

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

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth

RECEIPT DATE: 2/20/20 ONSITE SEWAGE DISPOSAL SYSTEM P 567317-A

APPROVAL DATE: 4/9/20 PERMIT: CONSTRUCTION A

PROPERTY ADDRESS: 16109 Ed Warfield Road

SUBDIVISION: Oakdale LOT: 3 TAX ID:

CONTRACTOR: WTC Contractors EMAIL:

CONTRACTOR ADDRESS: 3033 Salem Bottom Road, Westminster, MD 21157 PHONE: 410-458-7024

PROPERTY OWNER: Olowaseun Owojuigbe EMAIL:

OWNER ADDRESS: 14108 Barbara Circle, Cooksville, MD 21723 PHONE: 443-226-2700

SEPTIC TANK SIZE (GALLONS): 2000 TANK MANUFACTURER:

PUMP MODEL: n.a. PUMP SIZE n.a. PUMP TANK CAPACITY: n.a.

DISTRIBUTION SYSTEM: [X] GRAVITY [] PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 0.8

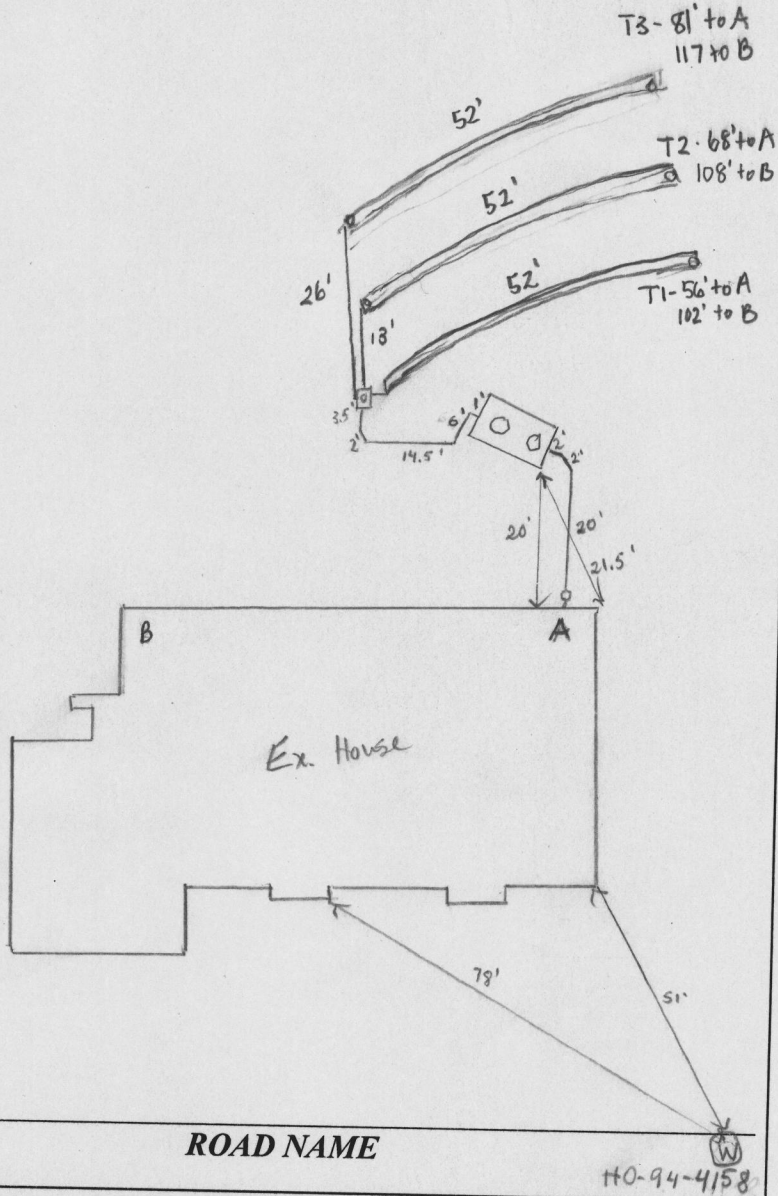
Table with 2 columns: Field Name (TRENCHES, LOCATION, NOTES) and Field Value (Linear feet required, Inlet depth, etc.)

ISSUED BY: Hank Oswald ISSUE DATE: 2/19/20 EXPIRATION DATE: 2/19/20

- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
NOTE: WATERTIGHT TANKS REQUIRED
NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL
NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM. PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT. CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

NOT TO SCALE



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	2.5'	6'
NUMBER OF TRENCHES		3
TOTAL LENGTH		156'
ABSORPTION AREA		156' + Sidewall
DISTRIBUTION BOX LEVEL		yes
DISTRIBUTION BOX BAFFLE		yes
DISTRIBUTION BOX PORT		yes

PRE-CONSTRUCTION:

SEPTIC TANK DATA

SEPTIC TANK I LEVEL	yes
MANUFACTURER	Baby's 1st
CAPACITY	2000 GAL
SEAM LOC	top
TANK LID DEPTH	1'
BAFFLES	front + back
BAFFLE FILTER	-
MANHOLE LOC	front + back
6" PORT LOC	-
WATERTIGHT TEST	-
SLOTTED	yes
DATE ON LID	2-11-20

PUMP/SEPTIC TANK LEVEL

MANUFACTURER	
CAPACITY	GAL
SEAM LOC	
TANK LID DEPTH	
BAFFLES	
BAFFLE FILTER	
MANHOLE LOC	
6" PORT LOC	
WATERTIGHT TEST	
SLOTTED	
DATE ON LID	

4/1/2020 No mark in basement of hung sewer location. Laid out three 52' trenches according to plan. Tank and d-box staked according to plan (ST)

INSTALLATION: 4/7/2020 Contractor set tank too close to house w/o calling in for inspection. Will have to move tank back to original location per plan. (ST)

4/8/2020 Tank re-set according to plan, 20' from house. Connected tank to d-box that had been previously cut. Reinspect for SHC. (ST) 4/9/20. Site insp. Contractor on site, SHC completed, 2 trenches completed and last trench was almost completed, 6' bottom, 3.5' of stone, stone looks good, inlet @ 2.5' trenches 13 cft, dbox level's levelers good, observation pipes at both ends of all trenches w/ the dbox obs. pipe at the front end of Trench #1, all trenches 3' wide w/ geotextile fabric in place. OK to backfill (ST)

