

Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

Main: 410-313-2640 | Fax: 410-313-2648

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www.hchealth.org

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Maura J. Rossman, M.D., Health Officer

October 7, 2016

Scott Shanaberger, Shanaberger & Lane, Applicant
home@shanlane.com

RE: Percolation Test Results, Allnut Farms Estates, Section 4, Lot 21, A559759

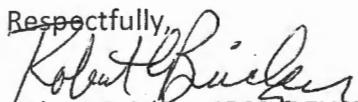
Dear Mr. Shanaberger,

Percolation testing was conducted on October 5, 2016 on Lot 21 in the Allnut Farms Estates, Section 4 subdivision for the purpose of establishing a private sewage disposal area (SDA) to serve the lot. Lot 21 was initially recorded in 1977 on Plat 3890, Sheet 2 of 3 and indicated thereon as "Not buildable until approved by Howard Co. Health Officer". The lot is subject to the requirement of having a 10,000 sq.ft. private sewage area to be considered buildable.

Percolation tests pits were dug at five staked locations (1 thru 5) within a proposed private sewage area. Test locations 1, 2, and 3 PASS with percolation rates of 3 to 5 minutes per inch generally below 3.4 to 4.3 feet depth. The usable soil profiles at locations 4 and 5 were truncated by apparent water table at 6 feet depth at location 4, and by rock greater than 50 percent at 6 feet depth at location 5. Percolation tests at locations 4 and 5 were conducted at 2 feet depth. Very little to no infiltration was observed during prewet periods of 60 minutes and 30 minutes at locations 4 and 5, respectively; locations 4 and 5 FAIL. Only about 6400 sq.ft. of the proposed private sewage area is represented by test locations 1, 2 and 3.

If you have questions related to this inquiry, you may reply to me via email, rbricker@howardcountymd.gov, or call my desk, 410-313-2691.

Respectfully,

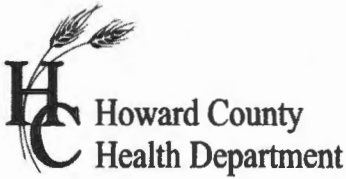

Robert Bricker, CPSS, REHS/R.S.

Environmental Sanitarian II

Well and Septic Program, Bureau of Environmental Health

Enclosures (2): Percolation Test Field Worksheets

Copy: Robert and Sharon Dass, owners
File



APPLICATION

FOR PERCOLATION TESTING AND SITE EVALUATION

TEST DATE(S) _____ TEST TIME _____

QIP 559759

AGENCY REVIEW: _____

DATE 9-9-16

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 UNKNOWN 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) ROBERT D. DASS & SHARON E. DASS

DAYTIME PHONE 410-979-0551 CELL _____ FAX _____

MAILING ADDRESS 13406 ARLWITT LANE HIGHLAND MD 20777
STREET CITY/TOWN STATE ZIP

APPLICANT G. SCOTT SHANABERGER

DAYTIME PHONE 410-461-0563 CELL _____ FAX 410-461-0693

MAILING ADDRESS SHANABERGER & LANE, 9526 TOWN & COUNTRY BLVD, SUB. 201, ELICOTT CITY, MD 21043
STREET CITY/TOWN STATE ZIP

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

PROPERTY LOCATION
SUBDIVISION/PROPERTY NAME LOT 21, ARLWITT FARMS ESTATES, SEC. 4 LOT NO. _____

PROPERTY ADDRESS ARLWITT LANE HIGHLAND, MD, 20777
STREET TOWN/POST OFFICE

TAX MAP PAGE(S) 34 GRID 15 PARCEL(S) 375 PROPOSED LOT SIZE 40,005 SQ. FT.

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.

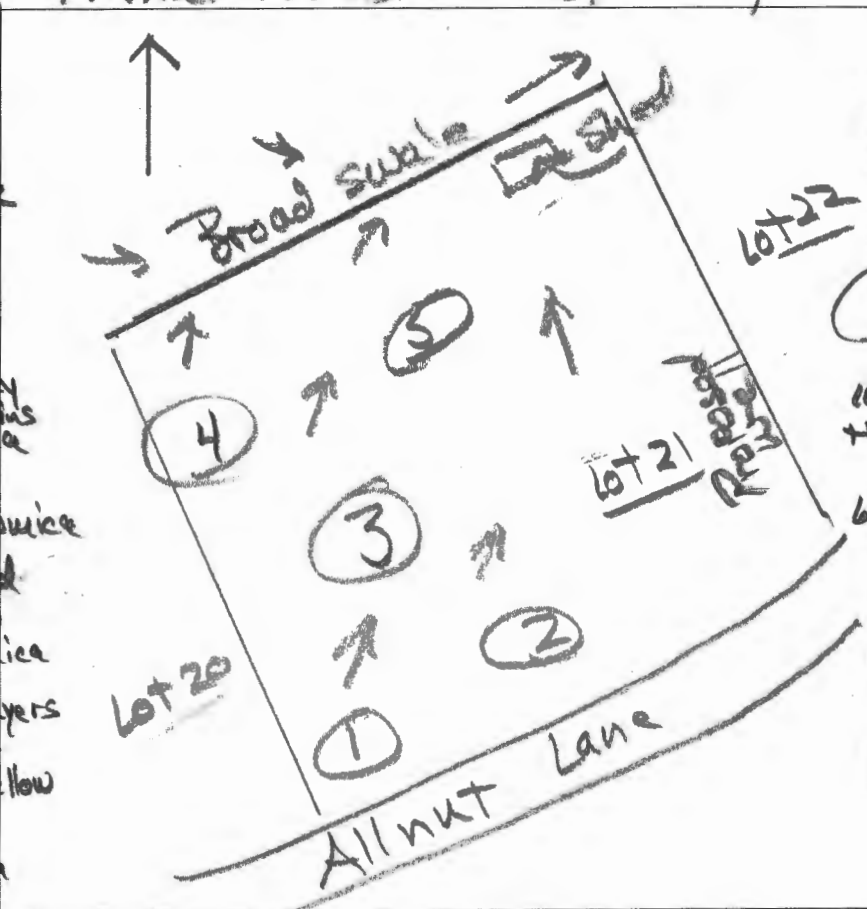
TEST RESULTS WILL BE MAILED TO APPLICANT.

