

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

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

RECEIPT DATE: 8-8-22 ONSITE SEWAGE DISPOSAL SYSTEM P 572126

APPROVAL DATE: 7/22/2022 PERMIT: CONSTRUCTION A

PROPERTY ADDRESS: 7008 COLT PLACE, CLARKSVILLE, MD 21029

SUBDIVISION: WILLOWSHIRE LOT: 28 TAX ID: 05-603016

CONTRACTOR: CHAVIS ENTERPRISES & SEPTIC SERVICES EMAIL: sedrick@chavisenterprisesllc.com

CONTRACTOR ADDRESS: 23 EAST ELLENDALE, BEL AIR, MD 21014 PHONE: (410)872-9165

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: [X] MDE [X] MANUFACTURER:

PROPERTY OWNER: TOLL MID-ATLANTIC LP COMPANY, INC EMAIL: nbrandenburg@tollbrothers.com

OWNER ADDRESS: 250 GIBRALTER ROAD, HORSHAM, PA 19044 PHONE: (410)872-9165

BAT UNIT MODEL: NORWECO TNTLP 750 PUMP SIZE: 0.5 PUMP TANK CAPACITY: 2000

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 6/17/2022 DATE RECORDED: 7/21/2022

DISTRIBUTION SYSTEM: [ ] GRAVITY [X] PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 0.8

Table with trench specifications: LINEAR FEET REQUIRED: 142.75, TRENCH WIDTH: 3, MINIMUM SPACE BETWEEN TRENCHES: 12, INLET DEPTH: 2.0, MAXIMUM BOTTOM DEPTH: 8.0, EFFECTIVE AREA BEGINNING DEPTH: 3.5

LOCATION: PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.

NOTES: Install two (2) to four (4) cleanouts on SHC. BAT unit installation must be certified by manufacturer prior to Final Approval of this permit. The installed septic system must pass a Pump & Alarm test prior to Health Department release of Use and Occupancy. Ashland EP50M1-20 pump, or equivalent, is recommended.

ISSUED BY: R BRICKER ISSUE DATE: 8-9-22 EXPIRATION DATE: 8-8-23

- 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 SEPTIC 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
[X] ELECTRICAL PERMIT ISSUED E 220041696
NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM. PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT. CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

NOT TO SCALE

SEE ATT

ROAD NAME

**TRENCH/DRAINFIELD DATA**

WIDTH	INLET	BOTTOM
3	2'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		144 F
ABSORPTION AREA		432 SF + 48' SIDE WALL
DISTRIBUTION BOX LEVEL		LPD
DISTRIBUTION BOX BAFFLE		MANIF
DISTRIBUTION BOX PORT		-

**SEPTIC TANK DATA**

SEPTIC TANK 1 LEVEL	
SEPTIC TANK 1 LEVEL	YES
MANUFACTURER	BACKRIVER
CAPACITY	INTLP 750 GAL
SEAM LOC	TOP
TANK LID DEPTH	1'
BAFFLES	BAT
BAFFLE FILTER	BAT
MANHOLE LOC	FRONT/MID/BACK
6" PORT LOC	-
WATERTIGHT TEST	-
SLOTTED	BAT
DATE ON LID	09/16/2022
PUMP/SEPTIC TANK LEVEL	
PUMP/SEPTIC TANK LEVEL	YES
MANUFACTURER	BACKRIVER
CAPACITY	2000 GAL
SEAM LOC	TOP
TANK LID DEPTH	18" - 36"
BAFFLES	-
BAFFLE FILTER	-
MANHOLE LOC	FRONT/BACK
6" PORT LOC	-
WATERTIGHT TEST	-
SLOTTED	-
DATE ON LID	10/06/2022

NORWECO

**PRE-CONSTRUCTION:**

10/30/2022 LAID OUT 2x72 TRS; CONFIRM LPD CONTOUR. ✓

**INSTALLATION:** 10/06/2022 UPPER TRENCH AND LATERALS INSTALLED. ✓

10/11/2022 TRS COMPLETE; SITE SL TANKS SET; F MAIN INSTALLED w/ MANIF. ✓

12/22/22 - onsite for start up. High water alarm okay. Distal head a >2 for 1, & >3 for T2. Circuit located at outside of house on WASP system. BRISP

FINAL INSPECTOR Shopsura Patel  
Ryan Ruppert

DATE OF APPROVAL 12/22/2022

7008 COLT PLACE

NOT TO SCALE

1:30

PROP LINE

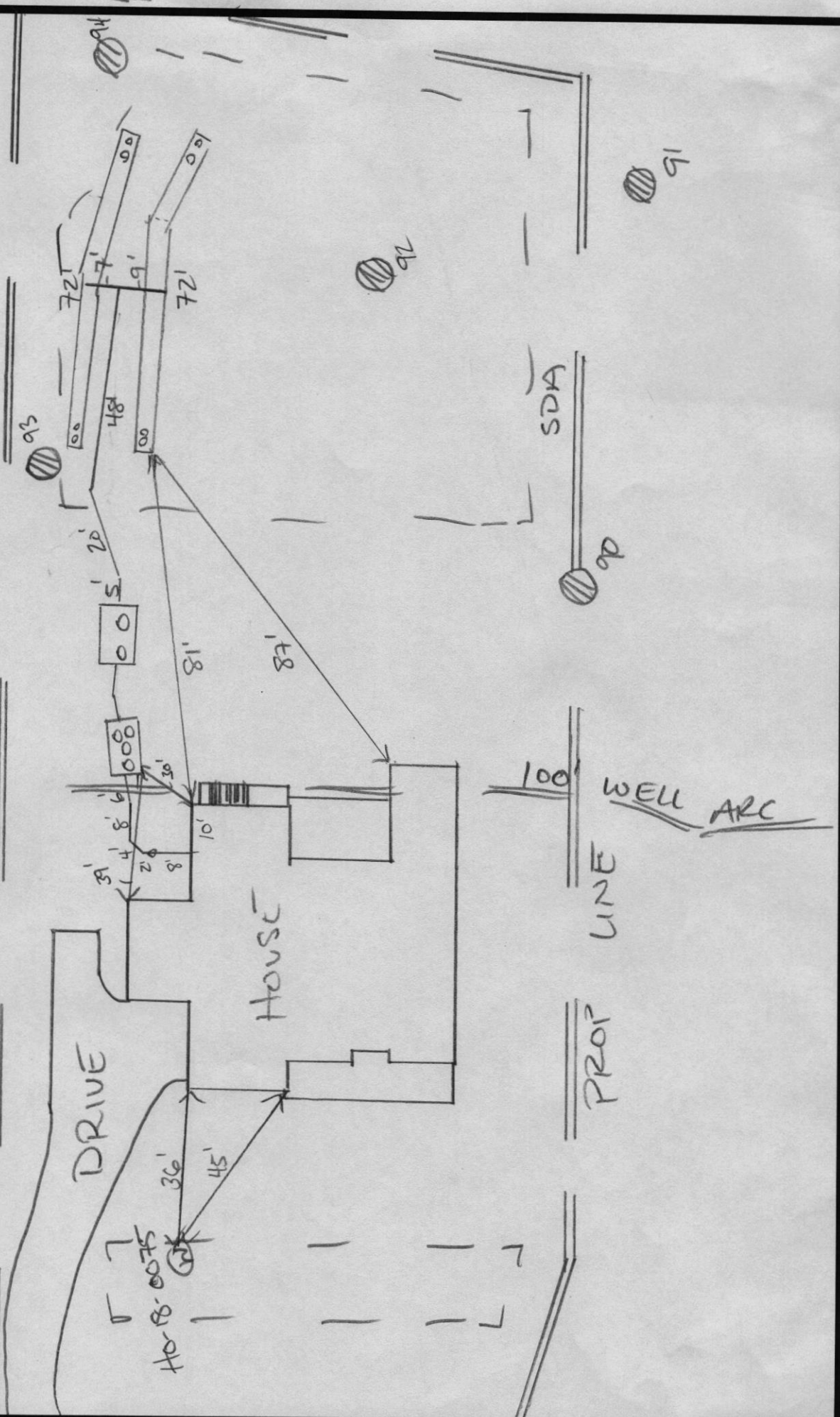
DRIVE

HOUSE

PROP LINE

WELL ARC

SDA





BACK RIVER PRE-CAST, LLC  
 PO BOX 329  
 GLYNDON, MD 21071  
 PH# 410-833-3394

**NORWECO CERTIFICATION**

PROPERTY OWNER: TOLL MID-ATLANTIC	INSTALLATION COMPANY: CHAVIS SEPTIC
ADDRESS: 7008 COLT PLACE	CERTIFIED INSTALLER: JOSH CHAVIS
CITY, ZIPCODE & COUNTY: DAYTON, 21036, HOWARD	PERMIT#
SIZE OF SYSTEM INSTALLED: 750 GPD CONCRETE	DATE INSTALLED: 10-10-22
NUMBER OF BEDROOMS:	START-UP DATE: 12-05-22
TYPE OF INSTALLATION: NEW	DATE OF FINAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	DATE OF ELECTRICAL INSPECTION:
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 34"	TANK LEVEL: YES
SYSTEM WIRED ON A 15-AMP DEDICATED CIRCUIT WITH STD. BREAKER: YES	BURIAL DEPTH OF TANK: 24"
	RISERS 4" - 6" ABOVE GRADE: YES
LENGTH(S) OF UF WIRE PAST LAST AERATION RISER(S): 30"	VENTED LID(S) ON AERATION CHAMBER(S): YES
FEMALE PLUG(S) WIRED TO UF WIRE: YES	ANY GROUND SETTLING AROUND TANK:
CONDUIT(S) ENTERING AERATION RISER MADE WITH A WATERTIGHT CONNECTION: YES	NO
ISTHE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

ON 2<sup>ND</sup> PAGE MAKE A ROUGH SKETCH OF THE HOUSE ,WHERE THE SYSTEM IS LOCATED, WHERE THE CONTROL PANEL IS LOCATED , WHERE THE FRONT OF THE IS AND DIRECTIONS TO THE PROPERTY.

DIRECTIONS CAN START A FEW STREETS AWAY

EXAMPLE: RT. X LEFT ONTO XX STREET RIGHT ONTO PRIVATE DRIVEWAY 5<sup>TH</sup> HOUSE OF THE LEFT.

I certify that the Norweco Singulair TNT Wastewater Treatment System was installed according to the manufacture's specifications.

Matthew Geckle

December 22,2022

Signature of BRP Representative

Vice-President

Date

Lot 287008 Colt Place

Clerk of the Circuit Court for  
Howard County

9250 Judicial Way,  
Ellicott City, MD 21043  
410-313-2111

-----  
LR - Agreement Recording Fee  
1x 20.00 20.00

Name: Starr  
Ref: 40

LR - Agreement Surcharge  
1x 40.00 40.00

LR - Agreement Recording Fee  
1x 20.00 20.00

Name: Dubin  
Ref: 41

LR - Agreement Surcharge  
1x 40.00 40.00

-----  
SubTotal: 120.00

Total: 120.00

-----  
CRD-Credit 120.00

Credit Card Confirmation : 025845

07/21/2022 10:46

CC13-G10

#16436112/495/4

~ Thank you for visiting us today ~



Bureau of Environmental Health
8930 Stanford Blvd | Columbia, MD 21045
410.313.2640 - Voice/Relay
410.313.2648 - Fax
1.866.313.6300 - Toll Free

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

OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this 17th day of June 2022, among
Ratika Sood and Josh Starr, hereinafter collectively referred to as
"Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at
Lot 28, 7008 Colt Place, Dayton, MD 21036, in the 5 Election District of Howard
County, Maryland, and the deed and subdivision plat of the property is recorded among the Land
Records of Howard County, Maryland, Tax Map # 27, Block # 18, Parcel # 36, Deed
Reference # 25500-09 and Tax Account # 603016 ("the Property").

