

GENERAL NOTES:

- THE PROJECT IS IN CONFORMANCE WITH THE 5TH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.
- BOUNDARY AND TOPOGRAPHY IS BASED ON FIELD SURVEY BY CLARK, FINELOCK, & SACKETT, AUGUST 2002 OF PARCEL 46 AND B15.
- EXISTING UTILITY LOCATIONS SHOWN ARE TAKEN FROM AVAILABLE RECORDS.
- SOILS INFORMATION WAS TAKEN FROM HOWARD COUNTY SOILS SURVEY MAPS 33 AND 34.
- STORM WATER MANAGEMENT (CPV, REV AND W/O) TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO BIO RETENTION, RAIN BARRELS, PERVIOUS DRIVEWAYS AND SIDEWALKS. MICRO-BIORETENTION FACILITIES TO BE MAINTAINED BY THE HOA.
- THE 100-YEAR FLOOD PLAIN INDICATED IS TAKEN FROM HOWARD COUNTY FEMA PANELS #240044-0039 AND #240044-0043. THERE ARE NO FLOODPLANES ON THIS SITE.
- TO THE BEST OF THE OWNER'S KNOWLEDGE THERE ARE NO BURIAL OR CEMETERY LOCATIONS ON THE PROPERTY.
- SEDIMENT AND EROSION CONTROL WILL BE PROVIDED AS REQUIRED.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2006), 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- FOREST STAND DELINEATION AND WETLAND REPORT PREPARED BY: ENVIRONMENTAL SYSTEMS ANALYSIS, DEC. 2002. THERE ARE NO WETLANDS ON THIS SITE.
- APPO TRAFFIC STUDY PREPARED BY: STREET TRAFFIC STUDIES, LTD., DEC. 2002 AND APPROVED BY SKETCH PLAN #28/03.
- WATER AND SEWER FOR THIS DEVELOPMENT WILL BE PUBLIC. CONTRACT #24-4454-D, PATUXENT SEWER SHED.
- ALL LOTS TO BE SERVED BY THE PRIVATE ACCESS PLACE. (GLENROBIN PLACE)
- FOR FLAG OR PIPESTEM LOT, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE PRIVATE FLAG OR PIPESTEM AND THE PUBLIC ROAD RIGHT-OF-WAY, AND NOT ONTO THE FLAG OR PIPESTEM LOT DRIVEWAY.
- THE OPEN SPACE LOT WILL BE OWNED AND MAINTAINED BY A HOMEOWNERS ASSOCIATION.
- THERE ARE NO SLOPES IN EXCESS OF 15% ON THE PROPERTY.
- NOISE STUDY IS NOT REQUIRED BASED ON DESIGN MANUAL SECTION 5.2.F GUIDELINES. GUILFORD ROAD IS A MAJOR COLLECTOR.
- THE SITE IS LOCATED IN THE METROPOLITAN DISTRICT.
- 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. 4218 AND 0080 WERE USED FOR THIS PROJECT.
- SIGHT DISTANCE ANALYSIS APPROVED BY SKETCH PLAN.
- THIS PROPERTY IS ZONED R-12 PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7/28/06.
- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLES-CARNES, DATED NOVEMBER 3, 2006.
- THIS 4'X10' CONCRETE TRASH PAD (6 INCHES IN DEPTH) WILL BE MAINTAINED BY THE OWNERS OF LOTS 2-11 PURSUANT TO THE DECLARATION OF RIGHT OF ACCESS AND MAINTENANCE OBLIGATIONS RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.200 WILL BE FULFILLED BY 0.70 AC. OF RETENTION AND 0.12 AC. OF REFORESTATION PROVIDED ONSITE.
- THE SIDEWALK ADJACENT TO MARY LANE WILL SERVE AS A CHILD STANDING PAD IN ACCORDANCE WITH THE APPROVAL OF THE BOARD OF EDUCATION.
- ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE RIBB SLEEVE (12 GAUGE-3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- A PRIVATE ROAD STREET NAME SIGN (SNS) THAT NEEDS TO BE INSTALLED AT THE INTERSECTION OF THE PRIVATE ROAD WITH A PUBLIC ROAD, SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.

SITE DATA:

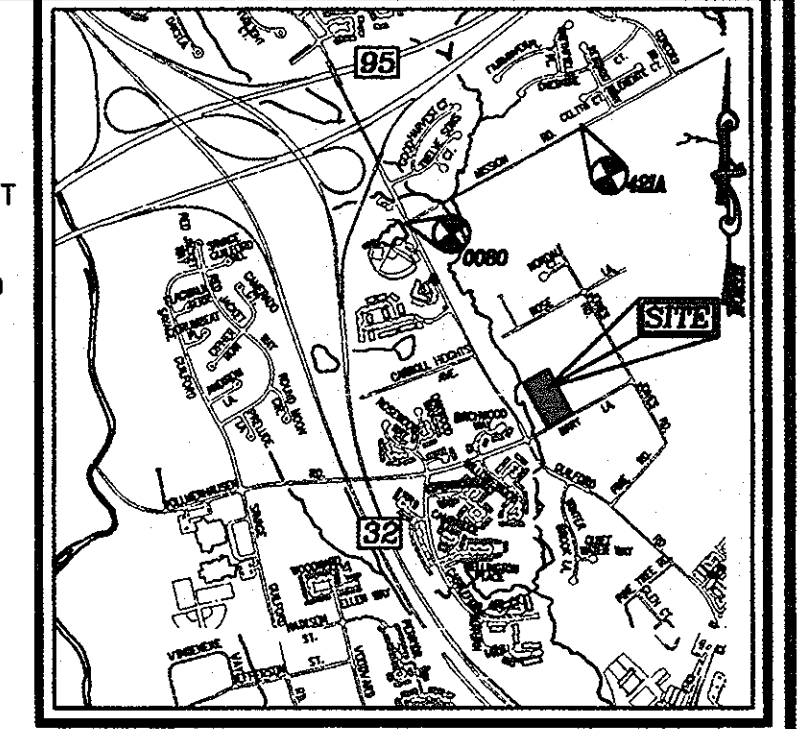
- EXISTING ZONING: R-12
- LOCATION: TAX MAP #2, GRID 24, TAX MAP 47, GRID 6, 6TH ELECTION DISTRICT
- DEED REFERENCE: LOT 1 & 2A (P.46 & P.815) L.6243, F.570
- LOT AREA: LOT 1 PLAT BOOK 3, FOLIO 51: 2.25 ACRES; LOT 2A PLAT BOOK 10, FOLIO 76: 1.19 ACRES
- GROSS TRACT AREA: 3.44 ACRES; MARY LANE RIGHT OF WAY DEDICATION: 0.03 ACRES
- NUMBER OF LOTS PROPOSED: 12
- MINIMUM LOT SIZE: 7,200 S.F.
- OPEN SPACE: MINIMUM LOT SIZE OPTION 7,200 S.F.: 40% REQUIRED; GROSS TRACT AREA x 40%: 1.36 ACRES; OPEN SPACE PROVIDED: 1.39 ACRES
- COLLECTIVE LOT AREAS: AREA OF PROPOSED BUILDABLE LOTS: 2.02 AC.; AREA OF OPEN SPACE LOT 1 & 12: 1.39 AC.
- RECREATION OPEN SPACE REQUIRED: 10 LOTS @ 200 S.F./LOT: 2,000 S.F.; REC. OPEN SPACE PROVIDED: 2,000 S.F.
- MINIMUM SETBACKS: FRONT: 20'; SIDE: 7.5'; REAR: 30'

LEGEND

- CONTOUR INTERVAL: 2 FT.
- EXISTING CONTOUR: [Symbol]
- PROPOSED CONTOUR: [Symbol]
- DIRECTION OF FLOW: [Symbol]
- EXISTING TREE LINE: [Symbol]
- EXISTING TREE LINE TO REMAIN: [Symbol]
- 100 YEAR FLOODPLAIN: [Symbol]
- 75' STREAM BUFFER: [Symbol]
- WETLANDS: [Symbol]
- TEST PIT: [Symbol]
- STREET LIGHT: 150 WATT PREMIER [Symbol]
- EXIST. TREE TO REMAIN: [Symbol]
- EXIST. TREE TO BE REMOVED: [Symbol]
- FOREST CONSERVATION EASEMENT: [Symbol]
- WETLAND: [Symbol]
- EXISTING PARCEL/LOT: [Symbol]
- DIVIDE LINE: [Symbol]

MONUMENT COORDINATES

BENCHMARK NO. 1: COUNTY MONUMENT #421A
 TYPICAL HOWARD COUNTY CONCRETE MONUMENT
 N 543390.409 E 1364912.625
 ELEV. = 311.956
BENCHMARK NO. 2: COUNTY MONUMENT #0080
 TYPICAL HOWARD COUNTY CONCRETE MONUMENT
 N 542366.913, E 1,363075.951
 ELEV. = 282.350



VICINITY MAP
 SCALE: 1"=2000'
 ADC 20,05

SHEET INDEX

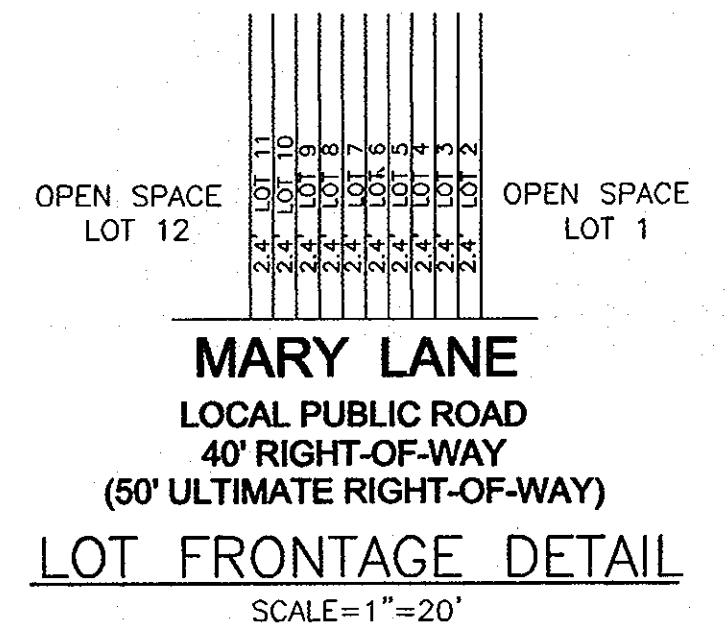
DESCRIPTION	SHEET NO.
PRELIMINARY PLAN	1 OF 9
PRELIMINARY GRADING & SEDIMENT CONTROL	2 OF 9
PLAN & PROFILE PRIVATE ACCESS PLACE AND MARY LANE AND CROSS SECTIONS	3 OF 9
STORM DRAIN & STORMWATER MANAGEMENT PLANS AND DETAILS	4 OF 9
EXISTING OFFSITE & ONSITE DRAINAGE AREA MAP FOR SWM	5 OF 9
PROPOSED OFFSITE & ONSITE DRAINAGE AREA MAP FOR SWM	6 OF 9
PROPOSED ONSITE DRAINAGE AREA MAP FOR SWM	7 OF 9
STORM DRAIN DRAINAGE AREA MAP	8 OF 9
LANDSCAPE AND FOREST CONSERVATION PLAN	9 OF 9

MINIMUM LOT SIZE OPTION (MINIMUM LOT SIZE 7,200 S.F.)