G. Scott Shanaberger
SIGNATURE OF APPLICANT

HOWARD COUNTY HEALTH DEPARTMENT, BUREAU OF ENVIRONMENTAL HEALTH, WELL AND SEPTIC PROGRAM
7178 COLUMBIA GATEWAY DRIVE COLUMBIA, MARYLAND 21046 (410) 313-2640 FAX (410) 313-2648
TDD (410) 313-2323 TOLL FREE 1-877-4MD-DHMH

Allnut Farms Estates, Sect 4, Lot 21

AP 0559759



(2)
 dk brns l
 2' 8" sbk
 0.8' brns sl, 2' sbk
 6.5' yel-red & brn
 l, 2' sbk
 2.2' yel-red & brn
 l, 2' sbk, clay
 skins, few mica
 3' red l, thin
 clay skins, mica
 4.3' brn & yel-red
 sl, thick platy
 many fine mica
 Alternate layers
 pale red-yel
 & pale brn & yellow
 ls, thick platy
 many f. mica
 yel-red & brn sl
 thick platy
 many f. mica
 pale red-yel
 pale brn & yellow
 ls, thick platy
 many f. mica
 2.3' red-yel ls
 thick platy
 many f. mica
 9' pale red-yel
 & pale-brn ls
 12.7'

(1)
 dk brns l
 2' 8" sbk to 2' sbk
 0.4' brn l, 2' cpr
 few mica
 2.4' yel-red sl
 thick platy
 many mica
 (34) alternating
 layers
 10'-6" pale yel-yel
 & pale brn ls
 thick
 to
 6'-8" yel-red sl
 thick thick platy
 many f. mica
 9' pale red-yel
 & pale brn ls
 thick platy
 many f. mica
 12'
 (3)
 dk brn l, 2' 8" sbk
 0.1' brn l, 2' 8" sbk
 0.5' red-brn cl
 3' msbk, few
 mica
 2.2' yel-red sl
 thick platy
 common f. mica
 (4) pale red-yel
 ls, thin platy
 w/ thin dk. brn
 layers
 thick platy
 many f. mica
 9.5' pale brn,
 white & dk. brn
 ls, thick platy
 c.p. (yel-red)
 moist, many
 f. mica
 11.5' water f. mica

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
10/5/16	2	4.2' 12.7'	10:31	10:36	11:01	25	rsbk
10/5/16	2	5' 12.7'	11:17	11:21	11:26	5	P
10/5/16	1	3.7' 12'	11:03	11:05	11:08	3	P
10/5/16	3	5.1' 9.5'	11:33	11:35	11:38	3	P
10/5/16	4	2.2' 6'	12:30	1:30 ⁺			F
10/5/16	5	2' 6'	12:44	1:14 ⁺	no movement		F

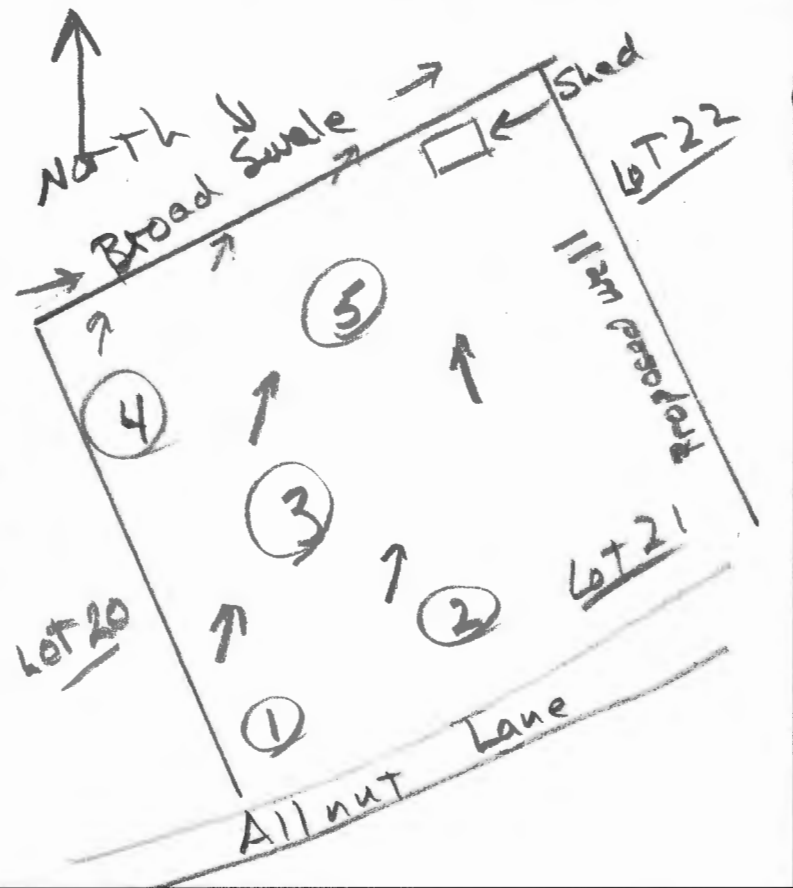
REMARKS _____
 SANITARIAN R. Bricker BACKHOE Bill Ingram OTHERS Robert Dass
 TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____
 TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE SW _____

Allnutt Farms Estates, Sect. 4, Lot 21

55 9759

5

④
 0.2' dk. brn L
 2 v. f. sbk to 2 f. sbk
 1.7' brn L, 2 msbk
 red-yel sl
 thick platy
 many p. mica
 moist
 3' yel-red, dk brn
 and lt. yel-brn
 fsl, many p. mica
 thick platy
 6' very pale brn
 & pale red-yel
 ls, few thin
 dark brn layers
 between plates
 thin platy
 saturated
 7' grey, yel-red
 & lt. yel-brn
 sl, thick platy
 many mica
 water seeps
 8'



0.8' dk brn L
 2 v. f. sbk to 1 f. sbk
 red-yellow
 L, 3 msbk (2 apr)
 ss, clay skins
 1.9' red-yellow
 & lt. yel-brn
 L, 2 msbk
 ss, few mica
 few stones
 3' yel-red
 & lt. yel-brn
 sl, thick platy
 common mica
 5% - 10% stone
 4' yellow ls
 thin platy
 many mica
 4.7' red & v. dk. brn
 ls, thin platy
 many mica
 stone increases
 6' yellow, dk. brn
 & lt. yel-brn
 v. st. ls.
 55% - 60%+
 quartzite
 fragments
 water seeps
 8' grey, dk brn
 & lt. yel-brn
 sl, thick platy
 many mica
 water seeps
 9.5'

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
10/5/16	4	2.2'	12:30	1:30			F
10/5/16	5	2.6'	12:44	1:14	no movement		F

