

SHEET INDEX	
NO.	DESCRIPTION
1	COVER SHEET
2	SITE DEVELOPMENT & GRADING PLAN
3	SEDIMENT CONTROL PLAN, NOTES AND DETAILS

**GENERAL NOTES**

- THE SUBJECT PROPERTY IS ZONED R-SC PER THE 2/02/04 COMPREHENSIVE ZONING PLAN AND PER COMP. UTE ZONING AMENDMENTS EFFECTIVE 7/28/06.
- PROJECT BOUNDARY AND TOPOGRAPHY ARE BASED ON FIELD RUN BOUNDARY SURVEY AND TOPOGRAPHY PERFORMED BY BENCHMARK ENGINEERING INC. DATED SEPTEMBER, 2010 AND ROAD CONSTRUCTION PLANS F-12-019. ALL VERTICAL CONTROLS ARE BASED ON NAVD83.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NO.508A AND NO.508B WERE USED FOR THIS PROJECT.
- WATER AND PUBLIC UTILITIES ARE BASED ON CONTRACT 14-4723-D.
- STORMWATER MANAGEMENT METHODS WERE BASED ON THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II. QUALITY TREATMENT SHALL BE PROVIDED BY ON-LOT BIO-SWALES AND MICROBIORETENTION FACILITIES WHICH SHALL BE OWNED AND MAINTAINED BY EACH LOT OWNER.
- EXISTING UTILITIES SHOWN WERE TAKEN FROM RECORD DRAWINGS PER F-12-019 AND CONTRACT 14-4723-D. IF NECESSARY, CONTRACTOR SHALL ADJUST STRUCTURE TOPS TO MEET SDP GRADES.
- ALL WATER METERS SHALL BE SET OUTSIDE.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WAS POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR FINAL PLAN F-12-019 IN THE AMOUNT OF \$5,720 FOR 10 SHADE TREES (INCLUDING TWO LARGE SHADE TREES FOR MITIGATION PER WP-11-153), 3 EVERGREENS, 215' OF PRIVACY FENCING AND 4 SHRUBS FOR TRASH PAD SCREENING.
- WETLAND DELINEATION PROVIDED BY ECO-SCIENCE PROFESSIONALS, INC., DATED OCTOBER, 2010, AND WAS APPROVED UNDER F-12-019. THERE ARE NO STEEP SLOPES, 100 YEAR FLOODPLAINS, OR STREAMS ON THE PROPERTY. THERE ARE NO WETLANDS OR WETLAND BUFFERS WITHIN THE PROJECT LIMITS (ON-LOT).
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
- FINAL PLAN F-12-019 COMPLIED WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE ON-SITE RETENTION OF 0.89 ACRES OF FOREST RESOURCES WITHIN OPEN SPACE LOT 6, IN EXCESS OF THE BREAK EVEN POINT OF 0.5 ACRES REQUIRED FOR THIS SUBDIVISION. A DEED OF FOREST CONSERVATION EASEMENT AND FOREST CONSERVATION AGREEMENT HAVE BEEN EXECUTED WITH THE DEVELOPER AGREEMENT FOR F-12-019.
- UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
- BRL INDICATES ZONING RESTRICTION LINE. OTHER RESTRICTIONS MAY APPLY.
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS; BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
- FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE ENJOYMENT OF THE FLAG OR PIPE STEM AND ROAD RIGHT OF WAY LINE ONLY AND NOT ONTO THE FLAG OF PIPE STEM LOT DRIVEWAY.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:  
 (a) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE)  
 (b) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATINGS (1-1/2" MIN.)  
 (c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 1/2" GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.  
 (d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).  
 (e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.  
 (f) STRUCTURE CLEARANCES - MINIMUM 12 FEET.  
 (g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- OPEN SPACE LOT 6 WAS DEDICATED TO HOWARD COUNTY, MARYLAND PER F-12-019.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC FEATURES OR CEMETERIES ON THIS SITE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- FOR DRIVEWAY SETBACKS SEE HOWARD COUNTY STANDARD DETAILS R-5.06.
- SHC ELEVATIONS SHOWN ARE AT THE PROPERTY LINE OR EASEMENT LINE.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
- DRIVEWAY SLOPES SHOWN ARE AVERAGE. THE SLOPE AT THE OUTSIDE EDGES COULD BE FLATTER OR STEEPER DEPENDING ON GRADE OF ROADWAY.
- THIS PLAN CONFORMS WITH THE AMENDED 5th EDITION OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 1993 ZONING REGULATIONS AMENDED BY CB 50-2001. THE BUILDER SHALL APPLY FOR BUILDING PERMITS FOR ALL LOTS AS SHOWN ON THIS SITE DEVELOPMENT PLAN WITHIN FIVE YEARS OF SIGNATURE APPROVAL OF THIS PLAN.
- 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 EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- THIS PROJECT IS UTILIZING THE ZERO LOT LINE OPTION FOR LOT 1. THE REQUIREMENT OF A MINIMUM OF 15' BETWEEN HOUSES IS PROVIDED BY A 15' BRL ON LOT 2. A 5' MAINTENANCE EASEMENT TO BENEFIT LOT 1 IS REQUIRED FOR MAINTENANCE ACCESS, AND HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY SIMULTANEOUSLY WITH THE RECORDED OF THIS PLAT IN ACCORDANCE WITH SECTION 110.E.2 OF THE ZONING ORDINANCE.
- WP-11-153 WAS SUBMITTED TO REQUEST A WAIVER FROM SECTION 16.1205.(g), TO ALLOW REMOVAL OF TWO (2) SPECIMEN TREES IN ADDITION TO THE REQUIRED LANDSCAPING.
- A DESIGN MANUAL WAIVER WAS SUBMITTED, TO REQUEST A REDUCTION FROM THE REQUIRED 25' PLACEMENT OF SWALES FROM HOUSE FOUNDATIONS. THE WAIVER APPROVED SEPTEMBER 16, 2001 ALLOWS THE SWALES TO BE APPROXIMATELY 14.2' FROM THE FRONT OF THE HOUSE.
- LOT 5 IS LOCATED WITHIN THE FALLSINGTON URBAN (F3) SOIL COMPLEX. WITHIN THIS COMPLEX, DEPTH TO BEDROCK IS UNDETERMINED, THERE IS A 0 TO 1 FOOT WATER TABLE, AND THERE ARE SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS. SEASONAL WETNESS OCCURS.
- A USE-IN-COMMON ACCESS MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAY SERVING LOTS 1-5 AND OPEN SPACE LOT 6 HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND ON APRIL 26, 2013 AS LIBER 14940, FOLIO 413. AS OWNER OF OPEN SPACE LOT 6, THE DEPARTMENT OF RECREATION AND PARKS SHALL HAVE NO MAINTENANCE RESPONSIBILITY FOR THE SHARED DRIVEWAY.
- IN ACCORDANCE WITH SECTION 110.E.2 OF THE ZONING REGULATIONS, THIS PROJECT IS UTILIZING THE ZERO LOT LINE OPTION FOR LOT 1. THE REQUIREMENT OF A MINIMUM OF 15' BETWEEN HOUSES IS PROVIDED BY A 15' BUILDING RESTRICTION LINE ON LOT 2. A 5' MAINTENANCE EASEMENT TO BENEFIT LOT 1 FOR MAINTENANCE ACCESS HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND ON APRIL 26, 2013 AS LIBER 14940, FOLIO 411.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS OR THEIR BUFFERS OR FOREST CONSERVATION EASEMENTS.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR RESIDENTIAL INFILL DEVELOPMENT. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
- INDIVIDUAL HOUSE SITES SHALL PROVIDE PRIVATE DRIVEWAYS A MINIMUM OF 18 FOOT DEPTH FROM THE FACE OF THE GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY SO THAT A CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE SHARED DRIVEWAY. THE TWO (2) CAR GARAGES SHALL BE USED FOR PARKING PURPOSES ONLY, AND SHALL NOT BE CONVERTED INTO LIVING SPACE OR STORAGE SPACE.
- VEHICLE AND GUEST PARKING IS RESTRICTED ALONG THE USE-IN-COMMON DRIVEWAY. THIS SHARED DRIVEWAY SHALL PROVIDE ADEQUATE UNOBSTRUCTED ACCESS TO ALL DWELLINGS AT ALL TIMES AS REQUIRED BY HOWARD COUNTY DEPARTMENT OF FIRE AND RESCUE.
- A DESIGN MANUAL WAIVER WAS APPROVED NOVEMBER 17, 2011 ALLOWING GRAVITY SEWER SERVICE TO THE FIRST FLOOR ONLY, SUBJECT TO A NOTE BEING PROVIDED ON THE SITE DEVELOPMENT PLAN. BASEMENT SERVICE WILL BE PROVIDED BY PRIVATE ON-SITE PUMP SYSTEMS, IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEPARTMENT OF INSPECTIONS.

