

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: 3/8/22 **ONSITE SEWAGE DISPOSAL SYSTEM** P SKODA
 APPROVAL DATE: 03/18/2022 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 6509 OLD HILLTOP COURT, CLARKSVILLE, MD 21029
 SUBDIVISION: CLARKSVILLE CROSSING LOT: 2 TAX ID: 05-602004
 CONTRACTOR: HATFIELDS EQUIPMENT EMAIL: ken@hatfieldsequipment.com
 CONTRACTOR ADDRESS: P.O. BOX 517 ANNAPOLIS JUNCTION, MD 20701 PHONE: 301-489-4289
 PROPERTY OWNER: WILLIAMSBURG GROUP EMAIL: chriswine@williamsburgllc.com
 OWNER ADDRESS: 5485 HARRIS FARM LANE, COLUMBIA, MD 21044 PHONE: (410)997-8800
 SEPTIC TANK SIZE (GALLONS): 2000 TANK MANUFACTURER: MAYER BROS., INC.
 PUMP MODEL: ZOELLER M-57 PUMP SIZE 0.33 PUMP TANK CAPACITY: 2000

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 1.2

| | | |
|-----------|---|--|
| TRENCHES: | LINEAR FEET REQUIRED: <u>130</u> | INLET DEPTH: <u>2.5*</u> |
| | TRENCH WIDTH: <u>3</u> | MAXIMUM BOTTOM DEPTH: <u>7.0</u> |
| | MINIMUM SPACE BETWEEN TRENCHES: <u>10</u> | EFFECTIVE AREA BEGINNING DEPTH: <u>5.0</u> |
| LOCATION: | PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION. | |
| NOTES: | INVEERT IN FOR TRENCH T-1-1 IS 2.5 FEET DEEP, WHILE INVEERT IN FOR TRENCHES T-1-2 ANF T-1-3 ARE AT 2 FEET DEPTH. INSTALL AT LEAST 3 CLEANOUTS IN SHC: AT 1 ST , 2 ND , AND 3 RD BEND. INSTALL DISTRIBUTION BOX PER PLAN. | |

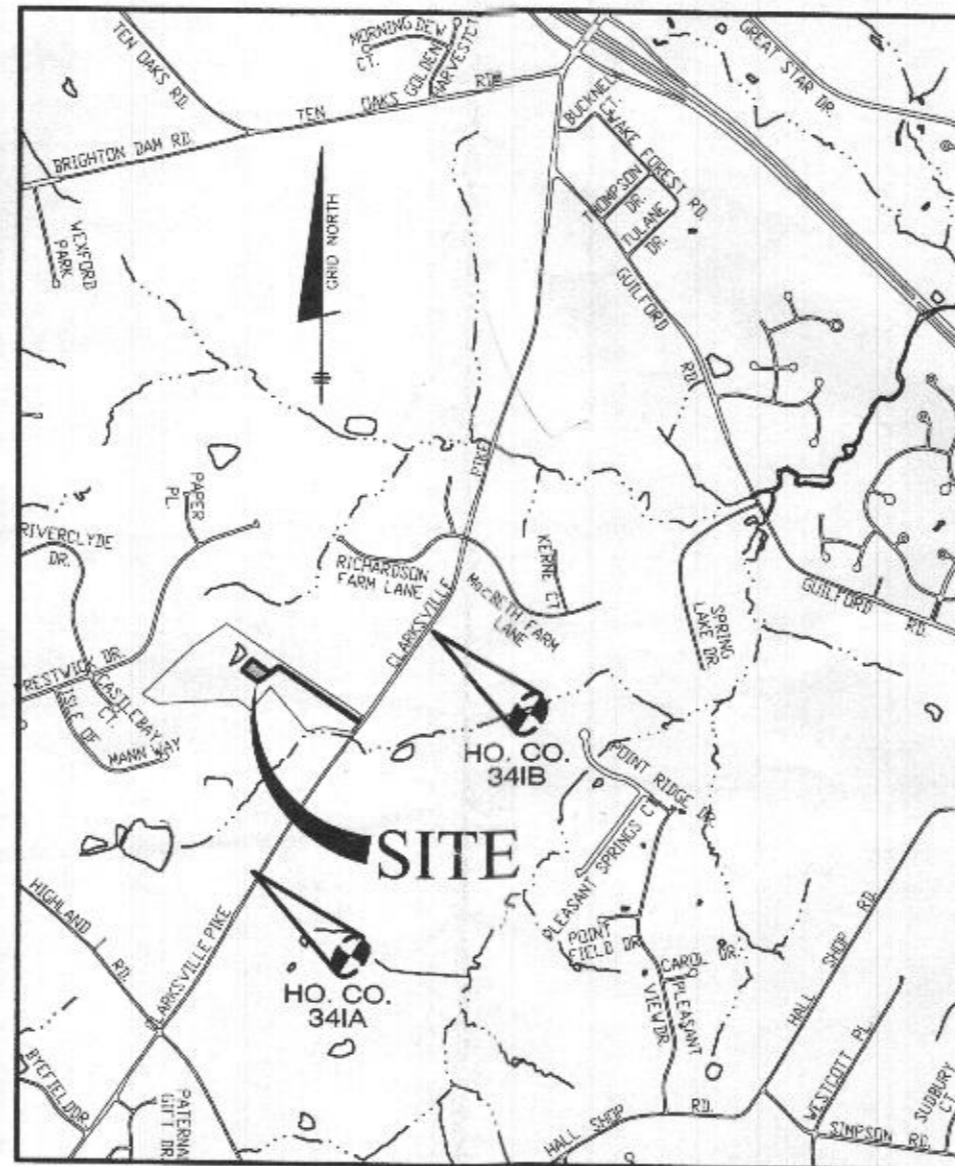
ISSUED BY: R BRICKER ISSUE DATE: 03/18/2022 EXPIRATION DATE: 3/8/23

