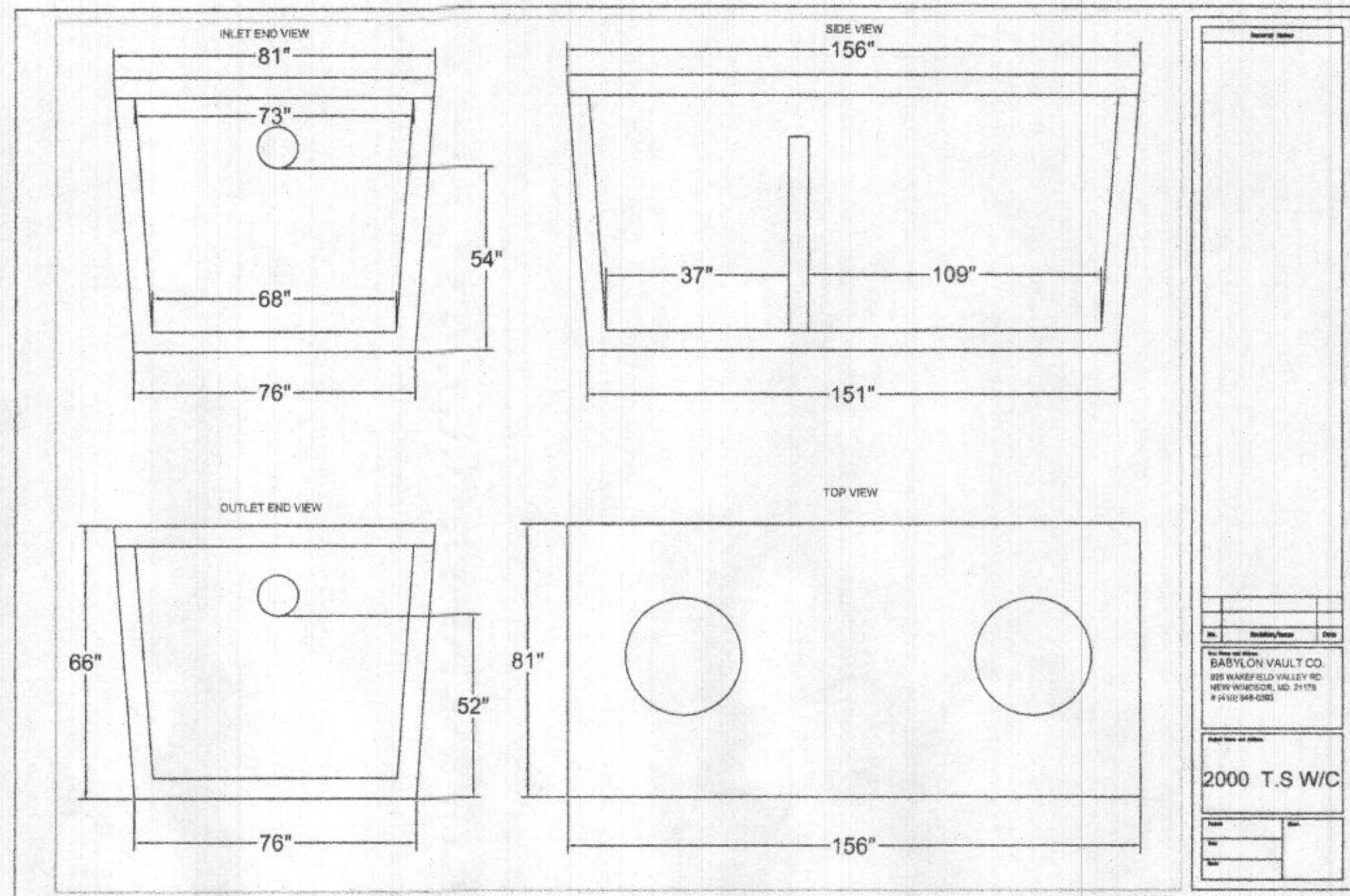
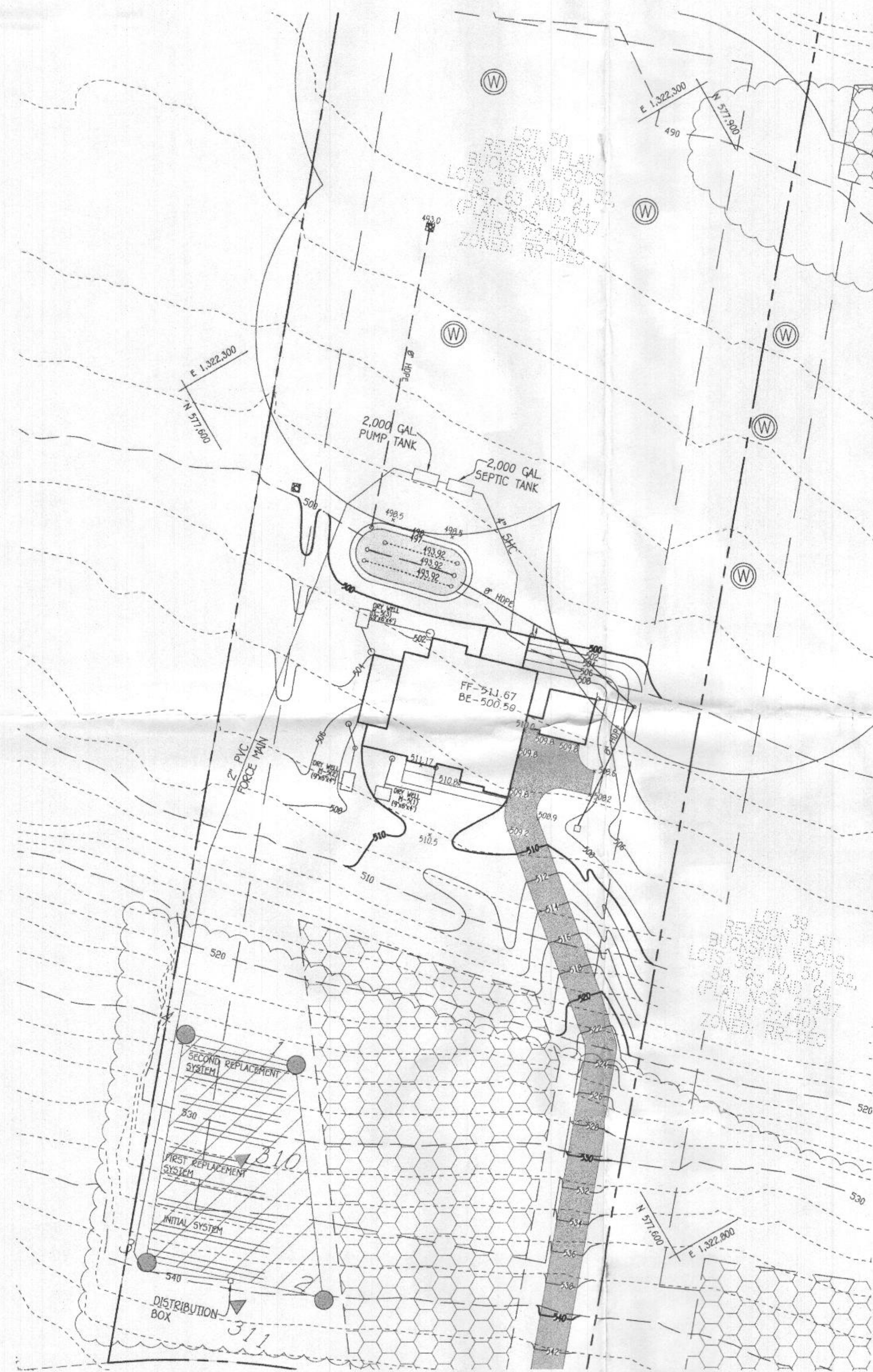
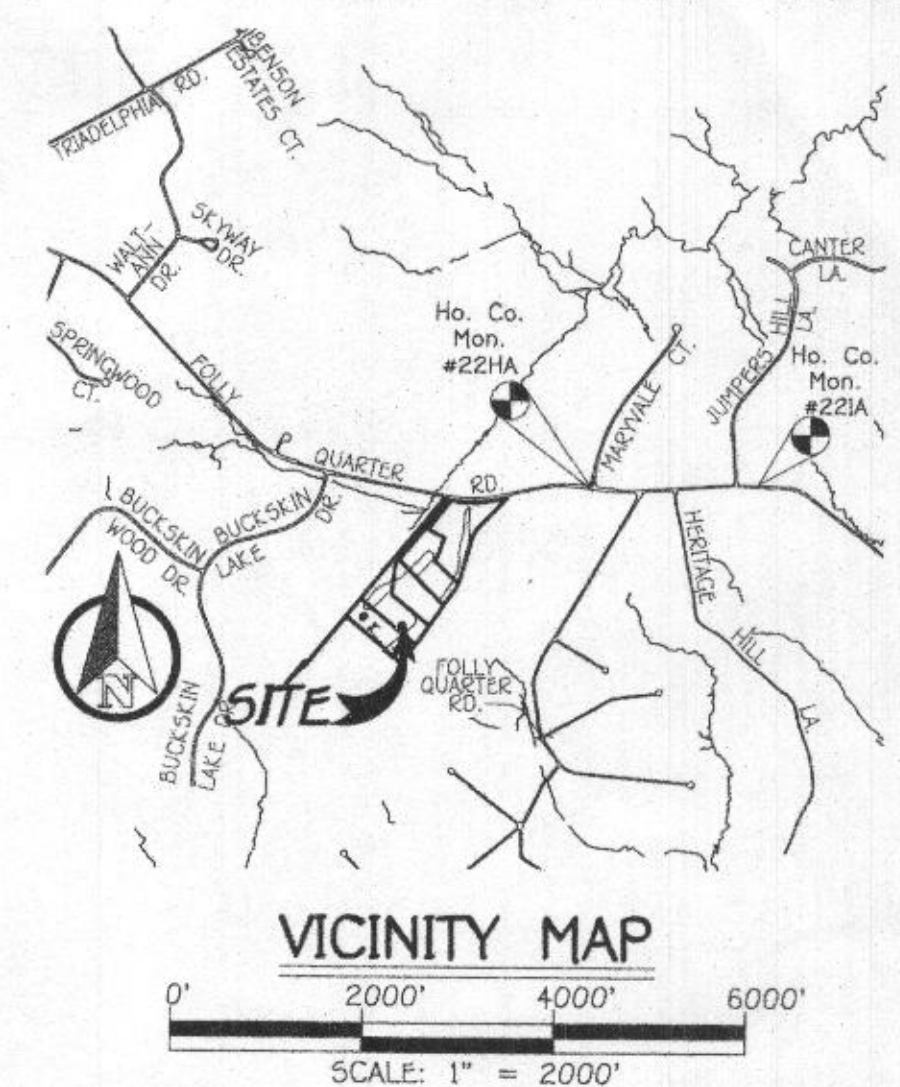


