

**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](http://www.hchealth.org)  
 Facebook: [www.facebook.com/hocohealth](http://www.facebook.com/hocohealth)

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

RECEIPT DATE: 12/08/2020 **ONSITE SEWAGE DISPOSAL SYSTEM** P 572886  
 APPROVAL DATE: 10/05/2020 **PERMIT: CONSTRUCTION** A \_\_\_\_\_  
 PROPERTY ADDRESS: 18423 Hidden Creek Way  
 SUBDIVISION: Windsor Forest Knolls LOT: 18 TAX ID: 04-373340  
 CONTRACTOR: FARM AND HOME EXC. EMAIL: \_\_\_\_\_  
 CONTRACTOR ADDRESS: 901 DRIVER ROAD MARIOTTVILLE MD PHONE: 410 442 2139  
 PROPERTY OWNER: Keystone Custom Homes EMAIL: \_\_\_\_\_  
 OWNER ADDRESS: 227 Granite Run Dr. PHONE: \_\_\_\_\_  
 SEPTIC TANK SIZE (GALLONS): 2000 TANK MANUFACTURER: MBI  
 PUMP MODEL: Zoeller PUMP SIZE 0.3 PUMP TANK CAPACITY: 2000

DISTRIBUTION SYSTEM:  GRAVITY  PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>223</u>	INLET DEPTH: <u>2</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>6</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4.5</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: \_\_\_\_\_ ISSUE DATE: 12/08/2020 EXPIRATION DATE: 12/08/2021

- 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 21002256
- 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.**



24' Private Use-In-Common Access Easement for Parcels 'A' and 'D'

DANIEL LIB.

16' Access Easement Parcel 'D'

GRID NORTH

S72°21'52"E

53.63'

166.09'

S 40°22'21" E 160.99'

30'BRL

30'BRL

113.8'

LOT 17

LOT 18

Public Stormwater Management, Drainage, Utility & Access Easement

267.12'

10'BRL

N 22°08'52" E

31.1'

SEE DETAIL

50'BRL

72.2'

N 67°51'19" W

112.51'

LOT 12

LOT 13

N 22°51'13" W 28.28'

N 22° 08' 52" E

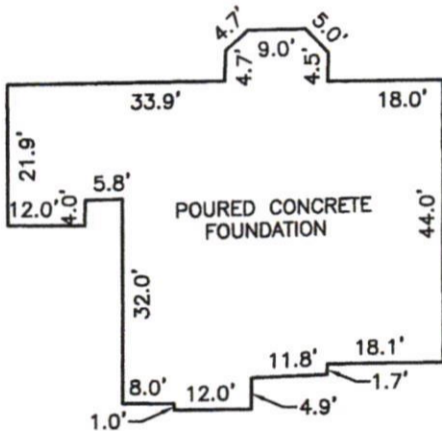
24' Use-In-Common for Driveway Easement Lots 16, 17, and 18

342.61'

S 22° 08' 52" W

343.81'

TO HIDDEN CREEK WAY



FOUNDATION DETAIL  
SCALE: 1" = 30'

TOP OF FOUNDATION WALL = 788.3'  
OFFSET DIMENSIONS TO PROPERTY LINES ARE ± 0.1'

**SURVEYOR'S CERTIFICATE**

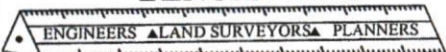
I HEREBY CERTIFY THAT THESE DOCUMENTS, WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21320, EXPIRATION DATE 1-7-2023 AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, 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 04/15/2021.

*Donald A. Mason* 4/16/21

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

FEMA FIRM No. 24027C0010D  
ZONE: X  
DATED: 11/6/2013

**BENCHMARK**



ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644

FIELD OBS. BY ML  
COMP. BY EWF  
DRAWN BY EWF

4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE: 1" = 50' DATE: 04/15/2021

Approved  
4/1/21 (SF)

WALL CHECK

**WINDSOR FOREST KNOLLS**  
**LOTS 1 THRU 18**  
**PLAT No. 19396**  
**LOT No. 18**

18423 HIDDEN CREEK WAY

**Thomas, Susan**

---

**From:** Oswald, Hank  
**Sent:** Tuesday, June 1, 2021 8:39 AM  
**To:** Thomas, Susan  
**Subject:** Re: 18423 hidden Creek Way

You're welcome. The file is in my cubicle. Do you want to run it by Kevin just to see what he thinks about it?