- 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 22001512
- 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.**

GENERAL NOTES

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR CLARKSVILLE CROSSING PROPERTY, PLAT NUMBER 25134-25137 REFER TO THE PLAT FOR LOT DIMENSIONS, LOT AREA, ALL EASEMENTS AND CONDITIONS.
2. THE EXISTING WELL SHOWN ON THIS PLAN (HO-17-0381) HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC. AND IS ACCURATELY SHOWN.
3. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
4. TOPOGRAPHY SHOWN WAS PREPARED BY BENCHMARK ENGINEERING, INC. DATED AUGUST, 2013.
5. SEDIMENT AND EROSION CONTROLS WILL BE SUBMITTED BY HOWARD SOILS CONSERVATION DISTRICT AS A CUSTOM GRADING PLAN.
6. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED BUILDING PERMIT AND CUSTOM GRADING PLANS.
7. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
8. ANY CHANGES 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.
9. ANY ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
10. THE SEPTIC TANK WILL BE A 2000 GALLON TWO COMPARTMENT TANK. THE PUMP TANK IS TO BE A 2,000 GALLON ONE COMPARTMENT TANK.
11. THE MAXIMUM EARTH COVER OVER A TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
12. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS/OR SEPTIC SYSTEM HAVE BEEN SHOWN.
13. ANY FUTURE WELLS SHALL BE 10' FROM DRIVEWAY.
14. MICRO-BIORETENTION SWM FACILITIES WITHIN 100' OF A WELL SITE OR WELL BOX WILL BE LINED. MICRO-BIORETENTION FACILITIES ARE NOT ALLOWED CLOSER THAN 50' TO A WELL SITE OR WELL BOX.



SCALE: 1" = 2000'
ADC MAP 31; GRID C4

Approved Septic System Plan
Howard County Health Department
2000-gal Septic Tank
w/2000-gal Pump Tank
& Zoeller M57/M57 pump or equiv
R. Budek 11/22/2021
Signature Date
To Gravity Distribution
for 5-bedroom residence

