

**GENERAL NOTES**

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP, PERFORMED IN MAY, 2021.
3. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP, DATED MAY 28 2021.
4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 25DMT6 AND 25DMT2 WERE USED FOR THIS PROJECT.
5. THE SUBJECT PROPERTY IS ZONED "R-ED" IN ACCORDANCE WITH THE 10/6/2013 COMPREHENSIVE ZONING PLAN AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 76-2003. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
6. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.  
-WATER FOR THIS PROJECT SHALL BE PUBLIC EXTENSION FROM CONTRACT NO. 134-W.  
-SEWER FOR THIS PROJECT SHALL BE PUBLIC EXTENSION FROM CONTRACT NO. 10-1167-D.
7. A GEOTECHNICAL STUDY AND ESD TEST PITS WILL BE PROVIDED WITH A FUTURE PLAN.
8. COLLEGE AVENUE IS A MINOR COLLECTOR / SCENIC ROAD.  
-NEW CUT ROAD IS A MINOR COLLECTOR / SCENIC ROAD.
9. NO FLOODPLAIN IS LOCATED ON THE PROJECT SITE IN ACCORDANCE WITH THE HOWARD COUNTY DATA FOUND AT [HTTPS://DATA.HOWARDCOUNTYMD.GOV/INTERACTIVEMAP.HTML](https://data.howardcountymd.gov/interactivemap.html). NO FLOODPLAIN IS LOCATED ONSITE, THE LIMITS OF WHICH ARE 80-FEET BELOW THE PROPOSED PROJECT DISTURBANCE.
10. THERE ARE STEEP SLOPES WITH CONTIGUOUS AREAS OF 20,000SF LOCATED ONSITE.
11. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.
12. A WETLAND, FOREST STAND DELINEATION AND PRELIMINARY FOREST CONSERVATION PLAN WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. NOVEMBER 3, 2022.
13. THERE ARE NO WETLANDS, STREAMS OR BUFFERS, WITHIN THE LOD.
14. FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE ADDRESSED BY A FOREST CONSERVATION PLAN SUBMITTED WITH THE SUBDIVISION OR SITE DEVELOPMENT PLAN.
15. A NOISE STUDY IS NOT REQUIRED WITH THE DEVELOPMENT PROCESS.
16. EXISTING UTILITIES LOCATED FROM AS-BUILT DRAWINGS, CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE TO THE OWNERS KNOWLEDGE. THERE ARE NO BURIAL GROUNDS OR CEMETERIES ON THIS PROPERTY. THERE ARE NO HISTORIC HOUSES LOCATED ON THIS PROPERTY.
17. -ENVIRONMENTAL SITE DESIGN (ESD) STORMWATER MANAGEMENT FOR THE PROJECT IS BEING ACHIEVED THROUGH THE USE OF M-6 MICRO BIO-RETENTION FACILITIES, A A-2 PERMEABLE SURFACE DRIVEWAY, M-5 DRYWELLS AND M-5 GRAVEL TRENCH (DRY WELL) AS WELL AS WITHIN THE PROPOSED F-1 SURFACE SAND FILTER BMP FACILITY.  
-THE PROJECT SITE DRAINS TO THE TIBER BRANCH WATERSHED, IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 123-2019 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME 1 - CHAPTER 5, SECTION 5.2.1, QUANTITY MANAGEMENT FOR THE 24-HOUR 10 AND 100 YEAR STORM EVENTS AS WELL AS THE 3.55 HOUR, 6.6 INCH STORM EVENT IS REQUIRED, THE RESULT BEING MANAGED "WOODS IN GOOD CONDITION".  
-QUANTITY MANAGEMENT SHALL BE ACHIEVED IN THE F-1 SAND FILTER FACILITY.  
-AS ENVIRONMENTAL WAIVERS ARE REQUIRED FOR THIS PROJECT, A 10% REDUCTION OF THE EXISTING RUNOFF RATE IS REQUIRED.  
-THE ESD AND QUANTITY MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
18. THE LIMITS OF DISTURBANCE (LOD) SHOWN ON THE PLAN IS ENTIRELY ON THE SITE EXCEPT FOR MINIMAL PAVING IN THE EXISTING ROAD RIGHT-OF-WAY FOR DRIVEWAY AND UTILITY EXTENSION.
19. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR REDLINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR REDLINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
20. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD COUNTY CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
21. SITE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO BUILDING PERMITS BEING ISSUED FOR THE CONSTRUCTION OF THE RESIDENTIAL DWELLING.
22. LANDSCAPING SHALL BE ADDRESSED WITH THE FUTURE SITE DEVELOPMENT PLAN SUBMISSION.
23. PER THE PROPOSAL PRESENTED ON THIS CONCEPT PLAN, AN ALTERNATIVE COMPLIANCE REQUEST IS REQUIRED FOR THE FOLLOWING:  
1. REMOVAL OF SPECIMEN TREES.  
2. STEEP SLOPE DISTURBANCE.  
NO DESIGN MANUAL WAIVERS ARE REQUIRED FOR THE STORMWATER MANAGEMENT DESIGN.

**ENVIRONMENTAL SITE DESIGN NARRATIVE**

IN ACCORDANCE WITH CHECKLIST ITEM III.K.

1. THE PROJECT SITE IS ZONED R-ED, LOCATED IN ELLICOTT CITY, MARYLAND BETWEEN NEW CUT ROAD AND COLLEGE AVENUE. THE TOTAL PROPERTY AREA IS 6.3 AC. +/- INGRESS AND EGRESS TO THE PROJECT WILL BE PROVIDED THROUGH AN EXISTING RIGHT-OF-WAY, TO BE IMPROVED. STEEP SLOPES ARE PRESENT ONSITE.

2. THE OFFSITE NATURAL RESOURCES SHOULD REMAIN UNDISTURBED AND NO DRAMATIC DISTURBANCE TO THE NATURAL DRAINAGE PATTERNS ARE PROPOSED. EVERY EFFORT HAS BEEN MADE TO REDUCE THE DISTURBANCES.

3. CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT. REFER TO THE SUMMARY BELOW. QUANTITY REQUIREMENTS IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 123-2019 ARE CONCEPTUALLY PROVIDED WITHIN THE PROPOSED SURFACE SAND FILTER.  
ALL PRACTICES WILL BE PRIVATELY OWNED AND MAINTAINED.

4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PERIMETER SILT FENCE AND/OR SUPER SILT FENCE CONTROLS AND A SEDIMENT TRAP. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.

5. -ENVIRONMENTAL SITE DESIGN (ESD) STORMWATER MANAGEMENT FOR THE PROJECT IS BEING ACHIEVED THROUGH THE USE OF M-6 MICRO BIO-RETENTION FACILITIES, A-2 PERMEABLE SURFACE DRIVEWAY, M-5 DRYWELLS AND M-5 GRAVEL TRENCH (DRY WELL) AS WELL AS WITHIN THE PROPOSED F-1 SURFACE SAND FILTER BMP FACILITY.  
-THE PROJECT SITE DRAINS TO THE TIBER BRANCH WATERSHED, IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 123-2019 AND THE HOWARD COUNTY DESIGN MANUAL VOLUME 1 - CHAPTER 5, SECTION 5.2.1, QUANTITY MANAGEMENT FOR THE 24-HOUR 10 AND 100 YEAR STORM EVENTS AS WELL AS THE 3.55 HOUR, 6.6 INCH STORM EVENT IS REQUIRED, THE RESULT BEING MANAGED "WOODS IN GOOD CONDITION".  
-QUANTITY MANAGEMENT SHALL BE ACHIEVED IN THE F-1 SAND FILTER FACILITY.  
-AS ENVIRONMENTAL WAIVERS ARE REQUIRED FOR THIS PROJECT, A 10% REDUCTION OF THE EXISTING RUNOFF RATE IS REQUIRED.  
-THE ESD AND QUANTITY MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.

