

GENERAL NOTES

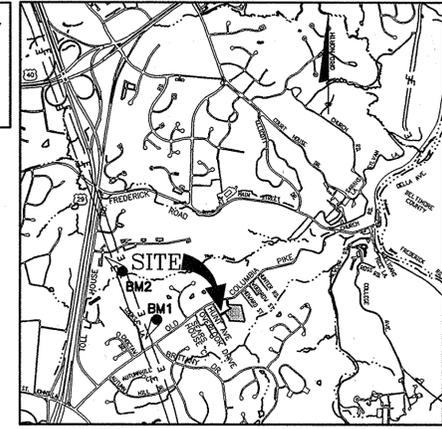
- 1.) THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- 2.) THE SUBJECT PROPERTY IS ZONED R-20 PER THE 2-2-2004 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7-28-2006.
- 3.) COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 2418 AND 2413.
- 4.) TRACT BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY DEMARIO DESIGN CONSULTANTS IN JUNE, 2009, AND VERIFIED BY BENCHMARK ENGINEERING, INC. IN APRIL, 2012.
- 5.) THE EXISTING TOPOGRAPHY SHOWN WAS FIELD RUN BY DEMARIO DESIGN CONSULTANTS, INC. IN JULY, 2009.
- 6.) THE EXISTING UTILITIES SHOWN HEREON ARE BASED ON FIELD SURVEYS BY DEMARIO DESIGN CONSULTANTS, INC AND BY RECORD DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR VERIFYING THESE UTILITIES IN THE FIELD AT TIME OF CONSTRUCTION.
- 7.) THE TRAFFIC STUDY WAS PREPARED BY TRAFFIC CONSULTING, INC. DATED JANUARY 22, 2010 AND WAS APPROVED UNDER SP-10-003 ON NOVEMBER 10, 2010.
- 8.) THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- 9.) WATER IS PUBLIC. THE CONTRACT NUMBER IS 14-4670-D.
- 10.) SEWER IS PUBLIC. THE CONTRACT NUMBER IS 14-4670-D.
- 11.) THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS THEREOF. EFFECTIVE 12/21/12 ON WHICH DATE DEVELOPER AGREEMENT 14-4670-D WAS FILED AND ACCEPTED.
- 12.) THERE ARE NO WETLANDS, STREAMS, THEIR BUFFERS, OR 100-YEAR FLOODPLAIN LOCATED ON THIS SITE. STEEP SLOPES 25% OR GREATER ARE LOCATED ON OPEN SPACE LOT 7.
- 13.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON THESE LOTS.
- 13.) THERE ARE NO HISTORIC SITES/FEATURES LOCATED ON THESE LOTS.
- 14.) STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE STORMWATER MANAGEMENT ACT OF 2007. ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICAL (MEP) BY THE USE OF (N-2) NON-ROOFTOP DISCONNECTION CREDIT, (M-3) LANDSCAPE FILTRATION AND (M-6) MICRO-BIORETENTION PRACTICES. ALL ESD PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED.
- 15.) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$3450 SHALL BE PAID AS PART OF THE DEVELOPER AGREEMENT.
- 16.) A DESIGN MANUAL WAIVER FOR RELEASE FROM THE PROVISION OF PUBLIC SIDEWALKS AND A SPEED STUDY FOR THE SITE ACCESS ON HUNT AVENUE WAS APPROVED ON JUNE 21, 2010 BY A LETTER RECEIVED FROM CHARLES D. DAMMERS, CHIEF, DEVELOPMENT ENGINEERING DIVISION.
- 17.) DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY 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 COATING (1-1/2" MIN).
 - c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
 - d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (255 LOADINGS).
 - 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.
- 18.) WAIVER PETITION (WP-11-155) WAS APPROVED ON APRIL 26, 2011 GRANTING A REQUEST TO DEFER THE OPEN SPACE REQUIREMENTS FOR LOT 1 AND FOREST CONSERVATION OBLIGATION REQUIREMENTS FOR NON-BUILDABLE BULK PARCEL 'B' UNTIL THE RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B'.
- 19.) THE FOREST CONSERVATION OBLIGATION FOR THIS SITE IS MET BY THE RETENTION OF 0.83 ACRES OF FOREST AND THE PLANTING OF 29 ACRES OF OPEN SPACE LOT 7. FINANCIAL SURETY IN THE AMOUNT OF \$6,317.00 FOR THE ON-SITE PLANTING SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT. THERE IS NO SURETY REQUIRED FOR THE ON-SITE RETENTION.
- 20.) 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 ANY WORK.
- 21.) THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 22.) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 23.) 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.
- 24.) ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 25.) THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
- 26.) THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT, OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. 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.