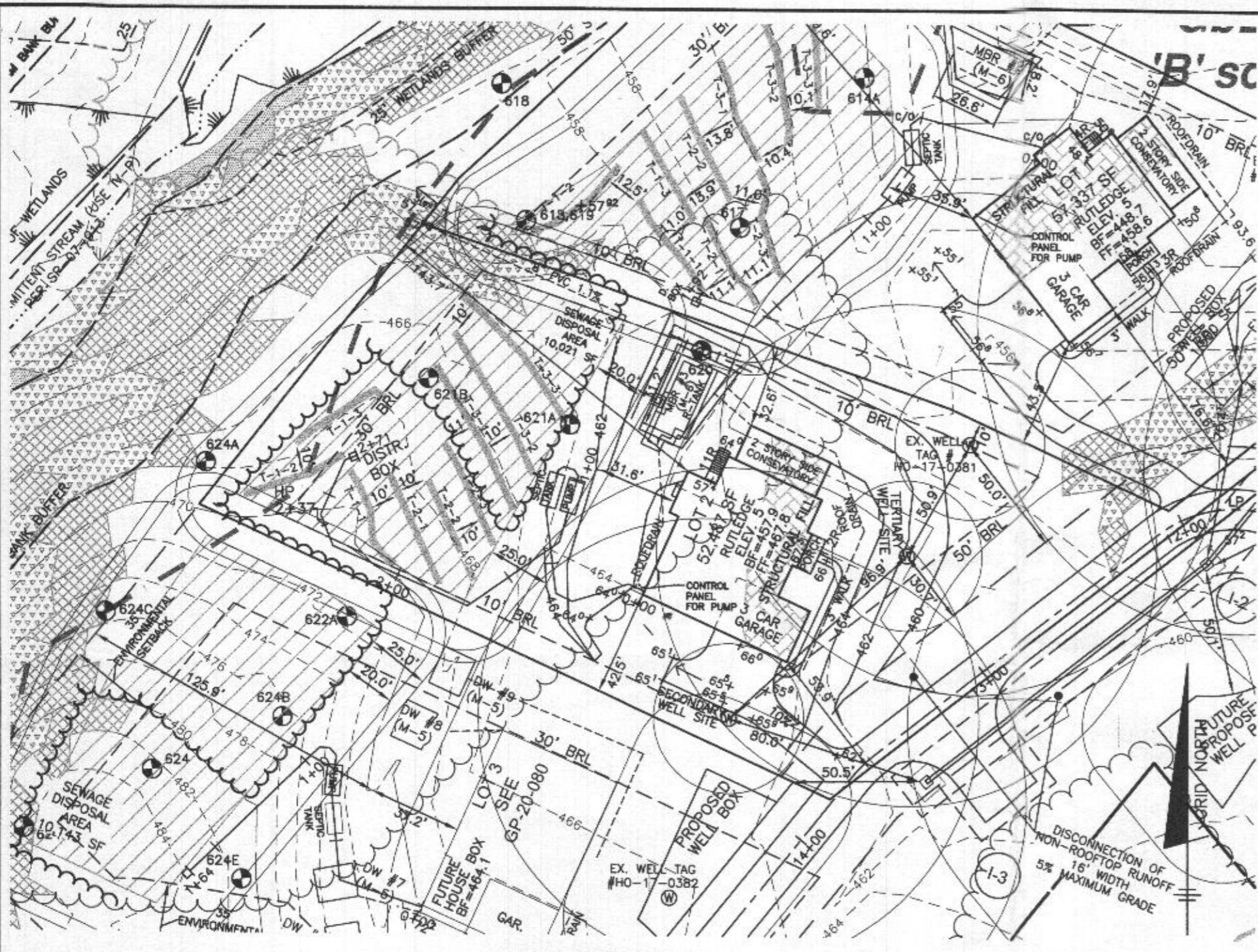
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 45577, Expiration Date: 06/08/2022



| | | | |
|-------------|-----------------|---|--------|
| PROJECT: | | CLARKSVILLE CROSSING LOT 2 | |
| LOCATION: | | TAX MAP: 34, GRID: 23, PARCEL: 301 6509 OLD HILLTOP CT., TAX ID: 05-602004 ELECTION DISTRICT NO. 5, HOWARD COUNTY, MARYLAND | |
| TITLE: | | ONSITE SEWAGE DISPOSAL SYSTEM PLAN | |
| HOUSE TYPE: | | RUTLEDGE | |
| DATE: | SEPTEMBER, 2021 | PROJECT NO. | 2525 |
| SCALE: | AS SHOWN | DRAWING | 1 OF 4 |

BUILDER:
WILLIAMSBURG HOMES
5485 HARPERS FARM ROAD
COLUMBIA, MARYLAND 21044
410-997-8800

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-8105 ▲ (F) 410-465-6644
WWW.BEI-CVILENGINEERING.COM



| INITIAL SYSTEM - LOT 2 | | |
|----------------------------------|------|--------|
| Number of Bedrooms | 5 | |
| Application Rate | 1.2 | gpd/sf |
| Effective Area Beginning Depth | 5.0 | ft |
| Bottom Max Depth | 7.0 | ft |
| Design Flow | 750 | gpd |
| Drainage Field square footage | 625 | sf |
| Sidewall Reduction Credit | 0.63 | |
| Trench width | 3 | ft |
| Effective Area Depth | 2 | ft |
| Trench Spacing | 10 | ft |
| Linear Length of trench Required | 130 | lf |

