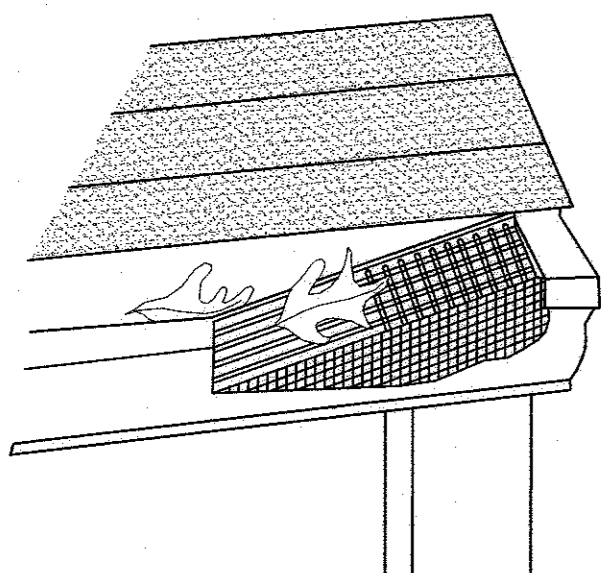


SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
UFA	Urban Land-Fallsington Complex, 0 to 2 percent slope	D	.02
UsB	Urban Land-Sassafras-Beltville Complex, 0 to 5 percent slope	D	.37
Soil Map Number: 19 (Savage, NE)			

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
SITE	300	665	MICRO-BIORETENTION (M-6)
TOTAL	300	665	

GROSS AREA = 0.559 ACRES (LOT 1)  
 LOD = 0.46 ACRES  
 RCN = 77  
 TARGET Pe = 1.0"



