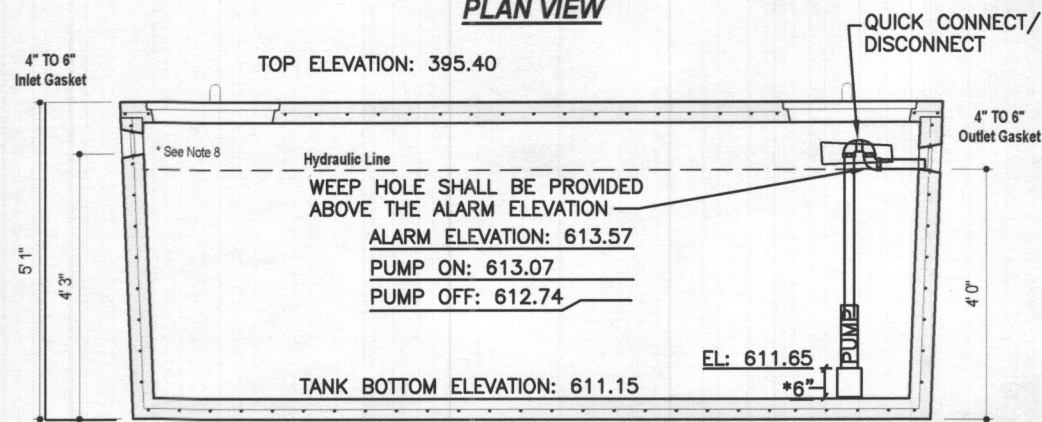


PLAN VIEW



SECTION A-A

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

DESIGN DATA & GENERAL NOTES

- [1] Concrete strength $f_c=4,000$ p.s.i. @ 28 days. Density = 150 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, base, & 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	611.15	
Top of Pump	612.65	1' 6"
Pump Off	612.74	1' 7"
Pump On	613.11	1' 11 7/16"
High Alarm	613.61	2' 5 7/16"

WEIGHT = 16,000 lbs.



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

www.mayerbrosprecast.com

1,500 GALLON SEPTIC/PUMP TANK
1-Compartment

NON-TRAFFIC MAX 3 ft. OF COVER

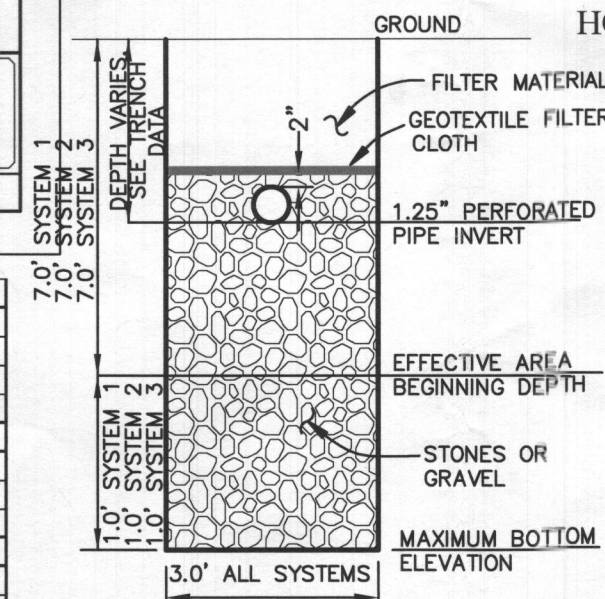
Dwg. No. 1500-1C

No Scale

Aug. 11, 2008

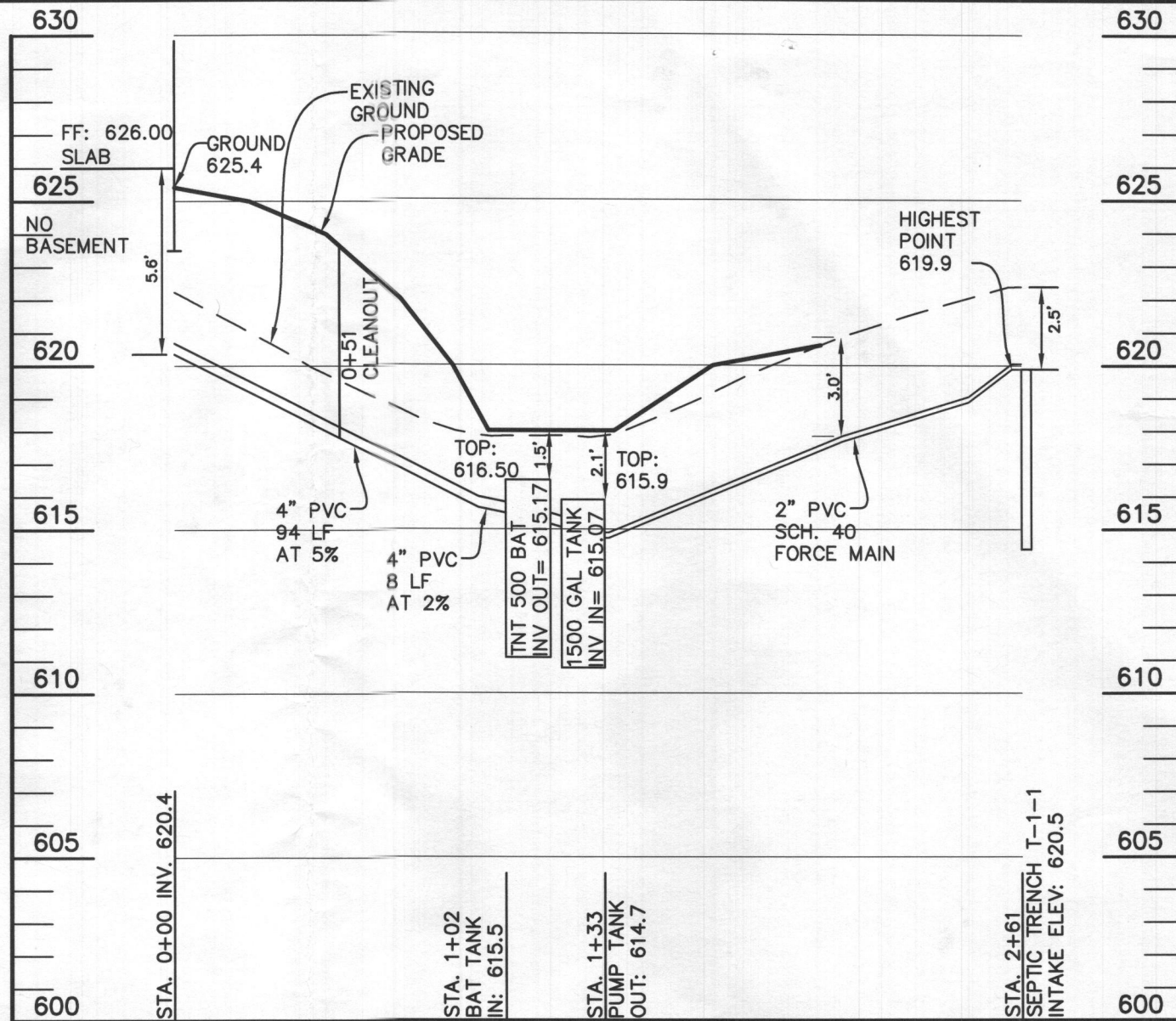
SPEC SHEET INFORMATION - Lot 1 10/26/2020			
System	Application Rate	Effective Depth	Bottom Depth
Initial	0.8	7.0	8.0
1st Repair	0.8	7.0	8.0
2nd Replacement	0.8	7.0	8.0

Trench	LF
T-1-1	41
T-1-2	56
T-1-3	56
T-1-4	56
Total Initial System	209
T-2-1	70
T-2-2	70
T-2-3	70
Total First Repair	210
T-3-1	70
T-3-2	70
T-3-3	70
Total Second Repair	210



LOW PRESSURE DOSE TYPICAL TRENCH DETAIL

NOT TO SCALE

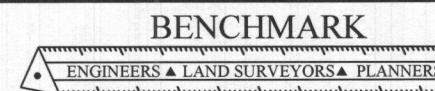


SEWER PROFILE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

OWNER:
HOMES FOR OUR TROOPS, INC.
6 MAIN STREET
TAUNTON, MA 02780



ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.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. 45577, Expiration Date: 06-08-2024.