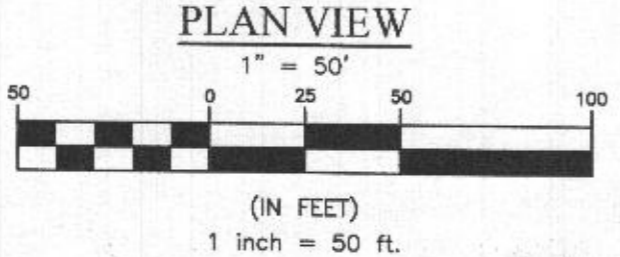
| 1st REPLACEMENT SYSTEM | | |
|----------------------------------|------|--------|
| Number of Bedrooms | 5 | |
| Application Rate | 1.2 | gpd/sf |
| Effective Area Beginning Depth | 6.0 | ft |
| Bottom Max Depth | 8.0 | ft |
| Design Flow | 750 | gpd |
| Drainage Field square footage | 625 | sf |
| Sidewall Reduction Credit | 0.63 | |
| Trench width | 3 | ft |
| Effective Area Depth | 2 | ft |
| Trench Spacing | 10 | ft |
| Linear Length of trench Required | 130 | lf |

| 2nd REPLACEMENT SYSTEM | | |
|----------------------------------|------|--------|
| Number of Bedrooms | 5 | |
| Application Rate | 0.8 | gpd/sf |
| Effective Area Beginning Depth | 5.5 | ft |
| Bottom Max Depth | 7.5 | ft |
| Design Flow | 750 | gpd |
| Drainage Field square footage | 938 | sf |
| Sidewall Reduction Credit | 0.63 | |
| Trench width | 3 | ft |
| Effective Area Depth | 2 | ft |
| Trench Spacing | 10 | ft |
| Linear Length of trench Required | 195 | lf |

| SEPTIC INVERT CHART - LOT 2 | |
|-----------------------------|--------|
| INV @ HOUSE | 462.2 |
| GROUND @ HOUSE | 464.5 |
| INV IN TANK | 460.7 |
| INV OUT TANK | 460.4 |
| TOP OF TANK | 461.5 |
| GROUND OVER TANK | 464.5 |
| INV IN PUMP TANK** | 460.0 |
| INV OUT PUMP TANK | 459.7 |
| TOP OF PUMP TANK | 460.8 |
| GROUND OVER TANK | 463.0 |
| INV IN DIST BOX | 467.00 |
| INV OUT DIST BOX | 466.90 |
| GROUND AT DIST BOX | 469.3 |

LEGEND

- SOILS CLASSIFICATION **GgB**
- SOILS DELINEATION
- EXISTING CONTOURS
- EXISTING TREE LINE
- PROPOSED TREE LINE
- WELL BOX
- SEWAGE DISPOSAL AREA
- FIELD LOCATED WELL
- PERCOLATION TEST, PASSING



| SPEC SHEET INFORMATION - LOT 2 | | | |
|--------------------------------|------------------|-----------------|--------------|
| System | Application Rate | Effective Depth | Bottom Depth |
| Initial | 1.2 | 5.0 | 7.0 |
| 1st Replacement | 1.2 | 6.0 | 8.0 |
| 2nd Replacement | 0.8 | 5.5 | 7.5 |

Approved Septic System Plan
 Howard County Health Department
[Signature]
 11/22/21
 Date

BUILDER:
 WILLIAMSBURG HOMES
 5485 HARPERS FARM ROAD
 COLUMBIA, MARYLAND 21044
 410-997-8800

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 8480 BALTIMORE NATIONAL PIKE • SUITE 315
 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 • (F) 410-465-6644
 WWW.BEI-CIVILENGINEERING.COM

| | |
|---|------------------|
| PROJECT: CLARKSVILLE CROSSING LOT 2 | |
| LOCATION: TAX MAP: 34, GRID: 23, PARCEL: 301 6509 OLD HILLTOP CT., TAX ID: 05-602004 ELECTION DISTRICT NO. 5, HOWARD COUNTY, MARYLAND | |
| TITLE: ONSITE SEWAGE DISPOSAL SYSTEM PLAN | |
| HOUSE TYPE: RUTLEDGE | |
| DATE: SEPTEMBER, 2021 | PROJECT NO. 2525 |
| SCALE: AS SHOWN | DRAWING 2 OF 4 |

