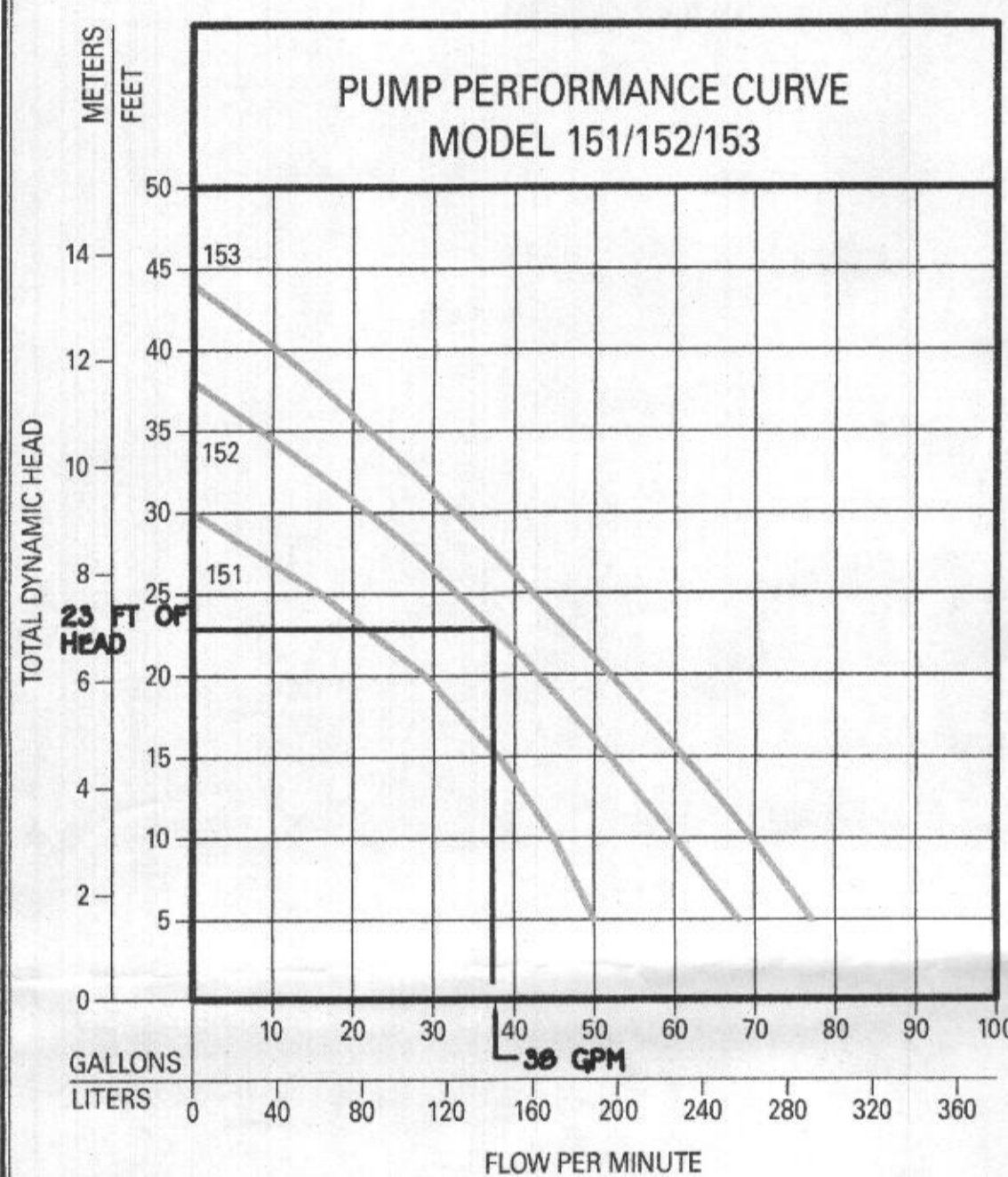
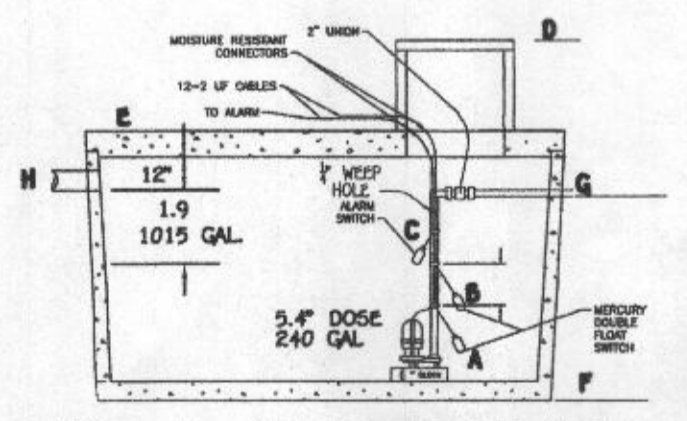


**PUMP TANK DETAIL**  
NOT TO SCALE



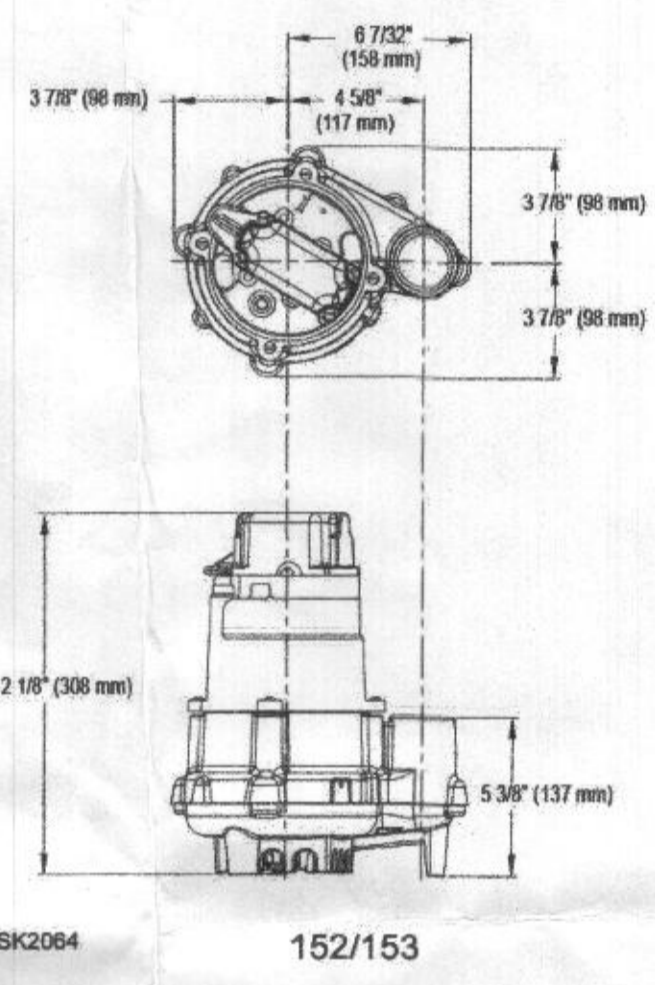
NOTE: SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.

