**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.orgFacebook: www.facebook.com/hocohealth

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

RECEIPT DATE: 8-6-20**ONSITE SEWAGE DISPOSAL SYSTEM**P 567930APPROVAL DATE: 10/8/2020 (ST)**PERMIT: CONSTRUCTION**

A _____

PROPERTY ADDRESS: 5300 GREEN BRIDGE ROADSUBDIVISION: WILLOWSHIRELOT: 1TAX ID: 05-367182CONTRACTOR: CHAVIS ENTERPRISES, LLC.EMAIL: sedrick@chavisenterprisesllc.comCONTRACTOR ADDRESS: 3811 Federal Hill Rd, Jarrettsville, MD 21084PHONE: 410-608-6151

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:



MDE



MANUFACTURER:

PROPERTY OWNER: TOLL MID ATLANTIC LP COMPANY, INC.EMAIL: gdavids@tollbrothers.comOWNER ADDRESS: 7164 COLUMBIA GATEWAY DRIVE, COLUMBIA, MD 21046PHONE: 240-418-3846BAT UNIT MODEL: NORWECO TNTLP-750PUMP SIZE: 0.3PUMP TANK CAPACITY: 2000

OPERATION & MAINTENANCE AGREEMENT

DATE SIGNED: 7/28/20DATE RECORDED: 8/4/20DISTRIBUTION SYSTEM: ☐ GRAVITY☒ PRESSURE DOSEDBEDROOMS: 6APPLICATION RATE: 1.2

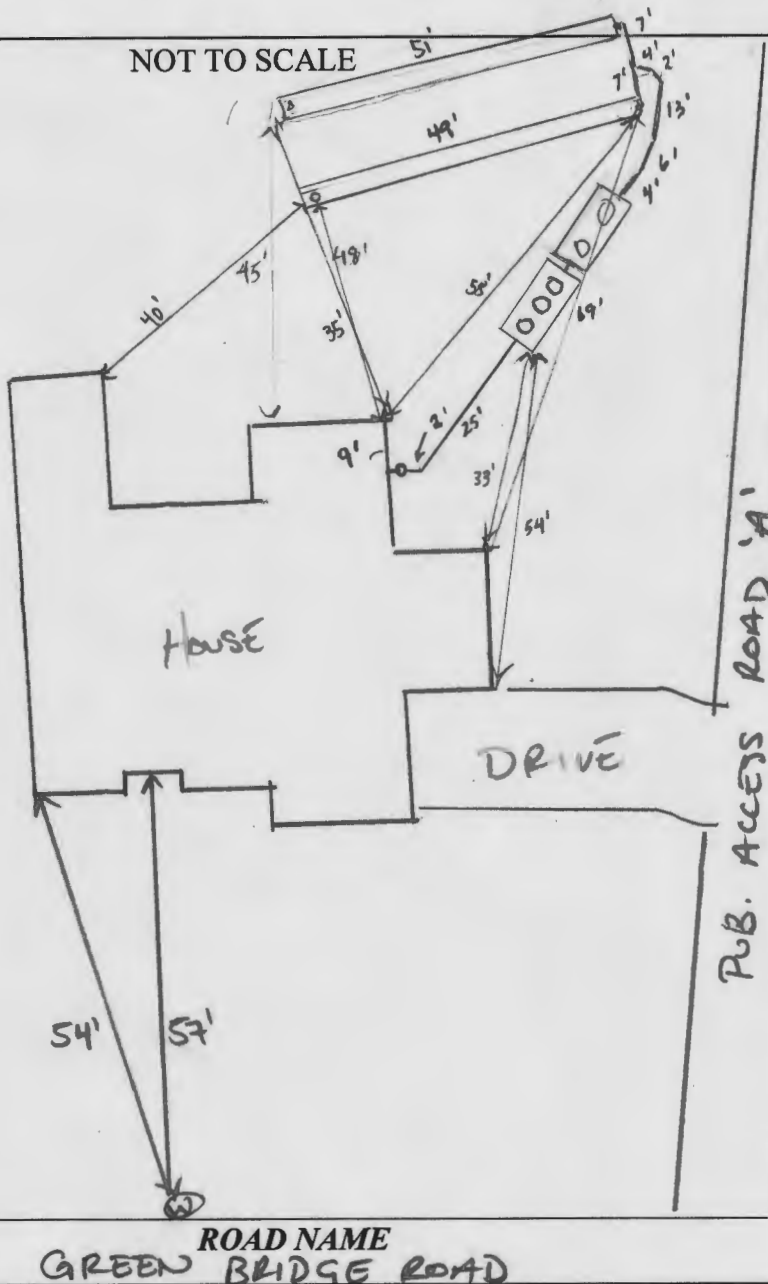
TRENCHES:	LINEAR FEET REQUIRED: <u>96</u>	INLET DEPTH: <u>2 AND 3*</u>
	TRENCH WIDTH: <u>3.0</u>	MAXIMUM BOTTOM DEPTH: <u>8.0</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>12</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.5</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	TRENCH 1 PIPE INVERT AT 3 FEET DEPTH; TRENCH 2 PIPE INVERT IS AT 2 FEET DEPTH. A LOCKING LID OR SOIL COVER IS REQUIRED ON THE PUMP TANK. INSTALLER MAY MODIFY SLIGHTLY THE DESIGN OF FORCE MAIN INSIDE PUMP TANK. BABYLON 2000 GALLON SINGLE CHAMBER TANK RECOMMENDED FOR PUMP TANK.	

ISSUED BY: ROBERT BRICKERISSUE DATE: 8-6-20EXPIRATION DATE: 8-6-21**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 DOWNGRADE 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

8/20/20**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



TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	3 1/2'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		100'
ABSORPTION AREA		300 sq ft + side wall
DISTRIBUTION BOX LEVEL		—
DISTRIBUTION BOX BAFFLE		—
DISTRIBUTION BOX PORT		—

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL	yes
MANUFACTURER	Norweco
CAPACITY	750 GAL
SEAM LOC	top
TANK LID DEPTH	1.5'
BAFFLES	—
BAFFLE FILTER	—
MANHOLE LOC	front + back
6" PORT LOC	—
WATERTIGHT TEST	—
SLOTTED	—
DATE ON LID	3-26-20

PUMP/SEPTIC TANK LEVEL	yes
MANUFACTURER	Babylon
CAPACITY	2000 GAL
SEAM LOC	top
TANK LID DEPTH	1'
BAFFLES	—
BAFFLE FILTER	—
MANHOLE LOC	front + back
6" PORT LOC	—
WATERTIGHT TEST	—
SLOTTED	—
DATE ON LID	6-30-20

