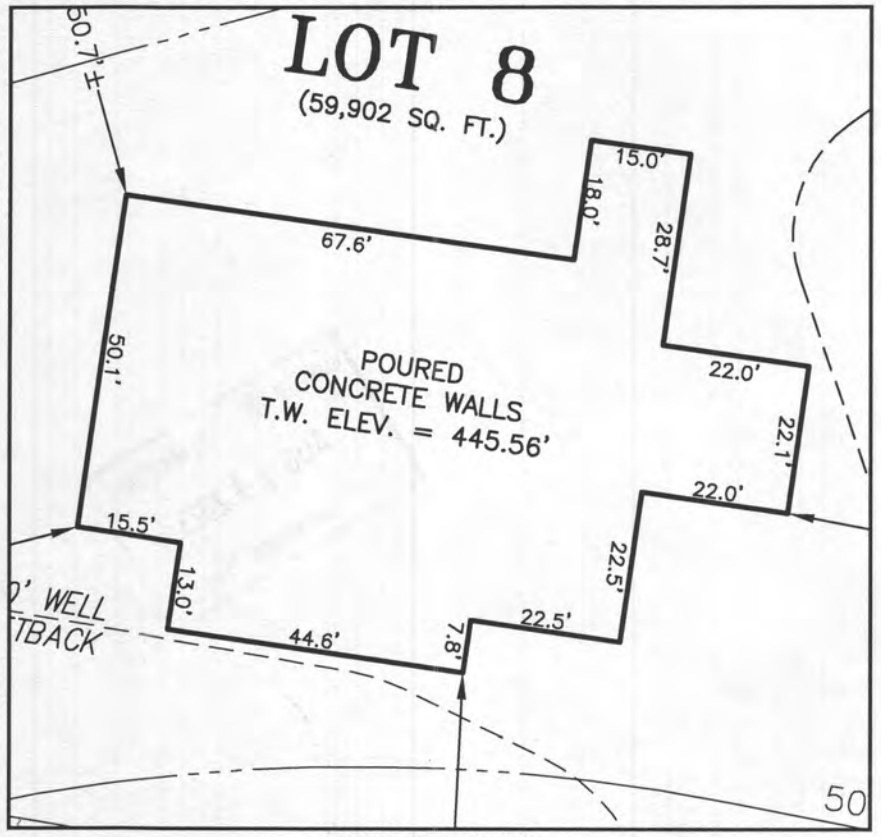
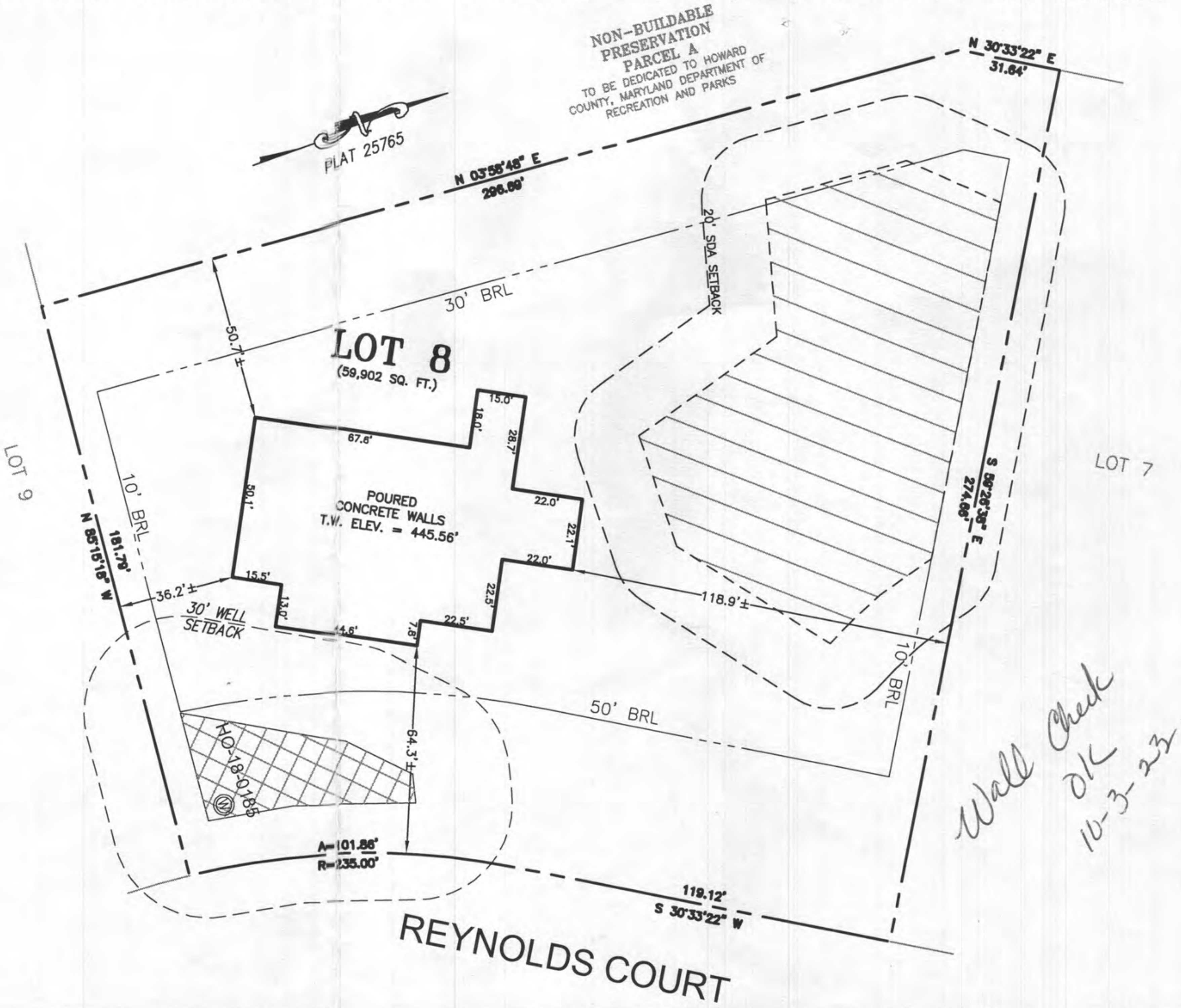
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21328, EXPIRATION DATE 1/8/25.

LEGEND:

BRL	BUILDING RESTRICTION LINE
Ⓦ	WELL LOCATION
T.W.	TOP OF WALL
▨	SEWAGE DISPOSAL AREA
▦	WELL BOX AREA


LOT 8
(59,902 SQ. FT.)
50.7'±
15.0'
18.0'
67.6'
28.7'
50.1'
POURED
CONCRETE WALLS
T.W. ELEV. = 445.56'
22.0'
22.1'
22.0'
15.5'
22.5'
13.0'
22.5'
0' WELL
TBACK
44.6'
7.8'
50

HOUSE ENLARGEMENT
NOT TO SCALE


NON-BUILDABLE
PRESERVATION
PARCEL A
TO BE DEDICATED TO HOWARD
COUNTY, MARYLAND DEPARTMENT OF
RECREATION AND PARKS
PLAT 25765
N 03°58'48" E
296.69'
N 30°33'22" E
31.64'
20' SDA SETBACK
30' BRL
50.7'±
LOT 8
(59,902 SQ. FT.)
15.0'
18.0'
67.6'
28.7'
50.1'
POURED
CONCRETE WALLS
T.W. ELEV. = 445.56'
22.0'
22.1'
22.0'
15.5'
13.0'
44.6'
7.8'
22.5'
22.5'
LOT 9
10' BRL
N 85°15'18" W
181.79'
36.2'±
30' WELL
SETBACK
118.9'±
LOT 7
S 59°26'38" E
274.66'
10' BRL
50' BRL
64.3'±
HO-18-0185
A=101.86'
R=235.00'
119.12'
S 30°33'22" W
REYNOLDS COURT

Wall Check
OK
10-3-23

WELL NUMBER: HO-18-0185

ADDRESS: 10629 REYNOLDS COURT
ELLICOTT CITY, MD 21042

PERMIT No.: B23000909

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

MICHAEL JOE BOYCE
07/28/23
NO. 21328

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.

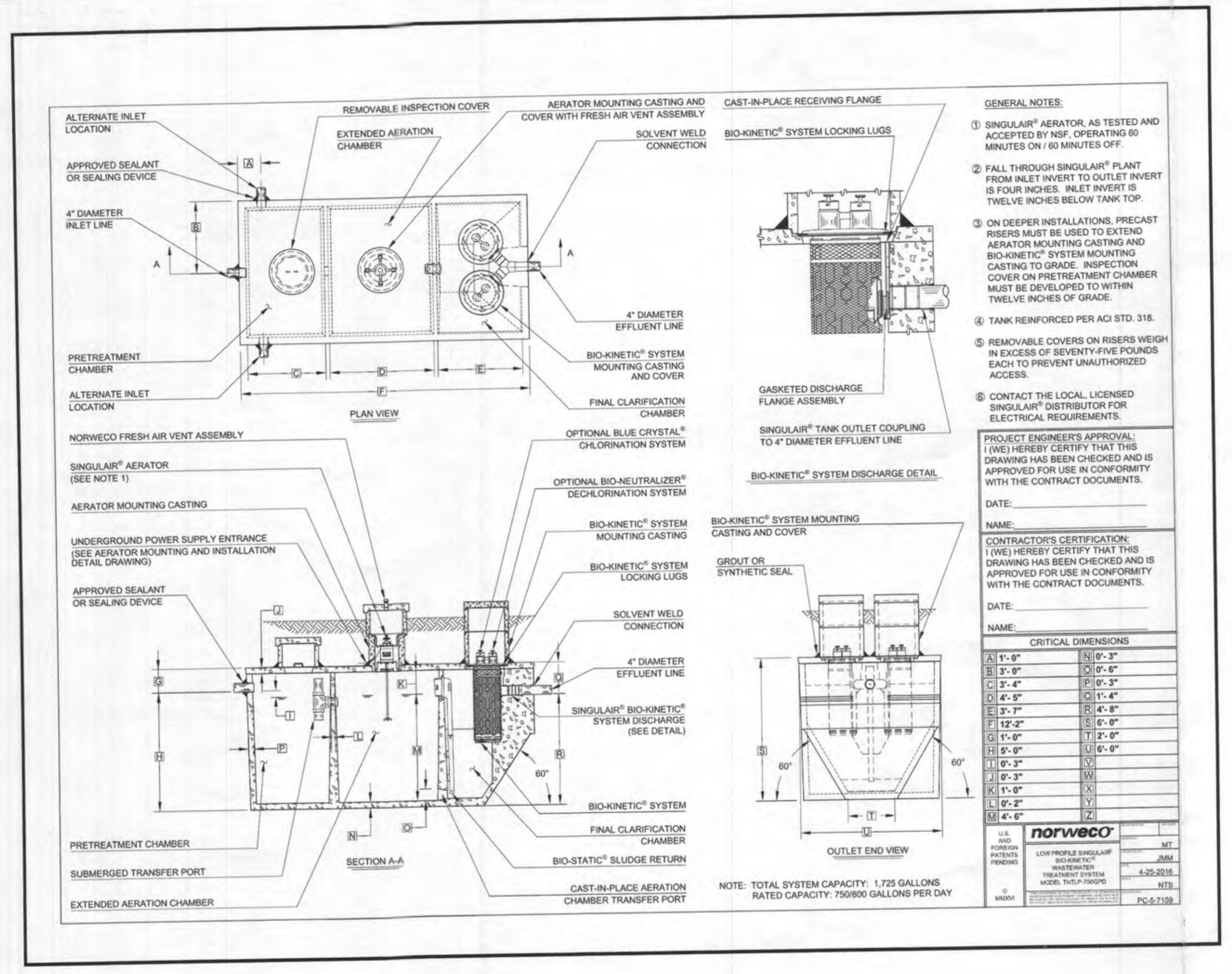
Michael Joe Boyce 21328 07/28/23
SIGNATURE: MICHAEL JOE BOYCE MD. LIC NO. DATE

WALLCHECK
LOT 8
KINGS FOREST
LIBER 20039, FOLIO 212
PLAT NO. 25765
2nd 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: 07/28/2023	SCALE: 1"= 40'	FILE: WC LOT 8
CHK'D: M.J.B.	JOB NO: 3502	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 1/8/25.


