Howard County Health Department

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

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

RECEIPT DATE: 2/21/17 **ONSITE SEWAGE DISPOSAL SYSTEM** P 560545

APPROVAL DATE: 06/20/2019 **PERMIT: CONSTRUCTION** A

PROPERTY ADDRESS: **11031 Fuzzy Hollow Way**

SUBDIVISION: **Melchior Property** LOT: **3** TAX ID: **03-596007**

CONTRACTOR: HATFIELDS EMAIL: Ken@hatfieldsequipment.com

CONTRACTOR ADDRESS: P.O. Box 519 Annapolis Junction 20701 PHONE: 301 490 4289

PROPERTY OWNER: **Williamsburg Group** EMAIL: **marinamorrois@williamsburgllc.com**

OWNER ADDRESS: **5485 Harpers Farm Road, Columbia, MD 21044** PHONE: **410-997-5800**

SEPTIC TANK SIZE (GALLONS): **1500** TANK MANUFACTURER: **Mayer Bro, Inc.**

PUMP MODEL: **Goulds WEO3L** PUMP SIZE **1/3** PUMP TANK CAPACITY: **1500**

DISTRIBUTION SYSTEM: ☐ GRAVITY ☒ PRESSURE DOSED BEDROOMS: **4** APPLICATION RATE: **1.2**

TRENCHES:	LINEAR FEET REQUIRED: 84	INLET DEPTH: 2
	TRENCH WIDTH: 3	MAXIMUM BOTTOM DEPTH: 5
	MINIMUM SPACE BETWEEN TRENCHES: 10	EFFECTIVE AREA BEGINNING DEPTH: 2
LOCATION:	**PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**	
NOTES:	Goulds WE03L (1/3 hp) Pump@	

ISSUED BY: **Robert Freemon** ISSUE DATE: 2/21/17 EXPIRATION DATE: 2/21/18

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

☒ *ELECTRICAL PERMIT ISSUED* E **13004083**

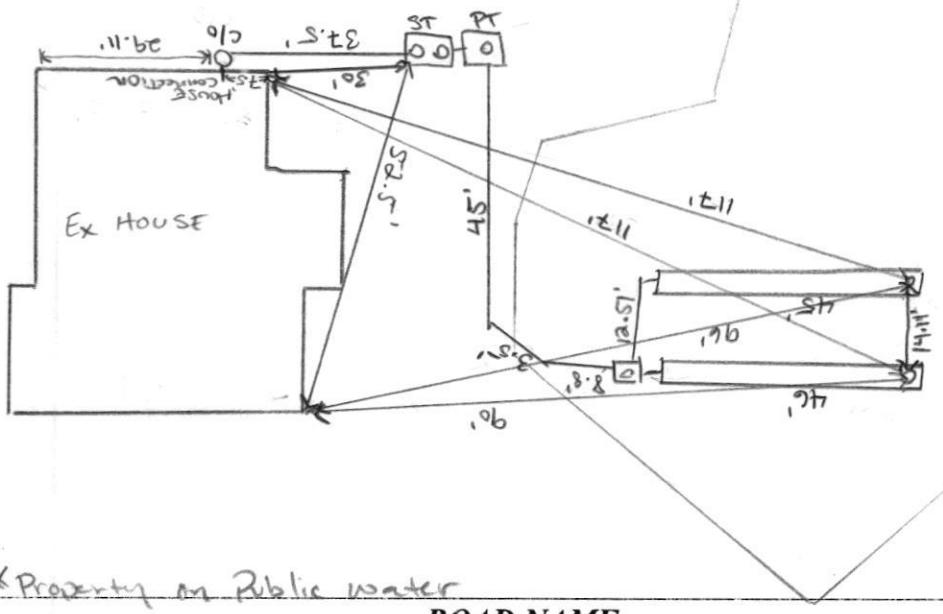
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

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



* Property on Public water

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	2'	5'

NUMBER OF TRENCHES 2
TOTAL LENGTH 91'
ABSORPTION AREA 273 SF
DISTRIBUTION BOX LEVEL N/A
DISTRIBUTION BOX BAFFLE yes
DISTRIBUTION BOX PORT yes

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL
MANUFACTURER Babylon
CAPACITY 1500 GAL
SEAM LOC TOP
TANK LID DEPTH 2'
BAFFLES yes
BAFFLE FILTER NO
MANHOLE LOC FRONT/BACK
6" PORT LOC FRONT INLET
WATERTIGHT TEST
SLOTTED yes
DATE ON LID 03/19/2017