WHEREAS, The Property is suitable for the installation of a conventional on-site sewage
disposal system with an advanced pre-treatment system, utilizing best available technology to
perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07,
effective November 24, 2016. The pre-treatment device being installed is

Norweco Model TATLP - 750 GPD

NOW, THEREFORE, the parties hereto agree as follows:

A. Owner hereby grants to the County the right to enter upon the Property at any reasonable time
with prior notice for access to the system to make periodic inspections and the Owner agrees to
provide any information and data in Owner's possession reasonably requested and needed by the
County.

B. Owner acknowledges and agrees that neither the County nor any of its agents or employees,
either officially or individually, underwrites the operation of any system approved by them.

C. The Owner will devote reasonable care and effort to the operation and maintenance of the
system in perpetuity or until a public sewer connection is made so that a system malfunction is
not the result of poor maintenance, faulty operation, or neglect.

D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County
with a private entity to operate and maintain on a regularly scheduled basis an approved
advanced pre-treatment system. The owner shall supply a copy of the contract to the County
when it is renewed or altered.

E. This agreement shall run with the land and upon Owner's taking title to the Property shall
bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as long as

LR - Agreement
Recording Fee 20.00
Name: Starr
LR - Agreement
Surcharge 40.00
SubTotal: 60.00
07/21/2022 10:47
CC13-610
#16436112 CC0503 -
Howard Co. Ellicott
City/CC05.03.03 -
Register 03

HOWARD COUNTY CIRCUIT COURT (Land Records) WAR 21636, p. 0131, MSA\_CE53\_21628, Date available 07/22/2022. Printed 08/24/2022.

the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Property that the system shall require maintenance or other attention. Upon taking title to the Property, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.


G. This agreement may be voided at any time at the discretion of the County.

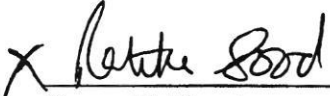
H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed this agreement on the date indicated above.

 6/27/22  
Howard County Health Department

X  6/17/22  
Owner #1 Signature Date

RATIKA Soad  
Owner #1 Print Name

X  6/17/22  
Owner #2 Signature Date

Joshua Starr  
Owner #2 Print Name

\_\_\_\_\_  
Buyer #1 Signature Date

\_\_\_\_\_  
Buyer #1 Print Name

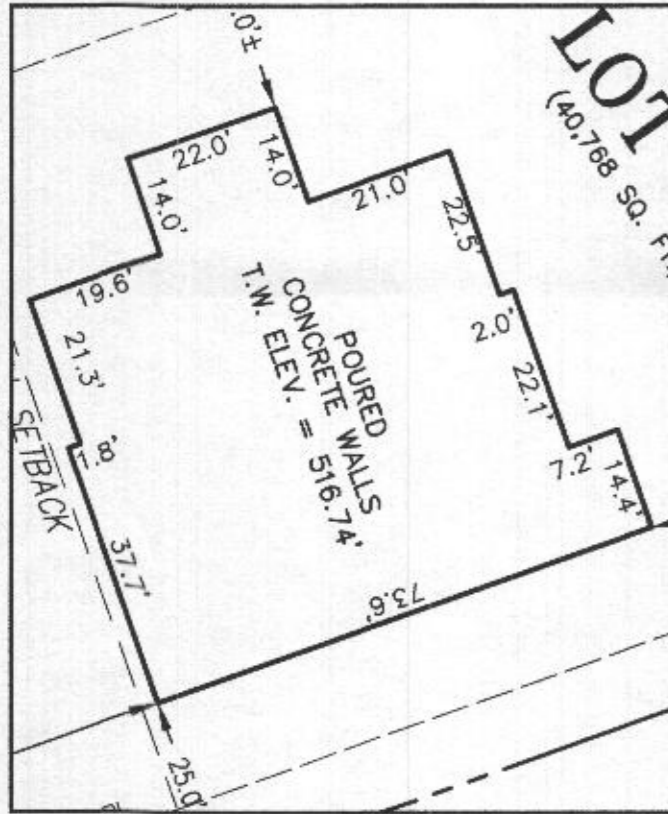
\_\_\_\_\_  
Buyer #2 Signature Date

\_\_\_\_\_  
Buyer #2 Print Name



**LEGEND:**

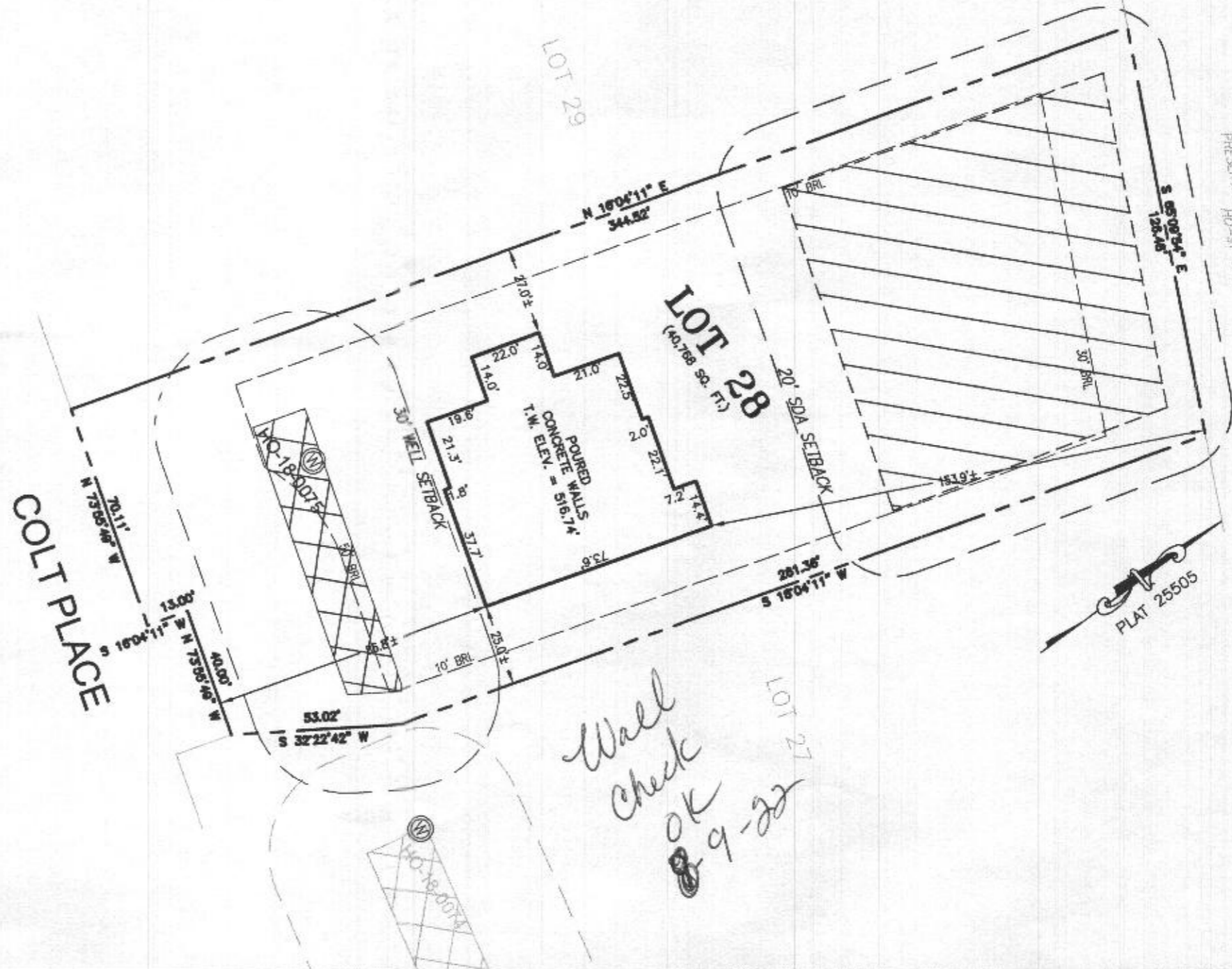
- BRL BUILDING RESTRICTION LINE
- ⊙ WELL LOCATION
- T.W. TOP OF WALL
- ELEV. ELEVATION
- SEWAGE DISPOSAL AREA
- WELL BOX AREA



HOUSE ENLARGEMENT  
NOT TO SCALE

WELL NUMBER: HO-18-0075  
 ADDRESS: 7008 COLT PLACE  
 DAYTON, MD 21036  
 PERMIT NO.: B22000618

BUILDING SETBACKS (B.R.L.'s) SHOWN HEREON PER SITE DEVELOPMENT PLAN  
 SETBACK DISTANCES SHOWN HEREON AS "±" HAVE AN ACCURACY OF ±0.1' FOOT.



PARCEL B, CREEK  
 THE OAKS AT BRIDLE, PAGE 8  
 PLAT BOOK 199, PAGE 8  
 HOWARD COUNTY AGRICULTURAL LAND  
 PRESERVATION PROGRAM EASEMENT  
 HO-91-15-E

*Wall  
check  
OK  
8-9-22*

**SURVEYOR'S CERTIFICATE**

THIS WALLCHECK WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHT-OF-WAYS, COVENANTS, AND RESTRICTIONS, ETC. OF RECORD, SOME OR ALL OF WHICH MAY OR MAY NOT BE SHOWN AND/OR REFERENCED HEREON. BEARINGS AND DISTANCES OF THE PROPERTY BOUNDARY LINES SHOWN HEREON ARE PER AVAILABLE RECORDS AND HAVE NOT BEEN FIELD VERIFIED.  
**THIS IS NOT A "LOCATION DRAWING" AND IS NOT TO BE USED FOR SETTLEMENT PURPOSES.**

*Michael Joe Boyce* 21328 07/11/22  
 SIGNATURE: MICHAEL JOE BOYCE MD. LIC NO. DATE

WALLCHECK  
 LOT 28  
**WILLOSHIRE**  
 LIBER 18479, FOLIO 296  
 PLAT NO. 25505  
 5th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**ESE CONSULTANTS**

ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL

ESE Consultants, Inc.  
 6731 Columbia Gateway Drive • Suite 120 • Columbia, MD 21046  
 T: 410-872-9105

DATE: 07/11/2022 SCALE: 1" = 40' FILE: WC LOT 28  
 CHK'D: M.J.B. JOB NO: 4520 DRAWN: V.X.P.