**PUMP ALARMS / INFORMATION**  
 A PUMP OFF : 496.09  
 B PUMP ON : 496.54  
 C HIGH WATER ALARM : 497.04  
 D TOP OF ACCESS COVER : 900.69  
 E TOP OF TANK : 499.19  
 F BOTTOM OF TANK : 493.69  
 G DISCHARGE OUT OF TANK : 497.94  
 H INVERT INTO TANK : 498.19



1015 + 311 = 1326 CUFT 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.



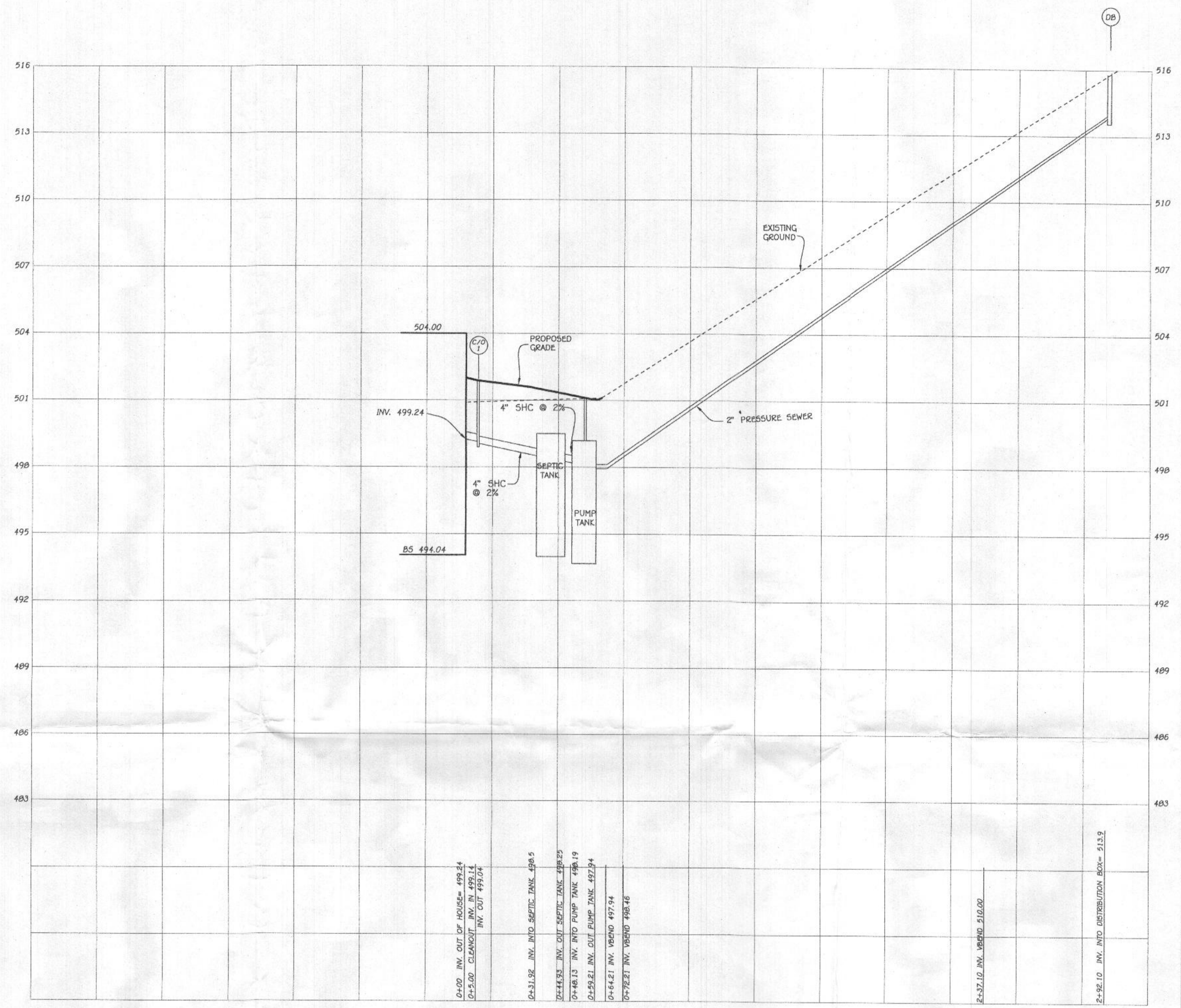
SK2444/SK2084 152/153

1 UNION @ 2 SCH. 40 PVC = 233 LF  
 3 1/8 HB @ 4 EQUIVALENT FEET = 12 LF  
 TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 247 LF

**DYNAMIC HEAD**  
 391 LF X 2.05 FT PER 100 LF OF 2" PIPE = 5.0 FT OF FRICTION HEAD  
 VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 2.03 FT OF FRICTION HEAD  
 HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV. OF SYSTEM = 20.3 FT (PUMP OUT IS THE HIGHEST POINT)  
 TOTAL DYNAMIC HEAD = 23.03 FT

1/6 DESIGN FLOW (1050/6=175) PLUS VOLUME OF 2" PIPE (62 GALLONS)  
 USE 237 GALLON DOSE (125 GALLON MINIMUM)  
 (RUN TIME = 6.3 MIN (38 GPM X 6.3 = 240 GALLON DOSE))

