	50ILS LEGEND		
50IL	NAME	CLA55	'K'VALUE
G ₉ C	Glenelg loam, 8 to 15 percent slopes	В	0.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	В	0.20

STORMWATER MANAGEMENT SUMMARY						
AREA ID.	ESDV REQUIRED CU.FT.	E5Dv PROVIDED CU.FT.	REMARK5			
ROOF (1,014 5qFt.)	140	300	2 DRYWELLS (M-5)			
DRIVEWAY & ROOF (886 54Ft.)	222 (STORAGE)	267 (STORAGE)	1 MICRO-BIORETENTION FACILITY (M-6)			
TOTAL	362	567				
TOTAL SITE	564	567				

SWM NARRATIVE

THIS REPORT WILL DEMONSTRATE HOW THE CRITERIA SET FORTH IN THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II (EFFECTIVE OCTOBER 2000, REVISED MAY 2009) WILL BE SATISFIED ON THIS PROJECT. THE GOAL OF CREATING HYDROLOGY SIMILAR TO THAT OF "WOODS IN GOOD CONDITION" WILL BE ACCOMPLISHED THROUGH THE USE OF THE PRACTICES CONTAINED WITHIN CHAPTER 5 OF SAID MANUAL.

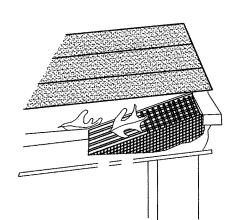
MATTUPALLI PROPERTY IS A 2 LOT SINGLE FAMILY SUBDIVISION WITH ON BUILDING BEING RETAINED. PROPERTY IS ZONED R-20 AND LOCATED ON TAX MAP 30, GRID 01, PARCEL NO. 6, OF THE HOWARD COUNTY, MARYLAND TAX MAP DATABASE SYSTEM. SUBDIVISION WILL UTILIZE PROPOSED PUBLIC WATER AND SEWER EXTENSIONS. THE PROPERTY IS LOCATED IN THE ELLICOTT CITY AREA OF HOWARD COUNTY, DRAINS TO CENTENNIAL LAKE, AND IN THE WATERSHED OF THE LITTLE PATUXENT RIVER (02131105). WATER RUNOFF FLOWS FROM FOREST STAND CONSISTING PRIMARILY OF WHITE PINE TREES EXISTS ON-SITE PER A FIELD INSPECTION CONDUCTED BY ECO-SCIENCE PROFESSIONALS (ESP). THE WEB SOIL SURVEY SHOWS SOILS ON THE SITE CONSIST OF GLENELG LOAM (GoC AND GhB), TYPE "B" SOILS. THE RUNOFF FROM A PORTION THE ROOF OF THE PROPOSED HOUSE IS TO BE TREATED BY DRYWELLS (M-5) AND THE REMAINING ROOFTOP AREA AND RUNOFF FROM THE DRIVEWAY WILL BE TREATED BY MICRO-BIORETENTION (M-6).

- NATURAL RESOURCE PROTECTION: ENVIRONMENTALLY SENSITIVE AREAS DO NOT EXIST ON-SITE.
- . MAINTENANCE OF NATURAL FLOW PATTERNS: IT IS THE INTENT OF THE PROPOSED DESIGN TO DISCHARGE RUNOFF SIMILAR TO THE CHARACTERISTICS AND DIRECTION OF THIS SITE PRIOR TO ANY OF THE PROPOSED IMPROVEMENTS.
- REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN. ALTERNATIVE SURFACES AND NONSTRUCTURAL PRACTICES THE DESIGN OF THIS PROJECT UTILIZES ONE INDIVIDUAL DRIVEWAY FOR THE PROPOSED SINGLE FAMILY DETACHED HOUSE. NON-STRUCTURAL PRACTICES AS PERMITTED IN CHAPTER 5, DRY
- IV. INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO

THE FULL REQUIRED ESD VOLUME IS BEING PROVIDED.

