

APPLICATION

PERCOLATION TESTING

A _____

P _____

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

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 RICHARD NUUN

ADDRESS 1815 BOCA VALLEY COURT PHONE _____

AGENT OR PROSPECTIVE BUYER _____

ADDRESS _____ PHONE _____

PROPERTY LOCATION:

SUBDIVISION TWARDZIK PROPERTY LOT NO. 2

ROAD AND DESCRIPTION FORSYTHE ROAD, NORTH OF INTERSECTION WITH OLD
FREDERICK ROAD

TAX MAP 8 PARCEL # _____

SIZE OF LOT 3.373 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
FEE CONNECTED WITH THE FILING OF THIS PERC TEST APPLICATION IS NON-REFUNDABLE UNDER ANY CIRCUMSTANCES. I ALSO AGREE
COMPLY WITH ALL M.O.S.H.A. REQUIREMENTS IN TESTING THIS LOT. [Signature]
(SIGNATURE OF APPLICANT)

APPROVED BY _____ FOR _____ DATE _____

DISAPPROVED BY _____ FOR _____ DATE _____

HOLD PENDING FURTHER TESTS _____

REASONS FOR REJECTION OR HOLDING _____

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

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

THIS IS NOT A PERMIT

COUNTY #

SOIL PROFILE

0' **C**

Brown/
tan
Sand
Clay
Lm

5 1/2'
mottling
gray/white
orange sand

6 1/2'

B

Red/orange
Sandy clay
Loam

3'

tan/orange
Brown
micaceous
sand lm

4 1/2'
7 1/2'

Wet
mottled

7'

water
↓

10'

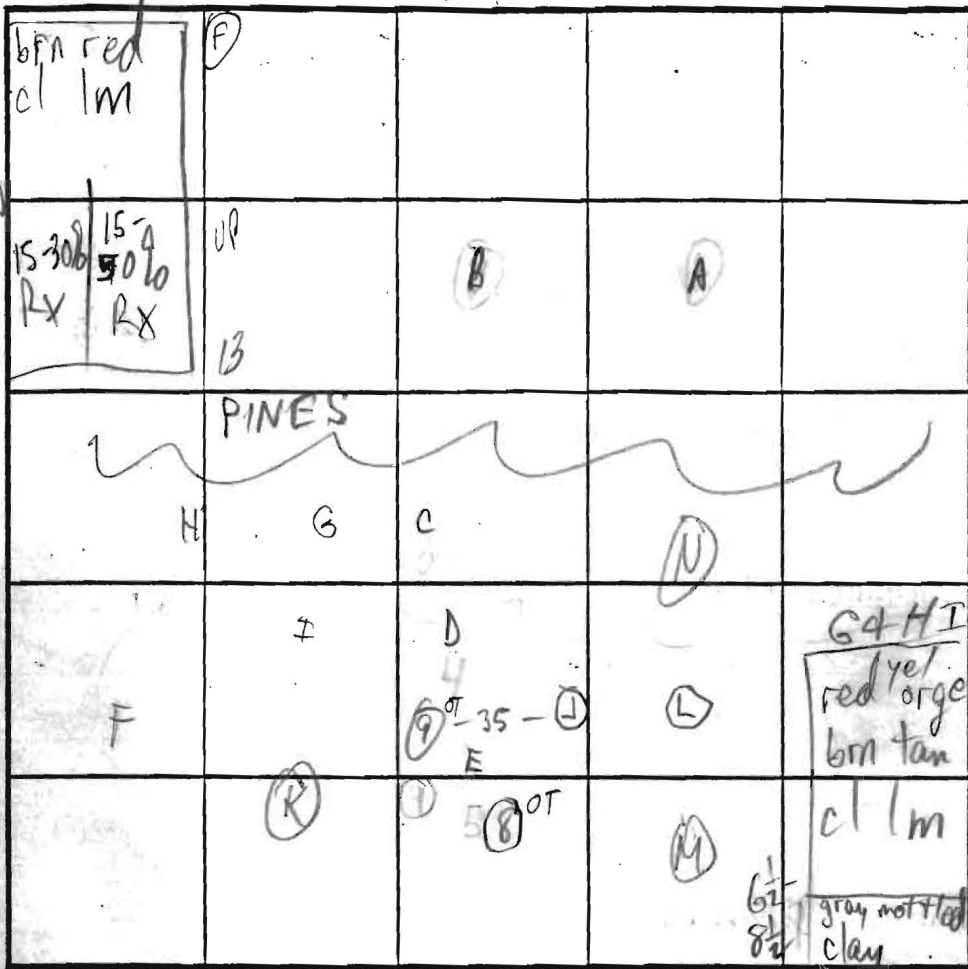
A

Red clay
BAM

2 1/2'

Sticky
Yellow
mottled
Sand

7'



SOIL PROFILE

0' **D**

red brn
cl lm

6 1/2'

gray
mottled
clay

10 1/2''
H2O

10 1/4''

E

red brn
sa cl lm
15% Rx

10 1/4''

H2O

INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE.

| DATE | TEST NO. | DEPTH | PRE-WET | | TEST - 1" DROP | | TIME |
|----------|-------------|--------------|---------|------|----------------|----------------|------|
| | | | START | STOP | START | STOP | |
| 12/29/03 | A V | 7 | 2:44 | 3:17 | | | |
| | B V | 10 | H2O | @ 9' | | | |
| | C V | 6 1/2 | | | | | |
| | D V | 10 1/4 | | | | | |
| | E S V | 5 1/2 10 1/4 | 2:44 | 3:17 | 3:17 | 4:18 60 min | 1/4 |
| | E S V | 5 1/2 13 | 3:15 | 3:48 | 3:48 | 4:33 45 min | 1/4 |
| | aka 608 G V | 8 | | | | | |
| | aka 605 H V | 7 | | | | | |
| | I V | 8 1/2 | | | | | |

REMARKS _____

TYPE OF SOIL _____

TESTED BY M. Ripkin/K. Bell ALSO PRESENT Justin & Zach B.