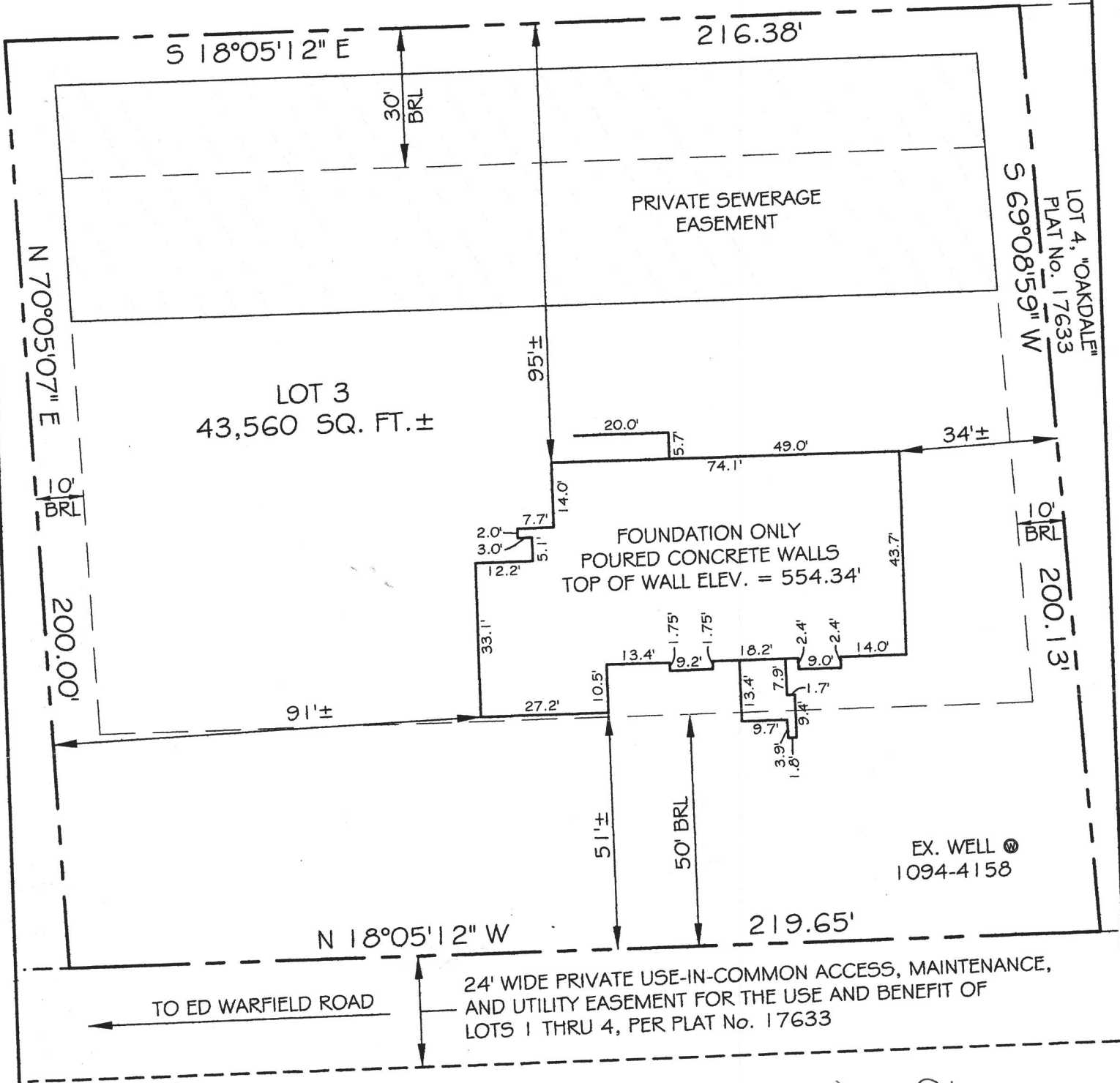
FINAL INSPECTOR R. Rappaport

DATE OF APPROVAL 4/9/2020

NOTES:

- 1) FOUNDATION AND FOOTINGS ARE IN PLACE AS SHOWN HEREON.
- 2) BUILDING TIES ARE ±0.5' UNLESS OTHERWISE NOTED.
- 3) TOP OF WALL = 554.34'

OAKDALE FARM, LLC
L. 14431, F. 347



OAKDALE FARM, LLC
L. 14431, F. 347

Wall Check
OK
R/E 2/19/2020

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY



WALL CHECK DRAWING

Survey.dwg; 12/17/2019 5:27:25 PM; 1:1

Oswald, Hank

From: Oswald, Hank
Sent: Monday, October 28, 2019 8:33 AM
To: 'seunowo@proactivedbs.com'
Cc: 'raztecengr@comcast.net'
Subject: RE: 16109 Ed Warfield_OSDS Plan Review
Attachments: floor plan.pdf

Good morning:

The OSDS Plan looks good but I looked over the floor plan again and the area below the balcony appears to be part of the poured foundation (see attachment). The septic tank setback to a house foundation with a basement is 20 feet. The septic tank on this plan appears to be only 11 feet from the foundation. Please correct this on the site plan and OSDS plan before submitting for final review. Also please keep in mind that the all well sites must be 30 feet from any poured foundation.

Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

From: seunowo@proactivedbs.com <seunowo@proactivedbs.com>
Sent: Friday, October 25, 2019 2:34 PM
To: Oswald, Hank <hoswald@howardcountymd.gov>
Subject: FW: 16109 Ed Warfield

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Mr. Hank,
I hope your day is going well.
Please find the attached revised OSDS drawing.
Thanks and God bless you

Seun Owojuyigbe

From: Peyman Gohari [<mailto:payman1371@yahoo.com>]
Sent: Friday, October 25, 2019 1:33 PM
To: seunowo@proactivedbs.com
Subject: 16109 Ed Warfield

Hello
Per comments I revised length of trenches.

Thanks
Payman Gohari

RAZTEC ASSOCIATES INC.

Oswald, Hank

From: Oswald, Hank
Sent: Friday, October 25, 2019 10:33 AM
To: raztecengr@comcast.net
Cc: SEUNOWO1@YAHOO.COM; seunowo@proactivedbs.com; raztecengr@comcast.net
Subject: RE: OSDS Plan_16109 Ed Warfield Road
Attachments: WF-SSP 1 OF 1.pdf; [Untitled]_2019102510314624.pdf

Hello:

At a quick glance of this revised plan, each system still doesn't have equal length trenches. For example, the Initial system calculated with 3 foot of sidewall credit requires 156.25 feet of trench. You may design the initial system using 3 trenches at 52.1 ft. each.

Additionally, the sidewall credit calculation for the initial system has changed and is now incorrect. Per the septic specs, the initial system may not use more than 3 feet of sidewall credit (see attached septic specs).

Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

From: seunowo@proactivedbs.com <seunowo@proactivedbs.com>
Sent: Thursday, October 24, 2019 3:45 PM
To: Oswald, Hank <hoswald@howardcountymd.gov>; raztecengr@comcast.net
Cc: SEUNOWO1@YAHOO.COM
Subject: RE: OSDS Plan_16109 Ed Warfield Road

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Hank,
It was nice talking to you this morning,
Please find the attached revised OSDS drawing for your review.
Thanks

Seun Owójuyigbe
(443)-226-8700

From: Oswald, Hank [<mailto:hoswald@howardcountymd.gov>]
Sent: Thursday, October 24, 2019 10:19 AM
To: raztecengr@comcast.net
Cc: SEUNOWO1@PROACTIVEDBS.COM; SEUNOWO1@YAHOO.COM
Subject: OSDS Plan_16109 Ed Warfield Road

Hello:

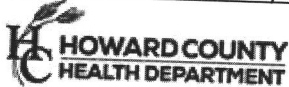
Attached, please find a memo with comment to the revised OSDS Plan dropped off by the owner this morning.

Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov



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

MEMORANDUM

TO: Raztec Associates, Inc.
341 W. Patrick St.
Frederick, MD 21701

FROM: Hank Oswald, L.E.H.S.
Well & Septic Program

RE: OSDS Plan Review
16109 Ed Warfield Road
Woodbine, MD 21797

Date: August 7, 2019

The OSDS Plan for has been reviewed with the following comments:

- 1.) Each system must have equal length trenches.
- 2.) Each system must show trench width (3 feet) accurately on trench layout.
- 3.) Septic Design chart has initial system with a trench depth of only 5.5 feet. To receive full sidewall credit, change bottom depth to 6 feet (i.e. bottom trench elevation to 544.90)
- 4.) Trench separation is 10 feet (edge to edge).
- 5.) Please note: If slab below balcony is poured as part of the foundation, then the tank must meet 20-foot setback.

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

MEMORANDUM

TO: Raztec Associates, Inc.
341 W. Patrick St.
Frederick, MD 21701

FROM: Hank Oswald, L.E.H.S.
Well & Septic Program

RE: OSDS Plan Review
16109 Ed Warfield Road
Woodbine, MD 21797

Date: August 7, 2019

The OSDS Plan for has been reviewed with the following comments:

- x 1.) Show 1500 sq. ft. well box and well box radius on plan.
- x 2.) Add well tag # too plan. *Added A#*
- ✓ 3.) Eliminate note #3 because electrical work is not required for this installation.
- x 4.) Add note that existing well (tag #) was field located by ENGINEER/SURVEYOR on DATE. *Tag # incorrect*
- 5.) Add tank size (1500 gallon) to septic tank view.
- x 6.) Trench inverts must be between 18 in. and 4 feet in depth. (May not exceed 4 feet)
- x 7.) Trenches must be equal length unless it's an LPD design.
- x 8.) Place initial system at top of sewage disposal area (Consider using 3 trenches at 41.6 feet each and show on contour. Also, show trench width (3 feet) accurately on trench layout.
- x 9.) Septic tank must be 20 feet from house foundation with basement. *& walk up.*

10/16/19 Revised plan still requires corrections

40 scale (not 20)

Oswald, Hank

From: Oswald, Hank
Sent: Wednesday, August 07, 2019 11:27 AM
To: raztecengr@comcast.net
Subject: OSDS Plan Review Comments_16109 Ed Warfield Road
Attachments: WS_EdWarfield_16449_MarianiProperty_Lot3_Well-94-4158.pdf; OSDS Memo To Raztec
_2019.pdf

Hello Mr. Razavi:

Attached, please find a memo with comments to the OSDS plan for 16109 Ed Warfield Road. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov



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16109 ED WARFIELD RD

1/28/91
1/26/96

4/26/96
W.P.S. MONTGOMERY - NOT INSPECTED (CW)

PERMIT

SEWAGE DISPOSAL SYSTEM

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

P 50972

A 42610

DISTRICT 4th

DATE 11/14/95

DATE SYSTEM APPROVED 5/28/96

INSPECTOR *[Signature]*

HOWARD COUNTY HEALTH DEPARTMENT

BUREAU OF ENVIRONMENTAL HEALTH

461-9933

313-2640

352297
INDEXED

K & K Excavating, Inc.