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. 45577, Expiration Date: 06/08/2022



Pumping Station

Diameter of Force Main and Manifold = 2" PVC SCH. 40
 Length of Force Main = 123 feet SCH.40 gallons/100 feet = 17.4 Table 4.2

Volume of Main = 21.4 gallons

Total Volume = 21.4 gallons

Minimum Dose must be greater than 1/6 of the design flow 125 gallons

Minimum Dose must be greater than the volume of the main 21 gallons

Use minimum dose of 130 gallons okay Doses per Day = 5.77

Size Pump Chamber

Pump chamber must be able to hold one dose and one days design flow

One day Capacity = 750 gallons
 Dose = 130 gallons
 Totals = 880 gallons

Use 2,000 gallon pump tank

| | | | | | |
|------------------|------------|----------|------------|------------------|-----------|
| Tank Dimensions: | Exterior | Interior | | | |
| Length: | 13.75 feet | Length: | 13.08 feet | Walls: | 0.33 feet |
| Width: | 8.25 feet | Width: | 5.58 feet | Bottom: | 0.33 feet |
| Height: | 5.42 feet | Height: | 4.67 feet | Top: | 0.42 feet |
| | | Area: | 73.05 sf | Bottom to Inlet: | 4.58 feet |
| | | Volume: | 340.89 cf | | |

Sizing the Pump

Flow: runtime = 5.000 minutes
 rate = 26.00 gallons/minute

Design Head:

Design Head = Static Head + Friction Head
 Static Head = highest elevation of main - pump off elevation
 Highest component of system = 457.8 Main HP
 Pump off elevation = 457.30
 Static Head = 10.30 feet

Friction Head = Head loss due to pipe friction
 2.0" pipe = 123 feet
 45' bends 3 loss for bend 12 feet per table 4.3
 90' bends 3 loss for bend 15 feet per table 4.3
 Gate Valve 0 loss for tee 0 feet per table 4.3

Friction loss per table 4.4 = 1.19 (ft/100 ft)
 Equivalent Length = 150 Friction loss 1.78 feet
 Total Friction Head = 1.78
 Design Head = 12.08 feet

Pump Requirements:

Performance = 26.00 gpm
 Head of Water = 12.08 feet of head

Pump Selection: Zoeller Pump Company, Model 55
 0.3 horse power

Pump Flow Rate = 28.00 gallons/minute per rating curve. Run time: 4.64 Minutes
 TDH analysis 12.35 ft
 Between design and curve? Yes

Design Pump Chamber

Ground over Tank = 463.00 Cover = 2.20 ft
 Top of Tank = 460.80
 Invert of Tank = 455.71
 8" Riser = 0.50 feet
 Pump Height = 0.64 feet

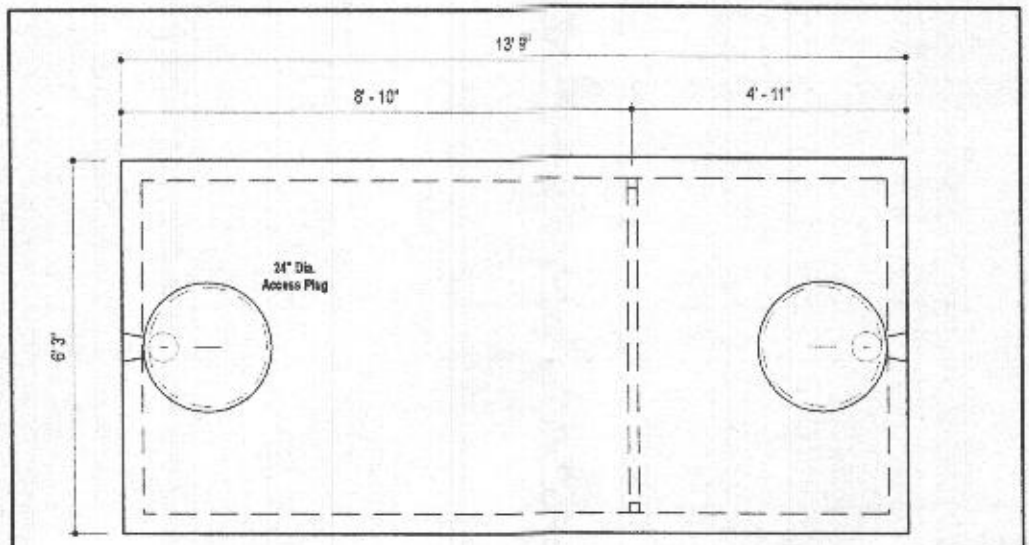
Min. Pump off = 457.05
 Selected Pump off = 457.30