---

**From:** Thomas, Susan <sathomas@howardcountymd.gov>  
**Sent:** Friday, May 28, 2021 4:39 PM  
**To:** Oswald, Hank <hoswald@howardcountymd.gov>  
**Subject:** Re: 18423 hidden Creek Way

Thanks for looking into this!

Get [Outlook for iOS](#)

---

**From:** Oswald, Hank <hoswald@howardcountymd.gov>  
**Sent:** Friday, May 28, 2021 4:36:40 PM  
**To:** Thomas, Susan <sathomas@howardcountymd.gov>  
**Subject:** Fwd: 18423 hidden Creek Way

FYI - Hank

Sent from my Verizon, Samsung Galaxy smartphone  
Get [Outlook for Android](#)

---

**From:** Alice A. Miller, P.E. <amiller@bei-civilengineering.com>  
**Sent:** Friday, May 28, 2021 4:33:31 PM  
**To:** Oswald, Hank <hoswald@howardcountymd.gov>  
**Subject:** RE: 18423 hidden Creek Way

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

Hank – on Keystone's homes, the top of wall is 8.67' above the basement floor.  $788.3 - 8.67 = 779.63$  sewer invert at the wall is 777.18.  $779.63 - 777.18 = 2.45'$  That's spitting distance to the 2.5' we usually use, so I think it should be fine. I also took a quick look at the house plan, and the basement bath rough-in is reasonably close to where we come out from under the foundation.

Alice A. Miller, P.E.  
410-465-6105

**From:** Oswald, Hank [mailto:hoswald@howardcountymd.gov]  
**Sent:** Friday, May 28, 2021 8:39 AM  
**To:** Alice Miller <amiller@bei-civilengineering.com>  
**Subject:** 18423 hidden Creek Way

Hi Alice:

i understand you are off work today. Our office received the wall check for 18423 Hidden Creek Way (Lot 18). On the OSDS Plan, the proposed FF elevation = 790.20. On the wall check, the top of wall elevation = 788.3. On the septic profile, the SHC fall is 1%. The SHC fall may not be less than 1%. Based on this info. can we still get proper fall or do we need to switch to hung sewer?

Thanks,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
(410) 313 - 1786  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)

## Thomas, Susan

---

**From:** Alice A. Miller, P.E. <amiller@bei-civilengineering.com>  
**Sent:** Tuesday, June 1, 2021 9:26 AM  
**To:** Thomas, Susan  
**Cc:** Oswald, Hank  
**Subject:** RE: 18423 Hidden Creek Way - hung sewer or below the footer?

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

Susan – I think I may have put that note on there because it was ‘close’. However, the profile shows 10’ basement walls, and all of the plans I have currently, show 9’ walls. So, that error is part of why it was close. If the walls have been constructed at 9’ (which would be 8.67’ concrete wall ‘above’ the basement slab elevation), they should be able to get under the slab and provide all of the service by gravity.

I apologize for the confusion. Occasionally, the plans get tweaked between the time I do the first layout and the final.

