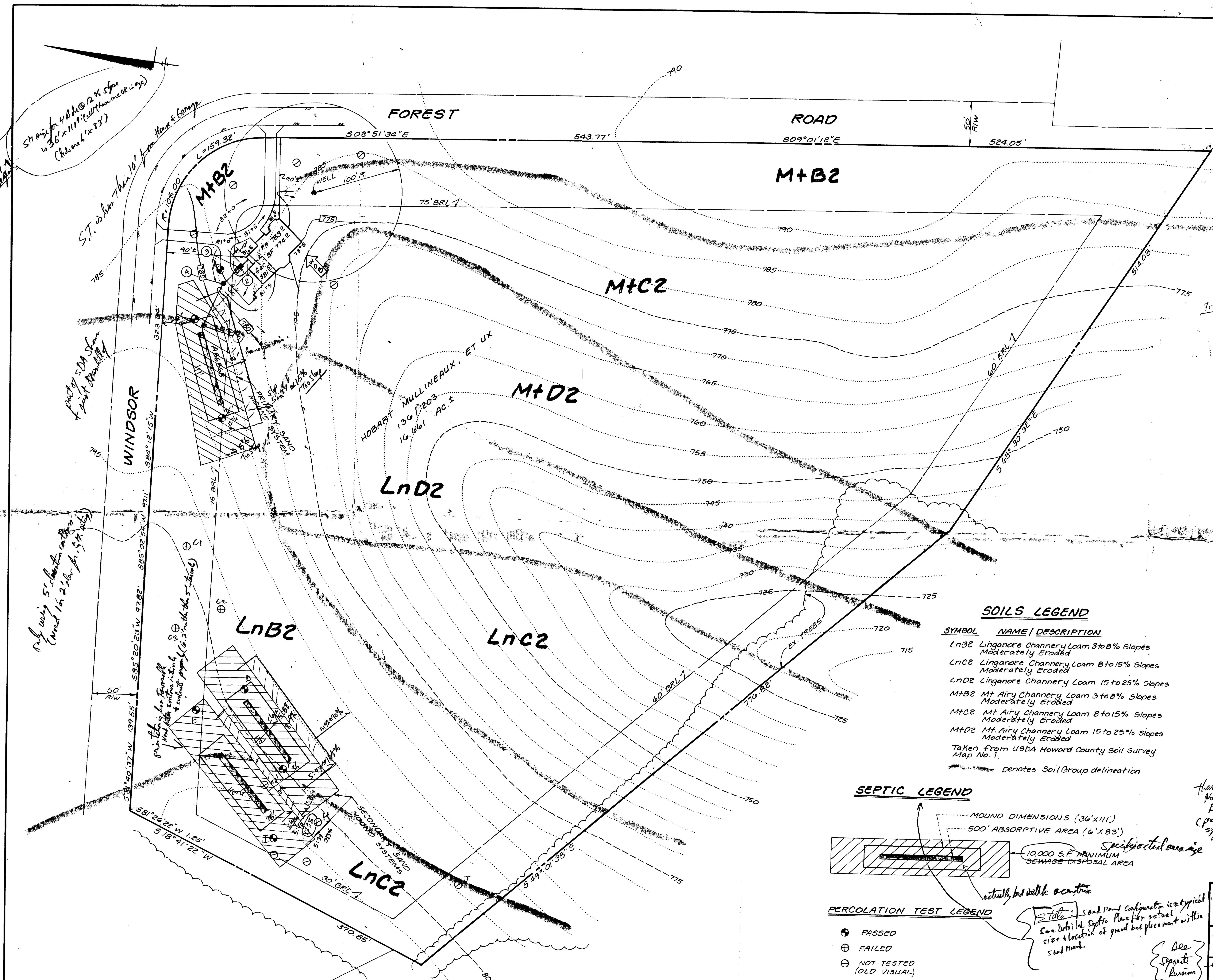
* Contractor to supply specifications of specific pump type per manufacturer.

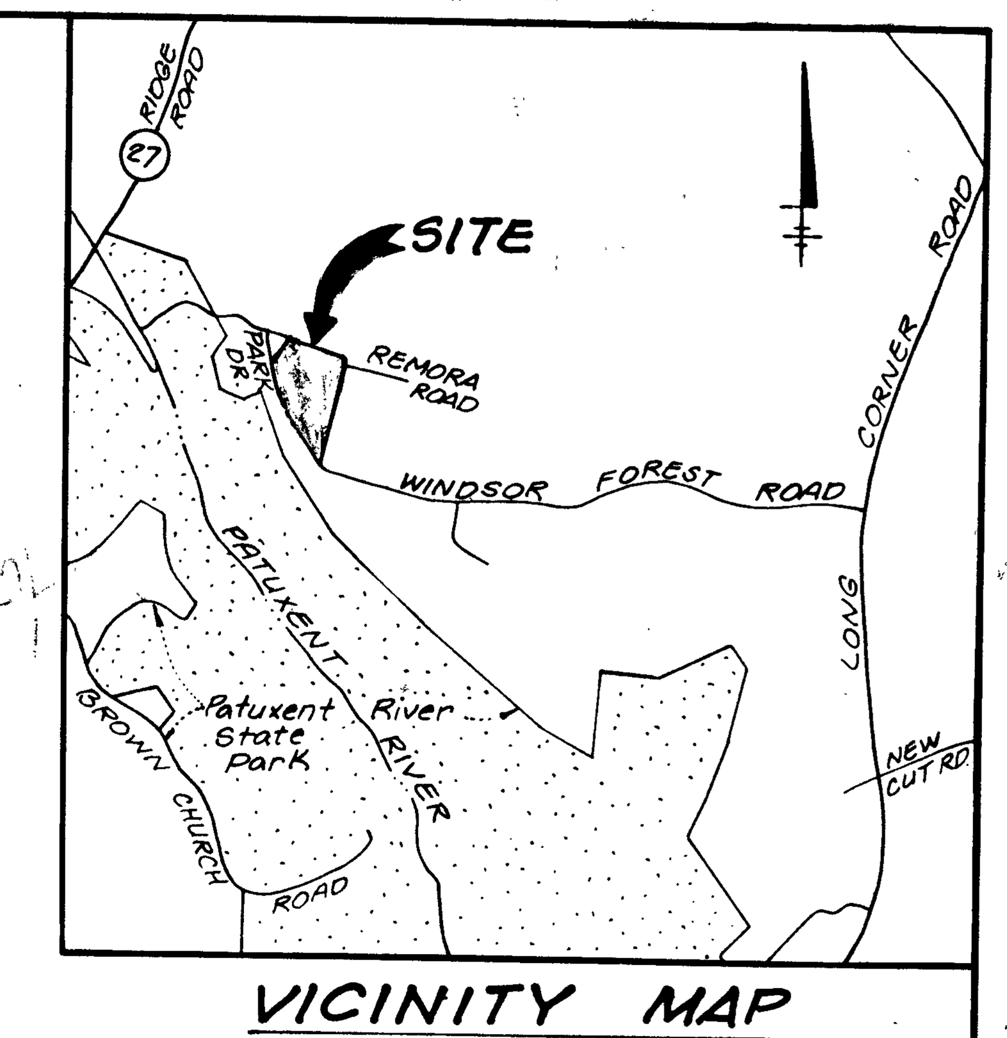
APPROVED: For Private Water and Private Sewerage Howard County Health Department:

Howard County Health Officer — Date

Drawn: KBW	PLOT PLAN FOR BUILDING PERMIT	Scale: 1"=50'
Designed: SDH	**H. MULLINEAUX PROPERTY**	Drawing: 1 of 1
Checked: BDB	TAX MAP No. 6 P/O PARCEL 15 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	LDE Job No. 96-035
Date: 6/96	BUILDER SELFRIDGE BUILDERS, INC. 14045 Bared Drive Glenwood, MD 21738 (410) 793-8200	File No.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)





VICINITY MAP

Scale: 1" = 2,000'

NOTES:

1.) [hatched symbol] ~~This area~~ designates a private sewerage easement of 10,000 square feet as required by the Maryland State Department of Health and Mental Hygiene for individual sewerage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3.) Existing Zoning: RC-DEO, per the 10/18/93 Comprehensive Zoning Plan.

4.) Provide manhole cleanout to finished grade at proposed septic tank.

5) The proposed septic system for this lot requires a pump.

6) Specifications and details of the proposed system to be supplied by the contractor for review and approval by the Howard County Health Department prior to issuance of ~~a septic installation permit~~ a building Permit.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt. Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

Denotes Soil Group delineation

SEPTIC LEGEND

MOUND DIMENSIONS (36'x111')

500' ABSORPTIVE AREA (6'x83')

10,000 S.F. MINIMUM SEWAGE DISPOSAL AREA

PERCOLATION TEST LEGEND

- PASSED
- FAILED
- NOT TESTED (OLD VISUAL)

SEPTIC SYSTEM DESIGN DATA:

(1) 4 Bedrooms.

(2) Invert @ wall : 771.50

(3) ~~1250~~ gallon septic tank. Provide manhole to grade.
Ex. grade over tank : 783.5 Invert In : 771.30
Prop. grade over tank : 781.8 Invert Out : 771.00

(4) 1000 gallon pump pit with dual effluent pumps.
Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Install check valves as required. Invert In : 770.60

(5) ~~Distribution Box : 2 outlets minimum.~~
~~Ex. grade @ box : 787.0~~
~~Prop. grade @ box : 789.0~~
~~Invert : 786.5~~

APPROVED: For Private Water and Private Sewage Howard County Health Department

Howard County Health Officer — Date

LDE, INC. 9250 Rumsey Road, Suite 106, Columbia, MD 21045 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)		
Drawn: KBW	PLOT PLAN FOR BUILDING PERMIT and PERCOLATION TEST CERTIFICATION PLAT **H. MULLINEAUX PROPERTY**	Scale: 1"=50'
Designed: SDH	TAX MAP No. 6 P/O PARCEL 15	Drawing: 1 of 1
Checked: BDB	5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	LDE Job No. 96-035
Date: 6/96	BUILDER SELFRIDGE BUILDERS, INC.	File No.

6/14/96

Re: Windsor Forrest Rd
Sand Mound System
The Second One (No Plat For yet)
Lot 2 — The Bird's Property

CW+RP, D. Kenner, Sullivan,
Batten Carolyn Pateman Bird Bonnie + Tim.

Preface

by CW — Prelim Explanation of Sand Mounds, Lot Development, analogies with buying a car, and How + why were here.

— showing example of SM perc Plat being developed on Lot 1 Scranton Property. area for system + 2 replacements. SM Mounds at least 10' buffer on high side and 20' buffer on low side.

— for SFD No sympathy for average water use Regs still require us to look at Max. Potential Flow.

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

Date: _____

Name: Donald L Rauwen

Address: 10805 Hickory Ridge Rd
MD

RE: PERCOLATION TEST RESULTS

APPLICATION #'(s) A56668

PROPOSED USE: _____

(Subdivision,) Recorded Lot, Adjustment to Recorded Sewage Easement

PROPERTY ID: Hobart Mullineaux Property Lot #2
Windsor Forrest Rd
Tax Map 6 P/o Parcel 15

Dear Mr. Rauwen:

Percolation testing conducted May 22, 1996 on the above referenced property indicated [unsatisfactory / (limited satisfactory) / satisfactory] soil conditions.

Copies of the percolation test results are enclosed.

Bureau of Environmental Health
3525-H Ellicott Mills Drive Ellicott City, Maryland 21043-4544
Water and Sewerage, Permits (410) 313-2640 Community Environmental Health (410) 313-2642
Director (410) 313-2645 TDD (410) 313-2323

Further review is contingent upon submission by a registered engineer of a percolation certification plat showing actual locations and elevations of all excavated test holes and a suitable house and well site. The plat should also include the location of all existing wells and septic systems on the property as well as the location of any other relevant features such as streams, swales, or existing structures. A note must be included certifying that all wells and septic systems within 100' of property boundaries have been shown.

This should be submitted within sixty (60) days to allow field verification if necessary. [If the proposal is for subdivision, a Groundwater Appropriations Permit must be approved prior to any plat approvals.] If you have any questions regarding this matter, please feel free to contact me at the above address or by calling 313-2640.

Very truly yours,

Sanitarian
Water and Sewerage Program

:dc
Enclosures
cc: Tax Assessment Office
Engineer
Owner
File

Program Supervisor's Review _____

TEST DATA

NAME H. Mullineaux Prop. FILE NO A56568

LOCATION Windsor Forrest Rd COUNTY Howard

DATE 5/22/96

GRID ___ E

RECORDED BY R[illegible] ___ N

HOLE NO.	TEST NO.	DEPTH	CLOCK TIME	ELAPSED TIME	MEASUREMENT	REMARKS (Method,Moisture,Biopores)
D	I_6	16-22"	2:55:20 2:59:20 3:03:00	> 4 mpi	6 3/4" 5" even 4" even	
E	I_7	17-24"	3:10:30 3:12:12	> 51 sec	7" even 5" even	V. Rocky Bottom settling may disturbed Rock too Much
G	I_8	16-21"	3:37:40 3:40:00	use fine results	7" even 5 3/8 pulled	← Leakage at one point
F	I_9	18-24"	3:46:30 3:48:36 3:52:00	> 3½ mpi	7" 6" 5" even	
H	I_{10}	15-23"	4:00:30 4:06:30 4:16:32 4:32:30	≈ 20 mpi	7" even 6 9/16" 5 13/16 5" even	
I	I_{11}	15-23"	4:12:00 4:14:30 4:18:30 4:26:00 4:34:00	> 16 mpi	7" even 6½" 6" even 5 9/16"	

TEST DATA

NAME Hobart Mullineaux Property Lt. 142 FILE NO A5668

LOCATION S/S Windsor Forest Rd. COUNTY Howard

DATE 5/22/86

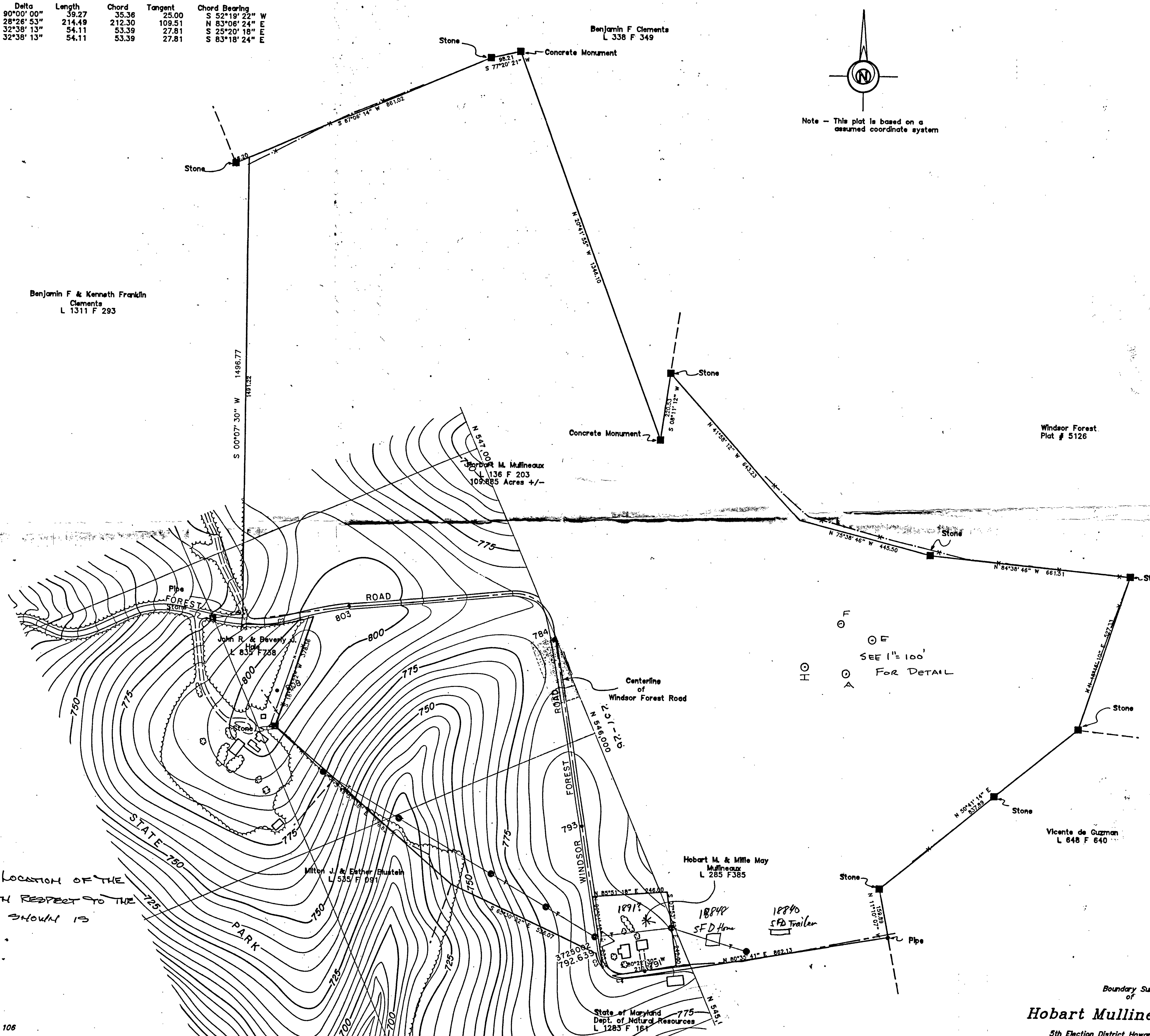
GRID E

RECORDED BY [illegible] N

HOLE NO.	TEST NO.	DEPTH	CLOCK TIME	ELAPSED TIME	MEASUREMENT	REMARKS (Method, Moisture, Biopores)
A	I_1	34-42"	11:25:00 11:45:00 12:45:00 Too slow		▽ "even 6 13/16" 6 29/32"	
A	I_2	14-21'	11:33:20 11:44 Seepage Noted on outside – imperfect seal – pulled		▽ "even	
	I_3	14-19"	11:57:00 12:06:00 seepage on outside Noted – imperfect seal – pulled		▽ " even 6 3/8"	
	I_5	11-18½	1:03:00 1:07:00 1:17:00 1:26:00 (last 2½ min perc is OK – conventionally)		▽ "even 6½" 6 3/16" ← observed leakage just past one side 6" even	
B	I_4	16-23"	12:24:00 12:38:00 > 30 gpi 1:08:00 1:20:00 > still > 30 gpi 1:30:00		▽ "even 6 7/16" 5 3/8" 4 15/16 4 5/8	

CURVE TABLE

#	Radius	Delta	Length	Chord	Tangent	Chord Bearing
1	25.00	90°00' 00"	39.27	35.36	25.00	S 52°19' 22" W
2	432.00	28°26' 53"	214.49	212.30	109.51	N 83°06' 24" E
3	95.00	32°38' 13"	54.11	53.39	27.81	S 25°20' 18" E
4	95.00	32°38' 13"	54.11	53.39	27.81	S 83°18' 24" E



Boundary Survey of

Hobart Mullineaux Property

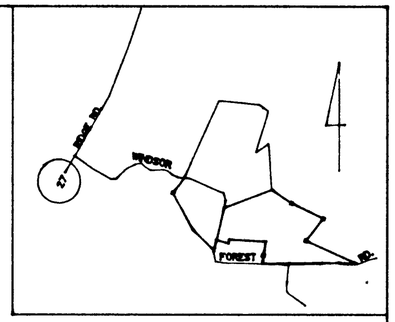
5th Election District Howard County, Maryland
Scale 1" = 200' September 1995 Job # 95-066

LDE, Inc.
9250 Rumsey Road Suite 106
Columbia, Maryland 21045
(410) 715-1070 (301) 596-3424 Fax (410) 715-9540

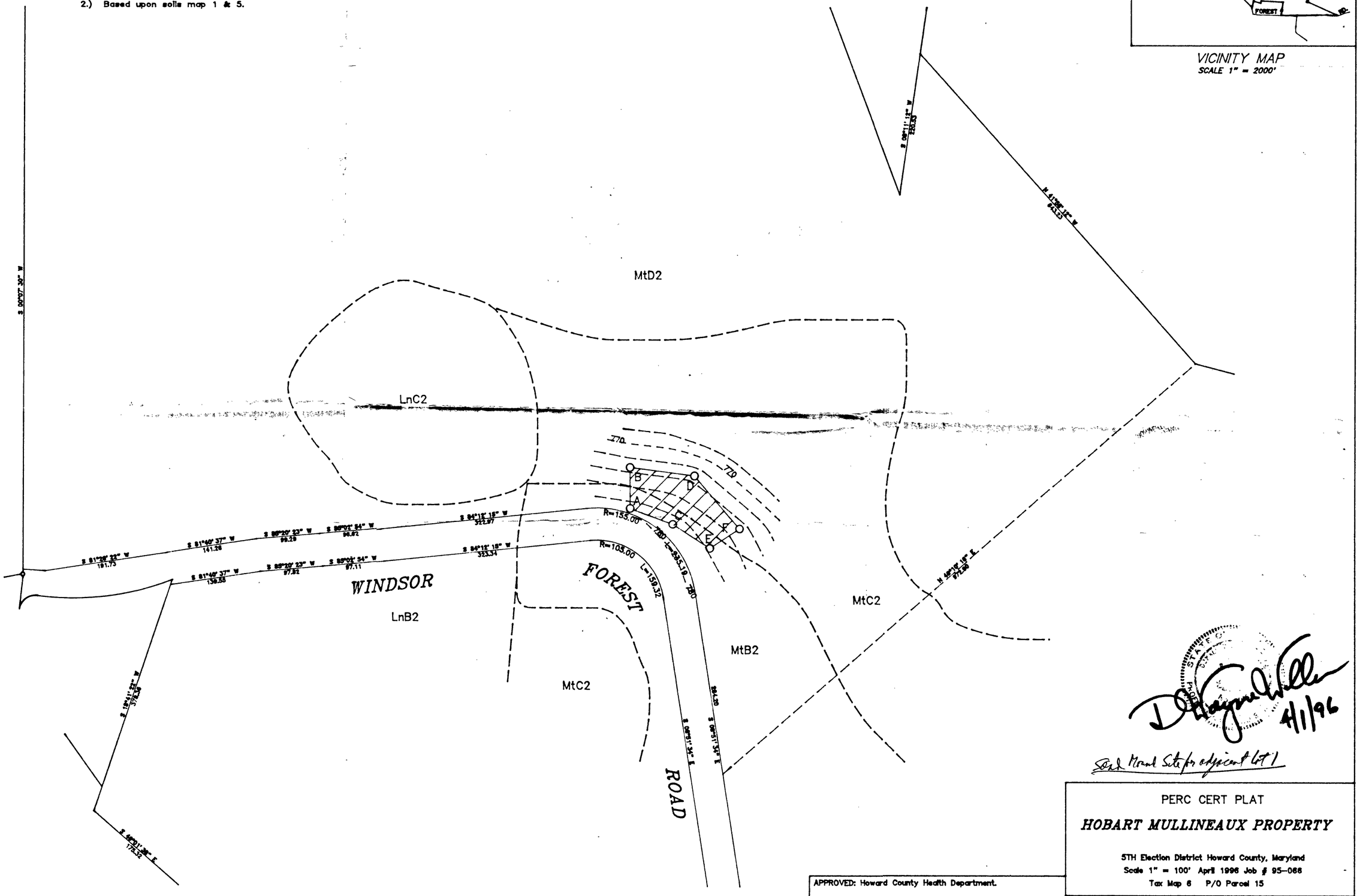
General Notes:

1.) This area designates a private sewerage easement as required by Maryland State Dept. of Health & Mental Heygiene for individual sewerage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to public sewerage system. The county Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) Based upon soils map 1 & 5.



VICINITY MAP
SCALE 1" = 2000'



4/1/96

Sand Mound Site for adjacent Lot 1

PERC CERT PLAT

HOBART MULLINEAUX PROPERTY

5TH Election District Howard County, Maryland
Scale 1" = 100' April 1996 Job # 95-066
Tax Map 6 P/O Parcel 15

APPROVED: Howard County Health Department.

Health Officer _____ Date _____

LDE, Inc

9250 Rumsey Road Suite 106
Columbia, Maryland 21045
Phone (410) 715-1070

TRANSMITTAL

Date 7/11/96

TO: HOWARD CO. HEALTH DEPT.

ATTN: RON PINKLEY

Phone

Fax Phone

FROM:

LDE Inc

9250 Rumsey Road

Suite 106

Columbia, MD 21045

Phone 410-715-1070

Fax Phone 410-715-9540

CC:

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please Comment

Sand Mound Plan Review is Incomplete — Do Not issue septic permit until signed approved copies are in our possession

R P Pinkley 7/24/96

2 - REVISED PERCOLATION PLAT

2 - REVISED PLOT PLAN FOR BUILDING PERMIT

2 - SAND MOUND DESIGN CALCULATIONS

PLEASE CALL SHOULD YOU HAVE ANY QUESTIONS

BRUCE BURTON

Mr Bruce Burton
LDE, Inc.
9250 Rumsey Rd
Suite 106
Columbia, MD 21045

(page 1)

RE: Plot Plan for Building Permit
i.e. Sand Mound Design Plans
(~~H. Mullineaux Property~~
Byrd Property (aka. H. Mullineaux Property)
Windsor Forrest Road.

cc: Selfridge Builders, Inc.
Mr & Mrs Byrd.

Meeting c Bruce Burton on 9/6/96 to Discuss these changes
pp.

Dear Mr Burton:

After a detailed review of the above plans I've discovered a number of changes and addition which need to be incorporated in the final plans as follows:

on the Site Plan

1. The 2ft contour intervals show slopes greater than 12% within the 20 ft immediate downslope of the lower repair sand Mound site (varies between 15 and 25% slope) and immediately adjacent to the Southwest Corner of the Primary mound site (25% slope). As this condition may have an adverse impact on the proper functioning and future repair alternative for the Sand Mound in question, the solution to this problem needs to be adequately address. Possible repositioning of the primary Sand Mound at the final stake out inspection or relocation of the primary Sand Mound to the uppermost Repair Site are possible solutions, since the well is already drilled and house is well along in its construction.

One foot intervals used here so slopes are acceptable.

2. A second pump chamber and [illegible] (ie. pump pit and dousing chamber are synonymous Terms) and pump appear redundant, a single chamber and pump system should be adequate. (Show change here and on

3. Relocation of septic and pump chambers to a site where 10+ft of cover are not required. 3-4 ft of cover maximum are prefered, since pump chambers require frequent access for

Maintenance. Provide detailed Septic Tank and Pump Chamber Plans showing Safety Ladder, Automatic Ventilation system, and Manhole riser sufficiently wide to allow safe and easy access for Routine Servicing if soil Cover is greater than 5 ft. (Show repositioned S.T. + P.C. and respective plumbing location on Site Plan where applicable)

Typical Sand Mound Cross Section

(4) Straw or Marsh hay is not acceptable backfill barrier. Use geotextile Fabric (change here and in SM Construction Sequence - C.4)

(5) 6" minimum for Topsoil cover.

(6) with 1½" diameter pipe, 10" (not 9") washed gravel would be required (this change affects all SM dimension calculation slightly)

(7) Show 2" of gravel cover over 1½" pipes.

(8) change downslope + upslope dimensions (discussed later)

(9) Perforations should be 5/16" - if use ¼" perforations, include a Sand Filter pre Treatment unit to reduce probability of perforation hole clogging in Design. (Show change in calculations and piping schematic)

(10) The last perforation should be upturned or in the elbow of a turnup to prevent vapor lock in the pipes.

(11) change perf. spacing if necessary.

Septic System Design Data

(12) If above discussed changes are used - invert elevation #2 and pump capacity #2 should be changed accordingly

(12b) item #6 - Make it clear these are elevations of Sandmound area completed.
- No grading of origin soil surface other than plowing as described in Construction Sequence

Bird SM. Changes
Windsor Forest Rd

STM Construction Sequence

(13) Preface: "Health Dept requires 48 hr Notice..."

(14) Soil Moisture for placing SMAS

(15) 6(a) Fill Placement sand spec's — " effective size .25 - .50 mm, uniformity coeff 3.5 or less

(16) C.(DNP) – "gravel shall be free of fines and between 3/4" and 2" in size.

(17) C.4 geotextile fabric only for backfill barrier.

(18) sod or "soil stabilizing web"? if finish in late fall to hold surface against erosion until grass can grow.

Piping Schematic

19 (a) place final perforation on top (Not invert) or in end cap of pipe (6) upper portion, or an upper elbow of Turnups to prevent gas trap in piping you may end lateral at last perforation rather than carry a dead end piece to 41' exactly.

b) Turnups at least on diagonally opposite ends for pump testing system — These may be cut back to grade once test is finished.

c) finished perforation must be smooth & free of burrs.

d) Manifolds should have piped diameter equal to or greater than Force Main from pump chamber.

e) Both side slopes should be 14'.

f) Adjust upslope and downslope dimensions to fit revised calculations. Generally on sloped sites downslope is greater than upslope widths.

(g) adjust hole direction and spacing per revised calc's doc. (Over)

SM. Calculation

(20) if 1½" dist. lateral used — need 10" not 9" total gravel bed depth (see my table 3.1 copy) i.e. = .833' (vs .75')

(21) upslope calc — use .83' (gravel bed) rather than 2.72'

(A) also this sum should be result/ plied by upslope correction factor = .73 at 12% slope. (1.0 @ 0% slope = your corrected answer with above formula)

(22) sideslope calc — change 9" to 10" gravel bed depth — still get 19'

(23) Downslope Calc — use 10" gravel depth and use downslope correction factor of 1.57 for 12% slope. This geometrically increasing ft is the reason sand mounds are not practical on slopes greater than 12%. — Based for 20 Ft zone between toe of sand mound and breaks to slopes ≥ 12% (see Comment #1 above).

Pressure Dist Design

(24) hole perforation should be 5/16" rather than 1/4" unless . . .

(25) Perforation Spacing should be 42" or greater. Use spacing of using 5/16" diam. perf. to keep lateral Flow rate below 80 gpm. this a suggestion only, your numbers could be used also as long as certain changes mentioned above are incorporated in plan.

(26) 3 Ft spacing between laterals (as shown in SM X section) is preferable to 2'. This gives 1.5' From lateral to edge & effluent distribution is bed is more balanced.

(27) since actual water usage per day used is less than half of max. design usage, the preferred practice is to dose @ 6 doses per day. Again just a suggestion.

(28) all above change will give a different flow rate and much different TDH — (remember TDH = Elev. head + Pressure head + Friction Loss head.

Bird Property
(Former H. Hallineaux)
Windsor Forrest Rd (Parcel 2)

TABLE 3.1

EQUATIONS FOR CALCULATING SAND MOUND DIMENSIONS

assume 4 Bdr @ 12% slope

Absorption bed ft.² (A × B) = $\frac{\text{Design flow (600 gpd)}}{1.2 \text{ gpd/ft.}^2}$ = 500 ft.²

Bed length (B) = 83 ft. (21 ft. to 101 ft. dependent on site)

Bed width (A) = $\frac{\text{Bed } 500 \text{ ft.}^2}{\text{B } 83 \text{ ft.}}$ = 6.02 ft. (15 ft. or less) rounded to 6' even

Upslope sand fill depth (D) = 48 in. − Z in. = 24 in. (12 in. min.)

Downslope sand fill depth (E) = [12 A × % slope] + D in. = [12 × 6 × 12% (8.64)] + 24" = 32.64" in. = 2.72' OK

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

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

Total Bed Depth (F) = 10 in. (they used 9" fill needed at least 9½" = 1½" diam pipe.

Sideslope setback (K) = [$\frac{(D + E)}{2}$ + 28 in.] × 3 = 168.96 in. = 14.08 ft.
(24 + 32.64) = 56.64 = 28.32 + 28 = 56.32

Upslope setback (J) = (22 in. + D) × 3 × upslope corr. factor = 100.74 in. = 8.395' [11½ @ 0% slope]
(46 + 24) (.73) (@ 12%)

Downslope setback (I) = (22 in. + E) × 3 × downslope corr. factor = 257.35 in. = 21.45'
(54.64 + 32.64) × 3 = 163.92 × (1.57) (at 12%)

Total Width of Mound (W) = 12A + J + I = 430.09 in. (35.84') 36' → (39' wide if 0% upslope)

Total Length of Mound (L) = 12B + K + K = 1333.92 in. (111.16') 111'

PERMIT

SEWAGE DISPOSAL SYSTEM

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

P _____

A _____

DISTRICT _____

DATE _____

DATE SYSTEM APPROVED _____

INSPECTOR _____

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
461-9933

_____ IS PERMITTED TO INSTALL _____ ALTER _____

ADDRESS _____ PHONE _____

SUBDIVISION Byrd Property (Former H. Mullineaux Property) LOT _____ ROAD Windsor Forrest Road

PROPERTY OWNER _____ Tax Map 6 Pcl Parcel 15

ADDRESS _____

Sand Mound Type Septic System — 4 Bedroom — Design Flow 600gpd on 12% slope site

1500 gal. Topseamed, 2chambered Septic Tank

1500 gal Topseamed pump chamber

Dual ~~Single~~ pump system with controls + alarms * — single pumps system may be allowed with Health Dept approval.

Install Sand Mound System based on Approved Sand Mound Plans (ie. Plot Plan for Building Permit)

Additional Details and specifications, and sand analysis to be submitted to Health Dept. for approval prior to begining construction.

48hr Notice to H.D. prior sand mound site stake out and beginning of Sand Mound Construction required.

Note: See Plans for Construction Sequence for 5 key points requiring Health Department inspection and approval before proceeding with Construction.

PLANS APROVED BY Ronald J Plank 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

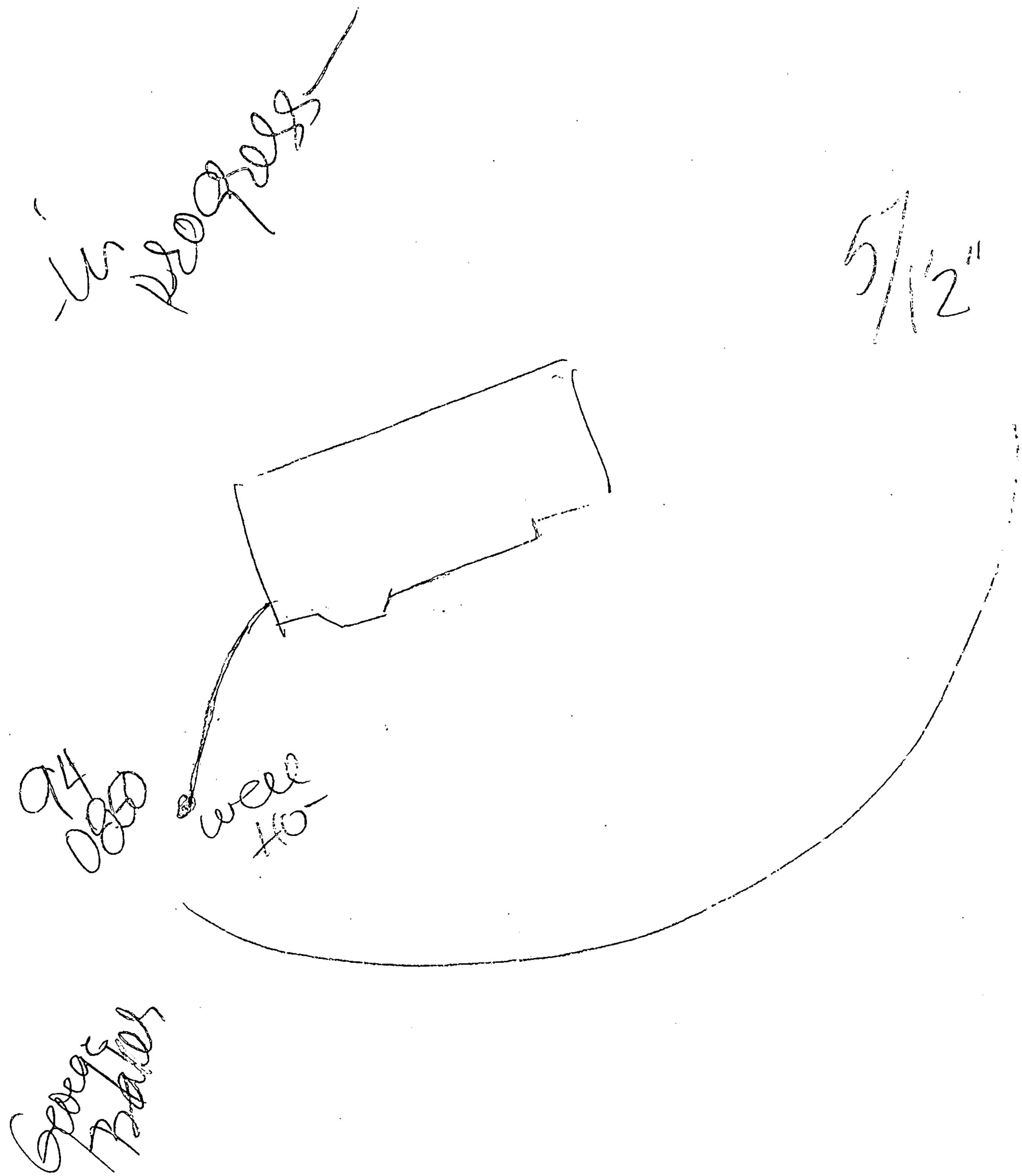
NOTE: INSTALL STAND PIPE ON SEPTIC TANK AND DRY WELL STAND PIPES MUST BE 6 INCHES IN DIAMETER CAST IRON, CONCRETE OR TERRA COTTA OR PVA OR ABS ACCEPTED. IF TOP OF SEPTIC TANK IS DEEPER THAN 3 FEET, MANHOLE TO GRADE REQUIRED.

NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES

*INSTALLER IS RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT

*CALL 461-9933 FOR INSPECTION OF SEPTIC SYSTEM.

HD-260(6-90)


5/12"

Re: Bird Property
Windsor Forrest Rd
Plot Plan for Bldg Permit

Septic System Design Data

Item # (3) – S.T. is proposed at 10 ft below finished grade } This is in the Rock!
Item # (4) – P.C. is proposed at 13¼ ft below grade }

(a) Recommended system especially where Top Sound is proposed should have inverts much closer to surface – Suggest they place Tank + P.C. downhill + get 3 ft or less cover over S.T. + P.C. and pump back uphill.

(b) If deep Manholes are necessary – easy accessibility will be required (i.e. rungs, ladders steps etc, or a wide enough accessway (i.e. 20" or larger inside diameter at Narrowest construction)

(c) (if dual pumps are not selected – a single pump system may be considered but Standard will be – "A minimum of 1 daily Design Flow Capacity, ie 600 gallons, between the high water alarm Float setting and the inlet invert of the pump chamber).

(5) The pump chamber is the Dosing chamber – a second one or a Distribution box is not necessary – Delete this reference and the D.B. shown on the 1¼" pressure line just short of the Sand Mound.

SS Design Data #6

(6) – No grading of Sand Mound site is permitted (~~[illegible]~~ please clarify on this section)

(C) Check Comments on SM Construction Sequence.

(D) Area 20 ft directly Downslope of West Side of 1° SM is 25% per 2' soil Contours on Site Plan – (Cont 15% – 24% on Downslope 20' [illegible] lower Mound in 2° area)

(E) Septic Tank + Pump chambers are Too deep in ground (i.e. they'll have inverts + lids below fractured bedrock on this site, and Deep Manholes (i.e. 13–14' below grade) pose a practical + potential Safety hazard – Provide diagram of such S.T., P.C., Safety devices (such as ladders, vent pipes, etc.) or propose an alternate site with less than 3 ft cover over P.C., ST lids. (such as at 795 elevation), If latter is OK show revised TDH for Pumps.
(Or use indoor grinder pump up to Stellar S.T. – if site preferred)

	Invert	grated (proposed grade)	
Inv @ wall	771.50'		FF 783.0
			BF 774.0
			CAR 781.5
S.T. inv in	770.80	785.0	(780.00)
S.T. inv out	770.50	785.0	
PC in	770.00	783.24	

(F) Comment on perf @ ½" vs. 5/16" @ 36" spacing vs. 42" spacing

(6) (a) is 3/4 head OK in lateral Probably OK

(b)

TRANSMITTAL

Date 7/11/96

TO: HOWARD CO. HEALTH DEPT.

ATTN: RON PINKLEY

Phone

Fax Phone

FROM:

LDE Inc
9250 Rumsey Road
Suite 106
Columbia, MD 21045

Phone 410-715-1070
Fax Phone 410-715-9540

CC:

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please Comment

Sand Mound Plan Review is Incomplete — Do Not issue septic permit until signed approved copies are in our possession a

R/Pinkley 7/24/96

2 - REVISED PERCOLATION PLAT

2 - REVISED PLOT PLAN FOR BUILDING PERMIT

2 - SAND MOUND DESIGN CALCULATIONS

PLEASE CALL SHOULD YOU HAVE ANY QUESTIONS

RE: Bird Property

BRUCE BURTON

BP corrections faxed 7/19/96 AP
+ logged out

APPLICATION

HOWARD COUNTY

PERMIT APPLICATION

DEPARTMENT OF INSPECTIONS, LICENSES & PERMITS
3430 COURT HOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043

SERIAL NUMBER: B00100804

BUILDING ADDRESS (HOUSE NO., STREET, TOWN OR AREA): 19001 WINDSOR FOREST RD 23776 MOUNT AIRY, MD 21771

GRADING/SEDIMENT CONTROL ☐ YES ☐ NO — SDP #

DESCRIPTION OF WORK AUTHORIZED: New Single Family Home with Attached 2 car garage Rough in basement 4 Bedrooms

LOT NO.	PARCEL NO.	SEC.	AREA	BLOCK NO.	LIBER	FOLIO
	15			14		

SUB DIVISION	ZONE	ZONE MAP	ELEC. DIST.	CENSUS TR.
	RC-DEO	6	4	6040

OWNER NAME AND ADDRESS: Timothy and Bonnie Bird, 14930 Triadelphia Road, Glenelg MD 21737 — PHONE NO. 301-854-6739

OCCUPANT'S NAME AND ADDRESS: Timothy and Bonnie Bird, 14930 Triadelphia Road, Glenelg MD 21737 — PHONE NO. 301-854-6739

ARCHITECT OR ENGINEER'S NAME AND ADDRESS: LDE, INC., 9250 Rumsey Road, Suite 106, Columbia MD 21045 — PHONE NO. 410-715-1070

CONTRACTOR'S NAME AND ADDRESS: Selfridge Builders, 14045 Laurel Drive, Glenwood MD 21738 — PHONE NO. 410-997-8232 3966

SIZE OF BLDG.	FRONT	DEPTH	HEIGHT

TYPE OF BLDG.	AREA	VOLUME	ROOF
B. ROOMS			
ROOMS			
BATHS			
FIREPLACES			

FOOTINGS	FOUNDATION	S. WALLS

UTILITIES

WATER/WELL	SEWER/SEPTIC	GAS	ELECTRICITY	TYPE OF HEAT	AC

EXISTING USE	PROPOSED USE
Vacant Lot	Single Family Home

EST. CONSTRUCTION COST	LICENSE NUMBER	PERMIT FEE
100,000		

I have carefully examined and read this application and know the same is true and correct, and that is doing this work, all provisions of Howard County Ordinances and the State Laws of Maryland will be complied with, whether specified or not; and I will notify the Department of Inspections, and Permits twenty-four hours in advance when I am ready for the inspections called for elsewhere in the application; and that no work will be covered up until such inspections have been complied with.

SIGNATURE

TITLE: Pres-A — DATE: 6-25-96

W/S CODE

FOR OFFICE USE ONLY

DISTANCE IN FEET FROM R/W LINE TO FRONT BUILDING LINE _____

SIDE YARD _____
(DISTANCE IN FEET FROM SIDE BLDG. LINE TO SIDE PROPERTY LINE)

TO SIDE BUILDING LINE _____
DISTANCE IN FEET, REAR YD. REQUIRING SET

BACK _____ (CORNER LOT ONLY) _____ SDP #

Check payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

FUNCTION	DATE	SIGNATURE APPROVAL
ZONING/PLANNING Y		
SHA Y		
SEDIMENT/GRADING Y		
BUILDING OFFICIAL Y		
WATER & SEWER		
HEALTH DEPT. Y	7/18/96	
FIRE PROTECTION		
STORM WATER MGM		

APPROVED _____ DATE _____

CAUTION

To begin construction before a permit placard has been issued and displayed on the job is a violation of the law.

Use and occupancy permit must be applied for two weeks before it will be issued.

IMPORTANT: PLEASE SHOW ZIP CODES AND AREA CODES WHEREVER REQUIRED.

LP-69-591 CK 7260

Distribution of Copies:
White - Building Official
Green - Planning & Zoning
Yellow - Engineering
Pink - Health Dept.
Gold - S.H.A.

C

C 1 | 7968 — SEQUENCE NO. (MDE USE ONLY)
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY
PLEASE PRINT OR TYPE

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

COUNTY NUMBER 13-A56568

ST/CO USE ONLY
DATE Received

DATE WELL COMPLETED 09/15/96

Depth of Well 260 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-99-0850

OWNER Selfridge Builders (last name) (first name)
STREET OR RFD Windsor Forest Rd TOWN Long Corner
SUBDIVISION (Former Ho Mullinear - Now Bird Property) SECTION LOT

WELL LOG
Not required for driven wells

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

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Top Soil	0	2	
Brown Shale	2	9	
Brown Slate	9	15	
Blue Slate	15	40	
Brown Slate	40	45	✓
Blue Slate	45	90	
Flint Rock	90	95	✓
Blue Slate	95	260	

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED (yes / no) N

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.

TYPE: MWD/MSD/MGD
DRILLERS LIC. NO. 116
Ralph Mayer

DRILLERS SIGNATURE
(MUST MATCH SIGNATURE ON APPLICATION)
LIC. NO. 117
Ralph E. Mayer

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

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box) (yes) Y / (no) N
TYPE OF GROUTING MATERIAL (Circle one)
CEMENT CM BENTONITE CLAY BC
NO. OF BAGS ____ NO. OF POUNDS 500
GALLONS OF WATER 42
DEPTH OF GROUT SEAL (to nearest foot)
from 9 ft. (TOP) to 29 ft. (BOTTOM) (enter 0 if from surface)

CASING RECORD
casing types insert appropriate code below
ST STEEL, CO CONCRETE, PL PLASTIC, OT OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
PL	6	22

OTHER CASING (if used) — EACH CASING

diameter inch	depth (feet) from	to

SCREEN RECORD
screen type or open hole insert appropriate code below
ST STEEL, BR BRASS BRONZE, HO OPEN HOLE, PL PLASTIC, OT OTHER

C 2

EACH SCREEN	DEPTH (nearest ft.)	
1	HO	29 / 260
2		
3		

SLOT SIZE 1 ____ 2 ____ 3 ____
DIAMETER OF SCREEN ____ (NEAREST INCH)

GRAVEL PACK	from	to
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 ____
TELESCOPE CASING — LOG INDICATOR — OTHER DATA

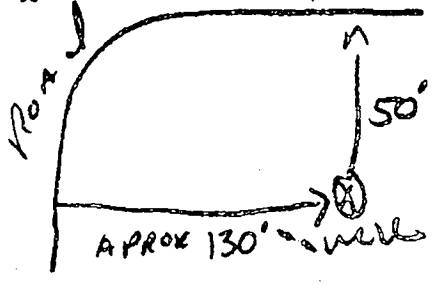
C 3

PUMPING TEST
HOURS PUMPED (nearest hour) 3
PUMPING RATE (gal. per min.) 10
METHOD USED TO MEASURE PUMPING RATE Bucket
WATER LEVEL (distance from land surface)
BEFORE PUMPING 99 ft.
WHEN PUMPING 60 ft.

TYPE OF PUMP USED (for test)
A air, P piston, T turbine, C centrifugal, R rotary, O other (descrit 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)
PUMP HORSE POWER
PUMP COLUMN LENGTH (nearest ft.)
CASING HEIGHT (circle appropriate box and enter casing height)
(+) above / (−) below LAND SURFACE ____ (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)



COUNTY

Page ____ of ____
Date July 15 1996

Review OK RPP 9/30/96

FIELD DATA SHEET
HOWARD COUNTY WELL YIELD TEST

Well Permit No. HO - 94-0850
Location of property (road) Windsor Forrest Rd now Bird Property
Subdivision (Formerly Hobart Mullinex Prop) Lot ____ Block ____ Plat ____ Sec. ____
Well Driller R Rouse Owner Eichelberger Builders

Depth of well 260
Distance of measuring point (M.P.) above ground 2'
Static water level (S.W.L.) below M.P. 44

I. High rate pumping -- reservoir drawdown

Time pump started 1:45 Pumping rate 12 GPM
Total time 15 min to reach pumping water level 60 ft. below M.P.

II. Recovery pump test data - observations to be recorded every 15 minutes

TIME (in 15 minute intervals	WATER LEVEL below M.P.	PUMPING RATE time to fill 1 gallon bucket	FLOW METER READING (if used)	CALCULATED FLOW (gallons per minute)
2:00	60 "	6 Sec		10 GPM
2:15	60 "	6 Sec		10 GPM
2:30	60 "	6 Sec		10 GPM
2:45	60 "	6 "		10 "
3:00	60 "	6 "		10 "
3:15	60 "	6 "		10 "
3:30	60 "	6 Sec		10 GPM
3:45	60 "	6 Sec		10 GPM
4:00	60 "	6 Sec		10 GPM
4:15	60 "	6 "		10 "
4:30	60 "	6 "		10 "
4:45	60 "	6 Sec		10 GPM
5:00	60 "	6 Sec		10 GPM

HD-224

22 Ø Casing 20 open 7 BAYS

STATE USE INDUSTRIES
JESSUP, MD 20794

EMERGENCY/TEMP NO. IF ANY

B 1 | 8219 | SEQUENCE NO. (MDE USE ONLY)
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
PERMIT TO DRILL WELL
please print or type

STATE PERMIT NUMBER: HO-99-0850
fill in this form completely

Date Received (APA): 07/1/96

OWNER INFORMATION

Last Name: SELFRIDGE | First Name: BUILDERS
Street or RFD: 1405 GARFIELD DR
Town: GLENWOOD | State: MD | Zip: 21738

DRILLER INFORMATION

CIRCLE: MSD / MGD / MWD

Driller's Name: Ralph MAYNE | License No.: 116
Firm Name: Ralph MAYNE well DRILLING
Address: 9120 Brown Church Rd Mt. Airy
Signature: Ralph Mayne | Date: 7/10/96

B 2 WELL INFORMATION

APPROX. PUMPING RATE (GAL. PER MIN.): 5
AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY): 500

USE FOR WATER (CIRCLE APPROPRIATE BOX)

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

APPROXIMATE DEPTH OF WELL: 150 FEET

APPROXIMATE DIAMETER OF WELL: 6" 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 DEEPENED WELLS

(CIRCLE APPROPRIATE BOX)

- (N) THIS WELL WILL NOT REPLACE AN EXISTING WELL
- [Y] THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED
- [S] THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS
- [D] THIS WELL WILL DEEPEN AN EXISTING WELL

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

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

APPROP. PERMIT NUMBER: GAP

FORCE: RP (WRITE INITIALS IN BOX) PERMIT No.: HO-99-0850

B 3 LOCATION OF WELL

Bird Property (Former Hobart Mullinear Prop)

8 COUNTY: HOWARD
23 SUBDIVISION: NONE
SECTION: | LOT:
52 NEAREST TOWN: LONGCORMOR
MILES FROM TOWN (enter 0 if in town): 2 MI

B 4

DIRECTION OF WELL FROM TOWN (CIRCLE BOX)

NW 8-9 | N 8 | NE 8-9
W 8 | TOWN | E 8
SW 8-9 | S 8 | SE 8-9

NEAR WHAT ROAD: WINDSOR Forest RD.

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX): NORTH (N) WEST (W) (32) EAST (E) SOUTH (S)

DISTANCE FROM ROAD: 75
ENTER FT OR MI: FT

TAX MAP: _____ BLK: _____ PARCEL _____

NOT TO BE FILLED IN BY DRILLER
HEALTH DEPARTMENT APPROVAL

COUNTY NAME: Howard | COUNTY NO.: 13-A36568
STATE SIGNATURE: _____ | INSERT S
DATE ISSUED: 07/17/96 | CO SIGNATURE: Ron Purkey (cw) | EXP. DATE: 7/16/97

NORTH GRID: 54700 | EAST GRID: 07500

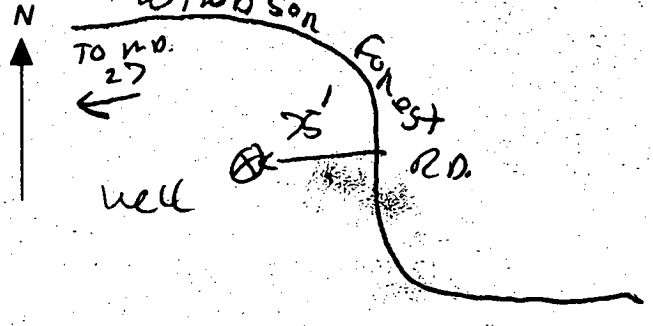
SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X

SOURCES OF DRILLING WATER
1. well
2.
3.

WRITE THE BOX NUMBER FROM THE MAP HERE

E 750
N 5407
000 000

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 =

COUNTY

Page _____ of _____ Review _____

Date _____

FIELD DATA SHEET
HOWARD COUNTY WELL YIELD TEST

Well Permit No. HO - 94-0850 Now Bird Property

Location of property (road) Windsor Forrest Rd

Subdivision (Former Hilbert Mullineaux Prop) Lot ← Block Plat Sec.

Well Driller R. Mayne Owner Se Fridge Builders

Depth of well _____

Distance of measuring point (M.P.) above ground _____

Static water level (S.W.L.) below M.P. _____

I. High rate pumping -- reservoir drawdown

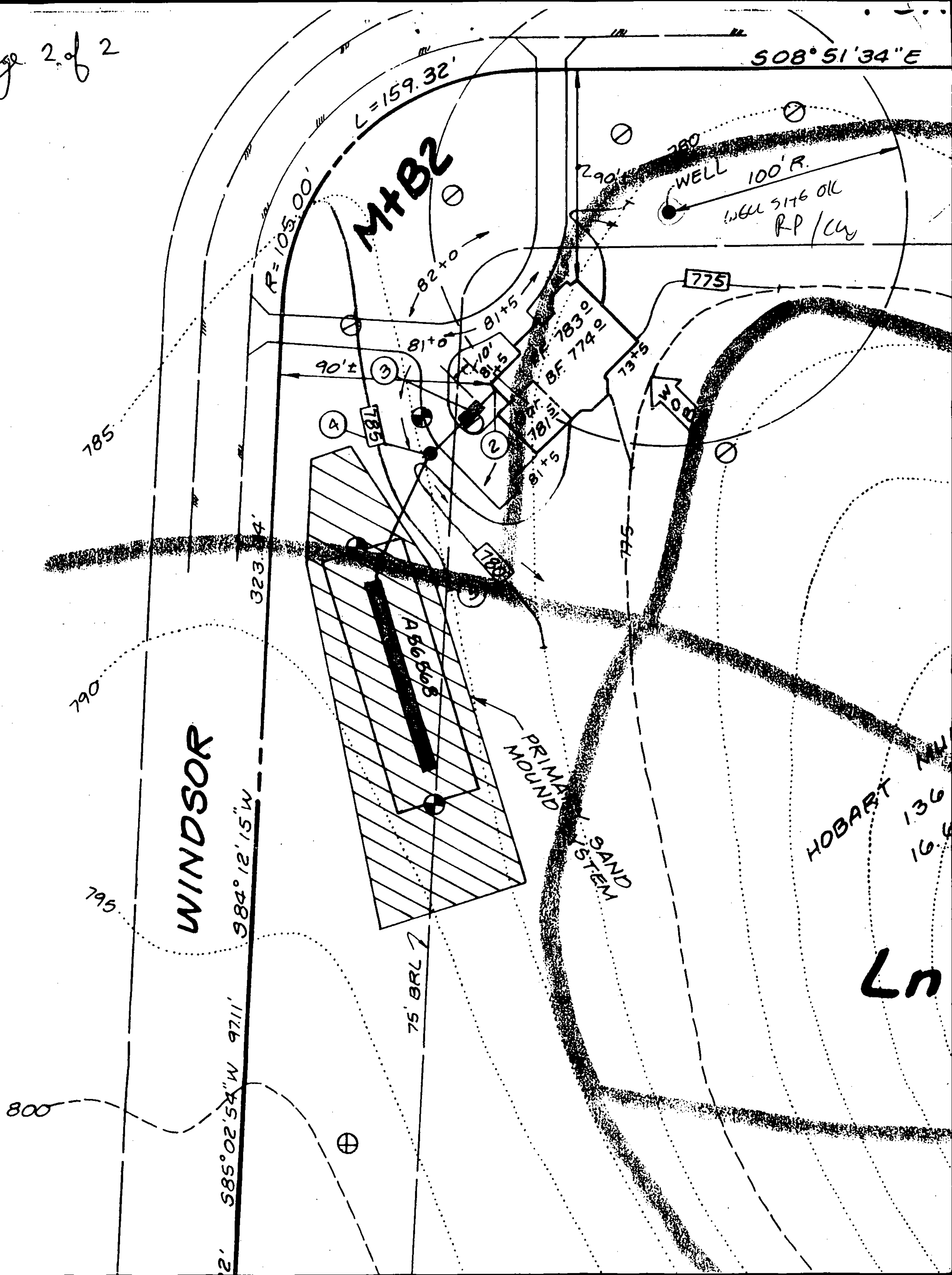
Time pump started _____ Pumping rate _____

Total time _____ to reach pumping water level _____ ft. below M.P.

II. Recovery pump test data - observations to be recorded every 15 minutes

TIME (in 15 minute intervals	WATER LEVEL below M.P.	PUMPING RATE time to fill 5 gallon bucket	FLOW METER READING (if used)	CALCULATED FLOW (gallons per minute)
		7/18/96		
		Per Ralph Mayne. - WELL CONSTRUCTION IS SATISFACTORY		
		well yield is 10 gpm		COMPLETION REPORT TO BE SUBMITTED SHORTLY (EW)
		He didn't remember depth		
		but it is >200'		
		Ann McMeen		

HD-224


S08°51'34"E
L=159.32'
R=105.00'
M+B2
82+0
81+5
81+0
90'±
3
4
785
2
81+5
WELL
100'R.
290'
780
775
BF 783.0
BF 774.0
73+5
WOB
788
185
790
795
800
WINDSOR
S84°12'15"W
323.
PRIMARY MOUND
SAND SYSTEM
75' BRL
S85°02'54"W 97.11'
HOBART
Ln

SELFRIDGE BUILDERS

July 16, 1996

Mr. Ron ~~Pinkerton~~ Pinkney
Dept. of Environmental Health
Howard County

REF: Hobart Mullinem Property
and Wellington Estates Lot #79

Dear Ron,

Pursuant to our phone conversation yesterday afternoon I am writing this letter in order to expedite the release of the well permits for the above referenced lots. Both wells will be located per the plans as submitted to Howard County and per the engineers stake out (Both lots are currently staked).

Selfridge Builders understands that this deviates from the standard process, for that reason we accept any responsibility should either of these wells need to be re-located upon completion of your review.

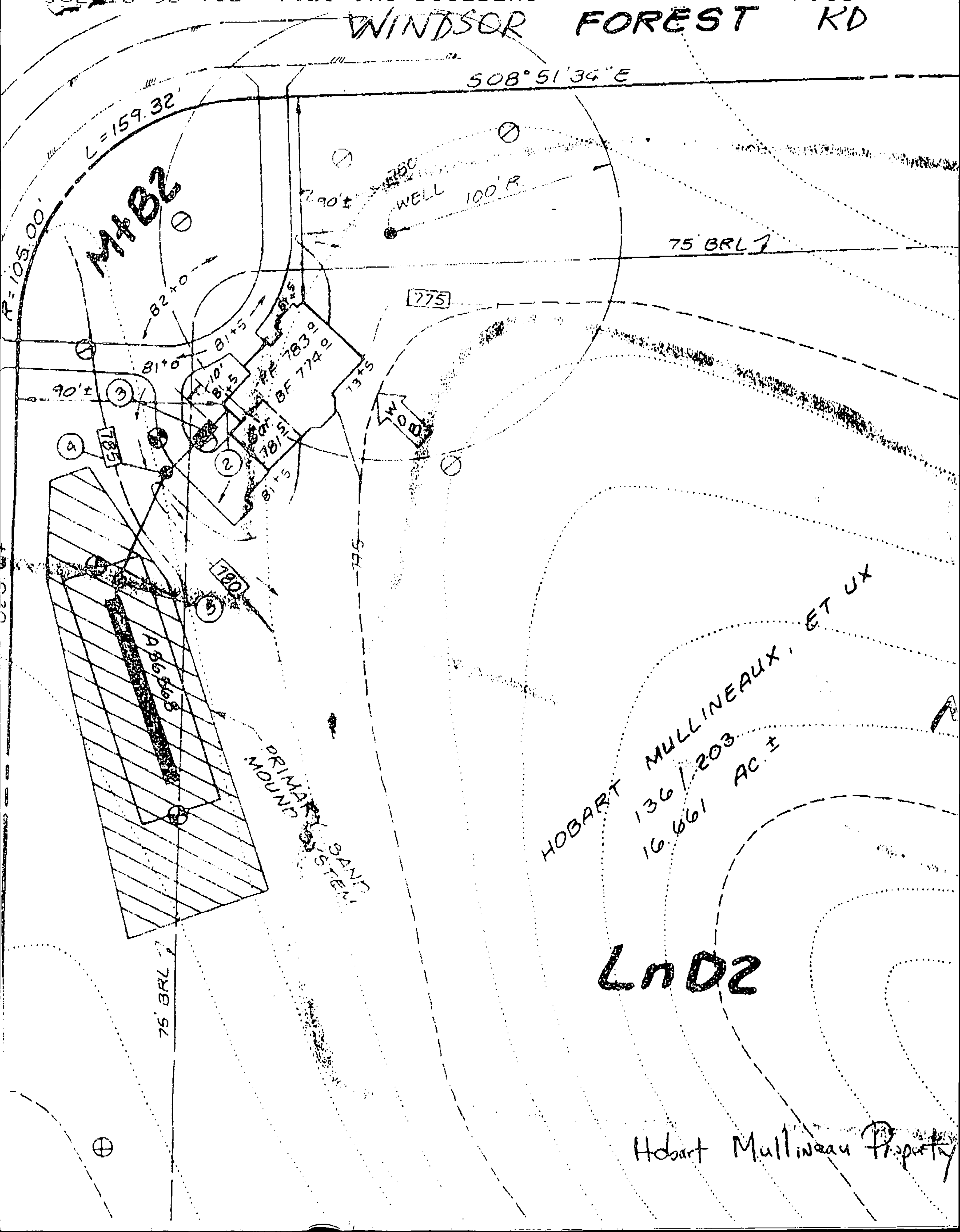
In advance we appreciate your help in the resolution of this matter and if you have any questions do not hesitate to call me.

Sincerely,

Tim Ragen
V.P. of Production

OK pp Pinkney 7/18/96
per Telephone conversation
of 7/15/96

cc: File
* (Attachments)



WINDSOR FOREST RD
S08°51'34"E
L=159.32'
R=105.00'
MxB2
WELL
100'R
90'±
75' BRL
775
785
780
BF 783.0
BF 774.0
Gar 781.5
PRIMARY MOUND SANI. SYSTEM
75' BRL
HOBART MULLINEAUX, ET UX
136/203
16.661 AC.±
LnD2
Hobart Mullineau Property

To CW

Date 7/1/96 Time 4:25 ☐ AM ☐ PM

WHILE YOU WERE OUT

M Bill Grau

of

Phone ( ) 6757
Area Code Number Extension

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	

RETURNED YOUR CALL

Message General Questions

Operator

Rob — 7/2/96

9/3/96 - call Ret'd,

BRUCE BURTON

LDE

(ASSOCIATE OF
WAYNE WELLER)

715-1070

FAX 715-9540

CHECKING ABOUT

SELFRIDGE

WINDSOR FOREST

SAND MOUND (CW)

Craig

MDE MARYLAND DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway • Baltimore, Maryland 21224
(410) 631-3000

Parris N. Glendening
Governor

Jane T. Nishida
Secretary

MEMORANDUM

TO: Environmental Health Directors

FROM: Jane C. Gottfredson, Program Manager JCG
State Groundwater Permits Program

SUBJECT: Applicability of Alternative Onsite Sewage Disposal System Policy

DATE: August 15, 1995

I am writing as a follow-up to our discussions of January 19 and March 16, 1995 at the MD Conference of Local Environmental Health Directors regarding applicability of the Alternative Onsite Sewage Disposal System Policy outlined in a September 28, 1994 memorandum directed to Health Officer's and Directors of Environmental Health by J. L. Hearn, Director, Water Management Administration. To clarify which "existing lots of record" were intended to be considered for application of alternative systems under this policy, a functional definition appears to be most useful and expedient. Therefore, wherever a conventional system would be considered to serve a property recorded in the land records, an alternative system could also be considered. This approach will preclude the possible problem of different jurisdictions applying different definitions of "legally established lots". Administration of applications would proceed as currently implemented within each jurisdiction.

If you have any questions, please call me at (410) 631-3779.

JCG:je

cc: J. L. Hearn
Dane Bauer
George Keller
Regional Consultants

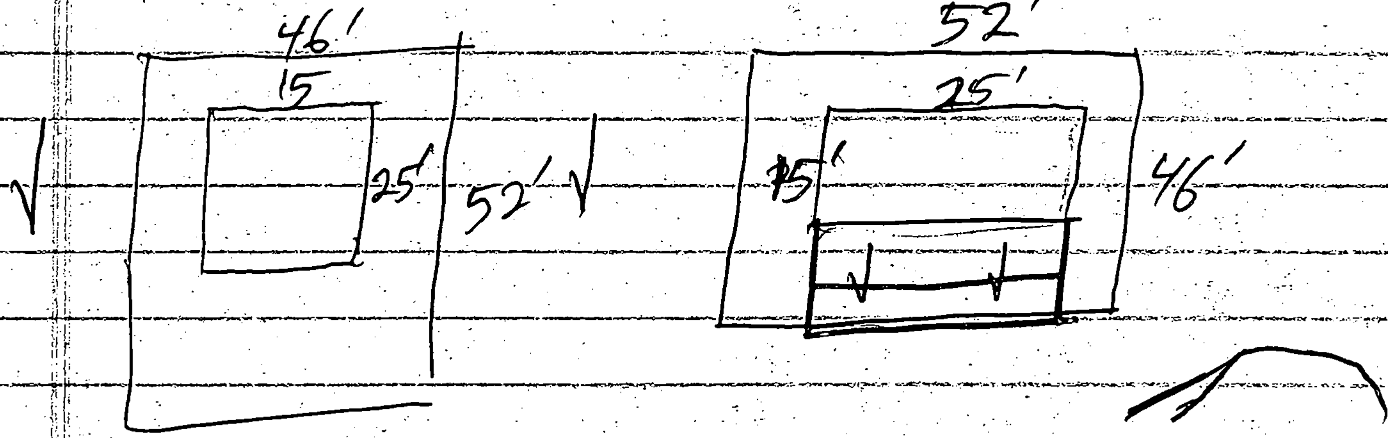
Howard Co. Health Dept policy, as we recently discussed, allows for use of alternative systems only for repair or in remote locations (i.e. 20 acre lot) not for subdivision.
Frank

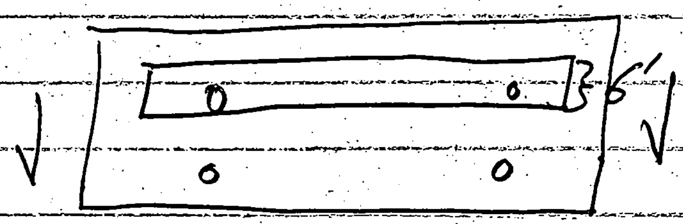
9/30/96 – Meeting c̄ Wayne Keller
Sand Mound Sizing

H. Mullineaux Property
Windsor Forrest Rd

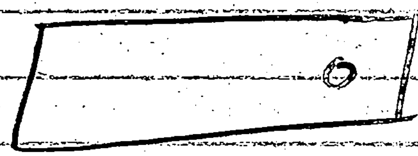
#BDR

46'x52' = 15'x25' Bed





375



25
15
250
125
375

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

April 26, 1996

Mr. Donald Reuwer
Land Design and Development
10805 Hickory Ridge Road
Columbia, MD 21044

RE: PERCOLATION TESTING
Receipt #A56568
Hobart Mullineaux Property
South Side of Windsor Forest Rd.

Dear Mr. Reuwer:

I arrived late (o the field assignment) No evidence anyone was at site for Testing I called office, Told to go to next appt. day. CW 5/1/96

A percolation test date has been reserved for Tuesday at 10:00 a.m., May 7, 1996.

You will be responsible for having a contractor on-site to excavate test holes at the corners of proposed percolation area.

Please call this office between 8:30 a.m. and 4:30 p.m., Monday through Friday, to confirm your acceptance of this percolation test date.

Thank you for your cooperation in this matter.

Very truly yours,

Craig Williams, Program Director
Water and Sewerage Program

CW:vrk

cc: File

Bureau of Environmental Health
3525-H Ellicott Mills Drive Ellicott City, Maryland 21043-4544
Water and Sewerage, Permits (410) 313-2640 Community Environmental Health (410) 313-2644
Food Protection Program (410) 313-2642 TDD (410) 313-2323

Howard County
MARYLAND

DEPARTMENT OF PLANNING & ZONING

Joseph W. Rutter, Jr., Director

April 4, 1996

Donald Reuwer
Land Design and Development
10805 Hickory Ridge Road
Columbia, MD 21044

Dear Mr. Reuwer:

As per your request of April 3, 1996, I am hereby certifying that it is the Department of Planning and Zoning's position that the part of the Mullineaux property consisting of 16 acres on the southwest side of Windsor Forest Road is a separate property from the property on the northeast side of Windsor Forest Road.

Should you have any questions or require further assistance, please do not hesitate to contact me.

