

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: 10-31-23 **ONSITE SEWAGE DISPOSAL SYSTEM** P 573687

APPROVAL DATE: 8/19/2024 **PERMIT: CONSTRUCTION** A _____

PROPERTY ADDRESS: 11209 Whithorn Way

SUBDIVISION: Riverwood, Phase 1 LOT: 24 TAX ID: _____

CONTRACTOR: Hatfields Equipment EMAIL: _____

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

PROPERTY OWNER: Arif and Humaira Ayub EMAIL: _____

OWNER ADDRESS: 6108 Every Sall Path, Clarksville, MD 21029 PHONE: _____

SEPTIC TANK SIZE (GALLONS): 2000 TANK MANUFACTURER: MBI

PUMP MODEL: Zoeller N151 PUMP SIZE: 1/3 HP PUMP TANK CAPACITY: 2,000

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>96</u>	INLET DEPTH: <u>2</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>12</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.5</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:		

ISSUED BY: Dana Bernard ISSUE DATE: 10-31-23 EXPIRATION DATE: 10-31-24

- 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 N/A E23005865 pump tank
- 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.**

HO-95-0009

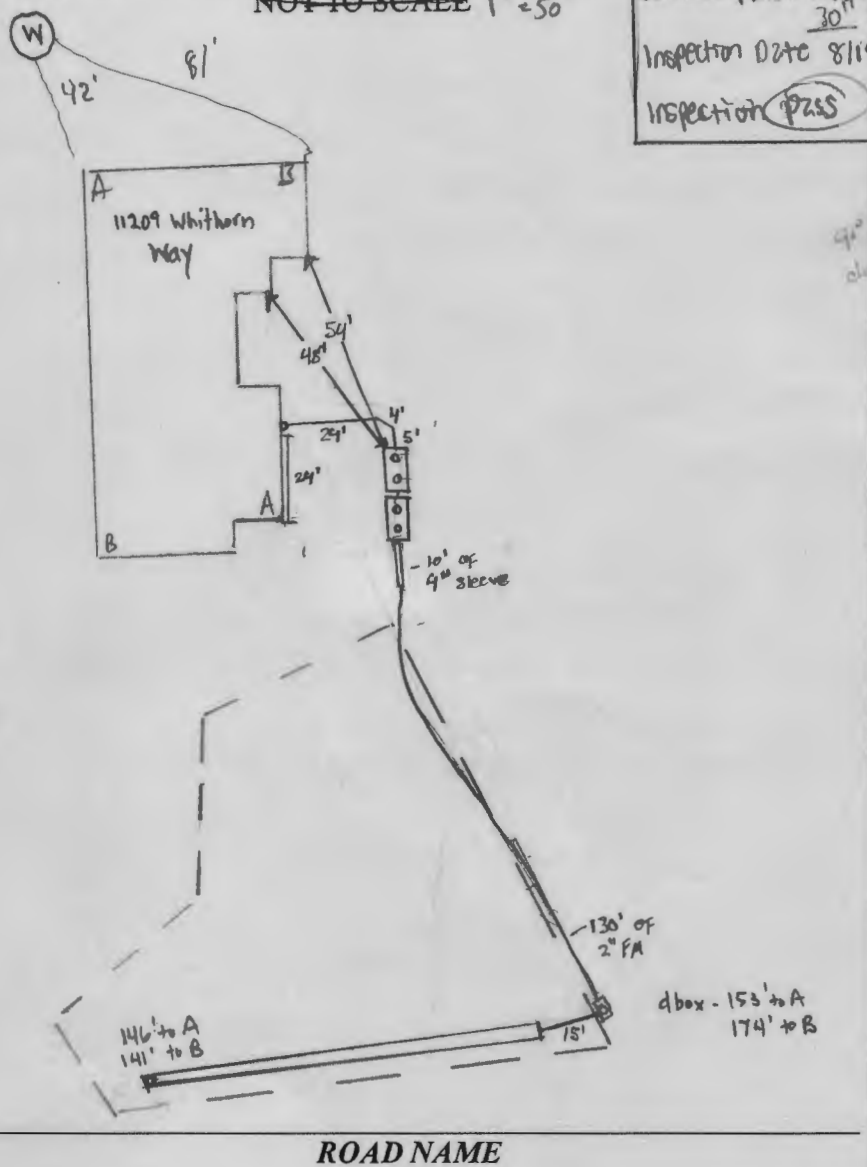
NOT TO SCALE 1" = 50'

control Panel Height 30'
Inspection Date 8/19/2024
Inspection Pass

TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	2'	8'
NUMBER OF TRENCHES <u>1</u>		
TOTAL LENGTH <u>96'</u>		
ABSORPTION AREA <u>288'</u> + side area		
DISTRIBUTION BOX LEVEL <u>yes</u>		
DISTRIBUTION BOX BAFFLE <u>yes</u>		
DISTRIBUTION BOX PORT <u>yes</u>		

SEPTIC TANK DATA	
SEPTIC TANK 1 LEVEL	<u>yes</u>
MANUFACTURER	<u>Babylon</u>
CAPACITY	<u>2000</u> GAL
SEAM LOC	<u>top</u>
TANK LID DEPTH	<u>1.5' - 1'</u>
BAFFLES	<u>4" back 6" front</u>
BAFFLE FILTER	<u>---</u>
MANHOLE LOC	<u>front + back</u>
6" PORT LOC	<u>---</u>
WATERTIGHT TEST	<u>---</u>
SLOTTED	<u>yes</u>
DATE ON LID	<u>12/3/2023</u>

PUMP/SEPTIC TANK LEVEL	<u>yes</u>
MANUFACTURER	<u>Babylon</u>
CAPACITY	<u>2000</u> GAL
SEAM LOC	<u>top</u>
TANK LID DEPTH	<u>1.5' - 2'</u>
BAFFLES	<u>---</u>
BAFFLE FILTER	<u>---</u>
MANHOLE LOC	<u>Front + back</u>
6" PORT LOC	<u>---</u>
WATERTIGHT TEST	<u>---</u>
SLOTTED	<u>---</u>
DATE ON LID	<u>11/3/2023</u>



ROAD NAME

PRE-CONSTRUCTION:

12/15/23 - laid out one trench @ 96' along contour, SDA not moved so marking paint used w/ stakes. the septic tank stake was in place pump tank stake missing contractor said the builder wants to change the location of the pool so the ASDS plan may be redefined. Ask Contractor about tank stakes upon flow insp. SDA stakes were in place. (PK)

12/29/23 - tank stakes in place and pool design will not change. (PK) * Get the septic tanks restaked before installation (PK) * (completed)