STORMWATER STRATEGY: IT IS ANTICIPATED THAT SEDIMENT TRAPS WILL NOT BE NEEDED. SILT FENCE ABD SUPER SILT FENCE WILL BE USED. NO OFF-SITE DRAINAGE EASEMENTS WILL BE REQUIRED. IT IS ANTICIPATED THAT ALL CUT WILL BE UTILIZED ON-SITE FOR CONSTRUCTION AT TIME OF FINAL

- IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM EXTENT PRACTICABLE (MEP)
- REQUEST FOR DESIGN MANUAL WAIVER: NO WAIVERS RELATED TO STORMWATER MANAGEMENT ARE BEING REQUESTED AT THIS TIME.



GUTTER DRAIN FILTER DETAIL

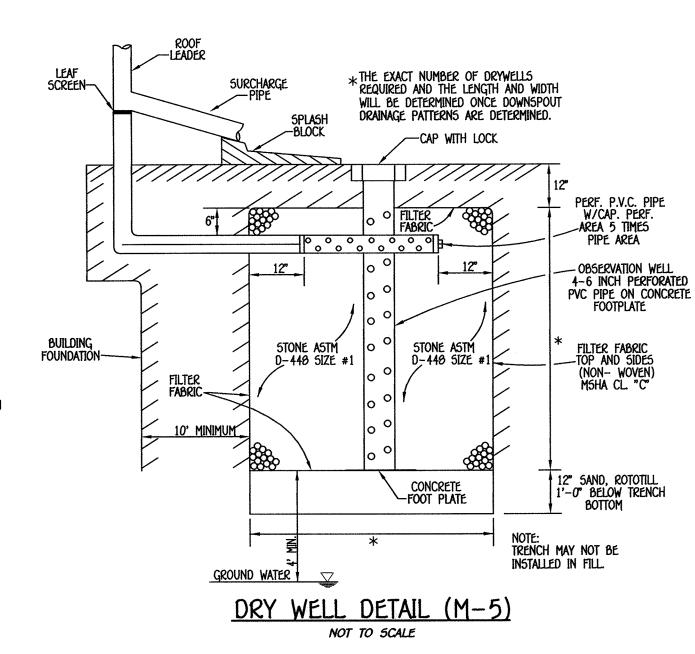
STORMWATER MANAGEMENT NOTES

. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.

. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 500 SQ. FT. OR LESS. . DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.

1. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

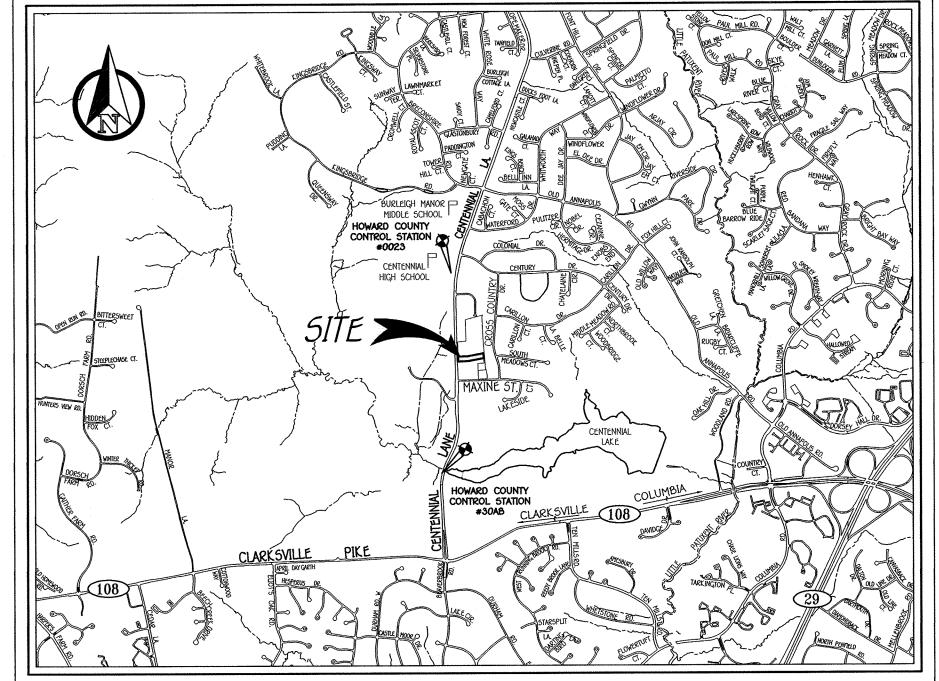




ENVIRONMENTAL CONCEPT PLAN MATTUPALLI PROPERTY

LOTS 1 & 2

ZONING: R-20 (RESIDENTIAL: SINGLE DISTRICT) TAX MAP No. 30 GRID No. 01 PARCEL No. 06 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND



HOWARD COUNTY HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 0023 GEODETIC SURVEY CONTROL NO. 30AB N 577,373.143 E 1,349,751.273 N 573,239.305 E 1,349,547.046 ELEVATION: 361.90 **ELEVATION: 479.248**

REFER TO HOWARD CO. ADC MAP 26-E3, E4, F3 & F4

AND AFTER EVERY HEAVY STORM EVENT.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY

OWNED AND MAINTAINED DRY WELLS (M-5)

A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS

B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING

C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY

E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO

F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED.

THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE

OWNER/DEVELOPER

PARCEL 06

MATTUPALLI, PRASAD & LAKSHMI

ELLICOTT CITY, MD 21042

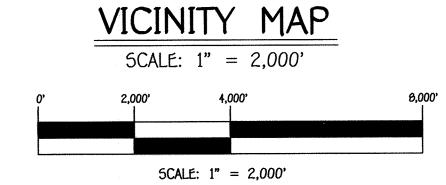
D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A

SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.

WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.

INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.

DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



DRY WELL CHART DRYWELL AREA OF ROOF VOLUME VOLUME AREA OF No. PER DRYWELL REQUIRED PROVIDED TREATMENT 2A | 928 5Q.FT. | 133 CU.FT. | 150 CU.FT. | 100%* | 11' x 8.5' x 4' LOT 2 | 28 | 866 5Q.FT. | 127 CU.FT. | 150 CU.FT. | 100%* | 11' x 8.5' x 4'

* AREA OF TREATMENT EXCEEDS THAT REQUIRED

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

SITE ANALYSIS DATA CHART

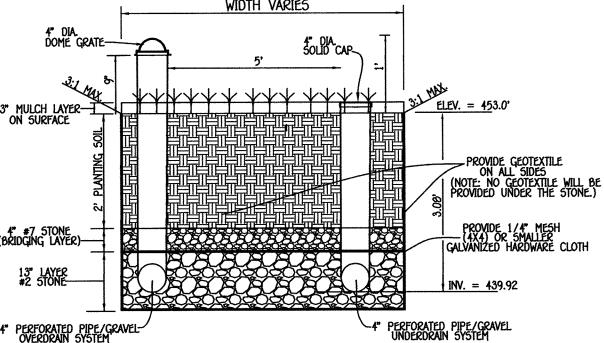
- TOTAL AREA OF THIS SUBMISSION: 54,102 Sq.Ft. (1.24 Ac.) LOT 1 = 27,091 sq.ft. (0.62 Ac.) (TO REMAIN UNDISTURBED) LOT 2 = 27,091 sq.ft. (0.62 Ac.)
- LIMIT OF DISTURBED AREA = (10,291.07 54.Ft.) 0.24 Ac. * PRESENT ZONING DESIGNATION = R-20
-). PROPOSED USE: SINGLE FAMILY DETACHED HOUSING
- NET TRACT AREA = 1.24 AC. DENSITY ALLOWED:
- 2 UNITS/ACRE X 1.24 = 2 UNITS BUILDING COVERAGE OF SITE: 2,700 54.Ft. (0.062 AC±) OR 5%
- PREVIOUS HOWARD COUNTY FILES: WP-19-047 TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.0 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0 AC+ TOTAL AREA OF WETLANDS (INCLUDING BUFFER) LOCATED ON SITE = 0 AC. ±
- 1. TOTAL GREEN OPEN AREA OF LOT 2 = 23,566 SF = 0.54 Ac. ±
- N. TOTAL IMPERVIOUS AREA = 2,418 sq.ft. (0.055 Ac.±)
- O. AREA OF ERODIBLE SOILS = 0 Ac.

