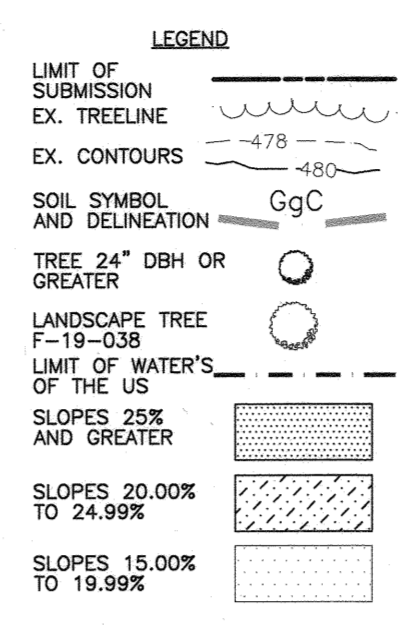
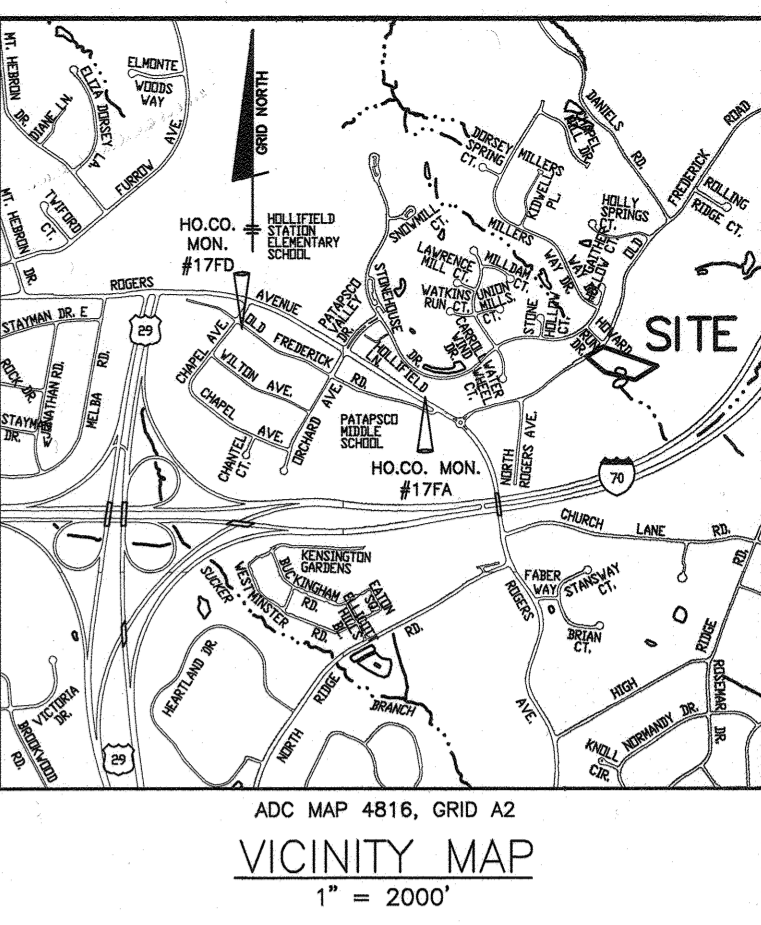


SHEET INDEX	
SHEET	TITLE
1	ENVIRONMENTAL CONCEPT PLAN COVER SHEET
2	ENVIRONMENTAL CONCEPT PLAN EXISTING CONDITIONS PLAN
3	ENVIRONMENTAL CONCEPT PLAN SITE LAYOUT AND GRADING PLAN
4	ENVIRONMENTAL CONCEPT PLAN SEDIMENT AND EROSION CONTROL PLAN AND DRAINAGE AREA MAP



PROJECT: **Capstone Estates** DATE: 10/03/22  
 Facility Summary

Pe (LOTS): 1.52 inches

BIORETENTION FACILITIES (M-6 AND F-6)													
Facility	Drainage Area	Impervious	I (%)	Rv	ESDv Req'd (cf)	Req'd Pondered Storage (75%)	Pondered Volume Provided (cf)	Req'd Stone Storage (cf)	Stone Storage Provided (cf)	Total ESDv	Pe Prov.	Rev (cf)	Notes
MBR-1 (M-6)	19,448	10,590	54%	0.54	1330	997	991	332	346	1667	1.90	346.0	
MBR-2 (M-6)	15,584	8,255	53%	0.53	1039	780	965.5	260	257	1545	2.26	257.3	
MBR-3 (M-6)	9,207	1,500	16%	0.20	229	172	394	57	90	616	4.08	90.3	
<b>TOTALS</b>		<b>20,345</b>			<b>2598</b>	<b>2351</b>	<b>2351</b>	<b>694</b>	<b>694</b>	<b>3828</b>		<b>694</b>	

DRY WELL FACILITY (M-5)										
Facility	Impervious Area (SF)	Drainage Area (SF)	Volume/Runoff	ESDv Required (CF)	Length (ft)	Width (ft)	Depth (ft)	Volume CF	Rev Provided (CF)	Full ESDv Provided?
DW 3-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 3-2 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 4-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 5-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
<b>TOTALS</b>	<b>3000</b>							<b>512.0</b>	<b>512.0</b>	

The total ESDv provided by this design is: 4340 CF  
 The total Rev provided by this design is: 1,105 CF EXCESS  
 Micro-bioretenion facilities within the 100' well radius must be provided with an impermeable liner.