INSTALLATION: 11/8/24 - trench, dbox & some of the FFI has been installed, trench @ 96' stone ok geotextile fabric in place. OK to backfill before the rain tomorrow, attempted to find the well but it's completely under water. (PK) 11/9/24 - went to get AS built measurements no contractor onsite, all work backfilled before the rain. (PK)

11/11/2024 - tanks installed w/ at most 2' of cover. pipe from house to tank has 2% fall. FM from pump tank around 10', FM 2" 2020 to 280 PSI. OK to Backfill Report for P&L. (PK)

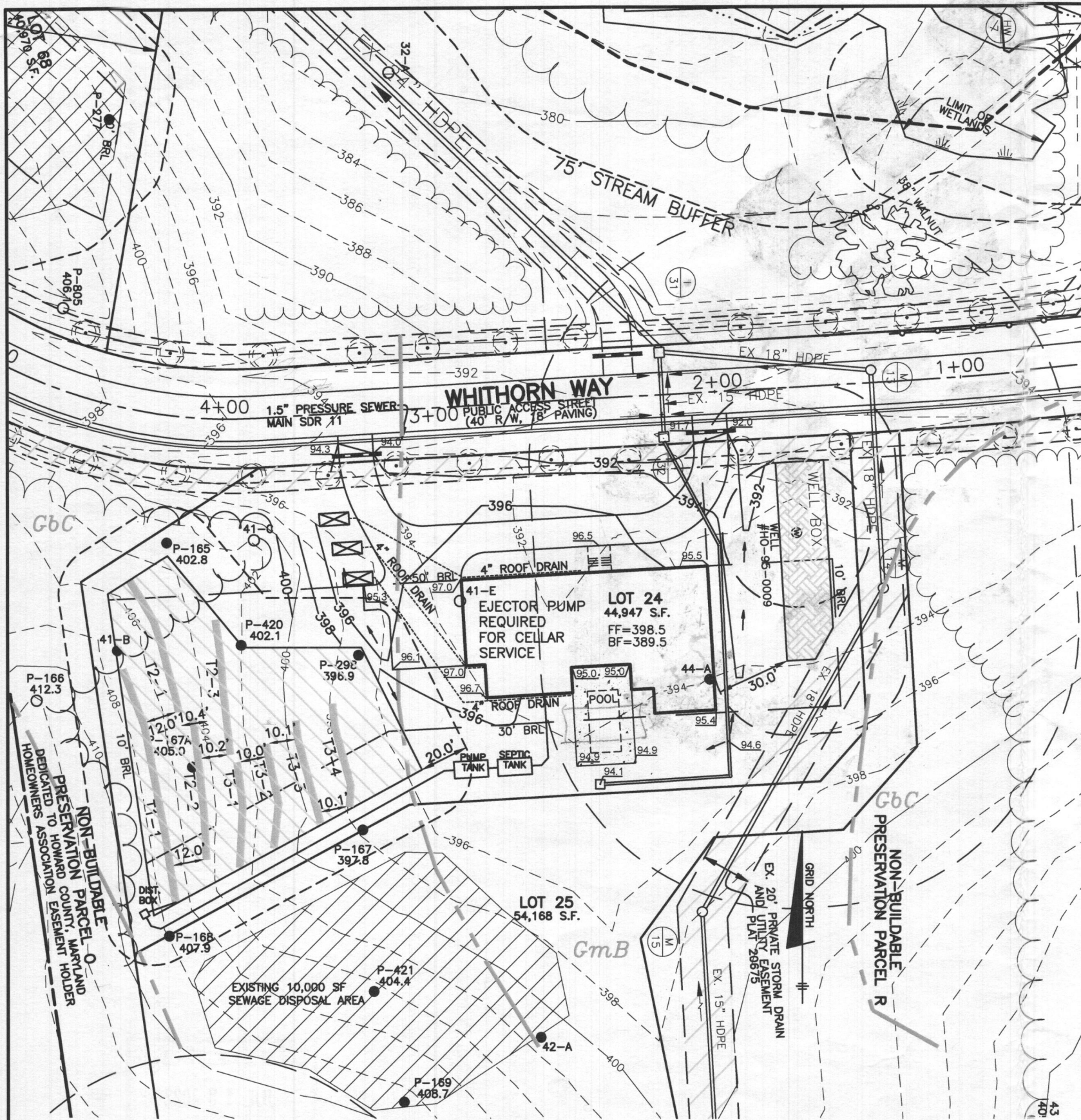
7/19/2024 S&NT&K on site High Water alarm functioning. Panel is 30" above grade next to pump tank Manhole 11521 pump also Working Approved (MBS)

FINAL INSPECTOR S. Page / M. Burns DATE OF APPROVAL 8/19/2024



1/8/24 - 11209 Whithorn Way - well completely underwater. no casing visible (14)



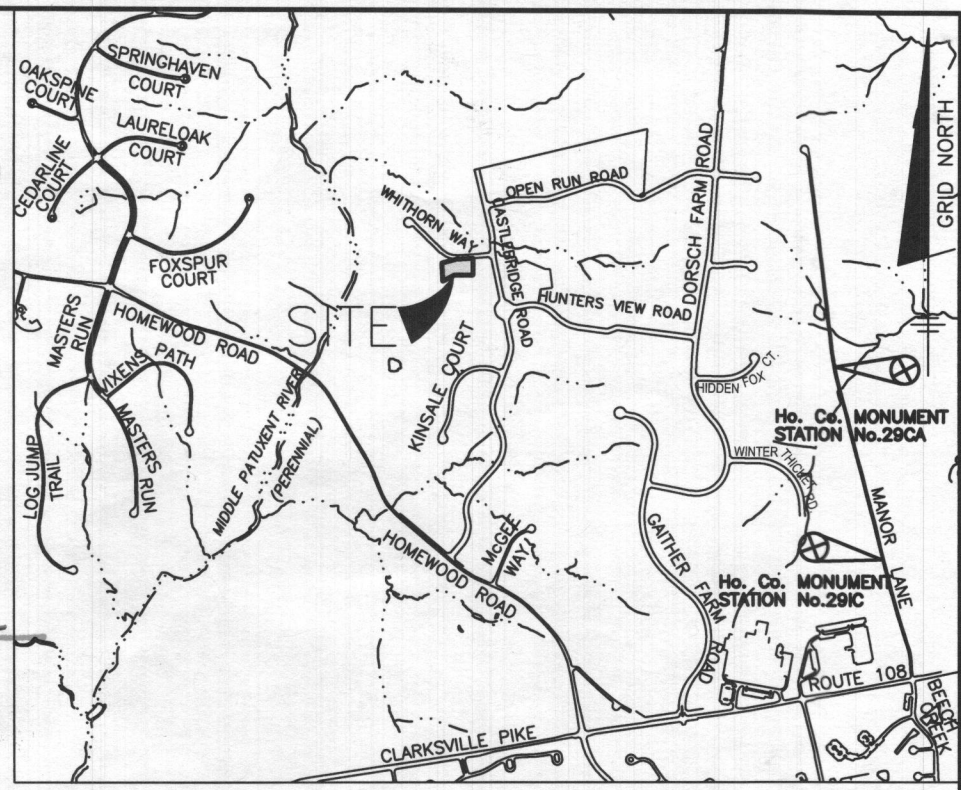


LEGEND

- EXISTING CONTOURS
- FIELD SURVEYED WELL LOCATION
- 7001A 402.8 PASSED PERCOLATION TEST PER TEST NOTES
- 62-A 397.1 FAILED PERCOLATION TEST PER TEST NOTES
- SEWAGE DISPOSAL AREA
- 1500 SF WELL BOX