GENERAL NOTES

- 1. THE SUBJECT PROPERTY IS ZONED R-20 (PER 10/06/13 COMPREHENSIVE ZONING PLAN.) BOUNDARY IS BASED ON A FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER ON OR ABOUT FEBRUARY, 2018.
- 2. CONTOURS ARE BASED ON A TOPOGRAPHIC FIELD RUN SURVEY PERFORMED BY FISHER. COLLINS AND CARTER, ON OR ABOUT AUGUST, 2018.
- 3. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 0023 AND NO. 30AB:

HOWARD COUNTY MONUMENT NO. 0023 E 1,349,751.273 ELEV. 479.248 N 573,239,385

- E 1,349,547.846 ELEV. 361.90 4. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II. REVISED 2009. THIS PLAN PROPOSES THE USE OF TWO (2) M-5 DRY WELLS
- AND ONE (1) M-6 MICRO-BIORETENTION FACILITY. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT
- BE UTILIZED FOR THIS PROJECT.
- BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST
- CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN. 8. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON DECEMBER 10, 2018 FOR
- 9. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT. 10. THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION BASED ON SECTION 16.1202(b)(viii OF HOWARD COUNTY CODE.
- 11. SOIL BORING INFORMATION WILL BE PROVIDED AT THE NEXT PLAN STAGE OF 12. APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION OR SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. 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, SITE DEVELOPMENT PLAN, OR RED-LINE REVISION PROCESSES. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT
- MAY ALTER THE OVERALL SITE DESIGN) AS THE PROJECT PROGRESSES THROUGH THE PLAN 13. THIS SITE IS SUBJECT TO APPROVAL OF AN ALTERNATIVE COMPLIANCE TO SECTION 16.120 (c)(2)(i) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR



NOTE: THE BOTTOM OF EACH BIO-RETENTION FACILITY (M-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

TYPICAL SECTION MICRO-BIORETENTION FACILITY (M-6) NO NOT SCALE

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE
- D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

TITLE SHEET MATTUPALLI PROPERTY LOTS 1 & 2

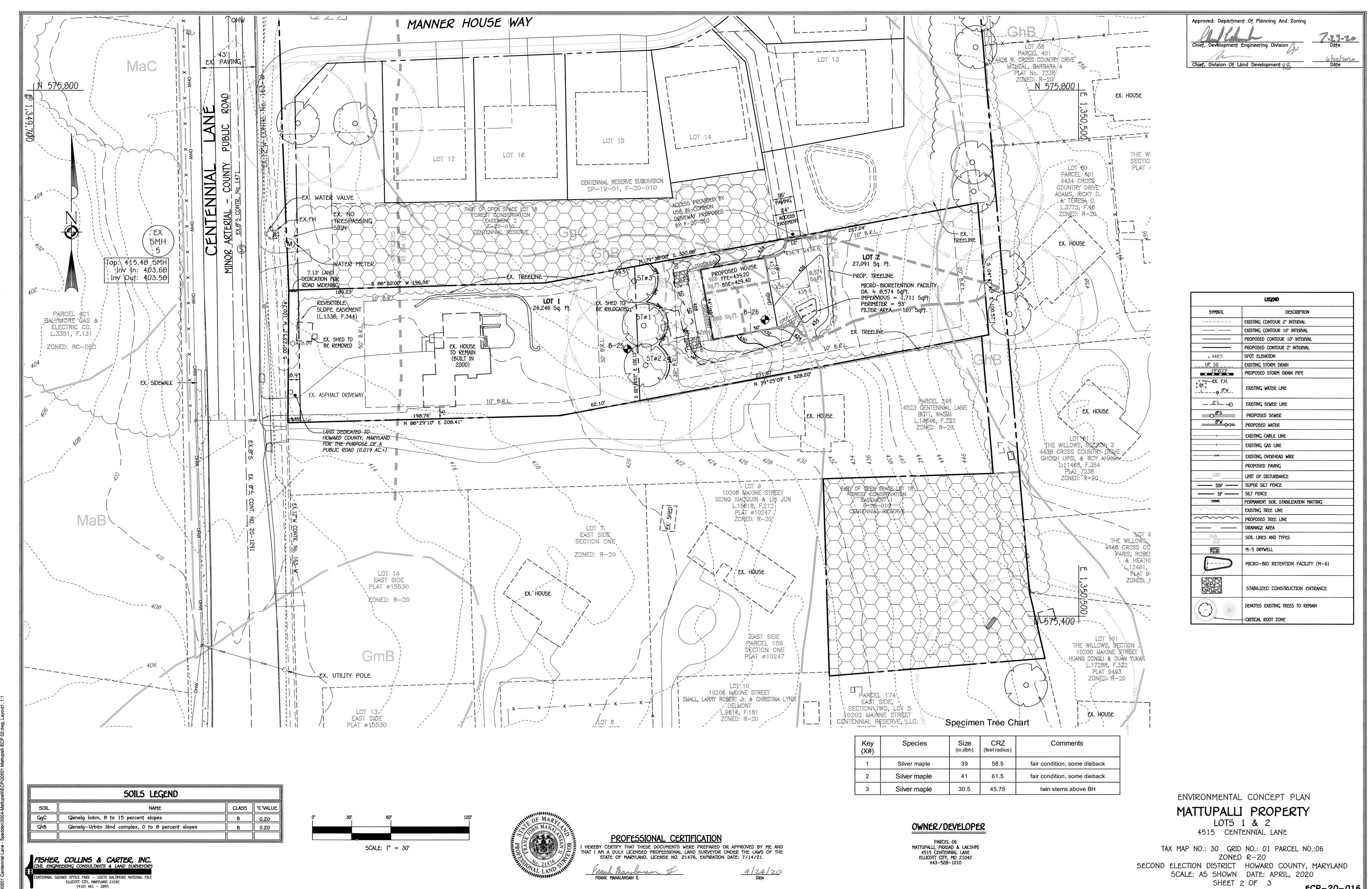
TAX MAP NO.: 30 GRID NO.: 01 PARCEL NO.:06 ZONED R-20