\*The ESDv summary table portrays storage in excess of that required for Environmental Site Design requirements.

**NOTES:**

- EXISTING ZONING: R-20, DEED REFERENCE: BOOK 21530, PAGE 136
- SITE ANALYSIS DATA:
  - TOTAL AREA OF SITE: 2.93 AC.
  - EXISTING IMPERVIOUS AREA: 0.15 AC.
  - EXISTING GREEN AREA: 2.78 AC.
  - EXISTING FORESTED AREA: 0.00 AC.
  - EXISTING SITE USE: SINGLE FAMILY DETACHED DWELLING
  - SLOPES 15% TO 24.99% 0.58 AC.
  - 20% OR GREATER 0.19 AC.
  - 25% OR GREATER 0.11 AC.
  - HIGHLY ERODIBLE SOILS 2.29 AC.
- AREA OF PLAN SUBMISSION: 2.93 AC.
- LIMIT OF DISTURBANCE: 2.05 AC.
- IMPERVIOUS AREA: 0.52 AC.
- REVEGETATED AREA: 1.53 AC.
- PROPOSED USE: RETAIN EXISTING DWELLING AND CREATE FOUR NEW DWELLINGS C. PREVIOUS SUBMITTAL.
- THIS LOT WILL UTILIZE A CUSTOM SEDIMENT AND EROSION PLAN.
- STORMWATER MANAGEMENT FOR THIS PROPOSAL IS PROVIDED WITH THE APPROVAL OF THE ENVIRONMENTAL CONCEPT PLAN AND MAY BE REVISED WITH THE FINAL PLANS, SITE DEVELOPMENT PLANS, & BUILDING PERMIT.
- THERE IS ONE EXISTING DWELLING ON THIS SITE. IT IS TO REMAIN.
- TO THE BEST OF OUR KNOWLEDGE AND BELIEF THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES ON-SITE.
- THE FOREST CONSERVATION PLAN AND ASSOCIATED FOREST STAND DELINEATION WILL BE REVIEWED FOR COMPLIANCE WITH THE FOREST CONSERVATION ACT AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR GRADING PERMIT PLAN STAGES. FOREST CONSERVATION OBLIGATION FOR THIS LOT IS 0.4 ACRES OF AFFORESTATION.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHALL 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.
- IT IS ANTICIPATED THAT THIS DEVELOPMENT WILL NEED WAYVANS FOR THE TYPICAL SECTION OF THE ROADWAY AND STORM DRAIN.
- OLD FREDERICK ROAD IS A NEIGHBORHOOD STREET 2, NO PARKING. THE LAND USE CONTEXT IS SUBURBAN AND THE TRANSPORTATION CLASSIFICATION IS COLLECTOR. THE APPROPRIATE STREET TYPE IS NEIGHBORHOOD STREET 2. THE EXISTING STREET CURRENTLY HAS NO PARKING AND THE RESIDENTIAL STRUCTURES HAVE ON-LOT PARKING SO THE ROADWAY IS ALSO GIVEN THE "NO PARKING" DESIGNATION. THE ULTIMATE RIGHT-OF-WAY IS 60'. THE LANE WIDTH IS APPROXIMATELY 12' AND THERE ARE NO EXISTING SIDEWALKS. SHARED USE PATHWAYS OR ON-STREET PARKING AREAS IN THE VICINITY OF THE PROJECT EXCEPT SUNELL LANE WHICH HAS SIDEWALKS ALONG THE EAST SIDE OF OLD FREDERICK ROAD. THE POSTED SPEED IS 25 MPH AND THERE ARE NUMEROUS DRIVEWAYS. BIKEWAY MARKING PLAN AND HOWARD COUNTY INTERACTIVE MAP DESIGNATES OLD FREDERICK ROAD AS A SHARED ROADWAY WITH SAFETY TREATMENTS 8.
- THE EXISTING POND DOES NOT SUPPORT WETLANDS. NO NEW WATERWAY WILL BE CONSTRUCTED. THE POND REMOVAL WILL BE REVIEWED BY MDG DAM SAFETY AND HOWARD SOIL CONSERVATION DISTRICT. THE INTENT IS TO PUMP THE POND THROUGH A FILTER BAG (DETAIL F-4) AND THEN FILLING AND STABILIZING THE DEPRESSION.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 3/16/23  
 DATE: 5-20-23

**STORMWATER MANAGEMENT DESIGN NARRATIVE:**

Summary

Environmental site design, ESD, is provided by fulfilling the requirements of chapter 5 of the 2000 Maryland Stormwater Design Manual, volumes I & II, revised May, 2009, and chapter 5 of volume I of the Howard County Design Manual.

The development of this site will include several strategies to fulfill the design manuals, these practices include:

- natural resource protections;
- use of multiple existing discharge locations;
- techniques for reduced impervious cover;
- integration of sediment control into the stormwater plan;
- use of ESD practices and methods.