Approved Septic System Plan
Howard County Health Department

Mark Oswald 8.25.22
Signature Date



ONSITE SEWAGE DISPOSAL PLAN NOTES:

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR RIVERWOOD, PHASE 1, PLAT No. 20675. REFER TO THE PLATS FOR LOT DIMENSIONS, LOT AREAS, ALL EASEMENTS AND CONDITIONS.
2. SEDIMENT AND EROSION CONTROLS, THE STANDARD PLAN USAGE, WERE APPROVED BY HOWARD SOIL CONSERVATION.
3. TOPOGRAPHY SHOWN HEREON IS FIELD RUN TOPOGRAPHY BY BENCHMARK ENGINEERING, INC., APRIL 2022, AND DESIGN GRADING FROM THE ROAD CONSTRUCTION PLANS.
4. ALL SEDIMENT AND EROSION CONTROL FEATURES USED ON THIS SITE SHALL COMPLY WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
5. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED ROAD CONSTRUCTION PLANS EXCEPT AS WAIVED.
6. THE EXISTING WELL SHOWN ON THIS PLAN, HO-95-0009, HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING, INC., AND IS ACCURATELY SHOWN.
7. TO THE BEST OF OUR KNOWLEDGE, ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELL AND/OR SEPTIC HAVE BEEN SHOWN.
8. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
9. STORMWATER MANAGEMENT FOR THIS LOT WILL BE PROVIDED BY THREE DRY WELL FACILITIES, NON-ROOFTOP DISCONNECTION AND THE EXISTING OFF-LOT MICROPOOL ED FACILITY.
10. THE SEPTIC TANK WILL BE A 2,000 GALLON TWO COMPARTMENT TANK, THE PUMP TANK WILL BE A 2,000 GALLON ONE COMPARTMENT TANK.
11. 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.
12. ANY ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

ADC MAP 4934 GRID E1

VICINITY MAP

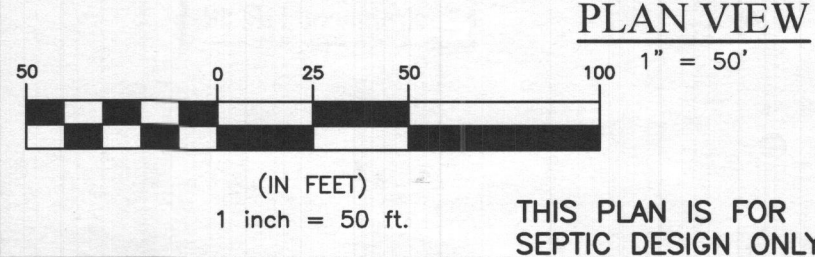
SCALE: 1" = 2000'

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. 28376, Expiration Date: 01-01-2023.