TRENCH DESIGN DATA: AVERAGE PERCOLATION TIME _____ TRENCH WIDTH _____

INLET DEPTH 7' MAXIMUM BOTTOM DEPTH _____ SQ. FT./BEDROOM _____

APPLICATION

PERCOLATION TESTING

A _____

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

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 Twardzik LOT NO. 2

ROAD AND DESCRIPTION _____

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 _____

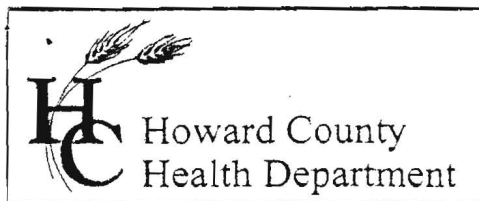
HOLD PENDING FURTHER TESTS _____

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



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

September 23, 2003

Richard Nunn
1815 Boka Valley Court
Woodbine, MD 21797

RE: Percolation Test Results – A 519063
Twardzik Property, Lot 2, Old Frederick Road
Adjust Platted Easement for House Site

Dear Mr. Nunn:

Percolation testing conducted August 4, 2003 on the referenced property indicated unsatisfactory soil conditions. The primary limiting factors are shallow bedrock and deep clay layers. Shallow groundwater was found in one test hole. Copies of the test results are enclosed.

Because the proposed test hole locations were not staked, testing continued only after extensive time was spent laying out test locations. Because some of the failing test locations appeared to be in close proximity to the existing platted easement, the validity of the platted easement has come into question. Due to observed soil conditions, the best option for any sewage reserve area of any type appears to be a sand mound design.

Further review is contingent upon submission by a registered engineer/surveyor of a percolation certification plan showing the following:

- 1) actual locations of all excavated test holes with field-verified topography
- 2) the existing platted sewage easement
- 3) proposed sewage reserve area showing three proposed sand mounds oriented on contour
- 4) proposed house and well site
- 5) a note certifying that all existing wells and septic systems within 100 feet of property boundaries have been shown
- 6) a note indicating that depicted topography reflects field-verified information
- 7) the plan identification number (PC 519063) in the title block

The percolation certification plat should be submitted within 60 days to allow field verification if necessary. If you have any questions regarding this matter, please contact me at the above address or by calling (410) 313-2640.

Very truly yours,

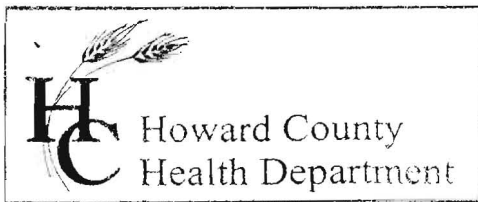
Mark E. Rifkin, R.S.

Water and Sewerage Program

MR

Enclosures

cc: FSH & Associates
File



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

February 3, 2004

Richard Nunn
1815 Boka Valley Court
Woodbine, MD 21797

RE: Percolation Test Results – A 519063
Twardzik Property, Lot 2, Old Frederick Road
Adjustment/Confirmation of Platted Easement

Dear Mr. Nunn:

Percolation testing conducted August 4, 2003 on the referenced property indicated unsatisfactory soil conditions for conventional trench designs due to shallow bedrock and deep clay. Subsequent sand mound testing on December 29, 2003 indicated unsatisfactory soil conditions due to slow test times; soils were also found to be unsatisfactory on that date for alternative trench systems due to shallow groundwater, deep clay and heavily mottled soils.

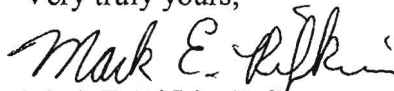
Final testing on January 12, 2004 in the vicinity of the platted easement indicated limited satisfactory soil conditions; the primary limiting factor was shallow groundwater. Based on these test results, it would appear that the only soils suitable for conventional systems are located within the existing platted easement. Copies of the test results from December and January are enclosed.

Further review is contingent upon submission by a registered engineer/surveyor of a percolation certification plan showing the following:

- 1) actual locations of all excavated test holes with proper identification and P/F designation
- 2) the existing platted sewage easement
- 3) proposed house footprint and well site
- 4) note that all existing wells and septic systems within 100' of property boundaries are shown
- 5) field verified topography in the vicinity of the platted easement and a note indicating same
- 6) purpose statement reflecting an attempt to adjust the platted easement which reverted to simply trying to establish any reasonable septic reserve area
- 7) the plan identification number (PC 519063) in the title block

The percolation certification plat should be submitted within 60 days to allow field verification if necessary. If you have any questions regarding this matter, please contact me at the above address or by calling (410) 313-2640.

Very truly yours,


Mark E. Rifkin, R.S.
Well and Septic Program

MR

Enclosures

cc: FSH Associates
File



APPLICATION

FOR PERCOLATION TESTING AND SITE EVALUATION

TEST DATE(S) 8/4/03 TEST TIME _____ A/P 519063
 AGENCY REVIEW: _____ DATE 7/23/03

DO NOT WRITE ABOVE THIS LINE

I HEREBY APPLY FOR THE NECESSARY TESTING/EVALUATION PRIOR TO ISSUANCE OF SEWAGE DISPOSAL SYSTEM PERMIT(S) TO:

CHECK AS NEEDED:

- CONSTRUCT NEW SEPTIC SYSTEM(S)
- REPAIR/ADD TO AN EXISTING SEPTIC SYSTEM
- REPLACE AN EXISTING SEPTIC SYSTEM

CHECK AS NEEDED:

- NEW STRUCTURE(S)
- ADDITION TO AN EXISTING STRUCTURE
- REPLACE AN EXISTING STRUCTURE

CHECK ONE:

- CREATE NEW LOT(S)
- BUILD ON AN EXISTING LOT IN A SUBDIVISION
- BUILD ON AN EXISTING PARCEL OF RECORD

IS THE PROPERTY WITHIN 2500' OF ANY RESERVOIR?