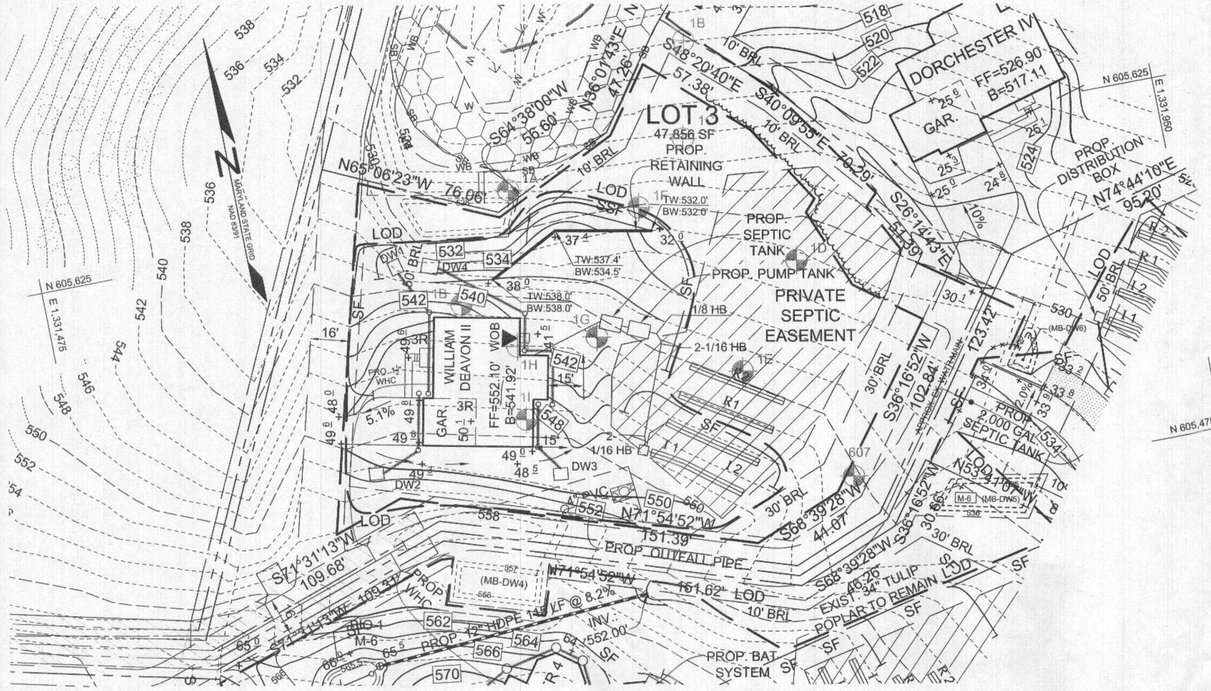
PUMP/SEPTIC TANK LEVEL
MANUFACTURER Babylon
CAPACITY 1500 GAL
SEAM LOC TOP
TANK LID DEPTH 2'
BAFFLES —
BAFFLE FILTER —
MANHOLE LOC CENTER
6" PORT LOC —
WATERTIGHT TEST
SLOTTED —
DATE ON LID 08/21/2016

PRE-CONSTRUCTION:
04/19/2017 Layout for Site. Due to Perc notes, advised to take care digging trench and notice and notify if trenches have bad soil. Will be on site Mon for inspection. Property had minor regrading in SDA - Distal field had less of a Δ in grade than proximal (~6"). Contractor notified of re-grading. Approved to begin construction (2)

INSTALLATION:
04/25/2017 Sandy Soil in trenches. Stone has noticeable fines.
4" Silver-line Coex Cellular - Trench PVC Spec. Needs Pump and Alarm (2)
ASTM F-891-10 NSF-dwv 1/0 NON PRESSURE
SL-CM 16 B NC 0114/16 16:54 Made in USA
ASSN STD SMS 01-2012 (1)

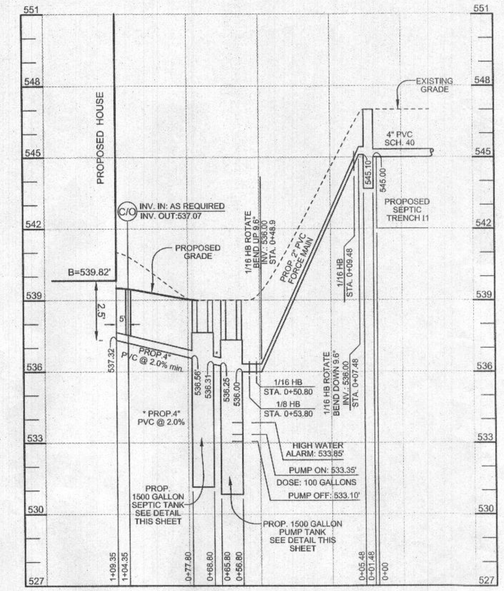
6/20/2019 REMEDIATED. QA OK. FINALED 6/20/2019

