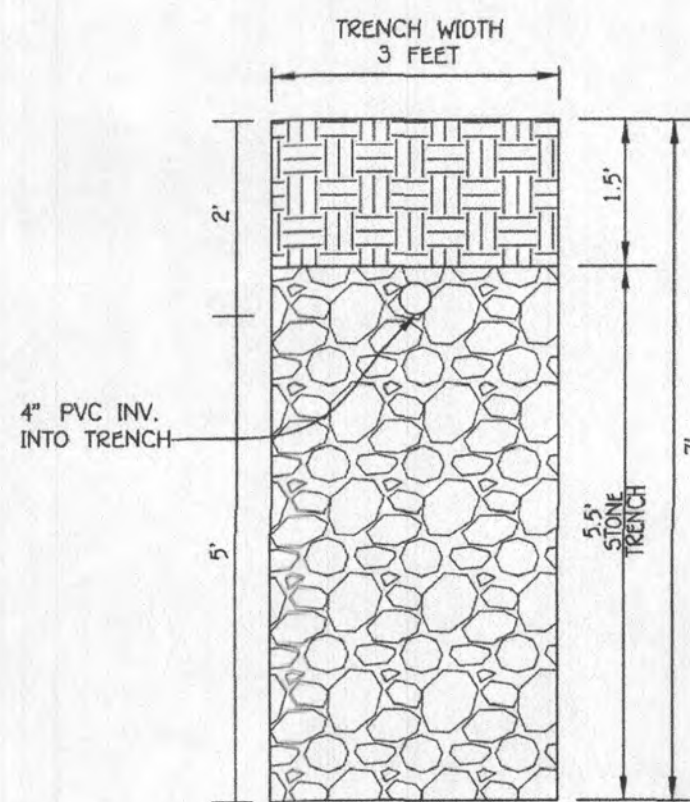


SOILS LEGEND			
SOIL	NAME	CLASS	K' VALUE
GmB	Glenview silt loam, 3 to 8 percent slopes	C	.55
GgB	Glenelg loam, 3 to 8 percent slopes	B	.37
GgC	Glenelg loam, 8 to 15 percent slopes	B	.43

LEGEND

- EXISTING 2' CONTOURS
- EXISTING 10' CONTOURS
- EXISTING TREE LINE
- SOIL LINES AND TYPES
- DENOTES EXISTING WELL
- DENOTES FAILED PERC
- DENOTES PASSED PERC
- DENOTES ALTERNATIVE WELL LOCATION
- DENOTES PROPOSED HOUSE ADDITION
- DENOTES 15%-24.9% SLOPES
- DENOTES 25% AND GREATER SLOPE
- AVAILABLE TRENCH LENGTH
- DENOTES SEWAGE DISPOSAL AREA



INITIAL TRENCH DETAIL
SCALE 1" = 2'

TRENCH DATA:

TRENCH 1:
EX. GROUND ABOVE = 532.27
INV. IN = 530.27
BOTTOM TRENCH = 525.27

TRENCH 2:
EX. GROUND ABOVE = 531.60
INV. IN = 529.60
BOTTOM TRENCH = 524.60

TRENCH 3:
EX. GROUND ABOVE = 530.48
INV. IN = 528.48
BOTTOM TRENCH = 523.48

DATE	DESCRIPTION
12-13-23	REVISE PUMP TANK LOCATION

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: 09/14/2025.



Yule Brown
Signature of Professional Engineer

10-20-23
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTRAL SOURCE OFFICE: PARC - 10272 BALTIMORE NATIONAL FILE
ELICOTT CITY, MARYLAND 21042
(410) 461 - 2995

#12940 TRIADELPHIA MILL ROAD
B.R.L. = BUILDING RESTRICTION LINE
FIRST FLOOR ELEVATION: 528.61'

PROPERTY OF HYUN KIL AND
SUNG KIL
LIBER 15427, FOLIO 485
ZONED: RR-DEO

PROPERTY OF VAN STACKS AND
KELLY STACKS
LIBER 17417, FOLIO 484
ZONED: RR-DEO

PROPERTY OF
TEN OAKS LLC
LIBER 4271, FOLIO 284
ZONED: RR-DEO

PROPERTY OF JOHN
DOUGHERTY AND
NANCY DOUGHERTY
LIBER 8875, FOLIO 61
ZONED: RR-DEO

SEPTIC INSTALL PLAN

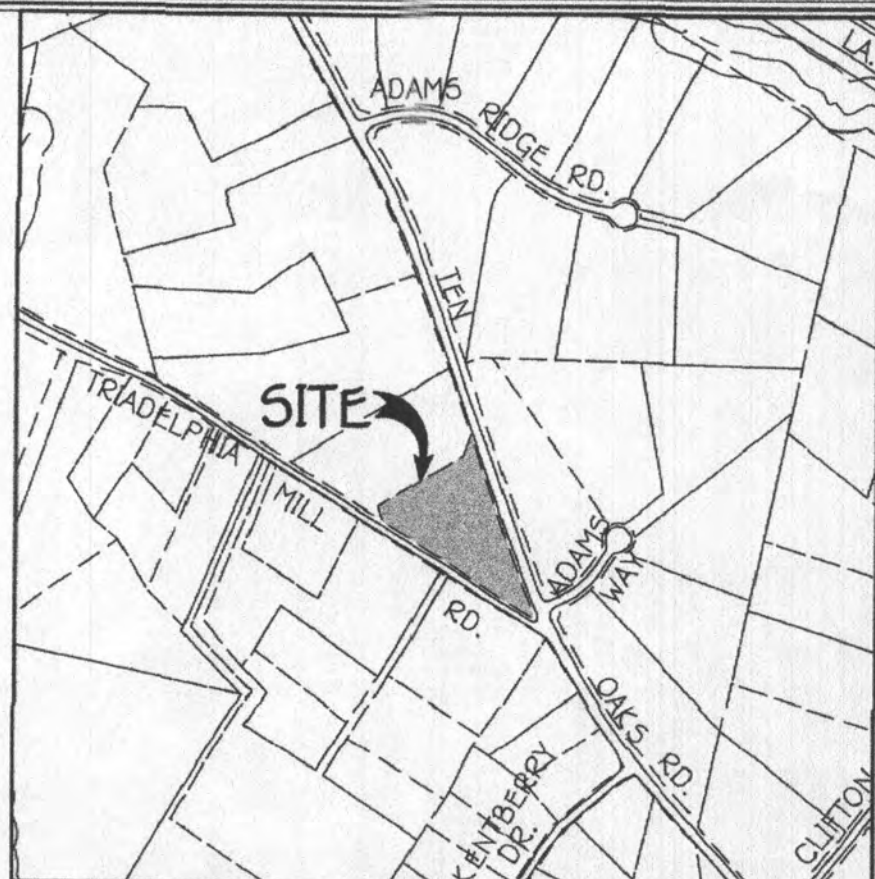
12940 TRIADELPHIA MILL ROAD

ADAMS FAMILY LIMITED PARTNERSHIP

DEED REFERENCE: F.4271, L.317
TAX MAP No. 34 GRID No. 04
PARCEL No. 0013
ZONED: RR-DEO
FIRTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: OCTOBER, 2023
SHEET 1 OF 2

GENERAL NOTES:

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VICINITY MAP
SCALE: 1" = 600'

INITIAL SYSTEM

SEWAGE DISPOSAL SYSTEM DATA - INITIAL SYSTEM
3 BEDROOMS
LOADING RATE = 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD
APPLICATION RATE = 0.8
EFFECTIVE SIDEWALL BEGINS AT 6 FEET
TRENCH DEPTH = 7 FEET
TRENCH WIDTH (W) = 3 FEET
EFFECTIVE DEPTH (D) = 1 FOOT
SF OF DRAINFIELD = 450 GPD / 0.8 = 562.5 SF
COEFFICIENT OF REDUCTION OF TRENCH LENGTH =
(W+2)/(W+1+2D)=(3+2)/(3+1+(2x1))=0.833
TRENCH LENGTH = 562.5 SF x 0.833 / 3 = 156.25 FEET
3 TRENCHES AT 53'
TRENCH SPACING = 2D+W = ((2x1) + 3) = 5' USE 10'

1ST REPLACEMENT SYSTEM

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2ND REPLACEMENT SYSTEM

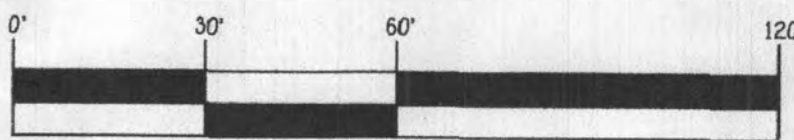
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TRENCH DEPTH = 6 FEET
TRENCH WIDTH (W) = 3 FEET
EFFECTIVE DEPTH (D) = 1.5 FEET
SF OF DRAINFIELD = 450 GPD / 1.2 = 375 SF
COEFFICIENT OF REDUCTION OF TRENCH LENGTH =
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TRENCH LENGTH = 375 SF x 0.714 / 3 = 89.25 FEET
2 TRENCHES AT 45'
TRENCH SPACING = 2D+W = ((2x1.5) + 3) = 6' USE 10'

