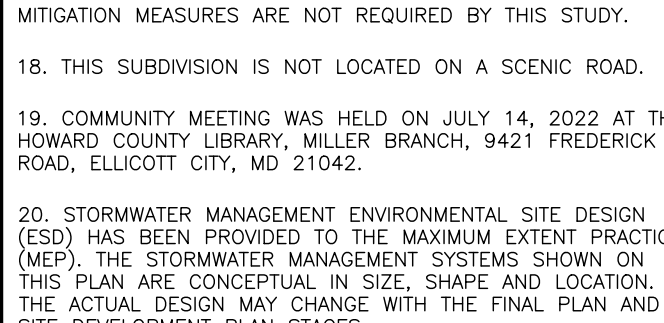


GENERAL NOTES:

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. SUBJECT PROPERTY ZONED R-20 PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
3. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
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 MONUMENTS NO. 177A AND 177D WERE USED FOR THIS PROJECT.
5. PREVIOUS HOWARD COUNTY FILE NUMBERS: ECP-23-002
6. TRACT BOUNDARY IS BASED ON FIELD RUN BOUNDARY SURVEY PERFORMED ON OR ABOUT JUNE 1, 2022.
7. TOPOGRAPHY SHOWN IS BASED ON FIELD-RUN SURVEY PERFORMED ON OR ABOUT MAY, 2022 BY BENCHMARK ENGINEERING, INC.
8. EXISTING UTILITIES SHOWN ARE BASED ON FIELD LOCATIONS BY BENCHMARK ENGINEERING, INC. HOWARD COUNTY GIS, F-19-038, F-98-057 AND F-97-042.
9. WETLAND AND FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED AUGUST 1, 2022.
10. THE GEOTECHNICAL REPORTS WERE PREPARED BY GEOTECHNICAL LABORATORIES, INC., IN NOVEMBER 1, 2022.
11. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, THEIR RELATED BUFFERS, 100V FLOODPLAIN, STEEP SLOPES OR FOREST CONSERVATION EASEMENTS, EXCEPT AS APPROVED BY THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
12. THERE ARE NO DRAINAGE AREAS OF 30 ACRES OR LARGER OR HAVING A 10-YEAR RUNOFF IN EXCESS OF 100CFS. NO NEW FLOODPLAIN STUDY IS REQUIRED. THE SUBJECT PROPERTY LIES WITHIN THE USE 1 WATERSHED OF THE PATAPSCO RIVER (021309081017).
13. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
14. THE EXISTING STRUCTURE ON LOT 1 IS TO REMAIN, NO NEW BUILDINGS, EXTENSIONS, OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIREMENTS.
15. THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND THE PLANNED SERVICE AREA WATER AND SEWER ARE PUBLIC AND CONNECT TO CONTRACTS 14-4879-D AND W-70.
16. A NOISE STUDY IS NOT REQUIRED FOR THIS PLAN AS THE PROPERTY IS NOT LOCATED WITHIN 500 FEET OF ANY EXISTING OR PROPOSED PRINCIPAL OR INTERMEDIATE ARTERIAL HIGHWAY RIGHT-OF-WAY LINE. PER DESIGN MANUAL VOLUME 1, COMPLETE STREETS AND BRIDGES, SECTION 5.2(0)(2)(c).
17. A TRAFFIC STUDY IS REQUIRED FOR THIS SUBDIVISION, IT IS PROVIDED BY MARS GROUP, INC., DATED JUNE, 2019, THE ADEQUATE ROAD FACILITIES COMPLETE STREET MULTIMODAL TRAFFIC EVALUATION REPORT WAS APPROVED ON MAY 15, 2023. BASED ON THE DATA AND ANALYSIS PRESENTED IN THE TRAFFIC STUDY IT WAS DETERMINED THAT THE PROPOSED DEVELOPMENT CAN BE ADEQUATELY ACCOMMODATED BY THE SURROUNDING AREA ROAD SYSTEM.
REPORT COMPLETED ON: JUNE 23, 2022
PLAN NUMBER THE REPORT WAS SUBMITTED UNDER: SP-23-002
KEY INTERSECTION IDENTIFIED FOR THE STUDY: HOWARD COUNTY LIBRARY, MILLER BRANCH, 9421 FREDERICK ROAD, ELLICOTT CITY, MD 21042.
KEY INTERSECTIONS OVER THE KEY INTERSECTIONS: HOWARD COUNTY LIBRARY, MILLER BRANCH, 9421 FREDERICK ROAD, ELLICOTT CITY, MD 21042.
KEY INTERSECTION POINTS WERE COLLECTED WHILE: HOWARD COUNTY PUBLIC SCHOOL 2021-2022 WAS IN SESSION.
DESIGN YEAR LEVEL-OF-SERVICE AT KEY INTERSECTION: AM PEAK HOUR 'B'; PM PEAK HOUR 'C'.
MITIGATION REQUIREMENT: MITIGATION MEASURES ARE NOT REQUIRED BY THIS STUDY.
18. THIS SUBDIVISION IS NOT LOCATED ON A SCENIC ROAD.
19. COMMUNITY MEETING WAS HELD ON JULY 14, 2022 AT THE HOWARD COUNTY LIBRARY, MILLER BRANCH, 9421 FREDERICK ROAD, ELLICOTT CITY, MD 21042.
20. STORMWATER MANAGEMENT ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN PROVIDED TO THE MAXIMUM EXTENT PRACTICAL (MEP). THE STORMWATER MANAGEMENT SYSTEMS SHOWN ON THIS PLAN ARE CONCEPTUAL IN SIZE, SHAPE AND LOCATION. THE ACTUAL DESIGN MAY CHANGE WITH THE FINAL PLAN AND SITE DEVELOPMENT PLAN STAGES.
THE DECLARATION OF COVENANTS SHALL BE RECORDED FOR ON-LOT DEVICES AND ALL SHARED SW DEVICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH MAINTENANCE EASEMENT AGREEMENT.
STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007. ENVIRONMENTAL SITE DESIGN METHODS SHALL BE UTILIZED, INCLUDING DRY WELLS (M-5), GRASS SWALES (M-6), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) AND MICRO-BIORETENTION (M-6) FACILITIES. ALL FACILITIES ARE TO BE PRIVATELY OWNED AND MAINTAINED.
21. THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY USING 0.27 ACRES OF OPT-SITE FOREST BANK ON THE VALLEY MEDE, SECTION 14, LOTS 71 AND 72 (F-09-051), PLAN NUMBER 20709-10. THERE IS NO SURETY OR INSPECTION FEE FOR THIS PLAN. THE REMAINING FOREST CONSERVATION OBLIGATION WILL FULFILLED USING DIFFERENT FOREST BANK, NOT YET IDENTIFIED, AT FINAL PLAN STAGE.
22. LANDSCAPING IS PROVIDED WITH A CERTIFIED LANDSCAPE PLAN IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL POSTING OF SURETY FOR REQUIRED LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL WILL BE REQUIRED. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT AT FINAL PLAN STAGE.
23. 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.
24. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
25. THE CONTRACTORS SHALL MAINTAIN A 5-FOOT HORIZONTAL CLEARANCE AND A 1-FOOT VERTICAL CLEARANCE FROM ALL EXISTING AND PROPOSED WATER LINES, SEWER LINES, FIRE HYDRANTS, STORM DRAINS AND RELATED APPURTENANCES WHEN INSTALLING CABLE, TRANSFORMER PEDESTALS, GAS LINES, UTILITY POLES, GUIDE WIRES, AND OTHER UTILITY COMPONENTS. ANY PEDESTAL OR UTILITY COMPONENT PLACED IN CONFLICT WITH SIDEWALK OR COUNTY OWNED/MAINTAINED UTILITY WILL BE MOVED AT THE COMPANY'S EXPENSE. DO NOT DISTURB BUTTRESSES FOR FIRE HYDRANTS.
26. A) THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
B) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430)
C) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD).
D) 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 GA) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GA) 3" LONG; THE ANCHOR SHALL NOT EXTEND MORE THAN TWO (2) (QUICK PUNCH) HOLES ABOVE GRADE LEVEL.
27. A PRIVATE ROAD STREET NAME SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY, BUREAU OF HIGHWAYS ALONG ROUTE 108 UNLESS IT WAS PROVIDED UNDER 18-081. A PRIVATE ROAD STREET NAME SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY, BUREAU OF HIGHWAYS FOR THE ENTRANCE FROM PRESTWICK DRIVE. BOTH OF THESE SIGN SHALL BE PAID FOR BY THE DEVELOPER/OWNERS. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
28. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12' AND (16' SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD).
E) DRAINAGE ELEMENTS - CAPABLE OF PASSING 100 YEAR FLOOD PLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET OF MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
29. LOTS 2 THROUGH 5 ARE SUBJECT TO SECTION 13.402(c)(4) OF THE HOWARD COUNTY CODE OF ORDINANCES FOR MODERATE INCOME HOUSING UNITS. THIS SHALL BE ACCOMPLISHED BY A FEE-IN-LIEU OF CONSTRUCTION PAYMENT THAT IS TO BE CALCULATED AND PAID AT THE TIME OF BUILDING PERMIT ISSUANCE. LOT 1 IS EXEMPT AS IT CONTAINS THE EXISTING HOUSE. IF THE LOT 1 DWELLING IS REMOVED THE NEW DWELLING SHALL BE SUBJECT TO THE MIHU REQUIREMENTS IN PLACE AT THAT TIME. THE DEVELOPER WILL ENTER INTO AN AGREEMENT TO PAY A FEE-IN-LIEU OF THE CONSTRUCTION FOR THE MODERATE INCOME HOUSING UNIT REQUIREMENT AT THE FINAL PLAN STAGE.
30. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
31. PER SECTION 16.121(a)(2) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THIS PROJECT IS SUBJECT TO 6% OPEN SPACE REQUIREMENT (7,958 SF). OPEN SPACE OBLIGATION IS TO BE FULFILLED BY A FEE IN LIEU PAYMENT OF \$4,854.00 PER ACRE. THE TOTAL PAYMENT IS TO BE \$4,854.00. SEE DEPARTMENT OF RECREATION AND PARKS LETTER DATED FEBRUARY 21, 2023.
32. PDW HAS DETERMINED THAT OLD FREDERICK ROAD IS A NEIGHBORHOOD STREET 2. NO PARKING. THE LAND USE CONTEXT IS SUBURBAN AND THE TRANSPORTATION CLASSIFICATION IS COLLECTOR. THE DPW APPROVED 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 OPEN TO 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, BIKEWAYS MASTER PLAN AND HOWARD COUNTY INTERACTIVE MAP DESIGNATES OLD FREDERICK ROAD AS A SHARED ROADWAY WITH SAFETY TREATMENTS. DPW HAS VERIFIED AND APPROVED THE STREET TYPE DETERMINATION.
33. THE EXISTING POND DOES NOT SUPPORT WETLANDS. NO NEW WATERWAY WILL BE CONSTRUCTED. MDE HAS DETERMINED THE EXISTING POND IS NOT REGULATED, BASED ON THIS DETERMINATION HOWARD COUNTY WILL NOT REQUIRE AN ALTERNATIVE COMPLIANCE FOR THE POND REMOVAL. THE POND REMOVAL WILL BE REVIEWED BY MDE 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.
34. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES, OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
35. FOR THESE LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE PRIVATE DRIVEWAY AND THE OLD FREDERICK ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PRIVATE DRIVEWAY.
36. THERE IS ADEQUATE AREA FOR STUDENTS TO STAND WHILE WAITING FOR THE BUS ON THE SIDEWALK ALONG THE DRIVEWAY ENTRANCE.
37. FOR DRIVEWAY APRON REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.01. A DRIVEWAY CULVERT IS NOT REQUIRED SINCE THE CALCULATED FLOW OVER THE DRIVEWAY IS LESS THAN THE AMOUNT REQUIRED FOR A CULVERT (5 cfs).
38. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
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SITE DATA TABULATION

- 1) GENERAL SITE DATA
a. PRESENT ZONING: R-20
b. LOCATION: TAX MAP 18, GRID 07, PARCEL 23
c. APPLICABLE DPZ FILE REFERENCES: ECP-23-002
d. DEED REFERENCE: BOOK 21530 PAGE 0136
e. PROPOSED USE: 5 SFD LOTS;
f. PROPOSED WATER AND SEWER: PUBLIC WATER AND PUBLIC SEWER
2) AREA TABULATION
a. TOTAL AREA OF OVERALL SITE: 2.93 Ac.±
b. AREA OF 100 YEAR FLOODPLAIN: 0.00 Ac.±
c. AREA OF STEEP SLOPES (25% OR GREATER): 0.11 Ac.±
d. AREA OF STEEP SLOPES LESS THAN 10 VERT. FEET: 0.11 Ac.±
e. NET AREA OF SITE: 2.93 Ac.±
f. LIMIT OF DISTURBANCE (APPROX.): 2.05 Ac.±
g. AREA OF PROPOSED BULIDABLE LOTS: 2.82 Ac.±
h. AREA OF OPEN SPACE LOTS: 0.00 Ac.±
i. AREA OF PROPOSED PUBLIC ROAD: 0.00 Ac.±
j. AREA OF PROPOSED PUBLIC R/W DEDICATION: 0.11 Ac.±
3) DENSITY TABULATION
a. NET AREA OF OVERALL SITE: 2.93 Ac.±
b. MINIMUM LOT SIZE: 20,000 SF
c. TOTAL NUMBER OF BULIDABLE LOTS: 5
d. TOTAL NUMBER OF OPEN SPACE LOTS: 0

TENTATIVELY APPROVED DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY

Signature block for Mary Kendall, Planning Director, dated 6/23/2023. Includes a stamp from the Department of Planning and Zoning, Howard County.

BOUNDARY COORDINATES table with columns for Point #, Northing, and Easting. Includes a Minimum Lot Size Chart with columns for Lot, Gross Area (SF), Pipestem Area (SF), and Minimum Lot Size (SF).

Stormwater Management Summary Chart with columns for Required and Provided values for Pe, ESDv, and Rev. Includes a SHEET INDEX table listing sheets 1 through 8 and their descriptions.

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING table with columns for Total Number of Lots/Units Proposed, Number of MIHU Required, Number of MIHU Provided Onsite, Number of APFO Allocations Required, and MIHU Fee-in-Lieu.

SOILS CHART SHEET table with columns for Symbol, Hydric, Hydrologic Group, Name, and k-value. Includes a note: ** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY MAY 2022, MAP 10.

Professional seal for John M. Carney, Professional Engineer, License No. 45577, State of Maryland. Includes the text: Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer in the State of Maryland, License No. 45577, Expiration Date: 06-08-2024.

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
PROJECT: 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
PRELIMINARY EQUIVALENT SKETCH PLAN
COVER SHEET
DATE: JUNE, 2023 BEI PROJECT NO: 3119
DESIGN: JC DRAFT: JC SCALE: AS SHOWN SHEET 1 OF 8

VICINITY MAP showing the project location relative to surrounding roads and landmarks. Includes a legend for symbols like Limit of Submission, Ex. Treeline, Ex. Contours, Soil Symbol, Tree, and Slopes.



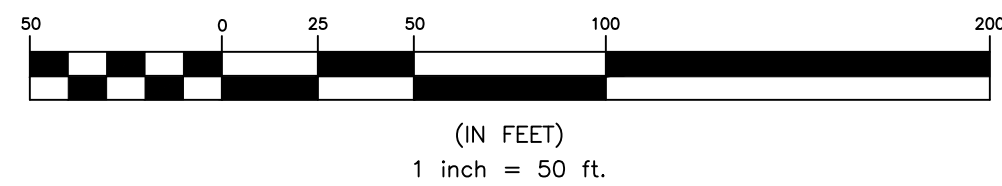
LEGEND

LIMIT OF SUBMISSION	---
EX. TREELINE	~~~~~
EX. CONTOURS	-478 -480
SOIL SYMBOL AND DELINEATION	GgC
TREE 24" DBH OR GREATER	○
LANDSCAPE TREE F-19-038	○
LIMIT OF WATER'S OF THE US	---

SOILS CHART SHEET

SYMBOL	HYDRC	HYDROLOGIC GROUP	NAME	K-VALUE Whole Soil
GbB	A		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.32
GgC	B		GLENNELG LOAM, 8 TO 15 PERCENT SLOPES	0.43
GgB	C		GLENNELG SHALE SILTY LOAM, 9 TO 19 PERCENT SLOPES	0.49

** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY MAY 2022, MAP 10.



The following table summarizes the groundwater at each test boring:

Test Boring No.	Depth to groundwater during drilling (feet)	Depth to groundwater after 24-hours (feet)	Approximate elevation of groundwater
B-1	No water	No water	-
B-2	No water	No water	-
B-3	No water	8.1	452.8
B-4	No water	No water	-
B-5	7.25	6.45	455.1
B-6	7.25	6.40	455.2
B-7	No water	No water	-
B-8	No water	No water	-

Bedrock Observations

Bedrock was not encountered within the test borings to the depths explored. Although Test Boring No. B-4 was terminated prior to its required depth, this is not necessarily indicative of bedrock, but rather dense and gravelly soils.