CONCEPTUAL ESD SUMMARY  
TARGET PE = 1.60" PROVIDED PE = 1.97"  
TARGET ESDV = 4,639 CUFT PROVIDED = 6,028 CUFT

COUNCIL RESOLUTION NO. 123-2019 SUMMARY - SEE SHEET 5

6. AT THIS CONCEPT STAGE OF DEVELOPMENT, ALTERNATIVE COMPLIANCE APPROVAL IS REQUIRED FOR REMOVAL OF SPECIMEN TREES, STEEP SLOPE DISTURBANCE.  
-AT THIS CONCEPT STAGE OF DEVELOPMENT, NO DESIGN MANUAL WAIVERS ARE REQUIRED FOR THE STORMWATER MANAGEMENT DESIGN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8.15.24  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 10.15.24  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	8,892 SF	2,585 SF	6,307 SF	6,000 SF
2	9,872 SF	1,908 SF	7,964 SF	6,000 SF
3	12,702 SF	1,005 SF	11,697 SF	6,000 SF
4	16,112 SF	1,415 SF	14,697 SF	6,000 SF
5	13,853 SF	0 SF	13,853 SF	6,000 SF
6 (EXCL. 2 PARCEL 49)	21,054 SF	0 SF	21,054 SF	6,000 SF

# ENVIRONMENTAL CONCEPT PLAN

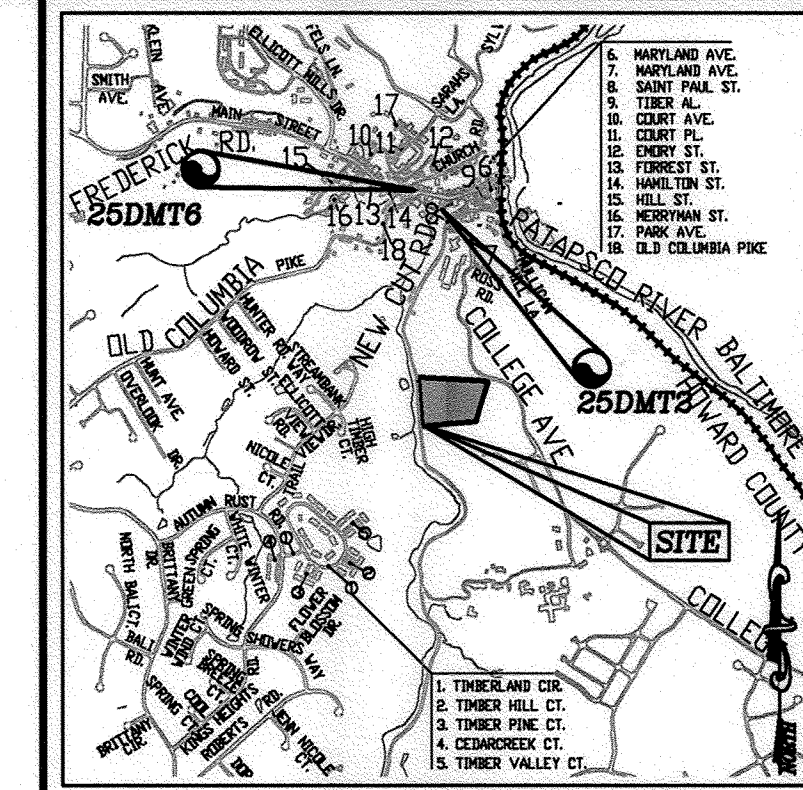
# NEW CUT ROAD

PARCEL 49 (LOT2) & PARCEL 50  
ELLICOTT CITY  
HOWARD COUNTY, MD

**BENCHMARKS**

HOWARD COUNTY BENCHMARK  
25DMT6 N 583057.556 E 1.369,561.591 NAVD88 ELEV. 149.681  
HOWARD COUNTY BENCHMARK  
25DMT2 N 583000.850 E 1.369820.612 NAVD88ELEV. 133.996

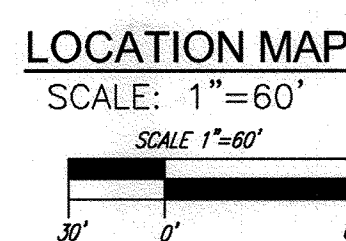
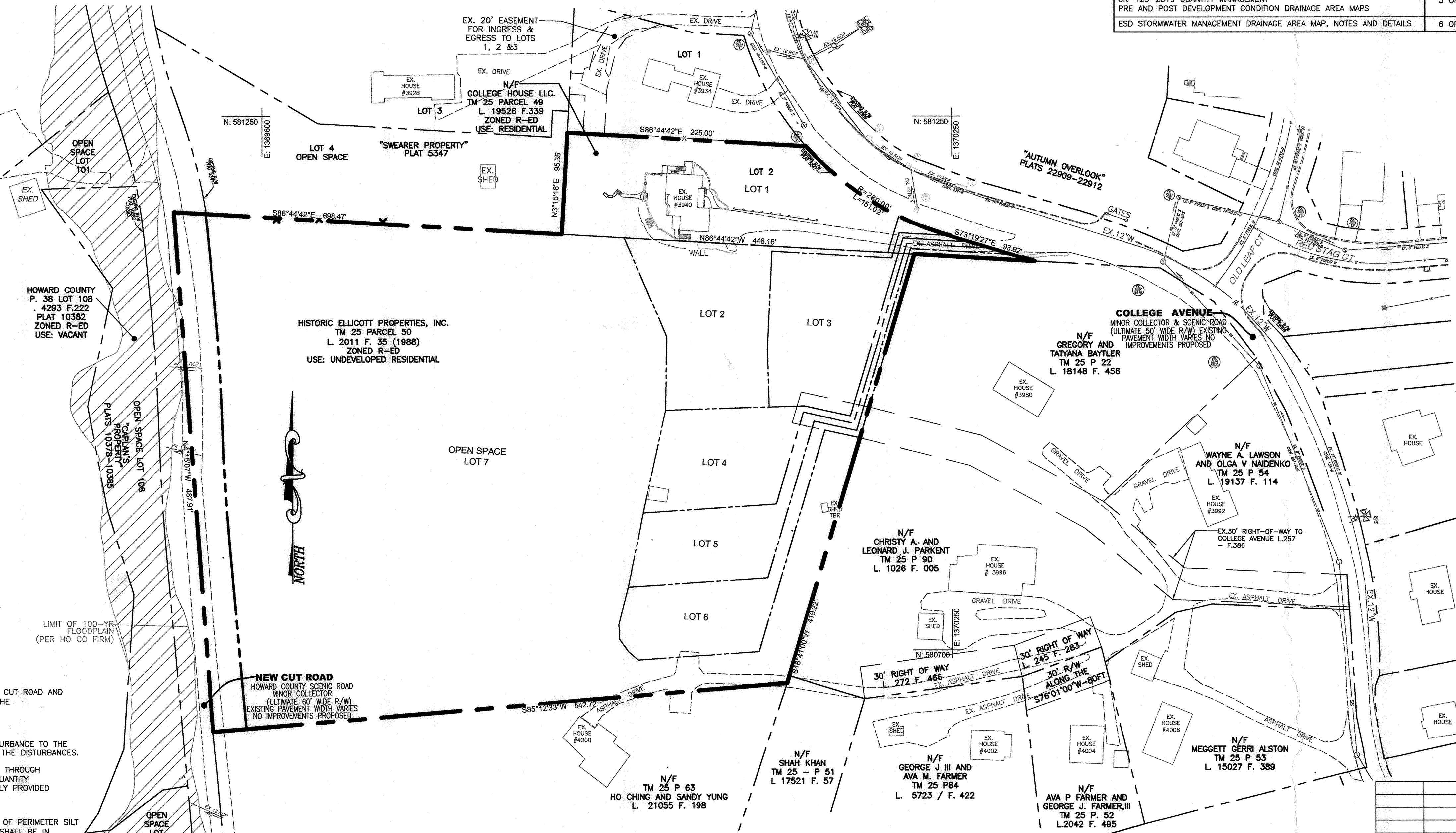
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 6
EXISTING CONDITIONS PLAN	2 OF 6
LAYOUT PLAN	3 OF 6
GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN	4 OF 6
OR-123-2019 QUANTITY MANAGEMENT PRE AND POST DEVELOPMENT CONDITION DRAINAGE AREA MAPS	5 OF 6
ESD STORMWATER MANAGEMENT DRAINAGE AREA MAP, NOTES AND DETAILS	6 OF 6



VICINITY MAP  
SCALE: 1"=2000'  
ADC MAP/GRID NO. 4816/C9

**LEGEND**

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVING
- FLOOD PLAN OFFSITE



**OWNER P.49**  
COLLEGE HOUSE LLC  
8 PARK CENTER CT. SITE 200  
OWINGS MILLS, MD, 21117  
TEL: 410-465-1950

**OWNER / DEVELOPER P.50**  
HISTORIC ELLICOTT PROPERTIES  
8 PARK CENTER CT. SITE 200  
OWINGS MILLS, MD, 21117  
TEL: 410-465-1950

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
COVER SHEET

## NEW CUT ROAD

ELLICOTT CITY, MARYLAND  
L.19526/F.339 & L.20111/F.35

TAX MAP 25 GRID 14  
2ND ELECTION DISTRICT

ZONED: R-ED

PARCEL 49 (LOT2) & 50  
HOWARD COUNTY, MARYLAND

### VOGEL ENGINEERING

### TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: RHV/EDS  
DRAWN BY: ONB/EDS  
CHECKED BY: RHV  
DATE: NOVEMBER 2023  
SCALE: AS SHOWN  
W.G. NO.: 48027

PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NUMBER IS 16193. EXPIRATION DATE: 07-27-2026

ROBERT H. VOGEL, PE No.16193

1 SHEET OF 6





Key (X#)	Species	Size (inches)	CRZ 1:1.5 (feet radius)	Condition (good unless otherwise noted)	DBH of State Champion
1	Tulip poplar	27.75	41.625		75.96
2	Tulip poplar	24	36		75.96
3	Tulip poplar	28.5	36.75		75.96
6	Tulip poplar	25.5	38.25		75.96
7	Tulip poplar	27.5	41.25		75.96
14	Tulip poplar	29	43.5		75.96
16	Tulip poplar	26	39		75.96
17	Tulip poplar	29	43.5		75.96
18	Tulip poplar	28	42		75.96
20	Tulip poplar	28.5	42.75		75.96
21	Tulip poplar	29.5	44.25		75.96
23	Tulip poplar	26	39		75.96
24	Tulip poplar	26	39		75.96
25	Tulip poplar	28.5	36.75		75.96
27	Box Elder	28.5	42.75	Poor notable deck	70.70
28	Tulip poplar	27	40.5		75.96
30	Tulip poplar	44	66		75.96
31	Tulip poplar	28	42		75.96
33	Tulip poplar	28	42		75.96
35	Tulip poplar	25.5	38.25		75.96
37	Tulip poplar	25.5	38.25		75.96
38	Red oak	26	39		92.04
39	Tulip poplar	28	42		75.96
40	Tulip poplar	27.5	41.25		75.96
42	Tulip poplar	27	40.5		75.96
44	Tulip poplar	28	42		75.96
45	Tulip poplar	28	42		75.96
46	Tulip poplar	25	37.5		75.96
49	Tulip poplar	27.5	41.25		75.96
51	Red oak	26	39		92.04
52	Tulip poplar	25	37.5		75.96
61	Red oak	26	39	Poor, notable deck	92.04
63	Tulip poplar	25.5	38.25		75.96
64	Red oak	24.4	36.6		92.04
65	Tulip poplar	25.5	38.25		75.96
66	Tulip poplar	24	36		75.96
67	American beech	24	36		78.03
68	Tulip poplar	25	37.5		75.96
69	Tulip poplar	28	42		75.96
70	Black oak	29	43.5		81.85
70	American beech	24	36		78.03

Key (X#)	Species	Size (inches)	CRZ 1:1.5 (feet radius)	Condition (good unless otherwise noted)	DBH of State Champion
4	Tulip poplar	30	45		75.96
5	Tulip poplar	36.5	54.75		75.96
8	Tulip poplar	31.5	47.25		75.96
9	Tulip poplar	31.5	47.25		75.96
10	Tulip poplar	30	45		75.96
11	Tulip poplar	34	51		75.96
12	White pine	33	49.5		62.05
13	Tulip poplar	35	52.5		75.96
15	Tulip poplar	36	54		75.96
19	Tulip poplar	30	45		75.96
22	Tulip poplar	30	45		75.96
26	Tulip poplar	31	46.5	Poor; hollow base, ex wound	75.96
29	Tulip poplar	36	54		75.96
32	Tulip poplar	34.5	51.75		75.96
34	Tulip poplar	37	55.5		75.96
36	Tulip poplar	44	66		75.96
41	Tulip poplar	34	51		75.96
43	Tulip poplar	33	49.5		75.96
47	White oak	30	45		88.85
48	Tulip poplar	30	45	evidence of decline in the canopy	75.96
58	Tulip poplar	30.5	45.75		75.96
59	Red oak	31	46.5		92.04
63	Tulip poplar	34	51		75.96
64	Tulip poplar	30.5	45.75		75.96
65	Tulip poplar	33	49.5		75.96
67	Tulip poplar	34	51		75.96
68	Tulip poplar	32.5	48.75		75.96
69	Tulip poplar	30	45		75.96

OWNER P.49  
 COLLEGE HOUSE LLC  
 8 PARK CENTER CT, STE.200  
 OWINGS MILLS, MD. 21117  
 TEL: 410-465-1950

OWNER / DEVELOPER P.50  
 HISTORIC ELLICOTT PROPERTIES  
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**LEGEND:**

—	PROPERTY LINE	—	EXISTING UTILITY	—	EX. PUBLIC RIGHT-OF-WAY L. 257 F. 386
—	ADJACENT PROPERTY LINE	—	EXISTING FENCE	—	STEEP SLOPES (>25%)
—	RIGHT-OF-WAY LINE	—	EXISTING SANITARY SEWER	—	MODERATE SLOPES (15%-24.99%)
—	EXISTING CONTOUR	—	EXISTING SEWER CLEANOUT	—	SOIL TYPE
—	EXISTING TREE LINE	—	EXISTING WATER	—	GgC (B)
—	EXISTING EDGE OF PAVING	—	EXISTING POWER OVERHEAD	—	GnB (C)
—	EXISTING TREE	—	EXISTING POLE	—	FSD
—	EXISTING SPECIMEN TREE 30"	—	EXISTING GUY-WIRE	—	FOREST STAND DELINEATION ZONES SEE WETLAND AND FOREST STAND DELINEATION PLAN
—	CRITICAL ROOT ZONE	—	FLOOD PLAN OFFSITE	—	
		—	EX. PAVING		

- FSD NOTES**
- Field review of the site has confirmed that no wetlands or streams are present on the property. A stream is present on the west side of New Cut Road, opposite the subject property.
  - The subject property is within a Use I watershed of an unnamed tributary of the Patapsco River (021309061017).
  - No 100 year FEMA floodplain is present on the site.
  - Steep slopes are present on the site.
  - No rare, threatened or endangered species are known to occur on the site.
  - No cemeteries or historic elements are known to occur on the site.
  - Specimen trees are present on the site.
  - No state champion trees, trees 75% of the state champion or other regulated vegetation is present on the site.

**MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND**

SYMBOL NAME / DESCRIPTION	GROUP	HYBRIC	Kw RANGE*	HIGHLY ERODIBLE
G6B GLENMILE-COCHOSUS - SILT LOAM - 0 TO 8 PERCENT SLOPES	G	NO	0.32	NO
W6D WANKER LOAM - 15 TO 25 PERCENT SLOPES, VERY ROOY	B	NO	0.28	YES
M6F WANKER-BANNERTOWN SANDY LOAMS - 25 TO 65 PERCENT SLOPES, ROOY	B	NO	0.24	YES
L6H LEIGORE-MONTOLEO - SILT LOAM - 3 TO 8 PERCENT SLOPES	C	NO	0.64	YES
L6C LEIGORE SILT LOAM - 8 TO 15 PERCENT SLOPES, STONY	C	NO	0.64	YES

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY  
 K VALUES TAKEN FROM <http://www.howardsoil.org/documents> - \*K FACTORS (USE KW)

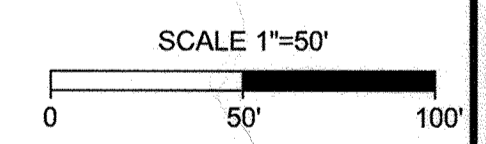
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 8/15/24  
 DATE

*[Signature]*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 7/15/24  
 DATE

EXISTING CONDITIONS PLAN  
 SCALE: 1"=50'



**J. Brody McAllister**  
 SIGNATURE: *[Signature]*  
 ISA Certified Arborist  
 Cert ID: MA6471A  
 MD DNR FCA Qualified Professional

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS  
 P.O. BOX 5006 GLEN ARM, MARYLAND 21057  
 Telephone (410) 683-7840  
 www.ecoscienceprofessionalsinc.com

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
 EXISTING CONDITIONS PLAN

**NEW CUT ROAD**  
 ELLICOTT CITY, MARYLAND  
 L.19526/F.339 & L.2011/F.35

TAX MAP 25 GRID 14  
 2ND ELECTION DISTRICT

ZONED: R-ED

PARCEL 49 (LOT) 2 & 50  
 HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**  
 +  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE

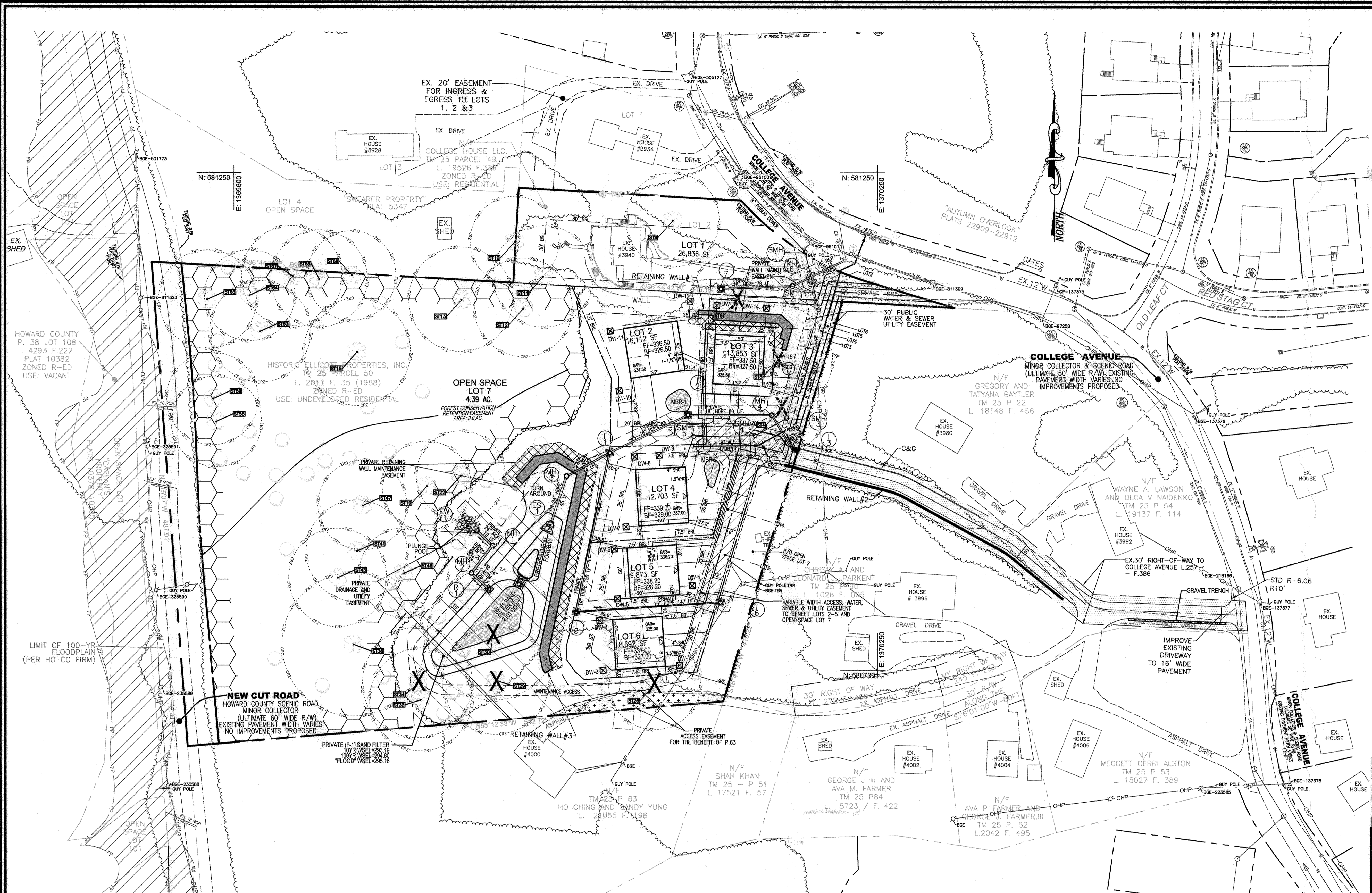
DESIGN BY: RHW/EDS  
 DRAWN BY: ONB/EDS  
 CHECKED BY: RHW  
 DATE: NOVEMBER 2023  
 SCALE: AS SHOWN  
 W.O. NO.: 48027

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: 07-27-2024

ROBERT H. VOGEL, PE No.16193

2 SHEET OF 6





- LEGEND:**
- PROPERTY LINE
  - - - ADJACENT PROPERTY LINE
  - - - RIGHT-OF-WAY LINE
  - - - EXISTING CONTOUR
  - - - EXISTING TRELINE
  - - - EXISTING EDGE OF PAVING
  - ⊙ EXISTING TREE
  - ⊗ EXISTING UTILITY
  - - - EXISTING FENCE
  - - - EXISTING SANITARY SEWER
  - - - EXISTING SEWER CLEANOUT
  - - - EXISTING WATER
  - ▨ FLOOD PLAN OFFSITE
  - ▤ EX. PAVING
  - - - LOT LINE
  - - - STORM DRAIN
  - ⊕ STORM DRAIN INLET
  - ⊖ STORM DRAIN MANHOLE
  - ⊘ SAND FILTER AREA
  - FLOW ARROWS
  - ⊙ DW-3 DRY WELL
  - - - PROPOSED TRELINE
  - ⊙ EXISTING TREE
  - ⊙ ST-1 SPECIMEN TREE WITH CRITICAL ROOT ZONE DELINEATION
  - ⊗ EX. SPECIMEN TREE TO BE REMOVED
  - ▨ FOREST CONSERVATION RETENTION EASEMENT
  - ▨ EX. PUBLIC RIGHT-OF-WAY L. 257 F. 386
  - ▨ PUBLIC WATER AND SEWER EASEMENT
  - ▨ PRIVATE DRAINAGE AND UTILITY EASEMENT
  - ▨ PRIVATE USE-IN-COMMON ACCESS, WATER, SEWER AND UTILITY EASEMENT
  - ▨ PRIVATE ACCESS UTILITIES EASEMENT
  - ▨ PRIVATE WALL MAINTENANCE EASEMENT
  - - - 4" PRIVATE SEWER HOUSE CONNECTION
  - - - 1.5" PRIVATE WATER HOUSE CONNECTION

**NOTES:**

- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED BUILDING AND/OR GRADING PERMIT
- REVIEW OF THIS PLAN FOR COMPLIANCE WITH ZONING AND SUBDIVISION AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE FINAL PLAN AND SITE DEVELOPMENT PLAN STAGES; AND THEREFORE, THIS PLAN IS SUBJECT TO ADDITIONAL AND MORE DETAILED COMMENTS AS THE PLAN PROGRESSES THROUGH THE PERMIT PROCESS.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8-15-24  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8-15-24  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN**  
**LAYOUT PLAN**

**NEW CUT ROAD**  
ELLCOTT CITY, MARYLAND  
L.19526/F.339 & L.2011/F.35

TAX MAP 25 GRID 14      PARCEL 49 (LOT2) & 50  
2ND ELECTION DISTRICT      ZONED: R-ED      HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**