Approved Septic System Plan
Howard County Health Department

gls
Signature
12/15/23
Date

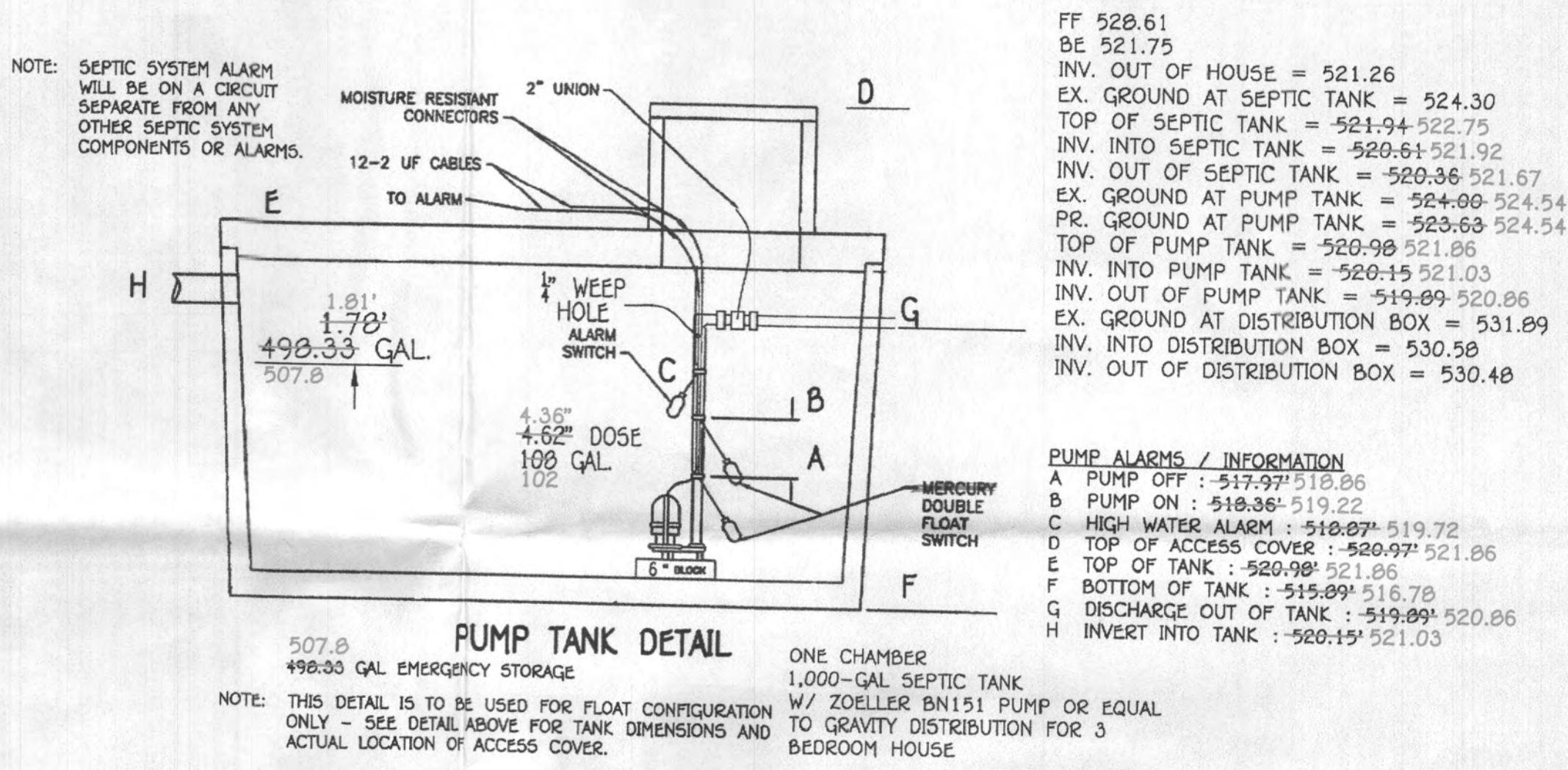
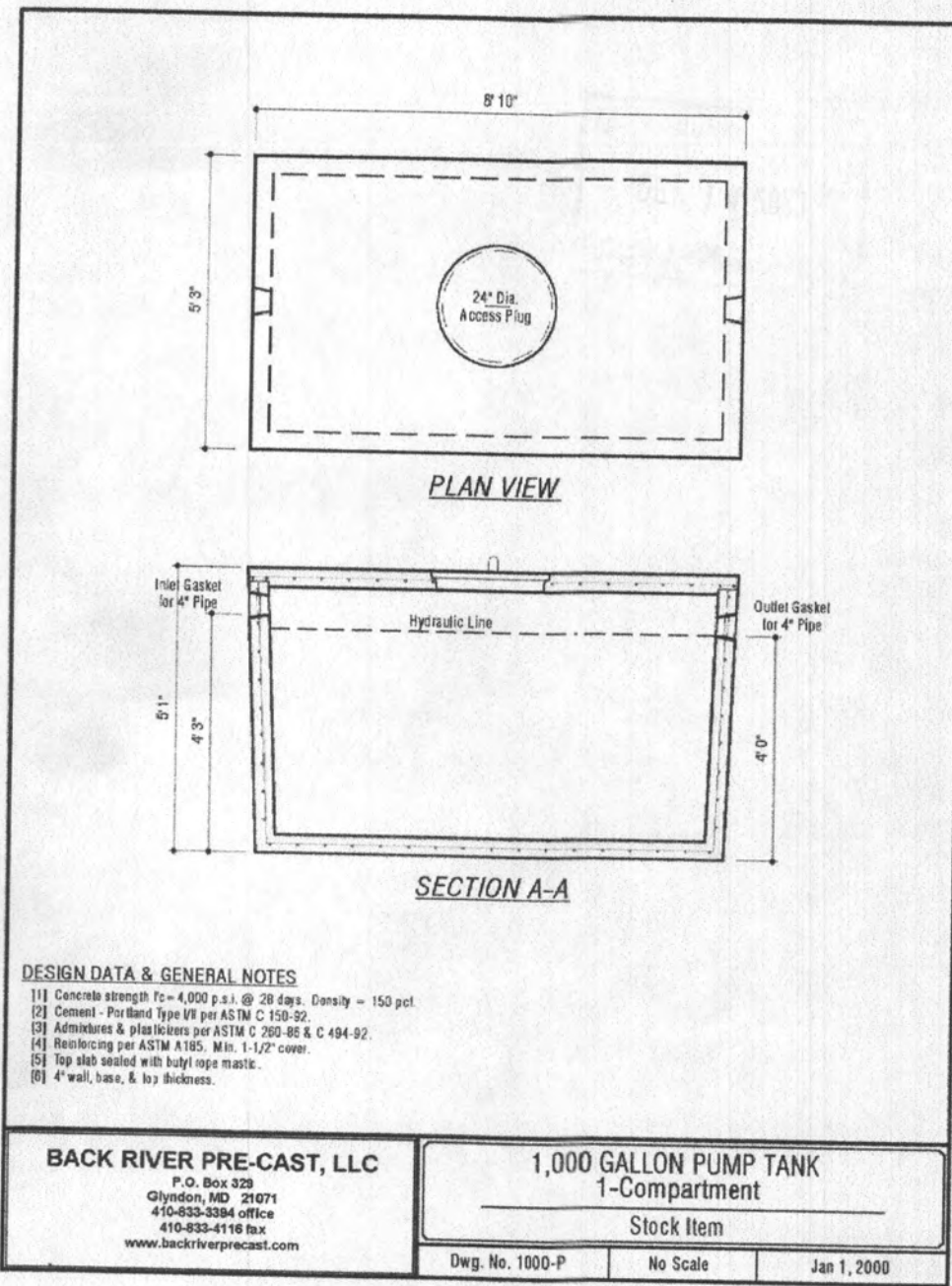
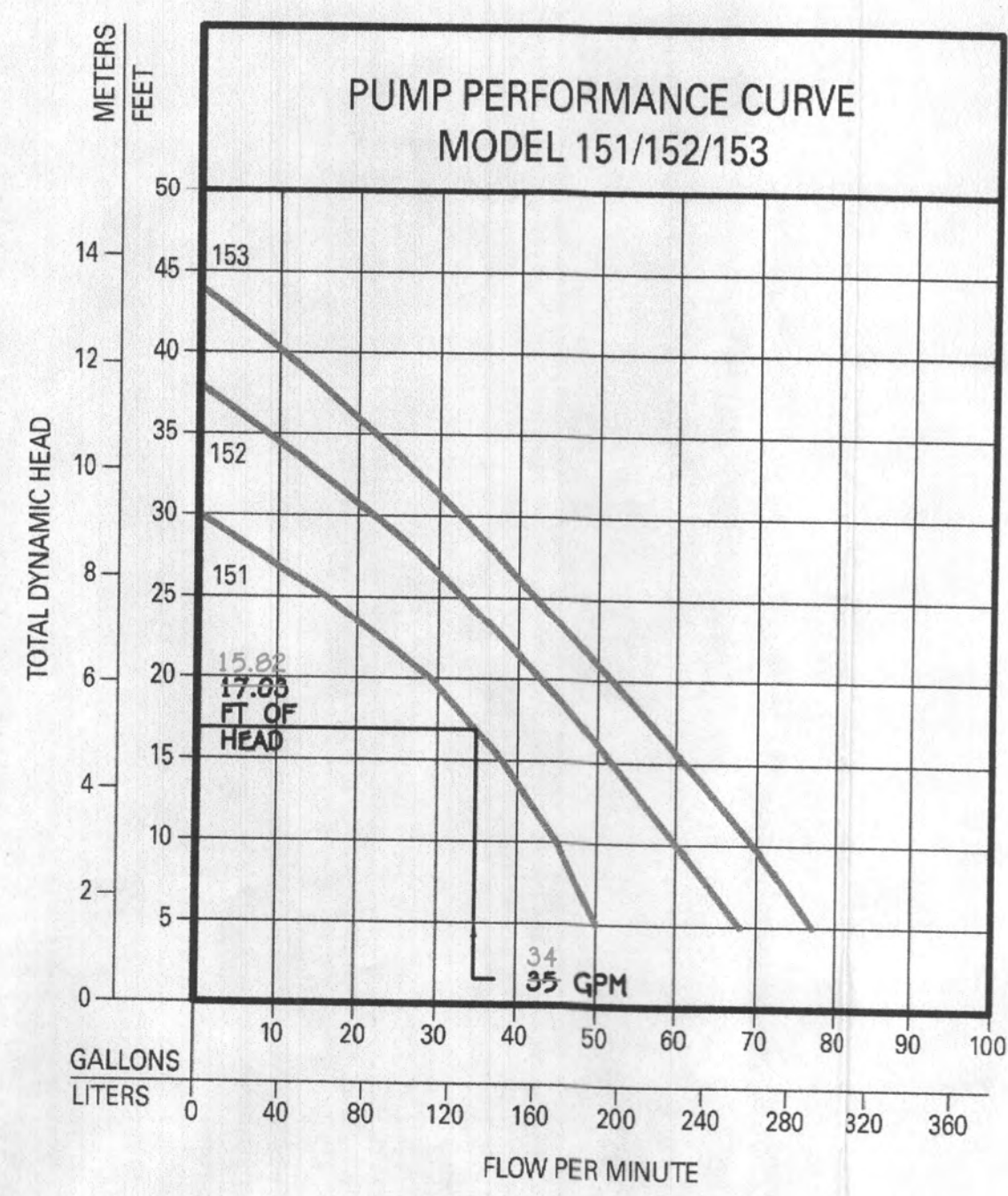
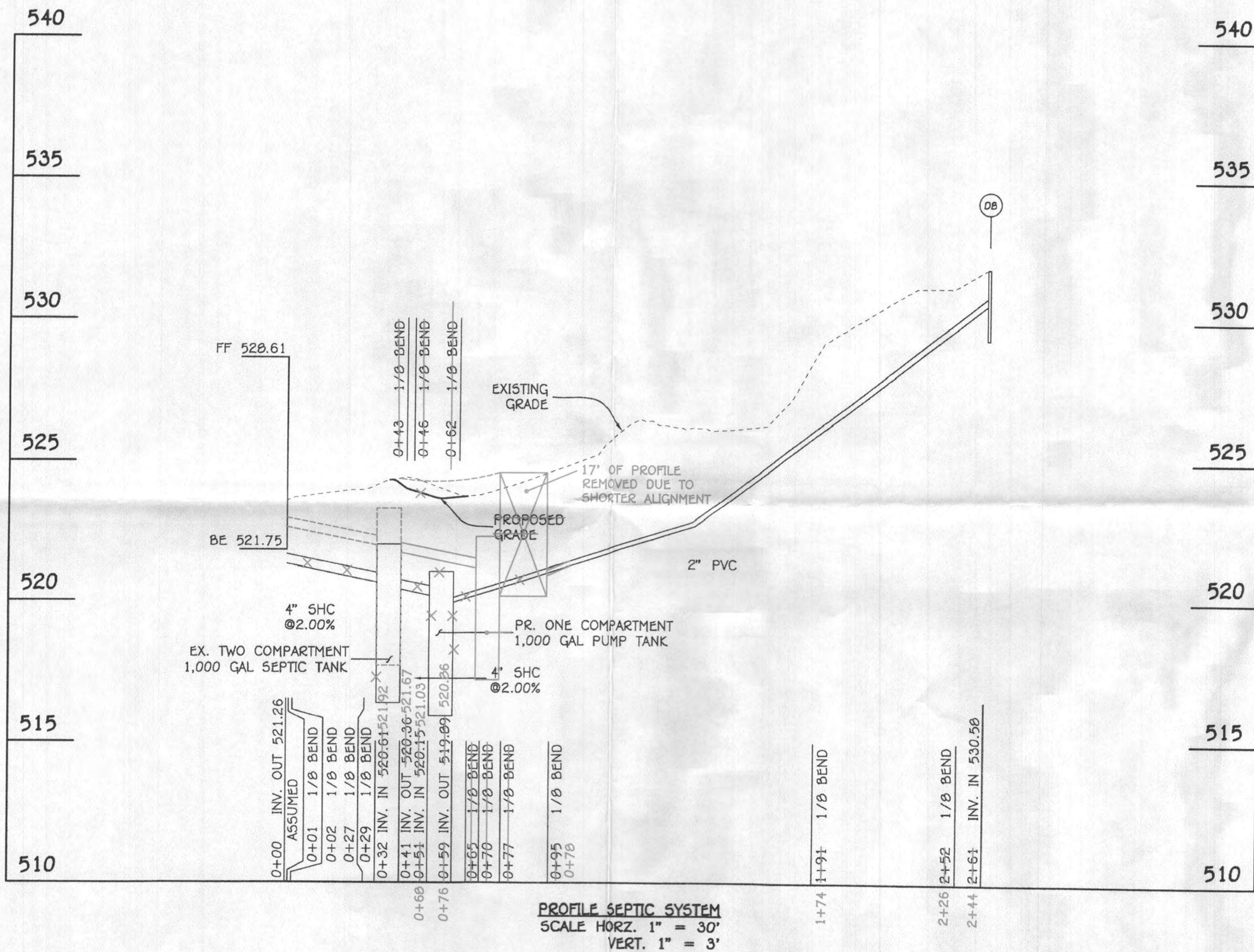
Approved Septic System Plan
Howard County Health Department