Natural resources protections:

- Specimen trees are present. Specimen trees will be shown on the plan and their critical root zone will be protected. At this time, none of the four specimen trees will be cleared.
- The shallow and poorly maintained pond will be replaced with lawn and graded as sheet flow.
- Wetlands, streams, and their buffers do not exist on site. There is no floodplain or steep slopes that exceed 20,000 ft on site. There are no disturbances to these types of resources.
- There is no forest on site. There is no disturbance to forest resources. Afforestation will take place off site or a fee-in-lieu will be paid to the county for afforestation projects.

Use of existing discharge locations:

Existing flow patterns shall be maintained under ultimate conditions. Four discharge locations have been identified: the existing public storm drain system that flows under Old Frederick Road flowing to the northwest; the existing pond outlet; the rear southern corner of the site that flows into the intermittent stream within the adjoining open space lot; and the rear eastern side of the property that flows into the adjoining open space lot and into by-pass swales and by-pass storm drain.

These four discharge locations are listed from front to rear of the site, this is not a ranking of any characteristics or preferences. These four discharge areas are used for the developed conditions drainage areas.

Flowing to the existing discharge location at the front of the property, the public storm drain under Old Frederick Road is a lawn area. This is the utilization of the existing grading adjacent to the existing driveway. The existing driveway is going to be replaced and expanded by the shared driveway.

The discharge to the pond area existing discharge location will include the by-pass of off-site areas and the discharge from a micro-bioretenion facility. The off-site area mostly discharges to this location under existing conditions. This discharge point is labeled on the plans and is at the embankment low point. This drainage area will also include several dry wells. The by-pass and on-site storm drain discharge near this location. Immediately down slope from this discharge location is an existing pond which discharges into a wetland and intermittent stream system. The wetland and stream are within an existing open space lot.

The discharge to the rear Southern corner existing discharge location will include off-site by-pass area that currently flows to this location and the discharge from two planned micro-bioretenion facilities. There are also dry wells planned in the area that discharges to this location. This discharge flows into an existing open space lot and into the intermittent stream that is within that open space lot. There is an off-site by-pass swale in this area but the facility and by-pass discharge do not flow to this swale. Some on-site sheet flow areas may flow to this by-pass swale.

The discharge to the rear eastern side existing discharge location of the site should be maintained at an acceptable discharge runoff rate or less. The micro-bioretenion in this area will need to be examined further to determine if the existing discharge is exceeded in developed conditions. The discharge in this area will flow into recently constructed by-pass swales and storm drain system. It can be assumed that the design of these swales and storm drain system are adequate to handle the existing condition discharge.

Drainage flow from pervious surfaces shall exit the property at the same general location as it does under existing conditions. Most impervious flow is directed to best management practices prior to discharge from the site. A portion of the existing driveway area and a portion of the new shared driveway impervious area is not treated by any environmental site design practices.

Techniques for reduced impervious cover:

Design methods were utilized to curtail the proposed new impervious cover. The driveway utilizes the existing access point of the existing house and overlaps the existing driveway with new pavement. The driveway is no longer than necessary. The individual driveways are as short as possible to limit the new imperviousness. A shared driveway is proposed instead of a public roadway to reduce the pavement width for the roadway and for the terminus. Parking spaces are not designed along the shared driveway but will occur within the individual driveways in front of the garages, limiting the pavement of the shared driveway to just the drive aisle. The proposed house boxes are designed to match the newer houses in the area and are no larger than what would be necessary to provide a building footprint that would match the neighborhood.

These are all design considerations that reduce the impervious areas.

Integration of sediment control into the stormwater plan:

Sediment and erosion control shall be provided by a custom plan that will be reviewed by Howard Soil Conservation District. A schematic concept is shown within this plan set. It is anticipated that it will consist

of silt fences, super silt fences, diversion practices, temporary traps and basins. A stabilized construction entrance at the public roadway access. Erosion control matting shall be used for swales if necessary. The locations of the temporary traps were selected to coincide with location of stormwater management practices or with the limit of the disturbed area. The drainage areas are designed to drain to these locations during site disturbance to allow for settling of sediment. The drainage areas are designed to flow to the micro-scale practices after construction to allow for stormwater treatment. The stormwater management design and sediment controls are designed to utilize the same natural discharge locations and the same location.

Use of ESD practices and methods:

The target pe is 1.52"; the target ESDv is 3,234 cf; the available ESDv by best management practices shown on this concept plan is 4,340 cf.

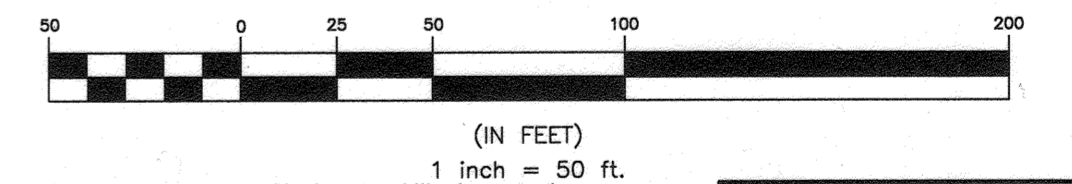
The required rev volume is 554 cf, the rev available by this design is 1,206 cf. Full groundwater recharge is available.