Alice A. Miller, P.E.  
410-465-6105

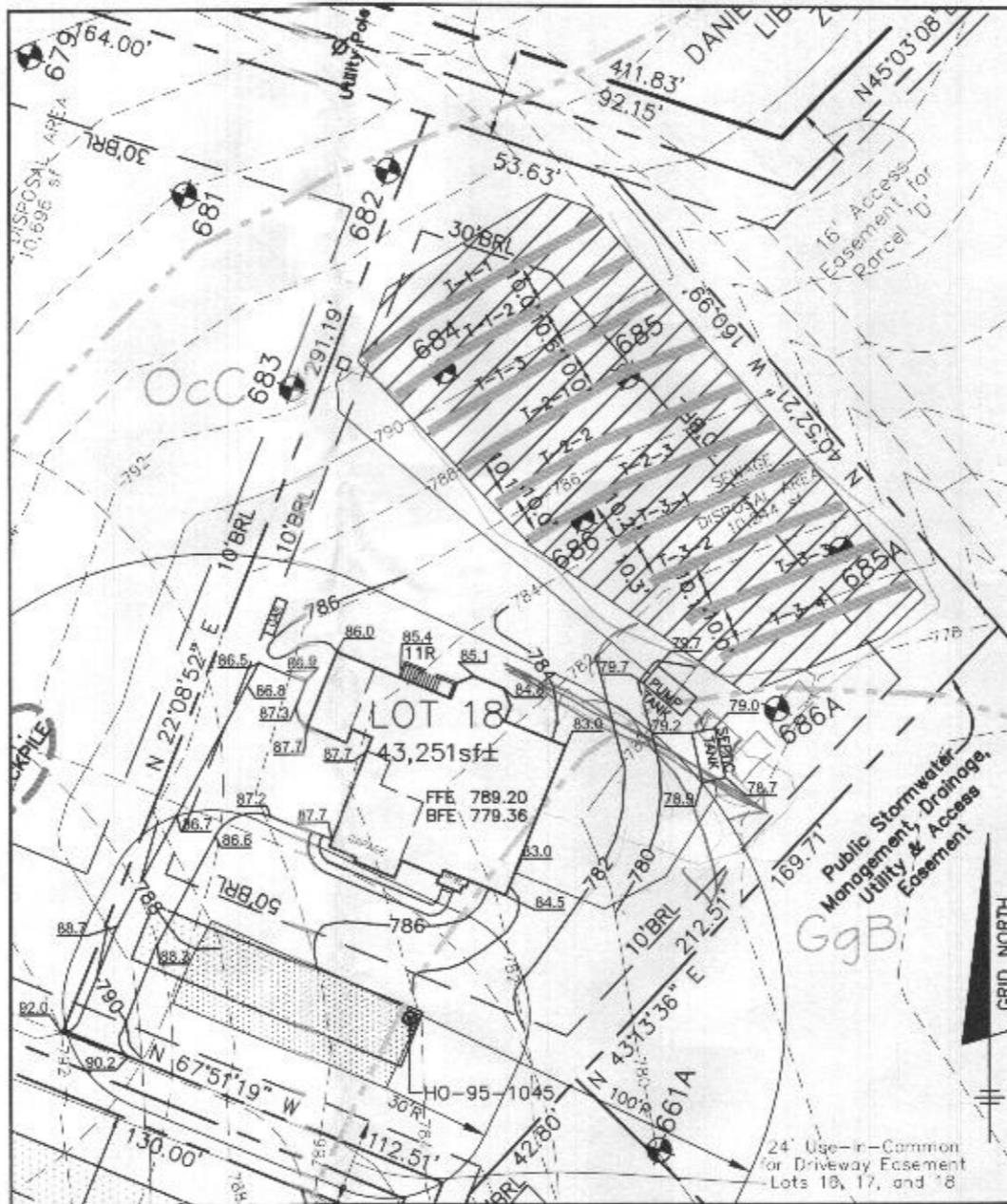
**From:** Thomas, Susan [mailto:sathomas@howardcountymd.gov]  
**Sent:** Tuesday, June 1, 2021 9:11 AM  
**To:** amiller@bei-civilengineering.com  
**Cc:** Oswald, Hank <hoswald@howardcountymd.gov>  
**Subject:** 18423 Hidden Creek Way - hung sewer or below the footer?

Dear Alice,

Just following up on your previous email exchange with Hank – the septic profile for 18423 Hidden Creek Way shows the sewer line coming out below the footer, however it is annotated to say “cellar not serviced via gravity, pump req’d for basement service”. (see below) Can you clarify if this is a hung sewer or it comes out below the footer?

# GENERAL NOTES

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR WINDSOR FOREST KNOLLS, PLAT NUMBER 19395. REFER TO THE PLAT FOR LOT DIMENSIONS, LOT AREA, ALL EASEMENTS AND CONDITIONS.
2. THE EXISTING WELL SHOWN ON THIS PLAN (HO-95-1045) HAS BEEN FIELD LOCATED BY BENCHMARK ENGINEERING INC. JULY 2020 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 BASED ON FIELD RUN TOPOGRAPHY BY C.B. MILLER & ASSOCIATES IN APRIL, 2002, AND WAS SUPPLEMENTED BY FIELD RUN TOPOGRAPHY BY BENCHMARK ENGINEERING, INC. JULY 2020.
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 WILL BE A 2000 GALLON ONE COMPARTMENT TANK.
11. THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
12. ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
13. 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.



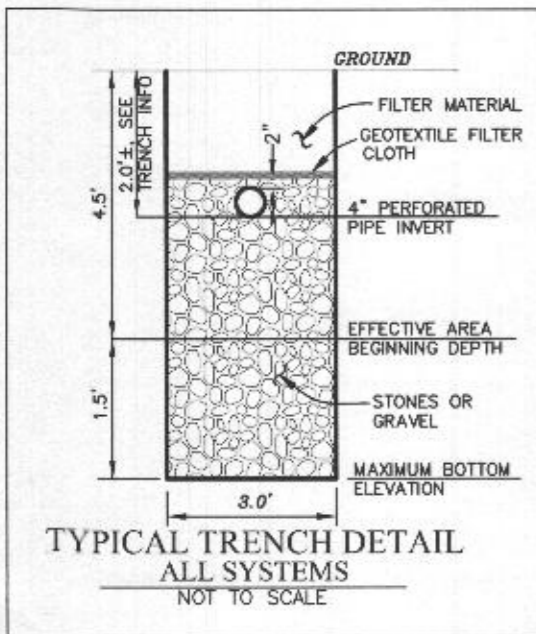
NOTE: CELLAR NOT SERVICED VIA GRAVITY, PUMP REQ'D FOR BASEMENT SERVICE

## PLAN VIEW

1" = 50'