GUTTER DRAIN FILTER DETAIL  
 NOT TO SCALE

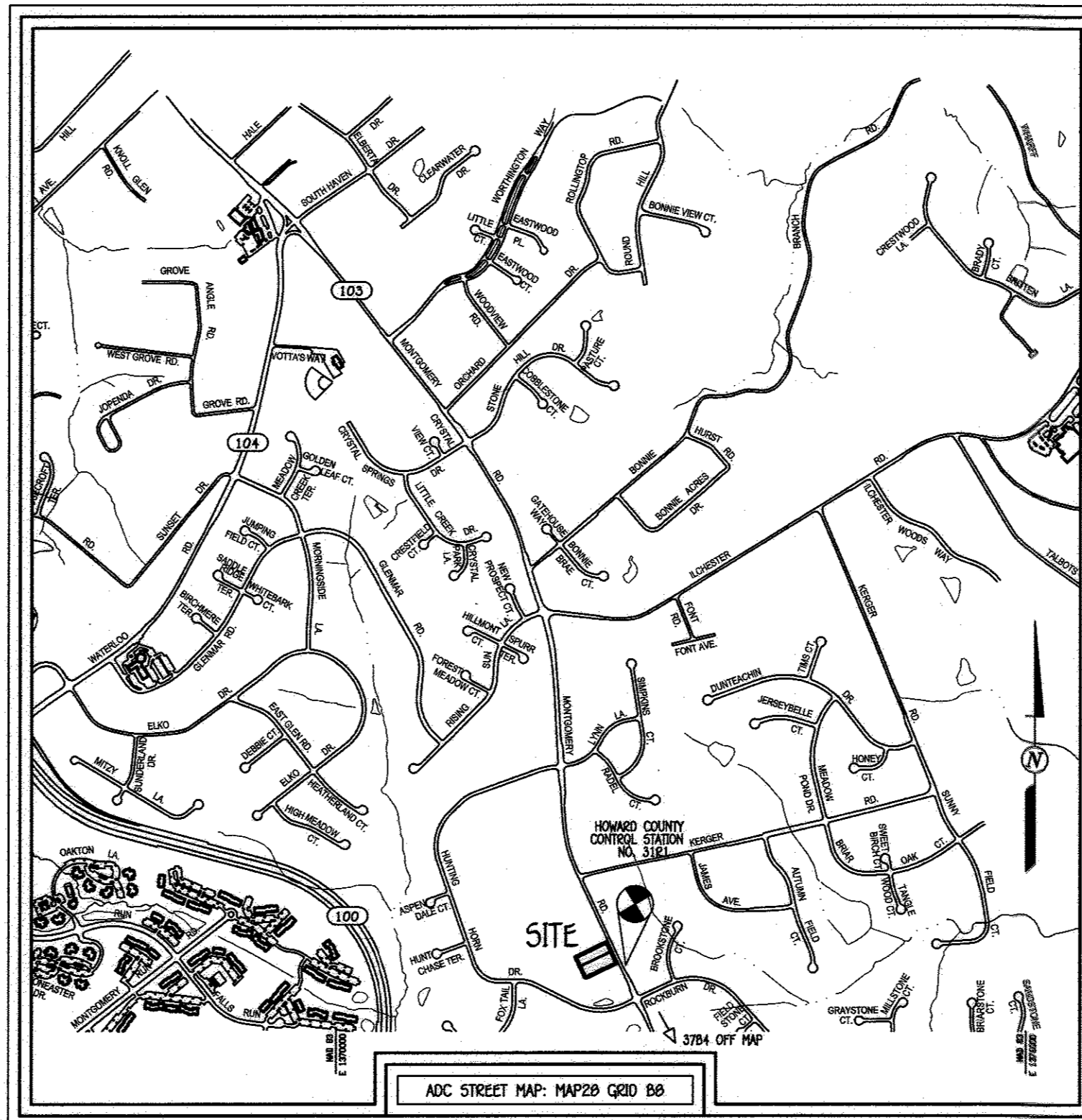
# ENVIRONMENTAL CONCEPT PLAN PAGAN PROPERTY LOTS 1 AND 2

TAX MAP No. 31 GRID No. 20 PARCEL NO. 199  
 FISRT ELECTION DISTRICT HOWARD COUNTY, MARYLAND

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING 2' CONTOURS		PROPOSED CONTOUR
	EXISTING 10' CONTOURS		SPOT ELEVATION
	SOILS LINES AND TYPE		LIMITS OF DISTURBANCE
	EXISTING TREELINE		DRAINAGE AREA DIVIDE
	INDIVIDUAL TREES & SHRUBS		SILT FENCE
	EXISTING FENCE LINE		FLOW ARROWS
	EXISTING & PROPOSED PAVING		STABILIZES CONSTRUCTION ENTRANCE

### GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1980 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY (MSS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED APRIL 2016. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN APRIL 2016 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 41CD AND 41CE WERE USED FOR THIS PROJECT.
- PREVIOUS DPZ FILE NUMBERS: N/A.
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE H.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009.
- NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOTS TO BE SERVED PUBLIC WATER AND PRIVATE SEWER, CONTRACT #10-1215 & 132-W.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN).
- NO 100 YEAR FLOODPLAIN, WETLANDS, STREAM(S) AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.
- NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENTIAL PROFESSIONALS, INC. DATED JULY 14, 2016.
- LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
- THIS PROJECT IS A MINOR SUBDIVISION CREATING ONE NEW LOT WITH NO FURTHER SUBDIVISION POTENTIAL. THIS SUBDIVISION IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202(b)(1)(vii) OF THE COUNTY CODE.
- A SOIL BORING WILL BE REQUIRED FOR THIS PROJECT SINCE DEWELLS ARE BEING UTILIZED.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT SUBDIVISION, FOREST CONSERVATION, OR SITE DEVELOPMENT PLANS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS THAT MAY ALTER THE SITE DESIGN, HOUSE LOCATION, DRIVEWAY LOCATION, GRADING, TREE CLEANSING, AND/OR OTHER REQUIREMENTS AS THE DEVELOPMENT PLAN PROGRESSES THROUGH THE PLAN REVIEW PROCESS IN ACCORDANCE WITH THE SUBDIVISION AND ZONING REGULATIONS AND THE FOREST CONSERVATION REQUIREMENTS.
- APPROVAL OF THIS ECP BY THE HOWARD COUNTY CONSERVATION DISTRICT DOES NOT PROVIDE APPROVAL OF THE SHOWN SEDIMENT CONTROLS.
- A STRUCTURE EXISTS ON THE PROPERTY, KNOWN AS 5522 MONTGOMERY ROAD, WHICH IS TO REMAIN.
- SOILS SHOWN HEREON ARE BASED ON THE HRCES WESSON SURVEY AND HOWARD COUNTY SOIL MAP #19.
- THERE ARE NO CEMETERY OR HISTORICAL FEATURES ON-SITE.