See Stormwater Management Report for additional details.

The location of the forest conservation bank, off-site mitigation or fee in lieu is not yet determined. There is no priority area on site that is available for afforestation. Any afforestation area would be very small in size and is better fulfilled with off-site areas or fee in lieu of forest conservation afforestation planting.

The developer has proposed treatment of the ESDv and the treatment of impervious surfaces. The existing discharge points have been utilized. The developer has reduced the proposed impervious area. For the effective area the amount of impervious being treated is 96% of the new impervious area and 89% of existing impervious area. The 4% of new impervious not being treated is compensated for within the micro-bioretenion facilities. The 4% of new impervious not being treated is the portion of the shared driveway near the edge of paving of Old Frederick Road and the proposed public sidewalk. No treatment options are available for these areas. Overall storage available is well above the amount required by the effective area.

Therefore, this project can be considered to be treated to the maximum extent practical.



**Site Analysis Data Sheet**

Gross Area	2.93 ac
100yr Floodplain	0.00 ac
Slopes 15% to 24.99%	0.38 ac
Slopes 25% or greater	0.11 ac
Slopes 20% or greater	0.19 ac
Wetlands (outside of floodplain)	0.00 ac
Wetlands Buffer (outside of floodplain)	0.00 ac
Stream	0.00 ac
Stream Buffer (outside floodplain)	0.00 ac
Forested Area	0.00 ac
Erodible Soils	2.29 ac
Limit of Disturbance (inc. Rights-of-Way)	2.05 ac
Impervious Area	0.52 ac
Green Space (within LOD)	2.41 ac

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 3300 NORTH RIDGE ROAD SUITE 140A ELICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BEI-ENGINEERING.COM

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. 45577, Expiration Date: 06-30-2024.

2/10/23  
 S.M. Cuy

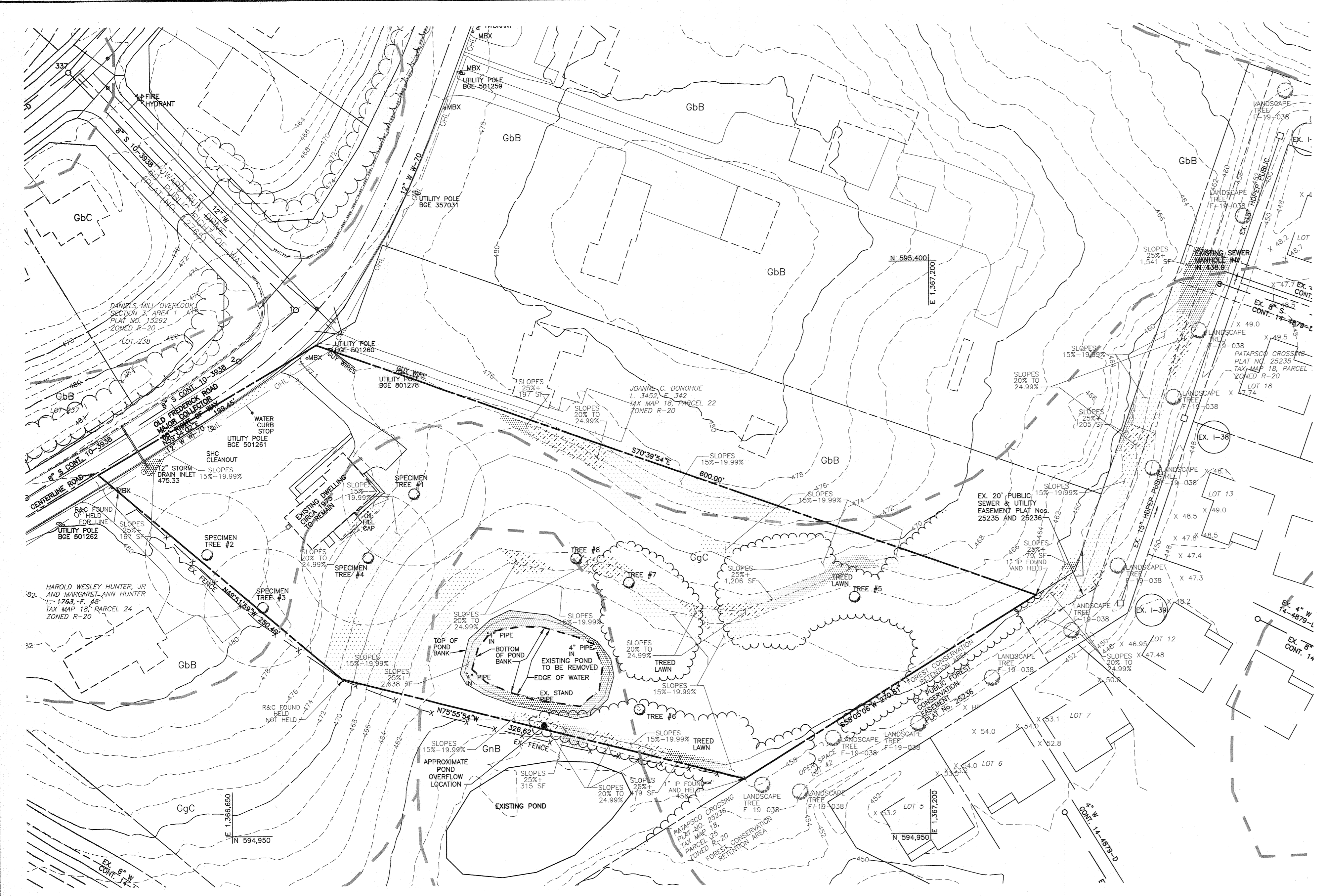
**OWNER:**  
 RAINMAKER DEVELOPMENT, INC.  
 2101 MILLERS MILL ROAD  
 COOKSVILLE, MD 21723  
 443-829-9222