27.) A SHARED DRIVEWAY ACCESS AND MAINTENANCE OBLIGATION AGREEMENT FOR THE 16' DRIVEWAY TO SERVE LOTS 2-5 & PEDESTRIAN AND VEHICULAR ACCESS EASEMENT FOR OPEN SPACE LOTS 6 AND 7 HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY SIMULTANEOUSLY WITH THE RECORDATION OF THIS PLAN.

28.) HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS SHALL NOT PARTICIPATE IN THE MAINTENANCE OF THE USE-IN-COMMON DRIVEWAY WHICH PROVIDES ACCESS TO DR&P OPEN SPACE LOT 7.

BENCHMARKS NAD'83 HORIZONTAL

HO. CO. #24FB	E 1364255.9193'
N 582652.1506'	ELEVATION: 422.498'
HO. CO. #2413	E 1364974.4661'
N 580648.9394'	ELEVATION: 403.699'



LEGEND

- PROJECT BOUNDARY
- LIMIT OF DISTURBANCE/ DRAINAGE AREA
- SOILS DELINEATION LINE
- SOILS TYPE (AND CLASS)
- Mgd(B)
- N-2 DISCONNECTION OF NON-ROOFTOP AREA
- FOREST CONSERVATION EASEMENT
- FF=329.2 - FIRST FLOOR ELEVATION
- BF=319.2 - BASEMENT FLOOR ELEVATION
- EROSION CONTROL MATTING
- SUPER SILT FENCE
- INDICATES WALKOUT BASEMENT
- EXISTING SLOPES 25% OR GREATER
- EXISTING SLOPE 15-24.9%
- PROPOSED TREELINE
- STONE CHECK DAMS

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER: *[Signature]* DATE: 8/16/2012

AS-BUILT CERTIFICATION

I hereby certify by my seal that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.

Donald Mason, P.E. No. 21443 Date 11/17/14

Professional Certification. 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. 21443 Expiration Date: 12-21-16

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/AS I AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *[Signature]* DATE: 8/6/2012

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] DATE: 8/17/12

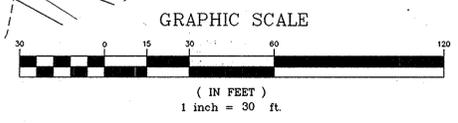
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 8/24/12

[Signature] DATE: 8/27/12

ESD PRACTICE SUMMARY TABLE

Practice	Pe= 1.6 inches	Qe= 0.44 inches	ESDv= 3452 cf		2% DA?	ESDv= 3452 cf		75% ESDv?	Rev	
			Required	Provided		Required	Provided		Required	Provided
(M-3) Landscape Filtration #1	4,670	1,250	93	94	PASS	98	98	PASS	0	0
(M-3) Landscape Filtration #2	4,800	1,250	96	96	PASS	98	98	PASS	0	0
(M-3) Landscape Filtration #3	4,670	1,250	93	94	PASS	98	98	PASS	0	0
(M-3) Landscape Filtration #4	3,776	852	76	77	PASS	48	69	PASS	0	0
(M-6) Micro-Bioretenion #1	11,000	4,300	220	500	PASS	589	650	PASS	0	600
(M-6) Micro-Bioretenion #2	6,059	3,260	121	300	PASS	432	450	PASS	0	0
(M-6) Micro-Bioretenion #3	8,112	2,500	162	250	PASS	354	375	PASS	0	0
(M-6) Micro-Bioretenion #4	8,295	2,500	166	210	PASS	355	357	PASS	0	0
(M-6) Micro-Bioretenion #5	8,295	2,500	166	210	PASS	355	357	PASS	0	0
(M-6) Micro-Bioretenion #6	10,325	2,500	207	210	PASS	369	357	PASS	0	0
TOTAL (not including disconnection) =			2708	2871					522	600
(N-2) Non-Rooftop Disc. #1	12	20	20	>1:1	>1:1	1.0	inches			
(N-2) Non-Rooftop Disc. #2	11	20	20	>1:1	>1:1	1.0	inches			
(N-2) Non-Rooftop Disc. #3	11	20	20	>1:1	>1:1	1.0	inches			



NOTE: ANY STABILIZED LOT SHALL HAVE THE 'DIRTY' WATER DIVERTED AROUND IT VIA FENCE DIVERSION.