Sincerely,

Joseph W. Rutter, Jr.
Director

JWR/:

Post-it® Fax Note 7671	Date	# of pages ▷ 1
To Craig Williams	From Don Reuwer	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

5/1/96
10:00

APPLICATION

PERCOLATION TESTING

A 56568

P _____

DISTRICT _____

DATE 4-18-96

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

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 Robert Mullineux

ADDRESS Windsor Forest PHONE _____

AGENT OR PROSPECTIVE BUYER Donald Beaver

ADDRESS 10805 Hickory Ridge Road PHONE 740-2100
Columbia, MD

PROPERTY LOCATION: 5th Election District

SUBDIVISION _____ LOT NO. _____

ROAD AND DESCRIPTION South side Windsor Forest Road

TAX MAP 6 PARCEL # 15 Grid 8

SIZE OF LOT 16 Ac ± TYPE BLDG. SFD
(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. _____
(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

HD-216 (3/92)

A66568
COUNTY #

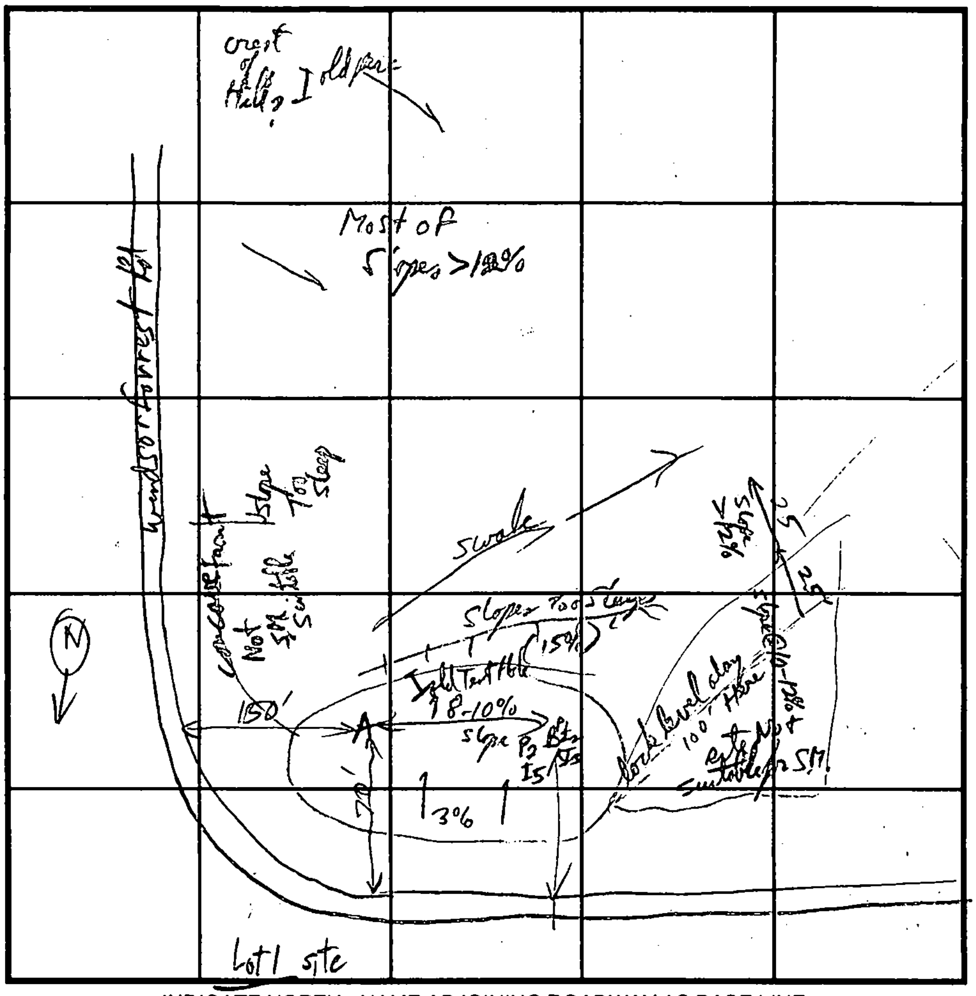
SOIL PROFILE

A

0' grn-f-sbk chLL Dark grey Brn
12" Neutral Brn dark grey Brn chSiCL-L f-m sbk dense
19" Neutral & Red Brn Mix chL-SiCL
48" Red, Red Brn dark grey & Brn Mix v ch Loam
5'

B

stn Brn vf sbk ch Loam
8" Red Brn vchLL
14" Mix Red & Neutral Brn vchCL
25-30" Mix Brn, grey Brn & Red Brn Loam 60-70% large stones
5'



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

SOIL PROFILE

0'

DATE	TEST NO.	DEPTH	PRE-WET START	PRE-WET STOP	TEST - 1" DROP START	TEST - 1" DROP STOP	TIME
5/22/96	A		(see shallow infiltration tests)				
		v5' 5'	20 min to reach Top Mark; after 50 min still had not reached Top Mark				Too Slow
	B						
		v5' 5'	3rd Refill 12:17:01	12:17:42	dry hole at 12:18:10		12 sec Too Fast
	A	3½	1:02:40	1:04:00	1:04:00	1:06:23	2½ min

REMARKS Primary area only big enough for one Sand Mound (other orientation Not SM suitable)

TYPE OF SOIL Mt. Airy

TESTED BY [signature] ALSO PRESENT

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME TRENCH WIDTH

INLET DEPTH MAXIMUM BOTTOM DEPTH SQ. FT/BEDROOM

APPLICATION

PERCOLATION TESTING

A A56668

P _____

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

DISTRICT _____

DATE 5/22/96

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 Hobart Mullineaux Property

ADDRESS c/o Land Design & Development PHONE 740-2100 x 297

AGENT OR PROSPECTIVE BUYER Donald Reasner

ADDRESS 10805 Hickory Ridge Rd PHONE 740-2100

PROPERTY LOCATION:

SUBDIVISION Hobart Mullineaux Property LOT NO. 2

ROAD AND DESCRIPTION S/S Windsor Forest Rd

TAX MAP 6 PARCEL # P/O 15

SIZE OF LOT _____ TYPE BLDG. _____
(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. _____
(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

HD-216 (3/92)

A56668
COUNTY #

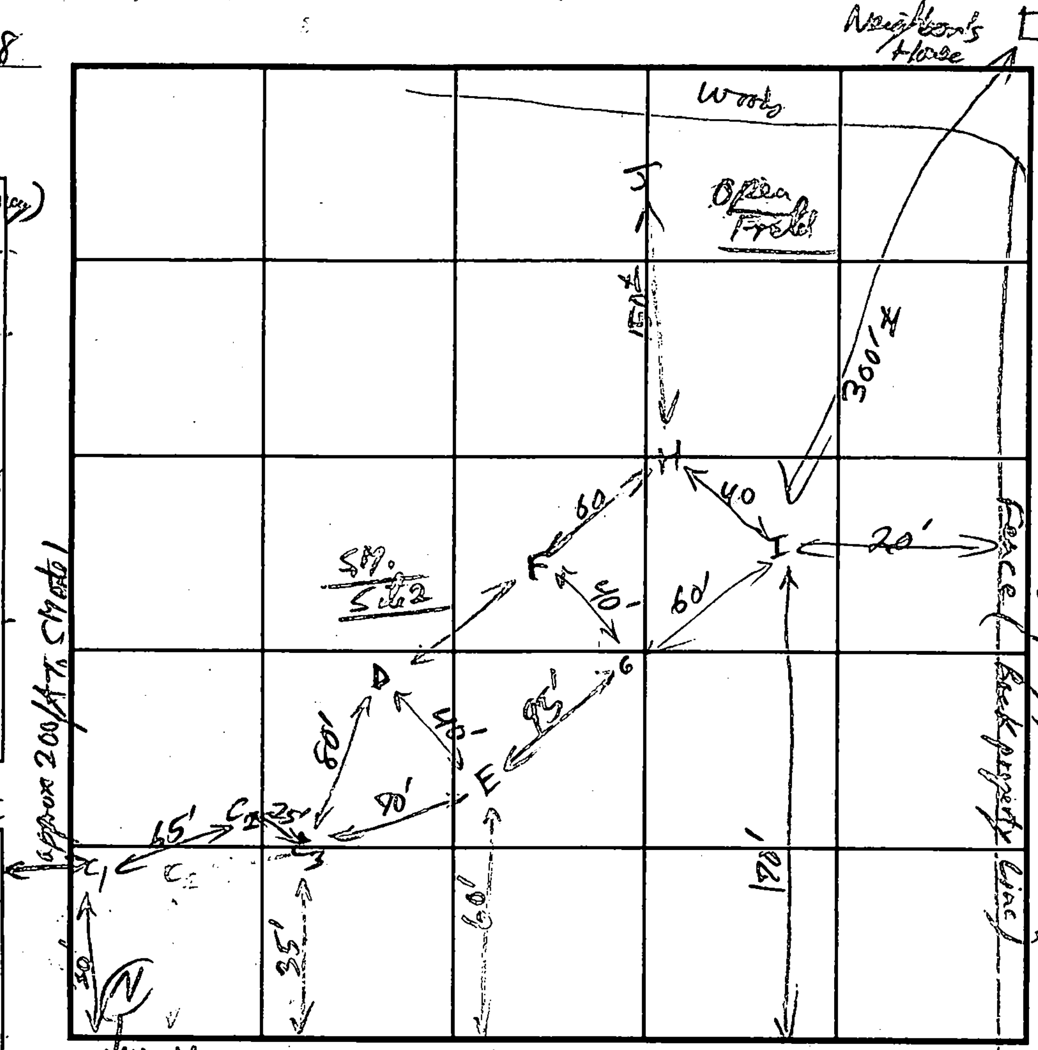
SOIL PROFILE (D)

0'

Dark Brn (gray) SiL
8" Sto Brn Ch Sil-L
24-30" Mixed Brn Blue gray V.Ch Loam Mix 40-50% Shales & Phylite
5½ >50% Rock Frags (Schale)
7½

E,F,G,H,I

Dark Brn Loam
8" Red Brn Ch SiCL-L
3' Only dug for shallow perc Test & Infiltration rates



SOIL PROFILE

0'

INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

DATE	TEST NO.	DEPTH	PRE-WET START	PRE-WET STOP	TEST - 1" DROP START	TEST - 1" DROP STOP	TIME	
5/22/96	✓ D	7½ ✓ 3½	2:52:00	2:55:00	2:55:00	3:03	5½ min	OK
	E	3' ✓ 3'	retested 3:08:00	3:08:23	3:08:23	~Fast± 3:10:30	2 min	OK
		Second Hole 3'	3:12? Missed	3:15:40	3:15:40	3:36:00	20 min	OK
	C2, C3	very shally — Refusal @ 2'					Fail	
	C1	3' Not Tested						
	G	3' ✓ 3'	3:28	3:34	3:34	3:41:00	7 min	OK
	F	3 ✓ 3'	3:47:00	3:47:50	3:47:50	3:49:50	2 min	OK
	H	3 ✓ 3'	3:52:00	3:56:00	3:56:00	4:08	12 min	OK
	I	3 ✓ 3'	4:09:00	4:15:00	4:15:00	4:28:00	13 min	
	J	Not Tested (Slope too steep for SM's)						

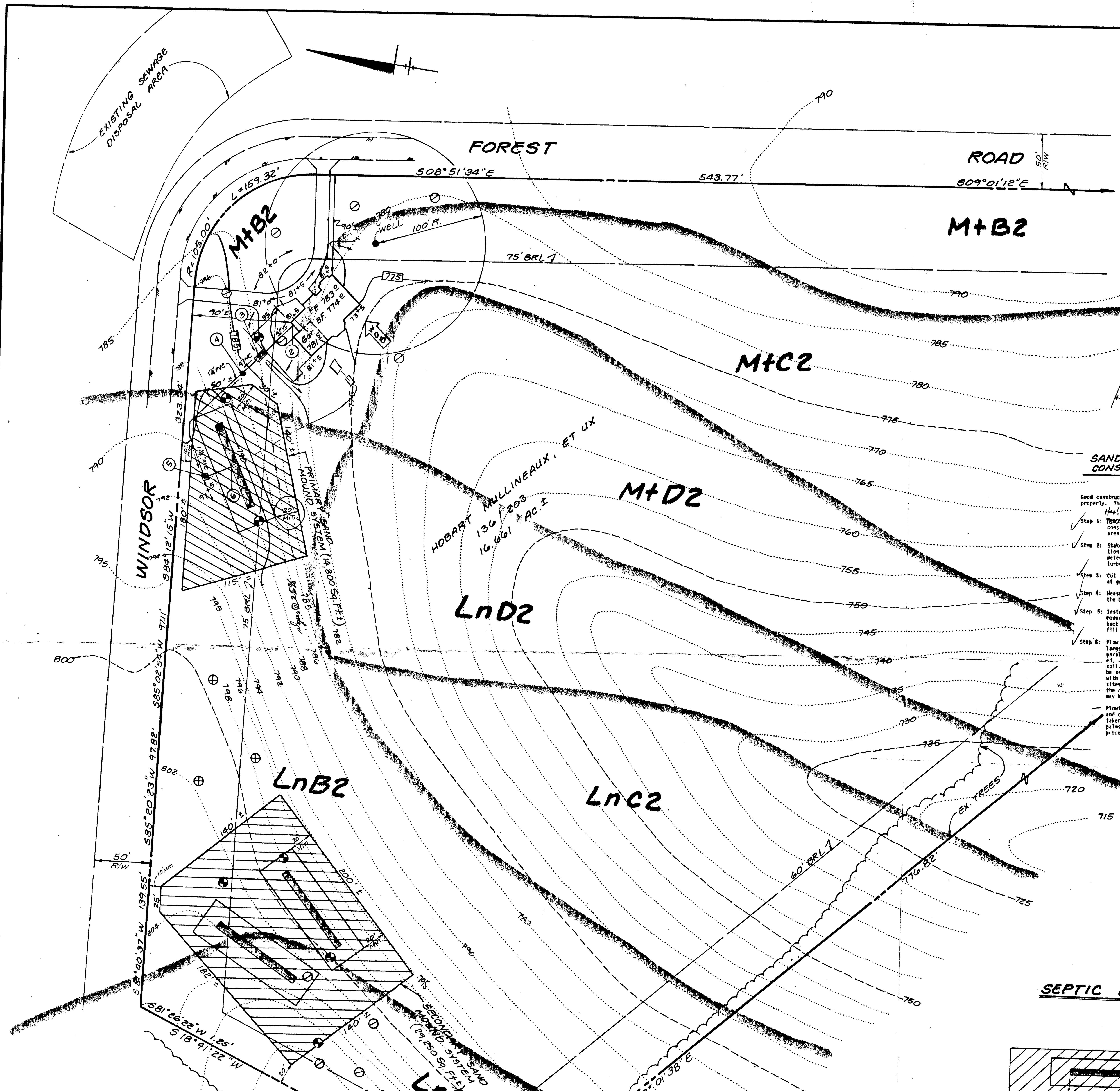
REMARKS Watch for Downslopes where ≥12% between perc holes. Slopes at 8-10% ← OK for Sand Mound only

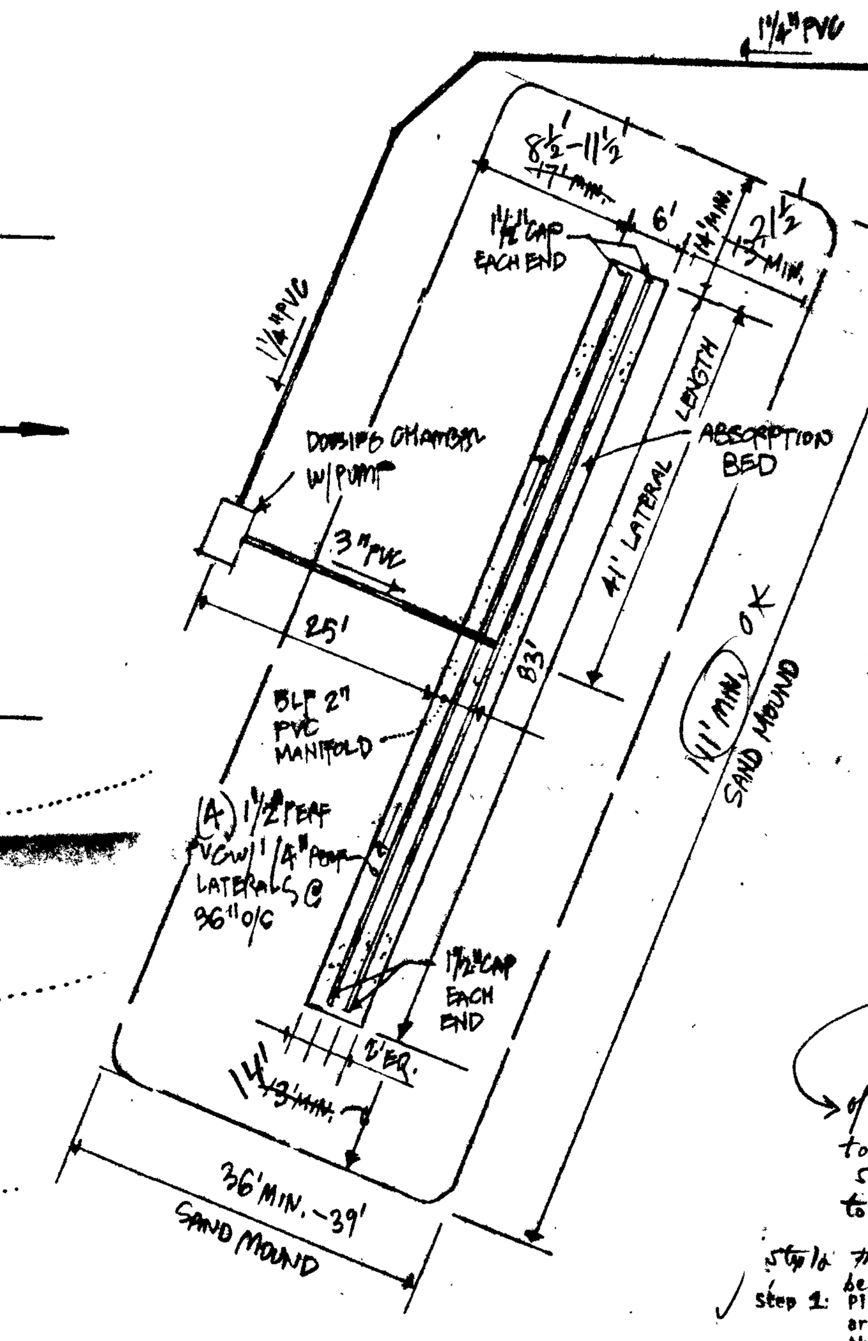
TYPE OF SOIL Mt Airy (near two acres with Linganore Transition)

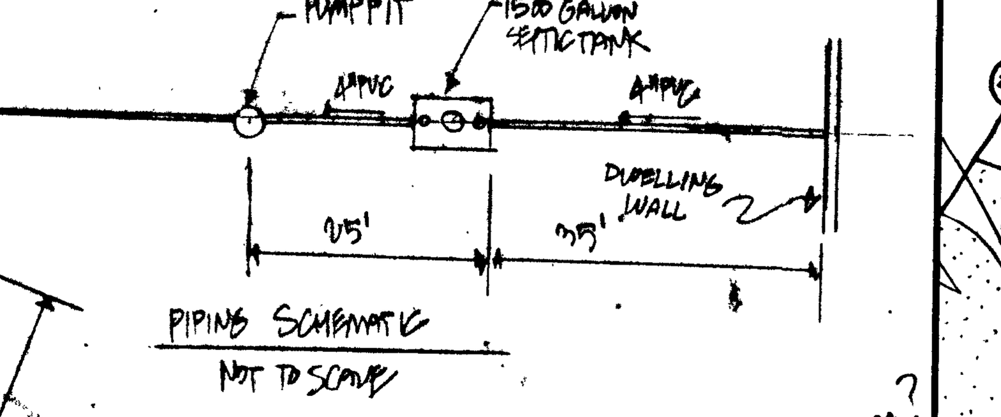
TESTED BY R.W. [illegible] ALSO PRESENT Don Rewwer

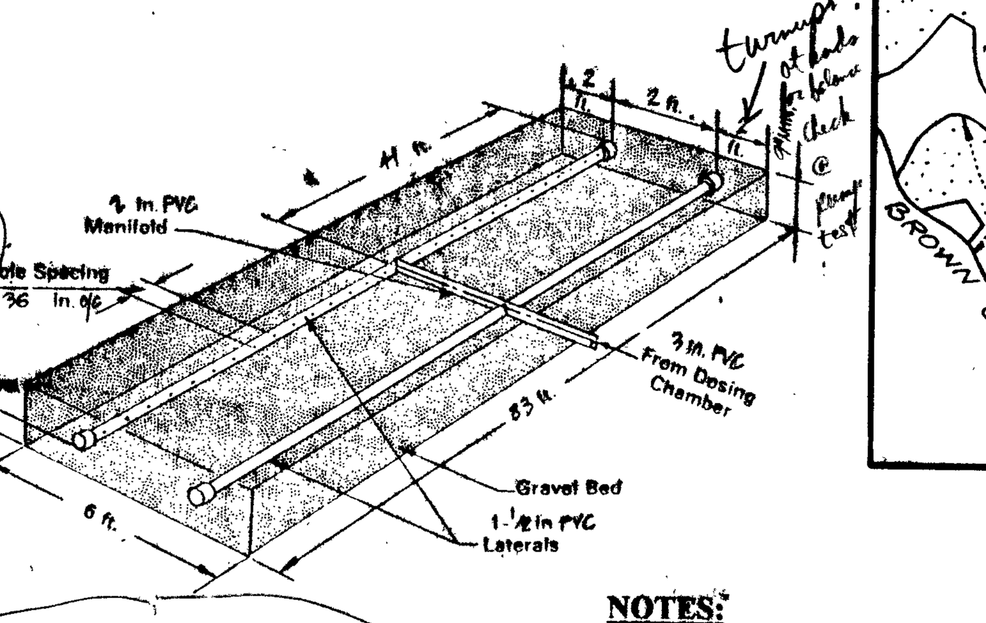
TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME ______ TRENCH WIDTH ______

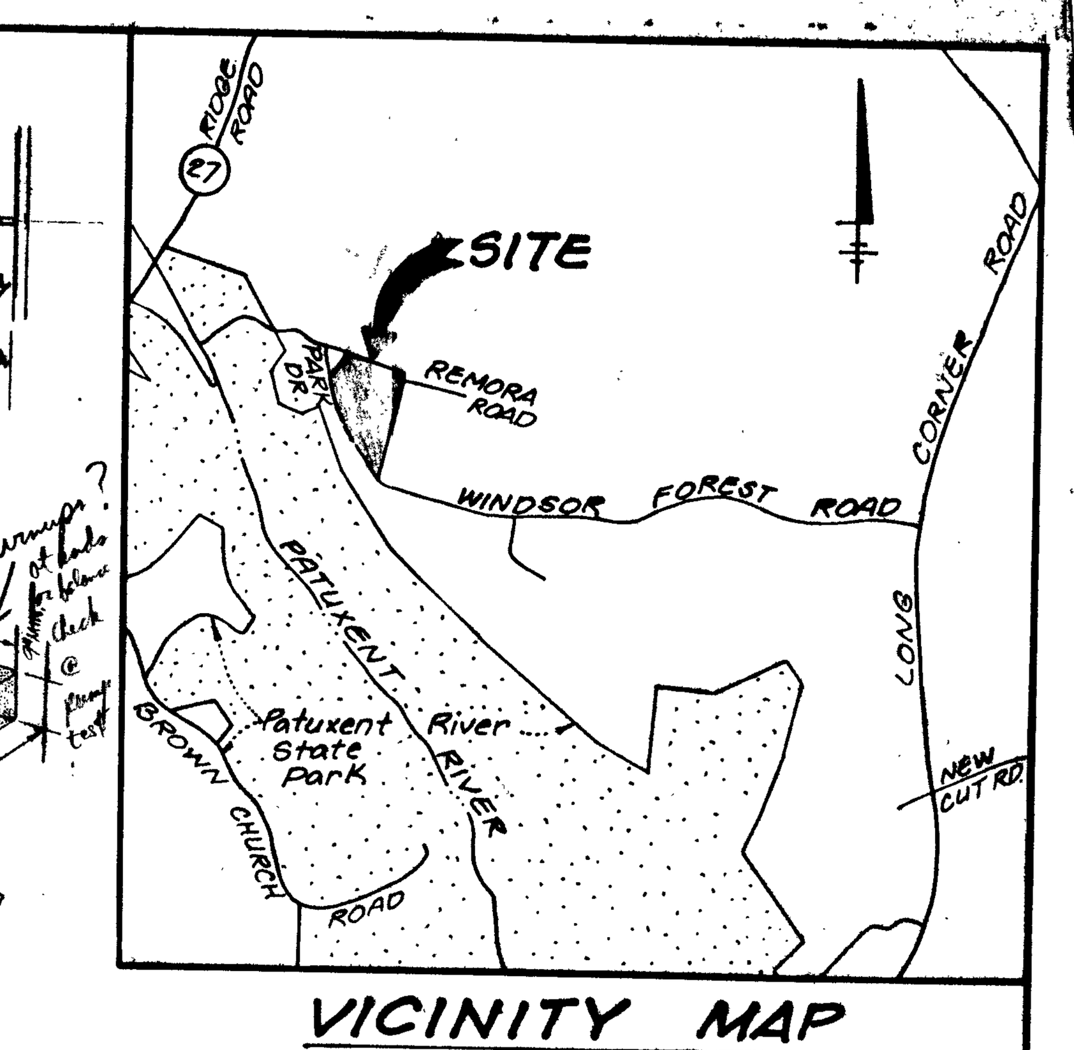
INLET DEPTH ______ MAXIMUM BOTTOM DEPTH ______ SQ. FT/BEDROOM ______











VICINITY MAP

Scale: 1" = 2,000'

SAND MOUND CONSTRUCTION SEQUENCE:

a. Site Preparation

Good construction techniques are essential if the mound is to function properly. The following techniques should be considered:

Health Dept Requires 48 hr Notice prior to begin Sand Mound Contruction

Step 1: Fence off the site to prevent damage to the area during other construction activity on the lot. Vehicular traffic over the area should be prohibited to avoid soil compaction.

Step 2: Stake out the mound perimeter and bed in the proper orientation. Reference stakes set some distance from the mound perimeter are also required in case the corner stakes are disturbed.

Step 3: Cut and remove any excessive vegetation. Trees should be cut at ground surface and the stumps left in place.

Step 4: Measure the average ground elevation along the upslope edge of the bed to determine the bottom elevation of the bed.

Step 5: Install the delivery pipe from the dosing chamber to the mound. Lay the pipe below the frost line or slope it uniformly back to the dosing chamber so it may drain after dosing. Backfill and compact the soil around the pipe.

Step 6: Plow the area within the mound perimeter. Use a two bottom or larger moldboard plow, plowing 7 to 8 in. (18 to 20 cm) deep parallel to the contour. Single bottom plows should not be used, as the trace wheel runs in every furrow, compacting the soil. Each furrow should be thrown upslope. A chisel plow may be used in place of a moldboard plow. Roughening the surface with backhoe teeth may be satisfactory, especially in wooded sites with stumps. Rototilling is not recommended because of the damage it does to the soil structure. However, rototilling may be used in granular soils, such as sands.

Plowing should not be done when the soil is too wet. Smearing and compaction of the soil will occur. If a sample of the soil taken from the plow depth forms a wire when rolled between the palms, the soil is too wet. If it crumbles, plowing may proceed. Call Health Dept when in doubt

To Health Dept: of 3.5 or less. Submit Sand Analysis of Sand Mound Sand to be used at site prior to construction or have Sanitarian on site verify suitability of sand prior to placement.

b. Fill Placement

Step 1a: The sand beneath the bed shall be of an effective size between .25 and 0.5 mm and have uniformity coefficient

Step 1: Place the fill material on the upslope edges of the plowed area. Keep trucks off the plowed area. Minimize traffic on the downslope side.

Step 2: Move the fill material into place using a small track type tractor with a blade. Always keep a minimum of 6 in. 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.

Step 3: With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed, checking it for the proper elevation. Shape the sides to the desired slope.

c. Distribution Network Placement

"Gravel shall be free of fines and between 3/4" and 2 1/2" in size"

Step 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 6 in. (15 cm).

Step 2: Assemble the distribution network on the aggregate. The manifold should be placed so it will drain between doses, either out the laterals or back into the pump chamber. The laterals should be laid level.

Step 3: Place additional aggregate to a depth of at least 2 in. (5 cm) over the crown of the pipe.

Step 4: Place a ~~suitable backfill barrier~~ over the aggregate. i.e. (geotextile Fabric) straw or paper is not acceptable

d. Covering

Step 1: Place a finer textured ... clay or silt loam over the top of the bed, a minimum depth of 6 in. (15 cm).

Step 2: Place 6 in. (15 cm) of good quality topsoil over the entire mound surface.

Step 3: Plant grass over the entire mound using grasses adapted to the area. Shrubs can be planted around the base and up the sideslopes. Shrubs should be somewhat moisture tolerant since the downslope perimeter may become moist during early spring and late fall. Plantings on top of the mound should be drought tolerant, as the upper portion of the mound can become dry during the summer.

Step 3b: Use sod or a soil stabilizing material to prevent erosion until grass has had time to grow, especially if construction is in late fall.

NOTES:

1.) [hatched box] These two areas designate a private sewerage easement as required by the Maryland State Department of the Environment for individual sewerage disposal utilizing sand mound sewage system only. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3.) Existing Zoning: RC-DEO, per the 10/18/93 Comprehensive Zoning Plan.

4.) Provide manhole cleanout to finished grade at proposed septic tank and the pump chamber.

5.) The proposed septic system for this lot requires a pump.

6) Details and specifications of the proposed pumps within the pump pit and dousing chamber to be supplied by the contractor for review and approval by the Howard County Health Department prior to issuance of a Septic Permit.

7) See builders architectural plans for building dimensions.

8) The sewage disposal area within the limit of disturbance for building construction is to be fenced during the entire building phase to prevent any ~~disturbance of soils on the sand mound site. The Howard County Health Department reserves the right to require construction of the sand mound sewage disposal system prior to building construction.~~

9) The primary sand mound sewage disposal system shall be staked in the field and location inspected by the Howard County Health Department prior to beginning any construction of the sand mound.

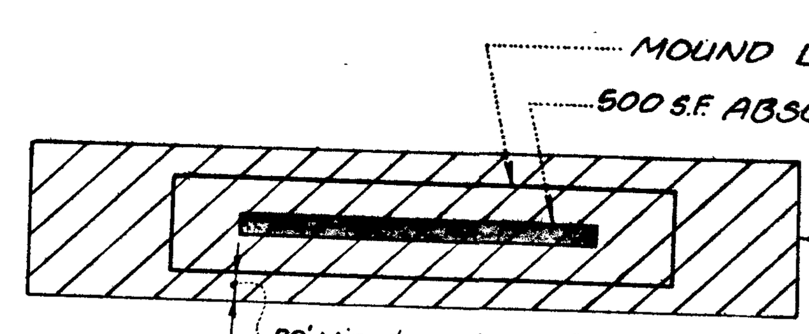
SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt. Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

[heavy line] Denotes Soil Group delineation

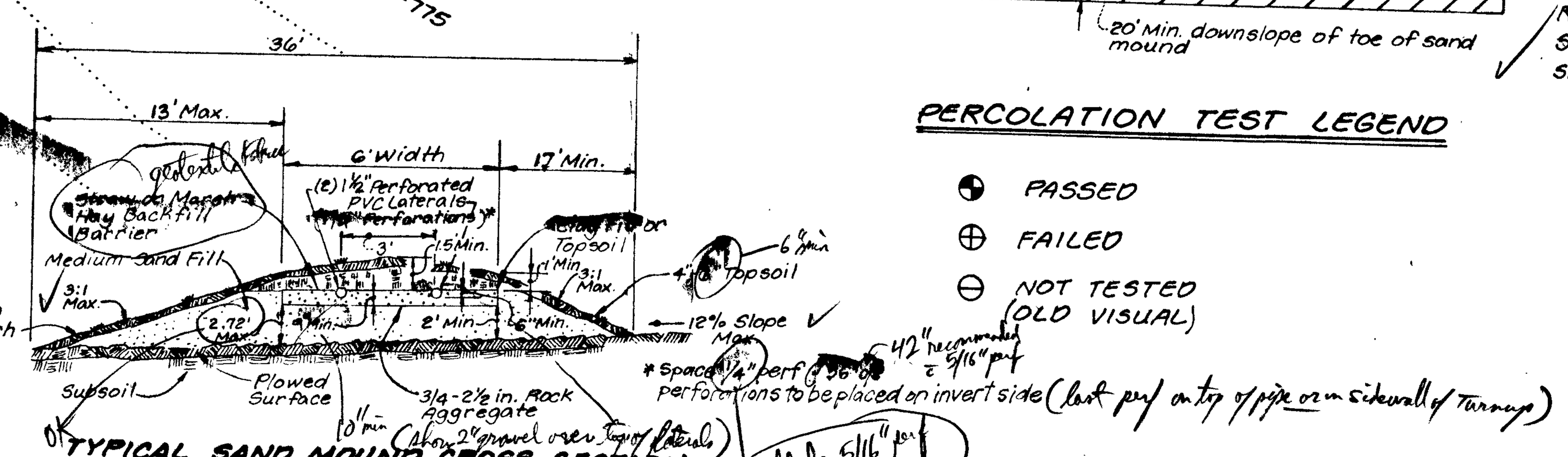
SEPTIC LEGEND



NOTE: THE SEPTIC LEGEND SHOWN REPRESENTS A TYPICAL SAND MOUND SYSTEM. ACTUAL LOCATION OF THE SAND MOUND MAY VARY. SEE PLAN VIEW.

PERCOLATION TEST LEGEND

- ◐ PASSED
- ⊕ FAILED
- ⊖ NOT TESTED (OLD VISUAL)



TYPICAL SAND MOUND CROSS SECTION
Not To Scale

SEPTIC SYSTEM DESIGN DATA:

1) 4 Bedrooms. at 12% site slope / 600 GPD

2) Invert @ wall : 771.50

3) 1500 gallon ~~top seamed two compartment~~ septic tank required. Provide manhole to grade and cleanouts at the front and back of tank.
Ex. grade over tank : 785.0 Invert In : 770.80
Prop. grade over tank : 780.0 Invert Out: 770.50

4) 1000 gallon ~~top~~ seamed pump pit with dual effluent pumps* required. Provide manhole to grade. Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Alarm system shall be installed on a separate electrical circuit. Install check valves as required.
Invert In : 770.00
Top Grade : 783.24

5) Dousing Chamber w/ Pump * Min pump capacity: 72 GPM @ 6.5' head
Ex. grade @ box : 790.0
Prop. grade @ box : 791.5
Invert In: 788.7 Invert Out: 788.2

6) Sand Mound (See typical section)
Ex. grade @ ℄ mound : 792.3
Prop. grade @ ℄ mound : 791.2 (Top elevation)
Invert 1¼" PVC laterals : 790.5

* Contractor to supply specifications of specific pump type per manufacturer.

~~APPROVED: For Private Water and Private Sewerage Howard County Health Department.~~

~~Howard County Health Officer Date~~

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Drawn: KBW	PLOT PLAN FOR BUILDING PERMIT	Scale: 1"=50'
Designed: SDH	H. MULLINEAUX PROPERTY	Drawing: 1 of 1
Checked: BDB	TAX MAP No. 6 P/O PARCEL 15, 5th ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	LDE Job No. 96-035
Date: 6/96	BUILDER: SELFRIDGE BUILDERS, INC. 14045 Bared Drive Glenwood, MD 21738 (410) 799-0200	File No.

Bird Prop SM. calc's
Windsor Forest Rd

Calculations

(5 B) Sideslope is 14.08' (due to use of 10" vs 9" gravel bed depth) 14.08' vs 13.8'
but ~ 14 ft is acceptable.

(5A) Upslope should be 8.4' (should use gravel depth of .833' instead of 2.72' in calc)
he should have used [(2' + .833'(Not 2.72') + 1') × 3] × .73 =

he forgot upslope correction factor

if slope is ≤ 12% could get larger.
i.e. @ 0% upslope C.F. = 1.0 = (11.5' upslope)

(5D) Downslope calc's wrong (he forgot downslope correction factor of 1.52 for 12% slopes (see My table 3.1 worksheet) and he still calc's on 9" rather than 10" gravel bed.