**DEVELOPER:**  
 RAINMAKER DEVELOPMENT, INC.  
 2101 MILLERS MILL ROAD  
 COOKSVILLE, MD 21723  
 443-829-9222

**CAPSTONE ESTATES**  
 LOTS 1-5  
 R-20 SINGLE FAMILY DETACHED  
 TAX MAP: 18, GRID: 07, PARCEL: 23  
 ZONED: R-20  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ENVIRONMENTAL CONCEPT PLAN COVER SHEET**

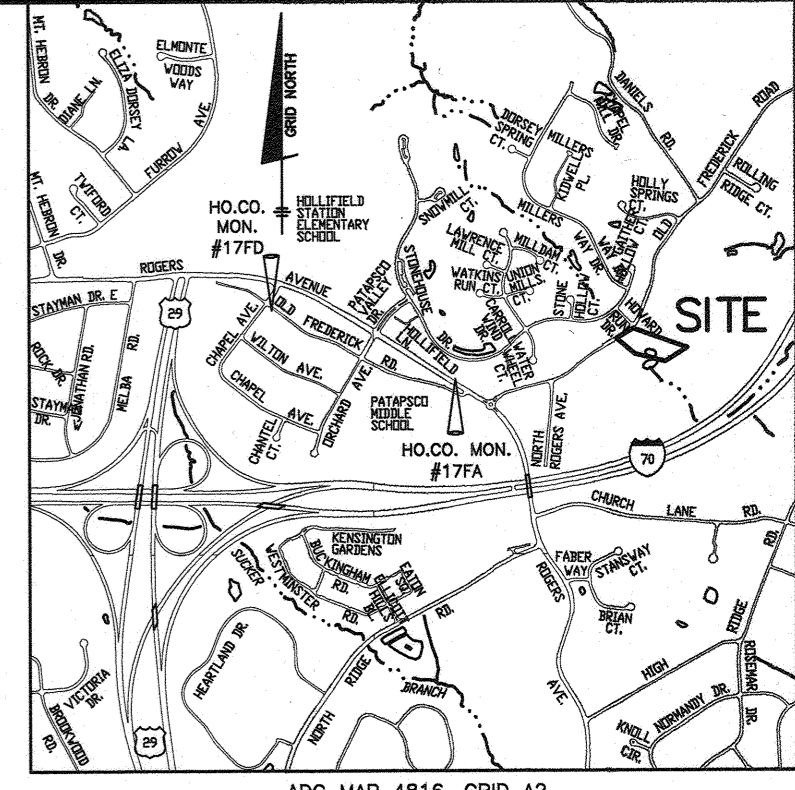
DATE: MARCH, 2023 BEI PROJECT NO. 3119  
 DESIGN: JC DRAFT: JC SCALE: AS SHOWN SHEET 1 OF 4



SOILS CHART SHEET			
SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME
GbB	A		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES
GgC	B		GLENELL LOAM, 8 TO 19 PERCENT SLOPES
GhP	C		GLENVILLE SILT LOAM, 0 TO 8 PERCENT SLOPES

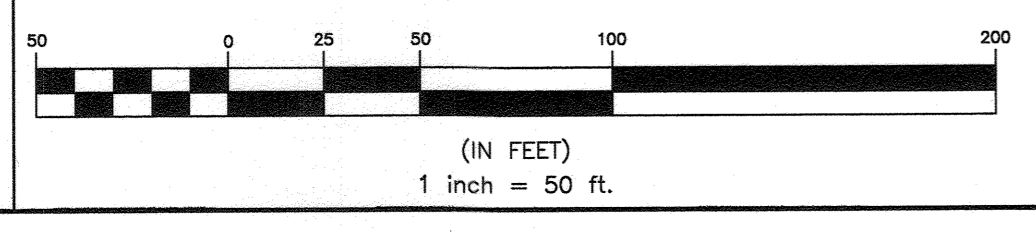
**LEGEND**

LIMIT OF SUBMISSION  
 EX. TREELINE  
 EX. CONTOURS  
 SOIL SYMBOL AND DELINEATION  
 TREE 24" DBH OR GREATER  
 LANDSCAPE TREE  
 LIMIT OF WATER'S OF THE US



VICINITY MAP  
 1" = 2000'

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 3/16/23  
 DATE: 3.20.23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