gls
Signature
10/27/23
Date



SCALE: 1" = 30'

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GmB	Glenville silt loam, 3 to 8 percent slopes	C	.55
GgB	Glenelg loam, 3 to 8 percent slopes	B	.37
GgC	Glenelg loam, 8 to 15 percent slopes	B	.43



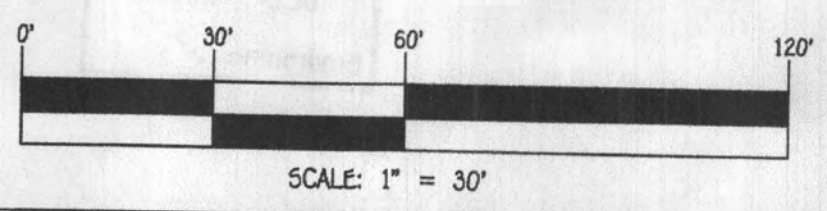
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2. FOR AREAS TO BE VEGETATIVELY STABILIZED:
A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
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ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWN SLOPE SIDE.

2\"/>

PROFESSIONAL CERTIFICATION
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Luke Groom 10-20-23
Signature Of Professional Engineer DATE

REVISION BLOCK	
DATE	DESCRIPTION
12-13-23	REVISE PUMP TANK LOCATION

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461 - 2895

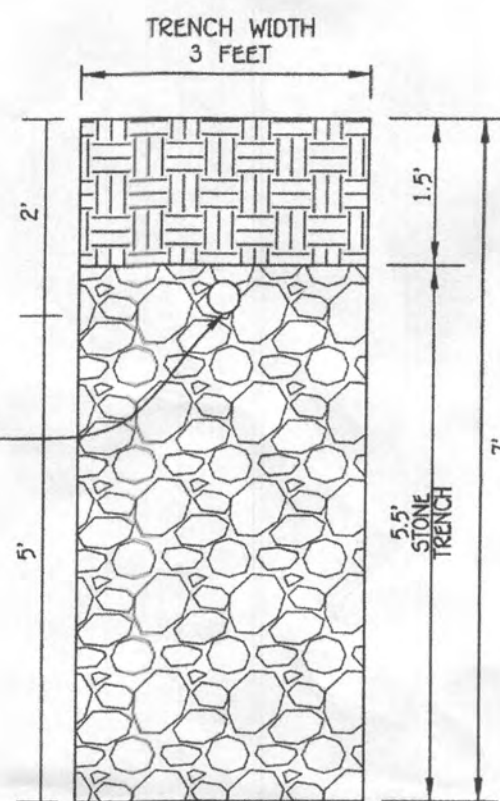


SEPTIC INSTALL PLAN
12940 TRIADELPHIA MILL ROAD
ADAMS FAMILY LIMITED PARTNERSHIP
DEED REFERENCE: F.4271, L.317
TAX MAP No. 34 Q2D No. 04
PARCEL No. 0013
ZONED: RR-DEO
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: OCTOBER, 2023
SHEET 2 OF 2

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GmB	Glenview silt loam, 3 to 8 percent slopes	C	.55
GgB	Glenelg loam, 3 to 8 percent slopes	B	.37
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LEGEND

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- DENOTES FAILED PERC
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SCALE 1" = 2'

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INV. IN = 530.27
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Signature of Professional Engineer
DATE

10-20-23

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LIBER 15427, FOLIO 485
ZONED: RR-DEO

PROPERTY OF VAN STACKS AND KELLY STACKS
LIBER 17417, FOLIO 484
ZONED: RR-DEO

PROPERTY OF TEN OAKS LLC
LIBER 4271, FOLIO 284
ZONED: RR-DEO

PROPERTY OF JOHN DOUGHERTY AND NANCY DOUGHERTY
LIBER 8875, FOLIO 61
ZONED: RR-DEO

SEPTIC INSTALL PLAN

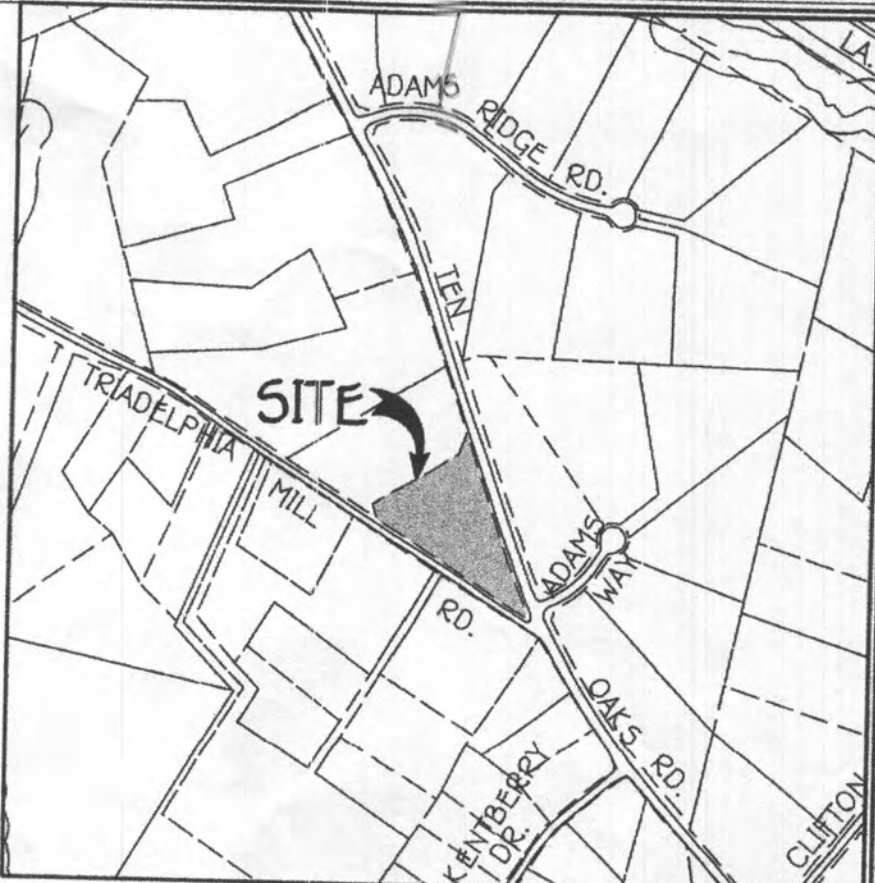
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ADAMS FAMILY LIMITED PARTNERSHIP