ALTERNATE INLET LOCATION
APPROVED SEALANT OR SEALING DEVICE
4" DIAMETER INLET LINE
PRETREATMENT CHAMBER
ALTERNATE INLET LOCATION
PLAN VIEW
NORWECO FRESH AIR VENT ASSEMBLY
SINGULAIR® AERATOR (SEE NOTE 1)
AERATOR MOUNTING CASTING
UNDERGROUND POWER SUPPLY ENTRANCE
APPROVED SEALANT OR SEALING DEVICE
PRETREATMENT CHAMBER
SUBMERGED TRANSFER PORT
EXTENDED AERATION CHAMBER
SECTION A-A
REMOVABLE INSPECTION COVER
EXTENDED AERATION CHAMBER
AERATOR MOUNTING CASTING AND COVER WITH FRESH AIR VENT ASSEMBLY
SOLVENT WELD CONNECTION
4" DIAMETER EFFLUENT LINE
BIO-KINETIC® SYSTEM MOUNTING CASTING AND COVER
FINAL CLARIFICATION CHAMBER
OPTIONAL BLUE CRYSTAL® CHLORINATION SYSTEM
OPTIONAL BIO-NEUTRALIZER® DECHLORINATION SYSTEM
BIO-KINETIC® SYSTEM MOUNTING CASTING
BIO-KINETIC® SYSTEM LOCKING LUGS
SOLVENT WELD CONNECTION
4" DIAMETER EFFLUENT LINE
SINGULAIR® BIO-KINETIC® SYSTEM DISCHARGE (SEE DETAIL)
BIO-KINETIC® SYSTEM
FINAL CLARIFICATION CHAMBER
BIO-STATIC® SLUDGE RETURN
CAST-IN-PLACE AERATION CHAMBER TRANSFER PORT
CAST-IN-PLACE RECEIVING FLANGE
BIO-KINETIC® SYSTEM LOCKING LUGS
GASKETED DISCHARGE FLANGE ASSEMBLY
SINGULAIR® TANK OUTLET COUPLING TO 4" DIAMETER EFFLUENT LINE
BIO-KINETIC® SYSTEM DISCHARGE DETAIL
BIO-KINETIC® SYSTEM MOUNTING CASTING AND COVER
GROUT OR SYNTHETIC SEAL
OUTLET END VIEW
60°

NOTE: TOTAL SYSTEM CAPACITY: 1,725 GALLONS RATED CAPACITY: 750/800 GALLONS PER DAY

GENERAL NOTES:

① SINGULAIR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.

② FALL THROUGH SINGULAIR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.

③ ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.

④ TANK REINFORCED PER ACI STD. 318.

⑤ REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.

⑥ CONTACT THE LOCAL, LICENSED SINGULAIR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

PROJECT ENGINEER'S APPROVAL:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: ______

NAME: ______

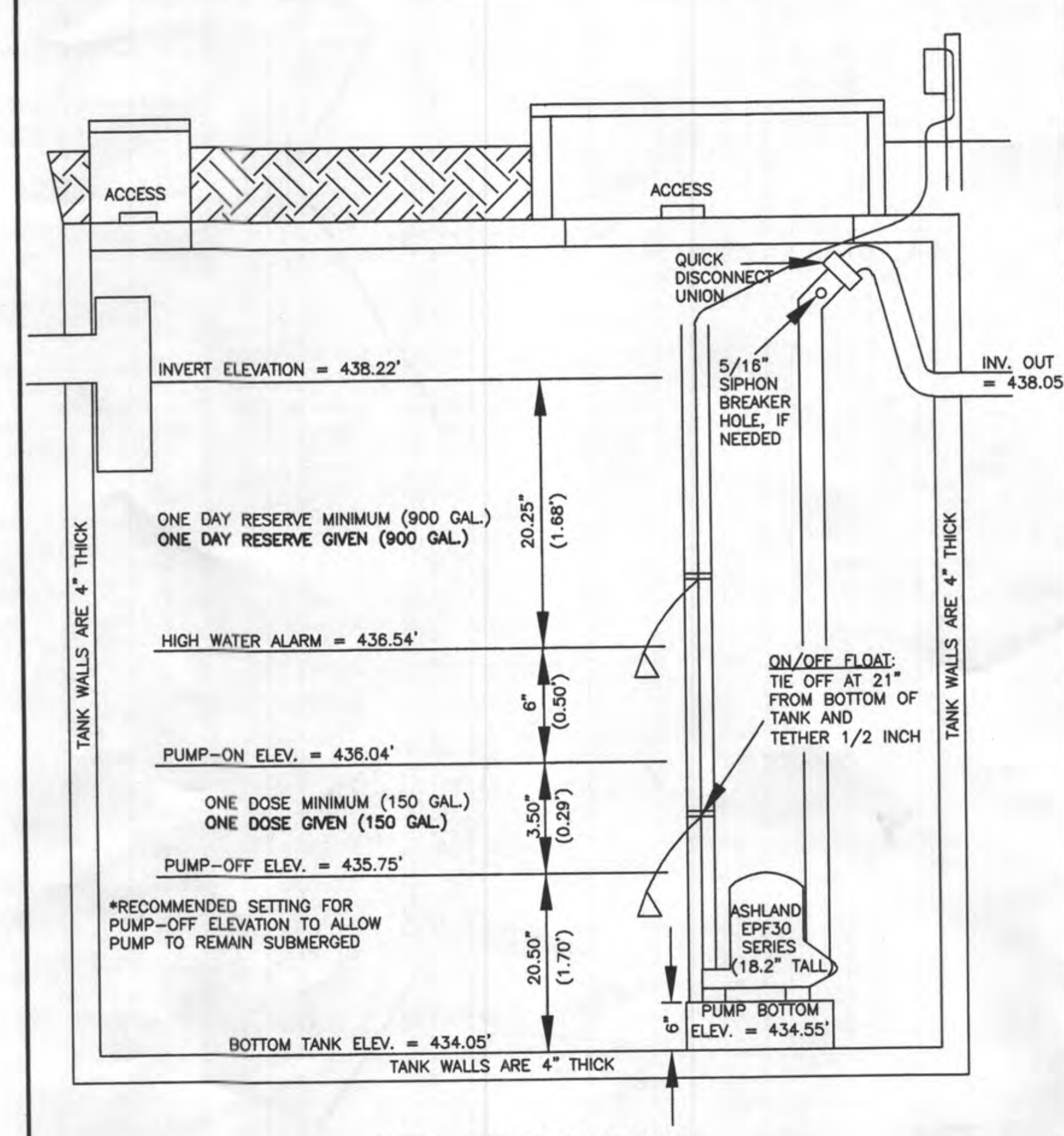
CONTRACTOR'S CERTIFICATION:
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

DATE: ______

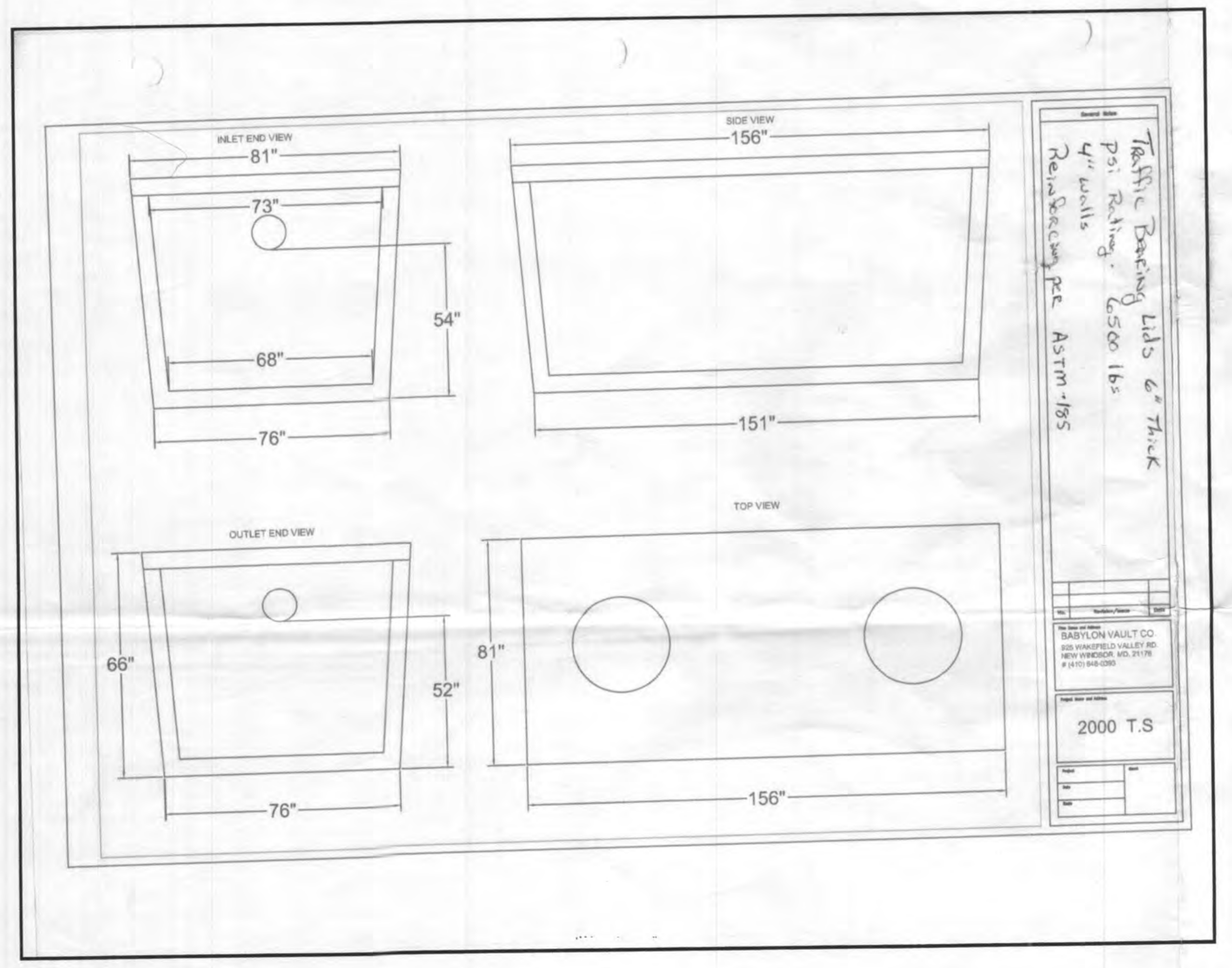
NAME: ______

CRITICAL DIMENSIONS			
A	1'- 0"	N	0'- 3"
B	3'- 0"	O	0'- 6"
C	3'- 4"	P	0'- 3"
D	4'- 5"	Q	1'- 4"
E	3'- 7"	R	4'- 8"
F	12'-2"	S	6'- 0"
G	1'- 0"	T	2'- 0"
H	5'- 0"	U	6'- 0"
I	0'- 3"	V	
J	0'- 3"	W	
K	1'- 0"	X	
L	0'- 2"	Y	
M	4'- 6"	Z	

U.S. AND FOREIGN PATENTS PENDING
© MMXVI
norweco
LOW PROFILE SINGULAIR® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM MODEL TNTLP-750GPD
MT
JMM
4-25-2016
NTS
PC-5-7159


ACCESS
ACCESS
QUICK DISCONNECT UNION
5/16" SIPHON BREAKER HOLE, IF NEEDED
INV. OUT = 438.05'
INVERT ELEVATION = 438.22'
ONE DAY RESERVE MINIMUM (900 GAL.)
ONE DAY RESERVE GIVEN (900 GAL.)
20.25" (1.68')
HIGH WATER ALARM = 436.54'
6" (0.50')
PUMP-ON ELEV. = 436.04'
ONE DOSE MINIMUM (150 GAL.)
ONE DOSE GIVEN (150 GAL.)
3.50" (0.29')
PUMP-OFF ELEV. = 435.75'
*RECOMMENDED SETTING FOR PUMP-OFF ELEVATION TO ALLOW PUMP TO REMAIN SUBMERGED
20.50" (1.70')
ON/OFF FLOAT: TIE OFF AT 21" FROM BOTTOM OF TANK AND TETHER 1/2 INCH
ASHLAND EPF30 SERIES (18.2" TALL)
6"
PUMP BOTTOM ELEV. = 434.55'
BOTTOM TANK ELEV. = 434.05'
TANK WALLS ARE 4" THICK
TANK WALLS ARE 4" THICK
TANK WALLS ARE 4" THICK

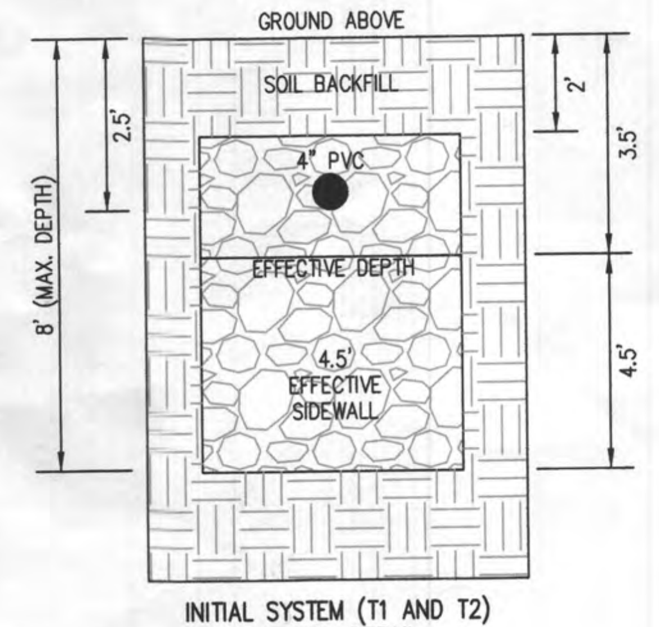
TYPICAL PUMP CHAMBER DETAIL
NOT TO SCALE