(5C) Basal Area Required

$\frac{600\ gpd}{.75\ (\text{infilt. rate})}$ = 800 sqft. / 83' bed length = 9.64' − 6' bed width given = 3.64' of downslope past bed edge
since less than 21.45' downslope calc'd
21.45' downslope applied

∴ SM width = up + down + bed =
8.4' + 21.45' + 6' = 35.85 ≈ (36' wide)
11.5'
up to 39' wide if greater upslope used

SM length = 83 + 2 (14) 28 = (111' long)
bed side

1st Copy — Not Approved — See Signed Final Copy of SK Plans and Calcs

SAND MOUND SYSTEM DESIGN FOR MULLINEAUX PROPERTY / SELFRIDGE BUILDERS 10/2/98 EJB

✓ NATURAL SOIL TEXTURE : SILT LOAM ✓ NATURAL INFILTRATION RATE 0.75 GPD/SF OK

✓ PERC RATE @ 20" DEPTH : UNKNOWN

DEPTH TO SEASONAL HIGH WATER : UNKNOWN

✓ SLOPE : 12% OK

✓ DWELLING SIZE : 4 BEDROOMS

✓ DESIGN INFILTRATION RATE : 1.2 GPD/SF (inside sand mound's gravel bed)

✓ (1) ESTIMATE DESIGN FLOW : 150 GPD/BR = 600 GPD OK

✓ (2) SIZE ABSORPTION BED : $\frac{600\ GPD}{1.2\ GPD/SF} = 500\ SF$ OK

✓ (3) ABSORPTION BED DIMENSIONS : ASSUME 83 FOOT LONG BED ON CONTOUR

$$WIDTH = \frac{500\ SF}{83'} = 6.02'$$ USE 6' bed width OK

(4) MOUND HEIGHT

✓ (A) FILL DEPTH : 2' MIN. @ UPSLOPE SIDE OF BED OK

✓ (B) FILL DEPTH @ DOWNSLOPE SIDE OF BED

FILL DEPTH + [SLOPE × BED WIDTH]

need 12" gravel cover over 1½" pipe = 10" 2' + 0.12 × 6' = 2.72' OK

✓ OK (C) BED DEPTH : 9" MIN. W/ 6" MIN. BELOW INVERT OF DISTRIBUTION LATERAL +2" gravel cover

✓ (D) CAP @ EDGE OF BED : 1' MIN.

✓ (E) CAP @ CENTER OF BED : 1½' MIN.

(5) MOUND PERIMETER

Needs change → (A) UPSLOPE SETBACK: MOUND HEIGHT @ UPSLOPE EDGE × 3:1 SLOPE

FILL DEPTH + FILL DEPTH @ D.S. + CAP @ EDGE × 3

(2' + 2.72' + 1') × 3 = 17.2' USE ~~17'~~ wrong / I got 8.395' ≈ 8.4' c̄ correction factor

should be grad depth .833

(all times slope correction factor of .73)

(B) SIDE SLOPE SETBACK: MOUND HEIGHT @ CENTER × 3:1 SLOPE

$$\left[\frac{\text{FILL DEPTH} + \text{FILL DEPTH @ D.S.}}{2} + \text{BED DEPTH} + \text{CAP @ CENTER}\right] \times 3$$

10" = .833

$$\left[\frac{2' + 2.72'}{2} + \sout{0.75'} + 1.5'\right] \times 3 = 13.8' \quad \text{USE } 14' \text{ OK}$$

I got 14.08 ft

(C) BASAL AREA REQUIRED: $\frac{\text{DESIGN FLOW}}{\text{INFILT. RATE}}$ = AREA

$$\frac{600 \text{ GPD}}{0.75 \text{ GPD/SF}} = 800 \text{ S.F.}$$

MIN. DOWNSLOPE REQUIRED: $\frac{\text{AREA}}{\text{MOUND LENGTH}}$ − MOUND WIDTH $\frac{800 \text{ S.F.}}{83'}$ − 6' = 3.6 USE 4'

(D) CHECK DOWNSLOPE SETBACK PROVIDED:

[FILL DEPTH @ D.S. + BED DEPTH + CAP @ EDGE] × 3

[2.72' + ~~0.75'~~ 10" .833 + 1'] × 3 = 13.4' USE ~~13' MIN.~~ wrong = 21.45'

he forgot downslope corr factor @ 12% slope of 1.57

SINCE DOWNSLOPE SETBACK IS GREATER THAN MINIMUM REQUIRED

NO ADJUSTMENT IS NECESSARY.

PRESSURE DISTRIBUTION DESIGN

USE CENTRAL MANIFOLD DESIGN WITH DOUSING CHAMBER PUMP

① LATERAL LENGTH = 83' TOTAL

$$\frac{83'}{2} - 0.5(\text{MANIFOLD LENGTH}) = 41 \text{ FT} \quad \text{OK}$$

please justify → ? ② HOLE DIAMETER AND SPACING 5/16" @ 42" preferred (or explain reason for difference – if 1/4" "necessary pretreatment with a sand filter or other device to remove fines from effluent will be required) 1/4" HOLE SPACED @ 36" O/C

OK ③ LATERAL DIAMETER : 1 1/2" DIA. SEE FIG 7-28

④ LATERAL DISCHARGE RATE : MAINTAIN A 3 FT HEAD IN LATERAL @ 1.3 PSI

DISCHARGE RATE: 1.28 GPM

NUMBER OF HOLES PER LATERAL $\frac{\text{LATERAL LENGTH}}{\text{HOLE SPACING}} : \frac{41}{3} = 13.6$ USE 14 OK

LATERAL DISCHARGE RATE: 14 HOLES × 1.28 GPM = 17.9 GPM/LATERAL

× 4

71.6 gpm

⑤ SELECT MANIFOLD SIZE 4 LATERALS OK SPACED @ 2 FT APART (3 ft Spacing would be preferable and 1.5' lateral to bed edge)

USE MANIFOLD LENGTH OF LESS THAN 5 FT.

USE MANIFOLD SIZE OF 2" DIA SEE 7-29 (3" is preferred although 2" may be OK – it depends on diameter of supply line – manifold dia ≥ supply dia)

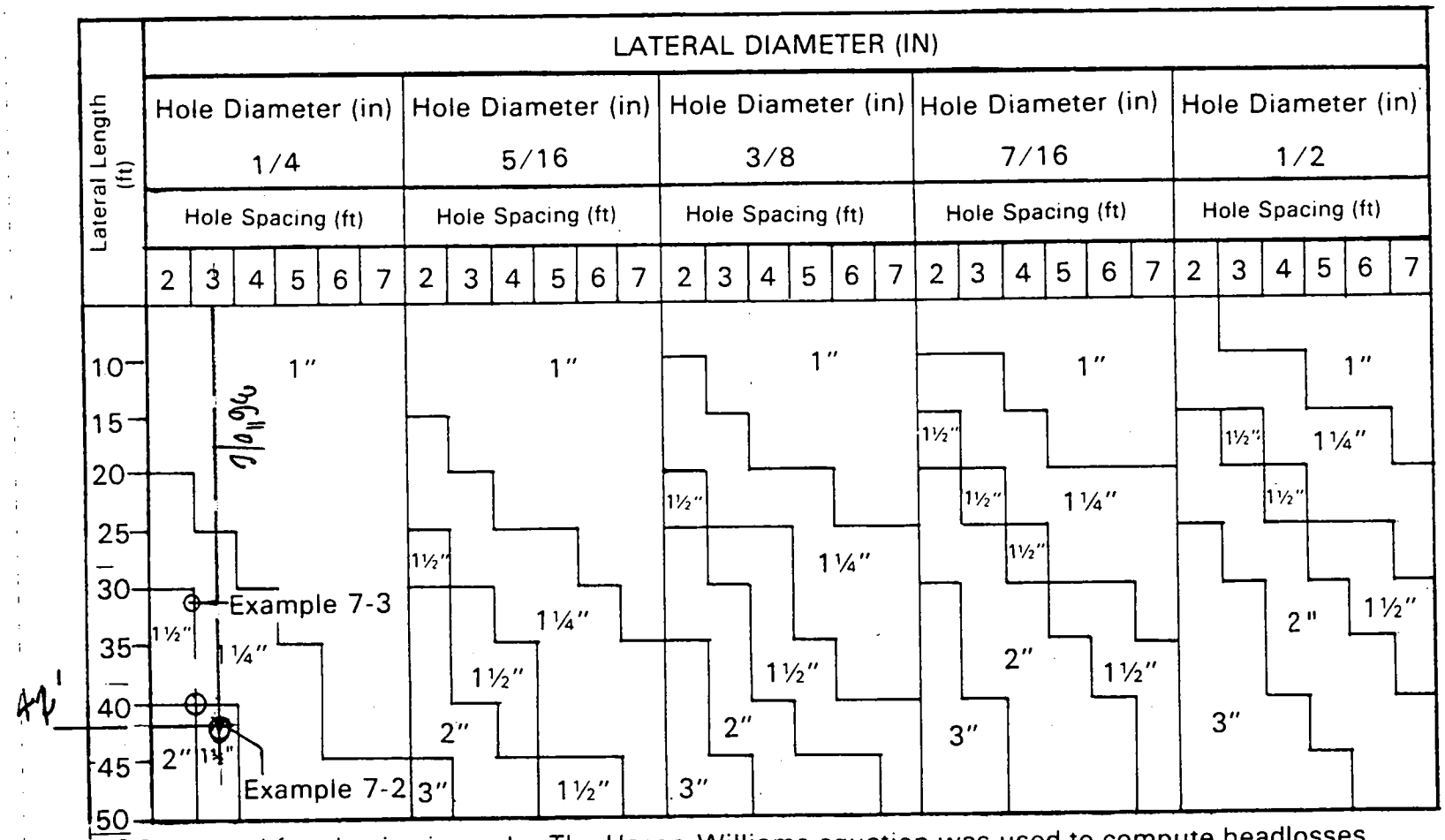
⑥ MINIMUM DOSE VOLUME : 2.7 GALLONS PIPE VOLUME 20.5 C.F. OR 100 GALLONS

$$\frac{600 \text{ GPD}}{4 \text{ DOSES/DAY}} = 150 \text{ GAL/DOSE}$$

prefer to size here @ 6 doses/day = 100 gal dose

FIGURE 7-28

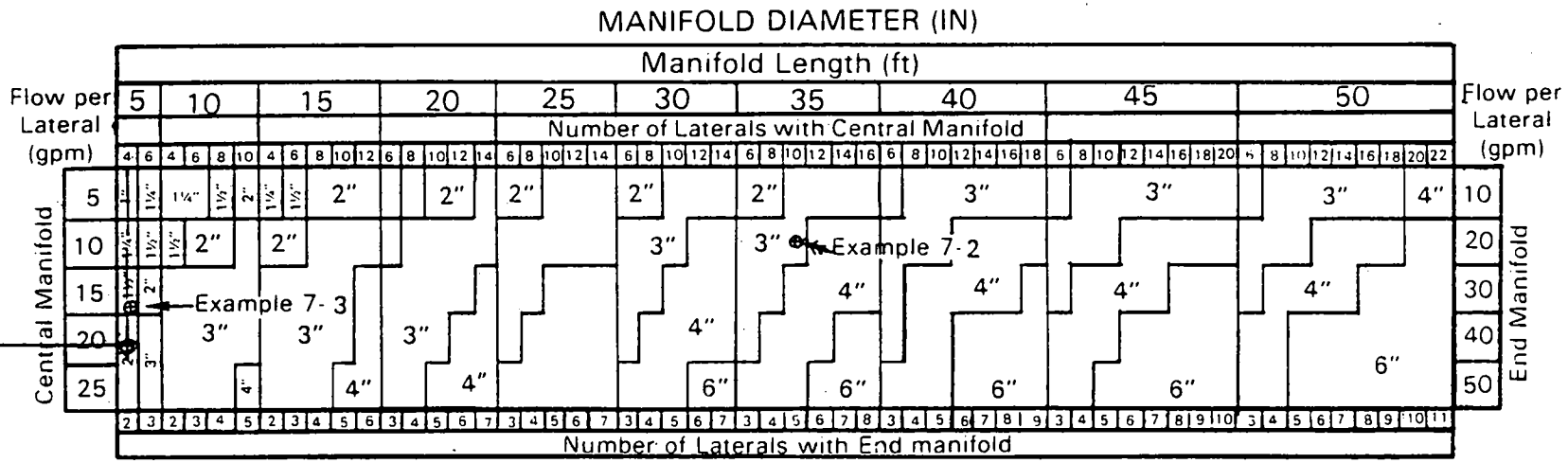
REQUIRED LATERAL PIPE DIAMETERS FOR VARIOUS HOLE DIAMETERS, HOLE SPACINGS, AND LATERAL LENGTHS[a]
(FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each pipe segment (Hazen-Williams C= 150). The orifice equation for sharp-edged orifices (discharge coefficient = 0.6) was used to compute the discharge rates through each orifice. The maximum lateral length for a given hole and spacing was defined as that length at which the difference between the rates of discharge from the distal end and the supply end orifice reached 10 percent of the distal end orifice discharge rate.

FIGURE 7-29

RECOMMENDED MANIFOLD DIAMETERS FOR VARIOUS MANIFOLD LENGTHS, NUMBER OF LATERALS, AND LATERAL DISCHARGE RATES (FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each segment (Hazen-Williams C = 150). The maximum manifold length for a given lateral discharge rate and spacing was defined as that length at which the difference between the heads at the distal and supply ends of the manifold exceeded 10 percent of the head at the distal end.

TABLE 7-14

FRICTION LOSS IN SCHEDULE 40 PLASTIC PIPE, C = 150
(ft/100 ft)

Flow gpm	Pipe Diameter (in.) 1	1-1/4	1-1/2	2	3	4	6	8	10
1	0.07								
2	0.28	0.07							
3	0.60	0.16	0.07						
4	1.01	0.25	0.12						
5	1.52	0.39	0.18						
6	2.14	0.55	0.25	0.07					
7	2.89	0.76	0.36	0.10					
8	3.63	0.97	0.46	0.14					
9	4.57	1.21	0.58	0.17					
10	5.50	1.46	0.70	0.21					
11		1.77	0.84	0.25					
12		2.09	1.01	0.30					
13		2.42	1.17	0.35					
14		2.74	1.33	0.39					
15		3.06	1.45	0.44	0.07				
16		3.49	1.65	0.50	0.08				
17		3.93	1.86	0.56	0.09				
18		4.37	2.07	0.62	0.10				
19		4.81	2.28	0.68	0.11				
20		5.23	2.46	0.74	0.12				
25			3.75	1.10	0.16				
30			5.22	1.54	0.23				
35				2.05	0.30	0.07			
40				2.62	0.39	0.09			
45				3.27	0.48	0.12			
50				3.98	0.58	0.16			
60					0.81	0.21			
70					1.08	0.28			
80					1.38	0.37			
90					1.73	0.46			
100					2.09	0.55	0.07		
150						1.17	0.16		
200							0.28	0.07	
250							0.41	0.11	
300							0.58	0.16	
350							0.78	0.20	0.07
400							0.99	0.26	0.09
450							1.22	0.32	0.11
500								0.38	0.14
600								0.54	0.18
700								0.72	0.24
800									0.32
900									0.38
1000									0.46

(7) MINIMUM DISCHARGE RATE

4 LATERALS × DISCHARGE RATE = 4 × 17.9 GPM = 71.6 GPM

(8) SELECT PUMP

DISTANCE: 25' PIPE DIAMETER: 3" FOR DELIVERY

ELEVATION DIFFERENCE: 3'

FRICTION LOSS: 1.08 SEE FIG 7.14 C 70 GPM

$1.08 + \frac{2}{10}(1.38 - 1.08) = 1.14$ FT / 100 FT

FRICTION LOSS IN ~~25 FT.~~ = 0.29' Refer for long length PC-SB No secondary chamber

ELEVATION HEAD: 3'

PRESSURE HEAD 3'

TOTAL PUMPING HEAD: 6.29'

A PUMP CAPABLE OF DELIVERING A MINIMUM OF AT LEAST 72 GPM AGAINST 6.5' OF HEAD IS REQUIRED.

Unapproved Record Copy – Discard to avoid confusion at time of S.T. construction (save Transmittal sheet only – [illegible] 10/2/96)

LDE INC.
9250 RUMSEY ROAD, SUITE 106
COLUMBIA, MARYLAND 21045
(410) 715-1070 (301) 596-3424
(410) 715-9540 FAX

LETTER OF TRANSMITTAL

DATE: 9/9/96 | JOB NO. 96-035

ATTENTION: RON PINFLEY

RE: BIRD RESIDENCE
MULLINEAUX PROPERTY

TO: HOWARD CO. HEALTH DEPT.

WE ARE SENDING YOU ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA DELIVERY THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☒ PRINTS ☐ COPY OF LETTER ☐ SAMPLES ☐ SPECIFICATIONS
☐ CHANGE ORDER ☐ PLANS ☐ ______

COPIES	DATE	NO.	DESCRIPTION
2		1	REVISED PLOT PLAN
2		6	REVISED SAND MOUND CALCULATIONS

REASON FOR TRANSMITTAL CHECKED BELOW:

☒ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RESUBMIT ______ COPIES FOR APPROVAL
☐ FOR YOUR USE ☐ RETURNED FOR CORRECTIONS ☐ SUBMIT ______ COPIES FOR DISTRIBUTION
☒ AS REQUESTED ☐ FOR REVIEW AND COMMENT ☐ RETURN ______ CORRECTED PRINTS
☐ APPROVED AS NOTED ☐ ______

☐ FOR BIDS DUE ______ 19 ______ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

2 changes Needed
① add Turnups to schematic pipe details
② change S.T. & P.C. elevations to those for revised location

Site OK → only 2 above details above which were

COPY TO: SELFRIDGE BUILDERS

SIGNED: BRUCE BURTON

PLEASE NOTIFY US AT ONCE IF ENCLOSURES ARE NOT AS NOTED.

032011

9/6/96

See Second Revision for Final Design

REVISED SAND MOUND SYSTEM DESIGN FOR MULLINEAUX PROPERTY / SELFRIDGE BUILDERS

NATURAL SOIL TEXTURE: SILT LOAM NATURAL INFILTRATION RATE: 0.75 GPD/SF
PERC RATE @ 20" DEPTH: UNKNOWN
DEPTH TO SEASONAL HIGHWATER: UNKNOWN
SLOPE: 12%
DWELLING SIZE: 4 BEDROOMS
DESIGN INFILTRATION RATE: 1.2 GPD/SF

① ESTIMATE DESIGN FLOW: 150 GPD/BR = 600 GPD

② SIZE ABSORPTION BED: $\frac{600\ GPD}{1.2\ GPD/SF} = 500\ SF$

③ ABSORPTION BED DIMENSIONS: ASSUME 83 FOOT LONG BED ON CONTOUR

$$WIDTH = \frac{500\ S.F.}{83'} = 6.02'$$ USE 6' BED WIDTH

④ MOUND HEIGHT

Ⓐ FILL DEPTH: 2' MIN. @ UPSLOPE SIDE OF BED

Ⓑ FILL DEPTH @ DOWNSLOPE SIDE OF BED

FILL DEPTH + [SLOPE × BED WIDTH]

$2' + 0.12 \times 6' = 2.72'$

Ⓒ BED DEPTH: 10" MIN. W/ 6" MIN. BELOW INVERT OF DISTRIBUTION LATERAL

6" MIN + 1½" LATERAL + 2" MIN. COVER = 9½" USE 10" MIN. TOTAL

Ⓓ CAP @ EDGE OF BED: 1' MIN.

Ⓔ CAP @ CENTER OF BED: 1½' MIN.

(5) MOUND PERIMETER

(A) UPSLOPE SETBACK: MOUND HEIGHT @ UPSLOPE EDGE x 3:1 SLOPE

FILL DEPTH + BED DEPTH + CAP @ EDGE x 3

$(2' + 0.83_2' + 1') \times 3' = 11.5'$ @ LEVEL GROUND

OK

11.5' LEVEL x UPSLOPE CORRECTION (0.72) = 8.4' USE (8.5' MIN.)

(B) SIDE SLOPE SETBACK: MOUND HEIGHT @ CENTER x 3:1

$$\left[\frac{\text{FILL DEPTH} + \text{FILL DEPTH @ D.S.}}{2} + \text{BED DEPTH} + \text{CAP @ CENTER}\right] \times 3$$

OK

$$\left[\frac{2' + 2.72'}{2} + \underline{0.83_3'} + 1.5'\right] \times 3 = 14.08' \text{ USE } (14' \text{ MIN.})$$

(C) BASAL AREA REQUIRED: $\frac{\text{DESIGN FLOW}}{\text{INFILT. RATE}} = \text{AREA}$

$$\frac{600 \text{ GPD}}{0.75 \text{ GPD/SF}} = 800 \text{ SF.}$$

MIN. DOWNSLOPE REQUIRED: $\frac{\text{AREA}}{\text{MOUND LENGTH}} - \text{MOUND WIDTH}$ $\quad \frac{800 \text{ SF}}{83'} - 6' = 3.6'$ ✓

(D) CHECK DOWNSLOPE SETBACK PROVIDED:

[FILL DEPTH @ D.S. + BED DEPTH + CAP @ EDGE] x 3

$[2.72' + \underline{0.83_3'} + 1'] \times 3' = 13.66'$ @ LEVEL GROUND

$13.66' \times \text{DOWNSLOPE CORRECTION } (1.57) = (21.44')$ USE 21.5' OK

PRESSURE DISTRIBUTION DESIGN

USE CENTRAL MANIFOLD DESIGN

① LATERAL LENGTH = 83' TOTAL

$\frac{83'}{2}$ - 0.5' (MANIFOLD LENGTH) = 41 FT. ✓

OK ② HOLE DIAMETER AND SPACING 5/16" HOLE @ 42" O/C

③ LATERAL DIAMETER: 1 1/2" DIAMETER SEE FIG 7-28

④ LATERAL DISCHARGE RATE: MAINTAIN A 2 FT. HEAD IN LATERAL @ 0.87 PSI

DISCHARGE RATE: 1.63 GPM

OK NUMBER OF HOLES PER LATERAL $\frac{\text{LATERAL LENGTH}}{\text{HOLE SPACING}}$; $\frac{41}{3.5}$ = 11.7 USE 12 OK

LATERAL DISCHARGE RATE: 12 HOLES × 1.63 GPM = 19.56 GPM/LATERAL OK

TOTAL DISCHARGE: 19.56 GPM × 4 = 78.24 GPM

OK ⑤ SELECT MANIFOLD SIZE 4 LATERALS SPACED @ 3 FT APART

USE MANIFOLD LENGTH OF LESS THAN 5 FT

OK 2" MANIFOLD PER NOMOGRAPH (USE 3" TO MATCH DELIVERY PIPE

⑥ MINIMUM DOSE VOLUME: 2.7 GALLONS

OK $\frac{600 \text{ GPD}}{\sqrt{6 \text{ DOSES/DAY}}}$ = 100 GALLON/DOSE OK

PIPE VOLUME OF 20.5 OF OF 100 GALLONS ? How get this ?

2 gal 86.92 gal for Sched 40

10.6 gal/100 LF of 1 1/2 Diameter

× 1.64 (41 × 4 CF) LF of pipe

5 × 17.384 gal 38.4 gal × 5/100

1.92

19.30 gal (5 Gallons of Septic Min.

× 5

96.52 gal

(7) MINIMUM DISCHARGE RATE

LATERALS × DISCHARGE RATE/LATERAL = 4 × 19.56 GPM = 78.24 GPM

ok   ok

(8) SELECT PUMP TO INITIAL SYSTEM

DISTANCE: 157' ✓   PIPE DIAMETER FOR DELIVERY   3" PVC ✓

ELEVATION DIFFERENCE: 20.5'

ground elev @ pump 794
−790.5
pump elev below grade → 3.5

810.5
− 20.5
790.5 (pump inlet hole elev)

May or may not be ok (could be 2-3 ft deeper depending on PE, soil, & depth)

FRICTION LOSS IN 3" PVC @ 78.24 GPM

I don't follow this calc → $1.08 + \frac{8.24}{10}(1.38 - 1.08) = 0.2472 + 1.06 = 1.33'/100'$

TOTAL FRICTION LOSS FOR 157' = 0.758? + 1.333 = 2.09'
where's this from

1.38

FRICTION LOSS = 2.09'
ELEVATION HEAD = 20.5' (Maybe!)
✓ PRESSURE HEAD = 2.0'

TOTAL PUMPING HEAD 24.59' (or 25.5)!

CONTRACTOR SHOULD INSTALL A PUMP CAPABLE OF DELIVERING AT LEAST 78.24 GPM AGAINST A 24.6' OF HEAD.

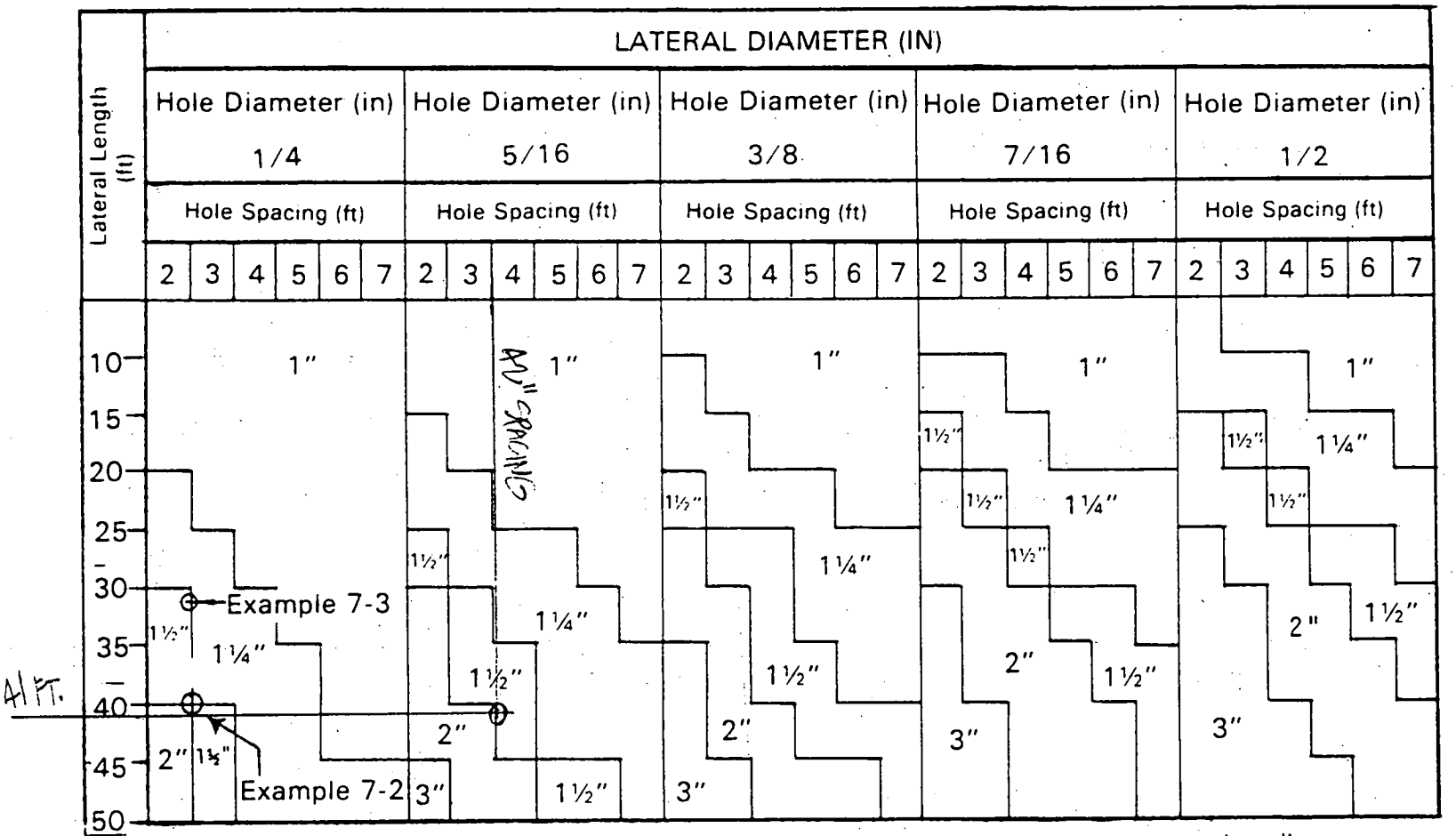
157' LF of supply line
+5' manifold
163' LF of straight run of pipe
+5' LF vent
168' LF of pipe (3")
50' equiv length for turns, couplings etc
218' LF equivalent 3" pipe
@ 1.38 ft of head/100 LF
3.0084 ft of head

equiv ft of 3" pipe
Valve 2' = 2'
3×45° el 6 ea = 18'
3×90° el 10 ea = 30
50' } estimates

20.5
2.0
25.5

FIGURE 7-28

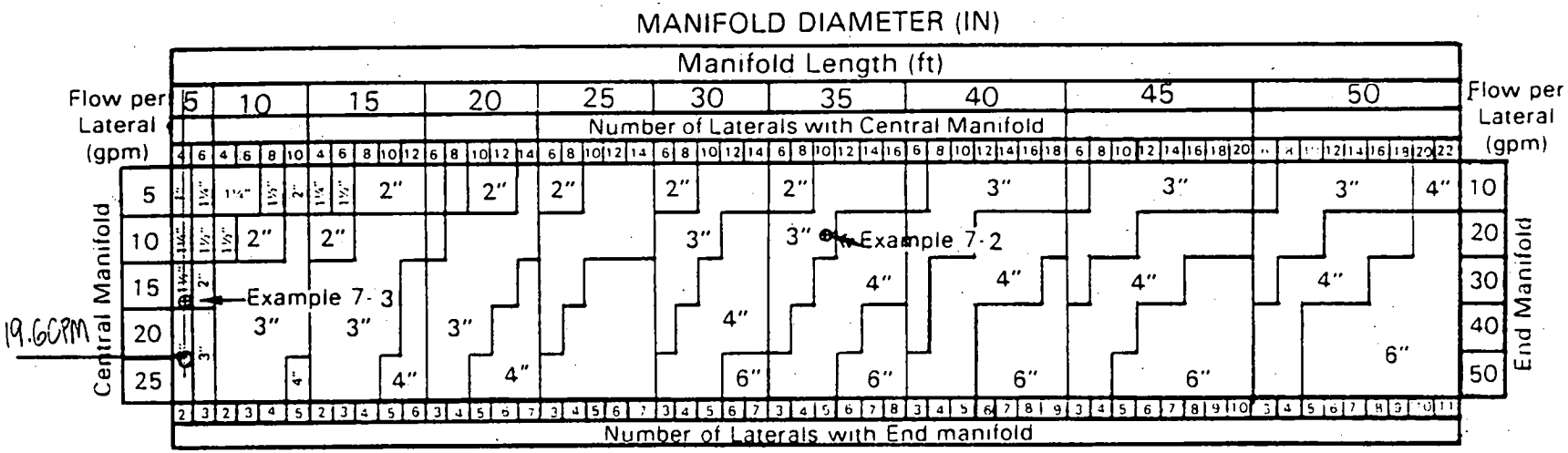
REQUIRED LATERAL PIPE DIAMETERS FOR VARIOUS HOLE DIAMETERS, HOLE SPACINGS, AND LATERAL LENGTHS[a]
(FOR PLASTIC PIPE ONLY)



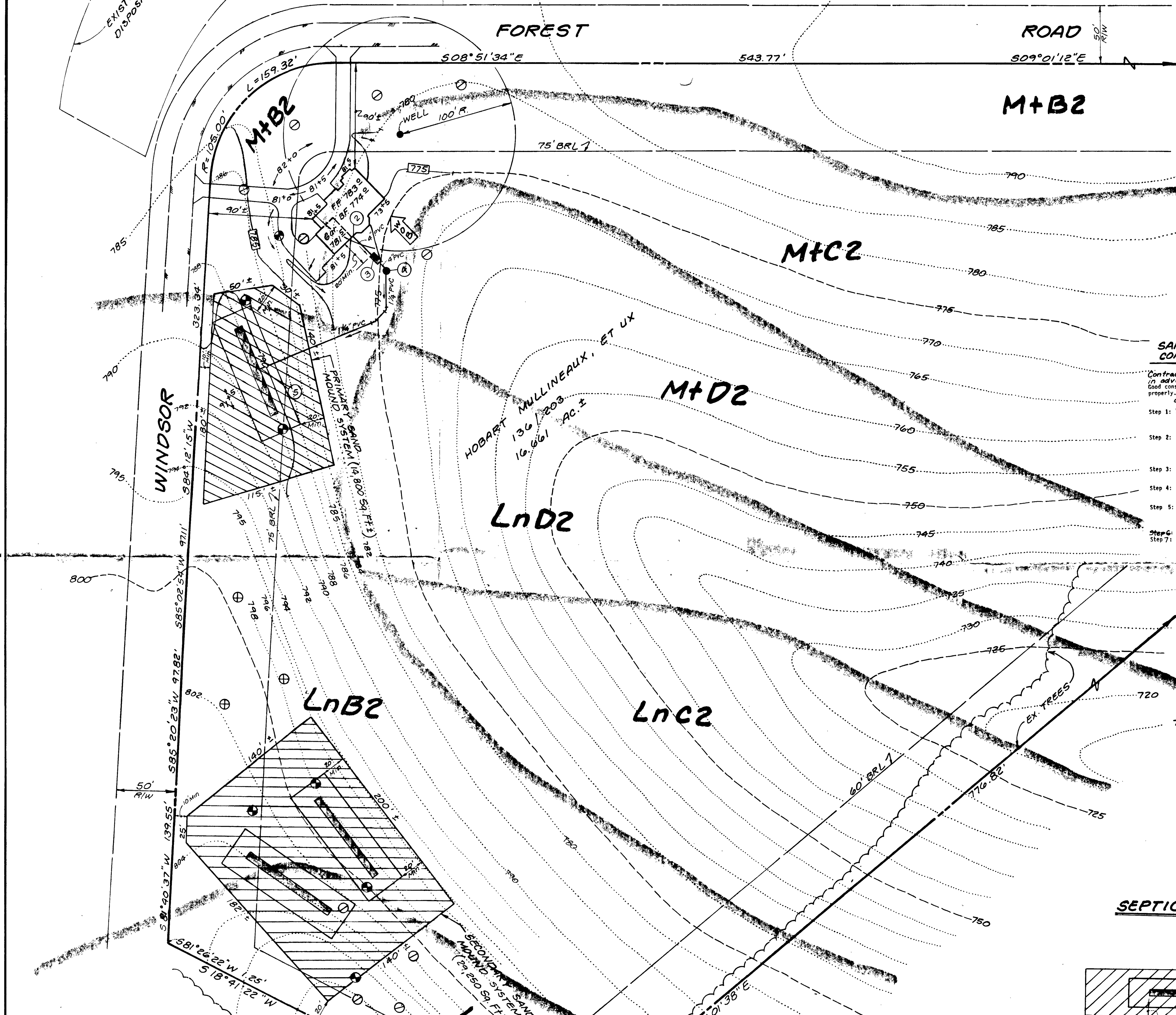
[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each pipe segment (Hazen-Williams C= 150). The orifice equation for sharp-edged orifices (discharge coefficient = 0.6) was used to compute the discharge rates through each orifice. The maximum lateral length for a given hole and spacing was defined as that length at which the difference between the rates of discharge from the distal end and the supply end orifice reached 10 percent of the distal end orifice discharge rate.