PRE-CONSTRUCTION:

08/10/2020 TANK, SDA, TRENCHES STAKED. CONFIRMED CONTOUR AND DESIGN SPECS. OPEN TRENCH INSP. TREE TBR IN MIDDLE OF LOWER TRENCH (P)

INSTALLATION: 08/10/2020 SHC INSTALLED. TANK PIT DUG, TANKS AND

SEWER LINE TO BE INSPECTED. JC 8/11/20 SHC and both tanks set (ST) 8/12/20 Bottom trench constructed with 2' invert, 54' long. Perforations were accidentally covered before inspection. Contractor intends to complete FM and cover it before it rains tonight; instructed to send pictures. (ST) 8/13/20 - perforations for pipe in second trench observed, 14 total at proper distance. Stone looks good, 2nd trench @ 3' inlet, more stone and the geotextile fabric to be set in place and will be ok to backfill. @ 10/8/2020 Control panel for Norweco

damaged from moisture but was fixed. Floats were at improper heights, and design called for three floats but Norweco panel only can be wired for two - got rid of "On" float and rewired panel for "On/off" float and alarm. Put alarm

FINAL INSPECTOR Dwain Thomas DATE OF APPROVAL 10/8/2020

Float at correct height. 2' of distal head pressure was observed in the 75" turnup (trench 1) and 50" turnup (trench 2) by using measuring tape and a section of PVC pipe (P)

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 28th day of JULY 2020 among Toll Brothers, 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 5300 Green Bridge Rd., Dayton, MD, in the 5th 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 # 0027, Block # N/A, Parcel # 0034, Deed Reference # 18479/0031 and Tax Account # 367182 ("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 Normco Singular TNT 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

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.

Beth Rifon 7/28/2020
Howard County Health Department

[Signature] 7/2/20
Owner #1 Signature Date

John Brudaly
Owner #1 Print Name

Owner#2 Signature Date

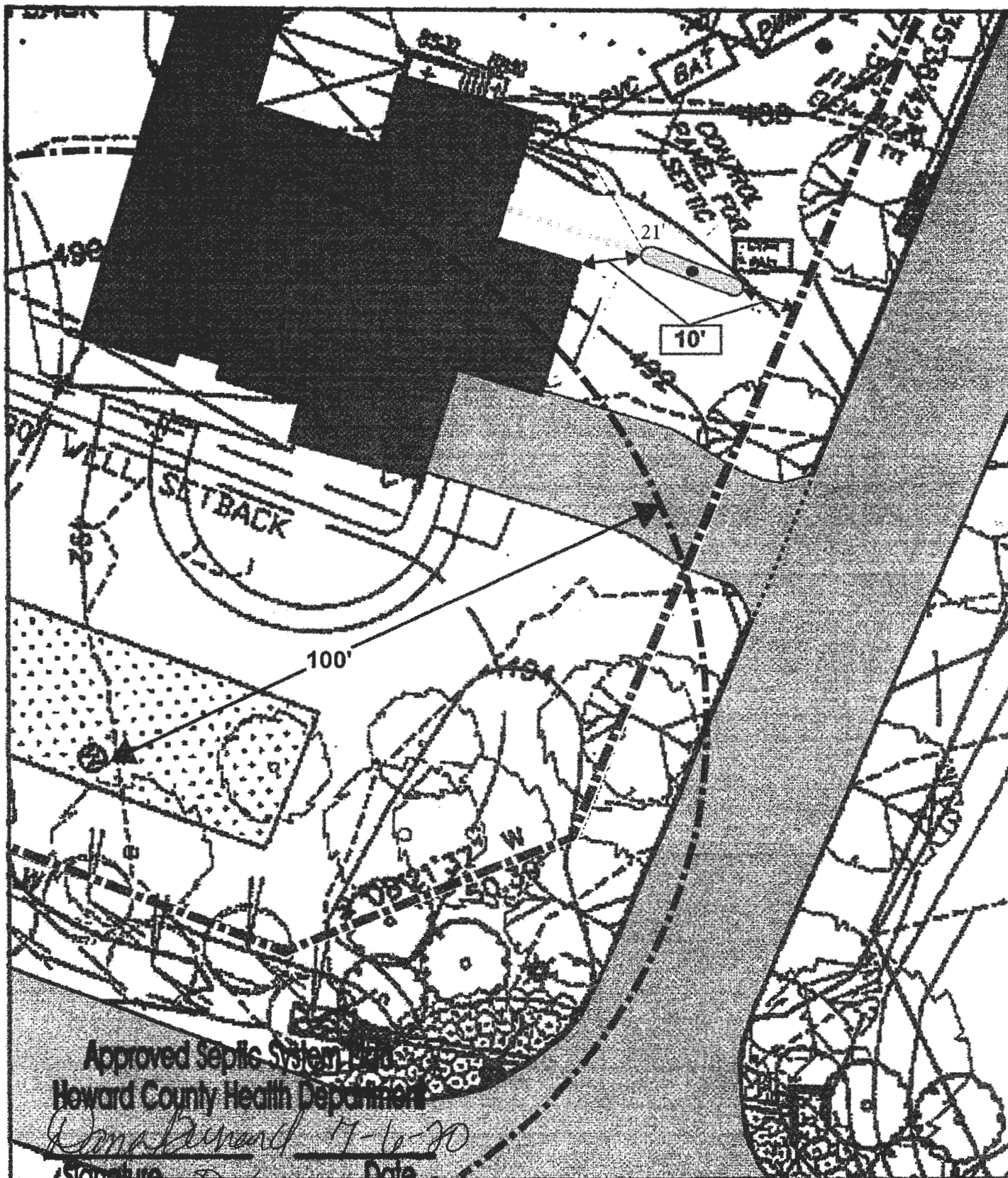
Owner #2 Print Name

Buyer #1 Signature Date

Buyer #2 Signature Date

Buyer #1 Print Name

Buyer #2 Print Name



Approved Septic System Plan
 Howard County Health Department

Dana Leonard 7-6-20
 Signature Date

PROPOSED UNDERGROUND 1,000-GALLON PROPANE STORAGE TANK LOCATION
 TOLL BROTHERS WILLOW CREEK MODEL HOME
 5300 GREEN BRIDGE ROAD, DAYTON, MARYLAND 21036

1" = 20'



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

NORWECO CERTIFICATION

PROPERTY OWNER: TOLL MID ATLANTIC LP CO	INSTALLATION COMPANY: CHAVIS SEPTIC
ADDRESS: 5300 GREEN BRIDGE RD	CERTIFIED INSTALLER: COLE HERSHEY
CITY, ZIPCODE & COUNTY: DAYTON, MD 21036	PERMIT#
SIZE OF SYSTEM INSTALLED:	DATE INSTALLED: 08-11-20
750 GPD CONCRETE	START-UP DATE: 10-08-20
NUMBER OF BEDROOMS:	DATE OF FINAL INSPECTION:
TYPE OF INSTALLATION: NEW	DATE OF ELECTRICAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	TANK LEVEL: YES
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 24"	BURIAL DEPTH OF TANK: 18"
SYSTEM WIRED ON A 15-AMP DEDICATED CIRCUIT WITH STD. BREAKER: YES	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
IS THE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

ON 2ND 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 5TH HOUSE OF THE LEFT.