Field Infiltration Results

The following table summarizes our field infiltration test results:

Boring No.	Depth of pipe below grade (feet)	Approximate elevation of bottom of pipe	Average Infiltration Rate (inches/hour)	USDA Texture Class
B-3	4.5	456.4	8.0	Loamy Sand
B-6	2.3	459.3	1.3	Sandy Loam

The rates obtained by field testing are different than the laboratory derived USDA infiltration rates. The difference may be due to variations in the overall subsurface profile not revealed by the test borings performed for this study. In our view however, the field results are more indicative of the actual conditions and should be applied.

Stormwater Management Study
Proposed Single-Family Homes
Capstone Estates
8621 Old Frederick Road, Ellicott City, Howard County, MD
Page 6

Stormwater Management Design Recommendations

The "2000 Maryland Stormwater Design Manual", published by the Maryland Department of the Environment, states that stormwater management facilities utilizing infiltration shall have a Hydrologic Soil Group classification (HSG) of A or B and a minimum infiltration rate of 0.52 inches per hour. Hydrologic soil groups C or D may be used with the addition of underdrains. The bottom of any SWM facility utilizing infiltration should be located at least four feet above any groundwater or bedrock.

The results of our study indicate that suitable soils for SWM facilities utilizing infiltration were encountered at all of the eight test boring locations. The encountered soils all classified as either HSG A or B. Additionally, the field infiltration rates at Test Boring Nos. B-3 & B-6 were greater than 0.52 inches per hour. Groundwater was encountered at Test Boring Nos. B-3, B-5 & B-6 which may be related to the existing pond on the property as well as on the neighboring property.

Geotechnical Laboratories, Inc.
8980 State Route 106, Suite 30, Columbia, Maryland 21046
geolab@verizon.net 410-772-2220

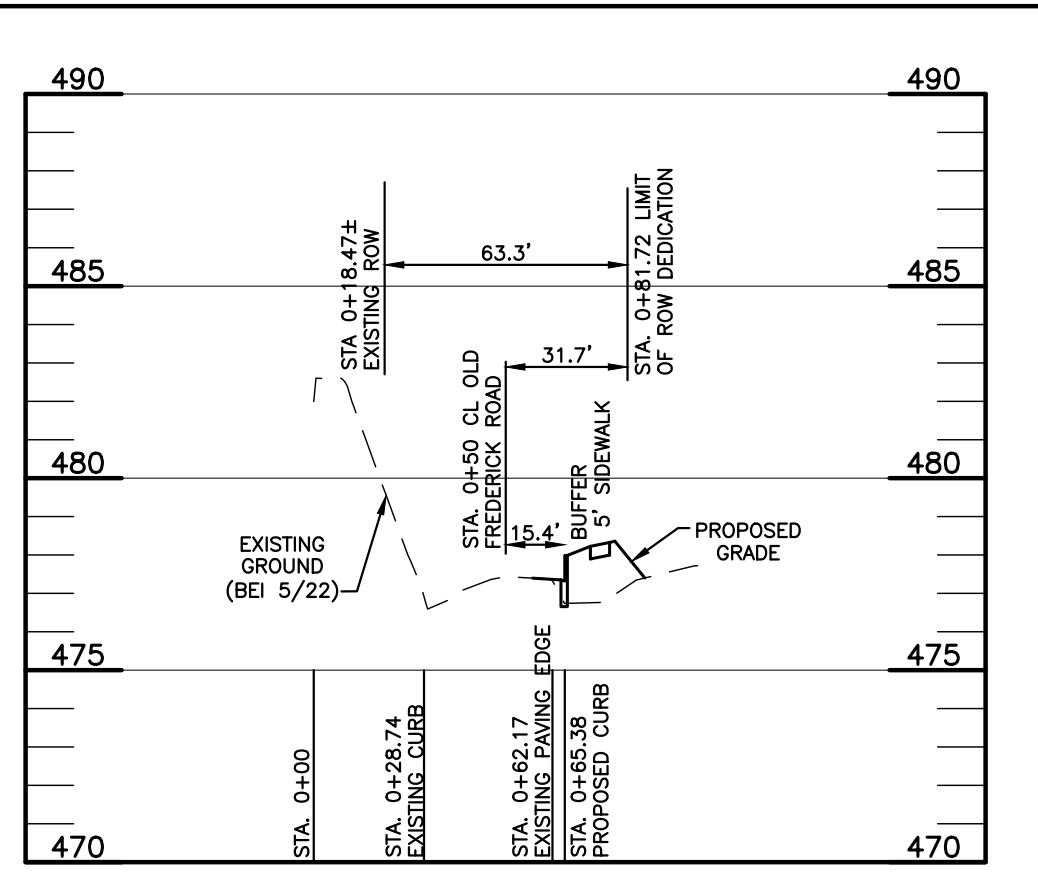
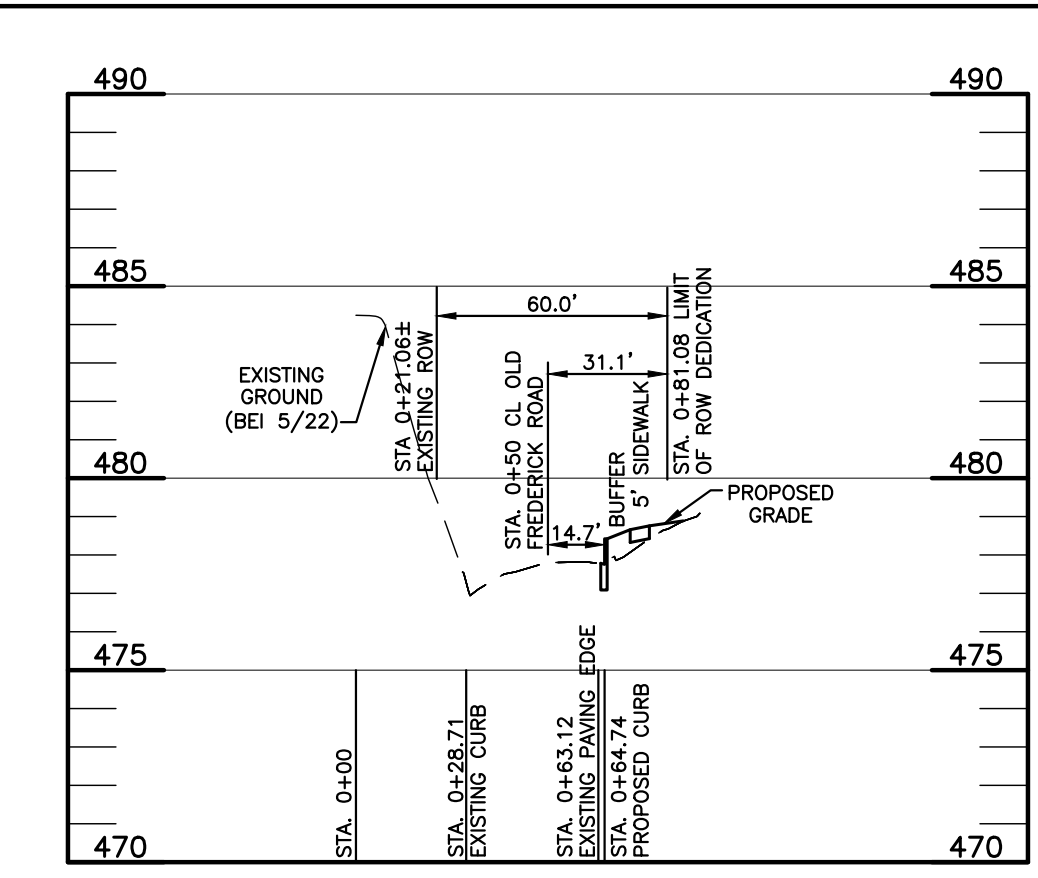
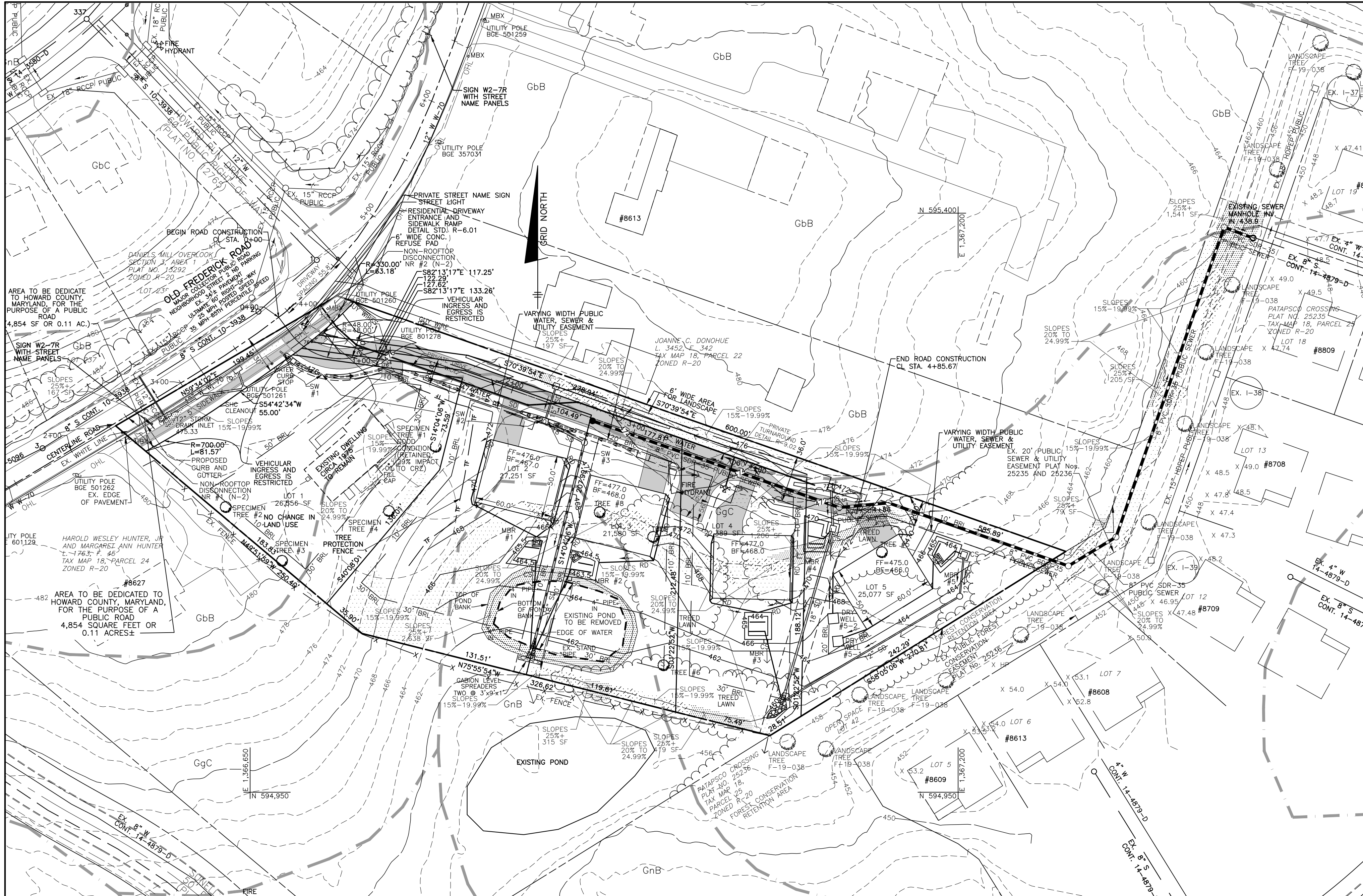
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DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

DocuSigned by:
Mary Kendall
148494238024466

6/23/2023

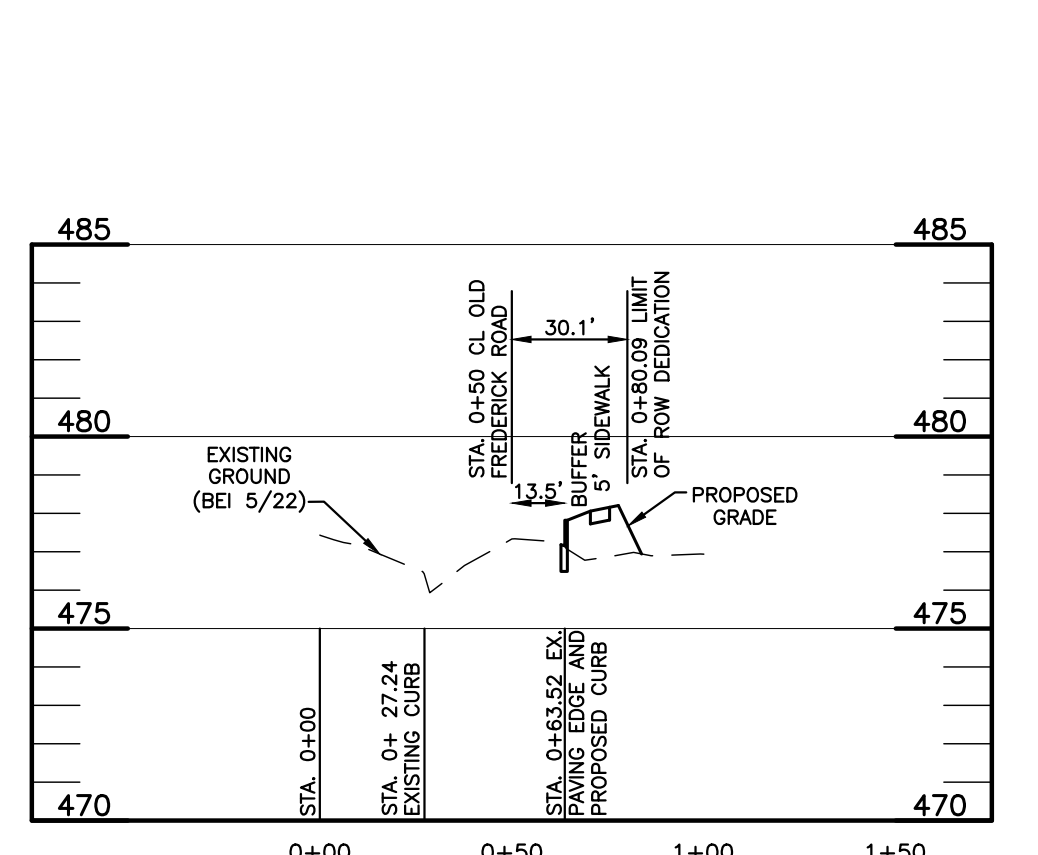
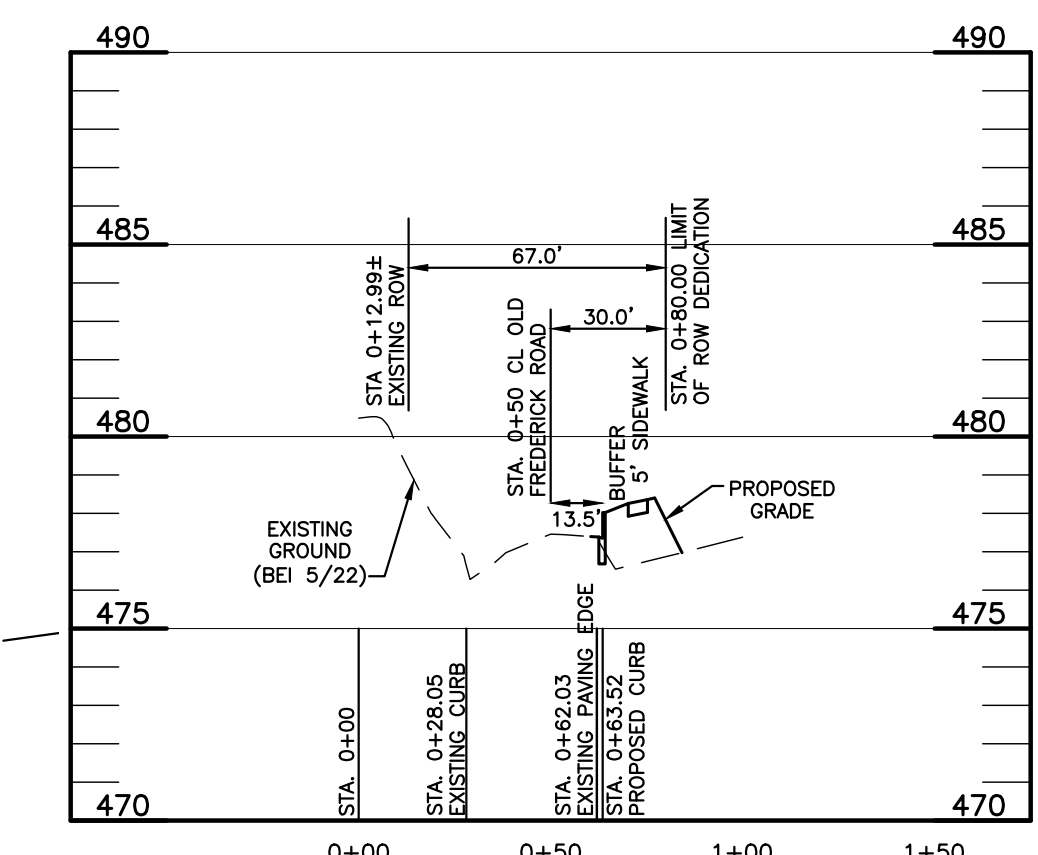
PLANNING DIRECTOR _____ DATE _____