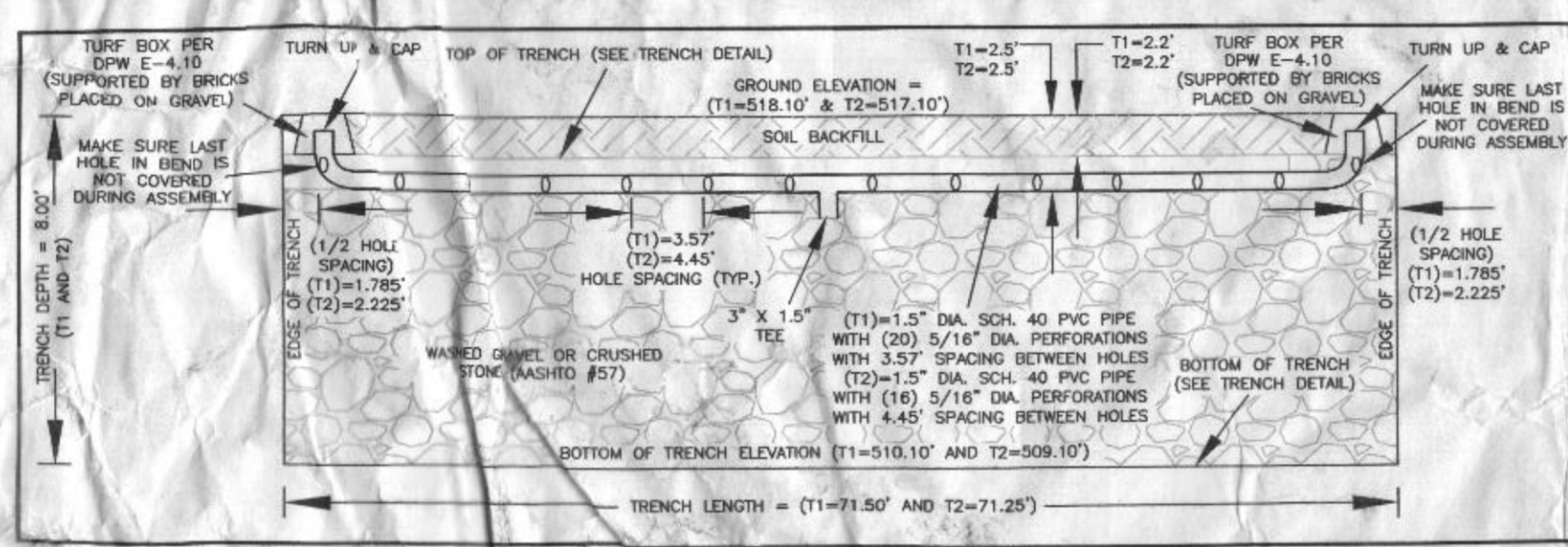
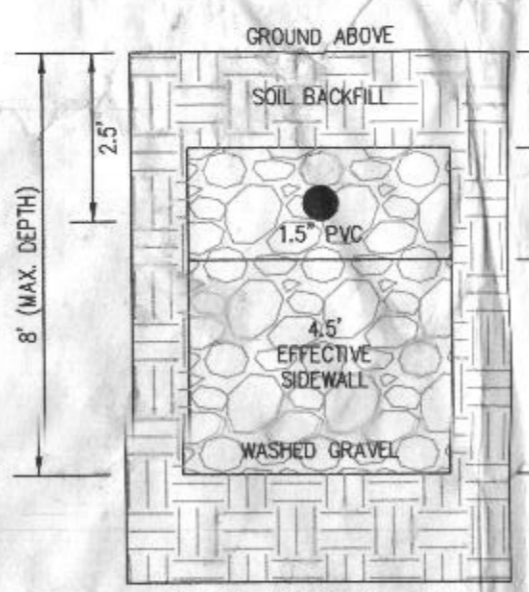
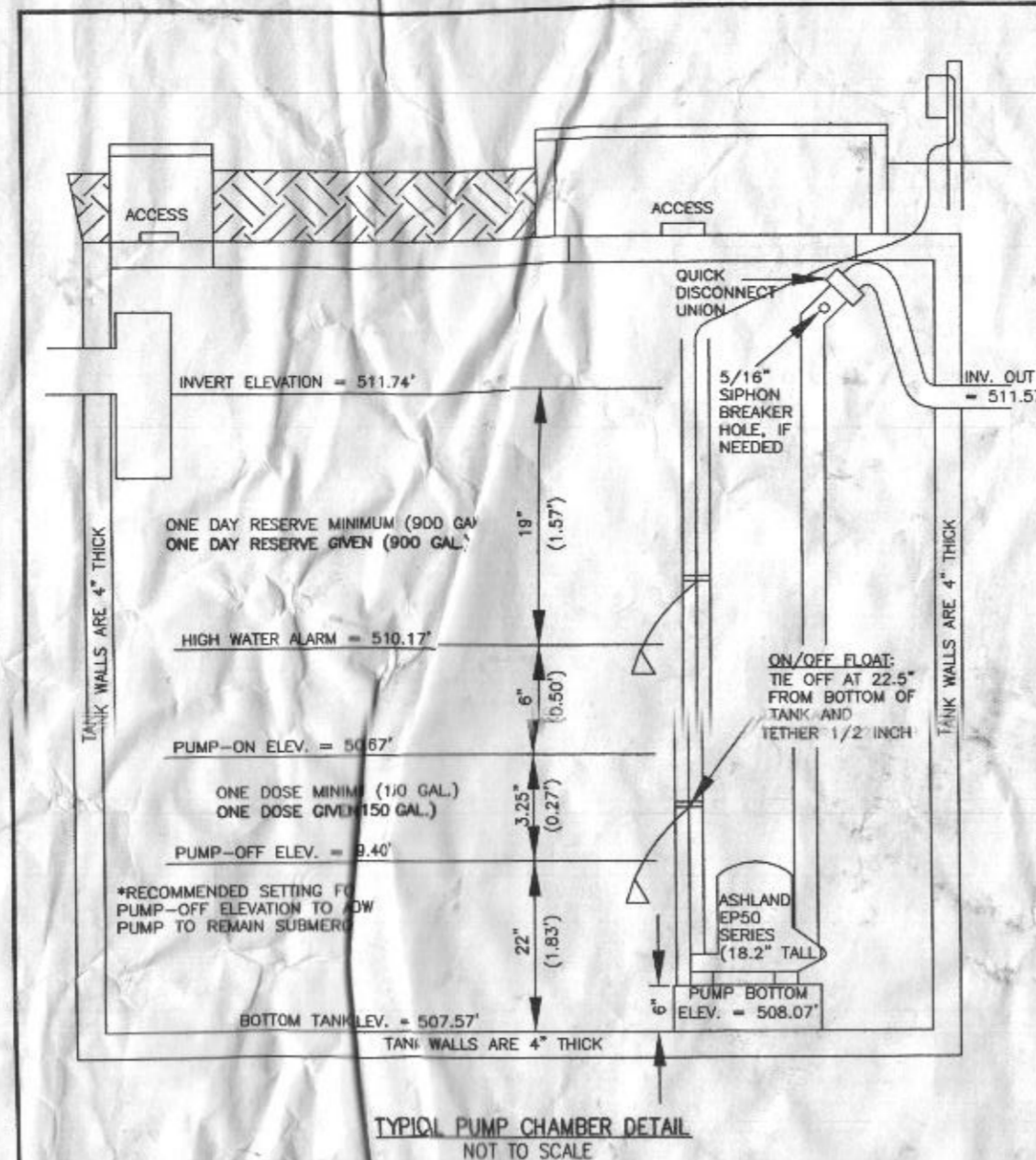
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/23.

**SOILS LEGEND**

SOIL	NAME	CLASS	Kw
GgB	GLENELG LOAM 3 TO 8 PERCENT SLOPES	B	28
GgC	GLENELG LOAM 8 TO 15 PERCENT SLOPES	B	28
GmB	GLENVILLE SILT LOAM 3 TO 8 PERCENT SLOPES	B	28

**INITIAL TRENCH DATA**

- BOTTOM MAX. DEPTH (8')
- TRENCH 1 (T1) 71.50 LF  
GROUND ABOVE = 518.10'  
INV. IN = 515.60'  
BOTTOM TRENCH = 510.10'
- TRENCH 2 (T2) 71.25 LF  
GROUND ABOVE = 517.10'  
INV. IN = 514.60'  
BOTTOM TRENCH = 509.10'



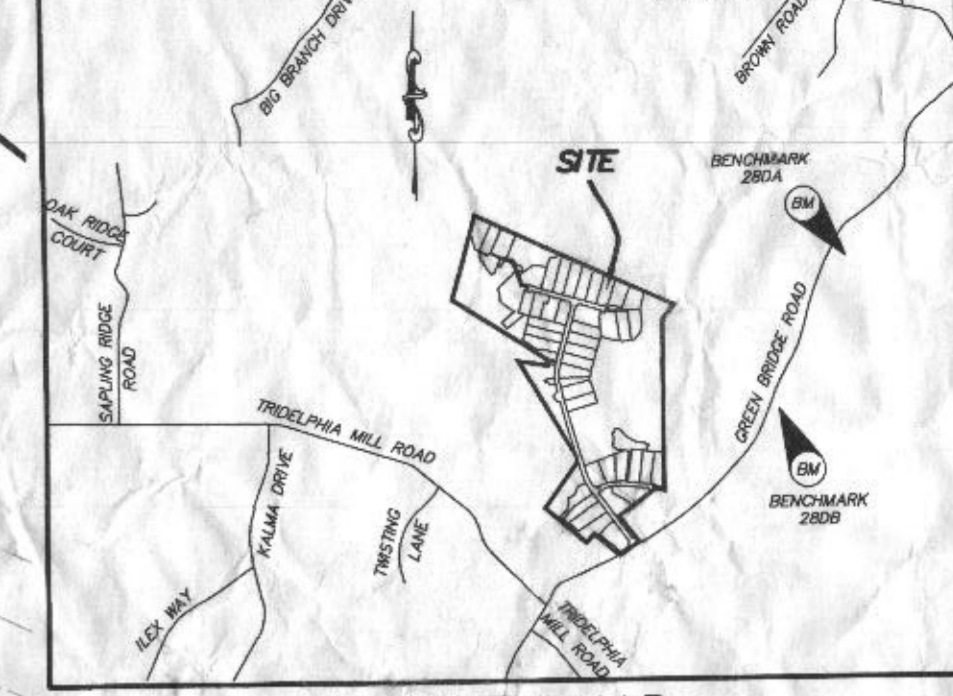
**HOUSE OPTIONS:**

- HOUSE TYPE: PARKHURST (MODERN FARMHOUSE)
- TWO CAR SIDE ENTRY GARAGE FINISHED LOWER LEVEL DAYLIGHT BASEMENT
- MULTI-GENERATIONAL SUITE ADDITION

**LEGEND:**

- PASSED PERC TEST LOCATION
- EXISTING WELL LOCATION
- C/O CLEANOUT
- TW TOP OF WALL
- GF GARAGE FLOOR
- BF BASEMENT FLOOR
- BRL BUILDING RESTRICTION LINE
- SDW SEWAGE DISPOSAL AREA
- SDL SOIL DELINEATION LINE