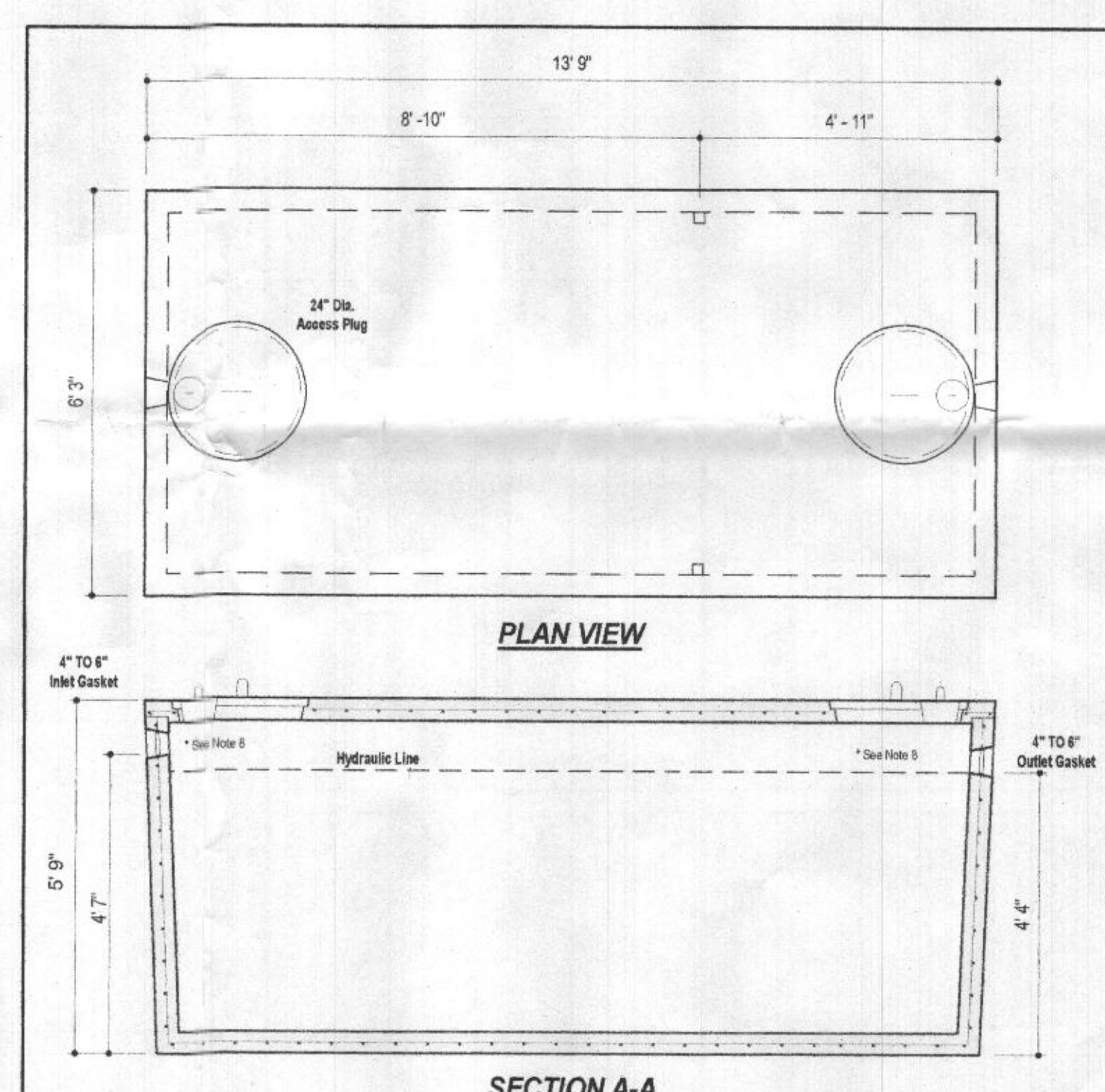
1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
3. ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
4. THE WELL HO-XX-XXXX HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
5. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
6. THE ENGINEER IS REGISTERED WITH MDE TO PROVIDE ON-SITE WASTEWATER SERVICE IN MARYLAND.