NO.	DATE	REVISION
 BENCHMARK ENGINEERS, INC. 3300 NORTH ROBEY ROAD & SUITE 1404 ELICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6444 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: 06-08-2024. John M. Carney 06.06.2023
OWNER:	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	
DEVELOPER:	RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222	
DESIGN: JC	DRAFT: JC	PRELIMINARY EQUIVALENT SKETCH PLAN EXISTING CONDITION PLAN, SOILS MAP AND BORING PLAN DATE: JUNE, 2023 BEI PROJECT NO. 3119 SCALE: AS SHOWN SHEET 2 OF 8



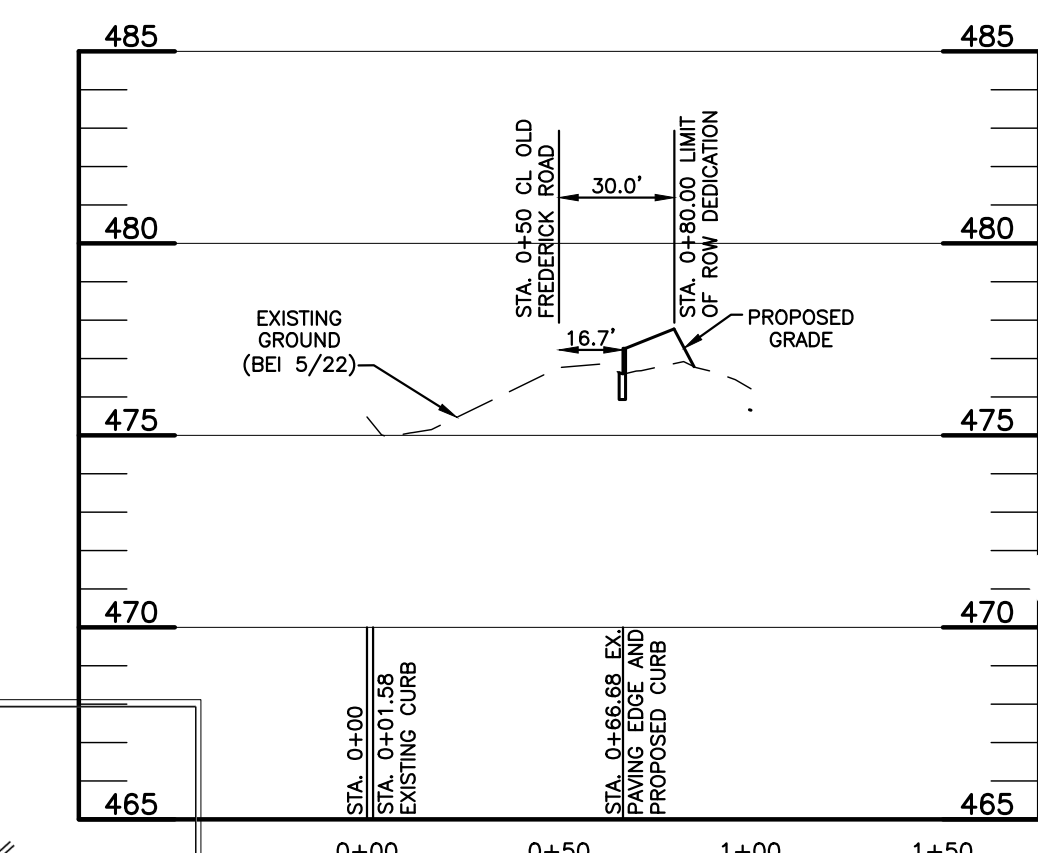
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Old Frederick Road
(25 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.

CROSS SECTION 3+00
Old Frederick Road
(25 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.

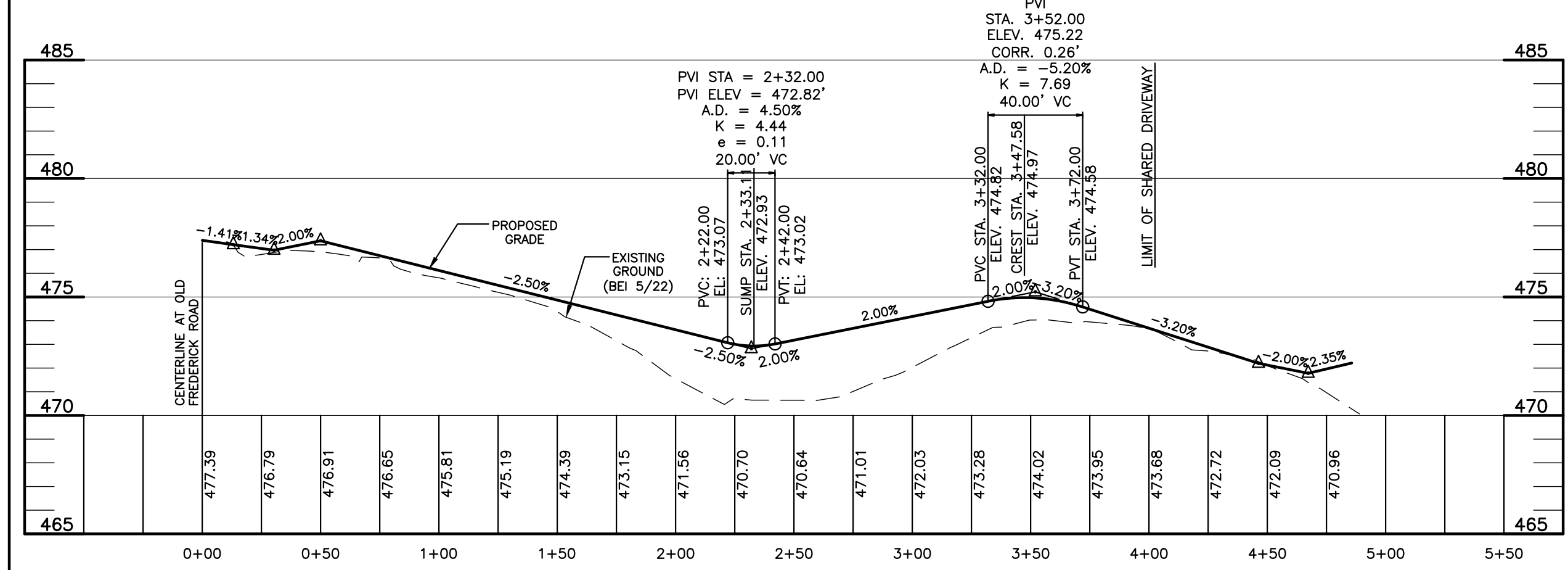


CROSS SECTION 3+50
Old Frederick Road
(25 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.

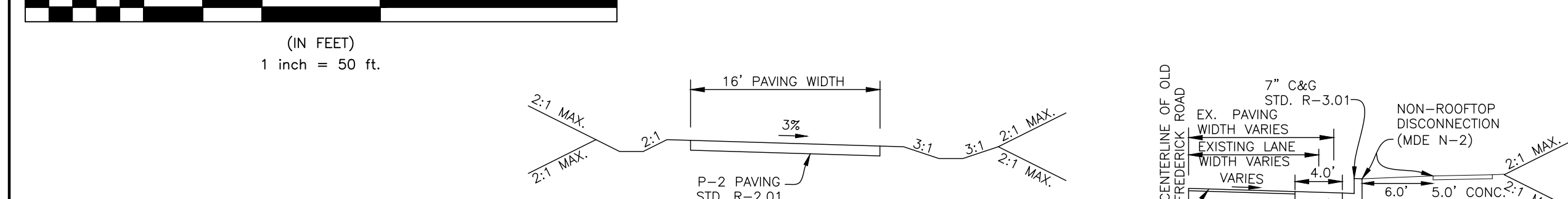
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Old Frederick Road
(25 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.



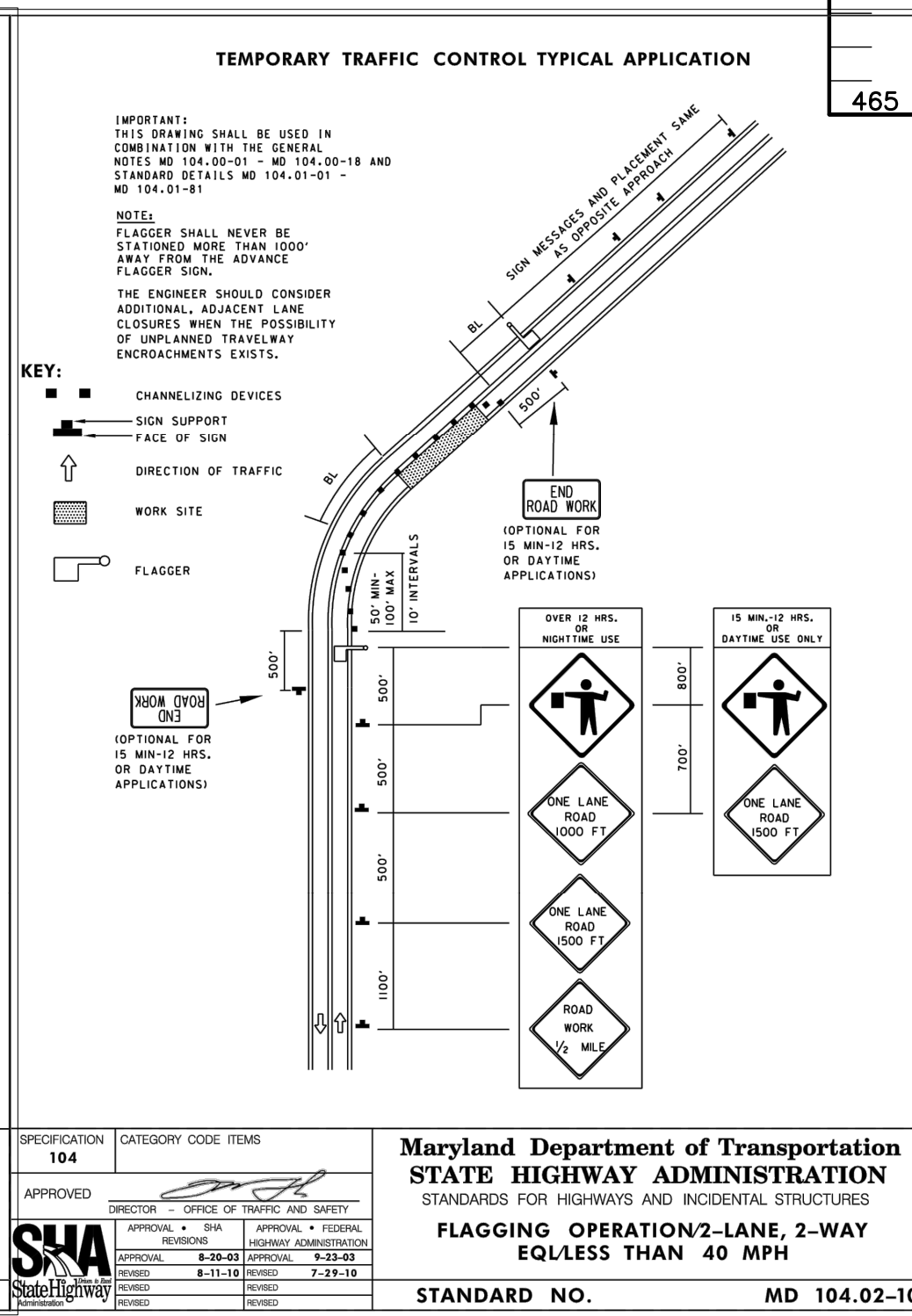
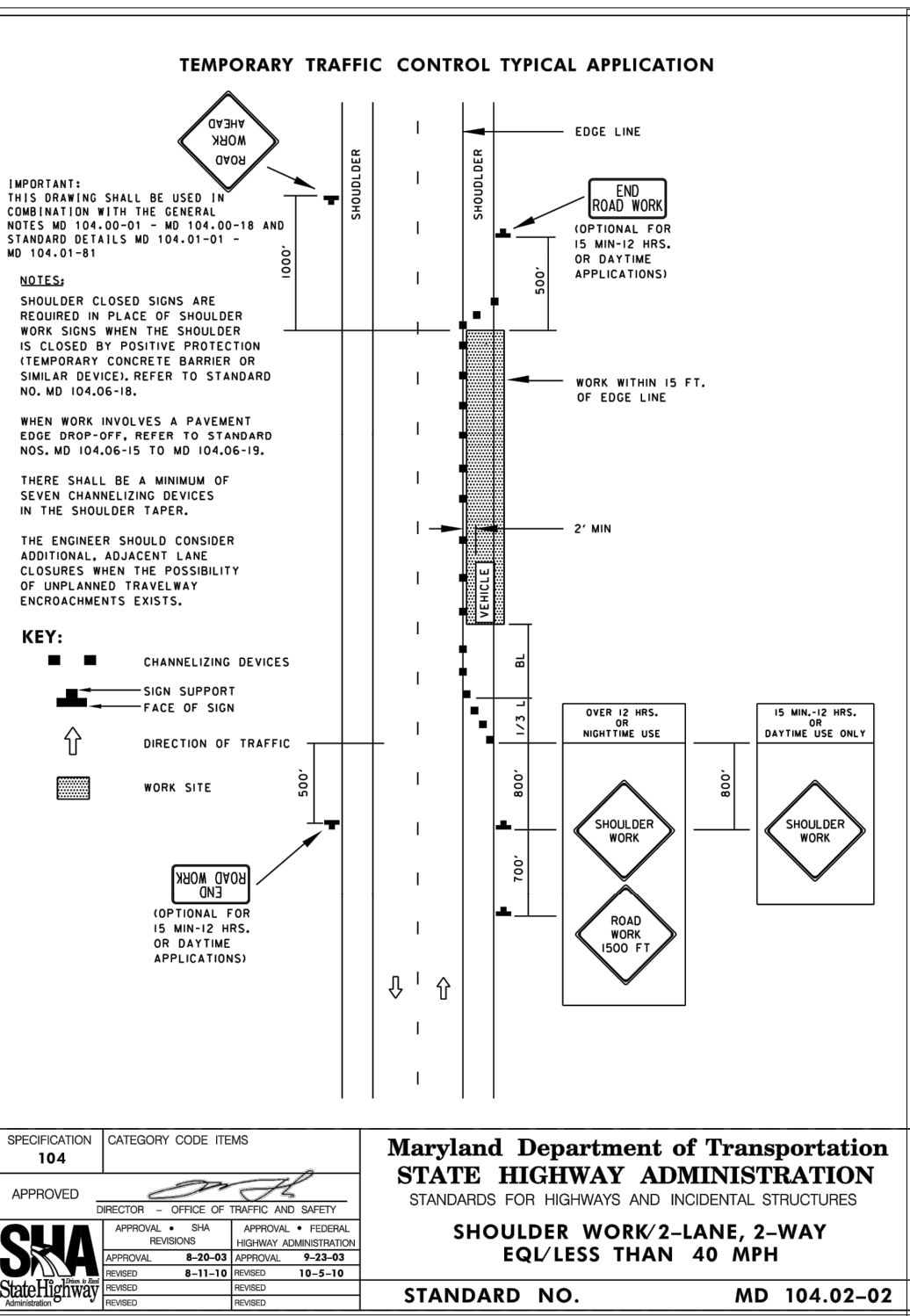
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Old Frederick Road
(25 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.



