

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH O.S. STANDARDS.
2. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE EXISTING TOPOGRAPHIC INFORMATION FROM HOWARD COUNTY GIS, COUNTY RECORDS, AND UTILITIES FROM PREVIOUSLY APPROVED SDP-02-113 AND CONTRACT DRAWINGS.
4. COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM - NAD83(1991).
5. THE PROPERTY LINES SHOWN HEREON IS BASED ON RECORD PLAT 15803.
6. ALL ELEVATIONS ARE TO FLOWLINE/TOP OF CURB UNLESS OTHERWISE NOTED.
7. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL PAVING TO BE PAVING PER GEOTECHNICAL RECOMMENDATIONS.
8. THE SUBJECT PROPERTY IS ZONED B-1 PER ZONING BOARD CASE 1094M, 03-19-2012.
9. PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 113-W.
10. PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 24-4012-D AND 125-S.
11. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
12. THE 100-YR FLOODPLAIN SHOWN PER FEMA FLOOD INSURANCE RATE MAP PANEL 240044 0023 B, AND PREVIOUSLY APPROVED UNDER SDP-02-113.
13. THIS SITE CONTAINS WETLANDS, WETLAND BUFFERS, STREAMS, AND STREAM BUFFERS, AND PREVIOUSLY APPROVED UNDER SDP-02-113. RE-CERTIFICATION OF WETLAND AND STREAM PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED 01/31/12. THERE ARE NOT STEEP SLOPES ON SITE.
14. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
15. THE FOREST STAND DELINEATION PREVIOUSLY PROVIDED UNDER SDP-02-113.
16. THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT HAS BEEN PREVIOUSLY SATISFIED UNDER SDP-02-113 WITH THE RETENTION OF 1.9 ACRES (0.9 CREDITED AND 1.0 NON-CREDITED) WHICH MEETS OR EXCEEDS THE BREAK-EVEN POINT OBLIGATION OF 0.8 ACRES FOR THIS SITE. A FOREST CONSERVATION SURVEY IN THE AMOUNT OF \$7,841.00 WAS POSTED FOR THE RETENTION (PLAT 15803). THE FOREST CONSERVATION ABANDONMENT PROPOSED, SHALL BE APPROVED BY HOWARD COUNTY, AND WILL BE REPLANTED ON-SITE WITH A NEW FOREST CONSERVATION EASEMENT AND SHALL BE IN CONJUNCTION WITH THE SUBSEQUENT SITE DEVELOPMENT PLAN.
17. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING GRADING PERMIT APPLICATION.
18. A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5" IN HEIGHT AND NO MORE THAN 6' LATERSALLY FROM THE DOOR. ITS LOCATION IS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
19. LANDSCAPING NOT PERMITTED WITHIN 7'-1/2" OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION, NPPA-1 13.1.4.
20. FIRE LINES SHOULD BE PROVIDED IN THIS SITE TO ALLOW EMERGENCY VEHICLE ACCESS. EITHER FIRE LANE SIGNAGE SHOULD BE INSTALLED, OR THE CURBS SHOULD BE PAINTED IN RED AND STENCILED TO IDENTIFY THE ROAD AS A FIRE LANE. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED SQUARE TUBE POST (1 1/2" DIA) INSERTED INTO A 2'-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (1 1/2" DIA) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
21. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. (DETAILS ON SHEET 2 AND 3).
22. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
23. STORMWATER MANAGEMENT FOR THIS PROJECT IS BEING PROVIDED BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO-BIORETENTION FACILITIES (M-6) AND PERMEABLE PAVEMENT (A-2) TO ACCOMMODATE THE TOTAL ESD VOLUME REQUIRED. SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED.
24. TRASH AND RECYCLING COLLECTION TO BE PRIVATE.
25. THE PROPOSED BUILDINGS WILL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
26. THERE ARE NO SPECIEM OR CHAMPION TREES WITHIN THE LDD.
27. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS, OR THEIR BUFFERS, FOREST CONSERVATION AREAS AND 100 YEAR FLOODPLAIN.
28. SIGNAGE SHALL BE PROVIDED ON THE BUILDING IDENTIFYING THE BUILDING ADDRESS, AND EACH SUITE SEPARATED BY LETTER.
29. THIS PLAN IS SUBJECT TO ZB-1094, A ZONING PETITION TO AMEND THE ZONING MAP OF HOWARD COUNTY TO RECLASSIFY THIS PARCEL FROM R-20 (RESIDENTIAL: SINGLE DISTRICT TO B-1 (BUSINESS: LOCAL), GRANTED ON 03-19-2012.
30. THE PROPOSED DISTURBANCE TO THE 100-YEAR FLOODPLAIN AND THE WETLAND BUFFER IS CONSIDERED A NECESSARY DISTURBANCE IN ACCORDANCE WITH SECTION 116.116(c) FOR THE CONSTRUCTION OF THE SHOWN STORM DRAIN, WHICH PROVIDES OUTFALL FOR THE ON-SITE STORMWATER MANAGEMENT FACILITIES AND STORM DRAIN. THE INTENT OF THE DESIGN IS TO EXTEND THE OUTFALL TO BE CLOSER TO THE STREAM, THEREFORE MINIMIZING THE POTENTIAL FOR FUTURE EROSION. FURTHERMORE, THE EXISTING SITE GRADES DO NOT PROVIDE ENOUGH VERTICAL GRADE CHANGE IN ORDER TO PROPERLY OUTFALL THE FACILITIES. SEDIMENT CONTROL WILL BE PROVIDED FOR ALL CONSTRUCTION ACTIVITY.

