

APPLICATION

PERCOLATION TESTING

A 513272

P _____

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

DISTRICT _____

DATE 2/18/2000

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 KAMDIN SHAKOURZADEH

ADDRESS 12970 BRIGHTON DAM RD PHONE (301) 289-9854

AGENT OR PROSPECTIVE BUYER _____

ADDRESS _____ PHONE _____

PROPERTY LOCATION:

SUBDIVISION _____ LOT NO. LOT 2

ROAD AND DESCRIPTION 1500'± SOUTHWEST OF THE INTERSECTION OF TEN OAKS ROAD IN BRIGHTON DAM ROAD

TAX MAP 34 PARCEL # 14

SIZE OF LOT 3 AC TYPE BLDG. SINGLE FAMILY
(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.

Kamdin Shakourzadeh
(SIGNATURE OF APPLICANT)

APPROVED BY _____ FOR _____ DATE _____

DISAPPROVED BY _____ FOR _____ DATE _____

HOLD PENDING FURTHER TESTS _____

REASONS FOR REJECTION OR HOLDING _____

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

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

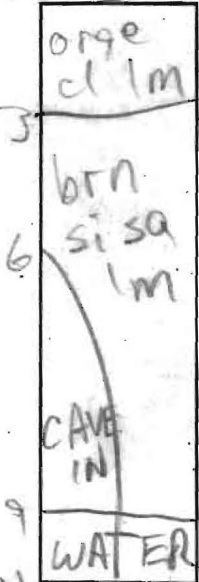
THIS IS NOT A PERMIT

COUNTY #

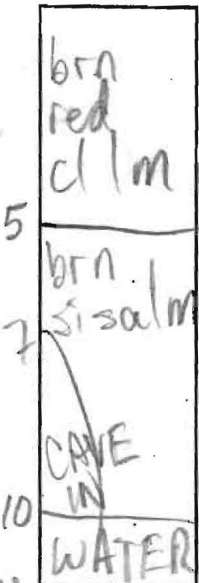
SOIL PROFILE



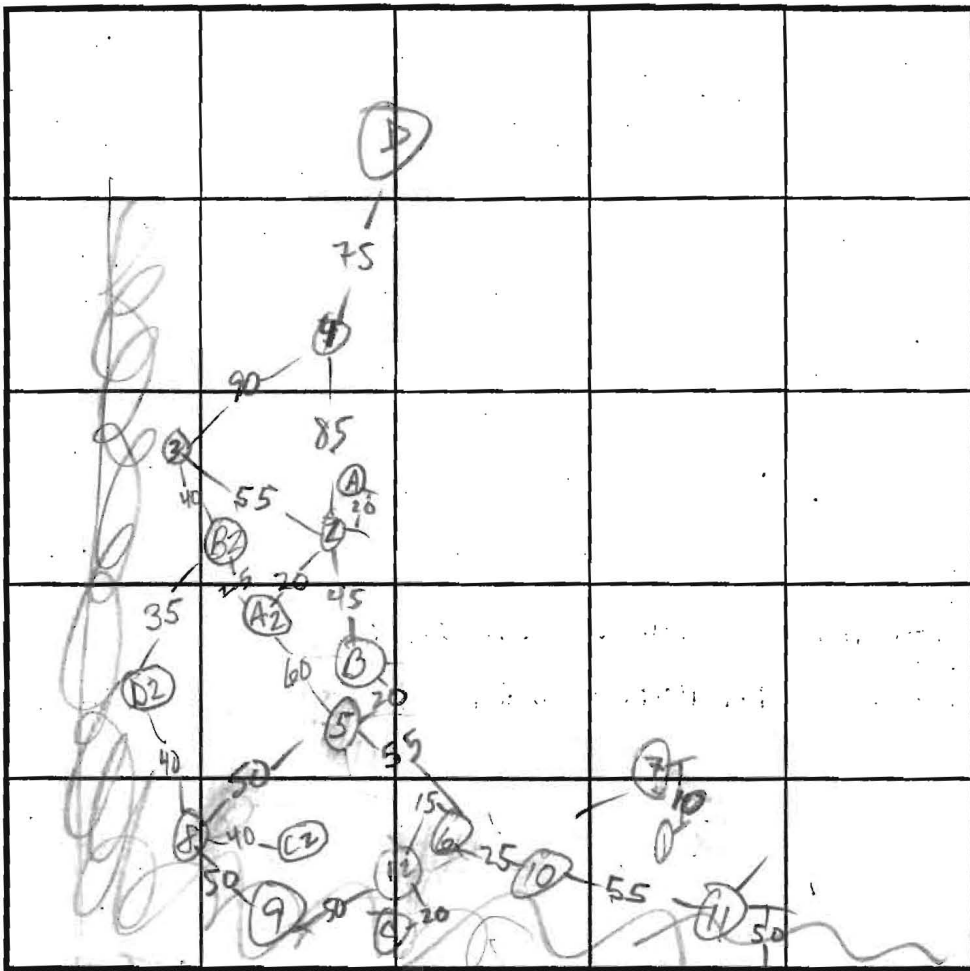
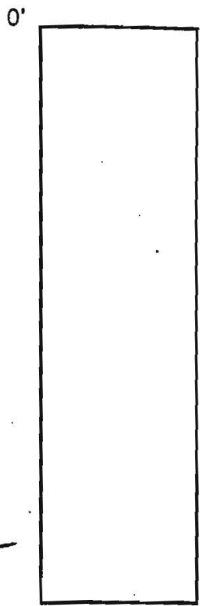
B



C



SOIL PROFILE



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

B. DAM RD

DATE	TEST NO.	DEPTH	PRE-WET		TEST - 1" DROP		TIME
			START	STOP	START	STOP	
?	1						
5/16/80	B S	3 1/2	11:55	12:03	12:03	12:19	116
	B V	11	FAIL	H ₂ O @ 9'			
	A V	11 ±					
	C V	11 ±					
	D V	7 ±	H ₂ O @ 5'	COLLAPSE FROM GRADE			

REMARKS _____

TYPE OF SOIL _____

TESTED BY _____ ALSO PRESENT _____

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME _____ TRENCH WIDTH _____

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

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PROPERTY OWNER KAMRIN SHAKOURZADEH

ADDRESS 12970 BRIGHTON DAM RD PHONE (301) 289-9854

AGENT OR PROSPECTIVE BUYER _____

ADDRESS _____ PHONE _____

PROPERTY LOCATION:

SUBDIVISION _____ LOT NO. _____

S.M. TEST CONT. EX. PARCEL LOT 1 (240000)

ROAD AND DESCRIPTION 1500'± SOUTHWEST OF THE INTERSECTION OF TEN OAKS ROAD & BRIGHTON DAM ROAD

TAX MAP 34 PARCEL # 14

SIZE OF LOT 3 AC TYPE BLDG. SINGLE FAMILY
(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.