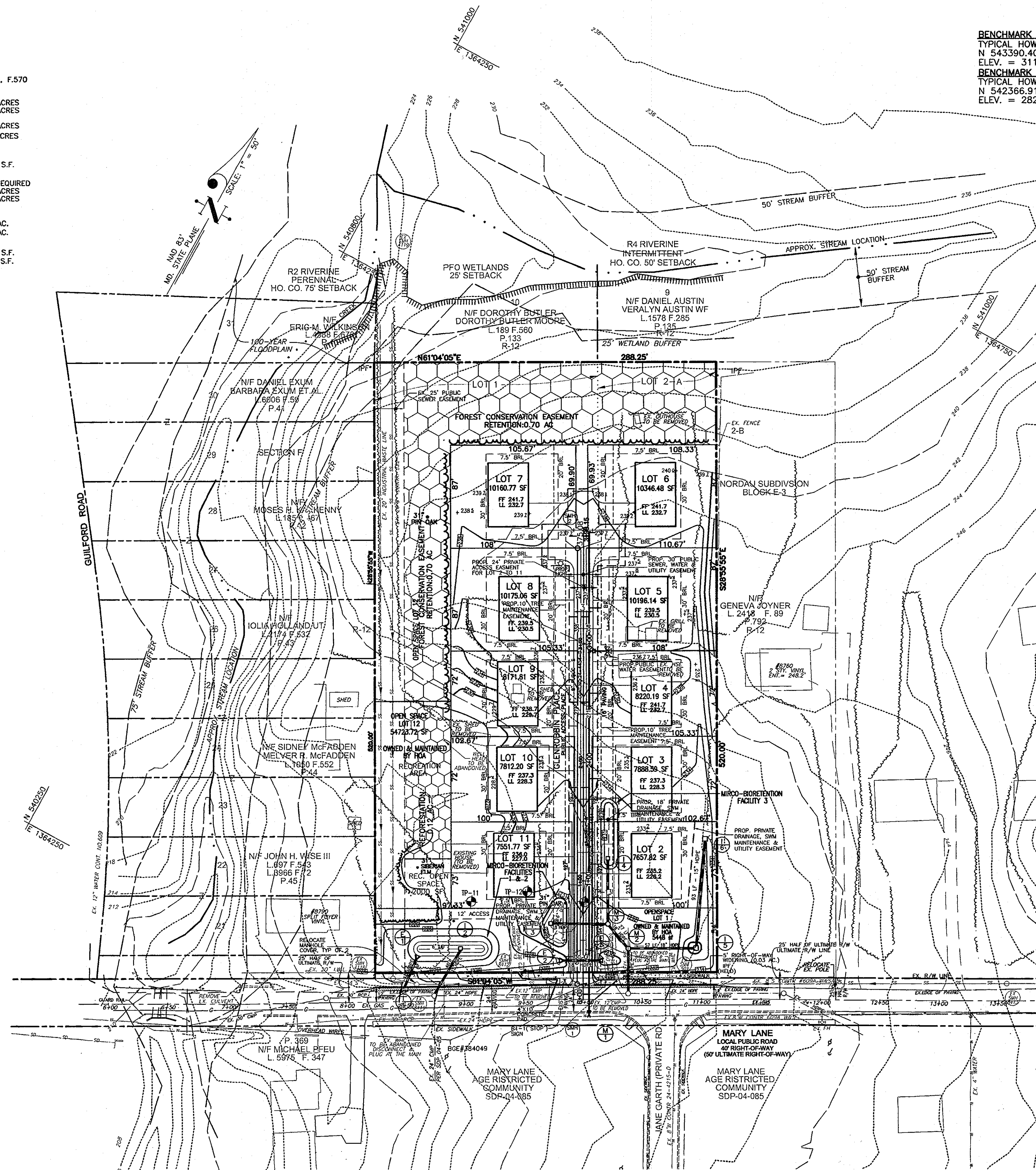
OPEN SPACE LOT	GROSS AREA	PIPE STEM AREA	MIN. LOT SIZE	MIN. LOT AREA
LOT 1	5,448 S.F.	129.60	7,200 S.F.	0.13 AC.
LOT 2	7,657.82 S.F.	129.60	7,200 S.F.	0.18 AC.
LOT 3	7,888.59 S.F.	304.80	7,200 S.F.	0.18 AC.
LOT 4	8,220.19 S.F.	477.60	7,200 S.F.	0.19 AC.
LOT 5	10,196.14 S.F.	650.40	7,200 S.F.	0.23 AC.
LOT 6	10,346.48 S.F.	859.20	7,200 S.F.	0.24 AC.
LOT 7	10,160.77 S.F.	859.20	7,200 S.F.	0.23 AC.
LOT 8	10,175.06 S.F.	650.40	7,200 S.F.	0.23 AC.
LOT 9	8,171.81 S.F.	304.80	7,200 S.F.	0.19 AC.
LOT 10	7,812.20 S.F.	304.80	7,200 S.F.	0.17 AC.
LOT 11	7,551.77 S.F.	129.60	7,200 S.F.	0.17 AC.
OPEN SPACE LOT 12	5,423.72 S.F.	129.60	7,200 S.F.	1.26 AC.
TOTAL OPEN SPACE REQUIRED AT 40%: 1.36 AC.				
TOTAL OPEN SPACE PROVIDED:				1.39 AC.
TOTAL LOT AREA:				2.02 AC.

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPE STEM AREA	MIN. LOT SIZE
2	7,657.82	129.60	7528.22
3	7,888.59	304.80	7583.79
4	8,220.19	477.60	7742.59
5	10,196.14	650.40	9545.74
6	10,346.48	859.20	9487.28
7	10,160.77	859.20	9301.57
8	10,175.06	650.40	9524.66
9	8,171.81	477.60	7694.21
10	7,812.20	304.80	7507.40
11	7,551.77	129.60	7422.17



MARY LANE LOCAL PUBLIC ROAD 40' RIGHT-OF-WAY (50' ULTIMATE RIGHT-OF-WAY) LOT FRONTAGE DETAIL
 SCALE=1"=20'



PLAN VIEW
 SCALE: 1"=60'

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Planning Director: *James E. Smith* 2/11/09
 DATE

OWNER
 HOWARD COUNTY HOUSING COMMISSION
 6751 GATEWAY DRIVE
 COLUMBIA, MARYLAND 21044
 410-313-6316

NO. _____ REVISION _____ DATE _____

PRELIMINARY PLANS LAYOUT PLAN
THE GLENS AT GUILFORD
 LOTS 2-11 & OPEN SPACE LOT 1 & 12
 A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

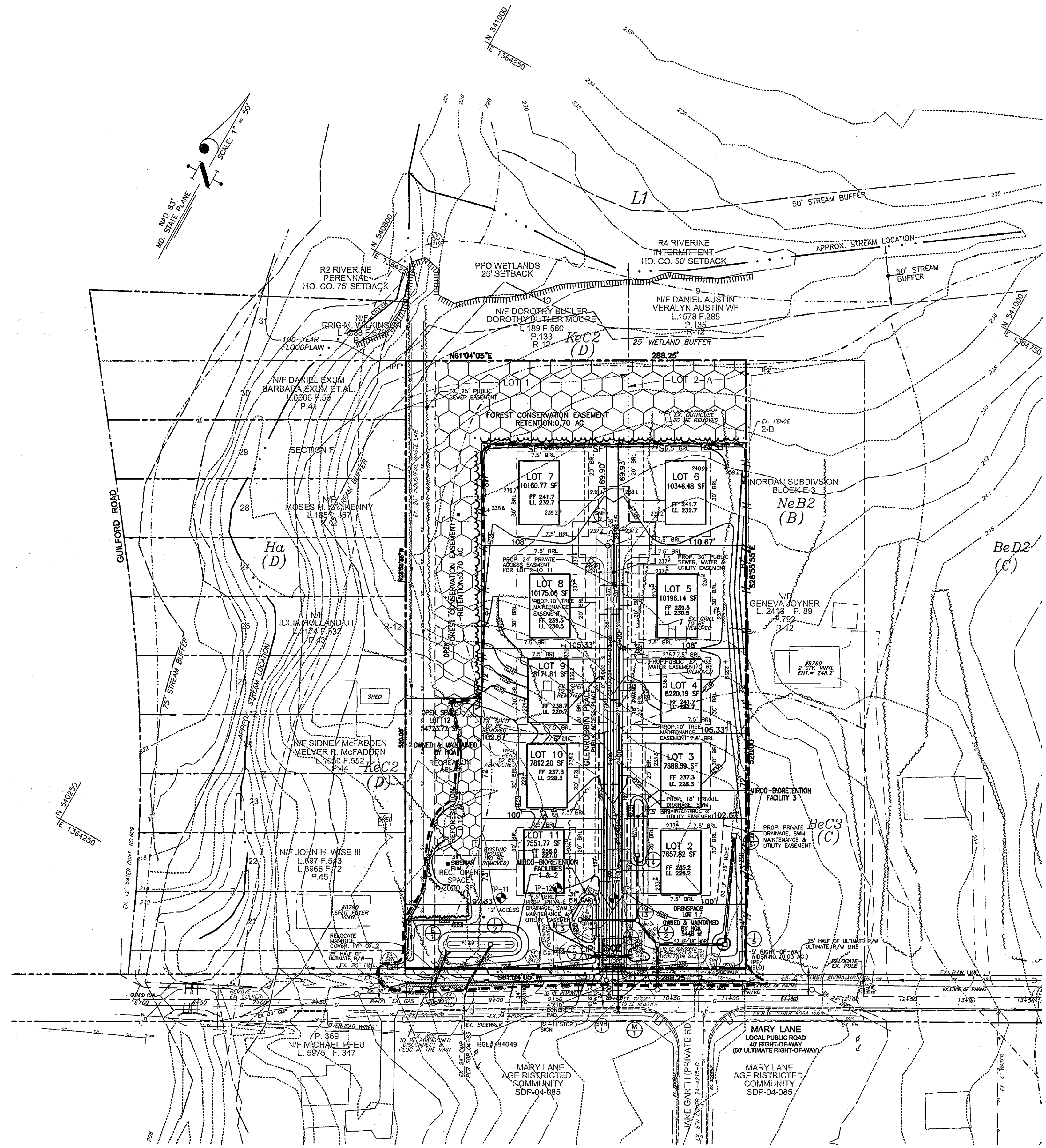
TAX MAP #47 & 42 GRID 6 & 24 PARCELS 46 & B15
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET #1043 TEL: 410-461-7666
 ELICOTT CITY, MD 21043 FAX: 410-461-8961

DESIGN BY: RJ/TM
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-05-2009
 SCALE: AS SHOWN
 W.O. NO.: 08-35

PROFESSIONAL CERTIFICATE
 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. 18183 EXPIRATION DATE: 08-27-2010

1 SHEET OF 9



PLAN VIEW
SCALE: 1" = 30'

LEGEND	
CONTOUR INTERVAL	2 FT.
EXISTING CONTOUR	--- 348 ---
PROPOSED CONTOUR	--- 348 ---
DIRECTION OF FLOW	→
EXISTING TREE LINE	~~~~~
EXISTING TREE LINE TO REMAIN	~~~~~
100 YEAR FLOODPLAIN	--- ---
75' STREAM BUFFER	--- ---
WETLANDS	~~~~~
TEST PIT	⊙
STREET LIGHT	⊙
EXIST. TREE TO REMAIN	⊙
EXIST. TREE TO BE REMOVED	⊗
FOREST CONSERVATION EASEMENT	⬢
SILT FENCE	SF SF
LIMIT OF DISTURBANCE	--- ---
TREE PROTECTION FENCE	
STABILIZED CONSTRUCTION ENTRANCE	⊞
INLET PROTECTION	IP
WETLAND	~~~~~
EXISTING PARCEL/LOT DIVIDE LINE

NO.	REVISION	DATE

PRELIMINARY PLANS
PRELIMINARY GRADING & SEDIMENT CONTROL
THE GLENS AT GUILFORD
LOTS 2-11 & OPEN SPACE LOT 1 & 12
A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3
TAX MAP #47 & 42, GRID 8 & 24 PARCELS 46 & 815
9TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

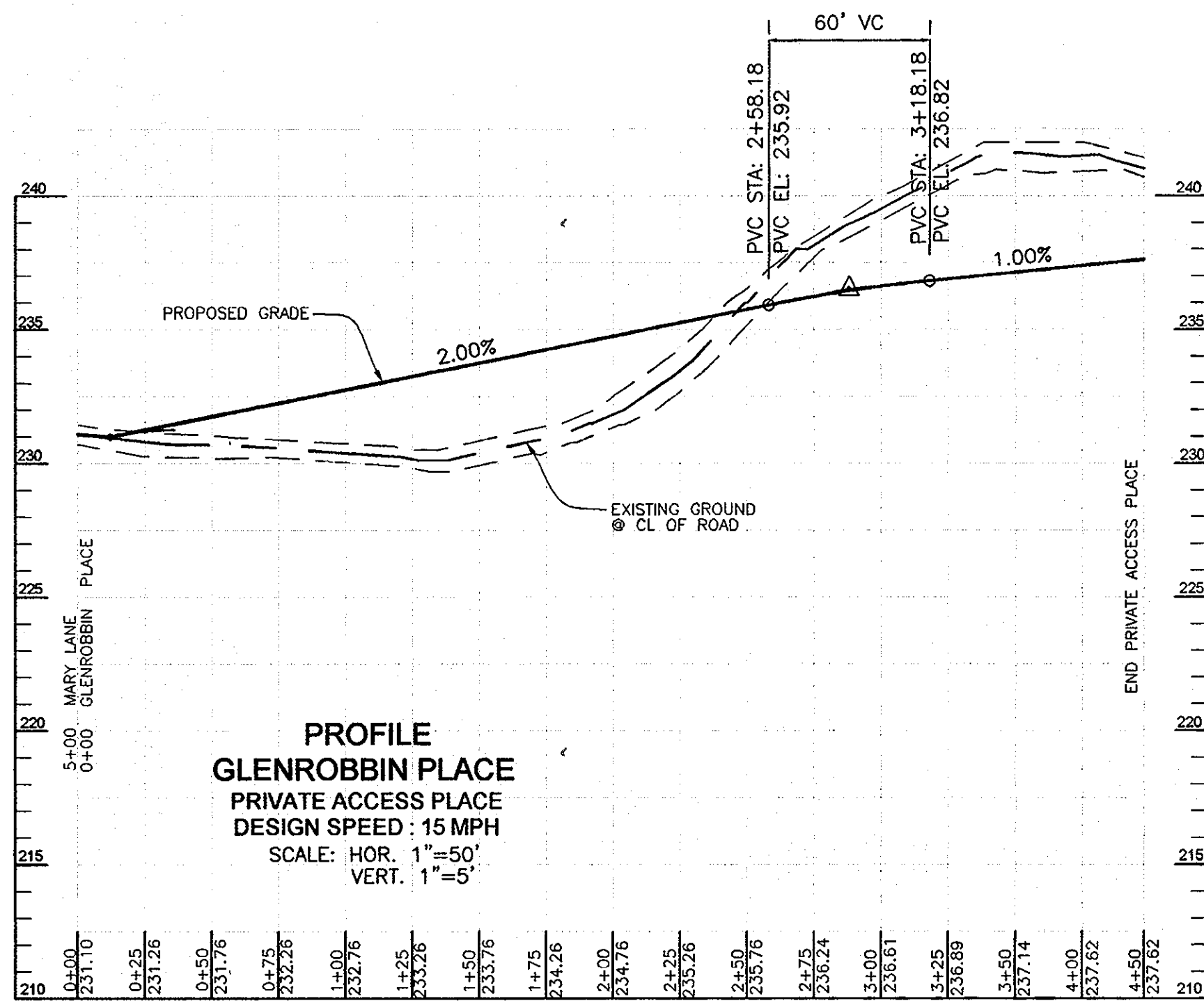
ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043 TEL: 410.461.7666
FAX: 410.461.8961