BEI-AAM

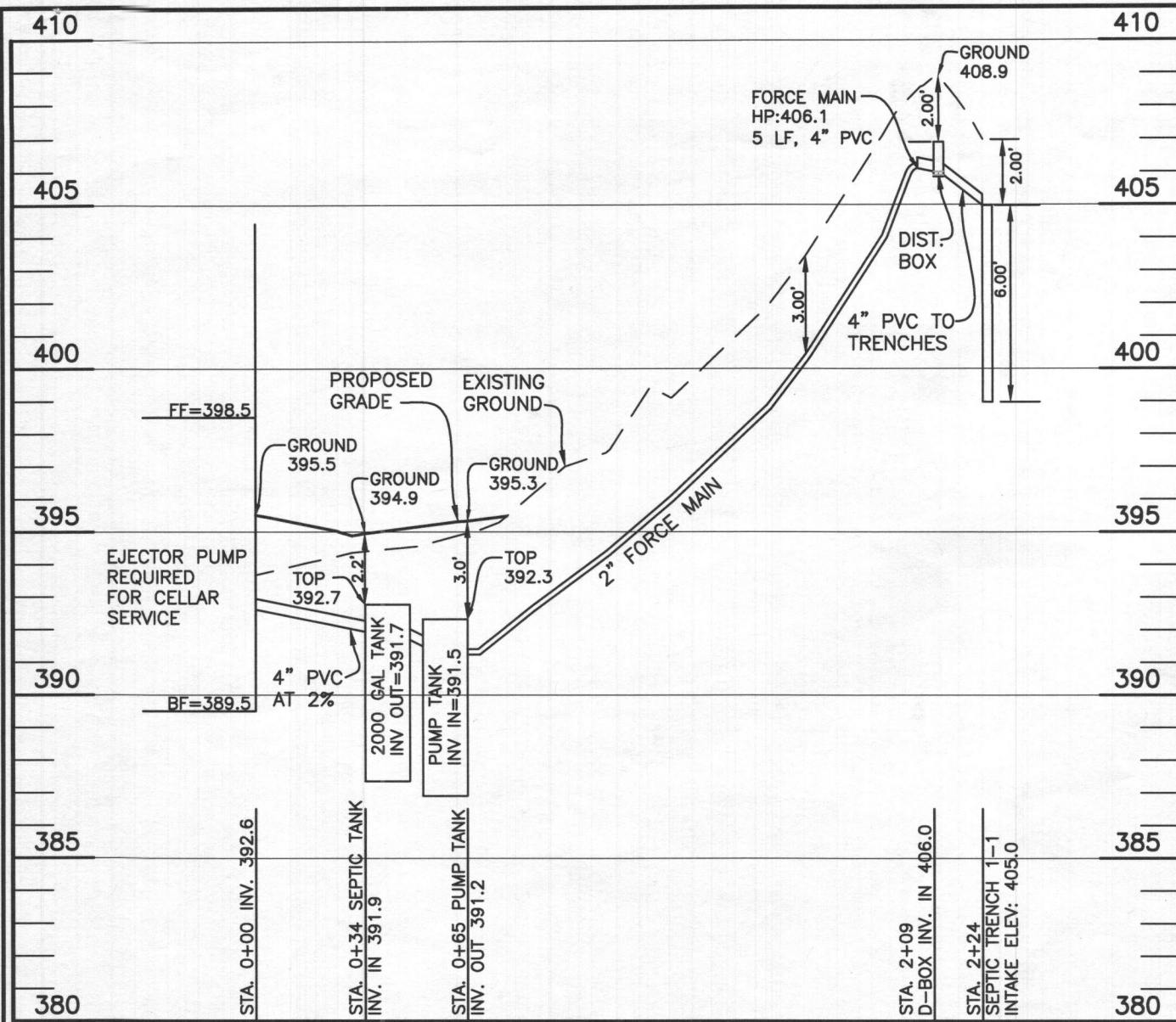
2022.07.08 22:33:46 -04'00



OWNER:
ARIF & HUMAIRA AYUB
6108 EVERY SAIL PATH
CLARKVILLE, MD 21029
443-864-7956

BENCHMARK ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
3300 NORTH RIDGE ROAD ▲ SUITE 140
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 ▲ (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

PROJECT:		RIVERWOOD, PHASE 1 LOT 24	
LOCATION:		TAX MAP: 29, GRID: 4, PARCEL: 20, ZONED: RC-DEO 11209 WHITHORN WAY ELLCOTT CITY MD 21042 THIRD ELECTION DISTRICT, HOWARD COUNTY, MD, TAX ID #03-345297	
TITLE: ONSITE SEWAGE DISPOSAL SYSTEM (OSDS) DESIGN PLAN			
DATE:	JULY, 2022	PROJECT NO.	3099
SCALE:	AS SHOWN	DRAWING	1 OF 4



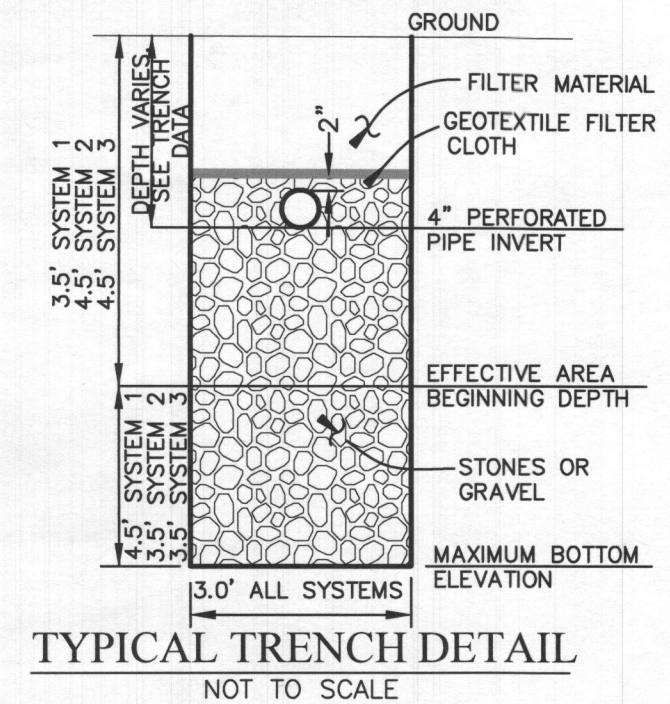
LOT 24 SEPTIC PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

INITIAL SYSTEM Lot 24		
Number of Bedrooms	6	
Application Rate	1.2	gpd/sf
Effective Area Beginning Depth	3.5	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.38	
Trench width	3	ft
Effective Area Depth	4.5	ft
Trench Spacing	12	ft
Linear Length of trench Required	96	lf

1st REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	4.5	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall Reduction Credit	0.45	
Trench width	3	ft
Effective Area Depth	3.5	ft
Trench Spacing	10	ft
Linear Length of trench Required	170	lf

2nd REPLACEMENT SYSTEM		
Number of Bedrooms	6	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	4.5	ft
Bottom Max Depth	8.0	ft
Design Flow	900	gpd
Drainage Field square footage	1125	sf
Sidewall Reduction Credit	0.45	
Trench width	3	ft
Effective Area Depth	3.5	ft
Trench Spacing	10	ft
Linear Length of trench Required	170	lf

SEPTIC INVERT CHART - LOT 24	
INV @ HOUSE	392.6
GROUND @ HOUSE	395.5
INV IN TANK	391.9
INV OUT TANK	391.7
TOP OF TANK	392.7
GROUND OVER TANK	394.9
INV IN PUMP TANK	391.5
INV OUT PUMP TANK	391.2
TOP OF PUMP TANK	392.3
GROUND OVER P. TANK	395.3
INV IN DIST BOX	406.10
INV OUT DIST BOX	406.00
GROUND AT DIST BOX	408.9



SPEC INFORMATION - LOT 24			
System	Application Rate	Effective Depth	Bottom Depth
Initial	1.2	3.5	8.0
1st Replacement	0.8	4.5	8.0
2nd Replacement	0.8	4.5	8.0

TRENCH DESIGN			
INITIAL SYSTEM			
T-1-1			
LENGTH	96.15 ft		
GROUND ELEVATION	407.0		
INVERT ELEVATION	405.0		
MAX BOTTOM ELEVATION	399.0		
SECOND SYSTEM			
T-2-1	T-2-2	T-2-3	
LENGTH	56.9 ft	LENGTH	56.9 ft
GROUND ELEVATION	405.4	GROUND ELEVATION	404.7
INVERT ELEVATION	403.4	INVERT ELEVATION	402.7
MAX BOTTOM ELEVATION	397.4	MAX BOTTOM ELEVATION	396.7
		GROUND ELEVATION	403.8
		INVERT ELEVATION	401.8
		MAX BOTTOM ELEVATION	395.8
THIRD SYSTEM			
T-3-1	T-3-2	T-3-3	T-3-4
LENGTH	42.7 ft	LENGTH	42.7 ft
GROUND ELEVATION	402.9	GROUND ELEVATION	401.3
INVERT ELEVATION	400.9	INVERT ELEVATION	399.3
MAX BOTTOM ELEVATION	394.9	MAX BOTTOM ELEVATION	393.3
		GROUND ELEVATION	399.7
		INVERT ELEVATION	397.7
		MAX BOTTOM ELEVATION	391.7
		GROUND ELEVATION	398.0
		INVERT ELEVATION	396.0
		MAX BOTTOM ELEVATION	390.0

SEE MANUFACTURERS SPECIFICATIONS FOR DETAILS. WWW.MAYERPRECAST.COM EQUIVALENT FROM OTHER MANUFACTURERS CAN BE SUBSTITUTED.
SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

OWNER:
ARIF & HUMAIRA AYUB
6108 EVERY SAIL PATH
CLARKSVILLE, MD 21029
443-864-7956

THIS PLAN IS FOR SEPTIC DESIGN ONLY

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. 28376, Expiration Date: 01-01-2023.