PROJECT:	SPRING ROCK FARM LOT 1		
LOCATION:	TAX MAP: 07, GRID: 21, PARCEL 392 2301 WOODBINE ROAD, WOODBINE, MD 21797 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND ACCOUNT IDENTIFIED 04-354524		
TITLE:	BAT SITE PLAN		
HOUSE TYPE:	AMERICAN DREAM PLAN B -4B		
DATE:	JUNE, 2022	PROJECT NO.	3038
SCALE:	AS SHOWN	DRAWING	2 OF 5

INITIAL SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

1st REPAIR SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

2nd REPLACEMENT SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

Design Calculations

Design Input:

Capacity requirements
 number of lots 1
 bedrooms per lot 4
 use rate per bedroom 150 gpd

Drainfield Requirements
 Application Rate 0.8 gpd/sq ft
 Trench width 3 ft
 trench gravel depth 1 ft
 number of trenches 4
 trench spacing center-center 10 ft

Tanks and Capacities
 BAT tank 1,300 gallons
 2nd settling tank NA gallons
 Equalization Tank NA gallons
 pump tank size 1,500 gallons

Distribution system
 number of cells 1
 trenches first system 4
 lateral length per pump 216.4 ft
 ID 1.25" SCH 40 PVC inches
 Max. Manifold length 128 ft
 ID 2.0" SCH 40 PVC inches

Static Hydraulic Profile
 Ground Elev. At BAT tank 618.00 ft
 Tank #1 invert in Cover 615.50 ft
 Tank #1 top 616.50 ft
 Fall in tanks 0.33 ft
 Fall between tanks 0.10 ft
 Ground Elev. at pump tank 618.00 ft
 Pump Tank invert in inv. into pump tank to top 615.07 ft
 Pump Tank top 615.90 ft
 Pump Block Height 0.50 ft
 Height of Intake 0.27 ft
 Highest lateral 619.90 ft

Perforation Design:
 Size of Perforation 5/16 inches
 Design Separation 8.00 ft
 Use Perforations 6
 Perforations per field 24

Dosing volume, flow rates and Pressures
 lateral flow rate per pump 39.08 gpm
 Friction (C) for PVC 150
 Miscellaneous Losses 0 ft
 Estimated Run Time 4.00 Min.
 Cells in simultaneous use 1
 Pump tank Volume 35.91 Gal/in

Tank and Float Design:
 Ground over Tank = 618.00 ft
 Top of Tank = 615.90 ft
 Invert of Tank = 611.15 ft
 Pump Block= 0.50 ft
 Water End and Motor = 1.00 ft

Calculations:
 Max. Daily Flow 600 gpd
 Average Daily Flow 300 gpd
 Maximum Daily Flow 0.42 gpm
 Average Daily Flow 0.21 gpm

Standard Trench Length 250.00 ft
 Deep Trench Conversion Factor 83.33 %
 Deep Trench Length for MDF 208.325 ft
 total trench length for 100% capacity 208.325 ft
 individual trench length 52.1 ft
 Approx. Lateral Length 48.10 ft

minimum req. area 2499.9 sf
 req. capacity (1125+(0.75*MDF)) 1575 gal.
 design settling capacity NA gal.
 min. pump tank capacity (ADF) 407 gal.

Total Number of Pumps 1
 laterals served by pump 4
 Vol./100 ft 1.25" SCH 40 7.8 gal.
 Vol. of laterals served 16.9 gal.
 Vol./100 ft 2.0" SCH 40 17.4 gal.
 Max. Main volume 22.3 gal.

Tank #1 effluent out elev 615.17 ft
 Pump Tank effluent in elev 615.07 ft
 Invert of pump tank 611.15 ft
 Pump Elevation 611.65 ft
 pump intake elev. 611.92 ft

Distal Pressure = 2.0 ft
 Flow 1.63 gpm
 Perforations per Lateral 6.51
 Perforation Actual Spacing 8.68 ft
 Flow rate 39.08 gpm

Static Head 7.16 ft Cell 1
 Friction Head 5.29 ft Cell 1
 Distal Head 2 ft
 Max. Total Dynamic Head 14.45 ft
 Estimated Dose (5xLateral+1xMain) Vol. 106.67 gal.
 Min. Runtime 4.09 min.
 Minimum Dose Volume 159.83 gal.
 Average Doses 1.88 per day

Inside Tank Dimensions
 Height = 4.42 ft
 Width = 4.58 ft
 Length = 12.58 ft
 Number of Tanks = 1

minimum Pump off = 612.65 ft
 Pump Off Float = 612.74 ft

Dose = 21.37 cf
 Area of Pit 57.62 sf
 Use one 1,500 gallon pump tank

Pump on dist. = 0.37 ft
 Pump on Elev. = 613.11 ft

Distance between Pump on and Highwater Alarm = 0.5 ft
 Highwater Alarm Elevation = 613.61 ft

High Water Alarm to inlet = 1.46
 Volume Above Alarm Float to Inlet = 84.36 cf or 631.00 gallons
 One Day Flow = 600.00 gallons
 okay

Lateral Pressure Calculations

Cell	Trench	Pipe Elev.	Beginning Manifold Loss	Gate Valve	Manifold Bends 45D	Manifold Length	Manifold velocity	Manifold Thru Tees	Delta Loss Manifold	Total Manifold Loss	Lateral 90 degree side tee loss	Sudden Reduction Loss	Lateral Bends 45 deg. Loss	Lateral Length to first perf. Loss	Lateral Loss Summation	Total Loss to First Perf.	Total Design Head (ft)	Lateral Pressure Head (ft)	Trench Flow Rate (gpm)
1	4	619.3	0		0	77	39.08	0	1.94	1.94	0.14	0.01	0.0337	0.14	0.32	2.26	10.82	2.70	11.35
	3	619.5	1.94		0	19	29.31	1	0.31	2.25	0.14	0.01	0.0337	0.17	0.36	2.60	11.37	2.50	10.92
	2	619.9	2.25		0	13	19.5	1	0.11	2.35	0.14	0.01	0.0337	0.10	0.28	2.63	11.80	2.10	11.68
	1	620.0	2.35		1	19	9.8	1	0.08	2.44	0.14	0.01	0.0000	0.06	0.21	2.64	11.91	2.00	8.14

Perforation Diameter = 5/16 inches Distal Head 2 feet

Trenches are unequal length, trench 1-1 is shorter

Trench and Lateral Design

Cell	Trench	Pipe Inv. Elev.	Trench Bottom Elev.	Highest Ground Over	Lowest Ground Over	Lateral Pressure Head (ft)	Approx. Lateral Length (ft)	Number of Perforations	Flow per Perforation (gpm)	Trench Flow Rate (gpm)	Lateral Flow Differential	Flow per LF Trench (gpm)	LR Differential
1	1	620.0	614.5	622.5	622.5	2.00	41	5	1.63	8.14	16.7%	0.20	0.00%
	2	619.9	613.9	621.9	621.9	2.10	56	7	1.67	11.68	19.5%	0.21	5.03%
	3	619.5	613.5	621.5	621.5	2.50	63	6	1.82	10.92	11.8%	0.20	1.77%
	4	619.3	612.8	620.8	620.8	2.70	58	6	1.89	11.35	16.2%	0.20	2.08%

Perforation Diameter = 5/16 inches Target Flow = 9.77 gpm Cell 1 Flow Rate 42.09

Depth To Effective Sidewall Deep Trench Depth Depth to Inlet

Trench 1	7 ft	8 ft	2.5 ft
Trench 2	7 ft	8 ft	2.0 ft
Trench 3	7 ft	8 ft	2.0 ft
Trench 4	7 ft	8 ft	1.5 ft

Perforation Design

Cell	Trench	Number of Perforations	Manifold to Trench (ft)	Trench Length (ft)	Perforation Spacing (ft)	Dist. Manifold to First Perf. (ft)	Dist. Last Perf. to Trench Edge	Lateral Length (ft.)	
1	1	5	0.0	41	8.20	4.10	4.10	36.90	
	2	7	2.9	56	8.00	6.90	4.00	52.00	
	3	6	7.6	56	9.33	12.27	4.67	51.33	
	4	6	5.0	56	9.33	9.67	4.67	51.33	
				Total:	209				

Lateral Length is distance from beginning of trench to end of lateral, does not include manifold to trench.