# SITE DEVELOPMENT PLAN

## KINGS ARMS, SECTION 5

### LOTS 1-5

#### 6th ELECTION DISTRICT

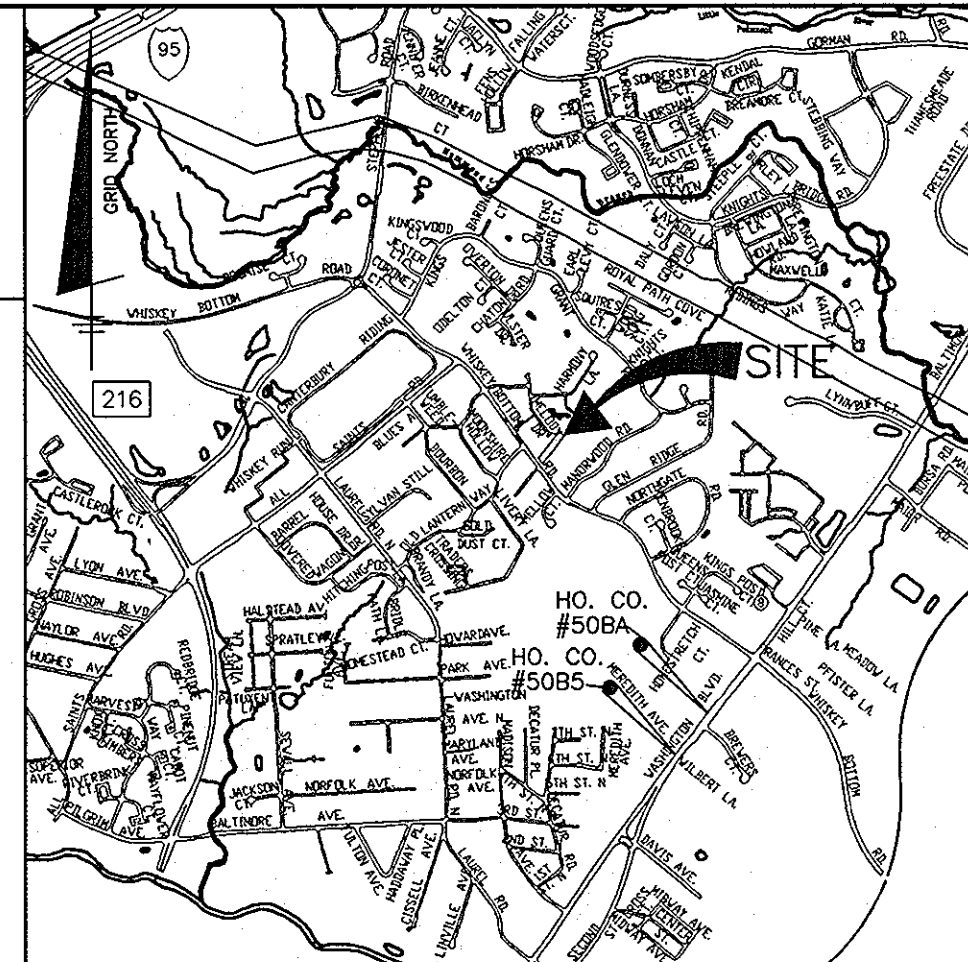
#### HOWARD COUNTY, MARYLAND

**BENCH MARKS--(NAD'83)**

HO. CO. #508A	EL. N/A
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HO. CO. #508B	EL. 178.242
STANDARD DISC ON CONC. MONUMENT	
N 524999.3640	E 1357925.6751