IS PERMITTED TO INSTALL ALTER

ADDRESS 14960 Route 144, Woodbine, MD 21797 PHONE 442-1336

SUBDIVISION Warfields Grant LOT 6 ROAD 16013 Misty Knoll Court

PROPERTY OWNER James A. Selfridge Builders / Paul Snyder

ADDRESS

Pump Chamber 1500 Gallons (Top Seamed)
SEPTIC TANK CAPACITY 1500 GALLONS *Install a pump/float control box with an alarm on a separate circuit. A single pump is acceptable provided that storage of one days effluent is available above the alarm float setting. 1/13/96 MR. KETTERMAN SAID THAT THEY ARE GOING TO INSTALL DUAL PUMPS, NO OTHER CHANGES. *[Signature]*

NUMBER OF BEDROOMS 5

210 SQUARE FEET PER BEDROOM

LINEAR FEET OF TRENCH REQUIRED 263

TRENCHES - Trench to be 2 feet wide. Inlet 3 feet below original grade. Bottom maximum depth 7 feet below original grade. Effective area begins at 3 feet below original grade. 4 feet of stone below distribution pipe.

LOCATION - Tank and pump chamber to be located 10' off right end of house and 15' from driveway or higher on lot. Place distribution box 80' from the right rear lot line (124.13) and 15' off the right side line (448.11). Run trenches along contour.

NOTES - No trench to exceed 100 feet in length. Provide 6" - 8" diameter cleanout and cap to grade or above on septic tank. *[Signature]*

PLANS APPROVED BY Glen Savage/Ron Pinkley DATE 10/20/95

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

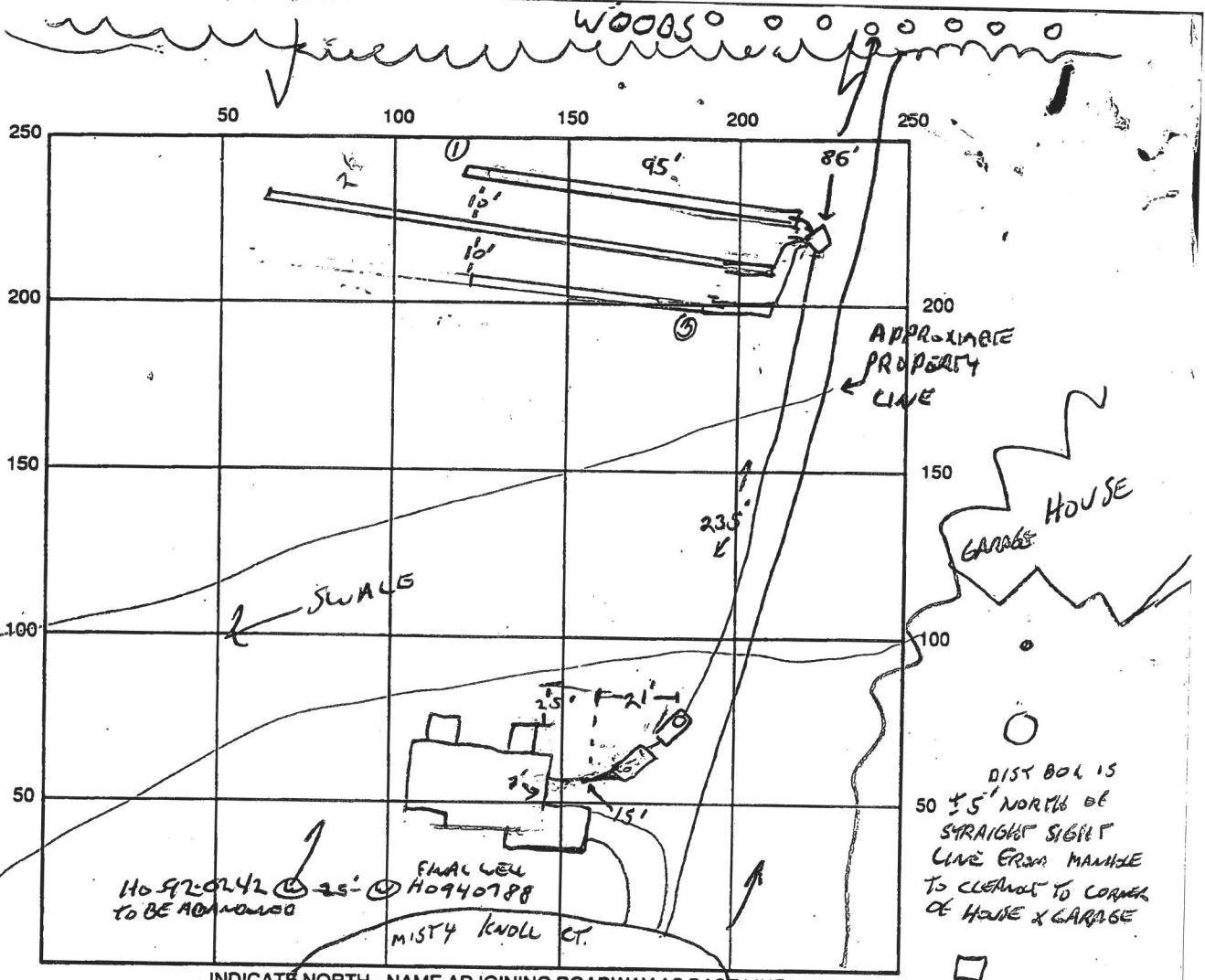
*INSTALLER IS RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT

CALL 461-9933 FOR INSPECTION OF SEPTIC SYSTEM.

HD-260(6-90)

BLDG PERMITS SIGNED AND RETURNED 10/20/01
B00130940 - pool

4/26/10



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE

2 1500 GAL TOP SEAM TANKS

SEPTIC TANK LEVEL TANK 1 SET OR TANK 2 OK CLEANOUTS 1 ON 1ST TANK, MANHOLE ON 2ND TANK

DISTRIBUTION BOX LEVEL OK NO ELEVATIONS OF 1/5/96

DRAIN FIELD/TILE DEPTH 7 FT. TRENCH WIDTH 2 FT. INLET DEPTH 3 FT.

EFFECTIVE GRAVEL DEPTH 4 FT. TOTAL LENGTH 95 FT. 67 3 267

NUMBER OF TRENCHES 3 ONE SIDEWALL/BOTTOM AREA 1068 SQ. FT.

DRYWALL INSIDE DIAMETER _____ FT. EFFECTIVE DEPTH BELOW INLET _____ FT.

ABSORBENT AREA _____ SQ. FT.

95
67
162
263
161
101

REMARKS: 1/4/96 TANKS SET, BOTTOM OF TANK HOLE 2 WET, DISCUSSED DIST BOX LOCATION

WITH CONTRACTOR - LOCATION MEASURED, 2 X TANK INSPECTIONS. PUMPS AND CONTROL BOX WILL NOT BE INSTALLED UNTIL HOUSE IS COMPLETE. OK TO BACKFILL TANKS

1/5/96 PRESSURE LINE 2" PVC (SCH 40), OK TO COVER LINE TO DIST BOX

1/25 1ST TRENCH COMPLETE 1/25/96 WORK COMPLETE, OK TO COVER

NEEDS PUMP TEST FOR FINAL - PUMPS TO BE INSTALLED - DUAL PUMPS - OK

DATE SYSTEM APPROVED 5/28/96

INSPECTOR [Signature]

12/30
12/29/94
12/30/94
2:00
Lester
12/31/94
40

12/29 (2) P.C.O.
12/30 (1) P.C.O.
P 57383

PERMIT

SEWAGE DISPOSAL SYSTEM

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
461-9933 313-2640

INDEXED

352289

A 42609

DISTRICT 4th

DATE 11/9/94

DATE SYSTEM APPROVED 1/3/95

INSPECTOR C. Bel + G. S.