4515 CENTENNIAL LANE

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: APRIL, 2020

SHEET 1 OF 3

ECP-20-016



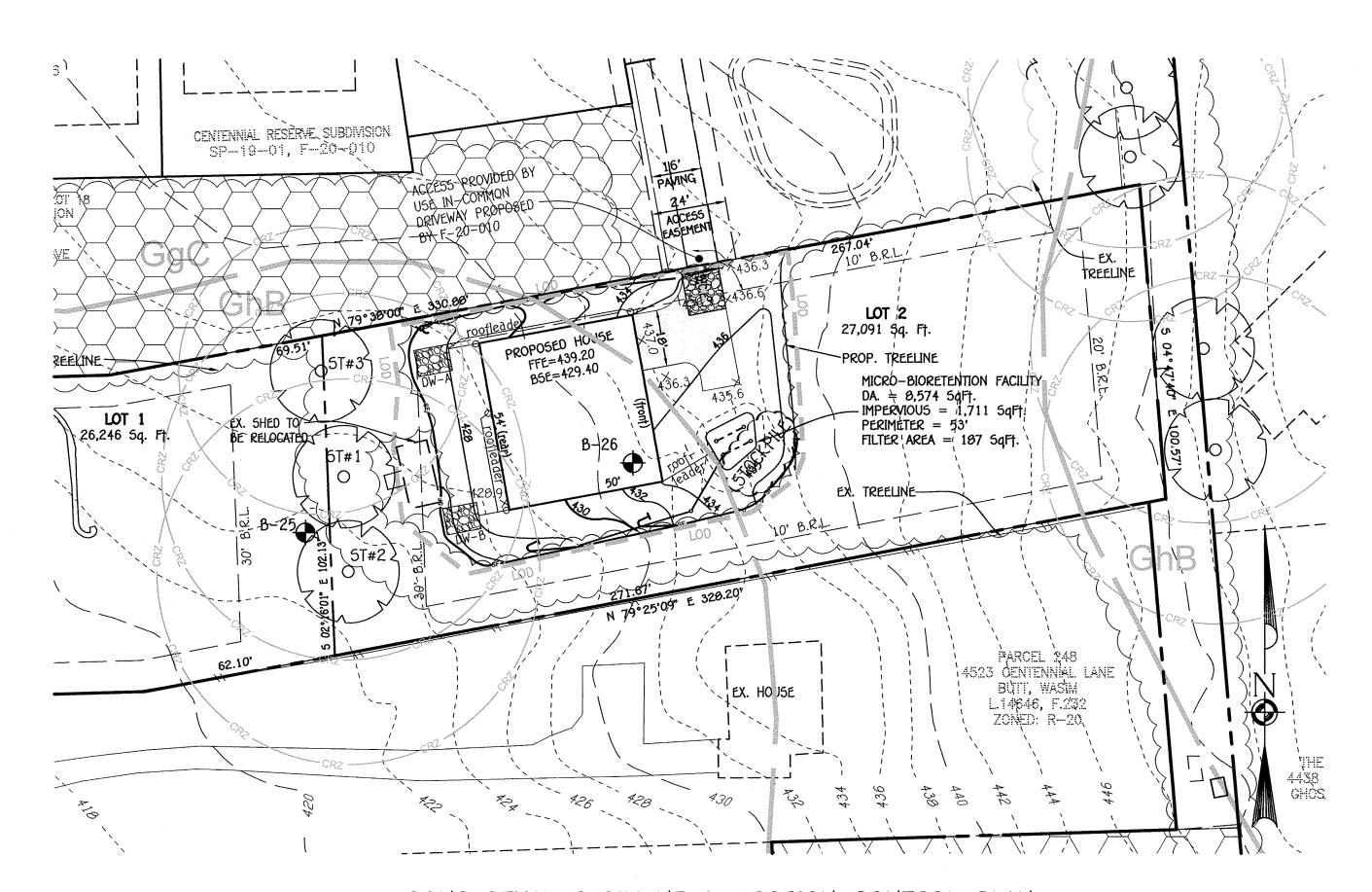
ECP-20-016

Approved: Department Of Planning And Zoning Chief, Division Of Land Development

Table B.4. Materials Specifications for Micro-Bioretention, Rain Garden	5 &	& Landscape	Infiltration
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Material	Specification	Size	Notes
Plantings	see Appendix A; Table A.4	n/ā	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand 60-65% compost 35-40% or sandy loam 30% coarse sand 30% compost 40%		USDA soil types loamy sand or sandy loam; clay content <5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM-D-440	No. 0 or No. 9 (1/0" to 3/0")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Түре Р5 20 or ААБНТО М-270	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" pert. © 6" on center. 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n.a	on-site testing of poured-in-place concrete required: 20 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved 5tate or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland — design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
5 a nd	AASHTO-M-6 or ASTM-C-33	0.02" †o 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

	LEGEND
5YMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
**********************	PROPOSED CONTOUR 10' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
× 448.5	SPOT ELEVATION
<u>18" 50</u> _	existing storm drain
15"RCCP	PROPOSED STORM DRAIN PIPE
「	EXISTING WATER LINE