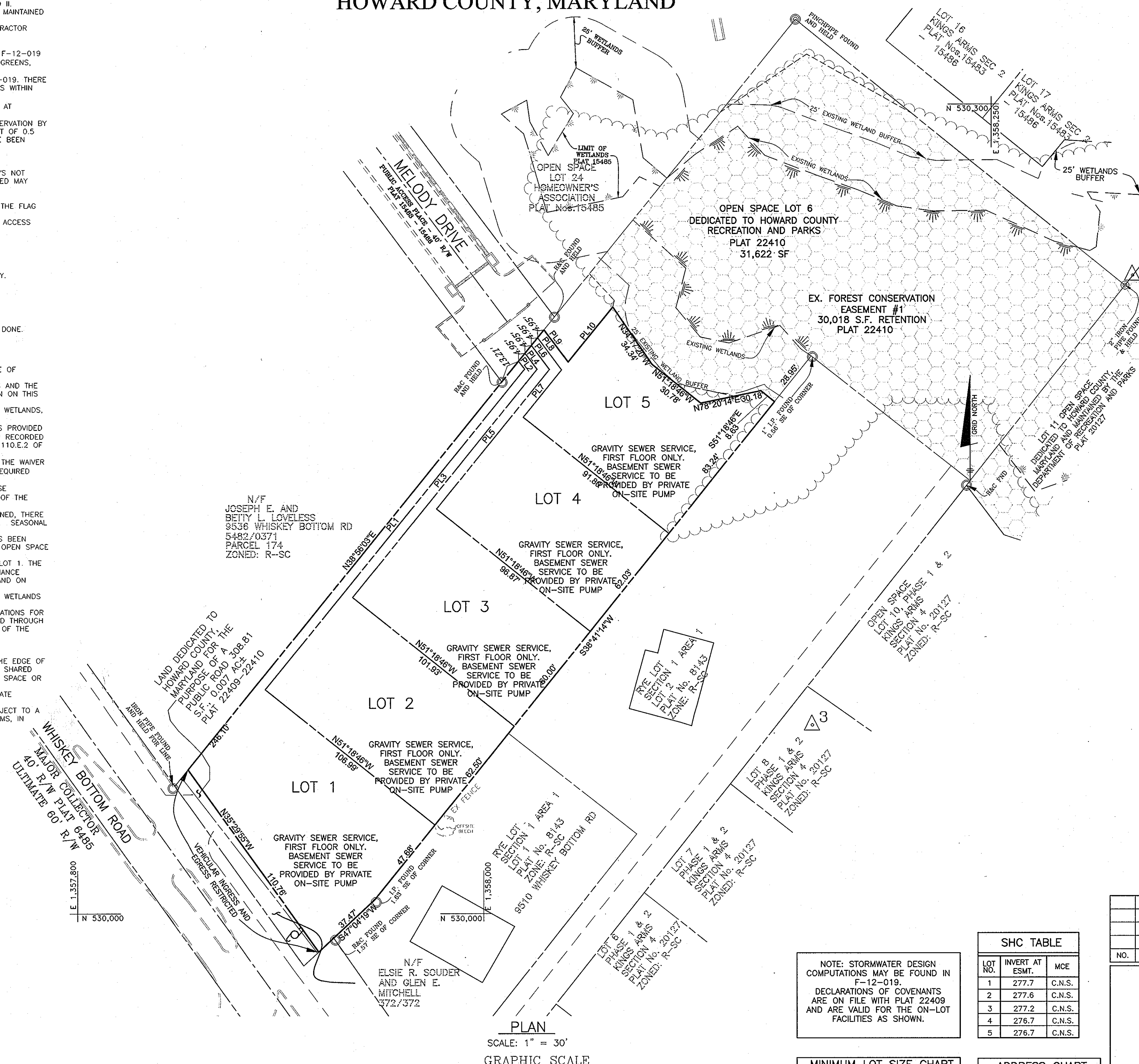
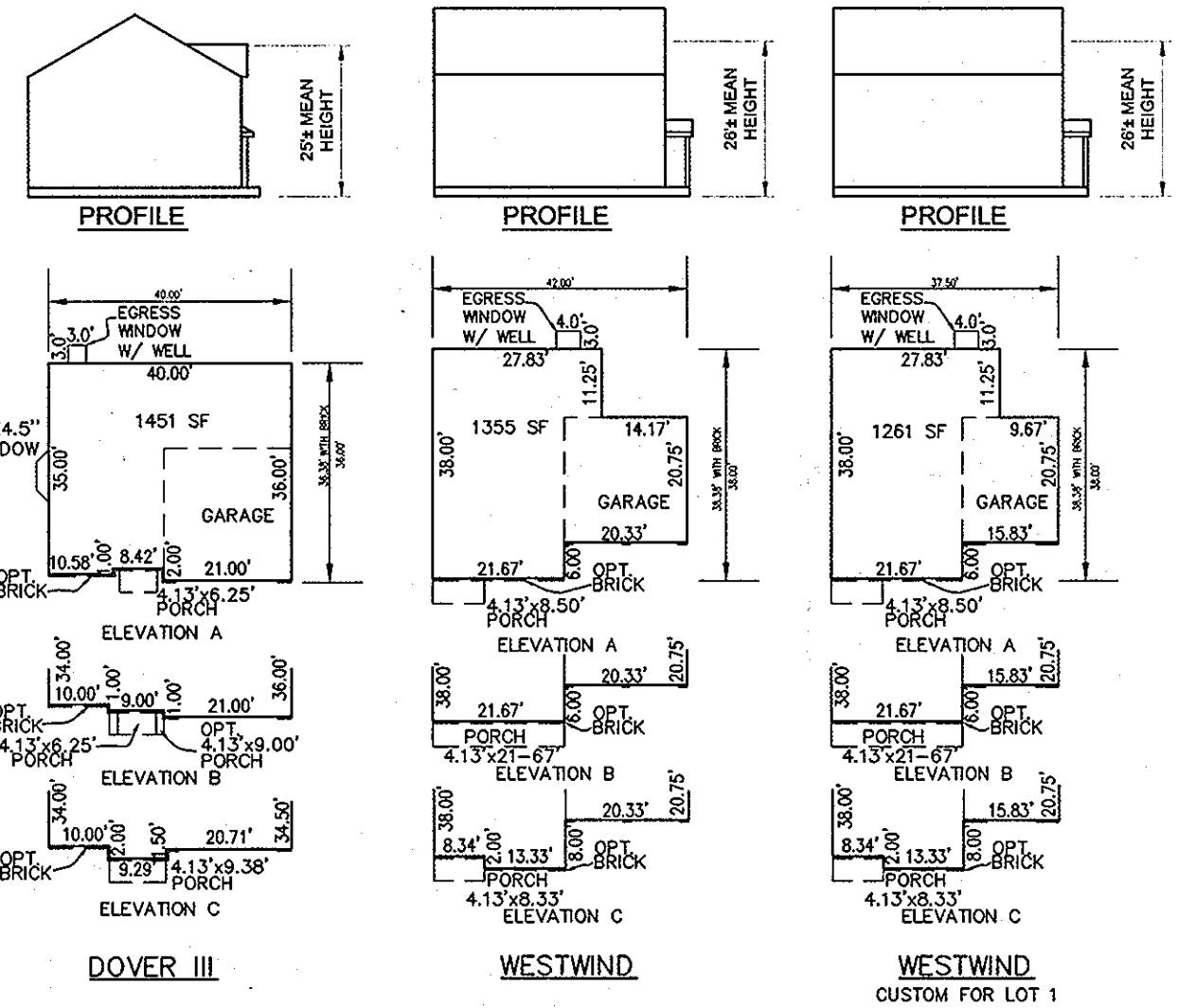
**LOTS 1-5 LINE TABLE**

