

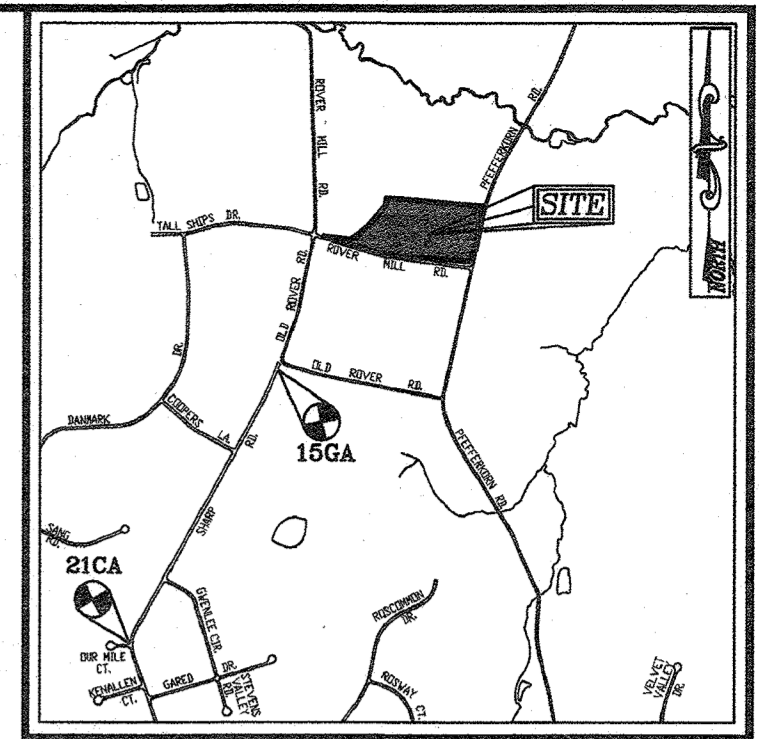
SITE DATA

LOCATION: TAX MAP 15, BLOCK 14
PARCEL: 169
3RD ELECTION DISTRICT
PRESENT ZONING: RR-DEO
GROSS AREA OF PROJECT: 16.42 AC.

LOT AREA TABULATION table with columns: LOT, GROSS AREA, PIPESTEM AREA, NET AREA, MIN. LOT SIZE

FINAL PLAN
ROVER MILL ESTATES
LOTS 1-7 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'

LEGEND table listing symbols for PROPERTY LINE, ADJACENT PROPERTY LINE, RIGHT-OF-WAY LINE, EXISTING EDGE OF PAVING, EXISTING STREAM, EXISTING STREAM BUFFER, EXISTING TREETLINE, PROPOSED TREETLINE, EXISTING WETLANDS, EXISTING WETLAND BUFFER, PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT, PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)



VICINITY MAP
SCALE: 1"=2000'
ADJ. MAP: PAGE: 17 BLOCK: D4 & E4
BENCHMARKS
HOWARD COUNTY BENCHMARK 156A (CONC. MON.)

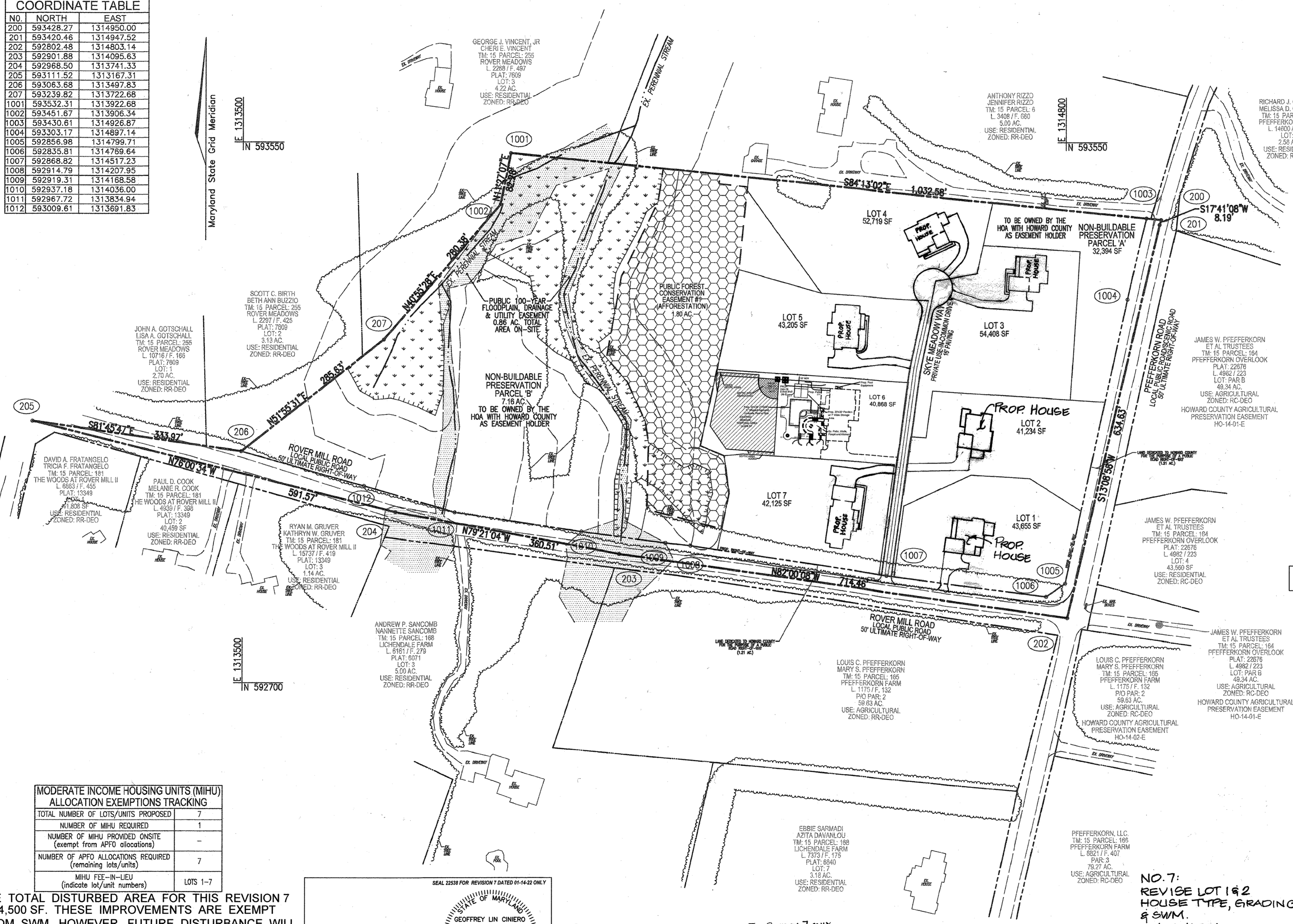
NOTE: NO HOUSES ARE TO BE CONSTRUCTED USING THIS PLAN.

NOTE: ONLY THE GRADING SHOWN ON SHEET 5 OF 15 IS TO BE PERFORMED UNDER THIS PLAN.

GENERAL NOTES

- 1. THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED SEPTEMBER 05, 2017.
2. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED OCTOBER 2017.

COORDINATE TABLE with columns: NO., NORTH, EAST



DENSITY EXCHANGE TABULATION

Density Exchange Tabulation table with columns: RECEIVING PARCEL INFORMATION, GROSS ACREAGE OF PARCEL, NET ACREAGE OF PARCEL, MAXIMUM NUMBER OF UNITS ALLOWED BY RIGHT

SHEET INDEX

SHEET INDEX table with columns: COVER SHEET, GENERAL NOTES, PROFILES AND SITE DETAILS, LAYOUT PLAN, LAYOUT PLAN

- 20. FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JOINTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
21. LOTS 2-7 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. A USE-IN-COMMON MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAYS SHALL BE RECORDED SIMULTANEOUSLY WITH THE FINAL PLAN.

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING table

GENERAL NOTES ARE CONTINUED ON SHEET 2

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
11/19/2019
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
11/19/19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

11/22/19
CHIEF, DIVISION OF LAND DEVELOPMENT

THE TOTAL DISTURBED AREA FOR THIS REVISION 7 IS 4,500 SF. THESE IMPROVEMENTS ARE EXEMPT FROM SWM, HOWEVER, FUTURE DISTURBANCE WILL REQUIRE THAT CURRENT SWM REQUIREMENTS BE COMPLIED WITH.

PARKING TABULATION:
TOTAL NUMBER OF DWELLING UNITS PROPOSED : 7
PARKING SPACES REQUIRED:
OFF-STREET PARKING AND OVERFLOW/GUEST PARKING SPACES
2.0 SPACES PER UNIT = 14 SPACES

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.

COVER SHEET
SCALE: 1"=100'

THIS AREA DESIGNATES A PRIVATE SEWAGE AREA OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA...

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.

STORMWATER MANAGEMENT PRACTICES

Stormwater Management Practices table with columns: SWALES, LOT NUMBER, ADDRESS, DISCONNECTION OF ROOFTOP RUNOFF, DISCONNECTION OF NON-ROOFTOP RUNOFF, DRY WELLS, MICRO-BIORETENTION

OWNER/DEVELOPER
PEPPERKORN ROVER MILL, LLC
C/O RAJ KATHURIA
12628 FREDERICK ROAD
WEST FRIENDSHIP, MD 21794
(443) 574-1600

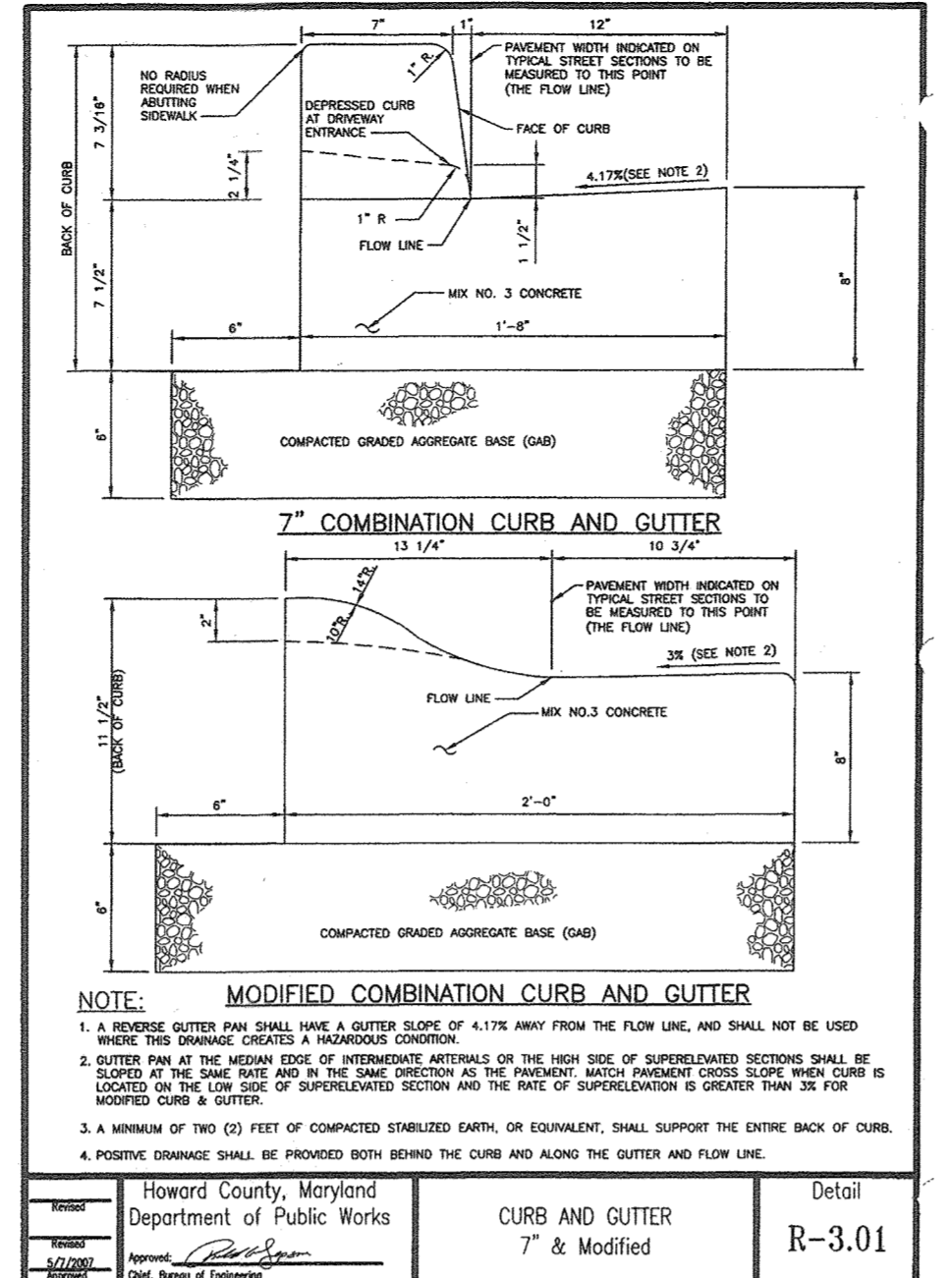
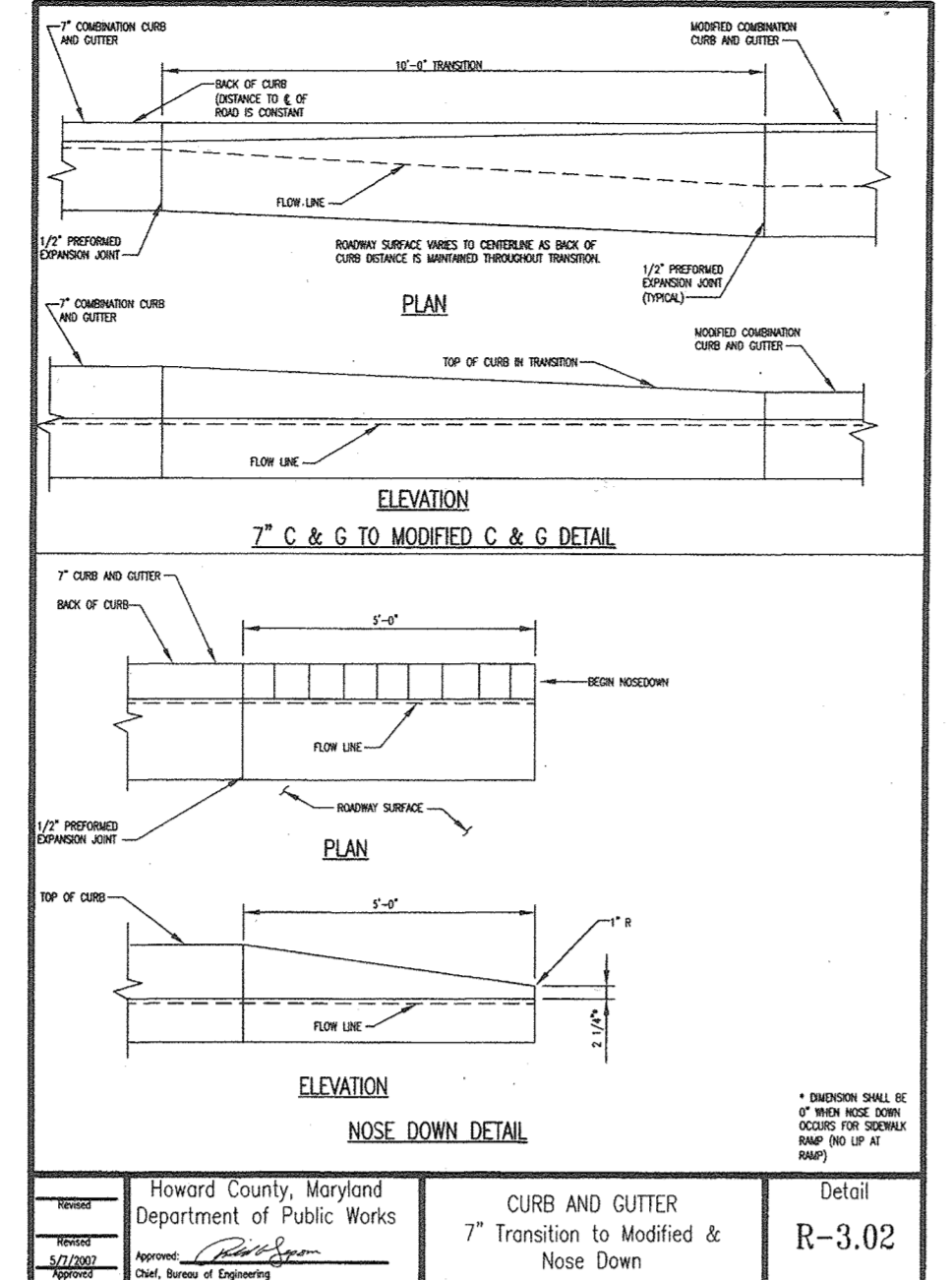
FINAL PLAN
COVER SHEET
ROVER MILL ESTATES
LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'

Robert H. Vogel Engineering, Inc. logo and contact information: 3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043