Approved Septic System Plan  
Howard County Health Department

Hank Oswald 1/14/2021  
Signature Date



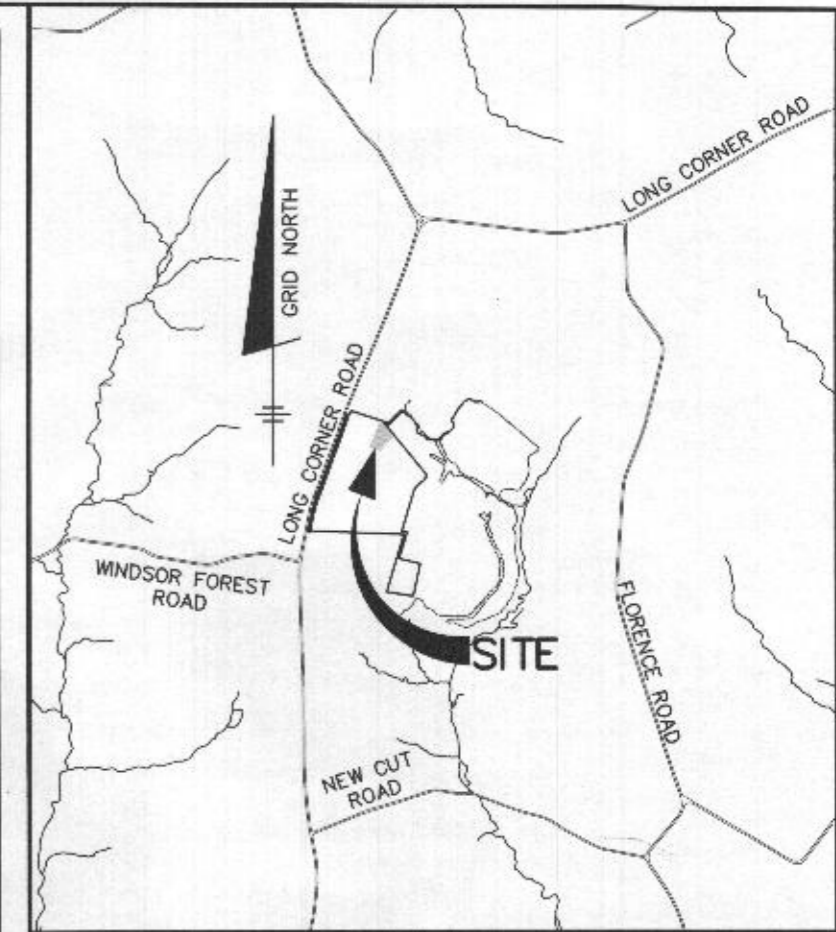
## LEGEND

- 400 — PROPOSED CONTOURS
- 400 — EXISTING CONTOURS
- 396 — EXISTING PRIVATE SEWAGE DISPOSAL AREA
- EXISTING WELL BOX
- MaC SOILS MAP SYMBOL
- SOILS DELINEATION LINE
- PERC TEST PASSED
- PERC TEST FAILED

OWNER/BUILDER:  
KEYSTONE CUSTOM HOMES, INC.  
227 GRANITE RUN DR.  
SUITE 100  
LANCASTER, PA 17601  
717-464-9060

BENCHMARK  
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
ENGINEERING, INC.  
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
ELLCOTT CITY, MARYLAND 21043  
(P) 410-485-8105 ▲ (F) 410-485-6644  
WWW.BEI-CVLENGINEERING.COM

PROJECT: WINDSOR FOREST KNOLLS LOT 18	
LOCATION: TAX MAP: 6 - GRID: 16 - PARCEL: 57 18423 HIDDEN CREEK WAY - TAX ID: 04-373340 ELECTION DISTRICT NO. 4 - HOWARD COUNTY, MARYLAND	
TITLE: ONSITE SEWAGE DISPOSAL PLAN	
HOUSE TYPE: CUSTOM - KEYSTONE HOMES	
DATE: DECEMBER, 2020	PROJECT NO. 2986
SCALE: AS SHOWN	DRAWING 1 OF 4