VICINITY MAP  
 SCALE: 1" = 1200'

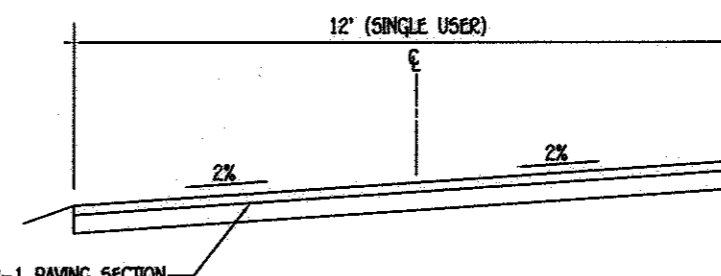
BENCHMARK INFORMATION	
B.M.#1 - HOWARD COUNTY CONTROL STATION #3181 - HORIZONTAL - (NAD '83) (LOCATED ON THE EAST SIDE OF MONTGOMERY ROAD NORTH OF HUNTING HORN DRIVE) N 565,303.479 E 1,372,517.790 ELEVATION = 400.938 - VERTICAL - (NAVD '86)	
B.M.#2 - HOWARD COUNTY CONTROL STATION #3784 - HORIZONTAL - (NAD '83) (LOCATED ON THE WEST SIDE OF MONTGOMERY ROAD SOUTH OF HUNTING HORN DRIVE) N 563,929.557 E 1,373,109.173 ELEVATION = 401.357 - VERTICAL - (NAVD '86)	

Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

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 3% - 6% 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. 8 or No. 9 (1/8" to 3/8")	
Curtain drain	ornamental stone: washed cobble	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	ASHTO M-43	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Type PS 28 or ASHTO M-278	4" to 6" rigid schedule 40 PVC or 50635	slotted or perforated pipe; 3/8" perf. @ 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 @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 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 350.8/89; vertical loading (1-10 or H-20); allowable horizontal loading (based on soil pressure); and analysis of potential cracking
Sand	ASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Ottawa and Geyserite (ASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

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

- 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.
- THE OWNER SHALL PERFORM A PLAN 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.
- 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 NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION  
 NOT TO SCALE

### SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 0.559 AC. (LOT 1).
- LIMIT OF DISTURBED AREA = 20,200 SQ.FT. OR 0.464 AC.
- PRESENT ZONING DESIGNATION = R-20  
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC.
- TOTAL AREA OF STEEP SLOPES:  
WOODSHED STEEP SLOPES: 15% - 24.9% = 0.00 AC.  
STEEP SLOPES: 25% OR GREATER = 0.00 AC.
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC.
- TOTAL AREA OF EXISTING FOREST = 0.00 AC.
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC.
- TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.559 AC.
- TOTAL GREEN OPEN AREA = 0.469 AC.
- TOTAL IMPERVIOUS AREA = 0.090 AC.
- TOTAL AREA OF ERODIBLE SOILS = 0.00 AC.
- TOTAL AREA OF ROAD DEDICATION = 0.00 AC.

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21104  
 (410) 461-2292

NO.	REVISION	DATE

### 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. 31351, EXPIRATION DATE: 07/15/2017.

*Joseph M. Pagan*  
 Signature Of Professional Land Surveyor  
 DATE: 9/20/2016



### OWNER/DEVELOPER

JOSEPH AND MARY PAGAN  
 5522 MONTGOMERY ROAD  
 ELLICOTT CITY, MARYLAND 21043-7022  
 443-307-1994

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Robert L. ...*  
 Chief, Division of Land Development  
 Date: 9-22-16