LINE LENGTH	BEARING
PL1 203.50	N38°56'03"E
PL2 4.95	N36°46'47"W
PL3 144.71	N38°56'03"E
PL4 9.91	N36°46'47"W
PL5 88.42	N38°56'03"E
PL6 14.88	N36°46'47"W
PL7 30.10	N38°56'03"E
PL8 19.81	N36°46'47"W
PL9 19.81	N36°46'47"W
PL10 35.00	N38°56'03"E



**LEGEND**

- EXISTING CONTOURS
- SOIL DELINEATION
- EXISTING WOODS LINE
- WETLANDS LIMIT
- F-12-019 LANDSCAPING TREES
- PUBLIC FOREST CONSERVATION EASEMENT



**SITE ANALYSIS DATA CHART**

A) TOTAL PROJECT AREA	0.81 AC.
B) AREA OF THIS PLAN SUBMISSION	0.81 AC.
C) APPROXIMATE LIMIT OF DISTURBANCE	0.60 AC.
D) PRESENT ZONING:	R-SC
E) PROPOSED USE OF SITE:	RESIDENTIAL SINGLE FAMILY DETACHED UNITS
F) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S):	5
G) TOTAL NUMBER OF UNITS PROPOSED:	5
H) REQUIRE PARKING PER SFD UNIT:	2.5
I) PROVIDED PARKING PER UNIT:	4 (LOTS 2-5: 2 GARAGE, 2 DRIVEWAY) (LOT 1: 1 GARAGE, 3 DRIVEWAY)
J) APPLICABLE DPZ FILE REFERENCES:	ECP-11-050, WP-11-153, F-12-019, CONTRACT 14-4723-D, PLAT 22409-22410
K) PROPOSED WATER AND SEWER SYSTEMS:	X PUBLIC PRIVATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Kurt Steinhilber* 10/04/13  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Mark L. Loyce* 10/2/13  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Mark L. Loyce* 10/4/13  
DIRECTOR

**STORMWATER MANAGEMENT PRACTICES**

LOT NUMBER AND ADDRESS	MICRO-BIORETENTION I&B (NUMBER)	BIO-SWALES N&S (NUMBER)
LOT 1 9041 MELODY DRIVE	1	1
LOT 2 9037 MELODY DRIVE	1	1
LOT 3 9033 MELODY DRIVE	1	1
LOT 4 9029 MELODY DRIVE	1	1
LOT 5 9025 MELODY DRIVE	1	1

**DESIGN IMPERVIOUS (HOUSE)**

LOT	DESIGN AREA (SF)
1	1411
2	1600
3	1800
4	1800
5	1800

NOTES:  
1. STORMWATER MANAGEMENT HAS BEEN DESIGNED FOR THE HOUSE AREAS SHOWN ON THE DESIGN IMPERVIOUS TABLE. SHOULD A HOUSE TYPE REVISION BE REQUIRED THAT CAUSES THE HOUSE TO EXCEED THE DESIGN AREA, THE STORMWATER MANAGEMENT WILL BE REEVALUATED AT THAT TIME.  
2. AREAWAYS, IF PROVIDED, SHALL BE PARALLEL TO REAR WALL AND MAY ONLY EXTEND 4' BEYOND BRL.

**SHC TABLE**

LOT NO.	INVERT AT ESMT.	MCE
1	277.7	C.N.S.
2	277.6	C.N.S.
3	277.2	C.N.S.
4	276.7	C.N.S.
5	276.7	C.N.S.

NOTE: STORMWATER DESIGN COMPUTATIONS MAY BE FOUND IN F-12-019. DECLARATIONS OF COVENANTS ARE ON FILE WITH PLAT 22409 AND ARE VALID FOR THE ON-LOT FACILITIES AS SHOWN.