- LEGEND**
- EXISTING 2' CONTOURS
  - - - EXISTING 10' CONTOURS
  - EXISTING TREE LINE
  - ⊙ DENOTES WELL LOCATION
  - DENOTES FAILED PERC
  - ⊙ DENOTES PASSED PERC
  - ▨ DENOTES SEWAGE DISPOSAL AREA



FFE 511.67  
 BSE 500.50  
 INV. OUT OF HOUSE = 498.00  
 PROP. GROUND AT CLEANOUT #1 = 499.67  
 INV. INTO CLEANOUT = 497.91  
 INV. OUT OF CLEANOUT = 495.00  
 EX. GROUND AT SEPTIC TANK = 497.46  
 PROP. GRADE ABOVE SEPTIC TANK = 497.46  
 TOP OF SEPTIC TANK = 495.37  
 INV. INTO SEPTIC TANK = 494.43  
 INV. OUT OF SEPTIC TANK = 494.26  
 TOP OF PUMP TANK = 495.23  
 INV. INTO PUMP TANK = 494.16  
 INV. OUT OF PUMP TANK = 493.91  
 EX. GROUND AT DISTRIBUTION BOX = 539.99  
 INV. INTO DISTRIBUTION BOX = 537.25  
 INV. OUT OF DISTRIBUTION BOX = 537.15



**DESIGN DATA & GENERAL NOTES**

- 1) Concrete strength  $f_{cm}$  100 p.s.i. @ 28 days. Density = 150 pcf.
- 2) Cement - Portland Type III per ASTM C 150-92.
- 3) Admixtures & plasticizers per ASTM C 260-88 & C 484-92.
- 4) Reinforcing per ASTM A 193. Min. 1-1/2" cover.
- 5) Top slab sealed with butyl rope mastic.
- 6) 4" x 4" base, 8" top thickness.
- 7) Max 3" of cover.
- 8) Depending on use of tank, Inlet & Outlet baffles may be required by code.

**WEIGHT = 19,000 lbs.**

**BACK RIVER PRE-CAST, LLC**  
 P.O. Box 328  
 Glyndon, MD 21071  
 410-333-3394 office  
 410-333-4116 fax  
 www.backriverprecast.com