*Chad ...*  
 Chief, Development Engineering Division  
 Date: 10-5-16

PROJECT: PAGAN PROPERTY, LOTS 1 AND 2  
 SECTION: -  
 PARCEL NO.: 199

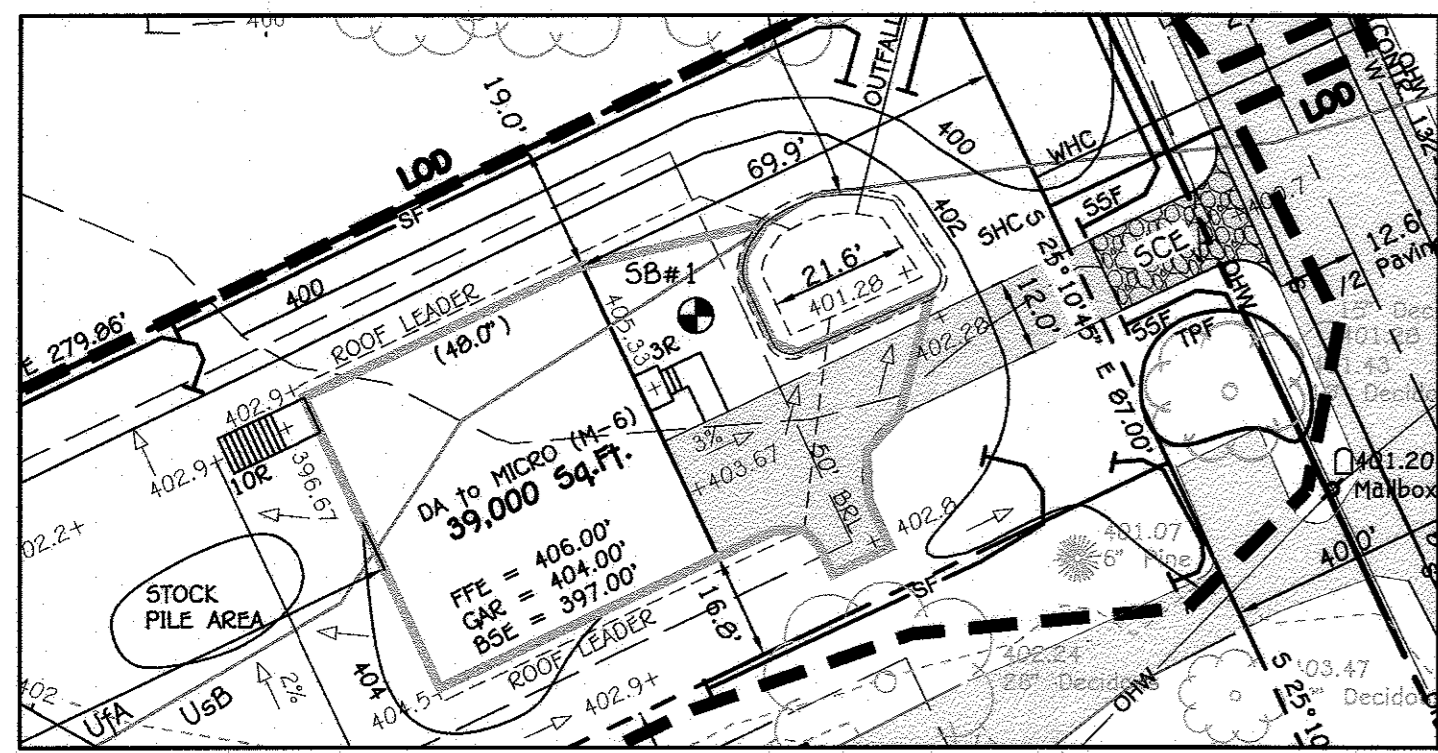
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 16665 F. 179	20	R-20	31	FIRST	601105

### TITLE SHEET

PAGAN PROPERTY,  
 LOTS 1 AND 2  
 5522 MONTGOMERY ROAD  
 ZONED R-20

TAX MAP No. 31 GRID No. 20 PARCEL No. 199  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: SEPT. 20, 2016  
 SHEET 1 OF 2

ECP-16-068



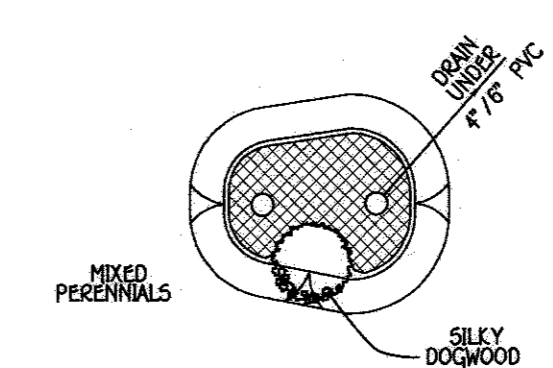
DRAINAGE AREA DETAIL  
SCALE: 1" = 30'

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING 2' CONTOURS		PROPOSED CONTOUR
	EXISTING 10' CONTOURS		SPOT ELEVATION
	SOILS LINES AND TYPE		LIMITS OF DISTURBANCE
	EXISTING TREELINE		DRAINAGE AREA DIVIDE
	INDIVIDUAL TREES & SHRUBS		SILT FENCE
	EXISTING FENCE LINE		EROSION CONTROL MATTING
	EXISTING & PROPOSED PAVING		STABILIZES CONSTRUCTION ENTRANCE
	H.P. HIGH POINT		TO BE REMOVED OR RELOCATED