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

Matthew Geckle

October 08, 2020

Signature of BRP Representative

Vice-President

Date



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

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750 GPD CONCRETE	START-UP DATE: 10-08-20
NUMBER OF BEDROOMS:	DATE OF FINAL INSPECTION:
TYPE OF INSTALLATION: NEW	DATE OF ELECTRICAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	TANK LEVEL: YES
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 24"	BURIAL DEPTH OF TANK: 18"
SYSTEM WIRED ON A 15-AMP DEDICATED CIRCUIT WITH STD. BREAKER: YES	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: NO
CONDUIT(S) ENTERING AERATION RISER MADE WITH A WATERTIGHT CONNECTION: YES	
IS THE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

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Matthew Geckle

October 08, 2020

Signature of BRP Representative

Vice-President

Date

FINKSBURG TERMINAL

PH: (410) 833-4400

2700 Emory Rd.

Finksburg, MD 21048

TKT: 486043**Cust#:** CHALLC

CHAVIS ENTERPRISES, LLC

8/13/2020**7:28:06AM****Job#:** GREBRA GREEN BRIDGE**Trk#:** CH24 - CHAVIS ENTERPRISES LLC**Zone#:** 0000 PICK-UP**Gross:** 60700**P.O.#:****Tare:** 27880**Proj#:****Net:** 32820**Mat'l#:** 22-#2 STONE**TONS:** 16.41

	Loads	Tons
Job/Daily:	1	16.41
Job/Total:	5	98.67

WEIGHMASTER: Cassidy Lindemann

We exercise No Control Over Delivery of Our Products & We Won't
be Held Liable for Any Damage to Person or Property.

Material Safety Data Information Available Upon Request.

Have A Great Day. Please Drive Safely!

FINKSBURG TERMINAL

PH: (410) 833-4400

2700 Emory Rd.

Finksburg, MD 21048

TKT: 485898**Cust#: CHALLC**

CHAVIS ENTERPRISES, LLC

8/11/2020**12:33:11PM****Job#: GREBRA GREEN BRIDGE****Trk#: CH24 - CHAVIS ENTERPRISES LLC**

* P. T.

Zone#: 0000 PICK-UP**Gross: 67920****P.O.#:*** **Tare: 27840****Proj#:****Net: 40080****Mat'l#: 22-#2 STONE****TONS: 20.04**

	Loads	Tons
Job/Daily:	4	82.26
Job/Total:	4	82.26

WEIGHMASTER: Cassidy Lindemann

We exercise No Control Over Delivery of Our Products & We Won't
be Held Liable for Any Damage to Person or Property.

Material Safety Data Information Available Upon Request.

Have A Great Day. Please Drive Safely!

FINKSBURG TERMINAL

PH: (410) 833-4400

2700 Emory Rd.

Finksburg, MD 21048

TKT: 485883**Cust#: CHALLC****8/11/2020**

CHAVIS ENTERPRISES, LLC

10:49:12AM**Job#: GREBRA GREEN BRIDGE****Trk#: CH24 - CHAVIS ENTERPRISES LLC**

* P. T.

Zone#: 0000 PICK-UP**Gross: 68900****P.O.#:*** **Tare: 27840****Proj#:****Net: 41060****Mat'l#: 22-#2 STONE****TONS: 20.53**

	Loads	Tons
Job/Daily:	3	62.22
Job/Total:	3	62.22

WEIGHMASTER: Cassidy Lindemann

We exercise No Control Over Delivery of Our Products & We Won't
be Held Liable for Any Damage to Person or Property.

Material Safety Data Information Available Upon Request.

Have A Great Day. Please Drive Safely!

FINKSBURG TERMINAL

PH: (410) 833-4400

2700 Emory Rd.

Finksburg, MD 21048

TKT: 485867**Cust#: CHALLC****8/11/2020****CHAVIS ENTERPRISES, LLC****9:15:29AM****Job#: GREBRA GREEN BRIDGE****Trk#: CH24 - CHAVIS ENTERPRISES LLC****Zone#: 0000 PICK-UP***** P. T.****Gross: 69060****P.O.#:***** Tare: 27840****Proj#:****Net: 41220****Mat'l#: 22-#2 STONE****TONS: 20.61**

	Loads	Tons
Job/Daily:	2	41.69
Job/Total:	2	41.69

WEIGHMASTER: Cassidy Lindemann

We exercise No Control Over Delivery of Our Products & We Won't
be Held Liable for Any Damage to Person or Property.

Material Safety Data Information Available Upon Request.

Have A Great Day. Please Drive Safely!

FINKSBURG TERMINAL

PH: (410) 833-4400

2700 Emory Rd.

Finksburg, MD 21048

TKT: 485844**Cust#: CHALLC****8/11/2020**

CHAVIS ENTERPRISES, LLC

7:36:19AM**Job#: GREBRA GREEN BRIDGE****Trk#: CH24 - CHAVIS ENTERPRISES LLC****Zone#: 0000 PICK-UP****Gross: 70000****P.O.#:****Tare: 27840****Proj#:****Net: 42160****Mat'l#: 22-#2 STONE****TONS: 21.08**