SITE DATA ANALYSIS

LOT DATA

- a. GROSS AREA OF SITE..... 3.88± AC
- b. AREA DEDICATED TO HOWARD COUNTY FOR PURPOSE OF A PUBLIC ROAD (PLAT #21672)..... 0.04± AC
- c. AREA OF LOT 1 (PLAT #21672)..... 0.47± AC
- d. AREA OF BULK PARCEL 'A' (PLAT 21672)..... 0.01± AC
- d. AREA OF THIS RESUBDIVISION..... 3.36± AC

OPEN SPACE DATA

- a. MINIMUM RESIDENTIAL LOT SIZE SELECTED..... 18,000 S.F.*
- b. OPEN SPACE REQUIRED (10% OF 3.88 AC)..... 0.39± AC
- c. OPEN SPACE PROVIDED (38.4% OF 3.88 AC)..... 1.49± AC
- c. OPEN SPACE PROVIDED (LESS THAN 35' IN WIDTH)..... 0.18± AC
- c. CREDITED (33.8% OF 3.88 AC)..... 1.31± AC
- d. AREA OF RECREATION OPEN SPACE REQUIRED..... N/A
- e. AREA OF RECREATION OPEN SPACE PROVIDED..... N/A

* DEDICATION OF OPEN SPACE TO HOWARD COUNTY IS REQUIRED. THEREFORE, THE ALTERNATE LOT SIZE METHOD OF 18,000 SF IS BEING UTILIZED PER SECTION 16.121(a)(2)

* OPEN SPACE REQUIREMENT IS FOR ENTIRE SUBDIVISION INCLUDING LOT 1 WHICH WAS RECORDED AS PLAT 21672 WHICH DEFERRED OPEN SPACE FOR THAT LOT UNTIL FUTURE RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B'.

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC.

8450 BALTIMORE NATIONAL PIKE SUITE 418 ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3508
 WWW.BEI-CIVILENGINEERING.COM

THE WALTER DAVIS PROPERTY

LOTS 2 thru 5 AND OPEN SPACE LOTS 6 & 7

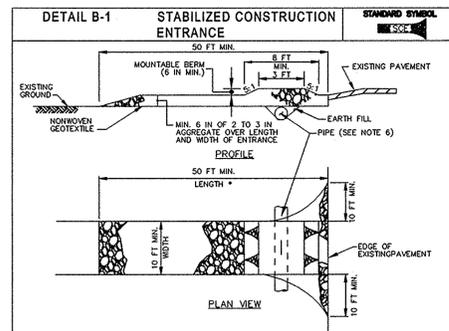
ECP-10-011, SP-10-003, F-11-049, WP-11-155, SDP-12-021

TAX MAP: 25 GRID: 13 PARCEL: 148 ZONED: R-20
 HUNT AVENUE ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SUPPLEMENTAL STORMWATER MANAGEMENT, GRADING, SEDIMENT & EROSION CONTROL PLAN

DATE: AUGUST, 2012 BEI PROJECT NO: 2445

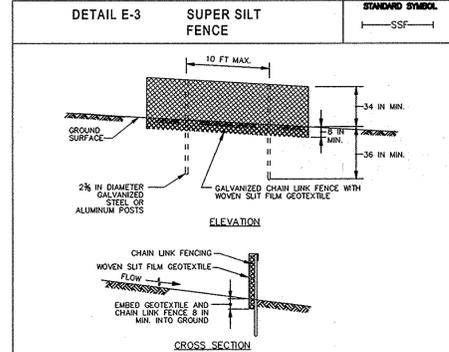
DESIGN: DBT DRAWN: DBT SCALE: AS SHOWN SHEET 1 OF 6



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (+30 FEET FOR SINGLE RESURFACE LOTS) AND MINIMUM WIDTH OF 10 FEET. FLARE SCE TO THE ENTRANCE AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BEAM WITH 5/8" SIZES AND A MINIMUM OF 2 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BEAM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKS OF SEDIMENT AND STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAR SURFACE, MOUNTABLE BEAM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY WALKING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