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FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
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VICINITY MAP
SCALE: 1" = 600'

INITIAL SYSTEM

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SF OF DRAINFIELD = 450 GPD / 0.8 = 562.5 SF
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+2x1) = 0.833
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3 TRENCHES AT 53'
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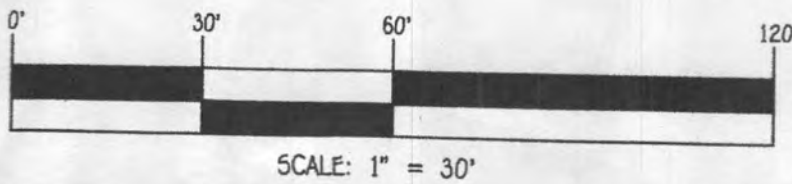
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2ND REPLACEMENT SYSTEM

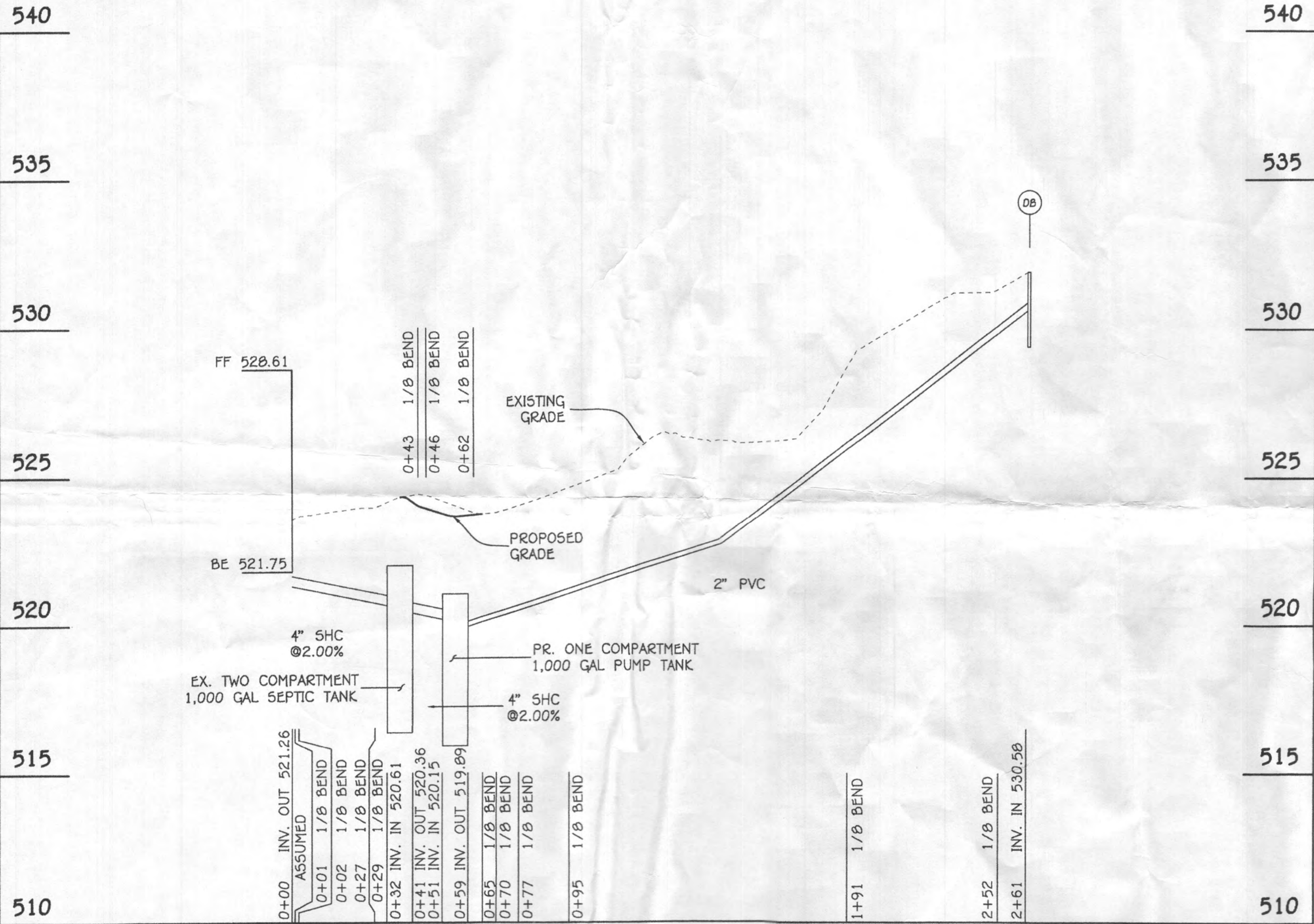
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SF OF DRAINFIELD = 450 GPD / 1.2 = 375 SF
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+2x1.5) = 0.714
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2 TRENCHES AT 45'
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Approved Septic System Plan
Howard County Health Department
Signature
Date