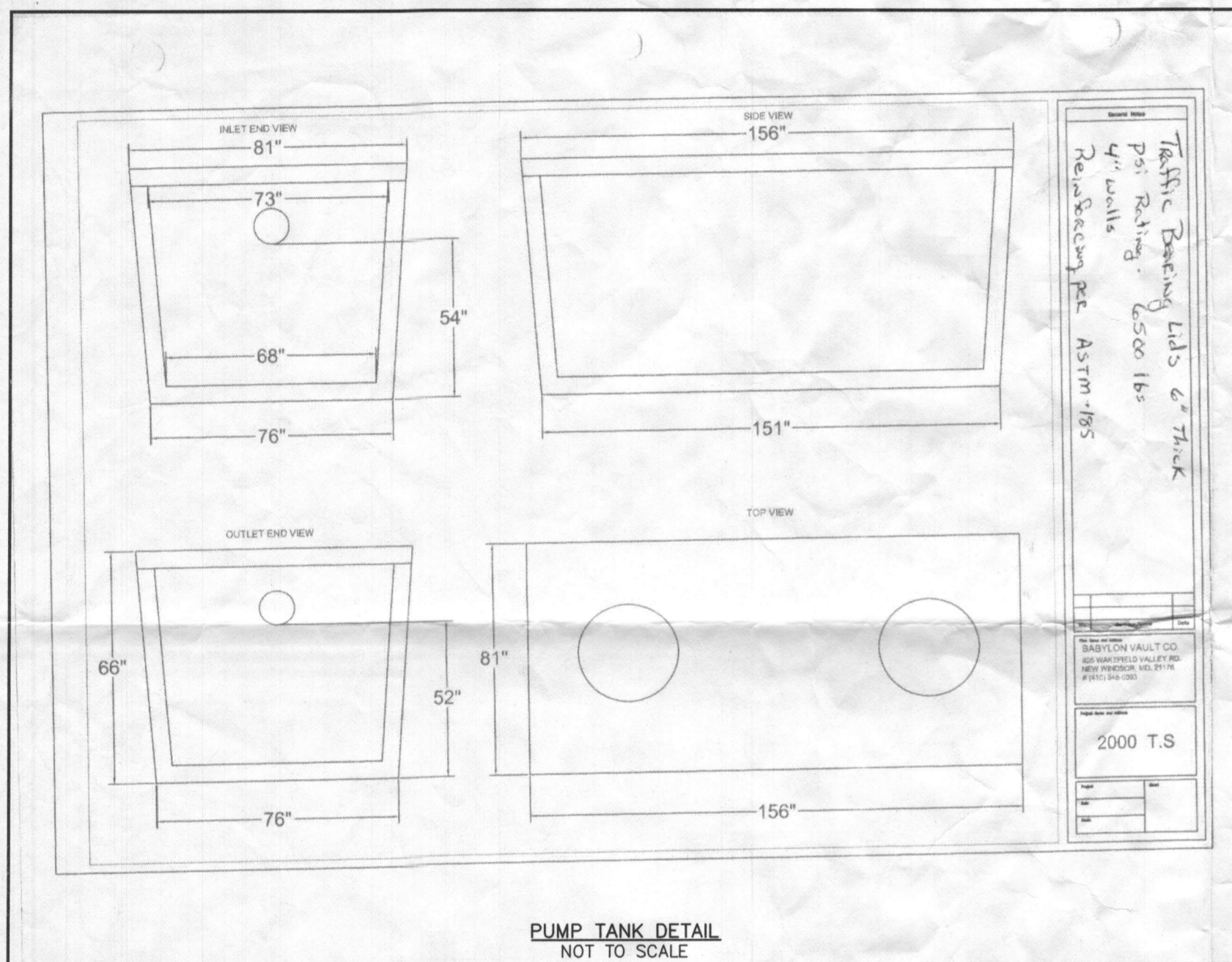
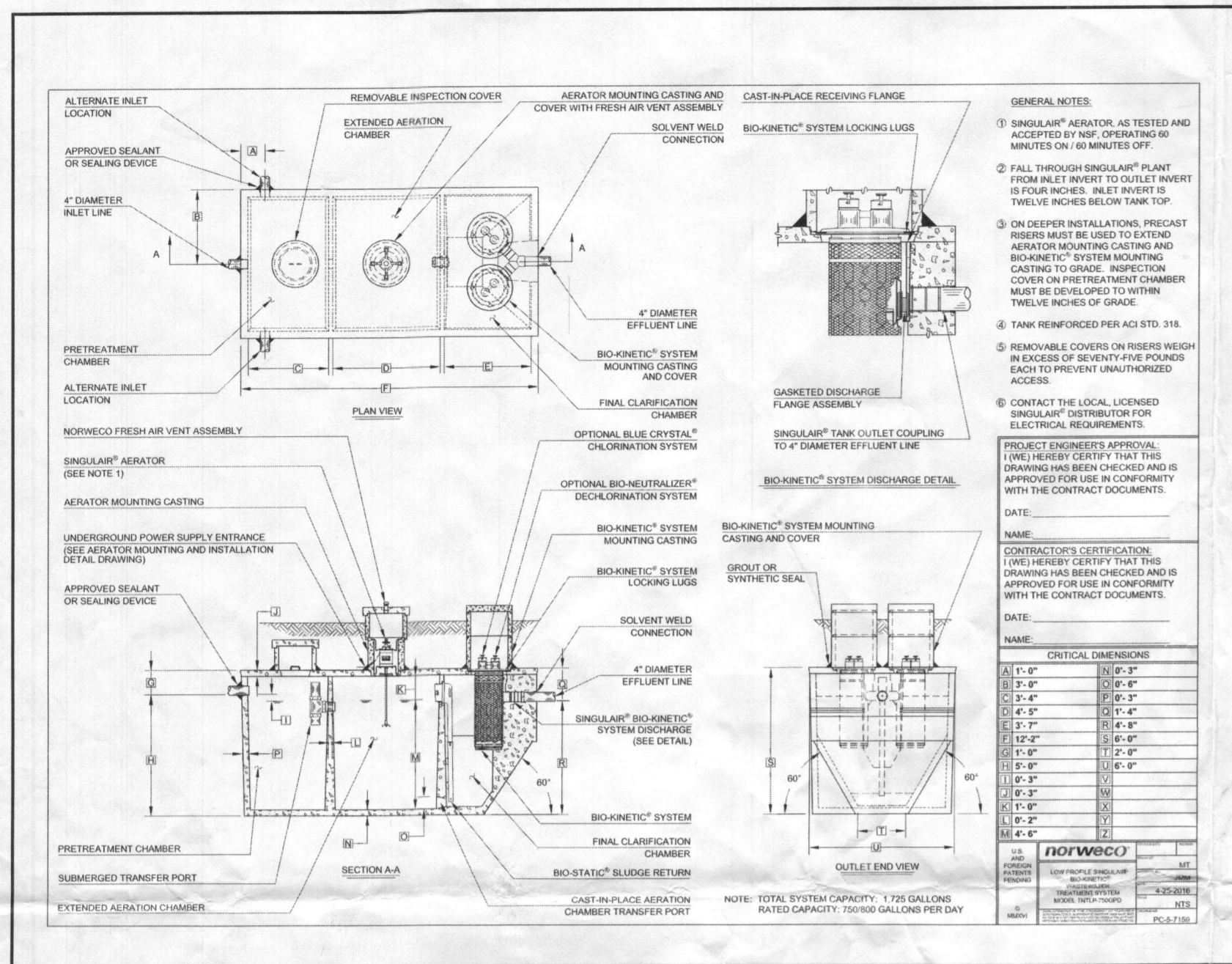
	Loads	Tons
Job/Daily:	1	21.08
Job/Total:	1	21.08