STORMWATER MANAGEMENT PRACTICES				
LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRY WELLS (M-5) Y/N, NUMBER	MICRO-BIORETENTION (M-6) Y/N, NUMBER
2	-	-	-	-
1	NO	NO	NO	YES (1)

SOILS LEGEND				
SOIL	NAME	CLASS	K FACTOR	
UJA	Urban Land-Fallsington Complex, 0 to 2 percent slope	D	.02	
UB	Urban Land-Sassafra-Beltville Complex, 0 to 5 percent slope	D	.37	

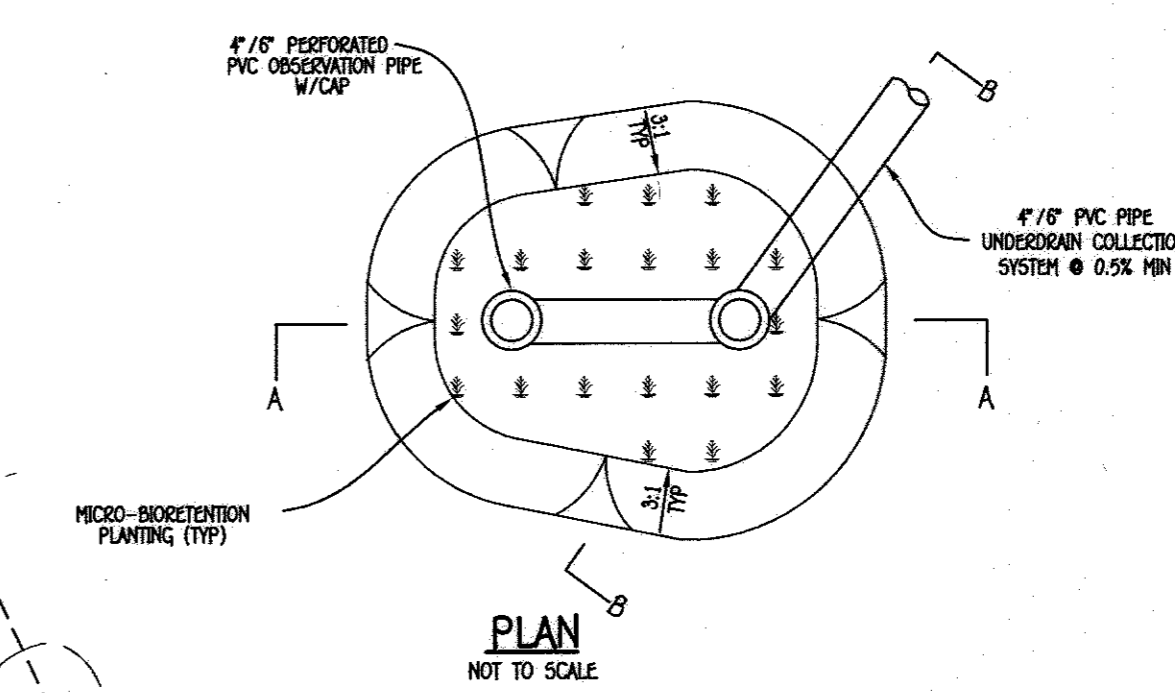
Soil Map Number: 19 (Savage, ND)