INLET END VIEW
81"
73"
68"
54"
76"
SIDE VIEW
156"
151"
OUTLET END VIEW
66"
52"
76"
TOP VIEW
81"
156"

Traffic Baring Lids 6" Thick
psi Rating. 6500 lbs
4" walls
Reinforcing per ASTM-185

BABYLON VAULT CO.
925 WAKEFIELD VALLEY RD.
NEW WINDSOR, MD. 21776
(410) 848-0393

2000 T.S


GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
4.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
3.5'
4.5'

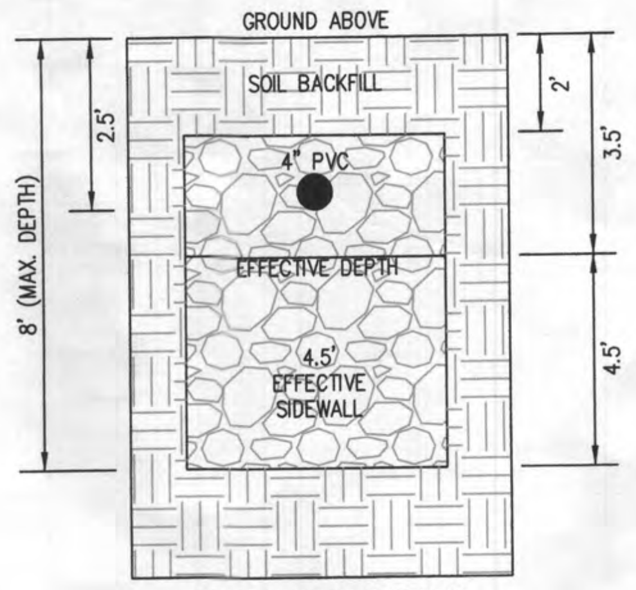
INITIAL SYSTEM (T1 AND T2)
TRENCH DETAIL
(NOT TO SCALE)

INITIAL TRENCH DATA:

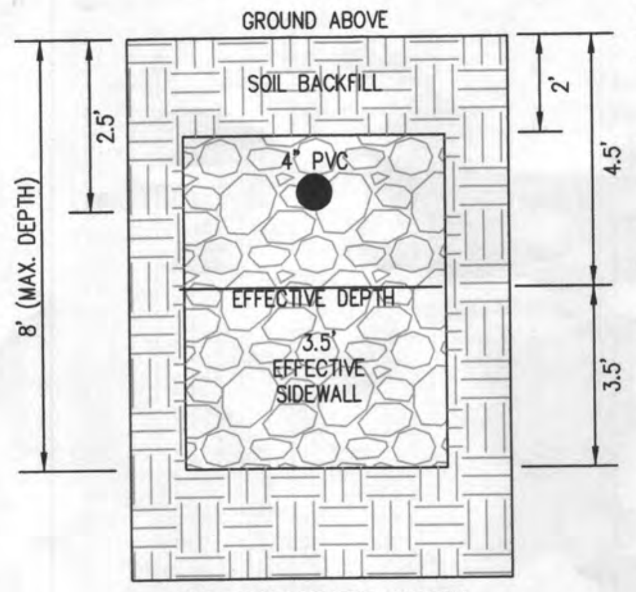
BOTTOM MAX. DEPTH (8')

TRENCH 1 (T1): 47.50 LF.
GROUND ABOVE = 444.10'
INV. IN = 441.60'
BOTTOM TRENCH = 436.10'

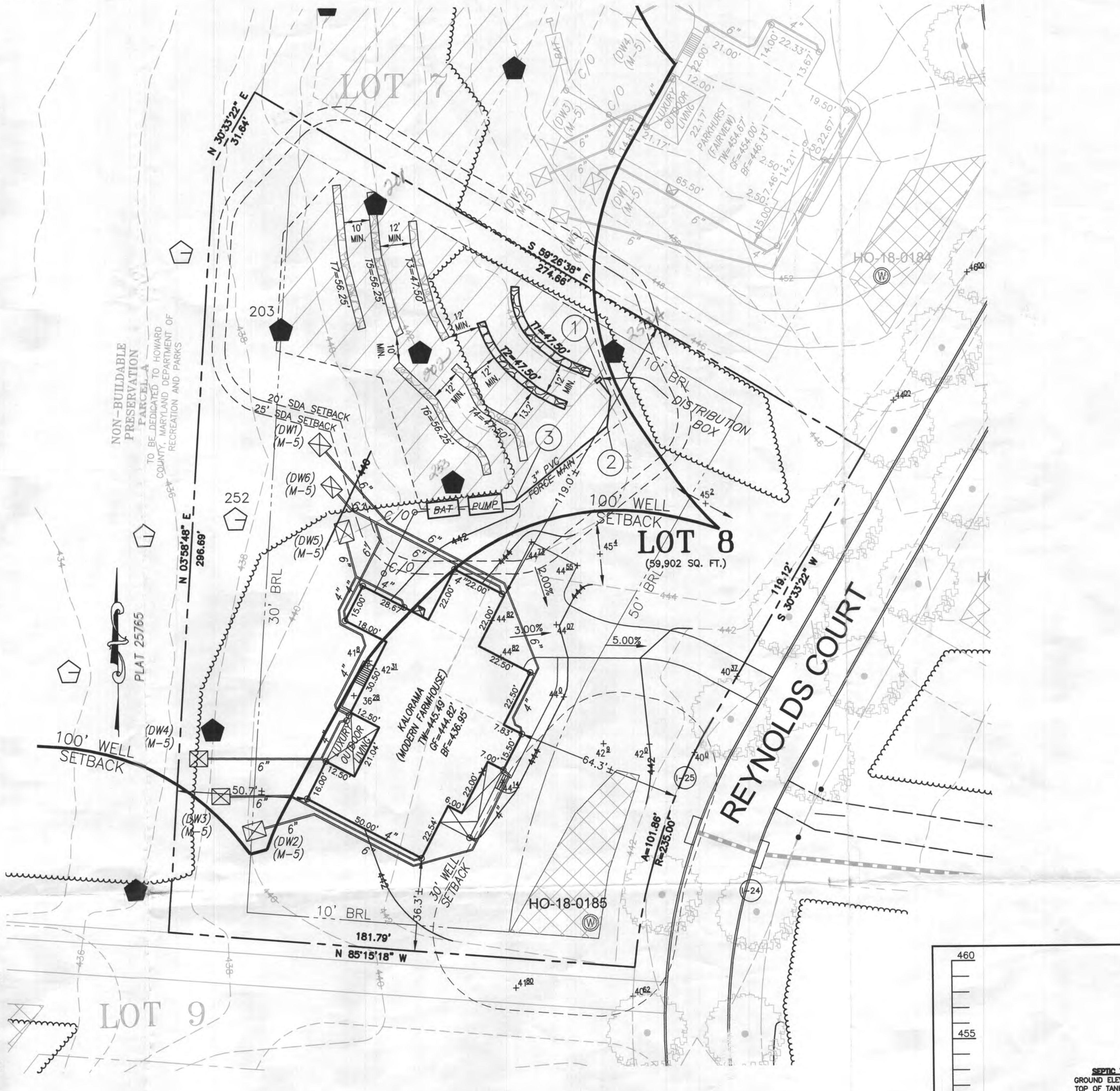
TRENCH 2 (T2): 47.50 LF.
GROUND ABOVE = 443.30'
INV. = 444.80'
BOTTOM TRENCH = 435.30'

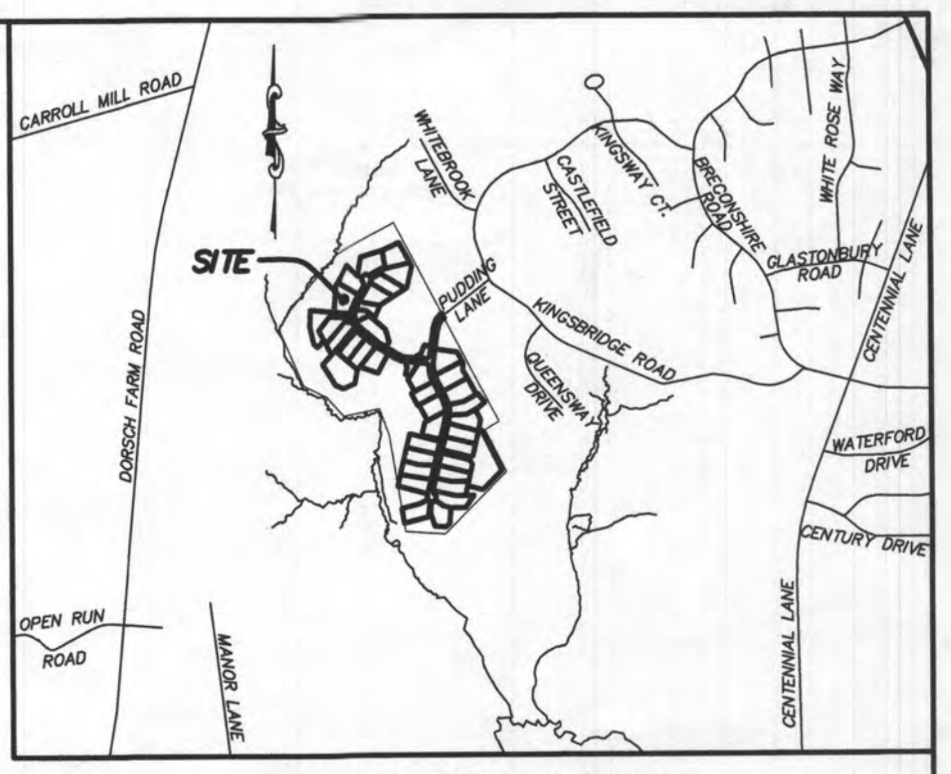

GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
4.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
3.5'
4.5'

1ST REPLACEMENT SYSTEM
(T3 AND T4)
TRENCH DETAIL
(NOT TO SCALE)


GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
3.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
4.5'
3.5'

2ND REPLACEMENT SYSTEM
(T5 THRU T7)
TRENCH DETAIL
(NOT TO SCALE)