USE-IN-COMMON DRIVEWAY
(15 mph DESIGN SPEED)
SCALE: 1"=50' HORIZ., 1"=5' VERT.

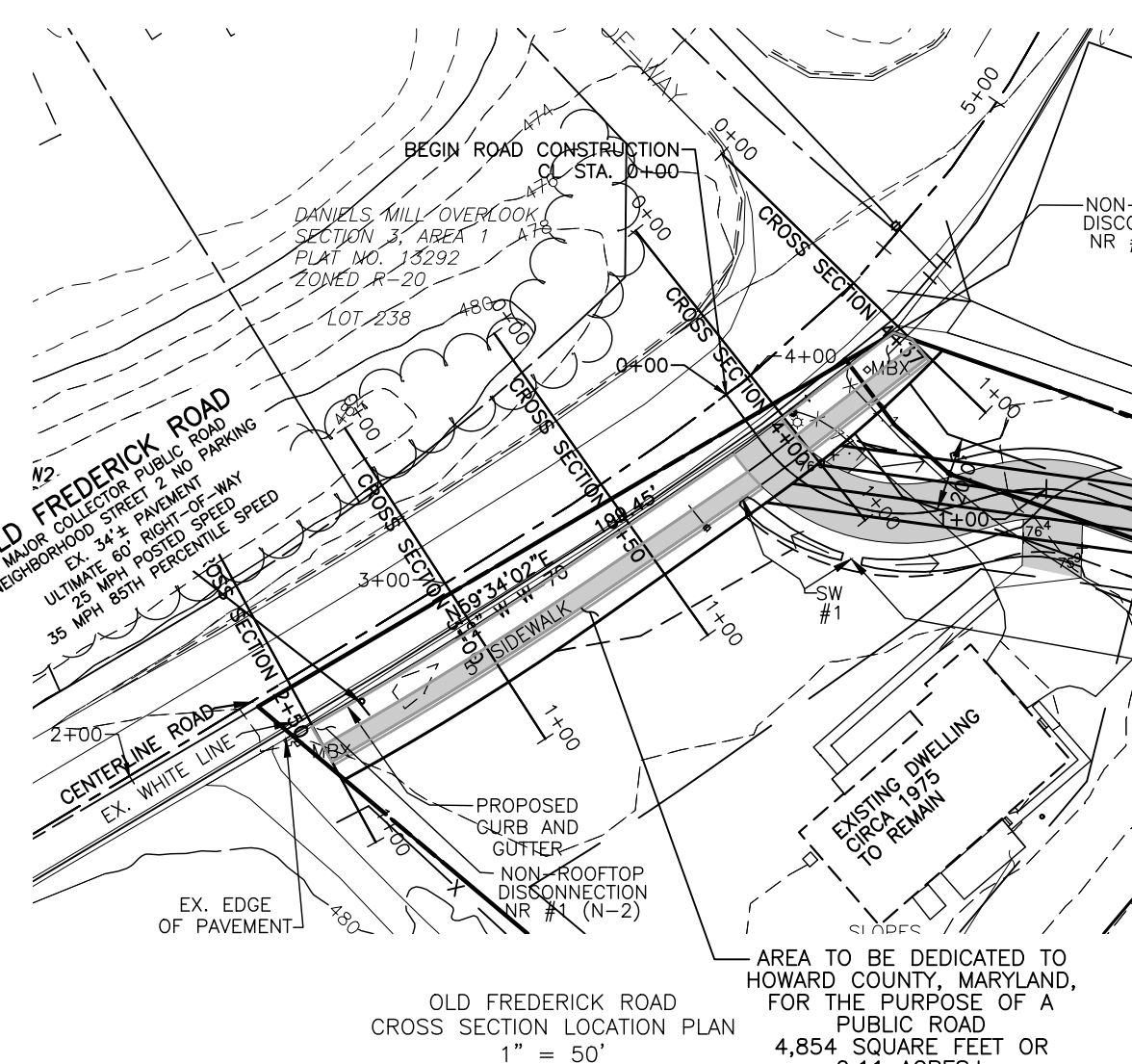


PRIVATE DRIVEWAY
TYPICAL SECTION
SCALE: 1" = 10'



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/2-LANE, 2-WAY
SLOTTED LESS THAN 40 MPH
STANDARD NO. MD 104.02-02

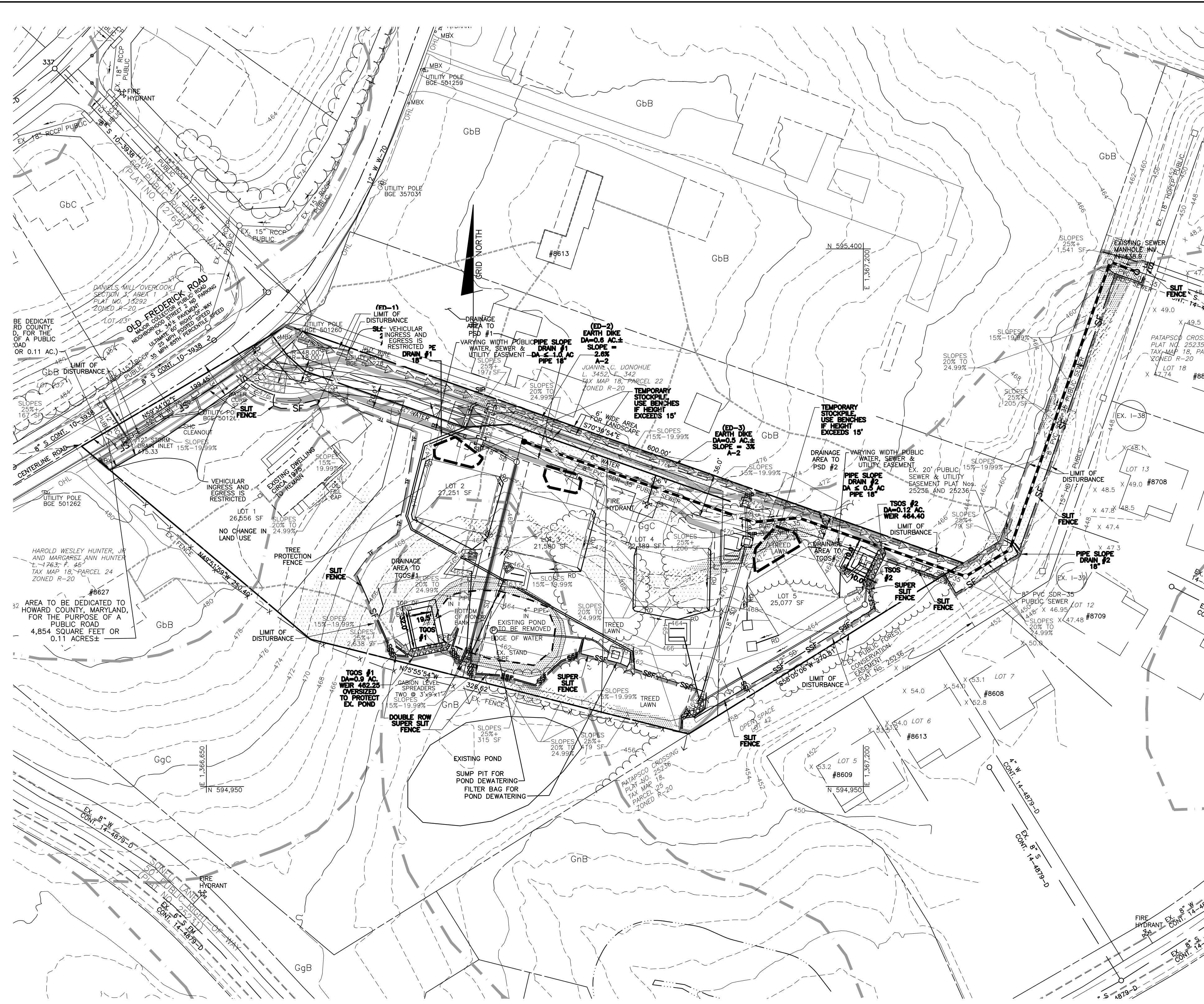
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
FLAGGING OPERATION/2-LANE, 2-WAY
EQLSS THAN 40 MPH
STANDARD NO. MD 104.02-10



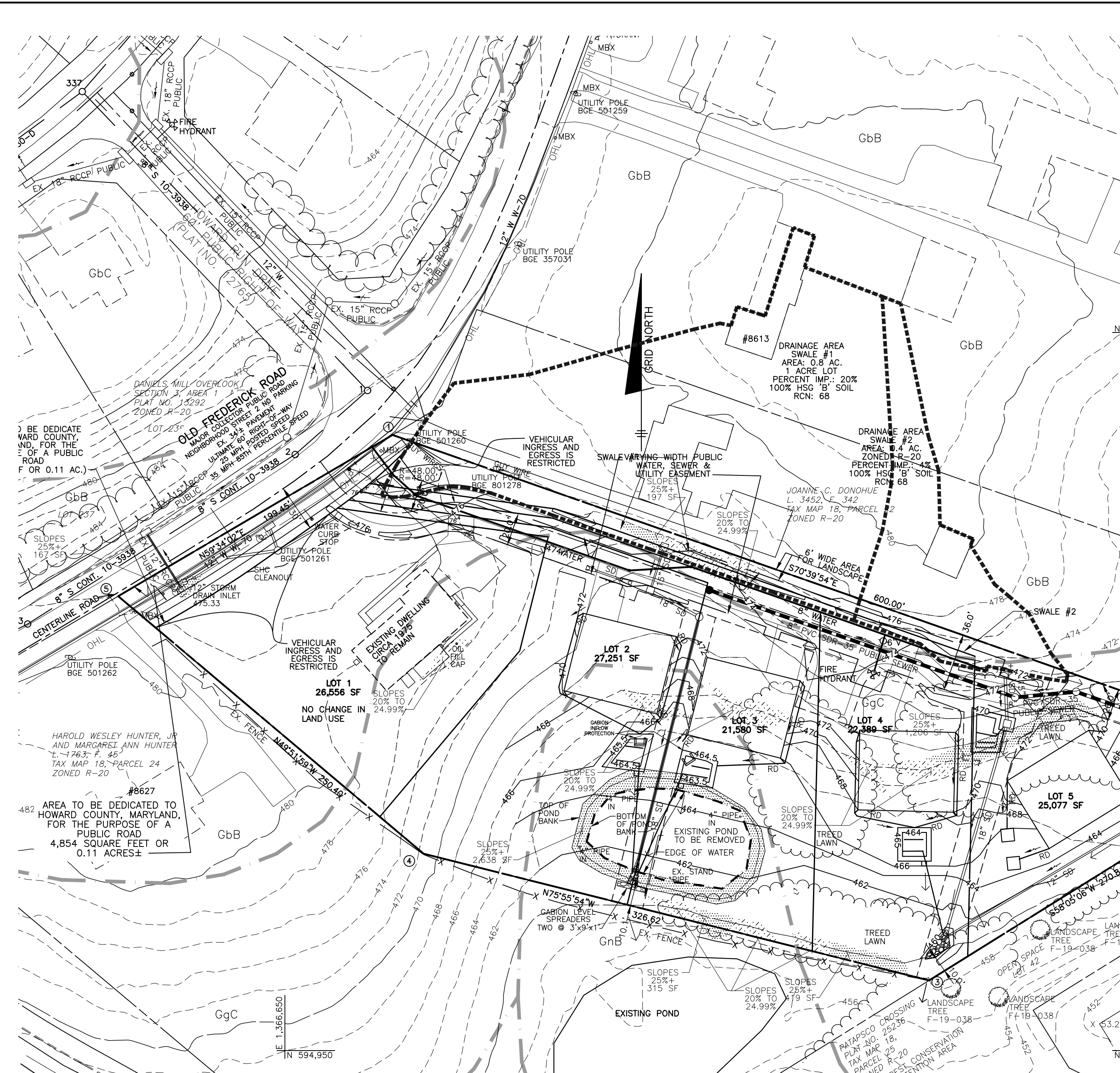
CROSS SECTION LOCATION PLAN
SCALE: 1" = 50'

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC. 3300 NORTH ROAD ROAD & SUITE 140 4 ELLECIOT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM		
OWNER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222		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: 06-08-2024.
DEVELOPER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222		John M. Carney 06.06.2023
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		
PRELIMINARY EQUIVALENT SKETCH PLAN PRELIMINARY SITE PLAN, GRADING PLAN, DRIVEWAY PROFILE, MOT AND OLD FREDERICK ROAD CROSS SECTIONS		
DATE: JUNE, 2023	BEI PROJECT NO. 3119	
DESIGN: JC	DRAFT: JC	SCALE: AS SHOWN SHEET 3 OF 8



SEDIMENT AND EROSION CONTROL PLAN WITH TEMPORARY FEATURES DRAINAGE AREA MAP



PERMANENT SWALES DRAINAGE AREA MAP

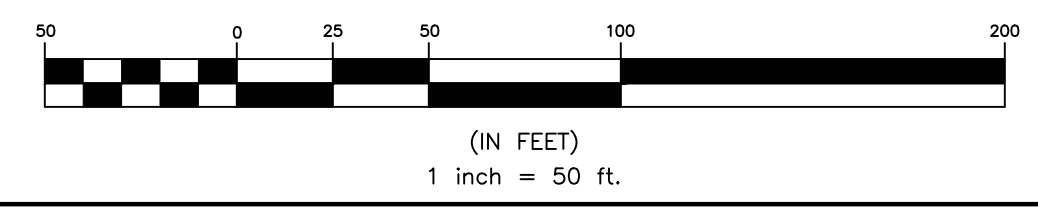
** HIGHLY ERODIBLE, K>0.35, AND STEEPER THAN 5% OR 15% AND GREATER SLOPES TAKEN FROM THE NRCS WEB SOIL SURVEY MAY 2022, MAP 10.