PUMP NEEDS TO HANDLE 38 GPM AT 23.03 FT OF HEAD  
 USE 0.4 HP (ZOELLER MODEL 152 PUMP)



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

FFE 504.00  
 BSE 494.04  
 INV. OUT OF HOUSE = 499.24  
 PROP. GROUND AT CLEANOUT # 1 = 501.90  
 INV. INTO CLEANOUT = 499.14  
 INV. OUT OF CLEANOUT = 499.04  
 EX. GROUND AT SEPTIC TANK = 501.60  
 PROP. GRADE ABOVE SEPTIC TANK = 501.60  
 TOP OF SEPTIC TANK = 499.50  
 INV. INTO SEPTIC TANK = 498.50  
 INV. OUT OF SEPTIC TANK = 498.25  
 EX. GROUND AT PUMP TANK = 501.2  
 PROP. GRADE ABOVE PUMP TANK = 501.1  
 TOP OF PUMP TANK = 499.19  
 INV. INTO PUMP TANK = 498.19  
 INV. OUT OF PUMP TANK = 497.94  
 EX. GROUND AT DISTRIBUTION BOX = 515.8  
 INV. INTO DISTRIBUTION BOX = 513.9  
 INV. OUT OF DISTRIBUTION BOX = 513.8



**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. 20748, EXPIRATION DATE: 02/22/2023.

*Michael Young*  
 Signature of Professional Engineer  
 10/1/22  
 DATE

Approved Septic System Plan  
 Howard County Health Department  
*Robert...*  
 Signature Date 10/28/2022

**SEPTIC SYSTEM  
 INSTALLATION SITE PLAN  
 BUCKSKIN WOODS  
 LOT 55  
 4251 BUCKSKIN LAKE DRIVE**

ZONED: RC-DEO PLAT NO.: 11657  
 TAX MAP NO.: 22 GRID NO.: 22 PARCEL NO.: 535  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1"=100' DATE: OCTOBER 4, 2022  
 SHEET 2 OF 2

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 15272 BALDWIN NATIONAL PARK  
 ELLETTT CITY, MARYLAND 21042  
 (410) 461-2999

**OWNER**  
 JEFFREY O RANDOLPH  
 YOLANA YOUNG  
 7713 LONGBOTTOM RD  
 ELK RIDGE MD 21075

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-95-2174 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 EXISTING WELL (HO-95-2174) ON BUCKSKIN WOODS LOT 55 (PLAT 11657) IS INSTALLED AT A LANDSCAPE POSITION THAT IS DOWNGRADE FROM APPROVED SEWAGE DISPOSAL AREAS ON LOTS 30 AND 31, RESPECTIVELY. WHEN THE RESIDENCE IS CONSTRUCTED ON LOT 55, THE HEALTH DEPARTMENT HIGHLY RECOMMENDS THAT A WATER SAMPLE IS OBTAINED AS SOON AS POSSIBLE FOR ANALYSES OF COLIFORM AND E.COLI BACTERIA. SHOULD THE WELL BE CONTAMINATED WITH BACTERIA, WELL DISINFECTION MUST BE CONDUCTED IN ACCORDANCE WITH CODE OF MARYLAND ANNOTATED REGULATIONS (COMAR, 26.04.04.24). IF THE DISINFECTION PROCEDURE PRESCRIBED BY COMAR ARE IMPLEMENTED AND BACTERIA CONTAMINATION PERSISTS, A REPLACEMENT WELL MUST BE INSTALLED AND THE EXISTING CONTAMINATED WELL MUST BE SEALED BY A LICENSED WELL DRILLER. USE AND OCCUPANCY SHALL NOT BE PERMITTED BY THE HEALTH DEPARTMENT UNTIL THE ORIGINAL WELL ABANDONMENT REPORT FOR THE CONTAMINATED WELL IS RECEIVED BY THE HEALTH DEPARTMENT. THE REPLACEMENT WELL YIELD AND CONSTRUCTION ARE APPROVED BY APPROVAL OF THE WELL COMPLETION REPORT, AND WATER ANALYSES FROM THE REPLACEMENT WELL ARE PROVEN TO BE FREE OF BACTERIA.
7. THE REPLACEMENT WELL IS DOWNGRADE OF SEVERAL APPROVED SEWAGE DISPOSAL AREAS (SDA) THOUGH SHALL NOT BE INSTALLED WITHIN 200 FEET OF A SEPTIC SYSTEM DISTRIBUTION TRENCH OR AN APPROVED SDA. THE WELL MUST BE INSTALLED AS STEEL CASING TO A DEPTH OF 50 FEET, OR 10 FEET INTO COMPETENT ROCK, WHICHEVER IS DEEPER.

**INITIAL SYSTEM**  
SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 7 BEDROOMS  
LOADING RATE = 7 BEDROOMS X 150 GPD/BEDROOM = 1050 GPD  
APPLICATION RATE = 1.2  
EFFECTIVE SIDEWALL BEGINS AT 3 FEET  
TRENCH DEPTH = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 3 FEET  
SF OF DRAINFIELD = 1050 GPD / 1.2 = 875 SF  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2*3)) = 0.5$   
TRENCH LENGTH = 291.67 SF x 0.5 = 145.83 FEET  
(USE 3 TRENCHES AT 48.61 L.F.)  
TRENCH SPACING = 2D+W = ((2\*3) + 3) = 9' USE 10'

**1ST REPLACEMENT SYSTEM**  
SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 7 BEDROOMS  
LOADING RATE = 7 BEDROOMS X 150 GPD/BEDROOM = 1050 GPD  
APPLICATION RATE = 1.2  
EFFECTIVE SIDEWALL BEGINS AT 3 FEET  
TRENCH DEPTH = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 3 FEET  
SF OF DRAINFIELD = 1050 GPD / 1.2 = 875 SF  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2*3)) = 0.5$   
TRENCH LENGTH = 291.67 SF x 0.5 = 145.83 FEET  
(USE 3 TRENCHES AT 48.61 L.F.)  
TRENCH SPACING = 2D+W = ((2\*3) + 3) = 9' USE 10'