	DESIGN BY: RJ/TM	PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2011
	DRAWN BY: RJ	
	CHECKED BY: RHV	
	DATE: 01-05-2009	
	SCALE: AS SHOWN	
W.O. NO.: 08-35	2 SHEET OF 9	

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Thomas F. Butler 2/11/09
PLANNING DIRECTOR DATE

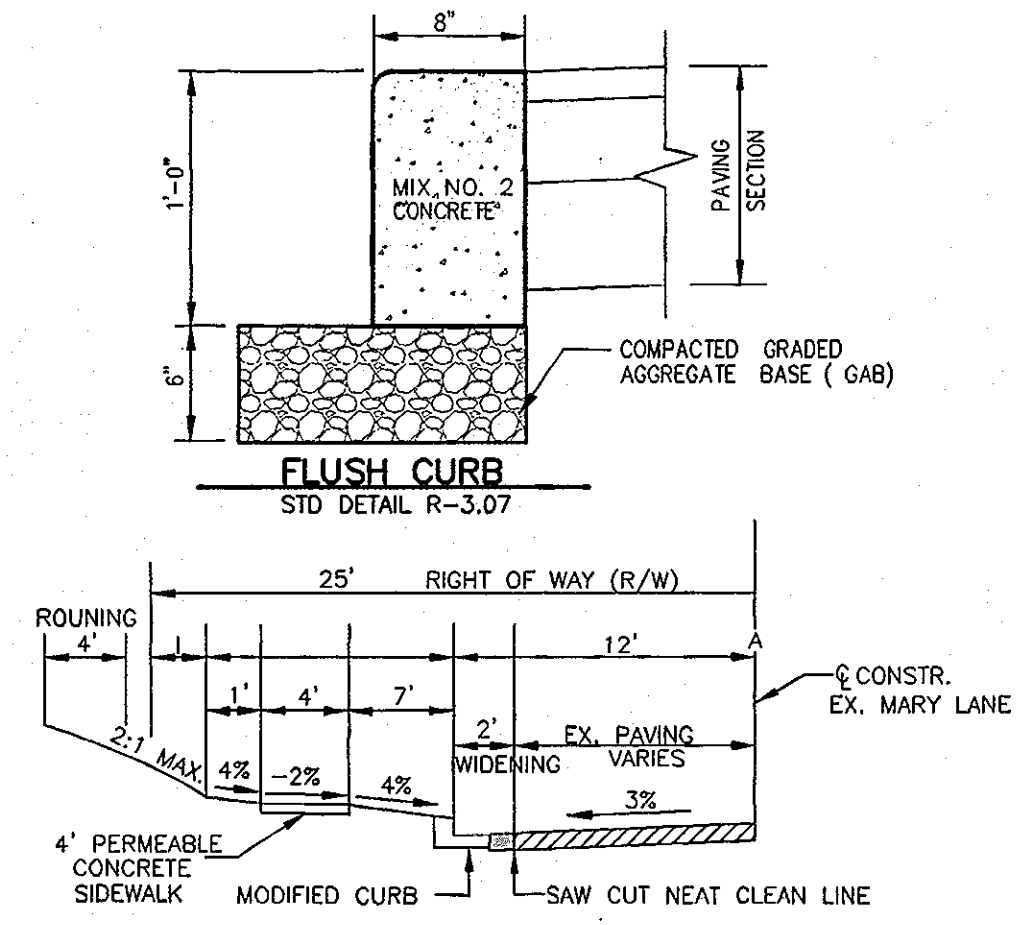
OWNER
HOWARD COUNTY HOUSING COMMISSION
6751 GATEWAY DRIVE
COLUMBIA, MARYLAND 21044
410-313-6316

PVI STA = 2+88.18
 PVI ELEV = 236.52
 A.D. = -1.00
 K = 60.00
 CORR. = 0.075'



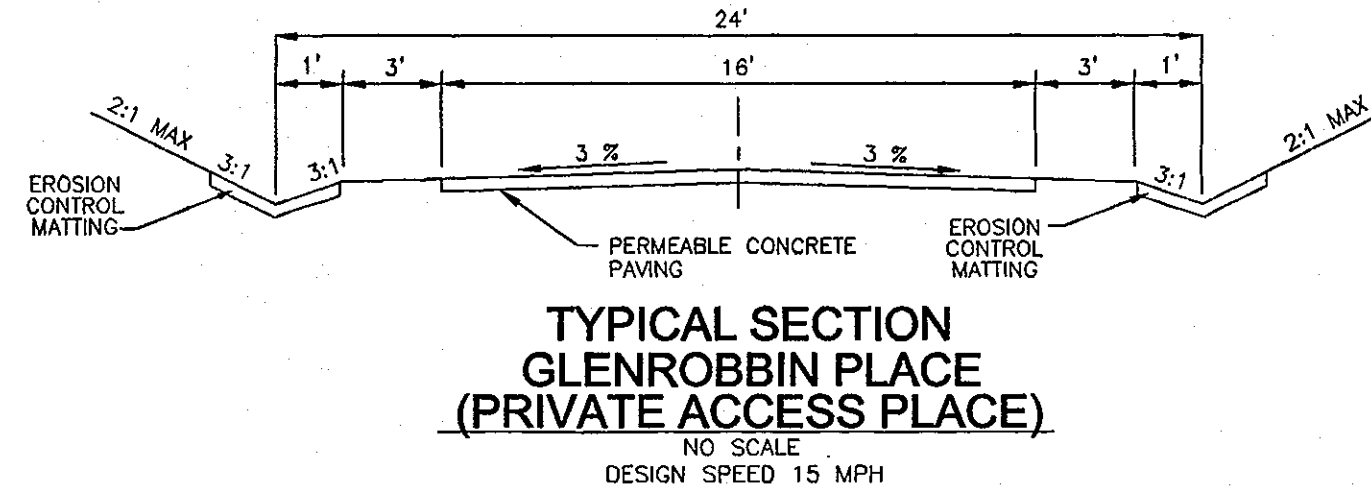
PROFILE
GLENROBBIN PLACE
 PRIVATE ACCESS PLACE
 DESIGN SPEED: 15 MPH
 SCALE: HOR. 1"=50'
 VERT. 1"=5'

0+00	231.10
0+25	231.28
0+50	231.76
0+75	232.26
1+00	232.76
1+25	233.26
1+50	233.76
1+75	234.26
2+00	234.76
2+25	235.26
2+50	235.76
2+75	236.26
3+00	236.61
3+25	236.89
3+50	237.14
4+00	237.62
4+50	237.82