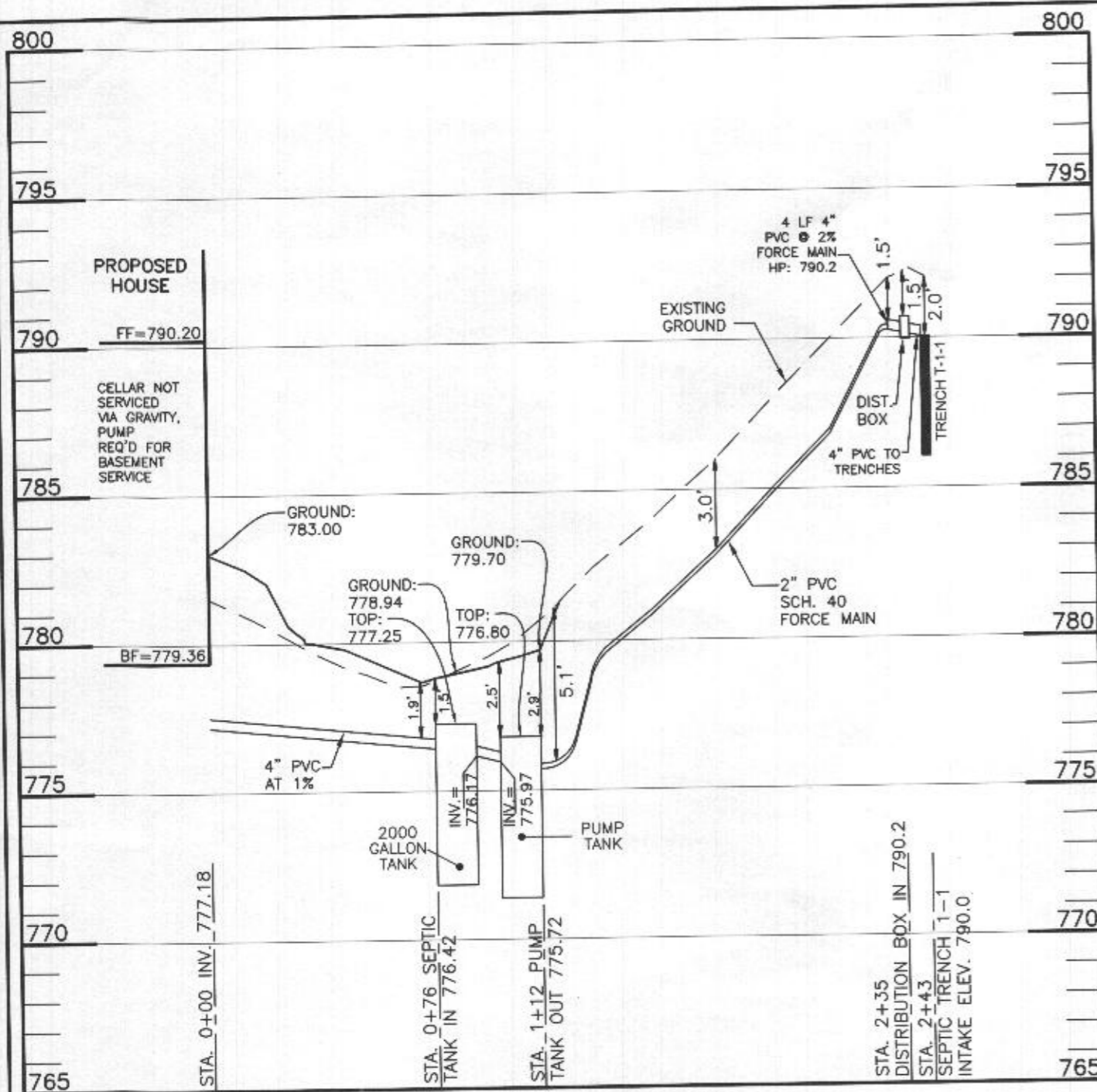
## VICINITY MAP

SCALE: 1" = 2000'

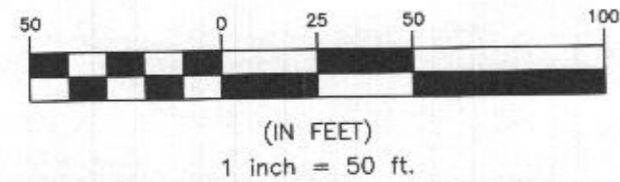
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 28376, Expiration Date: 01-01-2023.