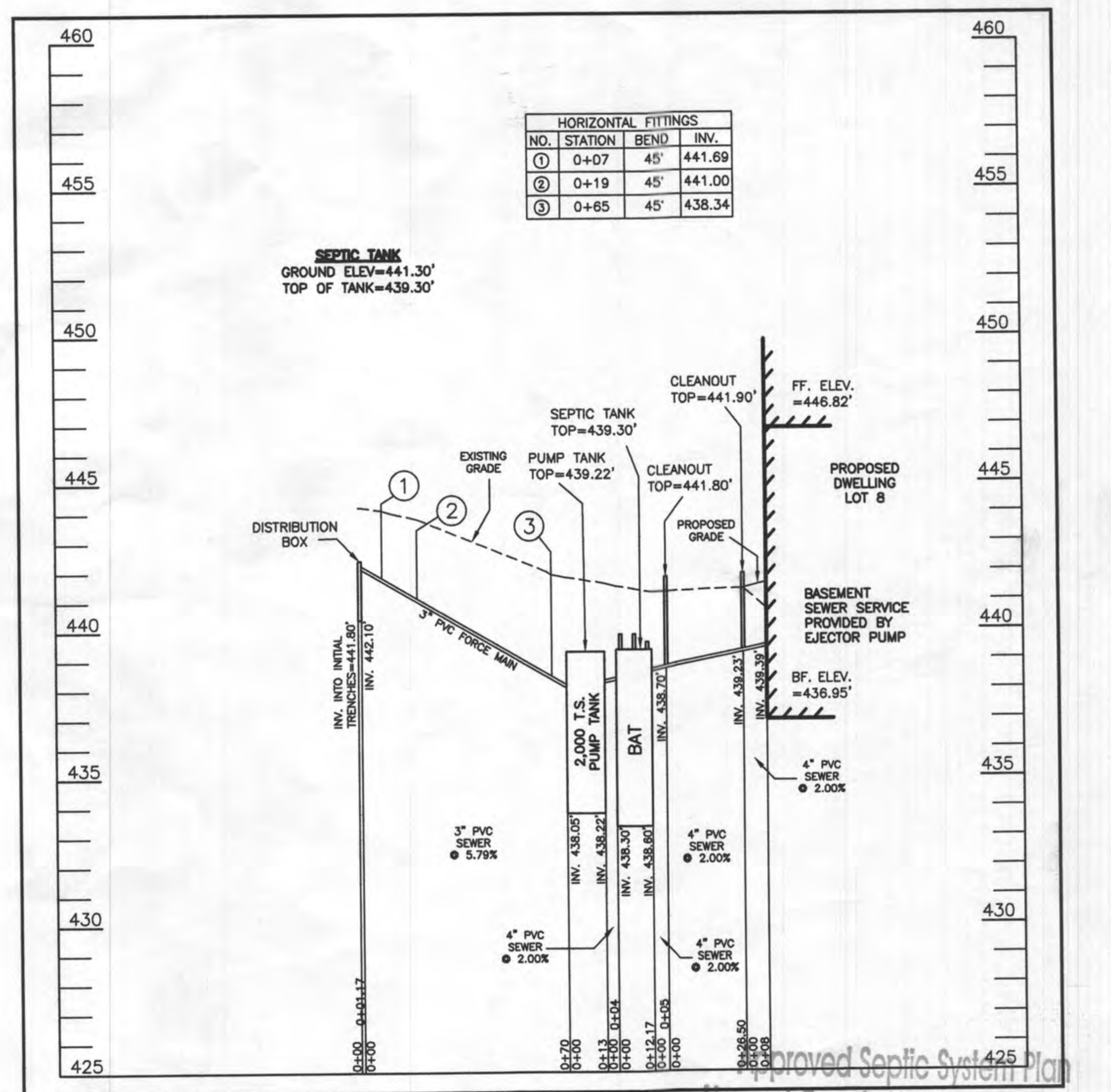

LOT 7
LOT 8
(59,902 SQ. FT.)
LOT 9
REYNOLDS COURT
NON-BUILDABLE PRESERVATION PARCEL A
TO BE DEEDED TO HOWARD COUNTY, MARYLAND DEPARTMENT OF RECREATION AND PARKS
PLAT 25765
N 30°33'22" E 31.84'
S 89°25'38" E 277.68'
N 03°58'48" E 296.89'
181.79'
N 85°15'18" W
119.12'
S 30°33'22" W
A=101.88'
R=335.00'
100' WELL SETBACK
100' WELL SETBACK
10' BRL
30' BRL
50' BRL
10' BRL
25' SDA SETBACK
20' SDA SETBACK
30' WELL SETBACK
DISTRIBUTION BOX
BAT
PUMP
3" PVC FORCE MAIN
KALORAMA (MODERN FARMHOUSE)
HO-18-0185
HO-18-0184
(DW1) (M-5)
(DW2) (M-5)
(DW3) (M-5)
(DW4) (M-5)
(DW5) (M-5)
(DW6) (M-5)
203
252
5.00%
12' MIN.
10' MIN.
T1=47.50'
T2=47.50'
T3=47.50'
T4=47.50'
T5=56.25'
T6=56.25'
T7=56.25'


CARROLL MILL ROAD
SITE
DORSEY HALL ROAD
OPEN RUN ROAD
MANOR LANE
CENTENNIAL LANE
KINGSBRIDGE ROAD
WATERFORD DRIVE
CENTURY DRIVE
GLASTONBURY DRIVE
WHITE ROSE WAY

VICINITY MAP
1" = 1000'

GENERAL NOTES:

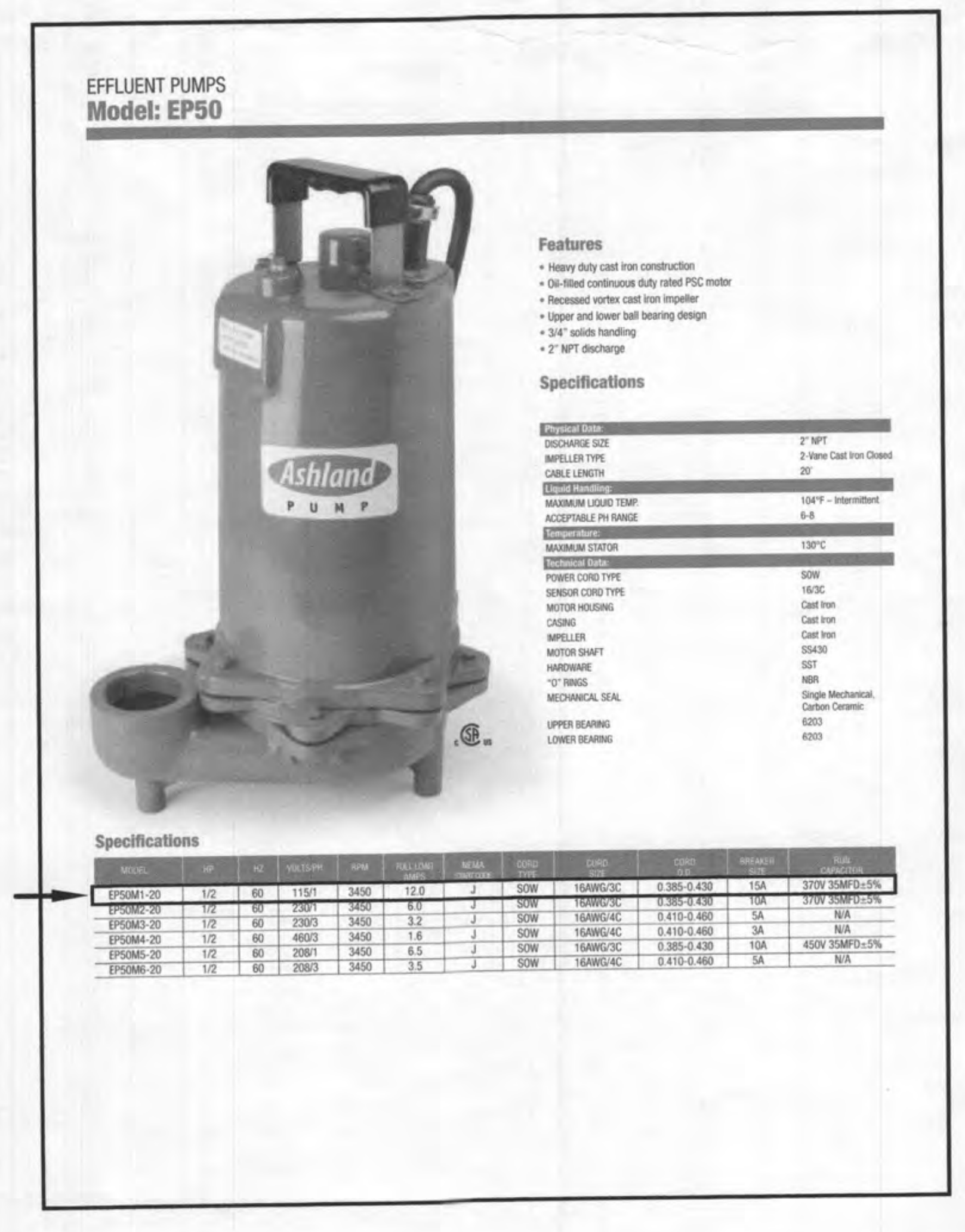
1. ▨ THESE AREAS DESIGNATE A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS UNTO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
2. EXISTING WELLS, SEPTIC SYSTEMS, AND SEPTIC RESERVE AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEPTIC RESERVE AREAS HAVE BEEN SHOWN.
3. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
4. BUILDING SETBACKS (B.R.L.'s) SHOWN HEREON PER SITE DEVELOPMENT PLAN SETBACK DISTANCES SHOWN HEREON AS "±" HAVE AN ACCURACY OF ±0.1' FOOT.
5. 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.
6. THE MAXIMUM EARTH COVER OVER THE TANK IS THREE (3) FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
7. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP, WIDTH, AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
8. THE EXISTING TOPOGRAPHY SHOWN HEREON IS FROM HOWARD COUNTY GIS, 2' CONTOUR INTERVAL AND FIELD VERIFIED BY BENCHMARK ENGINEERING, INC., IN FEBRUARY 2014.
9. LOTS SHOWN HEREON ARE PER THE F-19-014 PLAN, APPROVED ON MARCH 5, 2020. RECORD PLATS ARE NOT RECORDED AT THIS TIME BUT ARE IN PROCESS THEREOF.

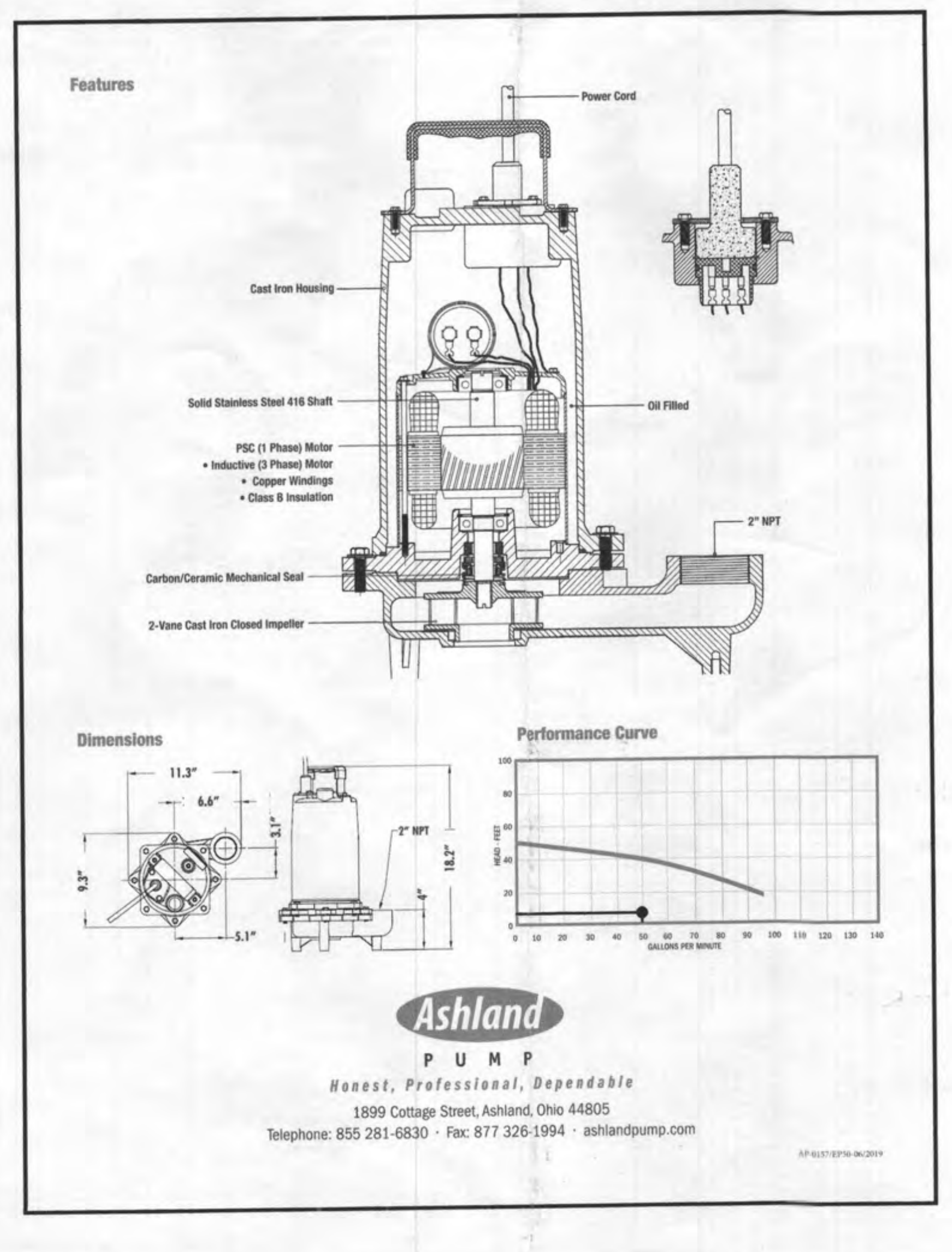

460
455
450
445
440
435
430
425
SEPTIC TANK
GROUND ELEV=441.30'
TOP OF TANK=439.30'
CLEANOUT TOP=441.90'
FF. ELEV. =446.82'
SEPTIC TANK TOP=439.30'
EXISTING GRADE
PUMP TANK TOP=439.22'
CLEANOUT TOP=441.80'
PROPOSED GRADE
PROPOSED DWELLING LOT 8
DISTRIBUTION BOX
① ② ③
3" PVC FORCE MAIN
BASEMENT SEWER SERVICE PROVIDED BY EJECTOR PUMP
BF. ELEV. =436.95'
2,000 T.S.
PUMP TANK
BAT
3" PVC SEWER @ 5.79%
4" PVC SEWER @ 2.00%
4" PVC SEWER @ 2.00%
4" PVC SEWER @ 2.00%
4" PVC SEWER @ 2.00%
0+00
0+01
0+70
0+13
0+04
0+12.17
0+05
0+26.50
0+08

HORIZONTAL FITTINGS			
NO.	STATION	BEND	INV.
①	0+07	45'	441.69
②	0+19	45'	441.00
③	0+65	45'	438.34

SEPTIC SYSTEM PROFILE
SCALE = HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