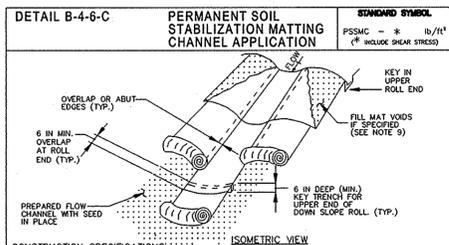
- INSTALL 2x4 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. LOCATE THE POSTS A MINIMUM OF 48 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2x6 INCH MAXIMUM OPENING) TO THE POSTS TO BE OVERTOPPED BY 24 INCHES.
- FASTEN NONWOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 6 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COKE TOGETHER, THE ENDS SHOULD BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEEDING BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USER MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BUILDS DEVELOPED IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REMOVE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TOPSOIL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of stones, roots, twigs, ferns, grubs, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
 - On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content or topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

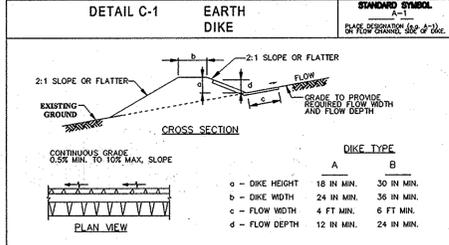
Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate authority, may be used in lieu of natural topsoil.



CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHECKS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL IF PRESENT. NETTING MUST BE EXTENDED PLASTIC WITH A MAXIMUM MESH OPENING OF 0.2 INCHES AND SUFFICIENT EDGES OF SEAM OR 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE MATTING MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH WIDE LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUND-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 1/2 INCHES IN WIDTH, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WARDING STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SUBGRADE SURFACE, AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT ON A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, OVERLAP AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

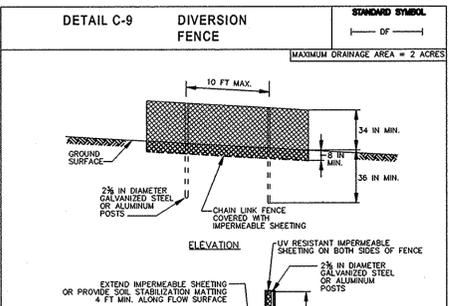
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- REMOVE AND DISPOSE OF ALL TREES, BRUSH, OBSTRUCTIONS, AND OTHER OBSTRUCTIONAL MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
- EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
- CONSTRUCT FILL.
- COMPLY FLOW CHANNEL ON AN UNINTERFERRED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
- PROVIDE CULVERT PROTECTION AS REQUIRED ON APPROVED PLAN.
- STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- REMOVE FLOW OF EARTH DIKE. GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF UNWIND STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

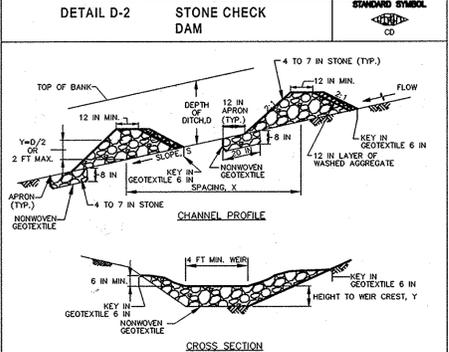
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2x6 INCH MAXIMUM OPENING).
- USE 2x4 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
- FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
- SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
- EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
- WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNSLOPE.
- KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- PREPARE SMOLES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION C-2. STANDARDS AND SPECIFICATIONS FOR TEMPORARY SMALE, OR AS SPECIFIED ON PLAN.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE. CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM TOP OF 12 INCHES. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS. FROM THE WEIR SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSLOPE FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (8 TO 15 INCH).
- SET THE HEIGHT FOR THE WEIR CREST EQUAL TO ONE-HALF THE DEPTH OF THE CHANNEL OR DITCH TO AVOID SCOUR. THE MAXIMUM HEIGHT OF THE WEIR CREST MUST NOT EXCEED 2.0 FEET.
- REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

30.0 DUST CONTROL

Definition
Controlling dust blowing and movement on construction sites and roads.