- YES
- NO

THE TYPE OF STRUCTURE IS:

- RESIDENTIAL WITH 4 PROPOSED BEDROOMS IN THE COMPLETED STRUCTURE (NOTE **UNKNOWN** IF APPROPRIATE)
- COMMERCIAL (PROVIDE DETAIL OF NUMBERS AND TYPES OF EMPLOYEES/ CUSTOMERS ON ACCOMPANYING PLAN)
- INSTITUTIONAL/GOVERNMENT (PROVIDE DETAIL OF NUMBERS AND TYPES OF EMPLOYEES/USERS ON ACCOMPANYING PLAN)

PROPERTY OWNER(S) Richard A. NUNN OWNER: Frank Twardzik

DAYTIME PHONE 410-977-7754 CELL SAME FAX 410-489-4191

MAILING ADDRESS 1815 BOKA VALLEY COURT WOODBINE MD 21787
 STREET CITY/TOWN STATE ZIP

APPLICANT SAME AS ABOVE - C. etc. will do for

CONTACT DAYTIME PHONE JUSTIN CELL 443-677-0627 FAX _____

MAILING ADDRESS _____
 STREET CITY/TOWN STATE ZIP

APPLICANT'S ROLE: DEVELOPER BUILDER **BUYER** RELATIVE/FRIEND REALTOR CONSULTANT

PROPERTY LOCATION TWARDZIK PROPERTY
 SUBDIVISION/PROPERTY NAME BEHIND 14230 FORSYTHE RD LOT NO. 2

PROPERTY ADDRESS 14234 FORSYTHE RD SYKESVILLE 21784
 STREET TOWN/POST OFFICE

TAX MAP PAGE(S) 8 GRID _____ PARCEL(S) 244 PROPOSED LOT SIZE 3.373 AC

AS APPLICANT, I UNDERSTAND THE FOLLOWING: THE SYSTEM INSTALLED SUBSEQUENT TO THIS APPLICATION IS ACCEPTABLE ONLY UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS APPLICATION IS COMPLETE WHEN ALL APPLICABLE FEES AND A SUITABLE SITE PLAN HAVE BEEN RECEIVED. I ACCEPT THE RESPONSIBILITY FOR COMPLIANCE WITH ALL M.O.S.H.A. AND "MISS UTILITY" REQUIREMENTS. APPROVAL IS BASED UPON SATISFACTORY REVIEW OF A PERC CERTIFICATION PLAN.

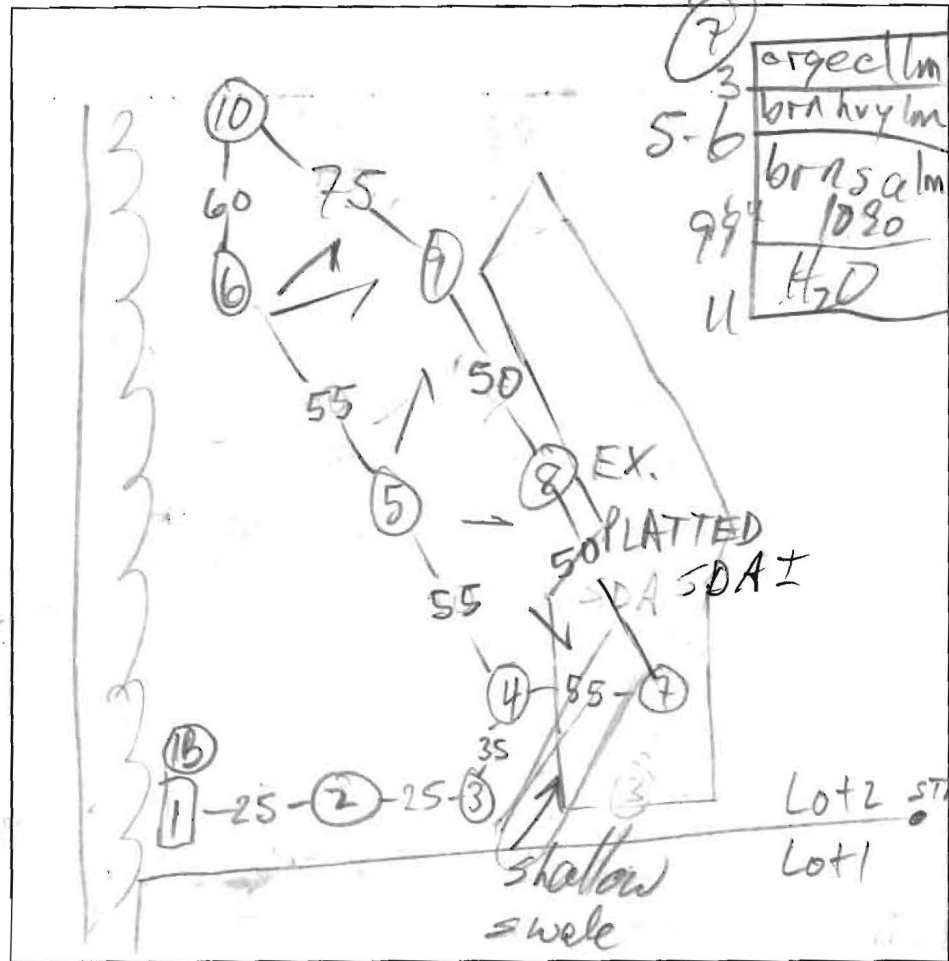
TEST RESULTS WILL BE MAILED TO APPLICANT. R. Nun
 SIGNATURE OF APPLICANT

HOWARD COUNTY HEALTH DEPARTMENT, BUREAU OF ENVIRONMENTAL HEALTH, WELL AND SEPTIC PROGRAM
 3525-H ELLICOTT MILLS DRIVE, ELLICOTT CITY, MARYLAND 21043-4544 (410) 313-1771 FAX (410) 313-2648
 TDD (410) 313-2323 TOLL FREE 1-877-4MD-DHMH

APV
 orge red
 siallm
 20-30%
 Rx
 4
 brn gray
 sand
 40-60%
 Rx
 WORSE
 UPHILL
 7 1/2
 8 1/2
 10 1/2

1-B
 orge red
 brn
 siallm
 3 1/2
 3 1/2
 brn gray
 sand
 30-40%
 Rx
 WORSE
 UPHILL
 10 1/2