NO.	DATE	REVISION

**BENCHMARK**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
 3300 NORTH RIDGE ROAD & SUITE 140 & ELLICOTT CITY, MARYLAND 21043  
 (P) 410-485-8105 (F) 410-465-6644  
 WWW.BEI-CIVILENGINEERING.COM

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. 45577. Expiration Date: 06-09-2024.  
 3/16/23  
*[Signature]*

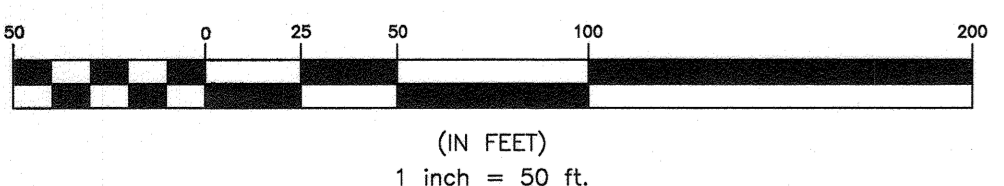
OWNER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222	<b>CAPSTONE ESTATES</b> LOTS 1-5 R-20 SINGLE FAMILY DETACHED TAX MAP: 18, GRID: 07, PARCEL: 23 ZONED: R-20 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222	<b>ENVIRONMENTAL CONCEPT PLAN</b> <b>EXISTING CONDITION PLAN AND</b> <b>SOILS MAP</b>
DESIGN: JC	DRAFT: JC
DATE: MARCH, 2023	BEI PROJECT NO. 3119
SCALE: AS SHOWN	SHEET 2 OF 4



STORMWATER MANAGEMENT PLAN AND DRAINAGE AREA MAP

SYMBOL	HYDROIC	HYDROLOGIC GROUP	NAME	K-VALUE Whole Soil
GbB	A		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.32
GgC	B		GLENELG LOAM, 8 TO 18 PERCENT SLOPES	0.43
GbB*	C		GLENVILLE-SALE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.49

- LEGEND**
- LIMIT OF SUBMISSION
  - EX. TREE LINE
  - EX. CONTOURS
  - SOIL SYMBOL AND DELINEATION
  - TREE 24" DBH OR GREATER
  - LANDSCAPE TREE
  - LIMIT OF WATER'S OF THE US
  - STORMWATER MANAGEMENT DRAINAGE DIVIDE
  - STORMWATER MANAGEMENT EFFECTIVE AREA



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 3/10/23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 3-20-23

PROJECT: **Capstone Estates** DATE: 10/03/22  
**Facility Summary**  
 Pe (LOTS): 1.52 inches

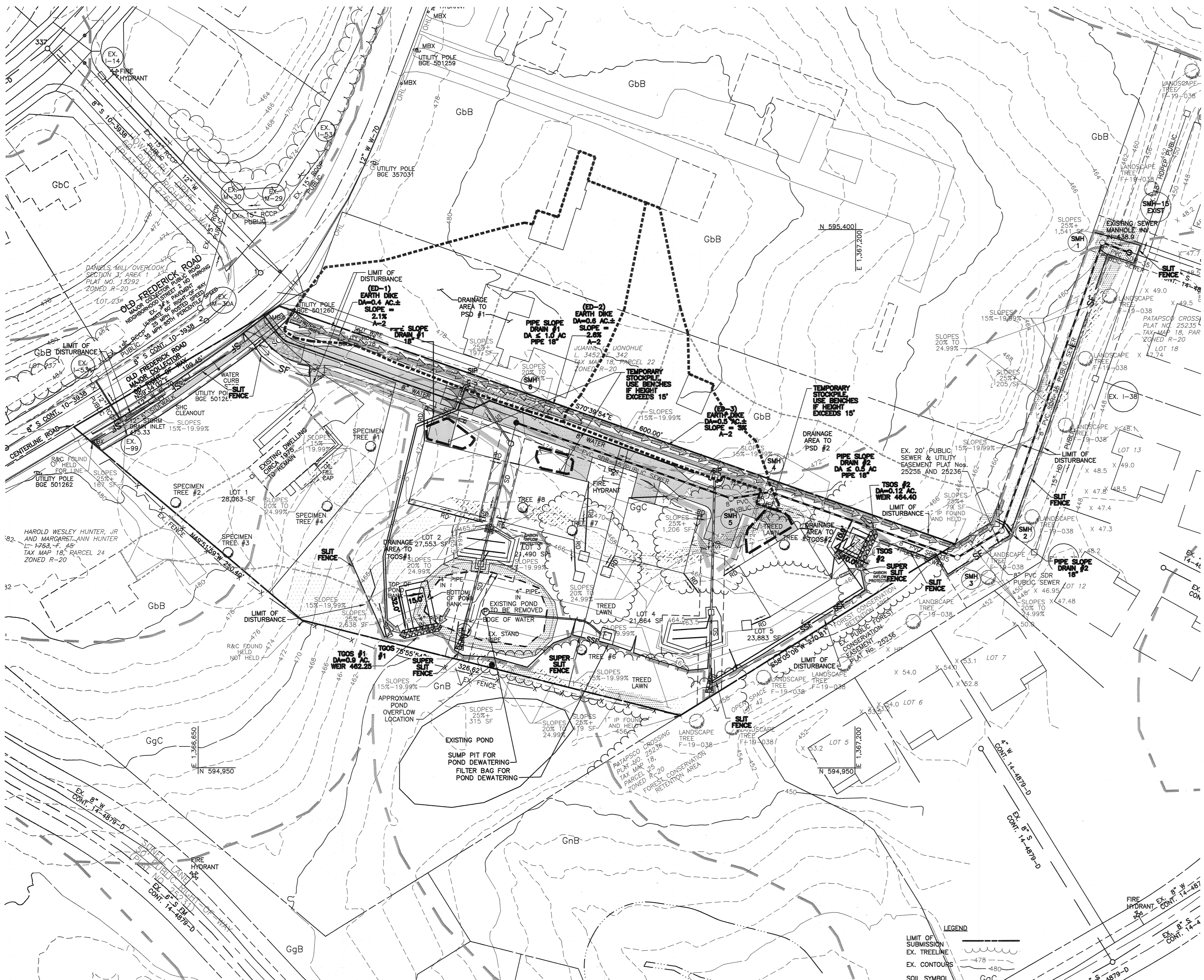
BIORETENTION FACILITIES (M-6 AND F-6)													
Facility	Drainage Area (SF)	Impervious	I (%)	Rv	ESDv Req'd (cf)	Req'd Pondered Storage (75%)	Pondered Volume Provided (cf)	Req'd Stone Storage (cf)	Stone Storage Provided (cf)	Total ESDv	Pe Prov.	Rev (cf)	Notes
MBR-1 (M-6)	19,448	10,590	54%	0.54	1330	997	991	332	346	1667	1.90	346.0	
MBR-2 (M-6)	15,584	8,255	53%	0.53	1039	780	965.5	260	257	1545	2.26	257.3	
MBR-3 (M-6)	9,207	1,500	16%	0.20	229	172	394	57	90	616	4.08	90.3	
<b>TOTALS</b>		<b>20,345</b>			<b>2598</b>		<b>2351</b>		<b>694</b>	<b>3828</b>		<b>694</b>	