BEI-AAM

2022.07.08 22:32:34 -04'00

BENCHMARK

ENGINEERS LAND SURVEYORS PLANNERS

ENGINEERING, INC.
3300 NORTH RIDGE ROAD SUITE 140
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

PROJECT:	RIVERWOOD, PHASE 1 LOT 24		
LOCATION:	TAX MAP: 29, GRID: 4, PARCEL: 20, ZONED: RC-DEO 11209 WHITHORN WAY ELLCOTT CITY MD 21042 THIRD ELECTION DISTRICT, HOWARD COUNTY, MD, TAX ID #03-345297		
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM (OSDS) DESIGN PLAN		
DATE:	JULY, 2022	PROJECT NO.	3073
SCALE:	AS SHOWN	DRAWING	2 OF 4

Pumping Station

Diameter of Force Main and Manifold = 2" PVC SCH. 40
 Length of Force Main = 144 feet SCH.40 gallons/100 feet = 17.4 Table 4.2

Volume of Main = 25.1 gallons

Total Volume = 25.1 gallons

Minimum Dose must be greater than 1/6 of the design flow 150 gallons

Minimum Dose must be greater than the volume of the main 25 gallons

Use minimum dose of 160 gallons okay Doses per Day = 5.625

Size Pump Chamber

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

One day Capacity = 900 gallons
 Dose = 160 gallons
 Totals = 1060 gallons

Use 2,000 gallon pump tank

Tank Dimensions:	Exterior	Interior	Walls:
Length:	13.75 feet	Length: 13.08 feet	0.33 feet
Width:	6.25 feet	Width: 5.58 feet	0.33 feet
Height:	5.42 feet	Height: 4.67 feet	0.42 feet
		Area: 73.05 sf	Bottom to Inlet: 4.58 feet
		Volume: 340.89 cf	

Sizing the Pump

Flow: runtime = 6.400 minutes
 rate = 25.00 gallons/minute

Design Head:

Design Head = Static Head + Friction Head
 Static Head = highest elevation of main - pump off elevation
 Highest component of system = 406.1 Main HP
 Pump off elevation = 388.70
 Static Head = 17.40 feet
 Friction Head = Head loss due to pipe friction
 2.0" pipe = 144 feet
 90° bends 3 loss per bend@7' 21 feet per table 4.3
 45° bends 3 loss per bend@4' 12 feet per table 4.3
 Gate Valve 0 loss for tee 0 feet per table 4.3
 Friction loss per table 4.4 = 1.10 (ft/100 ft)
 Equivalent Length = 177 Friction loss = 1.95 feet
 Total Friction Head = 1.95
 Design Head = 19.35 feet

Pump Requirements:

Performance = 25.00 gpm
 Head of Water = 19.35 feet of head

Pump Selection: Zoeller Pump Company, Model 151
 1/3 horse power

Pump Flow Rate = 30.17 gallons/minute per rating curve. Run time: 5.30 Minutes
 TDH analysis 20.16 ft
 Between design and curve? Yes

Design Pump Chamber

Ground over Tank = 395.30 Cover = 3.00 ft
 Top of Tank = 392.30
 Invert of Tank = 387.21
 Riser = 0.50 feet
 Pump Height = 0.97 feet

Min. Pump off = 388.69
 Selected Pump off = 388.70

Dose = 21.39 cf
 Area of Pit = 73.05 sf

Pump on dist = 0.29
 Pump on Elev. = 388.99

Distance between Pump on and Highwater Alarm = 0.5 feet
 Highwater Alarm Elevation = 389.49

Dist. for day stored above alarm = 1.65
 Minimum Inlet Elev. = 391.14
 Tank Inlet = 391.46 Okay
 Dist. Alarm to Inlet = 1.97 Okay

Trusted. Tested. Tough.™

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

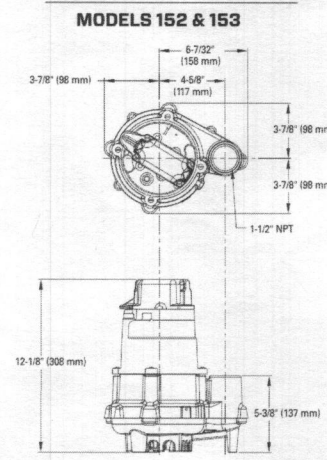
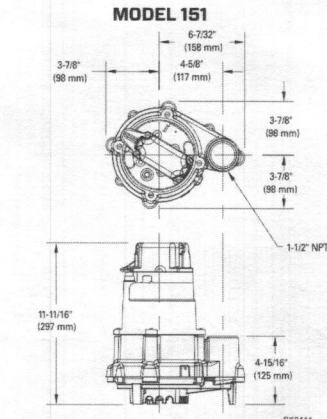


SECTION: 2.15.080
 FM2784
 1017
 Supersedes
 0315

TECHNICAL DATA SHEET
DOSE-MATE SERIES
 Models 151, 152, 153 Effluent Pumps

PRODUCT SPECIFICATIONS

MOTOR	MODEL 151
Horse Power	1/3 (151), 4/10 (152), 1/2 (153)
Voltage	115 or 230
Phase	1 Ph
Hertz	60 Hz
RPM	3450
Type	Permanent split capacitor
Insulation	Class B
Amps	3.0 - 10.5
Operation	Automatic or nonautomatic
Discharge Size	1-1/2" NPT
Solids Handling	1/2" (12 mm), 3/4" (19 mm) spherical solids
Cord Length	20' (6 m)
Cord Type	UL listed power cord
Max. Head	44' (13.4 m)
Max. Flow Rate	77 GPM (291 LPM)
Max. Operating Temp.	130 °F (54 °C)
Cooling	Oil filled
Motor Protection	Auto reset thermal overload
Cap	Cast iron
Motor Housing	Cast iron
Pump Housing	Cast iron
Base	Plastic or cast iron
Upper Bearing	Sleeve bearing
Lower Bearing	Ball bearing
Mechanical Seals	Carbon and ceramic
Impeller Type	Non-clogging vortex
Impeller	Engineered thermoplastic
Hardware	Stainless steel
Motor Shaft	AISI 1215 steel
Gasket	Neoprene



NOTE: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

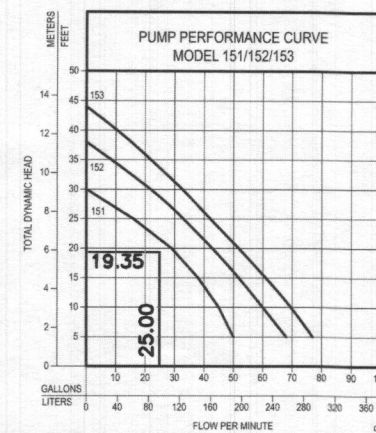
NOTE: See model comparison chart for specific details.