2 3
 orge
 cl lm
 3-4
 brn gray
 sand
 30-50%
 Rx
 6-
 8 1/2



7
 3
 orge cl lm
 5-6
 brn hvy lm
 9 1/2
 10 1/2
 H2O
 6

4/5
 orge brn
 hvy lm
 brn red
 lm
 WORSE
 SOUTH
 15-30%
 shale
 10
 HARD BOT

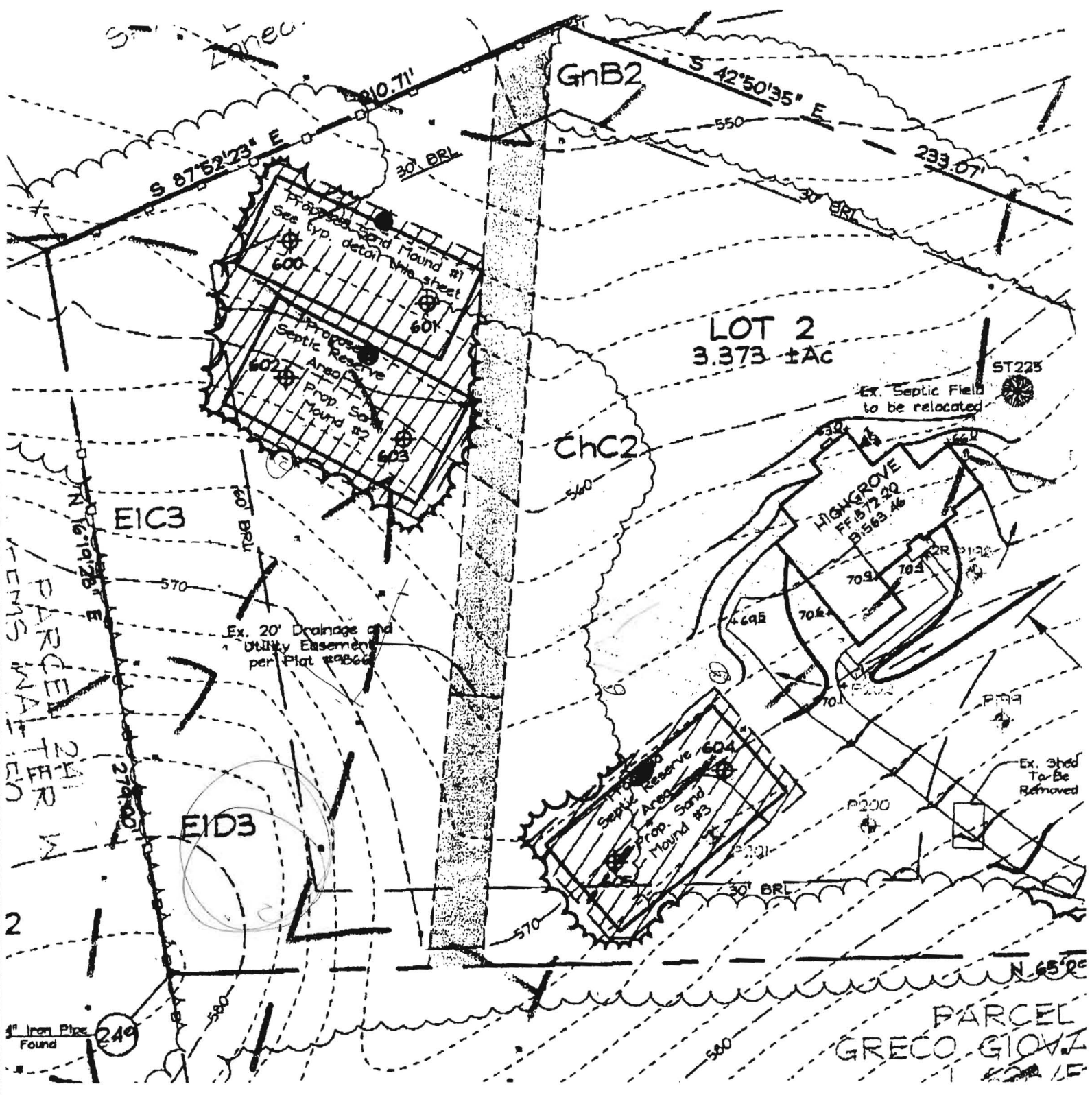
6/9
 topsoil
 16
 orge
 cl lm
 5 1/2
 orge brn
 hvy lm
 7-8
 orge brn
 lm
 WORSE
 UPHILL
 25-45%
 frags

8/10
 orge red
 siallm
 4
 orge red
 hvy lm
 15-20%
 frags
 7 1/2
 8 1/2
 brn tan
 sa lm
 10 1/2
 frags
 10 1/4

| DATE | TEST # | DEPTH | START | BREAK 1" DROP | STOP 2" DROP | TIME OF 2nd INCH | P/F/H |
|---------|-----------|-------------------------------|----------------------|----------------------|----------------------|---------------------|-------|
| 8/10/03 | 1 M V | 7 1/2 10 1/2 | 10:37:05 10:40:00 | 10:37:55 10:41:20 | 10:39:20 10:43:15 | 1:25 1:55 | F |
| | 1B S | 4 10 1/2 | 10:52 | 10:53:00 | 10:59 | 4 | P |
| | 2 S V | 2'6" 8 1/2 | 11:34 | SLOW RAIN | | | F |
| | 3 V | 6 | HARD BOT | | | | F |
| | 4 SH V | 6 1/2 7 1/2 7 1/2 10 | 12:23 1:43 | 12:43 1:53 | 1:13 (1/2") | 30 OK | P |
| | 5 V | 10 | | | | | |
| | 6 V | 10 1/4" = 11 | | | | | |
| | 7 V | 11 | H2O @ 9'9" | | | | M |
| | 8 V | 10 1/2 | | | | | |

10 Sv 6'9" 10 1/4 2:58 3:17 VE
 REMARKS PRELIM S.M. TESTS AT 16" AND 24" OK TO SUPPORT S.M. TESTS
 SANITARIAN M. Ripkin BACKHOE Justin & crew OTHERS _____
 TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____
 TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE SW _____

12/5/03 T/c w/Paul @ FSTH
 (MP) OK to perc 9 S.M. Holes



PARCEL
 GRECO GIOVIZ

January 2, 2004

Mark E. Rifkin, R.S.
Water and Sewerage Program
Howard County Health Department
3525 H Ellicott Mills Drive
Ellicott City, MD 21043

Ref: Twardzik Property, Lot 2, Forsythe Road
Sand mound test on Dec 29, 2003

Dear Mr. Rifkin:

Percolation testing conducted December 29, 2003 on the referenced property indicated unsatisfactory soil conditions. The primary limiting factors are deep clay layers and shallow ground waters.