**2,000 GALLON PUMP TANK**  
 1-Compartment  
 Stock Item [Approx. 19,000 lbs]

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

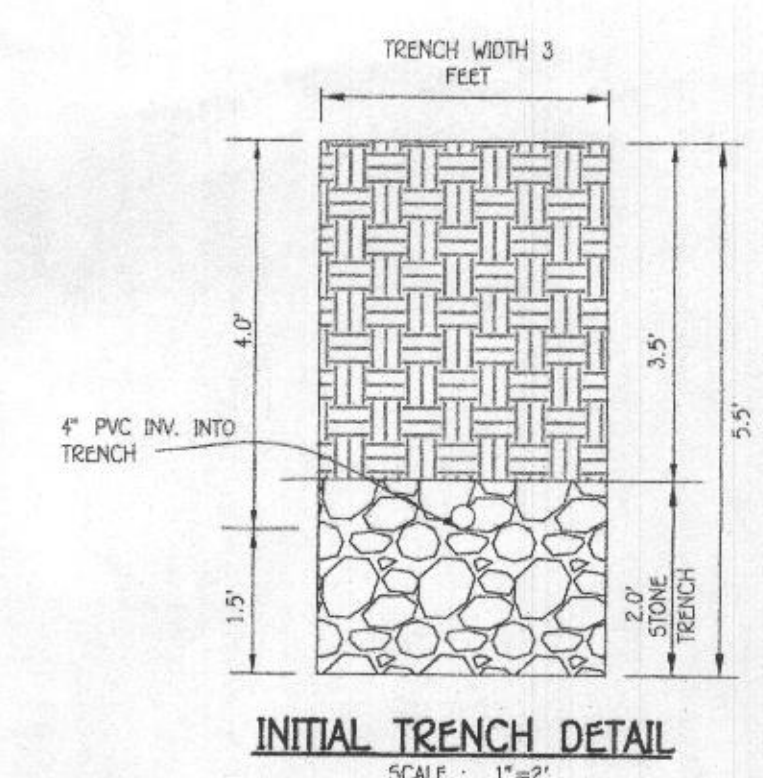
Environmental Health  
 OCT 18 2023

**TRENCH DATA:**

**TRENCH 1:**  
 EX. GROUND ABOVE = 539.0  
 INV. IN = 534.5  
 BOTTOM TRENCH = 533.5

**TRENCH 2:**  
 EX. GROUND ABOVE = 537.5  
 INV. IN = 533.0  
 BOTTOM TRENCH = 532.0

**TRENCH 3:**  
 EX. GROUND ABOVE = 535.9  
 INV. IN = 531.5  
 BOTTOM TRENCH = 530.5

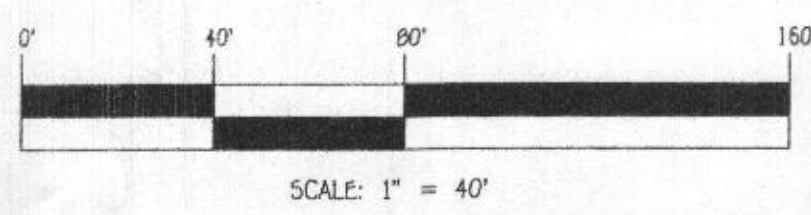


**INITIAL SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA. DESIGN FOR 6 BEDROOMS  
 LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
 APPLICATION RATE = 1.2  
 EFFECTIVE SIDEWALL BEGINS AT 4 FEET  
 TRENCH DEPTH = 5.5 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 1.5 FEET  
 SF OF DRAINFIELD = 900 GPD / 1.2 = 750 SF  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2 \times 1.5)) = 0.714$   
 TRENCH LENGTH = 250 SF x 0.714 = 178.50 FEET (USE 3 TRENCHES AT 60 LF.)  
 TRENCH SPACING =  $2D+W = ((2 \times 1.5) + 3) = 6'$  USE 10'

**2ND REPLACEMENT SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA. DESIGN FOR 6 BEDROOMS  
 LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
 APPLICATION RATE = 1.2  
 EFFECTIVE SIDEWALL BEGINS AT 4 FEET  
 TRENCH DEPTH = 6 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 2 FEET  
 SF OF DRAINFIELD = 900 GPD / 1.2 = 750 SF  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2 \times 2)) = 0.625$   
 TRENCH LENGTH = 250 SF x 0.625 = 156.25 FEET (USE 3 TRENCHES AT 52 LF.)  
 TRENCH SPACING =  $2D+W = ((2 \times 2) + 3) = 7'$  USE 10'

**1ST REPLACEMENT SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA. DESIGN FOR 6 BEDROOMS  
 LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
 APPLICATION RATE = 1.2  
 EFFECTIVE SIDEWALL BEGINS AT 4 FEET  
 TRENCH DEPTH = 6 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 2 FEET  
 SF OF DRAINFIELD = 900 GPD / 1.2 = 750 SF  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2 \times 2)) = 0.625$   
 TRENCH LENGTH = 250 SF x 0.625 = 156.25 FEET (USE 3 TRENCHES AT 52 LF.)  
 TRENCH SPACING =  $2D+W = ((2 \times 2) + 3) = 7'$  USE 10'

**SEPTIC SYSTEM**  
**INSTALLATION SITE PLAN**  
**4264 MAISEL FARM LANE**  
 LOT 50 ZONED: RR-DEO  
 TAX MAP NO.: 22 GRID NO.: 22 PARCEL NO.: 535  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER 17, 2023  
 SHEET 1 OF 2



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE  
 CLLETT CITY, MARYLAND 21044  
 (410) 461-2800