ARCADIA SQUARE

9525 BALTIMORE NATIONAL PIKE

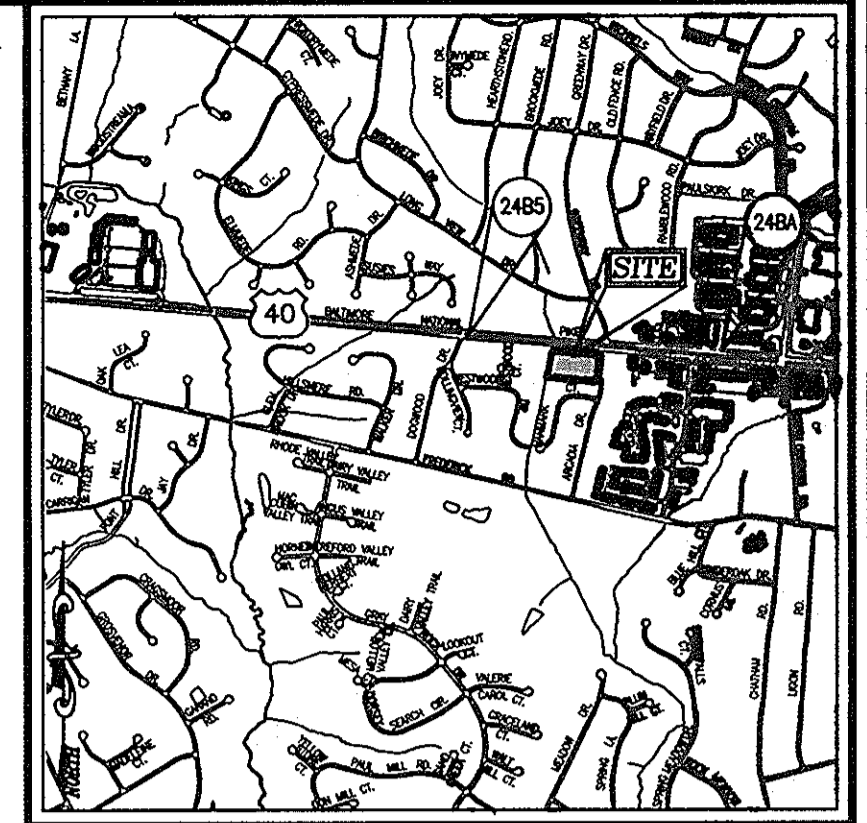
RESTAURANT AND RETAIL

L.1551 / F.89 (PLAT 15803)