FIGURE 7-29

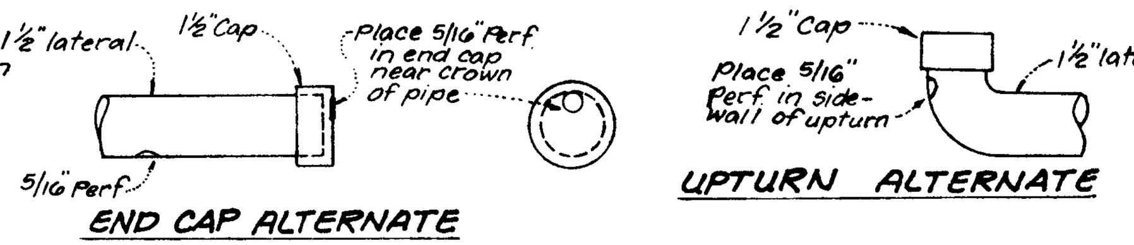
RECOMMENDED MANIFOLD DIAMETERS FOR VARIOUS MANIFOLD LENGTHS, NUMBER OF LATERALS, AND LATERAL DISCHARGE RATES (FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each segment (Hazen-Williams C = 150). The maximum manifold length for a given lateral discharge rate and spacing was defined as that length at which the difference between the heads at the distal and supply ends of the manifold exceeded 10 percent of the head at the distal end.

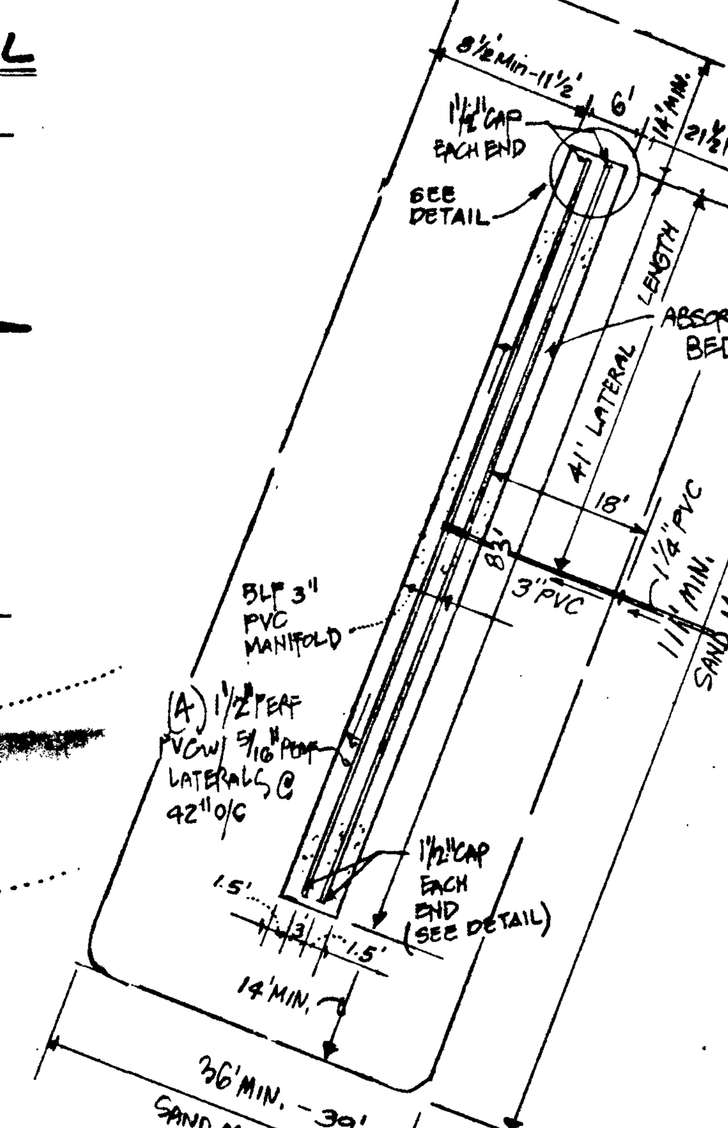


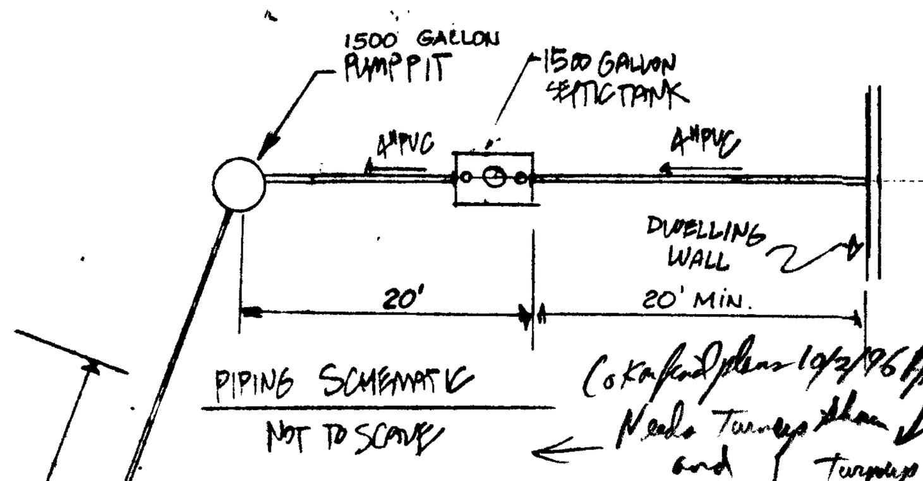
NOTE: Contractor shall place last perforation in each lateral in crown of end cap or in sidewall of upturn to prevent vapor lock. Turnups should be placed at least on diagonally opposite ends for clean water pump test. Turnups may be cut back to grade once system has been tested and approved by the Health Dept.



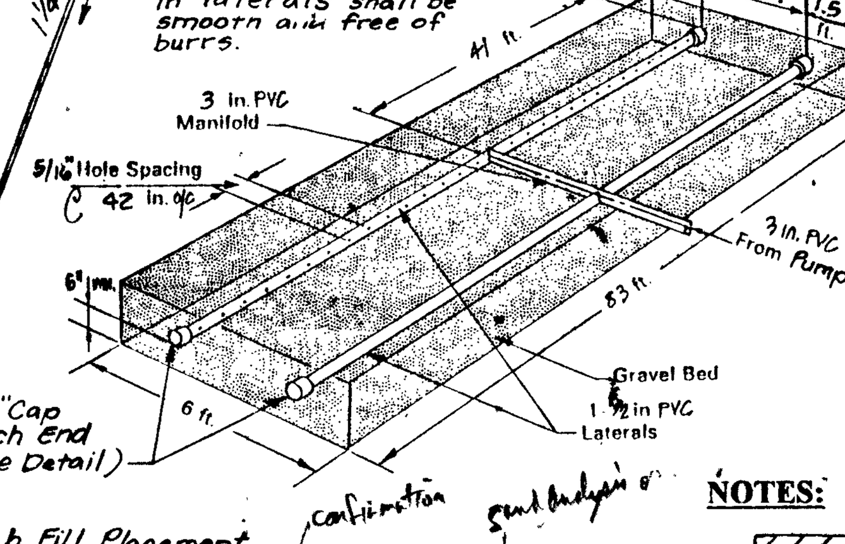
LATERAL END CAP DETAIL

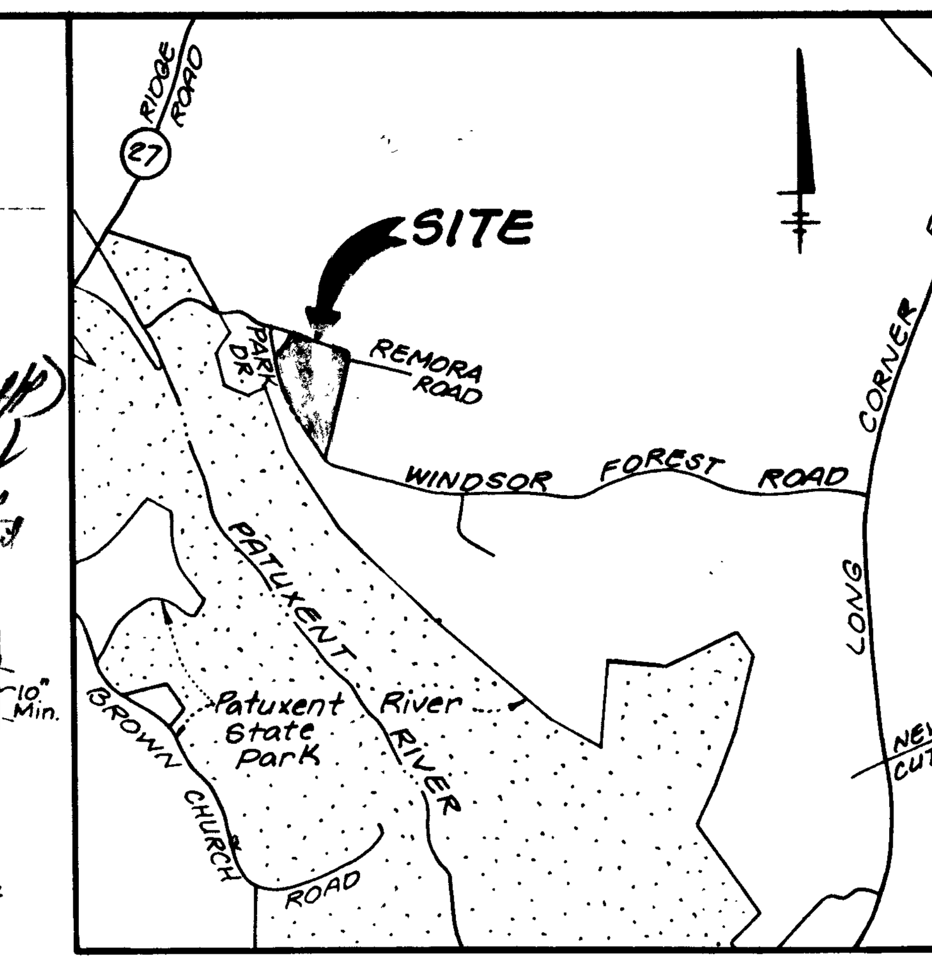
Not To Scale





NOTE: All 5/16" perforations in laterals shall be smooth and free of burrs.





VICINITY MAP

Scale: 1" = 2,000'

SAND MOUND CONSTRUCTION SEQUENCE:

Contractor shall contact Health Dept. (313-2640) 48 hours in advance of proceeding with any construction.
Good construction techniques are essential if the mound is to function properly. The following techniques should be considered:

a. Site Preparation:

Step 1: Fence off the site to prevent damage to the area during other construction activity on the lot. Vehicular traffic over the area should be prohibited to avoid soil compaction.

Step 2: Stake out the mound perimeter and bed in the proper orientation. Reference stakes set some distance from the mound perimeter are also required in case the corner stakes are disturbed.

Step 3: Cut and remove any excessive vegetation. Trees should be cut at ground surface and the stumps left in place.

Step 4: Measure the average ground elevation along the upslope edge of the bed to determine the bottom elevation of the bed.

Step 5: Install the delivery pipe from the dosing chamber to the mound. Lay the pipe below the frost line or slope it uniformly back to the dosing chamber so it may drain after dosing. Back fill and compact the soil around the pipe.

Step 6: Call Health Dept. for inspection of mound area.

Step 7: Plow the area within the mound perimeter. Use a two bottom or larger moldboard plow, plowing 7 to 8 in. (18 to 20 cm) deep parallel to the contour. Single bottom plows should not be used, as the trace wheel runs in every furrow, compacting the soil. Each furrow should be thrown upslope. A chisel plow may be used in place of a moldboard plow. Roughening the surface with backhoe teeth may be satisfactory, especially in wooded sites with stumps. Rototilling is not recommended because of the damage it does to the soil structure. However, rototilling may be used in granular soils, such as sands.

Plowing should not be done when the soil is too wet. Smearing and compaction of the soil will occur. If a sample of the soil taken from the plow depth forms a wire when rolled between the palms, the soil is too wet. If it crumbles, plowing may proceed. *Call Health Dept. for inspection of soil conditions from rain or snow prior to proceeding with plowing if in doubt.*

b. Fill Placement

Step 1a: The sand beneath the bed shall be of an effective size between 0.25 and 0.50 mm with a uniformity coefficient of 3.5 or less. Submit ~~sample~~ to Health Dept. for ~~analysis~~ of material to be used at site prior to construction or have sanitarian on site verify suitability of sand prior to placement. (confirmation) (sand analysis or)

Step 1b: Place the fill material on the upslope edges of the plowed area. Keep trucks off the plowed area. Minimize traffic on the downslope side.

Step 2: Move the fill material into place using a small track type tractor with a blade. Always keep a minimum of 6 in. 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.

Step 3: With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed, checking it for the proper elevation. Shape the sides to the desired slope.

Step 4: Call Health Dept. for inspection.

c. Distribution Network Placement

Step 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 6 in. (15 cm). *Gravel shall be washed with a size variable of 3/4" to 2" Gravel shall be free of fines.*

Step 2: Assemble the distribution network on the aggregate. The manifold should be placed so it will drain between doses, either out the laterals or back into the pump chamber. The laterals should be laid level.

Step 3: Place additional aggregate to a depth of at least 2 in. (5 cm) over the crown of the pipe.

Step 4: Place a suitable backfill barrier *of geotextile fabric over the aggregate.*

Step 5: Call Health Dept. for clean water pump test.

d. Covering

Step 1: Place a finer textured soil material such as clay or silt loam over the top of the bed to a minimum depth of 6 in. (15 cm).

Step 2: Place 6 in. (15 cm) of good quality topsoil over the entire mound surface.

Step 3a) Plant grass over the entire mound using grasses adapted to the area. Shrubs can be planted around the base and up the side-slopes. Shrubs should be somewhat moisture tolerant since the downslope perimeter may become moist during early spring and late fall. Plantings on top of the mound should be drought tolerant, as the upper portion of the mound can become dry during the summer.

Step 3b) Use sod or soil stabilizing material to prevent erosion until grass has had time to grow especially if construction is in late Fall.

NOTES:

1.) [hatched symbol] These two areas designate a private sewerage easement as required by the Maryland State Department of the Environment for individual sewerage disposal utilizing sand mound sewage system only. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3.) Existing Zoning: RC-DEO, per the 10/18/93 Comprehensive Zoning Plan.

4.) Provide manhole cleanout to finished grade at proposed septic tank and the pump chamber.

5) The proposed septic system for this lot requires a pump.

6) Details and specifications of the proposed pumps within the pump pit to be supplied by the contractor for review and approval by the Howard County Health Department prior to issuance of a Septic Permit.

7) See builder's architectural plans for building dimensions.

8) The sewage disposal area within the limit of disturbance for building construction is to be fenced during the entire building phase to prevent any disturbance of soils on the sand mound site. The Howard County Health Department reserves the right to require construction of the sand mound sewage disposal system prior to building construction.

9) The primary sand mound sewage disposal system shall be staked in the field and location inspected by the Howard County Health Department prior to beginning any construction of the sand mound.

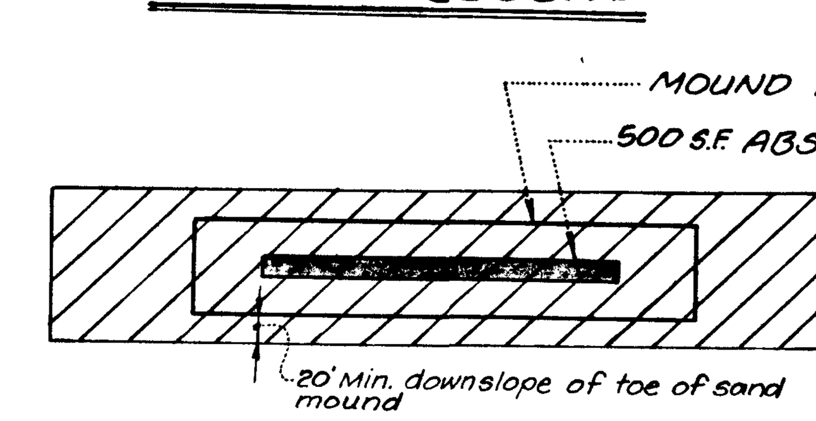
SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt. Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

[shaded line] Denotes Soil Group delineation

SEPTIC LEGEND



SEWAGE DISPOSAL AREA
NOTE: THE SEPTIC LEGEND SHOWN REPRESENTS A TYPICAL SAND MOUND SYSTEM. ACTUAL LOCATION OF THE SAND MOUND MAY VARY. SEE PLAN VIEW.

PERCOLATION TEST LEGEND

- PASSED
- FAILED
- NOT TESTED (OLD VISUAL)

SEPTIC SYSTEM DESIGN DATA:

(1) 4 Bedrooms. at 12% site slope / 600 GPD

(2) Invert @ wall : 771.50

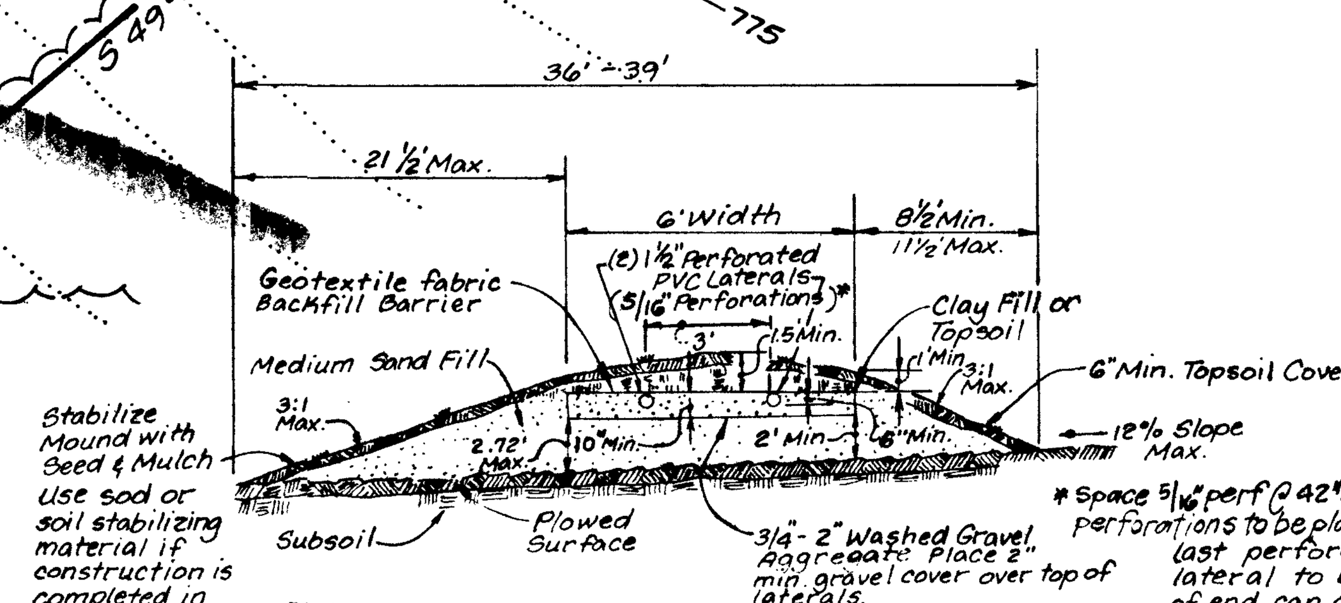
(3) 1500 gallon top seamed two compartment septic tank required. Provide manhole to grade and cleanouts at the front and back of tank.
Ex. grade over tank : 785.0 Invert In : 770.80
Prop. grade over tank : 780.0 Invert Out : 770.50

(4) 1500 gallon top seamed pump pit with dual effluent pumps* required. Provide manhole to grade. Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Alarm system shall be installed on a separate electrical circuit. Install check valves as required.
Invert In : 770.00
Top Grade : 783.24

(5) Sand Mound (See typical section)
Ex. grade @ ℄ mound : 792.3
Fin. grade @ ℄ mound : 791.2 (Top elevation)
Invert 1¼" PVC laterals : 790.5

NOTE: No grading of original soil surface other than plowing as described within the construction sequence shall be permitted within the limits of the sand mound.

* Contractor to supply specifications of specific pump type per manufacturer.



TYPICAL SAND MOUND CROSS SECTION
Not To Scale

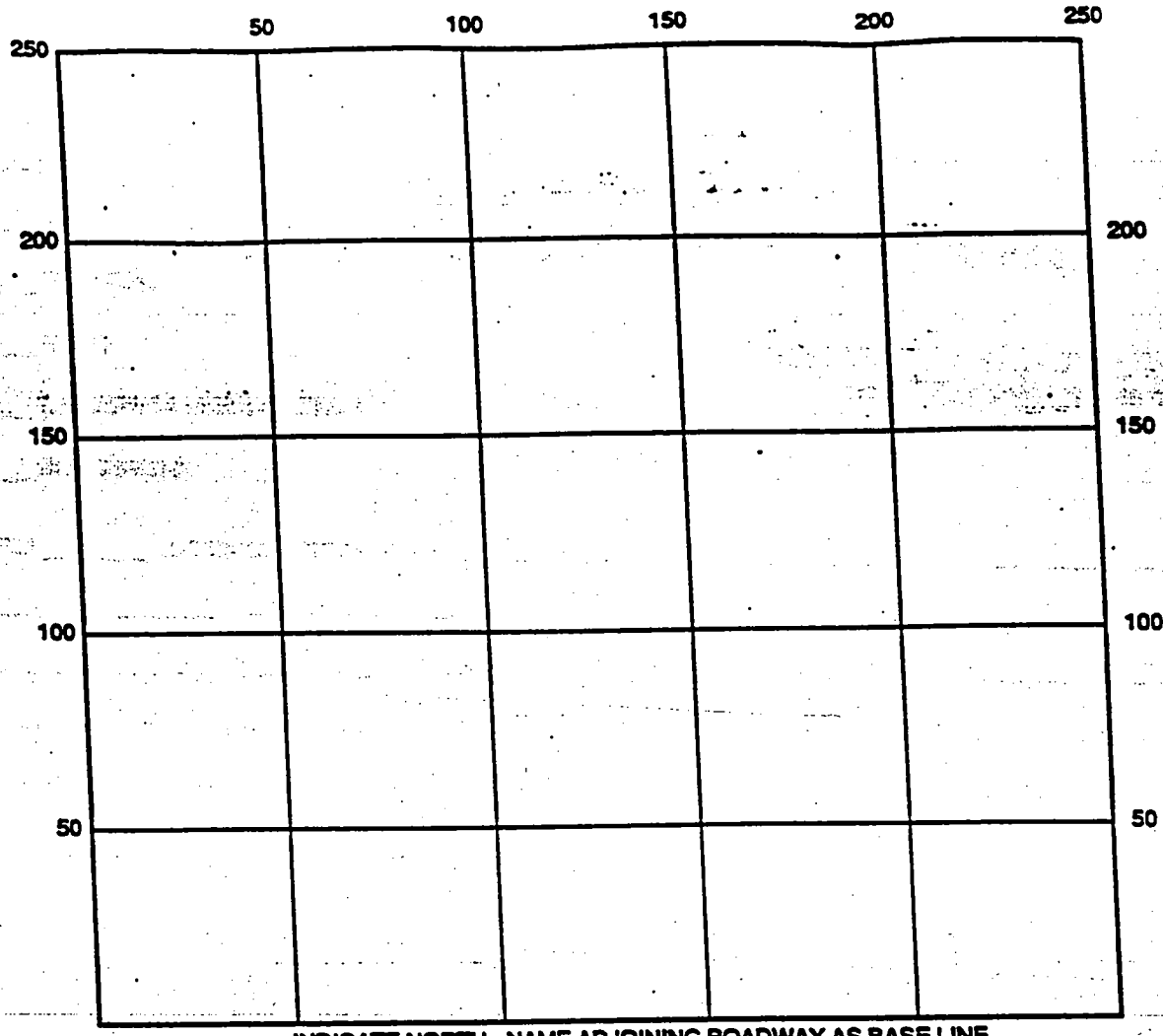
~~APPROVED: For Private Water and Private Sewage Howard County Health Department.~~

Howard County Health Officer Date

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Drawn: KBW	PLOT PLAN FOR BUILDING PERMIT	Scale: 1"=50'
Designed: SDH	**H. MULLINEAUX PROPERTY**	Drawing: 1 of 1
Checked: BDB	TAX MAP No. 6 P/O PARCEL 15 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	LDE Job No. 96-035
Date: 6/96	BUILDER SELFRIDGE BUILDERS, INC. 14045 Gared Drive Glenwood, MD 21738 (410) 799 - 0200	File No.



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE

Septic Tanks Level _____

Dosing Chamber Level _____

Dual Pump _____

Controls _____

Alarm _____

Pump Test _____

Piezometers _____

Observation Ports _____

Float Settings High Off: _____

High On: _____

Low Off: _____

Low On: _____

Alarm Float: _____

Trench: Sand mound Details - Compare with plan.

Width _____

Length _____

Bottom _____

Depth _____

Inlet _____

Depth _____

Gravel _____

Depth _____

Remarks: _____

Date System Approved _____ Inspector _____

9/6/96
REV. 10/1/96

REVISED SAND MOUND SYSTEM DESIGN FOR MULLINEAUX PROPERTY / SELFRIDGE BUILDERS

NATURAL SOIL TEXTURE: SILT LOAM NATURAL INFILTRATION RATE: 0.75 GPD/SF (Boarder Soil Profile, estimate only)

PERC RATE @ 20" DEPTH: UNKNOWN (see perc Test Notes)

DEPTH TO SEASONAL HIGHWATER: UNKNOWN

SLOPE: 12%

DWELLING SIZE: 4 BEDROOMS

DESIGN INFILTRATION RATE: 1.2 GPD/SF

✓ (1) ESTIMATE DESIGN FLOW: 150 GPD/BR = 600 GPD

✓ (2) SIZE ABSORPTION BED: $\frac{600 \text{ GPD}}{1.2 \text{ GPD/SF}} = 500 \text{ SF}$

✓ (3) ABSORPTION BED DIMENSIONS: ASSUME 83 FOOT LONG BED ON CONTOUR

WIDTH = $\frac{500 \text{ S.F.}}{83'} = 6.02'$ USE 6' BED WIDTH

Approved Septic System Plan
Howard County Health Department

✓ (4) MOUND HEIGHT

✓ (A) FILL DEPTH: 2' MIN. @ UPSLOPE SIDE OF BED

✓ (B) FILL DEPTH @ DOWNSLOPE SIDE OF BED

FILL DEPTH + [SLOPE × BED WIDTH]

2' + 0.12 × 6' = 2.72

[signature] 10/2/96
Signature Date

✓ (C) BED DEPTH: 10" MIN. W/ 6" MIN. BELOW INVERT OF DISTRIBUTION LATERAL

6" MIN + 1 1/2" LATERAL + 2" MIN. COVER = 9 1/2" USE 10" MIN. TOTAL

✓ (D) CAP @ EDGE OF BED: 1' MIN.

✓ (E) CAP @ CENTER OF BED: 1 1/2' MIN.

RECEIVED
HOWARD CO. HEALTH DEPT.
ENVIRONMENTAL HEALTH
1996 OCT -2 A 8:47

(5) MOUND PERIMETER

(A) UPSLOPE SETBACK: MOUND HEIGHT @ UPSLOPE EDGE × 2:1 SLOPE

FILL DEPTH + BED DEPTH + CAP @ EDGE × 3

2' + 0.833' + 1' × 3' = 11.5' @ LEVEL GROUND

11.5' LEVEL × UPSLOPE CORRECTION (0.72) = 8.4' USE 8.5' MIN. ≤ 11.5' allowable

(B) SIDE SLOPE SETBACK: MOUND HEIGHT @ CENTER × 3:1

$$\left[\frac{\text{FILL DEPTH} + \text{FILL DEPTH @ D.S.}}{2} + \text{BED DEPTH} + \text{CAP @ CENTER}\right] \times 3$$

$$\left[\frac{2' + 2.72'}{2} + 0.833' + 1.5'\right] \times 3 = 14.08' \text{ USE } 14' \text{ MIN.}$$

(C) BASAL AREA REQUIRED: $\frac{\text{DESIGN FLOW}}{\text{INFILT. RATE}} = \text{AREA}$

$\frac{600 \text{ GPD}}{0.75 \text{ GPD/SF}} = 800 \text{ SF.}$

MIN. DOWNSLOPE REQUIRED: $\frac{\text{AREA}}{\text{MOUND LENGTH}} - \text{MOUND WIDTH}$ $\quad \frac{800 \text{ SF}}{83'} - 6' = 3.6'$

(D) CHECK DOWNSLOPE SETBACK PROVIDED:

[FILL DEPTH @ D.S. + BED DEPTH + CAP @ EDGE] × 3

[2.72' + 0.833' + 1'] × 3' = 13.66' @ LEVEL GROUND

13.66' × DOWNSLOPE CORRECTION (1.57) = 21.44' USE 21.5'

PRESSURE DISTRIBUTION DESIGN

USE CENTRAL MANIFOLD DESIGN

① LATERAL LENGTH = 83' TOTAL

$\frac{83'}{2} - 0.5'$(MANIFOLD LENGTH) = (41 FT.) ✓

② HOLE DIAMETER AND SPACING (5/16" HOLE) @ (42" O/C)

③ LATERAL DIAMETER: (1½" DIAMETER) SEE FIG 7-28

④ LATERAL DISCHARGE RATE: MAINTAIN A 2 FT. HEAD IN LATERAL @ 0.87 PSI

DISCHARGE RATE: (1.63 GPM)

NUMBER OF HOLES PER LATERAL $\frac{\text{LATERAL LENGTH}}{\text{HOLE SPACING}}$; $\frac{41}{3.5} = 11.7$ (USE 12)

LATERAL DISCHARGE RATE: 12 HOLES × 1.63 GPM = (19.56 GPM/LATERAL)

TOTAL DISCHARGE: 19.56 GPM × 4 = (78.24 GPM)

⑤ SELECT MANIFOLD SIZE 4 LATERALS SPACED @ 3 FT APART

USE MANIFOLD LENGTH OF LESS THAN 5 FT

2" MANIFOLD PER NOMOGRAPH, USE (3" TO MATCH) DELIVERY PIPE

⑥ MINIMUM DOSE VOLUME: 2.7 GALLONS PIPE VOLUME OF 20.5 OF OR 100 GALLONS

OK $\frac{600 \text{ GPD}}{6 \text{ DOSES/DAY}} =$ (100 GALLON/DOSE)

(7) MINIMUM DISCHARGE RATE

LATERALS × DISCHARGE RATE/LATERAL = 4 × 19.56 GPM = 78.24 GPM

(8) SELECT PUMP TO INITIAL SYSTEM

DISTANCE: 157' (STRAIGHT) PIPE DIAMETER FOR DELIVERY 3" PVC

ELEVATION DIFFERENCE: 20.5'

EQUIVALENT LENGTH: 2-45° BENDS - 3.4; 1 T FLOW - 12.0; 1 T BRANCH - 17.0; (32.4) OK approx

EQUIVALENT DISTANCE: 190 FEET OK (157 + 33 = 190)

FRICTION LOSS IN 3" PVC @ 78.24 GPM

$1.08 + \frac{8.24}{10}(1.38 - 1.08) = 0.2472 + 1.08 = 1.33' / 100'$

TOTAL FRICTION LOSS FOR 157' = 1.20 + 1.33 = 2.53' close enough

FRICTION LOSS	2.53'	2.53
ELEVATION HEAD	= 20.5'	23.5'
PRESSURE HEAD	= 2.0'	2.0
TOTAL PUMPING HEAD	25.03' or	28.03'

~~Invert outlet in~~ S.T. 790.5,
Invert PC 770.00'
~~approx~~ bottom pump ≈ 767.00±
23.5'
If this, then this

CONTRACTOR SHOULD INSTALL A PUMP CAPABLE OF DELIVERING AT LEAST 78.24 GPM AGAINST A 25.03' OF HEAD

Note: check pump curve submitted by installer
OK if point is below curve at 80 gpm @ 28 ft of Head

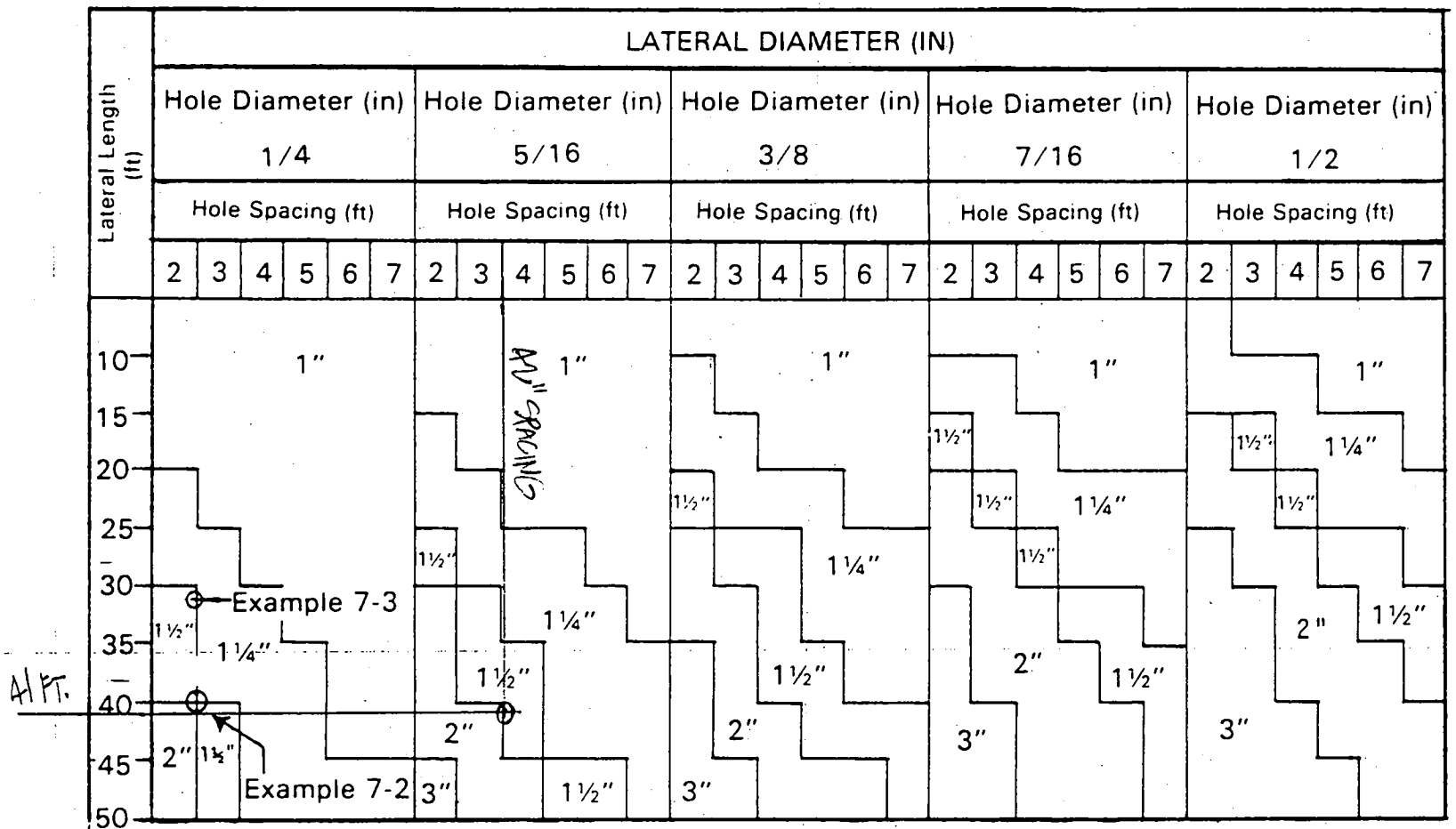
Approved Septic System Plan
Howard County Health Department

AP 10/2/96

[signature] 10/2/96
Signature Date

FIGURE 7-28

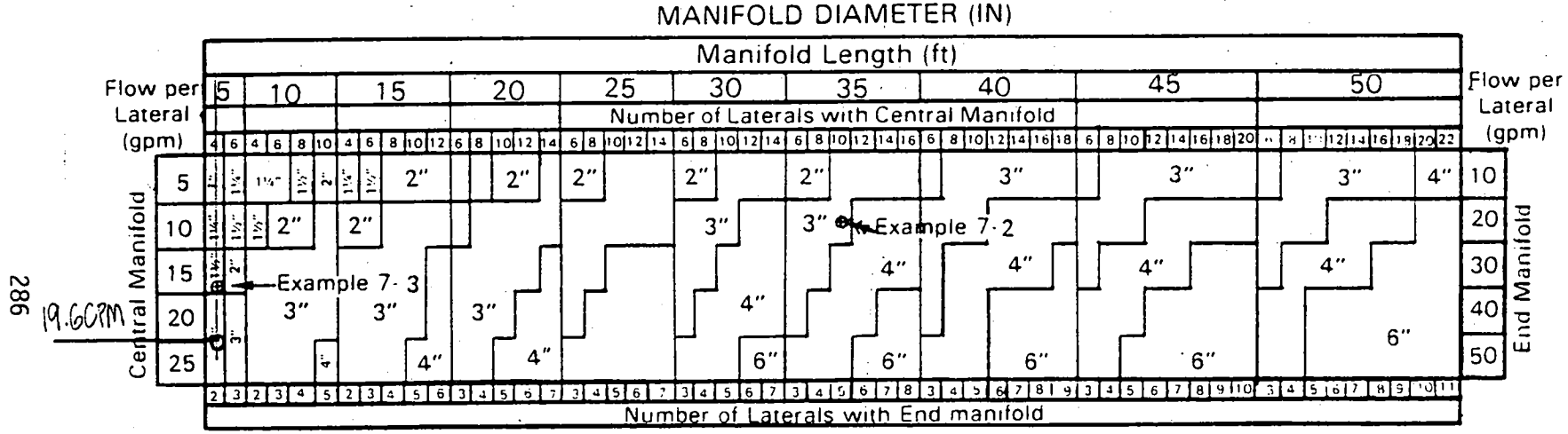
REQUIRED LATERAL PIPE DIAMETERS FOR VARIOUS HOLE DIAMETERS, HOLE SPACINGS, AND LATERAL LENGTHS[a]
(FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each pipe segment (Hazen-Williams C= 150). The orifice equation for sharp-edged orifices (discharge coefficient = 0.6) was used to compute the discharge rates through each orifice. The maximum lateral length for a given hole and spacing was defined as that length at which the difference between the rates of discharge from the distal end and the supply end orifice reached 10 percent of the distal end orifice discharge rate.