**2ND REPLACEMENT SYSTEM**  
SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 7 BEDROOMS  
LOADING RATE = 7 BEDROOMS X 150 GPD/BEDROOM = 1050 GPD  
APPLICATION RATE = 1.2  
EFFECTIVE SIDEWALL BEGINS AT 3 FEET  
TRENCH DEPTH = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 3 FEET  
SF OF DRAINFIELD = 1050 GPD / 1.2 = 875 SF  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH =  $(W+2)/(W+1+2D) = (3+2)/(3+1+(2*3)) = 0.5$   
TRENCH LENGTH = 291.67 SF x 0.5 = 145.83 FEET  
(USE 2 TRENCHES AT 72.92 L.F.)  
TRENCH SPACING = 2D+W = ((2\*3) + 3) = 9' USE 10'



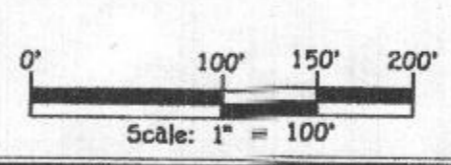
**LEGEND**

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	EXISTING TREES
457.70	SPOT ELEVATION
-S-S-	SILT FENCE
---	LIMITS OF DISTURBANCE
---	DENOTES 12% - 24% SLOPES
///	DENOTES SEWAGE DISPOSAL AREA

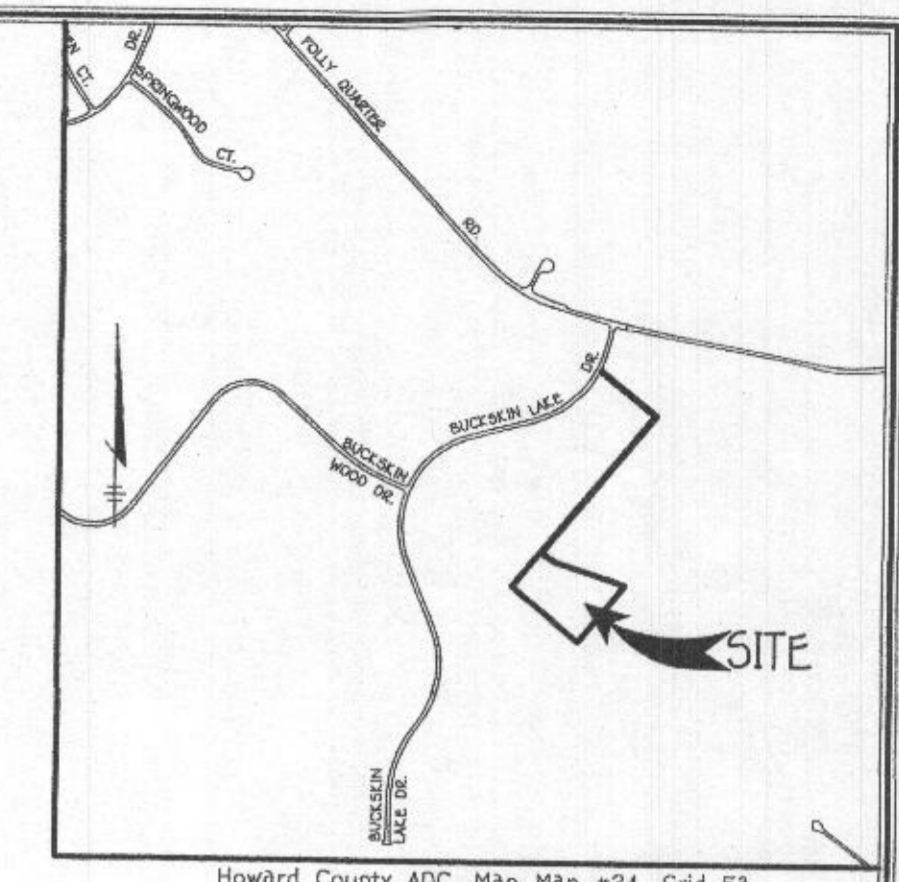
**PLAN**  
SCALE: 1" = 40'



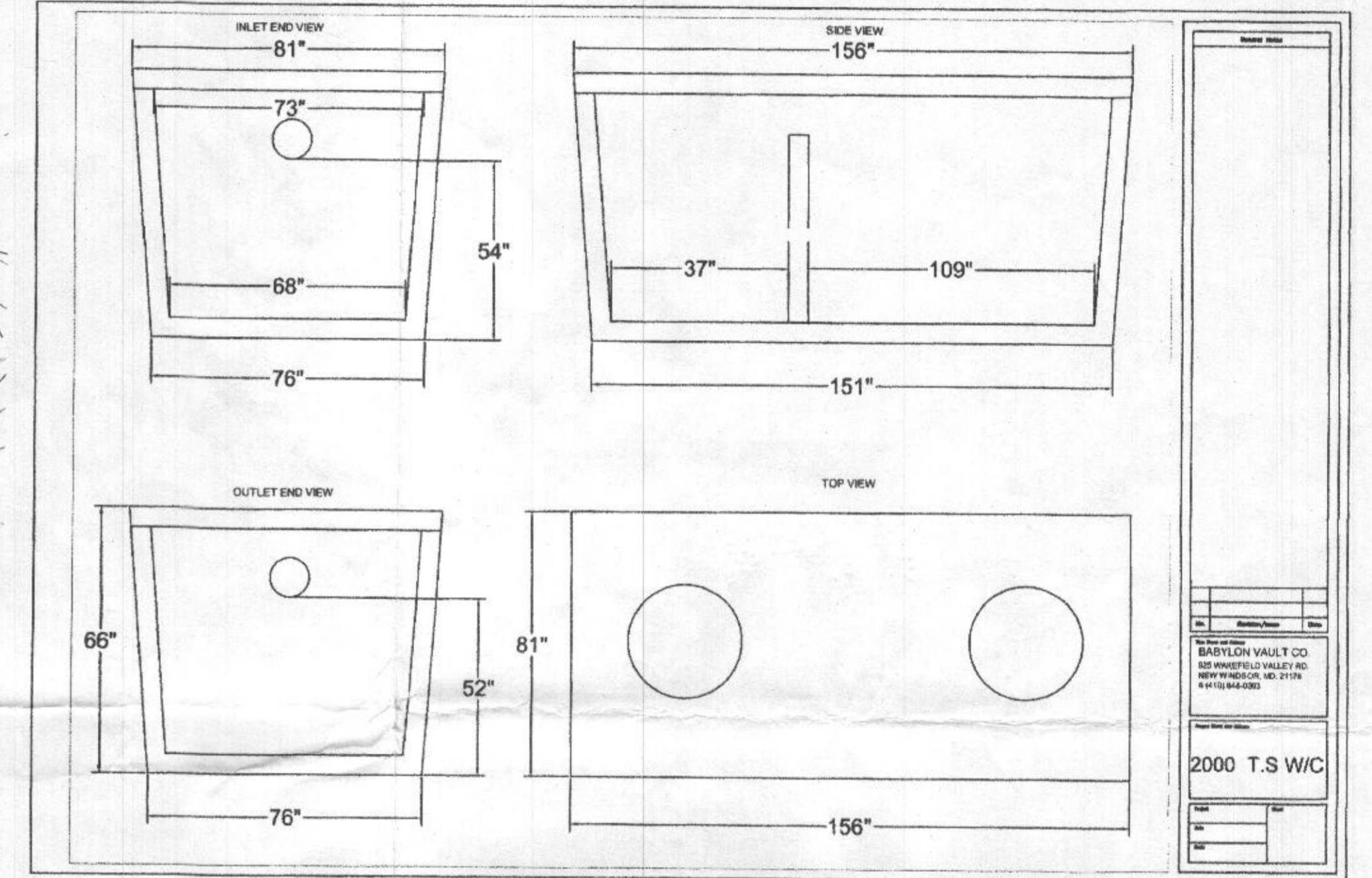
**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 02/22/2025.  
Signature: Michael J. Vitale DATE: 2/5/24