Dose = 17.4 cf
 Area of Pit = 73.05 sf

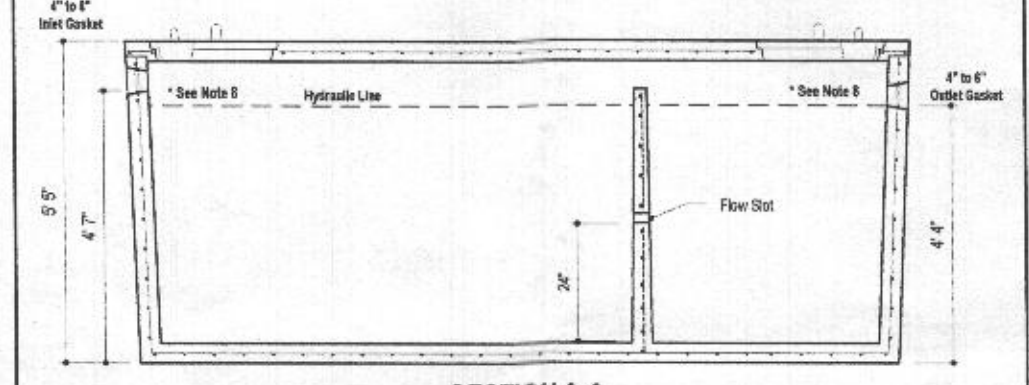
Pump on dist. = 0.24
 Pump on Elev. = 457.54

Distance between Pump on and Highwater Alarm = 0.5 feet
 Highwater Alarm Elevation = 458.04

Dist. for day stored above alarm 1.37
 Minimum Inlet Elev. = 459.41
 Tank Inlet = 459.96 Okay
 Dist. Alarm to Inlet = 1.92 Okay



PLAN VIEW



SECTION A-A

DESIGN DATA & GENERAL NOTES

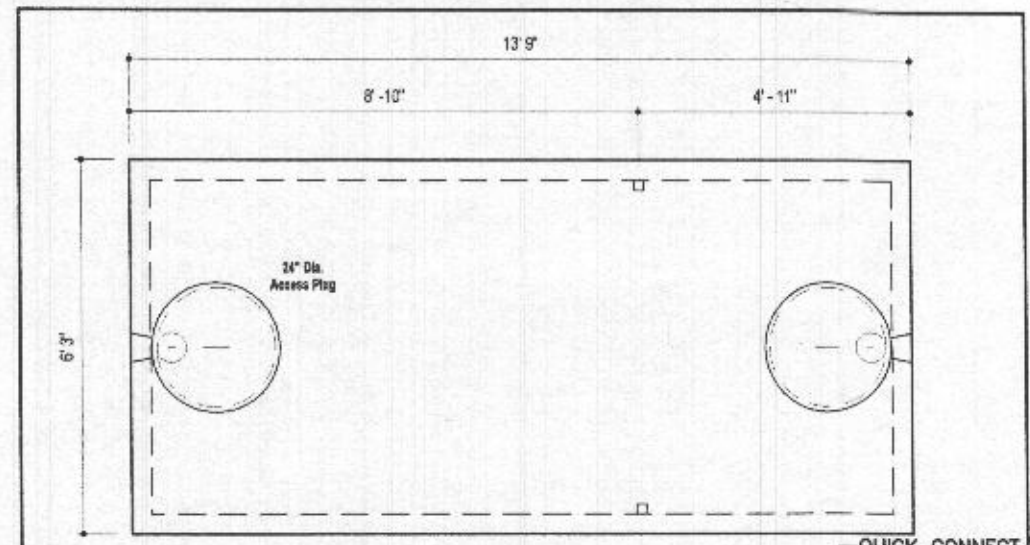
- [1] Concrete strength $f'c=4,000$ p.s.i. @ 28 days. Density = 160 pcf.
- [2] Cement - Portland Type III per ASTM C 150-82.
- [3] Admixtures & plasticizers per ASTM C 260-88 & C 484-82.
- [4] Reinforcing per ASTM A186. Min. 1-1/2" cover.
- [5] Top slab sealed with butyl rope mastic.
- [6] 4" wall, 4" base, & 6" top thickness.
- [7] Max 3" of cover
- [8] Depending on use of tank, Inlet & Outlet baffles may be required by code.