Capstone Estate SP-23-002
SEC Computations

Practice	Q10	V10	d10	Q2	V2	d2	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?
Bypass SW-1	2.64	3.01	0.33	0.98	2.17	0.19	2.5%	0.03	2	2:1	2.0	0.51	okay	okay	okay
Bypass SW-2	0.70	2.19	0.14	0.26	1.50	0.08	4.0%	0.03	2	2:1	2.0	0.35	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	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	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	okay

Temporary Stone/Gabion Outlet Structure												
Designation	Drainage Area SF	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	38232	0.88	TGOS	1580	461.50	463.00	462.25	460.00	19.50	32.00	2017	Yes
#2	5319	0.12	TSOS	220	463.40	464.90	464.40	462.15	10.00	10.00	519	Yes

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DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
DocuSigned by:
Mary Kendall
6/23/2023
PLANNING DIRECTOR DATE



- 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
 - SLOPES 25% AND GREATER
 - SLOPES 20.00% TO 24.99%
 - SLOPES 15.00% TO 19.99%
 - LIMIT OF DISTURBANCE
 - EARTH DIKE
 - SUPER SILT FENCE
 - SILT FENCE
 - STABILIZATION MATTING
 - TEMPORARY STONE OR GABION OUTLET SEDIMENT TRAP
 - STABILIZED CONSTRUCTION ENTRANCE WITH BERM
 - PERMANENT DRAINAGE AREA
 - TEMPORARY DRAINAGE AREA
 - INLET PROTECTION
 - MOUNTABLE BERM
 - TREE PROTECTION FENCE

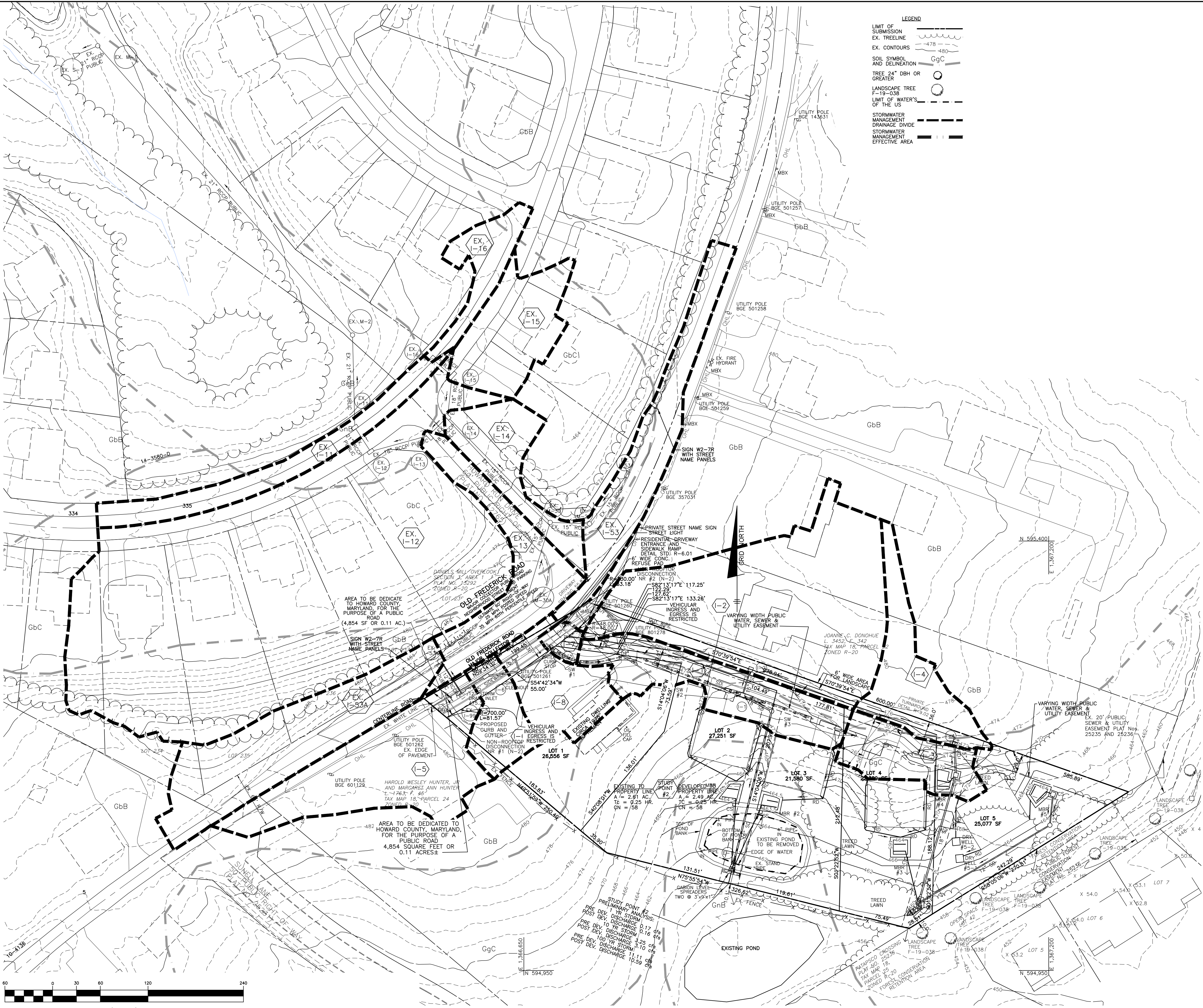
NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
3300 NORTH ROBEY ROAD & SUITE 1406 ELICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (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: 06-08-2024.

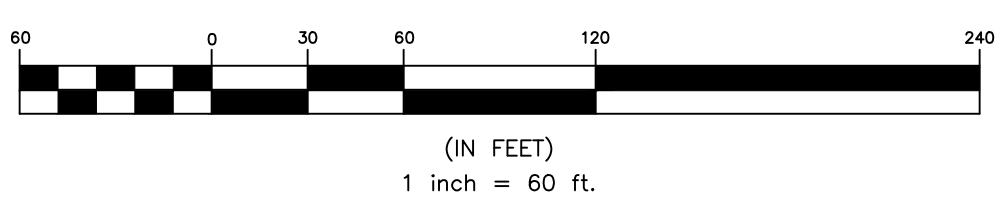
John M. Carney 06.06.2023

<p>OWNER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222</p>	<p>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</p>
<p>DEVELOPER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222</p>	<p>PRELIMINARY EQUIVALENT SKETCH PLAN SEDIMENT AND EROSION CONTROL PLAN AND DRAINAGE AREA MAP</p>
<p>DATE: JUNE, 2023 DESIGN: JC DRAFT: JC</p>	<p>BEI PROJECT NO. 3119 SCALE: AS SHOWN SHEET 4 OF 8</p>



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
- STORMWATER MANAGEMENT DRAINAGE DIVIDE
- STORMWATER MANAGEMENT EFFECTIVE AREA



STORM DRAIN DRAINAGE AREA MAP ON-SITE SYSTEM AND F-97-042 SYSTEM

SOILS CHART SHEET

SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME	K-VALUE	Whole Soil
GbB		A	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.32	
GgC		B	GLENELO LOAM, 3 TO 15 PERCENT SLOPES	0.43	
GbP	YES	C	GLENEVILLE SILTY LOAM, 0 TO 8 PERCENT SLOPES	0.48	

D.A. #	AREA (Ac.)	"C" (< 25 Yr)
I-1	0.30	0.26
I-2	0.91	0.22
I-3	0.19	0.28
I-4	0.24	0.23
I-5	0.49	0.48
I-6	0.13	0.33
I-7	0.03	0.50
I-8	0.20	0.33
EX I-11	0.21	0.86
EX I-12	2.32	0.35
EX I-13	0.30	0.81
EX I-14	0.20	0.66
EX I-15	0.26	0.43
EX I-16	0.13	0.68
EX I-53A	0.47	0.54
EX I-53	0.32	0.86
EX I-59	2.49	0.26

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

DocuSigned by:
Mary Kendall 6/23/2023

PLANNING DIRECTOR DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
3300 NORTH RIDGE ROAD & SUITE 140 & ELICOTT CITY, MARYLAND 21043
(P) 410-465-9105 (F) 410-465-6444
WWW.BE-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: 06-08-2024.

John M. Carney 06.06.2023

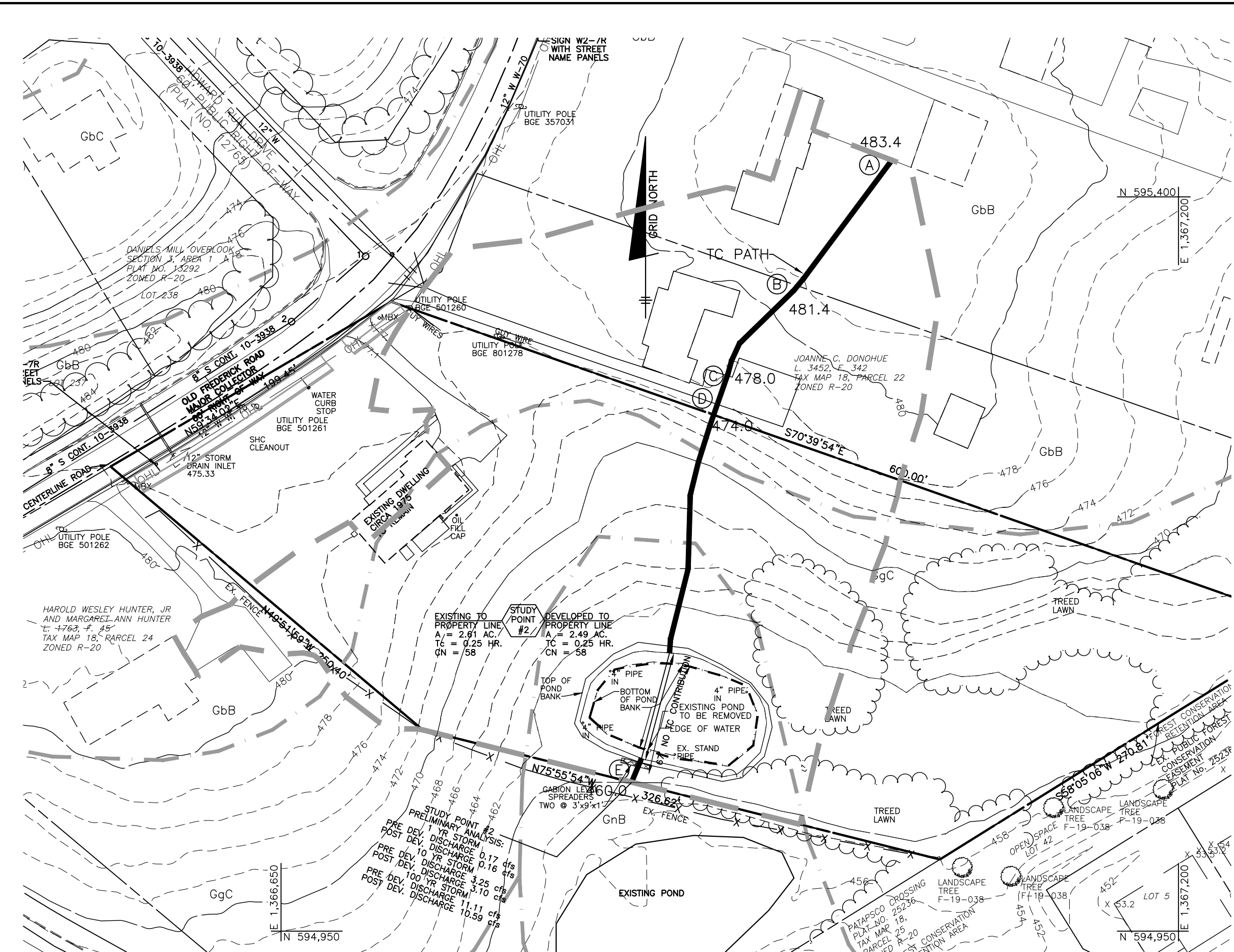
OWNER:
RAINMAKER DEVELOPMENT, INC.
2101 MILLERS MILL ROAD
COOKSVILLE, MD 21723
443-829-9222

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

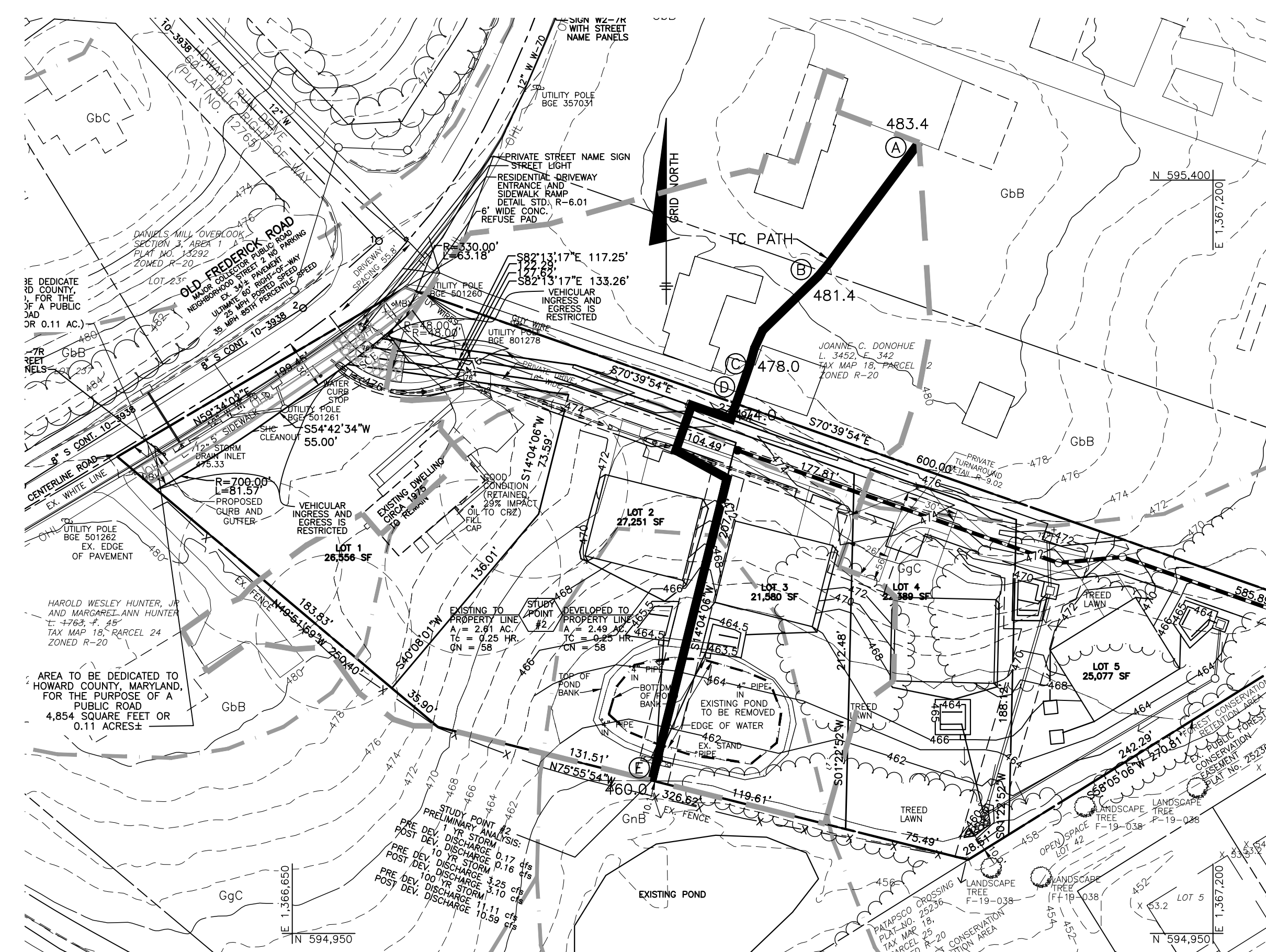
DEVELOPER:
RAINMAKER DEVELOPMENT, INC.
2101 MILLERS MILL ROAD
COOKSVILLE, MD 21723
443-829-9222

PRELIMINARY EQUIVALENT SKETCH PLAN
STORM DRAIN PLAN AND DRAINAGE AREA MAP

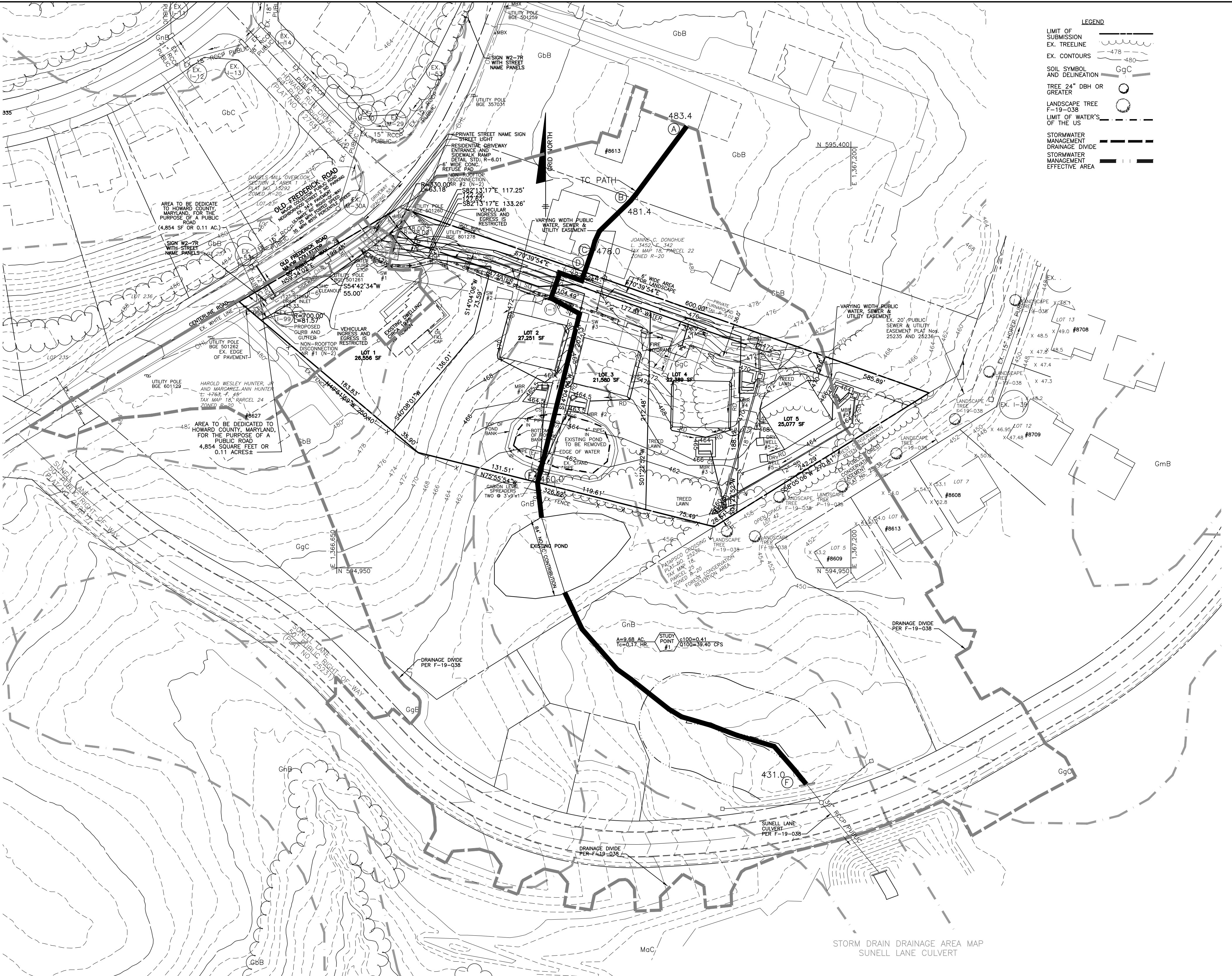
DATE: JUNE, 2023	BEI PROJECT NO. 3119
DESIGN: JC	DRAFT: JC
SCALE: AS SHOWN	SHEET 5 OF 8