Burgemeister-Bell, Inc. IS PERMITTED TO INSTALL ALTER

ADDRESS 10331 S. Dolfield Road, Owings Mills, Maryland 21117 PHONE 363-0880

SUBDIVISION Warfields Grant LOT 5 ROAD 16014 Misty Knoll Court

PROPERTY OWNER James H. Selfridge Builders, Inc.

ADDRESS

SEPTIC TANK CAPACITY 1500 GALLONS

NUMBER OF BEDROOMS 4 ~~4~~ 12/21/94

180 SQUARE FEET PER BEDROOM

LINEAR FEET OF TRENCH REQUIRED 300 240

TRENCHES - Trench to be 3 feet wide. Inlet 3 feet below original grade. Bottom maximum depth 5 feet below original grade. Effective area begins at 3 feet below original grade. 2 feet of stone below distribution pipe.

LOCATION - Place distribution box 230 feet up the right (613.04') lot line and 35 feet off the same lot line when facing the lot from Buck's Run Court. Run trenches on contour in ~~forward the front lot line~~. MAINTAIN 100 FEET FROM WELL TO SEPTIC.

NOTES - No trench to exceed 100 feet in length. Provide 6" - 8" diameter cleanout and cap to grade or above on septic tank. DR Run 10-21-94

PLANS APPROVED BY Amy McMillen DATE 05/24/94

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.

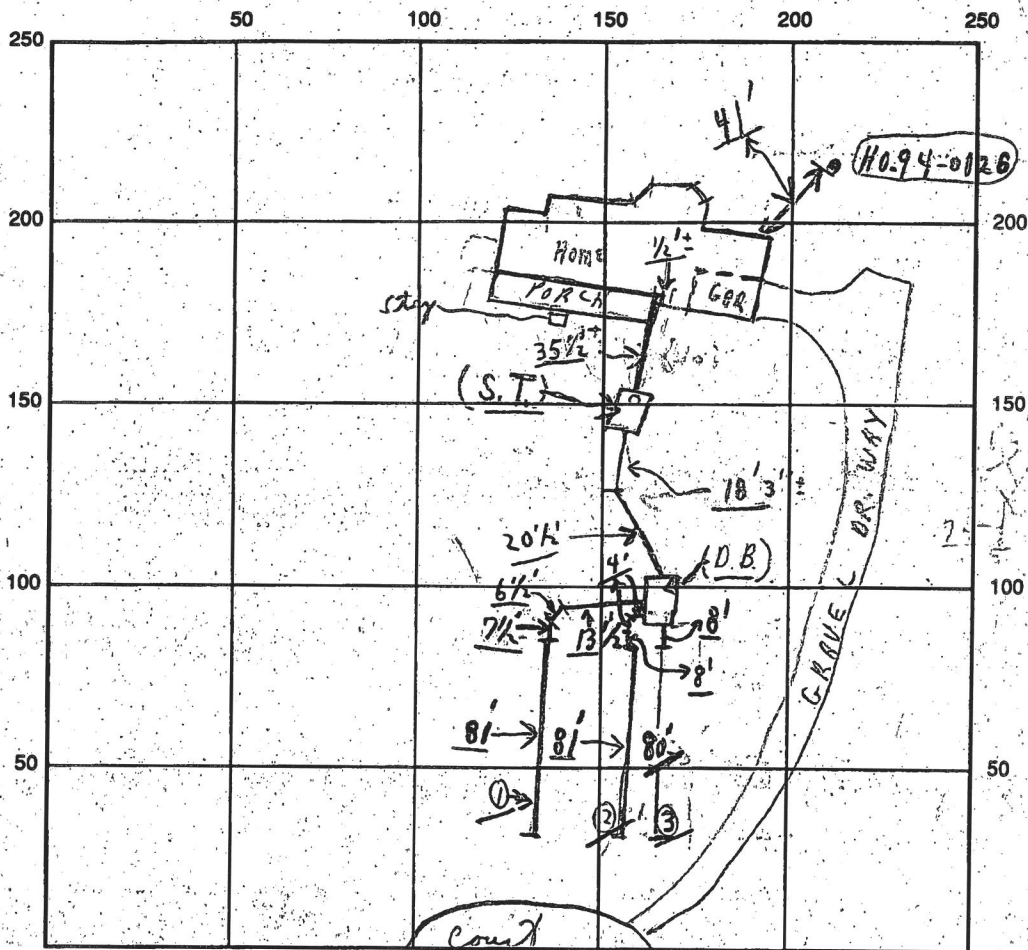
NOTE: DISTRIBUTION BOXES MUST HAVE BAFFLES

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

***CALL 461-9933 FOR INSPECTION OF SEPTIC SYSTEM.**

HD-260(6-90)

A 42609



INDICATE NORTH - NAME ADJOINING ROADWAY AS BASE LINE

SEPTIC TANK LEVEL OK CLEANOUTS OK

DISTRIBUTION BOX LEVEL OK (Baffles ok)

DRAIN FIELD/TITLE DEPTH 5 FT. TRENCH WIDTH 3 FT. INLET DEPTH 3 FT.

EFFECTIVE GRAVEL DEPTH 2 FT. TOTAL LENGTH 242 FT.

NUMBER OF TRENCHES 3 ONE SIDEWALL BOTTOM AREA 226 SQ. FT.

DRYWALL INSIDE DIAMETER — FT. EFFECTIVE DEPTH BELOW INLET — FT.

ABSORBENT AREA 226 SQ. FT.

REMARKS: Notes: (1) Bedrooms per Mark Ripkin 12/29/94 P.P.A. - Not ready
visit either S.T.; partial; chd; Late P.M. 12/29/94 OK to trench
to stone; covers from home to septic tank; and septic
tank to Dist. Box; copy 12/30/94 #1 trenches ok to cover
except near dist box & #2 @ far end; need to see pipe
12/29/94 W.P.I. - no - chd; 12/30/94 W.P.I. Yes permit out of Dist. Box

DATE SYSTEM APPROVED 1/3/95 INSPECTOR Charles B. Stricker

to each trench & #3 trench; partial chd
1/3/95 Final - ok to cover all work; chd + G.S. / chd

Oswald, Hank

From: Oswald, Hank
Sent: Wednesday, August 07, 2019 11:27 AM
To: raztecengr@comcast.net
Subject: OSDS Plan Review Comments_16109 Ed Warfield Road
Attachments: WS_EdWarfield_16449_MarianiProperty_Lot3_Well-94-4158.pdf; OSDS Memo To Raztec__2019.pdf

Hello Mr. Razavi:

Attached, please find a memo with comments to the OSDS plan for 16109 Ed Warfield Road. Should you have any questions, please don't hesitate to ask.