© Copyright 2017 Zoeller® Co. All rights reserved.
 502-778-2731 | 800-928-7867 | 3649 Cane Run Road | Louisville, KY 40211-1961 | zoellerpumps.com

TOTAL DYNAMIC HEAD
FLOW PER MINUTE

MODEL	151	152	153
Feet	5	10	15
Meters	1.5	3.0	4.5
Gal.	50	100	150
Liters	188	376	564
Gal.	61	122	183
Liters	231	462	693
Gal.	61	122	183
Liters	231	462	693
Gal.	23	46	69
Liters	87	174	261
Gal.	22	44	66
Liters	85	170	255
Gal.	11	22	33
Liters	42	84	126
Shut-off Head:	30 ft. (9.1m)	38 ft. (11.6m)	44 ft. (13.4m)



RECOMMENDED PUMP:
BN151

Model	MODEL COMPARISON										
	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs	Kg	Simplex	Duplex
N151	Single	Non	115	1	6.0	1/3	60	32	15	1	2 or 3
E151	Single	Non	230	1	3.0	1/3	60	32	15	1	2 or 3
BN151	Single	Auto	115	1	6.0	1/3	60	33	15	*	2 or 3
BE151	Single	Auto	230	1	3.0	1/3	60	33	15	*	2 or 3
N152	Single	Non	115	1	8.5	4/10	60	37	17	1	2 or 3
E152	Single	Non	230	1	4.3	4/10	60	37	17	1	2 or 3
BN152	Single	Auto	115	1	8.5	4/10	60	39	18	*	2 or 3
BE152	Single	Auto	230	1	4.3	4/10	60	39	18	*	2 or 3
N153	Single	Non	115	1	10.5	1/2	60	37	17		
BN153	Single	Auto	115	1	10.5	1/2	60	39	18	*	2 or 3
E153	Single	Non	230	1	5.3	1/2	60	37	17	1	2 or 3
BE153	Single	Non	230	1	5.3	1/2	60	39	18	*	2 or 3

*BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 25' (8 m) and 35' (11 m). 50' (15 m) cords are available for 230V units only.

NOTE: Model 151 has a plastic base. Models 152 & 153 have a cast iron base.

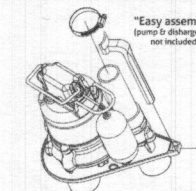
SELECTION GUIDE

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
- See FM1228 for correct model of simplex control panel.
- See FM0712 for correct model of duplex control panel.

OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris
- Replaces rocks or bricks under the pump
- Made of durable, noncorrosive ABS
- Raises pump 2" (5 cm) off bottom of basin
- Provides the ability to raise intake by adding sections of 1 1/2" or 2" (DN40 or DN50) PVC piping
- Attaches securely to pump
- Accommodates sump, dewatering and effluent applications

NOTE: Make sure float is free from obstruction.



CAUTION All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

© Copyright 2017 Zoeller® Co. All rights reserved.
 502-778-2731 | 800-928-7867 | 3649 Cane Run Road | Louisville, KY 40211-1961 | zoellerpumps.com

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. 28376, Expiration Date: 01-01-2023.



BEI-AAM

2022.07.08 22:33:03 -04'00

BENCHMARK

ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS

ENGINEERING, INC.

3300 NORTH RIDGE ROAD ▲ SUITE 140
 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 ▲ (F) 410-465-6644

WWW.BEI-CIVILENGINEERING.COM

OWNER:

ARIF & HUMAIRA AYUB
 6108 EVERY SAIL PATH
 CLARKSVILLE, MD 21029
 443-864-7956

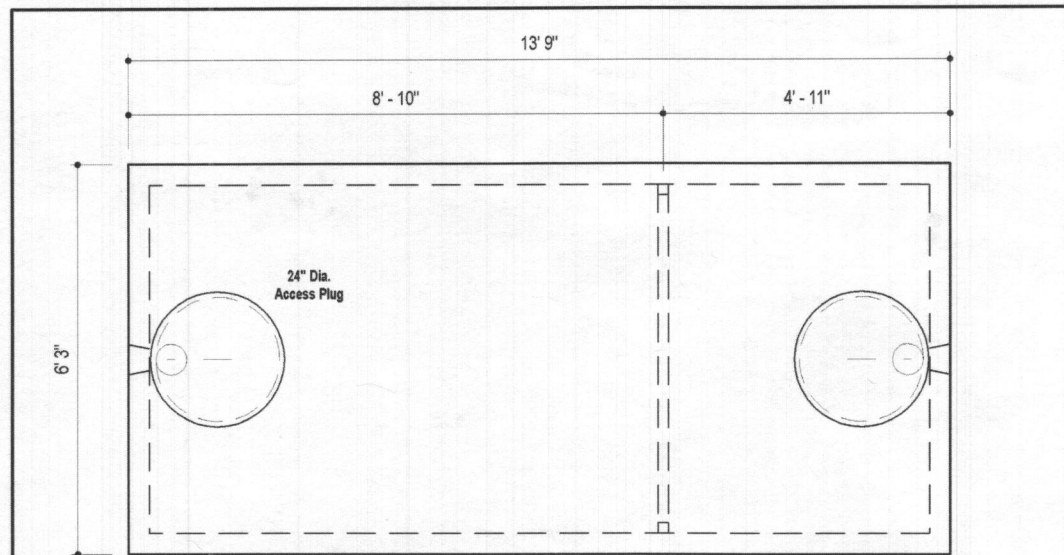
PROJECT: **RIVERWOOD, PHASE 1**
LOT 24

LOCATION: TAX MAP: 29, GRID: 4, PARCEL: 20, ZONED: RC-DEO
 11209 WHITHORN WAY
 ELLICOTT CITY MD 21042
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MD, TAX ID #03-345297