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REASONS FOR REJECTION OR HOLDING _____

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

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

THIS IS NOT A PERMIT

COUNTY #

SOIL PROFILE

0'

Empty vertical box for soil profile notes on the left side.

Empty vertical box for soil profile notes on the left side.

Empty vertical box for soil profile notes on the left side.

SOIL PROFILE

0'

Empty vertical box for soil profile notes on the right side.

INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

DATE	H ₂ O TEST NO.	HOLES	ROD DEPTH	TIME	PRE-WET START	PRE-WET STOP	TEST - 1" DROP START	TEST - 1" DROP STOP	TIME
5/30/00	A2	7"	20"	35 11:14 34 11:32	3 1/16"	B2 7"	18 11:45 44 11:40	25 11:25 40 11:40	3/4"
		FAIL	34 11:47	11:47	V16		43 11:55 42 12:10	13/32 11/32	
	C2	7"	17"	10 11:28 8 11:43	12 1/32		43 12:25 42 12:43	1/4 12/32	
			6 11:58 5 12:13	11:58 12:13	28/32 35/32		42 12:58 42 1:13	9/32 6/32	
			4 12:28 9 12:43	12:28 12:43	33/32 29/32				
			7 12:58 7 1:13	12:58 1:13	34/32 30/32				
	D2	7"	12"	35 12:04 33 12:11	1 1/32				
			33 12:42 32 12:57	12:42 12:57	22/32 16/32 (1/2)				
			32 1:12 31 1:27	1:12 1:27	19/32 15/32				
			31 1:42 30 1:57	1:42 1:57	12/32 8/32				

results A: 240 min/inch - FAIL
 B: 80 min/inch - last reading
 C: 16 min/inch - OK - last
 D: 60 min/in - OK last read

REMARKS _____

TYPE OF SOIL _____

TESTED BY M. Rifkin ALSO PRESENT C. Zapp

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME _____ TRENCH WIDTH _____

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

TEST DATA

NAME <u>Shakou zedeh</u>	FILE NO _____
LOCATION <u>Brighton Dam Rd</u> <u>Lot 2</u>	COUNTY _____
DATE <u>5/16/00</u>	GRID _____ E
RECORDED BY _____	N

HOLE NO.	TEST NO.	DEPTH	CLOCK TIME	ELAPSED TIME	MEASUREMENT	REMARKS (Method, Moisture, Biopores)
7	24"	7"	12:29	-	35"	16/32 FAIL 160 min/i (last reading)
			12:44	15	34 26/32	
			12:59	15	34 23/32	
8	22"	2"	1:58	-	35"	20/32 OK 5.3 min/inch (last 2 readings)
			2:16	18	34 12/32	
			2:46	30	33 19/32	
			3:05	19	33 7/32	
			3:37	32	32 20/32	
9	17"	7"	2:19	-	45	12/32 FAIL 320 min/i
			2:49	30	44 20/32	
			3:09	20	44 18/32	

TEST DATA

NAME <u>Shakourzadeh</u>	FILE NO _____
LOCATION <u>Brighton Dam Rd</u>	COUNTY _____
<u>Lot 2</u>	DATE _____
RECORDED BY <u>M. Rifkin</u>	GRID _____ E
	N

HOLE NO.	TEST NO.	DEPTH	CLOCK TIME	ELAPSED TIME	MEASUREMENT	REMARKS (Method, Moisture, Biopores)
4/13/00 1	2'	4"	10:27	-	40"	29/16
			11:57		38 3/16	
5/16/00 10	18"	7"	2:44	-	10	12/32 72 35
			3:00	16	9 20/32	88 32
			3:20	20	9 13/32	560 4/5
			3:56	36	8 29/32	520 10
			4:18	22	8 20/32	9/32
					78 m/i last reading	
11	20"	8	3:27	-	45	2"
			4:04	37	43	2"
			4:27	23	42	1" 23 m/i OK
12	15	8	3:51	-	35	22/32
			4:21	30	34 4/32	4/32
			4:36	15	34 7/32	2/32
			4:46	10	34 5/32	2/32
					160 m/i last reading	

4
2
35
85
175
2800

TEST DATA

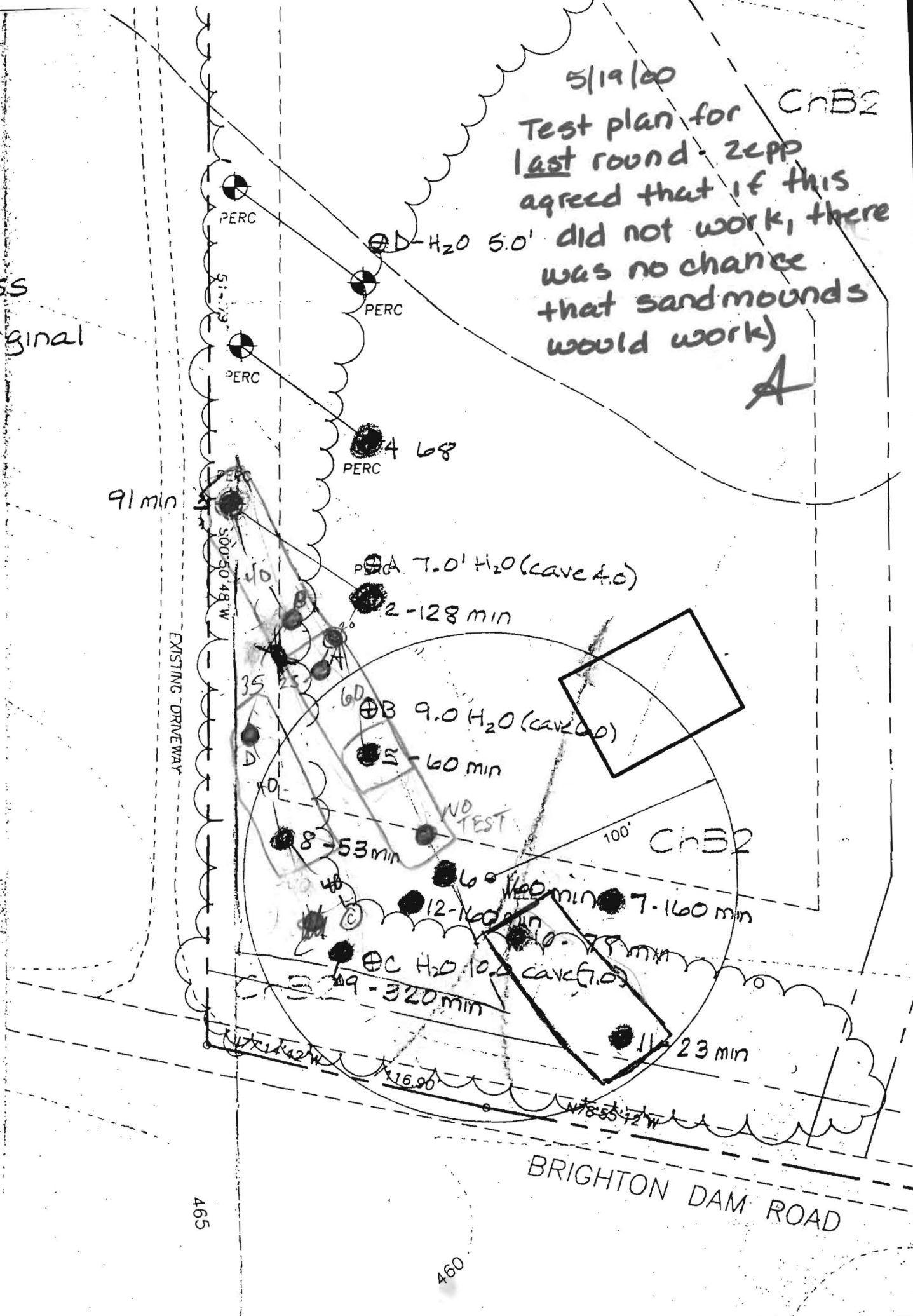
NAME _____	FILE NO _____
LOCATION <u>Shakourzadeh Lot 2</u>	COUNTY _____
<u>Brighton Dam Rd</u>	DATE <u>5/16/80</u>
RECORDED BY <u>M. Ripkin</u>	GRID _____ E
	N