**ADDRESS**  
4251 BUCKSKIN LAKE DRIVE



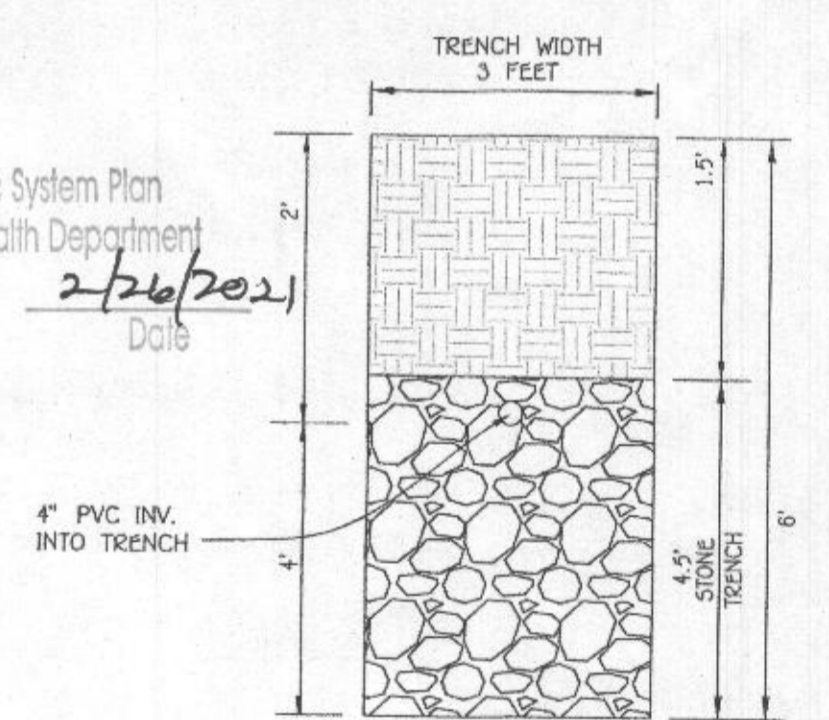
VICINITY MAP  
SCALE: 1" = 1200'



**TRENCH DATA:**  
TRENCH 1:  
EX. GROUND ABOVE = 515.8  
INV. IN = 513.8  
BOTTOM TRENCH = 509.8  
TRENCH 2:  
EX. GROUND ABOVE = 515  
INV. IN = 513  
BOTTOM TRENCH = 509.0  
TRENCH 3:  
EX. GROUND ABOVE = 514  
INV. IN = 512  
BOTTOM TRENCH = 508.0

Approved Septic System Plan  
Howard County Health Department  
Signature: [Signature] DATE: 2/26/2024