Purpose
To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies
This practice is applicable to areas where potential for dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

Temporary Methods

- Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or trolled to prevent blowing.
- Vegetative Cover - See standards for temporary vegetative cover.
- Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 100 feet apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
- Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
- Barriers - Solid board fences, silt fences, snow fences, burp fences, straw bales, and similar material can be used to control off currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
- Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

- Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
- Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
- Stone - Cover surface with crushed stone or coarse gravel.

References

- Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
- Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.

B-4.4 STANDARDS AND SPECIFICATIONS

FOR TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

- Select one or more of the species or mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding dates. If this Summary is not part of the plan and contract, then Table B.1 plus fertilizer and lime rates must be part of the plan.
- For sites having test results performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.1.b and maintain until the next seeding season.

B-4.5 STANDARDS AND SPECIFICATIONS

FOR PERMANENT STABILIZATION

Definition
To stabilize disturbed soils with permanent vegetation.

Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.

Criteria

- Seed Mixtures
 - General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife and aesthetic landscaping are listed in USDA-NRCS Technical Field Guide, Section 342 - Critical Area Planning.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (48-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding, in addition to the soil amendments shown in the Permanent Seeding Summary.
 - Turfgrass Mixtures
 - Areas where turfgrasses may be desired include lawns, parks, playgrounds, and commercial areas which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Intensive requires the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Kentucky Bluegrass Seeding Rate: 2.0 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One of more cultivars to be seeded.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

B-4.3 STANDARDS AND SPECIFICATIONS

FOR SEEDING AND MULCHING

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed areas not under active grading.

Criteria

- Seeding
 - Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.1 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.1 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Inoculants: The inoculant for legume seedings must be a pure culture of nitrogen fixing bacteria to prepare the soil. The inoculant must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible during storage. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast seeders.
 - Incorporate seed into the subsoil at the rate prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good soil to soil contact.
 - Ditch or Outcrop Seeding: Mechanized seeders that apply and cover seed with sod.
 - Cultivating seeders are required to bury the seed in such a fashion as to provide at least 1/2 inch of soil coverage. Seeded must be after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre of total soluble nitrogen; P₂O₅ (phosphorus), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
 - Lime: Use only ground agricultural limestone (up to 3 tons per acre) may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Max seed and fertilizer on soil and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.
 - Mulching
 - Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not more than 1 millimeter in diameter, decayed, or excessively dirty. Use sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFFM): Consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must have a 300-mesh ground cover and hold half seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - WCFFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter of approximately 1 millimeter, pH range of 4.0 to 8.0, ash content of 1.5 percent maximum and holding capacity of 90 percent maximum.
 - Application
 - Apply mulch to all seeded areas immediately after seeding.
 - When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Anchoring
 - Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by use of the following methods (listed by preference), depending upon the area and erosion hazard:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic OLR (Agro-Tack), DCA-770, Petrolnet, Terra Turf, Terra Tack or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches much, such as in culverts and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

NOTES:

- NO STOCKPILING IS ALLOWED ON THESE LOTS.
- THIS LOT IS ENTIRELY WITHIN GFC(B) SOILS GROUP.

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

- Obtain grading permit. (day 1)
- Install stabilized construction entrance, clean water diversion dike, and super silt fences. (day 2-4)
- Grade the swale along the western edge of the use-in-common drive and install stone check dams. (day 5-10)
- Install water and sewer mains and grinder pumps. (day 6-15)
- Base pave the use-in-common driveway. Once complete, install Micro-Bioretenction practices #1 and #2. Do not plant at this time. (day 16-25)
- As each house is sold, excavate for foundation, construct house, backfill and construct driveway. (day 26-100)
- As the contributing drainage area for each lot is stabilized, construct the on-lot micro-bioretenction facility and landscape filtration. If necessary, install super silt fence between lots. (day 101-110)
- Final grade the lot and stabilize in accordance with the permanent seeded notes. Once the proposed swale on the high side of Lot 2 has been constructed, remove the cleanwater diversion dike and install erosion control matting. (day 111-113)
- Install perimeter trees. (day 114)
- Upon approval from the Howard County sediment control inspector, remove sediment control devices including the stone check dams (add permanent erosion control matting) and stabilize any remaining disturbed areas. (day 115)

No As-Built Information is required on this sheet



Professional Certification. 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. 21413, Expiration Date: 12-21-16