HOLE NO.	TEST NO.	DEPTH	CLOCK TIME	ELAPSED TIME	MEASUREMENT	REMARKS (Method, Moisture, Biopores)
2 #474	SHELF 16"	7"	10:29	-	45"	9/32
			10:51	22	44 ²³ / ₃₂	FAIL
			11:11	20	44 ¹⁸ / ₃₂	5/32 128 min/inch
3 #479	15"	7"	10:36	-	10"	11/32
			10:56	20	9 ²¹ / ₃₂	PASS BY ALM
			11:16	20	9 ¹⁴ / ₃₂	7/32 91 min/inch
4 #475	19"	7"	10:40	-	35"	15/32
			11:05	25	34 ¹² / ₃₂	OK
			11:20	15	34 ¹⁴ / ₃₂	7/32 68 min/inch
5	18"	7"	12:04	-	45"	8/32
			12:19	15	44 ²¹ / ₃₂	9/32
			12:34	15	44 ¹⁵ / ₃₂	10/32
			12:49	15	44 ⁵ / ₃₂	OK
			1:05	16	43 ²⁸ / ₃₂	7/32
			2:05	60	42 ²⁹ / ₃₂	31/32 60 min/inch
6	19"	7"	12:11	-	10"	22/32 incl. some to
			12:31	20	9 ¹⁰ / ₃₂	package
			12:42	16	9 ¹ / ₃₂	9/32
			1:04	17	8 ²⁵ / ₃₂	8/32
			2:08	64	8 Even	25/32
			2:23	15	7 ²⁵ / ₃₂	7/32 160 min/inch
			2:33	10	7 ²³ / ₃₂	2/32

5/19/00
 Test plan for ChB2
 last round. Zepp
 agreed that if this
 did not work, there
 was no chance
 that sand mounds
 would work)

A

- Pass
- Marginal
- Fail



91 min

EXISTING DRIVEWAY

465

460

BRIGHTON DAM ROAD

PERC

⊕ D-H₂O 5.0'

PERC

PERC

● 4 68
 PERC

⊕ A 7.0' H₂O (cave 40)

● 2-128 min

⊕ B 9.0' H₂O (cave 20)

● 5-60 min

NO TEST

● 8-53 min

● 6-160 min

100' ChB2

● 12-160 min

● 10-78 min

⊕ C H₂O 10.0' cave (7.0)

● 9-320 min

● 11-23 min

N 78° 42' W

N 16° 20'

N 78° 55' 12" W

TABLE 3.1

EQUATIONS FOR CALCULATING SAND MOUND DIMENSIONS

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

$$\text{Bed length (B)} = \frac{500}{50} \text{ ft. (21 ft. to 101 ft. dependent on site)}$$

$$\text{Bed width (A)} = \frac{\text{Bed } 500 \text{ ft.}^2}{B \text{ } 50 \text{ ft.}} = \frac{500}{50} \text{ ft. (15 ft. or less)}$$

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

$$\text{Downslope sand fill depth (E)} = [12 A \times \% \text{ slope}] + D \text{ in.} = \frac{34.7}{29.4} \text{ in.}$$

AVG SAND FILL DEPTH:
26.7"

$$\text{Cap + topsoil at bed center (H)} = \frac{18}{18} \text{ in.}$$

$$\text{Cap + topsoil at bed edge (G)} = \frac{12}{12} \text{ in.}$$

$$\text{Total Bed Depth (F)} = \frac{10}{10} \text{ in.}$$

$$\text{Sideslope setback (K)} = \left[\frac{26.7}{2} + 28 \text{ in.} \right] \times 3 = \frac{164.1}{164.1} \text{ in. } 13.7'$$

$$\text{Upslope setback (J)} = (22 \text{ in.} + D) \times 3 \times \text{upslope corr. factor} = \frac{121.4}{121.4} \text{ in. } 10.1'$$

$$\text{Downslope setback (I)} = (22 \text{ in.} + E) \times 3 \times \text{downslope corr. factor} = \frac{182}{182} \text{ in. } 15.2'$$

$$\text{Total Width of Mound (W)} = 12A + J + I = \frac{410.4}{410.4} \text{ in. } 34.2'$$

$$\text{Total Length of Mound (L)} = 12B + K + K = \frac{1000.2}{1000.2} \text{ in. } 83.4'$$

TABLE 3.1

EQUATIONS FOR CALCULATING SAND MOUND DIMENSIONS

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

Bed length (B) = $\frac{500}{80.56} \text{ ft.}$ (21 ft. to 101 ft. dependent on site)

Bed width (A) = $\frac{\text{Bed } 500 \text{ ft.}^2}{B \ 80.56 \text{ ft.}} = \frac{500}{80.56} \text{ ft.}$ (15 ft. or less)

Upslope sand fill depth (D) = 48 in. - Z in. = $\frac{24}{34.7}$ in. (12 in. min.)

Downslope sand fill depth (E) = [12 A × % slope] + D in. = $\frac{29}{34.7}$ in.

AVG SAND FILL DEPTH:
26 1/2"

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

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

Total Bed Depth (F) = 10 in.