FINAL INSPECTOR _____ DATE OF APPROVAL 06/20/2019



PLAN VIEW

SCALE: 1=30'



ONSITE SEWAGE DISPOSAL SYSTEM PROFILE

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

SEPTIC SYSTEM DESIGN :
Initial System And Replacements:
Application Rate: 1.2
Effective Area Beginning Depth: 2.0'
Bottom Maximum Depth: 5.0'

DESIGN FLOW :
4 Bedrooms at 150 gpd
4x150 = 600 gpd
Square Footage of Drain field Required:
Design Flow (600 gpd) / Application Rate (1.2) = 500 sf
Sidewall Reduction Credit: - Trench Width (W) = 3'
Trench Effective Depth (D) = 3.0'
(W+2) / (W+1+2D) x 100 = (3'+2')/ (3'+1+2(3) = 5/10 = 50.0%
Replacement area = 5/7 or 71.4%
Linear Length of Trench Required: -Drain field Square Footage (500)
x Sidewall Reduction Credit (50.0%) / Trench Width (3') = 83.33; use 84.0'
Linear Length of Trench Provided =84.0' -Two trenches 42 lf each

DOSE TANK DESIGN :
Design Flow: 600 GPD Diameter of Force Main: 2.0" Material: Schedule 40 PVC
Dose Calculations: - Design Flow: 600 gpd - Length of force main: 2.0" force main = 57.32'
Volumé of force main: - 57.32' x 17.4 gallons per 100' = 9.97; say 10.0 gallons
Minimum dose : use 80 gallons for dose min.

PUMP DESIGN :
Pump Flow : 50 gpm
Dose Amount : 80 gallons
Pump Run Time : 1.6 minutes to achieve required dose

FRICTION LOSS IN DELIVERY PIPE FITTINGS
22.5° HB/VB - 5 @ 2.0 = 10.0'
2 @ 2.0 = 4.0' Couplings
1 @ 4.5 = 4.5' Quick Disconnect
1@ 4.5= 4.5 ' Gate Valve
TOTAL = 23.00 '

Length of delivery pipe @ distribution box = 51.3'
Fittings equiv. = 23.00'
TOTAL "L" = 74.00'

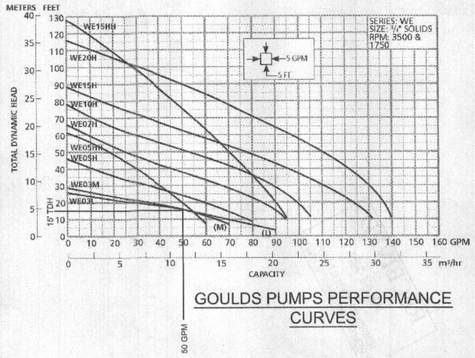
Flow at 2.0" pipe = 30 gpm
Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 1.10
Total equivalent length of 2.0" Force Main and appurtenances = 51' + 23.00' = 74.00'

Friction loss in 2.0" pipe = 74.00'/100 x 1.10 = 0.81'
Total Friction Head = 0.81'

DETERMINE STATIC HEAD:
Grade above tanks =547.00
Top of Tank Elev = 539.00
Pipe below grade = 3.00' ave.
Elevation of pipe inv out = 536.00
Elevation of Dose Tank Bottom inv = 531.08
Elevation of distribution pipe inv =545.10
Static Head = 545.10 -531.08 = 14.02'
Total Dynamic Head = Static head + Friction head
: 14.02 + 0.81' = 14.8' use 15' TDH

PUMP TANK ELEVATIONS:
Proposed grade at top of tank : 539.00
Top of pump tank: 367.17
Elev. of Pipe inv. Out = 536.00
Pump chamber invert in: 536.25
High Water Alarm: 533.85
Pump On: 533.35
Pump Off: 533.10
Bottom inside slab of tank: 531.08