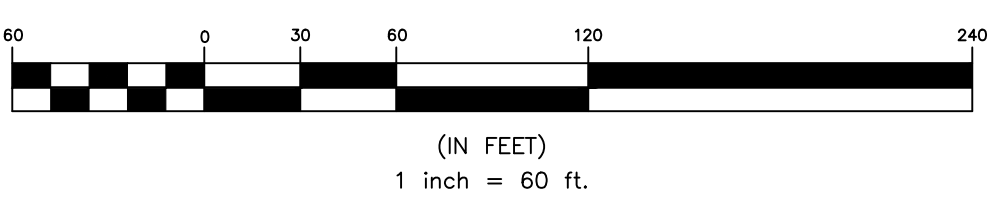
EX. CONDITIONS STORM DRAIN DRAINAGE AREA MAP
SOUTHERN BOUNDARY LINE (STUDY POINT #2)



DEV. CONDITIONS STORM DRAIN DRAINAGE AREA MAP
SOUTHERN BOUNDARY LINE (STUDY POINT #2)



STORM DRAIN DRAINAGE AREA MAP
SUNELL LANE CULVERT



LEGEND

- LIMIT OF SUBMISSION
- EX. TREELINE
- EX. CONTOURS
- SOIL SYMBOL AND DELINEATION
- TREE 24" DBH OR GREATER
- LANDSCAPE TREE F-19-038
- LIMIT OF WATER'S OF THE US
- STORMWATER MANAGEMENT DRAINAGE DIVIDE
- STORMWATER MANAGEMENT EFFECTIVE AREA

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Designed by
Mary Kendall
6/23/2023

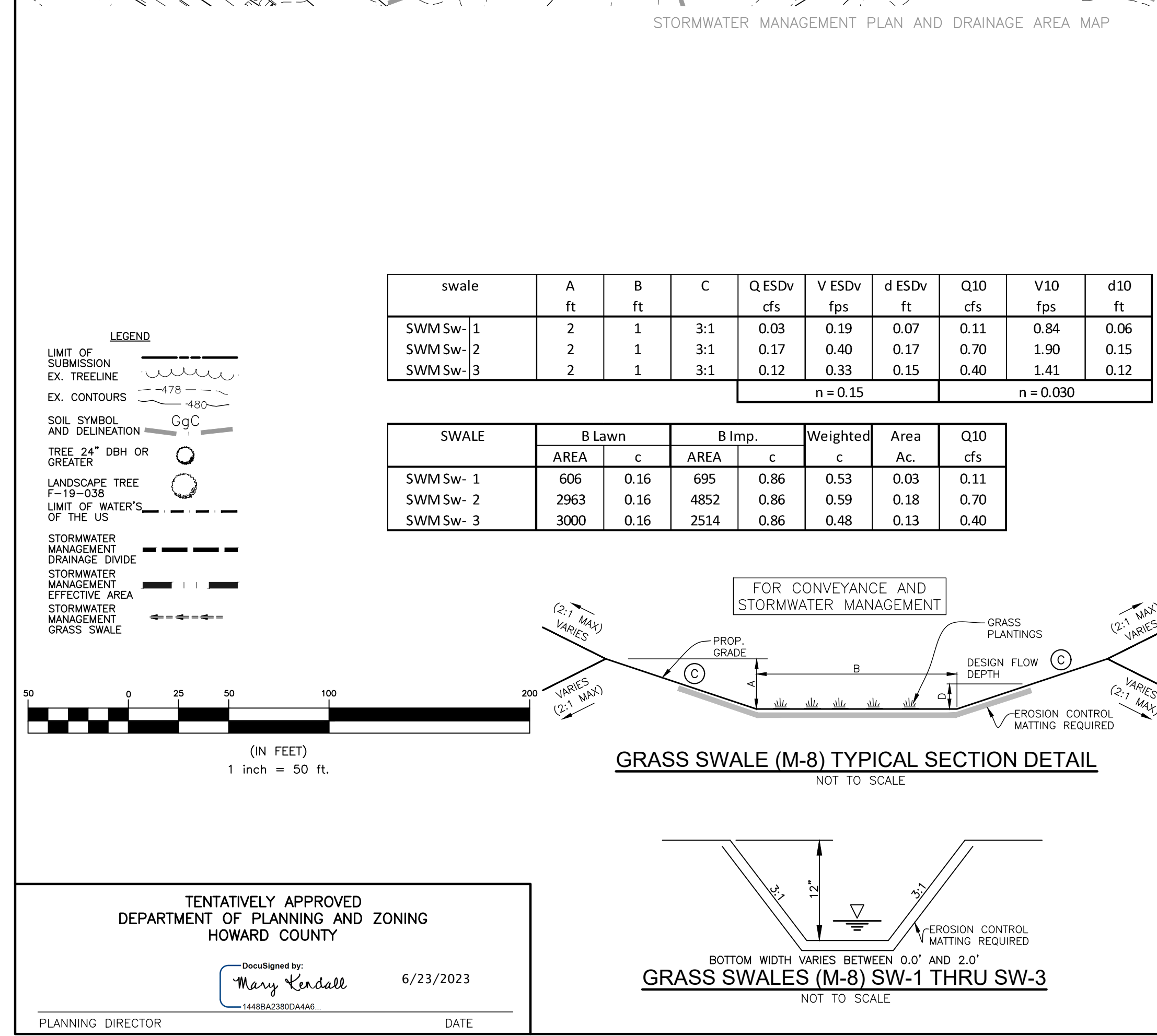
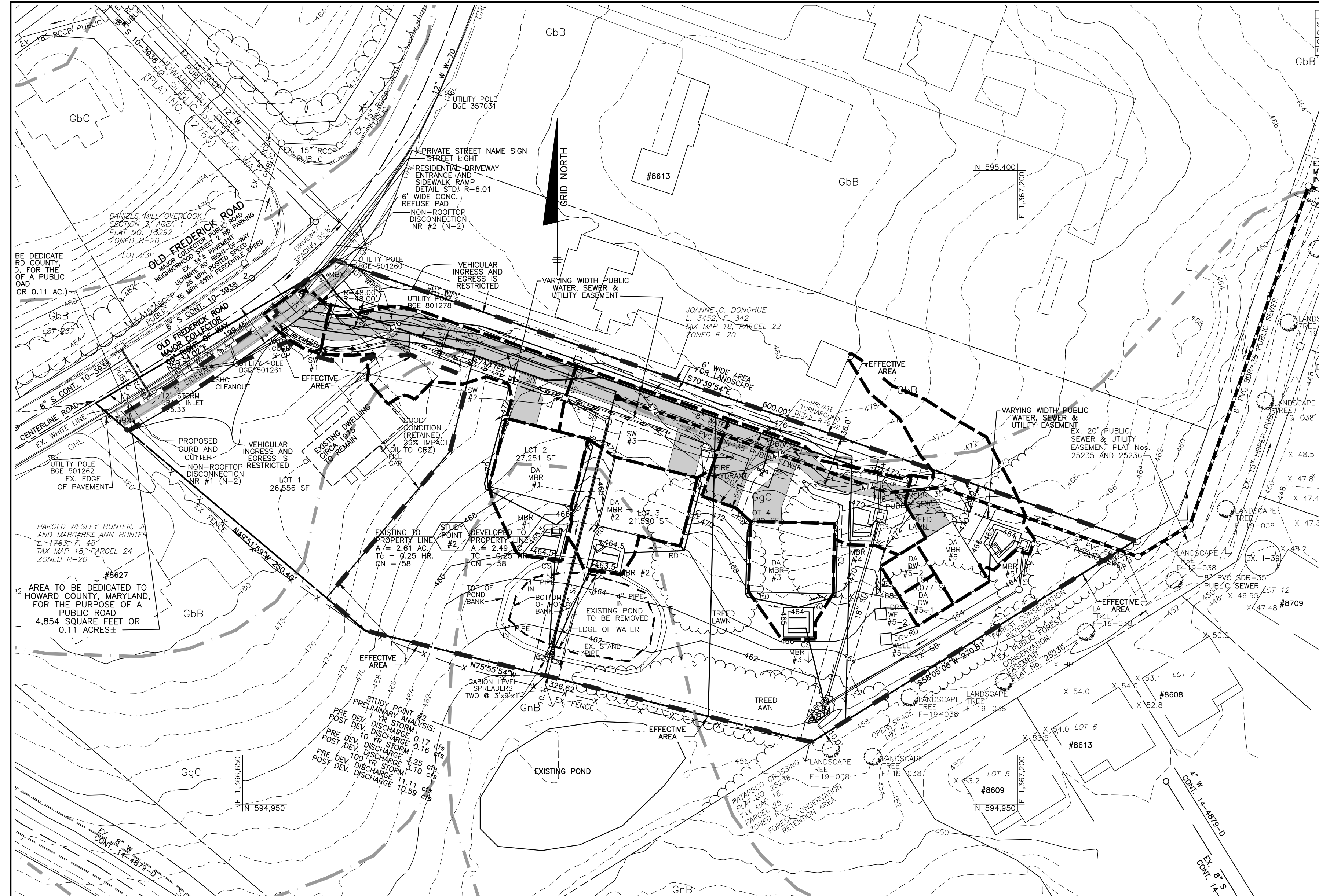
PLANNING DIRECTOR DATE

NO.	DATE	REVISION

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

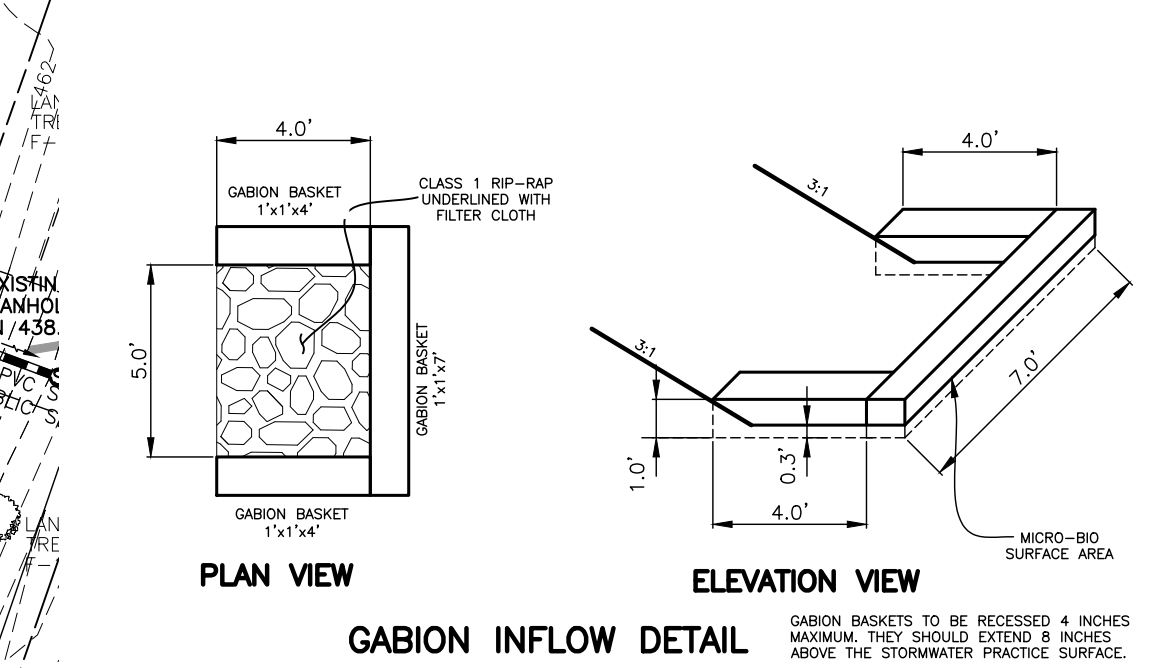
John M. Carney 06.06.2023

<p>OWNER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222</p>	<p>CAPSTONE ESTATES LOTS 1-5 R-20 SINGLE FAMILY DETACHED</p> <p>TAX MAP: 18, GRID: 07, PARCEL: 23 ZONED: R-20 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>
<p>DEVELOPER: RAINMAKER DEVELOPMENT, INC. 2101 MILLERS MILL ROAD COOKSVILLE, MD 21723 443-829-9222</p>	<p>PRELIMINARY EQUIVALENT SKETCH PLAN STUDY POINT DRAINAGE AREA MAPS</p>
<p>DATE: JUNE, 2023 DESIGN: JC DRAFT: JC</p>	<p>BEI PROJECT NO. 3119 SHEET 6 OF 8</p>



GRASS SWALES (M-8) SW-1 THRU SW-3 NOT TO SCALE

SOILS CHART SHEET table with columns for SYMBOL, HYDRIC, HYDROLOGIC GROUP, NAME, and k-VALUE.



GABION INFLOW DETAIL SCALE: 1" = 5'

PROJECT: Capstone Estates Facility Summary DATE: 05/19/23

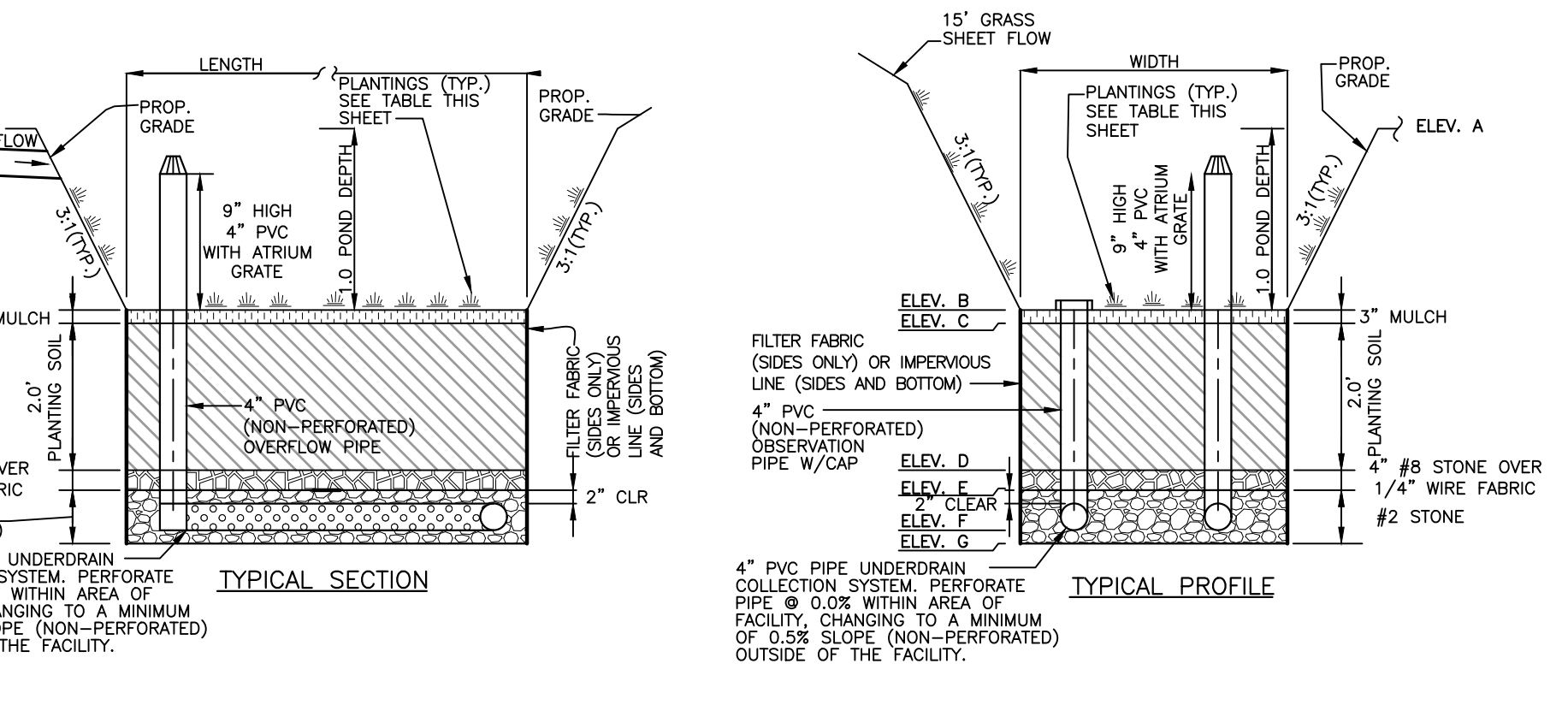
Table with columns: Facility, Drainage Area, Impervious, Vol, ESDv, etc. for BIOTENTION FACILITIES (M-6 AND F-6).