Sideslope setback (K) = $\frac{26 \frac{1}{2} \text{ H+F}}{2} \times 3 = \frac{103 \frac{1}{2}}{1090 \text{ NOT } 690} \text{ in.}$ 13.6'

Upslope setback (J) = $\frac{G+F \ 24}{22 \text{ in.} + D} \times 3 \times \text{upslope corr. factor} = \frac{118.7}{.860} \text{ in.}$ 9.9'

Downslope setback (I) = $\frac{29}{22 \text{ in.} + E} \times 3 \times \text{downslope corr. factor} = \frac{186.7}{1.22} \text{ in.}$ 15.6'

Total Width of Mound (W) = 12A + J + I = $\frac{75 \times 118.7 \ 186.7}{380.4} \text{ in.}$ 31.7'

Total Length of Mound (L) = 12B + K + K = $\frac{960 \times 103 \frac{1}{2} \ 103 \frac{1}{2}}{1287.0} \text{ in.}$ 107.25'

TABLE 3.1

EQUATIONS FOR CALCULATING SAND MOUND DIMENSIONS

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

$$\text{Bed length (B)} = \frac{500}{56} \text{ ft. (21 ft. to 101 ft. dependent on site)}$$

$$\text{Bed width (A)} = \frac{\text{Bed } 500 \text{ ft.}^2}{B \text{ } 56 \text{ ft.}} = \frac{500}{56} \text{ ft. (15 ft. or less)}$$

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

$$\text{Downslope sand fill depth (E)} = [12 A \times \% \text{ slope}] + D \text{ in.} = \frac{29.4}{29.4} \text{ in.}$$

AVG SAND FILL DEPTH:
26.7"

$$\text{Cap + topsoil at bed center (H)} = \frac{18}{18} \text{ in.}$$

$$\text{Cap + topsoil at bed edge (G)} = \frac{12}{12} \text{ in.}$$

$$\text{Total Bed Depth (F)} = \frac{10}{10} \text{ in.}$$

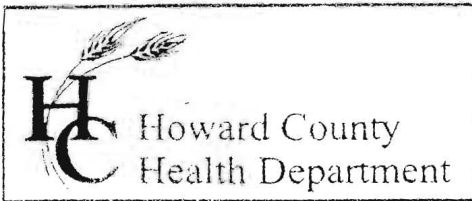
$$\text{Sideslope setback (K)} = \frac{26.7}{2} [(D + E) + 28 \text{ in.}] \times 3 = \frac{164.1}{164.1} \text{ in. } 13.7'$$

$$\text{Upslope setback (J)} = (22 \text{ in.} + D) \times 3 \times \text{upslope corr. factor} = \frac{121.4}{121.4} \text{ in. } 10.1'$$

$$\text{Downslope setback (I)} = (22 \text{ in.} + E) \times 3 \times \text{downslope corr. factor} = \frac{182}{182} \text{ in. } 15.2'$$

$$\text{Total Width of Mound (W)} = 12A + J + I = \frac{410.4}{410.4} \text{ in. } 34.2'$$

$$\text{Total Length of Mound (L)} = 12B + K + K = \frac{1000.2}{1000.2} \text{ in. } 83.4'$$



3525 H Ellicott Mills Drive, Ellicott City, MD 21043
(410) 313-2640 Fax (410) 313-2648
TDD (410) 313-2323 Toll Free 1-866-313-6300
website: www.hchealth.org

Penny E. Borenstein, M.D., M.P.H., Health Officer

SAND MOUND DIMENSIONS

Shakoorzadeh Property

Lot 2

12982 Brighton Dam Road

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

$$\text{Bed length (B)} = 56 \text{ ft}$$

$$\text{Bed width (A)} = \frac{500 \text{ ft}^2}{56 \text{ ft}} = 8.9 \text{ (rounded to 9.0) ft}$$

Upslope sand fill depth = defaulted to 12 in

$$\text{Downslope sand fill depth} = [(12 \times 9) \times .06] + 12 = 18.5 \text{ in}$$

Cap + topsoil at bed center = 18 in

Cap + topsoil at bed edge = 12 in

Total Bed Depth = 10 in

$$\text{Sideslope Setback} = \left[\frac{(12 + 18.5)}{2} + 28 \right] \times 3 = 129.75 \text{ in} = 10.8 \text{ ft}$$

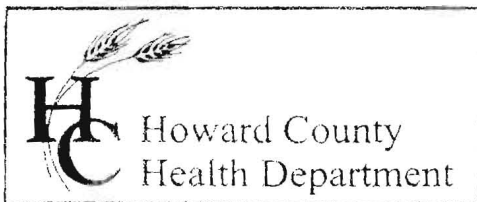
$$\text{Upslope Setback} = (22 + 12) \times 3 \times 0.86 = 87.72 \text{ in} = 7.3 \text{ ft}$$

$$\text{Downslope Setback} = (22 + 18.5) \times 3 \times 1.22 = 148.23 \text{ in} = 12.4 \text{ ft}$$

$$\text{Total width of mound} = (12 \times 9) + 87.72 + 148.23 = 343.95 \text{ in} = 28.7 \text{ ft}$$

$$\text{Total length of mound} = (12 \times 56) + (2 \times 129.75) = 931.5 \text{ in} = 77.6 \text{ ft}$$

OK MR 12/31/03



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Penny E. Borenstein, M.D., M.P.H., Health Officer

SAND MOUND PRESSURE DISTRIBUTION NETWORK DESIGN

Design Flow = 4 BR x 150 gal/BR = 600 gpd
Bed dimensions = 56 ft by 9 ft → Central manifold system
Length of laterals = (56 x 0.5) - (3.5' x 0.5) = 26.25 ft
3 Laterals, spaced 3 ft apart

PIPING

Laterals: 5/16" perforations in 1-1/4" diameter SDR 21 pipe
Each lateral 26.25 ft length → 3.5 ft spacing; each lateral stops 1.75 ft from bed end
28/3.5 = 8 perfs per lateral; first perf 1.75 ft from manifold, last perf 1.75 ft from lateral end

Force Main 3" SDR 21
Manifold 3" SDR 21

DOSE

Volume of Force Main + Manifold = (285 + 6) x 40.9 gal/100 ft = 119 gallons
Volume of Laterals = 6 x (5 x 26.25 x 9.2/100) = 72.5 gallons
Minimum Dose = 191.5 gallons