Approved Septic System Plan
Howard County Health Department
DBernard 4-3-23
Signature Date


EFFLUENT PUMPS
Model: EP50
Features
Specifications
Ashland PUMP


Features
Power Cord
Cast Iron Housing
Solid Stainless Steel 416 Shaft
Oil Filled
Carbon/Ceramic Mechanical Seal
Dimensions
Performance Curve
Ashland
PUMP
Honest, Professional, Dependable

1899 Cottage Street, Ashland, Ohio 44805
Telephone: 855 281-6830 · Fax: 877 326-1994 · ashlandpump.com

HOUSE OPTIONS:

HOUSE TYPE: KALORAMA (MODERN FARMHOUSE)

TWO CAR SIDE ENTRY GARAGE	OPTION No. 012
DAYLIGHT BASEMENT	OPTION No. 018
WET BAR ROUGH-IN	OPTION No. 048246
ADDITIONAL TWO CAR FRONT ENTRY GARAGE	OPTION No. 263019
MULTI GENERATIONAL SUITE	OPTION No. 263073
GRAND MULTI GENERATIONAL SUITE	OPTION No. 263075
EXPANDED CLOSET	OPTION No. 263111
PREP KITCHEN	OPTION No. 263158
LUXURY OUTDOOR LIVING SPACE	OPTION No. 263165
DAYLIGHT WINDOW/WELL	OPTION No. 543
DOUBLE WIDE DRIVEWAY TAIL	OPTION No. 851

LEGEND:

BRL	BUILDING RESTRICTION LINE
Ⓦ	WELL LOCATION
T.W.	TOP OF WALL
G.F.	GARAGE FLOOR
B.F.	BASEMENT FLOOR
⬟	PASSED PERC LOCATION
⬠	FAILED PERC LOCATION
▨	SEWAGE DISPOSAL AREA
☒	WELL BOX AREA
○	PROPOSED TREE

03/07/23
NO. 21328

PUMP SYSTEM CALCULATIONS

TOTAL DOSE PER DAY = 150 GALLONS X 6 EVENTS PER DAY IS 900 GPD

TRENCH 1 (T1) INV. ELEV.=441.60' LENGTH=47.50'
TRENCH 2 (T2) INV. ELEV.=440.80' LENGTH=47.50'

DESIGN FLOW = 900 GPD
PUMP OFF ELEV. = 435.75'
INV. OUT PUMP TANK = 438.05'
PUMP BOTTOM ELEV. = 434.55'
PUMP SELECTED = 1/2 HP

FORCEMAIN LENGTH = 70.00' TYPE=SCH40

**PUMPING FORCEMAIN TO A DISTRIBUTION BOX AND GRAVITY FLOW FROM DISTRIBUTION BOX TO TRENCHES, NO MANIFOLD AND TRENCH CALCULATIONS NEEDED

MIN. SYSTEM DISCHARGE RATE = 50 GPM
MANIFOLD DIAMETER = ______ IN.
FORCE MAIN DIAMETER = 3 IN.
MINIMUM DOSE = 150 GAL.

VELOCITY = ______ FPS
VELOCITY = 2.17 FPS

FRICTION LOSS (TABLE 4.4) = ______
FRICTION LOSS (TABLE 4.4) = 0.58

CALCULATE TOTAL DESIGN HEAD

LENGTH OF FM FROM PUMP TANK TO DISTRIBUTION BOX = 70.00'
# OF (45') BENDS IN FM = 3 (ADD 6' PER BEND) = 18.00'
# OF (90') BENDS IN FM = N/A (ADD 10' PER BEND) = N/A
TOTAL LENGTHS = 70.00' TOTAL ADD'L LENGTHS = 18.00'
TOTAL PIPE/ FRICTION LOSS = 88.00'

((50 GPM OF 3" PVC = 0.58 PER 100' PIPE): 0.58 / 100' = 0.0058 x 88.00' = 0.51')

FRICTION HEAD = 0.51' FT. (PER ABOVE CALCULATION)
STATIC HEAD = 6.35' FT. (HIGHEST POINT IN DISTRIBUTION SYSTEM – PUMP OFF FLOAT ELEVATION)
TOTAL DYNAMIC HEAD = 6.86' FT. (FRICTION HEAD + STATIC HEAD)

THEREFORE A PUMP CAPABLE OF DELIVERING AT LEAST 50 GPM AGAINST 6.86' OF HEAD IS REQUIRED.
EPF50M1-20, 1/2 H.P. IS EFFICIENT

SEWAGE DISPOSAL SYSTEM DATA (6 BDRM):

PROPOSED INVERT AT FOUNDATION WALL: 439.39'

1. EX. GRADE OVER TANK: 441.30'
   PROPOSED GRADE OVER TANK: 441.30'
   INVERT IN: 438.60' INVERT OUT: 438.30'
2. DISTRIBUTION BOX
   EXISTING GRADE OVER TANK: 444.20'
   PROPOSED GRADE OVER TANK: 444.20'
   INVERT IN: 442.10' INVERT OUT: 441.80'
3. INITIAL TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 1.2 APP. RATE = 750 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   12' MIN. SPACING BETWEEN TRENCH EDGES
   750 SF ÷ 3' WIDTH = 250 LF x 0.38 (SIDEWALL REDUCTION) = 95.00 LF MIN.
   USE 2 47.50' LONG TRENCHES = 95.00 LF
4. 1ST REPLACEMENT TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 1.2 APP. RATE = 750 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   12' MIN. SPACING BETWEEN TRENCH EDGES
   750 SF ÷ 3' WIDTH = 250 LF x 0.38 (SIDEWALL REDUCTION) = 95.00 LF MIN.
   USE 2 47.50' LONG TRENCHES = 95.00 LF
5. 2ND REPLACEMENT TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 0.8 APP. RATE = 1,125 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   10' MIN. SPACING BETWEEN TRENCH EDGES
   1,125 SF ÷ 3' WIDTH = 375 LF x 0.45 (SIDEWALL REDUCTION) = 168.75 LF MIN.
   USE 3 56.25' LONG TRENCHES = 168.75 LF

WELL LOCATION CERTIFICATION:

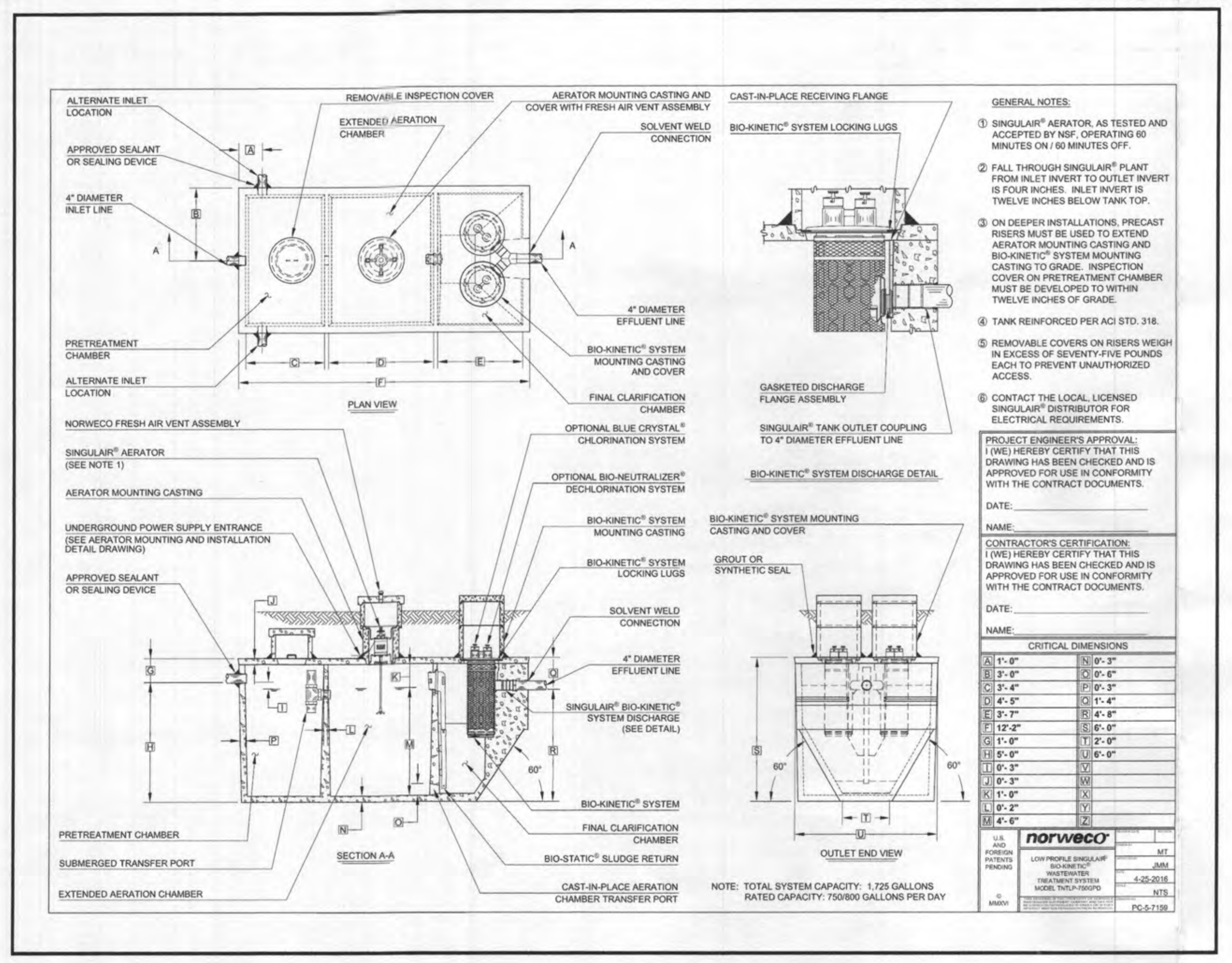
THE EXISTING WELL SHOWN FOR LOT 8 (TAG NO. HO-18-0185) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN HEREON.

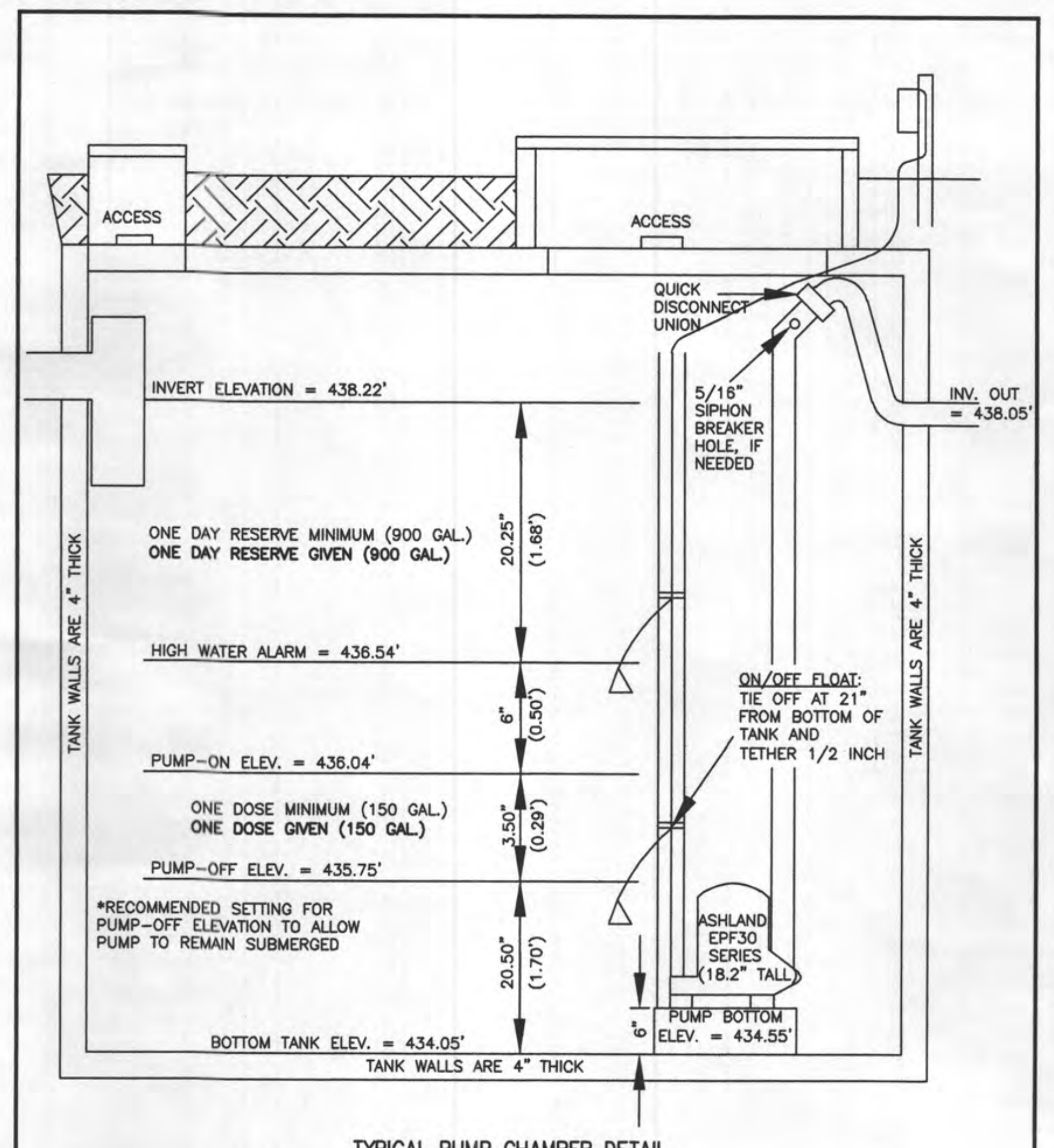
SITE PLAN FOR BAT INSTALLATION
LOT 8 10629 Reynolds
KINGS FOREST Court
LIBER 20039, FOLIO 212
PLAT NO. 25765
ELECTION DISTRICT No. 2
HOWARD COUNTY, MARYLAND
ADDRESS: 10629 REYNOLDS COURT
ELLICOTT CITY, MARYLAND 21042