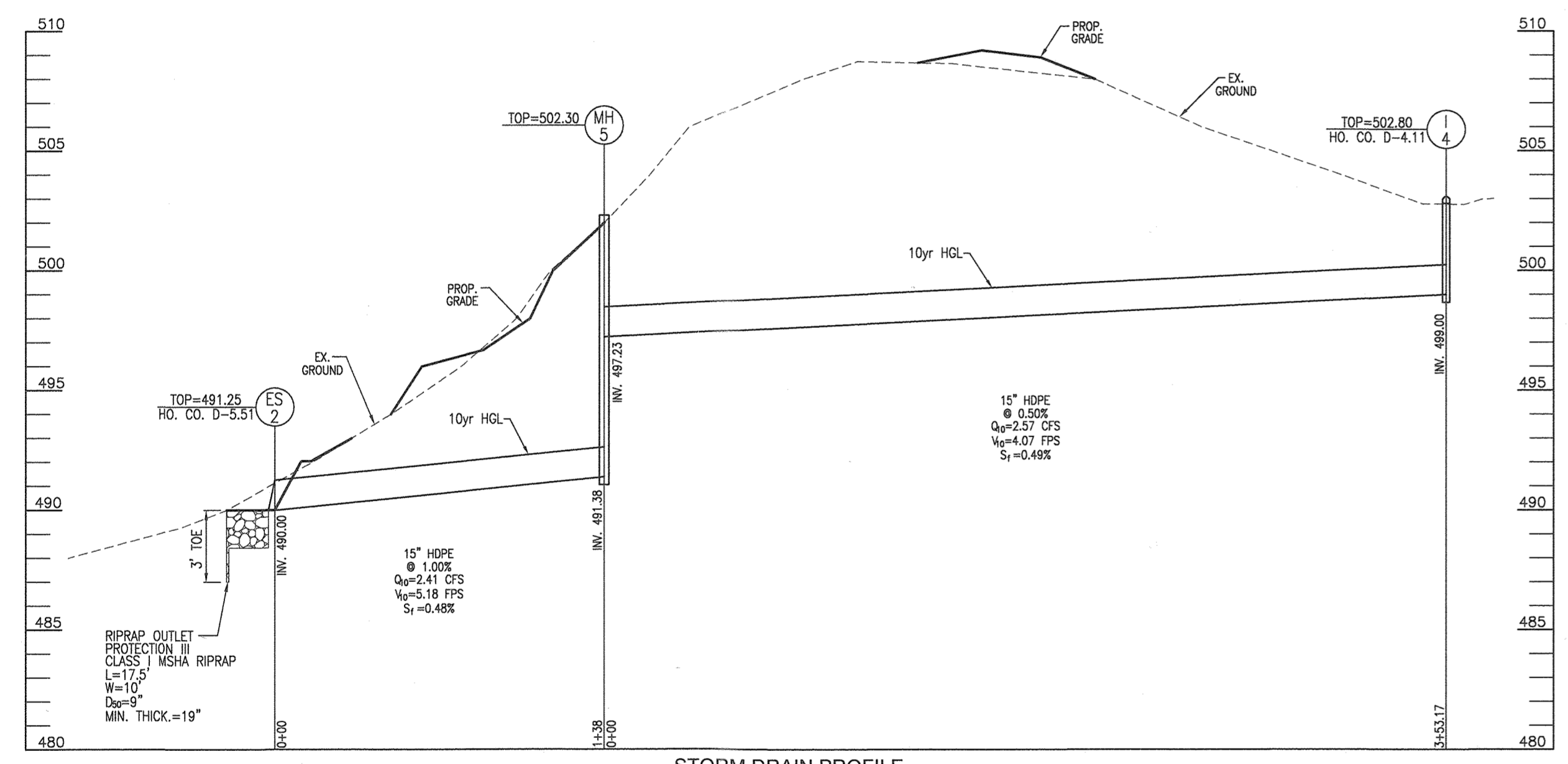
ASBULT MARCH, 2021
1 SHEET OF 15

**GENERAL NOTES (CONT'D)**

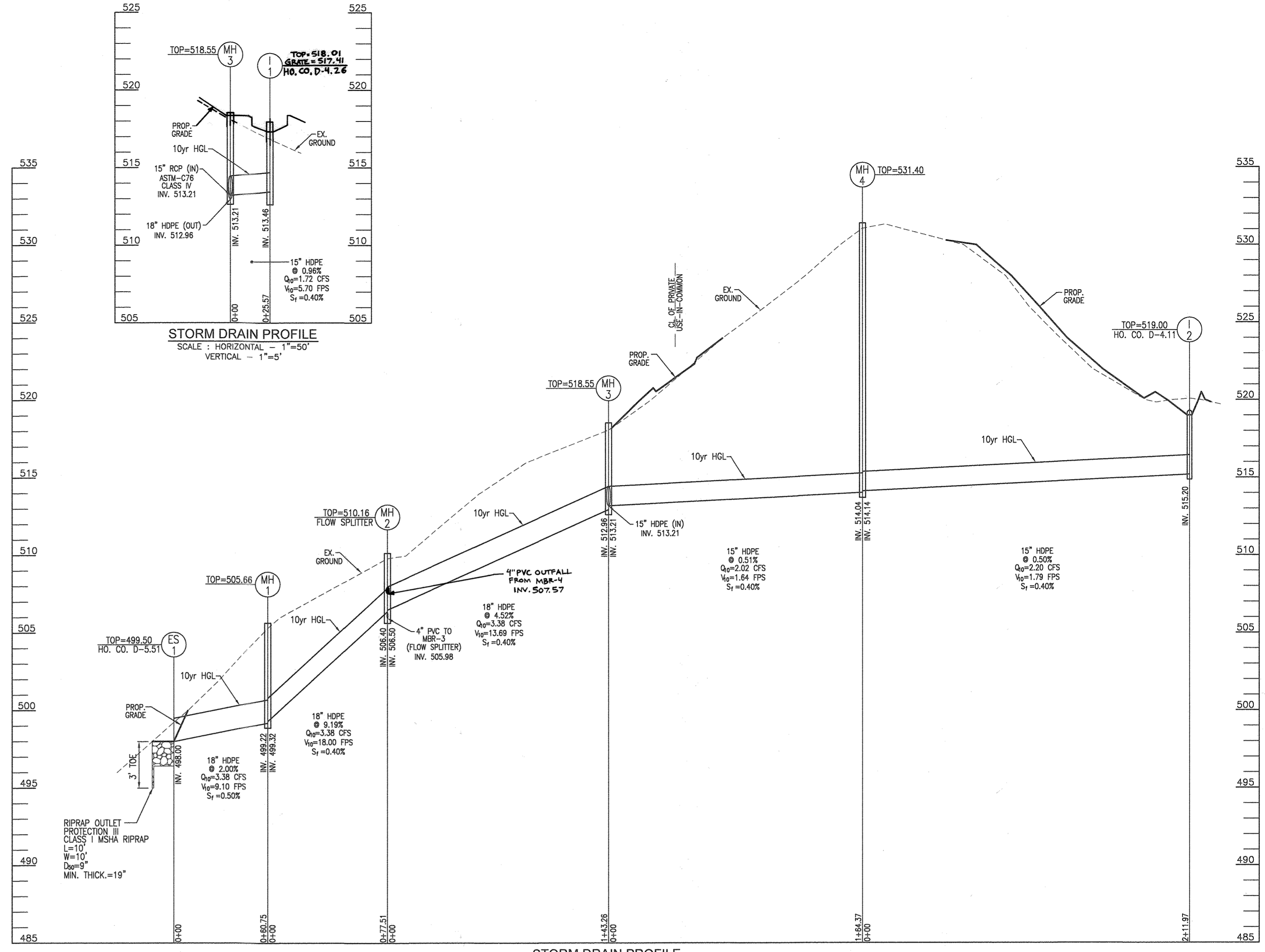
40. TRAFFIC CONTROL DEVICES:  
 A) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.  
 B) ALL TRAFFIC CONTROL DEVICES, AND THEIR LOCATIONS, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).  
 C) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.  
 41. AN ALTERNATIVE COMPLIANCE PETITION TO SECTION 16.1205(a)(7), FILED AS WP-18-092, TO REMOVE 4 SPECIMEN TREES WAS APPROVED ON OCTOBER 15, 2018. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:  
 1. THE REMOVAL OF THE FOUR NORWAY MAPLE TREES IS PERMITTED AS SHOWN ON THE PLAN EXHIBIT. THE REMOVAL OF ANY ADDITIONAL SPECIMEN TREE IS NOT PERMITTED UNDER THIS ALTERNATIVE COMPLIANCE REQUEST UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.  
 2. THE DEVELOPER SHALL PLANT EIGHT 2-1/2" MINIMUM-CALIPER NATIVE SHADE TREES IN ADDITION TO THE REQUIRED PERIMETER LANDSCAPING TO MITIGATE THE REMOVAL OF THE FOUR SPECIMEN TREES. INCLUDE THE ADDITIONAL TREES ON SP-18-001 AND ALL SUBSEQUENT SUBDIVISION AND DEVELOPMENT PLANS. THESE TREES WILL BE BONDED ALONG WITH THE REQUIRED PERIMETER LANDSCAPING AS PART OF THE FINAL SUBDIVISION PLAN.  
 42. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED FEBRUARY 28TH, 2018, AND WAS APPROVED ON NOVEMBER 08, 2018. THERE IS APPROXIMATELY 0.86 ACRES OF 100-YR FLOODPLAIN LOCATED WITHIN THE LIMITS OF THIS SITE.  
 43. ALL PROPOSED WELLS MUST BE DRILLED PRIOR TO HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLATS.  
 44. A PERCOLATION CERTIFICATION PLAN WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED JUNE 05, 2018 AND SIGNED BY THE HEALTH OFFICER ON JUNE 19, 2018. ALL SEWAGE DISPOSAL AREAS SHOWN HEREON MATCH THE SIGNED PERCOLATION CERTIFICATION PLAN.  
 45. THE ARTICLES OF INCORPORATION FOR THE HOMEOWNERS ASSOCIATION WERE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION ON \_\_\_\_\_ FILE NO. \_\_\_\_\_.  
 46. PFEFFERKORN ROAD IS CLASSIFIED AS A LOCAL PUBLIC ROAD AND A SCENIC ROAD. NO IMPROVEMENTS TO PFEFFERKORN ROAD ARE PROPOSED. ROVER MILL ROAD IS ALSO CLASSIFIED AS A LOCAL PUBLIC ROAD. THE IMPROVEMENTS TO ROVER MILL ROAD SHALL CONFORM WITH GUIDELINES WITHIN THE DESIGN MANUAL.  
 47. A TOTAL OF 1.21 ACRES OF LAND SHALL BE DEDICATED TO HOWARD COUNTY, MD FOR THE PURPOSE OF PUBLIC ROAD RIGHT-OF-WAY DEDICATION.  
 48. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.  
 49. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.  
 50. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.



**SEE SHEET 4 FOR  
CUL-DE-SAC LINEAR PROFILE**



SIZE	TYPE	LENGTH
4"	SOLID PVC	105 LF
6"	PERFORATED PVC	68 LF
6"	SOLID PVC	46 LF
15"	HDPE	893 LF
18"	HDPE	282 LF

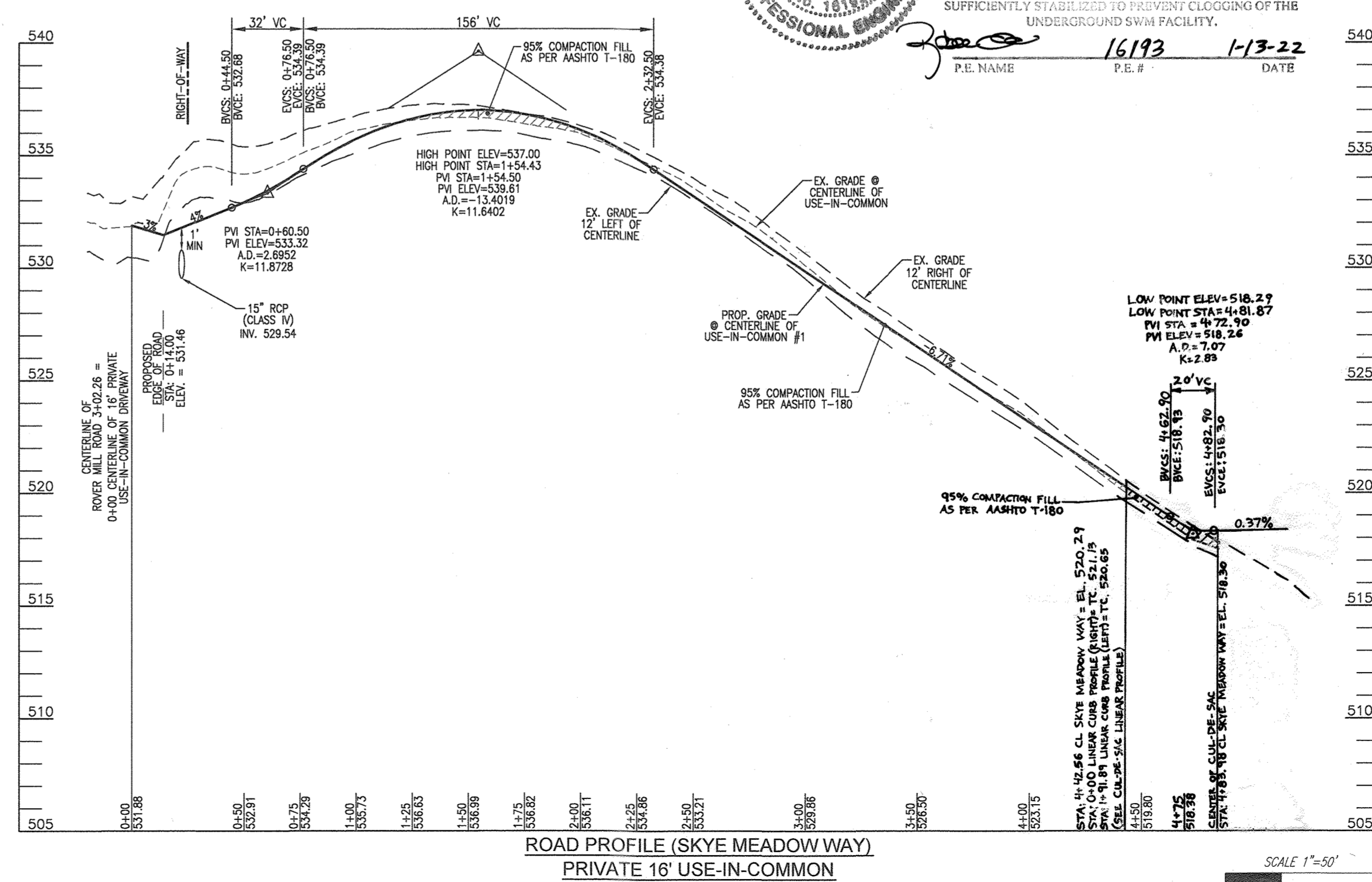
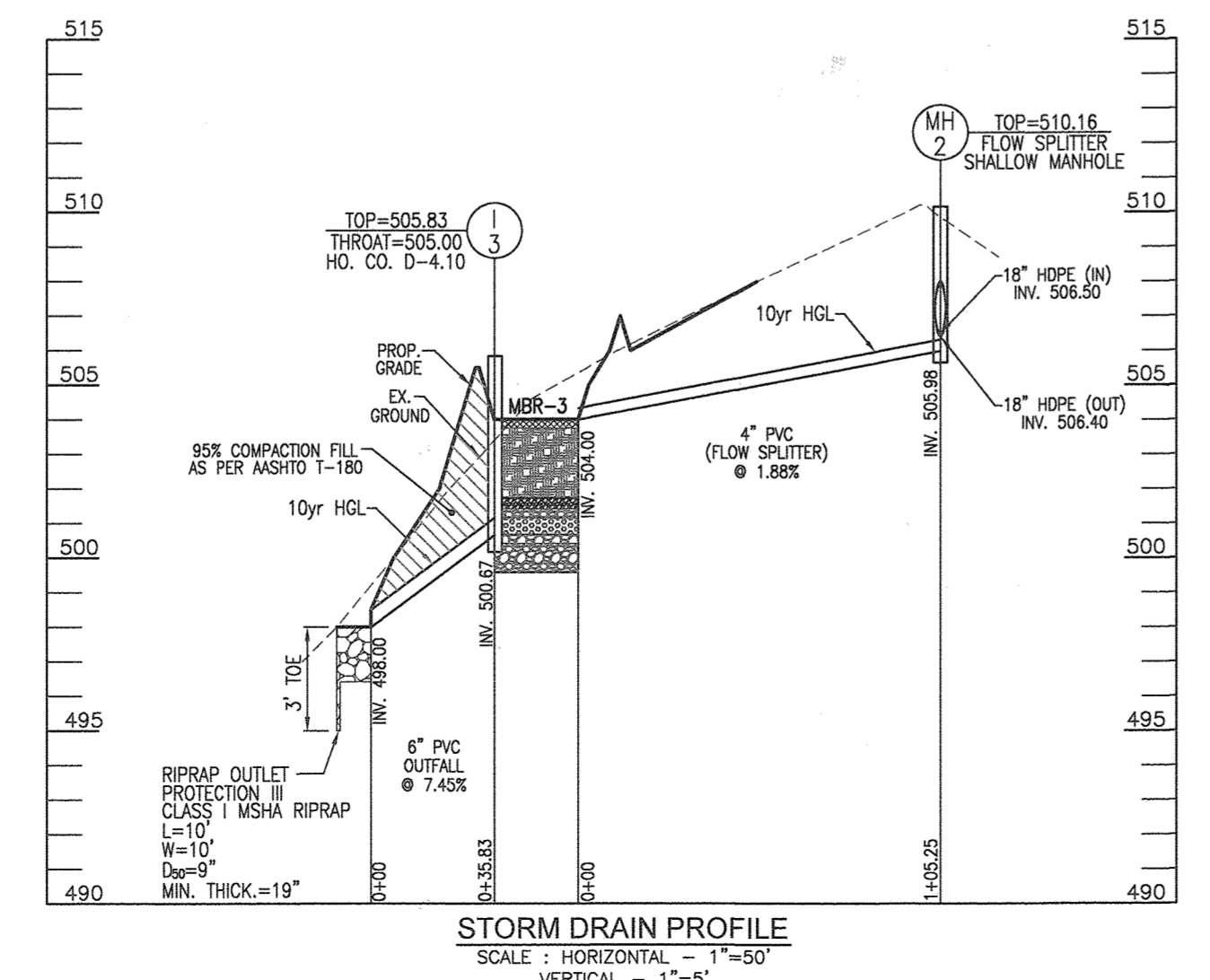


**STORM DRAIN PROFILE**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'  
 AS-BUILT CERTIFICATION FOR PFSWM  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.  
 P.E. NAME: 16193 DATE: 1-13-22

**OWNER/DEVELOPER**  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12668 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

NO.	REVISION	DATE
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	5-27-21
2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	10-31-20

NO.	TYPE	LOCATION	TOP EL.	INV. IN	INV. OUT	COMMENTS
I-1	TYPE "S" COMBINATION INLET	N 593327.70 E 1314562.40	518.01	-	513.46	HO. CO. STD. D-4.26
I-2	TYPE "D" INLET W/ BEEHIVE GRATE	N 593143.33 E 1314844.39	519.00	-	515.20	HO. CO. STD. D-4.11
I-3	TYPE "D" INLET	N 593375.02 E 1314311.44	505.83	-	500.87	HO. CO. STD. D-4.10
I-4	TYPE "D" INLET W/ BEEHIVE GRATE	N 593441.92 E 1314785.38	502.80	-	499.00	HO. CO. STD. D-4.11
MH-1	4" STANDARD PRECAST MANHOLE	N 593360.68 E 1314353.74	505.66	499.32	499.22	HO. CO. STD. G-5.12
MH-2	4" STANDARD PRECAST MANHOLE SHALLOW MANHOLE	N 593311.92 E 1314413.98	510.16	506.50	506.40	HO. CO. STD. G-5.12
MH-3	4" STANDARD PRECAST MANHOLE	N 593302.73 E 1314556.95	518.55	513.21	512.96	HO. CO. STD. G-5.12
MH-4	4" STANDARD PRECAST MANHOLE	N 593156.94 E 1314632.86	531.40	514.14	514.04	HO. CO. STD. G-5.12
MH-5	4" STANDARD PRECAST MANHOLE	N 593477.50 E 1314414.22	502.30	497.23	491.38	HO. CO. STD. G-5.12
ES-1	18" RCP END SECTION	N 593409.79 E 1314317.97	499.50	-	498.00	HO. CO. STD. D-5.51
ES-2	15" RCP END SECTION	N 593491.41 E 1314276.92	491.25	-	490.00	HO. CO. STD. D-5.51



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11-19-19

APPROVED: HOWARD COUNTY DEPARTMENT OF LAND DEVELOPMENT  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/19

**FINAL PLAN**  
 GENERAL NOTES, PROFILES AND SITE DETAILS  
**ROVER MILL ESTATES**  
 LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 F, 155 16.42 AC.  
 PARCEL: 188 ZONED: RR-DEO HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110 TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

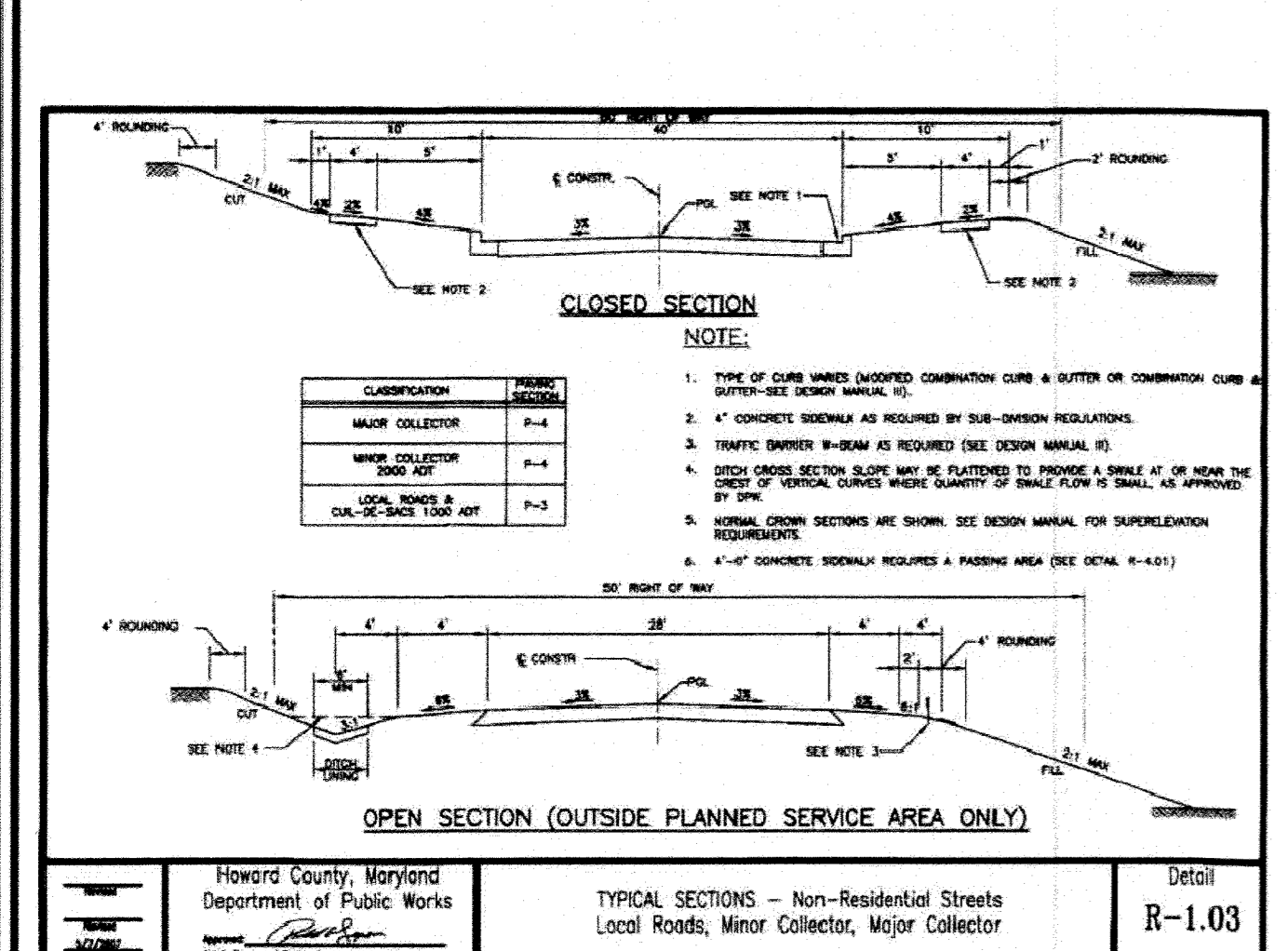
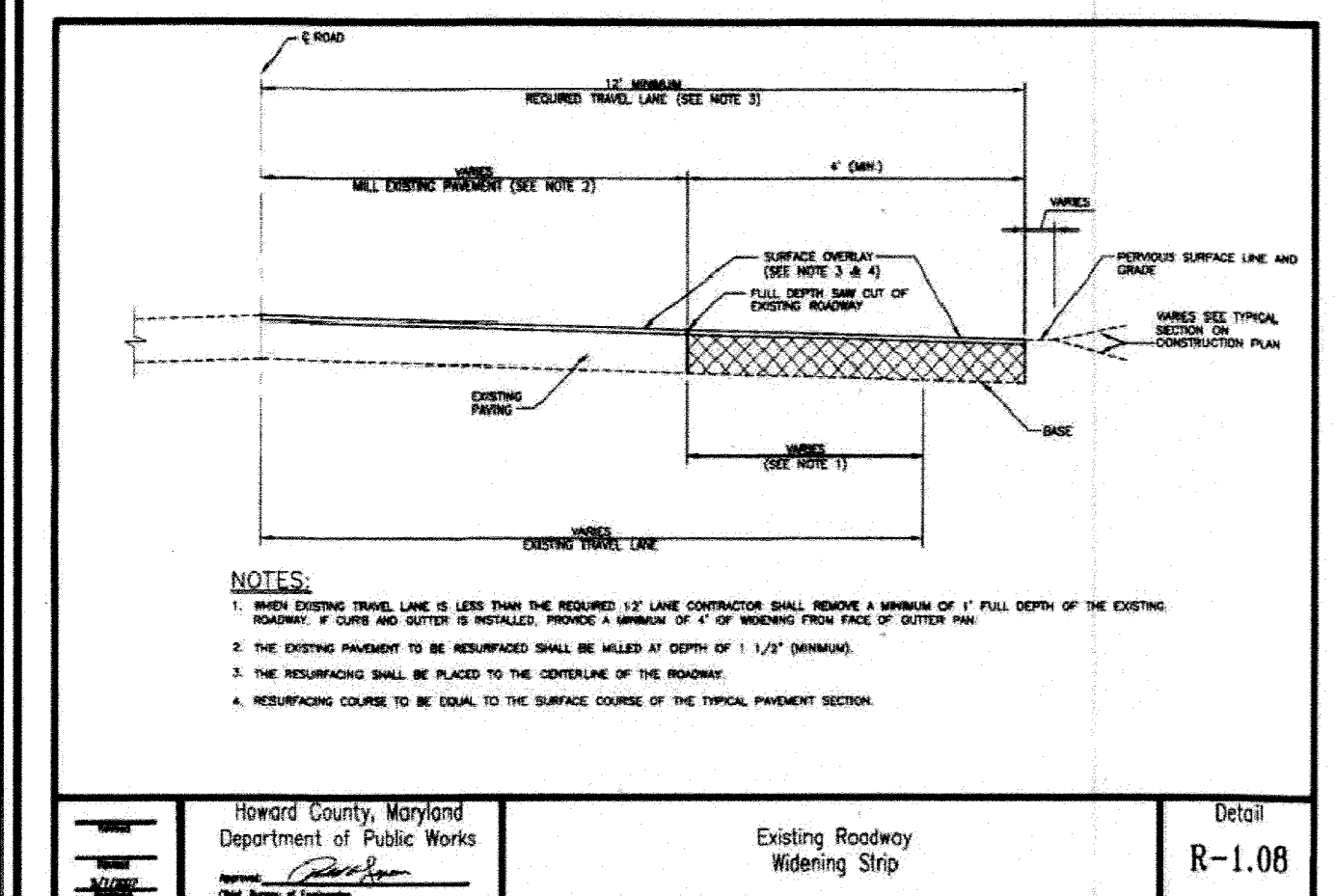
PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2028

2 SHEET OF 15

AS-BUILT MARCH, 2021 F-19-056

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVING MATERIAL (THICKNESS)	3 TO 48"	48 TO 60"	60 TO 84"	84 TO 108"	108 TO 132"	132 TO 156"	156 TO 180"	180 TO 204"	204 TO 228"	228 TO 252"
P-1	PAVING MATERIAL AND NON-RESIDENTIAL	1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-2	PAVING MATERIAL AND NON-RESIDENTIAL	1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-3	PAVING MATERIAL AND NON-RESIDENTIAL	1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-4	PAVING MATERIAL AND NON-RESIDENTIAL	1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5" 1.5"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

NOTE: PROVIDE P-1 PAVING FOR THE PROPOSED USE-IN-COMMON DRIVEWAY AND P-3 PAVING FOR THE ROVER MILL ROAD PUBLIC ROAD WIDENING



USE-IN-COMMON #1 LINE TABLE			
LINE	BEARING	DELTA	DISTANCE
L1	N07°47'19"E	348.03'	
L2	N12°19'02"E	121.91'	

USE-IN-COMMON #1 CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	TAN	CHORD
C-1	208.00'	16.44'	0°43'14"	8.22'	S107°03'11"W 16.44'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/19/19