TRENCH DATA - LOT 1

INITIAL SYSTEM		FIRST REPLACEMENT		SECOND REPLACEMENT	
TRENCH 1-1	TRENCH 1-2	TRENCH 2-1	TRENCH 2-2	TRENCH 3-1	TRENCH 3-2
LENGTH 41 ft	LENGTH 56 ft	LENGTH 70 ft	LENGTH 70 ft	LENGTH 70 ft	LENGTH 70 ft
GROUND ELEVATION 622.4	GROUND ELEVATION 621.9	GROUND ELEVATION 620.3	GROUND ELEVATION 619.8	GROUND ELEVATION 618.1	GROUND ELEVATION 618.1
INVERT ELEVATION 619.9	INVERT ELEVATION 619.9	INVERT ELEVATION 618.3	INVERT ELEVATION 617.8	INVERT ELEVATION 616.6	INVERT ELEVATION 616.1
MAX BOTTOM ELEVATION 614.4	MAX BOTTOM ELEVATION 613.9	MAX BOTTOM ELEVATION 612.3	MAX BOTTOM ELEVATION 611.8	MAX BOTTOM ELEVATION 610.6	MAX BOTTOM ELEVATION 610.1
TRENCH 1-3	TRENCH 1-4	TRENCH 2-3	TRENCH 3-3		
LENGTH 56 ft	LENGTH 56 ft	LENGTH 70 ft	LENGTH 70 ft		
GROUND ELEVATION 621.5	GROUND ELEVATION 620.8	GROUND ELEVATION 619.2	GROUND ELEVATION 617.2		
INVERT ELEVATION 619.5	INVERT ELEVATION 619.3	INVERT ELEVATION 617.2	INVERT ELEVATION 615.6		
MAX BOTTOM ELEVATION 613.5	MAX BOTTOM ELEVATION 612.8	MAX BOTTOM ELEVATION 611.2	MAX BOTTOM ELEVATION 609.6		

Friction Head main

Friction Head = Head loss due to pipe friction

2.0" pipe = 128 feet

45° bends	3 loss for manifold bend	12.0 feet	per table 4.3
90° Bend	3 loss for manifold bend	30.0 feet	per table 4.3
Str. Coupling	3 loss for straight tee	6.0 feet	per table 4.3
90 deg. Side tee	1 loss for tee bend	10.0 feet	per table 4.3 for smaller pipe
Sudden reduction	1 loss for reduction	1.0 feet	per Crane Co. technical paper
45° bends	1 loss for lateral bend	2.4 feet	per table 4.3
Gate Valve	0 loss for valve	0.0 feet	per table 4.3

Equivalent Manifold Length : 176.0 Friction loss = 4.43 feet

1.25" lateral 61.50 feet Friction loss = 0.86 feet

Total Friction Head = 5.29



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: 06-08-2024.

OWNER:
 HOMES FOR OUR TROOPS, INC.
 6 MAIN STREET
 TAUNTON, MA 02780

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 ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS

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 8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315
 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 ▲ (F) 410-465-6644
 WWW.BEI-CVILENGINEERING.COM

PROJECT:	SPRING ROCK FARM LOT 1	
LOCATION:	TAX MAP: 07, GRID: 21, PARCEL 392 2301 WOODBINE ROAD, WOODBINE, MD 21797 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND ACCOUNT IDENTIFIED 04-354524	
TITLE:	BAT SITE PLAN	
HOUSE TYPE:	AMERICAN DREAM PLAN B -4B	
DATE:	JUNE, 2022	PROJECT NO. 3038
SCALE:	AS SHOWN	DRAWING 3 OF 5



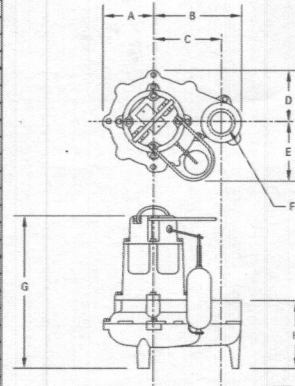
Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

TECHNICAL DATA SHEET
WASTE-MATE SERIES

Models 266 & 267 Sewage/ Effluent or Dewatering Pumps

PRODUCT SPECIFICATIONS

MOTOR	Specifications
Horse Power	1/2
Voltage	115 - 480
Phase	1 or 3 Ph
Hertz	60 Hz
RPM	1725
Type	Permanent split capacitor
Insulation	Class B
Amps	1.5 - 9.4
Operation	Automatic or nonautomatic
Auto On/Off Points	12" (30 cm) / 4" (10 cm)
Discharge Size	2" NPT
Solids Handling	2" (50 mm) spherical solids
Cord Length	10' (3 m) automatic or 15' (5 m) nonautomatic
Cord Type	UL listed neoprene cord and plug
Max. Head	21.5' (6.6 m)
Max. Flow Rate	128 GPM (484 LPM)
Max. Operating Temp.	130° F (54° C)
Cooling	Oil filled
Motor Protection	Auto reset thermal overload (1 Ph)
Cap	Cast iron
Motor Housing	Cast iron
Pump Housing	Cast iron
Base	Cast iron or engineered plastic
Upper Bearing	Sleeve bearing
Lower Bearing	Sleeve bearing
Mechanical Seals	Carbon and ceramic
Impeller Type	Non-clogging vortex
Impeller	Engineered plastic w/ metal insert
Hardware	Stainless steel
Motor Shaft	AISI 1215 cold rolled steel
Gasket	Neoprene
Min. Basin Size	Simplex: 18" x 30" (45.7 x 76.2 cm) Duplex: 30" x 38" (76.2 x 91.4 cm)



NOTE: The sizing of effluent systems normally requires variable level float controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps. See model comparison chart for specific details.
* May be used in those states where codes do not restrict solids size in effluent systems.

MODEL DIMENSIONS

MODEL	A	B	C	D	E	F	G	H
266	4-3/4" (12.1 cm)	6-9/16" (21.1 cm)	6-13/32" (16.3 cm)	6-13/16" (12.2 cm)	6-7/32" (15.8 cm)	2" NPT	14-1/4" (36.2 cm)	6-3/8" (16.2 cm)
267	4-3/4" (12.1 cm)	6-9/16" (21.1 cm)	6-13/32" (16.3 cm)	6-13/16" (12.2 cm)	6-7/32" (15.8 cm)	2" NPT	14-9/16" (36.4 cm)	6-3/8" (16.4 cm)



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SELECTION GUIDE

- Integral float operated mechanical switch, no external control required.
- For automatic use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM4077.
- See FM1228 for correct model of simplex control panel.
- See FM0712 for correct model of duplex control panel or FM1863 for a residential alternator system.

SPECIAL MODEL FEATURES

- Model 266 features a plastic base.
- Model 267 features a cast iron base.
- Model 267 is available with a cast iron impeller, which is standard on all 3 Ph units.
- SN and SE models include a variable level pump switch.
- Additional cord lengths are available in 15' (5 m), 30' (11 m) and 50' (15 m).

CONSULT FACTORY FOR SPECIAL APPLICATIONS

- Minimum recommended basin size (small load applications)
Simplex - 18" x 30" (45.7 x 76.2 cm)
Duplex - 30" x 38" (76.2 x 91.4 cm)
- High water alarm available