**VOID**



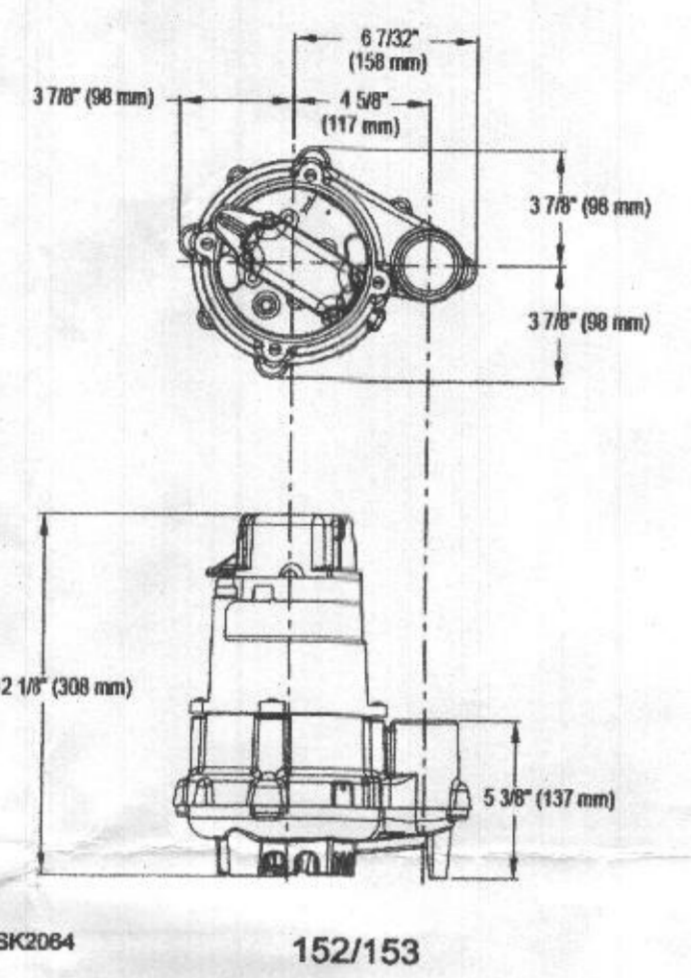
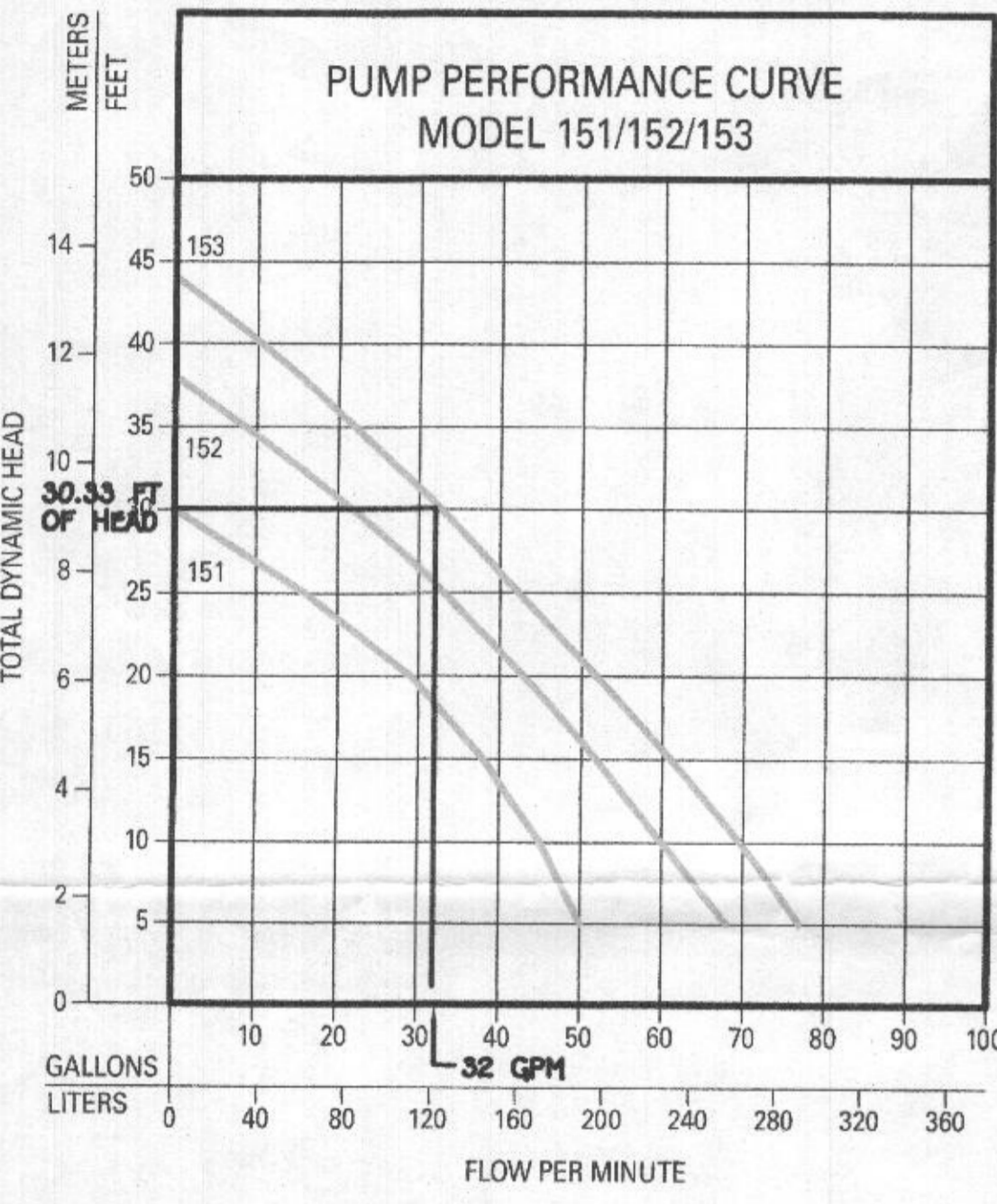
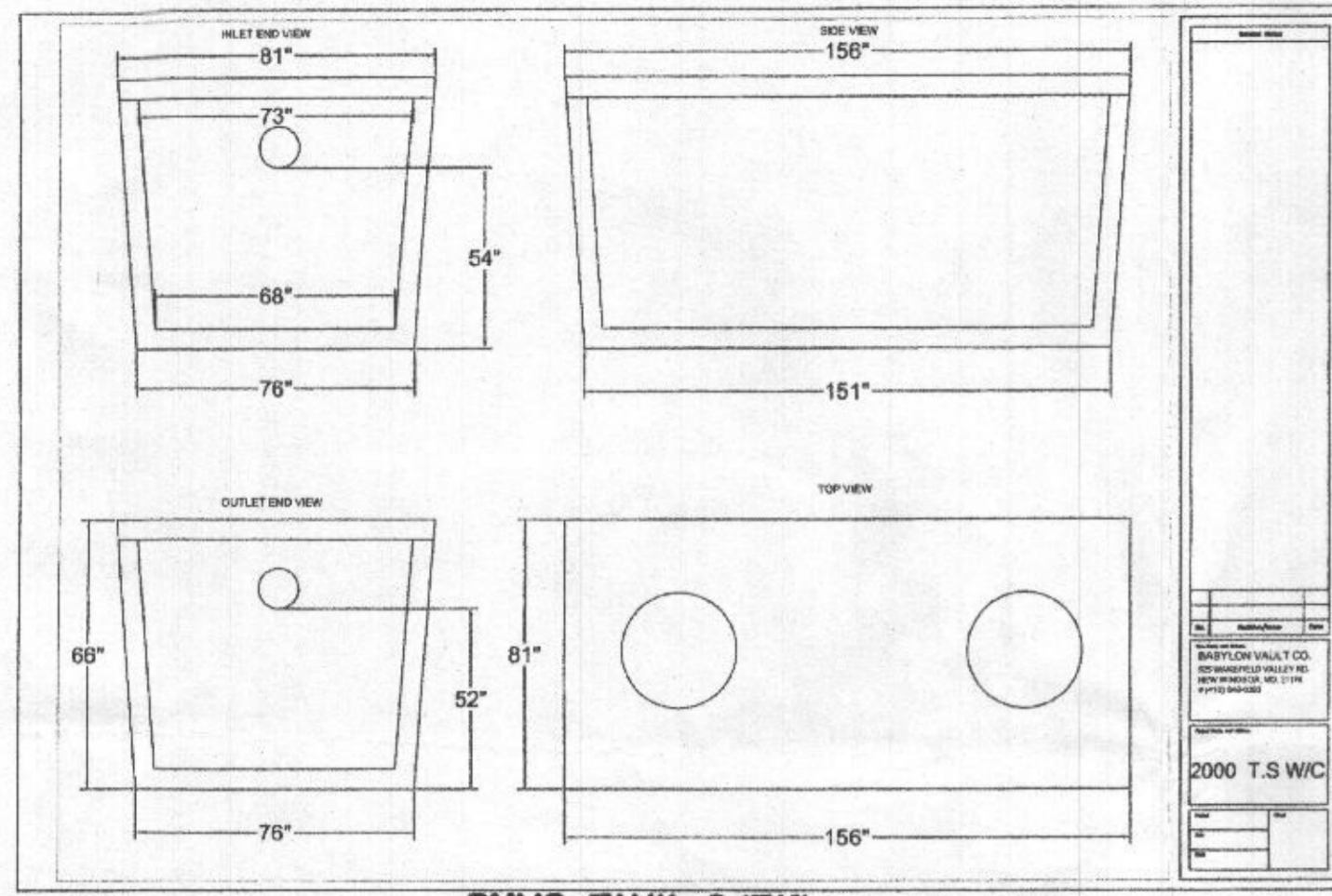
INITIAL TRENCH DETAIL