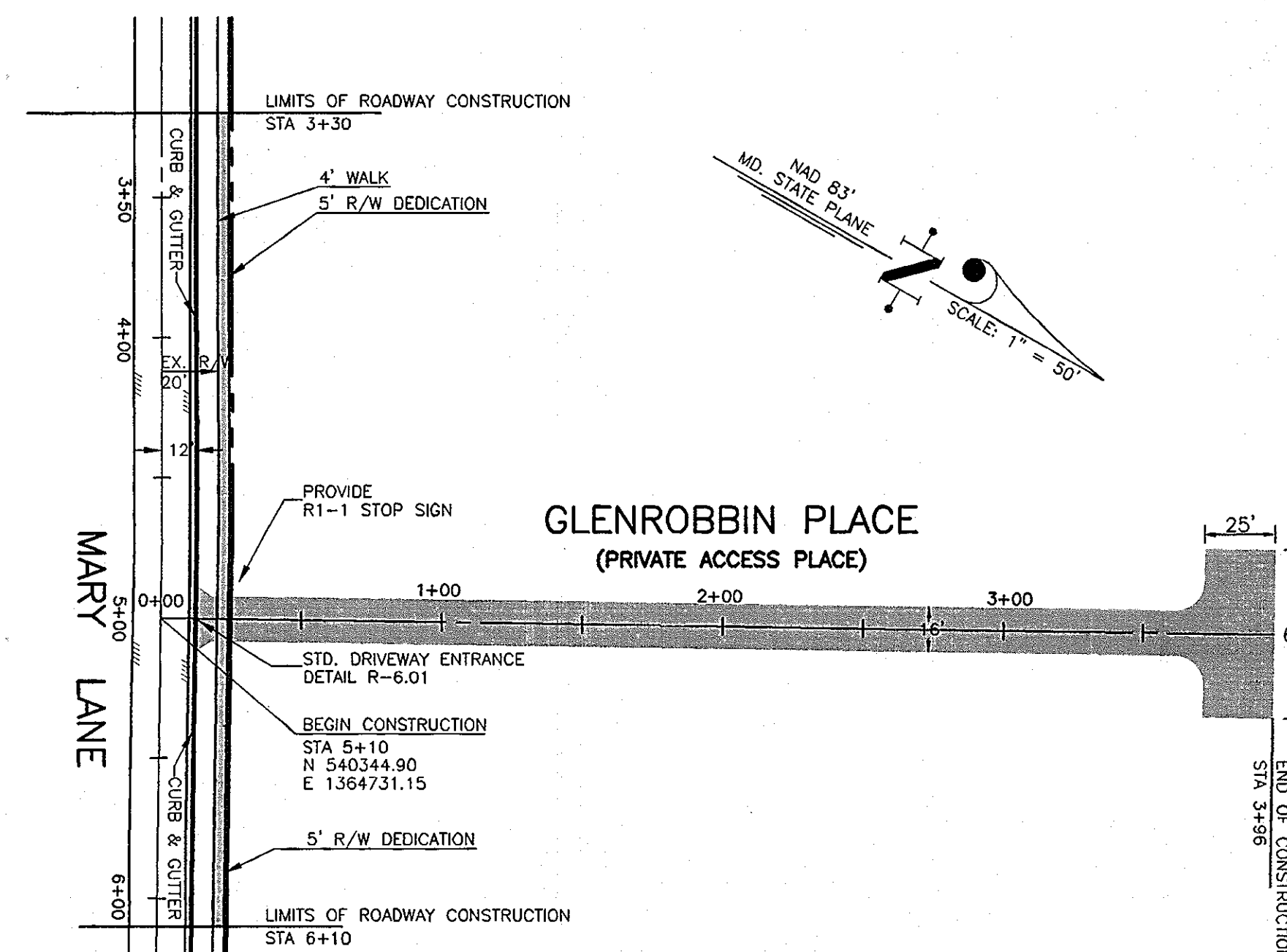


CLASSIFICATION	A	B	C	D	E	R/W
MINOR COLLECTOR 1000-2000 ADT	24'	7'	4'	12'	1'	R/W

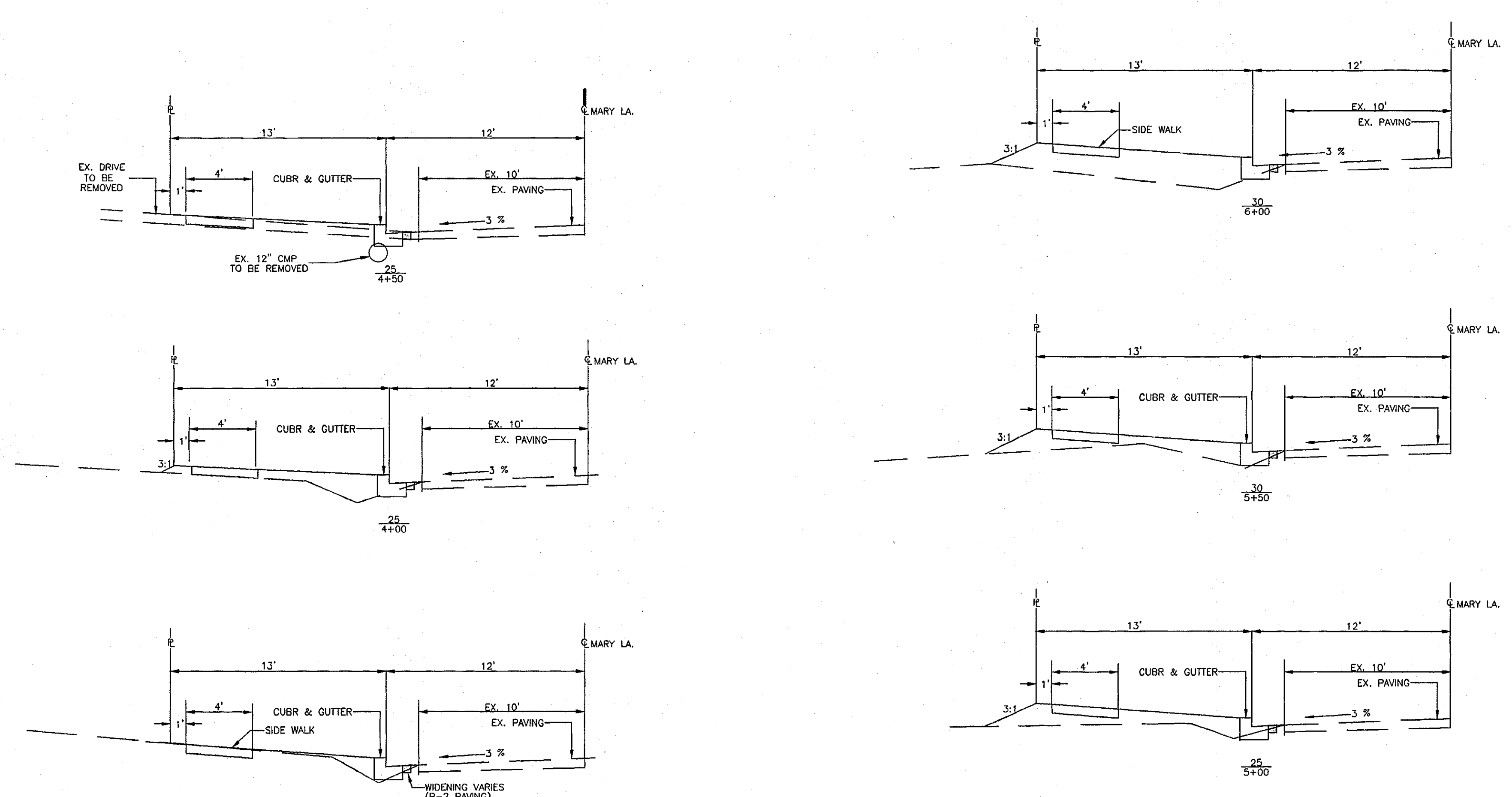
MARY LANE 1/2 SECTION
 NOT TO SCALE



TYPICAL SECTION
GLENROBBIN PLACE
 (PRIVATE ACCESS PLACE)
 NO SCALE
 DESIGN SPEED 15 MPH



THE GLENS AT GUILFORD
GLENROBBIN PLACE
 (PRIVATE ACCESS PLACE)
 SCALE: 1"=50'



MARY LANE TYPICAL SECTION
 SCALE: 1"=5'

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Thomas E. Suttler
 PLANNING DIRECTOR

2/11/09
 DATE

OWNER
 HOWARD COUNTY HOUSING COMMISSION
 6751 GATEWAY DRIVE
 COLUMBIA, MARYLAND 21044
 410-313-6316

NO.	REVISION	DATE

PRELIMINARY PLANS
 PLAN & PROFILE PRIVATE ACCESS PLACE
 AND MARY LANE AND CROSS SECTIONS

THE GLENS AT GUILFORD
 LOTS 2-11 & OPEN SPACE LOT 1 & 12
 A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

TAX MAP #47 & 42 GRID 6 & 24 PARCELS 46 & 815
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

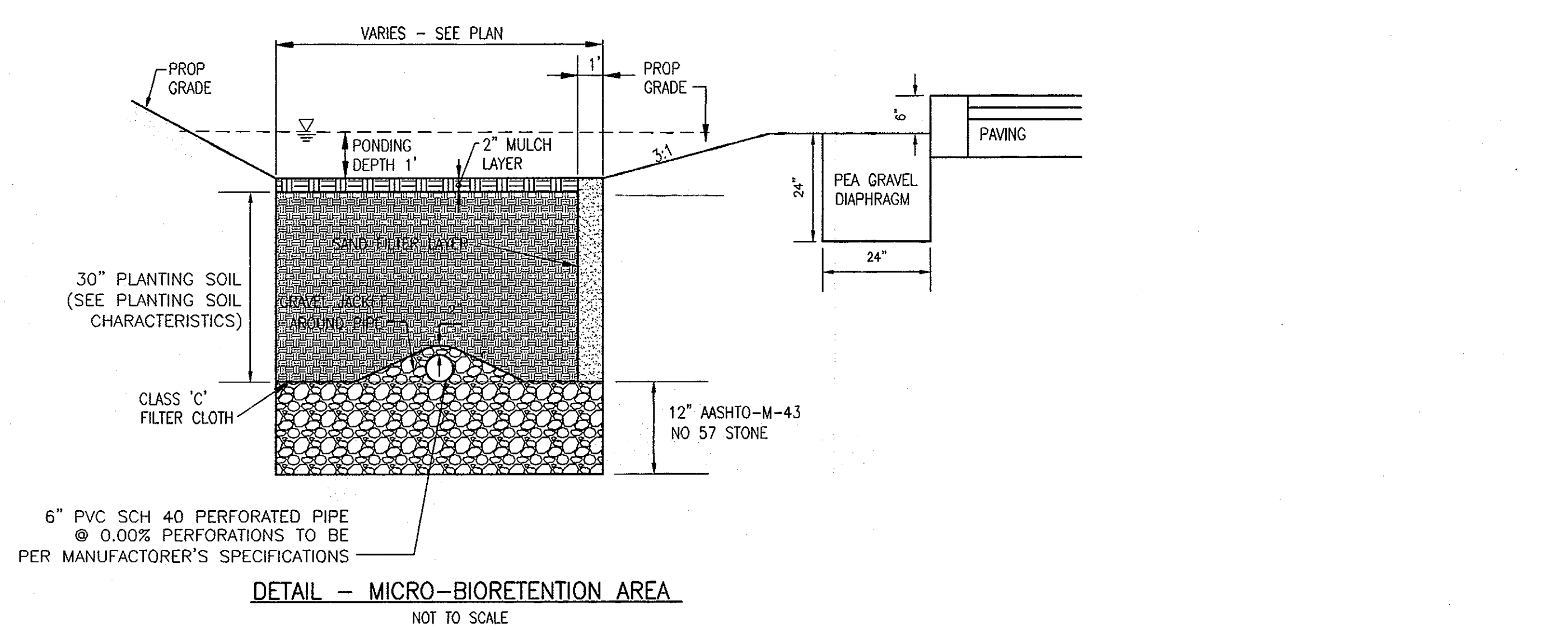
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 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

STATE OF MARYLAND PROFESSIONAL ENGINEER
 ROBERT H. VOGEL, PE No. 16193

DESIGN BY: RJ/TM
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-05-2009
 SCALE: AS SHOWN
 W.O. NO.: 08-35

I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED OR APPROVED BY ME, AND
 THAT I AM A FULLY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE
 OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2010

3 SHEET OF 9



MATERIALS	SPECIFICATIONS	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35-60% SILT 30-55% CLAY 0%-5%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED CLOBBLES	PEA GRAVEL: NO. 6 STONE: 2" TO 5"	
GEOTEXTILE	CLASS 'C' - APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	ASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR ASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER IPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'C=3500 PSI@28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-B15-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED; 28 DAY STRENGTH AND SLUM TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRED DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND DESIGN TO INCLUDE MEETING ACT CODE 350R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1' DEEP)	ASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

APPENDIX B.3. CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS

SPECIFICATIONS FOR BIORETENTION

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.

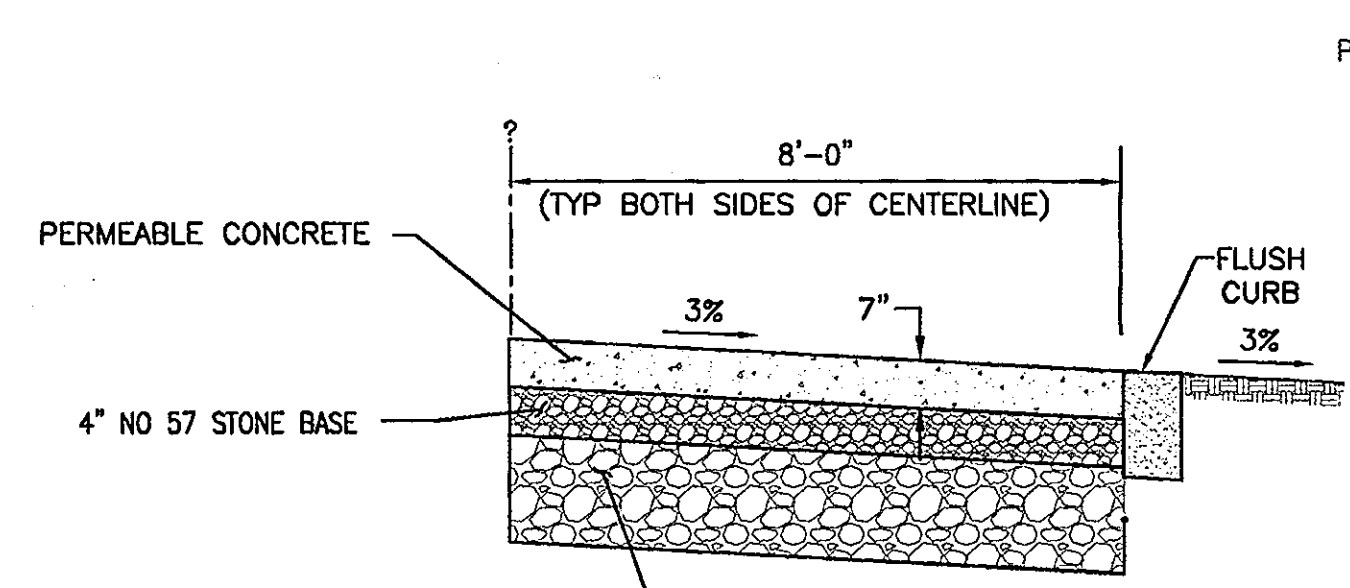
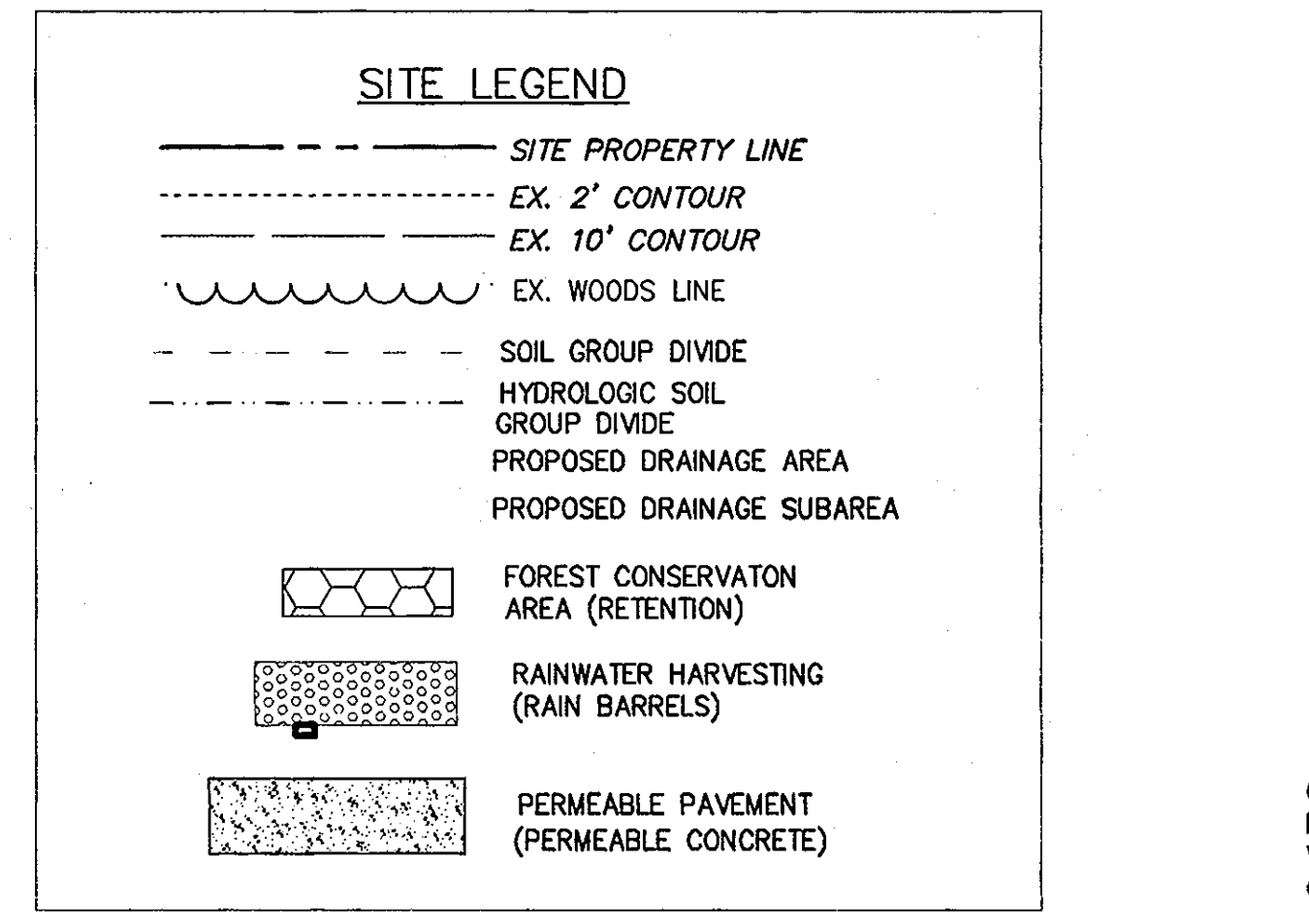
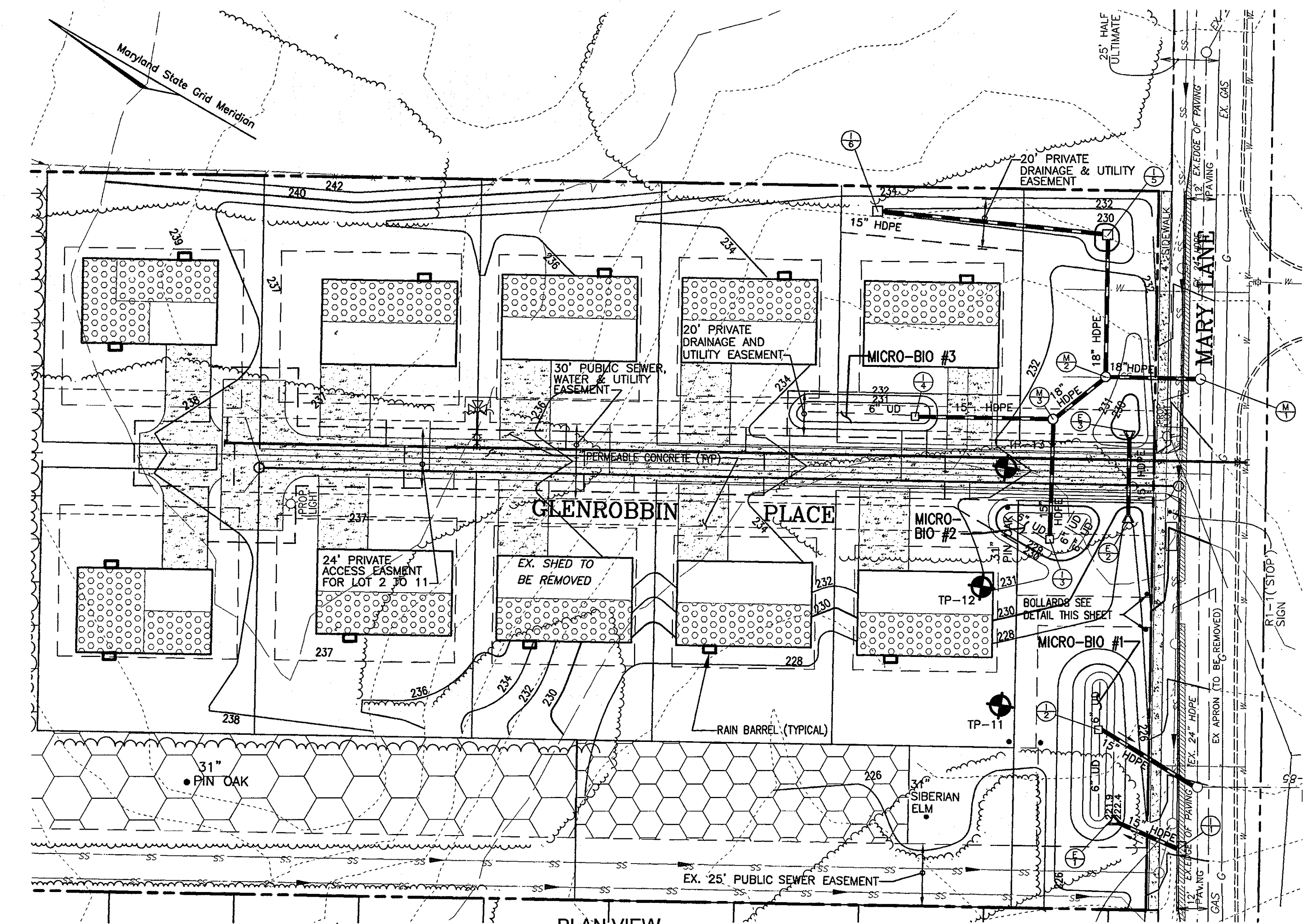
2. PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DAMPED WITH THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
PH RANGE: 6.5-7.5
ORGANIC MATTER: 15-4 % (BY WEIGHT)
MAGNESIUM: 50 LB/AC
PHOSPHORUS (POTASH - P): 205 LB/AC
POTASSIUM (POTASH - K): 200 LB/AC
SULFUR: 10% (BY WEIGHT)
ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TEST OF ORGANIC MATTER AND SULFUR SALTS. A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED.
SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY. SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER WITH LIME OR LOWER) WITH IRON SULFATE PLUS SULFUR.