**TIMMONS GROUP**

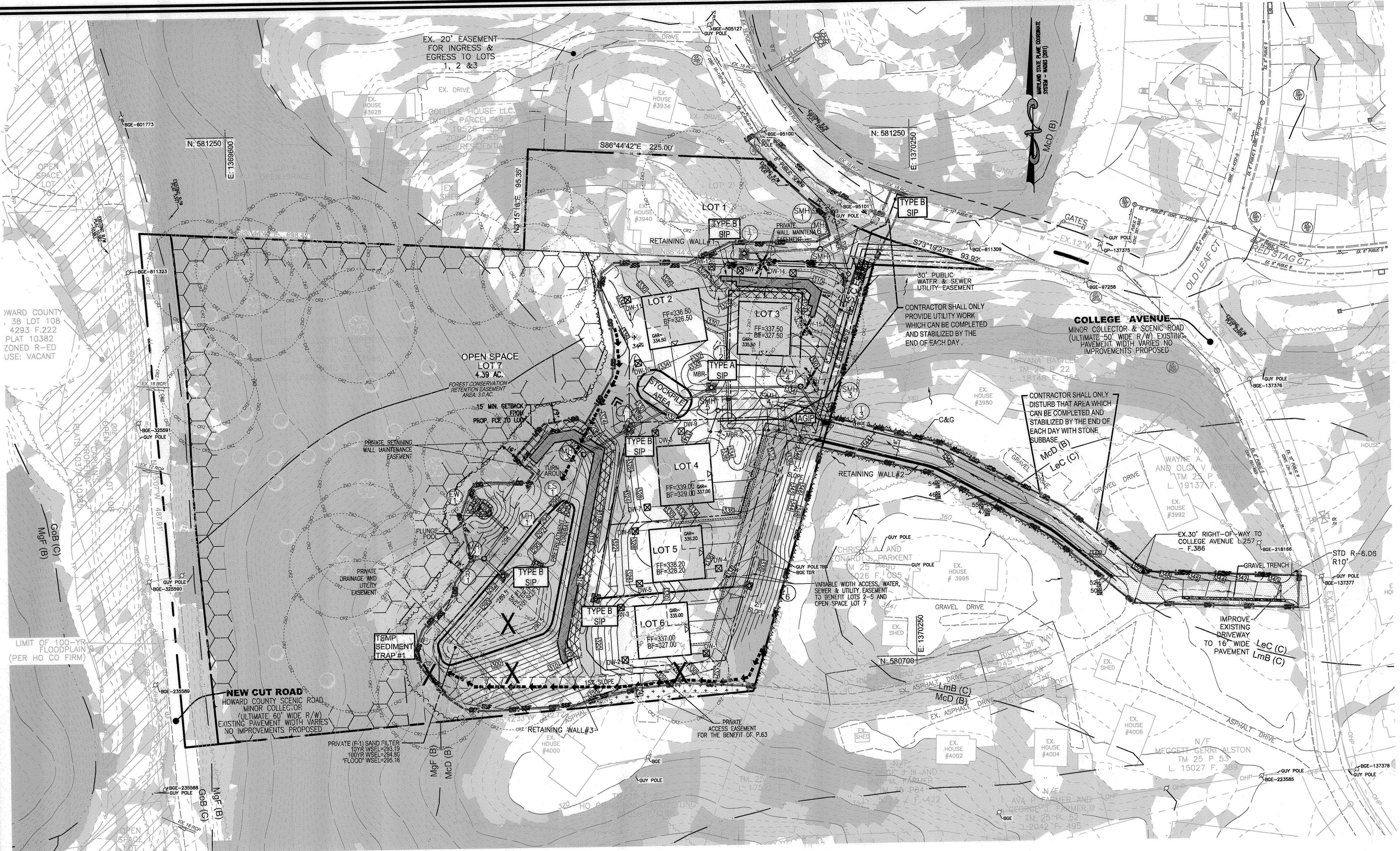
3300 NORTH RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043  
P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: RHV/EDS	PROFESSIONAL CERTIFICATE
DRAWN BY: ONB/EDS	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: 09-27-2024
CHECKED BY: RHV	
DATE: NOVEMBER 2023	
SCALE: AS SHOWN	
W.O. NO.: 48027	

3 SHEET OF 6

ROBERT H. VOGEL, PE No.16193

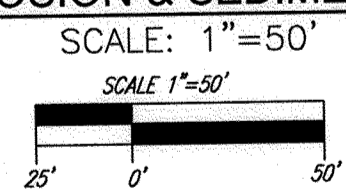




**LEGEND:**

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING CONTOUR
	EXISTING TREELINE
	EXISTING EDGE OF PAVING
	EXISTING UTILITY
	EXISTING SANITARY SEWER
	EXISTING SEWER CLEANOUT
	EXISTING WATER
	FLOOD PLAN OFFSITE
	EXISTING TREE
	SPECIMEN TREE WITH CRITICAL ROOT ZONE DELINEATION
	EX. SPECIMEN TREE TO BE REMOVED
	SOIL TYPE
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	SUPER SILT FENCE
	DIVERSION FENCE
	EARTH DIKE DIVERSION
	STABILIZED CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBED AREA
	STANDARD INLET PROTECTION
	AT GRADE INLET PROTECTION
	STEEP SLOPES (2%+)
	MODERATE SLOPES (1% - 2%)
	FOREST CONSERVATION RETENTION EASEMENT
	EX. PUBLIC RIGHT-OF-WAY L. 257 F. 386
	EX. WATER AND SEWER EASEMENT
	PR. PRIVATE DRAINAGE AND UTILITY EASEMENT
	PR. PRIVATE USE-IN-COMMON ACCESS, WATER, SEWER AND UTILITY EASEMENT
	PR. PRIVATE ACCESS UTILITIES EASEMENT
	PR. PRIVATE WALL MAINTENANCE EASEMENT

**GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN**



**HSCD NOTES:**

- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME.
- THE FINAL OR SITE DEVELOPMENT PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING
  - THE PROJECT SHALL ADDRESS ANY TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
  - THE FINAL OR SITE DEVELOPMENT PLAN SUBMISSION SHALL PROVIDE A DRAINAGE AREA MAP SPECIFIC TO CHOSEN SEDIMENT CONTROLS
  - THE FINAL OR SITE DEVELOPMENT PLAN SUBMISSION SHALL PROVIDE COMPUTATIONS TO VERIFY VELOCITIES ALONG DIKES, SWALES AND AT DIKES OUTLET LOCATIONS

**NOTE:**  
EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS.

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

**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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8-15-24  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*[Signature]* 7/28/24  
CHIEF, DIVISION OF LAND DEVELOPMENT

**MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND**

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	Kc	RANGE%	HIGHLY ERODIBLE
CG	CLAYEY COLORED - SILT LOAM - 0 TO 8 PERCENT SLOPES	C	NO	0.32	NO	NO
MCD	MINOR LOAM - 15 TO 25 PERCENT SLOPES, VERY ROCKY	B	NO	0.28	YES	YES
MNF	MINOR-BANNESTOWN SANDY LOAMS - 25 TO 65 PERCENT SLOPES, ROCKY	B	NO	0.24	YES	YES
LMB	LOOSE-MODERATE - SILT LOAM - 1 TO 8 PERCENT SLOPES	C	NO	0.64	YES	YES
LMD	LOOSE SILT LOAM - 8 TO 15 PERCENT SLOPES, STONY	C	NO	0.64	YES	YES

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY, MARYLAND  
K VALUES TAKEN FROM: <https://www.howardcountymd.org/documents> - "K" FACTORS (USE KW)  
**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.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN  
**NEW CUT ROAD**  
ELLCOTT CITY, MARYLAND  
L. 1952/6 F. 339 & L. 2011/F. 35  
TAX MAP 25 GRID 14  
2ND ELECTION DISTRICT  
ZONED: R-ED  
HOWARD COUNTY, MARYLAND  
PARCEL 49 (LOT 2) & 50

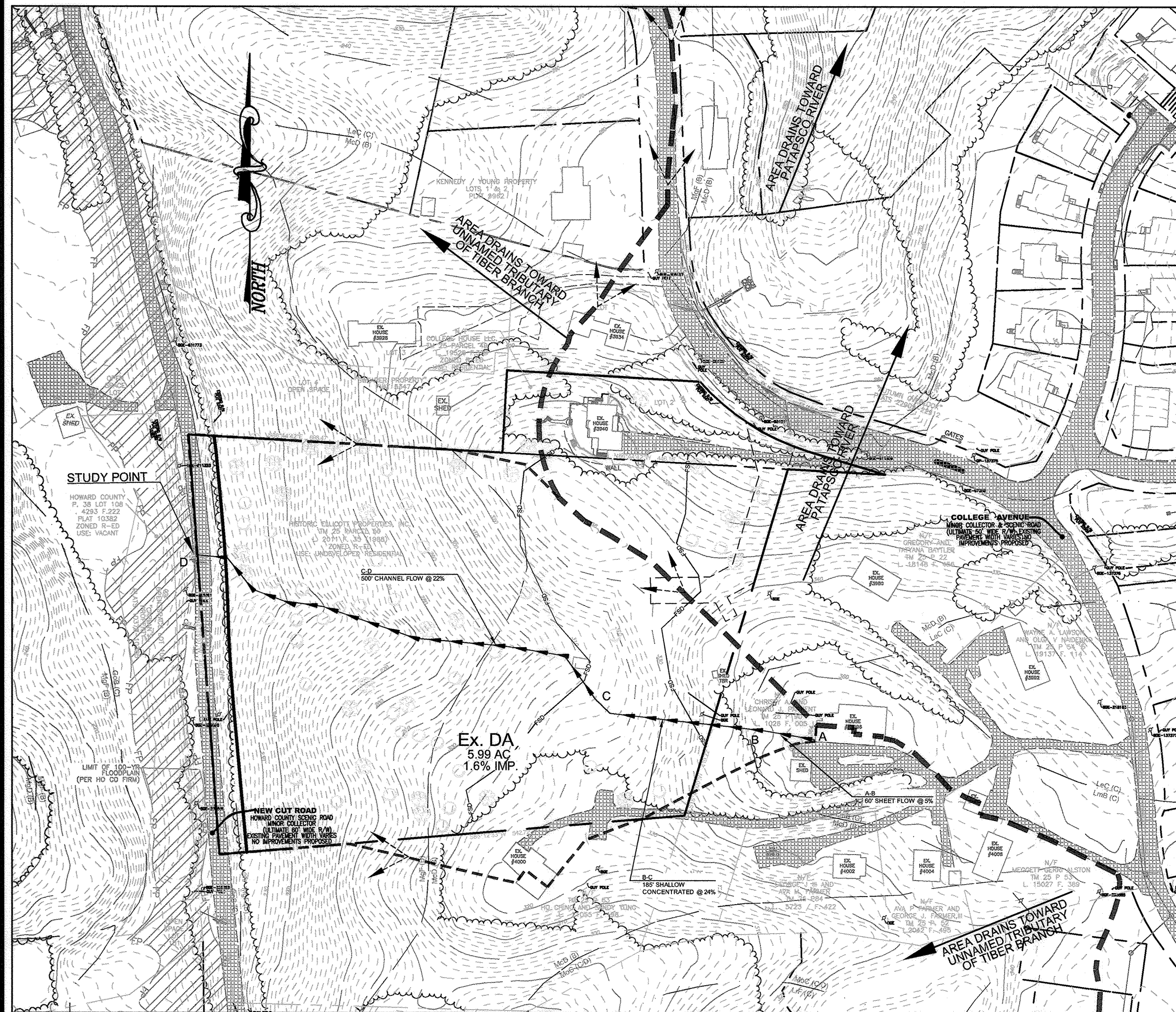
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DESIGN BY: RHW/EDS  
DRAWN BY: OMB/EDS  
CHECKED BY: RHW  
DATE: NOVEMBER 2023  
SCALE: AS SHOWN  
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ROBERT H. VOGEL, PE No. 16193