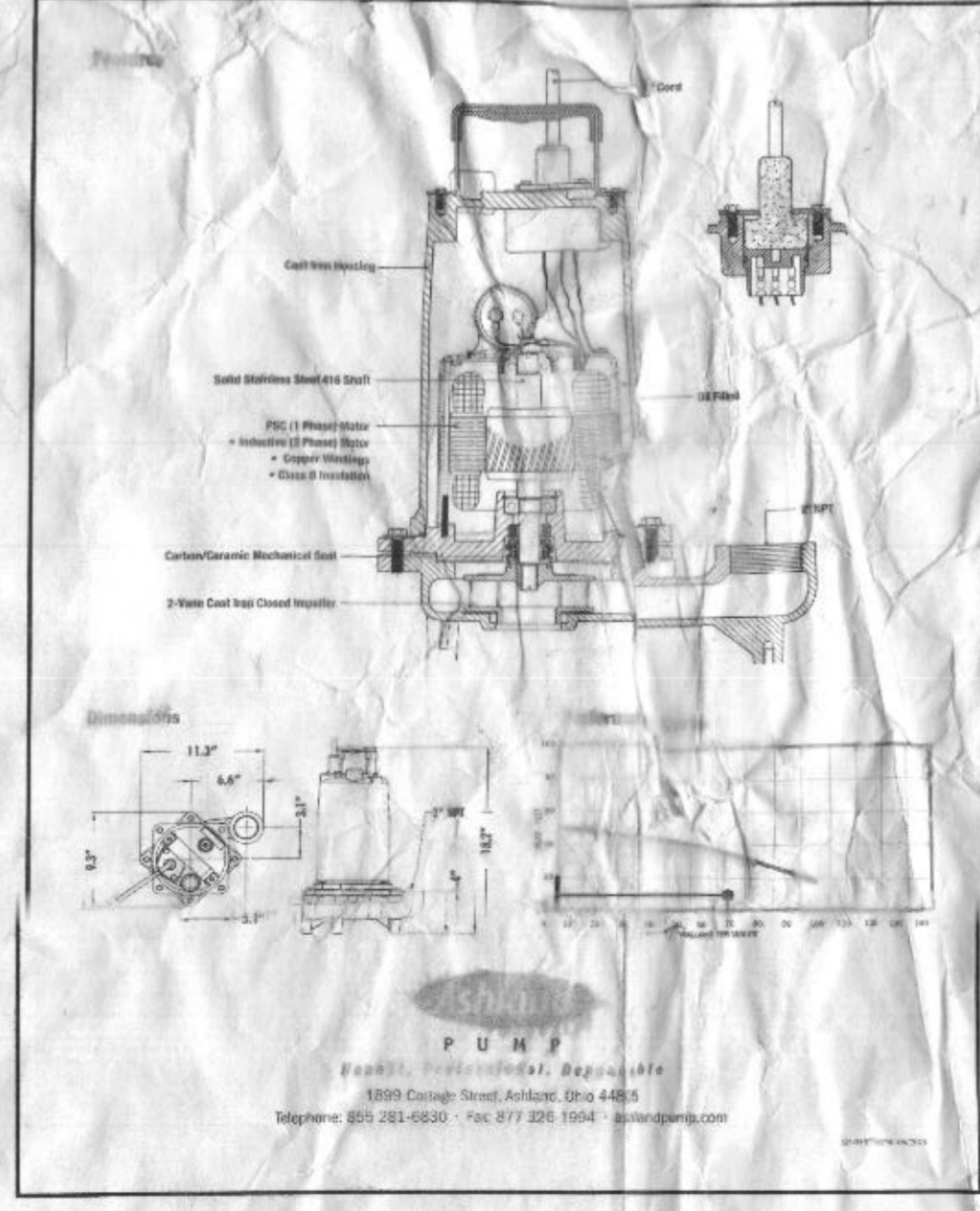
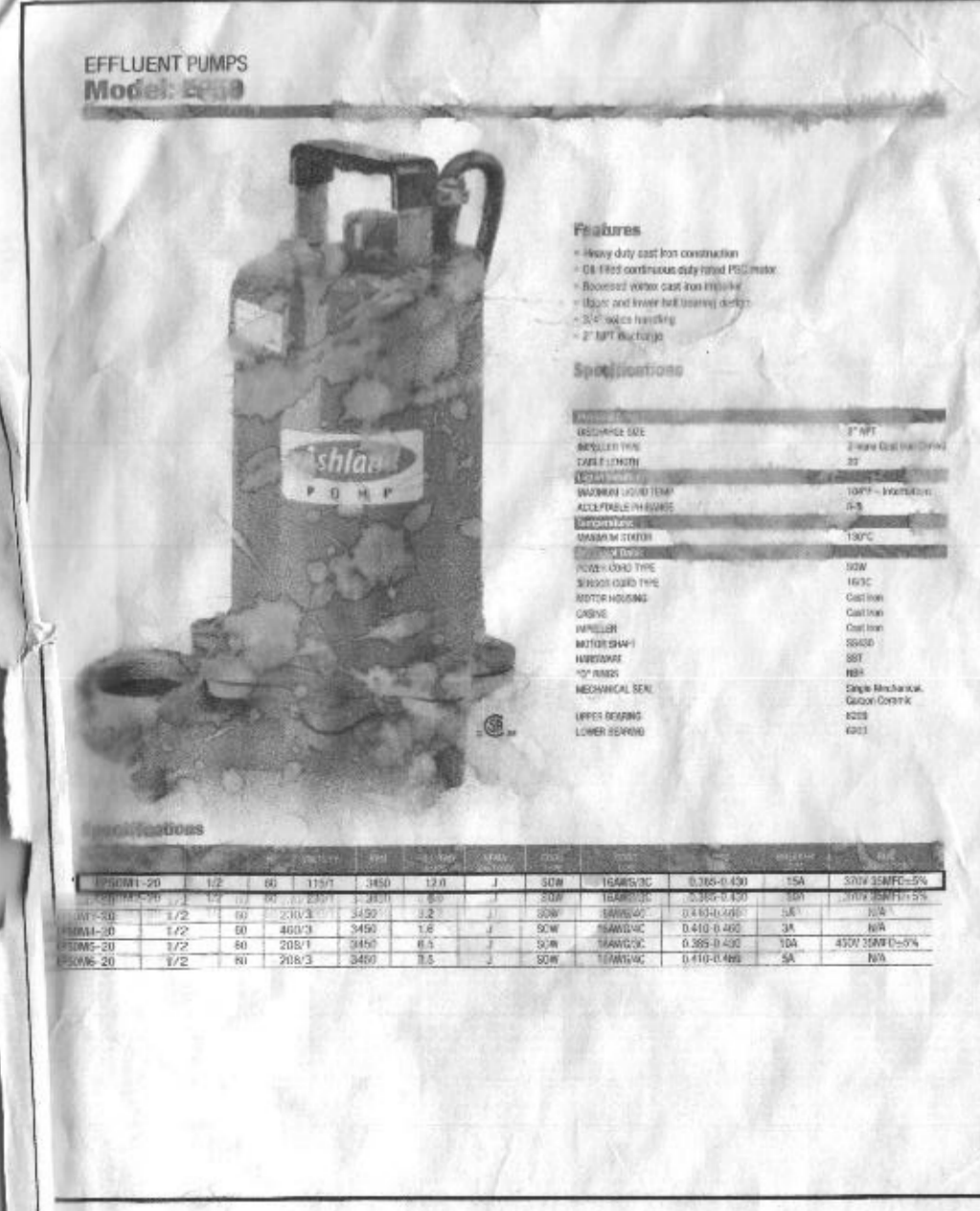
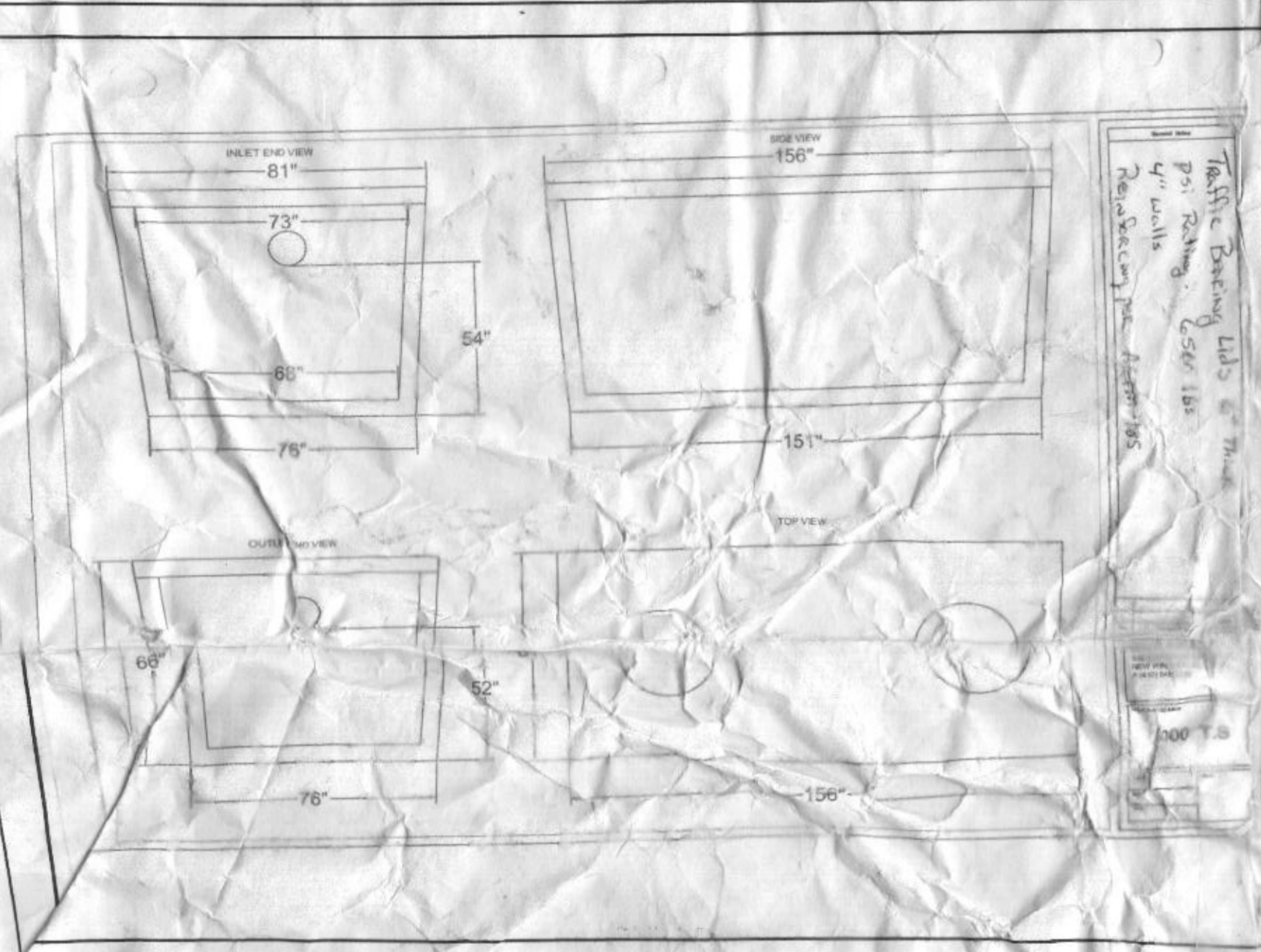
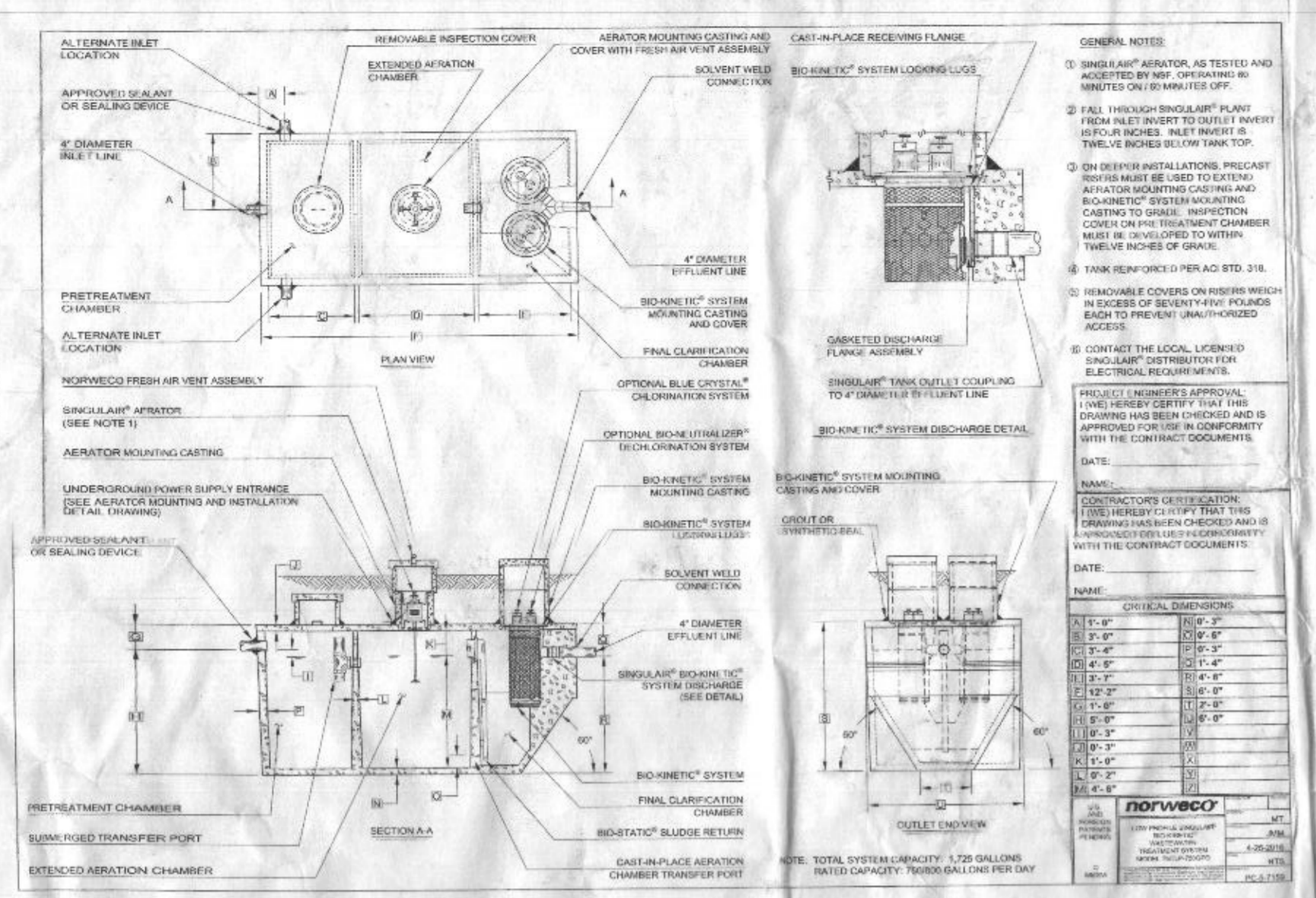
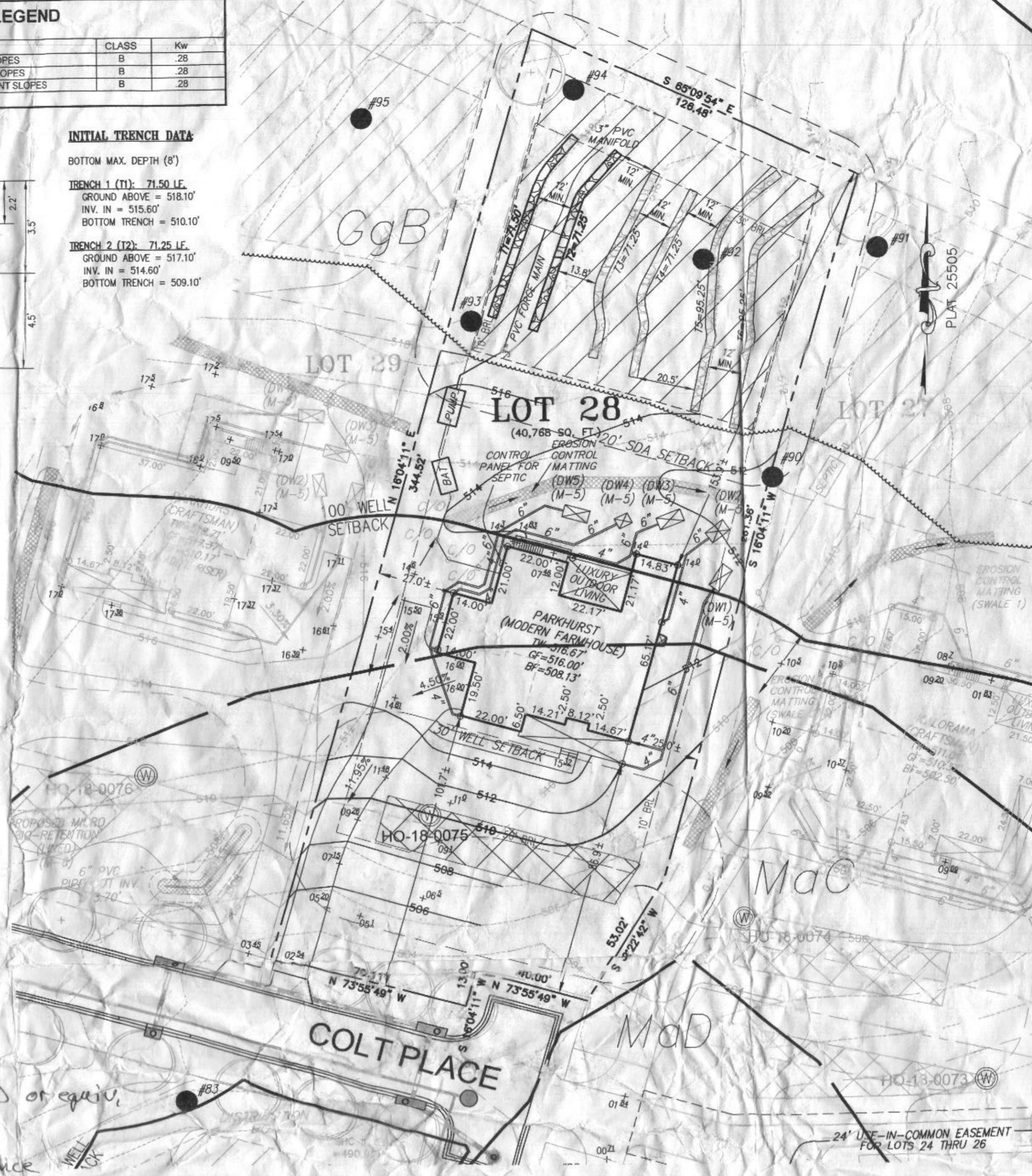
Approved Septic System Plan  
Howard County Health Department  
NORWECO TMLP-750  
W/ 2000-gal Pump Tank  
& Ashland 5P50 M120 pump or equiv.  
Revised 5/20/2022  
to LPD for 6-Bedroom residence