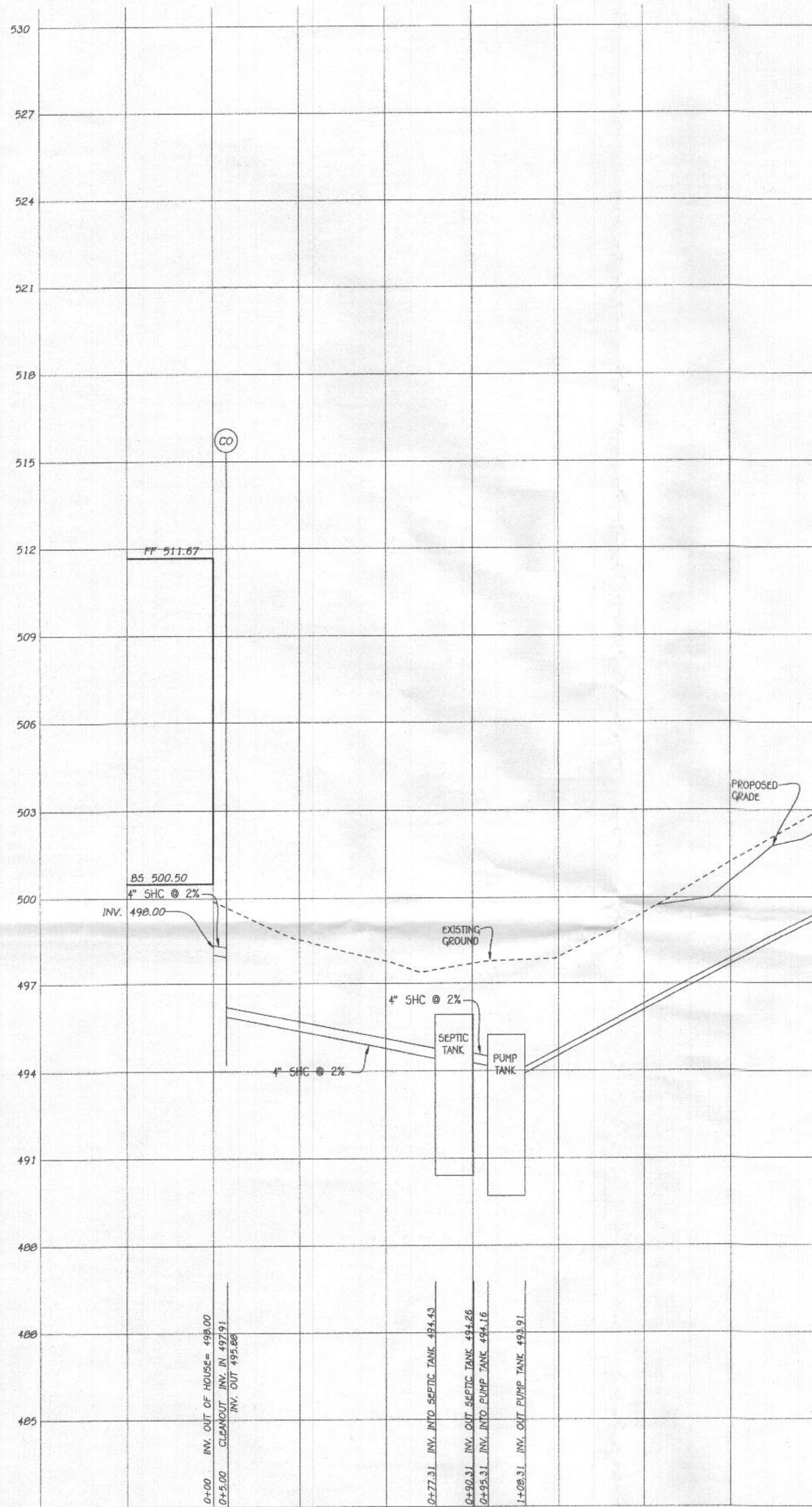
**OWNER**  
 ROXBURY FARM, LLC  
 C/O COLUMBIA DEVELOPERS LLC  
 6240 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044



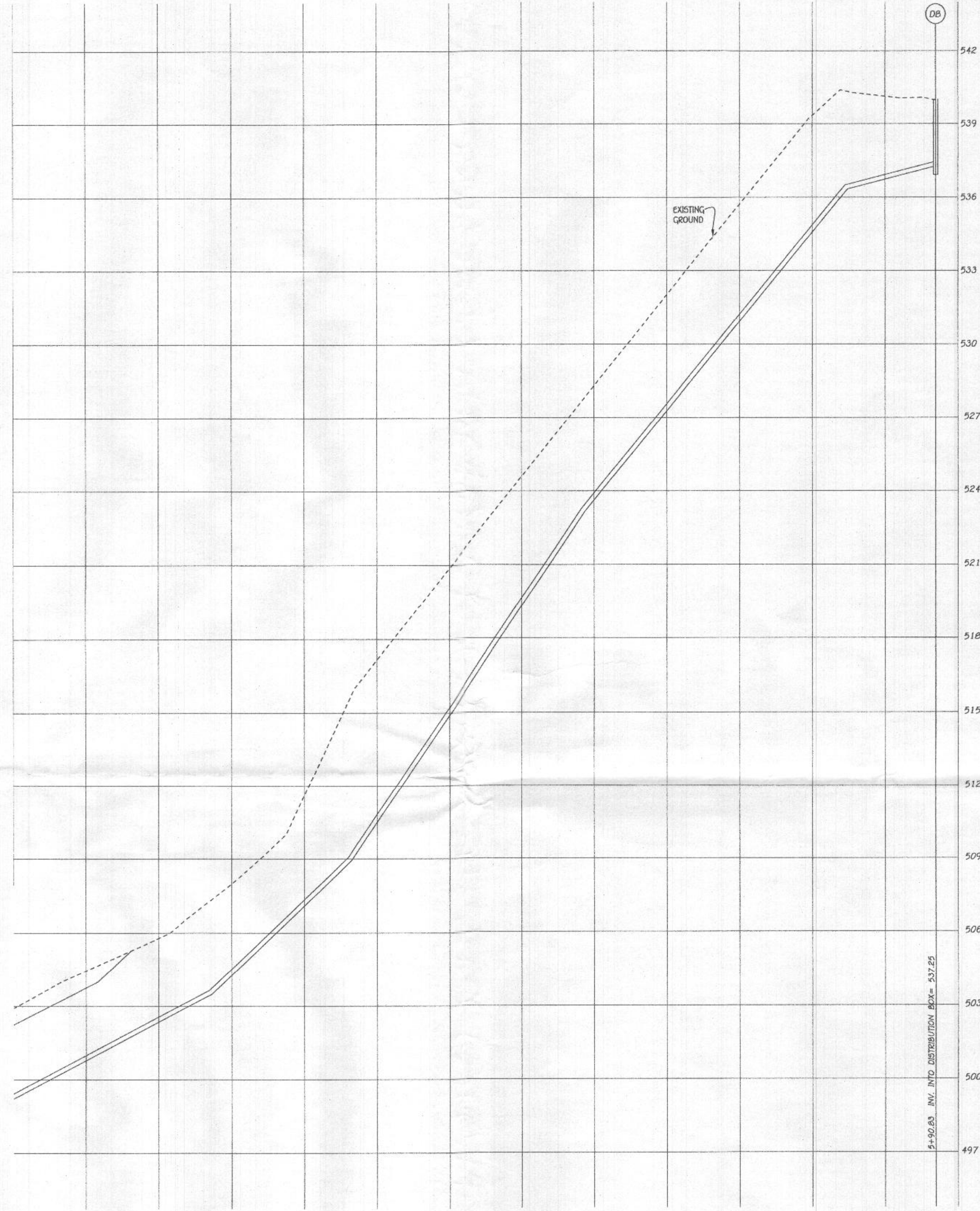
**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 46091, EXPIRATION DATE: 05/14/2025.