PUMP CHAMBER

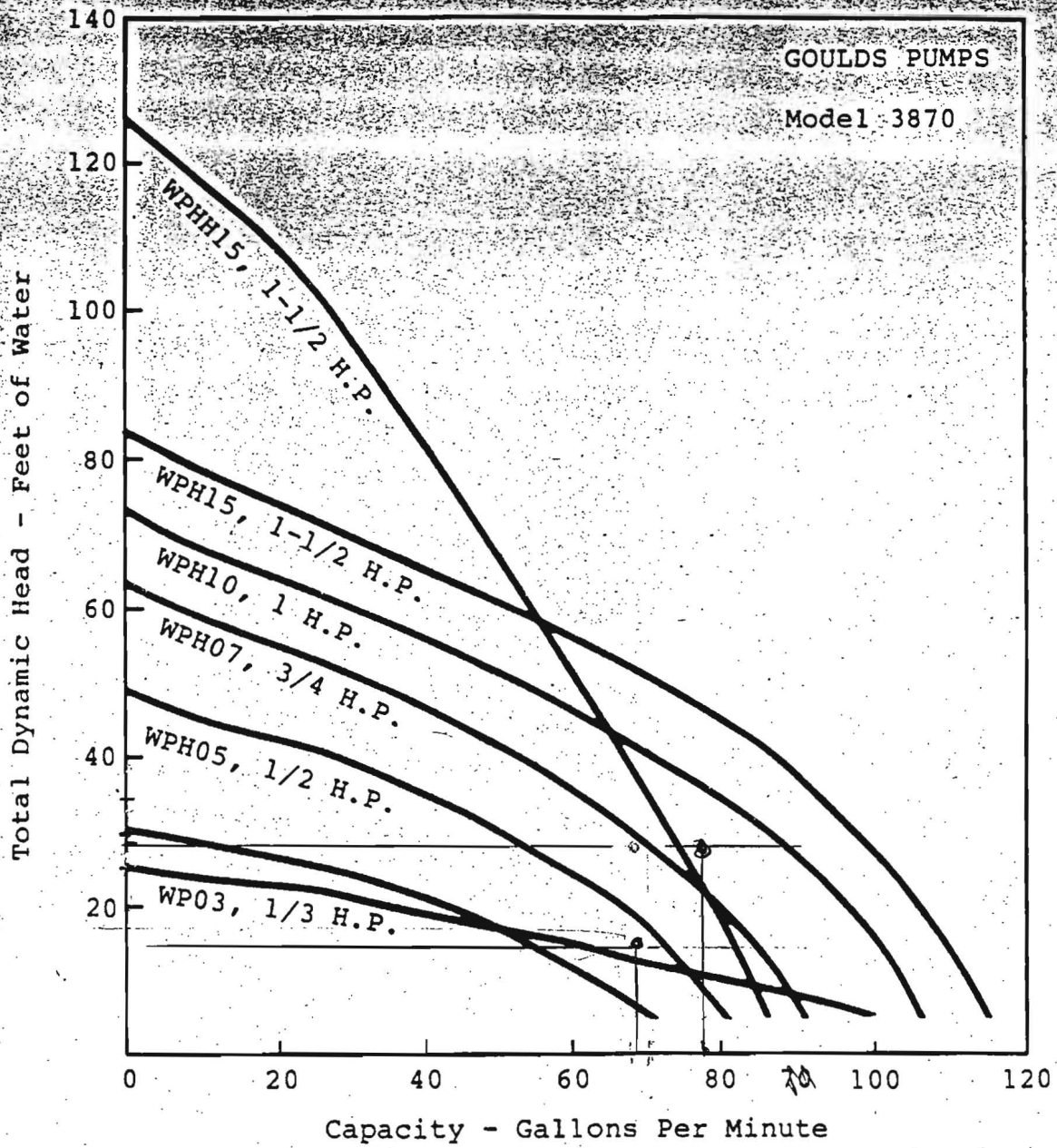
Size 1500 gallons (Mayer Bros)
Dimensions 4.6 ft by 12.6 ft = 58.0 ft² 3.92 ft deep from inlet to bottom
Capacity = 600 + 191.5 = 791.5 gallons above high water alarm float
 $\frac{791.5 \times 231}{8346.2} = 21.9 \text{ in} = 1.83 \text{ ft}$ minimum between invert in and high water alarm