Respectfully,

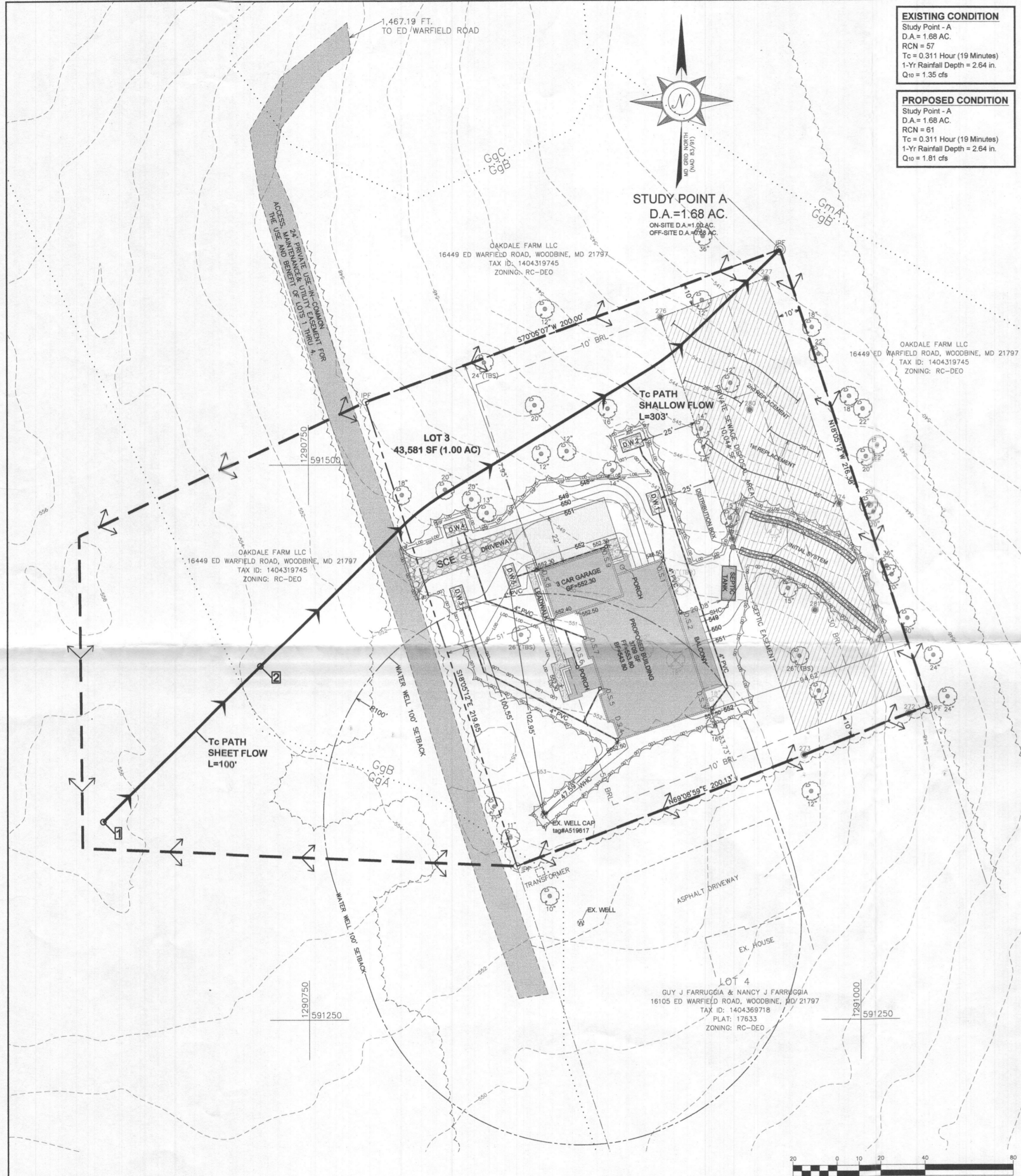
Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov



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Address: 16109 ED WARFIELD ROAD, WOODBINE, MD 21797
 Lot #: 3
 Lot Area: 4381.00 S.F.
 Least of Disturbed (LOD) Area: 15288.00 S.F.

Based On Lot Area		Based On LOD	
Building & Porch (Roof):	4775.00 S.F.	Building & Porch (Roof):	4775.00 S.F.
Drive Way:	1285.00 S.F.	Drive Way:	1285.00 S.F.
Septic Tank:	101.00 S.F.	Septic Tank:	101.00 S.F.
Leachwalk, Steps & Balcony:	344.00 S.F.	Leachwalk, Steps & Balcony:	344.00 S.F.
Total Impervious Area (Site Area):	6505.00 S.F.	Total Impervious Area (LOD):	6505.00 S.F.
Percent Total Impervious Area:	14.9%	Percent Total Impervious Area (LOD):	42.61%

Calculation:
 Hydrologic Soil Group: A B C D
 Soil Type: --- G_A, G_B, ---
 Percentage: 0.00% 100.00% 0.00% 0.00%

Target PE: 1.00 inch
 R_v = 0.05 + (0.009D) = 0.433
 ESD_v = (PE)(R_v)(A)_v = 551.49 C.F.
 REQUIRED ESD_v: ---

Provide Drywells to Attenuate Roof Runoff

Gravel Drywell #1
 DA To DS = 594.00 S.F.
 Provide maximum volume equal to 2.7" of rainfall therefore volume allowed is:
 V = (2.64" x 594.00 S.F.) / 12" = 207.75 C.F.
 Provide Gravel Drywell System
 Void Ratio: 0.40
 Size Drywell:
 Depth: 5.00 Feet
 Length: 10.00 Feet
 Width: 6.00 Feet
 Drywell Area: 60.00 S.F.
 Volume Provided = (0.4)(Area)(Depth) = 120.00 C.F.
 Rainfall Attenuated by this System is ESD_v = (PE)(R_v)(A)_v / 12
 Re-Arranging PE = 1.25SD_v(R_v)(A) = 1.52 inch < 2.64 inch-OK

Gravel Drywell #2
 DA To DS = 560.00 S.F.
 Provide maximum volume equal to 2.7" of rainfall therefore volume allowed is:
 V = (2.64" x 560.00 S.F.) / 12" = 206.64 C.F.
 Provide Gravel Drywell System
 Void Ratio: 0.40
 Size Drywell:
 Depth: 5.00 Feet
 Length: 10.00 Feet
 Width: 6.00 Feet
 Drywell Area: 60.00 S.F.
 Volume Provided = (0.4)(Area)(Depth) = 120.00 C.F.
 Rainfall Attenuated by this System is ESD_v = (PE)(R_v)(A)_v / 12
 Re-Arranging PE = 1.25SD_v(R_v)(A) = 1.58 inch < 2.64 inch-OK

Gravel Drywell #3
 DA To DS = 579.00 S.F.
 Provide maximum volume equal to 2.7" of rainfall therefore volume allowed is:
 V = (2.64" x 579.00 S.F.) / 12" = 204.40 C.F.
 Provide Gravel Drywell System
 Void Ratio: 0.40
 Size Drywell:
 Depth: 5.00 Feet
 Length: 10.00 Feet
 Width: 6.00 Feet
 Drywell Area: 60.00 S.F.
 Volume Provided = (0.4)(Area)(Depth) = 120.00 C.F.
 Rainfall Attenuated by this System is ESD_v = (PE)(R_v)(A)_v / 12
 Re-Arranging PE = 1.25SD_v(R_v)(A) = 1.55 inch < 2.64 inch-OK

Gravel Drywell #4
 DA To DS = 561.00 S.F.
 Provide maximum volume equal to 2.7" of rainfall therefore volume allowed is:
 V = (2.64" x 561.00 S.F.) / 12" = 198.76 C.F.
 Provide Gravel Drywell System
 Void Ratio: 0.40
 Size Drywell:
 Depth: 5.00 Feet
 Length: 11.00 Feet
 Width: 5.00 Feet
 Drywell Area: 55.00 S.F.
 Volume Provided = (0.4)(Area)(Depth) = 110.00 C.F.
 Rainfall Attenuated by this System is ESD_v = (PE)(R_v)(A)_v / 12
 Re-Arranging PE = 1.25SD_v(R_v)(A) = 1.46 inch < 2.64 inch-OK

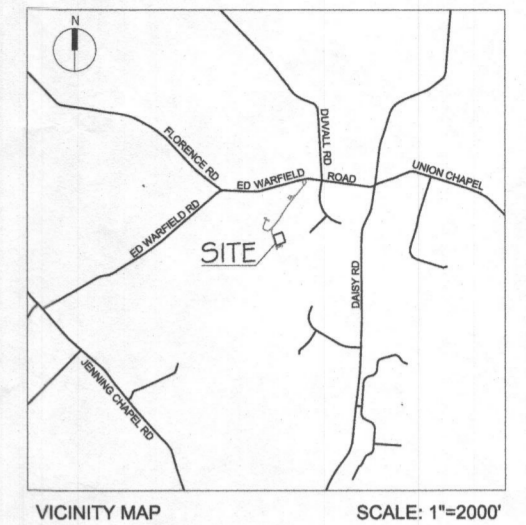
Summary for Lot 3
 Gravel Drywell #1: Size = 5' x 10' and device Volume = 120 C.F.
 Gravel Drywell #2: Size = 5' x 10' and device Volume = 120 C.F.
 Gravel Drywell #3: Size = 5' x 10' and device Volume = 120 C.F.
 Gravel Drywell #4: Size = 5' x 11' and device Volume = 110 C.F.
 Gravel Drywell #5: Size = 5' x 10' and device Volume = 120 C.F.
 Total Volume Provided = 590 C.F.
 Total volume provided in proposed systems is 590 C.F. which is more than the required target volume of 551.49 C.F. Therefore, the required ESD_v to MEP has been satisfied.
 Re-Arranging PE_{corrected} = 1.25SD_v(R_v)(A) = 1.07 inch < 2.64 inch-OK