*Luke Groon* 10-17-23  
 Signature of Professional Engineer DATE

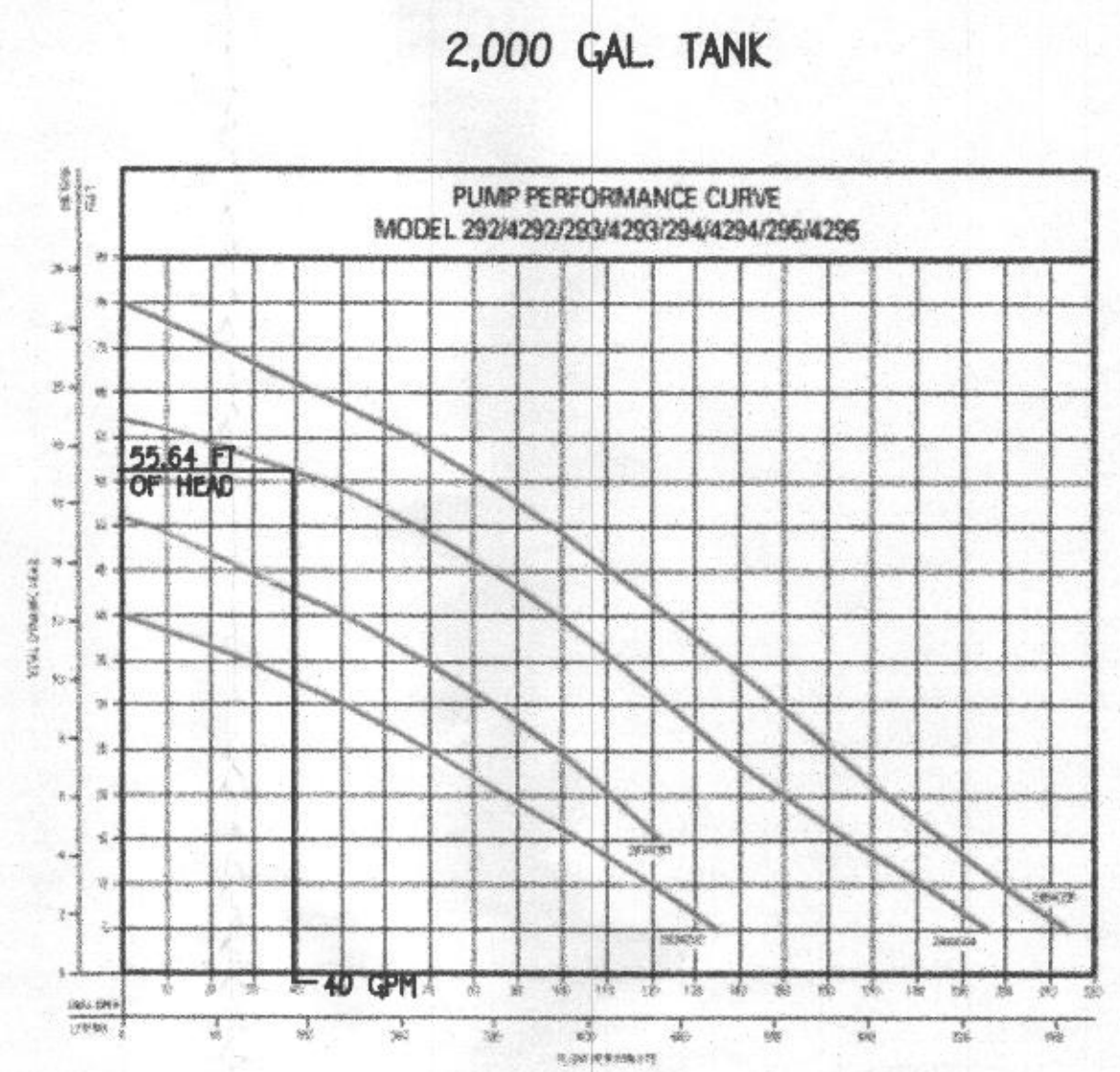
**DAILY STABILIZATION NOTE:**  
 CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHALL BE AS FOLLOWS:  
 1. FOR AREAS TO BE PAVED, THAT APPLICATION OF STONE BASE.  
 2. FOR AREAS TO BE VEGETATIVELY STABILIZED:  
 A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.  
 B. PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.  
 ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWN SLOPE SIDE.



**PLAN**  
SCALE: 1" = 30'



**SEPTIC PROFILE**  
SCALE: 1" = 30'



**2,000 GAL. TANK**

**PUMP PERFORMANCE CURVE**  
MODEL 292/4292/293/4293/294/4294/295/4295

2" SCH 40 PVC = 483 LF  
1 UNION @ 2 EQUIVALENT FEET = 2 LF  
7 1/8 HD @ 4 EQUIVALENT FEET = 28 LF  
TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 513 LF