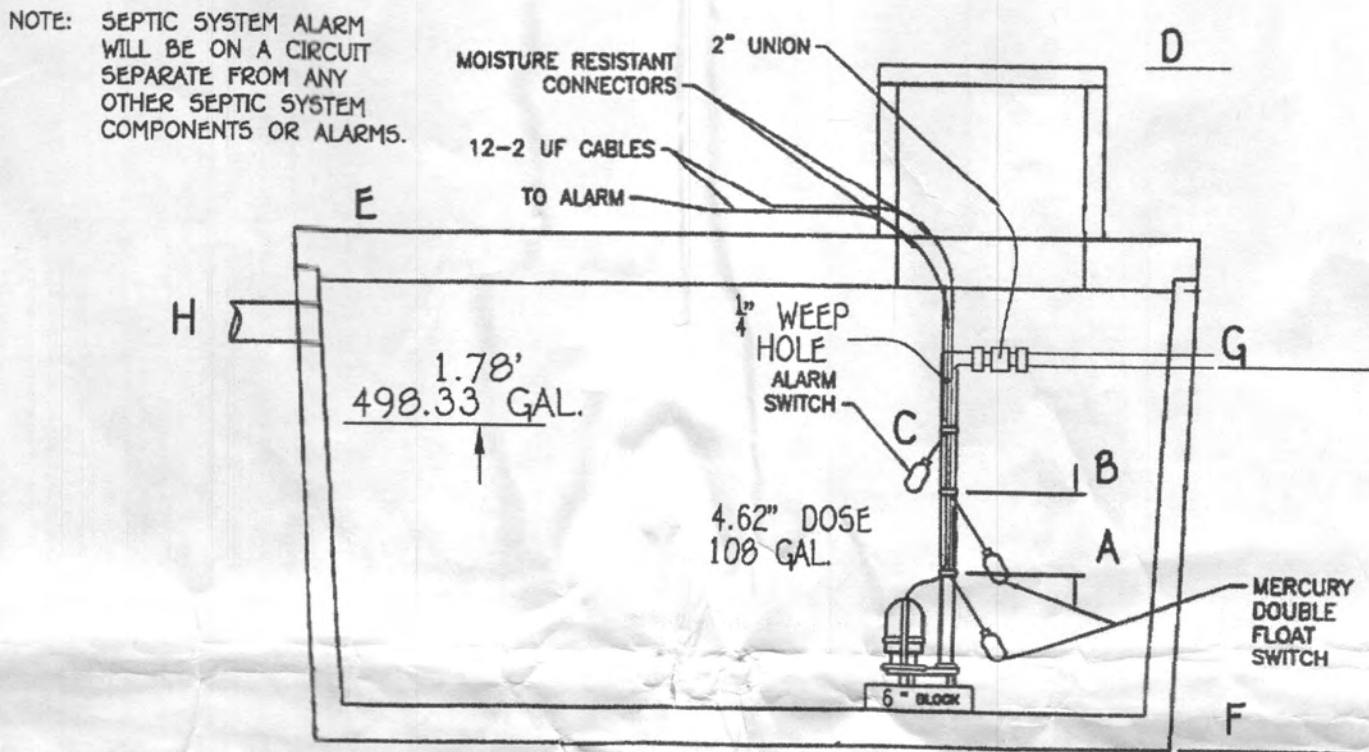
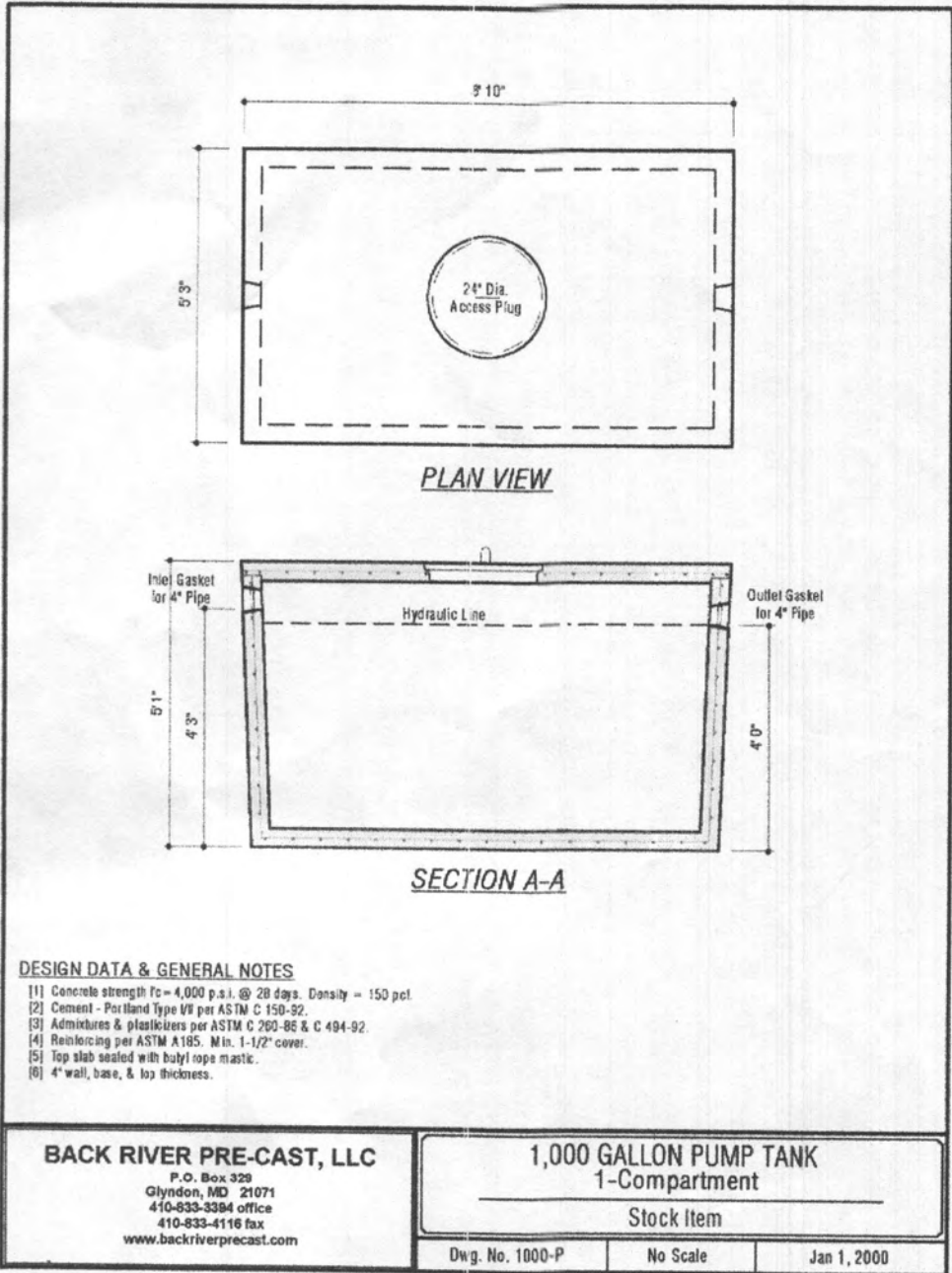
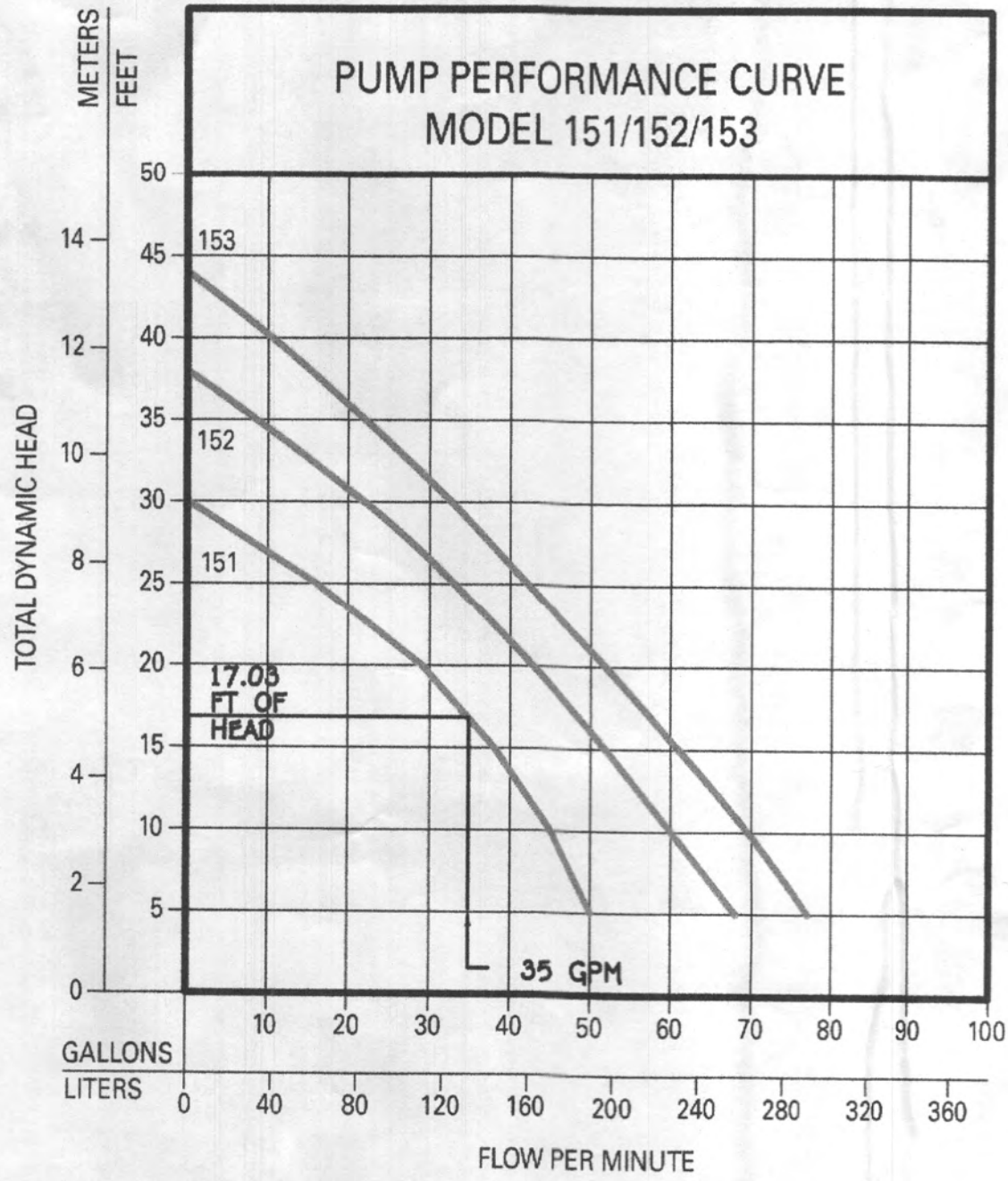


SCALE: 1" = 30'

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GmB	Glenville silt loam, 3 to 8 percent slopes	C	.55
GgB	Glenelg loam, 3 to 8 percent slopes	B	.37
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PROFILE SEPTIC SYSTEM
SCALE HORZ. 1" = 30'
VERT. 1" = 3'



PUMP TANK DETAIL

490.33 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 CHAMBER
1,000-GAL SEPTIC TANK
W/ ZOELLER BN151 PUMP OR EQUAL
TO GRAVITY DISTRIBUTION FOR 3
BEDROOM HOUSE

FF 520.61
BE 521.75
INV. OUT OF HOUSE = 521.26
EX. GROUND AT SEPTIC TANK = 524.30
TOP OF SEPTIC TANK = 521.94
INV. INTO SEPTIC TANK = 520.61
INV. OUT OF SEPTIC TANK = 520.36
EX. GROUND AT PUMP TANK = 520.63
PR. GROUND AT PUMP TANK = 520.98
TOP OF PUMP TANK = 520.98
INV. INTO PUMP TANK = 520.15
INV. OUT OF PUMP TANK = 519.09
EX. GROUND AT DISTRIBUTION BOX = 531.09
INV. INTO DISTRIBUTION BOX = 530.50
INV. OUT OF DISTRIBUTION BOX = 530.40

PUMP ALARMS / INFORMATION

A PUMP OFF : 517.97'
B PUMP ON : 519.36'
C HIGH WATER ALARM : 518.07'
D TOP OF ACCESS COVER : 520.97'
E TOP OF TANK : 520.98'
F BOTTOM OF TANK : 519.09'
G DISCHARGE OUT OF TANK : 519.09'
H INVERT INTO TANK : 520.15'

DAILY STABILIZATION NOTE:
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2. FOR AREAS TO BE VEGETATIVELY STABILIZED:
A. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
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1 UNION @ 2" SCH. 40 PVC = 202 LF
6 1/8" H @ 4" EQUIVALENT FEET = 24 LF
TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 226 LF

DYNAMIC HEAD
226 LF X 2.05 FT PER 100 LF OF 2" PIPE = 4.67 FT OF FRICTION HEAD
VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 1.67 FT OF HEAD
HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV. OF SYSTEM = 10.69 FT (PUMP OUT IS THE HIGHEST POINT)
TOTAL DYNAMIC HEAD = 17.03 FT

1/6 DESIGN FLOW (450/6=75) PLUS VOLUME OF 2" PIPE (33 GALLONS)
USE 100 GALLON DOSE (75 GALLON MINIMUM)
RUN TIME = 3.08 MIN (35 GPM X 3.08 = 108 GALLON DOSE)

PUMP NEEDS TO HANDLE 35 GPM AT 17.03 FT OF HEAD
USE 0.3 HP (ZOELLER MODEL 151 PUMP)



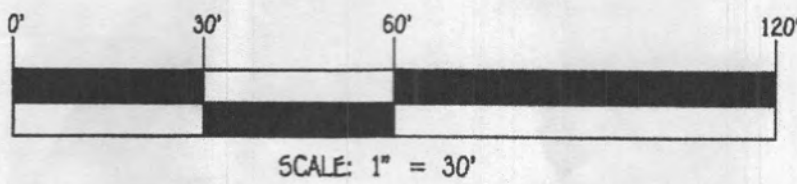
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Luke Groom
Signature Of Professional Engineer

10-20-23
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21043
(410) 461-2895