8"5→	EXISTING SEWER LINE
<u></u>	PROPOSED SEWER
	PROPOSED WATER
c	- EXISTING CABLE LINE
	EXISTING CAS LINE
OHW	EXISTING OVERHEAD WIRE
	PROPOSED PAVING
LOO secondos contratos contratos con contratos contratos con contratos contratos con contratos con contratos contratos contratos contratos con contratos con contratos con contratos contratos con contratos con contratos contratos contratos contratos contratos con contratos contratos contratos contratos contratos contratos contratos contratos contratos con contratos contratos con contratos contratos con contratos con contratos contratos contratos contratos contratos contratos contratos contratos con contratos contratos contratos contratos con c	LIMIT OF DISTURBANCE
—— 55F ——	SUPER SILT FENCE
5F	SILT FENCE
P55HC .	PERMANENT SOIL STABILIZATION MATTING
	EXISTING TREE LINE
~~~~	PROPOSED TREE LINE
	DRAINAGE AREA
Rub Ucb	SOIL LINES AND TYPES
	M-5 DRYWELL
	MICRO-BIO RETENTION FACILITY (M-6)
	STABILIZED CONSTRUCTION ENTRANCE
	denotes existing trees to remain
	CRITICAL ROOT ZONE



CONCEPTUAL SEDIMENT & EROSION CONTROL PLAN

SCALE: 1" = 30'

OWNER/DEVELOPER

PARCEL 06
MATTUPALLI, PRASAD & LAKSHMI
4515 CENTENNIAL LANE
ELLICOTT CITY, MD 21042
443-520-1010

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

NOTES & DETAILS

## MATTUPALLI PROPERTY

LOTS 1 & 2 4515 CENTENNIAL LANE

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NO.:06 ZONED R-20 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: APRIL, 2020

SHEET 3 OF 3 ECP-20-016

F15HER, COLLINS & CARTER, INC. NTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055