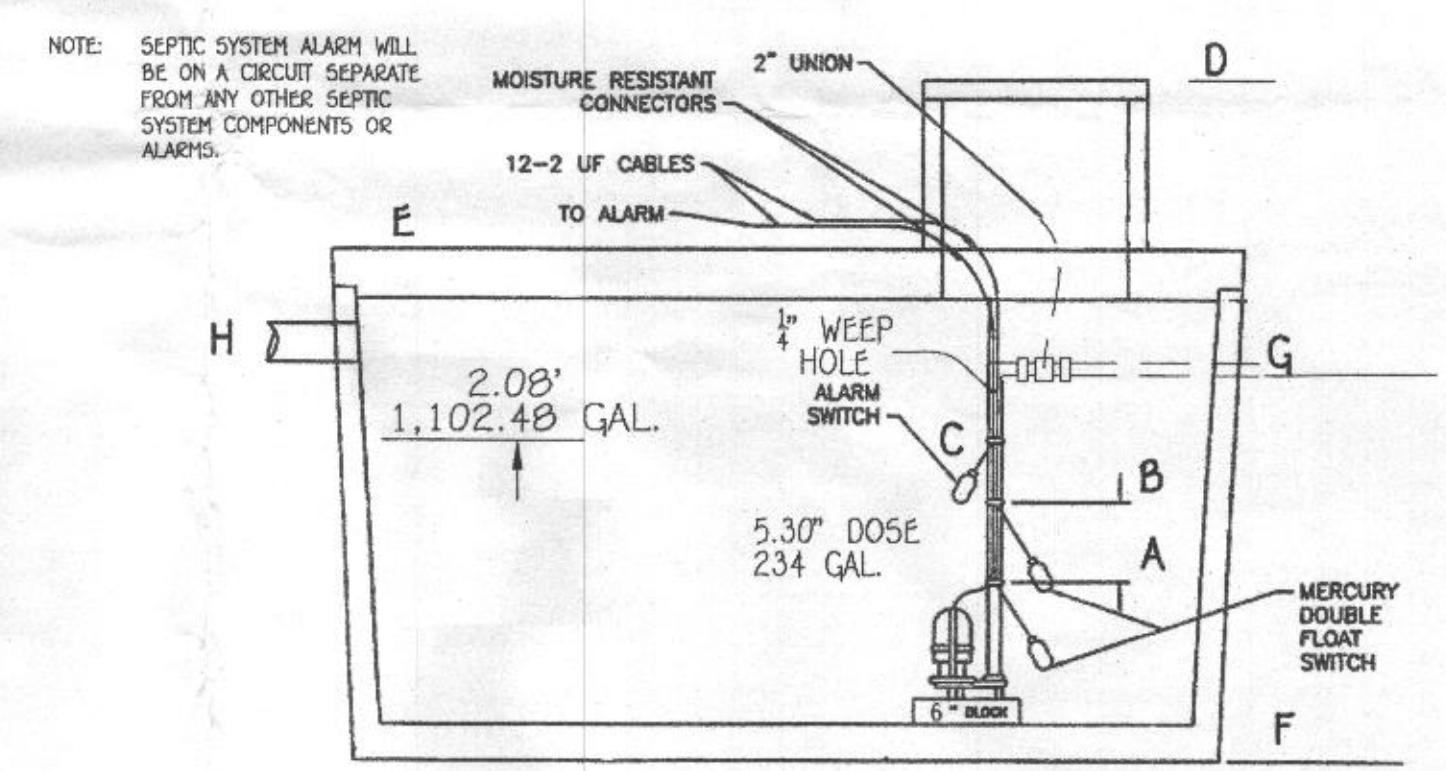
**DYNAMIC HEAD**  
483 LF X 2.05 FT PER 100 LF OF 2" PIPE = 9.90 FT OF FRICTION HEAD  
VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 2.40 FT OF HEAD  
HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV OF SYSTEM = 43.34 FT (PUMP OUT IS THE HIGHEST POINT)  
TOTAL DYNAMIC HEAD = 55.64 FT

1/6 DESIGN FLOW (900/6=150) PLUS VOLUME OF 2" PIPE (84 GALLONS)  
USE 234 GALLON DOSE (150 GALLON MINIMUM)  
RUN TIME = 5.85 MIN (40 GPM X 5.85 = 234 GALLON DOSE)

PUMP NEEDS TO HANDLE 5.85 GPM AT 55.64 FT OF HEAD  
USE 2 HP (ZOELLER MODEL 294 PUMP)

**PUMP ALARMS / INFORMATION**

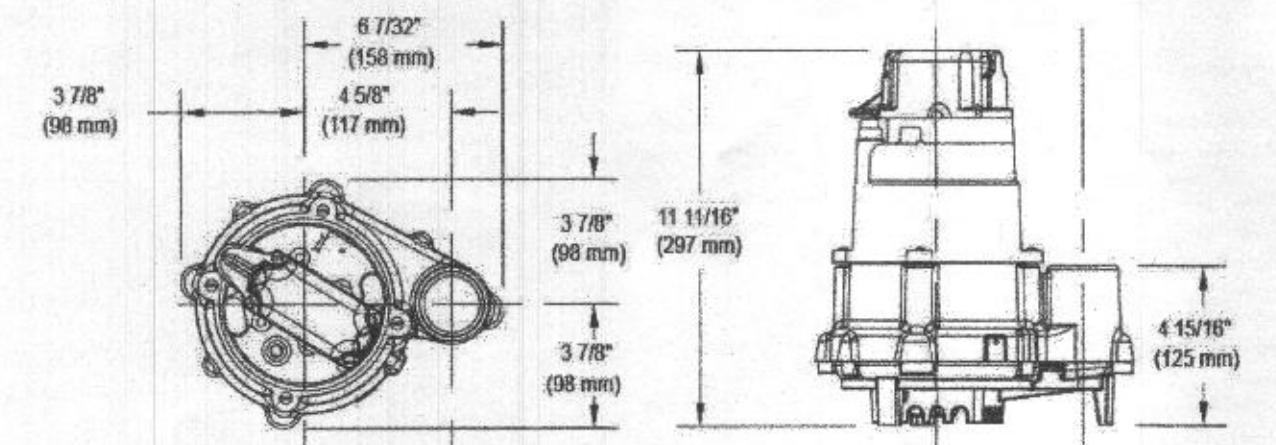
A PUMP OFF : 491.79'  
B PUMP ON : 492.23'  
C HIGH WATER ALARM : 492.73'  
D TOP OF ACCESS COVER : 495.23'  
E TOP OF TANK : 495.23'  
F BOTTOM OF TANK : 493.71'  
G DISCHARGE OUT OF TANK : 493.91'  
H INVERT INTO TANK : 494.16'



**PUMP TANK DETAIL**

1,102.48 GAL EMERGENCY STORAGE  
NOTE: THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.