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/19

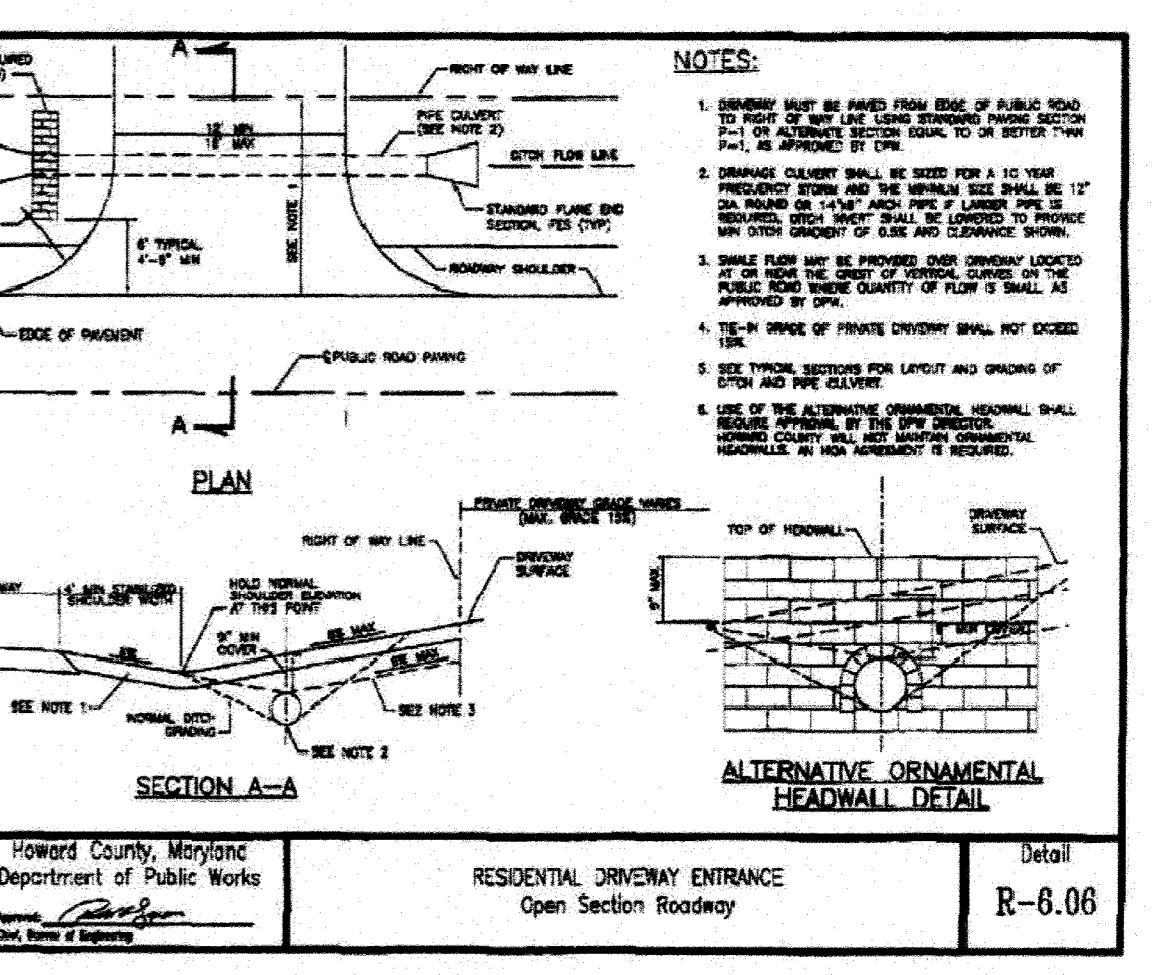


**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVING
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING UTILITY POLE
- EXISTING WELL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- 24" PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
- VARIABLE WIDTH PRIVATE SWM, DRAINAGE & UTILITY EASEMENT
- PROPOSED MICRO-BIOTRETENTION FACILITY (M-8)
- PROPOSED DRY WELL (M-5)
- PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PROPOSED WELL

**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.: 22238  
 Expiration Date: 11-24-20

**AS-BUILT CERTIFICATION FOR PSWM**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE ATTACHED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE EXISTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THIS UNDERGROUND SWM FACILITY.



NO.	REVISION	DESCRIPTION	DATE
8	Added additional patio area and pool, shifted septic field and relocated dry wells	01/14/2022	

**OWNER/DEVELOPER**  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12668 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

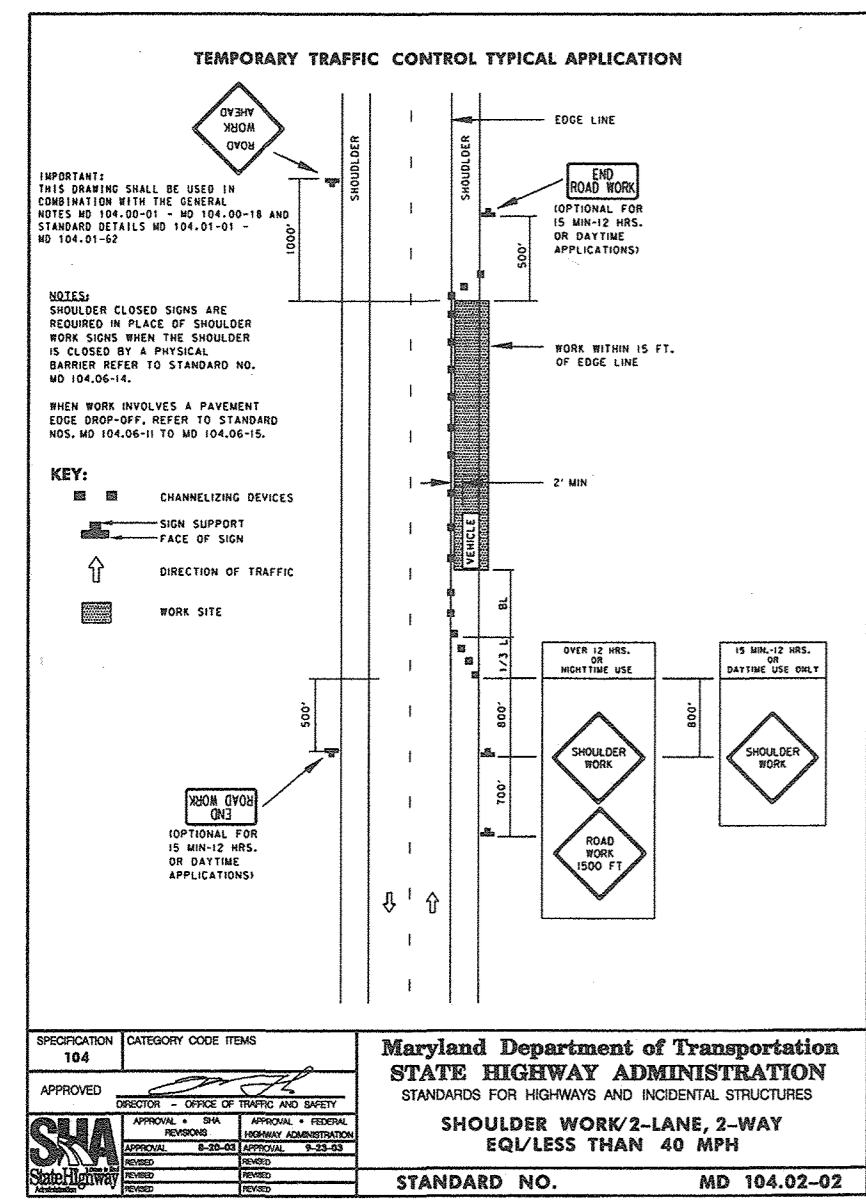
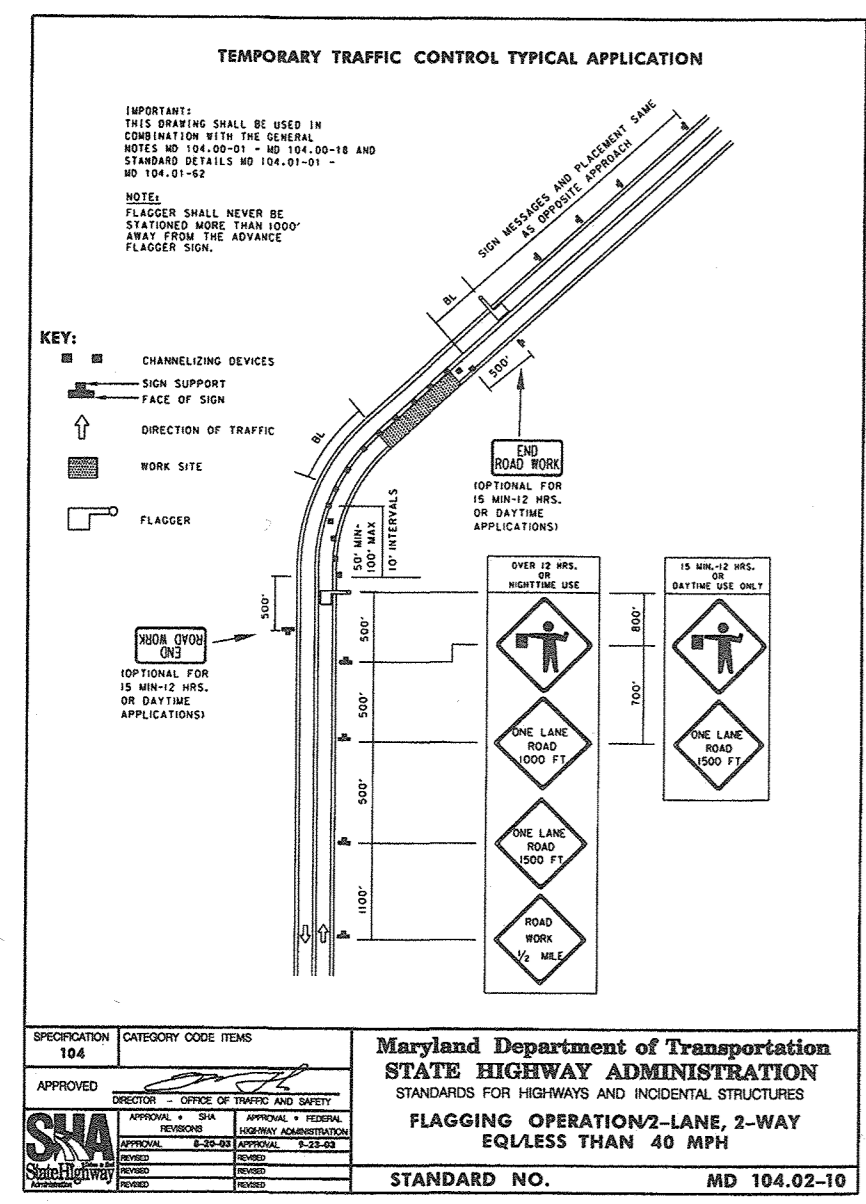
**FINAL PLAN**  
**LAYOUT PLAN**  
**ROVER MILL ESTATES**  
 LOTS 1-7 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 E 155  
 16.42 AC.

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
 DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

3 SHEET OF 15

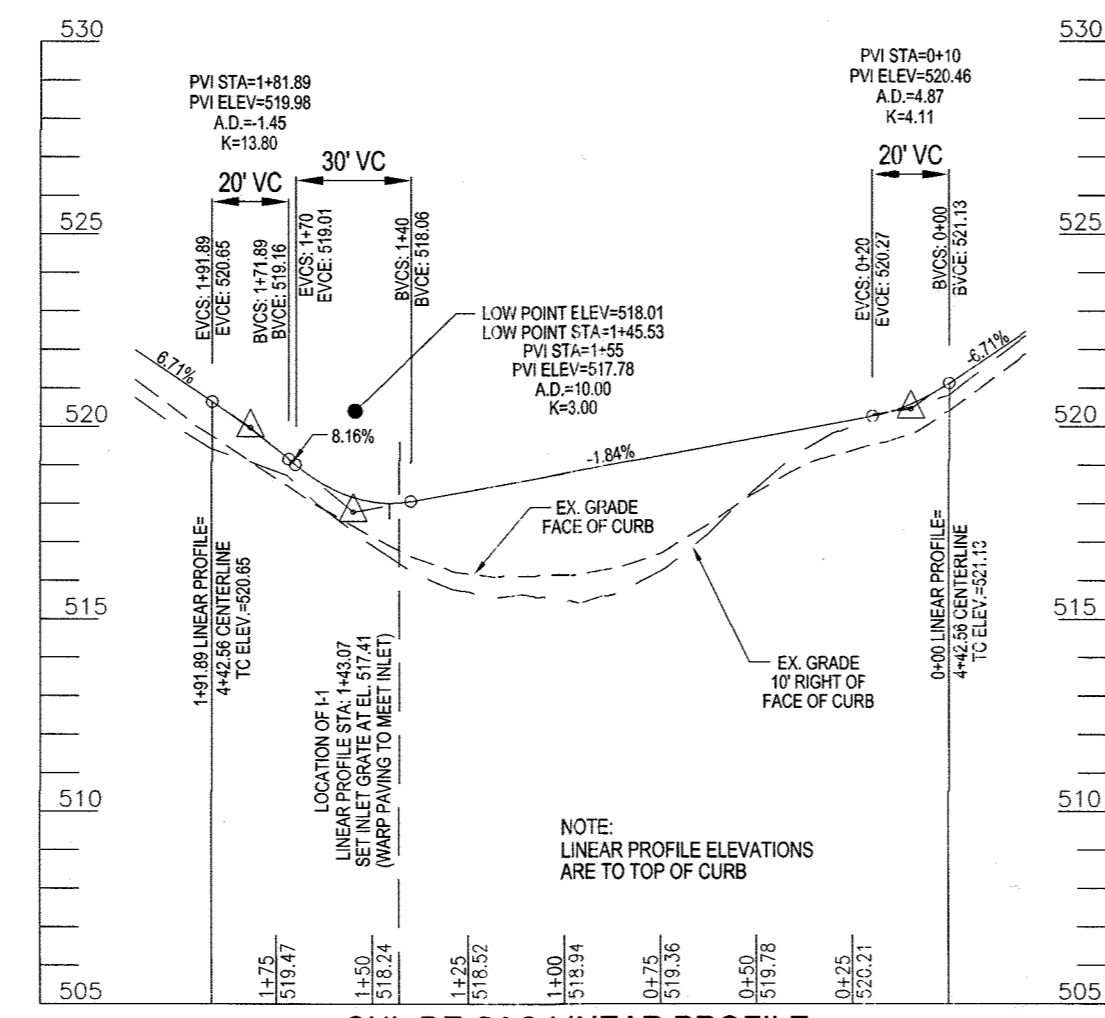
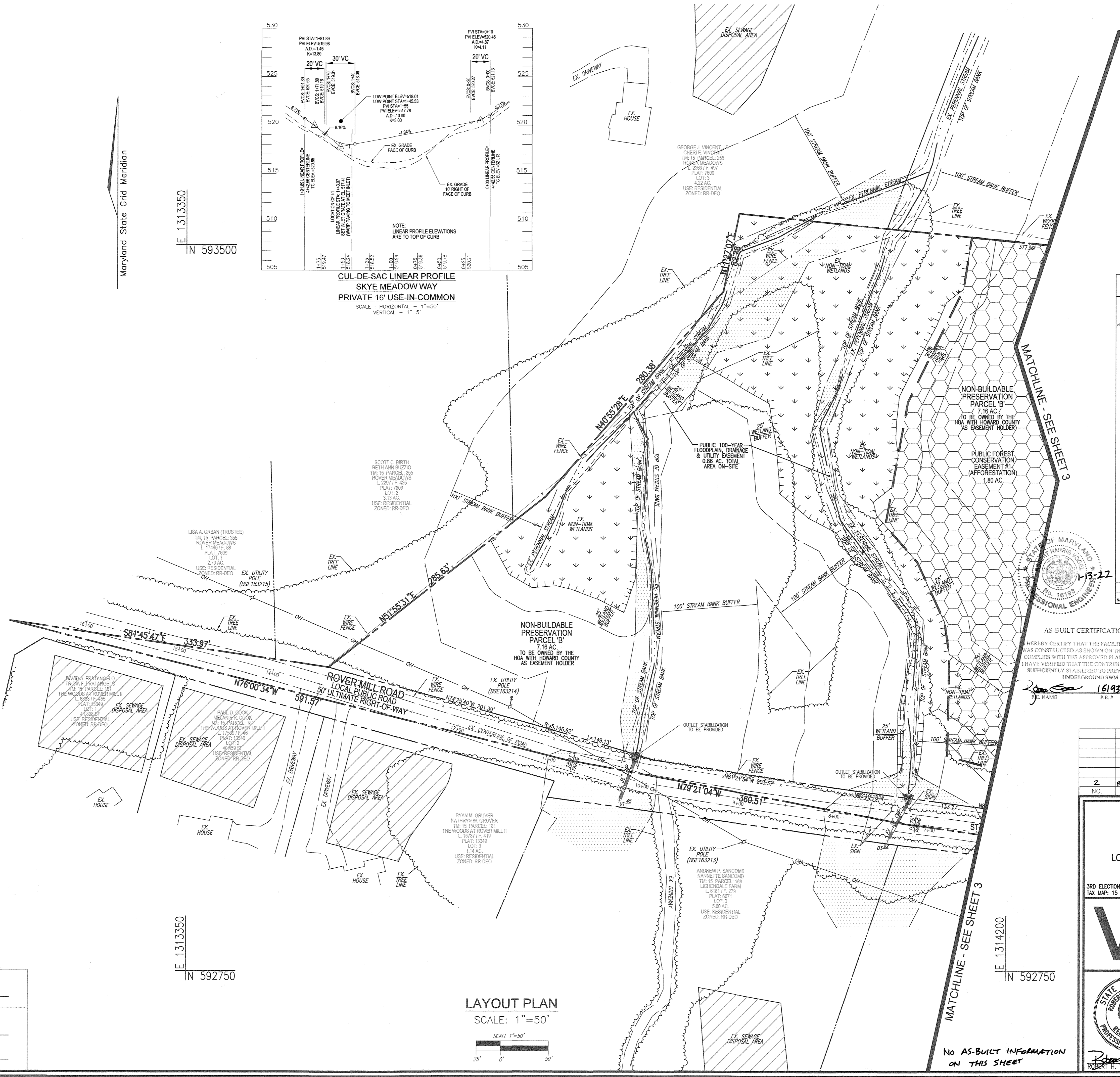
NOTE:  
NO GRADING OR PROPOSED IMPROVEMENTS ARE  
PROPOSED ON THIS PORTION OF NON-BUILDABLE  
PRESERVATION PARCEL 'B' UNDER THIS PLAN.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

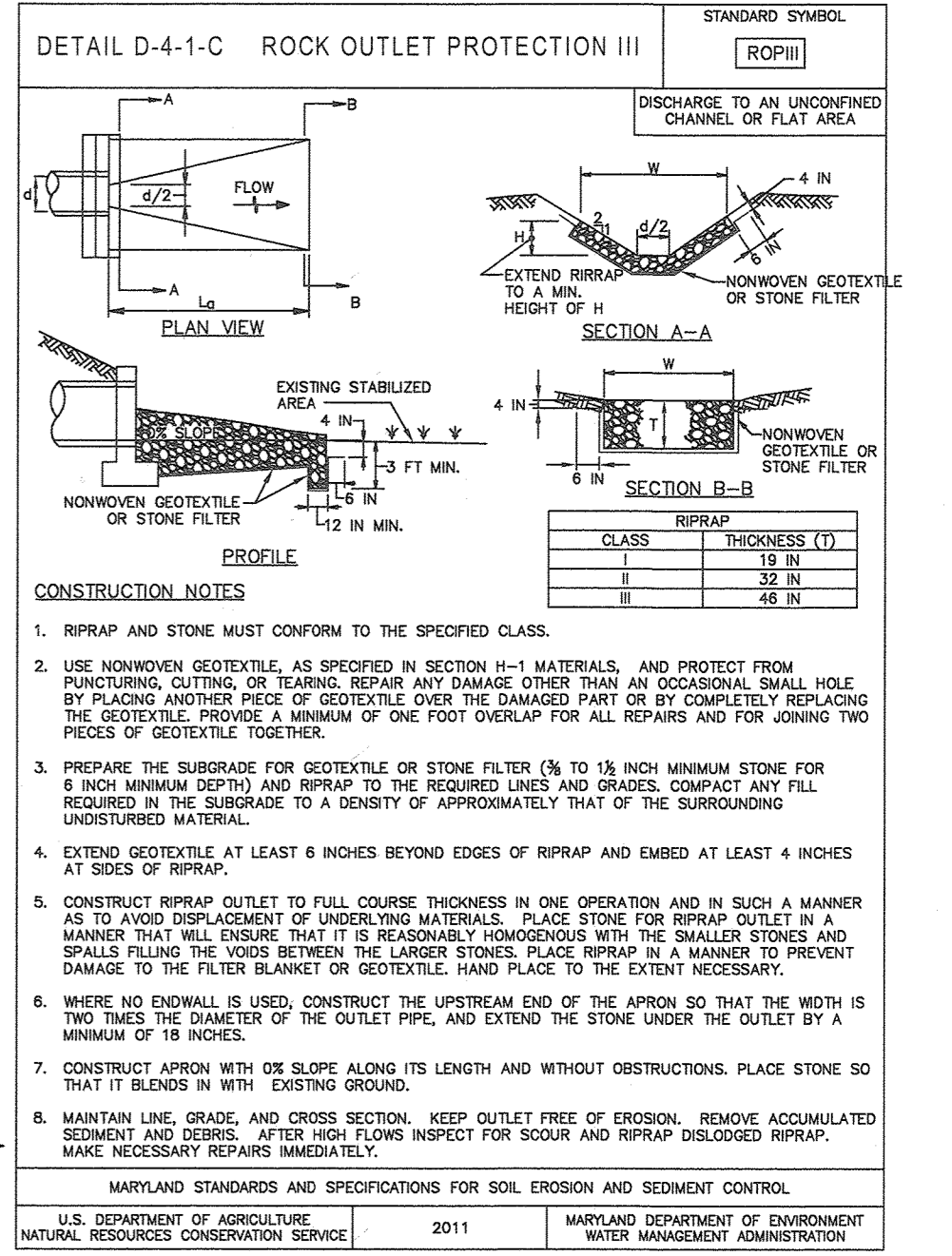
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/2019



**LEGEND:**

[Symbol]	PROPERTY LINE
[Symbol]	RIGHT-OF-WAY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING STREAM BUFFER
[Symbol]	EXISTING STREAM
[Symbol]	EXISTING TREELINE
[Symbol]	PROPOSED TREELINE
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING WETLAND BUFFER
[Symbol]	PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
[Symbol]	PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)



**AS-BUILT CERTIFICATION FOR PSWM**

HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

**OWNER/DEVELOPER**  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12608 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

**DATE:** 1-13-22  
**DATE:** 1-13-22  
**DATE:** 1-13-22

2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	10-21-20
NO.	REVISION	DATE

**FINAL PLAN**  
**LAYOUT PLAN**  
**ROVER MILL ESTATES**  
 LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
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 16.42 AC.  
 PARCEL: 169  
 ZONED: RR-DEO  
 HOWARD COUNTY, MARYLAND

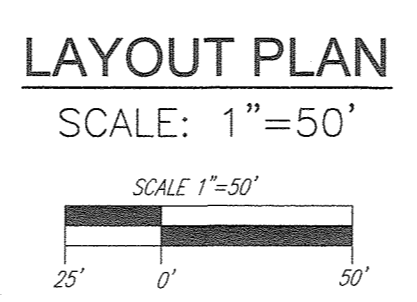
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110  
 ELLICOTT CITY, MD 21143  
 TEL: 410-461-7666  
 FAX: 410-461-8951