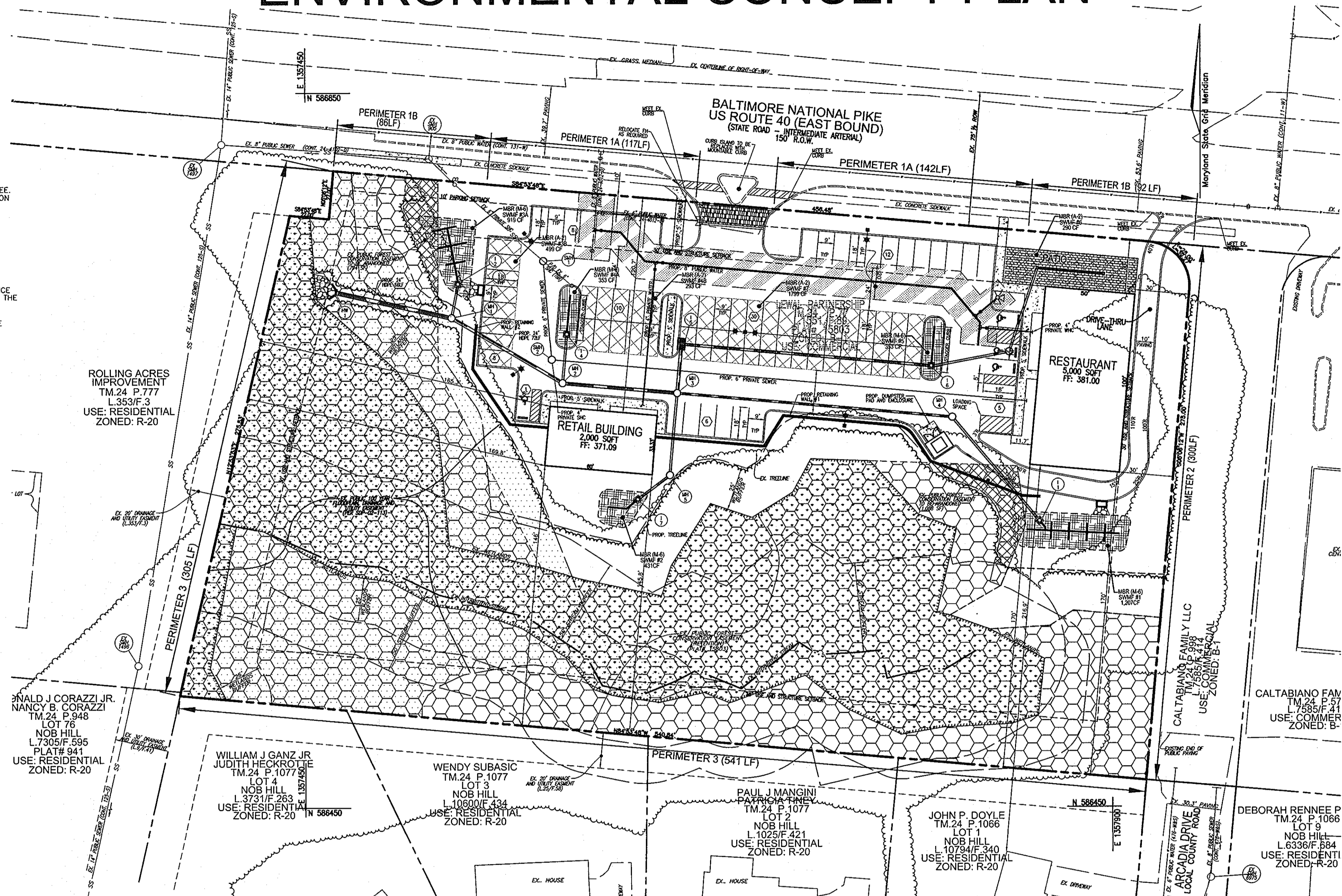
ENVIRONMENTAL CONCEPT PLAN

BENCHMARKS

HOWARD COUNTY BENCHMARK 248A	N 586,783.2418	E 1,359,211.6588	ELEV.: 385.600'
HOWARD COUNTY BENCHMARK 248S	N 586,956.2726	E 1,356,570.7844	ELEV.: 390.170'



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATES: 4815 F6



PLAN VIEW
SCALE: 1"=40'

SITE DATA

LOCATION : ELICOTT CITY, MD.; TAX MAP 24, BLOCK 4, PARCEL 77
1ST ELECTION DISTRICT
PRESENT ZONING : B-1
PARCEL AREA : 3.564 AC.
DPZ REFERENCES : L.1551/F.89, PLAT 15803, SDP-02-113, ZB-1044M, ZB-1094
USE OF STRUCTURES: RESTAURANT AND RETAIL
TOTAL BUILDING COVERAGE: 7,000 SF (0.16 AC. OR 4.48% OF GROSS AREA)
PAVED PARKING LOT AREA ON THIS SITE: 31,957 SF (0.73 AC. OR 20.42% OF GROSS AREA)
AREA OF LANDSCAPE ISLAND: 13,321 SF (0.30 AC. OR 0.84% OF GROSS AREA)
LIMIT OF DISTURBED AREA: 65,823 SF/1.51 AC
WETLANDS ON SITE: 0.98 AC
WETLAND BUFFERS ON SITE: 0.72 AC
STREAMS AND THEIR BUFFERS ON SITE: 1.10 AC
AREA OF STEEP SLOPES ON SITE: 0.99 AC
AREA OF EXISTING FOREST ON SITE: 2.24 AC
AREA OF ERODIBLE SOILS: 0.00 AC
AREA MANAGED BY ESDV (THIS PLAN): 1.51 AC
*IMPERVIOUS AREA : 0.97 AC.
*GREEN AREA: 0.54 AC.