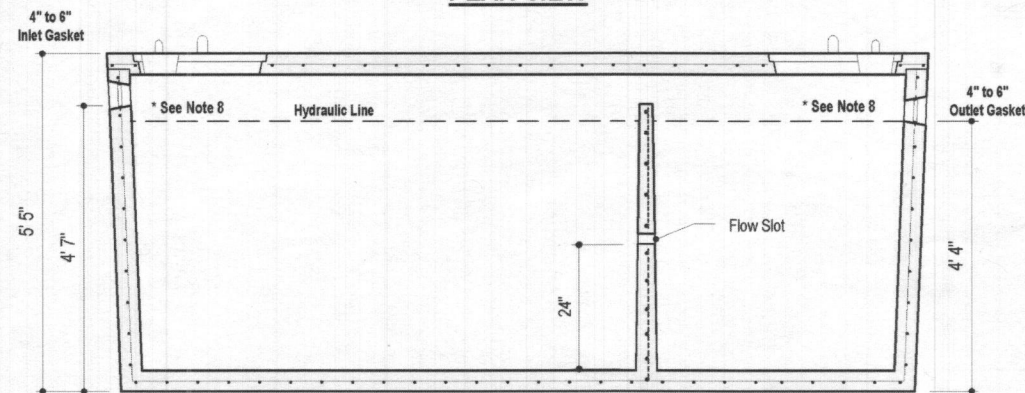
TITLE: **ONSITE SEWAGE DISPOSAL SYSTEM**
(OSDS) DESIGN PLAN

DATE: JULY, 2022 PROJECT NO. 3073

SCALE: AS SHOWN DRAWING 3 OF 4



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 150-92.
- [3] Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
- [4] Reinforcing per ASTM A185. Min. 1-1/2" cover.
- [5] Top slab sealed with butyl rope mastic.
- [6] 4" wall, 4" base, & 5" top thickness.
- [7] Max 3" of cover
- [8] Depending on use of tank, Inlet & Outlet baffle may be required by code.

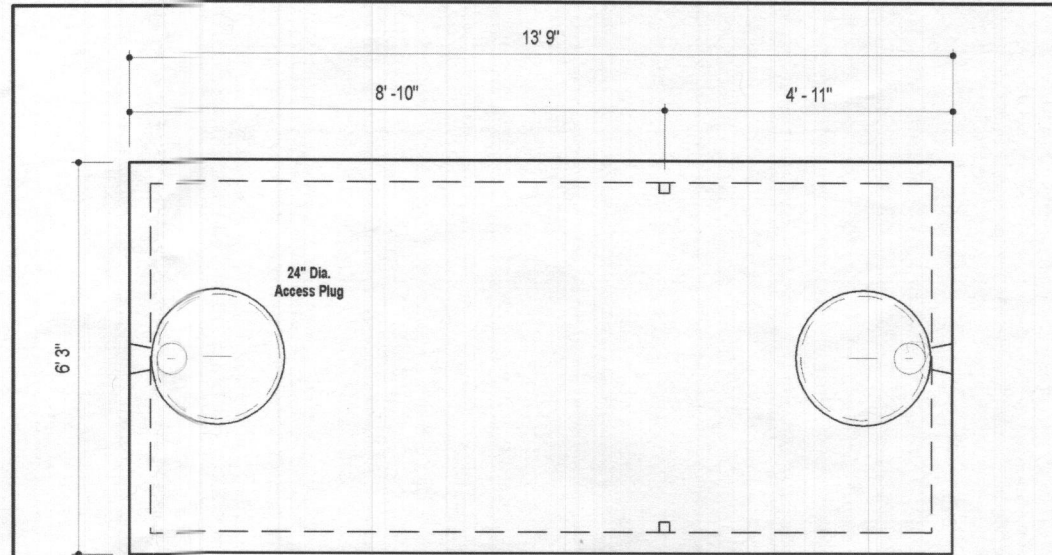
MBI
Mayer Bros., Inc. www.mayerbrosprecast.com

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

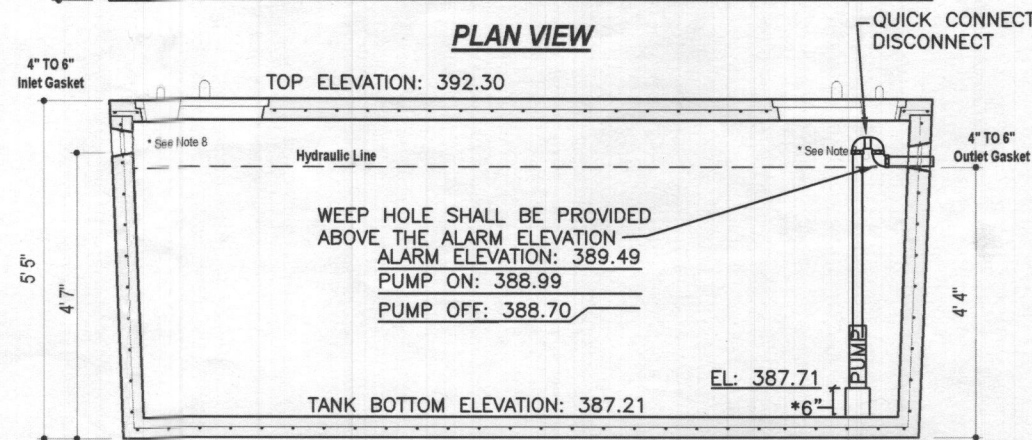
**2,000 GALLON SEPTIC TANK
2-Compartment**

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 150-92.
- [3] Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
- [4] Reinforcing per ASTM A185. Min. 1-1/2" cover.
- [5] Top slab sealed with butyl rope mastic.
- [6] 4" wall, 4" base, & 5" top thickness.
- [7] Max 3" of cover
- [8] Depending on use of tank, Inlet & Outlet baffle may be required by code.

Float Tree:	Elev.	Relative to Bottom
Bottom of Tank	387.21	
Top of Pump	388.69	1' 5 11/16"
Pump Off	388.70	1' 5 13/16"
Pump On	388.99	1' 9 3/8"
High Alarm	389.49	2' 3 3/8"

WEIGHT = 19,000 lbs.

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
1-Compartment**

Stock Item [Approx. 19,000 lbs]

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

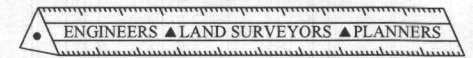
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28376, Expiration Date: 01-01-2023.