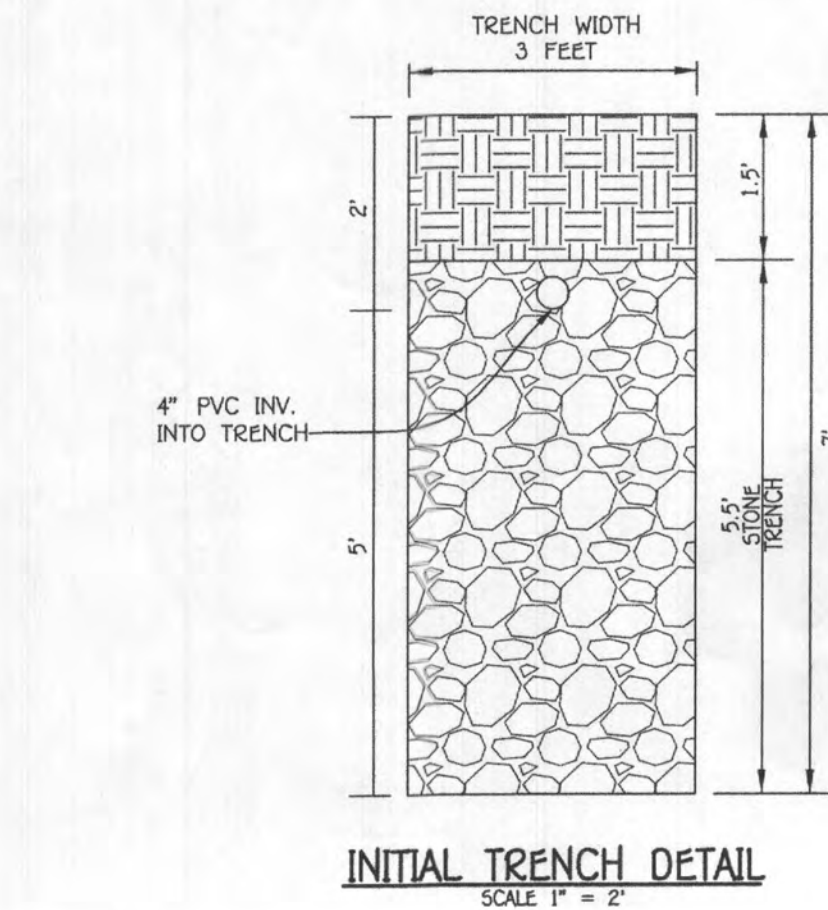


SEPTIC INSTALL PLAN
12940 TRIADELPHIA MILL ROAD
ADAMS FAMILY LIMITED PARTNERSHIP
DEED REFERENCE: F.4271, L.317
TAX MAP No. 34 GRID No. 04
PARCEL No. 0013
ZONED: RR-DEO
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: OCTOBER, 2023
SHEET 2 OF 2

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
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- LEGEND

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STATE OF MARYLAND

46091

PROFESSIONAL ENGINEER

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Yule Joon

10-20-23

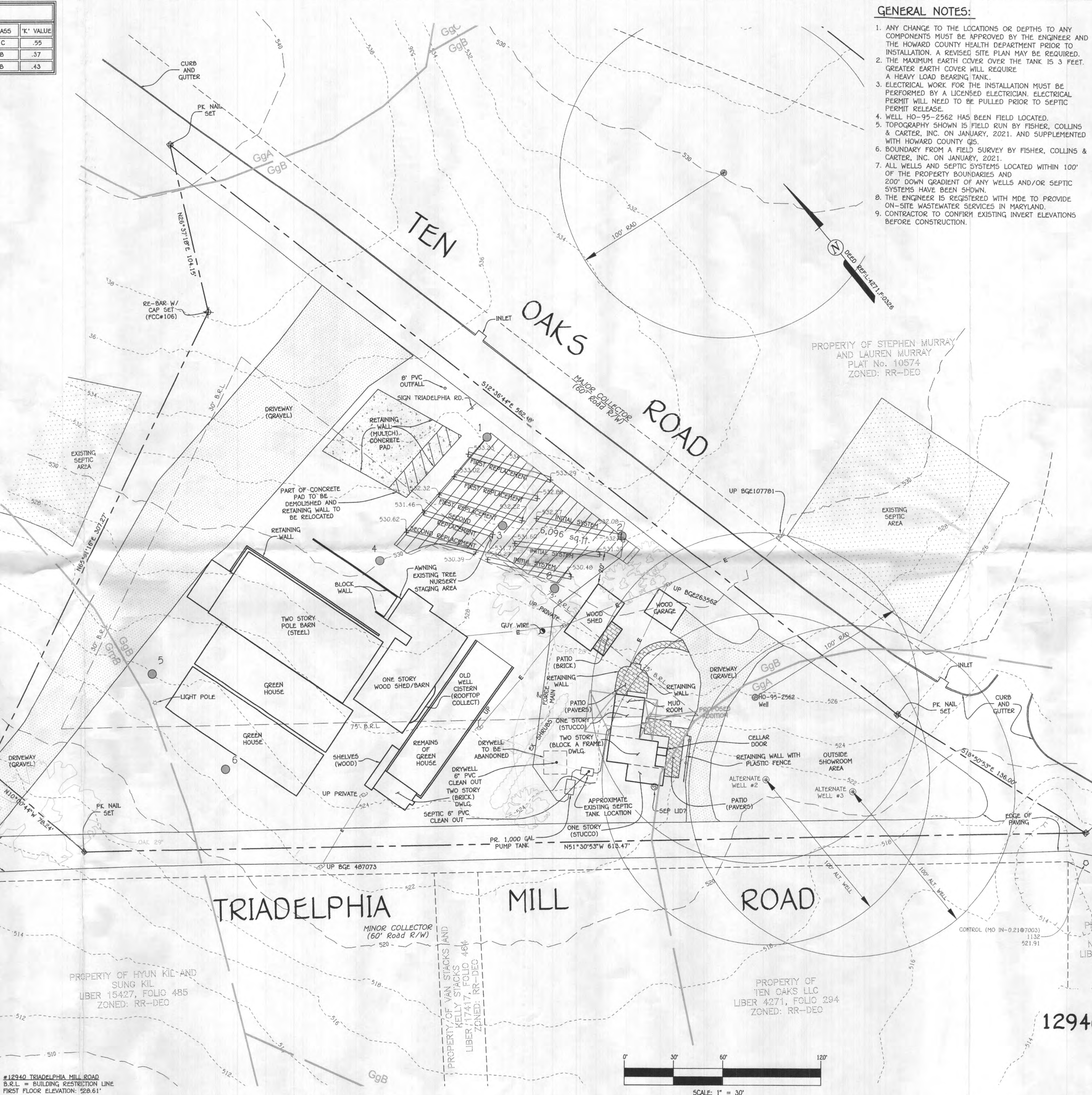
Signature Of Professional Engineer

DATE

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FILE
ELKJOTT CITY, MARYLAND 21042
(410) 661 - 2995



- GENERAL NOTES:
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. ELECTRICAL PERMIT WILL NEED TO BE PULLED PRIOR TO SEPTIC PERMIT RELEASE.

4. WELL HO-95-2562 HAS BEEN FIELD LOCATED.

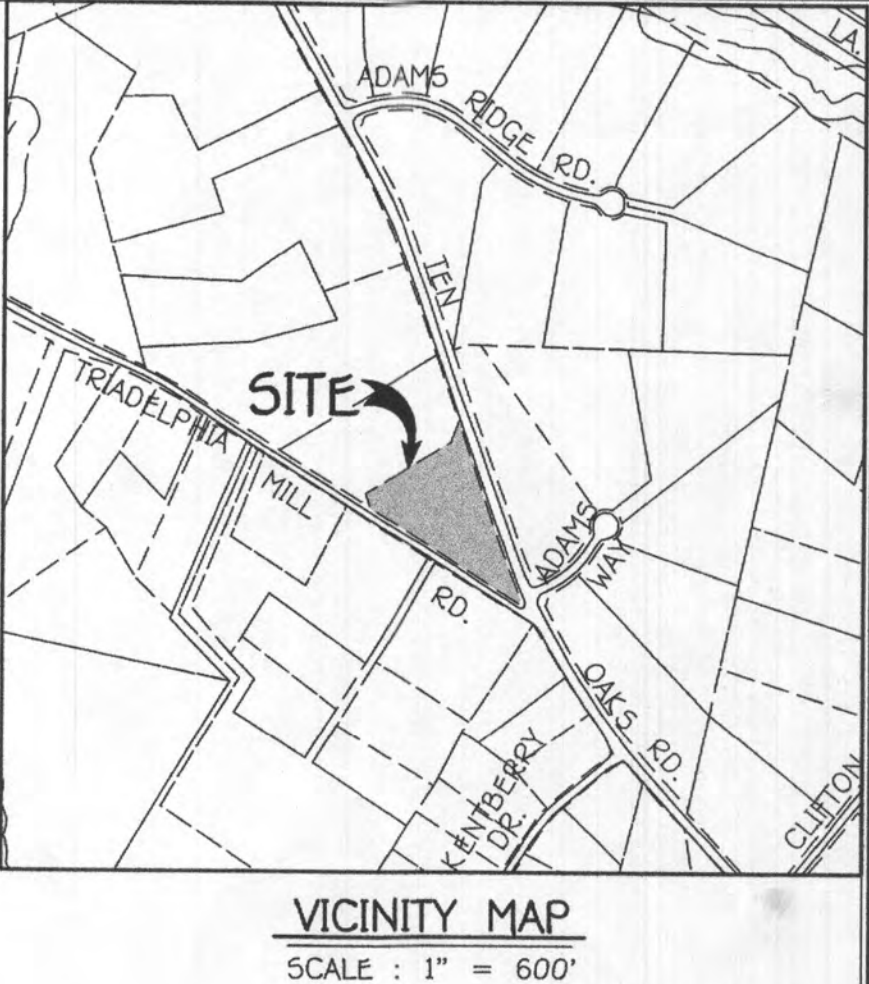
5. TOPOGRAPHY SHOWN IS FIELD RUN BY FISHER, COLLINS & CARTER, INC. ON JANUARY, 2021. AND SUPPLEMENTED WITH HOWARD COUNTY GIS.

6. BOUNDARY FROM A FIELD SURVEY BY FISHER, COLLINS & CARTER, INC. ON JANUARY, 2021.

7. 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.