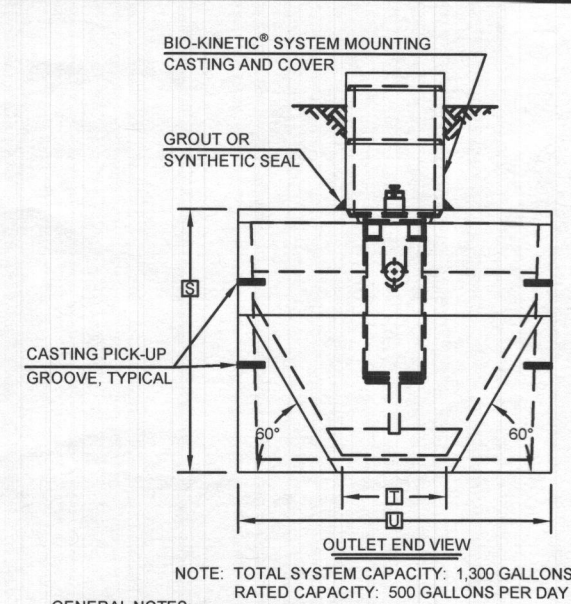
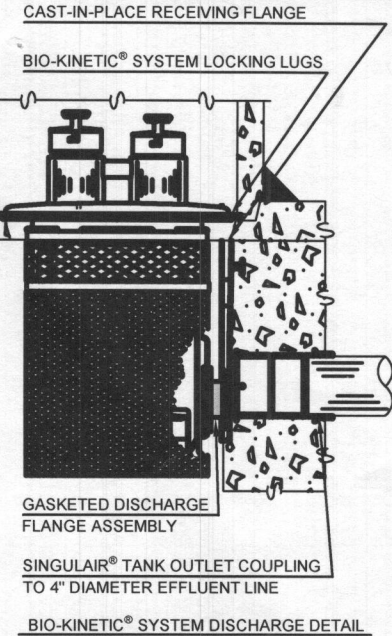
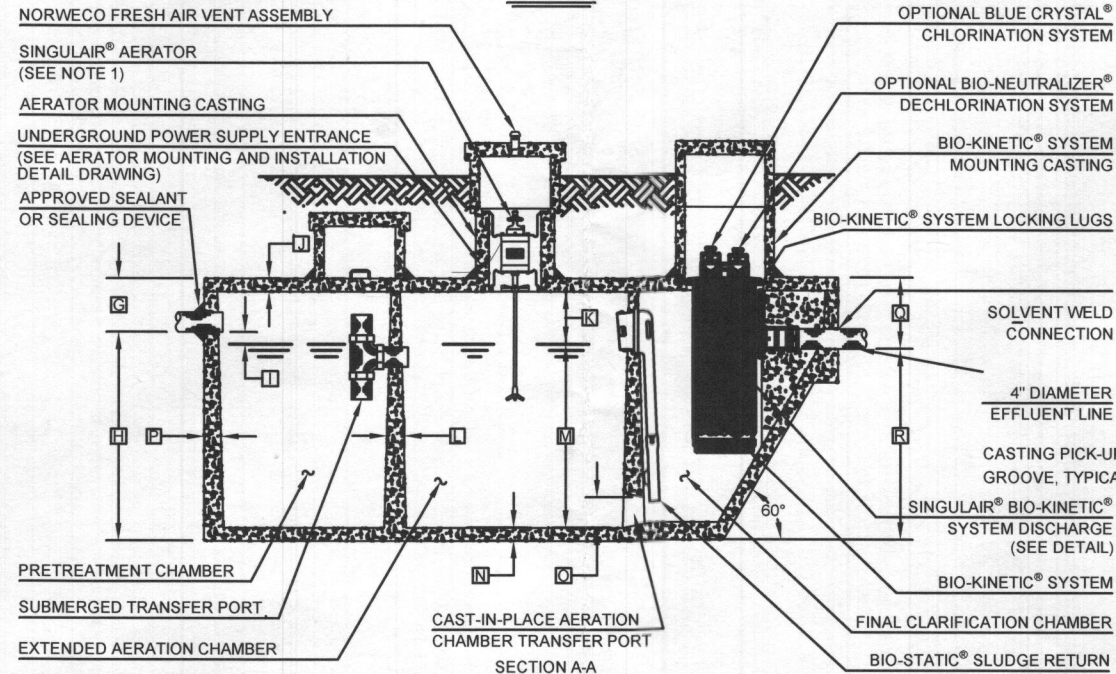
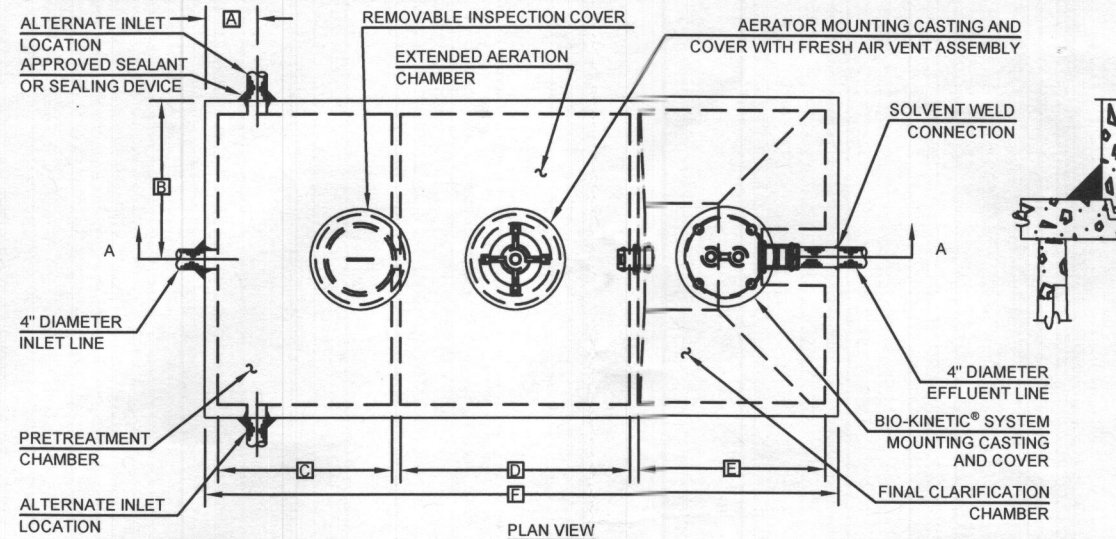
Standard All Models:	Weight
266 - Weight	41 lbs. (18.6 kg)
267 - Weight	47.5 lbs. (21.5 kg)

CAUTION: Maximum temperature of sewage or dewatering must be limited to 130°F (54°C). For over 130°F (54°C), special quotation required.

USE BN266 PUMP OR EQUIVALENT

Model	MODEL COMPARISON										CERTIFICATIONS		
	Seal	Mode	Volts	Ph	Amps	HP	H _z	Lbs	Kg	Simplex	Duplex	cCSAus	UL
M266/BN266	Single	Auto	115	1	9.4	1/2	60	41.0	19	1	4	Y	Y
N266	Single	Non	115	1	9.4	1/2	60	41.0	19	2 or 3	2 or 4	Y	Y
D266/BE266	Single	Auto	230	1	5.5	1/2	60	41.0	19	1	—	Y	Y
E266	Single	Non	230	1	5.5	1/2	60	41.0	19	2 or 3	4	Y	Y
H266	Single	Auto	700-208	1	6.2	1/2	60	41.0	19	1	—	Y	N
J266	Single	Non	700-208	1	6.2	1/2	60	41.0	19	3	4	Y	N
J266	Single	Non	700-208	3	2.6	1/2	60	41.0	19	3	4	Y	Y
F266	Single	Non	230	3	2.6	1/2	60	40.0	18	3	4	Y	Y
G266	Single	Non	480	3	1.5	1/2	60	40.0	18	3	4	Y	Y
M267/BN267	Single	Auto	115	1	9.4	1/2	60	47.5	22	1	4	Y	Y
N267	Single	Non	115	1	9.4	1/2	60	47.5	22	2 or 3	4	Y	Y
D267/BE267	Single	Auto	230	1	5.5	1/2	60	47.5	22	1	—	Y	Y
E267	Single	Non	230	1	5.5	1/2	60	47.5	22	2 or 3	4	Y	Y
H267	Single	Auto	700-208	1	6.2	1/2	60	47.5	22	1	—	Y	N
J267	Single	Non	700-208	1	6.2	1/2	60	47.5	22	3	4	Y	N
J267	Single	Non	700-208	3	2.6	1/2	60	47.5	22	3	4	Y	Y
F267	Single	Non	230	3	2.6	1/2	60	47.5	22	3	4	Y	Y
G267	Single	Non	480	3	1.5	1/2	60	47.5	22	3	4	Y	Y

CAUTION: All installation of controls, interconnections 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).



NOTE: TOTAL SYSTEM CAPACITY: 1,300 GALLONS
RATED CAPACITY: 500 GALLONS PER DAY

CRITICAL DIMENSIONS			
A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	3'-8"
F	12'-2"	S	5'-0"
G	1'-0"	T	2'-0"
H	4'-0"	U	6'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
M	3'-6"	Z	

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

Required BAT Site Plan Notes

- 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 sit plan may be required.
- The maximum depth of the BAT shall be per the manufacturer's specification, 3.0'.
- The blower may not be located further from the tank than the manufacturer's specifications, 75'.
- The BAT system shall be maintained and operated for the life of the system.
- The BAT shall be operated by and maintained by a certified service provider.
- Within one month of installation, a person installing the BAT system shall report to the Maryland Department of the Environment (MDE) in a manner acceptable to MDE, the address and date of completion of the BAT installation and the type of BAT installed.
- Electrical work for the BAT installation must be performed by a licensed electrician.
- An agreement and Easement must be completed and signed by all applicable parties, and recorded in Land Records of Howard County.
- The Health Department requires documentation for the start-up certification from the manufacturer prior to final approval of the installation.