Dec 7 2020 8:29 AM DocuSign



**LOT 18 SEPTIC PROFILE**  
 SCALE: 1"=50' HORIZ., 1"=5' VERT.



INITIAL SYSTEM		
Number of Bedrooms	5	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	4.5	ft
Bottom Max Depth	6.0	ft
Design Flow	750	gpd
Drainage Field square footage	937.5	sf
Sidewall Reduction Credit	0.71	
Trench width	3	ft
Effective Area Depth	1.5	ft
Trench Spacing	10	ft
Trench Length Required	223	lf

1ST REPLACEMENT SYSTEM		
Number of Bedrooms	5	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	4.5	ft
Bottom Max Depth	6.0	ft
Design Flow	750	gpd
Drainage Field square footage	937.5	sf
Sidewall Reduction Credit	0.71	
Trench width	3	ft
Effective Area Depth	1.5	ft
Trench Spacing	10	ft
Trench Length Required	223	lf

2ND REPLACEMENT SYSTEM		
Number of Bedrooms	5	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	4.5	ft
Bottom Max Depth	6.0	ft
Design Flow	750	gpd
Drainage Field square footage	938	sf
Sidewall Reduction Credit	0.71	
Trench width	3	ft
Effective Area Depth	1.5	ft
Trench Spacing	10	ft
Trench Length Required	223	lf

TRENCH DESIGN - Lot 18					
<b>INITIAL SYSTEM</b>					
T-1-1	LENGTH	74.5 ft	T-1-2	LENGTH	74.5 ft
	GROUND ELEVATION	792.0		GROUND ELEVATION	790.8
	INVERT ELEVATION	790.0		INVERT ELEVATION	788.8
	MAX BOTTOM ELEVATION	786.0		MAX BOTTOM ELEVATION	784.8
	T-1-3	LENGTH	74.5 ft		LENGTH
		GROUND ELEVATION	789.4		GROUND ELEVATION
		INVERT ELEVATION	787.4		INVERT ELEVATION
		MAX BOTTOM ELEVATION	783.4		MAX BOTTOM ELEVATION
<b>1ST REPLACEMENT SYSTEM</b>					
T-2-1	LENGTH	74.5 ft	T-2-2	LENGTH	74.5 ft
	GROUND ELEVATION	788.0		GROUND ELEVATION	786.8
	INVERT ELEVATION	786.0		INVERT ELEVATION	784.8
	MAX BOTTOM ELEVATION	782.0		MAX BOTTOM ELEVATION	780.8
	T-2-3	LENGTH	74.5 ft		LENGTH
		GROUND ELEVATION	785.2		GROUND ELEVATION
		INVERT ELEVATION	783.2		INVERT ELEVATION
		MAX BOTTOM ELEVATION	779.2		MAX BOTTOM ELEVATION
<b>2ND REPLACEMENT SYSTEM</b>					
T-3-1	LENGTH	55.9 ft	T-3-2	LENGTH	55.9 ft
	GROUND ELEVATION	783.8		GROUND ELEVATION	782.3
	INVERT ELEVATION	781.8		INVERT ELEVATION	780.3
	MAX BOTTOM ELEVATION	777.8		MAX BOTTOM ELEVATION	776.3
T-3-3	LENGTH	55.9 ft	T-3-4	LENGTH	55.9 ft
	GROUND ELEVATION	781.0		GROUND ELEVATION	779.6
	INVERT ELEVATION	779.0		INVERT ELEVATION	777.6
	MAX BOTTOM ELEVATION	775.0		MAX BOTTOM ELEVATION	773.6

SEPTIC INVERT CHART - Lot 18	
INV @ HOUSE	777.2
GROUND @ HOUSE	783.0
INV IN SEPTIC TANK	776.4
INV OUT SEPTIC TANK	776.2
TOP OF SEPTIC TANK	777.3
GROUND OVER SEPTIC TANK	778.9
INV IN PUMP TANK	776.0
INV OUT PUMP TANK	775.7
TOP OF PUMP TANK	776.8
GROUND OVER PUMP TANK	779.7
INV IN DIST BOX	790.2
INV OUT DIST BOX	790.1
GROUND AT DIST BOX	792.2

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.