**PROFESSIONAL CERTIFICATE**

DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

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. 16193 EXPIRATION DATE: 09-27-2020

4 SHEET OF 15

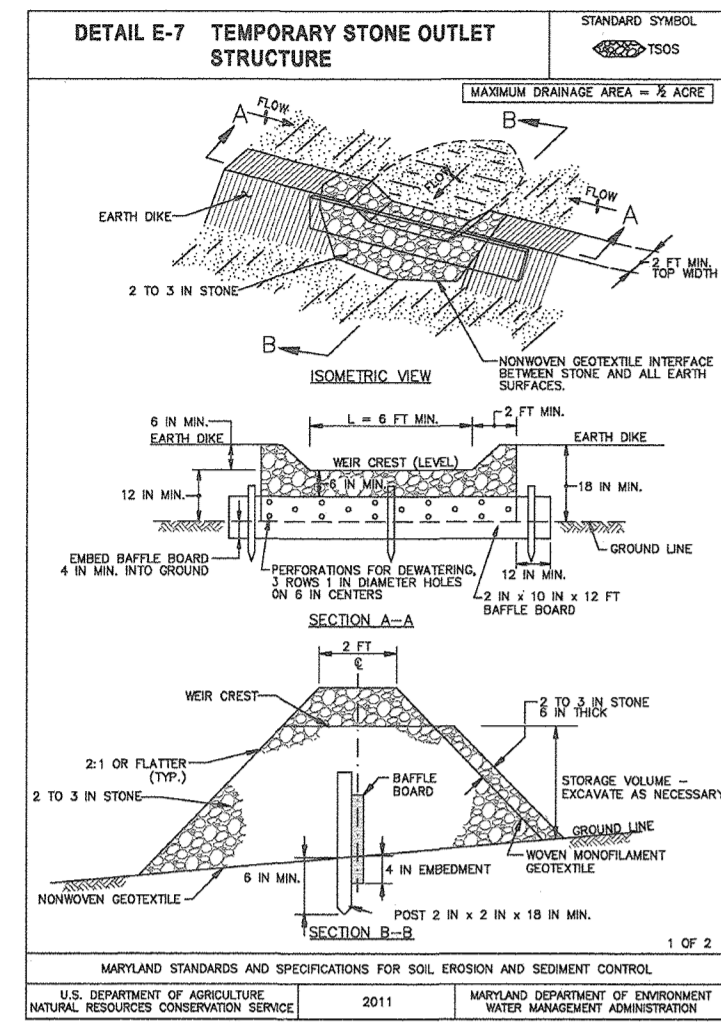


No AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT MARCH 2021 F-19-056

SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GcB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.28	NO
GcB	GLENVILLE-BALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
GcB	GLENVILLE-COORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
Mac	MAJOR LOAM, 8 TO 15 PERCENT SLOPES	B	.28	NO

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

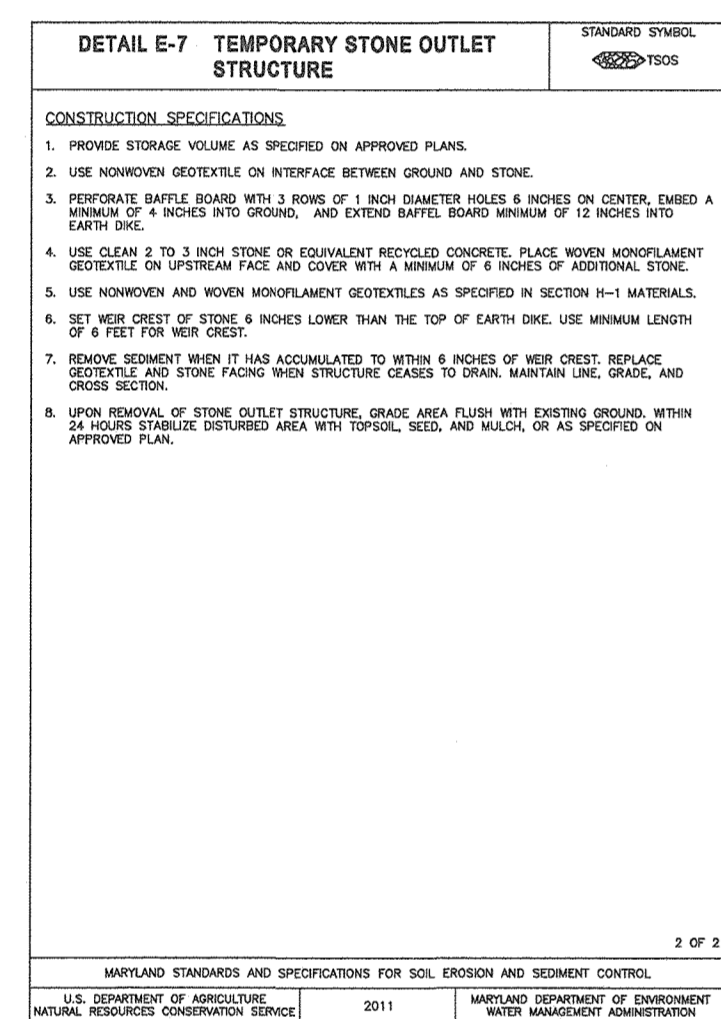


NOTE: STABILIZATION IS TO BE DONE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STDS. & SPECS. WHICHEVER IS MORE RESTRICTIVE.

WARNING! INSTALL HIGHLY VISIBLE AND PROTECTIVE DEVICES AROUND WELLS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS. MAINTAIN PROTECTIVE DEVICES THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES

NOTE: ONLY THE GRADING SHOWN ON THIS SHEET IS TO BE PERFORMED UNDER THIS PLAN.

NOTE: - SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. - SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART - DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.



THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: John A. Robertson, 11/19/19, DATE

DESIGN CERTIFICATION: I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS...

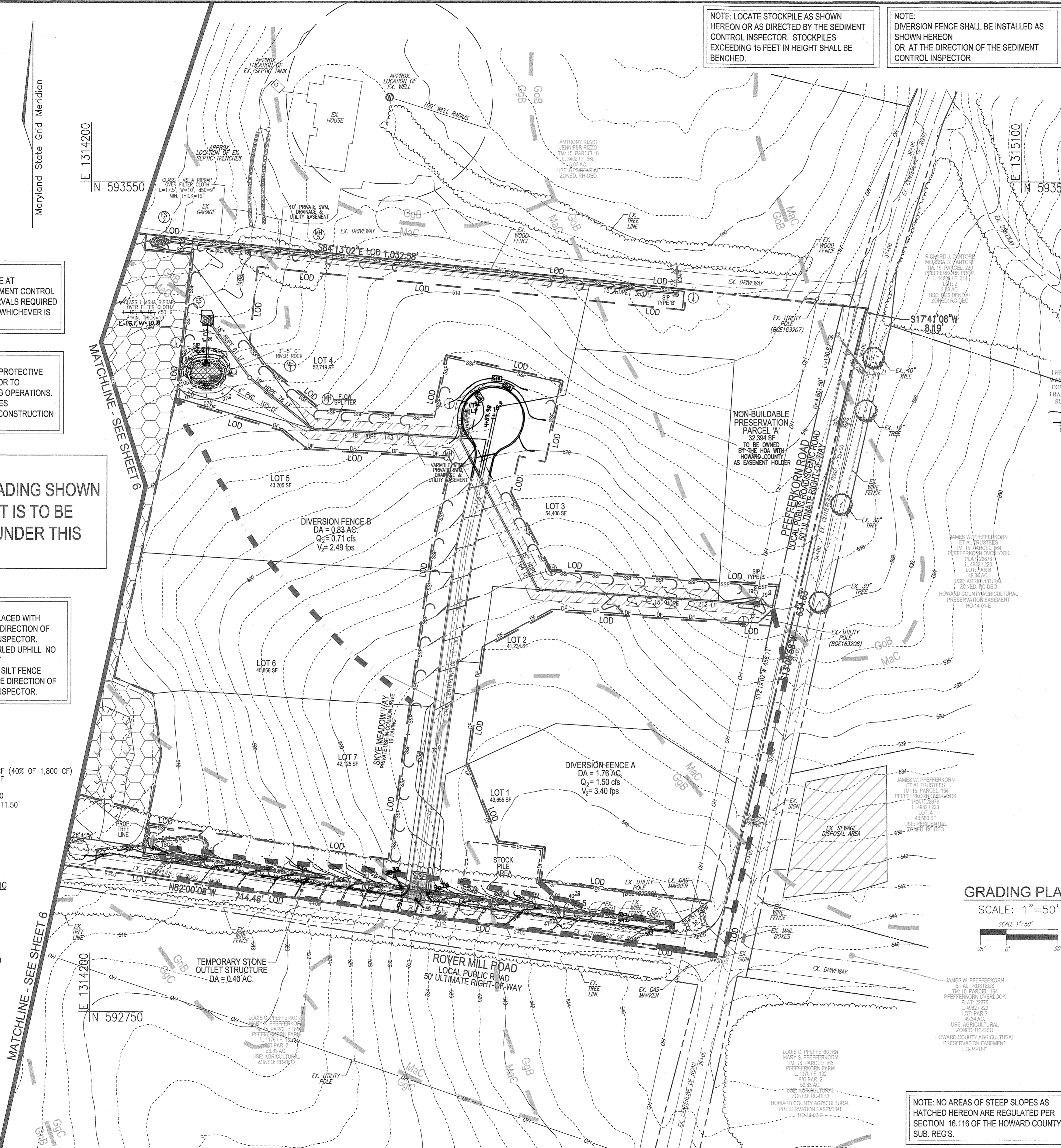
DESIGNER'S SIGNATURE: Robert H. Vogel, DATE: 10/31/19

OWNER/DEVELOPER CERTIFICATION: I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN...

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CHIEF, BUREAU OF HIGHWAYS, DATE: 11/19/2019

TEMPORARY STONE OUTLET STRUCTURE  
A = 0.40 AC.  
STORAGE REQUIRED: 720 CF (40% OF 1,800 CF)  
STORAGE PROVIDED: 768 CF  
BOTTOM ELEVATION: 510.00  
STORAGE ELEVATION: 511.00  
TOP OF DIKE ELEVATION: 511.50

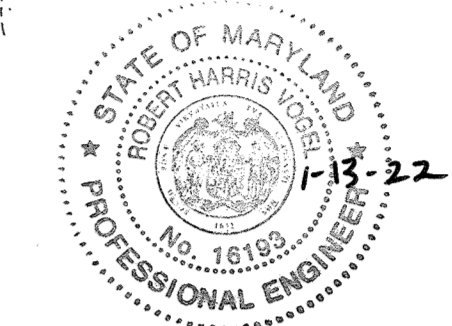
PERMANENT SOIL STABILIZATION MATTING  
A = 0.40 AC.  
IMP. = 0.17 AC.  
GRASS = 0.23 AC.  
Tc = 10.0 MIN.  
i2 = 4.5  
C = 0.87  
Q2 = (A)(C)(1/2)  
Q2 = (0.40)(0.87)(4.5)  
Q2 max = 1.57 CFS  
V2 max = 4.68 FPS  
S = 10.39%  
n = 0.03  
SHEAR STRESS = 1.03



NOTE: LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

NOTE: DIVERSION FENCE SHALL BE INSTALLED AS SHOWN HEREON OR AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR

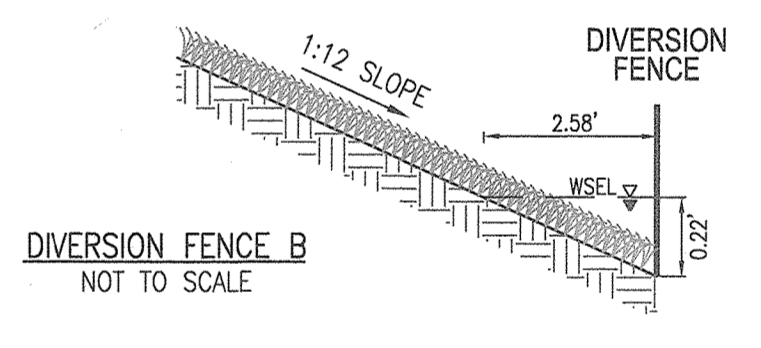
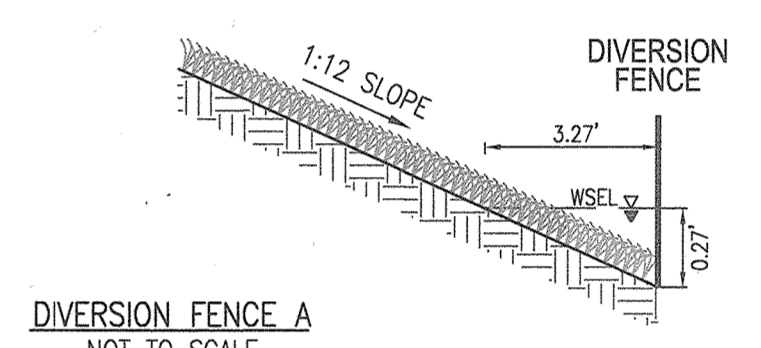
LEGEND:	
(Symbol)	PROPERTY LINE
(Symbol)	RIGHT-OF-WAY LINE
(Symbol)	ADJACENT PROPERTY LINE
(Symbol)	EXISTING EDGE OF PAVING
(Symbol)	EXISTING STREAM BUFFER
(Symbol)	EXISTING STREAM
(Symbol)	EXISTING TREELINE
(Symbol)	PROPOSED TREELINE
(Symbol)	EXISTING UTILITY POLE
(Symbol)	EXISTING WELL
(Symbol)	EXISTING METAL FENCE
(Symbol)	EXISTING WOOD FENCE
(Symbol)	EXISTING 10' CONTOUR
(Symbol)	EXISTING 2' CONTOUR
(Symbol)	EXISTING WETLANDS
(Symbol)	EXISTING WETLAND BUFFER
(Symbol)	24" PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
(Symbol)	VARIABLE WIDTH PRIVATE SIML DRAINAGE & UTILITY EASEMENT
(Symbol)	PROPOSED MICRO-BIOTRETENTION FACILITY (M-B)
(Symbol)	PROPOSED DRY WELL (M-5)
(Symbol)	SOILS
(Symbol)	PROPOSED 10' CONTOUR
(Symbol)	PROPOSED 2' CONTOUR
(Symbol)	LIMIT OF DISTURBANCE
(Symbol)	STABILIZED CONSTRUCTION ENTRANCE
(Symbol)	SUPER SILT FENCE
(Symbol)	SILT FENCE
(Symbol)	DIVERSION FENCE
(Symbol)	PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
(Symbol)	PROPOSED WELL



AS-BUILT CERTIFICATION FOR PSWM  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS...

DIVERSION FENCE A  
A = 1.76 AC.  
IMP. = 0.09 AC.  
GRASS = 1.67 AC.  
Tc = 10.0 MIN.  
i2 = 4.5  
C = 0.19  
Q2 = (A)(C)(1/2)  
Q2 = (1.76)(0.19)(4.5)  
Q2 max = 1.50 CFS  
V2 max = 3.40 FPS  
S = 7.53%  
n = 0.03

DIVERSION FENCE B  
A = 0.83 AC.  
IMP. = 0.00 AC.  
GRASS = 0.83 AC.  
Tc = 10.0 MIN.  
i2 = 4.5  
C = 0.19  
Q2 = (A)(C)(1/2)  
Q2 = (0.83)(0.19)(4.5)  
Q2 max = 0.71 CFS  
V2 max = 2.49 FPS  
S = 5.31%  
n = 0.03



OWNER/DEVELOPER  
PFEFFERKORN ROVER MILL LLC  
C/O RAJ KATHURIA  
12668 FREDERICK ROAD  
WEST FRIENDSHIP, MD 21794  
(443) 574-1600

GRADING PLAN  
SCALE: 1" = 50'

NO.	REVISION	DATE
2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	10-21-20

FINAL PLAN  
SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN  
ROVER MILL ESTATES  
LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
PFEFFERKORN ROAD & ROVER MILL ROAD  
WEST FRIENDSHIP, MD 21794  
L 16745 F, 155 16.42 AC. PARCEL: 168 ZONING: RES-20 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 N. RIDGE ROAD, SUITE 110 ELLIGOTT CITY, MD 21043  
TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE  
DESIGN BY: RHV  
DRAWN BY: JMR  
CHECKED BY: RHV  
DATE: OCTOBER 2019  
SCALE: AS SHOWN  
W.O. NO.: 15-36  
5 SHEET OF 15

NOTE: NO AREAS OF STEEP SLOPES AS HATCHED HEREON ARE REGULATED PER SECTION 16.116 OF THE HOWARD COUNTY SUB. REGS.

AS-BUILT MARCH, 2021 F-19-058

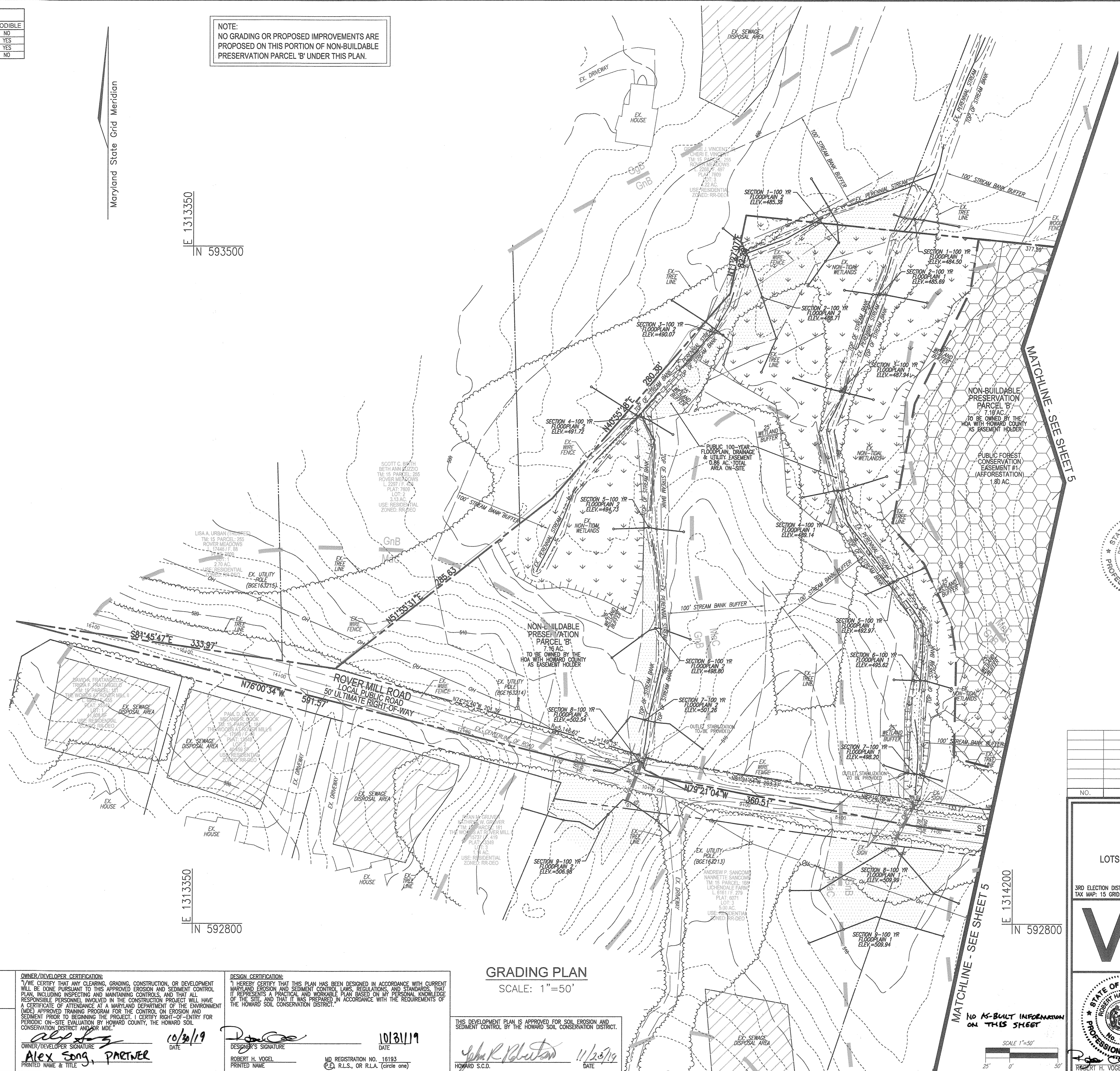
SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.28	NO
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
GnS	GLENVILLE-CODRUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
MnC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	.28	NO

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE  
 -HOWARD COUNTY SOILS MAP NUMBER 11 - SYKESVILLE SW

NOTE:  
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT  
 OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH  
 A SLOPE GREATER THAN 5 PERCENT

NOTE:  
 NO GRADING OR PROPOSED IMPROVEMENTS ARE  
 PROPOSED ON THIS PORTION OF NON-BUILDABLE  
 PRESERVATION PARCEL 'B' UNDER THIS PLAN.

LEGEND:	
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING EDGE OF PAVING
	EXISTING STREAM BUFFER
	EXISTING STREAM
	EXISTING TREELINE
	PROPOSED TREELINE
	EXISTING UTILITY POLE
	EXISTING WOOD FENCE
	EXISTING METAL FENCE
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	SOILS
	EXISTING WETLANDS
	EXISTING WETLAND BUFFER
	PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
	PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWIM FACILITY.

*R. H. Vogel* 16193 1-13-22  
 P.E. # DATE

OWNER/DEVELOPER  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12668 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (413) 574-1600

NO.	REVISION	DATE

FINAL PLAN  
 SOILS MAP, GRADING, EROSION  
 AND SEDIMENT CONTROL PLAN  
 ROVER MILL ESTATES  
 LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 F 155  
 16.42 AC. PARCEL: 169  
 ZONED: RR-DEO  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL**  
**ENGINEERS • SURVEYORS • PLANNERS**  
 3300 N. RIDGE ROAD, SUITE 110 TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A SOIL LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2020.