8. THE ENGINEER IS REGISTERED WITH MDE TO PROVIDE ON-SITE WASTEWATER SERVICES IN MARYLAND.

9. CONTRACTOR TO CONFIRM EXISTING INVERT ELEVATIONS BEFORE CONSTRUCTION.



INITIAL SYSTEM

SEWAGE DISPOSAL SYSTEM DATA - INITIAL SYSTEM

3 BEDROOMS

LOADING RATE = 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD

APPLICATION RATE = 0.8

EFFECTIVE SIDEWALL BEGINS AT 6 FEET

TRENCH DEPTH = 7 FEET

TRENCH WIDTH (W) = 3 FEET

EFFECTIVE DEPTH (D) = 1 FOOT

SF OF DRAINFIELD = 450 GPD / 0.8 = 562.5 SF

COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x1))=0.833

TRENCH LENGTH = 562.5 SF x 0.833 / 3 = 156.25 FEET

3 TRENCHES AT 53'

TRENCH SPACING = 2D+W = ((2x1) + 3) = 5' USE 10'

1ST REPLACEMENT SYSTEM

SEWAGE DISPOSAL SYSTEM DATA - INITIAL SYSTEM

3 BEDROOMS

LOADING RATE = 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD

APPLICATION RATE = 0.8

EFFECTIVE SIDEWALL BEGINS AT 6 FEET

TRENCH DEPTH = 7 FEET

TRENCH WIDTH (W) = 3 FEET

EFFECTIVE DEPTH (D) = 1 FOOT

SF OF DRAINFIELD = 450 GPD / 0.8 = 562.5 SF

COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x1))=0.833

TRENCH LENGTH = 562.5 SF x 0.833 / 3 = 156.25 FEET

3 TRENCHES AT 53'

TRENCH SPACING = 2D+W = ((2x1) + 3) = 5' USE 10'

2ND REPLACEMENT SYSTEM

SEWAGE DISPOSAL SYSTEM DATA - INITIAL SYSTEM

3 BEDROOMS

LOADING RATE = 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD

APPLICATION RATE = 1.2

EFFECTIVE SIDEWALL BEGINS AT 4.5 FEET

TRENCH DEPTH = 6 FEET

TRENCH WIDTH (W) = 3 FEET

EFFECTIVE DEPTH (D) = 1.5 FEET

SF OF DRAINFIELD = 450 GPD / 1.2 = 375 SF

COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x1.5))=0.714

TRENCH LENGTH = 375 SF x 0.714 / 3 = 89.25 FEET

2 TRENCHES AT 45'

TRENCH SPACING = 2D+W = ((2x1.5) + 3) = 6' USE 10'

Approved Septic System Plan

Howard County Health Department

Signature

10/27/23

Date

PROPERTY OF JOHN DOUGHERTY AND NANCY DOUGHERTY

LIBER 8875, FOLIO 61

ZONED: RR-DEO

SEPTIC INSTALL PLAN

12940 TRIADELPHIA MILL ROAD

ADAMS FAMILY LIMITED PARTNERSHIP

DEED REFERENCE: F.4271, L.317

TAX MAP No. 34 GRD No. 04

PARCEL No. 0013

ZONED: RR-DEO

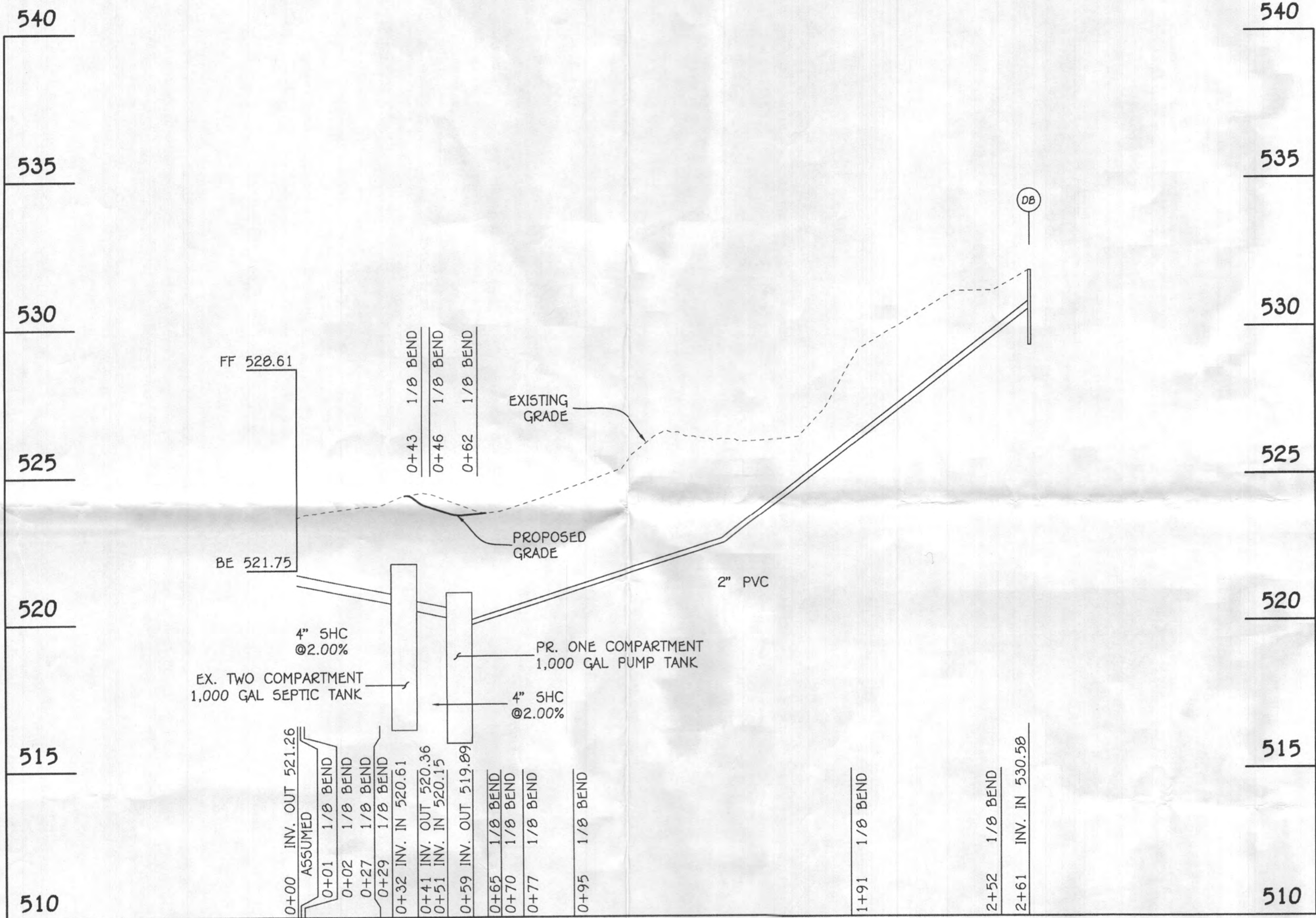
FIFTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