Dec 7 2020 8:29 AM DocuSign

HEALTH DEPARTMENT SPEC SHEET INFORMATION - Lot 18			
System	Application Rate	Effective Depth	Bottom Depth
1st System	0.8	4.5	6.0
2nd system	0.8	4.5	6.0
3rd System	0.8	4.5	6.0

PROJECT:	WINDSOR FOREST KNOLLS LOT 18		
LOCATION:	TAX MAP: 6 - GRID: 16 - PARCEL: 57 18423 HIDDEN CREEK WAY - TAX ID: 04-373340 ELECTION DISTRICT NO. 4 - HOWARD COUNTY, MARYLAND		
TITLE:	ONSITE SEWAGE DISPOSAL PLAN		
HOUSE TYPE:	CUSTOM - KEYSTONE HOMES		
DATE:	DECEMBER, 2020	PROJECT NO.	2986
SCALE:	AS SHOWN	DRAWING	2 OF 4

OWNER/BUILDER:  
 KEYSTONE CUSTOM HOMES, INC.  
 227 GRANITE RUN DR.  
 SUITE 100  
 LANCASTER, PA 17601  
 717-464-9060

BENCHMARK  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 ENGINEERING, INC.  
 8480 BALTIMORE NATIONAL PIKE SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BEI-CIVILENGINEERING.COM

**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 = 5.769231

**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	Walls:	0.33 feet
	Length: 13.75 feet	Length: 13.08 feet	Bottom:	0.33 feet
	Width: 6.25 feet	Width: 5.58 feet	Top:	0.42 feet
	Height: 5.42 feet	Height: 4.67 feet	Bottom to Inlet:	4.56 feet
		Area: 73.05 sf		
		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 = 790.2 Main HP  
 Pump off elevation = 773.50  
 Static Head = 16.70 feet

Friction Head = Head loss due to pipe friction  
 2.0" pipe = 123 feet  
 45° bends 5 loss for bend 20 feet per table 4.3  
 Gate Valve 0 loss for tee 0 feet per table 4.3

Friction loss per table 4.4 = 1.188 (ft/100 ft)

Equivalent Length = 143 Friction loss 1.70 feet

Total Friction Head = 1.70

Design Head = 18.40 feet

**Pump Requirements:**

Performance = 26.00 gpm  
 Head of Water = 18.40 feet of head

**Pump Selection:** Zoeller Pump Company, Model 371  
 1/3 horse power

Pump Flow Rate = 31.88 gallons/minute per rating curve. Run time: 4.08 Minutes  
 TDH analysis 19.18 ft  
 Between design and curve? Yes

**Design Pump Chamber**

Ground over Tank = 779.70 Cover = 2.90 ft  
 Top of Tank = 776.80  
 Invert of Tank = 771.71  
 9" Riser = 0.50 feet  
 Pump Height = 1.13 feet