WEIGHMASTER: Cassidy Lindemann

We exercise No Control Over Delivery of Our Products & We Won't
be Held Liable for Any Damage to Person or Property.

Material Safety Data Information Available Upon Request.

Have A Great Day. Please Drive Safely!



MYERS' ME3 SERIES

The Myers' ME3 series submersible effluent pumps are constructed of the most durable combination of materials to withstand the harshest environments. The ME3 is available with a recessed impeller for high-head applications or an enclosed impeller for high-flow installations. Available in tethered automatic plugback models or manual models for use with external controls.

APPLICATIONS: Effluent removal, sump drainage, water transfer, flood control.

FEATURES: Two Powerful Pumps: High head (ME3H, High Flow (ME3F)) Maximum Head-handling: Durable oil-filled motor for continuous bearing lubrication and maximum head discharge. Powerful Starts: High torque, no starting switches or relays to wear out. Thermal Protection: Heat sensor certified protection with automatic reset when motor cools to a safe operating temperature.

Specifications: Capacities - ME3H 35 GPM (134 LPM), ME3F 25 GPM (95 LPM). Shut-off Head - ME3H 35 (10.7 m), ME3F 25 (7.9 m). Maximum Suction Solids - 3/4" (19 mm). Liquid Handling - Domestic effluent and drain water. Intermittent Liquid Temperature - Up to 140°F (60°C). Motor/Technical Data - 120V/1550 RPM, classed poles, 60-65Hz, 115V, 120, 10, 60Hz, 230V, 60, 10, 60Hz. Acceptable at Range - 1:1. Specific Gravity - 1.1. Viscosity - 20-50 SSU. Discharge, NPT - 1-1/2" (38.1 mm). Housing - Heavy cast iron. Minimum Sump Diameter - 36" (91.4 cm). Diameter 36" (91.4 cm). Power Cord - 20', 14/2, SJTW.

PUMP PERFORMANCE: Graph showing flow rate (GPM) vs. head (ft.) for ME3H and ME3F models.

MYERS' ME3 SERIES

DESIGN INFORMATION:

Catalog Number	HP	Volts	Phase	Output	Amperage	Discharge Rate (GPM)	Switch Type	Cord Length	Approx. Wt. (Lbs.)
ME3H-11	1/2	115	1PH	12	1.1	1.0	Manual	20'	27
ME3H-15	3/4	115	1PH	18	1.5	1.5	Manual	20'	35
ME3H-21	1	115	1PH	24	2.0	2.0	Manual	20'	43
ME3H-25	1 1/2	115	1PH	30	2.5	2.5	Manual	20'	51
ME3F-11	1/2	115	1PH	12	1.1	1.0	Automatic	20'	27
ME3F-15	3/4	115	1PH	18	1.5	1.5	Automatic	20'	35
ME3F-21	1	115	1PH	24	2.0	2.0	Automatic	20'	43
ME3F-25	1 1/2	115	1PH	30	2.5	2.5	Automatic	20'	51

INSTALLATION: Diagram showing the pump connected to a manifold and trench.

LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

NUMBER OF MANIFOLDS = 1
MANIFOLD TYPE = END FEED

TRENCH 1 (T1) ELEV.=482.84' LENGTH=47.80'
TRENCH 2 (T2) ELEV.=482.84' LENGTH=47.80'

MANIFOLD LENGTH = 19.00' TYPE=SCH40
FORCEMAIN LENGTH = 22.75' TYPE=SCH40

TRENCH	TRENCH LENGTH (FT.)	FEED	PIPE INV. ELEV. (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)	GAL. PER LF TRENCH (GPM)	LATERAL DIAM. (IN.)	TYPE
1	47.80	END	482.84	2	5/16	1.63	3.416	14	22.82	46.12	0.490		1.5	SCH40
2	47.80	END	482.84	2	5/16	1.63	3.416	14	22.82	46.12	0.490		1.5	SCH40