Because of the poor soil conditions, you advised me to explore some alternate filtration systems. The three types you recommended were incineration devices, filters and aerated systems. After contacting numerous county health departments, Rich Pillick with the Anne Arundel County Health Department recommended a aerated system by Bio-Microbics with a conventional septic field. He has used this system many times with excellent results. I would like to submit the following information for your review. Please note the Bio-Microbics aerated system is extremely effective at processing waste water. A fast system provides an ideal home for large volumes of friendly organisms in the inner aerated media chamber to digest the wastewater and turn it into a clear, odorless, high-quality effluent.

Thank you for all your technical support and steering me in the right direction. You have been very positive in these difficult times.

Sincerely

A handwritten signature in black ink, appearing to be "R. N.", followed by a horizontal line extending to the right.



Home

About us

Contact us

Site map

Bio-Microbics, Inc.
8450 Cole Parkway
Shawnee, KS 66227
Phone: 913.422.0707
800.753.FAST
Fax: 913.422.0808

Home

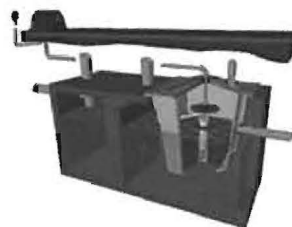
Welcome to Bio-Microbics Online

Bio-Microbics manufactures a unique line of wastewater treatment systems, stormwater treatment equipment, wastewater screening devices and grease interceptors. Bio-Microbics' products have been used successfully for many years in municipal, industrial, marine, commercial and residential applications. > [More Corporate Profile](#)

Featured Products

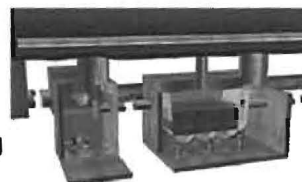
FAST® Wastewater Treatment Systems -

Ideally suited for use in single family dwellings, clustered subdivisions, communities, restaurants, and other high-strength commercial applications. Perfect for package plant and lagoon upgrades as well. Whatever your wastewater treatment application, a versatile FAST wastewater treatment system is ready to serve your needs.



> [More](#)

BioSTORM™ Pre-engineered Stormwater Treatment Systems - designed to remove trash, sediment, oil and other pollutants from stormwater flows. The unique off-line design consists of a patented StormTEE™ self-cleaning deflector screen and a modular separation and coalescing unit, all housed in readily-available precast concrete tanks. > [More](#)



RetroFAST® Septic System Enhancement - Used as an enhancement for conventional septic systems and provide a simple upgrade to renovate biologically-failed systems. > [More](#)

SaniTEE™ self-cleaning wastewater deflection screens (commonly known as septic tank effluent filters) are designed to reduce suspended solids discharged in septic tank effluent by promoting natural sedimentation and excluding gas lifted particles from entering the outlet pipe. > [More](#)

More Products

[FOG Hog™ \(Fat, Oil and Grease\) Interceptors](#)

[NitriFAST® \(second stage wastewater treatment for higher Nitrogen removal\)](#)

[ABC® Specialty Clarifiers \(additional Nitrogen and Phosphorous removal\)](#)

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BIO-MICROBICS

INCORPORATED

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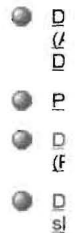
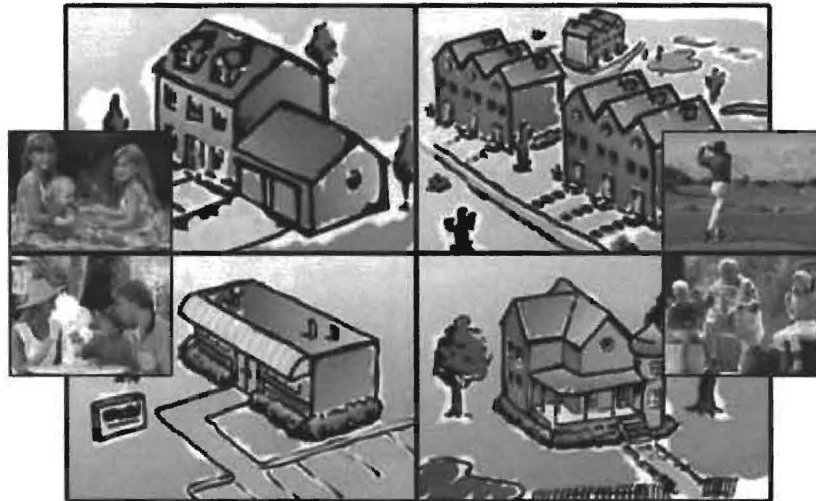
About us

Contact us

Site map

Bio-Microbics, Inc.
8450 Cole Parkway
Shawnee, KS 66227
Phone: 913.422.0707
800.753.FAST
Fax: 913.422.0808

Products > FAST.



FAST® Wastewater Treatment Systems – Ideally suited for use in single family dwellings, clustered subdivisions, high strength commercial applications and renovation of failing conventional septic systems, a versatile FAST® system is ready to serve your needs. Click on the different applications above for more information on the specific products in the FAST family of wastewater treatment systems.

FAST wastewater treatment systems
with **SFR**™

Nothing to disturb your view.

You'll like the view your FAST wastewater treatment system affords - because you can't see it. Everything is tucked neatly underground, except for an unobtrusive blower housing that can be located up to 100 feet away. For years to come you won't notice a thing about your FAST system except how well it's working. And the beautiful view.

The real beauty of this remarkable system is how well it works.

The science behind a FAST wastewater treatment system is environmentally sound and simple. FAST is an acronym for Fixed Activated Sludge Treatment. Here's why this technology is so effective:

A FAST wastewater treatment system is a pre-engineered modular apparatus designed to treat wastewater from residential, commercial, high strength and small community applications.

FAST is a fixed film, aerated system utilizing a combination of attached and suspended growth, capable of nitrification/denitrification in a single tank. This innovative combination includes the stability of fixed film media and the effectiveness of proven activated sludge treatment, making FAST technologically advanced and extraordinarily reliable.

A FAST system provides an ideal home for large volumes of friendly organisms in the inner aerated media chamber to digest the wastewater and turn it into a clear, odorless, high-quality effluent. The attached growth system assures that more organisms remain inside the system instead of being flushed out, even during times of peak hydraulic flows (for example, during large social gatherings or on multiple-wash-load laundry days). During times of low usage, the large volumes of thriving organisms prevent a dying-off of the system, making FAST equally well suited to intermittent use applications.