**VICINITY MAP**  
1" = 2000'  
TAX MAP 27, GRID 18  
BENCHMARK 282A  
N: 570,824.937, E: 1,313,434.228, EL: 564.389'  
BENCHMARK 282B  
N: 569,055.561, E: 1,313,795.348, EL: 537.361'

**GENERAL NOTES:**

- THESE AREAS DESIGNATE A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- EXISTING WELLS, SEPTIC SYSTEMS, AND SEWAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWAGE DISPOSAL AREAS HAVE BEEN SHOWN.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- BUILDING SETBACKS (B.R.L.'s) SHOWN HEREON PER SITE DEVELOPMENT PLAN SETBACK DISTANCES SHOWN HEREON AS "±" HAVE AN ACCURACY OF ±0.1' FOOT.
- 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.
- THE MAXIMUM EARTH COVER OVER THE TANK IS THREE (3) FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- THE LOT SHOWN HEREON COMPLEES WITH THE MINIMUM OWNERSHIP, WIDTH, AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY BOHLER ENGINEERING ON 9/8/15, AND HOWARD COUNTY GIS.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE BAT SYSTEM.
- THE BAT SYSTEM SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE (1) 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 THE LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO THE FINAL APPROVAL OF THE BAT INSTALLATION.
- AFTER PRESSURE TESTING THE DISTRIBUTION SYSTEM, THE PIPE TURN-UPS AT THE ENDS OF THE LATERALS ARE TO BE CUT BELOW GRADE AND CAPPED. THE TRUNCATED LATERAL TURN-UPS SHOULD BE PROTECTED BY TUFF BOXES.
- THE EXISTING WELL FOR LOT 14 (TAG NO. HO-18-003) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN HEREON.



**LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS**

NUMBER OF MANFOLDS = 1  
MANIFOLD TYPE = CENTER FEED  
TRENCH 1 (T1) ELEV.=518.10' LENGTH=71.25'  
TRENCH 2 (T2) ELEV.=517.10' LENGTH=71.00'  
MANIFOLD LENGTH = 15.00' TYPE=SCH40  
FORCEMAIN LENGTH = 68.00'

TRENCH	TRENCH LENGTH (FT)	FEED	PVE INV. (FT)	HEAD (FT)	SOLE DIA. (IN)	HOLE FLOW RATE (GPM)	HOLE SPACING (FT)	#HOLES	TRENCH FLOW RATE (GPM)	LATERAL LENGTH (FT)	FLOW PER LF TRENCH (GPM)	GAL PER LF (GPM)	LATERAL DIA. (IN)	TYPE
1	71.50'	CENTER	515.60	2	5/16	1.63	3.57	20	32.60	67.93	0.48	1.5	SCH40	
2	71.25'	CENTER	514.60	3	5/16	1.99	4.45	16	31.84	66.80	0.48	1.5	SCH40	

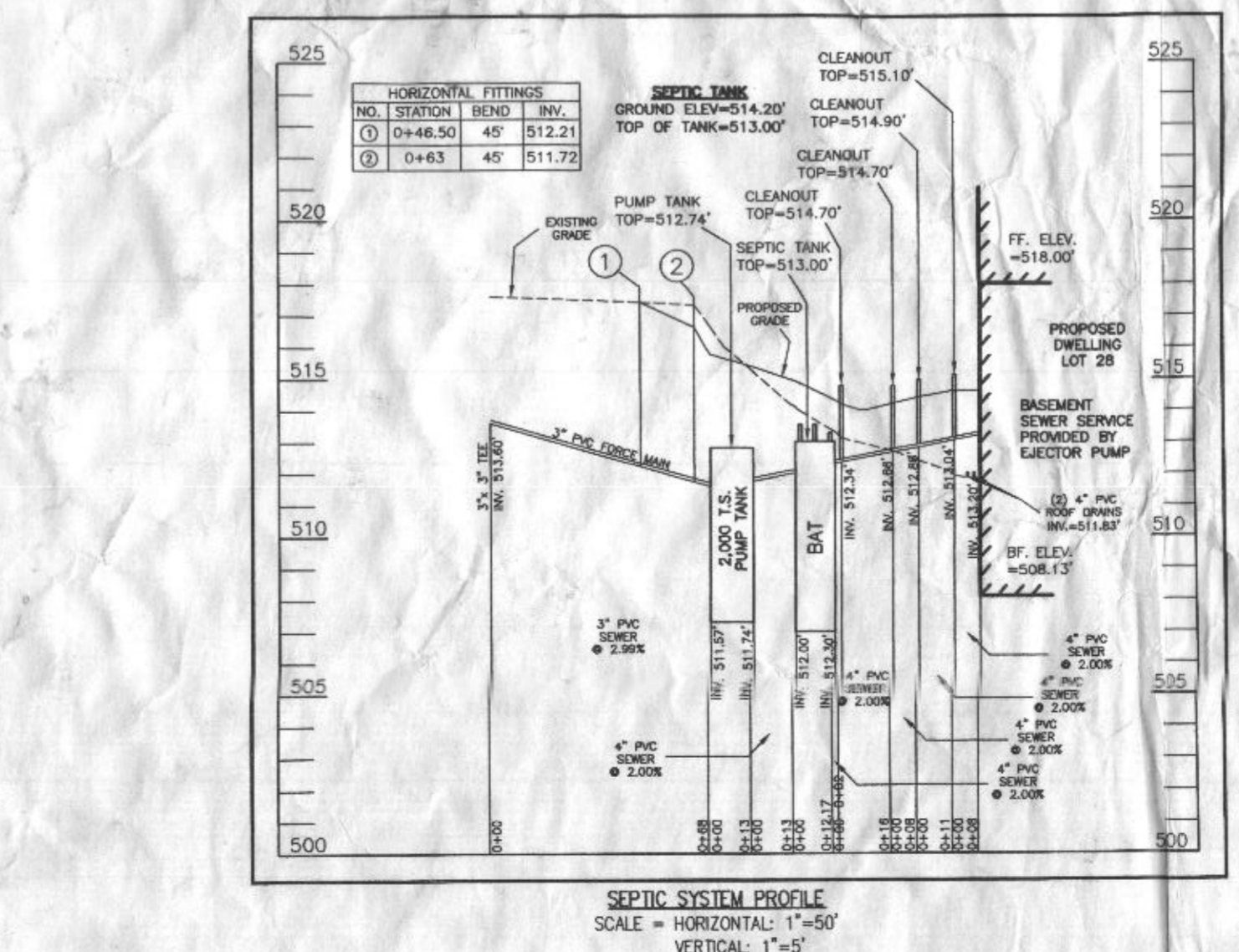
MIN. SYSTEM DISCHARGE RATE = 64.44 GPM  
MANIFOLD DIAMETER = 3 IN.  
FORCE MAIN DIAMETER = 3 IN.  
MINIMUM DOSE = 150 GAL