Distance between Pump Off and Pump On

$\frac{191.5 \times 231}{8346.2} = 5.3 \text{ in}$

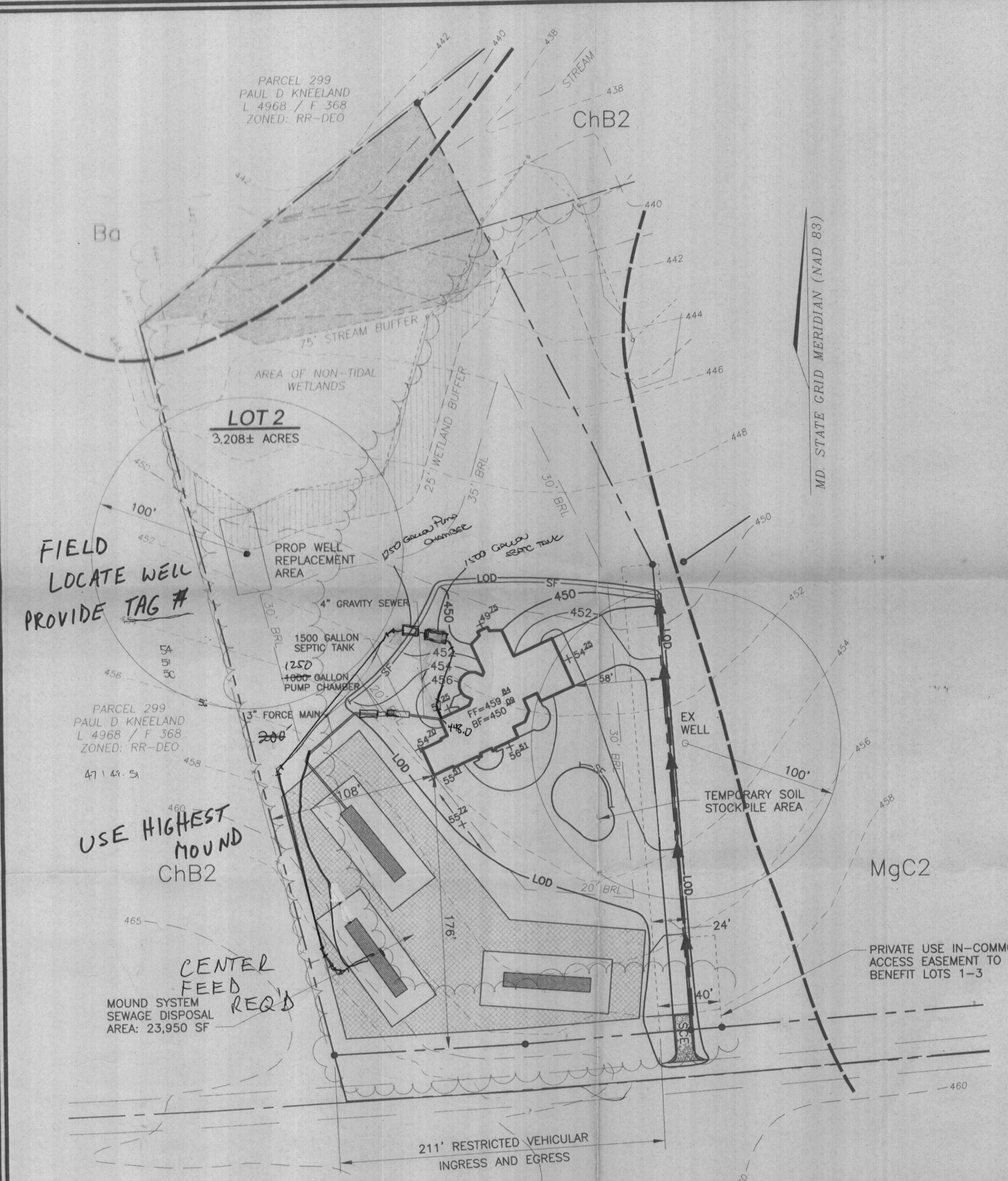
PUMP DESIGN

Flow: 8 perfs/lat x 6 laterals x 1.63 gpm/lat = 78.2 gpm
Static Head: 459.2 ft (ex. bed elev) + 1.27 ft (avg sand fill) + 0.66 ft (pipe ht above sand) = 461.1
461.1 - 441.84 = 19.26 ft of head
Friction Head: (5) 45° bends = 30 ft equivalent pipe
285 ft force main + 30 ft = 315 ft
Friction loss for 315 ft of pipe @ 78.2 gpm = 315/100 x 1.32 = 4.16 ft of head
Total Design Head = 19.26 + 4.16 + 2 = 25.4 ft of head
Pump for 25.4 ft of TDH @ 78.2 gpm is Gould Model 3870 WPH10 (1.0 HP)



USE WPH10
78 GPM
26 TDH

FIGURE 4.7 - EFFLUENT PUMP CURVES



TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SF).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL/ACRE ANNUAL RYE (3.2 LBS/1000 SF). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS/ACRE WEEPING LOVEGRASS (0.07 LBS/1000 SF). FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1 1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SF) OF UNROTTED SMALL-GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS/ACRE (5 GAL/1000 SF) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GALLON (8 GAL/1000 SF) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/100 SF) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT THE TIME OF SEEDING. APPLY 400 LBS/ACRE 20-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF).
- ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SF) AND APPLY 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SF) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4 LBS/1000 SF) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS/ACRE OF KENTUCKY 31 TALL FESCUE AND 2 LBS/ACRE (0.05 LBS/1000 SF) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THRU FEBRUARY 29, PROTECT SITE BY: OPTION 1) 2 TONS/ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION 2) USE SOD. OPTION 3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SF) OF UNROTTED SMALL-GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS/ACRE (5 GAL/1000 SF) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GALLONS/ACRE (8 GAL/1000 SF) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- INSTALL SEDIMENT CONTROL AS SHOWN ON PLAN IN ACCORDANCE WITH DETAILS.
- CLEAR AND ROUGH GRADE SITE.
- CONSTRUCT HOUSE.
- FINE GRADE AND STABILIZE SITE WITH TOPSOIL AND SEED (SEE THIS SHEET).
- AFTER SITE IS PERMANENTLY STABILIZED AND PERMISSION GRANTED FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROLS AND STABILIZE ANY REMAINING DISTURBED AREAS.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

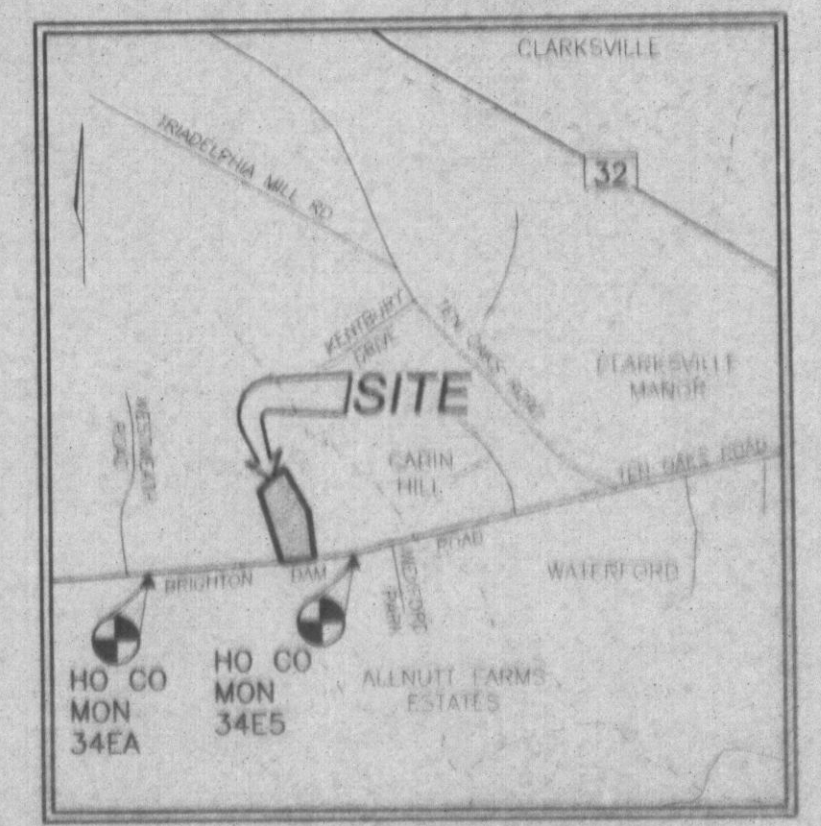
- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONDITIONS WHERE PRACTICE APPLIES

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLATS OR PLAT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEG, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUTING LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 LBS/1000 SF) PRIOR TO THE PLACEMENT OF TOPSOIL. LIMESTONE SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATION, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
 - ORGANIC CONTENT OF TOPSOIL SHALL NOT BE LESS THAN 1.5 PERCENT BY WEIGHT.
 - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PREVENT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 - NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

TOPSOIL APPLICATION:

- WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4"-8" HIGHER IN ELEVATION.
- TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR FROSTY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDED PREPARATION.



SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410) 313-1855.
 - ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
 - FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1. B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 - ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
 - ALL DISTURBED AREAS MUST BE STABILIZED WITH THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC G) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
 - ALL SEDIMENT CONTROLS STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - SITE ANALYSIS:

TOTAL AREA	70,825 SF
AREA DISTURBED	29,280 SF
AREA TO BE ROOFED OR PAVED	13,730 SF
AREA TO BE VEGETATIVELY STABILIZED	15,550 SF
TOTAL CUT	2050 CY +
TOTAL FILL	2050 CY +
OFFSITE WATER/BORROW AREA LOCATION	N/A
 - ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
 - ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 - ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
 - TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- *TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.
- +CUT AND FILL TO BE DETERMINED BY CONTRACTOR. QUANTITIES PROVIDED FOR PERMIT PURPOSES ONLY.

