		SHEET INDEX	
SHEET	NO.	DESCRIPTION	
1		TITLE SHEET	
2	1000	EXISTING CONDITIONS, SOILS & DEMOLITION PLAN	
3		ENVIRONMENTAL CONCEPT PLAN	
4		PRELIMINARY EROSION/SEDIMENT CONTROL PLAN AND STORMW/ NOTES AND DETAILS	ATER MANAGEMENT

	SOILS LEGEND		
50IL	NAME	CLA55	'K' VALUE
GbB	Gladstone loam, 3 to 8 percent slopes	В	.32
GbC	Gladstone loam, 8 to 15 percent slopes	В	.32

	STORMWA	ITER MAN	IAGEMENT PRACTICES BY LOT
AREA ID.	MICRO-BIO (M-6) NUMBER	DRY WELL (M-5) NUMBER	REMARKS
LOT 4	1		PARKING AREA AND PORTION OF UIC DRIVEWAY DRAINS TO BIO ON LOT
LOT 1		1A,1B,1C &1D	PROPOSED HOUSE TREATED BY ON LOT DRY WELLS (4)
	1		PARKING AREA AND PORTION OF UIC DRIVEWAY DRAINS TO BIO ON LOT
LOT 2		2A,2B,2C,2D&2E	PROPOSED HOUSE TREATED BY ON LOT DRY WELLS (5)

GROSS AREA = 1.36 ACRES LOD = 0.78 ACRES RCN = 55.0 TARGET Pe = 1.8" PROVIDED Pe = 2.1"

STORMWATER MANAGEMENT PRACTICES							
AREA ID	LOCATION	DRAINAGE AREA SF.	% IMPERVIOUS	E50v REQUIRED CuFt.	ESDV PROVIDED CuFt.	MICRO BIO-RETENTION M-6 (Y/N)	DRY WELL M-5 (Y/N)
DW 1A		1,000	100%	143	154		Y
DW 1B	· ·	1,000	100%	143	154		Y
DW 1C	LOT 1	1,000	100%	143	154		Υ
DW 1D		1,000	100%	143	154		Υ
BIO 1	LOT 1	3,372	53%	266	470	Υ	
DW 2A		1,000	100%	143	154		Υ
DW 2B	LOT 2	1,000	100%	143	154		Υ
DW 2C		1,000	100%	143	154		Y
DW 20		1,000	100%	143	154		Υ
DW 2E	ar Asa sanan	600	100%	<i>9</i> 6	96		Υ
BIO 2	LOT 2	5,895	47%	420	428	Y	

#### STORMWATER MANAGEMENT DESIGN 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 FOR THIS PROJECT. THE GOAL OF CREATING HYDROLOGY SIMILAR TO THAT OF "WOODS IN GOOD CONDITION" WILL BE ACCOMPLISHED THROUGH THE USE OF DRY WELLS AND MICRO BIO-RETENTION FACILITIES AS SUGGESTED WITHIN CHAPTER 5 OF PREVIOUSLY MENTIONED MANUAL THE ACHIEVEMENT OF THIS GOAL WILL REMOVE THE REQUIREMENT OF PROVIDING CHANNEL PROTECTION VOLUME.