DRYWELL SCHEDULE

DRYWELL	DIMENSIONS (Length x Width x Height)	CONTRIBUTING IMPERVIOUS AREA (S.F.)	ELEV. A	ELEV. B	ELEV. C
1	10'x6'x5'	994	547.50	546.50	541.50
2	10'x6'x5'	960	546.50	545.50	540.50
3	10'x6'x5'	978	551.00	550.00	545.00
4	11'x5'x5'	951	550.00	549.50	544.50
5	10'x6'x5'	892	552.00	550.50	545.50

PIPE SCHEDULE

FROM	TO	LENGTH (FT)	INVERT IN	INVERT OUT	SLOPE (%)
D.S.2	D.W.2	46	547.00	545.50	3.26%
D.S.3	D.W.2	127	550.00	544.50	4.33%
D.S.4	D.W.3	99	551.00	549.00	2.02%
D.S.6	D.W.4	88	550.80	548.50	2.61%
D.S.9	D.W.5	43	550.80	549.50	3.02%



- GENERAL NOTES**
- Project Name: 16109 ED WARFIELD ROAD
 - Project Address: 16109 ED Warfield Road, Woodbine, MD 21797
 - Owners: OLLUBANJI OWUJUYIGBE & OLUWASEUN OWUJUYIGBE
 - Net Tract Area: 43,581 SF (1.00 AC)
 - Lot #: 3
 - Parcel #: 350
 - Plot #: 17633
 - Map #: 13
 - Grd.: 23
 - Libr.: 18867
 - Folio: 8
 - Tax Account #: 140436999
 - Election District Number: 4
 - Zoning: RC-DEO
 - Existing Use: Vacant
 - Proposed Use: Residential (Single Family)
 - Waterfetched: Brington Dam
 - Setbacks:

Front	Required	Provided
Sides	10'	33' 7" & 97' 9"
Rear	30'	94.62'
 - The Topography information shown hereon is based on field-run survey, conducted in May, 2019 by SURVEYORS DEVELOPMENT & ASSOCIATES LLC, 3230 Chillum Rd, Mount Rainier, MD 20712
 - Stormwater Management is in accordance with chapter 5 of the Maryland Stormwater Management Manual, Volume 1 & 2, revised 2009. We are providing five Dry-Weils (M-5).
 - This property is served by Septic and Well.
 - Forest Conservation will not be required, since the amount of forest removed on this property will be 15,123 SF which is below the 20,000 SF threshold.
 - This project is not subject to the requirements of The Howard County Subdivision Requirements, since this property was created 2005, and has not been altered since.
 - No Environmental Feature exist within the LOD.

LEGEND

FEATURE	SYMBOL	FEATURE	SYMBOL
EXISTING STRUCTURES	EX	EXISTING WATER LINE	---
PROPOSED STRUCTURES	---	EXISTING SEWER LINE	---
BUILDING RESTRICTION LINE	---	PROP. WATER HOUSE CONNECTION	---
PROPERTY BOUNDARY LINE	---	PROP. SEWER HOUSE CONNECTION	---
OVERHEAD ELECTRIC WIRE	---	PROP. SEWER BRANCHED TRENCH	---
ROAD CENTERLINE	---	PROP. SEWER DISTRIBUTION BOX	---
EXISTING TOPOGRAPHY	---	PERCOLATION TEST PIT	---
PROPOSED GRADING	---	PROP. GRAVEL DRYWELL	---
PROP. SPOT ELEVATION	---	PROP. STORM DRAIN LEADER	---
EXISTING TREE LINE	---	PROP. DOWN-SPOUT	---
PROPOSED TREE LINE	---	SOIL TYPE BOUNDARY	---
EXISTING FENCE	---	EXISTING WATER WELL	---
LIMIT OF DISTURBANCE	---	SEWAGE/WATER EASEMENT	---
STEEP SLOPES (2% AND GREATER)	---	PROP. SUPER SILT FENCE	---
PROP. ELECTRICITY POWER LINE	---	To PATH	---
SPECIMEN TREE (TO BE SAVED)	---	DRAINAGE AREA LINE	---
SPECIMEN TREE (TO BE REMOVED)	---	PROP. STABILIZED CONSTRUCTION ENTRANCE	---

NOTE
 NO GRADING OR PLACEMENT OF DIRT/EARTH OR EQUIPMENT IS ALLOWED WITHIN THE SEPTIC AREA.

SITE GRADING PLAN

16109 ED WARFIELD ROAD

PROJECT ADDRESS: 16109 ED WARFIELD RD., WOODBINE, MD 21797
 OWNER/APPLICANT INFO: OLLUBANJI OWUJUYIGBE & OLUWASEUN OWUJUYIGBE, 3904 OWINGS CHOICE CT., OWINGS MILLS, MD 21117

MAP: GRID: 23 ZONING: RC-DEO
 PLAT #: 17633 LOT #: 3
 TAX ACCT.: 140436999 LIBR.: 18867
 PARCEL: 356 PARCEL: 8

4th DISTRICT
 HOWARD COUNTY, MD

RAZTEC ASSOCIATES, INC.
 civil engineers & planners
 341 W. Patrick St., Frederick, Tel (301) 775-4394
 Maryland 21701 email: raztecengr@comcast.net