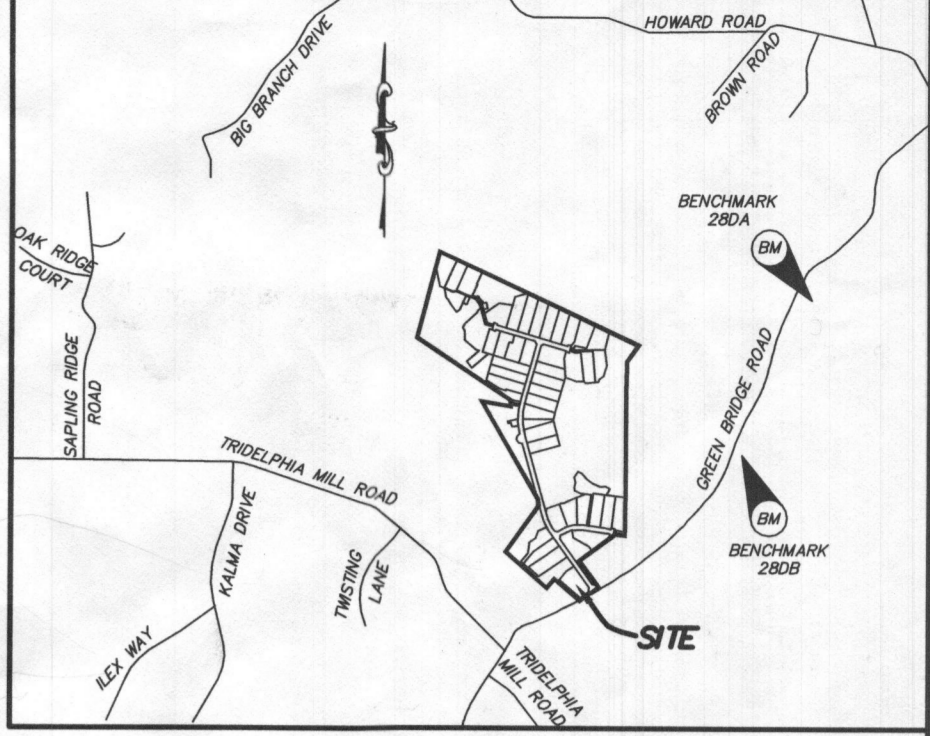
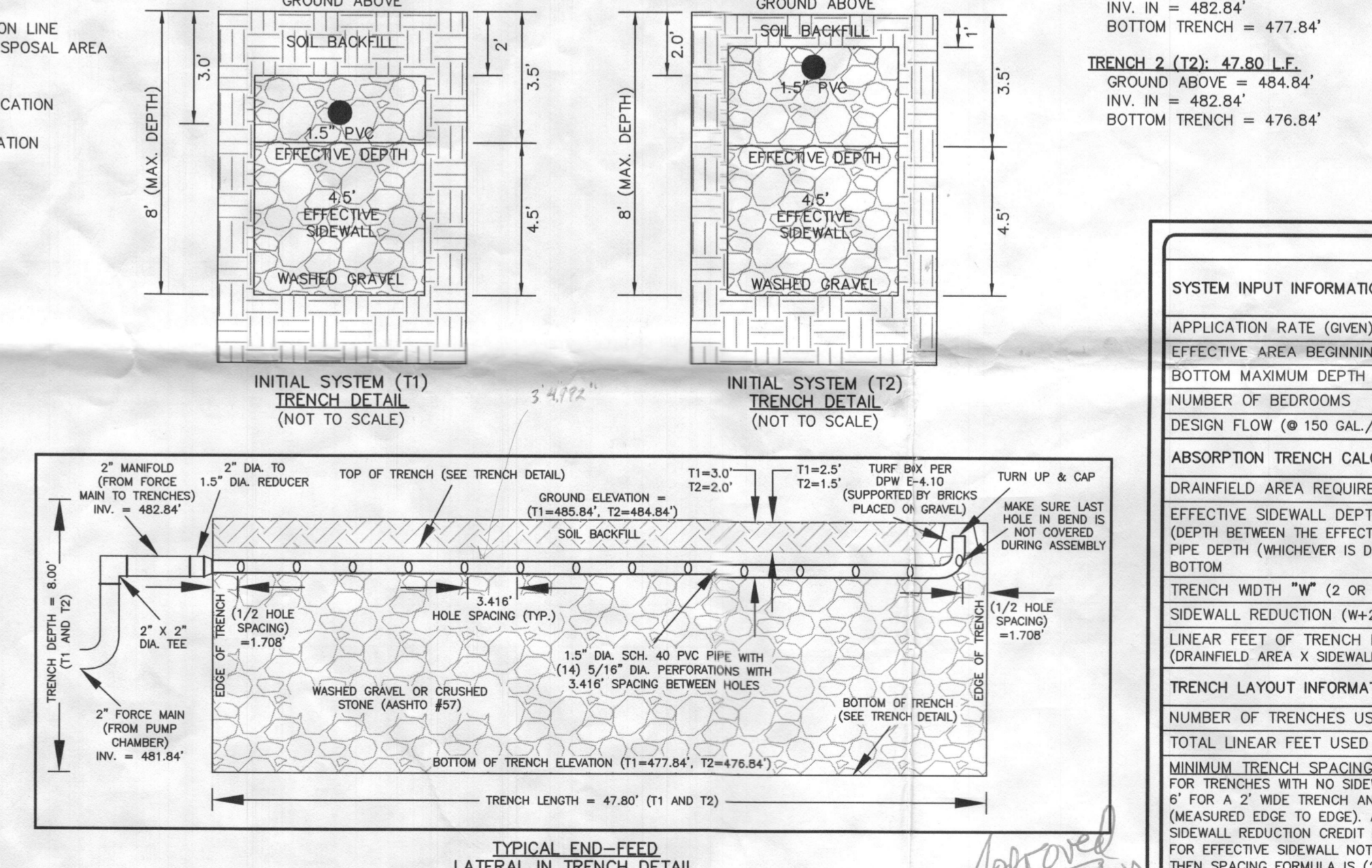
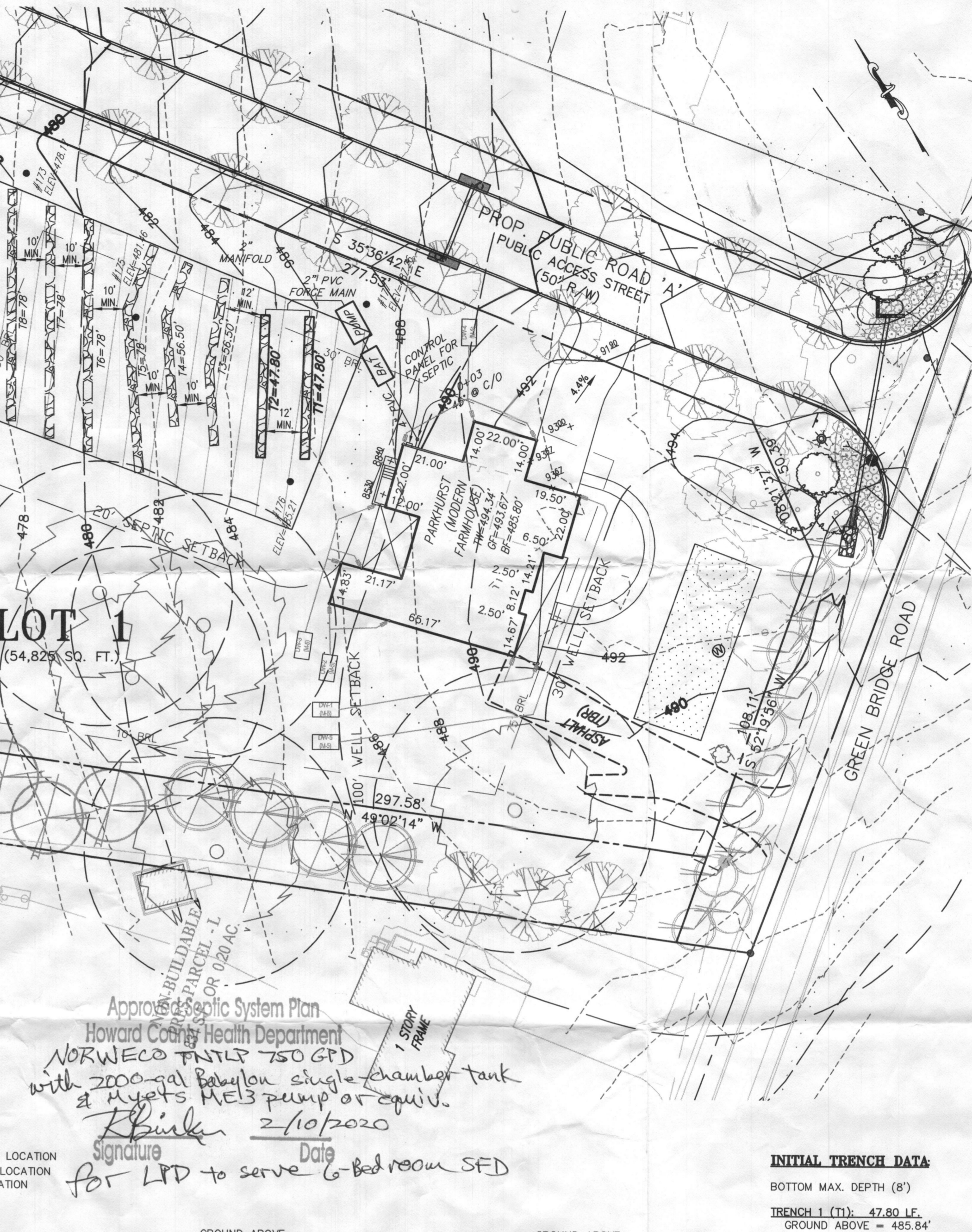
MIN. SYSTEM DISCHARGE RATE = 45.64 GPM
MANIFOLD DIAMETER = 2 IN.
FORCE MAIN DIAMETER = 2 IN.
MINIMUM DOSE = 150 GAL.