THE SUBJECT PROPERTY IS ZONED R-20 AND LOCATED ON TAX MAP 35, PARCEL NO. 108 OF THE HOWARD COUNTY, MARYLAND TAX MAP DATABASE SYSTEM.THE PROPERTY CONSISTING OF 1.36 ACRES, IS RECTANGULAR IN SHAPE AND IS IMPROVED WITH A SINGLE FAMILY RESIDENCE. THE PROPERTY IS BORDERED BY RESIDENTIAL LOTS AND HAS ROAD FRONTAGE ON TROTTER ROAD DESIGNATED AS A SCENIC ROAD. TO THE SOUTH. CURRENTLY ACCESS TO THE PROPERTY IS FROM AN EXISTING DRIVEWAY WHICH WILL BE ABANDONED, THE EXISTING HOUSE ON THE PROPERTY WILL BE DEMOLISHED. THIS PROJECT PROPOSES A TWO LOT SUBDIVISION IMPROVED · BY TWO SINGLE FAMILY DETACHED RESIDENCES SHARING A USE—IN—COMMON DRIVE. THE PROPERTY IS PARTIALLY WOODED AND HAS A GENTLY SLOPED RIDGE RUNNING FROM THE FRONT WESTERLY CORNER OF THE PROPERTY TO THE REAR EASTLY CORNER OF THE PROPERTY WHICH CREATES A DRAINAGE DIVIDE WITH RUNOFF FLOWING ACROSS THE ADJACENT PROPERTIES. THE PROPERTY IS LOCATED WITHIN THE MIDDLE PATUXENT RIVER BASIN WATERSHED (02131106) THE RUNOFF FROM THE PROPOSED IMPROVEMENTS WILL BE TREATED BY A COMBINATION OF SWM DEVICES CONSISTING OF ONE (1) M-6 MICRO BIORETENTION FACILITY TO TREAT THE USE IN COMMON DRIVEWAY AND NINE (9) M-5 DRYWELLS TO TREAT THE PROPOSED HOUSES. THE WEB SOIL SURVEY SHOWS SOILS ON THE SITE CONSIST OF TYPE "B" - GLENELG URBAN LAND COMPLEX SOILS.

#### . NATURAL RESOURCE PROTECTION:

NO WETLANDS, STREAMS, THEIR BUFFERS, STEEP SLOPES, FLOODPLAIN, OR FOREST EXIST ON-SITE. NO SPECIAL PROTECTION IS REQUIRED.

#### MAINTENANCE OF NATURAL FLOW PATTERNS:

THE EXISTING LOT HAS A NATURAL RIDGE WHICH DIVIDES THE PROPERTY GENERALLY TO THE FRONT AND REAR PROPERTY LINE. THE PROPOSED HOMES HAVE BEEN SITED ON THE RIDGE, SUCH THAT THE DRAINAGE AREAS ARE GENERALLY DIVIDED TO THE FRONT AND REAR PROPERTY LINES. THEREFORE; THE PROPOSED HOUSE SITING MAINTAINS THE EXISTING NATURAL PATTERN.

#### REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN. ALTERNATIVE

SURFACES AND NONSTRUCTURAL PRACTICES: ONLY THE MINIMUM IMPERVIOUS AREAS HAVE BEEN PROPOSED TO ALLOW ADEQUATE ACCESS TO THE PROPOSED LOTS. THIS DESIGN PROVIDES ONLY A SINGLE SHARED DRIVEWAY FOR ACCESS TO EACH

#### INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO STORMWATER STRATEGY: THIS PROJECT UTILIZES A BIO-RETENTION FACILITY IN A LOCATION THAT COULD WORK IN CONCERT

#### IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM

THIS SUBMISSION WILL PROPOSE SEVERAL CHAPTER 5 DEVICES TO MEET AND EXCEED ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT PRACTICABLE (ESD TO THE MEP). ALL IMPERVIOUS AREAS WILL RECEIVE FULL TREATMENT.

## VI. <u>REQUEST FOR DESIGN MANUAL WAIVER:</u>

NO WAIVERS ARE EXPECTED TO BE REQUESTED ON THIS PROJECT RELATING TO SWM REQUIREMENTS.

#### STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 500 SQ. FT. OR LESS. FINAL GRADING SHALL BE PROVIDED WITH THE SITE DEVELOPMENT PLAN. 1990