Table with columns: Facility, Drainage Area, Impervious, Vol, ESDv, etc. for GRASS SWALE FACILITY (M-8).

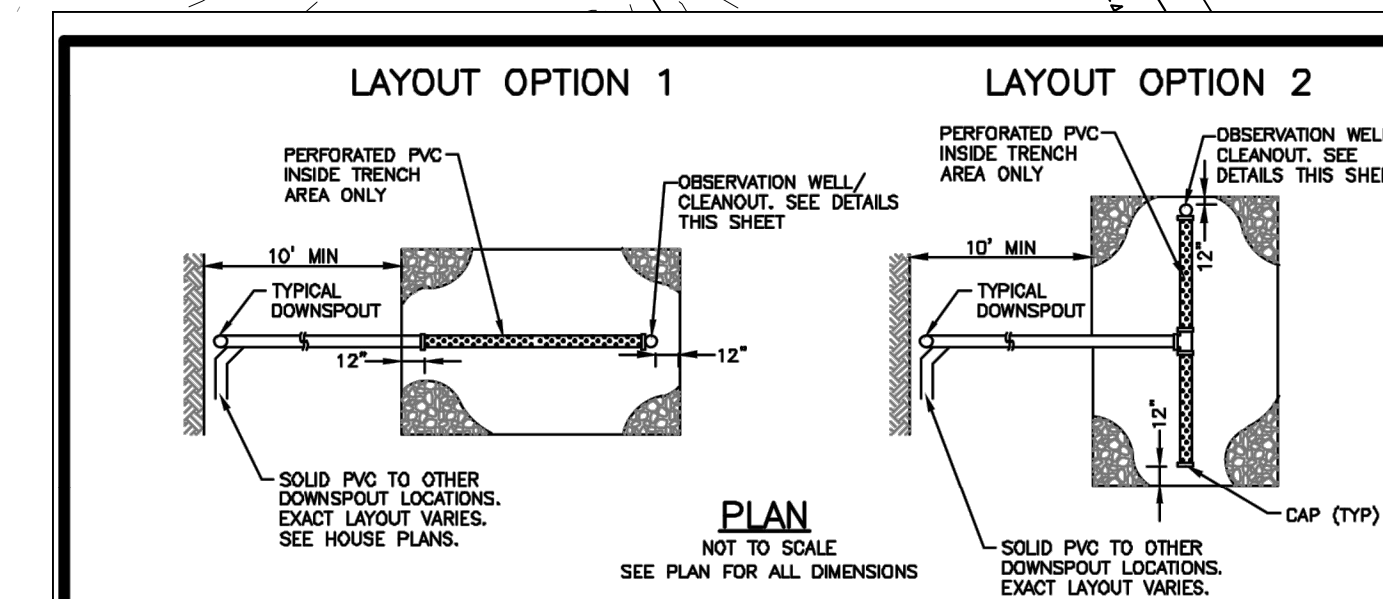
Table with columns: Facility, Impervious Area, Drainage Area, Vol, ESDv, etc. for DRY WELL FACILITY (M-5).

Table with columns: Disconnection Designation, Impervious Area, Drainage Area, Vol, ESDv, etc. for NON-ROOFTOP DISCONNECTION (N-2).

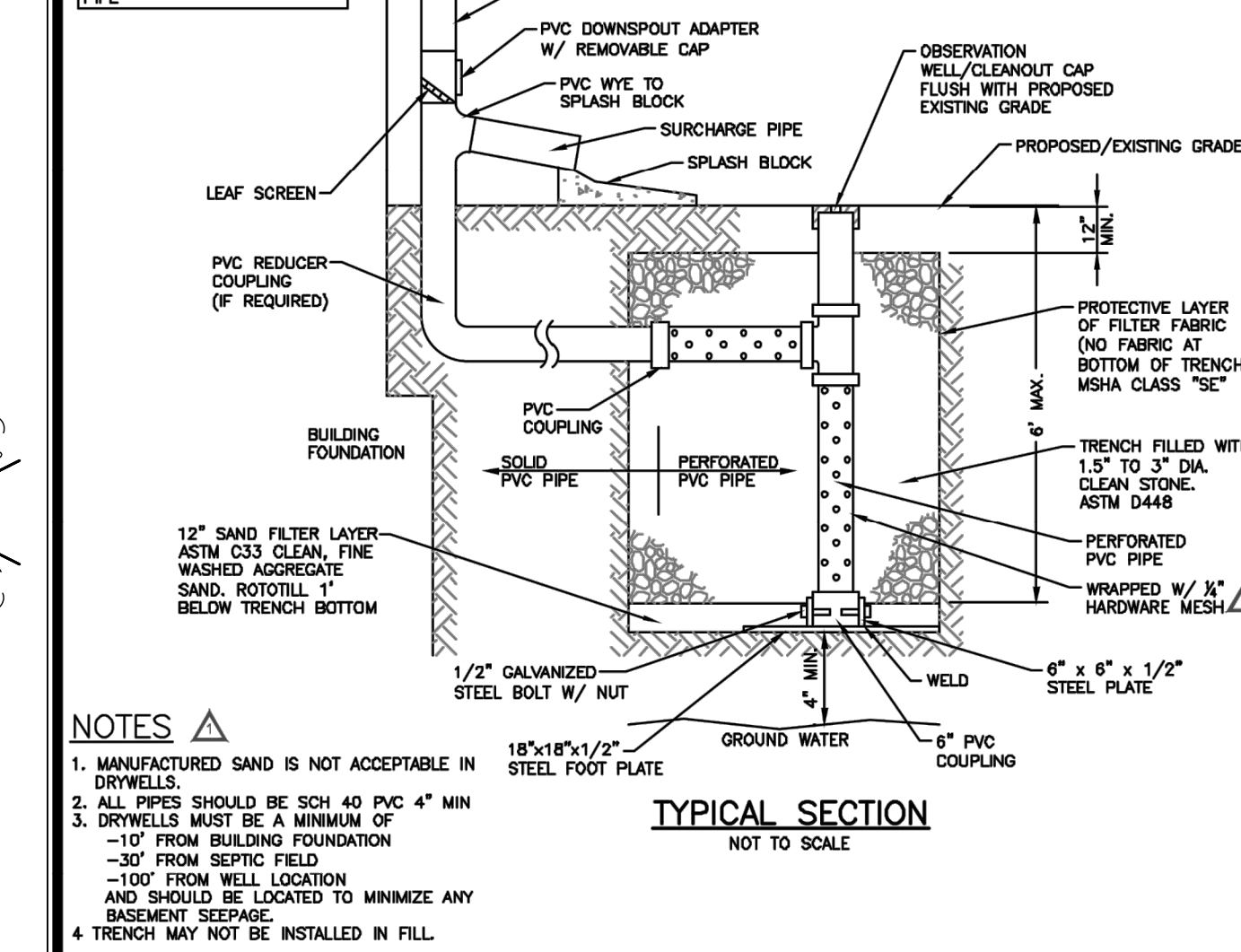
The total ESDv provided by this design is: 4133 CF. The total Rev provided by this design is: 1075 CF.



MICRO-BIOTENTION DETAILS (TYPICAL) NOT TO SCALE



LAYOUT OPTION 1 and LAYOUT OPTION 2



ROOF DRAIN DRYWELL Private Detail D-9.01

Stormwater Management Summary Chart table with Required and Provided values for Pe, ESDv, and Rev.

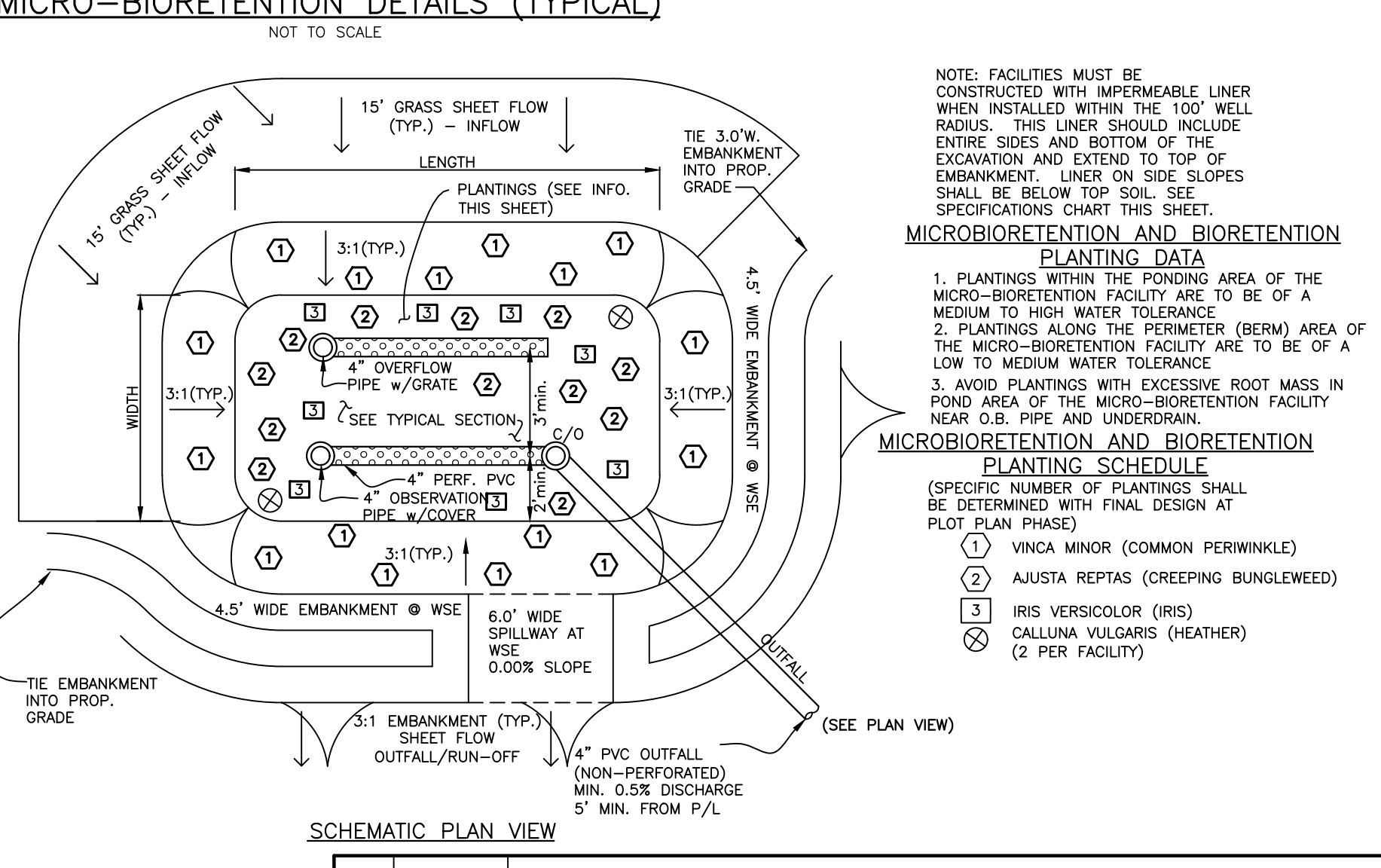
Non-Rooftop Discon. table with columns for Disconnection Designation, Area, Runoff, etc.

PROJECT: Capstone Estates Facility Dimensions DATE: 05/12/23

BIOTENTION FACILITIES table with columns for Facility, Area, Runoff, ESDv, etc.

Table with columns: Designation, Area, Runoff, ESDv, etc. for Drywell.

Table with columns: Designation, Length, Width, Depth, Grade, etc. for Drywell.



SCHEMATIC PLAN VIEW

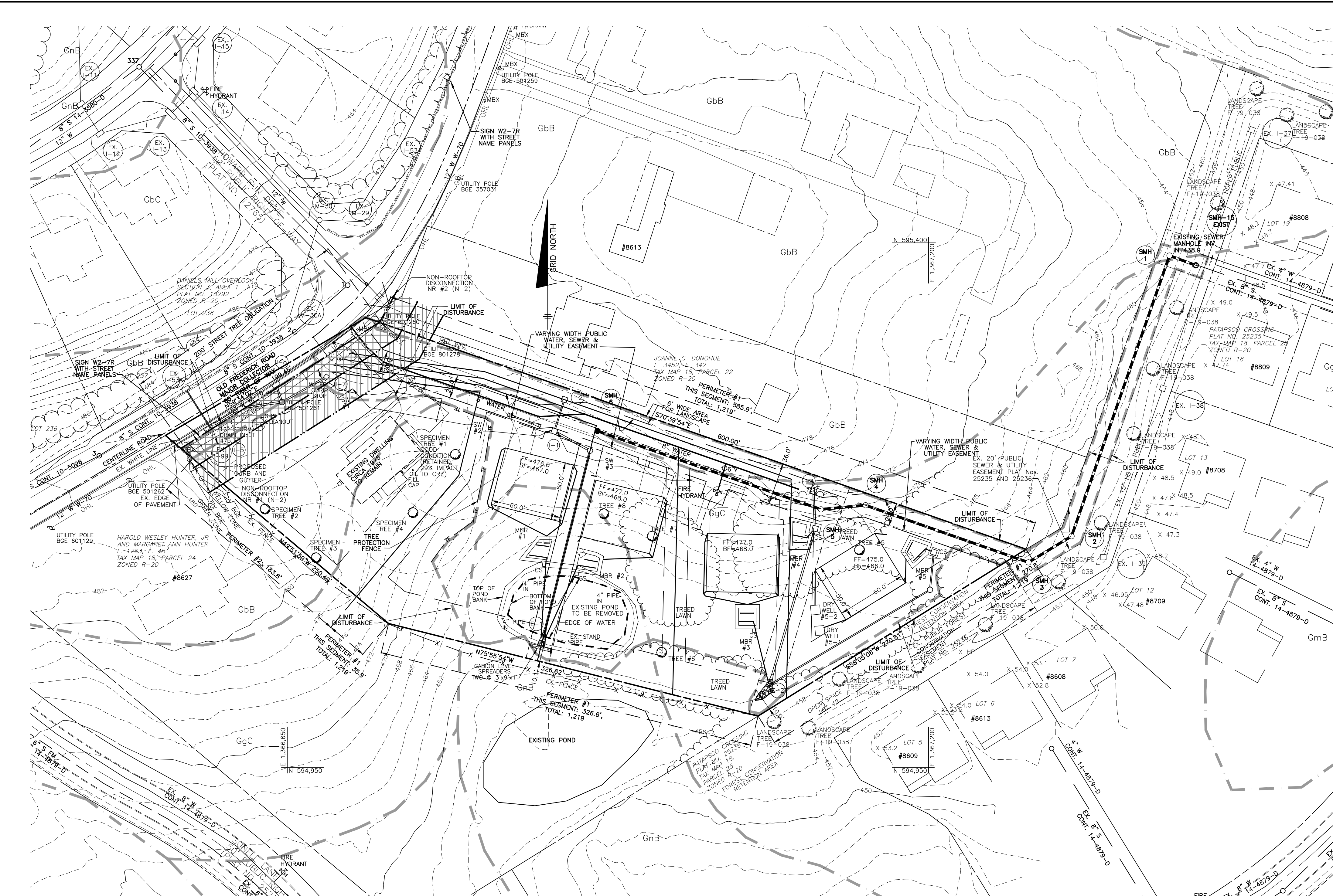
BENCHMARK ENGINEERS, INC. logo and contact information.