VELOCITY = 2.52 FPS  
VELOCITY = 2.52 FPS  
(VOL. IN FM, MAX. 5x LATERAL=108.12 GAL < 17.6 DESIGN FLOW=900/6=150 GAL)

MAX./MIN. FLOW RATIO (SHOULD BE < 1.10): 0.98

FRICITION HEAD = 0.82' FT. (PER ABOVE CALCULATION)  
OPERATING HEAD = 2.00' FT.  
STATIC HEAD = 6.20' FT. (HIGHEST POINT IN DISTRIBUTION SYSTEM - PUMP OFF FLOOR ELEVATION)  
TOTAL DYNAMIC HEAD = 9.02' FT. (FRICITION HEAD + OPERATING HEAD + STATIC HEAD)

THEREFORE A PUMP CAPABLE OF DELIVERING AT LEAST 64.44 GPM AGAINST 9.02' OF HEAD IS REQUIRED.  
EPOSM-20, 1/2 HP, IS EFFICIENT



**SEPTIC TRENCH SIZE CALCULATIONS**

SYSTEM INPUT INFORMATION	INITIAL SYSTEM	1ST REPLACEMENT SYSTEM	2ND REPLACEMENT SYSTEM
APPLICATION RATE (GPH)	0.8	0.8	0.6
EFFECTIVE AREA BEGINNING DEPTH (GVEN)	3.5	3.5	3.5
BOTTOM MAXIMUM DEPTH (GVEN)	8	8	8
NUMBER OF BEDROOMS	6	6	6
DESIGN FLOW (150 GAL/DAY/BEDROOM)	900	900	900
ABSORPTION TRENCH CALCULATIONS			
DRAINFIELD AREA REQUIRED (DESIGN FLOW/APP RATE)	1,125	1,125	1,500
EFFECTIVE SIDEWALL DEPTH "D" (DEPTH BETWEEN THE EXTREME BEGINNING DEPTH OR PIPE DEPTH (WHICHEVER IS DEEPER) AND MAX. TRENCH BOTTOM)	4.5	4.5	4.5
TRENCH WIDTH "W" (2 OR 3 FEET)	3	3	3
SIDEWALL REDUCTION (W+2)/(W+1+20)	0.38	0.38	0.38
LINEAR FEET OF TRENCH REQUIRED (DRAINFIELD AREA X SIDEWALL REDUCTION)/W	142.50	142.50	190.00
TRENCH LAYOUT INFORMATION			
NUMBER OF TRENCHES USED	2	2	2
TOTAL LINEAR FEET USED	142.75	142.50	190.50
MINIMUM TRENCH SPACING	12	12	12

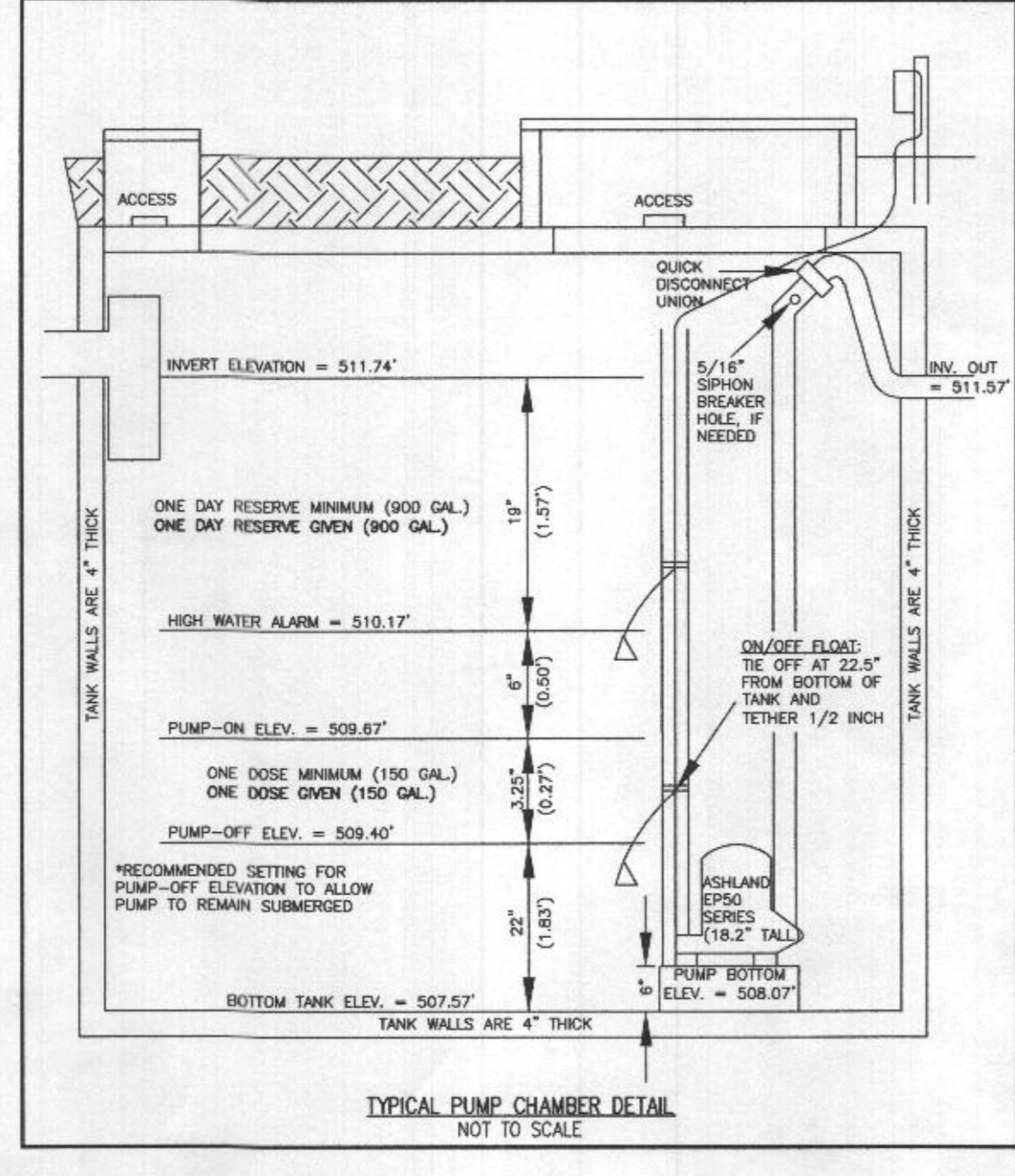
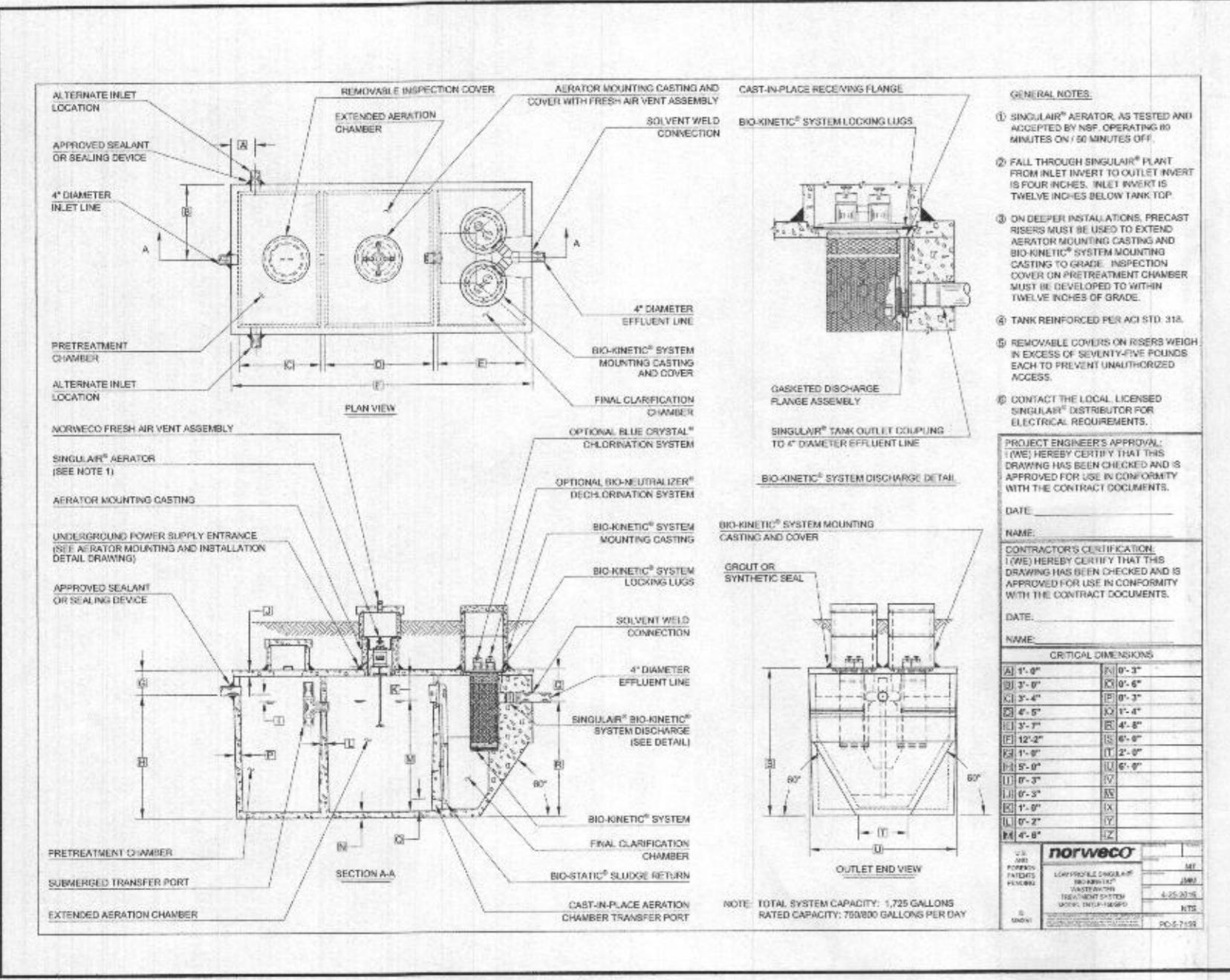
FOR TRENCHES WITH NO SIDEWALL CREDIT, THE SPACING IS 6' FOR A 2' WIDE TRENCH AND 9' FOR A 3' WIDE TRENCH (MEASURED EDGE TO EDGE). ALL TRENCHES UTILIZING SIDEWALL REDUCTION CREDIT MUST BE SPACED A MIN. OF 10' FOR EFFECTIVE SIDEWALL NOT OVER 3.5'. IF MORE THAN 3.5' THEN SPACING FORMULA IS (D+W) UP TO A MAX. OF 18'

PROFESSIONAL CERTIFICATION:  
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. 21328, EXPIRATION DATE 1/8/23.

DESIGNED BY: R.O.K.