# FISHER, COLLINS & CARTER, INC. ELLICOTT CITY, MARYLAND 21042

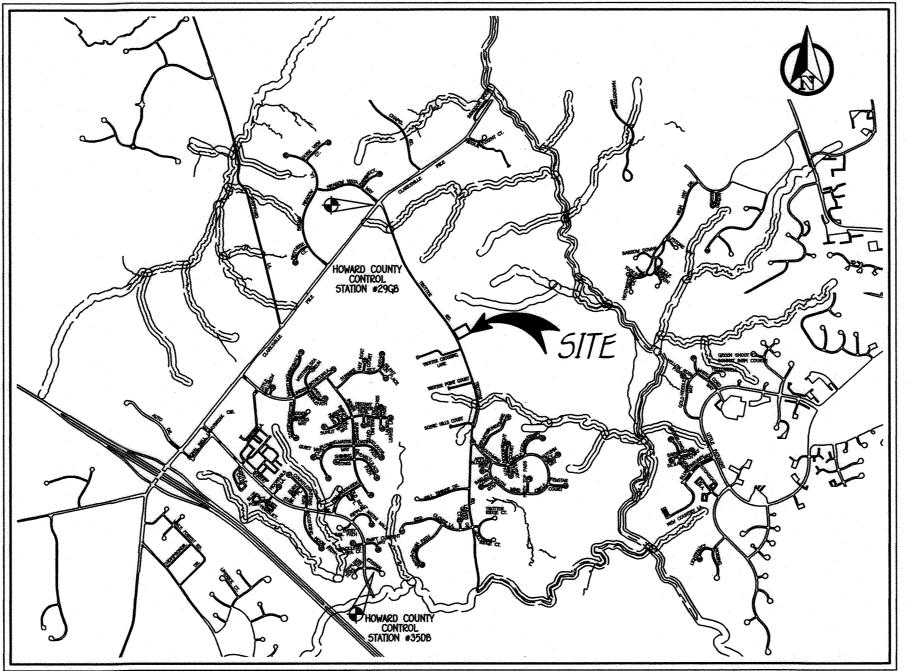
(410) 461 - 2855

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

# ENVIRONMENTAL CONCEPT PLAN SAPARIYA PROPERTY

LOTS 1 AND 2

R-20 ZONING DISTRICT TAX MAP No. 35 GRID No. 02 PARCEL NO. 180 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 350B N 557,696.143 E 1,333,974.615 ELEVATION: 400.941'

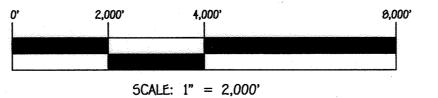
GEODETIC SURVEY CONTROL NO. 29GB N 566,826.147 E 1,333,265.923

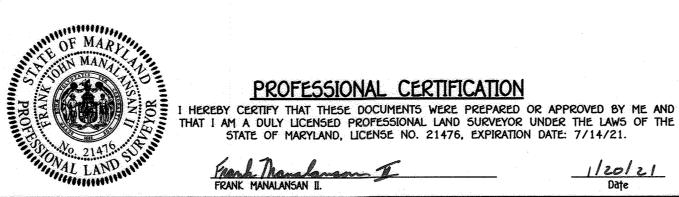
ELEVATION: 455.964'

REFER TO HOWARD CO. ADC MAP 28-A6

# VICINITY MAP

5CALE: 1" = 2,000"





#### GENERAL NOTES

- 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
- CONTOURS ARE BASED ON A TOPOGRAPHIC FIELD RUN SURVEY PERFORMED BY FISHER, COLLING AND CARTER, ON OR ABOUT APRIL, 2020. 4. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD

COUNTY GEODETIC CONTROL STATIONS NO. 35DB AND NO. 29GB: HOWARD COUNTY MONUMENT NO. 350B N 557,696.143

E 1,333,974.615 ELEV. 400.941' HOWARD COUNTY MONUMENT NO. 29GB N 566,826.147 E 1,333,265.923 ELEV. 455.964'

- 6. THIS PROPERTY IS LOCATED WITHIN THE
- BE UTILIZED FOR THIS PROJECT. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S
- 8. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- 9. THERE ARE NO WETLANDS, STREAMS OR THEIR BUFFERS LOCATED WITHIN THE BOUNDARY OF
- 11. FOREST CONSERVATION REQUIREMENTS FOR THIS PROPOSED SUBDIVISION WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. IT IS ANTICIPATED THAT A
- FEE-IN-LIEU OF AFFORESTATION WILL BE REQUESTED. TO WAIVE SECTION 16.132(A)(2)(I) REQUIRING CONSTRUCTION OF ROAD IMPROVEMENTS ON ONE SIDE OF A LOCAL
- 13. SOIL BORING INFORMATION WILL BE PROVIDED AT THE NEXT PLAN STAGE OF THIS PROJECT. 14. APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED 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