PROFESSIONAL'S REVIEW STATEMENT:
 I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER: 22742 EXPIRES: JUNE 15, 2020

REV#	DATE

DRAWN BY: PG	DATE: SEP, 2019	SCALE: 1"=20'	SHEET NUMBER: SGP 1 OF 1
CHECKED BY: MR			

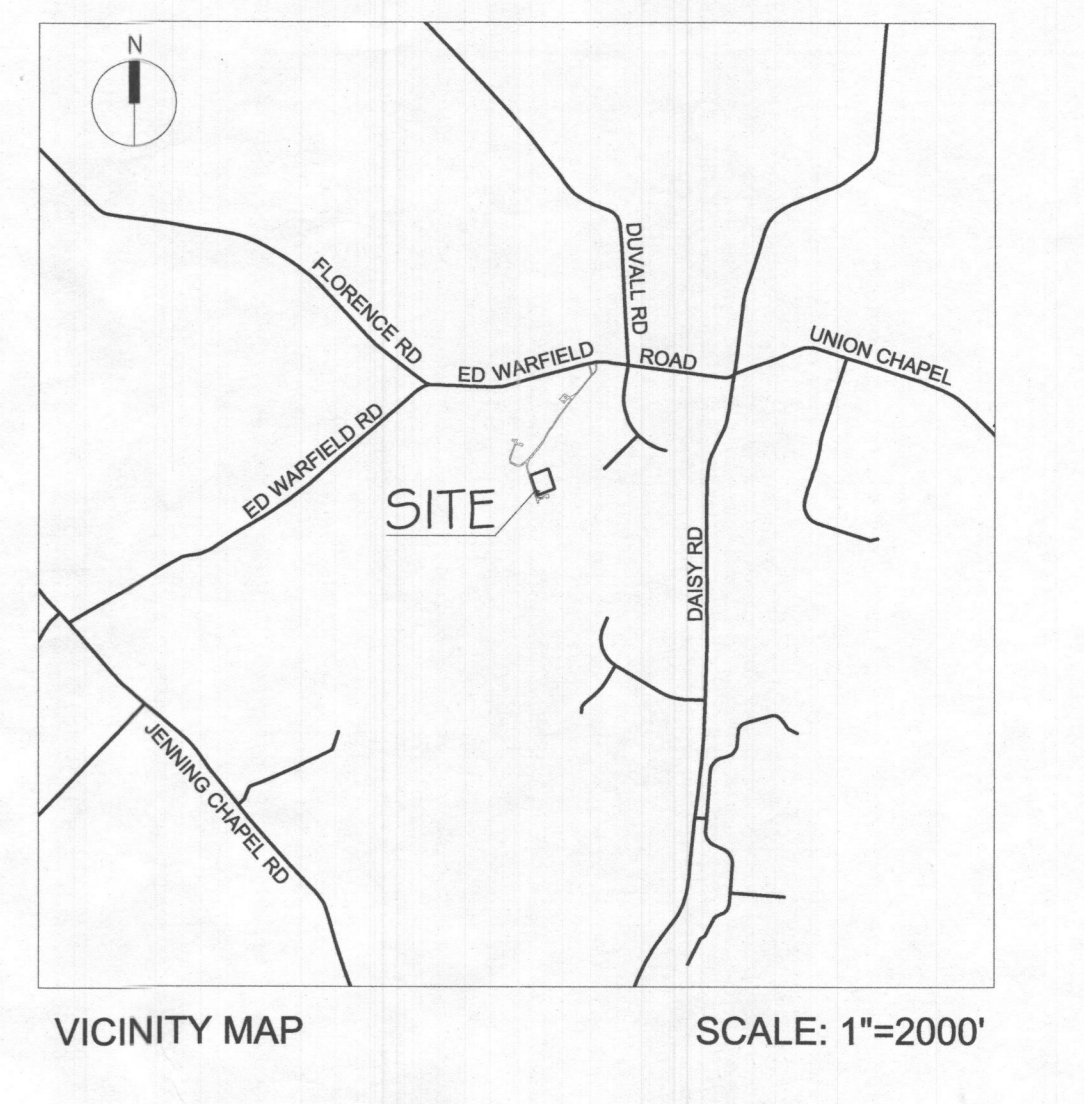


- ### GENERAL NOTES
- Project Name: 16109 ED WARFIELD ROAD
 - Project Address: 16109 ED Warfield Road, Woodbine, MD 21797
 - Owners: OLUBUMI OWOJUYIGBE & OLUWASEUN OWOJUYIGB
 - Net Tract Area: 43,581 SF (1.00 AC)
 - Lot #: 3
 - Parcel #: 356
 - Plat #: 17633
 - Map: 13
 - Grid: 23
 - Libert: 18667
 - Folio: 8
 - Tax Account #: 1404396999
 - Election District Number: 4
 - Zoning: RC-DEO
 - Existing Use: Vacant
 - Proposed Use: Residential (Single Family)
 - Watershed: Brighton Dam
 - Setbacks:

Required	Provided
Front 50'	51'
Sides 10'	33.73' & 97.93'
Rear 30'	94.62'
 - The Topography information shown hereon is based on field-run survey, conducted in May, 2019 by SURVEYORS DEVELOPMENT & ASSOCIATES LLC, 3230 Chillum Rd, Mount Rainier, MD 20712
 - Stormwater Management is in accordance with chapter 5 of the Maryland Stormwater Management Manual, Volume 1 & II revised 2009. We are providing five Dry-Well (M-5).
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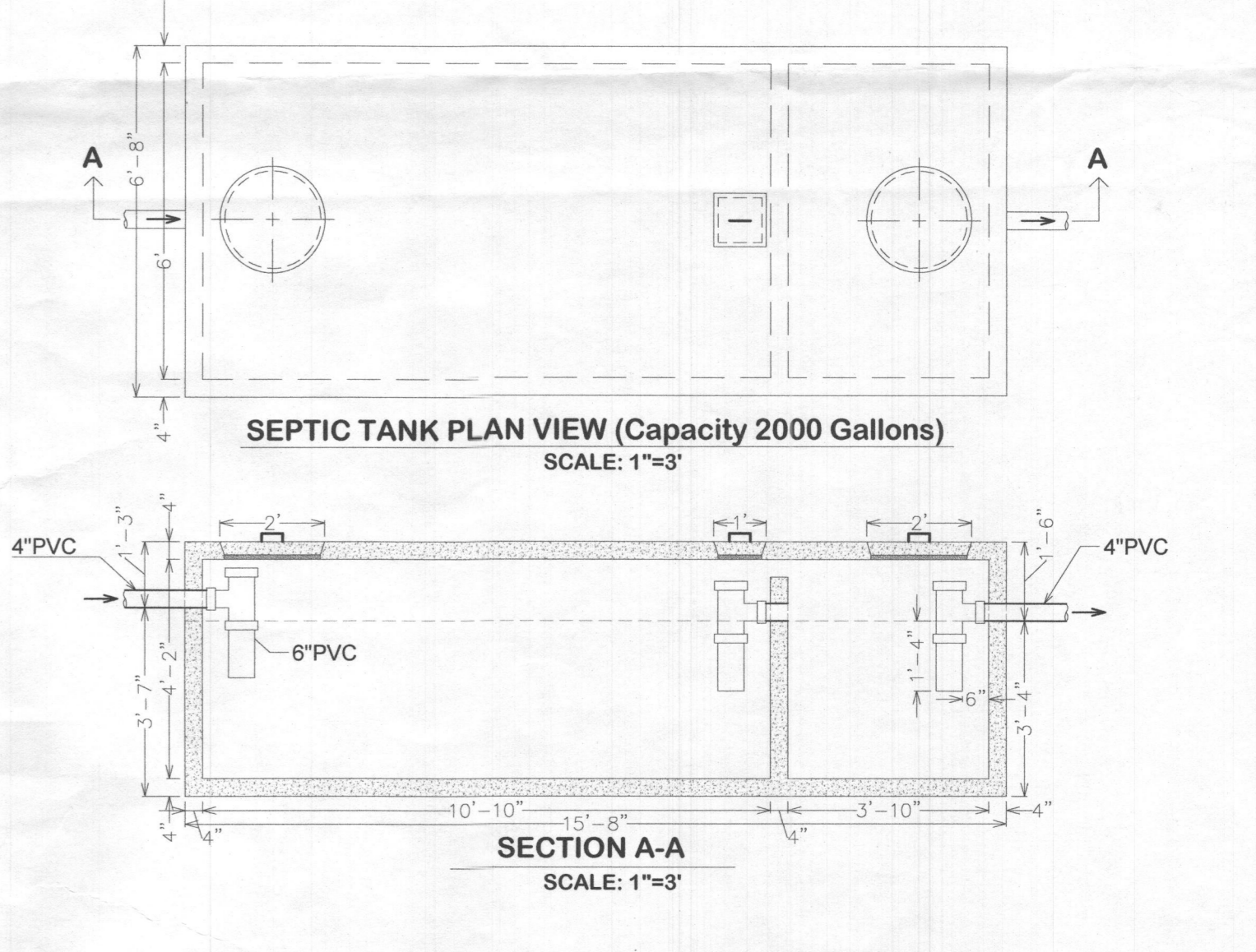
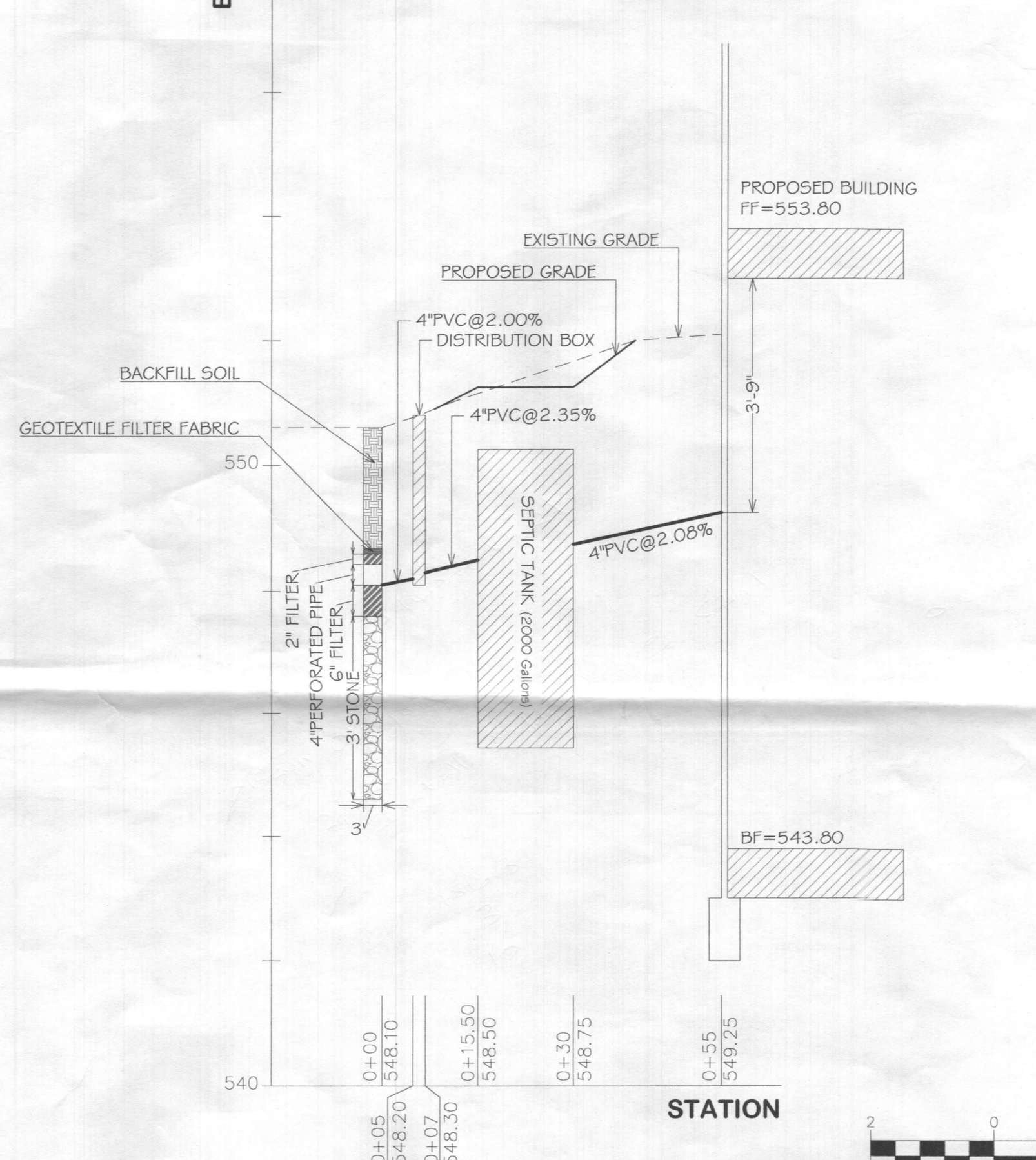
LEGEND