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHisel, PLow, RIFFLE, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE REQUIRED SAND LAYER. PUMP AND POKED WATER BEFORE PREPARING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADUATION ZONE. BACKFILL THE REMAINING OF THE TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 16". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. EQUIPMENT WITHIN THE BASIN WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

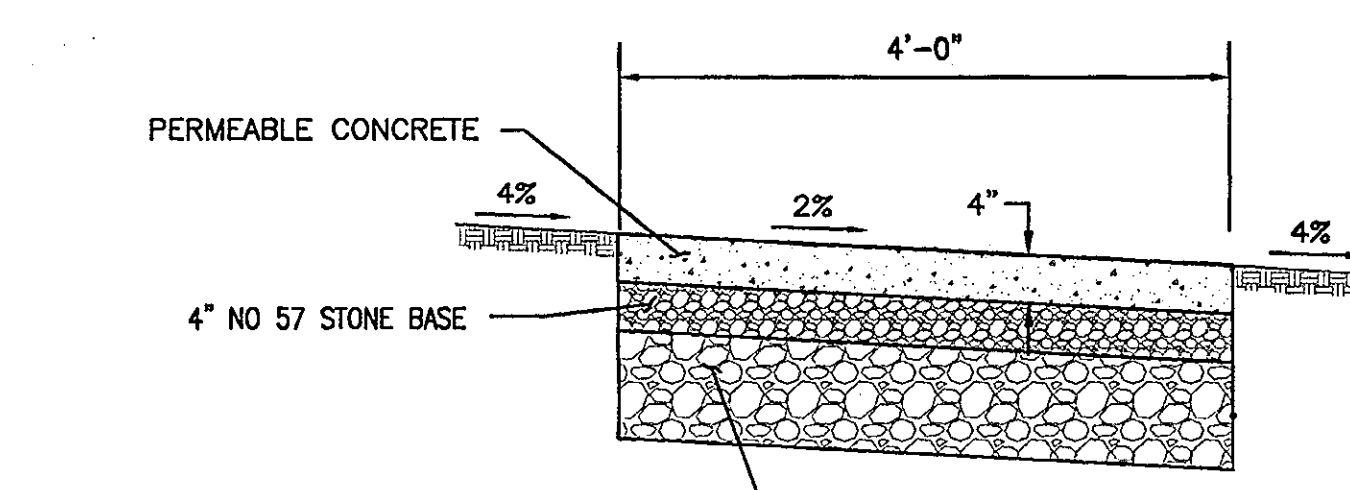
4. PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR BIORETENTION AREAS CAN BE FOUND IN APPENDIX A, SECTION A.2.3. OF THE 2003 MARYLAND STORMWATER DESIGN MANUAL.

5. PLANT INSTALLATION
MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND USE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (8 TO 12 MONTHS) FOR ACCEPTANCE.
ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED 50 PERCENT OF THE BALL ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS.
TREES SHALL BE BRANDED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS, SEEDS, OR A MINERAL IMPROVES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET.
6. UNDERDRAINS
UNDERDRAINS ARE TO BE PLACED ON A 3/4" WIDE SECTION FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.
THE MAIN COLLECTION PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELL AND/OR CLEANOUT PIPES MUST BE PROVIDED ONE INCH PER 100 SQUARE FEET OF SURFACE AREA.

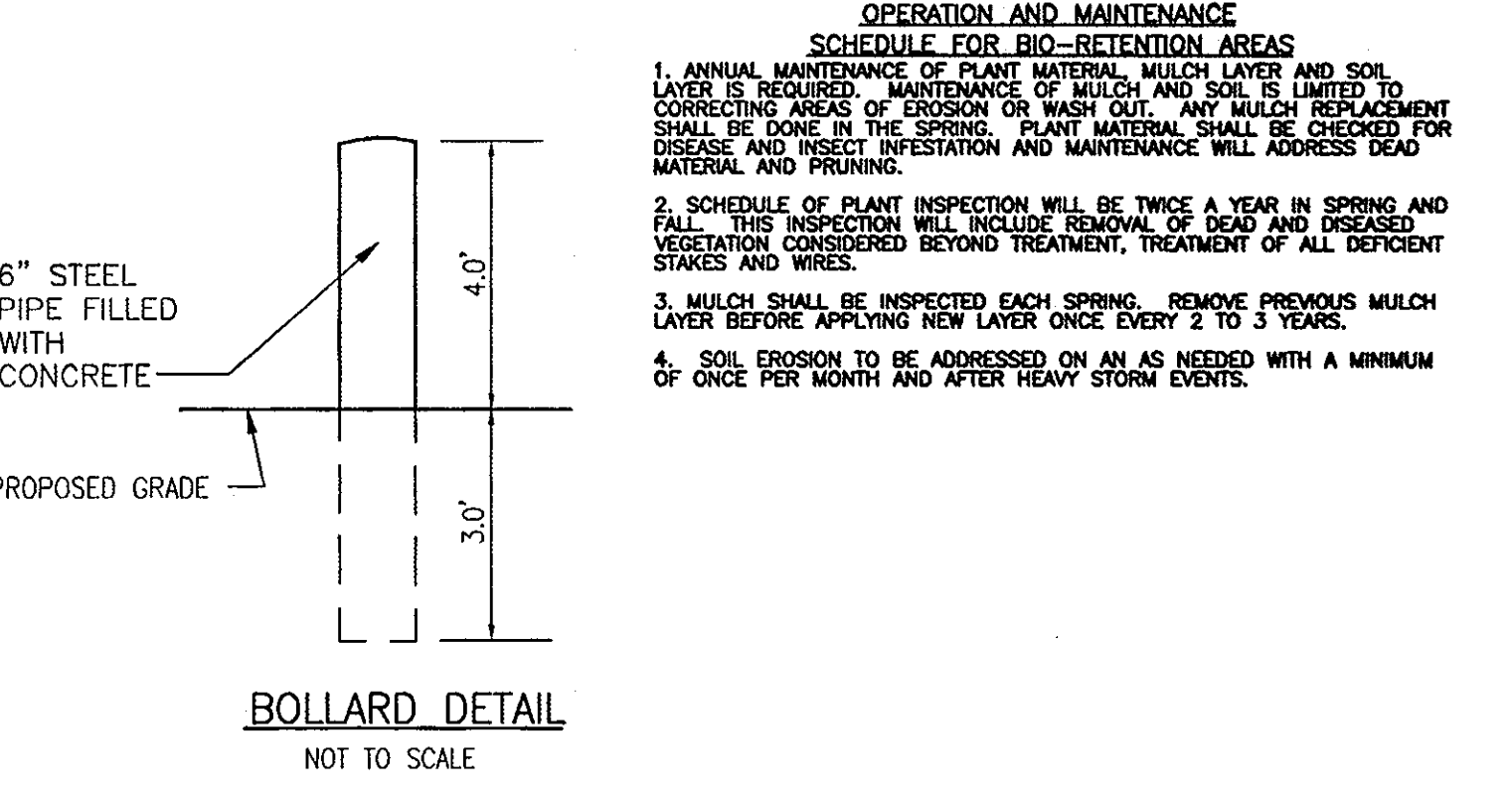
7. MISCELLANEOUS
THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



10" ASTM C 33 3/4" TO 2" STONE
PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
DETAIL - PERMEABLE CONCRETE GLENROBBIN PLACE
NOT TO SCALE



10" ASTM C 33 3/4" TO 2" STONE
PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
DETAIL - PERMEABLE CONCRETE SIDEWALK
NOT TO SCALE



NO.	REVISION	DATE

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Thomas E. Butler
PLANNING DIRECTOR

2/11/09
DATE

OWNER
HOWARD COUNTY HOUSING COMMISSION
6751 GATEWAY DRIVE
COLUMBIA, MARYLAND 21044
410-313-6316

STORMWATER SUMMARY

LEVEL OF MANAGEMENT	WQv, Rev, & Cpv
WATERSHED	LITTLE PATUXENT RIVER
ESD PRACTICES:	PERMEABLE CONCRETE (A-2) RAIN BARREL (M-1) MICRO-BIORETENTION (M-2)

FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.