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION =  $1.36~\text{AC.\pm}$ . B. LIMIT OF DISTURBED AREA =  $0.78~\text{Ac.\pm}$
- (SWM BASED ON LOD) C. PRESENT ZONING DESIGNATION = R-20
- (PER 10/06/2013 COMPREHENSIVE ZONING PLAN) PROPOSED USE: RESIDENTIAL SINGLE FAMILY DETACHED
- PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0 AC± TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC. ±
- TOTAL AREA OF EXISTING FOREST = 0.60 AC.
- TOTAL AREA OF FOREST TO BE RETAINED
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 1.36 AC+ TOTAL GREEN OPEN AREA (PERVIOUS) = 1.08 AC±
- TOTAL IMPERVIOUS AREA **EXCLUDES EXISTING IMPERVIOUS)** O. TOTAL AREA OF ERODIBLE SOILS

OWNER/DEVELOPER

DIVYESH & SOHILRAJ SAPARIYA

7304 WATERLOO WALK

LAUREL, MD. 20707

(301) 275 0762

- $= 0.27 \text{ AC} \pm \text{ (WITHIN LOD,}$
- $= 0 AC \pm$

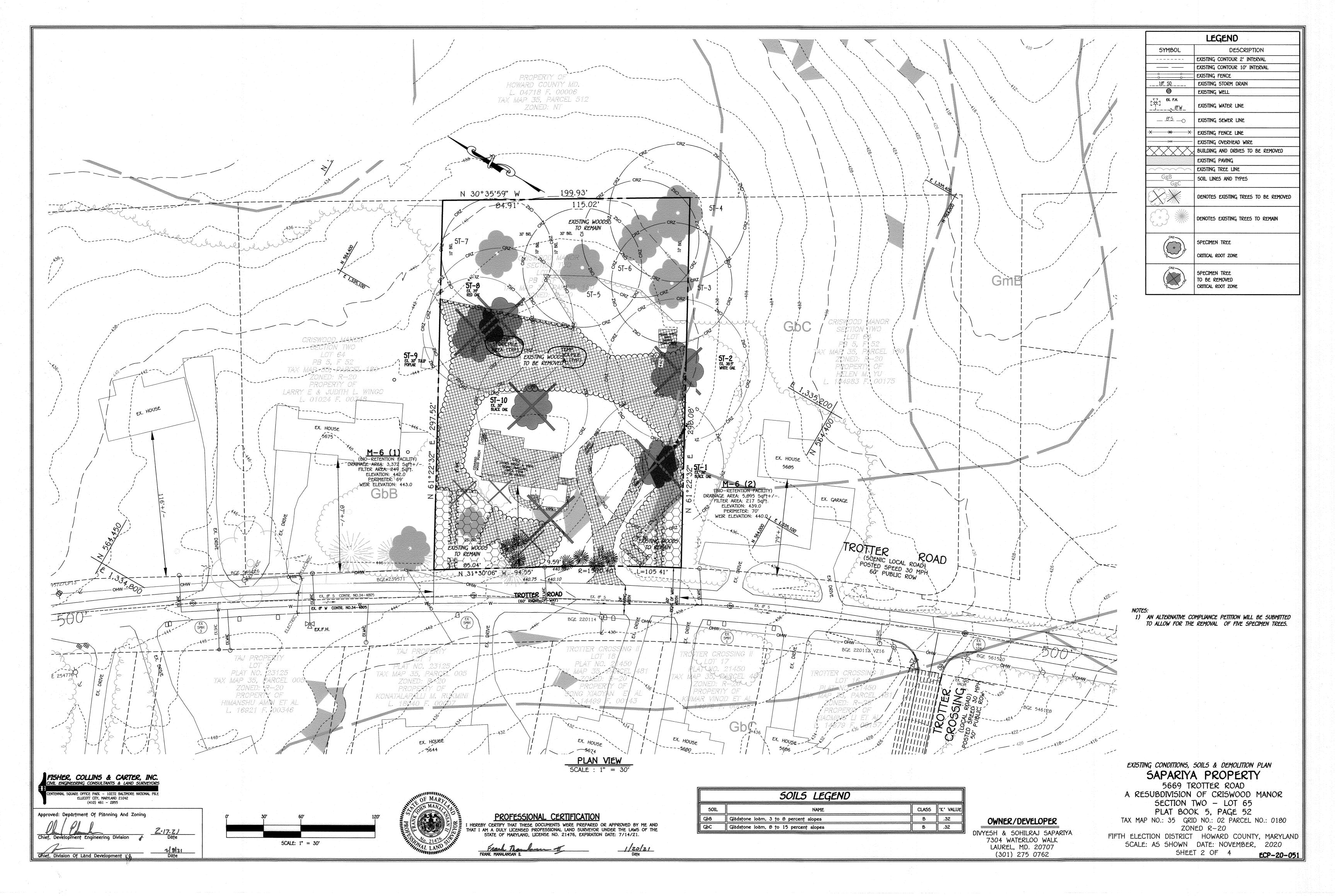
TITLE SHEET SAPARIYA PROPERTY

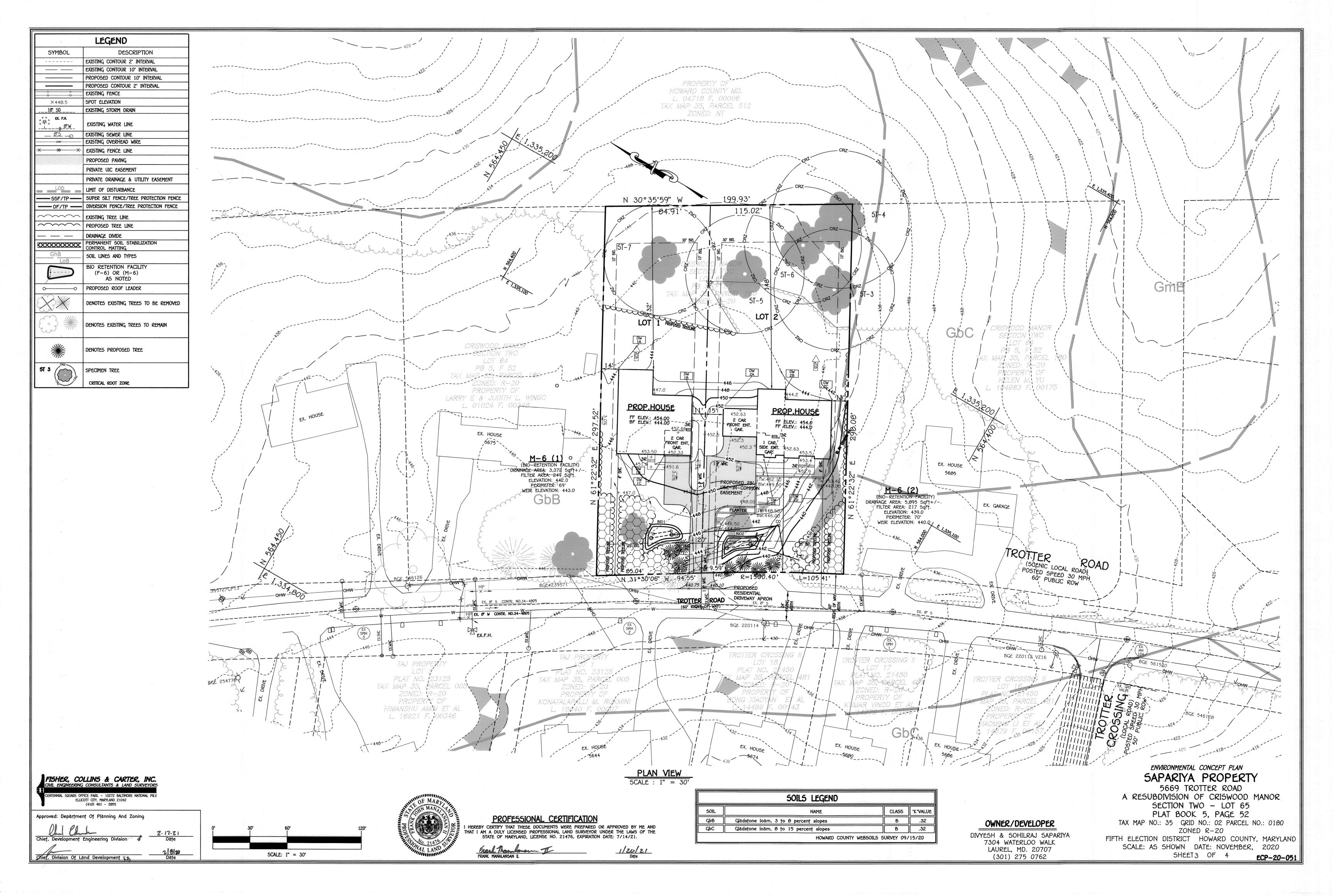
5669 TROTTER ROAD A RESUBDIVISION OF CRISWOOD MANOR SECTION TWO - LOT 65

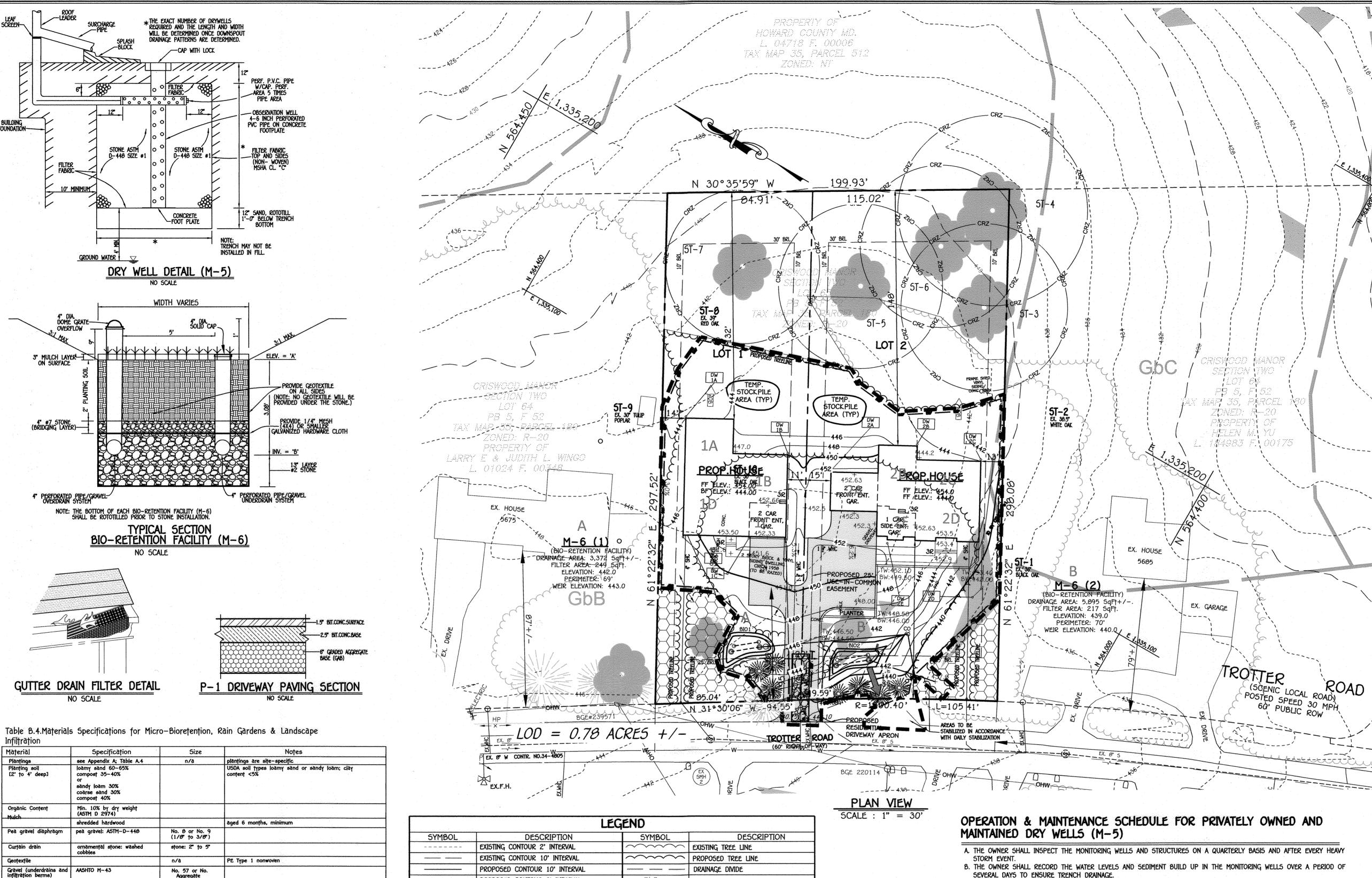
PLAT BOOK 5, PAGE 52 TAX MAP NO.: 35 GRID NO.: 02 PARCEL NO.: 0180 ZONED R-20