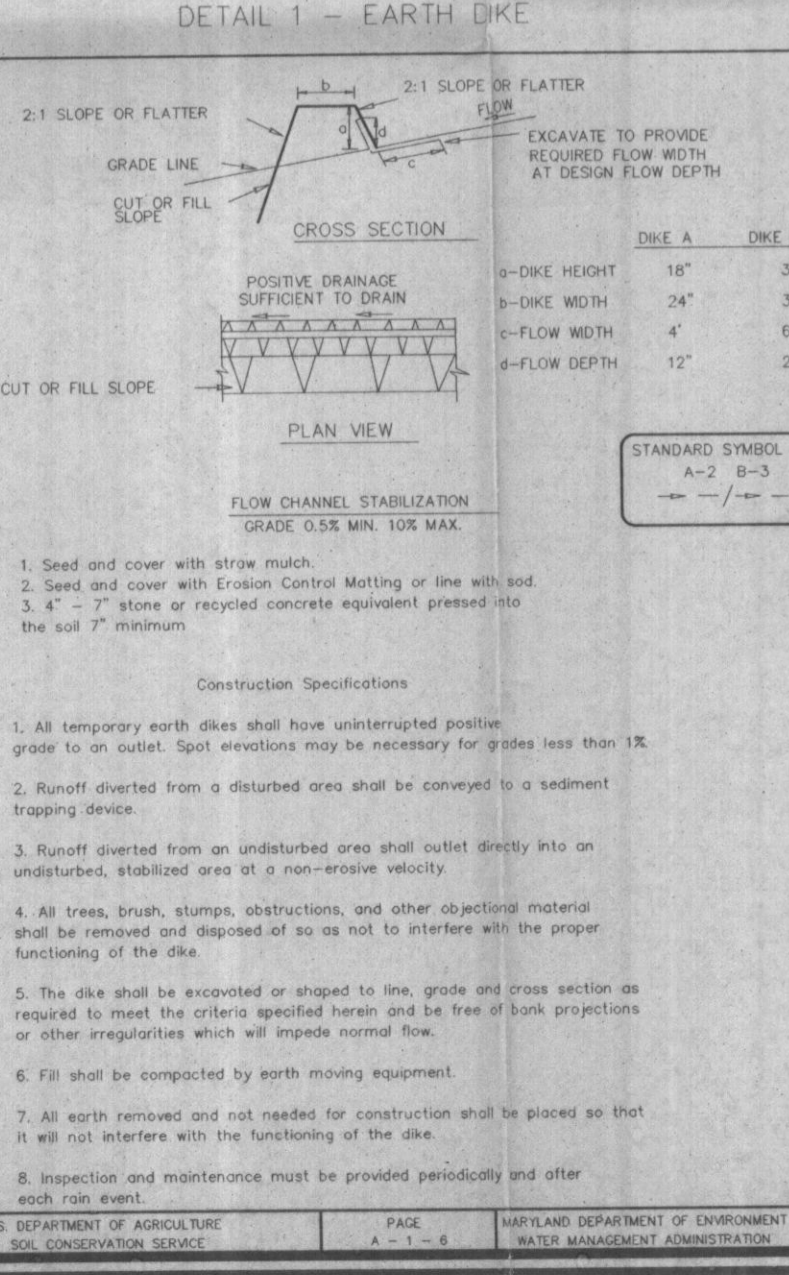
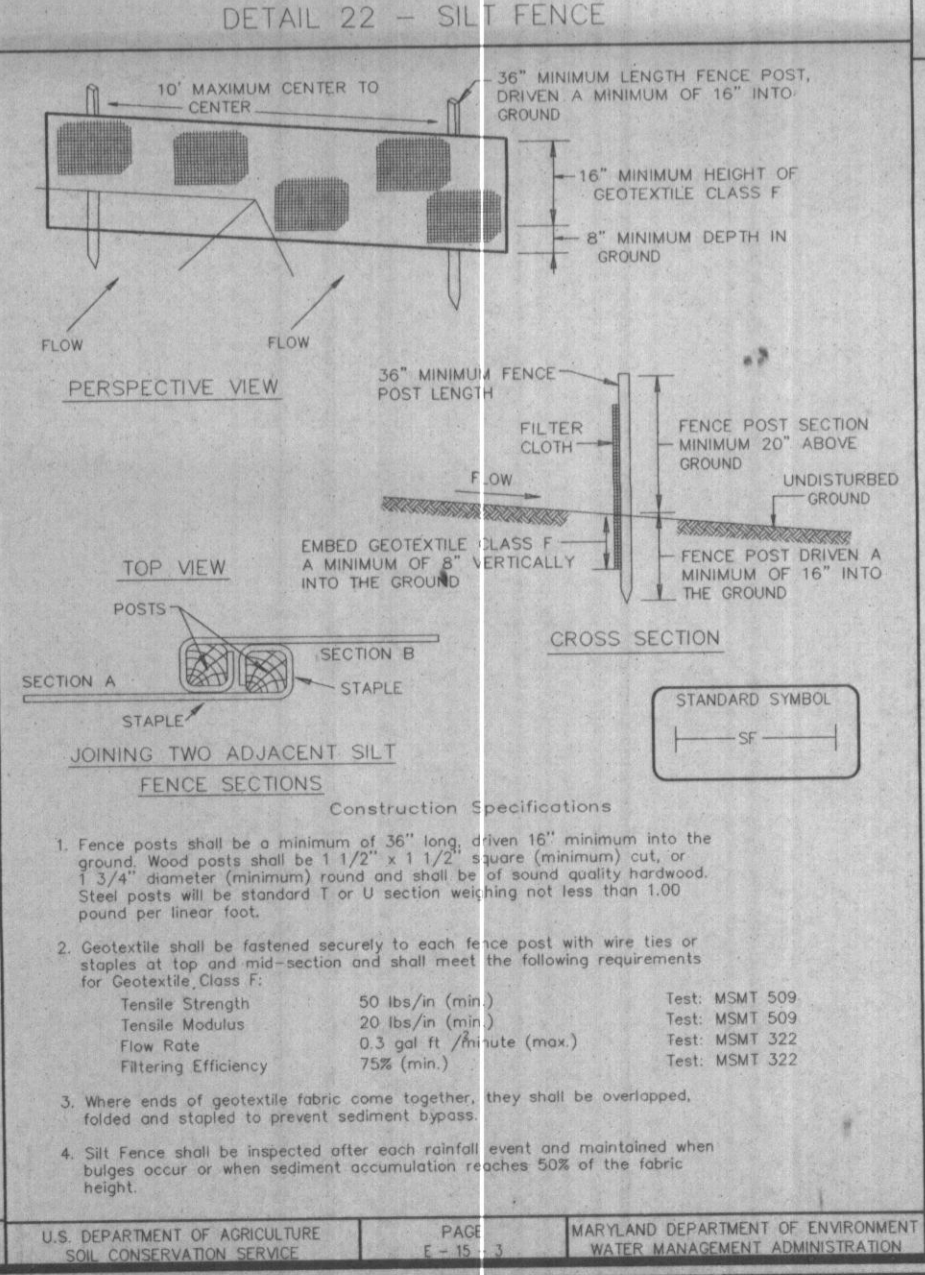
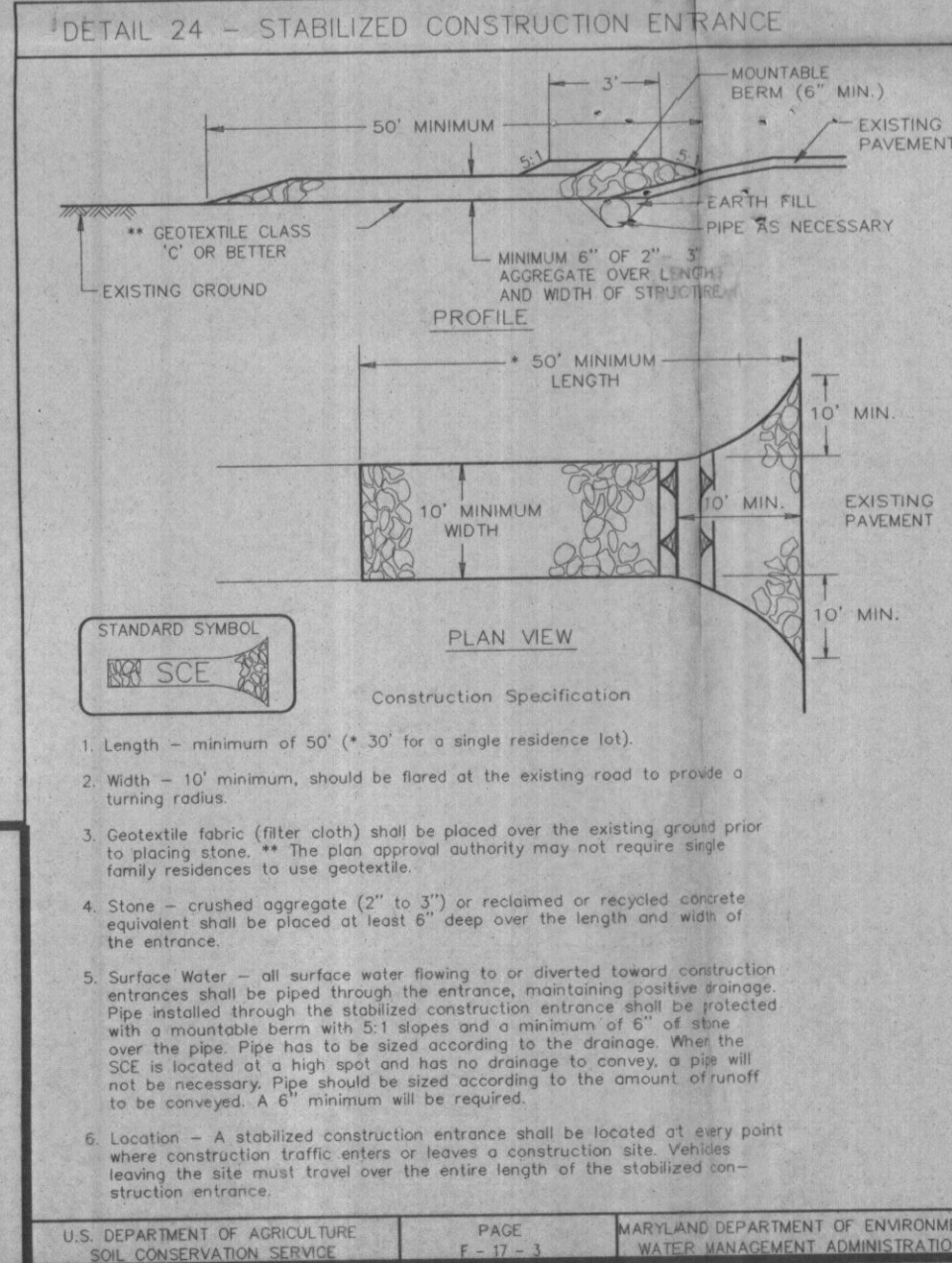
GENERAL NOTES