**MINIMUM LOT SIZE CHART**

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
1	8,758	979	7,779
2	7,400	721	6,679
3	6,582	475	6,108
4	6,218	219	6,000
5	6,184	95	6,090

**ADDRESS CHART**

LOT	STREET ADDRESS
1	9041 MELODY DRIVE
2	9037 MELODY DRIVE
3	9033 MELODY DRIVE
4	9029 MELODY DRIVE
5	9025 MELODY DRIVE

**PERMIT INFORMATION CHART**

SUBDIVISION NAME:		SECTION/AREA:	LOT/PARCEL #		
KINGS ARMS SECTION 5		N/A	LOTS 1-5		
PLAT No.	GRID No.	ZONE	TAX MAP	ELECTION DISTRICT	CENSUS TRACT
22409-22410	22	R-SC	47	6TH	6069.02

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLIOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644  
75 THOMAS JOHNSON DRIVE & SUITE E & FREDERICK, MARYLAND 21702  
301-710-6686  
WWW.BE-CIVILENGINEERING.COM

**KINGS ARMS SECTION 5**  
LOTS 1-5, SINGLE FAMILY DETACHED DWELLINGS  
PLAT 22409

RYLAND HOMES  
6240 OLD DOBBIN LANE, SUITE 190  
COLUMBIA, MARYLAND 21045  
410-290-0094

TAX MAP: 47  
GRID: 22  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

**COVER SHEET**

DATE: MAY 2013  
SEPTMBER, 2013  
PROJECT NO. 2364

DESIGN: AM DRAFT: AM CHECK: CAM SCALE: AS SHOWN SHEET 1 OF 3

SDP-13-076

### MATERIALS & SPECIFICATIONS FOR ESD PRACTICES

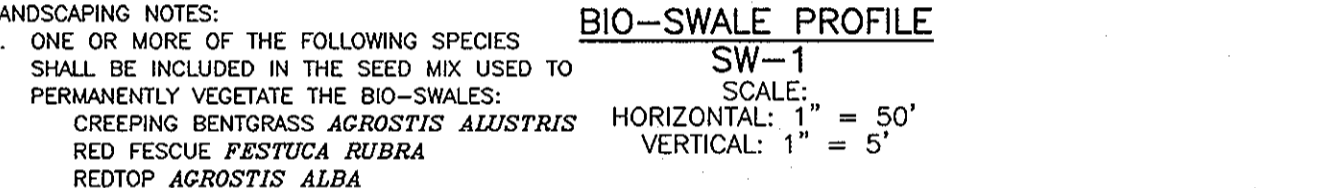
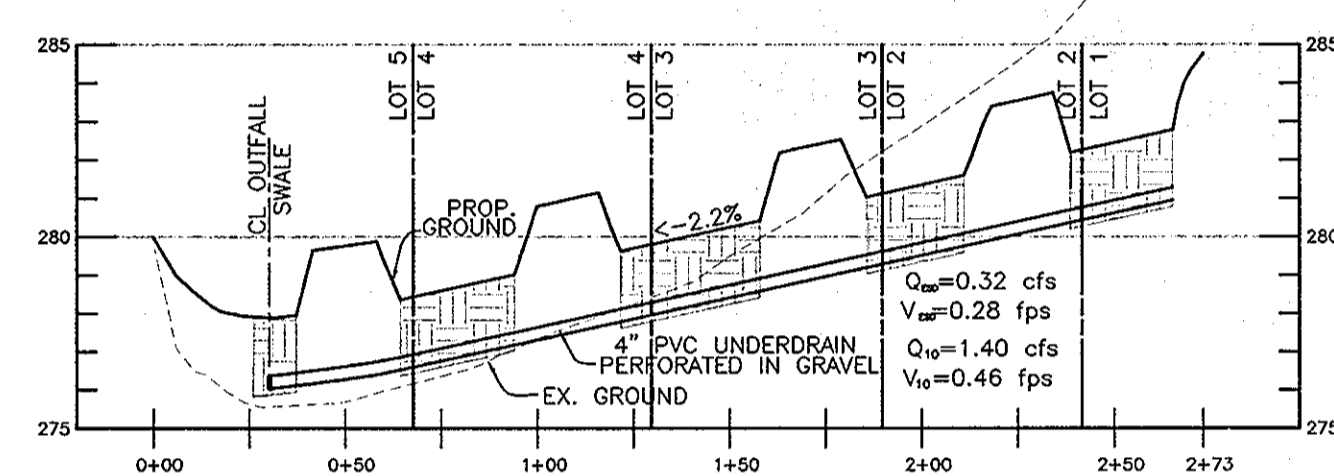
MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2" TO 4" DEEP)	LOAMY SAND 60-65% COMPOST 35-40% OR SANDY LOAM 35% COARSE SAND 30% & COMPOST 40%	N/A	USDA SOIL TYPES: LOAMY SAND OR SANDY LOAM; CLAY CONTENT <5%
ORGANIC CONTENT	MIN 10% BY DRY WEIGHT ASTM D 5974	N/A	
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM, NO PINE OR WOOD CHIPS
GEOTEXTILE (CLASS "C")	N/A	N/A	PE TYPE 1 NONWOVEN
GEOTEXTILE (1/4" WIRE MESH)	N/A	N/A	
UNDERDRAIN GRAVEL	NO. 57 OR NO. 6 0.375" TO 0.750"	1/4" WIRE MESH	3/8" PERFOR. @ 6" O.C. 4 HOLES PER ROW; MINIMUM UNDERNEATH PIPES. PIPE SHALL BE WRAPPED WITH 1/4-INCH GALVANIZED HARDWARE CLOTH.
UNDERDRAIN PIPING	F785, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SDR35 OR HOPE	

#### BIO-SWALE CONSTRUCTION SPECIFICATIONS

- SWALES SHALL NOT BE CONVERTED TO BIO-SWALES UNTIL THE SURROUNDING SITE IS STABILIZED.
- IT IS IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE PLANTING SOIL.
- ROTTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE PLACEMENT OF UNDERDRAIN.
- WHEN BACKFILLING THE PLANTING SOILS, PLACE SOIL IN LIFTS OF 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION AREA.
- SIDESLOPES WITHIN THE BIO-SWALE SHALL BE A MAXIMUM OF 3:1 SLOPES.
- ALL CHANGES IN GRADING SHALL BE SMOOTHED AND ROUNDED, TO ENSURE EASE OF FUTURE MOWING.