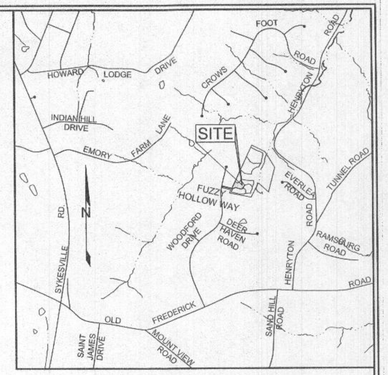
PUMP CHAMBER VOLUMES:
Invert to Pump On: 2.27'x 8.33'x 5.5'x7.48 = 777.92 gallons
Pump Dose : Pump On to Pump Off: 0.25' x 8.33' x 5.5' x 7.48 = 85.67 gallons
Excess High Water Alarm to top of tank or 3.06' x 8.33'x 5.5' x 7.48 : 1,048.65 gallons to the inside top of the tank
Pipe invert in; or 2.3' x 8.33'x 5.5' x 7.48 = 788.2 gallons to the invert of the pipe in.
Design based on: One (1) 1,500 gallon top seam tank Goulds WE03L (1/3 hp) series pump or equivalent.



GOULDS PUMPS PERFORMANCE CURVES

LEGEND

- PASSED PERCOLATION TEST LOCATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING TREE
- SOIL BOUNDARY
- EXISTING FOREST CONSERVATION EASEMENT PER F-13-075
- PROPOSED ROOF LEADER (4" PVC TYP. WITH DOWNSPOUT)
- PROPOSED BIORETENTION FACILITY (M-6)
- EX. SEPTIC EASEMENT
- PROPOSED 1.5" WHC



VICINITY MAP

SCALE: 1"=2000'

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	"K" FACTOR
GgB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.24

NOTES:
1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE; NATURAL RESOURCES CONSERVATION SERVICE; WEB SOIL SURVEY.
2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

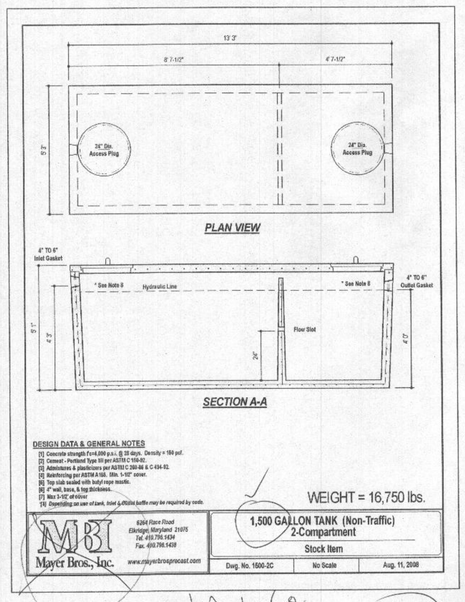
GENERAL NOTES

1. SUBJECT PROPERTY ZONED RR-DEO PER 10/06/13 COMPREHENSIVE ZONING PLAN.
2. TOTAL AREA OF LOT = 1.10 AC.±
3. PUBLIC WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
4. ▨ THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT, OF AT LEAST 10,000 SF 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 SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
5. WATER WILL BE PUBLIC (CONTRACT # 44-4791-D). WATER SERVICE TO THIS LOT WILL BE GRANTED UNDER PREVISIONS OF SECTION18.122.B OF THE HOWARD COUNTY CODE VIA CONNECTIONS TO EXISTING CONTRACT # W-44-3478.
6. ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN FIELD LOCATED.
7. THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY MILDENBERG, BOENDER AND ASSOC. IN OCTOBER 2012.
8. THE TOPOGRAPHY SHOWN HEREON HAS BEEN FIELD RUN BY CHRISTOPHER CONSULTANTS, INC. IN NOVEMBER 2004. THE EXISTING TOPOGRAPHY SHOWN OUTSIDE THE SITE IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004.
9. THE SOILS SHOWN HAVE BEEN TAKEN FROM THE NRCS WEB SOIL SURVEY WEBSITE. HOWARD COUNTY SOILS GRID 4, SOILS MAP-GRID 193.
10. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS, NUMBERS 09H2 AND 10GB, WERE USED FOR THIS PROJECT.
11. THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
12. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
13. ANY DAMAGE TO PUBLIC RIGHT-OF WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
14. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
15. ALL DITCHES AND SWALES WILL HAVE SOIL STABILIZATION MATTING UNLESS SOD IS BEING UTILIZED.
16. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS, UNLESS WAIVERS HAVE BEEN APPROVED.
17. LOTS 5 AND 6 ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. FOR LOT 5 SEE GRADING PLAN GP-17-034 . FOR LOT 6 SEE GRADING PLAN GP-16-005.
18. LIMIT OF DISTURBANCE = 18,745 OR 0.4303 AC.±
19. THE LOCATION OF WATER HOUSE CONNECTION (WHC) SHOWN HEREON IS APPROXIMATE. THE CONTRACTOR SHALL TEST PIT PRIOR TO CONSTRUCTION AND INFORM SILL ENGINEERING GROUP, LLC OF ANY CONFLICTS.
20. THE SEWAGE PUMP SHALL BE A ½ H.P . BY GOULDS MODEL WE03L OR EQUIVALENT. THE SEPTIC TANK SHALL BE A 1,500 GALLON TOP SEAM SEPTIC TANK TWO COMPARTMENT; AND THE PUMP TANK SHALL BE A 1,500 GALLON TOP SEAM PUMP SINGLE COMPARTMENT MANUFACTURED BY MAYER BROS. OR EQUIVALENT.
21. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
22. THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
23. ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
24. PROPERTY LINES ON THE EAST HALF OF THE LOT MUST BE PROFESSIONALLY STAKED BY A LICENSED SURVEYOR.