**PRE-DEVELOPMENT  
DRAINAGE AREA MAP**  
SCALE: 1"=100'



**POST-DEVELOPMENT  
DRAINAGE AREA MAP**  
SCALE: 1"=100'

- LEGEND:**
- - - - - EXISTING CONTOUR
  - - - - - PROPOSED CONTOUR
  - +22.88 PROPOSED SPOT ELEVATION
  - ~~~~~ EXISTING TREELINE
  - ~~~~~ PROPOSED TREELINE
  - EXISTING EDGE OF PAVING
  - EXISTING SPECIMEN TREE W/ CRITICAL ROOT ZONE
  - EXISTING TREE
  - PROPERTY LINE
  - ADJACENT PROPERTY LINE
  - RIGHT-OF-WAY LINE
  - ▨ FLOOD PLAIN OFFSITE
  - GgC (B)  
GnB (C) SOIL TYPE
  - ▨ EX. PAVING
  - ▨ PROPOSED BITUMINOUS CONCRETE PAVING
  - ▨ PROPOSED BUILDINGS
  - ▨ PROPOSED GRAVEL ACCESS ROAD
  - - - - - PRE DEVELOPMENT CONDITION DRAINAGE AREA DIVIDE
  - - - - - PRE DEVELOPMENT CONDITION TIBER / PATAPSCO WATERSHED DIVIDE
  - - - - - POST DEVELOPMENT CONDITION DRAINAGE AREA DIVIDE
  - - - - - POST DEVELOPMENT CONDITION TIBER/PATAPSCO WATERSHED DIVIDE

**PEAK DISCHARGE SUMMARY**  
Study Point

	Pre Development Peak Discharge Conditions cfs	Adjusted * Pre Development Peak Discharge cfs	Post Development Unmanaged Peak Discharge cfs	Post Development Managed Peak Discharge to Control Facility cfs	Post Development Managed Peak Discharge from Control Facility cfs	Post Development Peak Discharge ('Unmanaged+Managed') cfs
10 YEAR	6.8	6.1	5.4	13.5	1.4	6.1
100 YEAR	18.9	17.0	13.9	20.0	4.8	15.9
FLOOD	27.9	25.1	19.8	35.0	6.7	23.1

\* 10% Reduction (Required Alternative Compliance)

NOTE:  
SUBJECT TO CHANGE WITH FINAL SWM DESIGN

THE PRELIMINARY HYDROLOGIC AND HYDRAULIC COMPUTATIONS PROVIDED HEREIN RESULT IN AN ESTIMATE OF THAT REQUIRED TO PROVIDE QUANTITY MANAGEMENT AS REQUIRED BY CR-123-2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

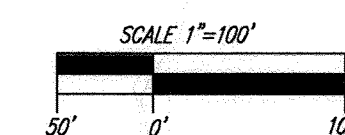
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**MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND**

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE*	HIGHLY ERODIBLE
Gsb SLENALLE-CODORUS - SILT LOAM - 0 TO 8 PERCENT SLOPES	C	NO	0.32	NO
UdD UNDRY LOAM - 15 TO 25 PERCENT SLOPES, VERY ROCKY	B	NO	0.28	YES
UfB UNDRY-BANNERTOWN SANDY LOAMS - 25 TO 50 PERCENT SLOPES, ROCKY	B	NO	0.24	YES
LmB LEGGORE-MONTALTO - SILT LOAM - 3 TO 8 PERCENT SLOPES	C	NO	0.64	YES
LmC LEGGORE-SILT LOAM - 8 TO 15 PERCENT SLOPES, STONY	C	NO	0.64	YES

TAKEN FROM: USDA, SCS-WEBB SOIL SURVEY, HOWARD COUNTY  
K VALUES TAKEN FROM <https://www.howardscd.org/documents> - \*K FACTORS (USE KW)  
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NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
CR-123-2019 QUANTITY MANAGEMENT  
PRE AND POST DEVELOPMENT CONDITION  
DRAINAGE AREA MAPS  
**NEW CUT ROAD**  
ELLCOTT CITY, MARYLAND  
L19526/F.339 & L.2011/F.35

TAX MAP 25 GRID 14 2ND ELECTION DISTRICT ZONED: R-ED PARCEL 49 (LOT2) & 50 HOWARD COUNTY, MARYLAND

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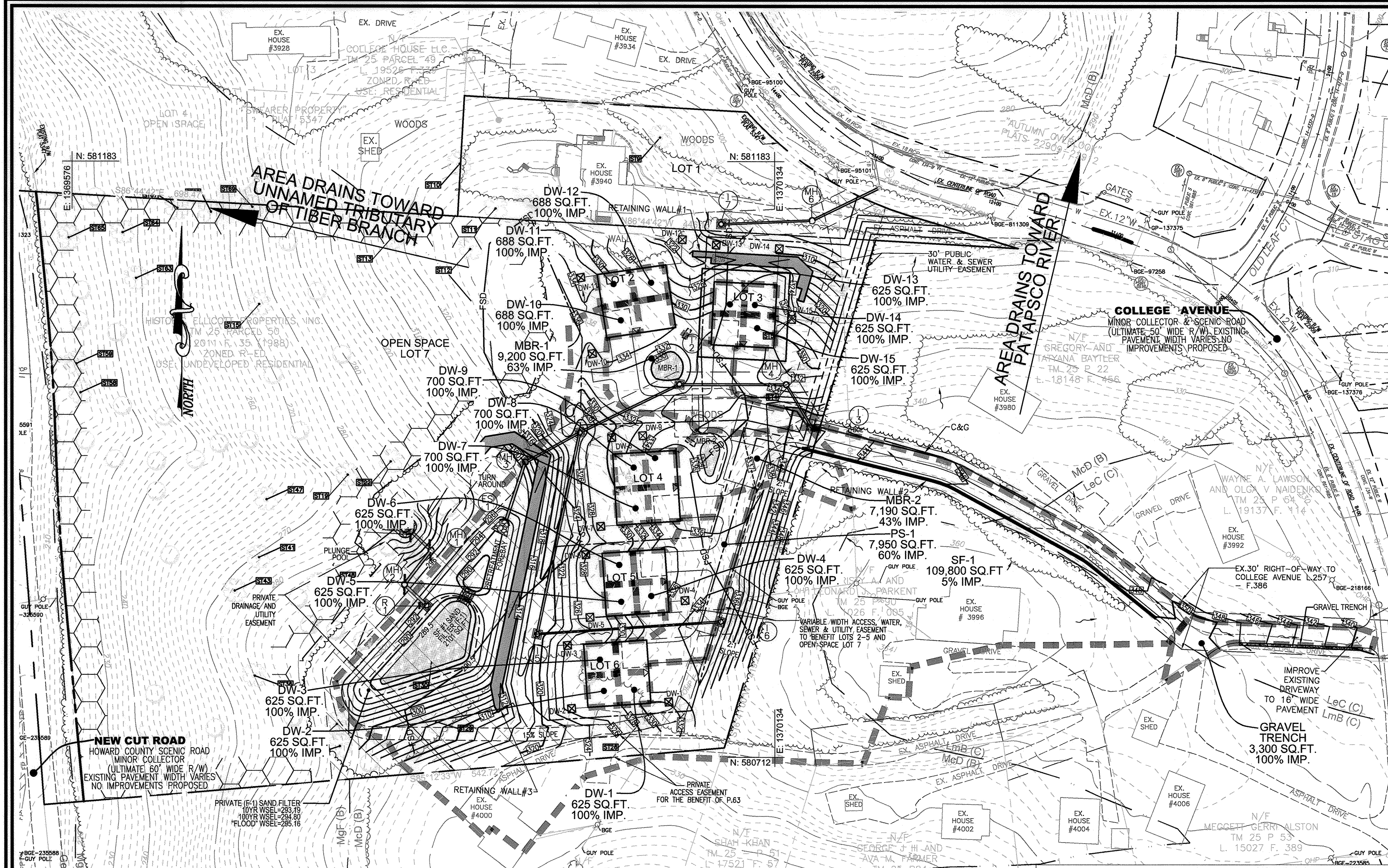
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5 SHEET OF 6