ENVIRONMENTAL SITE DESIGN NARRATIVE

1. THE PROPERTY DOES CONTAIN WETLANDS, A STREAM AND 100 YEAR FLOODPLAIN AS INDICATED ON THE PREVIOUSLY APPROVED PLAT 15803. THE OUTFALL FOR THE PROJECT HAS BEEN SHOWN THROUGH THE 100 YEAR FLOODPLAIN INTO THE EXISTING WETLAND AREA AND STREAM, WHICH WILL BE A MINOR AMOUNT OF DISTURBANCE. WITH THE EXCEPTION OF THE OUTFALL, THE NATURAL RESOURCES WILL REMAIN UNDISTURBED, PROTECTED AND ENHANCED.
2. THE SITE'S NATURALLY SLOPES FROM EAST TO WEST. THE OFFSITE DRAINAGE FLOWING TO THE SITE WILL REMAIN UNDISTURBED AND WILL CONTINUE TO FLOW TO THE EXISTING STREAM. THE PROPOSED DEVELOPMENT IS COMPRISED OF A RESTAURANT AND A RETAIL BUILDING WITH ASSOCIATED PARKING. THE SITE HAS BEEN DESIGNED TO ALSO MAINTAIN THESE NATURAL FLOW PATTERNS.
3. THE SOILS ARE SPECIFIED AS HYDROLOGIC SOIL GROUP (HSG) 'B', 'C' & 'D' AND ARE SPECIFIED AS BAILE, URBAN LAND & GLENELG SOILS IN CONJUNCTION WITH THE HOWARD COUNTY SOIL SURVEY. THE TOPOGRAPHY DOES NOT RESULT IN ANY STEEP SLOPES.
4. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, ENVIRONMENTAL SITE DESIGN CRITERIA HAVE BEEN IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT. THE ENVIRONMENTAL CONCEPT PLAN ADDRESSES THE OVERALL REQUIREMENTS FOR THE SITE BY UTILIZING MICRO-BIORETENTION FACILITIES (M-6) AND PERMEABLE PAVEMENT TO ACCOMMODATE THE TOTAL ESD VOLUME REQUIRED FOR THE PROJECT. THE PROPOSED ESD PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED.
5. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PERIMETER CONTROLS (SILT & SUPER SILT FENCE) AND INLET PROTECTION. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
6. THERE ARE 7 DRAINAGE SUB AREAS WHICH HAVE BEEN DELINEATED BY ESD TREATMENT. THE "OTHER AREA" IS SPECIFICALLY THOSE SMALL AREAS WHICH CANNOT BE CAPTURED AND ARE GENERALLY GRASS LOCATED ADJACENT TO THE PERIMETERS.

LEGEND

	EXISTING CONTOUR		EXISTING FENCE
	PROPOSED CONTOUR		PROPERTY LINE
	EXISTING CURB AND GUTTER		RIGHT-OF-WAY LINE
	PROPOSED CURB AND GUTTER		SOILS BOUNDARY
	EXISTING UTILITY POLE		LIMIT OF DISTURBANCE
	EXISTING LIGHT POLE		PROPOSED SIDEWALK
	EXISTING MAILBOX		EXISTING TREELINE
	EXISTING SIGN		PROPOSED TREELINE
	EXISTING SANITARY MANHOLE		PROPOSED STORM DRAIN
	EXISTING SANITARY LINE		PROPOSED STORM DRAIN INLET
	EXISTING CLEANOUT		PROPOSED PERMEABLE PAVEMENT
	EXISTING FIRE HYDRANT		
	EXISTING WATER LINE		

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/14/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

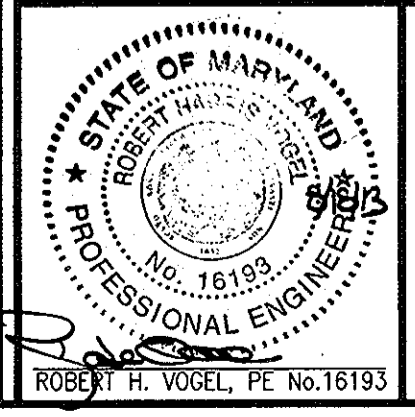
[Signature] 5/13/13
CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET, ECP PLAN	1 OF 2
SWM DRAINAGE AREA MAP, SWM DETAILS	2 OF 2