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

ENGINEER: *John C. Blanton* DATE: 8/31/12

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *John C. Blanton* DATE: 8/19/12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *John C. Blanton* DATE: 8/28/12

CHIEF, DIVISION OF LAND DEVELOPMENT: *John C. Blanton* DATE: 8/28/12

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THE WALTER DAVIS PROPERTY
LOTS 2 thru 5 AND OPEN SPACE LOTS 6 & 7
ECP-10-011, SP-10-003, F-11-049, WP-11-155, SDP-12-021
TAX MAP: 25 GRID: 138 PARCEL: 148 ZONED: R-20
HUNT AVENUE
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DATE: AUGUST, 2012 BEI PROJECT NO: 2445
SCALE: AS SHOWN SHEET 2 OF 6

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to expose the subgrade. All trees, brush, logs, fences, rubbish and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately 100 feet from the ground surface. For dry weather management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the embankment, and cut off trench shall conform to Unified Soil Classification CC, SC, CH, or CL and must have at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill material shall be placed in maximum 6 inch (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a tracked rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and it is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be a least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the cores shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall drainage equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent flooding the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall drainage equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material within the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on the inside of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-190 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer or two coats of asphalt. Galvanized bolts may be used for connections. The pH of the surrounding soils shall be monitored.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connection shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled or corrugated to accommodate the gasket. The following pipe connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pressed to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket having a 12-inch wide huggar type band with neoprene gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a neoprene gasket having a 12-inch wide huggar type band with neoprene gaskets having a 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and on the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 8 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire length, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Elastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Core of Water during Construction

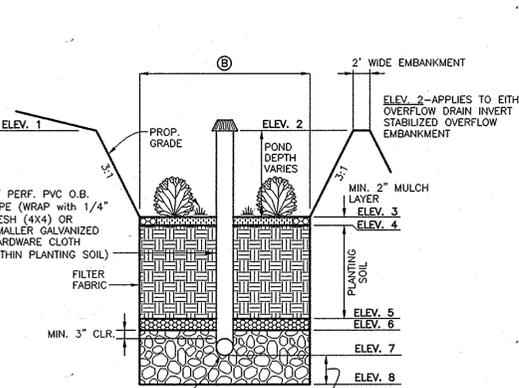
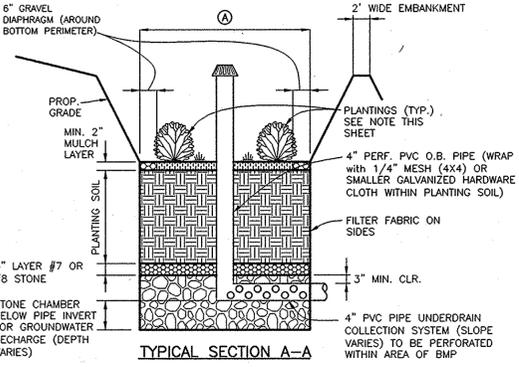
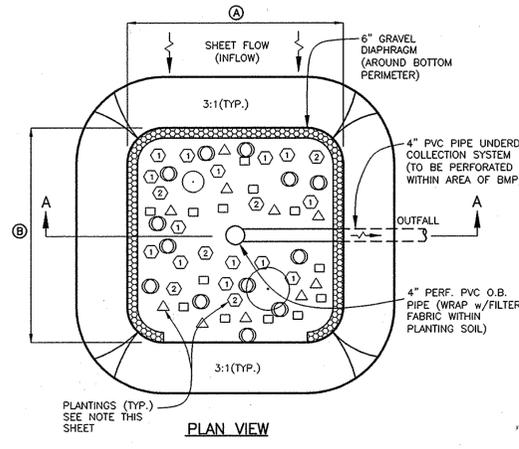
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all permanent pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level of the location being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water pumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, when vermic shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning erosion and sediment will be followed. Construction plans shall detail erosion and sediment control measures.