PRELIMINARY PLANS
STORM DRAIN & STORMWATER MANAGEMENT
PLANS AND DETAILS
THE GLENS AT GUILFORD
LOTS 2-11 & OPEN SPACE LOT 1 & 12
A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

TAX MAP #47 & 42, GRID 6 & 24
6TH ELECTION DISTRICT

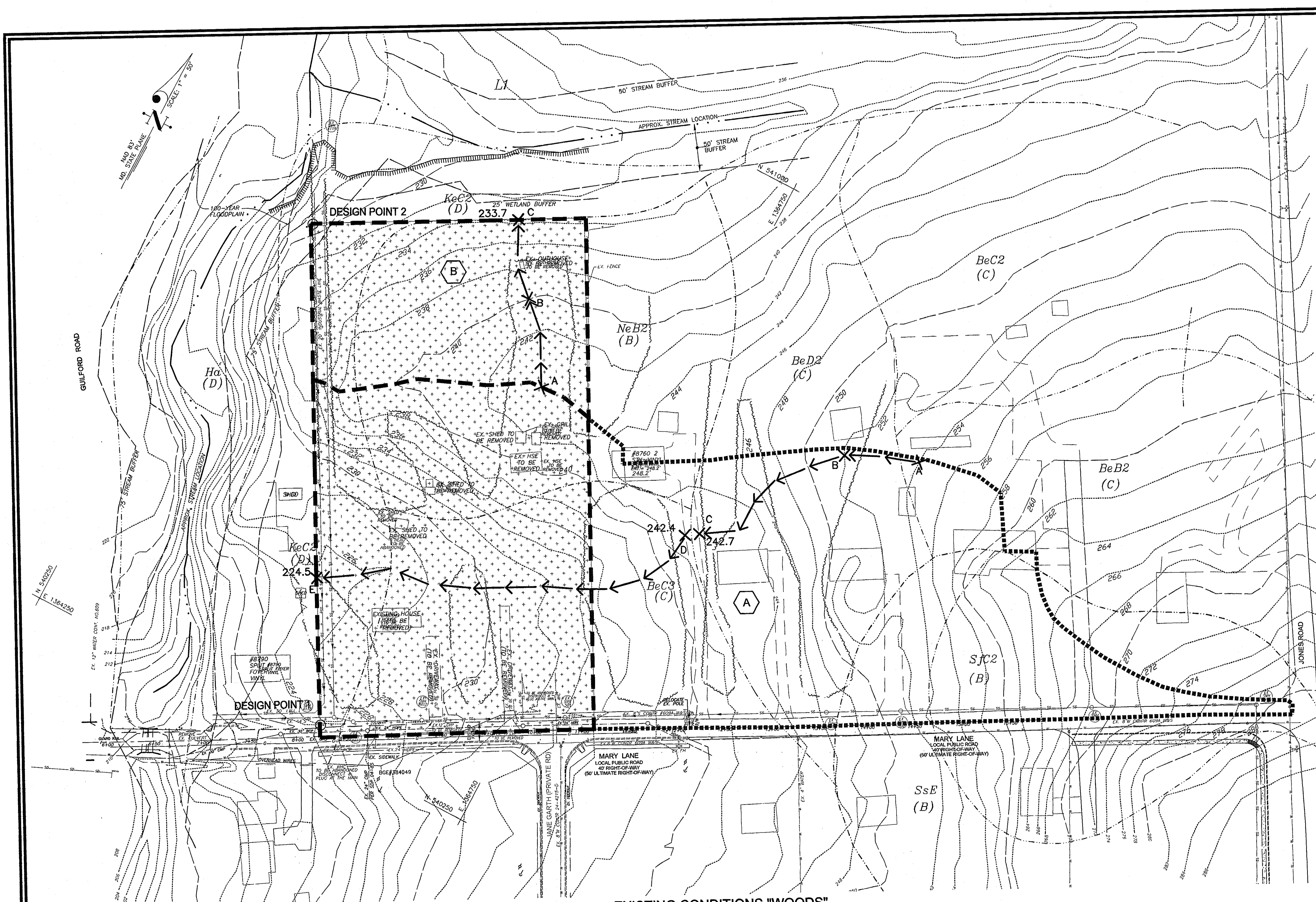
PARCELS 46 & 815
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS - SURVEYORS - PLANNERS
8407 MAIN STREET
ELIGOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
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. 16193, EXPIRATION DATE: 09-27-2010.

DESIGN BY: RJ/TM
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 01-05-2009
SCALE: AS SHOWN
W.O. NO.: 08-35

4 SHEET OF 9



LEGEND

SITE PROPERTY LINE: 2 FT.
 CONTOUR INTERVAL: 2 FT.
 PROPOSED CONTOUR: [Symbol]
 DIRECTION OF FLOW: [Symbol]
 EXISTING TREE LINE: [Symbol]
 LIMIT OF CLEARING: [Symbol]
 100 YEAR FLOODPLAIN: [Symbol]
 75' STREAM BUFFER: [Symbol]
 WETLANDS: [Symbol]
 TEST PIT: [Symbol]
 STREET LIGHT: 150 WATT PREMIER
 EXISTING TREE TO REMAIN: [Symbol]
 EXISTING TREE TO BE REMOVED: [Symbol]
 FOREST CONSERVATION EASEMENT: [Symbol]
 EXISTING DRAINAGE DIVIDE: [Symbol]
 OFFSITE DRAINAGE AREA: [Symbol]
 SOIL GROUP DIVIDE: [Symbol]
 HYDROLOGIC SOIL GROUP DIVIDE: [Symbol]
 EXISTING ONSITE DRAINAGE AREAS ARE MODELED AS WOODED: [Symbol]
 TIME OF CONCENTRATION PATH: 391.3

2.44 AC
 5.67 AC
 0.00886 SQ MI
 RCN=72
 31.92% B, 60.14% C, 7.94% D
 Tc = 0.23
 1-YR = 3.78 CFS
 R-12
 10.6 % IMP

1.13 AC
 0.00177 SQ MI
 RCN=59
 79.6% B, 20.4% D
 Tc = 0.34
 1-YR = 0.07 CFS
 R-12
 0.0% IMP

* INCLUDING OFFSITE AREA

TIME OF CONCENTRATION TABULATION

DRAINAGE AREA A	
ID	DESCRIPTION
A-B	SHEET, GRASS DENSE, 80'-FT, 0.025 FT/FT
B-C	SHALLOW CONC, UNPAV., 275'-FT, 0.109 FT/FT
D-E	SHALLOW CONC, UNPAV., 260'-FT, 0.050 FT/FT

DRAINAGE AREA B	
ID	DESCRIPTION
A-B	SHEET, WOODS LIGHT, 95'-FT, 0.021 FT/FT
B-C	SHALLOW CONC, UNPAV., 85'-FT, 0.074 FT/FT

EXISTING CONDITIONS "WOODS"
 SCALE: 1" = 50'

SOILS LEGEND

SYMBOL	DESCRIPTION	TYPE
KeC2	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES MODERATELY ERODED	D
NeB2	NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES MODERATELY ERODED	B
Ha	HATBORO SILT LOAM	D
BeC3	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES MODERATELY ERODED	C

- NOTES:**
- SOILS INFORMATION WAS TAKEN FROM HOWARD COUNTY SOIL SURVEY MAPS 30 & 34.
 - THERE ARE NO SLOPES IN EXCESS OF 15% ON THE PROPERTY.

NOTE: ALL SITE DISCHARGE FLOW TO AN UN NAMED TRIBUTARY OF THE LITTLE PATUXENT RIVER. STREAM USE P-1

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Thomas S. Kelle
 PLANNING DIRECTOR

2/16/19
 DATE

OWNER
 HOWARD COUNTY HOUSING COMMISSION
 6751 GATEWAY DRIVE
 COLUMBIA, MARYLAND 21044
 410-313-6316

PRELIMINARY PLANS
 EXISTING ONSITE & OFFSITE
 DRAINAGE AREA MAP FOR SWM
 THE GLENS AT GUILFORD
 LOTS 2-11 & OPEN SPACE LOT 1 & 2
 A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

TAX MAP #47 & 42 GRID 6 & 24
 8TH ELECTION DISTRICT

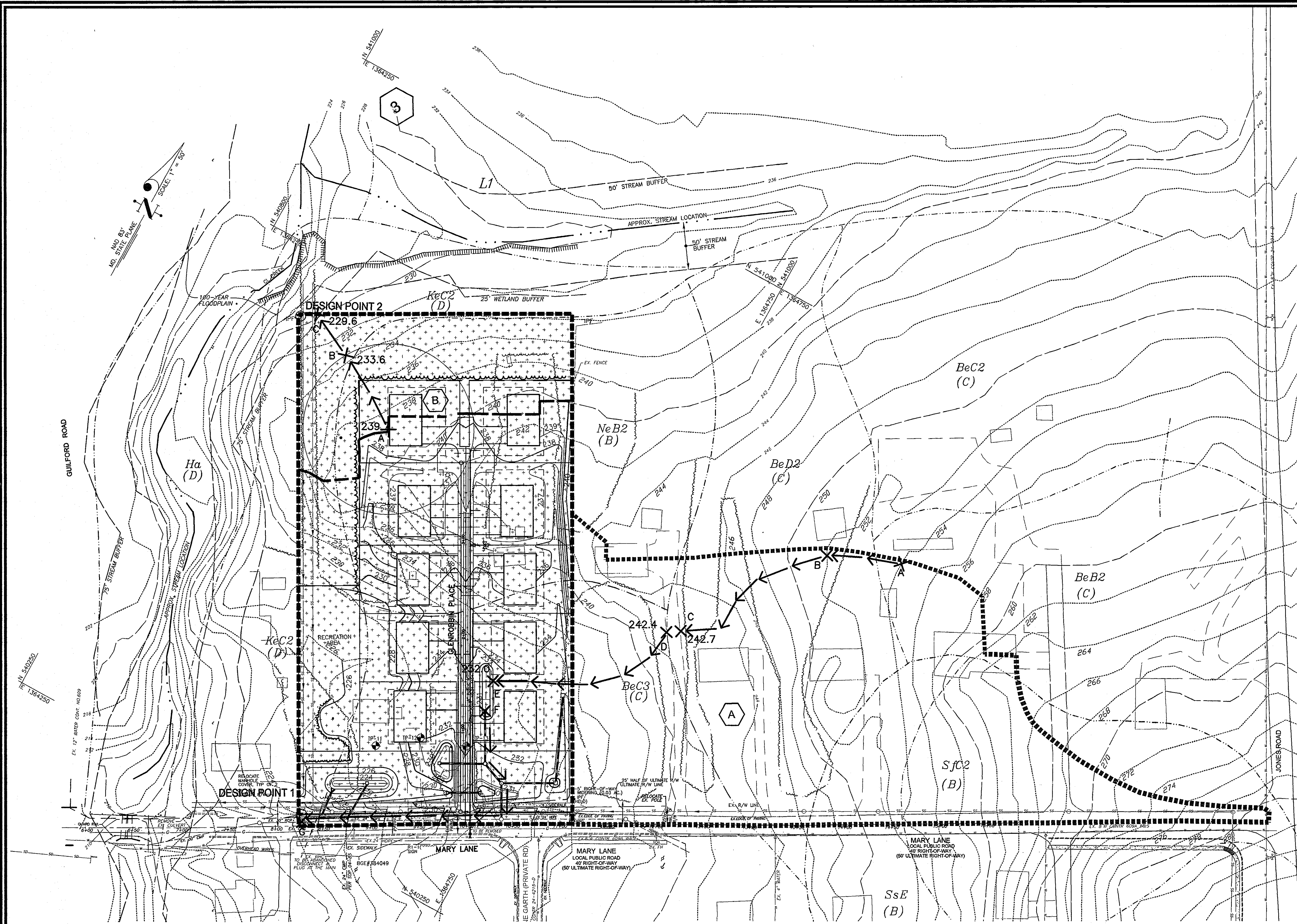
PARCELS 46 & 815
 HOWARD COUNTY, MARYLAND

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
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18183 EXPIRATION DATE: 05-27-2010

DESIGN BY: RJ/TA
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-05-2009
 SCALE: AS SHOWN
 W.D. NO.: 08-35

5 SHEET OF 9



LEGEND

SITE PROPERTY LINE	---
CONTOUR INTERVAL	2 FT.
PROPOSED CONTOUR	[348]
DIRECTION OF FLOW	→
EXISTING TREE LINE	~
LIMIT OF CLEARING	~
100 YEAR FLOODPLAIN	---
75' STREAM BUFFER	---
WETLANDS	---
TEST PIT	⊙
STREET LIGHT	⊙ 150 WATT PREMIER
EXIST. TREE TO REMAIN	⊙
EXIST. TREE TO BE REMOVED	X
FOREST CONSERVATION EASEMENT	⬢
LIMIT OF DISTURBANCE	---
PROPOSED DRAINAGE DIVIDE	---
OFFSITE DRAINAGE AREA	---
SOIL GROUP DIVIDE	---
HYDROLOGIC SOIL GROUP DIVIDE	---
PROPOSED ONSITE DRAINAGE AREAS ARE MODELED AS WOODED	⬢

2.76 AC	Tc = 0.23
5.99 AC*	1-YR = 3.78 CFS
0.00928 SQ MI	R-12
RCN=71	10.0 % IMP
37.94% B, 49.80% C, 12.25% D	

0.81 AC	Tc = 0.21
0.00111 SQ MI	1-YR = 0.12 CFS
RCN=61	R-12
71.6% B, 28.4% D	0.0% IMP

* INCLUDING OFFSITE AREA

TIME OF CONCENTRATION TABULATION

DRAINAGE AREA A	
ID	DESCRIPTION
A-B	SHEET, GRASS DENSE, 80-FT, 0.025 FT/FT
B-C	SHALLOW CONC, UNPAV., 185-FT, 0.050 FT/FT
D-E	SHALLOW CONC, UNPAV., 205-FT, 0.051 FT/FT
F-G	CHANNEL, STORM DRAIN, 330-FT @ 5 FPS