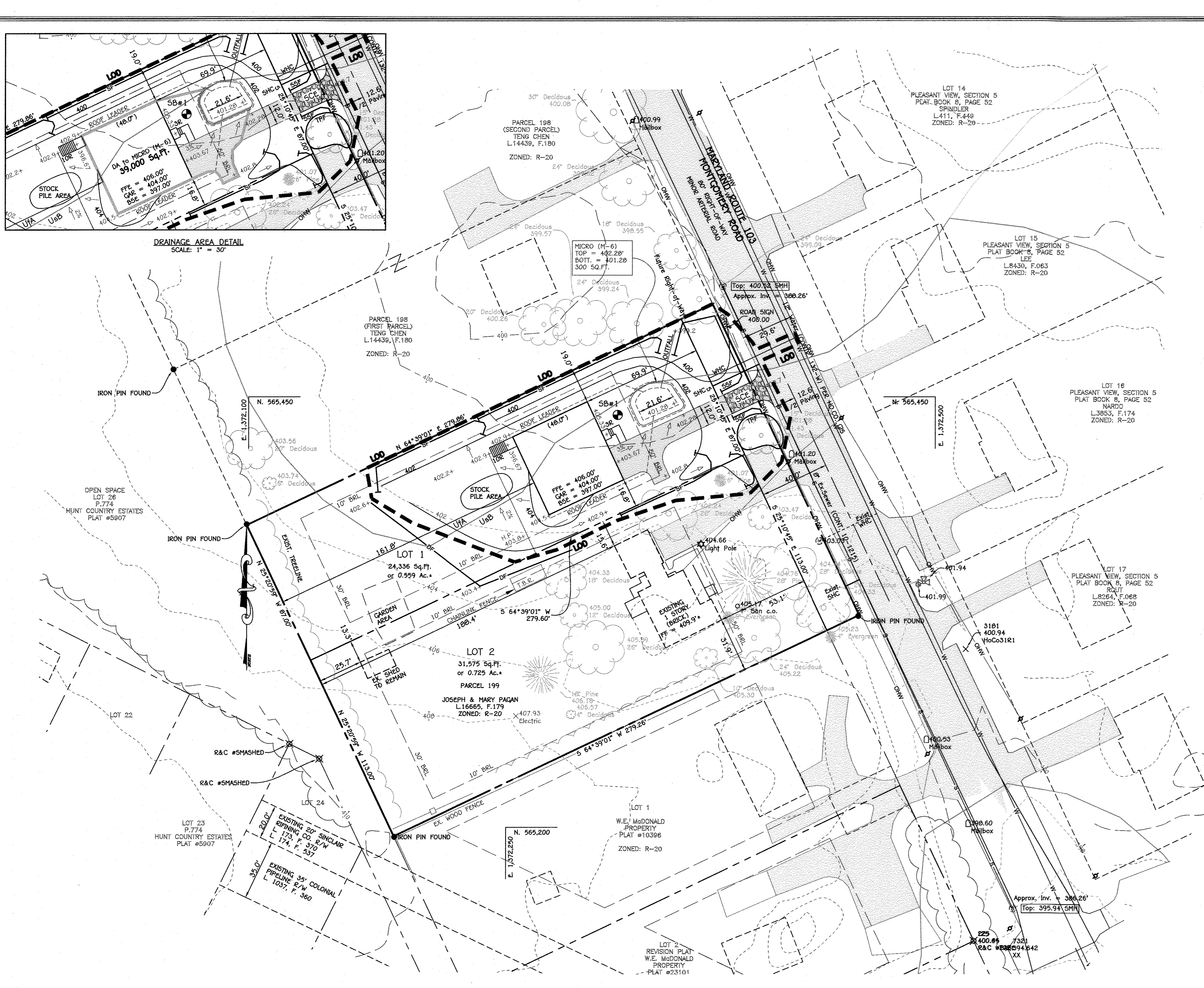
MICRO-BIORETENTION PLANTING DETAIL  
NOT TO SCALE

MICRO-BIORETENTION / BIORETENTION									
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I
1	402.28	402.28	401.28	401.03	400.03	399.78	399.53	399.2	399.2

MICRO-BIORETENTION PLANT MATERIAL		
MICRO-BIO QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1.5 TO 3.0 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



MICRO-BIORETENTION DETAIL (M-6)  
NOT TO SCALE



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21114  
 (410) 461-2929

NO.	REVISION	DATE	X

**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. 51351. EXPIRATION DATE: 07/15/2017.

*Signature of Professional Land Surveyor*      9/20/2016      DATE

**OWNER/DEVELOPER**  
 JOSEPH AND MARY PAGAN  
 5522 MONTGOMERY ROAD  
 ELLICOTT CITY, MARYLAND 21043-7022  
 443-307-1594

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Signature*      9-22-16      Date  
 Chief, Division of Land Development

*Signature*      10-5-16      Date  
 Chief, Development Engineering Division      J Y

PROJECT	SECTION	PARCEL NO.
PAGAN PROPERTY, LOTS 1 AND 2	-	199

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 16665 F. 179	20	R-20	31	FIRST	601105

**ENVIRONMENTAL CONCEPT PLAN**

**PAGAN PROPERTY,**  
 LOTS 1 AND 2  
 5522 MONTGOMERY ROAD  
 ZONED R-20  
 TAX MAP No. 31 GRID No. 20 PARCEL No. 199  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: SEPT. 20, 2016  
 SHEET 2 OF 2

**ECP-16-068**