TYPICAL MICRO-BIORETENTION DETAILS
NOT TO SCALE

(M-6) MICRO-BIORETENTION DESIGN TABLES

#1	#2	#3	#4	#5	#6
ELEV. 1 327.00V	ELEV. 1 317.00V	ELEV. 1 337.00	ELEV. 1 328.00	ELEV. 1 318.00	ELEV. 1 310.00
ELEV. 2 327.00V	ELEV. 2 317.80V	ELEV. 2 337.00	ELEV. 2 328.00	ELEV. 2 318.00	ELEV. 2 310.00
ELEV. 3 326.00V	ELEV. 3 316.00V	ELEV. 3 336.00	ELEV. 3 327.00	ELEV. 3 317.00	ELEV. 3 309.00
ELEV. 4 325.83	ELEV. 4 315.83	ELEV. 4 335.83	ELEV. 4 326.83	ELEV. 4 316.83	ELEV. 4 308.83
ELEV. 5 323.83	ELEV. 5 313.33	ELEV. 5 333.33	ELEV. 5 323.83	ELEV. 5 313.83	ELEV. 5 305.83
ELEV. 6 323.50	ELEV. 6 313.00	ELEV. 6 333.00	ELEV. 6 323.50	ELEV. 6 313.50	ELEV. 6 305.50
ELEV. 7 322.92	ELEV. 7 312.42	ELEV. 7 332.42	ELEV. 7 322.92	ELEV. 7 312.92	ELEV. 7 304.92
ELEV. 8 319.92	ELEV. 8 312.42	ELEV. 8 332.42	ELEV. 8 322.92	ELEV. 8 312.92	ELEV. 8 304.92
DIMENSIONS	DIMENSIONS	DIMENSIONS	DIMENSIONS	DIMENSIONS	DIMENSIONS
'A' varies	'A' 40'±	'A' 25'±	'A' 25'±	'A' 25'±	'A' 25'±
'B' varies	'B' 8'±				
TOTAL SF 500	TOTAL SF 300	TOTAL SF 250	TOTAL SF 210	TOTAL SF 210	TOTAL SF 210
OUTFALL PIPE					
SIZE 4"					
LENGTH 35'	LENGTH 35'	LENGTH 72'	LENGTH 87'	LENGTH 122'	LENGTH 122'
SLOPE 2.6%	SLOPE 1.2%	SLOPE 3.4%	SLOPE 1.0%	SLOPE 1.6%	SLOPE 1.6%

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (IF REQUIRED)	SEE APPENDIX A TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.0' TO 4.0' DEEP)	LOAMY SAND (60-85%) & COMPOST (35-40%)	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM; CLAY CONTENT <5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D2974)	N/A	AGED 6 MONTHS, MINIMUM
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM	#8 OR #9 ASTM D-448	1/8" TO 3/8"	
CURTAIN DRAIN	ORNAMENTAL STONE, WASHED COBBLES	2" TO 5"	
GEOTEXTILE	N/A	N/A	PE TYPE 1 - NONWOVEN
GRAVEL (UNDERDRAINS & BERMS)	AASHTO M-43	#57 OR #6 AGGREGATE (5/8" TO 3/4")	
UNDERDRAIN PIPING	F758, TYPE P528 OR AASHTO M-278	4" TO 6" RIGID SCH.40 PVC OR SDR35	SLOTTED OR PERFORATED: 3/8" PERFS. @ 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH
POURED-IN-PLACE CONC. (IF REQUIRED)	MSHA MIX NO.3; f'c=3000psi @ 28 DAYS, NORMAL WEIGHT, AIR ENTRAINED, REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST; ALL CONC. 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 AIA CODE 350R/89; VERTICAL LOADING (H-10 OR H-20) ALLOWABLE ON HORIZONTAL LOADS (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAWD (1.0' DEEP)	AASHTO M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DOLICITE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLICITE SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.
Donald Mason, P.E. No. 21443 Date 11/17/14

Professional Certification. 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. 21443 Expiration Date: 12/31/16



UNDERDRAIN, OVERFLOW AND OUTFALL NOTES

1. THE LAST CLEAN-OUT LOCATION WITHIN EACH MICRO-BIORETENTION FACILITY SHALL BE FITTED WITH A NON-CLOGGING SURFACE DRAIN (EXAMPLE: 4" ABS ROOF DRAIN W/CAST ALUMINUM DOME) AT THE POND SURFACE ELEVATION INDICATED IN THE CORRESPONDING TABLE ELEV. 2.
2. THE PVC WITHIN THE FACILITY SHALL BE PERFORATED.
3. THE UNDER-DRAIN AND PIPE TO OUTFALL SHALL BE INSTALLED TO A MINIMUM DEPTH OF 2' BELOW FINISHED GRADE AND SHALL MAINTAIN A MINIMUM 1% SLOPE AND MAINTAIN A MINIMUM OF 1' OF SEPARATION AT ALL CROSSINGS.