DRY WELL FACILITY (M-5)										
Facility	Impervious Area (SF)	Drainage Area (SF)	Volume/Runoff	ESDv Required (CF)	Length (ft)	Width (ft)	Depth (ft)	Volume CF	Rev Provided (CF)	Full ESDv Provided?
DW 3-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 3-2 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 4-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
DW 5-1 (M-5)	750	750	0.95	90.21	8.00	8.00	5.00	128	128.0	yes
<b>Totals</b>	<b>3000</b>							<b>512.0</b>	<b>512.0</b>	

The total ESDv provided by this design is: 4340 CF  
 The total Rev provided by this design is: 1206 CF  
 Micro-Bioretenation facilities within the 100' well radius must be provided with an impermeable liner.

\*The ESDv summary table portrays storage in excess of that required for Environmental Site Design requirements.

NO.	DATE	REVISION
 ENGINEERS & LAND SURVEYORS & PLANNERS 3300 NORTH RIDGE ROAD SUITE 140 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM		
OWNER:	<b>CAPSTONE ESTATES</b> LOTS 1-5 R-20 SINGLE FAMILY DETACHED TAX MAP: 18, GRID: 07, PARCEL: 23 ZONED: R-20 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
DEVELOPER:	RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222	
DESIGN: JC	DRAFT: JC	ENVIRONMENTAL CONCEPT PLAN STORMWATER MANAGEMENT PLAN AND DRAINAGE AREA MAP DATE: MARCH, 2023 SCALE: AS SHOWN
		BEI PROJECT NO. 3119 SHEET 3 OF 4