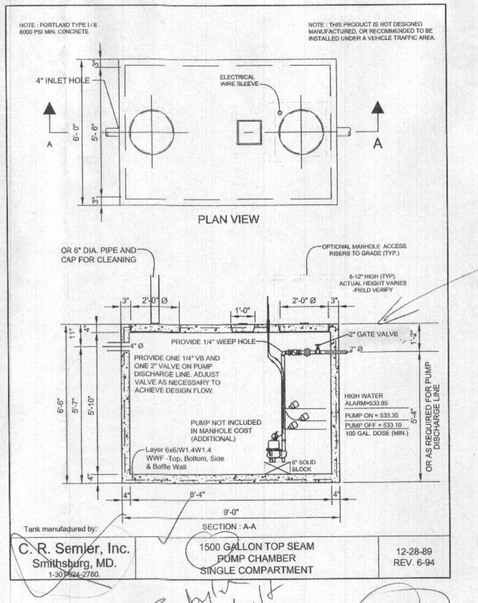
Approved Septic System Plan
Howard County Health Department
Signature — Date 1/2/17

SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

- INITIAL & REPLACEMENT SYSTEM:
  - APPLICATION RATE: 1.2
  - EFFECTIVE AREA BEGINNING DEPTH: 2'
  - BOTTOM MAXIMUM DEPTH: 5'
1. DESIGN FLOW:
   - 4 BEDROOMS AT 150 GPD
   - 4X150 GPD = 600 GPD
2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
   - DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF
3. SIDEWALL REDUCTION CREDIT:
   - TRENCH WIDTH (W) = 3'
   - TRENCH EFFECTIVE DEPTH (D) = 3'
   - (W+2) / (W+1+2D) X 100 = 50%
4. LINEAR LENGTH OF TRENCH REQUIRED:
   - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (0.50) / TRENCH WIDTH (3') =83.33'
5. LINEAR LENGTH OF TRENCH PROVIDED = 84'
   - TWO TRENCHES 42 LF/EACH
6. EXISTING GRADE: TRENCH I1: 547.0' TRENCH R1: 542.0'
   INVERT: TRENCH I1: 545.0' TRENCH R1: 540.0'
   EXISTING GRADE: TRENCH I2: 544.5' TRENCH R2: 540.0
   INVERT: TRENCH I2: 542.5' TRENCH R2: 538.0'



Babylon Vault Co. O.K. KW



Babylon Vault Co. OK KW

OWNER/DEVELOPER
WILLIAMSBURG GROUP
5485 HARPERS FARM ROAD
COLUMBIA, MARYLAND 21044

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN

MELCHIOR PROPERTY

LOT 3

TAX MAP 10 GRID 13 — PARCEL 184
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — PAUL SILL — No. 32025 — PROFESSIONAL ENGINEER

SILL ENGINEERING GROUP, LLC
11130 Dovedale Court, Suite 200
Marriottsville, Maryland 21104
Phone: 443.325.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

DESIGN BY:	PS
DRAWN BY:	AEA
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	DECEMBER 30, 2016
PROJECT #:	15-023
SHEET #:	1 of 1

PROFESSIONAL CERTIFICATION. I HEREBY 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 NO. 32025, EXPIRATION DATE: JUNE 20, 2017.