6 SHEET OF 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James* 11/19/2019  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Michael* 11-19-19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*T. Mauch* 11/22/19  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER/DEVELOPER CERTIFICATION:  
 I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

*Alex Song* 10/30/19  
 OWNER/DEVELOPER SIGNATURE DATE  
 PRINTED NAME & TITLE PARTNER

DESIGN CERTIFICATION:  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel* 10/31/19  
 DESIGNER'S SIGNATURE DATE  
 ROBERT H. VOGEL  
 PRINTED NAME MD REGISTRATION NO. 16193  
 R.L.S. OR R.L.A. (circle one)

GRADING PLAN  
 SCALE: 1"=50'

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Blanton* 11/23/19  
 HOWARD S.C.D. DATE





**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVING
- EXISTING STREAM BUFFER
- EXISTING STREAM
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING UTILITY POLE
- EXISTING WELL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
- SOILS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
- VARIABLE WIDTH PRIVATE SIM, DRAINAGE & UTILITY EASEMENT
- PROPOSED MICRO-BIORETENTION FACILITY (M-5)
- PROPOSED DRY WELL (M-5)
- DRAINAGE AREA DIVIDE
- PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PROPOSED WELL

**SOILS LEGEND**

SYMBOL	NAME/DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GdB	GLENNVILLE LOAM, 3 TO 8 PERCENT SLOPES	B	28	NO
GDb	GLENNVILLE-SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	43	YES
GdC	GLENNVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	43	YES
Mac	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	28	NO

NOTE:  
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

**OWNER/DEVELOPER**  
 PEEFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12868 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

**NO. 7  
 REVISE LOT 142  
 HOUSE TYPE, GRADING  
 AND SWM  
 10/28/2021**

NO.	REVISION	DATE
6	REVISE HOUSE TYPE, GRADING AND SWM ON LOT 1 AND REVISE INLET AND GRADING ON LOT 3	8-2-21
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	5-27-21
4	REVISE LOT 3 HOUSE TYPE, GRADING AND SWM	2-24-21
3	REVISE LOT 7 HOUSE TYPE, GRADING AND SWM	1-27-21
2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	10-21-20
1	REVISE LOT 6 HOUSE TYPE, GRADING AND SWM	7-9-20

**FINAL PLAN**  
**STORM DRAIN DRAINAGE AREA MAP**  
**ROVER MILL ESTATES**  
 LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PEEFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 F 155  
 16.42 AC.  
 PARCEL 169  
 ZONED RR-03  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110 TEL: 410.461.7666  
 ELICOTT CITY, MD 21043 FAX: 410.416.1896

**PROFESSIONAL CERTIFICATE**

DESIGN BY: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

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. 16193, EXPIRATION DATE 09-27-2020

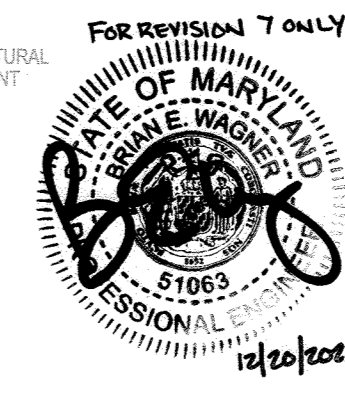
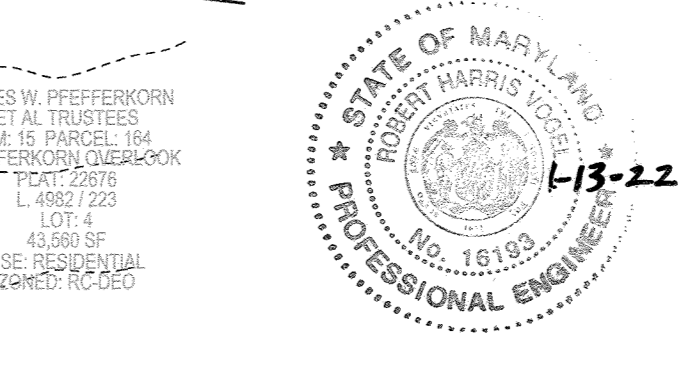
8 SHEET OF 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11-19-19

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/19

**SD DRAINAGE AREA MAP**  
 SCALE: 1"=50'  
 SCALE 1"=50'



Professional Certificate. 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. 51063  
 Expiration Date: 10/27/2023



### LANDSCAPE NOTES

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING, ANY DENIAL FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BENS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

NOTE: ALL MATERIALS AS SPECIFIED

2 MULCH PLANT SAUCER REMOVE BURIAL FROM TOP 1/3 OF BALL 2"x4" X 3" WOOD STAKES BACKFILL MATERIAL COMPACTED BACKFILL MATERIAL 6" MIN. 1'-0" ALL SIDES

**TYPICAL EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE

### SPECIMEN TREE CHART

NO.	SIZE (IN FEET)	CRZ (FEET)	COMMON NAME	CONDITION	COMMENTS
ST 1	30.5"	45.75'	NORWAY MAPLE	POOR, MAJOR DIEBACK, NOT NATIVE	TO REMAIN
ST 2	31"	48.5'	NORWAY MAPLE	NOT NATIVE	TO BE REMOVED
ST 3	30"	45'	NORWAY MAPLE	POOR, SEVERE DIEBACK, NOT NATIVE	TO BE REMOVED
ST 4	34"	51"	NORWAY MAPLE	POOR, MAJOR DIEBACK, NOT NATIVE	TO BE REMOVED
ST 5	36.5"	54.75'	NORWAY MAPLE	NOT NATIVE	TO BE REMOVED

### SPECIMEN TREE MITIGATION:

PROPOSED LANDSCAPE TREES WITH THE DESIGNATION OF 'LL' ARE PROVIDED AS PART OF THE 2:1 MITIGATION REQUIRED FOR THE REMOVAL OF FOUR SPECIMEN TREES.

### SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES AND ROADWAYS					SCENIC ROAD PLANTINGS	SPECIMEN TREE MITIGATION	TOTAL
	1	2	3	4	5			
PERIMETER/FRONTAGE LANDSCAPE TYPE	B	N/A	B	A	A	PEFFERKORN RD. B		
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	257	243	329	897	831	640'		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	-	NO	NO	NO	NO		
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	-	NO	NO	NO	NO		
NUMBER OF PLANTS REQUIRED (IF REMAINING)	257	-	329	897	831	640'		
SHADE TREES	1:50	5	1:50	7	1:60	15	1:50	13
EVERGREEN TREES	1:40	8	1:40	8	1:40	16	1:40	16
SHRUBS	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	5	6	15	14	16	16	8	42
SHADE TREES	-	-	-	-	-	-	-	-
EVERGREEN TREES	-	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-	-	-	-	-	-

NOTES:  
 1. SCENIC ROAD PLANTINGS HAVE BEEN PROVIDED ALONG PFEFFERKORN ROAD IN ORDER TO SCREEN THE PROPOSED DEVELOPMENT FROM THE SCENIC ROAD.  
 2. SCENIC ROAD PLANTINGS WILL BE CLUSTERED WITHIN NON-BUILDABLE PRESERVATION PARCEL 'A' DUE TO THE REQUIRED PERIMETER LANDSCAPING IN THE REAR OF LOTS 1 & 2.

### LANDSCAPING PLANT LIST

SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE
LL	8	8	TILIA CORDATA 'GREENSPIRE' GREENSPIRE LITTLELEAF LINDEN	2.5"-3" CAL.
SC	5	5	PRUNUS SARGENTII SARGENT CHERRY	2.5"-3" CAL.
AH	12	12	ILEX OPACA AMERICAN HOLLY	5'-6" HGT.
PM	40	40	ACER GRiseum PAPERBARK MAPLE	1.5"-2" CAL.
SH	30	30	THUJA STANDISHI X PLICATA GREEN GIANT ARBOVITAE	7'-8" HGT.
WO	12	12	QUERCUS PHELLOS WILLOW OAK	2.5"-3" CAL.
RS	17	17	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2.5"-3" CAL.

### STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET NO. REQUIRED	NO. PROVIDED
ROVER MILL ROAD	615/40	15

### STREET TREE PLANT LIST

SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE
AF	15	15	ACER RUBRUM 'AUTUMN FLAME' AUTUMN FLAME RED MAPLE	2.5"-3" CAL.

### TRASH PAD LANDSCAPING

SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
AF	5	DWARF JAPANESE YEW	3"-4" HT	B & B

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/19/19

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/19

DEVELOPER'S/BUILDER'S CERTIFICATE  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
 SIGNATURE OF DEVELOPER: [Signature] DATE: 10/30/19



### GENERAL NOTES:

- LANDSCAPING IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$23,100.00 FOR THE REQUIRED 62 SHADE TREES AND 30 EVERGREENS SHALL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT. A SURETY IN THE AMOUNT OF \$4,650.00 FOR THE 15 PUBLIC STREET TREES AND THE 5 SHRUBS FOR THE TRASH PAD WILL BE SATISFIED UNDER THE BID COST ESTIMATE.
- PRESERVATION PARCELS 'A' & 'B' WILL NOT REQUIRE PERIMETER LANDSCAPING, EXCEPT ALONG THE PERIMETER OF THE CLUSTER AREA. (SEE PAGE 17 OF THE HOWARD COUNTY LANDSCAPE MANUAL).

### LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM BUFFER
- EXISTING STREAM
- EXISTING TREETRINE
- EXISTING UTILITY POLE
- EXISTING WELL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EXISTING WETLAND FACILITY (M-6)
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRY WELL (M-5)
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING BG&E GREEN ZONE
- EXISTING BG&E YELLOW ZONE

### TREE PLANTING AND STAKING

NOTES:  
 1. SEE "LANDSCAPE SPECIFICATION" GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREA FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.  
 2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.  
 3. PLACE UPRIGHT STAKES PARALLEL TO TRUNKS & BUILDINGS.  
 4. KEEP MULCH 1" FROM TRUNK.  
 5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANNING MINIMUM REQUIREMENTS.  
 6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.

LEADER MUST REMAIN INTACT  
 PRUNE APPROXIMATELY 30% OF CROWN - SEE "LANDSCAPE GUIDELINES" - DO NOT PRUNE EVERGREEN TREES.  
 2 STRAINS OF GALVANIZED WIRE WASTED FOR SUPPORT  
 UPRIGHT STAKES - SET IN GROUND TO FIRM BEARING  
 RUBBER HOSE - CUT BURIAL & HOPE FROM TOP OF BALL  
 3" DEPTH MULCH  
 2" EARTH SAUCER  
 1/8" DEPTH OF BALL  
 PLANTING MIX - SEE PLANTING NOTES  
 LOOSESED SUBSOIL

### SHRUB PLANTING DETAIL

NOT TO SCALE

BACKFILL WITH TOPSOIL AND PEAT MOSS, 3:1 RATIO. BACKFILL IN 6" LIFTS  
 3" MULCH  
 6" MIN.  
 EQUAL TO TWICE BALL DIA.  
 6" FOR PLANTS UP TO 4' HEIGHT MIN. 8" FOR PLANTS OVER 4' HEIGHT MIN.

### NO. 7: REVISION LOG

NO.	REVISION	DATE
6	REVISE HOUSE TYPE, GRADING AND SWM ON LOT 4 AND REVISE INLET AND GRADING ON LOT 3	8-2-21
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	5-27-21
4	REVISE LOT 3 HOUSE TYPE, GRADING AND SWM	2-24-21
3	REVISE LOT 7 HOUSE TYPE, GRADING AND SWM	1-27-21
2	REVISE THE T-TURN AROUND TO A CUL-DE-SAC	10-21-20
1	REVISE LOT 6 HOUSE TYPE, GRADING AND SWM	7-9-20

### FINAL PLAN

#### LANDSCAPE PLAN, NOTES AND DETAILS

#### ROVER MILL ESTATES

LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794

3RD ELECTION DISTRICT  
 TAX MAP: 15 GRID: 14  
 PARCEL: 168  
 ZONE: R-30-20  
 HOWARD COUNTY, MARYLAND

### ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8991

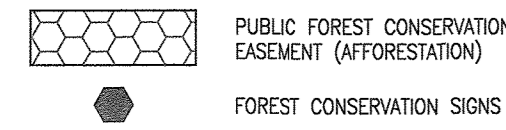
DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16193 EXPIRATION DATE: 09-27-2020

9 SHEET OF 15

AS-BUILT MARCH 2021 F-19-056

**FOREST CONSERVATION LEGEND:**

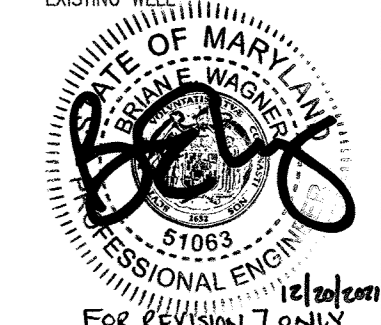


**SPECIMEN TREE CHART**

NO.	SIZE (IN. DBH)	CRZ (FEET)	COMMON NAME	CONDITION	COMMENTS
ST 1	30.5"	45.75'	NORWAY MAPLE	POOR, MAJOR DIEBACK, NOT NATIVE	TO REMAIN
ST 2	31"	46.5'	NORWAY MAPLE	NOT NATIVE	TO BE REMOVED
ST 3	30"	45'	NORWAY MAPLE	POOR, SEVERE DIEBACK, NOT NATIVE	TO BE REMOVED
ST 4	34"	51'	NORWAY MAPLE	POOR, MAJOR DIEBACK, NOT NATIVE	TO BE REMOVED
ST 5	36.5"	54.75'	NORWAY MAPLE	NOT NATIVE	TO BE REMOVED

**LEGEND:**

[Symbol]	PROPERTY LINE
[Symbol]	RIGHT-OF-WAY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING STREAM BUFFER
[Symbol]	EXISTING STREAM
[Symbol]	EXISTING TREELINE
[Symbol]	PROPOSED TREELINE
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING WETLAND BUFFER
[Symbol]	PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
[Symbol]	SOILS
[Symbol]	24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
[Symbol]	EXISTING WELL



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. 51063 Expiration Date: 12/31/2022

WATERSHED NAME: MIDDLE PATUXENT RIVER  
 WATERSHED NUMBER: 02131106

A. GROSS SITE AREA:	16.42 AC.
B. NET SITE AREA:	15.56 AC.
C. AREA OF 100-YEAR FLOODPLAIN:	0.85 AC.
D. AREA OF WETLANDS AND BUFFERS(ONSITE):	3.30 AC.
E. AREA OF STREAM AND BUFFERS(ONSITE):	5.35 AC.
F. AREA OF >25% STEEP SLOPES:	0.00 AC.
G. EXISTING FOREST (WITHIN NET TRACT AREA):	3.10 AC.
H. ZONED:	RR-DEO
I. EXISTING USE:	AGRICULTURAL
J. PROPOSED USE:	SFD RESIDENTIAL

**GENERAL NOTES**

- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITAT WERE OBSERVED ON THE PROPERTY.
- SURROUNDING LAND USE IS PRIMARILY RURAL RESIDENTIAL DEVELOPMENT.
- ALL WETLANDS AND STREAMS ON THE PROPERTY ARE PART OF THE MIDDLE PATUXENT RIVER WATERSHED (02-13-11). THE STREAMS ON SITE ARE CONSIDERED TO BE USE IV-P WATERS. PERENNIAL STREAMS WILL REQUIRE 100 FOOT BUFFERS, INTERMITTENT STREAMS WILL REQUIRE 50 FOOT BUFFERS AND WETLANDS WILL REQUIRE 25 FOOT BUFFERS.
- THERE IS APPROXIMATELY 0.86 ACRES OF 100-YEAR FLOODPLAIN LOCATED WITHIN THE LIMITS OF THIS SITE.
- THERE ARE NO STEEP SLOPES LOCATED ON THIS SITE.
- THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES ON THIS PROPERTY.
- THERE ARE 5 SPECIMEN TREES LOCATED ALONG THE PERIMETER OF THE PROPERTY ON ROVER MILL ROAD. THERE ARE NO KNOWN TREES THAT ARE STATE CHAMPION TREES AND OR TREES 75% OF THE SIZE OF THE STATE CHAMPION TREE ON THE PROPERTY.
- APPROXIMATELY 0.60 ACRES OF OFFSITE FOREST AREA IS CURRENTLY PRESENT WITHIN 100' OF THE PROPERTY.

**OWNER/DEVELOPER**  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAI KATHURIA  
 12668 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

**NO. 7 REVISE LOT 192 HOUSE TYPE, GRADING AND SWM**

NO.	REVISION	DATE
6	REVISE HOUSE TYPE, GRADING AND SWM ON LOT 4 AND REVISE INLET AND GRADING ON LOT 3	0-2-21
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	5-27-21
4	REVISE LOT 3 HOUSE TYPE, GRADING AND SWM	2-24-21
3	REVISE LOT 7 HOUSE TYPE, GRADING AND SWM	1-27-21
2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	10-21-20
1	REVISE LOT 6 HOUSE TYPE, GRADING AND SWM	7-9-20

**FINAL PLAN**  
**FOREST CONSERVATION PLAN**  
 ROVER MILL ESTATES  
 LOTS 1-7 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745.FE.165  
 16.42 AC.  
 3RD ELECTION DISTRICT  
 TAX MAP: 15 GRD: 14  
 PARCEL: 169  
 ZONE: RR-DEO  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
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 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
 DESIGN BY: RHV  
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 CHECKED BY: RHV  
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 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. 18193 EXPIRATION DATE: 09-27-2020  
 10 SHEET OF 15

**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GnB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.28	NO
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
GnB	GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
Mac	HANKER LOAM, 8 TO 15 PERCENT SLOPES	B	.28	NO

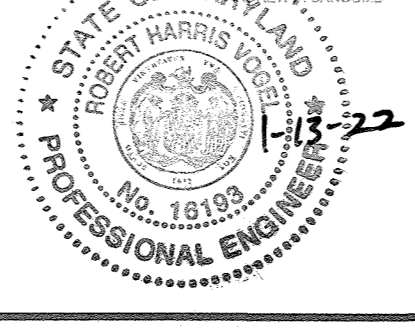
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 11/19/2019  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 11/19/19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

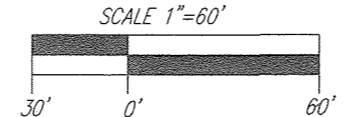
[Signature] 11/22/19  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONSTRUCTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.



**FOREST CONSERVATION PLAN**

SCALE: 1"=60'



**Eco-Science Professionals, Inc.**  
 Consulting Ecologists  
 P.O. Box 5006 Glen Arm, Maryland 21037  
 Telephone (410) 832-2480 Fax (410) 832-2488

MD DNR Qualified Professional  
 USACOE Wetland Delineator  
 Certification # WDCP53MD0610044B2  
 [Signature]

NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT MARCH 2021 F-19-056

REFOREST / AFFORESTATION PLAN

**A. PLANTING PLAN AND METHODS**

PLANT SPECIES SELECTION WAS BASED ON OUR KNOWLEDGE REGARDING PLANT COMMUNITIES IN MARYLAND'S PIEDMONT PLATEAU AND INFORMATION PROVIDED IN THE SOIL SURVEY ON TYPICAL VEGETATION FOR THE SOIL TYPE ON THE PLANTING SITE. SPECIES SELECTION WAS ALSO BASED ON OUR KNOWLEDGE OF PLANT AVAILABILITY IN THE NURSERY INDUSTRY.

REFOREST / AFFORESTATION SHALL BE ACCOMPLISHED THROUGH PLANTING 1" CALIBER TREES AT A RATE OF 200 TREES PER ACRE. CONTAINER GROWN STOCK IS RECOMMENDED BUT BAREROOT STOCK MAY BE USED TO HELP CONTROL AFFORESTATION COSTS. IF BAREROOT STOCK IS USED THE ROOT SYSTEMS OF ALL PLANTS WILL BE DIPPED IN AN ANTI-DESICCANT GEL PRIOR TO PLANTING TO IMPROVE MOISTURE RETENTION IN THE ROOT SYSTEMS.

PRIOR TO PLANTING THE PROPOSED FOREST CONSERVATION EASEMENTS ALL BRADFORD PEAR COLONIES, MULTIFLORA ROSE, HEAVY BRUSH AND OTHER INVASIVE SPECIES WITHIN THE PLANTING AREA, AND 20 FEET AROUND ITS PERIMETER, MUST BE REMOVED. REMOVAL OF THE BRADFORD PEAR COLONIES, MULTIFLORA ROSE, HEAVY BRUSH AND OTHER INVASIVE SPECIES MAY BE ACCOMPLISHED BY CUTTING OR BUSH-HOGGING AND ALL STUMPS/SPROUTS SHOULD BE TREATED WITH AN APPROPRIATE HERBICIDE TREATMENT. NATIVE TREES AND SHRUB SPECIES OCCURRING WITHIN THE PLANTING AREA SHOULD BE RETAINED WHEREVER POSSIBLE. HERBICIDE TREATMENTS SHALL OCCUR AT 2 MONTH INTERVALS DURING THE FIRST GROWING SEASON AND ONCE EACH IN THE SPRING AND FALL FOR SUBSEQUENT YEARS. HERBICIDE USED SHALL BE MADE SPECIFICALLY TO ADDRESS WOODY PLANT MATERIALS AND SHALL BE APPLIED AS PER MANUFACTURER'S SPECIFICATIONS. CARE SHOULD BE TAKEN NOT TO SPRAY PLANTED TREES OR NATURALLY OCCURRING NATIVE TREE/SHRUB SEEDLINGS. IT IS RECOMMENDED THAT THE INITIATION OF THE INVASIVE SPECIES REMOVAL BEGINS AT LEAST SIX MONTHS PRIOR TO PLANTING.

**B. PLANTING AND SOIL SPECIFICATIONS**

PLANT MATERIAL WILL BE INSTALLED IN ACCORDANCE WITH THE PLANTING DETAIL AND PLANTING SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN.

AMENDMENTS TO EXISTING SOIL WILL BE IN ACCORDANCE WITH THE PLANTING SPECIFICATIONS SHOWN ON THE FOREST CONSERVATION PLAN. SOIL DISTURBANCE WILL BE LIMITED TO INDIVIDUAL PLANTING LOCATIONS.

**C. MAINTENANCE OF PLANTINGS**

FOR INFORMATION REGARDING MAINTENANCE OF THE AFFORESTATION PLANTINGS, SEE SECTION VII B.

**D. GUARANTEE REQUIREMENTS**

A 90 PERCENT SURVIVAL RATE OF THE AFFORESTATION PLANTINGS WILL BE REQUIRED AFTER ONE GROWING SEASON. ALL PLANT MATERIAL BELOW THE 90 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE SECOND GROWING SEASON. AT THE END OF THE SECOND GROWING SEASON, A 75 PERCENT SURVIVAL RATE WILL BE REQUIRED. ALL PLANT MATERIAL BELOW THE 75 PERCENT SURVIVAL THRESHOLD WILL BE REPLACED BY THE BEGINNING OF THE NEXT GROWING SEASON.

**E. SECURITY FOR AFFORESTATION**

SECTION 16-1209 OF THE HOWARD COUNTY FOREST CONSERVATION ACT REQUIRES THAT A DEVELOPER SHALL POST A SECURITY (BOND, LETTER OF CREDIT, ETC) WITH THE COUNTY TO INSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE FCP.

**CONSTRUCTION PERIOD PROTECTION PROGRAM**

**A. FOREST PROTECTION TECHNIQUES**

**1. SOIL PROTECTION AREA (CRITICAL ROOT ZONE)**

THE SOIL PROTECTION AREA, OR CRITICAL ROOT ZONE, OF A TREE IS THAT PORTION OF THE SOIL COLUMN WHERE MOST OF A TREE'S ROOTS MAY BE FOUND. THE MAJORITY FOR WATER AND NUTRIENT UPTAKE OCCURS JUST BELOW THE SOIL SURFACE. TEMPORARY FENCING SHALL BE PLACED AROUND THE CRITICAL ROOT ZONE OF THE FOREST IN AREAS WHERE THE FOREST LIMITS OCCUR WITHIN 25 FEET OF THE LIMIT OF DISTURBANCE.

**2. FENCING AND SIGNAGE**

EXISTING FOREST LIMITS OCCURRING WITHIN 25 FEET OF THE LIMITS OF DISTURBANCE SHALL BE PROTECTED USING TEMPORARY PROTECTIVE FENCING. PERMANENT SIGNAGE SHALL BE PLACED AROUND THE AFFORESTATION AREA PRIOR TO PLANT INSTALLATION, AS SHOWN ON THE PLAN.

**B. PRE-CONSTRUCTION MEETING**

UPON STAKING OF LIMITS OF DISTURBANCE A PRE-CONSTRUCTION MEETING WILL BE HELD BETWEEN THE DEVELOPER, CONTRACTOR AND APPROPRIATE COUNTY INSPECTOR. THE MEETING WILL BE TO VERIFY THAT ALL SEDIMENT CONTROL IS IN ORDER, AND TO NOTIFY THE CONTRACTOR OF POSSIBLE PENALTIES FOR NON-COMPLIANCE WITH THE FCP.