MBI
 Mayer Bros., Inc. www.mayerbrosprecast.com

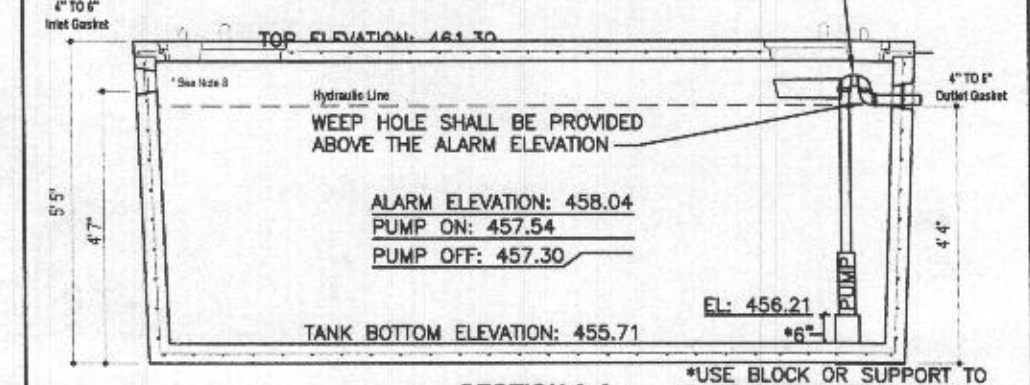
6264 Race Road
 Elkridge, Maryland 21075
 Tel. 410.796.1434
 Fax. 410.796.1438

2,000 GALLON SEPTIC TANK
 2-Compartment
 Stock Item [Approx. 19,900 lbs]

Dwg. No. 2000-2C No Scale Aug 11, 2008



PLAN VIEW



SECTION A-A

DESIGN DATA & GENERAL NOTES

- [1] Concrete strength $f'c=4,000$ p.s.i. @ 28 days. Density = 160 pcf.
- [2] Cement - Portland Type III per ASTM C 150-82.
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| Float Tree: | Elev. | Relative to Bottom |
|----------------|--------|--------------------|
| Bottom of Tank | 455.80 | |
| Top of Pump | 457.14 | 1' 4 1/8" |
| Pump Off | 457.30 | 1' 6" |
| Pump On | 457.54 | 1' 8 7/8" |
| High Alarm | 458.04 | 2' 2 7/8" |

*USE BLOCK OR SUPPORT TO RAISE PUMP INLET A MINIMUM OF 0.5' OFF BOTTOM OF TANK

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 Tel. 410.796.1434
 Fax. 410.796.1438

2,000 GALLON SEPTIC TANK
 1-Compartment
 Stock Item [Approx. 19,000 lbs]

Dwg. No. 2000-1C No Scale Aug. 11, 2008

Approved Septic System Plan
 Howard County Health Department

R. Buehler
 Signature 11/22/21
 Date

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. 45577
 Expiration Date: 06/08/2022

11/11/21



BUILDER:
 WILLIAMSBURG HOMES
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PROJECT: CLARKSVILLE CROSSING LOT 2

LOCATION: TAX MAP: 34, GRID: 23, PARCEL: 301
 6509 OLD HILLTOP CT., TAX ID: 05-602004
 ELECTION DISTRICT NO. 5, HOWARD COUNTY, MARYLAND

TITLE: ONSITE SEWAGE DISPOSAL SYSTEM PLAN

HOUSE TYPE: RUTLEDGE

| | |
|-----------------------|------------------|
| DATE: SEPTEMBER, 2021 | PROJECT NO. 2525 |
| SCALE: AS SHOWN | DRAWING 4 OF 4 |