Pump Requirements:

Performance = 39.08 gpm
Head of Water = 14.45 feet of head

Pump Selection:

Zoeller Pump BN266
1/2 horse power 115 Volts Single Phase

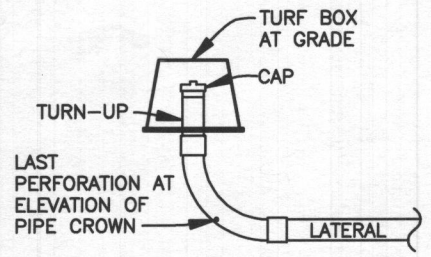
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TAUNTON, MA 02780

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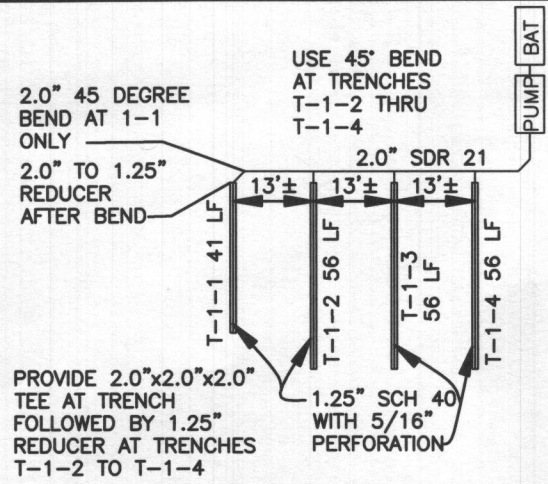


BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 315
ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

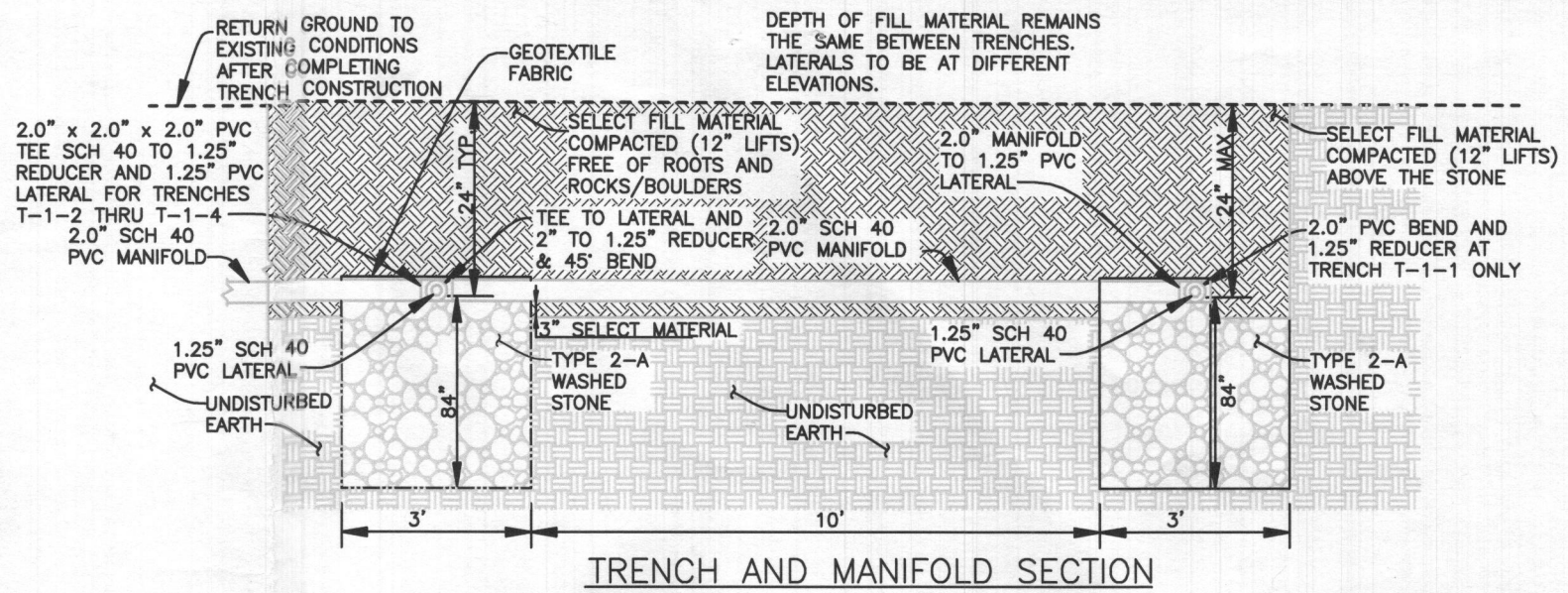
PROJECT:	SPRING ROCK FARM LOT 1		
LOCATION:	TAX MAP: 07, GRID: 21, PARCEL 392 2301 WOODBINE ROAD, WOODBINE, MD 21797 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND ACCOUNT IDENTIFIED 04-354524		
TITLE:	BAT SITE PLAN		
HOUSE TYPE:	AMERICAN DREAM PLAN B -4B		
DATE:	JUNE, 2022	PROJECT NO.	3038
SCALE:	AS SHOWN	DRAWING	4 OF 5