- THE PROPERTY OUTLINE IS BASED ON HOWARD COUNTY PLAT NO. 14890.
- THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON FIELD SURVEY BY FREDERICK WARD ASSOCIATES.
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12 FT (14 FT IF SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - P-1 STANDARD PAVING
 - GEOMETRY - MAX 15% GRADE, MAX 10% GRADE CHANGE
 - STRUCTURES (BRIDGES/CULVERTS) - CAPABLE OF SUPPORTING 25 GROSS
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FT DEPTH OVER DRIVEWAY SURFACE.

PLAN
SCALE: 1"=50'

LEGEND

- 450 - EXISTING MAJOR CONTOUR
- 452 - EXISTING MINOR CONTOUR
- 450 - PROPOSED MAJOR CONTOUR
- 452 - PROPOSED MINOR CONTOUR
- LOD - LIMIT OF DISTURBANCE



THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

BY THE DEVELOPER:
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

Signature: [Signature] DATE: 10/15/03

BY THE ENGINEER:
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature] DATE: 10/14/03

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: 1-10-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: 1-10-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: 1-10-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NO.	REVISION	DATE
PLOT PLAN		
LOT 2		
SHAKOORZADEH/BOLOORI		
RESIDENCE		
12982 BRIGHTON DAM ROAD		
TAX MAP: 34	BLOCK: 10	PARCEL 14
5TH ELECTION DISTRICT		HOWARD COUNTY, MARYLAND
7125 RIVERWOOD DRIVE COLUMBIA, MARYLAND 21046-2354 410-720-6900 410-720-6226 fax		
REGIONAL OFFICES: BEL AIR, MARYLAND AND WARRENTON, VIRGINIA		
ARCHITECTS ENGINEERS PLANNERS SURVEYORS www.frederickward.com		
DESIGN BY:	RHV/GMH	
DRAWN BY:	GMH	
CHECKED BY:	RHV	
DATE:	SEPTEMBER 2003	
SCALE:	AS SHOWN	
W.O. NO.:	2019175	
		1 SHEET OF 2

GP-04-25