FIGURE 7-29

RECOMMENDED MANIFOLD DIAMETERS FOR VARIOUS MANIFOLD LENGTHS, NUMBER OF LATERALS, AND LATERAL DISCHARGE RATES (FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each segment (Hazen-Williams C = 150). The maximum manifold length for a given lateral discharge rate and spacing was defined as that length at which the difference between the heads at the distal and supply ends of the manifold exceeded 10 percent of the head at the distal end.

LDE INC.
9250 RUMSEY ROAD, SUITE 106
COLUMBIA, MARYLAND 21045
(410) 715-1070 (301) 596-3424
(410) 715-9540 FAX

LETTER OF TRANSMITTAL

DATE 9/30/96 JOB NO. 96-035

ATTENTION RON PINKLEY

RE: BIRD RESIDENCE
MULLINEAUX PROPERTY

TO HOWARD CO. HEALTH DEPT.

WE ARE SENDING YOU ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA DELIVERY THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☒ PRINTS ☐ COPY OF LETTER ☐ SAMPLES ☐ SPECIFICATIONS
☐ CHANGE ORDER ☐ PLANS ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2		1	REVISED PLOT PLAN
2		6	REVISED SAND MOUND CALCULATIONS

REASON FOR TRANSMITTAL CHECKED BELOW:

☒ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RESUBMIT _____ COPIES FOR APPROVAL
☐ FOR YOUR USE ☐ RETURNED FOR CORRECTIONS ☐ SUBMIT _____ COPIES FOR DISTRIBUTION
☒ AS REQUESTED ☐ FOR REVIEW AND COMMENT ☐ RETURN _____ CORRECTED PRINTS
☐ APPROVED AS NOTED ☐ _____

☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

Approved Septic System Plan
Howard County Health Department

Signature

10/2/96
Date

RECEIVED
HOWARD CO. HEALTH DEPT.
ENVIRONMENTAL HEALTH
OCT - 2 1996

COPY TO SELFRIDGE BUILDERS

SIGNED: BRUCE BURTON

PLEASE NOTIFY US AT ONCE IF ENCLOSURES ARE NOT AS NOTED.

032011

APPLICATION (30)

HOWARD COUNTY (30)

PERMIT APPLICATION

30

DEPARTMENT OF INSPECTIONS, LICENSES & PERMIT
3430 COURT HOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043

SERIAL NUMBER
B0003657

BUILDING ADDRESS (HOUSE NO., STREET, TOWN OR AREA)
19001 Windsor Forest Rd
Mt. Airy, MD. 21771 23776

LOT NO.	PARCEL NO.	SEC.	AREA	BLOCK NO.	LIBER	FOLIO

SUB DIVISION	ZONE	ZONE MAP	ELEC. DIST.	CENSUS TR.

OWNER NAME AND ADDRESS — PHONE NO.
~~Selfridge Bldrs~~ Timothy Brad
~~[illegible]~~ Dr. Same (301) 854-6739
~~Glenwood, Md. [illegible]~~

OCCUPANT'S NAME AND ADDRESS — PHONE NO.

ARCHITECT OR ENGINEER'S NAME AND ADDRESS — PHONE NO.

CONTRACTOR'S NAME AND ADDRESS — PHONE NO.
Decked Out / Cary Lyon 426-7229
3108 Tyndale Ave
Balto. MD. 21214

EXISTING USE	PROPOSED USE
SFD	SFD

EST. CONSTRUCTION COST	LICENSE NUMBER	PERMIT FEE
6000.	47520	30.

GRADING/SEDIMENT CONTROL ☐ YES ☐ NO — SDP #

DESCRIPTION OF WORK AUTHORIZED
construct 47' x 14' deck w/ steps to grade

SIZE OF BLDG.	FRONT	DEPTH	HEIGHT

TYPE OF BLDG.	AREA	VOLUME	ROOF
B. ROOMS			
ROOMS			
BATHS			
FIREPLACES			

FOOTINGS	FOUNDATION	S. WALLS
[illegible]		

UTILITIES

WATER (WELL)	SEWER (SEPTIC)	GAS	ELECTRICITY	TYPE OF HEAT	AC

I have carefully examined and read this application and know the same is true and correct, and that in doing this work, all provisions of Howard County Ordinances and the State Laws of Maryland will be complied with, whether specified or not; and I will notify the Department of Inspections, and Permits twenty-four hours in advance when I am ready for the inspections called for elsewhere in the application; and that no work will be covered up until such inspections have been complied with.

Cary Lyon
SIGNATURE

Owner — TITLE — 1/16/97 DATE

W/S CODE

FOR OFFICE USE ONLY

DISTANCE IN FEET FROM R/W LINE TO FRONT BUILDING LINE ______

SIDE YARD ______ (DISTANCE IN FEET FROM SIDE BLDG. LINE TO SIDE PROPERTY LINE)

TO SIDE BUILDING LINE ______
DISTANCE IN FEET, REAR YD. REQUIRING SET

BACK ______ (CORNER LOT ONLY) ______ SDP #

Check payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

FUNCTION		DATE	SIGNATURE APPROVAL
ZONING/PLANNING	X		
SHA			
SEDIMENT/GRADING			
BUILDING OFFICIAL	X	1/	[illegible]
WATER & SEWER		/	
HEALTH DEPT.	X	1/16/97	DOUAK [illegible]
FIRE PROTECTION			[illegible]
STORM WATER MGM.			

APPROVED — DATE

CAUTION

To begin construction before a permit placard has been issued and displayed on the job is a violation of the law.

Use and occupancy permit must be applied for two weeks before it will be issued.

IMPORTANT: PLEASE SHOW ZIP CODES AND AREA CODES WHEREVER REQUIRED.

LP-69-591

3 DKA 2109 30

Distribution of Copies:
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Yellow - Engineering
Pink - Health Dept.
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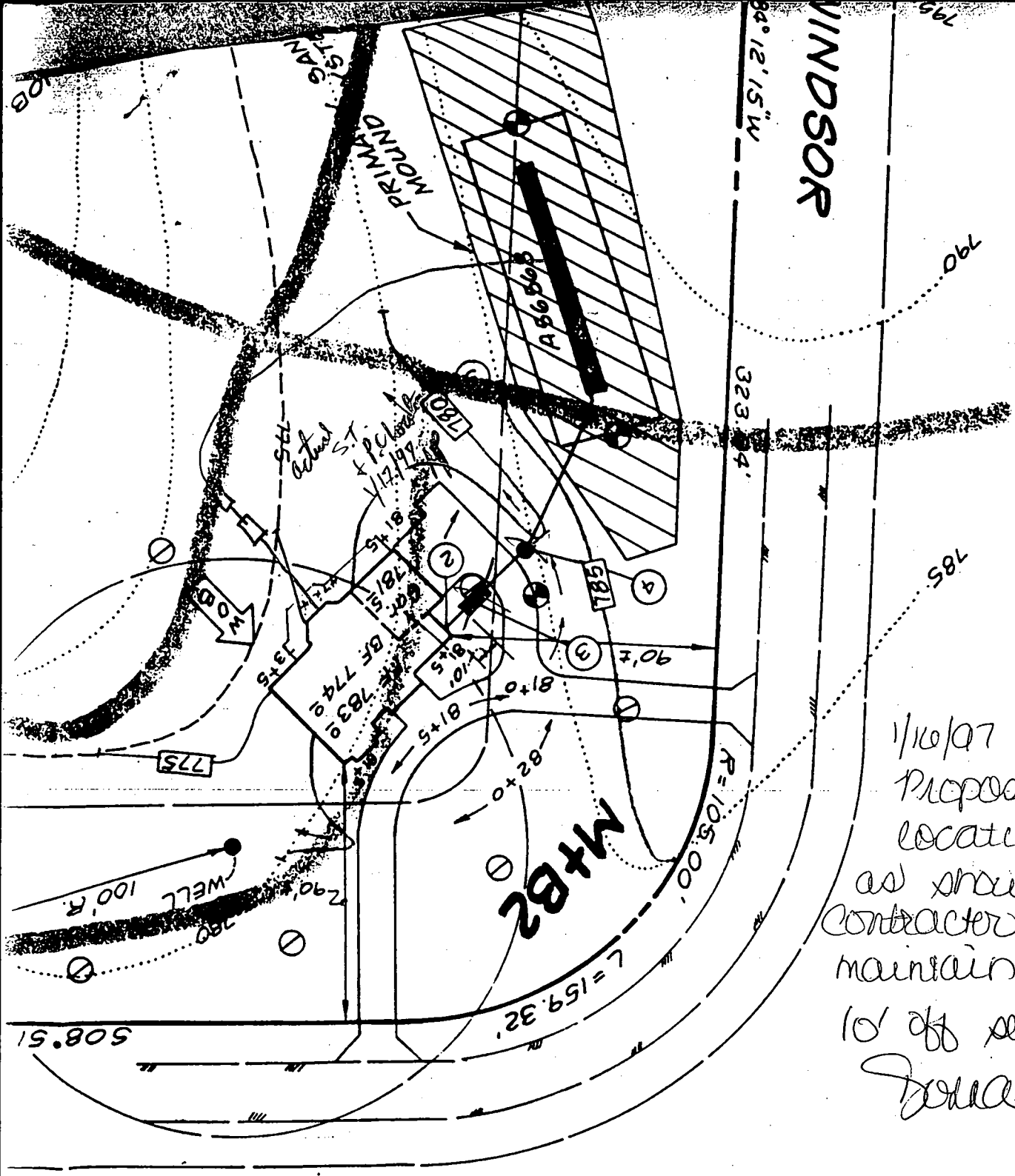
CA



LOCATION SURVEY PLAT

CASSELL TESTING, INC.
ENVIRONMENTAL SAMPLING AND TESTING
10940 BEAVER DAM ROAD, HUNT VALLEY, MD 21030-2211
(410) 252-7742

REPORT DATE: Jan 28, 1997

County Howard

Lab Number 97-0175

Sample iced Yes
Residual Cl_2 <0.1 mg/L

cc: County Health Dept. Yes

CERTIFICATE OF ANALYSIS

Maryland State Certified Water Quality
Laboratory No. 115
REQUESTER: Mr. James Selfridge
Selfridge Builders
14045 Gared Drive
Glenwood, Maryland 21738

Property Sampled: U&O: 19001 Windsor Forest Road

Station Sampled: Pressure Tank Tap

Date/Time Sampled: Jan 27, 1997 11:00 am

Owner, Telephone No.: Bird

Subdivision Name:

Building Permit No.: B00100804

Well Number: HO-94-0850

Tax Map #:

Parcel #:

Sampler: H. Sparby #96-374

Lot Number:

Observation: 2-Piece Cap
Satisfactory

RESULTS OF ANALYSIS:

PARAMETER	RESULT	METHOD	*MCL/**SMCL	
Nitrate	8.8 mg/L as N	ISE	*10 mg/L as N	Pass
Turbidity	<1.0 NTU	EPA 180.1	*10 NTU	Pass
pH	5.3 Units	EPA 150.1	**6.5-8.5 Units	
Sand	Negative		Negative	
Total Coliform	Absent	ONPG-MMO MUG	*Absent	Pass

Based upon COLIFORM BACTERIOLOGICAL STANDARDS, the above results indicate that, at the time the sample was collected, this water sample was SAFE for drinking purposes.

11:23

Sharon K. Cassell TY
Sharon K. Cassell

* MCL = Maximum Contamination Level
** SMCL = Scondary Maximum Contamination Level

February 6, 1997

Mr. Craig Williams
Howard County Helath Department
Ellicott City, Maryland

CC: Ron Pinkley

Re: Sandmound Septic - Temporary Use Permit and Sign-off

Dear Mr. Williams:

This letter serves as notification that we have arranged to pump out the septic tank as needed until final approvals are completed. This service is to be provided by Jack Fyock Septic Systems and Service and will commence on 2/9/97. Construction of the sand mound will be completed today or tomorrow.

Our move in date is 2/9/97.

Timothy W. Bird
Owner

fax transmission cover page

Bonnie Bird
Account Manager

DOCUTECH
1651 Crofton Blvd.
Suite 6
Crofton, MD 21114

Phone: 410-793-0301
301-261-0116

Fax: 410-721-6186

DATE: 2/6/97

TO: CRAIG WILLIAMS

FAX #:

COMMENTS: URGENT !!!

DELIVER IMMEDIATELY !!!!

COPY TO TZON PINKLEY

Number of Pages to Follow 1

FAX

Date 1/30/97

Number of pages including cover sheet 3

TO: RON PINFLEY

HEALTH DEPT.

Phone
Fax Phone 313 2648

FROM:

LDE Inc
9250 Rumsey Road
Suite 106
Columbia, MD 21045

Phone 410-715-1070
Fax Phone 410-715-9540

CC: JIM SELFRIDGE 992 8287

REMARKS: ☐ Urgent ☒ For your review ☒ Reply ASAP ☐ Please Comment

RON: JIM SELFRIDGE INDICATED THAT CONTRACTOR FEELS THE PUMP WILL BURN OUT USING A 3" PIPE. HE WISHES TO USE A 2" PVC FEED. MY CALCULATIONS INDICATE A 1HP MYERS SHOULD BE OK. PLEASE REVIEW, CONFIRM AND APPROVE.

CALL ME IF YOU HAVE ANY QUESTIONS.

BRUCE BURTON

see Note of My acceptance of either on page 2
BB 2/3/97

REVISED CALCULATIONS / BIRD RESIDENCE 1/30/97

① MINIMUM DISCHARGE INTO MOUND = 78.24 GPM SAY 80 GPM

② SELECT PUMP TO SYSTEM (USE 2" PVC PIPE)

DISTANCE 157' (STRAIGHT) +

4 - 45° BENDS,	(2.7 × 4)	= 10.8 FT.
1 - TEE (FLOW THRU)		= 1.8 FT.
1 - TEE (BRANCH)		= 6.6 FT
1 - ENLARGEMENT 2" TO 3"		= 1.2 FT
		20.4 FT.

TOTAL EQUIVALENT LENGTH = 177.4'

$$\frac{10.44(100)}{(150)^{1.86}} = (.0984) \text{ ok}$$

FRICTION LOSS

$$hf = 10.44(L)\frac{GPM^{1.85}}{(C)^{1.85}(D)^{4.8655}} = 10.44(177.4')\frac{80^{1.85}}{(150)^{1.85}(2)^{4.8655}} = 19.86 \text{ FT.} ✓$$

or × 215 ft / 100 ft = 24.07 ft of Head

FRICTION LOSS	19.86'	24.07 vs 2.96 for 3"
ELEVATION HEAD	20.5'	+20.5
PRESSURE HEAD	2.0	+2
	42.36'	(46.6) for 2" force Main or 25.0 ± for 3" Force Main

Ⓐ OK c̄ 1 HP pump

Ⓑ OK c̄ ½ hp Pump as on original calculation sheets

USE 1 HP PUMP (ME SERIES)

They can use either choice above — differences are in cost of Materials (piping, pumps, 220 vs. 110 volt connections etc. (so I told Ingram [S.M. Builder], B of (of Selfridge Building Engineer (BB) to discuss with owner and Make a choice — I'll accept whichever, pending successfull pump Test. [signature] 2/3/97

ME SERIES

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

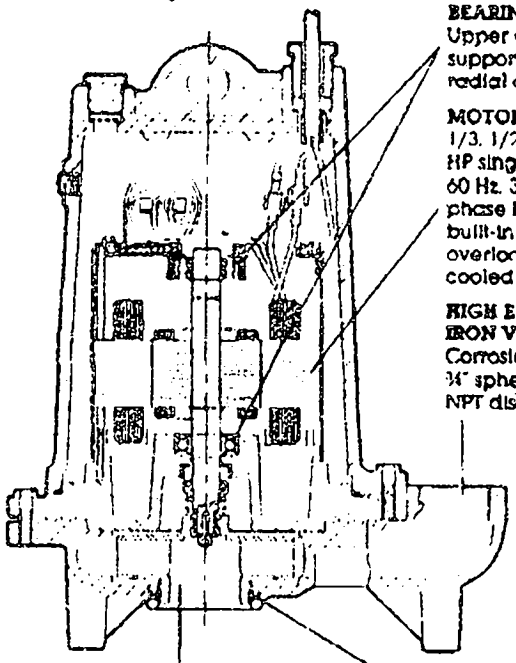
POWER CORD
Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

MOTOR HOUSING
Cast iron for efficient heat transfer and corrosion resistance.

BEARINGS
Upper and lower ball support rotor. Take radial and thrust loads.

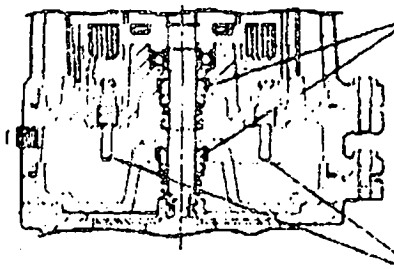
MOTOR
1/3, 1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

HIGH EFFICIENCY CAST IRON VOLUTE
Corrosion resistant. Passes 3/4" spherical solids. 2" NPT discharge.



ENCLOSED TWO VANE IMPELLER
High efficiency. Passes 3/4" spherical solids with stainless steel wear ring. Optional bronze construction available.

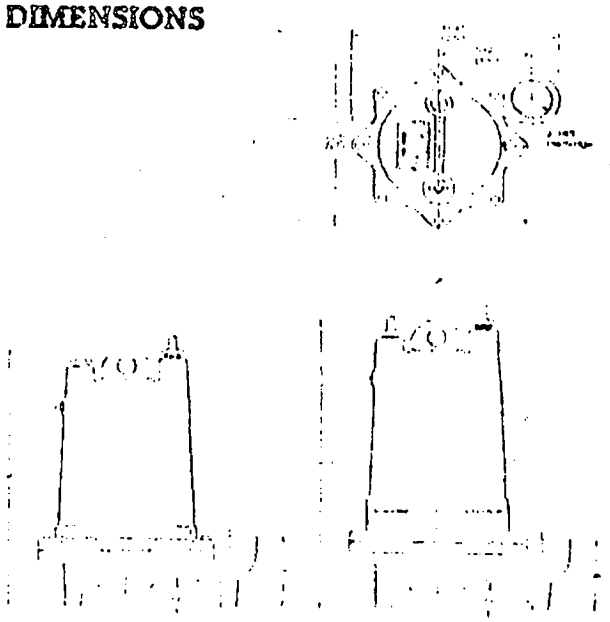
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.



SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

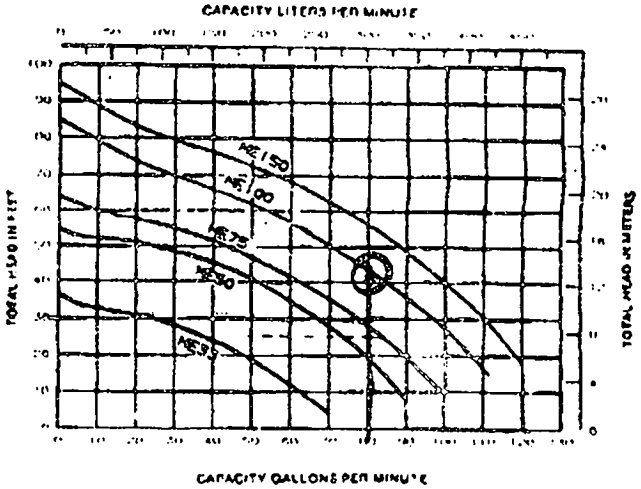
SEAL LEAK PROBES
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light.

DIMENSIONS



Model Series	Inches (millimeters) A	B	C	F
ME33S & ME50S	16.8 (427)	4.09 (104)	1.03 (26)	12.13 (308)
ME33D & ME50D	18.6 (472)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

PERFORMANCE CURVE



K3320 10/94
Printed in U.S.A.

Myers®
F.E. Myers
1101 Myers Parkway
Ashland, Ohio 44805-1969
419/289-1144
FAX: 419/289-6658 TLX 98-7443

To _____

Date _____ Time _____ ☐ AM ☐ PM

WHILE YOU WERE OUT

M _____

of _____

Phone (_____) _____

Area Code Number Extension

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	

RETURNED YOUR CALL	

Message _____

_____

_____

_____

_____

_____

_____

Operator

1/29/96 —

& left Message for Mr. Ingram —

He can proceed with SW Constr if he replaces with 3" drain. Supply line.

A've been unable to contact B. Burton as yet.

GP

APPLICATION

HOWARD COUNTY

PERMIT APPLICATION

DEPARTMENT OF INSPECTIONS, LICENSES & PERMIT
3430 COURT HOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043

#109

SERIAL NUMBER

B00103716

BUILDING ADDRESS (HOUSE NO., STREET, TOWN OR AREA)
19001 WINDSOR FOREST RD.
MOUNT AIRY MD. 21771 - 23776

GRADING/SEDIMENT CONTROL ☐ YES ☐ NO SDP #

DESCRIPTION OF WORK AUTHORIZED
Installation of 500 gallon underg... L.P. Tank

LOT NO.	PARCEL NO.	SEC.	AREA	BLOCK NO.	LIBER	FOLIO
NA	15	—	—	8	—	—

SUB DIVISION	ZONE	ZONE MAP	ELEC. DIST.	CENSUS TR.
Long Corner	RCDA	6	4	6046

OWNER NAME AND ADDRESS
Timothy & Bonnie Bird
14930 Tri Delphin Rd
Glenelg MD. 21737
PHONE NO. 301-854-6731

OCCUPANT'S NAME AND ADDRESS
Timothy & Bonnie Bird
14930 Tri Delphin Rd.
Glenelg MD. 21737
PHONE NO.

ARCHITECT OR ENGINEER'S NAME AND ADDRESS
Superior Builders Inc.
11045 Gorsuch Dr.
Glenwood MD. 21738
PHONE NO. 410-489-5782

CONTRACTOR'S NAME AND ADDRESS
United Propane Inc.
205 Naples Rd.
Millersville MD. 21108
PHONE NO. 410-987-5000

EXISTING USE	PROPOSED USE
SFD	Single family Dwelling w/ Tank

EST. CONSTRUCTION COST	LICENSE NUMBER	PERMIT FEE
$ 600	G. 1475	

SIZE OF BLDG.	FRONT	DEPTH	HEIGHT

TYPE OF BLDG.	AREA	VOLUME	ROOF
B. ROOMS			
ROOMS			
BATHS			
FIREPLACES			

FOOTINGS	FOUNDATION	S. WALLS

UTILITIES					
WATER/WELL	SEWER/SEPTIC	GAS	ELECTRICITY	TYPE OF HEAT	AC
O	O				

I have carefully examined and read this application and know the same is true and correct, and that is doing this work, all provisions of Howard County Ordinances and the State Laws of Maryland will be complied with, whether specified or not; and I will notify the Department of Inspections, and Permits twenty-four hours in advance when I am ready for the inspections called for elsewhere in the application; and that no work will be covered up until such inspections have been compiled with.

SIGNATURE

Project Manager
TITLE

2-6-97
DATE

W/S CODE

FOR OFFICE USE ONLY

DISTANCE IN FEET FROM R/W LINE TO FRONT BUILDING LINE _____

SIDE YARD _____
(DISTANCE IN FEET FROM SIDE BLDG. LINE TO SIDE PROPERTY LINE)

TO SIDE BUILDING LINE _____
DISTANCE IN FEET, REAR YD. REQUIRING SET

BACK _____ (CORNER LOT ONLY) _____ SDP #

Check payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

FUNCTION	DATE	SIGNATURE APPROVAL
ZONING/PLANNING	X	
SHA		
SEDIMENT/GRADING		
BUILDING OFFICIAL	X	
WATER & SEWER		
HEALTH DEPT.	X 2/7/97	
FIRE PROTECTION		
STORM WATER MG	X	

CAUTION

To begin construction before a permit placard has been issued and displayed on the job is a violation of the law.

Use and occupancy permit must be applied for two weeks before it will be issued.

APPROVED _____ DATE _____

IMPORTANT: PLEASE SHOW ZIP CODES AND AREA CODES WHEREVER REQUIRED.

LP-89-591 CK 3659

Distribution of Copies:
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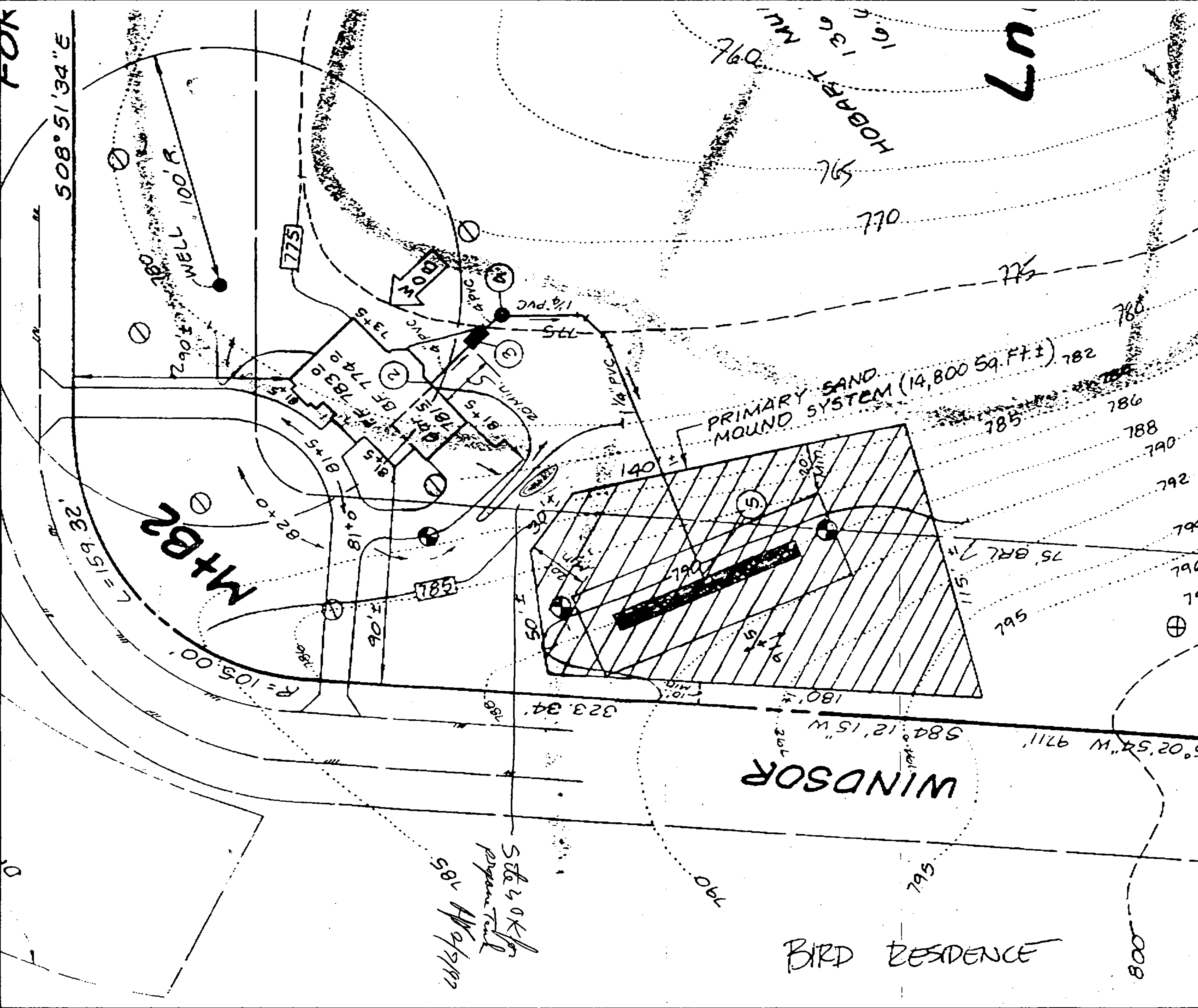
Yellow - Engineering
Pink - Health Dept.
Gold - S.H.A.



FEB- 6-97 THU 10:16 JHS BUILDERS

P.02

(1)

9/6/96
REV. 10/1/96

REVISED SAND MOUND CALCULATION FOR MULLINEAUX PROPERTY / SELFRIDGE BUILDERS

NATURAL SOIL TEXTURE: SILT LOAM NATURAL INFILTRATION RATE: 0.75 GPD/SF (Based on estimate only)

PERC RATE @ 20" DEPTH: UNKNOWN (see plan Test Note)

DEPTH TO SEASONAL HIGHWATER: UNKNOWN

SLOPE: 12%

DWELLING SIZE: 4 BEDROOMS

DESIGN INFILTRATION RATE: 1.2 GPD/SF

Post-it® Fax Note 7671	Date 1/23/97	# of pages ▶ 6
To James Selfridge	From Ron Pinkley	
Co./Dept. Selfridge Bldrs	Co. Howard Co Health Dept	
Phone # 992-8282	Phone # 313-2648	
Fax # 992 8287	Fax # 313-2648	

✓ (1) ESTIMATE DESIGN FLOW: 150 GPD/BR = 600 GPD

✓ (2) SIZE ABSORPTION BED: $\frac{600 \text{ GPD}}{1.2 \text{ GPD/SF}} = 500 \text{ SF}$

✓ (3) ABSORPTION BED DIMENSIONS: ASSUME 83 FOOT LONG BED ON CONTOUR

WIDTH = $\frac{500 \text{ SF}}{83'} = 6.02'$ USE 6' BED WIDTH

Approved Septic System Plan
Howard County Health Department

✓ (A) MOUND HEIGHT

✓ (A) FILL DEPTH: 2' MIN. @ UPSLOPE SIDE OF BED

✓ (B) FILL DEPTH @ DOWNSLOPE SIDE OF BED

FILL DEPTH + [SLOPE × BED WIDTH]

2' + 0.12 × 6' = 2.72

[signature] 10/2/96
Signature Date

✓ (C) BED DEPTH: 10" MIN. W/ 6" MIN. BELOW INVERT OF DISTRIBUTION LATERAL

6" MIN + 1½" LATERAL + 2" MIN. COVER = 9½" USE 10" MIN. TOTAL

✓ (D) CAP @ EDGE OF BED: 1' MIN.

✓ (E) CAP @ CENTER OF BED: 1½' MIN.

1996 OCT -2 A 8:47
HOWARD COUNTY HEALTH DEPT
ENVIRONMENTAL HEALTH

5. MOUND PERIMETER

(A) UPSLOPE SETBACK: MOUND HEIGHT @ UPSLOPE EDGE × 3:1 SLOPE

FILL DEPTH + BED DEPTH + CAP @ EDGE × 3

$2' + 0.833' + 1' \times 3' = 11.5'$ @ LEVEL GROUND

$11.5'$ LEVEL × UPSLOPE CORRECTION $(0.72) = 8.4'$ USE **8.5' MIN.**

*11.5' allowable

(B) SIDE SLOPE SETBACK: MOUND HEIGHT @ CENTER × 3:1

$$\left[\frac{\text{FILL DEPTH} + \text{FILL DEPTH @ D.S.}}{2} + \text{BED DEPTH} + \text{CAP @ CENTER}\right] \times 3$$

$$\left[\frac{2' + 2.72'}{2} + 0.833' + 1.5'\right] \times 3 = 14.08'$$ USE **14' MIN.**

(C) BASAL AREA REQUIRED:

$$\frac{\text{DESIGN FLOW}}{\text{INFILT. RATE}} = \text{AREA}$$

$$\frac{600 \text{ GPD}}{0.75 \text{ GPD/SF}} = 800 \text{ S.F.}$$

MIN. DOWNSLOPE REQUIRED: $\frac{\text{AREA}}{\text{MOUND LENGTH}} - \text{MOUND WIDTH}$ $\quad \frac{800 \text{ SF}}{83'} - 6' = 3.6'$

(D) CHECK DOWNSLOPE SETBACK PROVIDED:

[FILL DEPTH @ D.S. + BED DEPTH + CAP @ EDGE] × 3

$[2.72' + 0.833' + 1'] \times 3' = 13.66'$ @ LEVEL GROUND

$13.66' \times$ DOWNSLOPE CORRECTION $(1.57) = 21.44'$ USE **21.5'**

PRESSURE DISTRIBUTION DESIGN

E CENTRAL MANIFOLD DESIGN

- ① LATERAL LENGTH = 83' TOTAL

$\frac{83'}{2}$ - 0.5' (MANIFOLD LENGTH) = 41 FT.