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

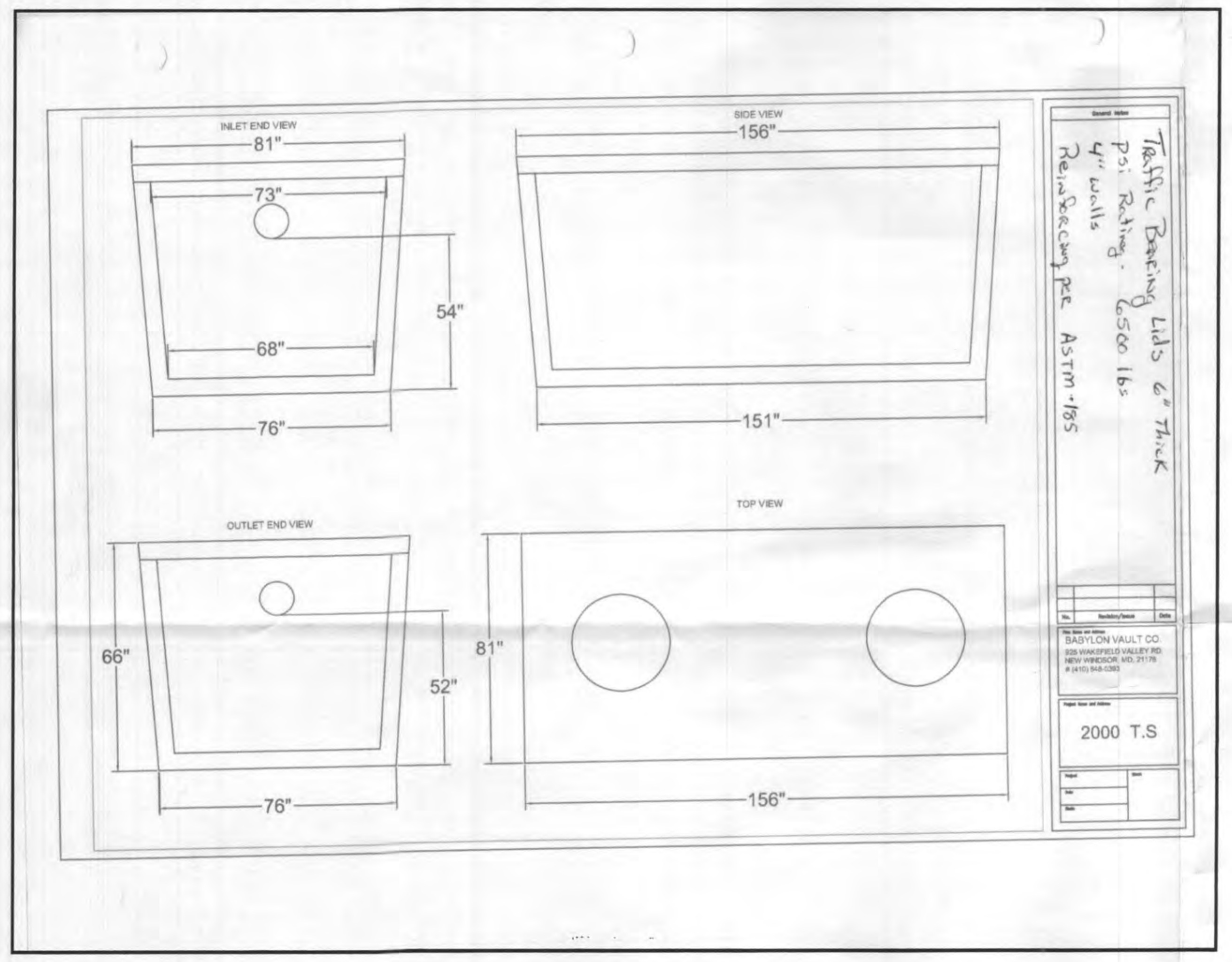
DATE:	03/06/2023	SCALE:	1"=30'	FILE:	BAT LOT 8
CHK'D:	M.J.B	JOB NO:	3502	DRAWN:	R.C.K

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 1/8/25.

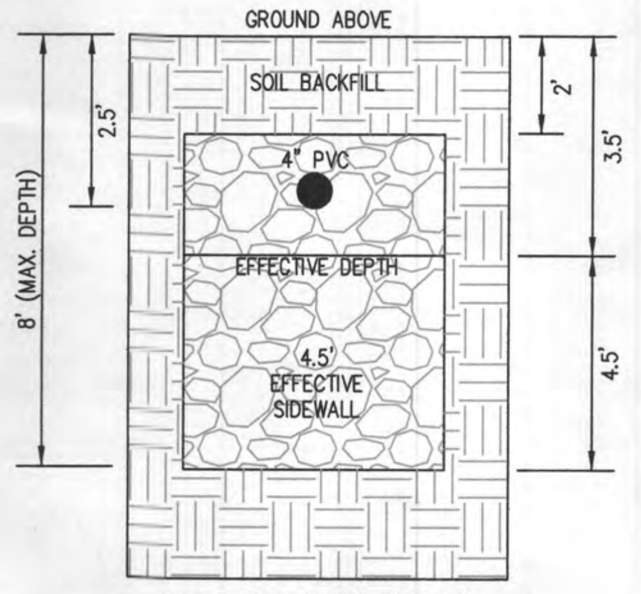



ACCESS
ACCESS
QUICK DISCONNECT UNION
5/16" SIPHON BREAKER HOLE, IF NEEDED
INV. OUT = 438.05'
INVERT ELEVATION = 438.22'
ONE DAY RESERVE MINIMUM (900 GAL.)
ONE DAY RESERVE GIVEN (900 GAL.)
20.25" (1.68')
HIGH WATER ALARM = 436.54'
6" (0.50')
ON/OFF FLOAT: TIE OFF AT 21" FROM BOTTOM OF TANK AND TETHER 1/2 INCH
PUMP–ON ELEV. = 436.04'
ONE DOSE MINIMUM (150 GAL.)
ONE DOSE GIVEN (150 GAL.)
3.50" (0.29')
PUMP–OFF ELEV. = 435.75'
*RECOMMENDED SETTING FOR PUMP–OFF ELEVATION TO ALLOW PUMP TO REMAIN SUBMERGED
20.50" (1.70')
ASHLAND EPF30 SERIES (18.2" TALL)
6"
PUMP BOTTOM ELEV. = 434.55'
BOTTOM TANK ELEV. = 434.05'
TANK WALLS ARE 4" THICK
TANK WALLS ARE 4" THICK
TANK WALLS ARE 4" THICK

TYPICAL PUMP CHAMBER DETAIL
NOT TO SCALE


INLET END VIEW
81"
73"
68"
54"
76"
SIDE VIEW
156"
151"
OUTLET END VIEW
TOP VIEW
66"
81"
52"
76"
156"
2000 T.S

Traffic Bearing Lids 6" Thick
psi Rating. 6500 lbs
4" walls
Reinforcing per ASTM-185


GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
4.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
3.5'
4.5'

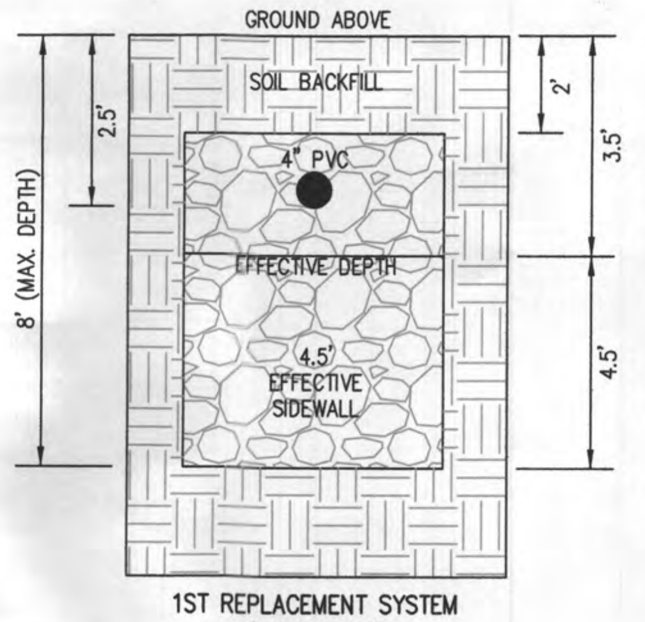
INITIAL SYSTEM (T1 AND T2)
TRENCH DETAIL
(NOT TO SCALE)

INITIAL TRENCH DATA:

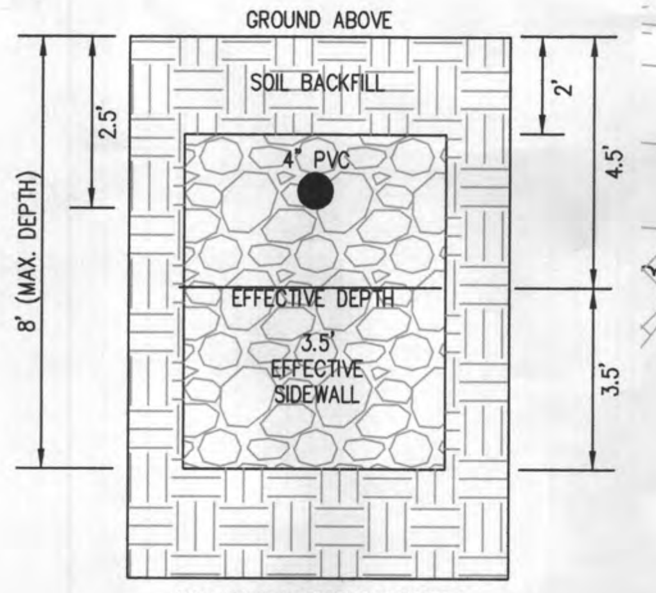
BOTTOM MAX. DEPTH (8')

TRENCH 1 (T1): 47.50 LF.
GROUND ABOVE = 444.10'
INV. IN = 441.60'
BOTTOM TRENCH = 436.10'