BEI-AAM

2022.07.08 22:33:27 -04'00

BENCHMARK

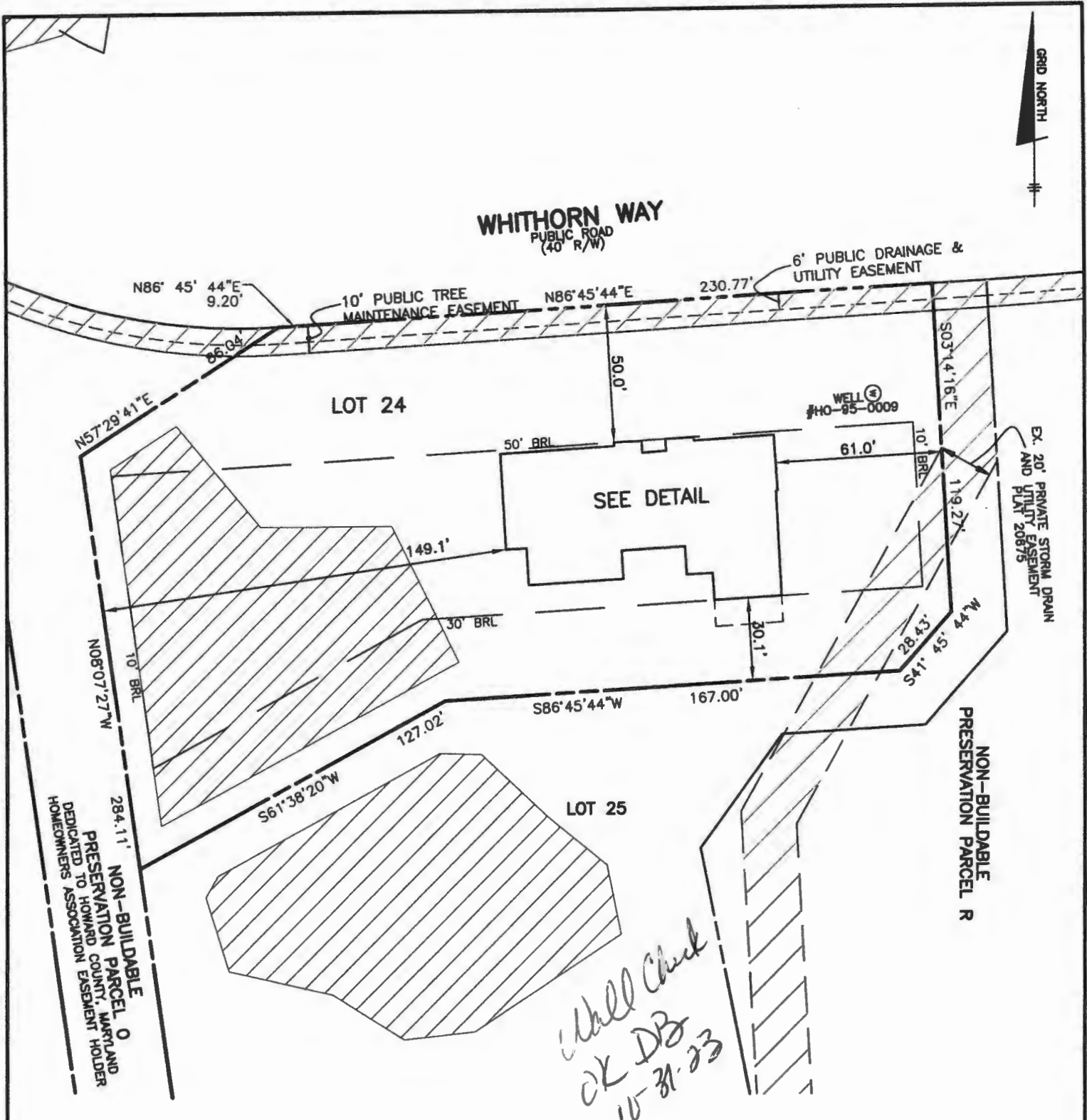


ENGINEERING, INC.
3300 NORTH RIDGE ROAD SUITE 140
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644

WWW.BEI-CIVILENGINEERING.COM

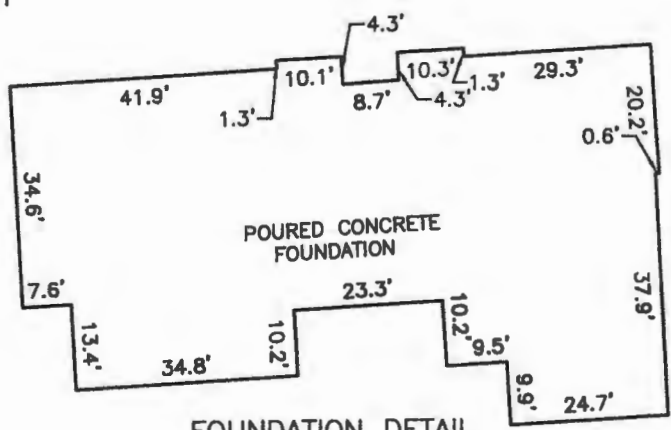
PROJECT:	RIVERWOOD, PHASE 1 LOT 24		
LOCATION:	TAX MAP: 29, GRID: 4, PARCEL: 20, ZONED: RC-DEO 11209 WHITHORN WAY ELLCOTT CITY MD 21042 THIRD ELECTION DISTRICT, HOWARD COUNTY, MD, TAX ID #03-345297		
TITLE:	ONSITE SEWAGE DISPOSAL SYSTEM (OSDS) DESIGN PLAN		
DATE:	JULY, 2022	PROJECT NO.	3073
SCALE:	AS SHOWN	DRAWING	4 OF 4

OWNER:
ARIF & HUMAIRA AYUB
6108 EVERY SAIL PATH
CLARKSVILLE, MD 21029
443-864-7956



TOP OF FOUNDATION WALL = 397.54'
 OFFSET DIMENSIONS TO PROPERTY LINES ARE ± 0.1'

SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS, WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21320, EXPIRATION DATE 1-7-2025 AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, THAT THE DIMENSIONS OF THE BUILDING WALLS SHOWN HEREON ARE CORRECT; THAT THEY ARE BASED ON A FIELD RUN SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. ON 04/24/2023 AND 10/26/23

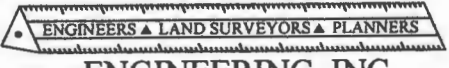


FOUNDATION DETAIL
 SCALE: 1" = 30'

Donald A. Mason
 DONALD A. MASON
 PROFESSIONAL LAND SURVEYOR
 MARYLAND REG. No. 21320

FEMA FIRM No. 24027C0155D
 ZONE: X
 DATED: 11/6/2013

BENCHMARK



ENGINEERING, INC.
 3300 NORTH RIDGE ROAD ▲ SUITE 140
 ELLICOTT CITY, MARYLAND 21043
 (P) 410-485-6105 ▲ (F) 410-485-6644

WALL CHECK

**RIVERWOOD
 PHASE 1
 PLAT No. 18040
 LOT No. 24**

11209 WHITHORN WAY
 3rd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FIELD OBS. BY AS
 COMP. BY EWF
 DRAWN BY EWF
 SCALE: 1" = 50' DATE: 04/24/2023
 REV. 10-26-23