② HOLE DIAMETER AND SPACING 5/16" HOLE @ 42" O/C

③ LATERAL DIAMETER: 1 1/2" DIAMETER SEE FIG 7-28

④ LATERAL DISCHARGE RATE: MAINTAIN A 2 FT. HEAD IN LATERAL @ 0.87 PSI

DISCHARGE RATE: 1.63 GPM

NUMBER OF HOLES PER LATERAL $\frac{\text{LATERAL LENGTH}}{\text{HOLE SPACING}}$; $\frac{41}{3.5}$ = 11.7 USE 12

LATERAL DISCHARGE RATE: 12 HOLES × 1.63 GPM = 19.56 GPM/LATERAL

TOTAL DISCHARGE: 19.56 GPM × 4 = 78.24 GPM

⑤ SELECT MANIFOLD SIZE 4 LATERALS SPACED @ 3 FT APART

USE MANIFOLD LENGTH OF LESS THAN 5 FT

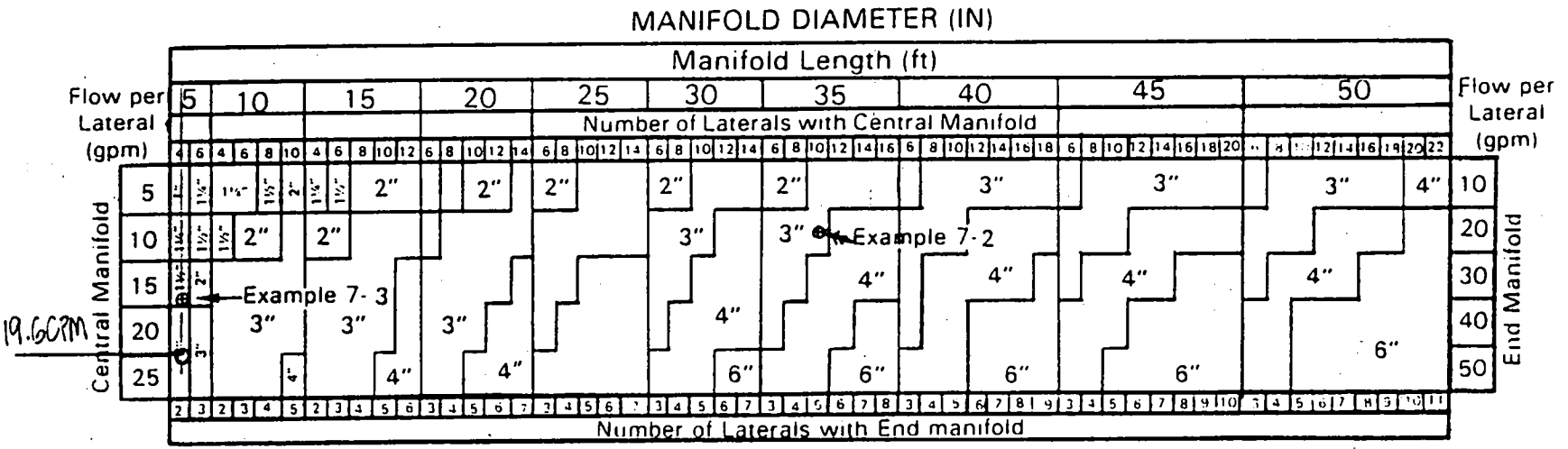
2" MANIFOLD PER NOMOGRAPH, USE 3" TO MATCH DELIVERY PIPE

⑥ MINIMUM DOSE VOLUME: 2.7 GALLONS PIPE VOLUME OF 20.5 CF or 100 GALLONS

OK $\frac{600 \text{ GPD}}{6 \text{ DOSES/DAY}}$ = 100 GALLON/DOSE

FIGURE 7-29

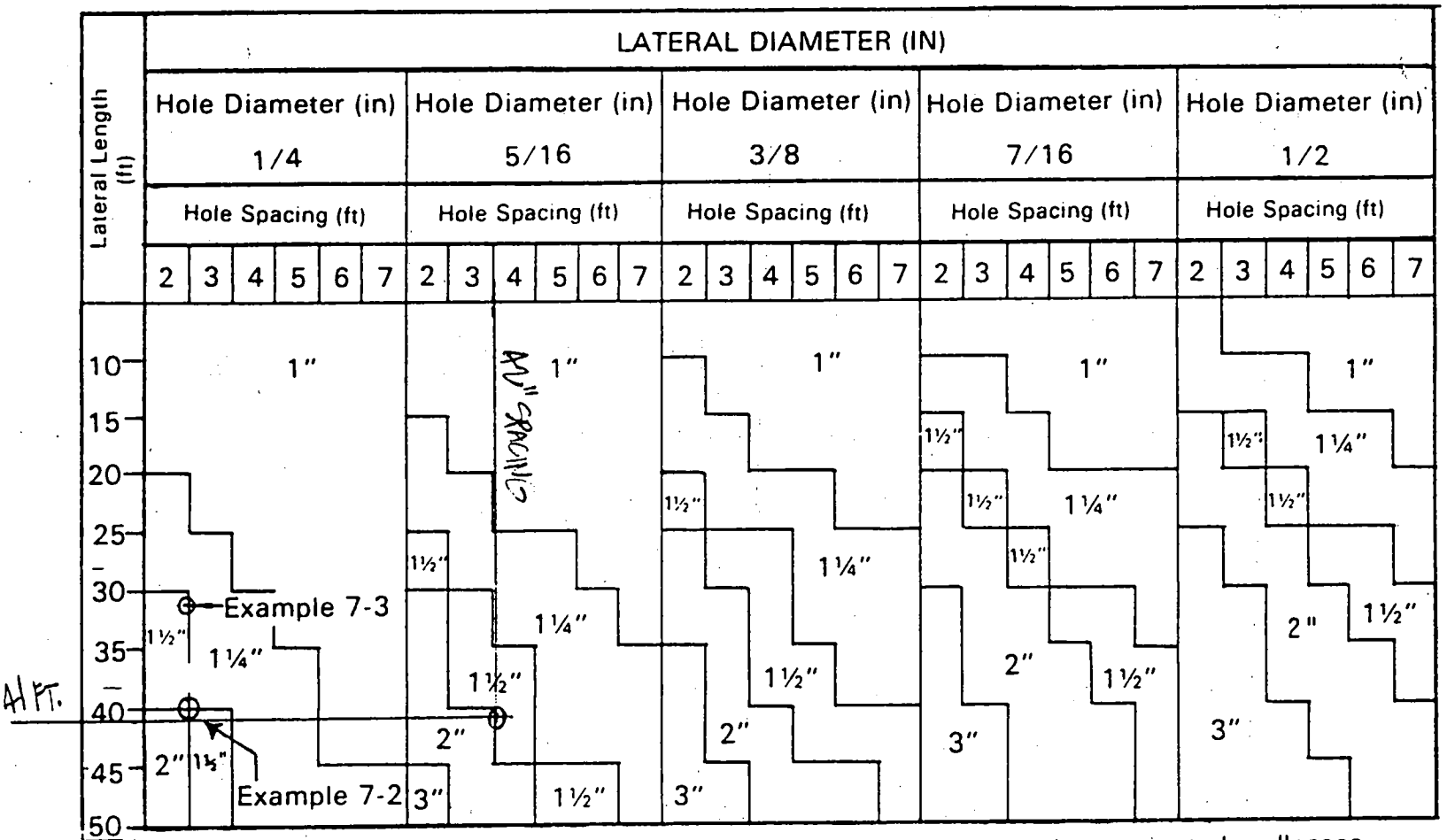
RECOMMENDED MANIFOLD DIAMETERS FOR VARIOUS MANIFOLD LENGTHS, NUMBER OF LATERALS, AND LATERAL DISCHARGE RATES (FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each segment (Hazen-Williams C = 150). The maximum manifold length for a given lateral discharge rate and spacing was defined as that length at which the difference between the heads at the distal and supply ends of the manifold exceeded 10 percent of the head at the distal end.

FIGURE 7-28

REQUIRED LATERAL PIPE DIAMETERS FOR VARIOUS HOLE DIAMETERS, HOLE SPACINGS, AND LATERAL LENGTHS[a]
(FOR PLASTIC PIPE ONLY)



[a] Computed for plastic pipe only. The Hazen-Williams equation was used to compute headlosses through each pipe segment (Hazen-Williams C= 150). The orifice equation for sharp-edged orifices (discharge coefficient = 0.6) was used to compute the discharge rates through each orifice. The maximum lateral length for a given hole and spacing was defined as that length at which the difference between the rates of discharge from the distal end and the supply end orifice reached 10 percent of the distal end orifice discharge rate.

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

January 17, 1997

Mr. Bruce Burton
LDE, Inc.
9250 Rumsey Road, Suite 106
Columbia, Maryland 21045

RE: Sand Mound Sewage Disposal System
Bird Property
19001 Windsor Forrest Road

Dear Mr. Burton:

Because of a break in the weather, construction of the sand mound sewage disposal system for the above referenced property has been able to move forward. As of this writing, the major work has been completed; just pump installation and completing the cover and seeding of the mound proper remain.

However, based on an inquiry from the septic contractor, Mr. Bill Ingram (Farm and Home Excavating), I have discovered a discrepancy in the size (diameter) of supply line as specified in the plans.

The calculations which were revised, review and accepted by this office as of October 2, 1996, use a 3" diameter (supply) pipe to figure friction resistance (in feet of head) in this supply line (see the section titled pump design and selection). The resulting plan called for a pump capable of delivering at least 78.24 gallons per minute at 25.03 feet of head.

However, the sketch plan and piping schematic both show 1 1/4" PVC for the supply line. The contractor indicates he has already installed 1 1/4" diameter PVC as stipulated on the sketch plan. (Mr. Ingram, apparently, was never provided with a copy of the calculation sheets, in which 3" diameter PVC is mentioned).

If the current situation remains unchanged, it appears this pump probably will not be able to function as required for proper dosing of this sand mound system.

I am requesting your recommendation for a design correction which will allow for the properly function of this particular sewage disposal system.

Please contact me at 313-2640 to discuss this problem and possible solutions which will be agreeable to all parties concerned.

Very truly yours,

Ronald J. Pinkley, R. S.
Water and Sewerage Program

RJP:jr
cc: Selfridge Builders
Bill Ingram
File

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

January 17, 1997

Mr. Bruce Burton
LDE, Inc.
9250 Rumsey Road, Suite 106
Columbia, Maryland 21045

RE: Sand Mound Sewage Disposal System
Bird Property
19001 Windsor Forrest Road

Dear Mr. Burton:

Because of a break in the weather, construction of the sand mound sewage disposal system for the above referenced property has been able to move forward. As of this writing, the major work has been completed; just pump installation and completing the cover and seeding of the mound proper remain.

However, based on an inquiry from the septic contractor, Mr. Bill Ingram (Farm and Home Excavating), I have discovered a discrepancy in the size (diameter) of supply line as specified in the plans.

The calculations which were revised, review and accepted by this office as of October 2, 1996, use a 3" diameter (supply) pipe to figure friction resistance (in feet of head) in this supply line (see the section titled pump design and selection). The resulting plan called for a pump capable of delivering at least 78.24 gallons per minute at 25.03 feet of head.

However, the sketch plan and piping schematic both show 1 1/4" PVC for the supply line. The contractor indicates he has already installed 1 1/4" diameter PVC as stipulated on the sketch plan. (Mr. Ingram, apparently, was never provided with a copy of the calculation sheets, in which 3" diameter PVC is mentioned).

If the current situation remains unchanged, it appears this pump probably will not be able to function as required for proper dosing of this sand mound system.

I am requesting your recommendation for a design correction which will allow for the properly function of this particular sewage disposal system.

Please contact me at 313-2640 to discuss this problem and possible solutions which will be agreeable to all parties concerned.

Very truly yours,

Ronald J. Pinkley, R. S.
Water and Sewerage Program

RJP:jr
cc: Selfridge Builders
Bill Ingram
File

T. C's contact has been made with B. Ingram (Contractor)
and B. Burton (plan engineer) about 1½" supply line problem.
and they are working on it (Faxed a copy of letter to B. B @ 4:30 4/28/99 ff

IMPORTANT MESSAGE

TO RON

DATE 1/16/97 TIME 12:00 A.M. P.M.

WHILE YOU WERE OUT

M ANTHONY PATTERSON

OF

Area Code & Exchange 1 888-613-6232

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
	RETURNED YOUR CALL		

Message "I SEZ, YOU KNOW"

Operator

SCM

(a) Flow = @ 80 gpm
(b) Diam = 3"

F = 1.549 ft of Head

× 1.85 (per 100 LF)

2.8656 ft of Head Total

@ Q = 80 gpm fric = 110.09

di = 1.25" × 1.85

@ Q = 80 Fric 203.66 ft/Head

di @ 2." Fric = 20.6495 ft. Head

di @ 2.6" = 6.965 ft of head

di @ 1.5" = 83.8144 ' of head

** TRANSMIT CONFIRMATION REPORT **

Journal No.	:	009
Receiver	:	97159540
Transmitter	:	HOCO ENVHEALTH
Date	:	Jan 21,97 16:54
Time	:	00'45
Mode	:	NORM
Document	:	01 Pages
Result	:	0 K

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

February 6, 1997

Mr. and Mrs. Timothy Bird
14930 Triadelphia Road
Glenelg, Maryland 21737

RE: Bird Property
19001 Windsor Forest Road
Well Permit #HO-94-0850

Dear Mr. and Mrs. Bird:

This is to advise you that the septic tank and pump chamber are to be used as a holding tank system during the interim while the sand mound system construction is completed. This temporary arrangement, as described in your letter dated February 6, 1997, is hereby accepted by the Health Department until the permanent system is completed.

The water sample recently submitted for testing was free of coliform and fecal coliform bacteria at the time of sampling and is bacteriologically safe for drinking.

INTERIM CERTIFICATE OF POTABILITY

This certifies that the initial sampling requirements of COMAR 26.04.04 "Well Regulations" have been met for the water supply system installed under well permit #HO-94-0850. No guarantee can be given for health protection beyond this date of issue. Based upon satisfactory investigation and evaluation by the Howard County Health Department, the Maryland Department of the Environment accepts this well system as required by COMAR 26.04.04.09.

This certificate may become final upon completion of the final bacteriological test which is to be taken by the county health department within six months. **It is requested that the homeowner contact Mr. Dave Schroeder, R.S., at (410) 313-2644 to make an appointment for follow up sampling.**

Date of Water Sample: January 27, 1997
Date of Well Completion: July 15, 1996

Approving Authority

Donna K. Soe, R.S.
Water and Sewerage Program

DKS
cc: Building Inspector's office
file

(7) MINIMUM DISCHARGE RATE

LATERALS x DISCHARGE RATE/LATERAL = 4x 19.56 GPM = 78.24GPM

(8) SELECT PUMP TO INITIAL SYSTEM

DISTANCE: 157'(STRAIGHT) PIPE DIAMETER FOR DELIVERY 3" PVC

ELEVATION DIFFERENCE: 20.5'

EQUIVALENT LENGTH: 2-45°BENDS - 3.4; 1 T FLOW - 12.0; 1 T BRANCH - 17.0; (32.4) OK approx

EQUIVALENT DISTANCE: 190 FEET OK (157 + 33 = 190)

FRICTION LOSS IN 3" PVC @ 78.24 GPM

$1.08 + \frac{8.24}{10}(1.38 - 1.08) = 0.2472 + 1.08 = 1.323'/100'$

TOTAL FRICTION LOSS FOR 157' = 1.20 + 1.323 = 2.523' Close enough

FRICTION LOSS	2.523'	2.53
ELEVATION HEAD	= 20.5'	23.5'
PRESSURE HEAD	= 2.0'	2.0
TOTAL PUMPING HEAD	25.023' or	28.03'

~~Invert outlet in ST~~ 790.5'
Invert PC 770.00'
~~assume~~ ~~bottom~~ pump ≈ 767.00±
23.5'

If this, then this

CONTRACTOR SHOULD INSTALL A PUMP CAPABLE OF DELIVERING AT LEAST 78.24GPM AGAINST A 25.023' OF HEAD

Note: check pump curve submitted by installer
OK if point is below curve at 80 gpm @28 ft of Head

APP 10/2/96

Approved Septic System Plan
Howard County Health Department

a 1 horsepower pump was used with 2" diameter sch 40 PVC Force Main at Contractor/Builder's Request
(A allow this as an acceptable substitute for ½ hp pump @3" diam Force Main) AP 12/7/97

[signature] 10/2/96

Signature Date

HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd, M.D., County Health Officer

February 6, 1997

Mr. and Mrs. Timothy Bird
14930 Triadelphia Road
Glenelg, Maryland 21737

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Approving Authority

Donna K. Soe, R.S.
Water and Sewerage Program

DKS
cc: Building Inspector's office
file

HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Division of Land Development

DATE: 8-11-98 P&Z File No. SDP 99-20

Department of Planning and Zoning

- ___ Transportation Planning
- ___ Historic Preservation
- X Comprehensive Planning and Zoning Administration
- X Research
- ___ Address Coordinator
- ___ Agricultural Preservation
- ___ Development Engineering Division
- X Forest Conservation Planner
- ___ File

Agencies

- X Soil Conservation District
- X Department of Inspections, Licenses & Permits
- ___ Department of Fire and Rescue Services
- ___ State Highway Administration
- X Bureau of Environmental Health
- X Board of Education
- X Recreation and Parks
- ___
- ___
- ___
- ___ Tax Assessment
- ___ Bell Atlantic Telephone
- ___ BG&E
- ___ Cable TV
- ___ Police
- ___ MTA
- ___ Finance
- ___ DPW, Real Estate Services
- ___ DPW, Construction and Inspection
- ___ DPW, Bureau of Utilities

RE: Bird's Eye View Farm / Forest Mitigation Bank

ENCLOSED FOR YOUR→ ___ Signature Approval X Review & Comments ___ Files

THE ENCLOSED → ___ Original

Plans	# of Sheets	Supplemental Documents
___ Sketch Plan	___	___ Wetlands Report
___ Prel Equiv Sketch Plan	___	___ Soils/Topo Map/Drain Area Map
___ Preliminary Plan	___	___ FSD/FCP/Worksheet and Application
___ Final Plat	___	___ Declaration of Intent
___ Final Constr Plans (RDS)	___	___ Drainage and/or Computation/Pond Safety Comps
___ Final Development Plan	___	___ Preliminary Road Profiles
X Site Development Plan	___	___ APFO Roads Test/Mitigation Plan
___ Landscape Plan	___	___ Traffic Study/Noise Study
___ Grading Plan	___	___ Sight Distance Analysis
___ House Type Revision Plan	___	___ Floodplain Study
___ Water and Sewer Plan	___	___ Stormwater Management Comps.
Applications		___ Industrial Waste Survey (DPW)
___ Waiver Petition Applic/Exhibit	___	___ Road Poster Form Letter
___ Planning Board Applic	___	___ Response Letter
___ ASDP/CSDP Application	___	___ Perc Plat
___ DED Application/Checklist	___	___ Scenic Road Exhibits
___ DED Fee Receipt/Deeds/Cost Estimate	___	

WAS: X Received ___ Tentatively Approved ___ Recorded

___ Received and Revised ___ Approved On 8-11

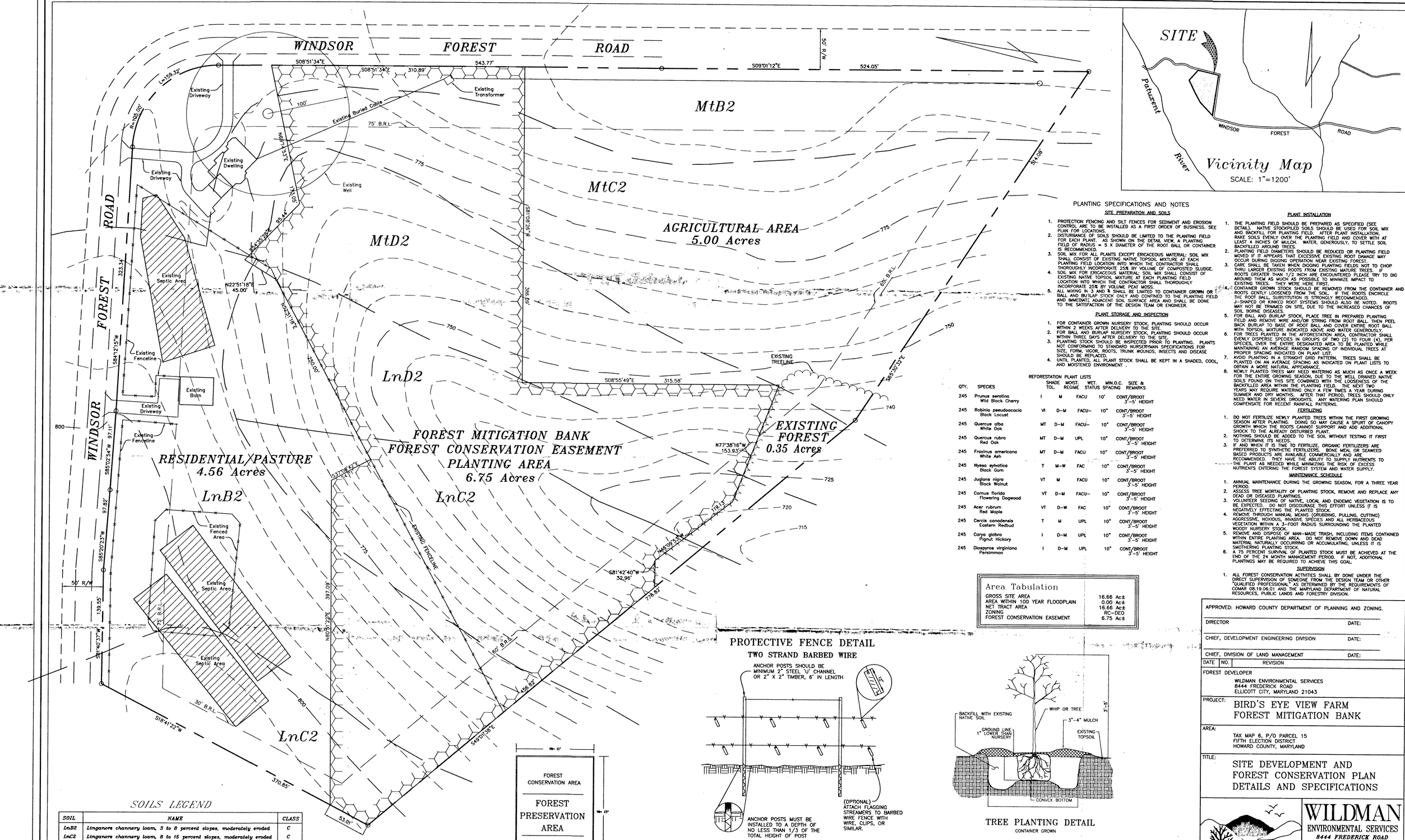
COMMENTS: _____ SRC/COMMENTS DUE BY: 9-03

_____

_____

8/26/98 Check, initial and return to the Department of Planning and Zoning if plan is approved with no comments.

T.F. #9 [revised 12/96]



SOILS LEGEND

SOIL	NAME	CLASS
LnB2	Linganore channery loam, 3 to 8 percent slopes, moderately eroded	C
LnC2	Linganore channery loam, 8 to 15 percent slopes, moderately eroded	C
LnD2	Linganore channery loam, 15 to 25 percent slopes, moderately eroded	C
MtB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	A
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A

NOTES:
* Hydric soils and/or contains hydric inclusions
** May contain hydric inclusions
† Generally only within 100-year floodplain areas

SIGNAGE DETAIL
NOT TO SCALE

PROTECTIVE FENCE DETAIL
TWO STRAND BARBED WIRE

NOTES
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
7. BARBED WIRE SHOULD BE ATTACHED SECURELY TO POSTS.

TREE PLANTING DETAIL
CONTAINER GROWN

THIS PLAN IS FOR
FOREST CONSERVATION EASEMENT
PLANTING PURPOSES ONLY

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR B&B AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .

REFORESTATION PLANT LISTS

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
245	Prunus serotina Wild Black Cherry	I	M	FACU	10'	CONT/BROOT 3'-5' HEIGHT
245	Robinia pseudoacacia Black Locust	VI	D–M	FACU–	10"	CONT/BROOT 3'-5' HEIGHT
245	Quercus alba White Oak	MT	D–M	FACU–	10"	CONT/BROOT 3'-5' HEIGHT
245	Quercus rubra Red Oak	MT	D–M	UPL	10"	CONT/BROOT 3'-5' HEIGHT
245	Fraxinus americana White Ash	MT	D–M	FACU	10"	CONT/BROOT 3'-5' HEIGHT
245	Nyssa sylvatica Black Gum	T	M–W	FAC	10"	CONT/BROOT 3'-5' HEIGHT
245	Juglans nigra Black Walnut	VT	M	FACU	10"	CONT/BROOT 3'-5' HEIGHT
245	Cornus florida Flowering Dogwood	VT	D–M	FACU–	10"	CONT/BROOT 3'-5' HEIGHT
245	Acer rubrum Red Maple	VT	D–W	FAC	10"	CONT/BROOT 3'-5' HEIGHT
245	Cercis canadensis Eastern Redbud	T	M	UPL	10"	CONT/BROOT 3'-5' HEIGHT
245	Carya glabra Pignut Hickory	I	D–M	UPL	10"	CONT/BROOT 3'-5' HEIGHT
245	Diospyros virginiana Persimmon	I	D–M	UPL	10"	CONT/BROOT 3'-5' HEIGHT

Area Tabulation

GROSS SITE AREA	16.66 Ac±
AREA WITHIN 100 YEAR FLOODPLAIN	0.00 Ac±
NET TRACT AREA	16.66 Ac±
ZONING	RC–DEO
FOREST CONSERVATION EASEMENT	6.75 Ac±

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4) PER SPECIES, OVER THE ENTIRE DESIGNATED AREA, TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

1. ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE:

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE:

CHIEF, DIVISION OF LAND MANAGEMENT — DATE:

DATE	NO.	REVISION

FOREST DEVELOPER
WILDMAN ENVIRONMENTAL SERVICES
8444 FREDERICK ROAD
ELLICOTT CITY, MARYLAND 21043

PROJECT: BIRD'S EYE VIEW FARM
FOREST MITIGATION BANK

AREA:
TAX MAP 6, P/O PARCEL 15
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SITE DEVELOPMENT AND FOREST CONSERVATION PLAN DETAILS AND SPECIFICATIONS

WILDMAN
ENVIRONMENTAL SERVICES
8444 FREDERICK ROAD
ELLICOTT CITY, MD. 21043
PHONE: (410) 313-9999
FAX: (410) 313-9099

DESIGNED BY: R.B.W.	
DRAWN BY: CADD	
PROJECT NO. BEV	
DATE: 8/1/98	
SCALE: 1"=50'	
SHEET NO. 1 OF 1	

BEVFB1.DWG

APPLICATION

latest

PERCOLATION TESTING A 50952

Goes To Byrd Property

P _____

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

Cumberland Sand & Gravel Design DISTRICT _____

DATE _____

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 _____

ADDRESS _____ PHONE _____

AGENT OR PROSPECTIVE BUYER _____

ADDRESS _____ PHONE _____

PROPERTY LOCATION:

SUBDIVISION Hobart Mullineaux Property LOT NO. 1+2 (area as yet undefined)

ROAD AND DESCRIPTION Windsor Forrest Rd

TAX MAP _____ PARCEL # _____

SIZE OF LOT _____ TYPE BLDG. _____
(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. _____
(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

HD-216 (3/92)

COUNTY #

SOIL PROFILE

0' 2, 5, 4, 1

similar To #3

ok to 9+ ft on 1, 3, 5

↓4.5' for #2 + 4 pockets or all > 50% large channers probably perc Too fast

3

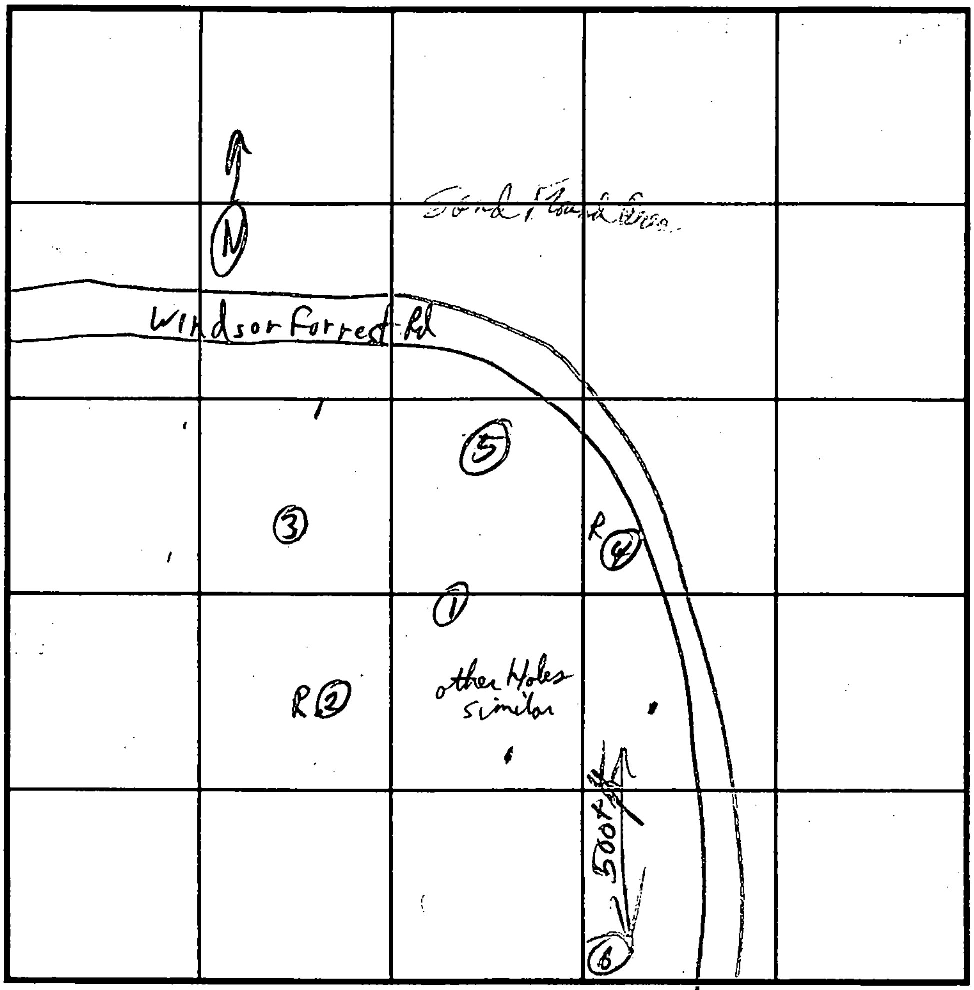
dark brown brn hSiL

10" yel brn - red brn ChSiCL

20" ChCoHL - Reddish (CL)

34" ChCoHL (CL) Rd Brn

7'



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

SOIL PROFILE

0'

DATE	TEST NO.	DEPTH	PRE-WET START	PRE-WET STOP	TEST - 1" DROP START	TEST - 1" DROP STOP	TIME
2/28/96	Reg perc. 1	3'	3:40:00	3:42:46	3:48:00		5 min
		√7' 7'	3:41:00	3:43:30	3:49:00		5½ min
	②	√7' Too Rocky at 4'		(>50% large channers)		No Test	
	③	3'	4:07:50	4:08:16	4:09:03	Too Fast	47 sec
		7½	Reperc tora	4:08:30	4:08:41		10 sec
	④	7+	>50% large channers		@ 4½ - 5'	Too Rocky	for conventional
	⑤	Not Tested (bottom of perc hole had been tamped Fast					
		by flat end of digging bar.					
	⑥	7+	>50% large channers at 4 ft + deeper				Fail

for conventional

REMARKS Soils similar to ones tested on North side of Road – appears favorable for Sand Mound Testing

TYPE OF SOIL Mt Airy

TESTED BY R. Pinkley ALSO PRESENT D. Beaver

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME ________ TRENCH WIDTH ________

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

APPLICATION

HOWARD COUNTY
PERMIT APPLICATION

DEPARTMENT OF INSPECTIONS, LICENSES & PERMITS
3430 COURT HOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043

#25 ||

SERIAL NUMBER: B00100804

BUILDING ADDRESS (HOUSE NO., STREET, TOWN OR AREA): ~~[illegible]~~ 14900? WINDSOR FOREST RD 23776
MOUNT AIRY, MD ~~[illegible]~~ 21771

LOT NO.	PARCEL NO.	SEC.	AREA	BLOCK NO.	LIBER	FOLIO
	15			14		

SUB DIVISION	ZONE	ZONE MAP	ELEC. DIST.	CENSUS TR.
	RC-DEO	6	4	6040

OWNER NAME AND ADDRESS: Timothy and Bonnie Bird, 14930 Triadelphia Road, Glenelg MD 21737 — PHONE NO. 301-854-6739

OCCUPANT'S NAME AND ADDRESS: Timothy and Bonnie Bird, 14930 Triadelphia Road, Glenelg MD 21737 — PHONE NO. 301-854-6739

ARCHITECT OR ENGINEER'S NAME AND ADDRESS: LDE, Inc., 9250 Rumsey Road, Suite 106, Columbia MD 21045 — PHONE NO. 410-715-1070

CONTRACTOR'S NAME AND ADDRESS: Selfridge Builders, 14045 Gired Drive, Glenwood MD 21738 — PHONE NO. 410-997-8282 3866

EXISTING USE: Vacant Lot
PROPOSED USE: Single Family Home

EST. CONSTRUCTION COST	LICENSE NUMBER	PERMIT FEE
100,000		

GRADING/SEDIMENT CONTROL ☐YES ☐NO — SDP #

DESCRIPTION OF WORK AUTHORIZED: New Single Family Home with Attached 2 Car Garage Roughin in Basement 4 Bedrooms

SIZE OF BLDG.	FRONT	DEPTH	HEIGHT

TYPE OF BLDG.	AREA	VOLUME	ROOF
B. ROOMS			
ROOMS			
BATHS			
FIREPLACES			

FOOTINGS	FOUNDATION	S. WALLS

UTILITIES

WATER/WELL	SEWER/SEPTIC	GAS	ELECTRICITY	TYPE OF HEAT	AC

I have carefully examined and read this application and know the same is true and correct, and that in doing this work, all provisions of Howard County Ordinances and the State Laws of Maryland will be complied with, whether specified or not; and I will notify the Department of Inspections, and Permits twenty-four hours in advance when I am ready for the inspections called for elsewhere in this application; and that no work will be covered up until such inspections have been complied with.

SIGNATURE: [signature]
TITLE: [signature] DATE: 6-25-96

W/S CODE — FOR OFFICE USE ONLY

DISTANCE IN FEE[T]
SIDE YARD (DISTA[NCE])
TO SIDE BUILDING DISTANCE IN FEE[T]
BACK

Check payable to: D[...]

To begi[n] ... displaye[d] ... Use an[d] ... before it will ... [is]sued ... [w]eeks

IMPORTANT: PLE[ASE] ... [REQ]UIRED.