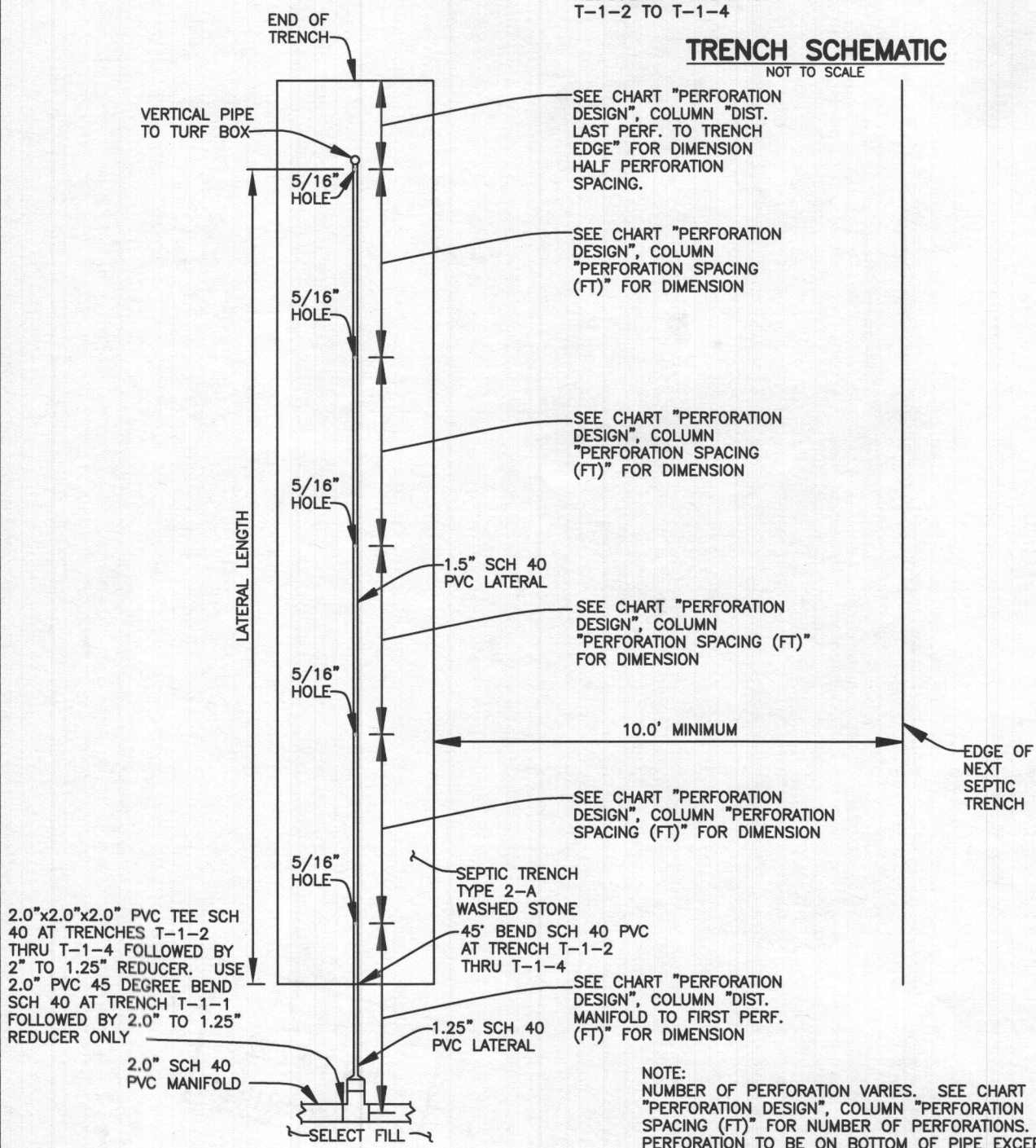
END PERFORATION AND TURN-UP DETAIL



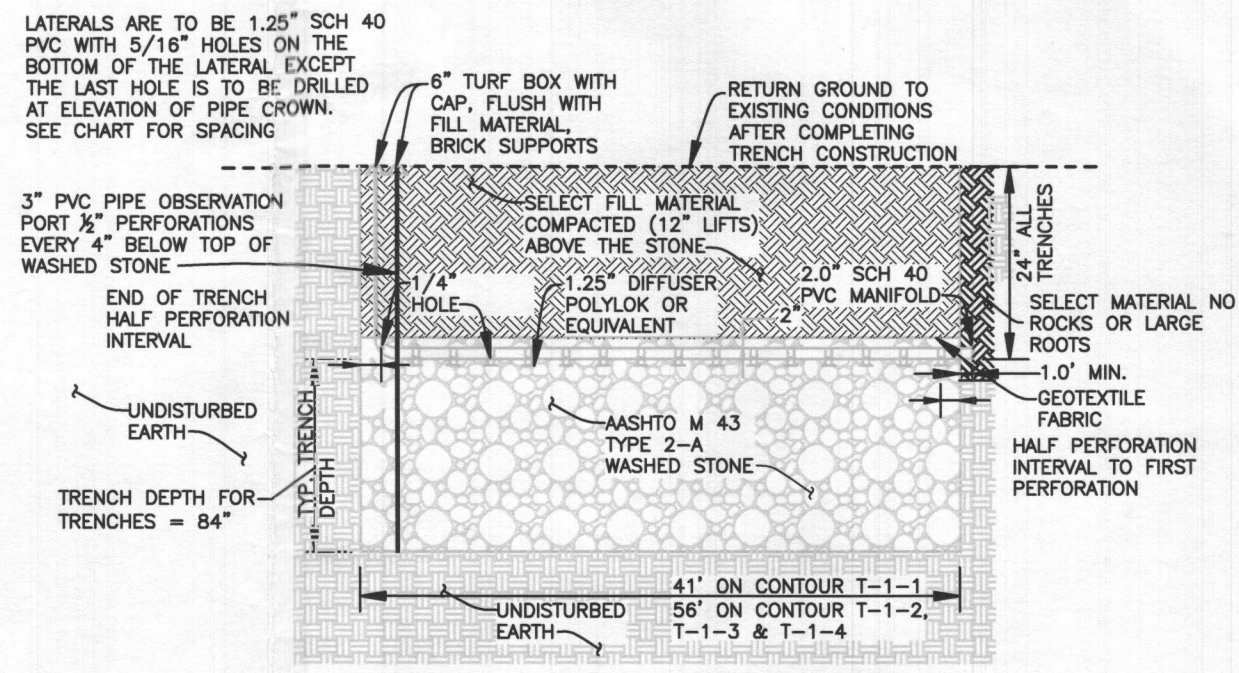
TRENCH SCHEMATIC
NOT TO SCALE



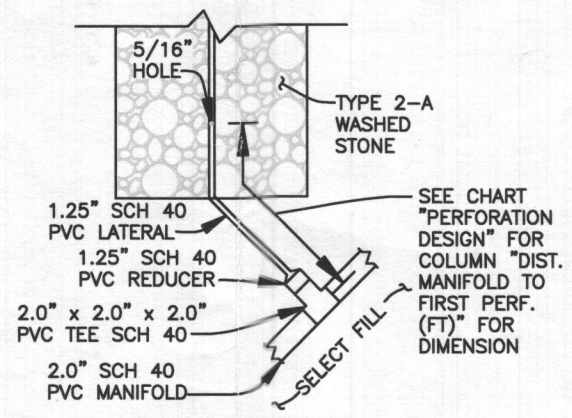
TRENCH AND MANIFOLD SECTION



PERFORATION SPACING AND LATERAL LENGTH DIAGRAM



LATERAL AND TRENCH DESIGN



OVERHEAD VIEW OF MANIFOLD AND LATERAL CONNECTION SECTION

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: 06-08-2024.



BENCHMARK

ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING, INC.

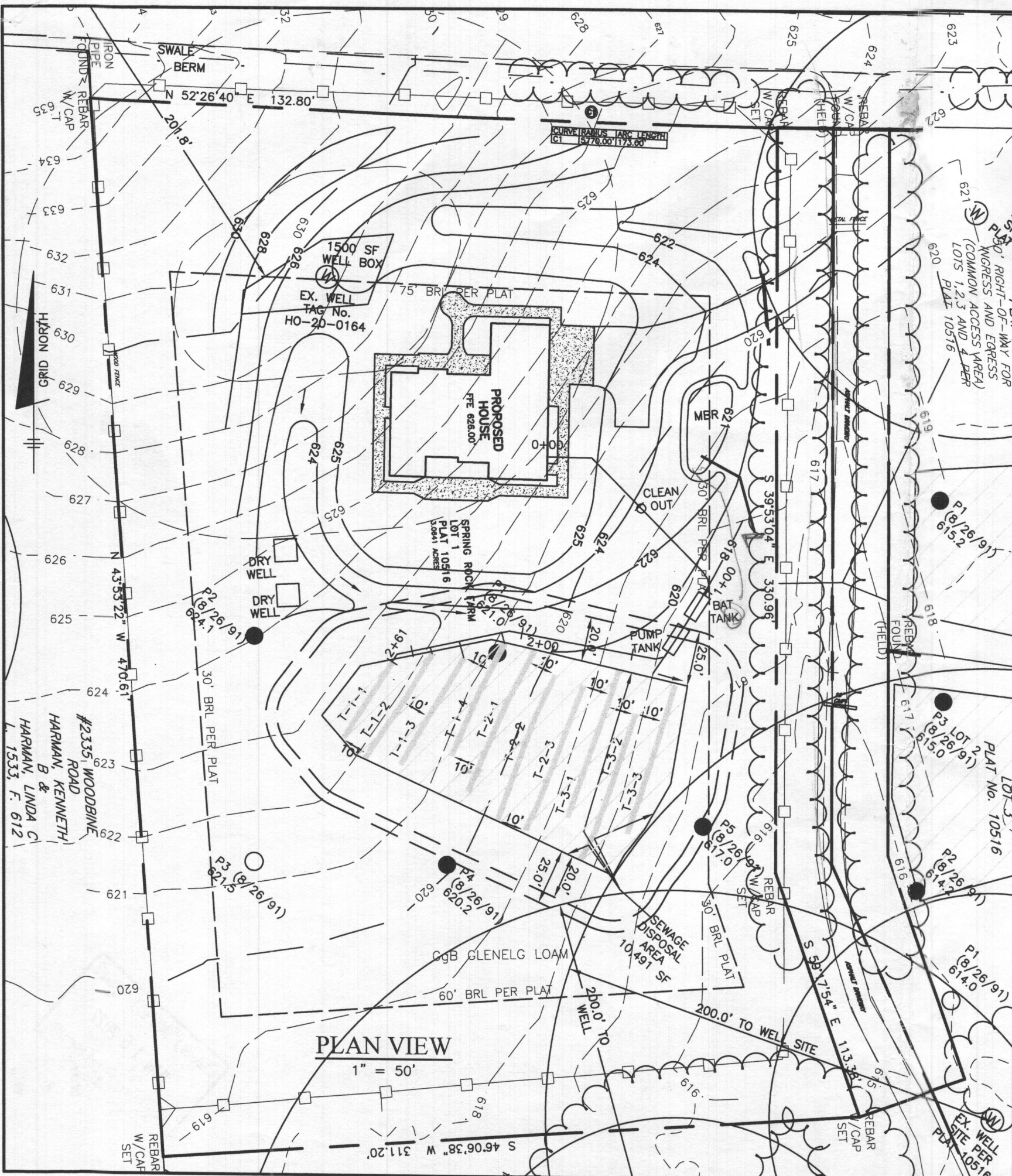
8480 BALTIMORE NATIONAL PIKE & SUITE 315
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WWW.BEI-CIVILENGINEERING.COM

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LOCATION:		TAX MAP: 07, GRID: 21, PARCEL 392 2301 WOODBINE ROAD, WOODBINE, MD 21797 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND ACCOUNT IDENTIFIED 04-354524	
TITLE:		BAT SITE PLAN	
HOUSE TYPE:		AMERICAN DREAM PLAN B -4B	
DATE:	JUNE, 2022	PROJECT NO.	3038
SCALE:	AS SHOWN	DRAWING	5 OF 5