**SOILS LEGEND**

SOIL	NAME	CLASS	'K' VALUE
BeB	Benevola silt loam, 3 to 8 percent slopes	B	.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	.37
GqB	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	.49
MaC	Manor loam, 8 to 15 percent slopes	B	.32
WHA	Wiltshire silt loam, 0 to 3 percent slopes	C	.37

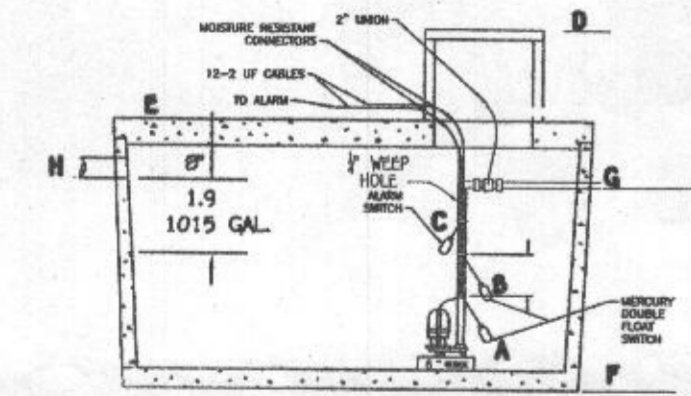
**SEPTIC SYSTEM INSTALLATION SITE PLAN**  
**BUCKSKIN WOODS**  
LOT 55  
4251 BUCKSKIN LAKE DRIVE  
ZONED: RC-DEO PLAT NO.: 11657  
TAX MAP NO.: 22 GRID NO.: 22 PARCEL NO.: 535  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1"=100' DATE: JANUARY 14, 2021  
SHEET 1 OF 2

**OWNER**  
JEFFREY O RANDOLPH  
YOLANA YOUNG  
7713 LONGBOTTOM RD  
ELK RIDGE MD 21075



**NOTE:** SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.

**PUMP ALARMS / INFORMATION**  
 A PUMP OFF : 491.54  
 B PUMP ON : 491.99  
 C HIGH WATER ALARM : 492.49  
 D TOP OF ACCESS COVER : 496.89  
 E TOP OF TANK : 494.89  
 F BOTTOM OF TANK : 489.39  
 G DISCHARGE OUT OF TANK : 493.72  
 H INVERT INTO TANK : 493.89