LP-89-591

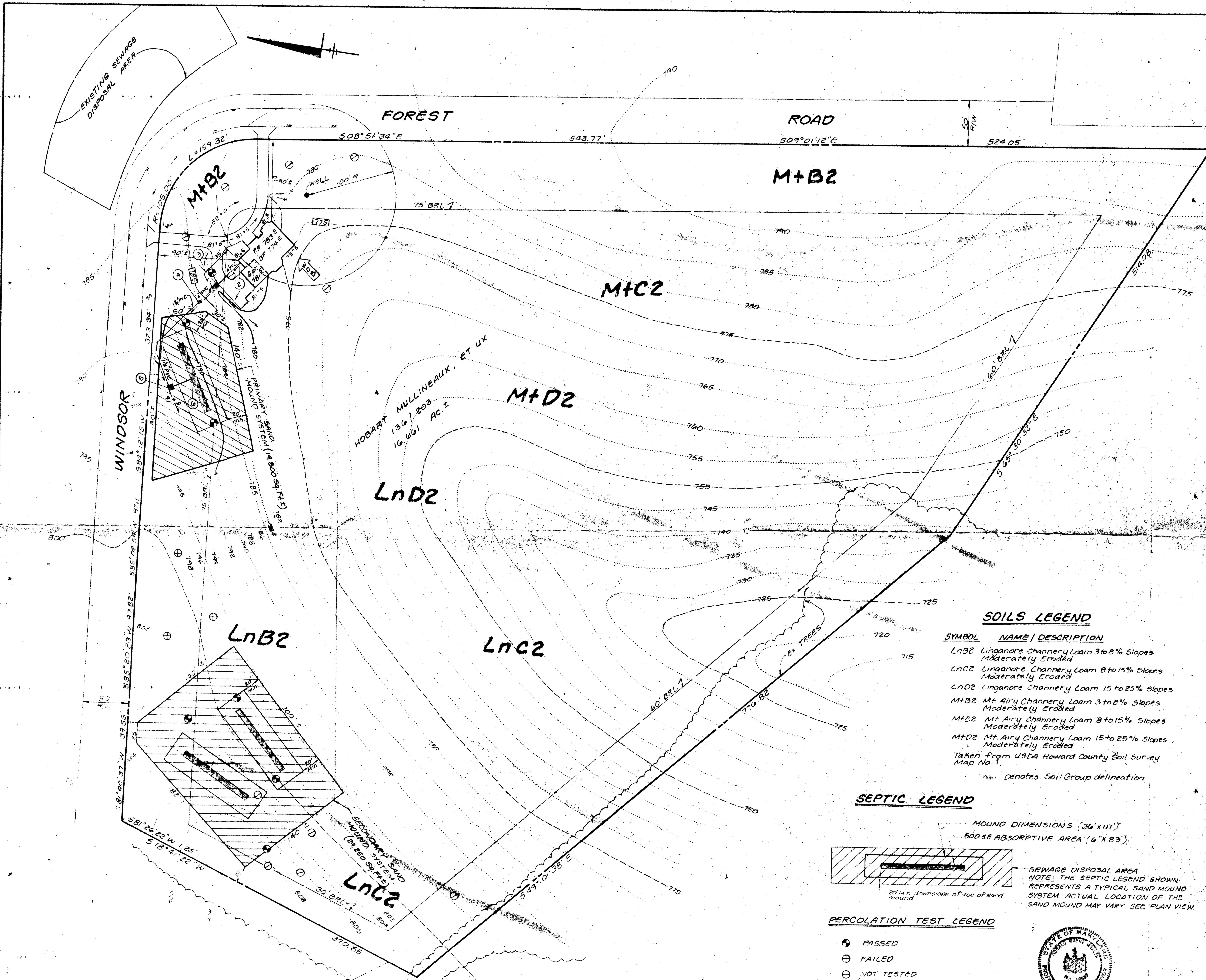
Sorry,
Could not locate
the file.
Hobart Mullineaux property
(Both septic files stored
together)
BP cannot issue
at this time.
Need a signed copy
of Plot Plan!
① Need Health Dept sound
② Mound Design Plan approval
Private Bldg [illegible]

FUNCTION	DATE	SIGNATURE APPROVAL
ZONING/PLANNING ✓		
SHA ✓		
SEDIMENT/GRADING ✓		
BUILDING OFFICIAL ✓		
WATER & SEWER		
HEALTH DEPT. ✓		
FIRE PROTECTION		
STORM WATER MGM[T] ✓		

APPROVED — DATE

Distribution of Copies:
White - Building Official
Green - Planning & Zoning
Yellow - Engineering
Pink - Health Dept.
Gold - S.H.A.

RON — FILE GIVEN TO JANE FOR WELL PERMIT PROCESSING....



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

Denotes Soil Group delineation

SEPTIC LEGEND

MOUND DIMENSIONS (36'x111')

500 SF ABSORPTIVE AREA (6'x83')

20' min. downslope of toe of sand mound

SEWAGE DISPOSAL AREA

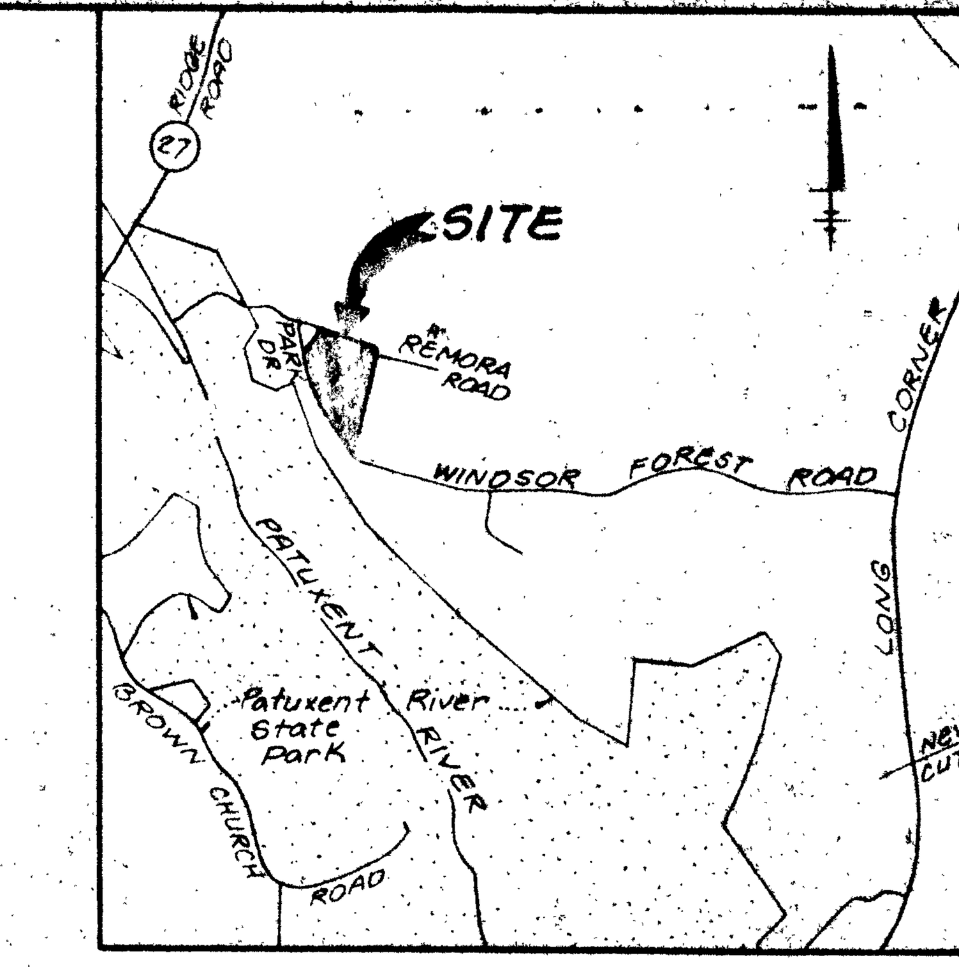
NOTE: THE SEPTIC LEGEND SHOWN REPRESENTS A TYPICAL SAND MOUND SYSTEM. ACTUAL LOCATION OF THE SAND MOUND MAY VARY. SEE PLAN VIEW.

PERCOLATION TEST LEGEND

- PASSED
- FAILED
- NOT TESTED (OLD VISUAL)

APPROVED: For Private Water and Private Sewerage Howard County Health Department

Howard County Health Officer Date



VICINITY MAP

Scale 1" = 2,000'

NOTES:

1) These two areas designate a private sewerage easement as required by the Maryland State Department of the Environment for individual sewerage disposal utilizing sand mound sewage system only. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3) Existing Zoning RC-DEO per the 10/18/93 Comprehensive Zoning Plan

~~4) Provide manhole cleanout to finished grade at proposed septic tank and the pump chamber~~

~~5) The proposed septic system for this lot requires a pump~~

4) Sand mound detail plan to be submitted for review and approval by the Howard County Health Department prior to issuance of a building permit for the residence.

~~[illegible]~~

5. The typical sand mounds shown were sized for a 4 bedroom single family dwelling with site slope of 12%. Any increase in house size (number of bedrooms) will require revised sand mound site and design plans to be submitted for review and approval by the Howard County Health Department prior to issuance of a building permit for the residence.

6. All existing wells and septic systems located within 100 ft. of the property line have been shown.

~~**SEPTIC SYSTEM DESIGN DATA:**~~

~~1) 4 Bedrooms.~~

~~2) Invert @ wall 771.50~~

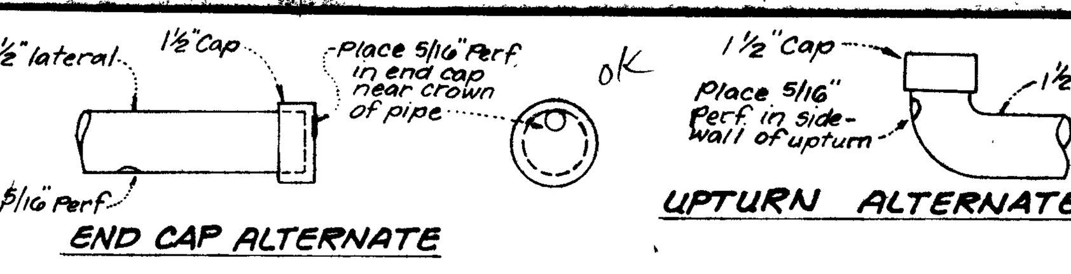
~~3) 1500 gallon top seamed septic tank required. Provide manhole to grade~~
~~Ex. grade over tank 785.0 Invert In 770.80~~
~~Prop. grade over tank 780.0 Invert Out 770.50~~

~~4) 1000 gallon top seamed pump pit with dual effluent pumps required. Provide manhole to grade. Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Alarm system shall be installed on a separate electrical circuit. Install check valves as required.~~
~~Invert In 770.00~~
~~Top Grade 785.00~~

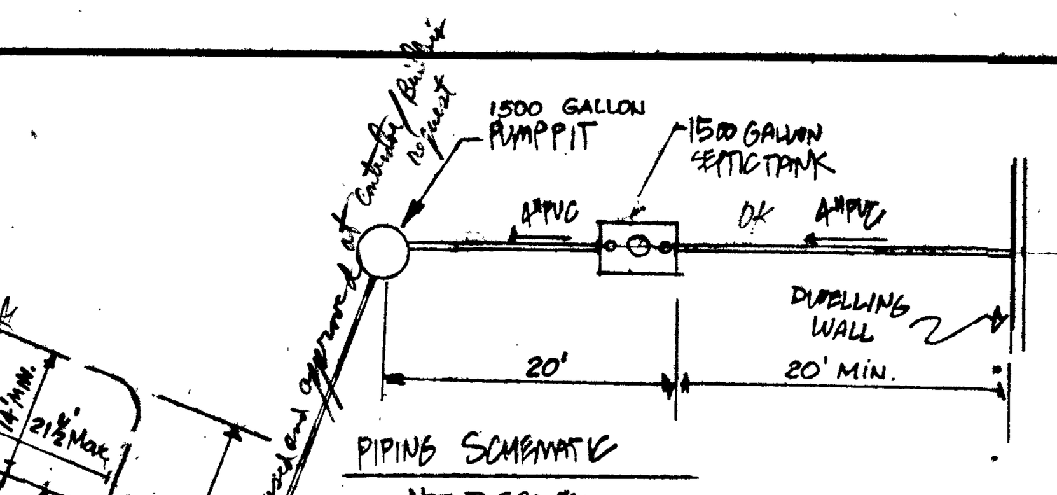
~~5) Distribution Box. 2 outlets minimum.~~
~~Ex. grade @ box 788.0~~
~~Prop. grade @ box 790.0~~
~~Invert 787.5~~

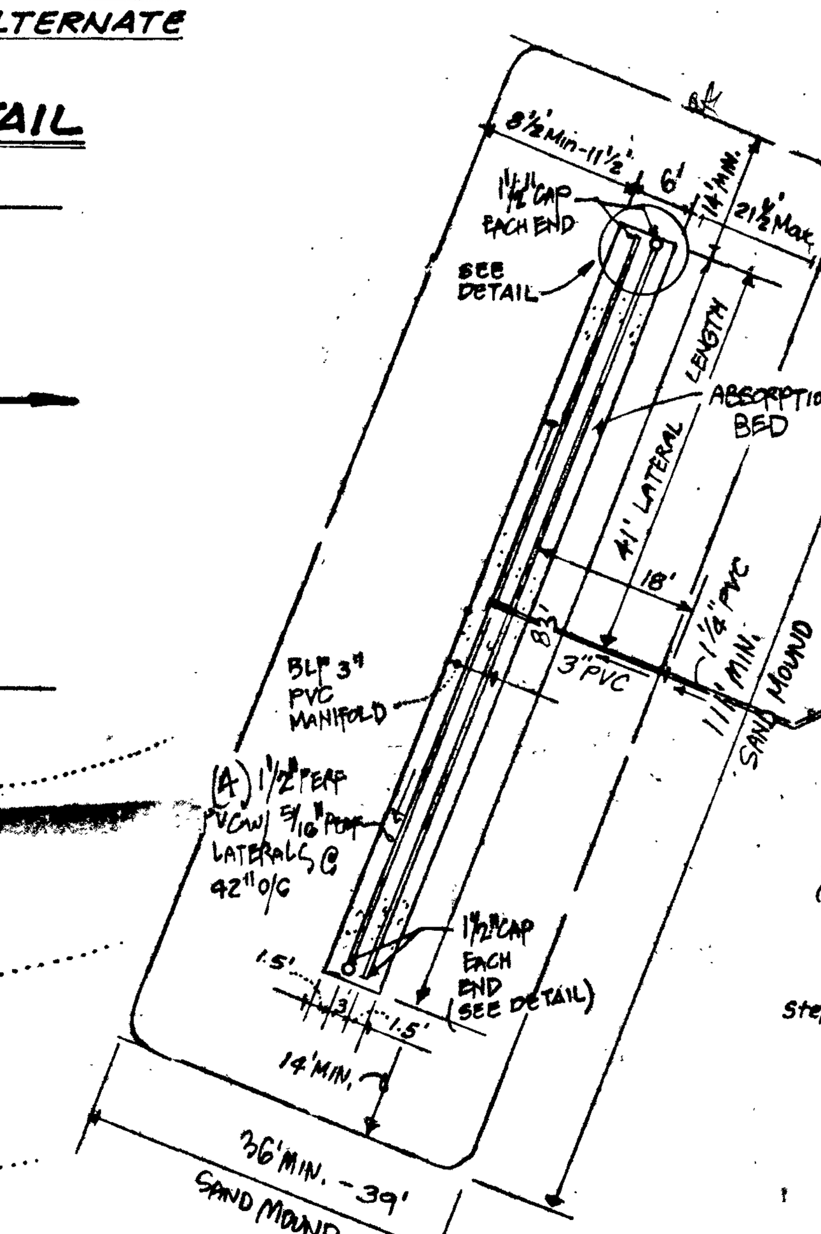
LDE, INC. 9250 Rumsey Road, Suite 106, Columbia, MD. 21045 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)			
Drawn: KBW	PERCOLATION TEST CERTIFICATION PLAT H. MULLINEAUX PROPERTY TAX MAP No. 6 P/O PARCEL 15 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		Scale: 1"=50'
Designed: SDH			Drawing: 1 of 1
Checked: BDB			LDE Job No. 96-035
Date: 6/96	BUILDER SELFRIDGE BUILDERS, INC. 14045 Bared Drive Glenwood, MD 21738 (410) 799-0200		File No.

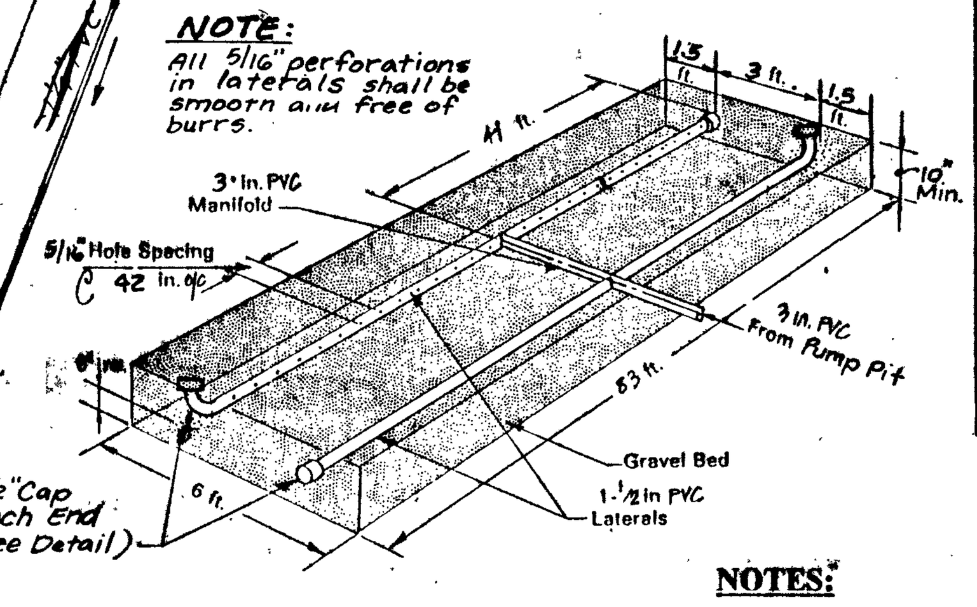
NOTE:
Contractor shall place last perforation in each lateral in crown of end cap or in sidewall of upturn to prevent vapor lock. Turnups should be placed at least on diagonally opposite ends for clean water pump test. Turnups may be cut back to grade once system has been tested and approved by the Health Dept.

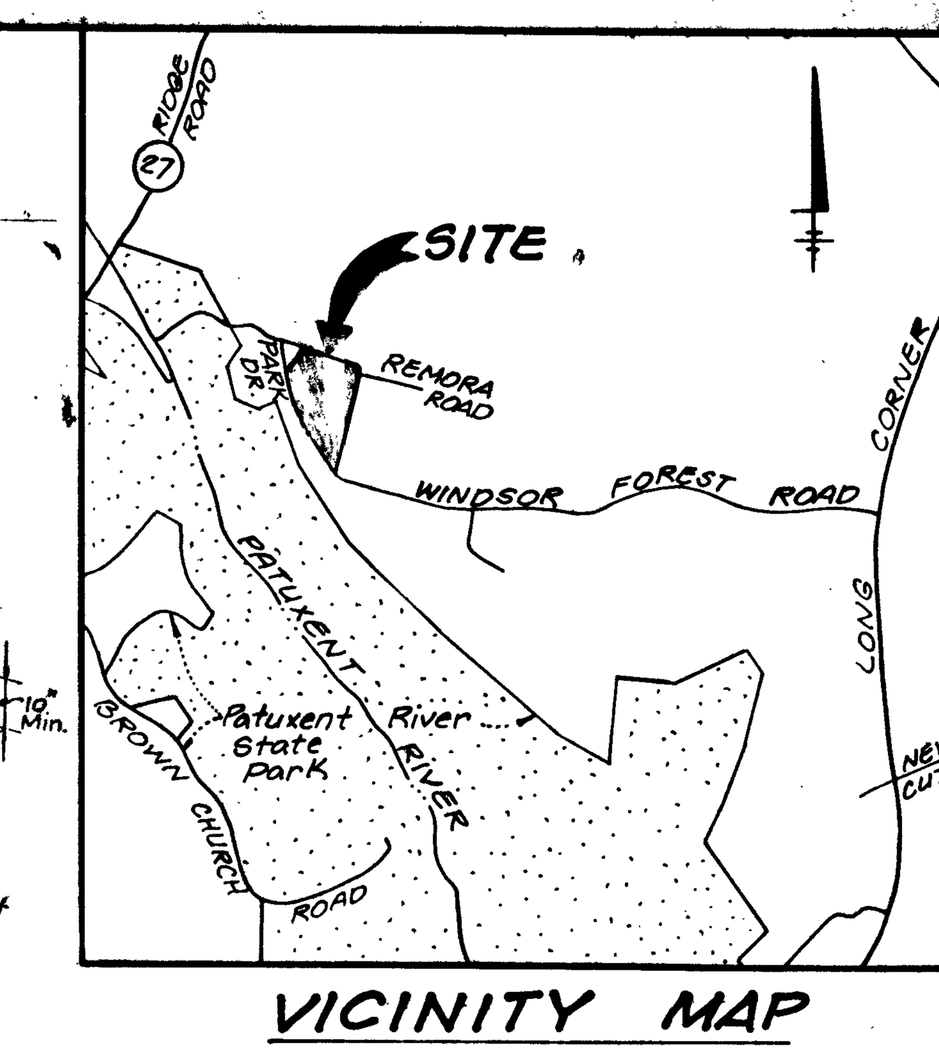


LATERAL END CAP DETAIL
Not To Scale

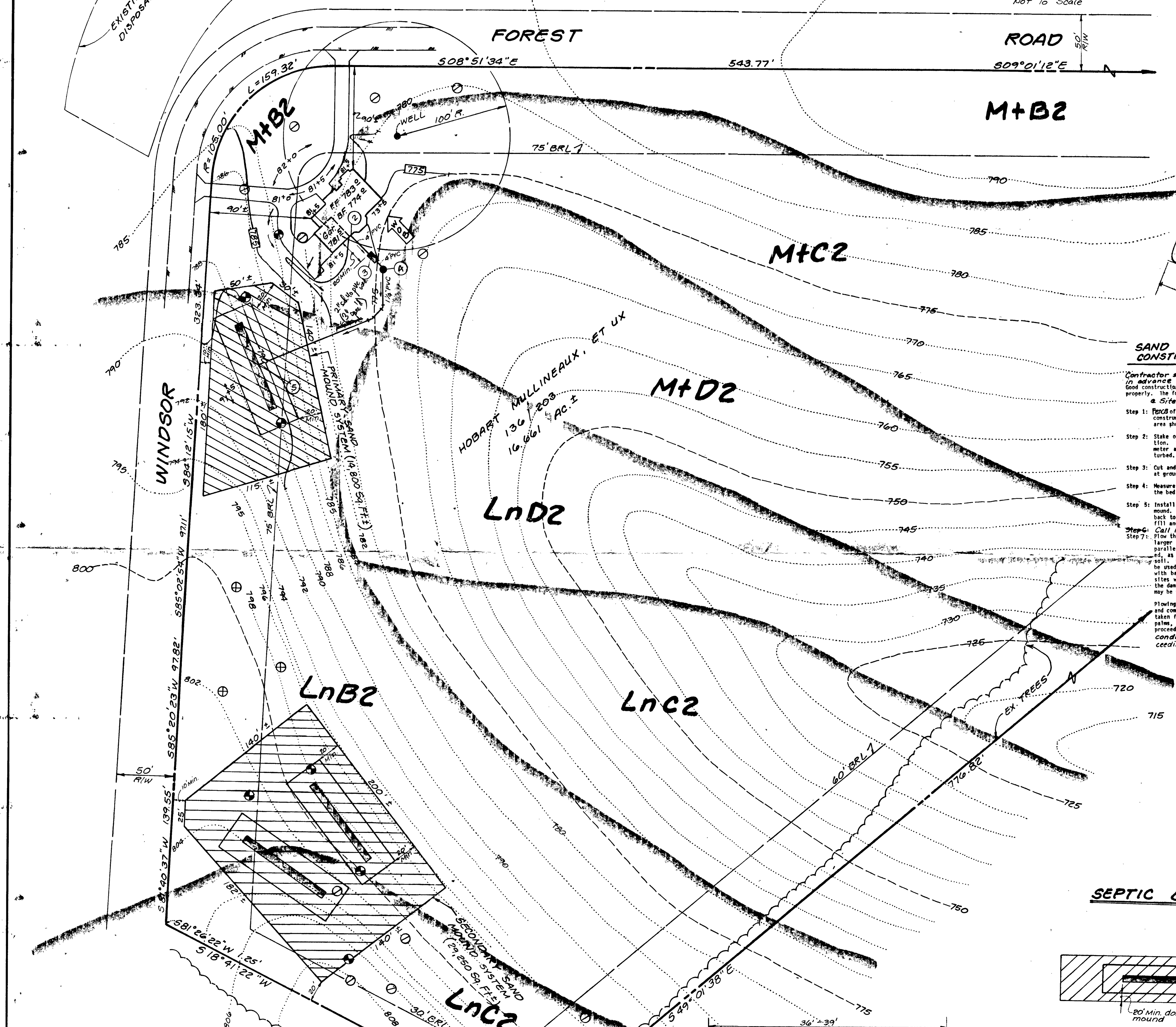








VICINITY MAP
Scale: 1" = 2,000'



SAND MOUND CONSTRUCTION SEQUENCE:

Contractor shall contact Health Dept. (313-2640) 48 hours in advance of proceeding with any construction.
Good construction techniques are essential if the mound is to function properly. The following techniques should be considered:

a. Site Preparation:

Step 1: Fence off the site to prevent damage to the area during other construction activity on the lot. Vehicular traffic over the area should be prohibited to avoid soil compaction.

Step 2: Stake out the mound perimeter and bed in the proper orientation. Reference stakes set some distance from the mound perimeter are also required in case the corner stakes are disturbed.

Step 3: Cut and remove any excessive vegetation. Trees should be cut at ground surface and the stumps left in place.

Step 4: Measure the average ground elevation along the upslope edge of the bed to determine the bottom elevation of the bed.

Step 5: Install the delivery pipe from the dosing chamber to the mound. Lay the pipe below the frost line or slope it uniformly back to the dosing chamber so it may drain after dosing. Back fill and compact the soil around the pipe.

Step 6: *Call Health Dept. for inspection of mound area.*

Step 7: Plow the area within the mound perimeter. Use a two bottom or larger moldboard plow, plowing 7 to 8 in. (18 to 20 cm) deep parallel to the contour. Single bottom plows should not be used, as the trace wheel runs in every furrow, compacting the soil. Each furrow should be thrown upslope. A chisel plow may be used in place of a moldboard plow. Roughening the surface with backhoe teeth may be satisfactory, especially in wooded sites with stumps. Rototilling is not recommended because of the damage it does to the soil structure. However, rototilling may be used in granular soils, such as sands.

Plowing should not be done when the soil is too wet. Smearing and compaction of the soil will occur. If a sample of the soil taken from the plow depth forms a wire when rolled between the palms, the soil is too wet. If it crumbles, plowing may proceed. *Call Health Dept. for inspection of soil conditions from rain or snow prior to proceeding with plowing if in doubt.*

b. Fill Placement

Step 1a: *The sand beneath the bed shall be of an effective size between 0.25 and 0.50 mm with a uniformity coefficient of 3.5 or less. Submit sample to Health Dept. for analysis of material to be used at site prior to construction or have sanitarian on site verify suitability of sand prior to placement.*

Step 1b: Place the fill material on the upslope edges of the plowed area. Keep trucks off the plowed area. Minimize traffic on the downslope side.

Step 2: Move the fill material into place using a small track type tractor with a blade. Always keep a minimum of 6 in. 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.

Step 3: With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed, checking it for the proper elevation. Shape the sides to the desired slope.

Step 4: *Call Health Dept. for inspection.*

c. Distribution Network Placement

Step 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 6 in. (15 cm). *Gravel shall be washed with a size variable of 3/4" to 2" Gravel shall be free of fines.*

Step 2: Assemble the distribution network on the aggregate. The manifold should be placed so it will drain between doses, either out the laterals or back into the pump chamber. The laterals should be laid level.

Step 3: Place additional aggregate to a depth of at least 2 in. (5 cm) over the crown of the pipe.

Step 4: Place a suitable backfill barrier *of geotextile fabric over the aggregate.*

Step 5: *Call Health Dept. for clean water pump test.*

d. Covering

Step 1: Place a finer textured soil material such as clay or silt loam over the top of the bed to a minimum depth of 6 in. (15 cm).

Step 2: Place 6 in. (15 cm) of good quality topsoil over the entire mound surface.

Step 3a) Plant grass over the entire mound using grasses adapted to the area. Shrubs can be planted around the base and up the sideslopes. Shrubs should be somewhat moisture tolerant since the downslope perimeter may become moist during early spring and late fall. Plantings on top of the mound should be drought tolerant, as the upper portion of the mound can become dry during the summer.

Step 3b) *Use sod or soil stabilizing material to prevent erosion until grass has had time to grow especially if construction is in late Fall.*

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION
LnB2	Linganore Channery Loam 3 to 8% Slopes Moderately Eroded
LnC2	Linganore Channery Loam 8 to 15% Slopes Moderately Eroded
LnD2	Linganore Channery Loam 15 to 25% Slopes
MtB2	Mt. Airy Channery Loam 3 to 8% Slopes Moderately Eroded
MtC2	Mt. Airy Channery Loam 8 to 15% Slopes Moderately Eroded
MtD2	Mt. Airy Channery Loam 15 to 25% Slopes Moderately Eroded

Taken from USDA Howard County Soil Survey Map No. 1.

Denotes Soil Group delineation

NOTES:

1.) These two areas designate a private sewerage easement as required by the Maryland State Department of the Environment for individual sewerage disposal utilizing sand mound sewage system only. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant variances for encroachments into the private sewerage easement. Recordation of a modified sewerage easement shall not be necessary.

2.) The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.

3.) Existing Zoning: RC-DEO, per the 10/18/93 Comprehensive Zoning Plan.

4.) Provide manhole cleanout to finished grade at proposed septic tank and the pump chamber.

5) The proposed septic system for this lot requires a pump.

6) Details and specifications of the proposed pumps within the pump pit to be supplied by the contractor for review and approval by the Howard County Health Department prior to issuance of a Septic Permit.

7) See builder's architectural plans for building dimensions.

8) The sewage disposal area within the limit of disturbance for building construction is to be fenced during the entire building phase to prevent any disturbance of soils on the sand mound site. The Howard County Health Department reserves the right to require construction of the sand mound sewage disposal system prior to building construction.

9) The primary sand mound sewage disposal system shall be staked in the field and location inspected by the Howard County Health Department prior to beginning any construction of the sand mound.

Approved Septic System Plan
Howard County Health Department

RECEIVED HOWARD CO. HEALTH DEPT. ENVIRONMENTAL HEALTH 1996 OCT -2 A 8:47

SEPTIC SYSTEM DESIGN DATA: Signature ______ Date 10/2/96

(1) 4 Bedrooms at 12% site slope / 600 GPD

(2) Invert @ wall: 771.50

(3) 1500 gallon top seamed two compartment septic tank required. Provide manhole to grade and cleanouts at the front and back of tank.
Ex. grade over tank: 775.50 Invert In: 770.80
Prop. grade over tank: 775.50 Invert Out: 770.50

(4) 1500 gallon top seamed pump pit with dual effluent pumps* required. Provide manhole to grade.
Pumps shall be equipped with audible and visual alarm system for high water and pump malfunction. Alarm system shall be installed on a separate electrical circuit. Install check valves as required.
Invert In: 770.00
Top Grade: 774.00

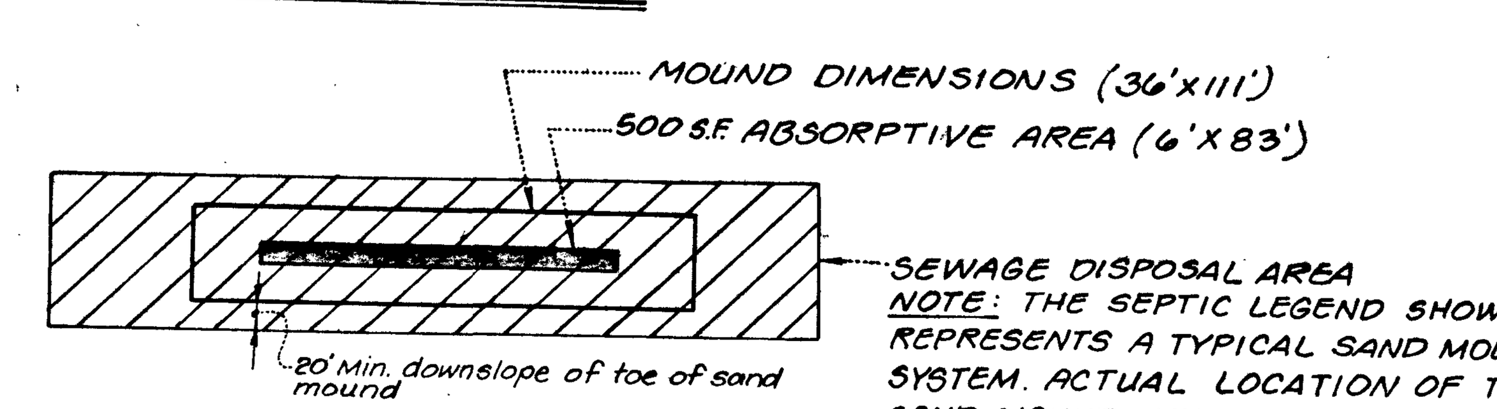
Note (For Health Dept info) * OK to allow single effluent pump & controls if have 600 gal storage capacity in pump pit above alarm float

(5) Sand Mound (See typical section)
Ex. grade @ ℄ mound: 792.3
Fin. grade @ ℄ mound: 791.2 (Top elevation)
Invert 1¼" PVC laterals: 790.5

NOTE: No grading of original soil surface other than plowing as described within the construction sequence shall be permitted within the limits of the sand mound.

* Contractor to supply specifications of specific pump type per manufacturer.

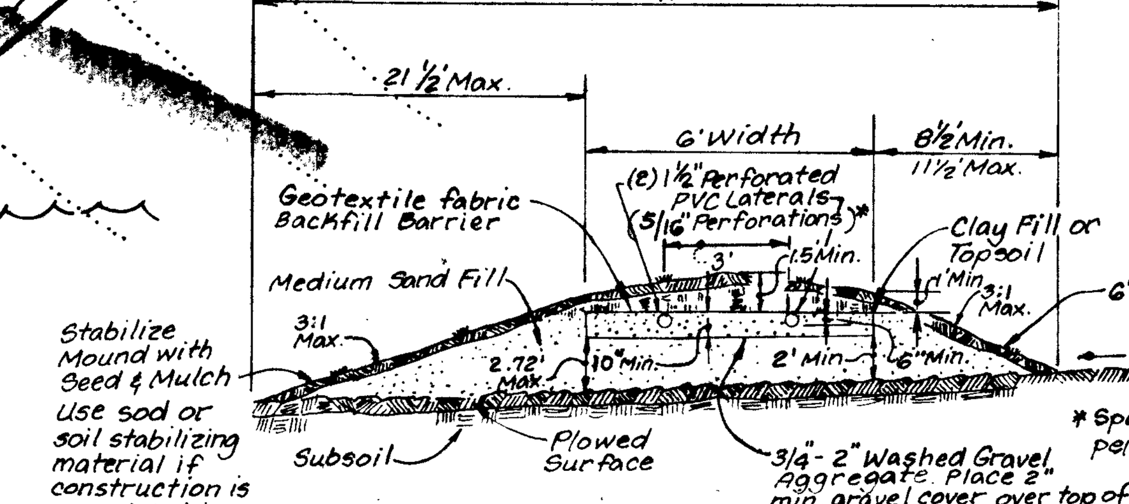
SEPTIC LEGEND



NOTE: THE SEPTIC LEGEND SHOWN REPRESENTS A TYPICAL SAND MOUND SYSTEM. ACTUAL LOCATION OF THE SAND MOUND MAY VARY. SEE PLAN VIEW.

PERCOLATION TEST LEGEND

- PASSED
- FAILED
- NOT TESTED (OLD VISUAL)



TYPICAL SAND MOUND CROSS SECTION
Not To Scale

~~APPROVED: For Private Water and Private Sewerage Howard County Health Department.~~

~~Howard County Health Officer ______ Date~~

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Drawn: KBW	PLOT PLAN FOR BUILDING PERMIT	Scale: 1"=50'
Designed: SDH	**H. MULLINEAUX PROPERTY**	Drawing: 1 of 1
Checked: BDB	TAX MAP NO. 6 P/O PARCEL 15 & 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	LDE Job No. 96-035
Date: 6/96	BUILDER SELFRIDGE BUILDERS, INC. 14045 Gared Drive Glenwood, MD 21738 (410) 799-0200	File No.