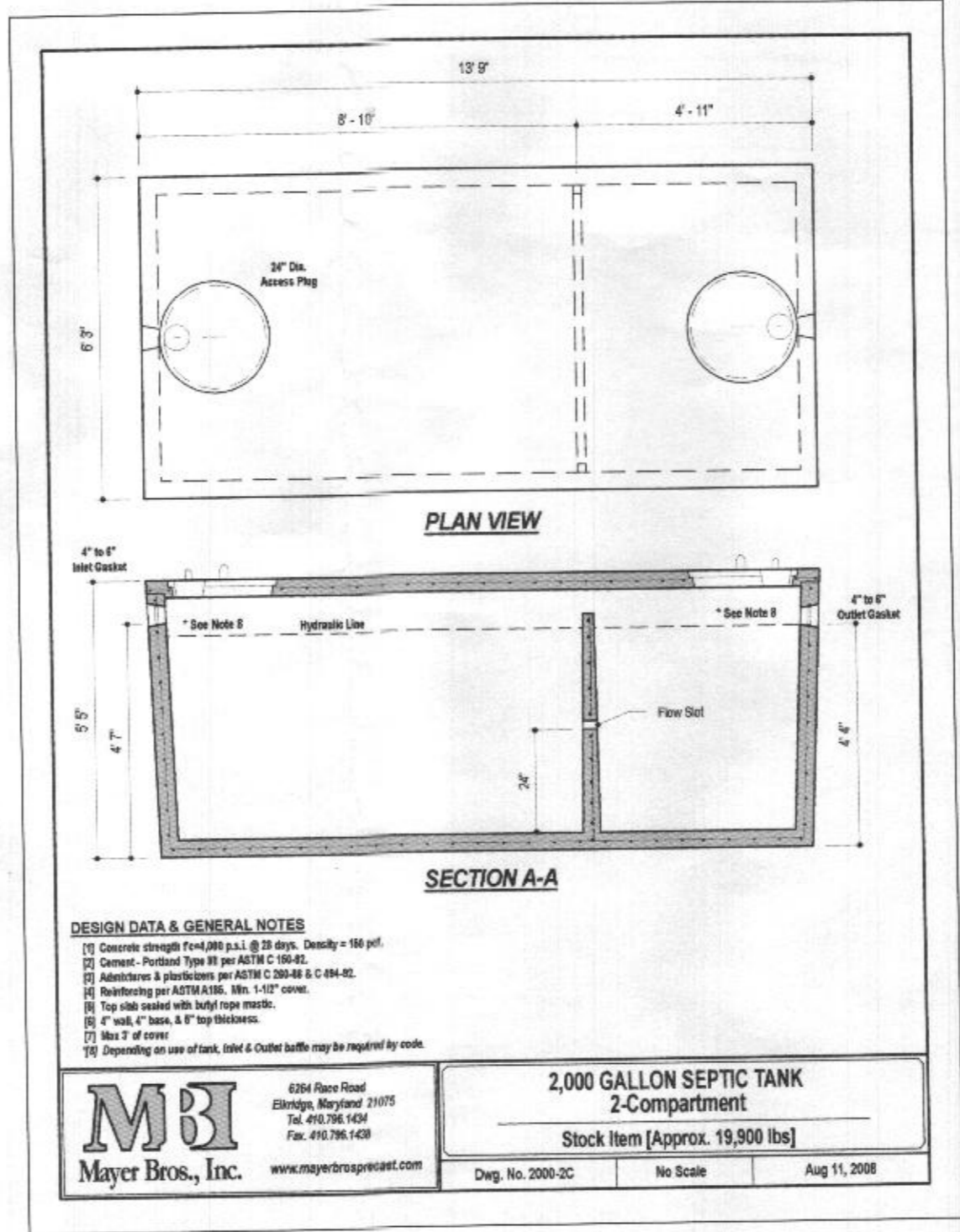
Min. Pump off = 773.34  
 Selected Pump off = 773.50

Dose = 17.4 cf  
 Area of Pit = 73.05 sf

Pump on dist. = 0.24  
 Pump on Elev. = 773.74

Distance between Pump on and Highwater Alarm = 0.5 feet  
 Highwater Alarm Elevation = 774.24

Dist. for day stored above alarm 1.37  
 Minimum Inlet Elev. = 775.61  
 Tank Inlet = 775.96 Okay  
 Dist. Alarm to Inlet = 1.72 Okay



SEPTIC INVERT CHART - Lot 18	
INV @ HOUSE	777.2
GROUND @ HOUSE	783.0
INV IN SEPTIC TANK	776.4
INV OUT SEPTIC TANK	776.2
TOP OF SEPTIC TANK	777.3
GROUND OVER SEPTIC TANK	778.9
INV IN PUMP TANK	776.0
INV OUT PUMP TANK	775.7
TOP OF PUMP TANK	776.8
GROUND OVER PUMP TANK	779.7
INV IN DIST BOX	790.2
INV OUT DIST BOX	790.1
GROUND AT DIST BOX	792.2

SIGNATURE AND SEAL ARE FOR SEPTIC PROFILE AND CALCULATIONS ONLY, TANK, PUMP AND DETAILS WERE NOT DESIGNED OR REVIEWED BY THE ENGINEER:

**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.



Dec 7 2020 8:29 AM DocuSign

SEE MANUFACTURER'S SPECIFICATIONS FOR DETAILS. EQUIVALENT FROM OTHER MANUFACTURERS CAN BE SUBSTITUTED.

**OWNER/BUILDER:**  
 KEYSTONE CUSTOM HOMES, INC.  
 227 GRANITE RUN DR.  
 SUITE 100  
 LANCASTER, PA 17601  
 717-464-9060

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS  
 8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315  
 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 ▲ (F) 410-465-6644  
 WWW.BEI-CVLENGINEERING.COM

PROJECT:	WINDSOR FOREST KNOLLS LOT 18		
LOCATION:	TAX MAP: 6 - GRID: 16 - PARCEL: 57 18423 HIDDEN CREEK WAY - TAX ID: 04-373340 ELECTION DISTRICT NO. 4 - HOWARD COUNTY, MARYLAND		
TITLE:	ONSITE SEWAGE DISPOSAL PLAN		
HOUSE TYPE:	CUSTOM - KEYSTONE HOMES		
DATE:	DECEMBER, 2020	PROJECT NO.	2986
SCALE:	AS SHOWN	DRAWING	3 OF 4