OWNER: RAINMAKER DEVELOPMENT, INC. DEVELOPER: RAINMAKER DEVELOPMENT, INC. DESIGN: JC DRAFT: JC SCALE: AS SHOWN SHEET 7 OF 8

TENTATIVELY APPROVED DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY

PLANNING DIRECTOR DATE

Howard County, Maryland Department of Public Works ROOF DRAIN DRYWELL Private Detail D-9.01



PRELIMINARY FOREST CONSERVATION WORKSHEET FOR 8621 OLD FREDERICK ROAD

Net Tract Area

A. Total (Gross) Tract Area	A = 2.9
B. Area within 100-year Floodplain	B = 0.0
C. Other Deductions (Identify:)	C = 0.0
D. Net Tract Area	D = 2.9

Land Use Category

Insert the number "1" under the appropriate land use (limit to only one entry)

Resid. Rural LD	Resid. Rural MD	Resid. Suburban	Inst./Linear	Retail/Office	Mixed Use/PUD
0	0	1	0	0	0

Existing Forest Cover

E. Afforestation Threshold (Net Tract Area x 15%)	E = 0.4
F. Reforestation Threshold (Net Tract Area x 20%)	F = 0.6

Break Even Point

J. Break Even Point	J = 0.0
K. Forest Clearing Permitted without Mitigation	K = 0.0

Proposed Forest Clearing

L. Total Area of Forest to be Cleared	L = 0.0
M. Total Area of Forest to be Retained	M = 0.0

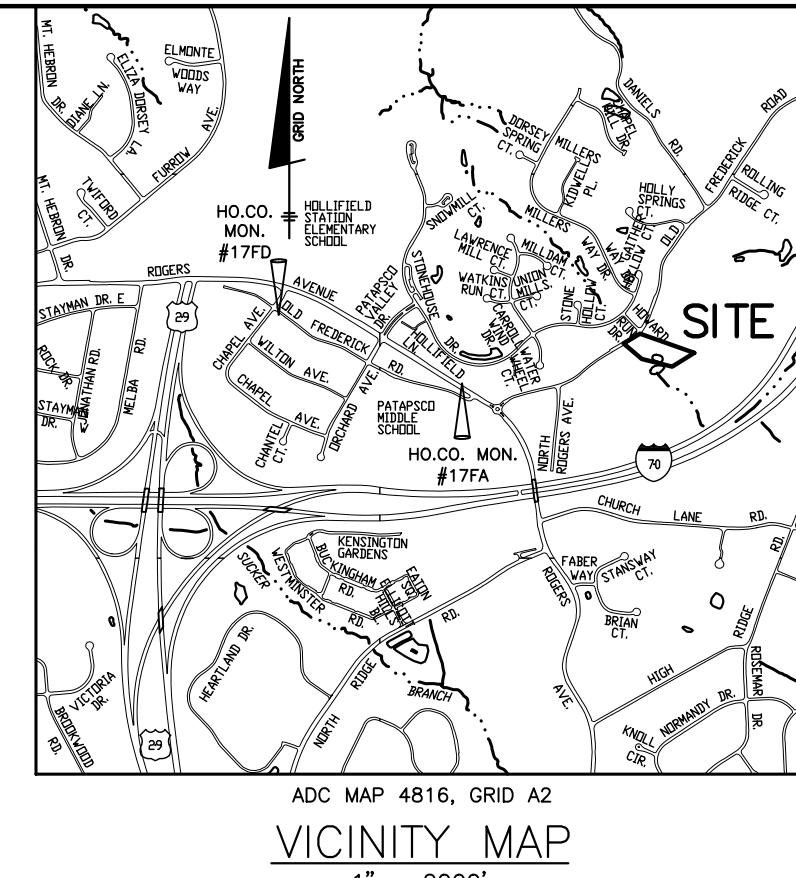
Planting Requirements Inside Watershed

N. Reforestation for Clearing above the Reforestation Threshold	N = 0.0
P. Reforestation for Clearing below the Reforestation Threshold	P = 0.0
Q. Credit for Retention above the Reforestation Threshold	Q = 0.0
R. Total Reforestation Required	R = 0.0
S. Total Afforestation Required	S = 0.4
T. Total Reforestation and Afforestation Requirement	T = 0.4
U. 75% of Total Obligation (Retention + Planting)	U = 0.3
V. Planting Required Onsite to meet 75% Obligation	V = 0.3

Planting Requirements Outside Watershed

W. Total Planting within Development Site Watershed	W = 0.0
X. Total Afforestation Required	X = 0.4
Y. Remaining Planting within Watershed for Reforestation Credit	Y = 0.0
Z. Reforestation for Clearing above the Reforestation Threshold	Z = 0.0
AA. Reforestation for Clearing below the Reforestation Threshold	AA = 0.0
BB. Credit for Retention above the Reforestation Threshold	BB = 0.0
CC. Total Reforestation Required	CC = 0.0
DD. Total Afforestation and Reforestation Requirement	DD = 0.4

Date: 8/17/22



SIMPLIFIED FOREST STAND DELINEATION/EXISTING CONDITIONS OVERVIEW

The subject property is located at 8621 Old Frederick Road in the Elliott City section of Howard County, Maryland. The subject property encompasses 2.91 acres and is identified on tax map 18 as parcel 23.

The subject property is roughly rectangular in shape with Old Frederick Road creating its western boundary. An existing single family home is present along the road frontage. The house is surrounded by lawn and landscaping with scattered shade trees. Yew, azaleas, Japanese maple, flowering cherry and dogwoods were notable landscaping elements around the home. Shaded trees around the home include slippery elm, black locust, black cherry and silver maple.

Behind the home, the property descends to the east to an area that includes an excavated pond and a tree lawn. The pond appears to have been excavated in an area of gravelly silt loam. This soil type continues downslope off of the property. The downslope property adjacent to the subject property also has an excavated pond and further downslope a stream channel is present. Onsite the pond appears to receive hydrologic input from seasonally high groundwater and concentrated run-off. Three drainage pipes were observed coming to the pond, though no discharge was observed. No defined spring or stream flow was noted entering the pond. It is possible that the pond was also supplemented by well pump or outside water source.

At the time of our field review the water level in the pond was greatly reduced from historic water lines defined by the pond edge. Water level was at least three feet below the riser elevation. It did not appear that failure of the pond drainage system was causing the lack of hydrology in the pond. It is assumed that any overflow from this pond is piped directly to the downslope pond as there was no notable defined discharge point from the pond and there are no stream channels or wetlands on or adjacent to the property.

No significant wetland development was noted around the pond. Some small black willow were noted along the top of the bank but these trees are no longer within the hydrologic influence of the pond. Broomsedge was growing on the exposed soils between the waterline and the top of the pond bank.

The property is maintained as lawn and tree lawn with patchy tree stands being present in the rear, eastern end of the site. These tree areas include Virginia and white pine, Norway spruce, black cherry, black locust, American holly, pin oak, flowering dogwood, red maple and mulberry. Some dogwood was noted in the dogwood and Virginia pine.

The tree patches in the yard do not provide contiguous cover that is 35 feet wide and 10,000 sq.ft. in area. The tree areas also occur over mowed lawn and have no true shrub or understory development.

Field review of the site did find that there are four specimen trees around the home. Four tree 24"-29" are present within the tree lawn in the rear of the lot. The location, species, size and condition of the trees are shown on the attached Simplified Forest Stand Delineation plan.

No State Champion trees or trees 75% of State Champion tree are present on the site.

The subject property lies within the Use I watershed of the Patapsco River (021309061017).

No 100 year floodplain is present on the site.

Slope slopes are present on the property.

No rare, threatened or endangered species are present on the property.

No known cemeteries or historic elements are present on the property.

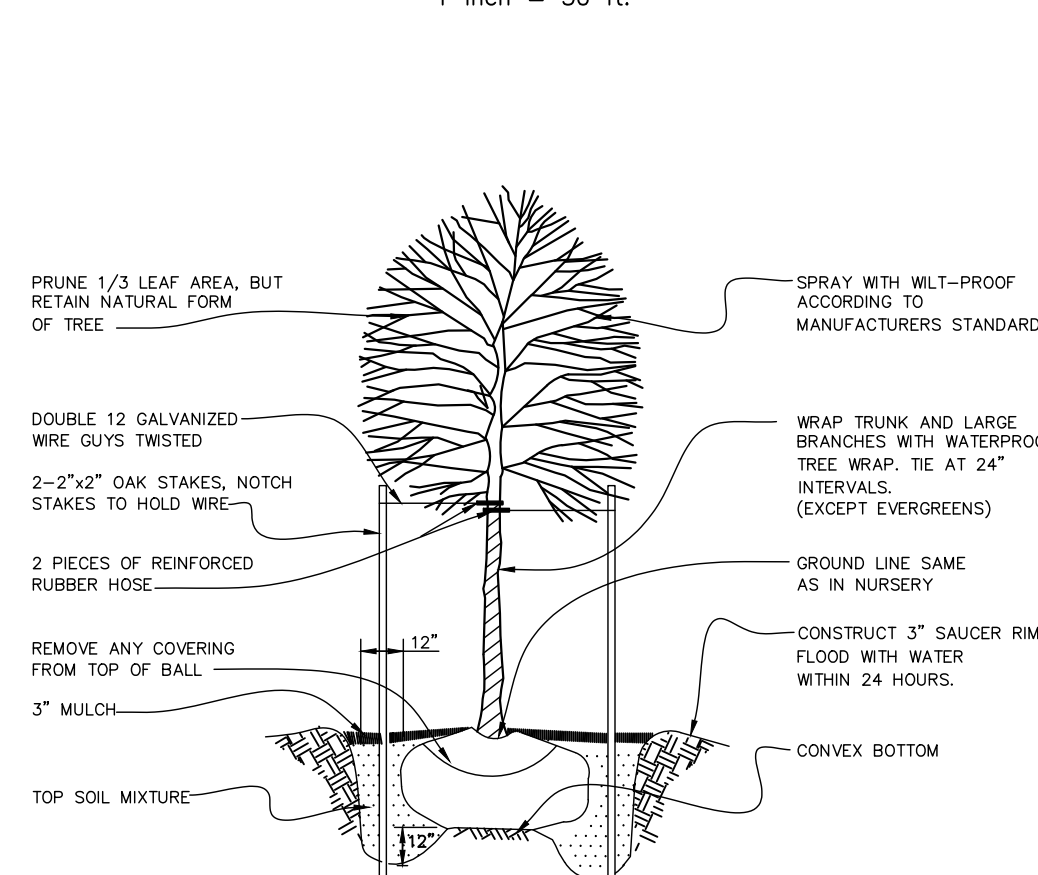
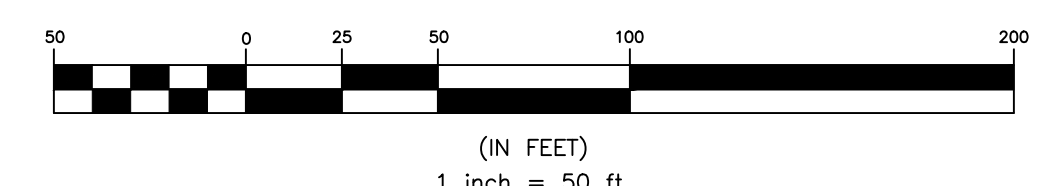
FOREST CONSERVATION COMPLIANCE

Proposed subdivision of the site will require compliance with the Forest Conservation Act. Since no forest is present on the site and the property is zoned for high density residential the afforestation obligation will be 15% of the net tract area or 0.4 acres. Given the small size of the property this obligation can be best met through the purchase of credit from a forest conservation bank or payment in to the County-fee-inu fund.

Removal of specimen trees will require specific approval from Howard County. If approved, removal of the specimen trees will generate a mitigation obligation.

LANDSCAPE NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- STREET TREE LOCATIONS:**
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS 6 FEET OR GREATER, THE TREES SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AND SHALL BE CENTERED BETWEEN THE CURB AND SIDEWALK.
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS LESS THAN 6 FEET, TREES MAY BE PLANTED 3 FEET FROM THE SIDEWALK IN THE DIRECTION AWAY FROM THE ROAD. A 10-FOOT WIDE TREE MAINTENANCE EASEMENT SHALL BE REQUIRED IF THE RIGHT-OF-WAY IS LIMITED.
 - TREES SHALL BE PLANTED 6 FEET BEHIND CURB WHEN THERE ARE NO SIDEWALKS.
 - TREES TO BE PLANTED MINIMUM 30 FEET FROM SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB. TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A STORM DRAIN INLET, OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, 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.
- LANDSCAPING FOR LOT 1 IS NOT REQUIRED SINCE THERE IS NO LAND USE CHANGE. LOT 1 CONTAINS AN EXISTING STRUCTURE TO REMAIN, NO LANDSCAPING IS REQUIRED FOR THAT LOT. FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING PLANTINGS IN ACCORDANCE WITH THE LANDSCAPE MANUAL SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT AT THE FINAL PLAN STAGE.



STREET TREE SCHEDULE

	COLUMBIA ROAD	TOTAL
LINEAR FEET OF RIGHT-OF-WAY	200'	
LINEAR FEET OF CREDIT	0'	
LINEAR FEET OF REQUIRED PLANTING	200'	
TREE SIZE	SMALL	
TREES PROVIDED	7	7
TREES PROVIDED SHADE TREES	7	7

SMALL STREET TREES ARE PROPOSED DUE TO THE LOCATION OF THE BOE GREEN AND YELLOW ZONES.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJ. TO PERIMETER	ADJ. TO PERIMETER	TOTAL REQ.
	PROP. SFD (1)	PROP. SFD (2)	
LANDSCAPE TYPE	A	-	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1,219'	184'	315'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO
NUMBER OF PLANTS REQUIRED	20	-	20
SHADE TREES	-	-	-
EVERGREEN TREES	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-
SHRUBS	-	-	-
NUMBER OF PLANTS PROVIDED	20	-	20
SHADE TREES	-	-	-
EVERGREEN TREES	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-
SHRUBS	-	-	-

* SINCE THIS IS A SUBDIVISION INVOLVING AN EXISTING DWELLING ON LOT 1 THERE IS NO LANDSCAPING OBLIGATIONS FOR THAT LOT IN ACCORDANCE WITH PAGE 31 OF THE LANDSCAPE MANUAL. PARTIAL EXEMPTIONS PERIMETER #2 REFLECTS THIS PERMETER.

Specimen/Significant Tree Chart

Key (X#)	Species	Size (in.dbh)	Comments (Good unless otherwise noted)
1	Slippery elm	37.5	
2	Black locust	32.5	Poor, heart rot, damaged root
3	Black cherry	31	
4	Silver maple	35	
5	Red maple	27	
6	Siberian elm	28.5	
7	White pine	29	
8	Black cherry	28	fair - some decline noted

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
P.O. BOX 7989, CLAYVILLE, MARYLAND 21787
Tel: 410-465-6444

J. Brody McAllister
ISA Certified Arborist
Cert ID: M6471A
MD DNR FCA Qualified Professional

BENCHMARK ENGINEERING, INC.
3300 NORTH ROBEY ROAD & SUITE 140A, ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6109 (F) 410-465-6444
WWW.BEI-ENGINEERING.COM

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

PRELIMINARY EQUIVALENT SKETCH PLAN LANDSCAPE PLAN, NOTES AND DETAILS & FOREST CONSERVATION PLAN

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

DATE: JUNE, 2023 BEI PROJECT NO. 3119
SCALE: AS SHOWN SHEET 8 OF 8

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Designed by: *Mary Kendall* 6/23/2023
PLANNING DIRECTOR DATE