SEDIMENT AND EROSION CONTROL PLAN WITH TEMPORARY FEATURES DRAINAGE AREA MAP



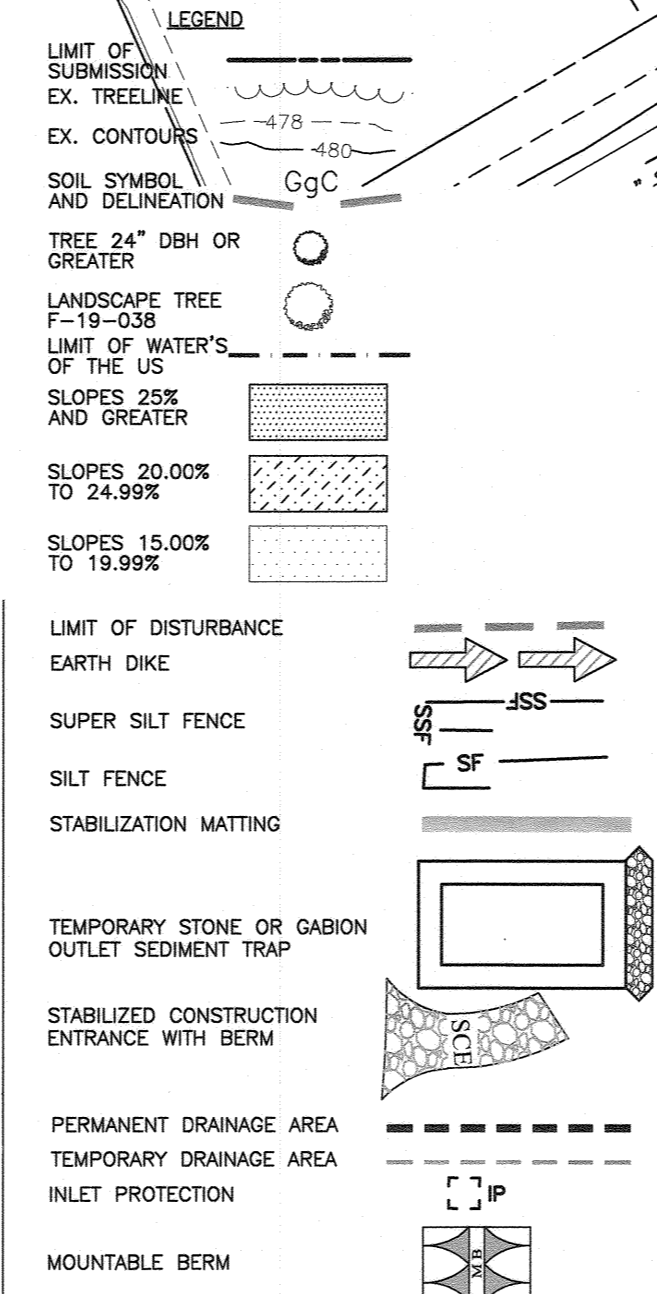
PERMANENT SWALES DRAINAGE AREA MAP

SYMBOL	HYDROIC	HYDROLOGIC GROUP	NAME	K VALUE	Whole Soil
GbB	A		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.32	
GgC	B		GLENELO LOAM, 8 TO 18 PERCENT SLOPES	0.43	
GgB	C		GLENELO-SALE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.49	

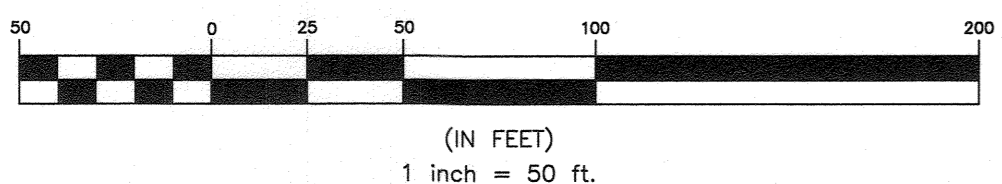
Capstone Estate  
SEC Computations

Practice	Q10 CFS	V10 PFS	d10 ft	Q2 CFS	V2 PFS	d2 ft	Slope %	Manning's 'n'	Width feet	Bank Slope	Channel Depth feet	Shear Stress	V10 less than 8.5?	V2 less than 6.0?	Shear Stress less than 2.0?
SW-1	2.32	2.97	0.32	0.86	2.16	0.17	2.7%	0.03	2	2:1	2.0	0.54	okay	okay	okay
SW-2	1.16	2.57	0.21	0.43	1.76	0.11	3.3%	0.03	2	2:1	2.0	0.43	okay	okay	okay
ED-1	1.16	1.81	0.19	0.43	1.32	0.11	2.1%	0.03	0	2:1,10:1	1.0		okay		okay
ED-2	1.74	2.24	0.23	0.65	1.63	0.13	2.6%	0.03	0	2:1,10:1	1.0		okay		okay
ED-3	1.45	2.82	0.21	0.54	2.08	0.12	5.8%	0.03	0	2:1,10:1	1.0		okay		okay

Designation	Drainage Area SF	Drainage Area Acres	Practice	Volume Required	Ground Elev.	Embankment Elev.	Weir Elev.	Pond Bottom	Bottom Width at Weir	Bottom Length Uphill of Weir	Volume Provided	Adequate Volume?
#1	39204	0.90	TGOS	1620	461.50	463.00	462.25	460.00	15.00	32.00	1647	Yes
#2	5319	0.12	TSOS	220	463.40	464.90	464.40	462.15	10.00	10.00	519	Yes



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF DIVISION OF LAND DEVELOPMENT  
 DATE: 3/16/23  
 DATE: 3-20-23



NO.	DATE	REVISION
<b>BENCHMARK</b> ENGINEERS • LAND SURVEYORS • PLANNERS <b>ENGINEERING, INC.</b> 3300 NORTH RIDGE ROAD, SUITE 140 • ELICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BCI-ENGINEERING.COM		
OWNER:	<b>CAPSTONE ESTATES</b> R-20 SINGLE FAMILY DETACHED TAX MAP: 18, GRID: 07, PARCEL: 23 ZONED: R-20 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
DEVELOPER:	<b>ENVIRONMENTAL CONCEPT PLAN</b> <b>SEDIMENT AND EROSION CONTROL PLAN</b> <b>AND DRAINAGE AREA MAP</b>	
DATE:	MARCH, 2023	BEI PROJECT NO. 3119
DESIGN:	JC	DRAFT: JC
SCALE:	AS SHOWN	SHEET 4 OF 4