FEATURE	SYMBOL	FEATURE	SYMBOL
EXISTING STRUCTURES	EX	EXISTING WATER LINE	---
PROPOSED STRUCTURES	---	EXISTING SEWER LINE	---
BUILDING RESTRICTION LINE	10' BRL	PROP. WATER HOUSE CONNECTION	WVC
PROPERTY BOUNDARY LINE	---	PROP. SEWER HOUSE CONNECTION	SHC
OVERHEAD ELECTRIC WIRE	OH	PROP. SEWER DRAINFIELD TRENCH	---
ROAD CENTERLINE	---	PROP. SEWER DISTRIBUTION BOX	---
EXISTING TOPOGRAPHY	-200	PERCOLATION TEST PIT	PT
PROPOSED GRADING	-180	PROP. GRAVEL DRYWELL	D.W.1
PROP. SPOT ELEVATION	+190.2	PROP. STORM DRAIN LEADER	---
EXISTING TREE LINE	---	PROP. DOWNSPOUT	---
PROPOSED TREE LINE	---	SOIL TYPE BOUNDARY	---
EXISTING FENCE	---	EXISTING WATER WELL	W
LIMIT OF DISTURBANCE	LOD	SEWAGE/WATER EASEMENT	---
STEEP SLOPES (2% AND GREATER)	---	PROP. SILT FENCE	SF
PROP. ELECTRICITY POWER LINE	---	TE-PATH	---
SPECIMEN TREE (TO BE SAVED)	ST	DRAINAGE AREA LINE	---
SPECIMEN TREE (TO BE REMOVED)	SR	PROP. STABILIZED CONSTRUCTION ENTRANCE	SCE



SEPTIC DESIGN CHART

	Surface Elevation	Bottom of Trench Elevation	Trench Pipe Elevation	Invert In at Tank	Invert Out at Tank
Initial System	550.60	544.60	548.10	548.75	548.5



Calculations For Septic Design

Design Criteria
 Design Flow = 150 (gpd/Bedroom) x 5 (Bedrooms) = 750 gpd
 Average of Percolation Rate = 9 Min./Inch
 Application Rate = 0.8 gpd/Inch
 Size of Subsurface Disposal System = 938 SF
 Square Footage of House = 7418 SF
 Septic Tank Capacity = 2000 Gallons

Septic Tank Design
 It has 2 Compartment
 Liquid Depth (D) = 3 ft (OK)
 Width (W) = 6 ft
 Length (L) = 15 ft
 L/W = 2.5 is equal or greater than 2 (OK)
 L/W = 2.5 is less than 3 (OK)
 Liquid Capacity of Septic Tank = 2000 Gallons
 Inlet Compartment Length = 11 ft
 Outlet Compartment Length = 4 ft
 Inlet Compartment Volume = 1481 is equal or greater than 2/3 of Septic Tank Volume (OK)

Drainfield Trench Design
Initial System
 Width of Trench (W) = 3 ft
 Effective Depth of Gravel Below Pipe (D) = 3 ft
 Percent of Length of Standard Trench = ((W+2)/(W+1+2D))x100 = 50 %
 Length of Standard Trench = 938 / 3 = 312.67 ft
 Length of Trench = 312.67 x 0.5 = 156.3 ft

1st Replacement
 Width of Trench (W) = 3 ft
 Effective Depth of Gravel Below Pipe (D) = 3 ft
 Percent of Length of Standard Trench = ((W+2)/(W+1+2D))x100 = 50 %
 Length of Standard Trench = 938 / 3 = 312.67 ft
 Length of Trench = 312.67 x 0.5 = 156.3 ft

2nd Replacement
 Width of Trench (W) = 3 ft
 Effective Depth of Gravel Below Pipe (D) = 3 ft
 Percent of Length of Standard Trench = ((W+2)/(W+1+2D))x100 = 50 %
 Length of Standard Trench = 938 / 3 = 312.67 ft
 Length of Trench = 312.67 x 0.5 = 156.3 ft

PROPOSED SEWER HOUSE CONNECTION PROFILE
 VERTICAL SCALE: 1"=2'
 HORIZONTAL SCALE: 1"=20'



MAPPED SOIL TABLE

Map unit symbol	Map unit name	K-Factor	HSG	Hydric Rating	Drainage Class	Acres in AOI	Percent of AOI
GgA	Glenelg loam, 0 to 3 percent slopes	0.24	B	0	Well drained	0.001	0.10%
GgB	Glenelg loam, 3 to 8 percent slopes	0.24	B	0	Well drained	0.999	99.90%
Totals for Area of Interest						1.000	100.00%

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
 HOWARD COUNTY, MARYLAND (MD027)

NOTES:
 THE SLAB OF REAR DECK IS NOT POURED AS FOUNDATION.

PERCOLATION TEST RESULTS

Test#	Date Test Performed	Depth	Start	Break 1st Drop	Stop 2nd Drop	Time of 2nd Inch	P/F/H
272	1/21/2004	4.5' - 14'	10:57	11:00	11:03	3 min	P
273	1/21/2004	3.5' - 11'	11:15	11:20	11:27	7 min	P
281	1/21/2004	5' - 11'	11:40	11:47	12:07	13 min	P
275	1/21/2004	4.5' - 12'	12:56	13:01	13:10	9 min	P
274	1/21/2004	4.5' - 12'	12:55	13:02	13:13	11 min	P
280	1/21/2004	4.5' - 13.5'	13:11	13:16	13:22	6 min	P
276	1/21/2004	4.5' - 14'	13:26	13:33	13:33	7 min	P
277	1/21/2004	4.5' - 13'	13:25	13:32	13:43	11 min	P

- ### NOTES:
- Any change to the location or depths to any components must be approved by the engineer and the Howard County Health Department prior to installation. A revised plan may be required.
 - The maximum earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank.
 - The well (tag# HO-94-4158) has been field located and is accurately shown.
 - All wells and septic systems located within 100' of property boundaries and 200' down gradient of any wells and/or septic systems have been shown.
 - No grading or placement of dirt/earth or equipment is allowed within the septic area.
 - Existing well (tag# HO-94-4158) was field located by EXACTA MARYLAND SURVEYORS ON MAY 2019.

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

16109 ED WARFIELD ROAD

PROJECT ADDRESS: 16109 ED WARFIELD RD., WOODBINE, MD 21797
 OWNER/APPLICANT INFO: OLUBUMI OWOJUYIGBE & OLUWASEUN OWOJUYIGBE, 9304 OWINGS CHOICE CT., OWINGS MILLS, MD 21117

MAP: 13 ZONING: RC-DEO
 GRID: 23 LOT #: 18667
 PLAT #: 17633 LIBER: 1404396999
 TAX ACC: 356 FOLIO: 8

4th DISTRICT
 HOWARD COUNTY, MD

Raztec Associates, Inc.
 civil engineers & planners
 341 W. Patrick St., Frederick, Tel (301) 775-4394
 Maryland 21701 email: raztecengr@comcast.net

PROFESSIONALS' REVIEW STATEMENT:
 I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER: 2742. EXPIRES: JUNE 15, 2020

DRAWN BY: PG DATE: OCT, 2019 SCALE: AS SHOWN SHEET NUMBER: SSP 1 OF 1
 CHECKED BY: MR