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2020

SHEET 1 OF 4 ECP-20-051







Infiltration			Andrew Commencer Com
Material	Specification	Size	Notes
Plantings	see Appendix A; Table A.4	n/a	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)		
	shredded hardwood		aged 6 months, minimum
Peā grāvel diāphrāgm	pea gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Grävel (underdräins änd infilträtion berms)	AA5HTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Type P5 20 or AASHTO M-270	4" to 6" rigid schedule 40 PVC or 50R35	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 State 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/09; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AA5HTO-M-6 or A5TM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (MSHTO) #10 are n acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
			In the second of

#### SEDIMENT CONTROL LEGEND

FISHER, COLLINS & CARTER, CIVIL ENGINEERING CONSULTANTS & LAND SURV	IEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATION ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055	AL PIKE
Approved: Department Of Planning And Zoning	Z:17:21
Chief, Development Engineering Division	Date
Chief, Division Of Land Development &	<u>Jalu</u> Date

LIMIT OF DISTURBANCE SUPER SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE/MOUNTABLE BERM PERMANENT SOIL STABILIZATION

CONTROL MATTING

#### PROPOSED CONTOUR 10' INTERVAL DRAINAGE DIVIDE PROPOSED CONTOUR 2' INTERVAL SOIL LINES AND TYPES EXISTING FENCE PERMANENT SOIL STABILIZATION SPOT ELEVATION ×448.5 CONTROL MATTING 18" 50 EX. F.H. 8"W EXISTING STORM DRAIN BIO RETENTION FACILITY EXISTING WATER LINE (F-6) OR (M-6) AS NOTED EXISTING FENCE LINE PROPOSED ROOF LEADER 8"5 EXISTING SEWER LINE DENOTES EXISTING TREES EXISTING OVERHEAD WIRE TO BE REMOVED PROPOSED PAVING PRIVATE UIC EASEMENT DENOTES EXISTING TREES TO REMAIN PRIVATE DRAINAGE & UTILITY EASEMENT LIMIT OF DISTURBANCE SPECIMEN TREE - DF/TP - DIVERSION FENCE/TREE PROTECTION FENCE

DENOTES MBR OVERLAND FLOWPATH

CRITICAL ROOT ZONE

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.

PROFESSIONAL CERTIFICATION

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) AND (F-6) ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF 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

1/20/21

MATERIAL AND PRUNING. 2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

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

PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.