#### FRONT BIO-SWALE PLANTINGS

SYMBOL	TOTAL QUANTITY	NAME	REMARKS
(1)	21	LIROPE MUSCARI	
(2)	15	IRIS VERSICOLOR	
(3)	5	PRUNUS VIRGINIANA CHOKE CHERRY	2 1/2" MIN. CAL. B&B



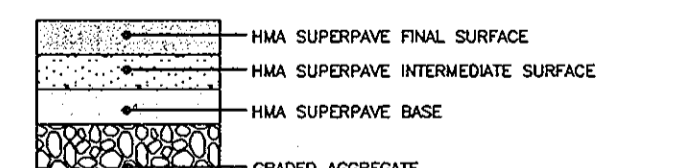
#### OPERATION AND MAINTENANCE SCHEDULE FOR M-8 BIO-SWALES AND M-6 MICROBIORETENTION

- 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 PLANT INSPECTION 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.

NOTE: STORMWATER DESIGN COMPUTATIONS CAN BE FOUND IN F-12-019. FACILITIES ARE TO BE CONSTRUCTED AFTER HOUSE CONSTRUCTION. DECLARATIONS OF COVENANTS ARE ON FILE WITH PLAT 22409 AND ARE VALID FOR THE ON-LOT FACILITIES AS SHOWN.

NOTE: THERE IS A STRIP OF LAND BETWEEN WITHIN THE ULTIMATE RIGHT-OF-WAY OF WHISKEY BOTTOM ROAD AND LOT 1 WHICH IS OWNED BY ELSIE R. SOUDER AND GLEN E. MITCHELL WHICH PROHIBITS THE COUNTY FROM REQUIRING THE DEVELOPER OF THIS SUBDIVISION TO PROVIDE SIDEWALKS AND ROAD IMPROVEMENTS.