OWNER/DEVELOPER
LEWAL PARTNERSHIP
100 PAINTERS MILL ROAD
SUITE 900
OWINGS MILLS, MD 21117
410-363-3434

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

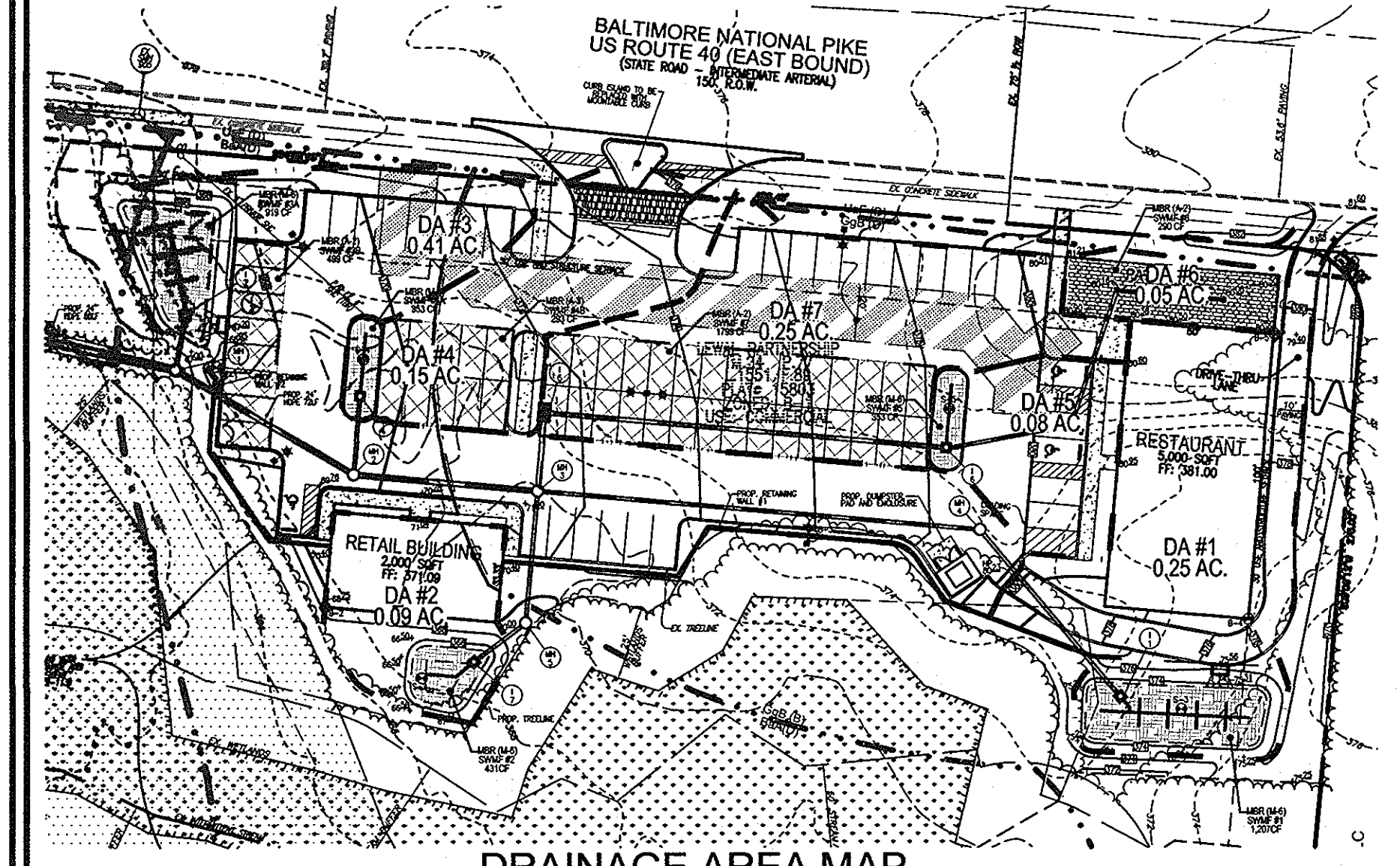


PROFESSIONAL CERTIFICATE

DESIGN BY: DZ
DRAWN BY: DZ
CHECKED BY: RHW
DATE: MARCH 2013
SCALE: AS SHOWN
W.O. NO.: 09-14

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. EXPIRATION DATE: 09-30-2014

1 SHEET OF 2



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/14/13
 CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

[Signature] 5/13/13
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS
 THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DEFINED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR PLACED WITH THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE AN OBSTACLE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMASS, GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER INVASIVE WEEDS OR OTHER UNDESIRABLE PLANT SPECIES.

3. COMPACTION
 IT IS VERY IMPORTANT TO MAINTAIN COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BENTONIT, WHEN POSSIBLE. USE COMPACTORS TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WALK BEHIND TRACK COMPACTOR, OR LIGHT EQUIPMENT WITH TURF TIRE TYRES. USE OF EQUIPMENT WITH MUD TRACKS OR MUD TREADS, RUBBER TYRES WITH LARGE LUGS, OR HIGH-PRESSURE TYRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED WATER INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY COMPROMISE TO DESIGN FAILURE.

4. PLANT MATERIAL
 RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION
 COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS WHICH SHOULD BE PLACED IN SUBSEQUENT TO THE REMOVAL OF THE TOPSOIL FROM THE SITE.