OWNER:
HOMES FOR OUR TROOPS, INC.
6 MAIN STREET
TAUNTON, MA 02780

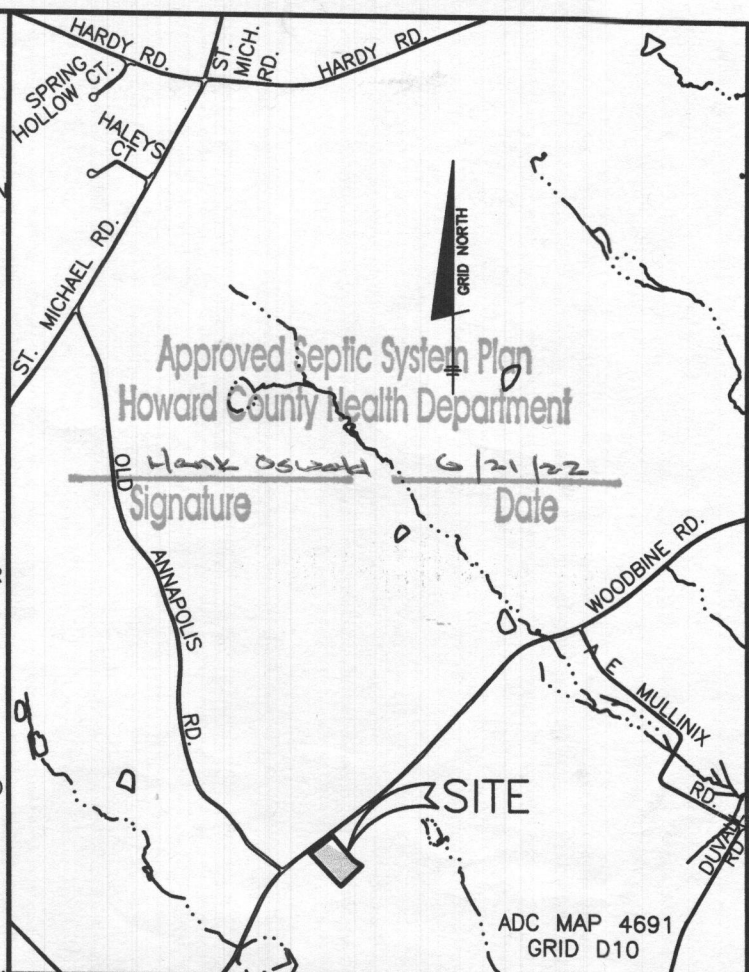
NOTE:
NUMBER OF PERFORATION VARIES. SEE CHART "PERFORATION DESIGN", COLUMN "PERFORATION SPACING (FT)" FOR NUMBER OF PERFORATIONS. PERFORATION TO BE ON BOTTOM OF PIPE EXCEPT THE LAST PERFORATION TO BE AT VERTICAL BEND SET ON THE OUTSIDE OF THE PIPE BEND AT ELEVATION OF TOP OF PIPE.



PLAN VIEW
1" = 50'

OSDS PERMIT PLAN NOTES:

1. THE LOT SHOWN HEREON WAS RECORDED ON THE PLAT FOR SPRING ROCK FARM, PLAT No. 10516. 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. 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.
3. TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A SURVEY BY POTOMAC VALLEY SURVEYS, INC., DATED NOV., 2020, AND SUPPLEMENTED WITH HOWARD COUNTY GIS.
4. ALL DRAINAGE AND STORMWATER MANAGEMENT FEATURES USED ON THIS SITE MUST COMPLY WITH THE APPROVED BUILDING PERMIT AND GRADING PERMIT PLANS EXCEPT AS WAIVED.
5. THE EXISTING WELL SHOWN ON THIS PLAN, TAG #HO-20-0164, HAS BEEN SHOWN PER A FIELD LOCATION PROVIDED BY D.R.S. & ASSOCIATES, DATED JUNE 14, 2022, AND IS ACCURATELY SHOWN PER THEIR EXHIBIT. THERE ARE NO EXISTING WELLS OR SEPTIC SYSTEMS WITHIN 100' OF THIS PROJECT'S BOUNDARY EXCEPT AS NOTED.
6. ANY CHANGES TO A PRIVATE SEWAGE DISPOSAL AREA OR WELL BOX SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
7. STORMWATER MANAGEMENT FOR THIS LOT WAS DESIGNED AND PROVIDED BY TWO DRY WELL FACILITIES AND ONE MICRO-BIORETENTION FACILITY.
8. THE PUMP SEPTIC TANK WILL BE A 1,500 GALLON ONE COMPARTMENT TANK.
9. 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.
10. ANY ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
11. MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED VARIANCES ON 6/21/22 FOR THE WELL LOCATION ON THIS PARCEL BEING DOWNGRADE OF THE SEWAGE DISPOSAL AREA ON 2308 WOODBINE ROAD, AND FOR THE WELL ON SPRING ROCK FARM, LOT 3 BEING DOWNGRADE OF THE SEWAGE DISPOSAL AREA ON SPRING ROCK FARM, LOT 1. THE CONDITIONS OF THE VARIANCE APPROVAL ARE THAT THE WELLS INSTALLED ON SPRING ROCK FARM, LOTS 1 AND 3, MUST BE INSTALLED AS STEEL CASING TO A DEPTH OF 50 FEET OR 10 FEET INTO COMPETENT ROCK, WHICHEVER IS DEEPER, AND THAT THE SEWAGE DISPOSAL FOR SPRING ROCK FARM, LOT 1, MUST UTILIZE BEST AVAILABLE TECHNOLOGIES (BAT) FOR NITROGEN REMOVAL AND LOW PRESSURE DOSING.
12. THE BAT TANK WILL BE NORWECO BAT TANK, MODEL TNTLP-500 GPD. THE PUMP TANK WILL BE A 2000 GALLON ONE COMPARTMENT TANK.
13. THE WELL FOR THIS PARCEL MUST BE INSTALLED PRIOR TO BUILDING PERMIT APPROVAL FOR THE PROPOSED RESIDENCE. THE OFFICIAL WELL COMPLETION REPORT MUST BE RECEIVED AT THE HEALTH DEPARTMENT, AND THE WELL YIELD AND CONSTRUCTION APPROVED BY AN ENVIRONMENTAL SANITARIAN BEFORE APPROVAL OF THE BUILDING PERMIT.



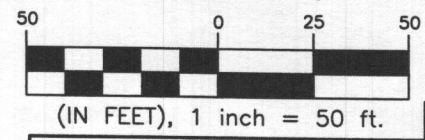
VICINITY MAP

SCALE: 1" = 2000'

LEGEND

- S 46°06'38" W 311.20' PROPERTY BOUNDARY
- 620 EXISTING CONTOURS
- 624 EXISTING CONTOURS
- W WELL LOCATION
- PASSED PERCOLATION TEST PER TEST NOTES
- FAILED PERCOLATION TEST PER TEST NOTES
- Ggc GLENELG LOAM SOILS DELINEATION
- Ggb GLENELG LOAM SOILS DELINEATION
- EXISTING TREELINE
- EXISTING APPROVED SEWAGE DISPOSAL AREA

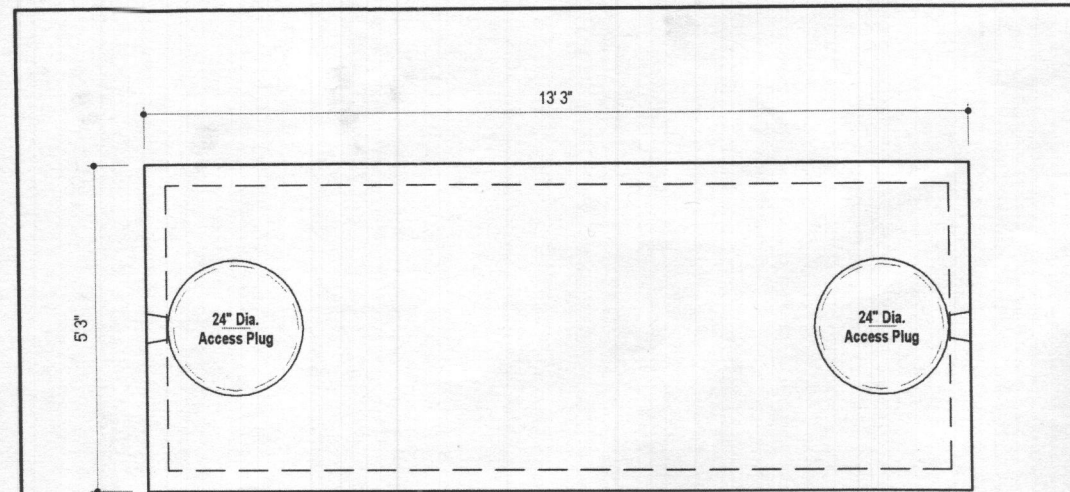
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 45577, Expiration Date: 06-08-2024.