**C. STORAGE FACILITIES/EQUIPMENT CLEANING**

ALL EQUIPMENT STORAGE, PARKING, SANITARY FACILITIES, MATERIAL STOCKPILING, ETC. ASSOCIATED WITH CONSTRUCTION OF THE PROJECT WILL BE RESTRICTED TO THOSE AREAS OUTSIDE OF THE PROPOSED FOREST CONSERVATION EASEMENT. CLEANING OF EQUIPMENT WILL BE LIMITED TO AREA WITHIN THE LOD OF THE PROPOSED HOMESTIES. WASTEWATER RESULTING FROM EQUIPMENT CLEANING WILL BE CONTROLLED TO PREVENT RUNOFF INTO ENVIRONMENTALLY SENSITIVE AREAS.

**D. SEQUENCE OF CONSTRUCTION**

THE FOLLOWING TIMETABLE REPRESENTS THE PROPOSED TIMETABLE FOR DEVELOPMENT. THE ITEMS OUTLINED IN THE FOREST CONSERVATION PLAN WILL BE ENACTED WITHIN TWO (2) YEARS OF SUBDIVISION APPROVAL.

BELOW FIND A PROPOSED SEQUENCE OF CONSTRUCTION:

1. INSTALL ALL SEDIMENT CONTROL DEVICES.
2. HOLD PRE-CONSTRUCTION MEETING BETWEEN DEVELOPER, CONTRACTOR AND COUNTY INSPECTOR.
3. BUILD ACCESS ROADS, INSTALL UTILITIES, AND CONSTRUCT HOMES. STABILIZE ALL DISTURBED AREAS ACCORDINGLY.
4. BEGIN INVASIVE SPECIES REMOVAL, AS NEEDED. INSTALL PERMANENT PROTECTIVE SIGNAGE FOR EASEMENTS AND INITIATE PLANTINGS IN ACCORDANCE WITH FOREST CONSERVATION PLAN. PLANTINGS WILL BE COMPLETED WITHIN TWO (2) YEARS OF SUBDIVISION APPROVAL.
5. REMOVE SEDIMENT CONTROL.
6. HOLD POST-CONSTRUCTION MEETING WITH COUNTY INSPECTORS TO ASSURE COMPLIANCE WITH FCP. SUBMIT CERTIFICATION OF INSTALLATION.
7. MONITOR AND MAINTAIN PLANTINGS FOR 2 YEARS.

**E. CONSTRUCTION MONITORING**

ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER, WILL MONITOR CONSTRUCTION OF THE PROJECT TO ENSURE THAT ALL ACTIVITIES ARE IN COMPLIANCE WITH THE FOREST CONSERVATION PLAN.

**F. POST-CONSTRUCTION MEETING**

UPON COMPLETION OF CONSTRUCTION, ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER, WILL NOTIFY THE COUNTY THAT CONSTRUCTION HAS BEEN COMPLETED AND ARRANGE FOR A POST-CONSTRUCTION MEETING TO REVIEW THE PROJECT SITE. THE MEETING WILL ALLOW THE COUNTY INSPECTOR TO VERIFY THAT AFFORESTATION PLANTINGS HAVE BEEN INSTALLED.

**POST-CONSTRUCTION MANAGEMENT PLAN**

HOWARD COUNTY REQUIRES A TWO YEAR POST-CONSTRUCTION MANAGEMENT PLAN BE PREPARED AS PART OF THE FOREST CONSERVATION PLAN. THE PLAN GOES INTO EFFECT UPON ACCEPTANCE OF THE CONSTRUCTION CERTIFICATION OF COMPLETION BY THE COUNTY. ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL DESIGNATED BY THE DEVELOPER, WILL BE RESPONSIBLE FOR IMPLEMENTATION OF THE POST-CONSTRUCTION MANAGEMENT PLAN.

THE FOLLOWING ITEMS WILL BE INCORPORATED INTO THE PLAN:

**A. FENCING AND SIGNAGE**

PERMANENT SIGNAGE INDICATING THE LIMITS OF THE RETENTION/AFFORESTATION AREA SHALL BE MAINTAINED.

**B. GENERAL SITE INSPECTIONS/MAINTENANCE OF PLANTINGS**

SITE INSPECTIONS WILL BE PERFORMED A MINIMUM OF THREE TIMES DURING THE GROWING SEASON. THE PURPOSE OF THE INSPECTIONS WILL BE TO ASSESS THE HEALTH OF THE AFFORESTATION PLANTINGS. APPROPRIATE MEASURES WILL BE TAKEN TO RECTIFY ANY PROBLEMS WHICH MAY ARISE.

IN ADDITION, MAINTENANCE OF THE AFFORESTATION PLANTINGS WILL INVOLVE THE FOLLOWING STEPS:

1. WATERING - ALL PLANT MATERIAL SHALL BE WATERED TWICE A MONTH DURING THE 1ST GROWING SEASON, MORE OR LESS FREQUENTLY DEPENDING ON WEATHER CONDITIONS. DURING THE SECOND GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER, IF NEEDED.
2. REMOVAL OF INVASIVE EXOTICS AND NOXIOUS WEEDS. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
3. IDENTIFICATION OF SERIOUS PLANT PESTS AND DISEASES. TREATMENT WITH APPROPRIATE AGENT.
4. PRUNING OF DEAD BRANCHES.
5. AFTER 12 AND 24 MONTHS, REPLACEMENT OF PLANTS, IF REQUIRED, IN ACCORDANCE WITH THE GUARANTEE REQUIREMENTS SHOWN ON THE FCP.

**C. EDUCATION**

THE DEVELOPER WILL PROVIDE APPROPRIATE MATERIALS TO PROPERTY OWNERS INFORMING THEM OF THE LOCATION AND PURPOSE OF THE AFFORESTATION AREA. MATERIALS MAY INCLUDE SITE PLANS AND INFORMATION EXPLAINING THE INTENT OF THE FOREST CONSERVATION PLAN.

**D. FINAL INSPECTION**

AT THE END OF THE TWO YEAR POST-CONSTRUCTION MANAGEMENT PERIOD, ECO-SCIENCE PROFESSIONALS, OR ANOTHER QUALIFIED PROFESSIONAL, WILL SUBMIT TO THE ADMINISTRATOR OF THE HOWARD COUNTY FOREST CONSERVATION PROGRAM CERTIFICATION THAT ALL RETENTION/AFFORESTATION REQUIREMENTS HAVE BEEN MET. UPON ACCEPTANCE OF THIS CERTIFICATION, THE COUNTY WILL RELEASE THE DEVELOPER FROM ALL FUTURE OBLIGATIONS AND RELEASE THE DEVELOPER'S BOND.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 11/19/2019  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 11/19/19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 4/22/19  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Eco-Science Professionals, Inc. Consulting Ecologists

P.O. Box 2006 One Arm, Maryland 21057 Telephone (410) 822-2489 Fax (410) 822-2488

MD DNR Qualified Professional USACOE William Delaney Certification # WDC09 MD061004182

*[Signature]* William Delaney

**HOWARD COUNTY FOREST CONSERVATION WORKSHEET**

ZONED RR-DEO NET TRACT AREA:

A. TOTAL TRACT AREA = 16.4 AC  
B. AREA WITHIN 100 YEAR FLOODPLAIN = 0.9 AC  
C. AREA OF PRESERVATION PARCEL B\* (EXCLUDING FLOODPLAIN) = 6.3 AC  
D. NET TRACT AREA = 9.2 AC

LAND USE CATEGORY: INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED RR-DEO

ARA	MDR	IDA	HDR	MPD	CIA
0	1	0	0	0	0

E. AFFORESTATION THRESHOLD = 20% X D. = 1.8 AC  
F. CONSERVATION THRESHOLD = 25% X D. = 2.3 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (WITHIN NET TRACT AREA) (EXCLUDING FLOODPLAIN) = 0.0 AC  
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 0.0 AC  
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 0.0 AC

BREAK EVEN POINT: (2 X I) + F = BREAK EVEN POINT (0 AC)

J. FOREST RETENTION ABOVE THRESHOLD W/ NO MITIGATION = 0.0 AC  
K. CLEARING PERMITTED WITH MITIGATION = 0.0 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED = 0.0 AC  
M. TOTAL AREA OF FOREST TO BE RETAINED = 0.0 AC

PLANTING REQUIREMENTS:

L. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25%) = 0.0 AC  
M. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.0 AC  
N. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) = 0.0 AC  
P. TOTAL REFORESTATION REQUIRED (N+P-Q) = 0.0 AC  
Q. TOTAL AFFORESTATION REQUIRED = 1.8 AC  
R. TOTAL PLANTING REQUIREMENT (REFORESTATION AND AFFORESTATION) = 1.8 AC

\*PRESERVATION PARCEL B (7.2 ACRES) (6.3 ACRES OF NTA AND 0.9 ACRES OF FLOODPLAIN) HAS BEEN DEDUCTED FROM THE GROSS SITE ACREAGE SINCE NO CHANGES IN LAND USE ARE PROPOSED ON THIS PORTION OF THE PROPERTY, PER APPENDIX L OF THE FCA MANUAL.

**FOREST CONSERVATION EASEMENT TABLE**

EASEMENT	RETENTION		AFFORESTATION	TOTAL
	CREDITED	NON-CREDITED		
FCE #1	0.0 AC.	0.0 AC.	1.8 AC.	1.8 AC.

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

1. STAKE OUT LIMITS OF DISTURBANCE AND FOREST CONSERVATION SIGN LOCATIONS.
2. PRECONSTRUCTION MEETING/SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
3. INSTALL TREE PROTECTION FENCING. FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
5. REMOVE BRADFORD PEAR COLONIES, MULTIFLORA ROSE, HEAVY BRUSH AND ALL OTHER INVASIVE SPECIES FROM THE PROPOSED AFFORESTATION AREA, AND FROM WITHIN 20 FEET OF ITS PERIMETER. REMOVAL MAY BE ACCOMPLISHED BY CUTTING OR BUSH-HOGGING. ALL STUMPS/SPROUTS SHOULD BE TREATED WITH AN APPROPRIATE HERBICIDE TREATMENT. RETAIN ANY HEALTHY NATIVE SPECIES WITHIN THE AFFORESTATION AREA. REGROWTH OF THE INVASIVE SPECIES SHOULD BE CONTROLLED WITH HERBICIDE AND MOWING ON A MONTHLY SCHEDULE, IN THE GROWING SEASON, DURING THE MAINTENANCE AND MONITORING PERIOD.
6. UPON REMOVAL OF THE INVASIVE SPECIES AND APPROVAL OF SITE CONDITIONS BY HOWARD COUNTY, PROCEED WITH PLANTING THE AFFORESTATION AREA.
7. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL GRADING AND UTILITY CONSTRUCTION HAS OCCURRED, AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

**FOREST STAND DATA**

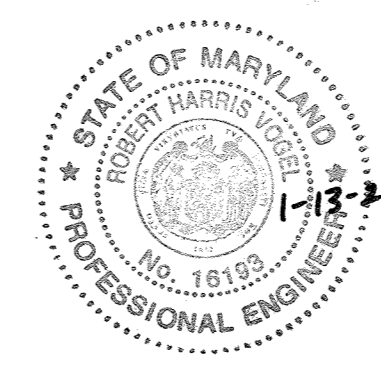
KEY	COMMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F1	SUCCESSIONAL	3.1	ROBINIA PSEUDO-ACACIA, PRUNUS SEROTINA, ALANTHUS ALTISSIMA, AGER PLATANOIDES, ROSA MULTIFLORA	FAIR - INVASIVE COMPOSITION	2± ACRES WETLAND, STREAMS AND BUFFERS

SEE ACCOMPANYING REPORT FOR COMPLETE STAND DESCRIPTIONS

NOTE: THE EXISTING FOREST IS LOCATED OUTSIDE OF THE NET TRACT AREA ON NON-BUILDABLE PRESERVATION PARCEL 'B'



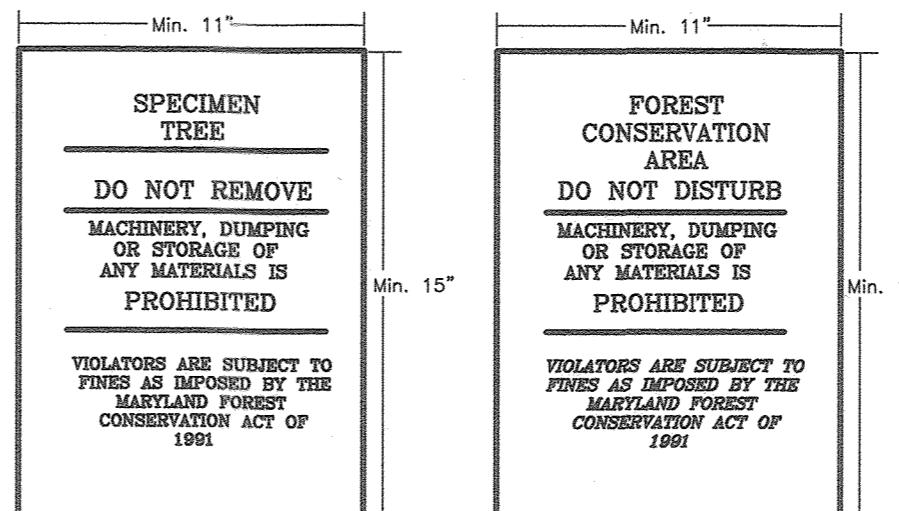
**VICINITY MAP**  
SCALE: 1"=1,000'  
ADC MAP: PAGE: 17 GRID: D4 & E4



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

*[Signature]* 16193 1-13-22  
P.E. NAME P.E.# DATE



NOTE:

1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50-100 FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART. WHERE SIGNS ARE TO BE PLACED AT THE REAR OF PROPOSED LOTS, SPACING SHALL BE APPROX. 50 FT.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
4. ALL FOREST CONSERVATION SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.
5. SIGN LOCATION SYMBOL = ●

**FOREST CONSERVATION AREA SIGNS**  
NOT TO SCALE

**OWNER/DEVELOPER**  
PEFFERKORN ROVER MILL, LLC  
C/O RAJ KATHURA  
12668 FREDERICK ROAD  
WEST FRIENDSHIP, MD 21794  
(443) 574-1600

NO.	REVISION	DATE

**FINAL PLAN**

**FOREST CONSERVATION NOTES AND DETAILS**

**ROVER MILL ESTATES**  
LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
PEFFERKORN ROAD & ROVER MILL ROAD  
WEST FRIENDSHIP, MD 21794  
L 16745 F, 155 16.42 AC. PARCEL: 198  
3RD ELECTION DISTRICT TAX MAP: 15 GRID: 14 ZONING: RR-DEO HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 N. RIDGE ROAD, SUITE 110 TEL: 410.461.7666  
ELIGOTT CITY, MD 21043 FAX: 410.461.6961

DESIGN BY: RHY  
DRAWN BY: JMR  
CHECKED BY: RHY  
DATE: OCTOBER 2019  
SCALE: AS SHOWN  
W.O. NO.: 15-36

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 08-27-2026

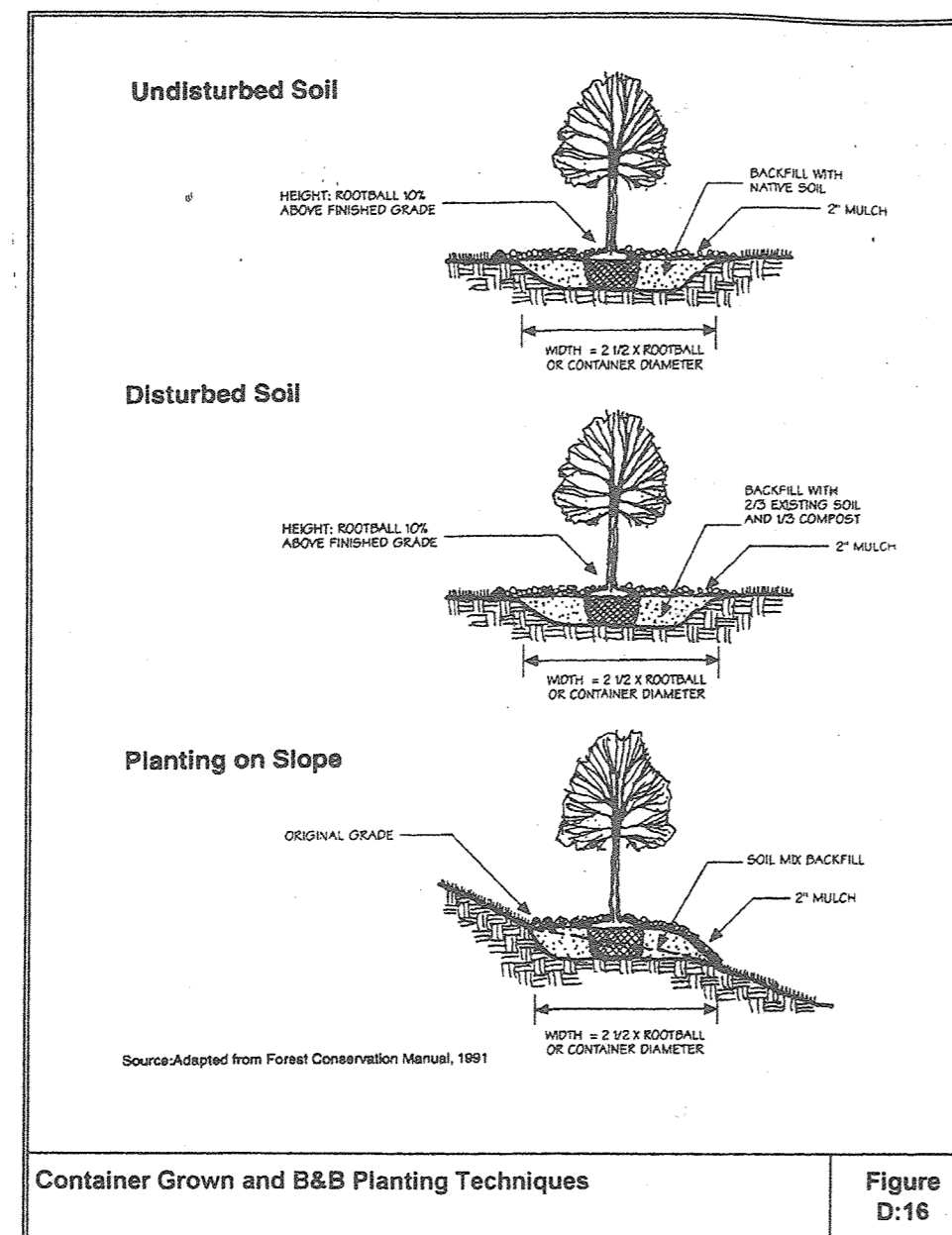
11 SHEET OF 15

NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT MARCH, 2021 F-19-056

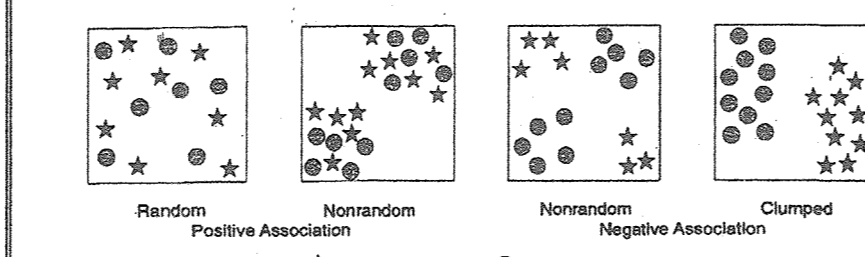
**PLANTING AREA MONITORING NOTES**

1. REMOVE BRADFORD PEAR COLONIES, MULTIFLORA ROSE, HEAVY BRUSH AND ALL OTHER INVASIVE SPECIES FROM THE PROPOSED AFFORESTATION AREA, AND FROM WITHIN 20 FEET OF ITS PERIMETER. REMOVAL MAY BE ACCOMPLISHED BY CUTTING OR BUSH-HOGGING. ALL STUMPS/SPROUTS SHOULD BE TREATED WITH AN APPROPRIATE HERBICIDE TREATMENT. RETAIN ANY HEALTHY NATIVE SPECIES WITHIN THE AFFORESTATION AREA. REGROWTH OF THE INVASIVE SPECIES SHOULD BE CONTROLLED WITH HERBICIDE AND MOWING ON A MONTHLY SCHEDULE, IN THE GROWING SEASON, DURING THE MAINTENANCE AND MONITORING PERIOD.
2. MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
3. THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
4. SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
5. EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.



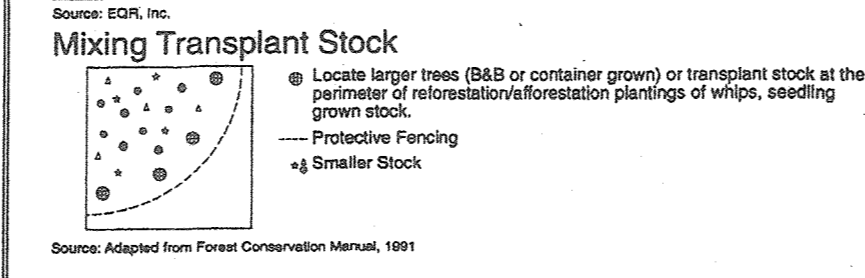
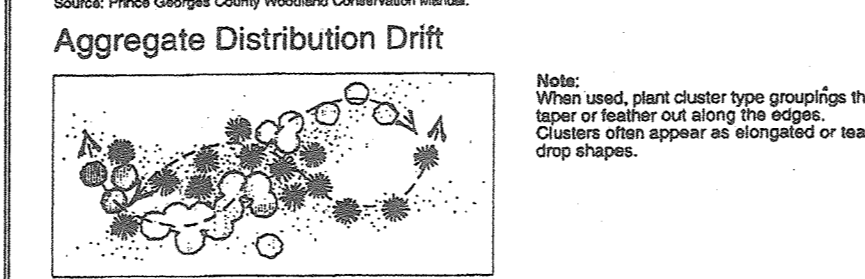
Container Grown and B&B Planting Techniques Figure D:16

**Typical Forest Tree Distribution Patterns**

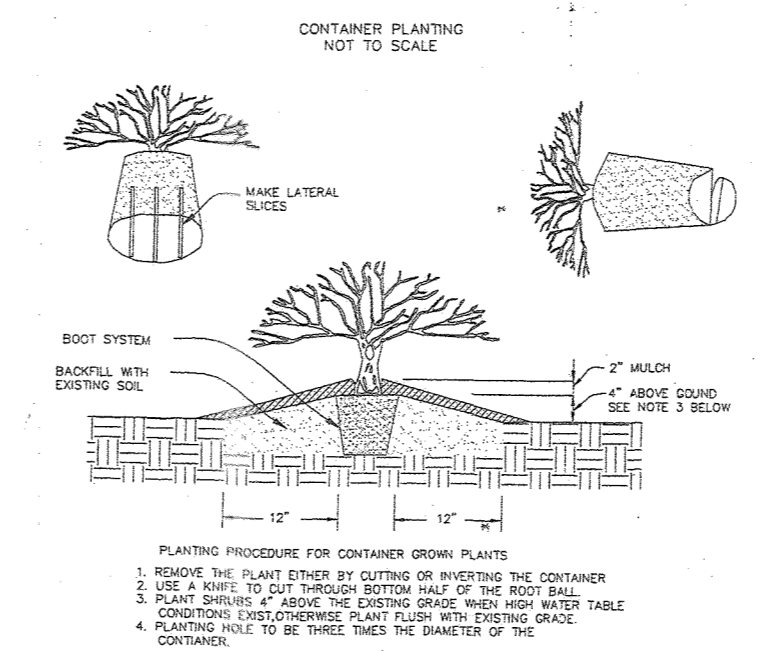


Note: Naturally occurring populations of trees tend to be found in informal groupings. A cluster of trees is really a mosaic of different species groups. The objective of an afforestation/reforestation plan is to select the appropriate species and distribution pattern for a chosen site that mimic natural patterns.