REMARKS _____

SANITARIAN R Bricker BACKHOE Bill Ingram OTHERS _____

TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____

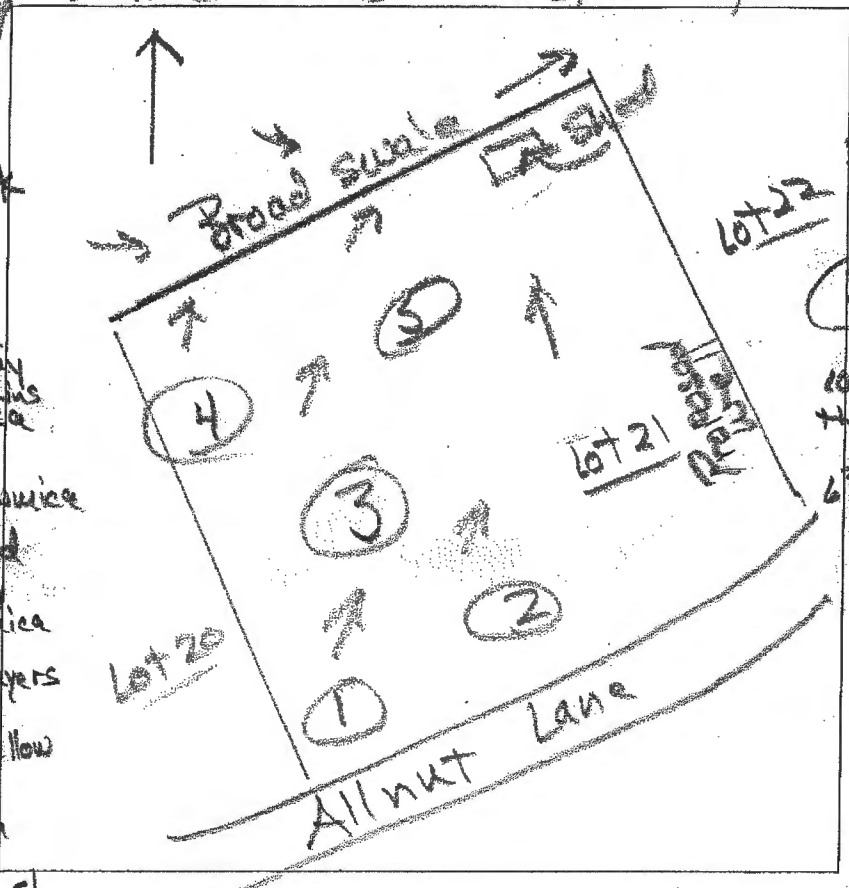
TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE SW _____

Allnut Farms Estates, Sect 4, Lot 21

①

0.559759

②



0.8' dk brns l
2' vsbk

brns l, 2' vsbk

0.8' yel-red & brn
l, 2' vsbk

1.5' yel-red & brn
2' vsbk, con
few skins

2.2' red l, thin
chry skins, mica

3' brn & yel-red
sl thick platy
many fine mica

4.3' alternate layers
pale red-yel
& pale brn & yellow
ls, thick platy
many f. mica

0.4' dk brns l
2' vsbk to 2' vsbk

2.4' brn l, 2' vsbk
few mica

3.4' yel-red sl
thick platy
many mica

alternating
layers

10'-6" pale yel-yel
& pale brn ls
thick

6'-8" yel-red sl
thick thick platy
many mica

9' pale red-yel
& pale brn ls
thick platy
many mica

3

0.1' dk brn l, 2' vsbk

0.5' brn l, 2' vsbk

2.2' red-brn cl
2' vsbk, mica

4.4' yel-red sl
thick platy
common mica

5' pale red-yel
ls, thin platy
w/ thin dk. brn
layers
thick platy
many mica

9.5' pale brn,
white & dk. brn
ls, thick platy
cap (yel-red)
moist, many
water f. mica

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
10/5/16	2	4.2' 17.7'	10:31	10:36	11:01	25	Rsl
10/5/16	2	5' 27'	11:17	11:21	11:26	5	P
10/5/16	1	3.7' 12'	11:03	11:05	11:08	3	P
10/5/16	3	5.1' 45'	11:33	11:35	11:38	3	P
10/5/16	4	2.2' 6'	12:30	1:30 ⁺			F
10/5/16	5	2' 6'	12:44	1:14 ⁺	no movement		F

REMARKS _____

SANITARIAN R. Bricker BACK-HOE Bill Ingram OTHERS Robert Doss

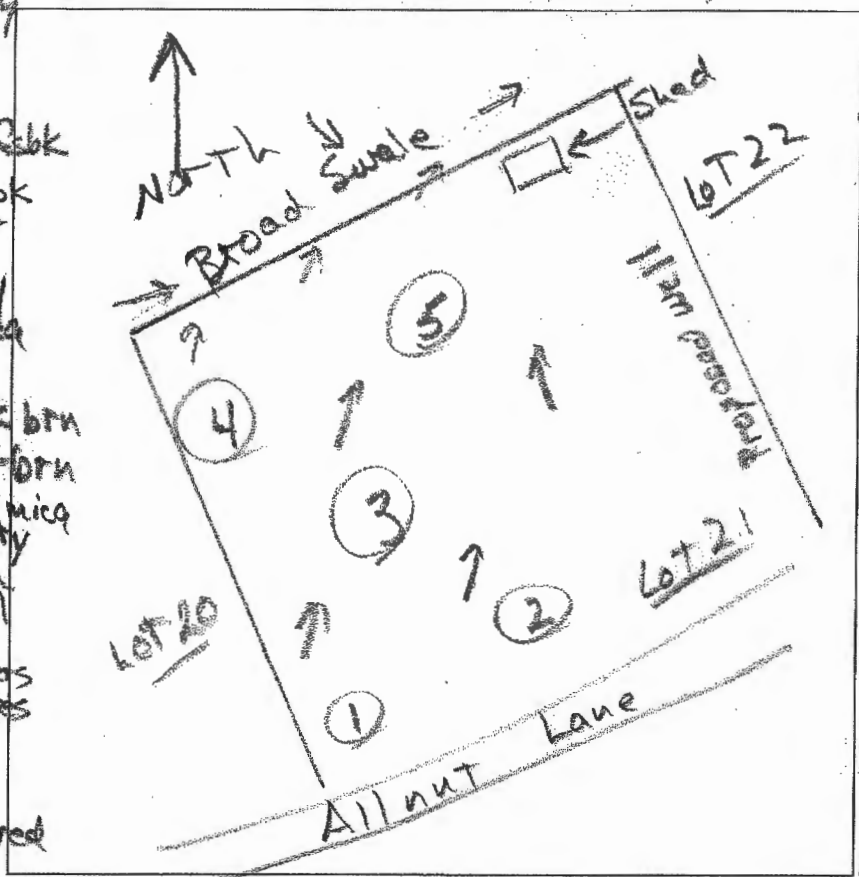
TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____

TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE S/W _____

Allnutt Farms Estates, Sect. 4, Lot 21

55-9759

④
 0.2' dk. brn L
 2 v. sbk to 2 sbk
 1.7' brn L, 2 msbk
 red-yel sl
 thick platy
 many mica
 moist
 3' yel-red, dk brn
 and lt. yel-brn
 sl, many mica
 thick platy
 6' very pale brn
 & pale red-yel
 ls. few thin
 dark brn layers
 between plates
 thin platy
 saturated
 7' grey, yel-red
 & lt. yel-brn
 sl, thick platy
 many mica
 water seeps
 8'



⑤
 0.8' dk brn L
 2 v. sbk to 1 sbk
 red-yellow
 L, 3 msbk (sepr)
 ss, clay skins
 1.9' red-yellow
 & lt. yel-brn
 L, 2 msbk
 3' ss, few mica
 few stones
 yel-red
 & lt. yel-brn
 sl thick platy
 common mica
 5% - 10% stone
 4' yellow ls
 thin platy
 many mica
 4.7' red & v. dk. brn
 ls, thin platy
 many mica
 stone increases
 6' yellow, dk. brn
 & lt. yel-brn
 v. sl.
 55% - 60%
 quartzite
 fragments
 water seeps
 8' grey, dk brn
 & lt. yel-brn
 sl thick platy
 many mica
 water seeps
 2.5'