Sufficient conditions are present which allows nitrification and denitrification to occur in the same tank - without any system modifications. Special patented technology allows FAST to consistently reduce nitrogen levels - including nitrates and all other nitrogen species - by over 70%.

Installation of the lightweight and durable FAST system is easy. It simply mounts into a septic tank. FAST is designed to be efficient, dependable, user-friendly and very easy to install.

Once installed, the FAST system is virtually maintenance free. Tastefully located below ground level, the clean, odorless system blends beautifully into any landscaping design. The only moving part is the quiet aerating blower, placed above ground level in the most convenient location. FAST needs no other filters or pumps.

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[Site map](#)

Bio-Microbics, Inc.
 8450 Cole Parkway
 Shawnee, KS 66227
 Phone: 913.422.0707
 800.753.FAST
 Fax: 913.422.0808

Products > MicroFAST.

Below are links to technical drawings for each MicroFAST® wastewater treatment system. A complete set of drawings has been provided in Autodesk DXF (zipped), AutoCAD DWG (zipped), Adobe PDF formats (coming soon). Anyone interested in dimensions, installation requirements or other technical information may download any of the available drawings free of charge.

| Unit Size | Treatment Capacity | People Served | File Type |
|------------------------|-------------------------|------------------|---|
| MicroFAST® 0.5 | 500 US gallons per day | 1 to 8 people | DWG DXI |
| MicroFAST® 0.75 | 750 US gallons per day | 1 to 8 people | DWG DXI |
| MicroFAST® 0.9 | 900 US gallons per day | 1 to 14 people | DWG DXI |
| MicroFAST® 1.5 | 1500 US gallons per day | 6 to 21 people | DWG DXI |
| MicroFAST® 3.0 | 3000 US gallons per day | 10 to 42 people | DWG DXI |
| MicroFAST® 4.5 | 4500 US gallons per day | 18 to 63 people | DWG DXI |
| MicroFAST® 9.0 | 9000 US gallons per day | 30 to 126 people | DWG DXI |

PLEASE NOTE: In order to open the zipped CAD versions, you must have zip compression software, such as WinZip or QuickZip. In order to view the CAD (.dxf or .dwg) versions, you must have installed CAD viewing software, Release 12 or newer. The PDF format can be viewed by installing Adobe Acrobat Reader (4.0 or newer). Click on the images to the right to download either Adobe's FREE Acrobat Reader or QuickZip.



TP 2 aka "K" 1-12-04

0-10 dark br 1-si mUR
2-3msbk-gran

10-24 reddish br h si'l
1 msbk
mFr

24-43 h si'l mUR

43- 0 cl

Twardzik Lot 2 Old Fred. Rd.

TPI aka "J"