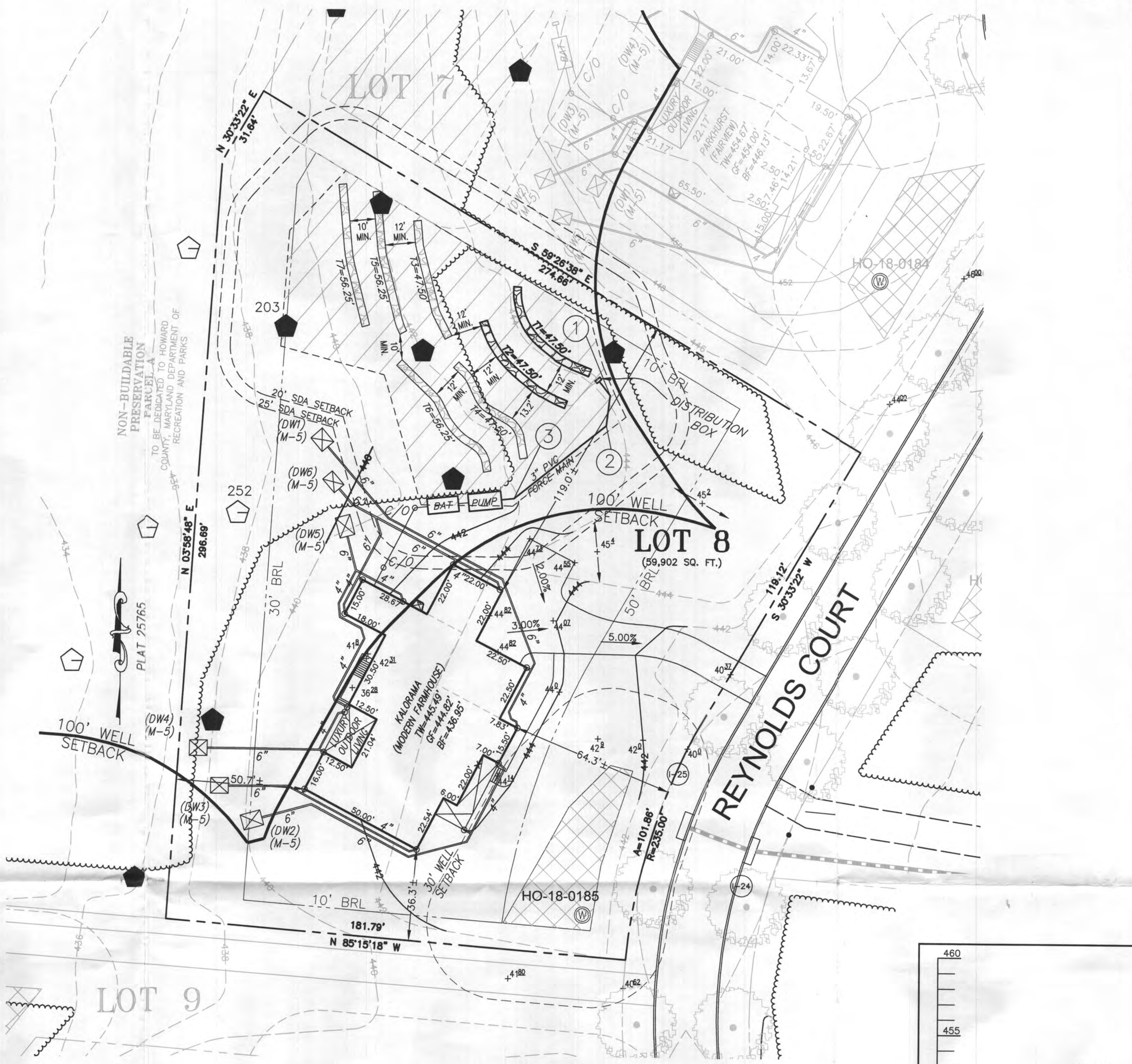
TRENCH 2 (T2): 47.50 LF.
GROUND ABOVE = 443.30'
INV. = 444.80'
BOTTOM TRENCH = 435.30'

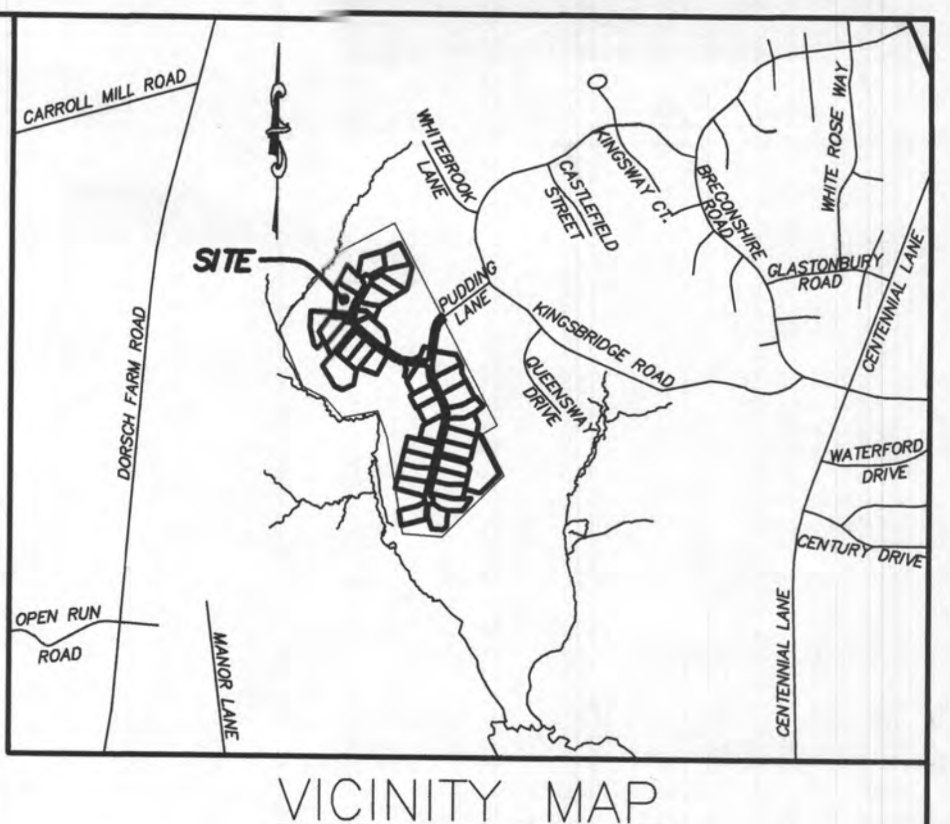

GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
4.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
3.5'
4.5'

1ST REPLACEMENT SYSTEM
(T3 AND T4)
TRENCH DETAIL
(NOT TO SCALE)


GROUND ABOVE
SOIL BACKFILL
4" PVC
EFFECTIVE DEPTH
3.5' EFFECTIVE SIDEWALL
8' (MAX. DEPTH)
2.5'
2'
4.5'
3.5'

2ND REPLACEMENT SYSTEM
(T5 THRU T7)
TRENCH DETAIL
(NOT TO SCALE)

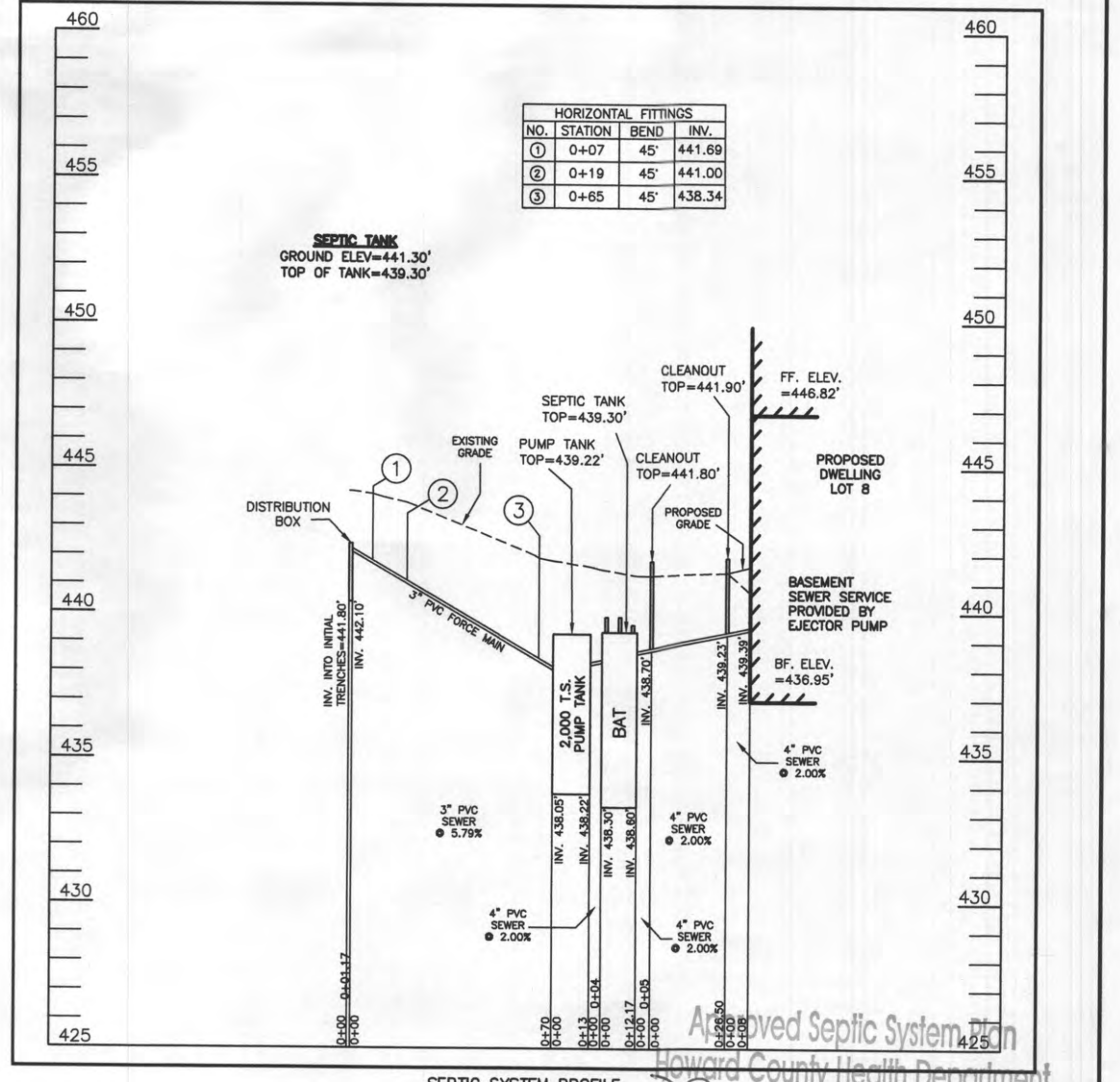

LOT 7
LOT 8
(59,902 SQ. FT.)
LOT 9
REYNOLDS COURT
N 30°33'22" E 31.64'
S 59°26'38" E 277.66'
N 03°58'48" E 296.69'
N 85°15'18" W 181.79'
S 30°33'22" W 119.12'
L=101.86' R=235.00'
NON-BUILDABLE PRESERVATION PARCEL
PLAT 25765
100' WELL SETBACK
100' WELL SETBACK
20' SDA SETBACK
25' SDA SETBACK
10' BRL
30' BRL
50' BRL
30' WELL SETBACK
DISTRIBUTION BOX
BAT
PUMP
KALORAMA (MODERN FARMHOUSE)
HO-18-0184
HO-18-0185
203
252
12' MIN.
10' MIN.
T1=47.50'
T2=47.50'
5.00%


CARROLL MILL ROAD
SITE
DORSEY FARM ROAD
OPEN RUN ROAD
MANOR LANE
KINGSBRIDGE ROAD
WATERFORD DRIVE
CENTURY DRIVE
CENTENNIAL LANE

VICINITY MAP
1" = 1000'

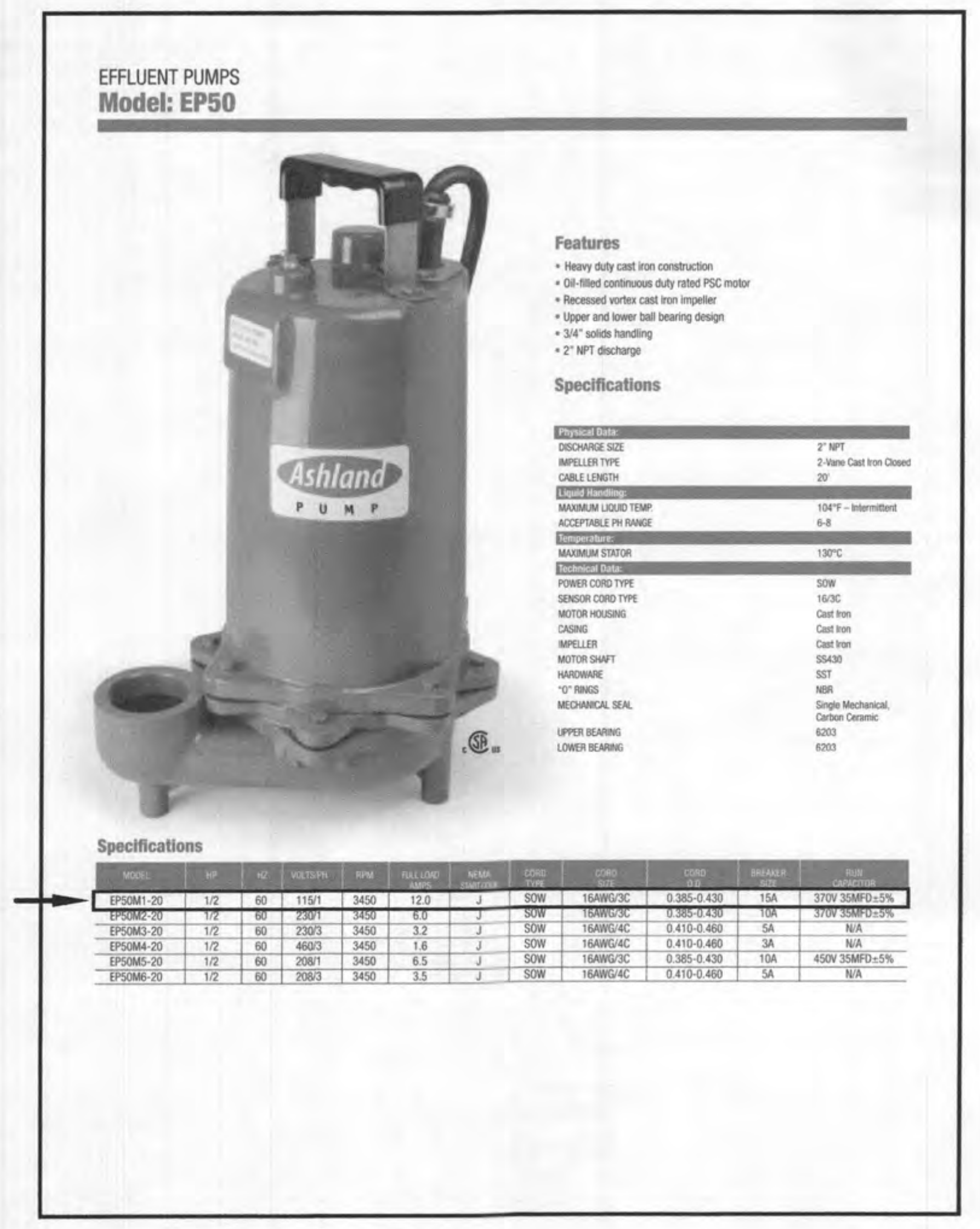
GENERAL NOTES:

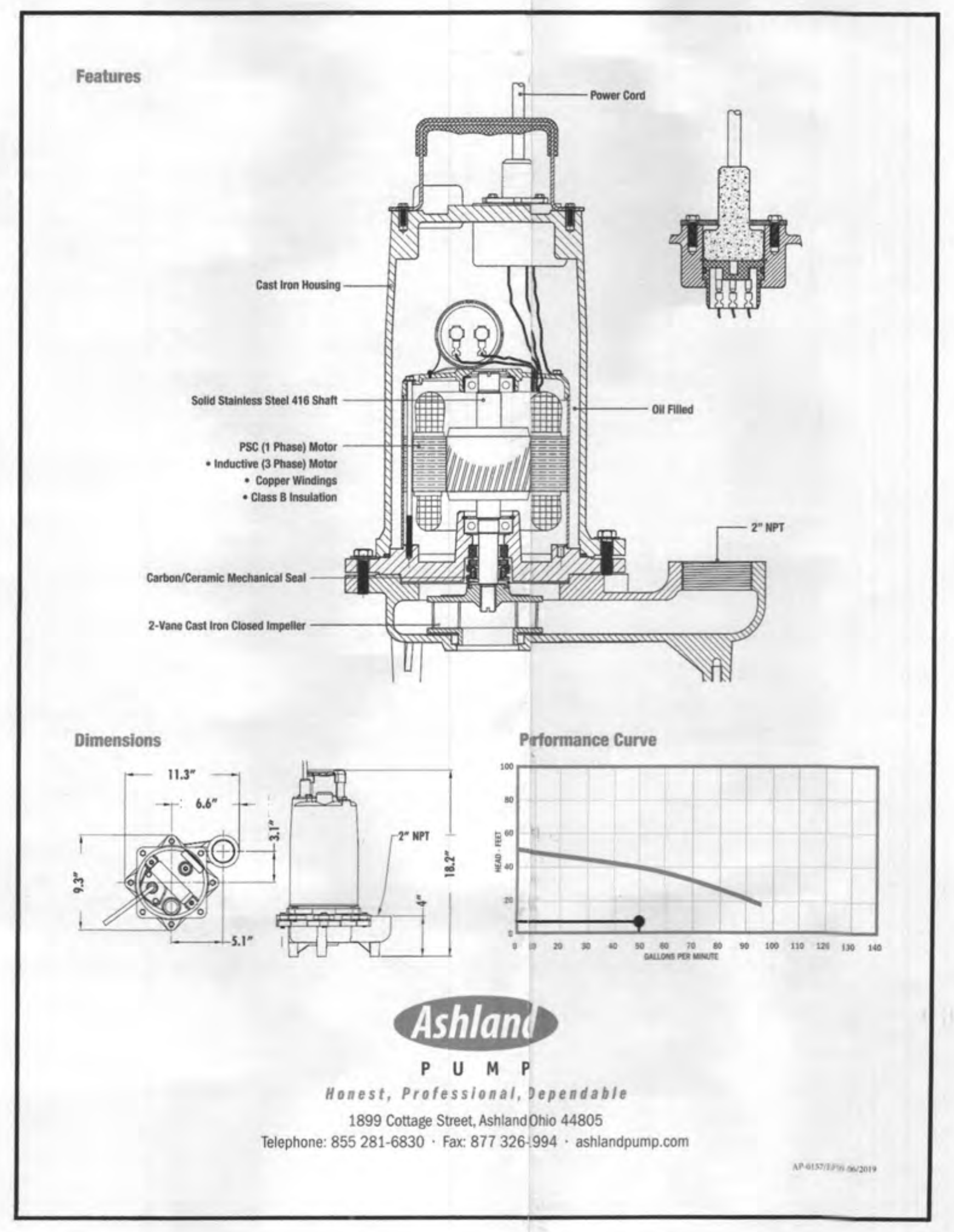
1. ▨ THESE AREAS DESIGNATE A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS UNTO THE PRIVATE SEWAGE AREA. RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
2. EXISTING WELLS, SEPTIC SYSTEMS, AND SEPTIC RESERVE AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEPTIC RESERVE AREAS HAVE BEEN SHOWN.
3. ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
4. BUILDING SETBACKS (B.R.L.'s) SHOWN HEREON PER SITE DEVELOPMENT PLAN SETBACK DISTANCES SHOWN HEREON AS "±" HAVE AN ACCURACY OF ±0.1' FOOT.
5. 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.
6. THE MAXIMUM EARTH COVER OVER THE TANK IS THREE (3) FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
7. THE LOT SHOWN HEREON COMPLIES WITH THE MINIMUM OWNERSHIP, WIDTH, AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
8. THE EXISTING TOPOGRAPHY SHOWN HEREON IS FROM HOWARD COUNTY GIS, 2' CONTOUR INTERVAL AND FIELD VERIFIED BY BENCHMARK ENGINEERING, INC., IN FEBRUARY 2014.
9. LOTS SHOWN HEREON ARE PER THE F–19–014 PLAN, APPROVED ON MARCH 5, 2020. RECORD PLATS ARE NOT RECORDED AT THIS TIME BUT ARE IN PROCESS THEREOF.


HORIZONTAL FITTINGS
NO. STATION BEND INV.
① 0+07 45° 441.69
② 0+19 45° 441.00
③ 0+65 45° 438.34
SEPTIC TANK
GROUND ELEV=441.30'
TOP OF TANK=439.30'
DISTRIBUTION BOX
EXISTING GRADE
PUMP TANK TOP=439.22'
SEPTIC TANK TOP=439.30'
CLEANOUT TOP=441.80'
CLEANOUT TOP=441.90'
FF. ELEV.=446.82'
PROPOSED DWELLING LOT 8
PROPOSED GRADE
BASEMENT SEWER SERVICE PROVIDED BY EJECTOR PUMP
BF. ELEV.=436.95'
4" PVC SEWER @ 2.00%
3" PVC SEWER @ 5.79%
BAT
2,000 T.S.
460
455
450
445
440
435
430
425

SEPTIC SYSTEM PROFILE
SCALE = HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

Approved Septic System Plan
Howard County Health Department
DBernard 4-3-23
Signature Date


EFFLUENT PUMPS
Model: EP50
Features
Specifications
Ashland PUMP
Honest, Professional, Dependable


Features
Dimensions
Performance Curve

HOUSE OPTIONS:
HOUSE TYPE: KALORAMA (MODERN FARMHOUSE)

TWO CAR SIDE ENTRY GARAGE	OPTION No. 012
DAYLIGHT BASEMENT	OPTION No. 018
WET BAR ROUGH–IN	OPTION No. 048246
ADDITIONAL TWO CAR FRONT ENTRY GARAGE	OPTION No. 263019
MULTI GENERATIONAL SUITE	OPTION No. 263073
GRAND MULTI GENERATIONAL SUITE	OPTION No. 263075
EXPANDED CLOSET	OPTION No. 263111
PREP KITCHEN	OPTION No. 263158
LUXURY OUTDOOR LIVING SPACE	OPTION No. 263165
DAYLIGHT WINDOW/WELL	OPTION No. 543
DOUBLE WIDE DRIVEWAY TAIL	OPTION No. 851

LEGEND:

BRL	BUILDING RESTRICTION LINE
Ⓦ	WELL LOCATION
T.W.	TOP OF WALL
G.F.	GARAGE FLOOR
B.F.	BASEMENT FLOOR
⬟	PASSED PERC LOCATION
⬠	FAILED PERC LOCATION
▨	SEWAGE DISPOSAL AREA
▩	WELL BOX AREA
○	PROPOSED TREE

PUMP SYSTEM CALCULATIONS

TOTAL DOSE PER DAY = 150 GALLONS X 6 EVENTS PER DAY IS 900 GPD

TRENCH 1 (T1) INV. ELEV.=441.60' LENGTH=47.50'
TRENCH 2 (T2) INV. ELEV.=440.80' LENGTH=47.50'

DESIGN FLOW = 900 GPD
PUMP OFF ELEV. = 435.75'
INV. OUT PUMP TANK = 438.05'
PUMP BOTTOM ELEV. = 434.55'
PUMP SELECTED = 1/2 HP

FORCEMAIN LENGTH = 70.00' TYPE=SCH40

**PUMPING FORCEMAIN TO A DISTRIBUTION BOX AND GRAVITY FLOW FROM DISTRIBUTION BOX TO TRENCHES, NO MANIFOLD AND TRENCH CALCULATIONS NEEDED

MIN. SYSTEM DISCHARGE RATE = 50 GPM
MANIFOLD DIAMETER = ____ IN. VELOCITY = ____ FPS FRICTION LOSS (TABLE 4.4) = ____
FORCE MAIN DIAMETER = 3 IN. VELOCITY = 2.17 FPS FRICTION LOSS (TABLE 4.4) = 0.58
MINIMUM DOSE = 150 GAL.

CALCULATE TOTAL DESIGN HEAD
LENGTH OF FM FROM PUMP TANK TO DISTRIBUTION BOX = 70.00'
OF (45°) BENDS IN FM = 3 (ADD 6' PER BEND) = 18.00'
OF (90°) BENDS IN FM = N/A (ADD 10' PER BEND) = N/A
TOTAL LENGTHS = 70.00' TOTAL ADD'L LENGTHS = 18.00' TOTAL PIPE/FRICTION LOSS = 88.00'
((50 GPM OF 3" PVC = 0.58 PER 100' PIPE): 0.58 / 100' = 0.0058 x 88.00' = 0.51')

FRICTION HEAD = 0.51' FT. (PER ABOVE CALCULATION)
STATIC HEAD = 6.35' FT. (HIGHEST POINT IN DISTRIBUTION SYSTEM – PUMP OFF FLOAT ELEVATION)
TOTAL DYNAMIC HEAD = 6.86' FT. (FRICTION HEAD + STATIC HEAD)

THEREFORE A PUMP CAPABLE OF DELIVERING AT LEAST 50 GPM AGAINST 6.86' OF HEAD IS REQUIRED.
EPF50M1–20, 1/2 H.P. IS EFFICIENT

SEWAGE DISPOSAL SYSTEM DATA (6 BDRM):

PROPOSED INVERT AT FOUNDATION WALL: 439.39'

1. EX. GRADE OVER TANK: 441.30'
   PROPOSED GRADE OVER TANK: 441.30'
   INVERT IN: 438.60' INVERT OUT: 438.30'
2. DISTRIBUTION BOX
   EXISTING GRADE OVER TANK: 444.20'
   PROPOSED GRADE OVER TANK: 444.20'
   INVERT IN: 442.10' INVERT OUT: 441.80'
3. INITIAL TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 1.2 APP. RATE = 750 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   12' MIN. SPACING BETWEEN TRENCH EDGES
   750 SF ÷ 3' WIDTH = 250 LF x 0.38 (SIDEWALL REDUCTION) = 95.00 LF MIN.
   USE 2 47.50' LONG TRENCHES = 95.00 LF
4. 1ST REPLACEMENT TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 1.2 APP. RATE = 750 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   12' MIN. SPACING BETWEEN TRENCH EDGES
   750 SF ÷ 3' WIDTH = 250 LF x 0.38 (SIDEWALL REDUCTION) = 95.00 LF MIN.
   USE 2 47.50' LONG TRENCHES = 95.00 LF
5. 2ND REPLACEMENT TRENCH DESIGN (6 BDRM x 150 GPD/BDRM = 900 GPD)
   900 GPD ÷ 0.8 APP. RATE = 1,125 SF
   USE 3' WIDE TRENCH WITH XX" GRAVEL BELOW PIPE
   10' MIN. SPACING BETWEEN TRENCH EDGES
   1,125 SF ÷ 3' WIDTH = 375 LF x 0.45 (SIDEWALL REDUCTION) = 168.75 LF MIN.
   USE 3 56.25' LONG TRENCHES = 168.75 LF

03/07/23
NO. 21328

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