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
10/5/16	4	2.2'	12:30	1:30	—	—	F
10/5/16	5	2.1'	12:44	1:14	no movement	—	F

REMARKS _____
 SANITARIAN R Bricker BACKHOE Bill Ingram OTHERS _____
 TEST HOLES USED IN SDA _____ AVG. PERC TIME _____ SQ. FT/BR _____
 TRENCH WIDTH _____ INLET DEPTH _____ MAX. BOT DEPTH _____ EFFECTIVE SW _____



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Maura J. Rqssman, M.D., Health Officer

SEWAGE DISPOSAL SYSTEM SPECIFICATIONS WORKSHEET

Address: 13492 Allnut Lane

Subdivision: Allnut Farms Estates Lot: 21

Initial system: Application rate: 1.2 Effective area beginning depth: 4 Bottom maximum depth: 8
1st Replacement: Application rate: 1.2 Effective area beginning depth: 4 Bottom maximum depth: 5.5
2nd Replacement: Application rate: Alt. Effective area beginning depth: - Bottom maximum depth: 2 to 3'

Design Flow = 150 gallons per day per bedroom

Design flow + application rate = square footage of drainfield required

Linear length of trench required = drainfield square footage x sidewall reduction percentage + trench width

Sidewall reduction credit formula:

(W+2)/(W+1+2D) x 100 = Percent of length of standard trench where W=trench width and D= depth between effective area beginning depth and trench bottom.

Standard design requirements:

- All trenches must be equal length unless low pressure dosed
All trenches must be on contour
Minimum trench spacing: 10' for all trenches utilizing sidewall reduction credit. Additional spacing may be necessary for any trench using over 3.5' of effective sidewall. In those cases, the spacing formula is 2D +W up to a maximum spacing of 18'.
Minimum trench spacing for trenches with no sidewall credit (bottom area only) is 6' for a 2' wide trench and 9' for a 3' wide trench (spacing is measured edge to edge)
Maximum trench length is 100'
Maximum pipe depth is 4'

Additional requirements:

BAT & Pump Chamber

Approved: R Bricker

Date: 12/1/2016

NOTES:

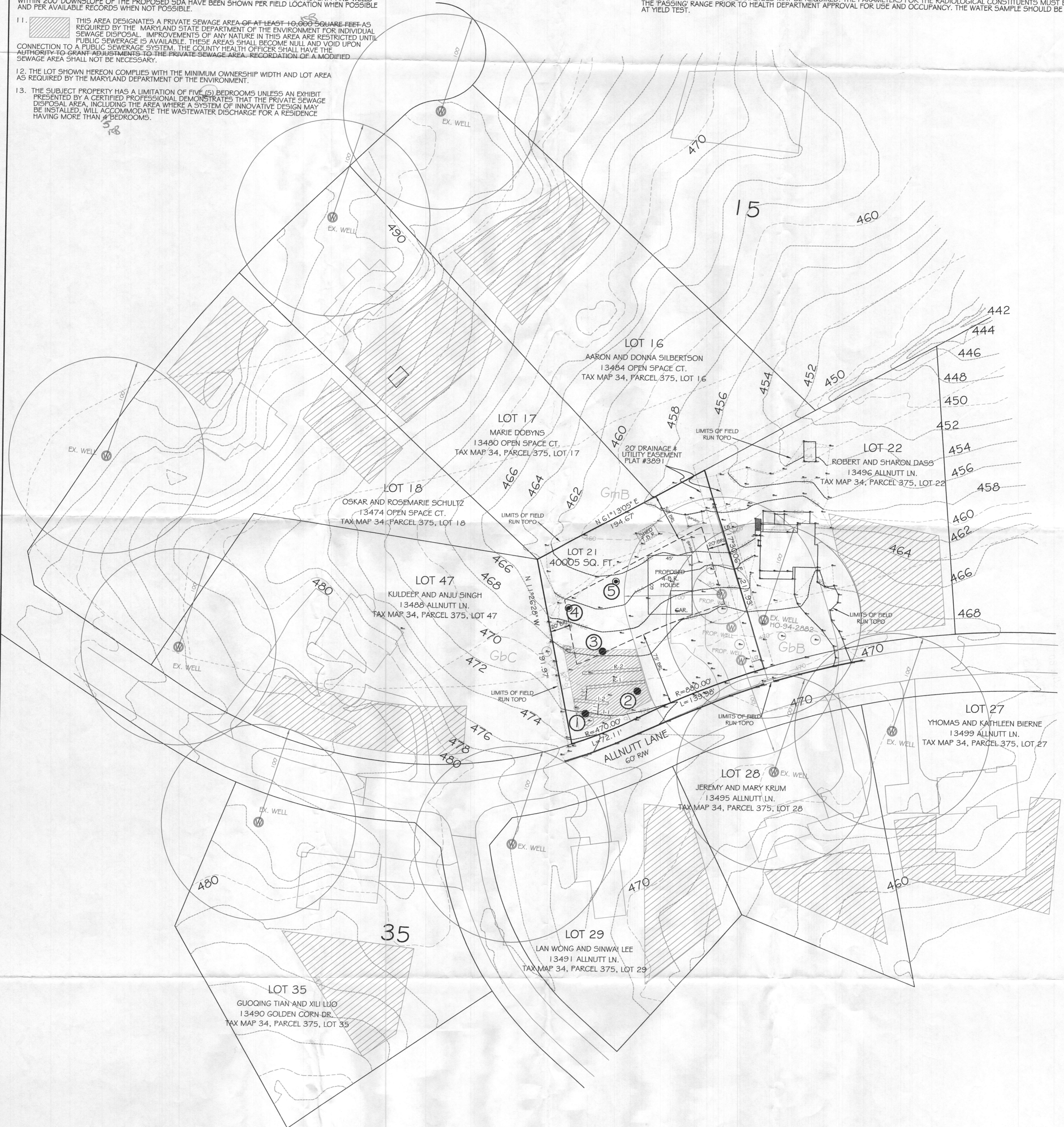
- THE PURPOSE OF THIS PLAT IS TO OBTAIN APPROVAL FOR A PRIVATE SEWAGE AREA TO SERVE LOT 21, ALLNUTT FARMS ESTATES.
- TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY SHANABERGER & LANE IN MARCH, 2017 WITHIN THE LIMITS SHOWN. OTHER TOPOGRAPHY IS FROM 2013 HOWARD COUNTY LIDAR.
- ONSITE IMPROVEMENTS WITHIN THE LIMITS OF FIELD RUN TOPOGRAPHY WERE LOCATED BY SHANABERGER & LANE IN MAY, 2016. OTHER IMPROVEMENTS SHOWN ARE FROM 2013 HOWARD COUNTY LIDAR.
- EXISTING WELL AND SEPTIC SYSTEM LOCATIONS SHOWN HEREON ARE FROM AVAILABLE HOWARD COUNTY HEALTH DEPARTMENT RECORDS, AND FIELD LOCATION.
- DESIGNATES PROPOSED PRIVATE SEWAGE AREA
 - PROPOSED WELL
 - EXISTING WELL
 - EXISTING PRIVATE SEWAGE AREA
 - SOIL TYPE BOUNDARY
 - WOODSLINES AND TREES
 - SUCCESSFUL PERC TEST OCTOBER 5, 2016
 - FAILED PERC TEST OCTOBER 5, 2016
 - LIMITS OF FIELD-RUN TOPOGRAPHY
- SOIL TYPES PER N.R.C.S WEB SOIL SURVEY:
 - GpB—Gladstone loam, 3 to 8 percent slopes
 - GpC—Gladstone loam, 8 to 15 percent slopes
 - GmB—Glenville silt loam, 3 to 8 percent slopes
- BOUNDARY LINES SHOWN HEREON ARE FROM HOWARD COUNTY TAX MAP INFORMATION AND FROM DEEDS OR PLATS OF RECORD. THEY DO NOT REPRESENT A BOUNDARY SURVEY. BEARINGS AND DISTANCES SHOWN ARE FROM DEEDS OR PLATS OF RECORD AND DO NOT REPRESENT A BOUNDARY SURVEY BY SHANABERGER & LANE.
- ANY CHANGE TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- ALL KNOWN EXISTING WELLS AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND WELLS WITHIN 200' DOWNSLOPE OF THE PROPOSED SDA HAVE BEEN SHOWN PER FIELD LOCATION WHEN POSSIBLE AND PER AVAILABLE RECORDS WHEN NOT POSSIBLE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- THE SUBJECT PROPERTY HAS A LIMITATION OF FIVE (5) BEDROOMS UNLESS AN EXHIBIT PRESENTED BY A CERTIFIED PROFESSIONAL DEMONSTRATES THAT THE PRIVATE SEWAGE DISPOSAL AREA, INCLUDING THE AREA WHERE A SYSTEM OF INNOVATIVE DESIGN MAY BE INSTALLED, WILL ACCOMMODATE THE WASTEWATER DISCHARGE FOR A RESIDENCE HAVING MORE THAN 5 BEDROOMS.

SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

- | | |
|---|--|
| <p>INITIAL SYSTEM:</p> <ul style="list-style-type: none"> - APPLICATION RATE: 1.2 - EFFECTIVE AREA BEGINNING DEPTH: 4' - BOTTOM MAXIMUM DEPTH: 8' | <p>REPLACEMENT SYSTEM #1:</p> <ul style="list-style-type: none"> - APPLICATION RATE: 1.2 - EFFECTIVE AREA BEGINNING DEPTH: 4' - BOTTOM MAXIMUM DEPTH: 5.5' |
|---|--|
-
- | | |
|---|---|
| <p>1. DESIGN FLOW:</p> <ul style="list-style-type: none"> - 4 BEDROOMS AT 150 GPD - 4X150 GPD = 600 GPD | <p>1. DESIGN FLOW:</p> <ul style="list-style-type: none"> - 4 BEDROOMS AT 150 GPD - 4X150 GPD = 600 GPD |
| <p>2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:</p> <ul style="list-style-type: none"> - DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF | <p>2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:</p> <ul style="list-style-type: none"> - DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF |
| <p>3. SIDEWALL REDUCTION CREDIT:</p> <ul style="list-style-type: none"> - TRENCH WIDTH (W) = 3' - TRENCH EFFECTIVE DEPTH (D) = 4' - $(W+2) / (W+1+2D) \times 100 = 41.67\%$ | <p>3. SIDEWALL REDUCTION CREDIT:</p> <ul style="list-style-type: none"> - TRENCH WIDTH (W) = 3' - TRENCH EFFECTIVE DEPTH (D) = 1.5' - $(W+2) / (W+1+2D) \times 100 = 71.43\%$ |
| <p>4. LINEAR LENGTH OF TRENCH REQUIRED:</p> <ul style="list-style-type: none"> - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (41.67%) / TRENCH WIDTH (3) = 70' | <p>4. LINEAR LENGTH OF TRENCH REQUIRED:</p> <ul style="list-style-type: none"> - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (71.43%) / TRENCH WIDTH (3) = 120' |
| <p>5. LINEAR LENGTH OF TRENCH PROVIDED = 70'</p> <ul style="list-style-type: none"> - TWO TRENCHES 35 LF/EACH | <p>5. LINEAR LENGTH OF TRENCH PROVIDED = 120'</p> <ul style="list-style-type: none"> - TWO TRENCHES 60 LF/EACH |
| <p>6. EXISTING GRADE: TRENCH 1: 472.1
TRENCH 2: 471.3
TRENCH 11: 468.1
TRENCH 12: 467.3</p> | <p>6. EXISTING GRADE: TRENCH R1: 470.1
TRENCH R2: 469.0
TRENCH R1: 466.1
TRENCH R2: 465.0</p> |
| <p>7. INVERT:</p> | <p>7. INVERT:</p> |

NOTES (cont.):

- AN ADVANCED PRE-TREATMENT SYSTEM MUST BE INSTALLED ON THE SEPTIC SYSTEM LOCATED ON (ALLNUTT FARMS ESTATES) LOT 21 AS THE APPROVABLE SEWAGE DISPOSAL AREA WILL ACCOMMODATE ONLY TWO DRAINFIELD SYSTEMS. A SUPPLEMENTAL SITE PLAN WITH ALL OF THE NECESSARY DETAILS FOR INSTALLATION OF THE SEPTIC SYSTEM WILL BE REQUIRED PRIOR TO THE RELEASE OF THE BUILDING PERMIT. IN ADDITION, AN OPERATION AND MAINTENANCE CONTRACT AGREEMENT FOR THE ADVANCED PRE-TREATMENT UNIT MUST BE FILED WITH HOWARD COUNTY LAND RECORDS PRIOR TO RELEASE OF THE SEPTIC SYSTEM INSTALLATION PERMIT.
- THE WELL SHALL BE DRILLED PRIOR TO HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT. IT IS THE DEVELOPER'S RESPONSIBILITY TO HOLD UP HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING SCHEDULES THE WELL DRILLING PRIOR TO BUILDING PERMIT SUBMITTAL.
- A WATER SAMPLE MUST BE OBTAINED AND THE SAMPLE SUBMITTED FOR ANALYSES OF RADIUM AND/OR ALPHA (PARTICLES) AND BETA (PARTICLES) PRIOR TO BUILDING PERMIT APPROVAL BY THE HEALTH DEPARTMENT. DEPENDING ON RESULTS OF THESE ANALYSES, TREATMENT AND ADDITIONAL ANALYSES MAY BE REQUIRED. THE PARAMETERS FOR THE RADIOLOGICAL CONSTITUENTS MUST BE IN THE PASSING RANGE PRIOR TO HEALTH DEPARTMENT APPROVAL FOR USE AND OCCUPANCY. THE WATER SAMPLE SHOULD BE OBTAINED AT YIELD TEST.



SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 201
 ELLICOTT CITY, MD 21043
 (410) 461-9563
 (410) 461-9693 fax
 home@shanlane.com

I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON REFLECTS WORK DONE BY ME OR UNDER MY DIRECT SUPERVISION USING AVAILABLE PUBLIC AND PRIVATE INFORMATION AND IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF.

G. Scott Shanaberger
 G. SCOTT SHANABERGER
 PROFESSIONAL LAND SURVEYOR #10848
 LICENSE EXPIRATION DATE 4/2/2018

DATE: 8/16/2017

APPROVED:
 FOR PRIVATE WATER AND SEWERAGE SYSTEMS




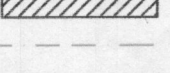

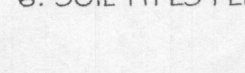

Margaret M. Murrain
 COUNTY HEALTH OFFICER

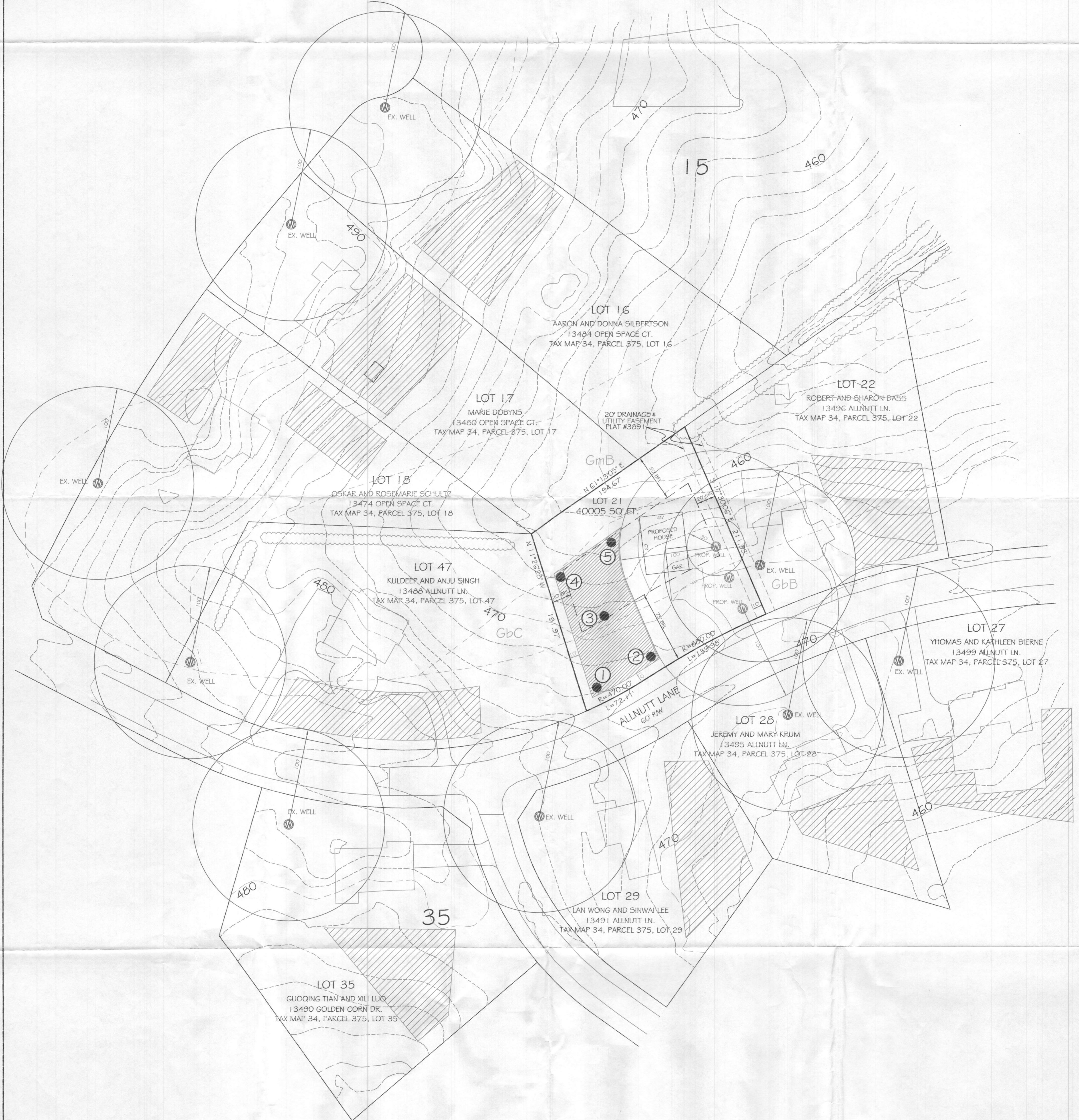
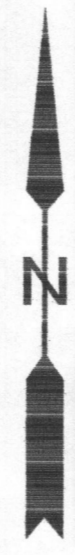
DATE: 8/16/2017

OWNERS
 ROBERT AND SHARON DASS
 13496 ALLNUTT LN.
 HIGHLAND, MD. 20777
 (410) 864-0970

PERC CERTIFICATION PLAT
LOT 21 ALLNUTT FARMS ESTATES

PLAT #4622
 TITLE DEED: 5332/344
 TAX MAP 34, GRID 15, PARCEL 375
 5TH ELECTION DISTRICT, HOWARD COUNTY, MD.
 ZONED RC-DEO
 SCALE: 1" = 50' DATE: 6/30/17

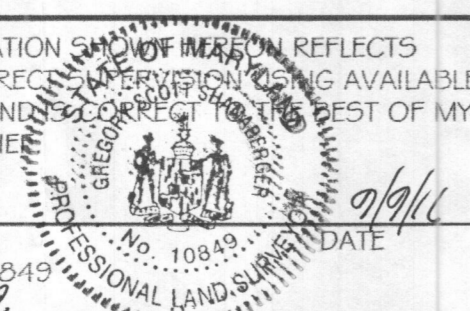
- NOTES:**
1. TOPOGRAPHY SHOWN HEREON IS FROM 2013 HOWARD COUNTY LIDAR.
 2. IMPROVEMENTS SHOWN HEREON ARE FROM 2013 HOWARD COUNTY LIDAR.
 3. EXISTING WELL AND SEPTIC SYSTEM LOCATIONS SHOWN HEREON ARE FROM AVAILABLE HOWARD COUNTY HEALTH DEPARTMENT RECORDS.
 4.  DESIGNATES PROPOSED PRIVATE SEWAGE EASEMENT FOR INDIVIDUAL SEWAGE DISPOSAL.
 -  PROPOSED WELL.
 -  EXISTING WELL.
 -  EXISTING SEWAGE DISPOSAL EASEMENT
 -  SOIL TYPE BOUNDARY
 -  WOODS/LINE/TREES
 6. SOIL TYPES PER N.R.C.S WEB SOIL SURVEY:
Gbb-Gladstone loam, 3 to 8 percent slopes
Gbc-Gladstone loam, 8 to 15 percent slopes
Gmb-Glenville silt loam, 3 to 8 percent slopes
 7. BEARINGS AND DISTANCES SHOWN HEREON ARE FROM PLAT NUMBER 4622.
 8. SOIL TYPES SHOWN HEREON ARE FROM N.R.C.S WEB SOIL SURVEY.
 9.  DESIGNATES PROPOSED PERC TEST LOCATION.