Source: Pinck Georgia County Woodland Conservation Manual.



Planting Distribution Patterns Figure A:19



Size	Number Required per Acre	Approximate Spacing feet on center	Survivability Requirement At the end of the second growing season	
Container Grown 5, 7 Gallon or 1" Caliper B & B	200	15 x 15	75%	170

**Notes:**

1. These stocking and survival requirements are the minimum numbers estimated to meet the definition of forest from bare land.
2. In certain circumstances, any combination of the above mentioned stocking options, dry seeding, tree shelters, transplants, and/or natural regeneration may be appropriate strategies to fulfill the requirements of an approved FCD. They will be evaluated on a case-by-case basis by the approving authority.
3. Spacing does not imply that trees or shrubs must be planted in a grid pattern.

**Site Stocking** **Figure A:18**

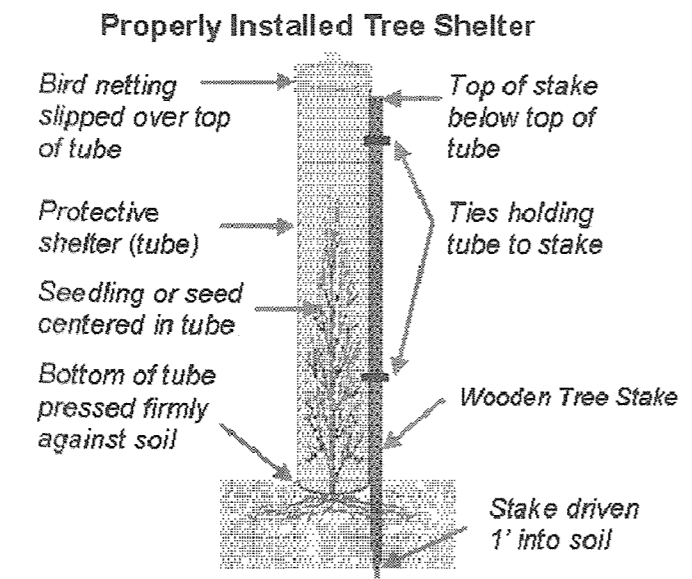
**TREE SHELTER INSTALLATION**

**Installation**  
Drive stake in ground 2" to 3" from seedling or seed, to a depth of 1', ensuring that top of stake will be below top of tube, but 3-6" inches above topmost tie position.

Insert ties in appropriate holes on tube and tie loosely, or leave open, as instructed by manufacturer. Slip ties over stake. Center the planting in the middle of the tube. Press the tube firmly against the soil surface (preferably 1/2" to 1" into the soil.) Ensure tree limbs are not caught under the ties. Tighten ties on stake. If installing bird netting, follow manufacturer's instructions.

**Maintenance**  
Inspect at least annually. Straighten tipped shelters. Replace broken stakes. Remove bird netting if trees are at or above the top of the tube. Use fabric, mulches, mowing, or herbicides to control weeds around trees. Remove shelters and stakes when the tube begins restricting tree stem diameter growth. Some types of tree shelters will be destroyed when removed. Removing tubes too early may result in a tree unable to support itself. Trees need to grow above the shelter for several years to develop wind hardness. Freshly exposed tree bark may take several weeks to "harden" and become resistant to damage.

Tree shelters may encourage weak, V-shaped branch angles within the tube, especially on opposite branching species. Prune off these weak branches when the tubes are removed.



PROVIDE TREE SHELTERS FOR ALL AFFORESTATION PLANTINGS

AFFORESTATION PLANTING SCHEDULE			
EASEMENT #1: 1.8 AC. (AFFORESTATION) @ 200 TREES/AC. = 360 TREES			
QTY.	BOTANICAL NAME	SIZE	SPACING
35	CERCIS CANADENSIS RED BUD	1" CAL.	15' O.C.
45	ACER RUBRUM RED MAPLE	1" CAL.	15' O.C.
50	CORNUS FLORIDA FLOWERING DOGWOOD	1" CAL.	15' O.C.
50	LIRIODENDRON TULIPIFERA TULIP POPLAR	1" CAL.	15' O.C.
50	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	1" CAL.	15' O.C.
50	PRUNUS SEROTINA BLACK CHERRY	1" CAL.	15' O.C.
45	QUERCUS ALBA WHITE OAK	1" CAL.	15' O.C.
35	SASSAFRAS ALBIDUM SASSAFRAS	1" CAL.	15' O.C.
360	TOTAL PLANTINGS		

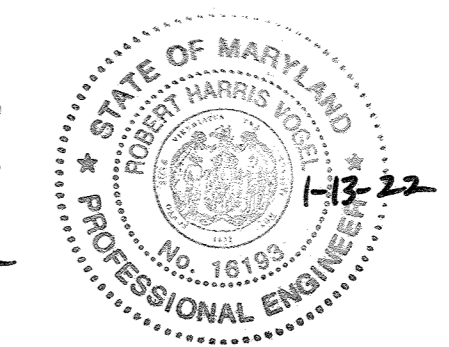
**OWNER/DEVELOPER**  
PFEFFERKORN ROVER MILL, LLC  
C/O RAJ KATHURIA  
12668 FREDERICK ROAD  
WEST FRIENDSHIP, MD 21794  
(443) 574-1600

NO.	REVISION	DATE

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWIM FACILITY.

*[Signature]* 16193 11-22-22  
P.E. # DATE



**FINAL PLAN**

**FOREST CONSERVATION NOTES AND DETAILS**

**ROVER MILL ESTATES**  
LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
PFEFFERKORN ROAD & ROVER MILL ROAD  
WEST FRIENDSHIP, MD 21794  
L 16745 F, 155 16.42 AC.

3RD ELECTION DISTRICT TAX MAP: 15 GRID: 14

PARCEL: 169 ZONING: RR-100 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS & SURVEYORS, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 N. RIDGE ROAD, SUITE 110 ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.6961

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 11/19/2019  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 11.19.19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/22/19  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**Eco-Science Professionals, Inc.**  
Consulting Ecologists  
P.O. Box 5006 Otco Arm, Maryland 21027 Telephone (410) 832-2488 Fax (410) 832-2488

MD DNR Qualified Professional  
USACOE Wetland Delinicator  
Certification # WDCP93MD0610044182

*[Signature]*  
Robert H. Canoles

PROFESSIONAL CERTIFICATE

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. 16193 EXPIRATION DATE: 10-31-2022

DESIGN BY: RHY  
DRAWN BY: JMR  
CHECKED BY: RHY  
DATE: OCTOBER 2019  
SCALE: AS SHOWN  
W.O. NO.: 15-36

12 SHEET OF 15

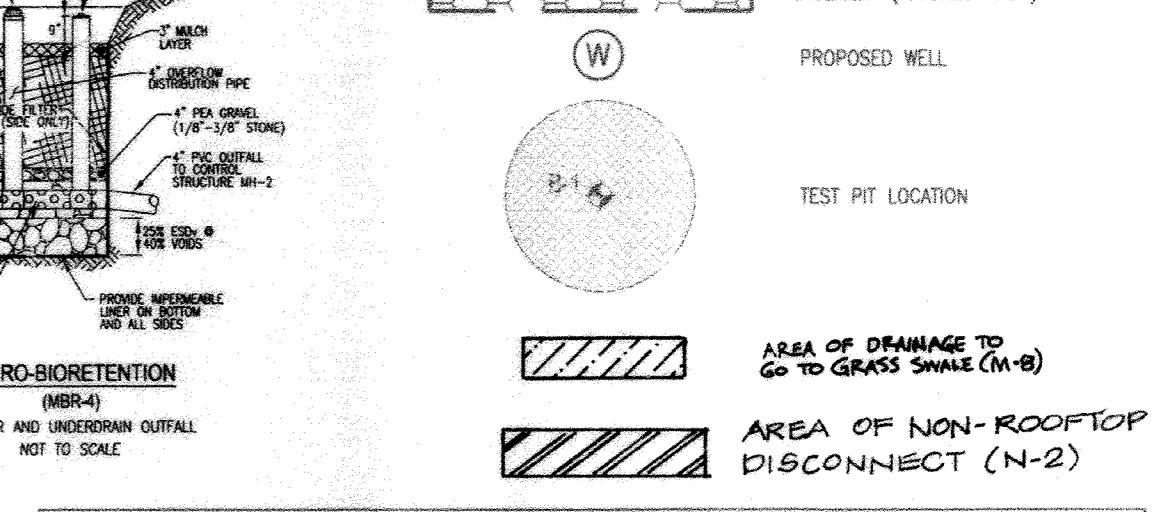
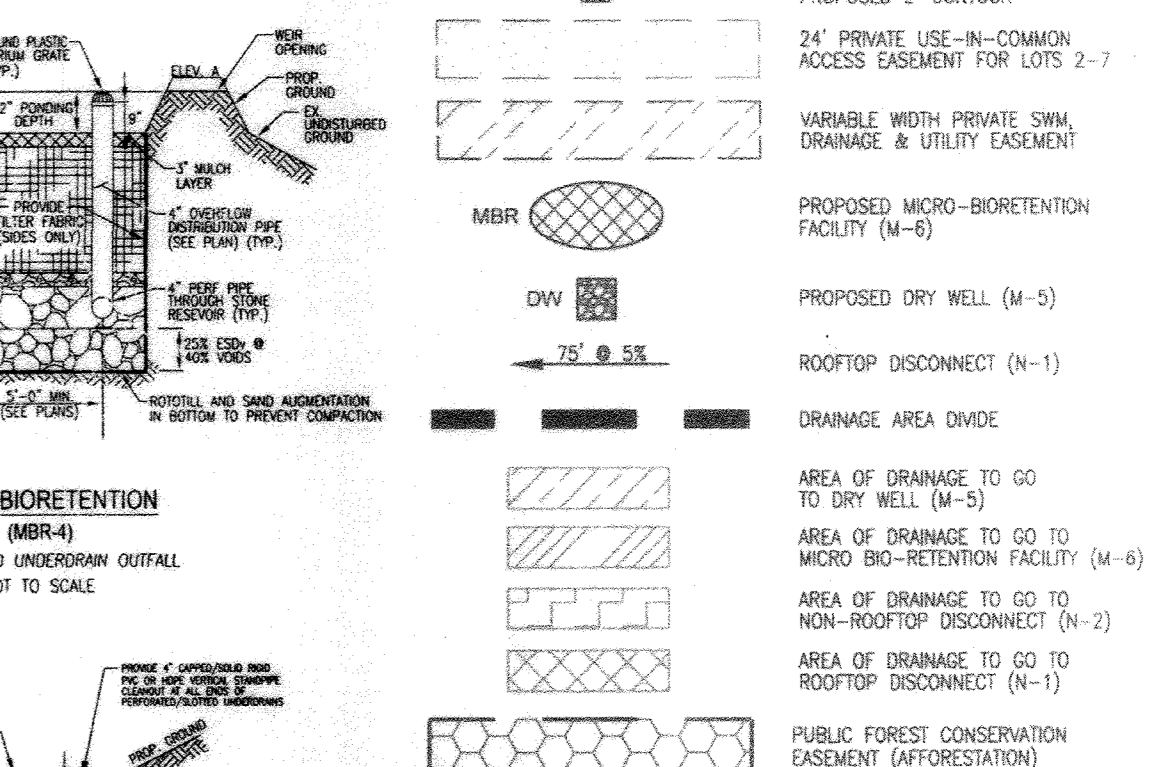
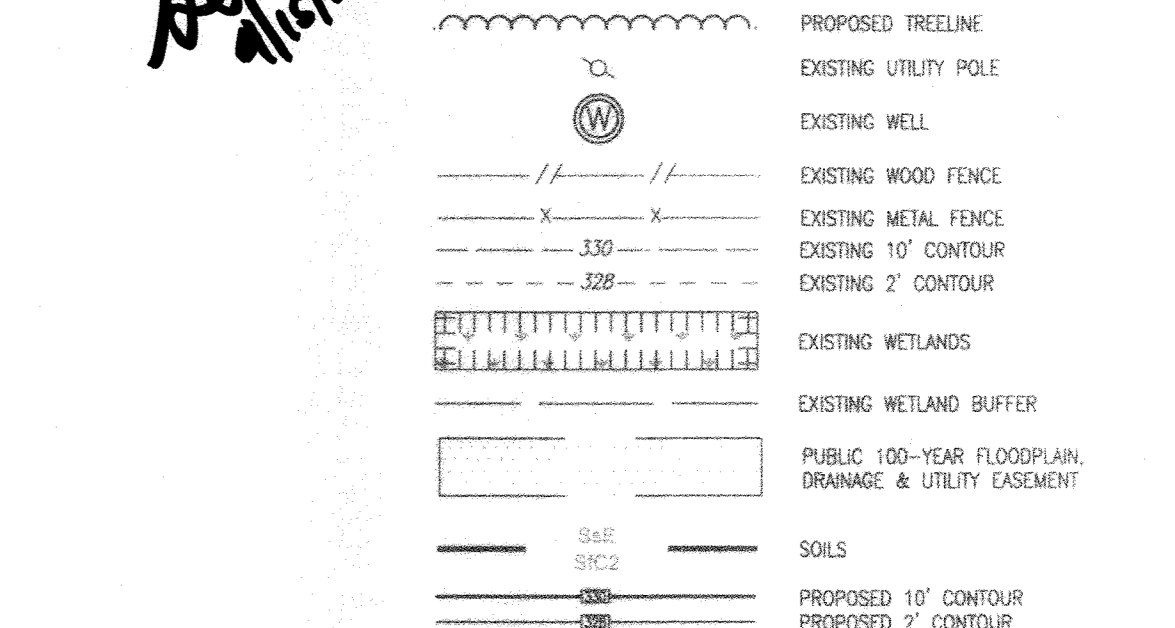
AS-BUILT MARCH, 2021 F-19-056



**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.: 22538  
 Expiration Date: 11-28-23

**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF DRAINAGE
- EXISTING STREAM BUFFER
- EXISTING STREAM
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING UTILITY POLE
- EXISTING WELL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
- SOILS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
- VARIABLE WIDTH PRIVATE SWM, DRAINAGE & UTILITY EASEMENT
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRY WELL (M-5)
- ROOFTOP DISCONNECT (N-1)
- DRAINAGE AREA DIVIDE
- AREA OF DRAINAGE TO GO TO DRY WELL (M-5)
- AREA OF DRAINAGE TO GO TO MICRO BIO-RETENTION FACILITY (M-6)
- AREA OF DRAINAGE TO GO TO NON-ROOFTOP DISCONNECT (N-2)
- AREA OF DRAINAGE TO GO TO ROOFTOP DISCONNECT (N-1)
- PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PROPOSED WELL
- TEST PIT LOCATION
- AREA OF DRAINAGE TO GO TO GRASS SWALE (M-8)
- AREA OF NON-ROOFTOP DISCONNECT (N-2)



**SOILS LEGEND**

SYMBOL	NAME/DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GdR	GLENVILLE LOAM, 3 TO 8 PERCENT SLOPES	B	28	NO
GdR	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	43	YES
GdR	GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	43	YES
MdC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	28	NO

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**NO. 7 REVISION LOT 1 & 2 HOUSE TYPE, GRADING AND SWM**

**OWNER/DEVELOPER**  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAJ KATHURIA  
 12888 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

NO.	REVISION	DATE
6	REVISE HOUSE TYPE, GRADING AND SWM ON LOT 4 AND REVISE INLET AND GRADING ON LOTS 8-2-2-1	5-2-21
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	2-24-21
4	REVISE LOT 3 HOUSE TYPE, GRADING AND SWM	1-27-21
3	REVISE LOT 7 HOUSE TYPE, GRADING AND SWM	10-21-20
2	REVISE THE T-TURNAROUND TO A CUL-DE-SAC	7-9-20
1	REVISE LOT 6 HOUSE TYPE, GRADING AND SWM	

**FINAL PLAN**  
 ESDv - SWM PLAN AND DRAINAGE AREA MAP  
 ROVER MILL ESTATES  
 LOTS 1-7 AND NON-BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 / F. 155  
 18.42 AC  
 PARCEL: 188  
 ZONED: RR-DD  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8981

**PROFESSIONAL CERTIFICATE**

DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: JMR  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.C. NO.: 13-36

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. 22538. EXPIRATION DATE: 11-28-23.

13 SHEET OF 15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 11/19/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/19/19

APPROVED: T. MacArthur, KS  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/22/19

**SWM PLAN**  
 SCALE: 1"=50'

**MICRO-BIORETENTION FACILITY ELEVATIONS (M-6)**

LOT #	FACILITY	A	B	C	D	E	F	G	H	UNDERGROUND INVERT	FACILITY SIZE	
8	MBR-4*	517.00	516.70	515.70	515.45	513.45	513.12	512.12	511.20	516.70	512.45	402 SF

\*PROVIDE IMPERVIOUS LINER WITH THIS FACILITY.

01/14/2022

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretentation, Rain Gardens & Landscape Infiltration

Table with 4 columns: Material, Specification, Size, and Notes. Lists materials like loamy sand, mulch, geotextile, and piping with their respective specifications and notes.

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1. 2. FILTERING MEDIA OR PLANTING SOIL THE SOIL SHALL BE A UNIFORM MIX... 3. COMPACTON IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL... 4. PLANT MATERIAL RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES IS LISTED IN APPENDIX A, SECTION A.2.3.

GRASS SWALE: 1,389 SF CHANNEL SLOPE=4.0% E=3'0" d=0.55' (0.5' FREEBOARD) d<sub>90</sub>=0.02 cfs V<sub>50</sub>=1.00 fms Q<sub>90</sub>=2.18 cfs SS=3:1

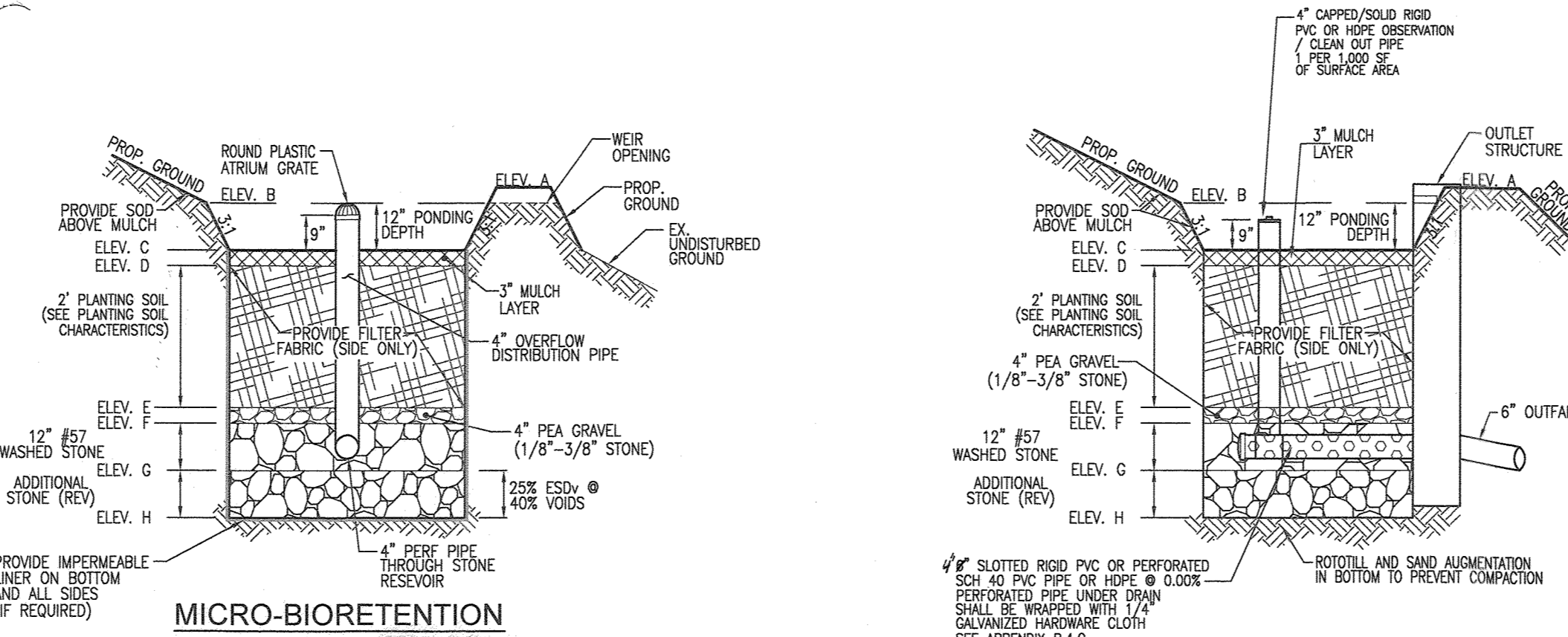
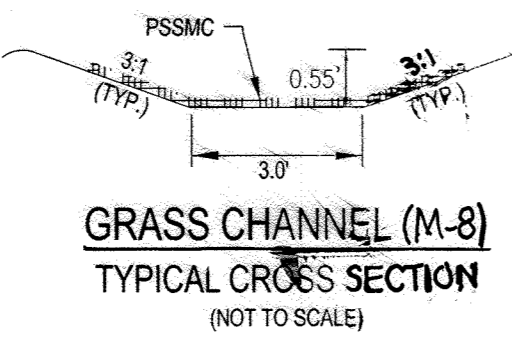
6. UNDERDRAINS UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA: PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER... 7. MISCELLANEOUS THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

Table with 3 columns: Material, Specification, and Notes. Lists materials like geotextile fabric, impermeable liner, and observation wells with their respective specifications.