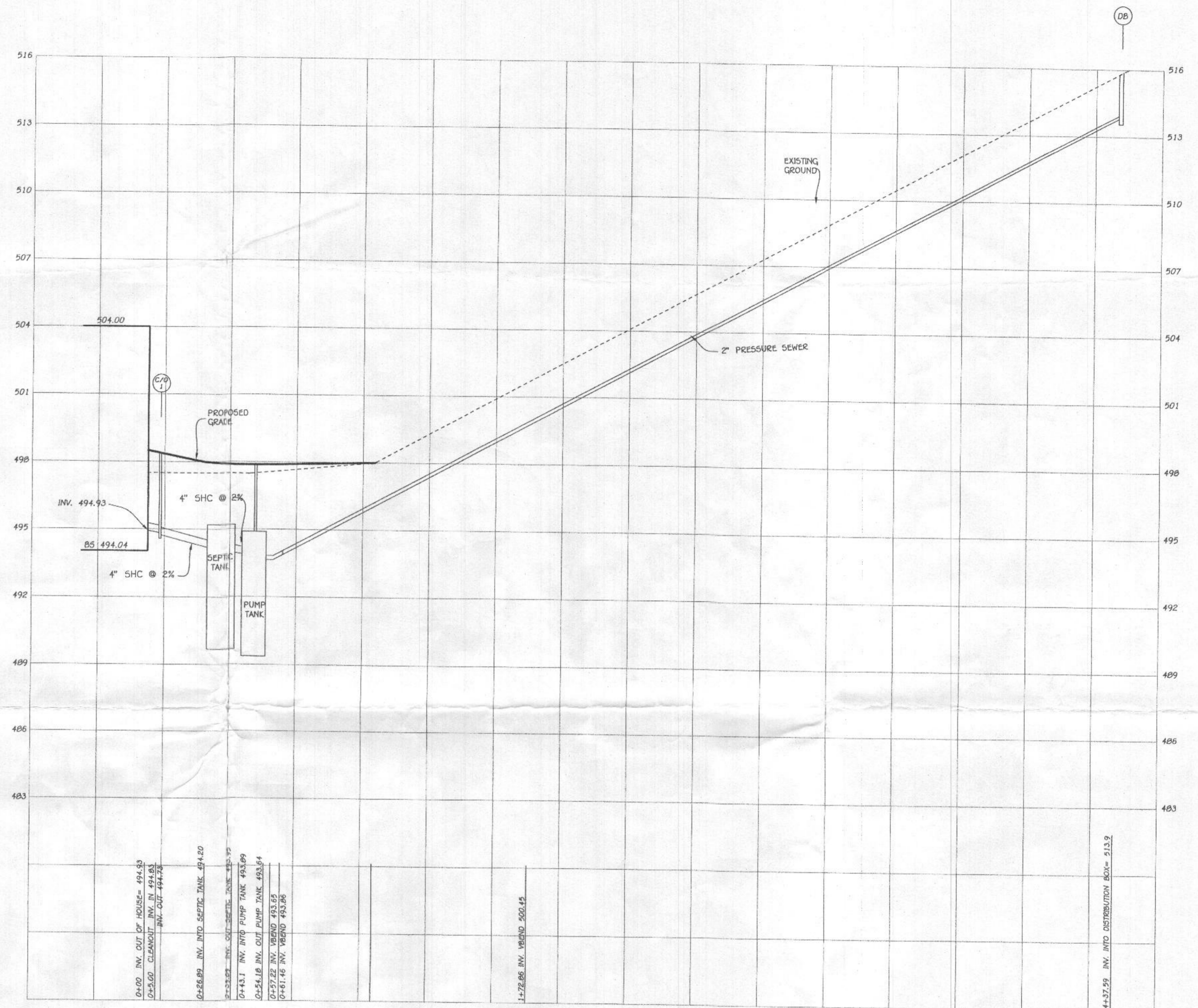


**NOTE:** THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.

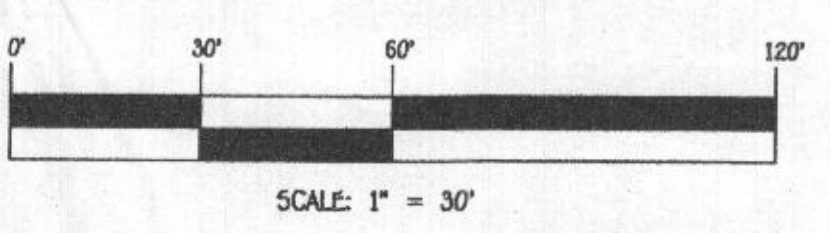
1 UNION @ 2 EQUIVALENT FEET = 2 LF  
 3 1/8 HB @ 4 EQUIVALENT FEET = 12 LF  
 TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 391 LF

**DYNAMIC HEAD**  
 391 LF X 2.05 FT PER 100 LF OF 2" PIPE = 8.0 FT OF FRICTION HEAD  
 VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 2.03 FT OF FRICTION HEAD  
 HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV. OF SYSTEM = 20.3 FT (PUMP OUT IS THE HIGHEST POINT)  
 TOTAL DYNAMIC HEAD = 30.33 FT

1/6 DESIGN FLOW (1050/6=175) PLUS VOLUME OF 2" PIPE (62 GALLONS)  
 USE 237 GALLON DOSE (125 GALLON MINIMUM)  
 (RUN TIME = 7.5 MIN (32 GPM X 7.5 = 240 GALLON DOSE))  
 PUMP NEEDS TO HANDLE 32 GPM AT 30.33 FT OF HEAD  
 USE 0.5 HP (ZOELLER MODEL 153 PUMP)



FFE 504.00  
 BSE 494.04  
 INV. OUT OF HOUSE = 594.93  
 PROP. GROUND AT CLEANOUT # 1 = 502.0  
 INV. INTO CLEANOUT = 494.83  
 INV. OUT OF CLEANOUT = 494.73  
 EX. GROUND AT SEPTIC TANK = 497.8  
 PROP. GRADE ABOVE SEPTIC TANK = 498.0  
 TOP OF SEPTIC TANK = 495.20  
 INV. INTO SEPTIC TANK = 494.20  
 INV. OUT OF SEPTIC TANK = 493.95  
 EX. GROUND AT PUMP TANK = 497.89  
 PROP. GRADE ABOVE PUMP TANK = 497.89  
 TOP OF PUMP TANK = 494.89  
 INV. INTO PUMP TANK = 493.89  
 INV. OUT OF PUMP TANK = 493.72  
 EX. GROUND AT DISTRIBUTION BOX = 515.8  
 INV. INTO DISTRIBUTION BOX = 513.9  
 INV. OUT OF DISTRIBUTION BOX = 513.8



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 GLEETOWN, MARYLAND 21042  
 (410) 461-2295

**OWNER**  
 JEFFREY O RANDOLPH  
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**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. 20746, EXPIRATION DATE: 02/22/2019-23

*Michael J. Fisher*  
 Signature of Professional Engineer  
 DATE: 2/26/2021

Approved Septic System Plan  
 Howard County Health Department  
*R. Bielen*  
 Signature Date: 2/26/2021

**SEPTIC SYSTEM**  
**INSTALLATION SITE PLAN**  
**BUCKSKIN WOODS**  
 LOT 55  
 4251 BUCKSKIN LAKE DRIVE  
 ZONED: RC-DEO PLAT NO.: 11657  
 TAX MAP NO.: 22 GRID NO.: 22 PARCEL NO.: 535  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1"=100' DATE: JANUARY 14, 2021  
 SHEET 2 OF 2