ONE TWO CHAMBER  
2,000-GAL SEPTIC TANK  
& ONE 2,000-GAL PUMP TANK  
W/ ZOELLER BN294 PUMP OR EQUAL TO GRAVITY DISTRIBUTION FOR 6 BEDROOM SFD



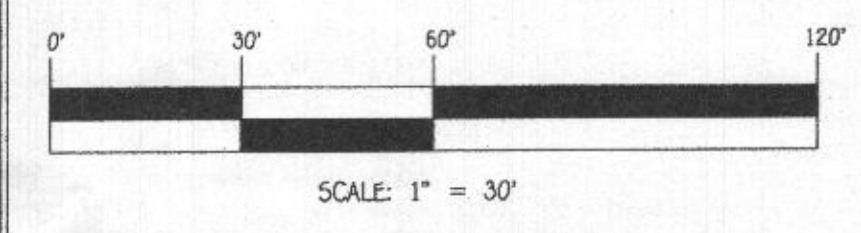
**PUMP DETAIL**  
NOT TO SCALE



**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. 46091, EXPIRATION DATE: 05/14/2025.

*Luke Shorn* 10-17-23  
Signature of Professional Engineer DATE



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
CLAYBROOK, MARYLAND 21116  
(410) 461-2995

**OWNER**  
ROXBURY FARM, LLC  
C/O COLUMBIA DEVELOPERS LLC  
6240 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044

**SEPTIC SYSTEM  
INSTALLATION SITE PLAN**  
**4264 MAISEL FARM LANE**

LOT 50 ZONED: RR-DEO  
TAX MAP NO.: 22 GRID NO.: 22 PARCEL NO.: 535  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: OCTOBER 17, 2023  
SHEET 2 OF 2

## Silvast, Zackary

---

**From:** Silvast, Zackary  
**Sent:** Wednesday, November 8, 2023 12:07 PM  
**To:** Luke Groom  
**Cc:** Paul Cavanaugh  
**Subject:** regarding OSDS plan revision comments for 4264 Maisel Farm Lane (Lot 50)  
**Attachments:** 4264 Maisel Farm Lane (new specs for lot 50).pdf

To Whom It May Concern,

I have thoroughly reviewed the submitted OSDS plan for Lot 50 of Maisel Farm Lane. I have the following revision comments that need to be addressed prior to stamping my approval. Please see below.

1. **We would prefer the inlets to the trenches to be no deeper than 2'.**
  - a. Trench detail needs to be reconstructed.
  - b. Should have proper labeling of ground surface, earth cover, correct effective depth range, etc.
2. **Current dbox location is not adequate. Should be closer to the beginning of the trenching.**
3. **I am going to provide a new spec sheet for this lot.**
  - a. I am willing to give 4' of side wall credit for the initial & 1<sup>st</sup> replacement system. (KEEPING AWAY FROM HOLE 2 as much as possible)
  - b. We need to maximize the area in the SDA all the way to the top & left if necessary to get everything straight & on contour (preferably get everything above contour 526\*).
4. **The current tank proposal locations are less than 100' from the wells, this is not acceptable.**
5. **Need to label the SDA. (accurate SF)**
6. **Need to provide well tag, should label them all properly on OSDS if shown.**

We look forward to your revisions and re-submittal. Thank you.

- ZS

### **Zack Silvast (LEHS)**

*Plan Review Supervisor - Water & Sewer Division*  
410-313-1777

Environmental Health Bureau  
Howard County Health Department

# FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS  
and LAND SURVEYORS

# Transmittal

Terrell A. Fisher, P.E., L.S.  
Earl D. Collins, P.E.  
Charles J. Crovo, Sr., P.E., L.S.

Paul W. Kriebel, P.E.  
Mark L. Robel, P.L.S.  
Aldo M. Vitucci, P.E.  
Frank Manalansan II, L.S.

Via:  Fax  Mail  Messenger  E-Mail  To Be Picked Up  
 Fax (original to follow via U.S. Mail)

To: <b>Bureau of Environmental Health</b> 8930 Stanford Blvd Columbia, MD 21045	Attn: <b>Zack Silvast</b> Fax: Phone:
---------------------------------------------------------------------------------------	---------------------------------------------

From: <b>Luke A. Groom, P.E.</b>	CC:
----------------------------------	-----

Re: <b>Buckskin Woods, Lot 50</b>	W.O.# <b>61260</b>
Date: <b>October 17, 2023</b>	Pages: <b>3</b> Page(s) Including this cover

We are forwarding: <input checked="" type="checkbox"/> Prints <input type="checkbox"/> Copy of Letter <input type="checkbox"/> Specifications <input type="checkbox"/> Shop drawings <input type="checkbox"/> Other <input type="checkbox"/> Urgent <input type="checkbox"/> For your use <input type="checkbox"/> As requested <input type="checkbox"/> For Review & Comment
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Remarks:

**Mr. Silvast:**

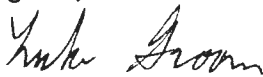
**In conjunction with the submission of the above referenced project.**

**Attached you should find:**

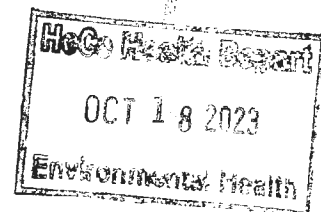
**3 Sets of Septic Installation Plan**

**Please feel free to contact me if you require any additional information.**

Regards,



Luke A. Groom, P.E.



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Pump on = 494.96  
 45 gpm  
492.58 = 238'  
 (0 10

Pump off = 495.38  
 15' from  
 high alarm  
492.58 = 2.8'  
 174 88 = 2.3'