6. UNDERDRAINS
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 • PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIBBON PLASTIC PIPE (ASTM F756, PE 28, OR AGRIC-10-278) IN A GRAVEL LAYER.
 • PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 1/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER FOOT. PIPE SHALL BE 1/8" OR 3/16" THICK GALVANIZED STEEL OR POLYETHYLENE TEREPHTHALATE (PET) WITH PERFORATIONS.
 • GRVEL - THE GRAVEL LAYER (NO. 89 OR 88) SHOULD BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

7. MISCELLANEOUS
 THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF
 THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

1. PERVIOUS CONCRETE SPECIFICATIONS
 DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 325.9R, ACI 330R) OR USING STRUCTURAL VALUES DERIVED FROM FLEXIBLE PAVEMENT DESIGN PROCEDURES.

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)
 PAVEMENT BLOCKS - BLOCKS SHOULD BE EITHER 3" IN. OR 4" IN. THICK, AND MEET ASTM C 936 OR CSA A231-2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% PREFERRED) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT INFILL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED.

3. REINFORCED TURF
 REINFORCED GRASS PAVEMENT (RGP) - WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

1. 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. PULLING, ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME 1, TABLE A.4.1 AND 2.

2. 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.

3. 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.

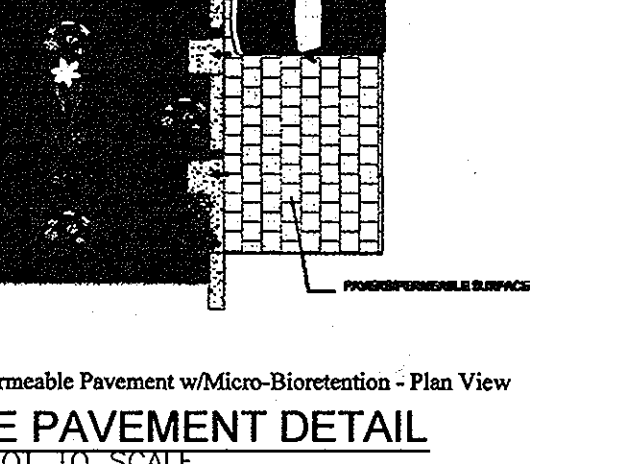
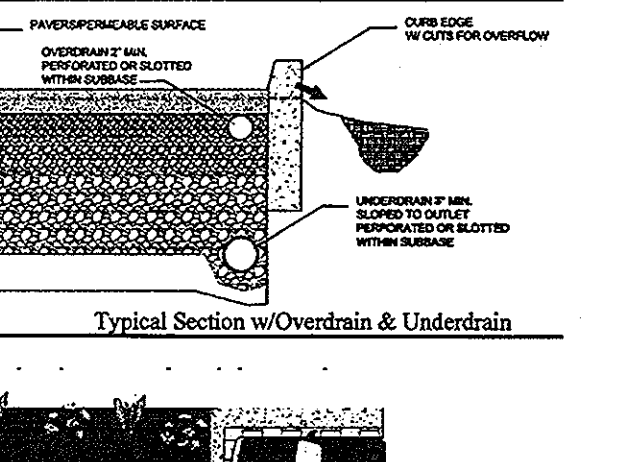
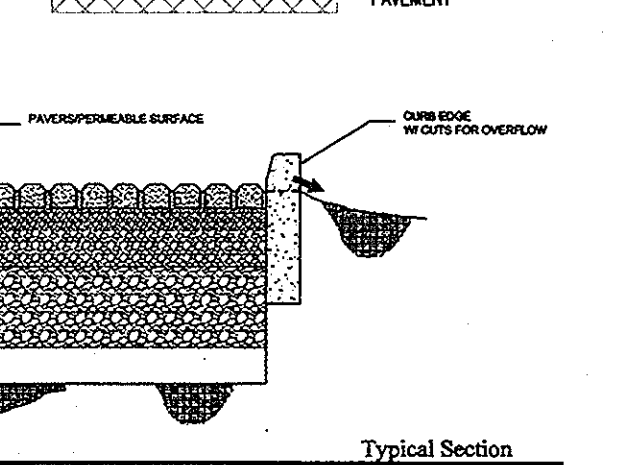
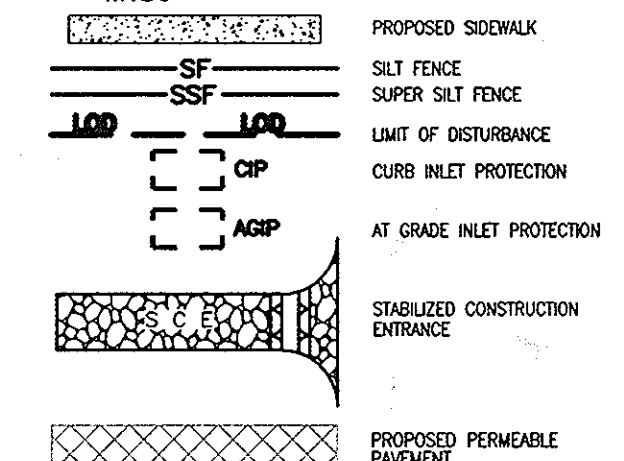
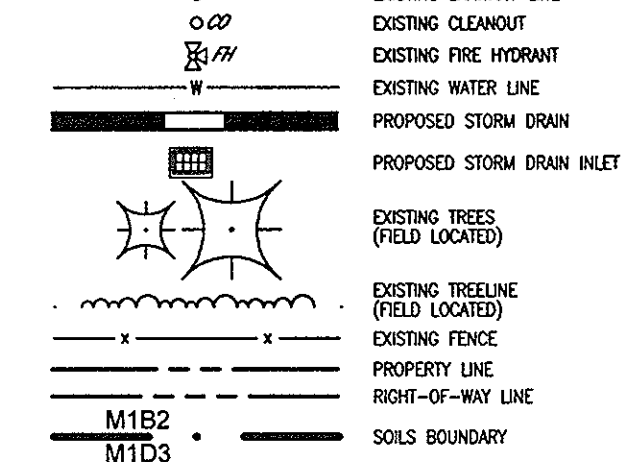
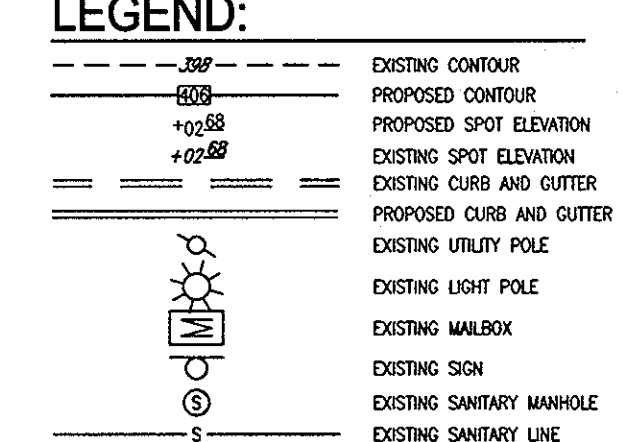
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

1. THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REMOVE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT, WASHING OR COMPRESSED AIR TREATMENT NOT BE USED TO PERFORM SURFACE CLEANING.

2. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE GLENS, DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.

3. THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.

4. THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
BoA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPES	D
Co	CODORUS AND HARBOR SILT LOAMS, 0 TO 3 PERCENT SLOPES	C
GIB	GLADSTONE-URBAN LAND COMPLEX, 0 TO 3 PERCENT SLOPES	B
UoF	UDOKENTH, HIGHWAY, 0 TO 65 PERCENT SLOPES	-

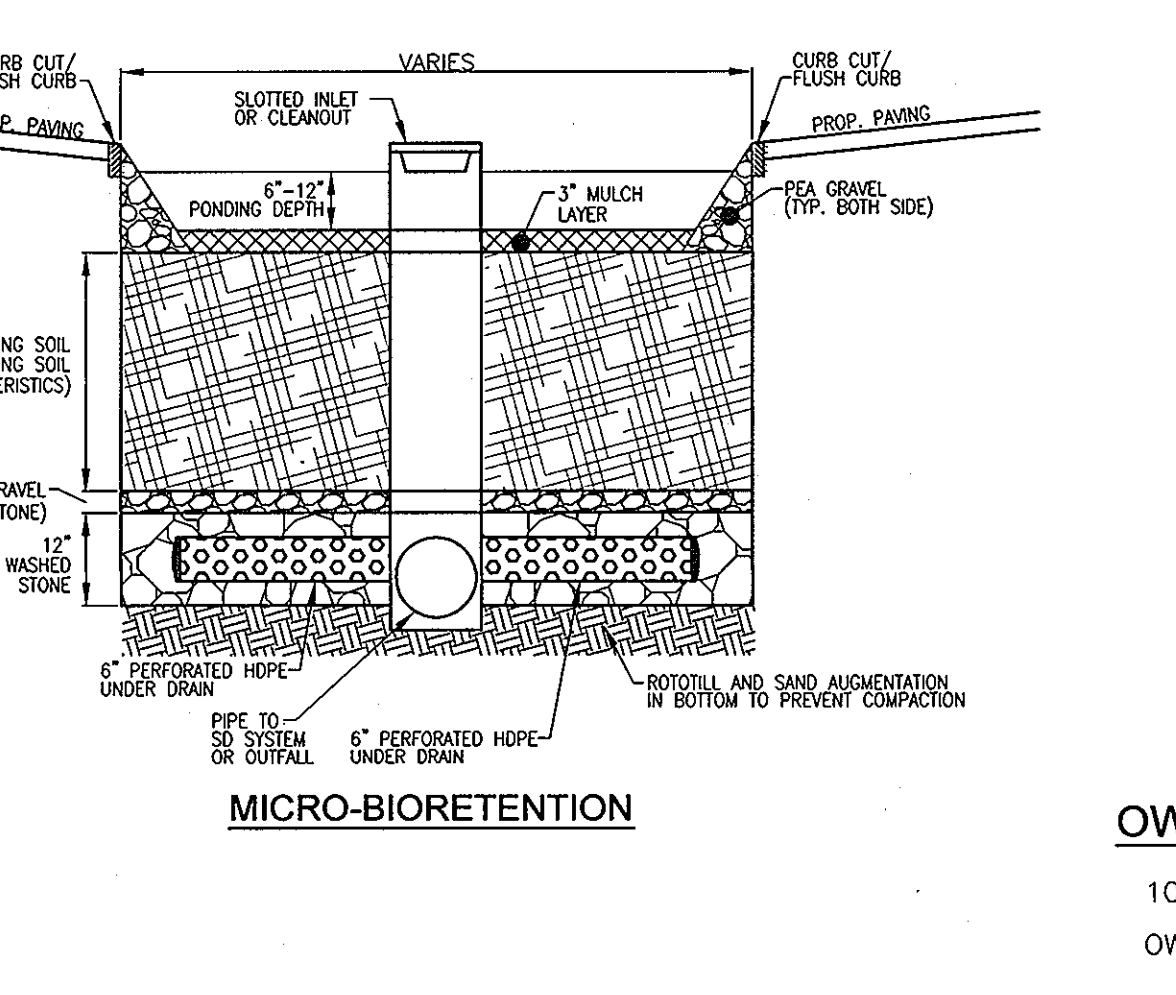
Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration

Material	Specifications	Notes
Flattening soil	See Appendix A, Table A.4	Identifies soil type
Flattening soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (70%), coarse sand (10%) & compost (40%)	USDA soil type loamy sand or sandy loam; clay content < 2%
Organic content	Min. 10% by dry weight (ASTM D 2974)	
Mulch	Shredded hardwood pea gravel ASTM-D-448	aged 6 months, minimum; no pine or wood chips
Curtain drain	ornamental stone: washed cobble	stone: 2" to 3" (1/4" to 3/8")
Geotextile	AASHTO M-43	1/8" PE Type 1 nonwovens
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 37 OR NO. 6 AGGREGATE (3/8" to 3/4")
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" x 6" rigid schedule 40 PVC or SDR35
Poured in place concrete (if required)	MSHA Mix No. 3, 3" - 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-A610-09	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 Slump or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland design to include design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland (H-10 or H-20); allowable horizontal loading (based on soil pressure), and analysis of potential cracking
Sand	AASHTO M-6 or ASTM-C-33	0.075" to 0.047"

ENVIRONMENTAL SITE DESIGN PRACTICE

DRAINAGE AREA #	AREA TREATED	PERMEABLE PAVEMENT	ADD UNDERDRAIN	LANDSCAPE INFILTRATION	PERVIOUS SWALE	BIO SWALE	TRENCH INFILTRATION	MICRO BIO ADD UNDERDRAIN	ESDV VOLUME
1	11662	0	0	0	0	0	0	0	1207
2	3815	0	0	0	0	0	0	431	
3	18067	0	0	0	0	0	0	919	
4	6342	207	292	0	0	0	0	919	
5	3678	0	0	0	0	0	0	353	
6	2190	290	0	0	0	0	0	290	
7	10960	953	846	0	0	0	0	1799	
TOTALS:									1743
TOTAL ESDV PROVIDED:									6144



NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN

STORMWATER MANAGEMENT DRAINAGE AREA MAP; SWM DETAILS

ARCADIA SQUARE
 9525 BALTIMORE NATIONAL PIKE
 RESTAURANT AND RETAIL
 L 1551/F 1556 (PLAT 15803)
 ZONED: B-1
 HOWARD COUNTY, MARYLAND

TAX MAP 24 BLOCK 4
 2ND ELECTION DISTRICT

PARCEL 77

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043

TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: _____ DZ
 DRAWN BY: _____ DZ
 CHECKED BY: _____ RHV
 DATE: _____ MARCH 2013
 SCALE: _____ AS SHOWN
 W.O. NO.: _____ 09-14

2 SHEET OF 2