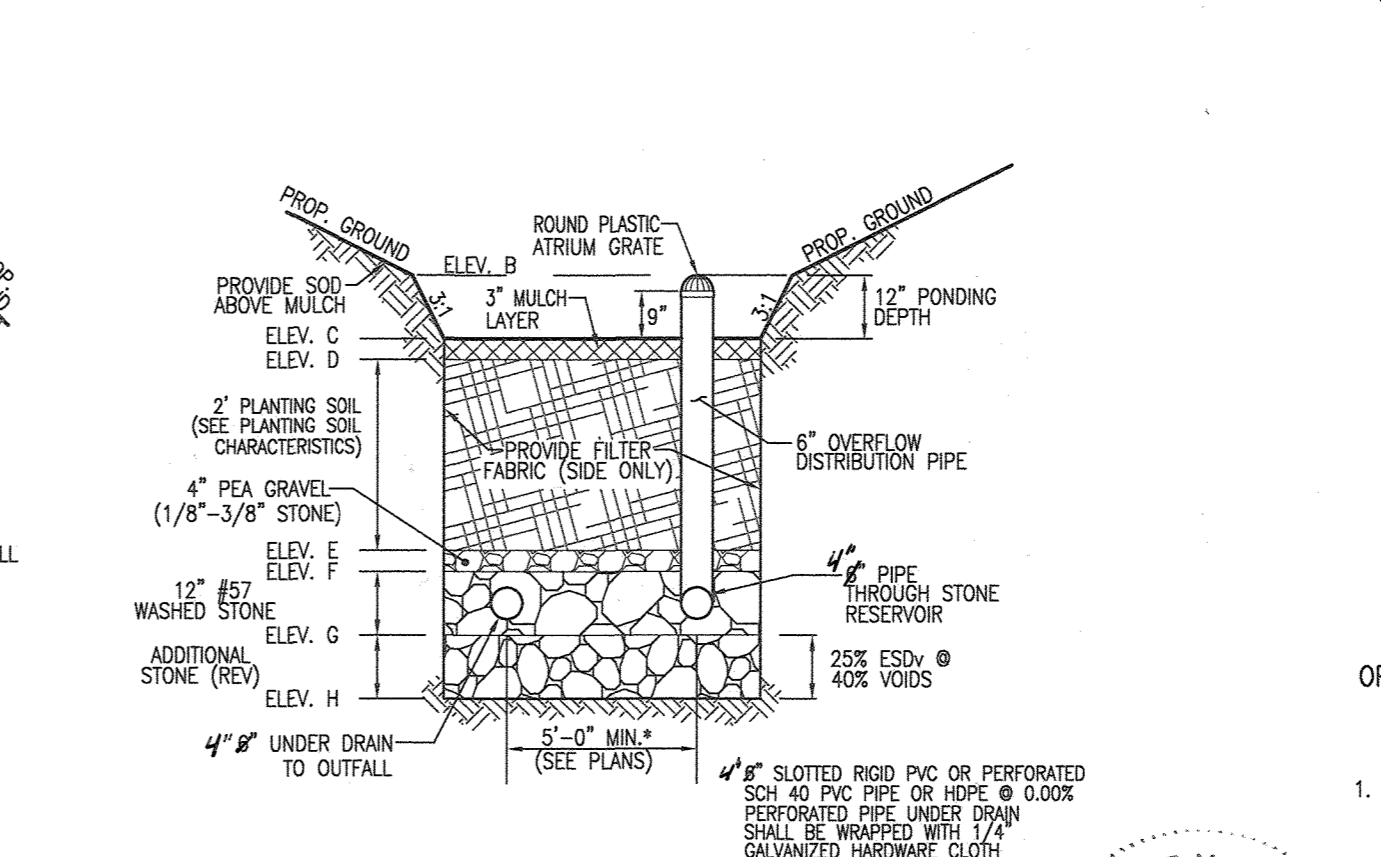
- 1. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC... 2. WRAP THE PERFORATED MICROBIORETENTION PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH... 3. PROVIDE 5' MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BOS.

OPERATION AND MAINTENANCE SCHEDULE FOR GRASS SWALE (M-8)

- 1. THE OPEN CHANNEL SYSTEM SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORM EVENTS... 2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MAINTENANCE OPERATIONS... 3. REMOVE SILT IN THE OPEN CHANNEL SYSTEM WHEN IT EXCEEDS 25% OF THE ORIGINAL VOLUME.



MICRO-BIORETENTION (UNDERDRAIN) (MBR-3) NOT TO SCALE



MICRO-BIORETENTION (OVERFLOW) (MBR-3) NOT TO SCALE

MICRO-BIORETENTION FACILITY ELEVATIONS (M-6)

Table with 10 columns: LOT #, FACILITY, A, B, C, D, E, F, G, H, UNDERDRAIN INV., FACILITY SIZE. Lists elevations for various facilities across lots.

MICRO-BIORETENTION FACILITY ELEVATIONS (M-6)

Table with 10 columns: LOT #, FACILITY, A, B, C, D, E, F, G, H, UNDERDRAIN INV., FACILITY SIZE. Lists elevations for various facilities across lots.

\* FOR MBR-4 DETAILS, SEE SHEET 13

OPERATION AND MAINTENANCE SCHEDULE FOR (M-6) MICROBIORETENTION AREAS

- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED... 2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL... 3. MULCH SHALL BE INSPECTED EACH SPRING, REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER...

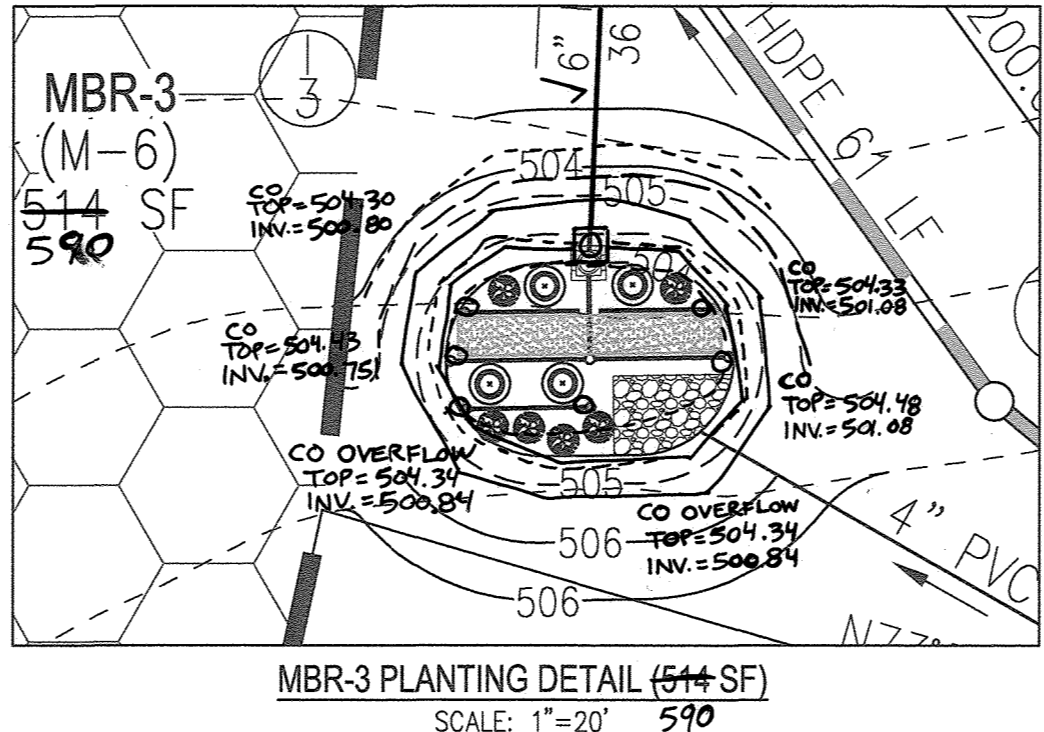
Table A.4 Commonly Used Species for Bioretention Areas

Table with 3 columns: Trees, Shrubs, and Herbaceous Species. Lists various plant species like Acer rubrum, Aesculus parviflora, and Andropogon virginicus.

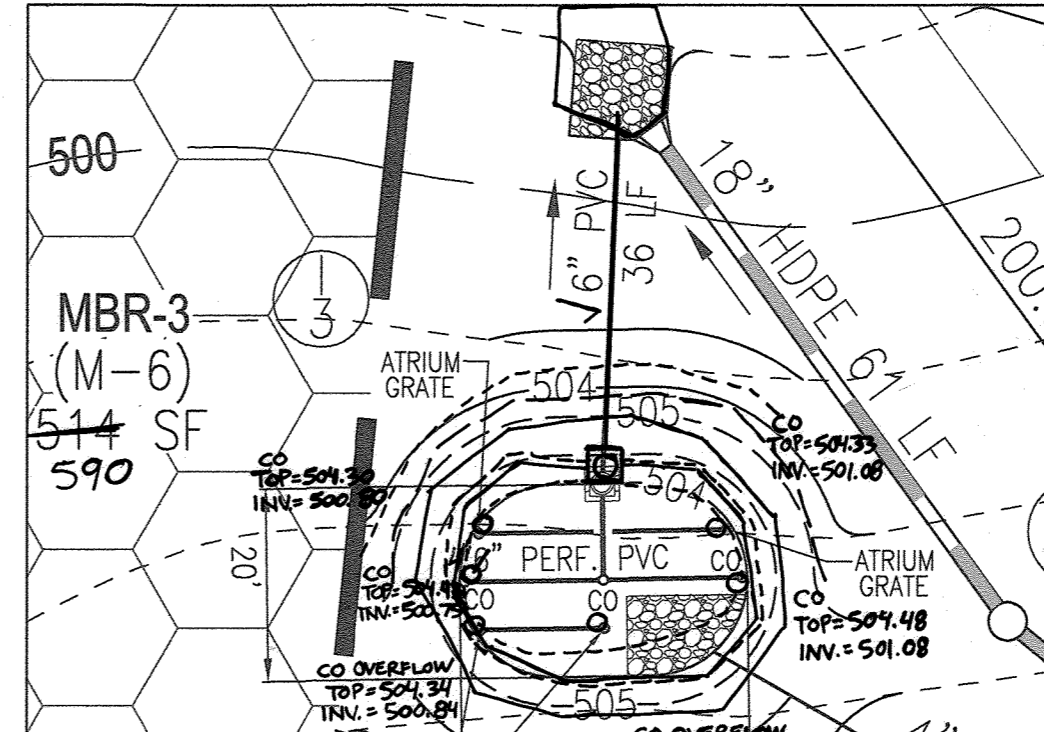
"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- 1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL... 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO SOILING... 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS... 4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

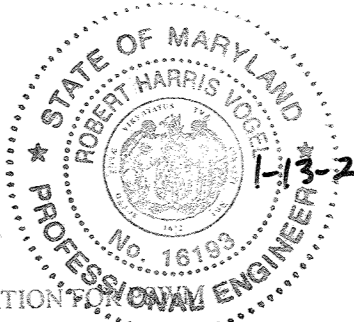
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CHIEF, BUREAU OF HIGHWAYS DATE 11/19/2019 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 11/19/19



MICRO-BIORETENTION PLANTING SCHEDULE (MBR-3) Table with 5 columns: QTY, BOTANICAL NAME/COMMON NAME, SIZE, REMARKS. Lists quantities for LINDERA BENZOIN, ILEX GLABRA, and LOBELIA CARDINALIS.

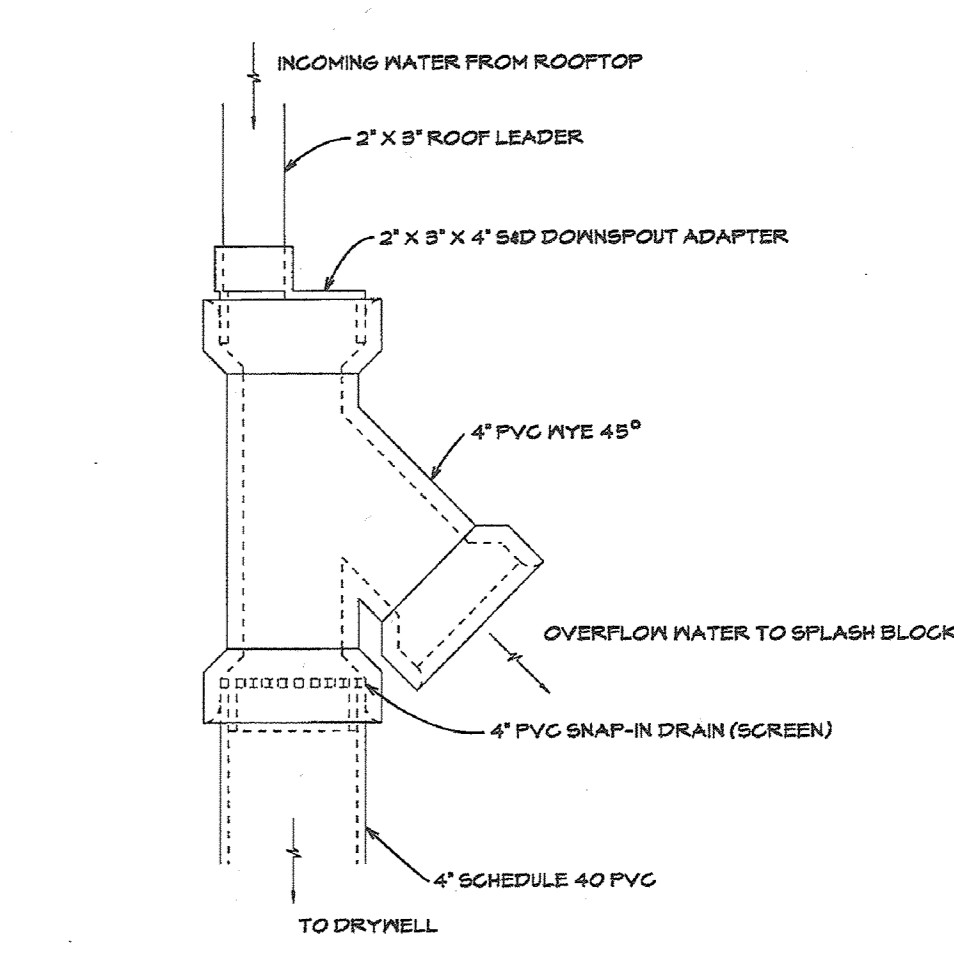


MICRO-BIORETENTION PLANTING SCHEDULE (MBR-3) Table with 5 columns: QTY, BOTANICAL NAME/COMMON NAME, SIZE, REMARKS. Lists quantities for ILEX GLABRA and LOBELIA CARDINALIS.



AS-BUILT CERTIFICATION I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND CONFORMS WITH THE APPLICABLE PLANS AND SPECIFICATIONS...

FIGURE 3 STANDARD DRYWELL DOWNSPOUT FITTINGS



- NOTES: 1. THE SNAP IN SCREEN IS REQUIRED TO PREVENT CLOGGING OF THE DRYWELL WITH DEBRIS. 2. SEE FIGURE B.1 LIST OF POTENTIAL SUPPLIERS TO ACCOMPANY FIGURE B.1 STANDARD DRYWELL DOWNSPOUT FITTINGS...

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (L-1) AND DRY WELLS (M-5)

- 1. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS... 2. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE... 3. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS...

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) AND DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

- 1. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS... 2. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF SHOULD BE PERFORMED FROM FUTURE COMPLETION OF IMPERVIOUS AREA IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

OWNER/DEVELOPER PEPPERKORN ROVER MILL, LLC C/O RAJ KATHURIA 12668 FREDERICK ROAD WEST FRIENDSHIP, MD 21794 (443) 574-1600

Table with 2 columns: NO., DESCRIPTION. Lists revision notes for house type, grading, and SWM.

FINAL PLAN ESDv - SWM NOTES AND DETAILS ROVER MILL ESTATES

LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B' PEPPERKORN ROAD & ROVER MILL ROAD WEST FRIENDSHIP, MD 21794

3RD ELECTION DISTRICT TAX MAP: 15 GRID: 14 ZONED: RR-DEO PARCELS: 169 HOWARD COUNTY, MARYLAND L. 16745 F. 155 16.42 AC. ROBERT H. VOGEL ENGINEERS • PLANNERS 3300 N. RIDGE ROAD, SUITE 110 ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHV CHECKED BY: JMR DATE: OCTOBER 2019 SCALE: AS SHOWN W.O. NO.: 15-36 SHEET 14 OF 15 PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME...

SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
G6B	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.28	NO
G6B	GLENVILLE-BALLE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
G6B	GLENVILLE-ODOROUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.43	YES
MAC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	.28	NO

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE  
 -HOWARD COUNTY SOILS MAP NUMBER 11 - SYKESVILLE SW

NOTE:  
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT  
 OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH  
 A SLOPE GREATER THAN 5 PERCENT

NOTE:  
 - SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.  
 - SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART  
 - DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTE:  
 STABILIZATION IS TO BE DONE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STDS. & SPECS. WHICHEVER IS MORE RESTRICTIVE.

NOTE: NO AREAS OF STEEP SLOPES AS HATCHED HEREON ARE REGULATED PER SECTION 16.116 OF THE HOWARD COUNTY SUB. REGS.

NOTE:  
 GRADING AND SEDIMENT CONTROL SHOWN ON THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT TO BE CONDUCTED UNDER THIS PLAN.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John K. Blanton* 11/14/19  
 HOWARD S.C.D. DATE

DESIGN CERTIFICATION:  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel* 10/31/19  
 DESIGNER'S SIGNATURE DATE  
 ROBERT H. VOGEL MD REGISTRATION NO. 16193  
 PRINTED NAME (C) R.L.S., OR R.L.A. (circle one)

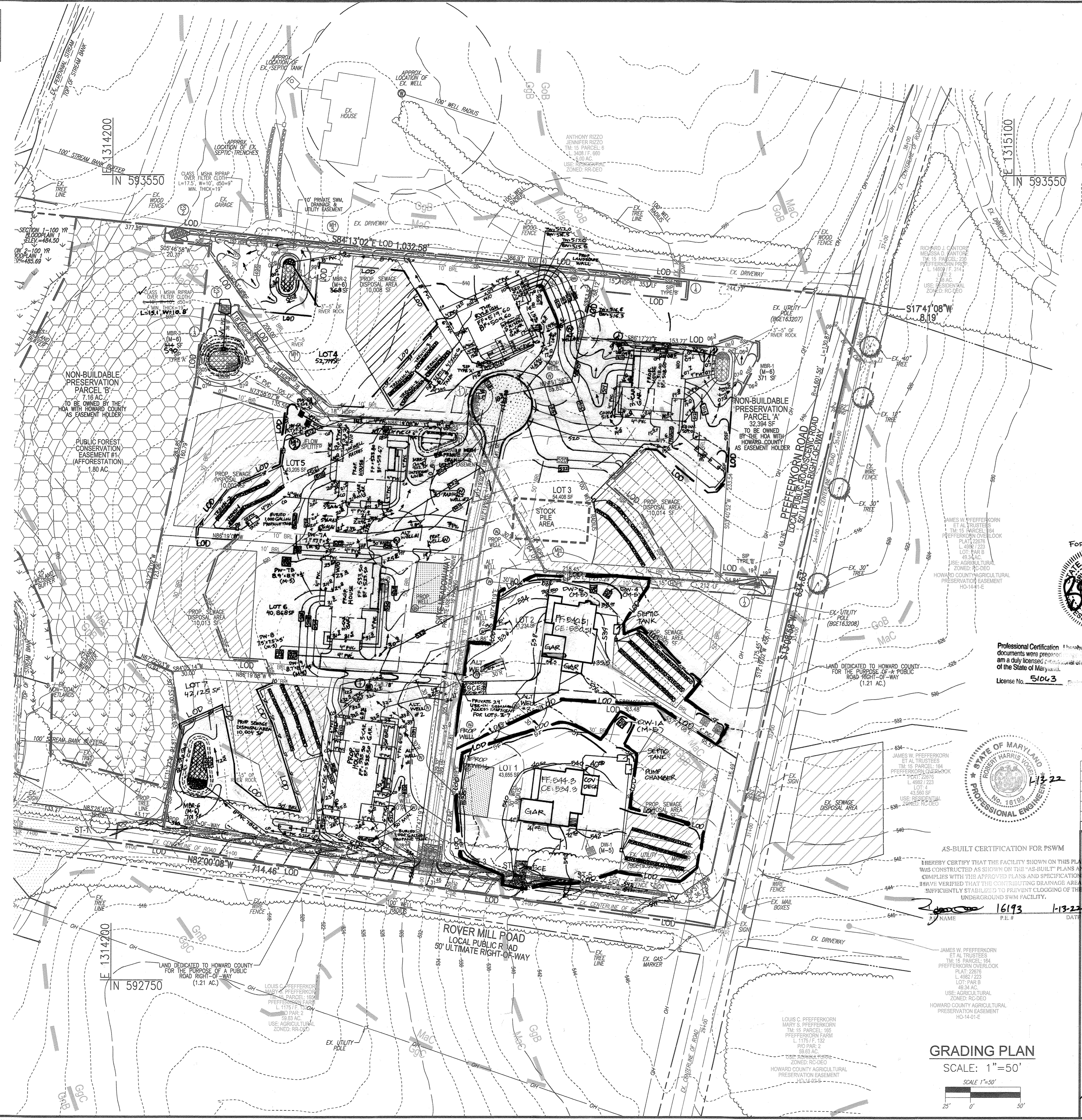
OWNER/DEVELOPER CERTIFICATION:  
 I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

*Alex Song* 10/30/19  
 OWNER/DEVELOPER SIGNATURE DATE  
 ALEX SONG, PARTNER  
 PRINTED NAME & TITLE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*David* 11/19/2019  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*T. Marshall* 11-19-19  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION NJ DATE

*T. Marshall* 11/22/19  
 CHIEF, DIVISION OF LAND DEVELOPMENT 66 DATE

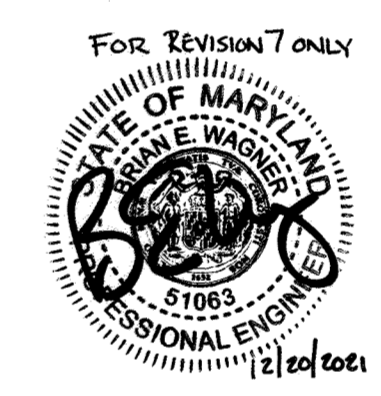


LEGEND:	
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING EDGE OF PAVING
	EXISTING STREAM BUFFER
	EXISTING STREAM
	EXISTING TREELINE
	PROPOSED TREELINE
	EXISTING UTILITY POLE
	EXISTING WELL
	EXISTING WOOD FENCE
	EXISTING METAL FENCE
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING WETLANDS
	EXISTING WETLAND BUFFER
	PUBLIC 100-YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT
	24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 2-7
	VARIABLE WIDTH PRIVATE SWM DRAINAGE & UTILITY EASEMENT
	PROPOSED MICRO-BIORETENTION FACILITY (M-6)
	PROPOSED DRY WELL (M-5)
	SOILS
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	LIMIT OF DISTURBANCE
	STABILIZED CONSTRUCTION ENTRANCE
	SUPER SILT FENCE
	SILT FENCE
	PASSED PERC. TEST
	FAILED PERC. TEST
	PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
	PROPOSED WELL

WARNING!  
 INSTALL HIGHLY VISIBLE AND PROTECTIVE DEVICES AROUND WELLS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS. MAINTAIN PROTECTIVE DEVICES THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES

NOTE: LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

Professional Certification: I hereby certify that these documents were prepared by me and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 51043 Date: 01/12/2023



OWNER/DEVELOPER  
 PFEFFERKORN ROVER MILL, LLC  
 C/O RAY KATHURIA  
 12668 FREDERICK ROAD  
 WEST FRIENDSHIP, MD 21794  
 (443) 574-1600

NO.	REVISION	DATE
6	REVISE HOUSE TYPE, GRADING AND SWM ON LOT 4 AND REVISE INLET AND GRADING ON LOT 3	9-2-21
5	REVISE LOT 5 HOUSE TYPE, GRADING AND SWM	5-27-21
4	REVISE LOT 3 HOUSE TYPE, GRADING AND SWM	2-24-21
3	REVISE LOT 7 HOUSE TYPE, GRADING AND SWM	1-27-21
2	REVISE THE TURNAROUND TO A CUL-DE-SAC	10-21-20
1	REVISE LOT 6 HOUSE TYPE, GRADING AND SWM	7-9-20

FINAL PLAN  
 ULTIMATE GRADING, EROSION AND SEDIMENT CONTROL PLAN  
 ROVER MILL ESTATES  
 LOTS 1-7 AND NON BUILDABLE PRESERVATION PARCELS 'A' & 'B'  
 PFEFFERKORN ROAD & ROVER MILL ROAD  
 WEST FRIENDSHIP, MD 21794  
 L 16745 / F. 155 16.42 AC. ZONED: RR-BEO  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. ROSE ROAD, SUITE 110 TEL: 410.461.7566  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: RHV  
 DATE: OCTOBER 2019  
 SCALE: AS SHOWN  
 W.O. NO.: 15-36

PROFESSIONAL CERTIFICATE:  
 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. 16193, EXPIRATION DATE: 09-27-2020.

15 SHEET OF 15

GRADING PLAN  
 SCALE: 1"=50'  
 SCALE: 1"=50'