NOTE: INDIVIDUAL HOUSE SITES SHALL PROVIDE PRIVATE DRIVEWAYS A MINIMUM 18 FOOT DEPTH FROM THE FACE OF GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE SHARED DRIVEWAY. THE SHARED DRIVEWAY SHALL PROVIDE ADEQUATE UNOBSTRUCTED ACCESS TO ALL DWELLINGS AT ALL TIMES AS REQUIRED BY HOWARD COUNTY DEPARTMENT OF FIRE & RESCUE.



#### P-1 PAVING DETAIL

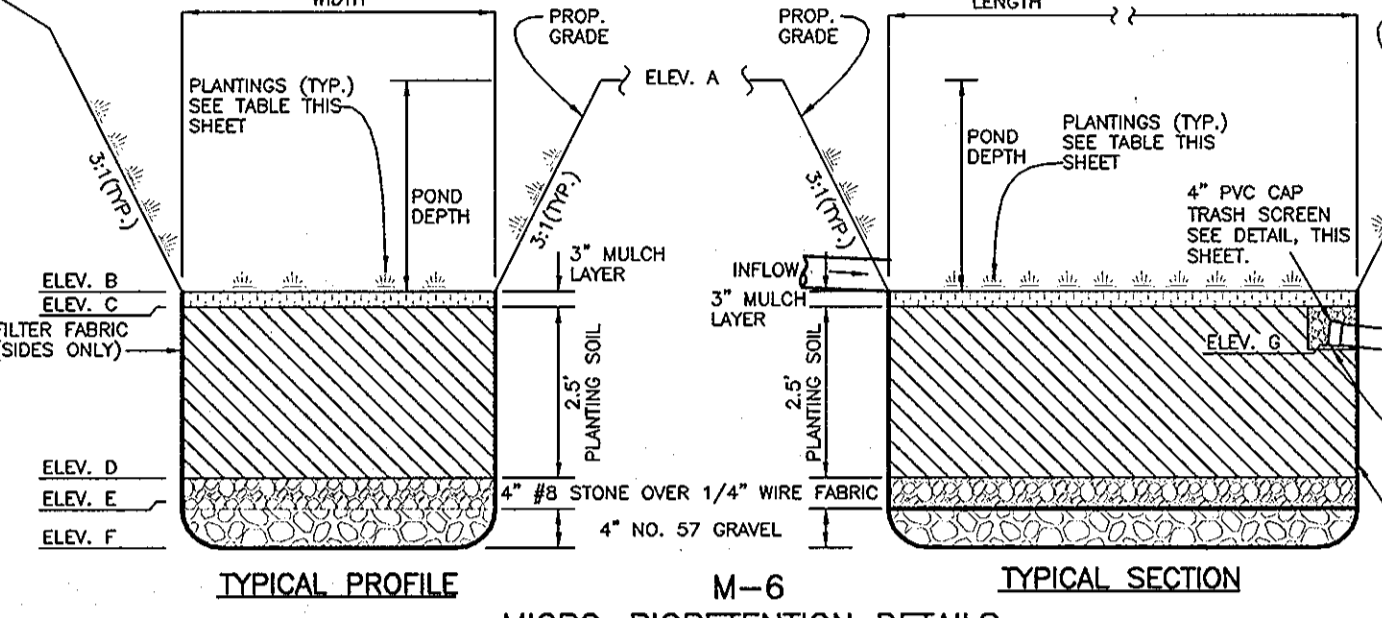
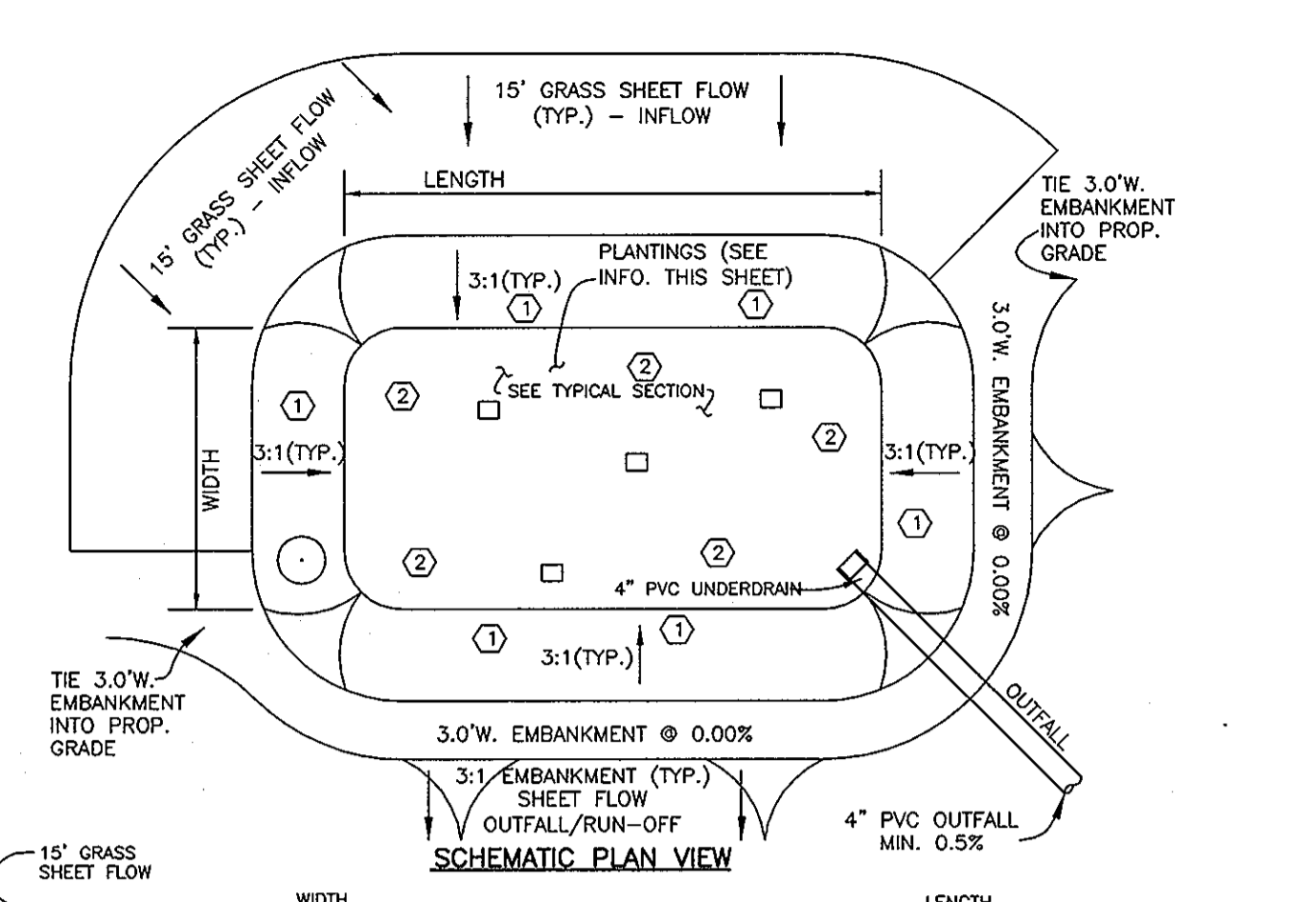
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P-1	HMA SUPERIMPOSED FINAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	HMA SUPERIMPOSED INTERMEDIATE SURFACE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	HMA SUPERIMPOSED BASE	2.0	2.0	2.0	3.5	3.0	2.5						
	GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.0	4.0						