MAX./MIN. FLOW RATIO (SHOULD BE < 1.10): 0.98
VELOCITY = 4.66 FPS FRICTION LOSS (TABLE 4.4) = 3.27
VELOCITY = 4.66 FPS FRICTION LOSS (TABLE 4.4) = 3.27
(VOL. IN FM, MAN, 5x LATERAL=62.31 GAL < 1/6 DESIGN FLOW=900, 6=150 GAL.)

CALCULATE TOTAL DESIGN HEAD
LENGTH OF FM FROM PUMP TANK TO MANIFOLD = 22.75'
OF (45°) BENDS IN FM = 3 (ADD 4' PER BEND) = 12
OF (90°) BENDS IN FM = 1 (ADD 10' PER BEND) = 10
LENGTH OF MANIFOLD FROM FM TO TRENCHES = 19.00'
OF (45°) BENDS IN MANIFOLD = N/A (ADD 4' PER BEND) = N/A
OF (90°) BENDS IN MANIFOLD = 2 (ADD 10' PER BEND) = 20
OF COUPLINGS (2" TO 1.5") = 1 (ADD 2' PER COUPLING) = 2
TOTAL LENGTHS = 41.75' TOTAL ADD'L LENGTHS = 44' TOTAL PIPE/FRICTION LOSS = 85.75'
(45.64 GPM OF 2" PVC = 3.27 PER 100' PIPE); 3.27 / 100' = 0.0327 x 85.75' = 2.80'

FRICTION HEAD = 2.80' FT. (PER ABOVE CALCULATION)
OPERATING HEAD = 2.00' FT.
STATIC HEAD = 2.00' FT. (HIGHEST POINT IN DISTRIBUTION SYSTEM - PUMP OFF FLOOD ELEVATION)
TOTAL DYNAMIC HEAD = 6.80' FT. (FRICTION HEAD + OPERATING HEAD + STATIC HEAD)

THEREFORE A PUMP CAPABLE OF DELIVERING AT LEAST 45.64 GPM AGAINST 6.80' OF HEAD IS REQUIRED.
(PER FIGURE 4.7) 3/8" 1/3 H.P. IS EFFICIENT



VICINITY MAP
1" = 2000'
TAX MAP 27, GRID 18
BENCHMARK 280A
N: 570,624.997, E: 1,313,434.228, EL: 564.389'
BENCHMARK 280B
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 COMPLIES 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 9/03/15, 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, BURNT-GRADE AND CAPPED. THE TRUNCATED LATERAL TURN-UPS SHOULD BE PROTECTED BY TURF BOXES.
 - THE EXISTING WELL FOR LOT 1 (TAG NO. HO-18-0096) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN HEREON.

SEPTIC TRENCH SIZE CALCULATIONS

SYSTEM INPUT INFORMATION	INITIAL SYSTEM	1ST REPLACEMENT SYSTEM	2ND REPLACEMENT SYSTEM
APPLICATION RATE (GIVEN)	1.2	1.2	0.8
EFFECTIVE AREA BEGINNING DEPTH (GIVEN)	3.5	4.5	7
BOTTOM MAXIMUM DEPTH (GIVEN)	8	8	8
NUMBER OF BEDROOMS	6	6	6
DESIGN FLOW (150 GAL./DAY/BEDROOM)	900	900	900
ABSORPTION TRENCH CALCULATION			
DRAINFIELD AREA REQUIRED (DESIGN FLOW/APP RATE)	750	750	1,125
EFFECTIVE SIDEWALL DEPTH "D"	4.5	3.5	1
(DEPTH BETWEEN THE EFFECTIVE BEGINNING DEPTH OR PIPE DEPTH (WHICHEVER IS DEEPER) AND MAX. TRENCH BOTTOM)			
TRENCH WIDTH "W" (2 OR 3 FEET)	3	3	3
SIDEWALL REDUCTION (W+2)/(W+1+20)	0.38	0.45	0.83
LINEAR FEET OF TRENCH REQUIRED (DRAINFIELD AREA X SIDEWALL REDUCTION)/W	95	112.50	311.25
TRENCH LAYOUT INFORMATION			
NUMBER OF TRENCHES USED	2	2	4
TOTAL LINEAR FEET USED	95.60	113	312
MINIMUM TRENCH SPACING	12	10	10
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 (20+W)/UP TO A MAX. OF 18'			

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. 21326, EXPIRATION DATE 1/8/21.

01/30/22
DATE

Michael Joe Boyce

DESIGNED BY: R.C.K.

DRAWN BY: R.C.K.

CHECKED BY: M.J.B.