1-12-04

~~0-10~~

~~mvfr~~

~~1~~

~~15% cl~~

~~3 msbk~~

~~strong brown~~

10-16

orange br

h 1

1-2 msbk

mvfr

16-23

sil

22-25% cl

mvfr

1 msbk

reddish br

23-40

sil - cl

1 msbk

reddish br

40-

yellow br

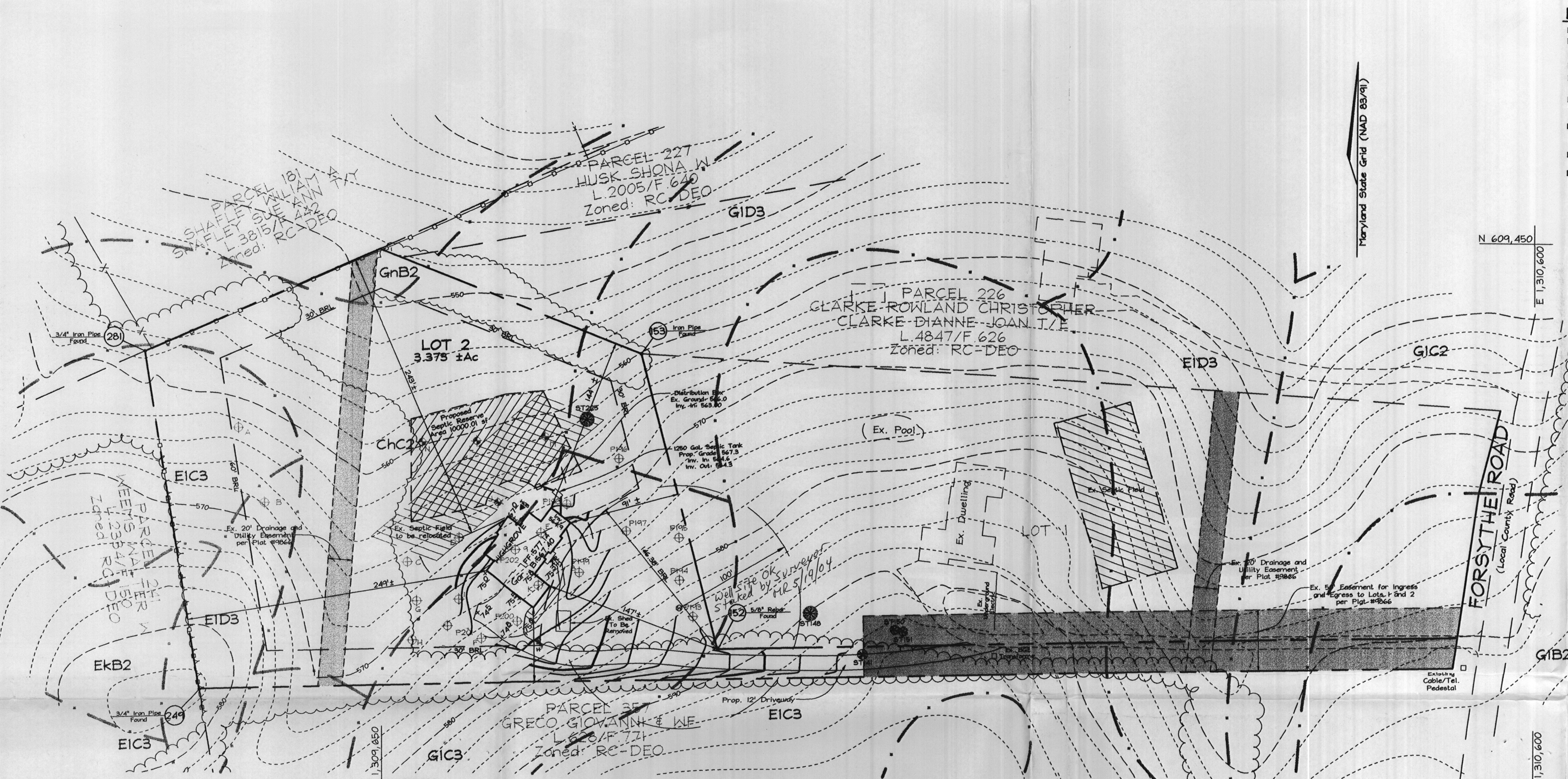
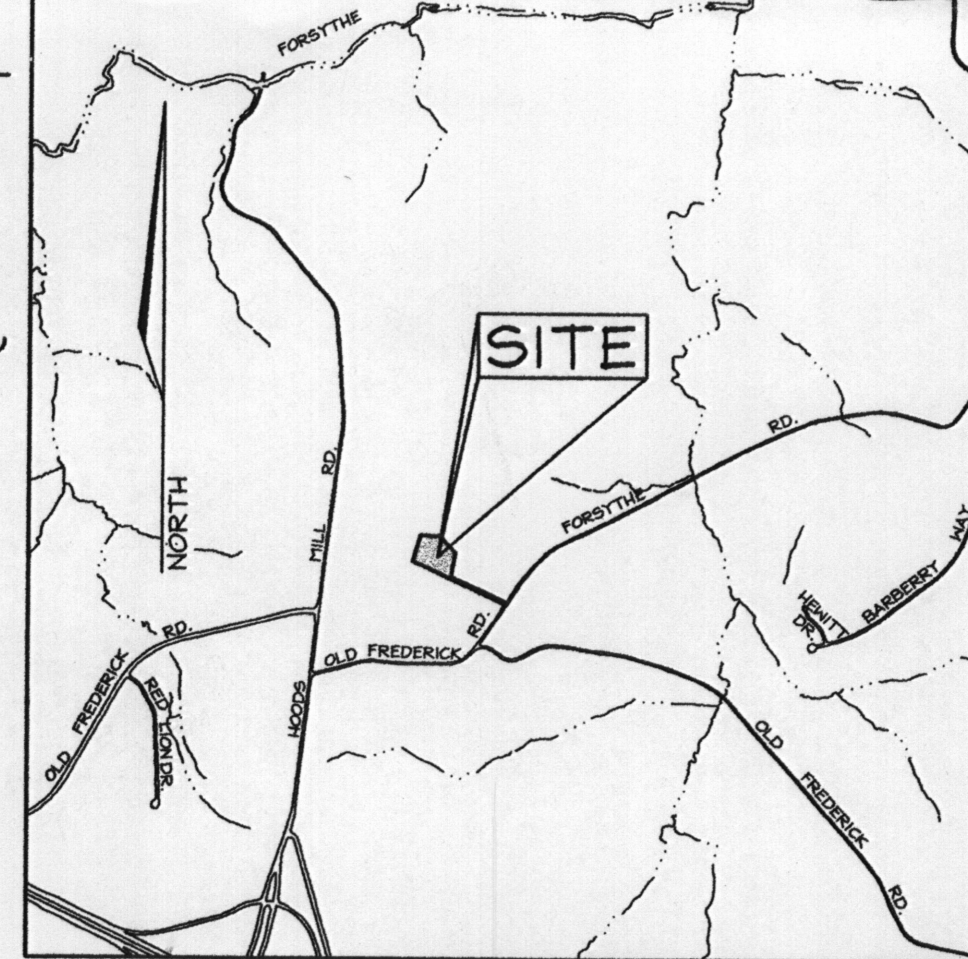
sil

o structure

mvfr

LEGEND

| | |
|-----------------------------|---------------|
| Existing Contour | --- |
| Proposed Contour | --- |
| Existing Spot Elevation | 302.3 |
| Proposed Spot Elevation | +8253 |
| Direction of Flow | → |
| Existing Trees to Remain | (Tree symbol) |
| Walk Out Basement | ▽ |
| Existing Perc Test (Passed) | PI97 |
| Existing Perc Test (Failed) | PI17 |



SOILS LEGEND

| SYMBOL | NAME / DESCRIPTION | SOIL GROUP |
|--------|---|------------|
| ChB2 | Chester silt loam, 3 to 8 percent slopes, moderately eroded | B |
| GIC2 | Chester silt loam, 8 to 15 percent slopes, moderately eroded | B |
| EKB2 | Eliok silt loam, 3 to 8 percent slopes, moderately eroded | B |
| EIC3 | Eliok silty clay loam, 8 to 15 percent slopes, severely eroded | B |
| EID3 | Eliok silty clay loam, 15 to 25 percent slopes, severely eroded | B |
| GIB2 | Glenelg loam, 3 to 8 percent slopes, moderately eroded | B |
| GIC2 | Glenelg loam, 8 to 15 percent slopes, moderately eroded | B |
| GIC3 | Glenelg loam, 8 to 15 percent slopes, severely eroded | B |
| GID3 | Glenelg loam, 15 to 25 percent slopes, severely eroded | B |
| GnB2 | Glenville silt loam, 3 to 8 percent slopes, moderately eroded | C |

- GENERAL NOTES**
- Reference: Plat #9866
 - Private water and sewer will be used within this site.
 - Contractor to confirm all dimension, utilities and topography in the field. If any conflicts arise, contact Engineer before beginning any work.
 - Subject property zoned "RC-DEO".
 - Total area of property: 3.373 Ac.±
 - This area designates a private sewage reserve area of at least 10,000 square feet as required by the Maryland State Department of the Environment for individual sewage disposal (COMAR 26.04.03). Improvements of any nature in this area are restricted until public sewage is available. This reserve area shall become null and void upon connection to a public sewage system. The County Health Officer shall have the authority to grant adjustments to the private sewage reserve area. Recordation of a modified sewage reserve area shall not be necessary.
 - The lot hereon complies with the minimum ownership width and lot area as required by the Maryland State Department of the Environment.
 - All wells and septic fields within 100' of property's boundary have been shown where pertinent.
 - The septic fields are located on soil types ChC2, GIC3 and GID3 as per the Soil Survey of Howard County.
 - On-site Topography based on a Field Run Topographic Survey prepared by C.B. Miller & Associates on October 2003 with two foot contours. Off-site Topography based on Howard County 1993 Aerial Topographic Surveys with five foot contours.
 - The purpose of this plan is to revise the shape of the existing septic easement.