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Kate S. ...* 10/24/13  
CHIEF, DIVISION OF LAND DEVELOPMENT

*...* 10/13  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*...* 10/14/13  
DIRECTOR



#### MICRO-BIORETENTION GEOMETRY

LENGTH	WIDTH	DEPTH	A	B	C	D	E	F	G	
MB-1	54.0'	3.5'	9.0'	284.00	283.25	283.00	280.50	280.17	279.83	282.25
MB-2	40.0'	3.3'	9.0'	282.00	281.25	281.00	278.50	278.17	277.83	280.25
MB-3	44.0'	4.5'	9.0'	280.00	279.25	279.00	276.50	276.17	275.83	278.25
MB-4	40.0'	3.3'	9.0'	278.00	277.25	277.00	274.50	274.17	273.80	276.25
MB-5	40.0'	3.3'	9.0'	274.00	273.25	273.00	270.50	270.17	269.83	272.25

- #### MICRO-BIORETENTION PLANTING SCHEDULE
- IRIS VERSICOLOR (IRIS)
  - NYPHOIDES PELLATA FLOATING-HEART YELLOW
  - LOBELIA CARDINALIS CARDINAL FLOWER
  - ACER RUBRUM (RED MAPLE)

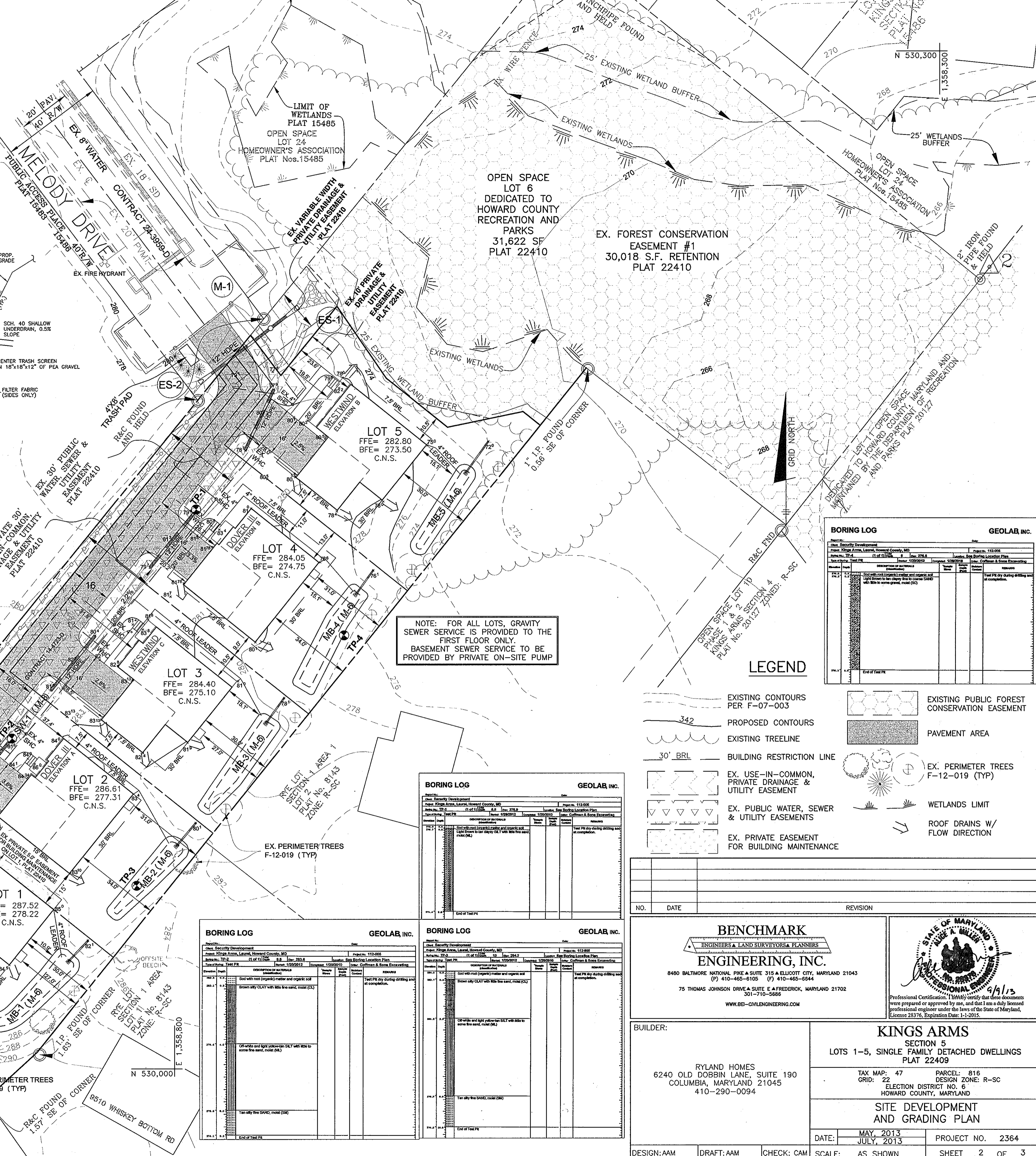
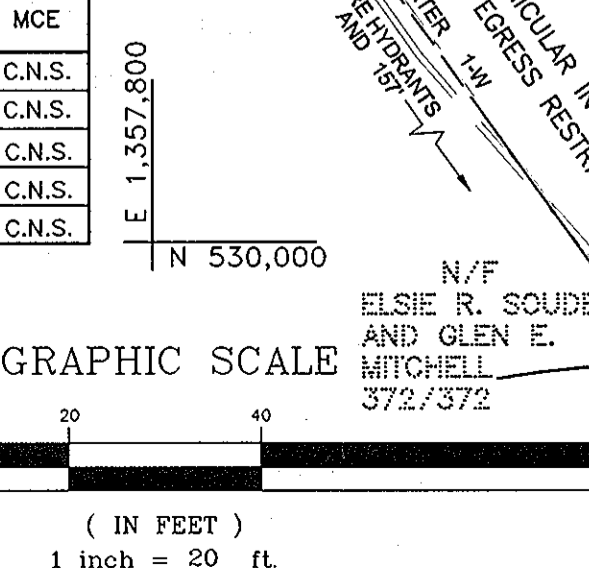
- #### MICRO-BIORETENTION PLANTING DATA
- PLANTINGS WITHIN THE PONDING AREA ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE.
  - PLANTINGS ALONG THE PERIMETER (BERM) AREA ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE.
  - AVOID PLANTINGS WITH EXCESSIVE ROOT MASS NEAR UNDERDRAIN.



NOTE: ALL DRIVEWAY CULVERT PIPES SHALL BE 12" HOPE.

#### SHC TABLE

LOT NO.	INVERT AT ESMT.	MCE
1	277.7	C.N.S.
2	277.6	C.N.S.
3	277.2	C.N.S.
4	276.7	C.N.S.
5	276.7	C.N.S.



#### BORING LOG

NO.	DATE	REVISION

- #### LEGEND
- EXISTING CONTOURS PER F-07-003
  - PROPOSED CONTOURS
  - EXISTING TREELINE
  - BUILDING RESTRICTION LINE
  - EX. USE-IN-COMMON, PRIVATE DRAINAGE & UTILITY EASEMENT
  - EX. PUBLIC WATER, SEWER & UTILITY EASEMENTS
  - EX. PRIVATE EASEMENT FOR BUILDING MAINTENANCE
  - EXISTING PUBLIC FOREST CONSERVATION EASEMENT
  - PAVEMENT AREA
  - EX. PERIMETER TREES F-12-019 (TYP)
  - WETLANDS LIMIT
  - ROOF DRAINS W/ FLOW DIRECTION

### BENCHMARK ENGINEERS, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELIJAH CITY, MARYLAND 21043  
(P) 410-465-6100 (F) 410-465-6144  
75 THOMAS JOHNSON DRIVE SUITE E A FREDERICK, MARYLAND 21702  
301-710-5888  
WWW.BEI-CIVILENGINEERING.COM

**KINGS ARMS SECTION 5**  
LOTS 1-5, SINGLE FAMILY DETACHED DWELLINGS PLAT 22409

RYLAND HOMES  
6240 OLD DOBBIN LANE, SUITE 190  
COLUMBIA, MARYLAND 21045  
410-290-0094

TAX MAP: 47 PARCEL: 816  
GRID: 22 DESIGN ZONE: R-SC  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

**SITE DEVELOPMENT AND GRADING PLAN**

DATE: MAY 2013  
JULY 2013 PROJECT NO. 2364

DESIGN: AAM DRAFT: AAM CHECK: CAM SCALE: AS SHOWN SHEET 2 OF 3