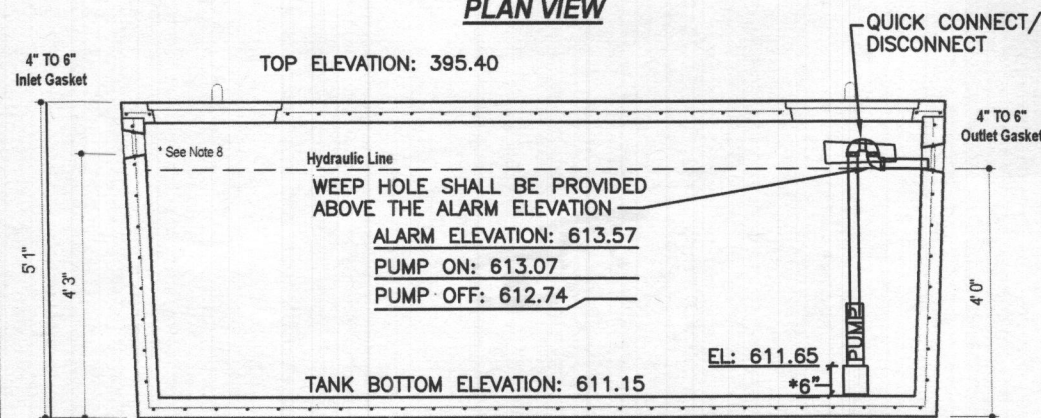
OWNER:
HOMES FOR OUR TROOPS, INC.
6 MAIN STREET
TAUNTON, MA 02780
ATTENTION CHERYL PETERSON,
CPETERSON@HFOTUSA.COM
508-245-1563

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WWW.BEI-CIVILENGINEERING.COM

PROJECT:	SPRING ROCK FARM LOT 1		
LOCATION:	TAX MAP: 07, GRID: 21, PARCEL 392 2301 WOODBINE ROAD, WOODBINE, MD 21797 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND ACCOUNT IDENTIFIED 04-354524		
TITLE:	BAT SITE PLAN		
HOUSE TYPE:	AMERICAN DREAM PLAN B -4B		
DATE:	JUNE, 2022	PROJECT NO.	3038
SCALE:	AS SHOWN	DRAWING	1 OF 5



PLAN VIEW



SECTION A-A

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

DESIGN DATA & GENERAL NOTES

- [1] Concrete strength $f_c=4,000$ p.s.i. @ 28 days. Density = 150 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, base, & 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	611.15	
Top of Pump	612.65	1' 6"
Pump Off	612.74	1' 7"
Pump On	613.11	1' 11 7/16"
High Alarm	613.61	2' 5 7/16"

WEIGHT = 16,000 lbs.



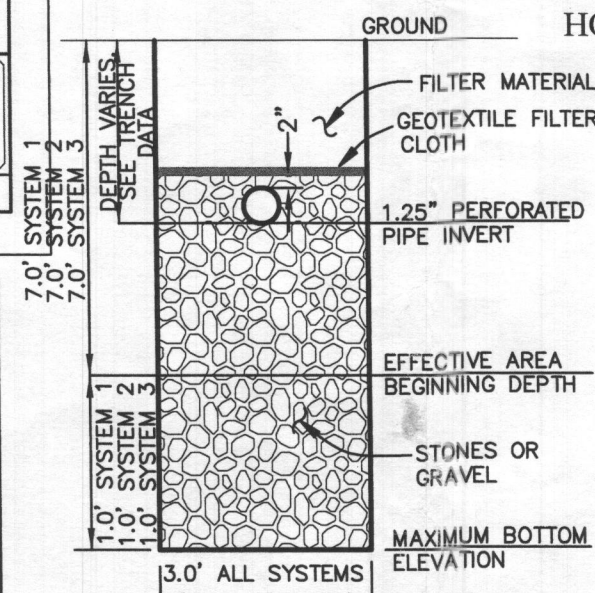
6264 Race Road
Elkridge, Maryland 21075
Tel. 410.796.1434
Fax. 410.796.1438
www.mayerbrosprecast.com

1,500 GALLON SEPTIC/PUMP TANK
1-Compartment
NON-TRAFFIC MAX 3 ft. OF COVER

Dwg. No. 1500-1C No Scale Aug. 11, 2008

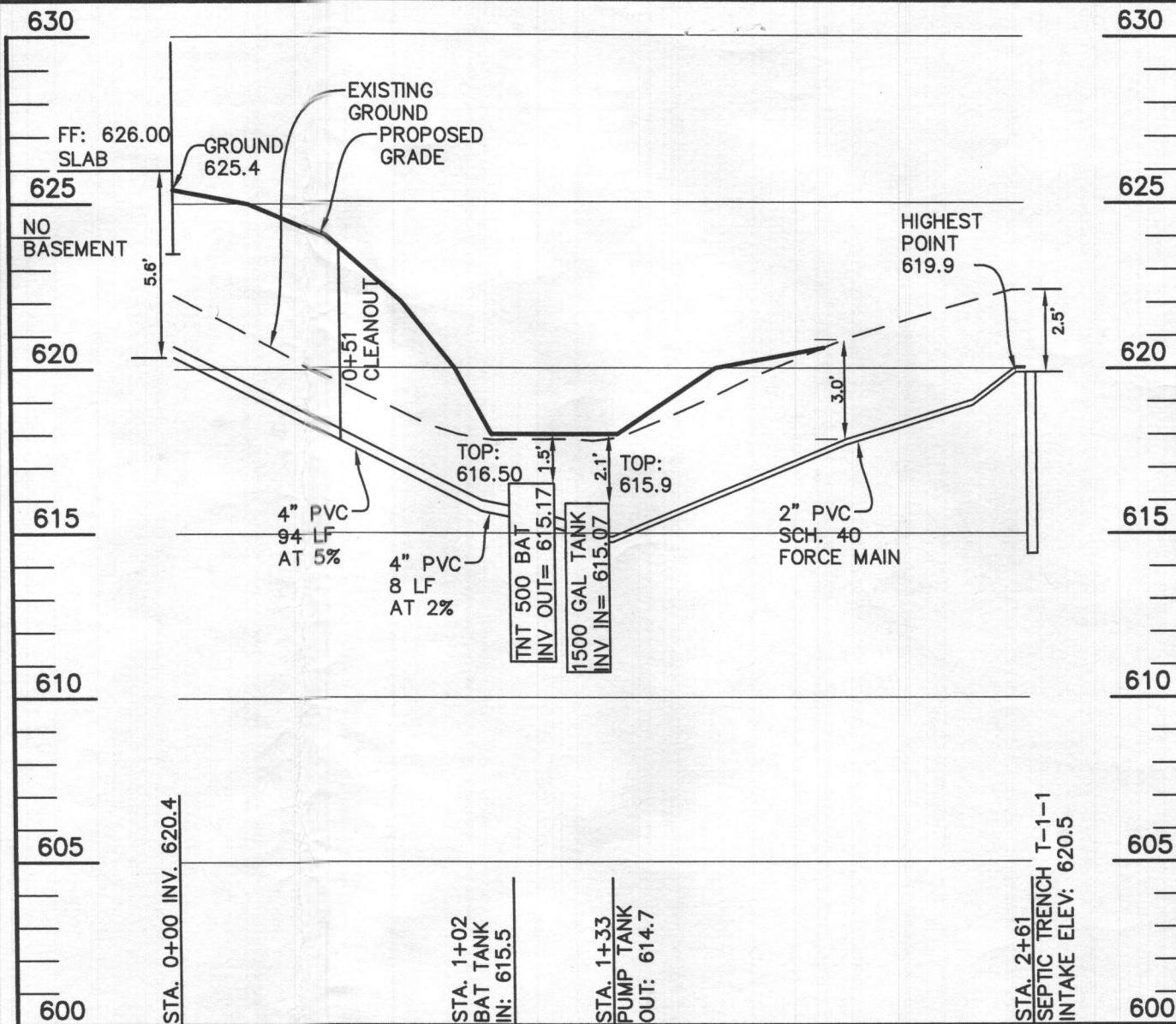
SPEC SHEET INFORMATION - Lot 1 10/26/2020			
System	Application Rate	Effective Depth	Bottom Depth
Initial	0.8	7.0	8.0
1st Repair	0.8	7.0	8.0
2nd Replacement	0.8	7.0	8.0

Trench	LF
T-1-1	41
T-1-2	56
T-1-3	56
T-1-4	56
Total Initial System	209
T-2-1	70
T-2-2	70
T-2-3	70
Total First Repair	210
T-3-1	70
T-3-2	70
T-3-3	70
Total Second Repair	210



LOW PRESSURE DOSE TYPICAL TRENCH DETAIL

NOT TO SCALE



SEWER PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

INITIAL SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

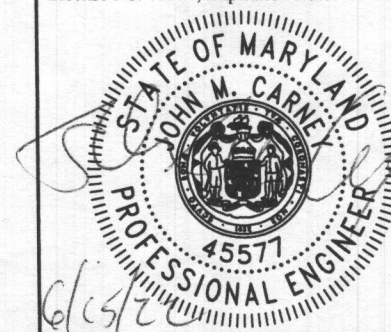
1st REPAIR SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

2nd REPLACEMENT SYSTEM		
Number of Bedrooms	4	
Application Rate	0.8	gpd/sf
Effective Area Beginning Depth	7.0	ft
Bottom Max Depth	8.0	ft
Design Flow	600	gpd
Drainage Field square footage	750	sf
Sidewall Reduction Credit	0.83	
Trench width	3	ft
Effective Area Depth	1	ft
Trench Spacing	10	ft
Linear Length of trench Required	208	lf

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HOUSE TYPE:	AMERICAN DREAM PLAN B -4B		
DATE:	JUNE, 2022	PROJECT NO.	3038
SCALE:	AS SHOWN	DRAWING	2 OF 5