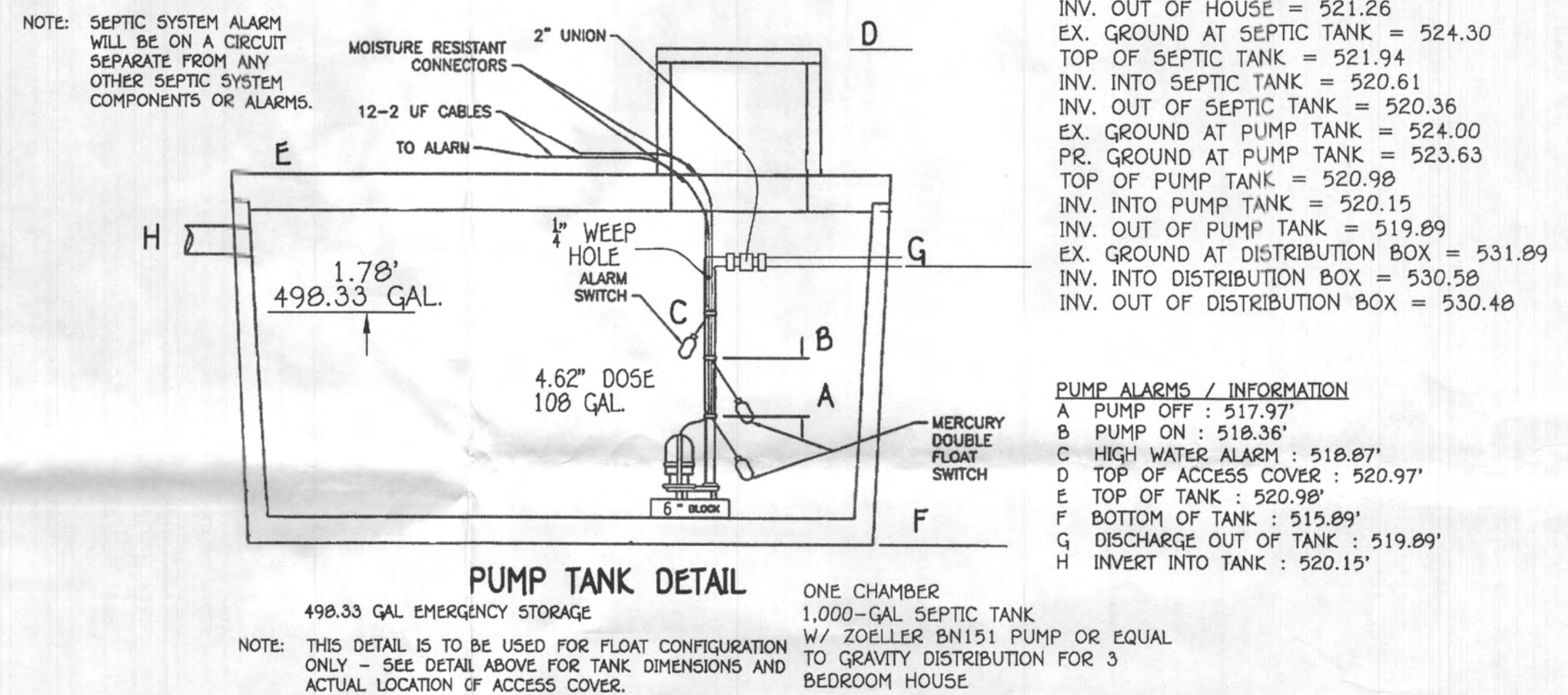
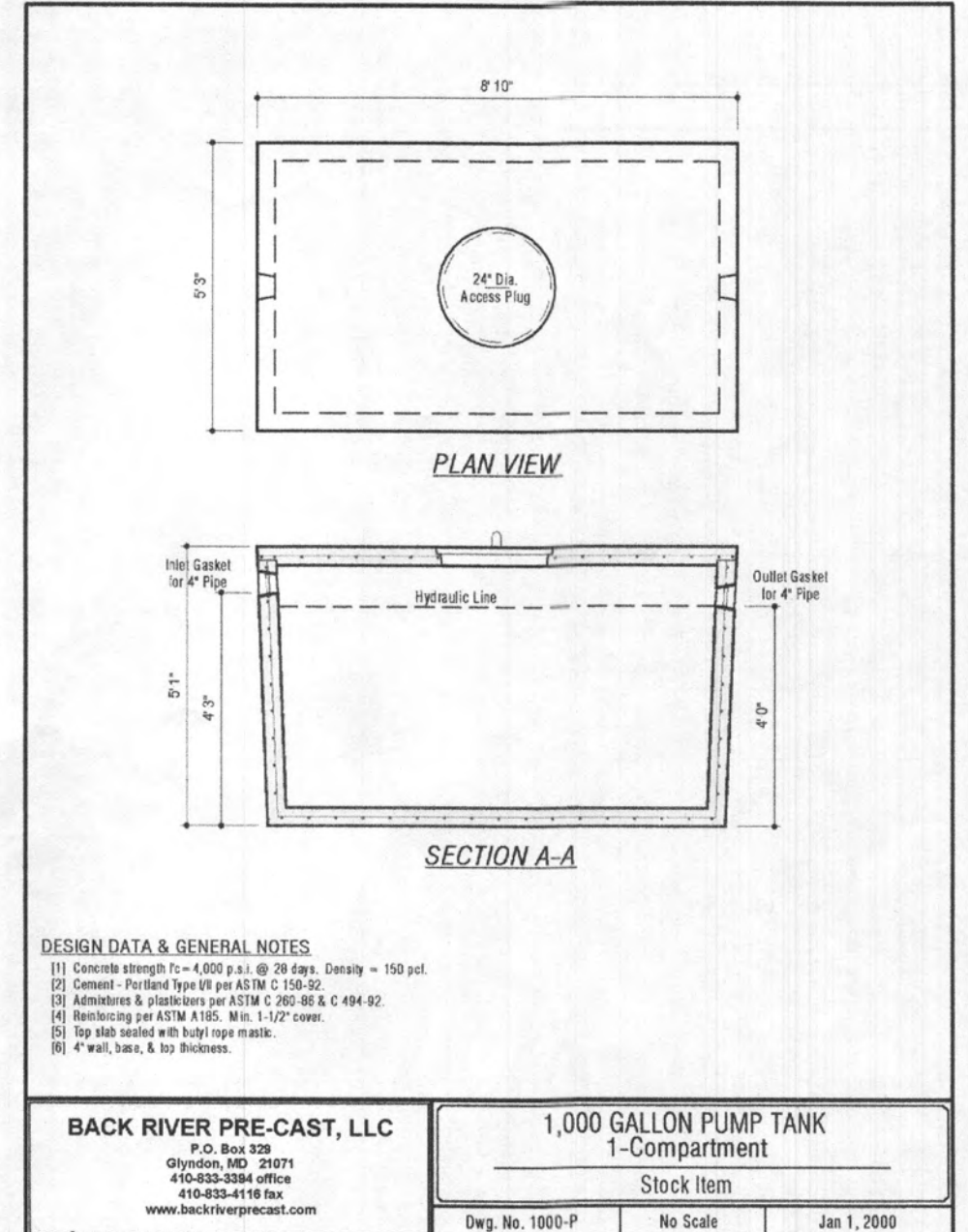
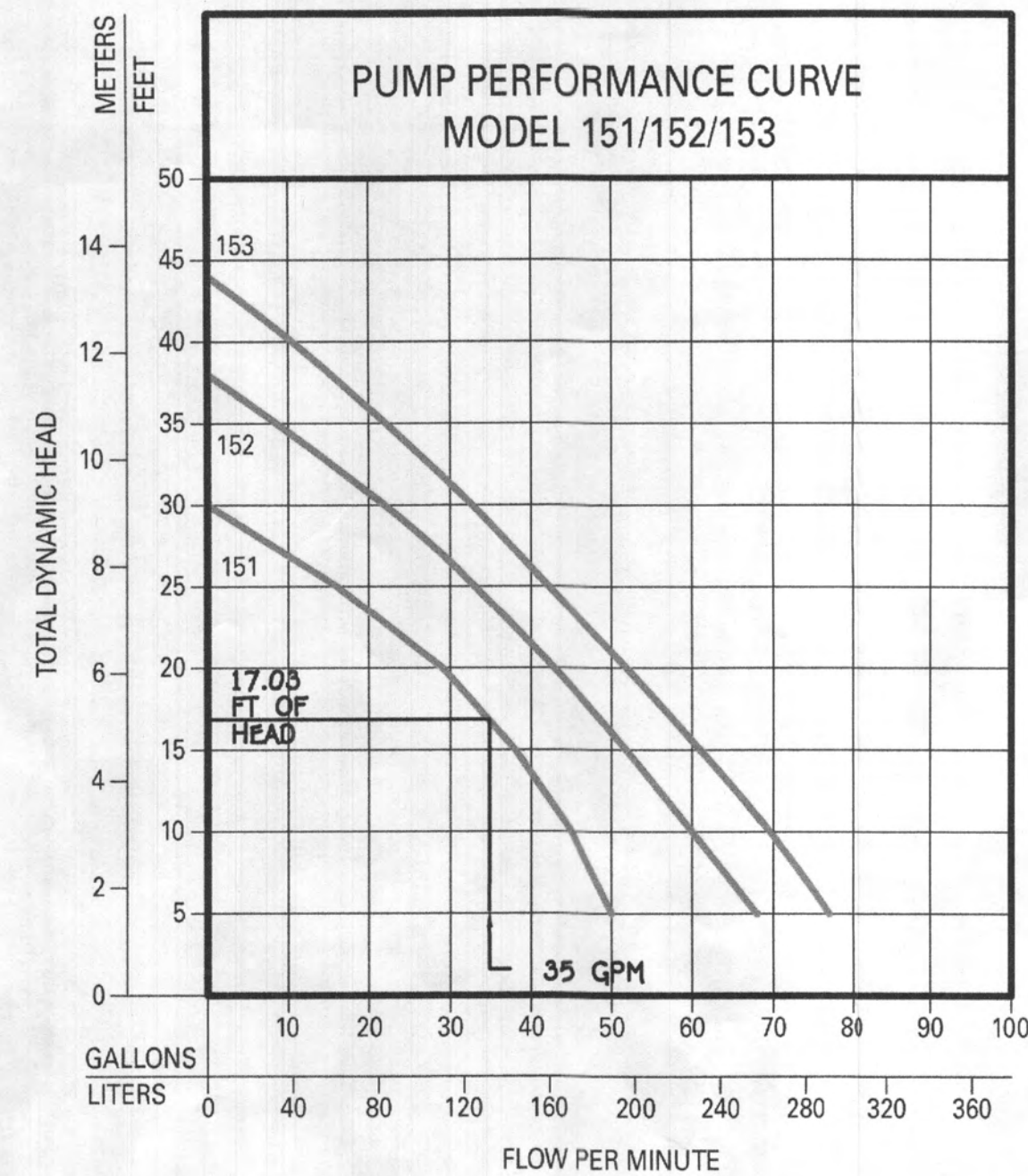
DATE: OCTOBER, 2023

SHEET 1 OF 2

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GmB	Glenville silt loam, 3 to 8 percent slopes	C	.55
GgB	Glenelig loam, 3 to 8 percent slopes	B	.37
GgC	Glenelig loam, 8 to 15 percent slopes	B	.43



PROFILE SEPTIC SYSTEM
SCALE HORZ. 1" = 30'
VERT. 1" = 3'

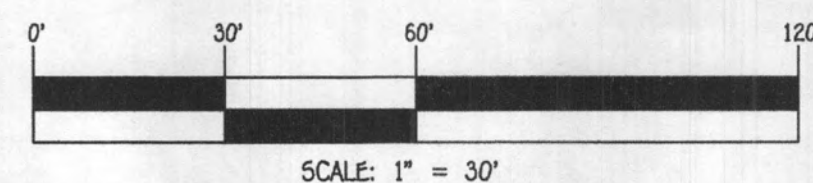


DAILY STABILIZATION NOTE:
CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHE BE AS FOLLOWS.
1. FOR AREAS TO BE PAVED, THAT APPLICATION OF STONE BASE.
2. FOR AREAS TO BE VEGETATIVELY STABILIZED:
A. PERMANENT SEED AND SOIL STABILIZATION 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.

2" SCH. 40 PVC = 202 LF
220 LF X 2.05 FT PER 100 LF OF 2" PIPE = 4.67 FT OF FRICTION HEAD
VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 1.67 FT OF HEAD
HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV. OF SYSTEM = 10.69 FT (PUMP OUT IS THE HIGHEST POINT)
TOTAL DYNAMIC HEAD = 17.03 FT
1/6 DESIGN FLOW (450/6=75) PLUS VOLUME OF 2" PIPE (33 GALLONS)
USE 100 GALLON DOSE (75 GALLON MINIMUM)
RUN TIME = 3.08 MIN (35 GPM X 3.08 = 108 GALLON DOSE)
PUMP NEEDS TO HANDLE 35 GPM AT 17.03 FT OF HEAD
USE 0.3 HP (ZOELLER MODEL 151 PUMP)

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 Groom
Signature Of Professional Engineer
10-20-23
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10072 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21040
(410) 461-2895



SEPTIC INSTALL PLAN
12940 TRIADDELPHIA MILL ROAD
ADAMS FAMILY LIMITED PARTNERSHIP
DEED REFERENCE: F, 4271, L, 317
TAX MAP No. 34 GRID No. 04
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ZONED: RS-DEO
FIFTH ELECTION DISTRICT
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DATE: OCTOBER, 2023
SHEET 2 OF 2