PERC. CHART

| Number | Elevation |
|--------|-----------|
| A | 563.22 |
| B | 567.50 |
| C | 566.50 |
| D | 567.36 |
| E | 570.11 |
| F | 575.15 |
| G | 569.04 |
| H | 571.03 |
| I | 571.27 |
| J | 566.04 |
| K | 573.32 |
| L | 560.79 |
| M | 562.00 |
| N | 559.91 |
| PI93 | 585.02 |
| PI94 | 581.12 |
| PI95 | 577.00 |
| PI96 | 566.47 |
| PI97 | 572.79 |
| PI98 | 568.61 |
| PI99 | 575.12 |
| P200 | 575.21 |
| P201 | 572.24 |
| P202 | 570.25 |

OWNER/DEVELOPER
Richard H. Nunn
1815 Boka Valley Court
Woodbine, Maryland 21797

PERCOLATION CERTIFICATION PLAN
Signed **TWARDZIK PROPERTY**
LOT 2 PC 519063
TAX MAP 8 GRID 12 LOT 2
4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

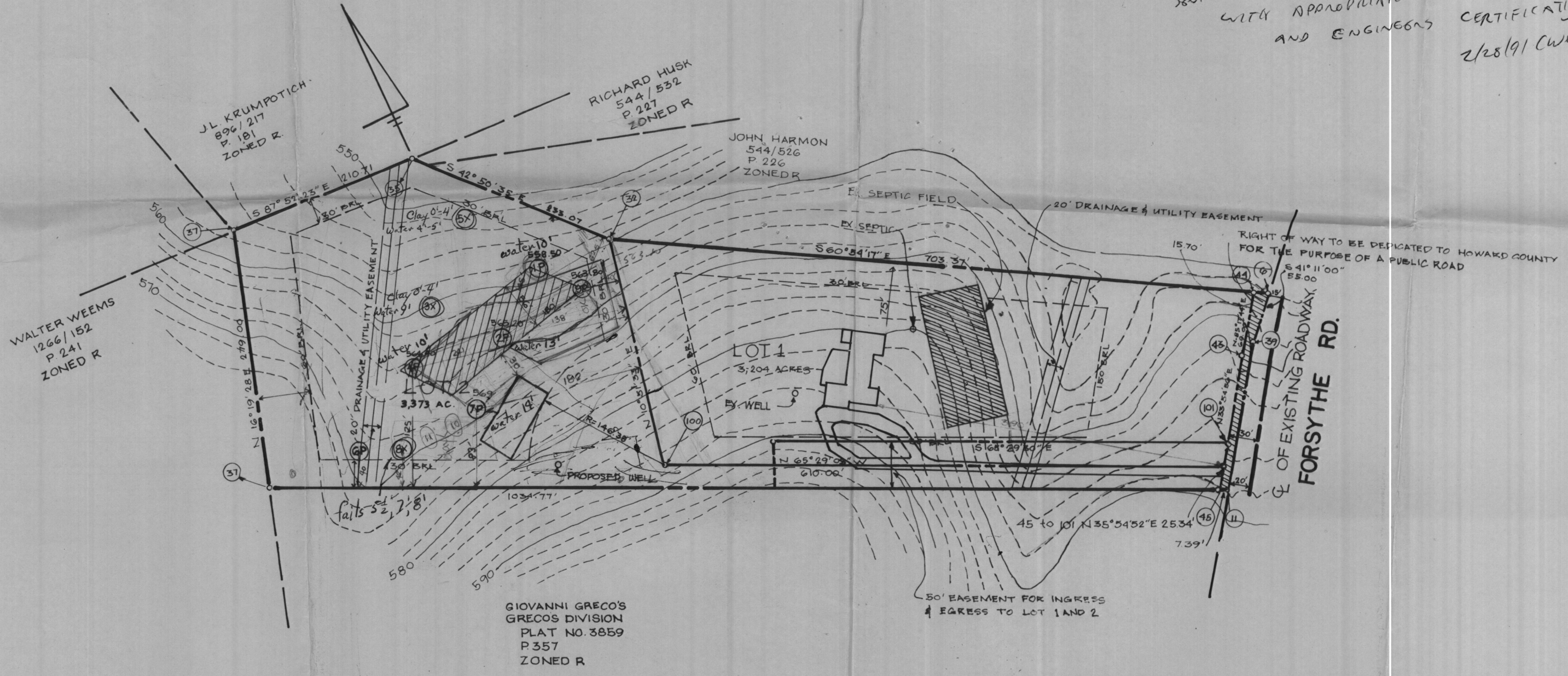
FSH Associates
Engineers Planners Surveyors
8318 Forrest Street, Elkton City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com

DESIGN BY: KO
DRAWN BY: KO
CHECKED BY: ZYF
SCALE: As Shown
DATE: April 30, 2004
W.O. No.: 3212
SHEET No.: 1 OF 1

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS IN ACCORDANCE WITH THE MASTER PLAN OF HOWARD COUNTY
Richard H. Nunn
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
5-11-04
DATE

LEGEND:

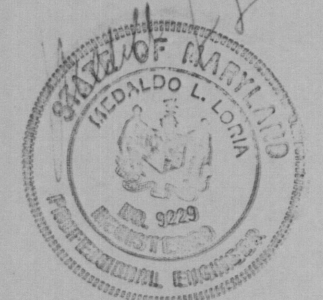
- (IP) PASSED HOLE
- (SX) FAILED HOLE
- [Hatched Box] SEPTIC FIELD



OK IN PRINCIPLE PG. C.B.S.
 SENT LETTER REQUESTING SIGNATURE COPY
 WITH APPROPRIATE ~~NOTES~~ NOTES
 AND ENGINEER'S CERTIFICATION
 2/28/91 CWL

3-14-91
 orig of Howard Co.
 sent for signature
 as chg'd F.

FILED SI MAR 5 1991
 HOWARD COUNTY
 RECEIVED



Loria engineering inc.
 Consulting Engineers • Land Planners • Surveyors
 3230 Bethany Lane, Suite 4, Ellicott City, Maryland
 301-465-0400

TWARDZIK PROPERTY
LOTS 1 & 2
 PERCOLATION TEST HOLES
 F-90-144