DRAINAGE AREA B	
ID	DESCRIPTION
A-B	SHEET, WOODS LIGHT, 90-FT, 0.068 FT/FT
B-C	SHALLOW CONC, UNPAV., 30-FT, 0.133 FT/FT

PROPOSED CONDITIONS "WOODS"
SCALE: 1" = 50'

SOILS LEGEND

SYMBOL	DESCRIPTION	TYPE
KeC2	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES MODERATELY ERODED	D
NeB2	NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES MODERATELY ERODED	B
Ho	HATBORO SILT LOAM	D
BeC3	BELLSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES MODERATELY ERODED	C

NOTE: ALL SITE DISCHARGE FLOW TO AN UN NAMED TRIBUTARY OF THE LITTLE PATUXENT RIVER. STREAM USE 1-P

- NOTES:**
- SOILS INFORMATION WAS TAKEN FROM HOWARD COUNTY SOIL SURVEY MAPS 30 & 34.
 - THERE ARE NO SLOPES IN EXCESS OF 15% ON THE PROPERTY.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Thomas E. Suttler 2/6/09
PLANNING DIRECTOR DATE

OWNER
HOWARD COUNTY HOUSING COMMISSION
6751 GATEWAY DRIVE
COLUMBIA, MARYLAND 21044
410-313-6316

NO.	REVISION	DATE

PRELIMINARY PLANS
PROPOSED ONSITE & OFFSITE DRAINAGE AREA MAP FOR SWM THE GLENS AT GUILFORD
LOTS 2-11 & OPEN SPACE LOT 1 & 12
A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

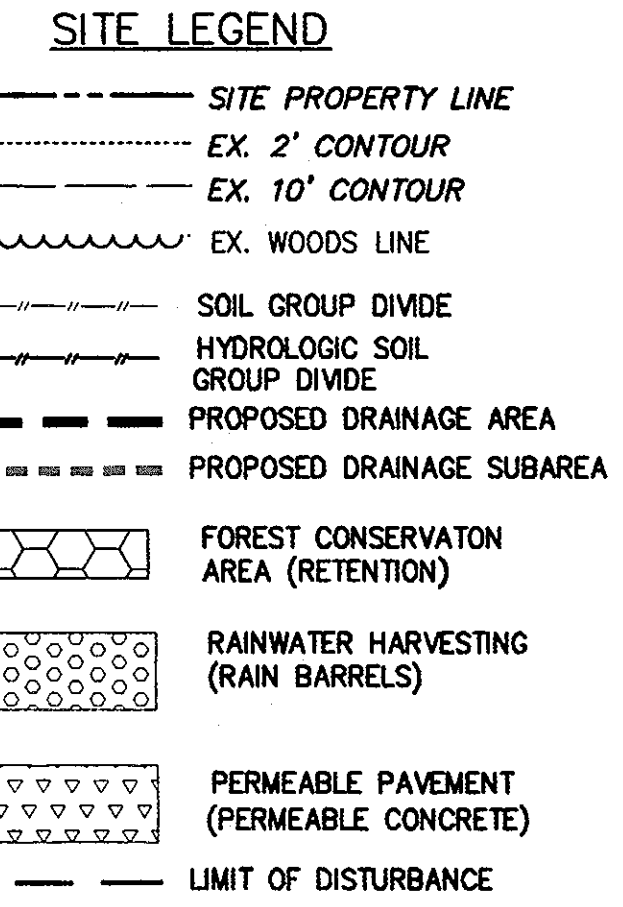
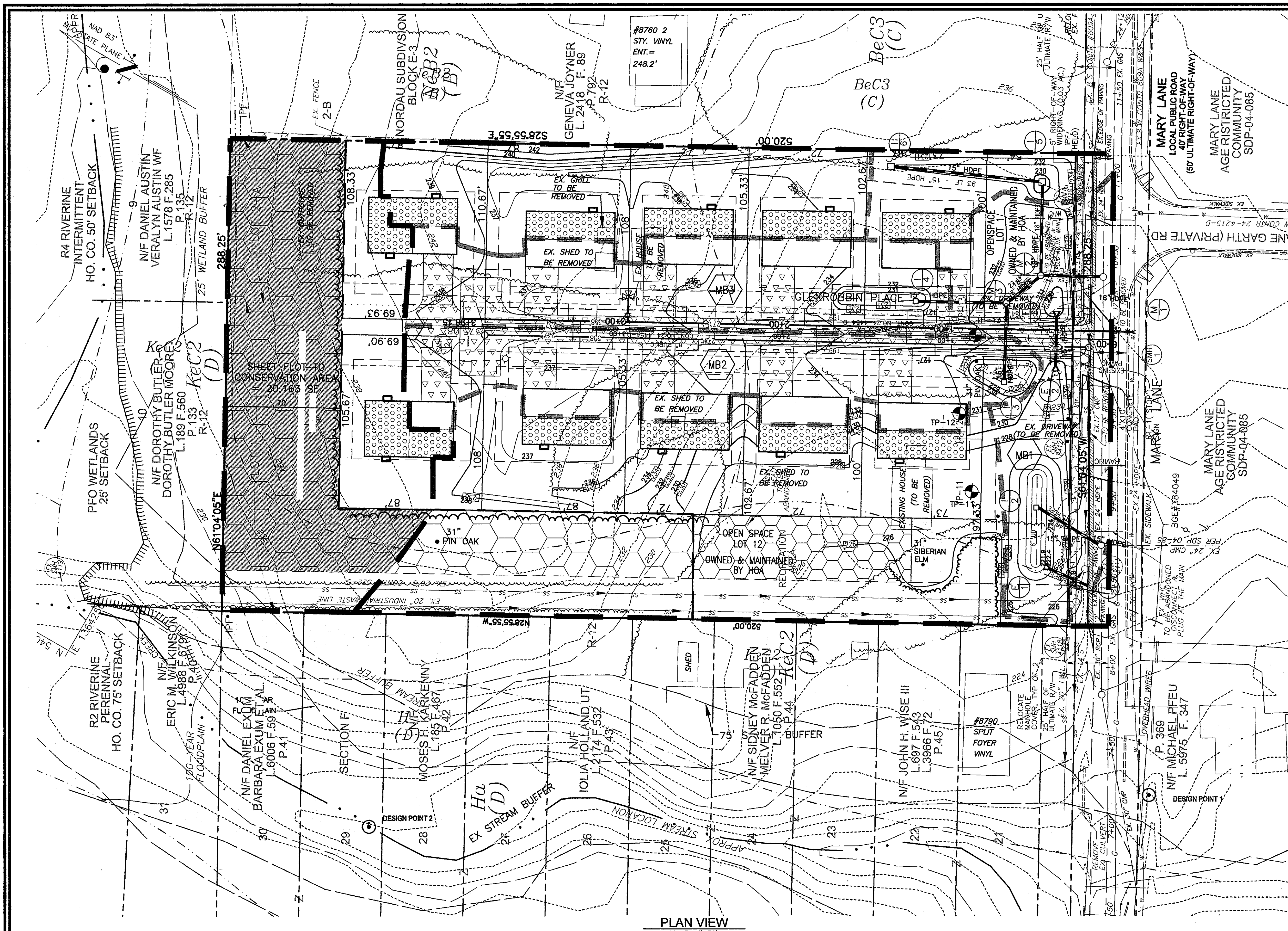
TAX MAP #47 & 42 GRID 6 & 24 PARCELS 46 & 815
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

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DESIGN BY: RJ/TM
DRAWN BY: RJ
CHECKED BY: RHY
DATE: 01-05-2009
SCALE: AS SHOWN
W.O. NO.: 08-35

6 SHEET OF 9



SOILS LEGEND

SYMBOL	DESCRIPTION	TYPE
KeC2	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES MODERATELY ERODED	c
NeB2	NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES MODERATELY ERODED	B
Ha	HATBORO SILT LOAM	D
BeC3	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES MODERATELY ERODED	c

NOTES:
 1. SOILS INFORMATION WAS TAKEN FROM HOWARD COUNTY SOIL SURVEY MAPS 30 & 34.
 2. THERE ARE NO SLOPES IN EXCESS OF 15% ON THE PROPERTY.

NOTE: ALL SITE DISCHARGE FLOW TO AN UN NAMED TRIBUTARY OF THE LITTLE PATUXENT RIVER. STREAM USE P-1

DRAINAGE AREA TABULATION

AREA	ACREAGE	IMPERVIOUS AREA	% IMPERVIOUS
MB1	0.41	0.14	34.1
MB2	0.45	0.25	55.6
MB3	0.41	0.22	53.7

PLAN VIEW
SCALE: 1"=30'

STORMWATER MANAGEMENT REQUIREMENTS - DESIGN POINT 1

AREA	REQUIREMENT	VOLUME REQUIREMENT Wq, Rev, & CpV	ESD PRACTICES			VOLUME PROVIDED
			RAIN BARREL M-1	PERM CONC A-2	MICRO BIO M-6	
1	ENVIRONMENTAL SITE DESIGN ADDRESSING: Wq, Rev, & CpV	2.76 ACRES x 0.86" = 8,616 CF	8 RAIN BARRELS @ 83 CF/EA = 664 CF	15,167 SF x 0.83' x 0.4" = 5,035 CF	(((1188 SF+2281 SF)/2) x 1') + ((1188 SF x 3.5' x 0.4) = 3,358 CF	9,097 CF
2	OVERBANK FLOOD PROTECTION (Op)	NA				
3	EXTREME FLOOD VOLUME (Op)	NA				

STORMWATER MANAGEMENT REQUIREMENTS - DESIGN POINT 2

AREA	REQUIREMENT	VOLUME REQUIREMENT Wq, Rev, & CpV	ESD PRACTICES		SHEET FLOW TO CONSERVATION AREA	VOLUME PROVIDED
			RAIN BARREL M-1	PERM CONC A-2		
1	ENVIRONMENTAL SITE DESIGN ADDRESSING: Wq, Rev, & CpV	0.81 ACRES x 0.19" = 559 CF	3 RAIN BARRELS @ 53 CF/EA = 249 CF		0.81 ACRES x 0.15" = 441 CF	690 CF
2	OVERBANK FLOOD PROTECTION (Op)	NA				
3	EXTREME FLOOD VOLUME (Op)	NA				

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Thomas & Bull
 PLANNING DIRECTOR

2/4/09
 DATE

OWNER
 HOWARD COUNTY HOUSING COMMISSION
 6751 GATEWAY DRIVE
 COLUMBIA, MARYLAND 21044
 410-313-6316

NO. _____ REVISION _____ DATE _____

**PRELIMINARY PLANS
 PROPOSED ONSITE ONLY
 DRAINAGE AREA MAP FOR SWM
 THE GLENS AT GUILFORD
 LOTS 2-11 & OPEN SPACE LOT 1 & 12
 A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3**

TAX MAP #47 & 42 GRID 6 & 24 PARCELS 46 & 815
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

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DESIGN BY: RJ/TJ
 DRAWN BY: RJ
 CHECKED BY: RHW
 DATE: 01-05-2009
 SCALE: AS SHOWN
 W.O. NO.: 08-35

7 SHEET OF 9

ROBERT H. VOGEL, PE No.18193



LEGEND

- SITE PROPERTY LINE
- CONTOUR INTERVAL 2 FT.
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- EXISTING TREE LINE
- LIMIT OF CLEARING
- 100 YEAR FLOODPLAIN
- 75' STREAM BUFFER
- WETLANDS
- TEST PIT
- STREET LIGHT
- EXIST. TREE TO REMAIN
- EXIST. TREE TO BE REMOVED
- FOREST CONSERVATION EASEMENT
- LIMIT OF DISTURBANCE
- PROPOSED DRAINAGE DIVIDE
- OFFSITE DRAINAGE AREA
- SOIL DIVIDE
- HYDROLOGIC SOIL GROUP DIVIDE

DRAINAGE AREA TABULATION					
NO.	AREA	'C'	% IMP.	SOIL	ZONE
A	1.54 AC	0.31	16.9	B & C	R-12
B	2.15 AC	0.33	17.6	B & C	R-12
C	0.41 AC	0.51	53.7	C	R-12
D	0.45 AC	0.53	55.6	B	R-12
E	0.41 AC	0.46	34.1	B	R-12

SOILS LEGEND		
SYMBOL	DESCRIPTION	TYPE
KeC2	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES MODERATELY ERODED	D
NeB2	NESHAMINY SILT LOAM, 3 TO 8 PERCENT SLOPES MODERATELY ERODED	B
Ho	HATBORO SILT LOAM	D
BeC3	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES MODERATELY ERODED	C

- NOTES:**
- SOILS INFORMATION WAS TAKEN FROM HOWARD COUNTY SOIL SURVEY MAPS 30 & 34.
 - THERE ARE NO SLOPES IN EXCESS OF 15% ON THE PROPERTY.