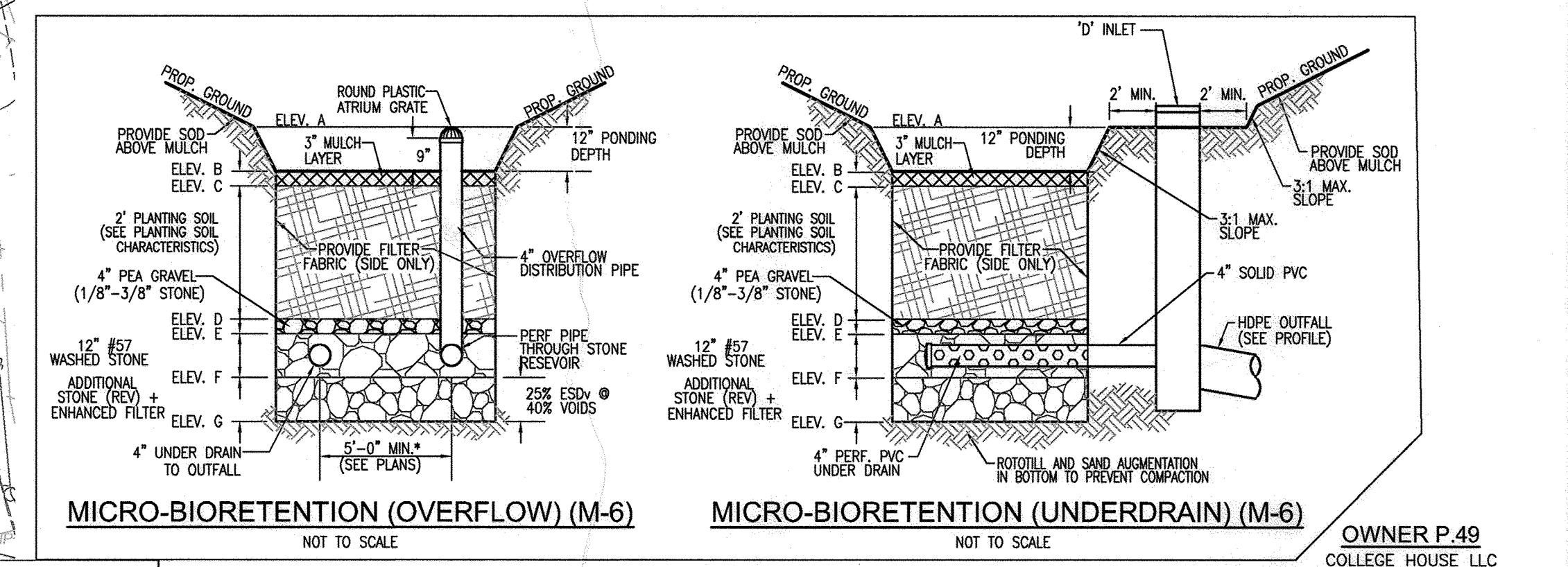
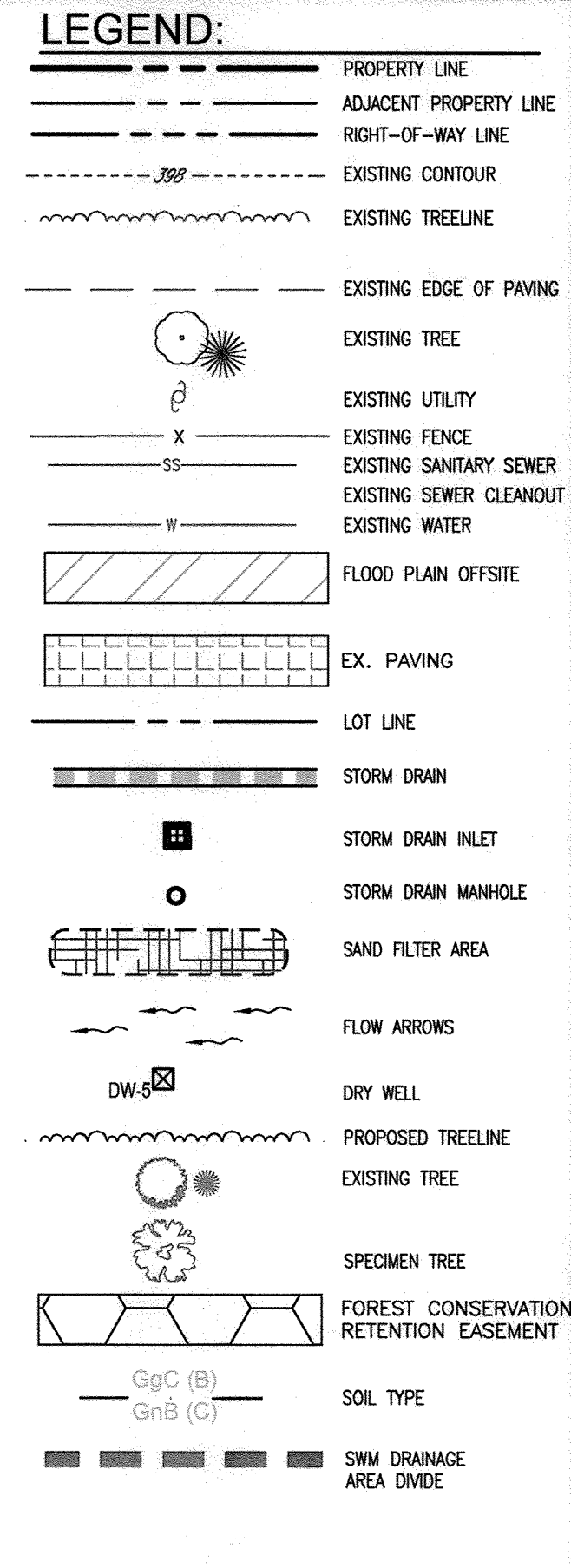
ROBERT H. VOGEL, PE No.16193





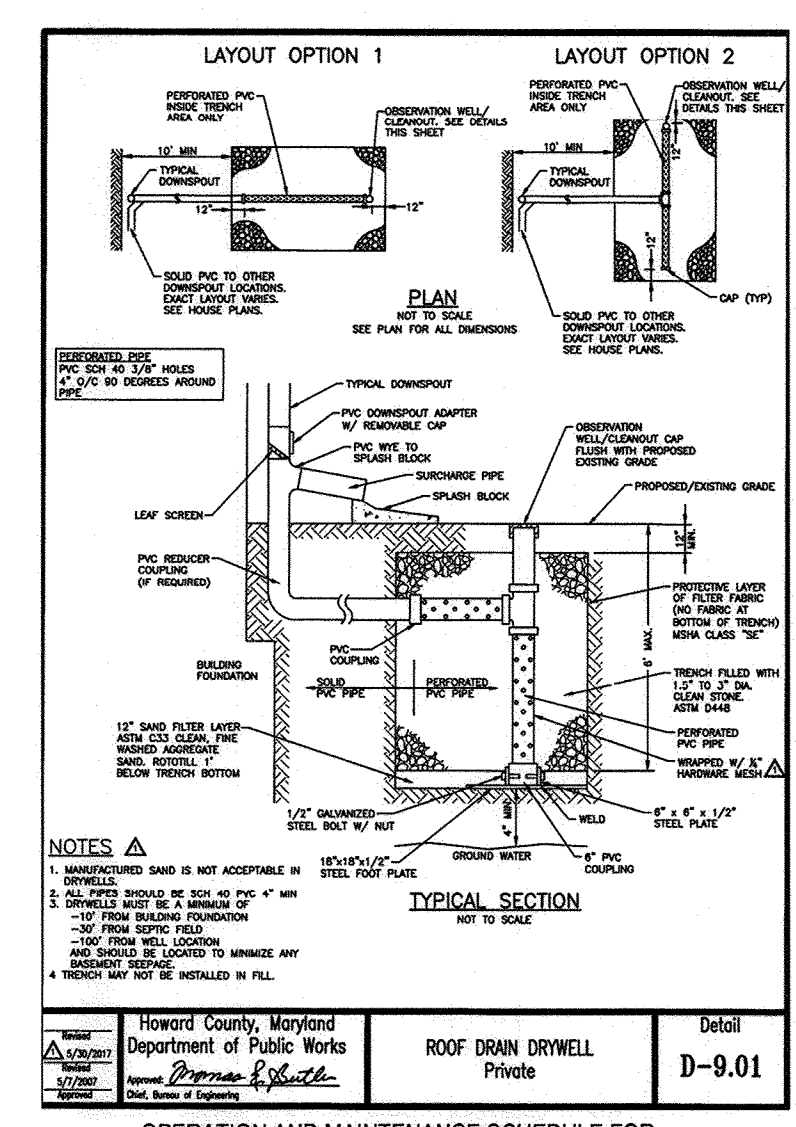
**APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS**