OPERATION AND MAINTENANCE CRITERIA.

SCHEDULE IS REQUIRED.

D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME

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

SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT

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

MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2

SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

OWNER/DEVELOPER

#### DIVYESH & SOHILRAJ SAPARIYA 7304 WATERLOO WALK LAUREL, MD. 20707

(301) 275 0762

#### INFILTRATION AND FILTER SYSTEM CONSTRUCTION SPECIFICATIONS

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH AS SAND FOR WC). AND RE V. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR QP AS WELL. THE MOST COMMON SYSTEMS INCLUDE INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS.

WHEN PROPERLY PLANTED, VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE, PRE-TREATMENT BUFFERS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE ARTERIES FOR STORMWATER TO PERMEATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

#### DESIGN CONSTRAINTS:

- > PLANTING BUFFER STRIPS OF AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE REACHING THE FACILITY. THEREBY REDUCING THE POSSIBILITY OF CLOGGING.
- > DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGY WILL BE SIMILAR TO BIORETENTION FACILITIES, SEE FIGURE A.5 AND TABLE A.4 FOR PLANTING MATERIAL GUIDANCE). > PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER
- > TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY. > PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.
- > STABILIZE HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SOD.
- > TEMPORARILY DIVERT FLOWS FROM SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED. > SEE TABLE A.5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

#### BIO-RETENTION SOIL BED CHARACTERISTICS

FABRIC IS USED AS PART OF FACILITY DESIGN.

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND. THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR

CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME [ENVIRONMENTAL QUALITY RESOURCES (EQR), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993]. SOILS SHOULD FALL WITHIN THE SM. ML. SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUGWORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.00.01.05.) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 10 LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

#### TABLE A.3 PLANTING SOIL CHARACTERISTICS

PARAMETER	VALUE		
PH RANGE	5.2 TO 7.00		
organic matter	1.5 TO 4.0% (BY WEIGHT)		
Magnesium	35 LBS. PER ACRE, MINIMUM		
PHOSPHORUS (PHOSPHATE - P205)	75 LBS. PER ACRE, MINIMUM		
POTASSIUM (POTASH -1(K2O)	05 LBS. PER ACRE, MINIMUM		
SOLUBLE SALTS	500 PPM		
CLAY	10 TO 25 %		
SILT	30 TO 55 %		
SAND	35 TO 60%		

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A

### PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIORETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES. BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES. SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIORETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE.

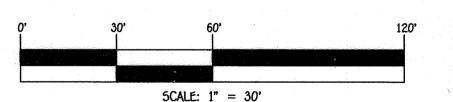
THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THER ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE

IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRYER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A RANDOM, AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTOR AND 5CHUELER, 1997.

50IL5 LEGEND					
50IL	NAME	CLA55	'K'VALUE		
GbB	Gladstone loam, 3 to 8 percent slopes	В	.32		
GbC	Gladstone loam, 8 to 15 percent slopes	В	.32		
GPC	HOWARD COUNTY WEBSOILS	SURVEY 09	JL		

#### DAILY STABILIZATION NOTE

ALL DISTURBED AREAS NOT DIRECTED TO A SEDIMENT CONTROL DEVICE SHALL BE STABILIZED AT THE END OF EACH WORKDAY. THE CONTRACTOR SHALL NOT DISTURB AN AREA GREATER THAN THAT WHICH CAN BE STABILIZED AT THE END OF EACH WORKDAY



PRELIMINARY EROSION/SEDIMENT CONTROL PLAN AND STORMWATER MANAGEMENT NOTES AND DETAILS

#### SAPARIYA PROPERTY

5669 TROTTER ROAD A RESUBDIVISION OF CRISWOOD MANOR SECTION TWO - LOT 65

PLAT BOOK 5, PAGE 52 TAX MAP NO.: 35 GRID NO.: 02 PARCEL NO.: 0180 ZONED R-20

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: NOVEMBER, 2020 SHEET 4 OF 4

ECP-20-051