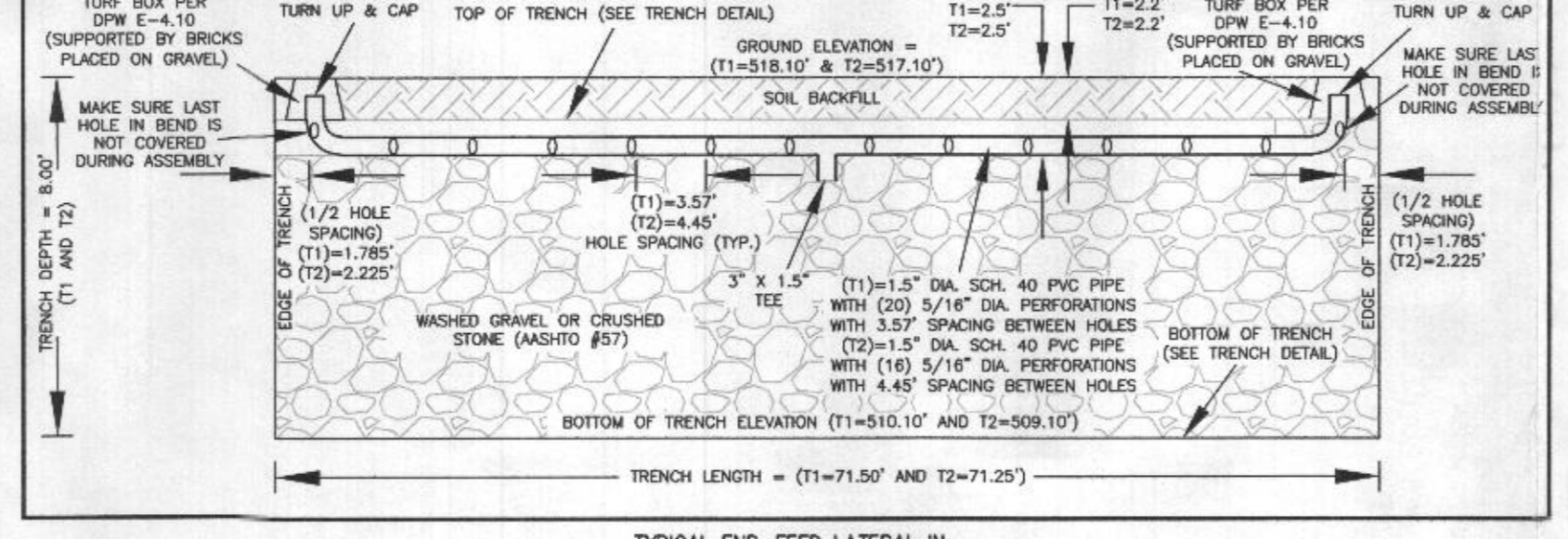
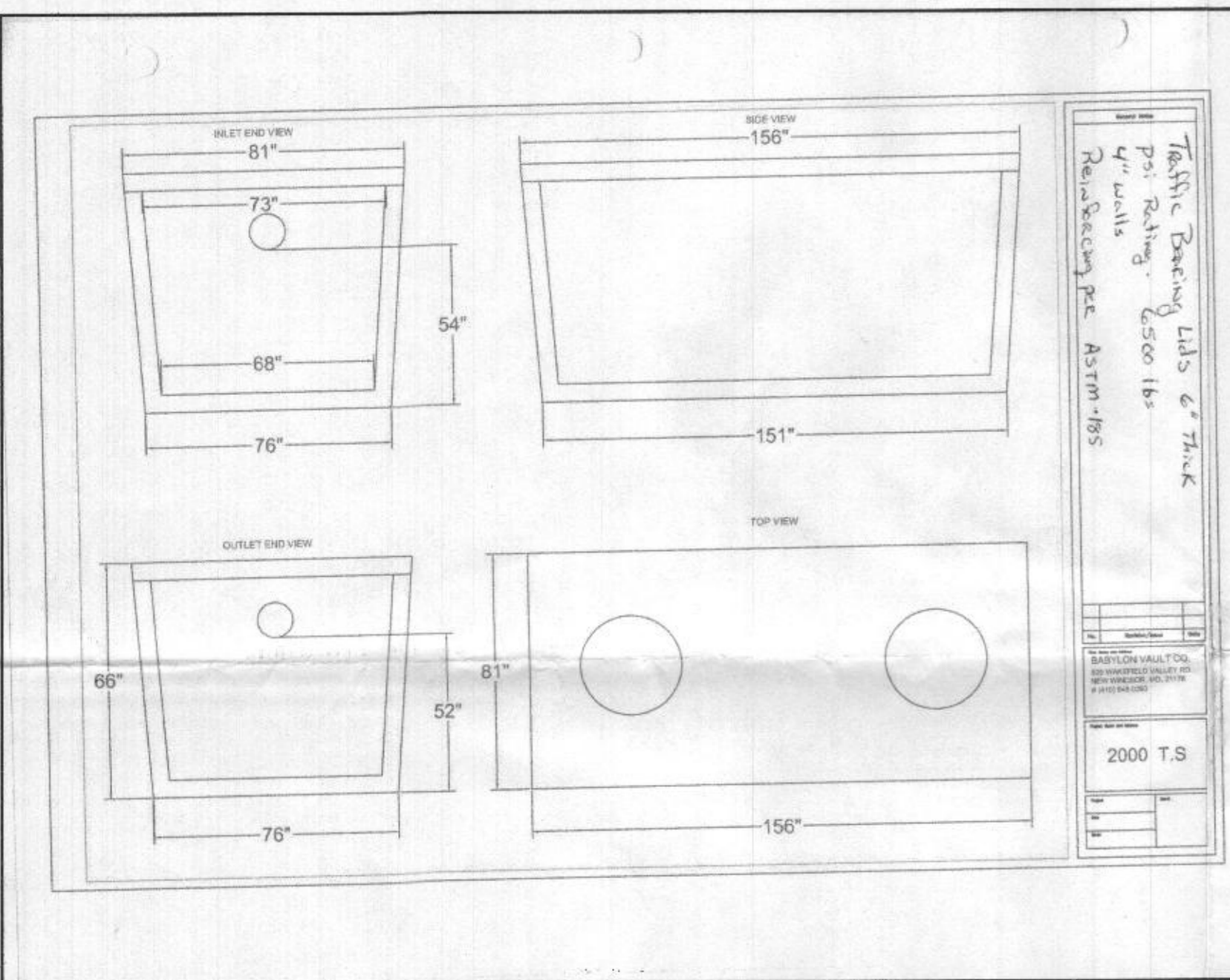
SITE PLAN FOR BAT INSTALLATION  
LOT 28  
WILLOWHIRE  
LRRF 18479, EOLN 296

**ESE CONSULTANTS**  
ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL  
ESE Consultants, Inc.  
SHEET 1



### SOILS LEGEND

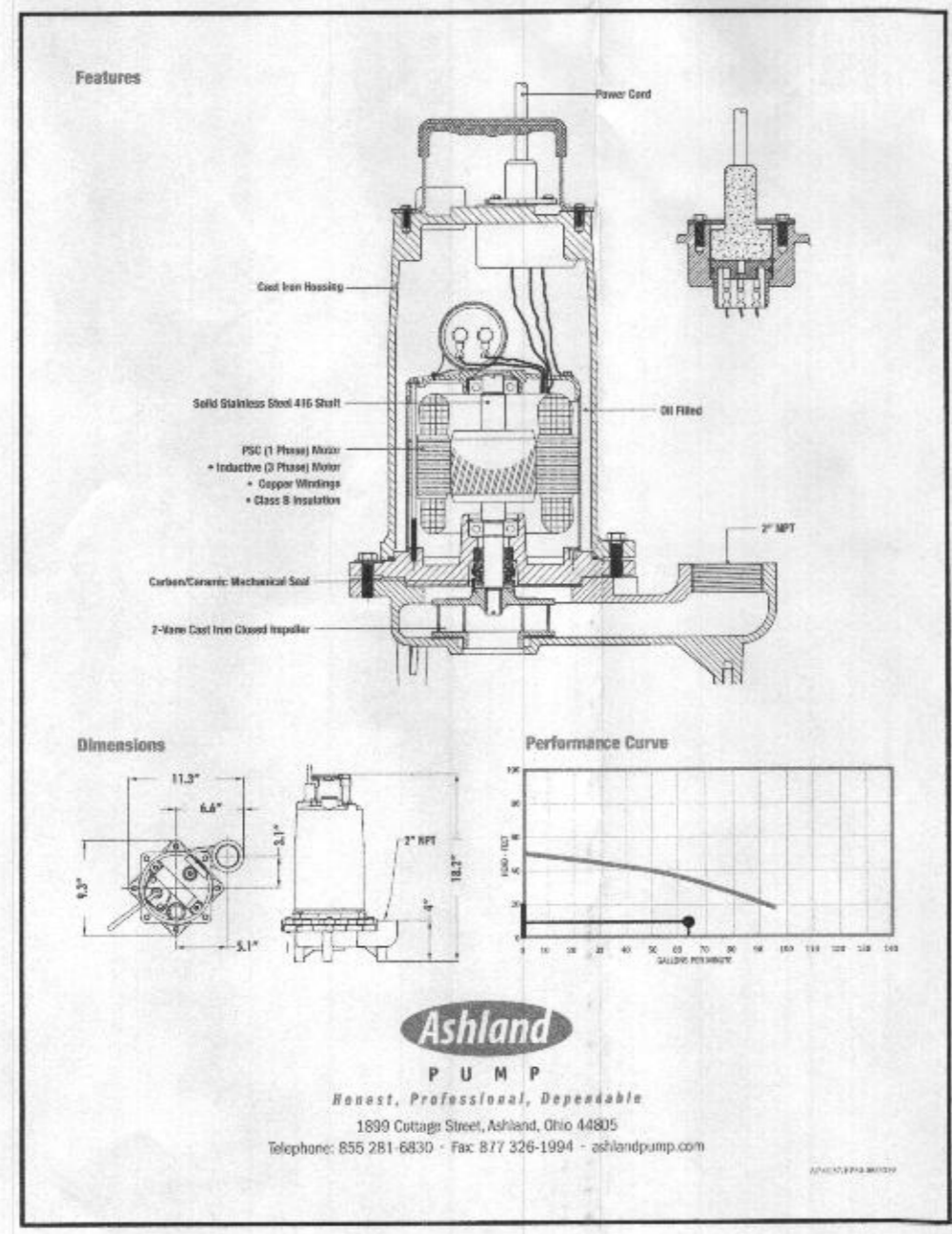
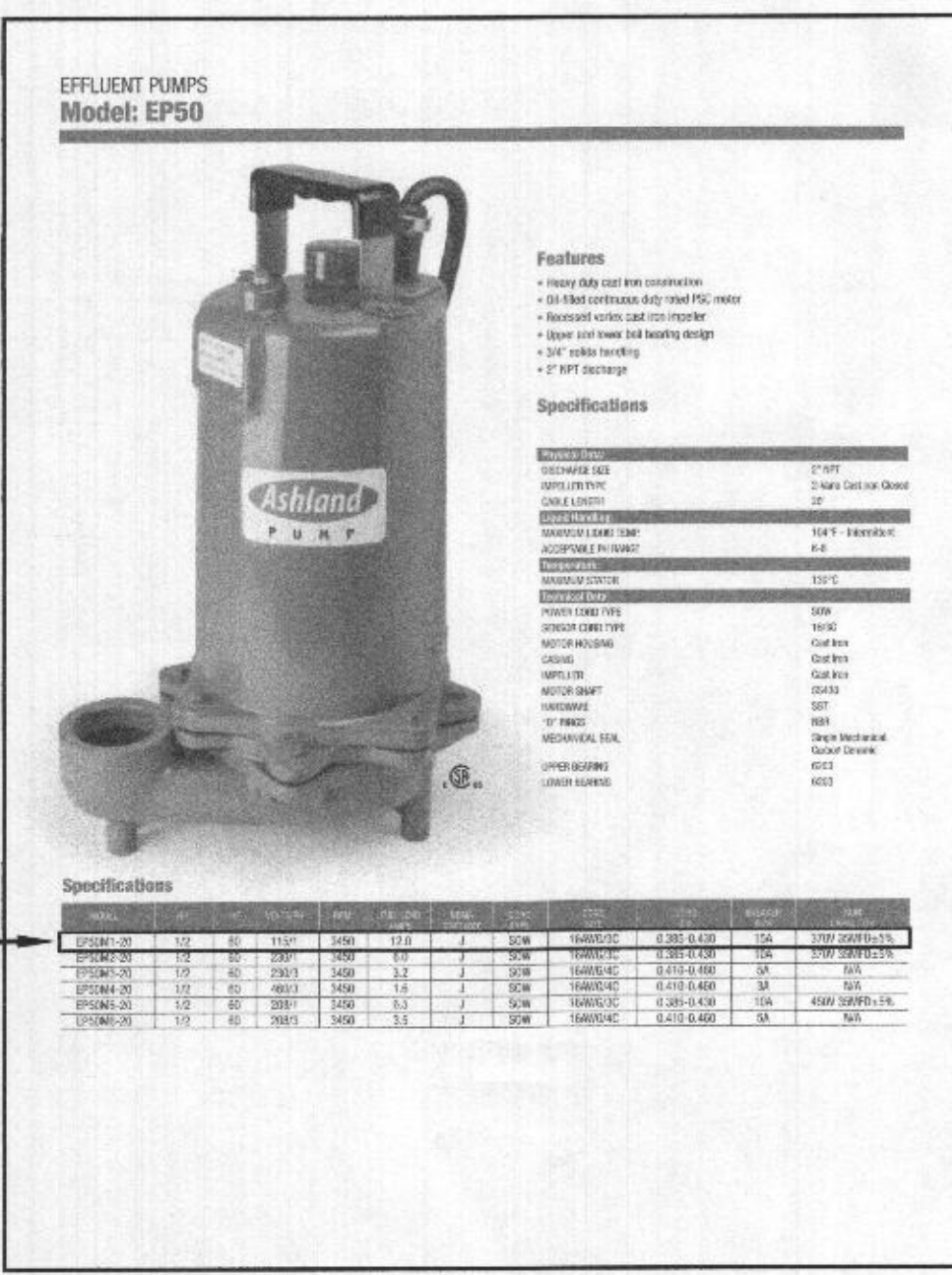
SOIL	NAME	CLASS	Kw
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.28
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	.28
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	B	.28