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HEREBY CERTIFY THAT THE INFORMATION SHOWN ON THIS PLAN REFLECTS WORK DONE BY ME OR UNDER MY DIRECT SUPERVISION AND IS THE BEST OF MY PUBLIC AND PRIVATE INFORMATION AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF.

G. Scott Shanaberger
 G. SCOTT SHANABERGER
 PROFESSIONAL LAND SURVEYOR #10845
 LICENSE EXPIRATION DATE 4/2/2016



OWNERS
 ROBERT AND SHARON DASS
 13496 ALLNUTT LN.
 HIGHLAND, MD. 20777
 (410) 884-0970

PLAT TO ACCOMPANY PERC TEST APPLICATION
LOT 21 ALLNUTT FARMS ESTATES
 PLAT #4622
 TITLE DEED: 5332/344
 TAX MAP 34, GRID 15, PARCEL 375
 5TH ELECTION DISTRICT, HOWARD COUNTY, MD.
 ZONED RC-DEO
 SCALE: 1" = 50' DATE: 8/16/16

NOTES:

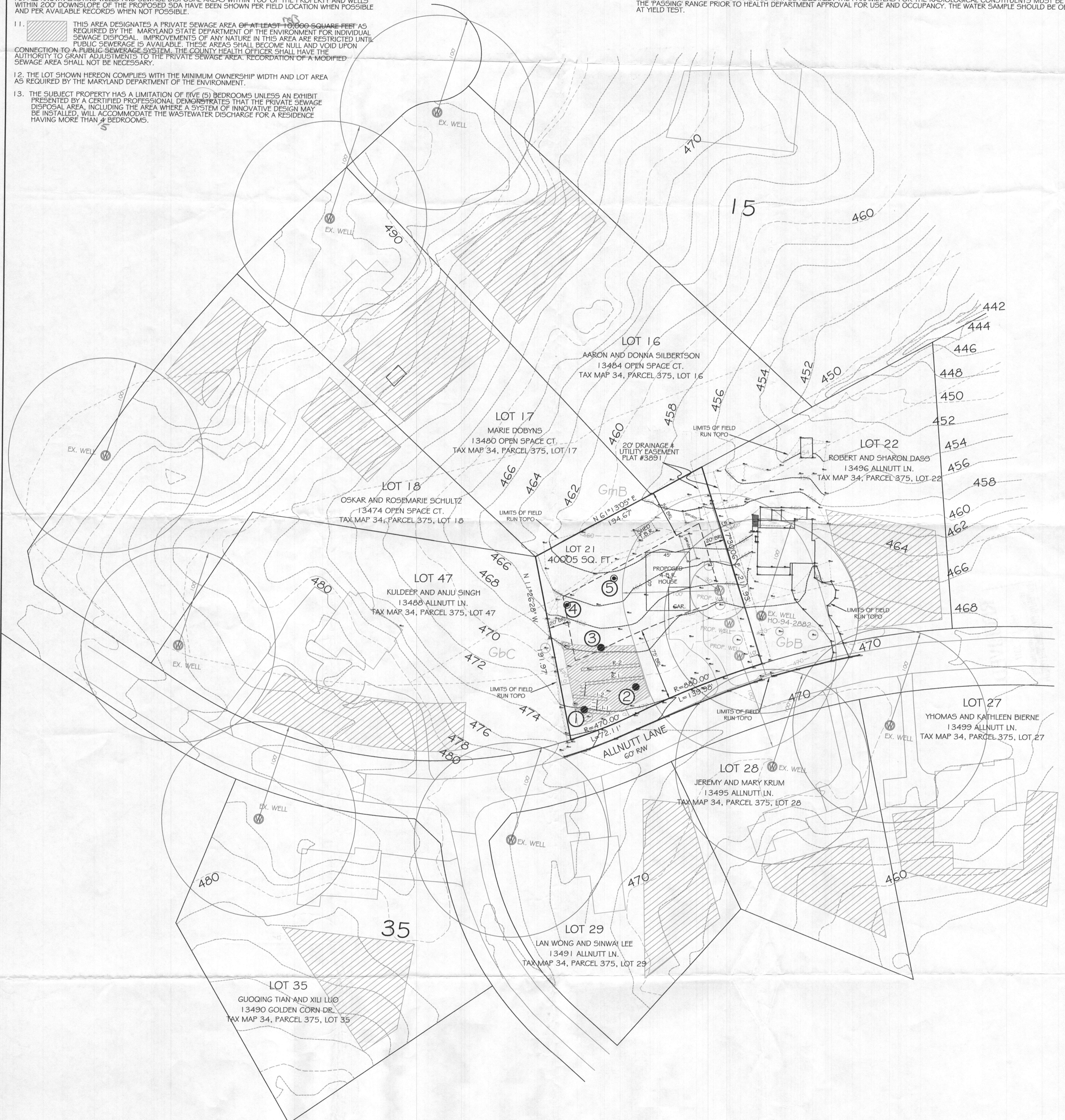
1. THE PURPOSE OF THIS PLAT IS TO OBTAIN APPROVAL FOR A PRIVATE SEWAGE AREA TO SERVE LOT 21, ALLNUTT FARMS ESTATES.
2. TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY SHANABERGER & LANE IN MARCH, 2017 WITHIN THE LIMITS SHOWN. OTHER TOPOGRAPHY IS FROM 2013 HOWARD COUNTY LIDAR.
3. ONSITE IMPROVEMENTS WITHIN THE LIMITS OF FIELD RUN TOPOGRAPHY WERE LOCATED BY SHANABERGER & LANE IN MAY, 2016. OTHER IMPROVEMENTS SHOWN ARE FROM 2013 HOWARD COUNTY LIDAR.
4. EXISTING WELL AND SEPTIC SYSTEM LOCATIONS SHOWN HEREON ARE FROM AVAILABLE HOWARD COUNTY HEALTH DEPARTMENT RECORDS, AND FIELD LOCATION.
6. DESIGNATES PROPOSED PRIVATE SEWAGE AREA
- PROPOSED WELL
- EXISTING WELL
- EXISTING PRIVATE SEWAGE AREA
- SOIL TYPE BOUNDARY
- WOODSLINES AND TREES
- SUCCESSFUL PERC TEST OCTOBER 5, 2016
- FAILED PERC TEST OCTOBER 5, 2016
- LIMITS OF FIELD-RUN TOPOGRAPHY
7. SOIL TYPES PER N.R.C.5 WEB SOIL SURVEY:
GbB-Gladstone loam, 3 to 8 percent slopes
GbC-Gladstone loam, 0 to 15 percent slopes
GmB-Glenville silt loam, 3 to 8 percent slopes
8. BOUNDARY LINES SHOWN HEREON ARE FROM HOWARD COUNTY TAX MAP INFORMATION AND FROM DEEDS OR PLATS OF RECORD. THEY DO NOT REPRESENT A BOUNDARY SURVEY. BEARINGS AND DISTANCES SHOWN ARE FROM DEEDS OR PLATS OF RECORD AND DO NOT REPRESENT A BOUNDARY SURVEY BY SHANABERGER & LANE.
9. ANY CHANGE TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
10. ALL KNOWN EXISTING WELLS AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND WELLS WITHIN 200' DOWNSLOPE OF THE PROPOSED SDA HAVE BEEN SHOWN PER FIELD LOCATION WHEN POSSIBLE AND PER AVAILABLE RECORDS WHEN NOT POSSIBLE.
11. THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
12. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
13. THE SUBJECT PROPERTY HAS A LIMITATION OF FIVE (5) BEDROOMS UNLESS AN EXHIBIT PRESENTED BY A CERTIFIED PROFESSIONAL DEMONSTRATES THAT THE PRIVATE SEWAGE DISPOSAL AREA, INCLUDING THE AREA WHERE A SYSTEM OF INNOVATIVE DESIGN MAY BE INSTALLED, WILL ACCOMMODATE THE WASTEWATER DISCHARGE FOR A RESIDENCE HAVING MORE THAN 4 BEDROOMS.

SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

- | | |
|--|--|
| <ul style="list-style-type: none"> INITIAL SYSTEM: <ul style="list-style-type: none"> - APPLICATION RATE: 1.2 - EFFECTIVE AREA BEGINNING DEPTH: 4' - BOTTOM MAXIMUM DEPTH: 8' | <ul style="list-style-type: none"> REPLACEMENT SYSTEM #1: <ul style="list-style-type: none"> - APPLICATION RATE: 1.2 - EFFECTIVE AREA BEGINNING DEPTH: 4' - BOTTOM MAXIMUM DEPTH: 5.5' |
| <ol style="list-style-type: none"> 1. DESIGN FLOW: <ul style="list-style-type: none"> - 4 BEDROOMS AT 150 GPD - 4X150 GPD = 600 GPD 2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED: <ul style="list-style-type: none"> - DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF 3. SIDEWALL REDUCTION CREDIT: <ul style="list-style-type: none"> - TRENCH WIDTH (W) = 3' - TRENCH EFFECTIVE DEPTH (D) = 4' - $(W+2) / (W+1+2D) \times 100 = 41.67\%$ 4. LINEAR LENGTH OF TRENCH REQUIRED: <ul style="list-style-type: none"> - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (41.67%) / TRENCH WIDTH (3) = 70' - LINEAR LENGTH OF TRENCH PROVIDED = 70' - TWO TRENCHES 35 LF/EACH 6. EXISTING GRADE: <ul style="list-style-type: none"> TRENCH 11: 472.1 TRENCH 12: 471.3 TRENCH 11: 468.1 TRENCH 12: 467.3 7. INVERT: <ul style="list-style-type: none"> TRENCH 11: 472.1 TRENCH 12: 471.3 TRENCH 11: 468.1 TRENCH 12: 467.3 | <ol style="list-style-type: none"> 1. DESIGN FLOW: <ul style="list-style-type: none"> - 4 BEDROOMS AT 150 GPD - 4X150 GPD = 600 GPD 2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED: <ul style="list-style-type: none"> - DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF 3. SIDEWALL REDUCTION CREDIT: <ul style="list-style-type: none"> - TRENCH WIDTH (W) = 3' - TRENCH EFFECTIVE DEPTH (D) = 1.5' - $(W+2) / (W+1+2D) \times 100 = 71.43\%$ 4. LINEAR LENGTH OF TRENCH REQUIRED: <ul style="list-style-type: none"> - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (71.43%) / TRENCH WIDTH (3) = 120' - LINEAR LENGTH OF TRENCH PROVIDED = 120' - TWO TRENCHES 60 LF/EACH 6. EXISTING GRADE: <ul style="list-style-type: none"> TRENCH R1: 470.1 TRENCH R2: 469.0 TRENCH R1: 466.1 TRENCH R2: 465.0 7. INVERT: <ul style="list-style-type: none"> TRENCH R1: 470.1 TRENCH R2: 465.0 |

NOTES (cont.):

14. AN ADVANCED PRE-TREATMENT SYSTEM MUST BE INSTALLED ON THE SEPTIC SYSTEM LOCATED ON (ALLNUTT FARMS ESTATES) LOT 21 AS THE APPROVABLE SEWAGE DISPOSAL AREA WILL ACCOMMODATE ONLY TWO DRAINFIELD SYSTEMS. A SUPPLEMENTAL SITE PLAN WITH ALL OF THE NECESSARY DETAILS FOR INSTALLATION OF THE SEPTIC SYSTEM WILL BE REQUIRED PRIOR TO THE RELEASE OF THE BUILDING PERMIT. IN ADDITION, AN OPERATION AND MAINTENANCE CONTRACT AGREEMENT FOR THE ADVANCED PRE-TREATMENT UNIT MUST BE FILED WITH HOWARD COUNTY LAND RECORDS PRIOR TO RELEASE OF THE SEPTIC SYSTEM INSTALLATION PERMIT.
15. THE WELL SHALL BE DRILLED PRIOR TO HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO BUILDING PERMIT SUBMITTAL. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP HEALTH DEPARTMENT APPROVAL OF THE BUILDING PERMIT.
16. A WATER SAMPLE MUST BE OBTAINED AND THE SAMPLE SUBMITTED FOR ANALYSES OF RADIUM AND/OR ALPHA (PARTICLES) AND BETA (PARTICLES) PRIOR TO BUILDING PERMIT APPROVAL BY THE HEALTH DEPARTMENT. DEPENDING ON RESULTS OF THESE ANALYSES, TREATMENT AND ADDITIONAL ANALYSES MAY BE REQUIRED. THE PARAMETERS FOR THE RADIOLOGICAL CONSTITUENTS MUST BE IN THE PASSING RANGE PRIOR TO HEALTH DEPARTMENT APPROVAL FOR USE AND OCCUPANCY. THE WATER SAMPLE SHOULD BE OBTAINED AT YIELD TEST.



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Scott Shanaberger
 G. SCOTT SHANABERGER
 PROFESSIONAL LAND SURVEYOR #10849
 LICENSE EXPIRATION DATE 4/2/2018

DATE: 8/16/2017

APPROVED:
 FOR PRIVATE WATER AND SEWERAGE SYSTEMS

Wiltona Maura Rossman 8/16/2017
 COUNTY HEALTH OFFICER

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