DATE

REVISION

BY

APPROVED

SITE PLAN FOR BAT INSTALLATION
FUTURE LOT 1
WILLIOWSHIRE
LIBER 18479, FOLIO 311
PLAT No. XXXIX
TAX No. 04-367204
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
ADDRESS: 5300 GREEN BRIDGE ROAD
DAYTON, MARYLAND 21036

ESE CONSULTANTS
ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL
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T: 410-672-9105

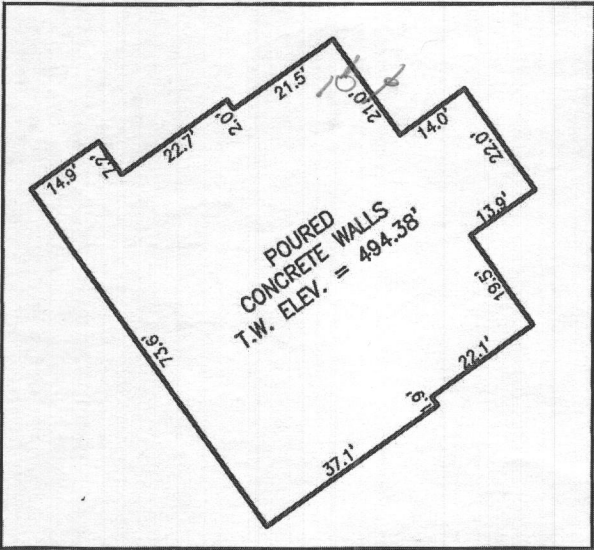
DATE: 01/30/2020 SCALE: 1"=30' FILE: CSDS LOT 1_rev4
CHK'D: M.J.B. JOB NO: 4520 DRAWN: R.C.K.

SHEET 1 OF 1

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 1/8/21.

LEGEND:
BRL BUILDING RESTRICTION LINE
T.W. TOP OF WALL
ELEV. ELEVATION

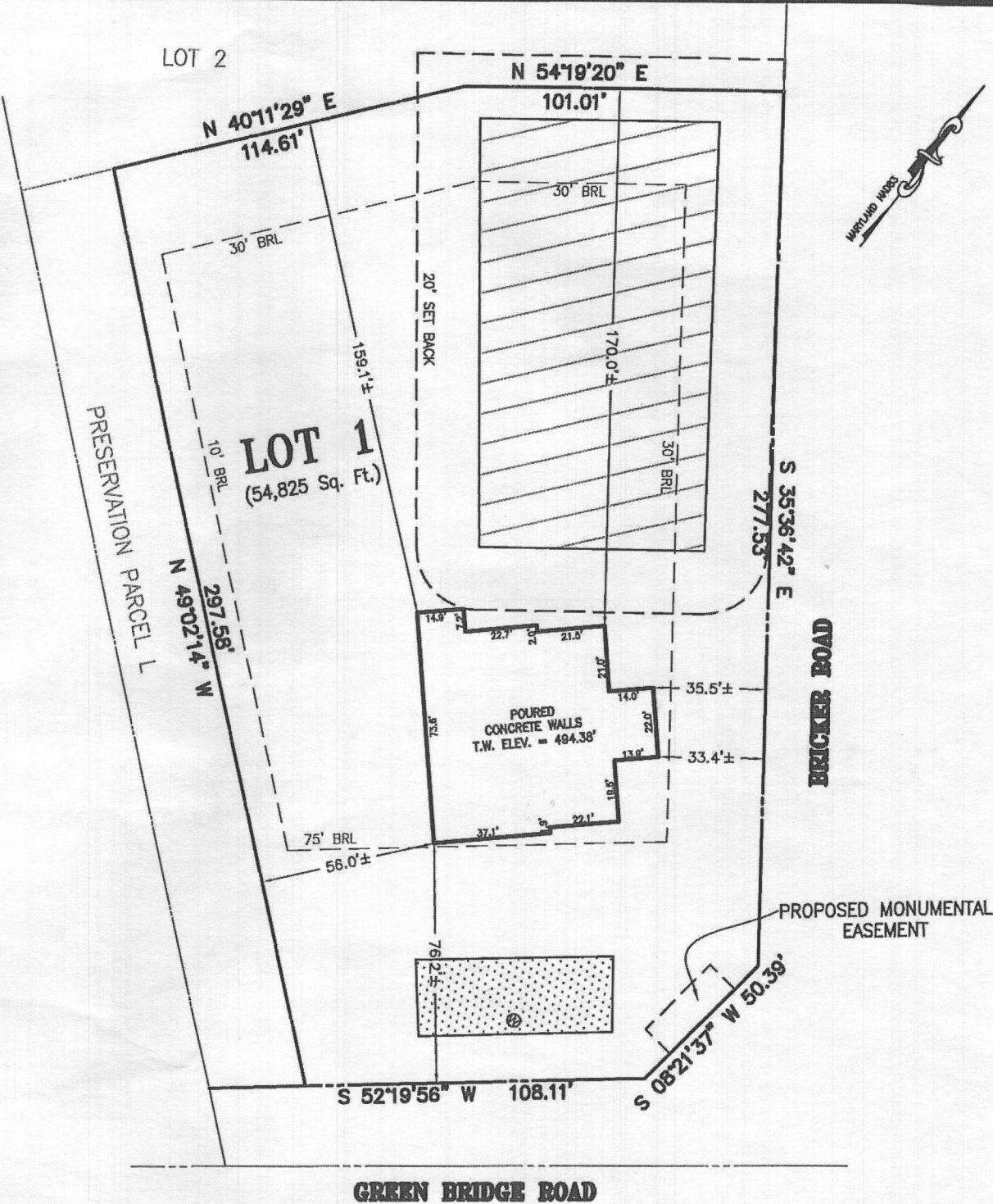
HOUSE ENLARGEMENT
NOT TO SCALE



ADDRESS: 5300 GREEN BRIDGE ROAD
DAYTON, MD 21036

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

OK
Gw
8/6/20



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.

SIGNATURE: MICHAEL JOE BOYCE

MD. LIC NO. 21328

DATE 03/02/20

WALLCHECK
LOT 1
WILLOWCREEK
LIBER 18479, FOLIO 311
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

ESE CONSULTANTS
ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL

ESE Consultants, Inc.
7164 Columbia Gateway Drive • Suite 230 • Columbia, MD 21046
T: 410-872-9105

DATE: 03/02/2020 SCALE: 1"=50' FILE: WC LOTS 01
CHK'D: M.J.B. JOB NO: 4520 DRAWN: V.X.P.