PROPOSED CONDITIONS "WOODS"
SCALE: 1" = 50'

NOTE: ALL SITE DISCHARGE FLOW TO AN UN NAMED TRIBUTARY OF THE LITTLE PATUXENT RIVER. STREAM USE 1-P

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Thomas E. Butler
PLANNING DIRECTOR

2/1/09
DATE

OWNER
HOWARD COUNTY HOUSING COMMISSION
6751 GATEWAY DRIVE
COLUMBIA, MARYLAND 21044
410-313-6316

NO.	REVISION	DATE

PRELIMINARY PLANS
**PROPOSED ONSITE & OFFSITE
DRAINAGE AREA MAP FOR SWM**
THE GLENS AT GUILFORD
LOTS 2-11 & OPEN SPACE LOT 1 & 12
A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

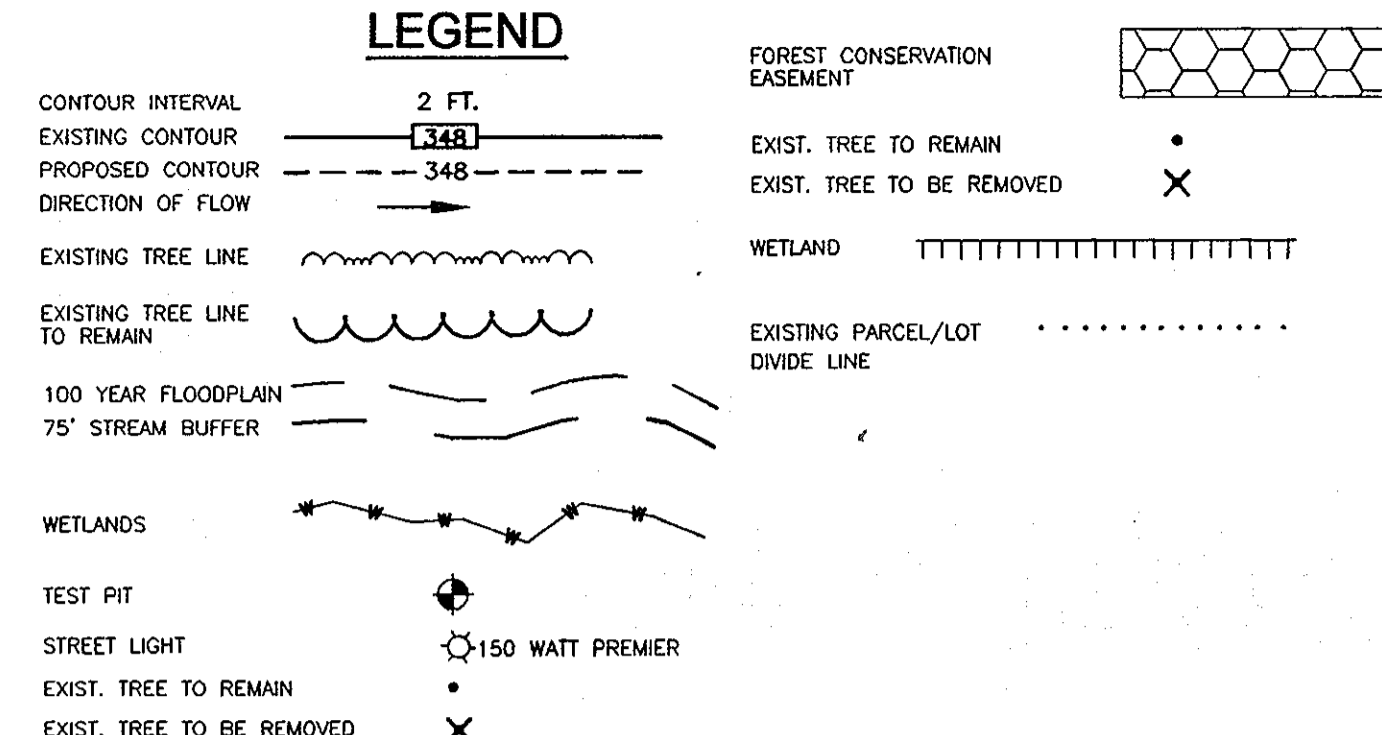
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DESIGN BY: RJ/TM
DRAWN BY: RJ
CHECKED BY: RHY
DATE: 01-05-2009
SCALE: AS SHOWN
W.O. NO.: 08-35

8 SHEET OF 9



PLANT SCHEDULE

KEY	QUAN.	PLANT NAME	SIZE	REMARK
(Circle with X)	07	ZELKOVA SERRATA 'VILLAGE GREEN' GREEN JAPANESE ZELKOVA 7-(P-5)	2 1/2"-3" CAL.	B&B
(Circle with dot)	22	ACER RUBRUM RED MAPLE 18 ST+04 (P-3)	2 1/2"-3" CAL.	B&B
(Circle with dot)	06	JAPANESE RED MAPLE ACER PALMATUM ATROPURPUREUM (SHADE TREES-GROWTH HEIGHT=20') 4-(P-2), 2-(P-1)	2 1/2"-3" CAL.	B&B
(Circle with dot)	08	AMUR MAPLE ACER GINNALA (SHADE TREES-GROWTH HEIGHT=20') 8-(P-0), SWM	2"-3" CAL.	B&B
(Circle with dot)	06	YOSHINO FLOWERING CHERRY PRUNUS X YEDONENSIS (GROWTH HEIGHT=25') ST/MARY LN	4'-6" HT.	B&B
(Circle with dot)	17	PINUS STROBILUS EASTERN WHITE PINE	6'-8" HT.	B&B

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMM PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

NET TRACT AREA: 3.44 AC
 A. TOTAL TRACT AREA: 3.44 AC
 B. AREA WITHIN 100 YEAR FLOODPLAIN: 0.00 AC
 C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION: 0.00 AC
 D. NET TRACT AREA: 3.44 AC

LAND USE CATEGORY: INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.
 ARA MDR IDA HDR MPD CIA
 0 0 0 1 0 0

E. AFFOREST THRESHOLD: 15% X D = 0.52 AC
 F. CONSERVATION THRESHOLD: 20% X D = 0.69 AC

EXISTING FOREST COVER:
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN): 1.22 AC
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD: 0.70 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD: 0.53 AC

BREAK EVEN POINT:
 J. BREAK EVEN POINT: 0.79 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION: 0.43 AC

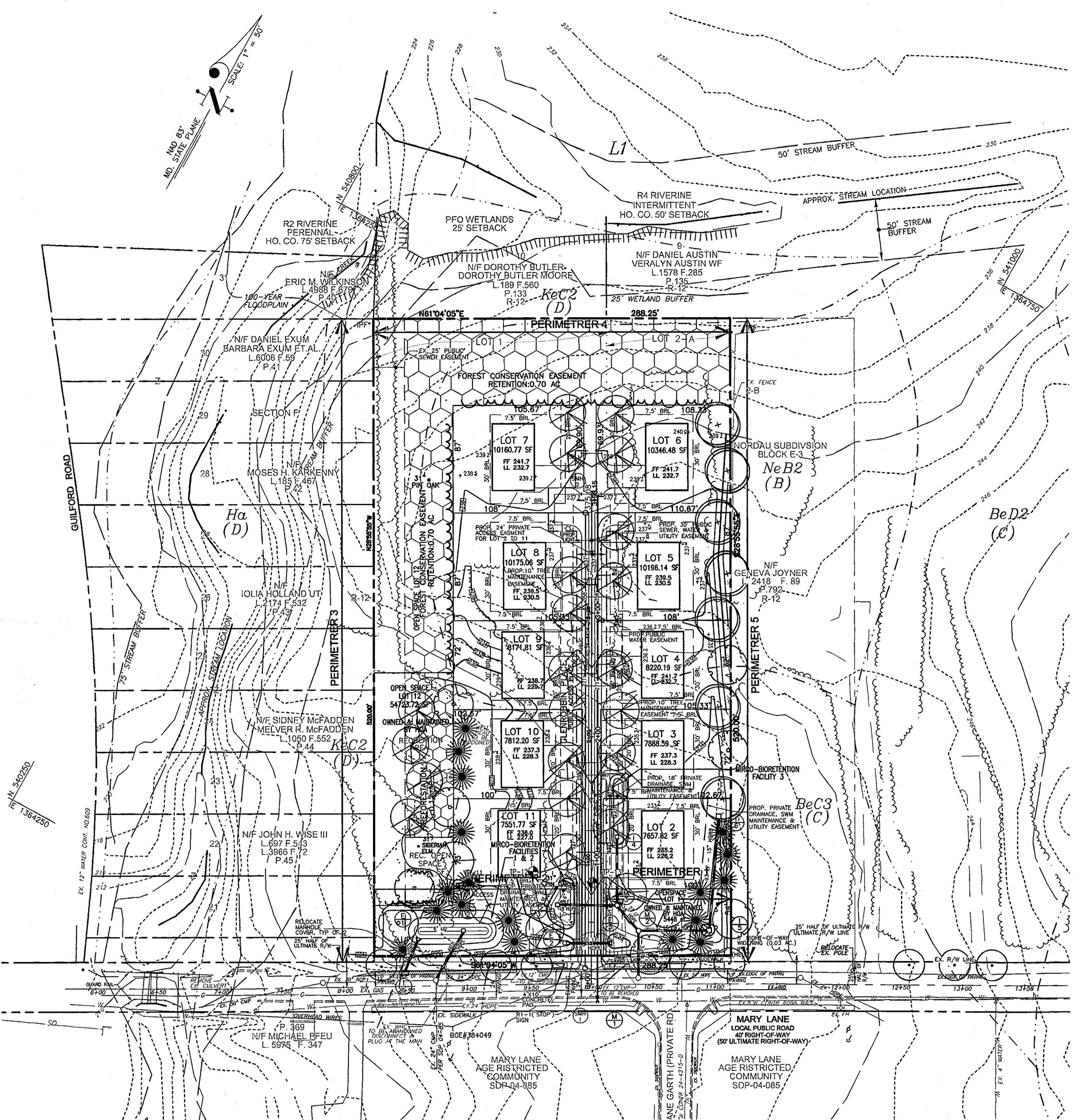
PROPOSED FOREST CLEARING:
 L. TOTAL AREA OF FOREST TO BE CLEARED: 0.52 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED: 0.70 AC

PLANTING REQUIREMENTS:
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD: 0.13 AC
 P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD: 0.00 AC
 Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD: 0.01 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-Q): 0.12 AC
 S. TOTAL AFFORESTATION REQUIRED: 0.00 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED: 0.12 AC

TOTAL FOREST RETENTION: 0.79 AC.

FOREST CONSERVATION EASEMENT HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL, NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

TOTAL FOREST CONSERVATION OBLIGATION THE PROJECT, TO BE FULFILLED BY ON SITE RETENTION OF 0.79 ACRES & REFORESTATION OF 0.12 ACRES.



PLAN VIEW
 SCALE: 1"=50'

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
MARY LANE	500 @ 1:40	13	13
GLENROBBIN PLACE	720 LF @ 1:40	18	18

SCHEDULE D: BIO-RETENTION FACILITIES (TOTAL) AREA LANDSCAPING-TYPE 'B' BUFFER

	BIO-RETENTION FACILITY#1	BIO-RETENTION FACILITY#2	BIO-RETENTION FACILITY#3	TOTAL
LINEAR FEET OF PERIMETER	166'	135'	105'	
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO	NO	
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	
NUMBER OF TREES REQUIRED SHADE TREES 1:50 EVERGREEN TREES 1:40	03 04	03 03	02 03	08**** 10****
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES SHRUBS				

**** TOTAL REQUIRED NUMBER OF TREES PROVIDED ON SITE

STREET LIGHT CHART

QUANTITY	SYMBOL	FIXTURE/POLE TYPE
2	*	150 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE. PRIVATE ACCESS PLACE STREET LIGHTS TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES		
	1	2	3	4	5
PERIMETER/FRONTAGE DESIGNATION LANDSCAPE TYPE	B	B	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	100'	164'	515'	288'	515'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO 30'	NO -	YES** 290'	YES* 288'	YES* 70'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED (LF REMAINING) SHADE TREES EVERGREEN TREES SHRUBS	1:50/2 1:40/3	1:50/4 1:40/4	225' 1:60/4	- -	445' 1:60/7
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	2 3	4 4	4 4	- -	7 -

*EXISTING WOODS TO REMAIN
 **EXISTING WOODS TO REMAIN AND 31" SIBERIAN ELM

- ### B G & E NOTES:
- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
 - BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
 - THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT, IF BGE

NO.	REVISION	DATE

PRELIMINARY PLANS
 LANDSCAPE AND FOREST CONSERVATION PLAN
 THE GLENS AT GUILFORD
 LOTS 2-11 & OPEN SPACE LOT 1 & 12
 A RESUBDIVISION OF LOTS 1 & 2-A, (P.46 & P.815), BLOCK E-3

TAX MAP #47 & 42 GRID 6 & 24 PARCELS 46 & 815
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

8407 MAIN STREET
 ELLICOTT CITY, MD 21043 TEL: 410-481-7666 FAX: 410-481-8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RJ/JM
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-05-2009
 SCALE: AS SHOWN
 W.O. NO.: 08-35

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. 16193 EXPIRATION DATE: 09-27-2010

9 SHEET OF 9

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Thomas J. Butler
 PLANNING DIRECTOR
 DATE: 2/11/09

OWNER
 HOWARD COUNTY HOUSING COMMISSION
 6751 GATEWAY DRIVE
 COLUMBIA, MARYLAND 21044
 410-313-6316

R. Joshi
 ROMA JOSHI
 DNR QUALIFIED PROFESSIONAL