**HOUSE OPTIONS:**  
 HOUSE TYPE: PARKHURST (MODERN FARMHOUSE)  
 TWO CAR SIDE ENTRY GARAGE  
 FINISHED LOWER LEVEL  
 DAYLIGHT BASEMENT  
 MULTI-GENERATIONAL SUITE ADDITION  
 ADDITIONAL: 1 CAR FRONT ENTRY GARAGE (14')  
 LUXURY OUTDOOR LIVING

**LEGEND:**  
 ● PASSED PERC TEST LOCATION  
 ○ EXISTING WELL LOCATION  
 C/O CLEANOUT  
 TW TOP OF WALL OF GARAGE FLOOR  
 BF BASEMENT FLOOR  
 BR BUILDING RESTRICTION LINE  
 SF SEWAGE DISPOSAL AREA  
 --- SOIL DELINEATION LINE

Approved Septic System Plan  
 Howard County Health Department  
 NORWESCO TULLIP 750  
 w/ 2000-gallon Pump Tank  
 & Ashland EPSO M1-20 pump or equiv.  
 Thibault 5/20/22  
 Signature Date  
 to LPD for 6-bedroom residence



### LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

NUMBER OF MANIFOLDS = 1  
 MANIFOLD TYPE = CENTER FEED  
 TRENCH 1 (T1) ELEV.=518.10' LENGTH=71.25'  
 TRENCH 2 (T2) ELEV.=517.10' LENGTH=71.00'  
 MANIFOLD LENGTH = 15.00' TYPE=SCH40  
 FORCE MAIN LENGTH = 68.00' TYPE=SCH40

TRENCH	TRENCH LENGTH (FT)	FEED	PIPE INV. (FT)	HEAD (FT)	HOLE DIA. (IN.)	HOLE FLOW RATE (GPM)	HOLE SPACING (FT)	#HOLES	TRENCH FLOW RATE (GPM)	LATERAL LENGTH (FT)	FLOW PER LF TRENCH (GPM)	GA PER LF TRENCH (GPM)	LATERAL DIA. (IN.)	TYPE
1	71.50'	CENTER	515.60	2	5/16	1.83	3.57	20	32.60	67.93	0.48	1.5	SCH40	
2	71.25'	CENTER	514.60	3	5/16	1.99	4.45	16	31.84	66.80	0.48	1.5	SCH40	

MIN. SYSTEM DISCHARGE RATE = 64.44 GPM  
 MANIFOLD DIAMETER = 3 IN.  
 FORCE MAIN DIAMETER = 3 IN.  
 MINIMUM DOSE = 150 GAL.

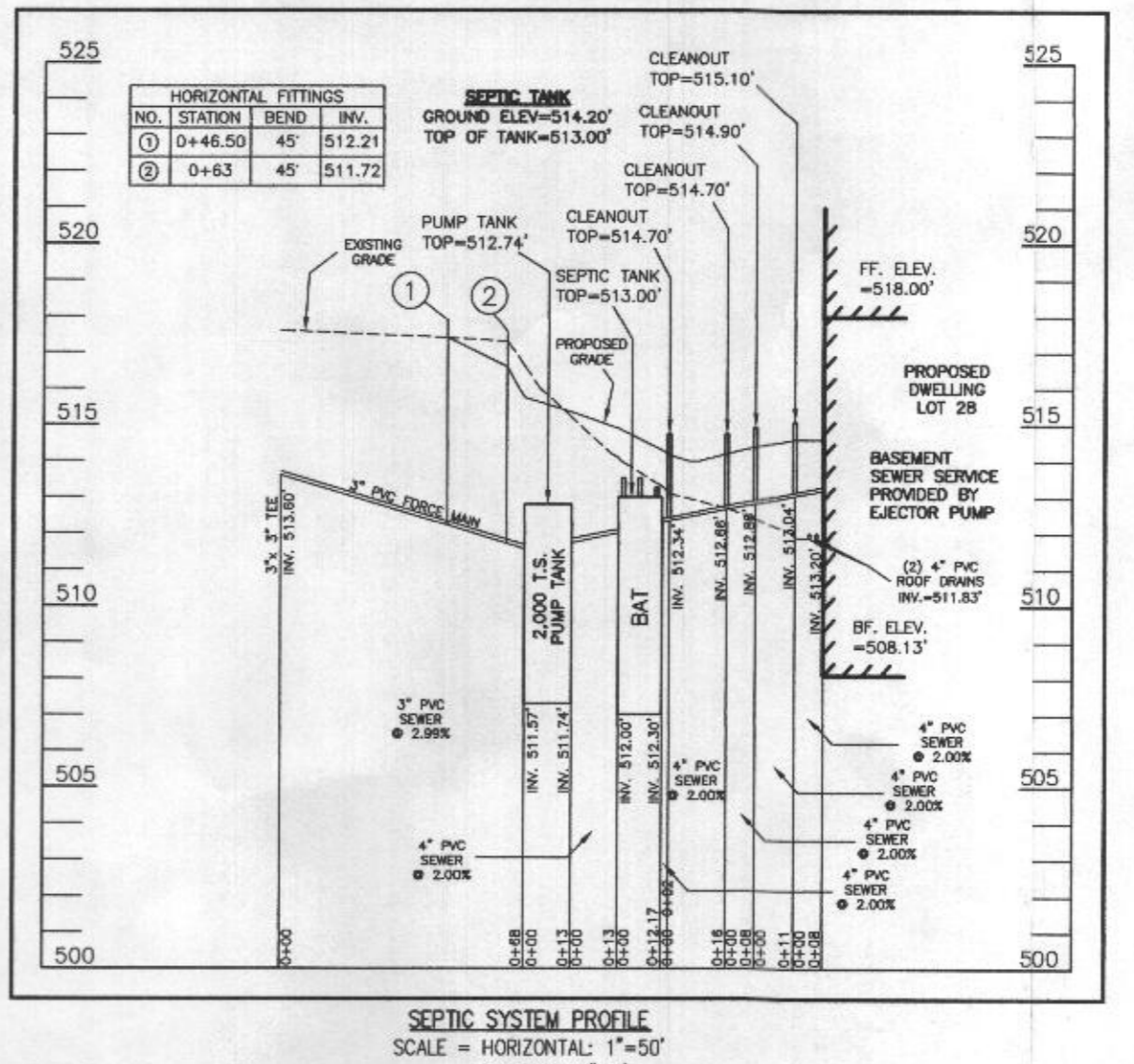
MAX/AVG FLOW RATE (SHOULD BE < 1.10): 0.96  
 VELOCITY = 2.52 FPS  
 VELOCITY = 2.52 FPS  
 VELOCITY = 150 GAL

ADD 6' PER BEND = 12'  
 ADD 10' PER BEND = N/A  
 ADD 8' PER BEND = N/A  
 ADD 10' PER BEND = N/A  
 ADD 3' PER COUPLING = 6'  
 TOTAL ADD'L LENGTHS = 18'

VAL PIPE / FRICTION LOSS = 101.00'

FRICITION HEAD = 0.92' FT. (PER ABOVE CALCULATION)  
 OPERATING HEAD = 2.00' FT.  
 STATIC HEAD = 6.20' FT. (HIGHEST POINT IN DISTRIBUTION SYSTEM - PUMP OFF FLOAT ELEVATION)  
 TOTAL DYNAMIC HEAD = 9.02' FT. (FRICITION HEAD + OPERATING HEAD + STATIC HEAD)

THEFORE A PUMP CAPABLE OF DELIVERING AT LEAST 64.44 GPM AGAINST 9.02' OF HEAD IS REQUIRED  
 EP50M1-20, 1/2 H.P. IS EFFICIENT



### SEPTIC TRENCH SIZE CALCULATIONS

SYSTEM INPUT INFORMATION	INITIAL SYSTEM	1ST REPLACEMENT SYSTEM	2ND REPLACEMENT SYSTEM
APPLICATION RATE (GPN)	0.8	0.8	0.6
EFFECTIVE AREA BEGINNING DEPTH (GVEN)	3.5	3.5	3.5
BOTTOM MAXIMUM DEPTH (GVEN)	8	8	8
NUMBER OF BEDROOMS	6	6	6
DESIGN FLOW (10 GAL/DAY/BEDROOM)	900	900	900
<b>ABSORPTION TRENCH CALCULATIONS</b>			
DRAINFIELD AREA REQUIRED (DESIGN FLOW/APP RATE)	1,125	1,125	1,500
EFFECTIVE SIDEWALL DEPTH "D" (DEPTH BETWEEN THE EFFECTIVE BEGINNING DEPTH OR PIPE DEPTH (WHICHEVER IS DEEPER) AND MAX. TRENCH BOTTOM)	4.5	4.5	4.5
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Michael Joe Boyce  
 DATE: 05/05/22



DESIGNED BY: R.C.K.	DATE:
DRAWN BY: R.C.K.	DATE:
CHECKED BY: M.J.B.	DATE:
APPROVED BY:	DATE:

SITE PLAN FOR BAT INSTALLATION  
 LOT 28  
**WILLOWSHIRE**  
 LIBER 18479, FOLIO 296  
 PLAT No. 25505  
 TAX No. 05-603016  
 FIFTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 ADDRESS: 7008 COLT PLACE  
 DAYTON, MARYLAND 21036

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ESE Consultants, Inc.  
 6731 Columbia Gateway Drive • Suite 120 • Columbia, MD 21046  
 T: 410-872-9105

DATE: 02/05/2022 SCALE: 1"=30'  
 CHK'D: M.J.B. JOB NO: 4520 FILE: BAT LOT 28\_rev2  
 DRAWN: R.C.K.