- MATERIAL SPECIFICATIONS**  
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- FILTERING MEDIA OR PLANTING SOIL**  
THE MEDIA SHALL BE A UNIFORM MIX OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOOD SPECIES AS SPECIFIED UNDER COMAR 16.06.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
  - SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
  - ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (50%-60%) AND COMPOST (5% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
  - CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
  - PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO CORRECT PH.
 THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS FOR ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
- COMPACTION**  
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.  
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.  
ROTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDING WATER BEFORE OPERATING (ROTOTILLING) THE TOPSOIL OVER THE SAND LAYER. FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 16". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT MATERIAL**  
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- PLANT INSTALLATION**  
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.  
BUSHES AND TREES SHOULD BE PLANTED IN THE PERIMETER OF THE BIORETENTION AREA. THE PLANT ROOT BALL SHOULD BE PLANTED 50% TO 75% OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.  
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS SEEDING SPECIFICATIONS.  
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRIP IS TO IMPROVE QUALITY. ADDING FERTILIZERS DEFERS, OR AT A MINIMUM, IMPROVES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
- UNDERDRAINS**  
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
  - PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 756, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC OF HDPE).
  - PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
  - GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
  - THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
  - A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
  - A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
 THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
- MISCELLANEOUS**  
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



**ESD STORM WATER MANAGEMENT DRAINAGE AREA MAP**  
SCALE: 1"=50'

- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)**
- THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY SWEEP (OR VACUUM PRODUCE CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
  - THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SURFACE.
  - THE INDIVIDUAL LOT OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
  - THE INDIVIDUAL LOT OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.



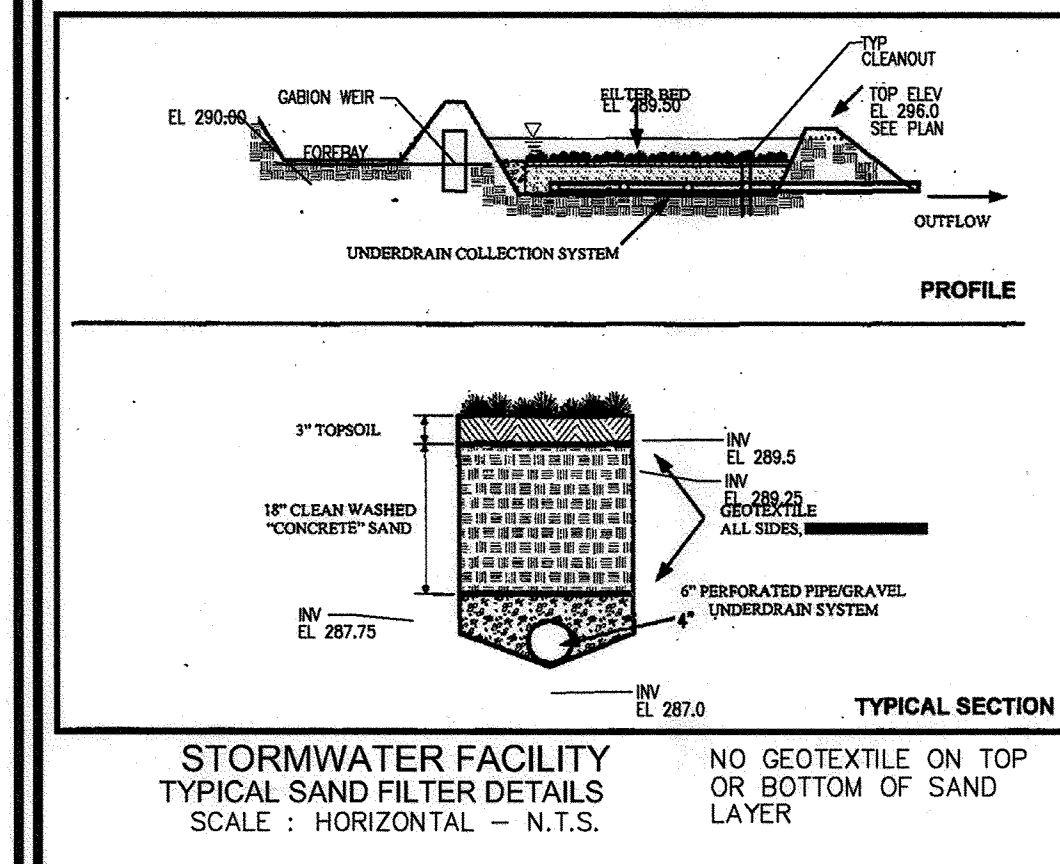
**OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER DRY WELLS (M-5)**

THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.

- WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE EROSION IN THE POND AS WELL AS RIFRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED. NON-ROUTINE MAINTENANCE (HOWARD COUNTY STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE LOW RISE STRUCTURE, SAND FILTER & PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**PARCEL 50 NEW CUT - ESDV PER AREA COMPUTATIONS**

DA	% IMPERV	Rv	DA	AREA	IMP. VOLUME	IMP. VOLUME	IMP. VOLUME	REMARKS	
1	2	3	4	5	6	7	8	9	
DA-1	100.00	0.9500	625	0.01	49	129	79	58	625
DA-2	100.00	0.9500	625	0.01	49	129	79	58	625
DA-3	100.00	0.9500	625	0.01	49	129	79	58	625
DA-4	100.00	0.9500	625	0.01	49	129	79	58	625
DA-5	100.00	0.9500	625	0.01	49	129	79	58	625
DA-6	100.00	0.9500	625	0.01	49	129	79	58	625
DA-7	100.00	0.9500	700	0.02	55	144	89	58	700
DA-8	100.00	0.9500	700	0.02	55	144	89	58	700
DA-9	100.00	0.9500	700	0.02	55	144	89	58	700
DA-10	100.00	0.9500	688	0.02	54	142	87	58	688
DA-11	100.00	0.9500	688	0.02	54	142	87	58	688
DA-12	100.00	0.9500	688	0.02	54	142	87	58	688
DA-13	100.00	0.9500	625	0.01	49	129	79	58	625
DA-14	100.00	0.9500	625	0.01	49	129	79	58	625
DA-15	100.00	0.9500	625	0.01	49	129	79	58	625
DA-16	100.00	0.9500	625	0.01	49	129	79	58	625
DA-17	100.00	0.9500	300	0.08	261	679	418	458	300
DA-18	62.50	0.6125	9200	0.21	470	1221	751	347	5750
DA-19	42.77	0.4249	7190	0.17	261	678	417	408	3075
DA-20	60.25	0.5923	7950	0.18	392	1020	628	693	4790
DA-21	4.74	0.0926	109000	2.52	448	2204	1356	2801	5000
DA-22	22.00	0.2480	147854	3.39	3056	7945	4889	6028	32529
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**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING**

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 8/15/24

DATE: 8/15/24

**ENVIRONMENTAL CONCEPT PLAN**

**ESD STORM WATER MANAGEMENT DRAINAGE AREA MAP NOTES & DETAILS**

**NEW CUT ROAD**

ELLICOTT CITY, MARYLAND

TAX MAP 25 GRID 14

2ND ELECTION DISTRICT

ZONED: R-ED

PARCEL 49 (LOT) & 50

HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**

**TIMMONS GROUP**

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043

P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: RHV/EDS

DRAWN BY: ONB/EDS

CHECKED BY: RHV

DATE: NOVEMBER 2023

SCALE: AS SHOWN

W.O. NO.: 48027

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. 15193

EXPIRATION DATE: 09-27-2024

6 SHEET OF 6