*** ON-LOT MICRO BIO-RETENTION FACILITIES WERE AS-BUILT WITH THE GRADE CERT. FOR EACH LOT.**

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (M-1) DISCONNECTION OF NON-ROOFTOP RUNOFF (M-2)

Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The areas receiving runoff should be protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

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

1. Annual maintenance of plant material, mulch layer and soil layer is required. 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.
2. Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation including but not limited to treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
3. Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
4. Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE 8/24/12
[Signature] DATE 8/24/12

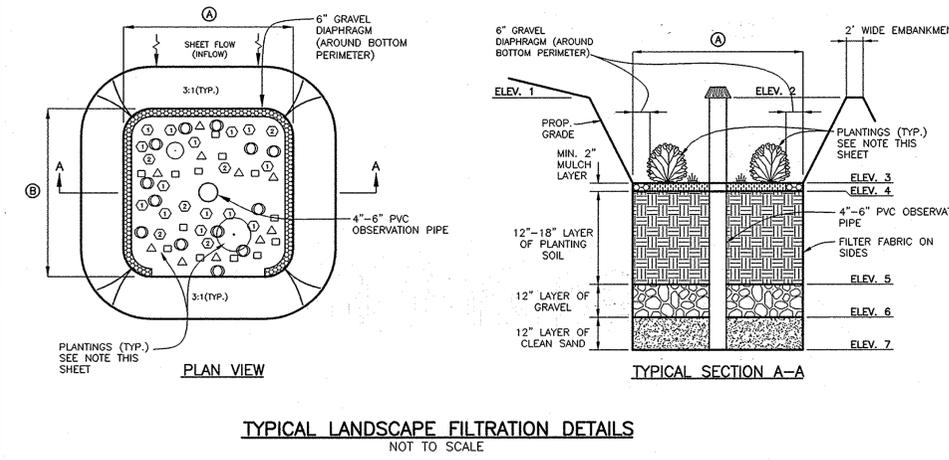
(M-3) LANDSCAPE FILTRATION DESIGN TABLES

#1	#2	#3	#4
ELEV. 1 339.00	ELEV. 1 329.00	ELEV. 1 321.00	ELEV. 1 311.00
ELEV. 2 339.00	ELEV. 2 329.00	ELEV. 2 321.00	ELEV. 2 311.00
ELEV. 3 338.00	ELEV. 3 328.00	ELEV. 3 320.00	ELEV. 3 310.00
ELEV. 4 337.83	ELEV. 4 327.83	ELEV. 4 319.83	ELEV. 4 309.83
ELEV. 5 337.00	ELEV. 5 327.00	ELEV. 5 319.00	ELEV. 5 309.00
ELEV. 6 336.00	ELEV. 6 326.00	ELEV. 6 318.00	ELEV. 6 308.00
ELEV. 7 335.00	ELEV. 7 325.00	ELEV. 7 317.00	ELEV. 7 307.00
DIMENSIONS	DIMENSIONS	DIMENSIONS	DIMENSIONS
'A' 20'±	'A' 20'±	'A' 20'±	'A' 20'±
'B' 4'±	'B' 4'±	'B' 4'±	'B' 4'±
TOTAL SF 94	TOTAL SF 96	TOTAL SF 94	TOTAL SF 77

*** ON LOT FILTRATION FACILITIES WERE AS-BUILT WITH THE GRADE CERT FOR EACH LOT.**

Facility square footage	MB #1	MB #2	MB #3	MB #4	MB #5	MB #6
500	300	250	210	210	210	210
PLANT NAME	COMMON NAME	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
Betula nigra	RIVER BIRCH	1	1	1	1	1
Clethra	COMMON PERIWINKLE	1	3	3	3	3
Ajuga reptans	CREeping BUGLEWEED	15	9	8	7	7
Iris versicolor	IRIS	15	9	8	7	7
Elymus virginicus	VIRGINIA WILD RYE	5	3	3	3	3
Vaccinium atrococcum	HIGHBUSH BLUEBERRY	5	3	3	3	3

PLANTING LEGEND	
SYMBOL	NAME
①	AJUGA REPTANS (CREeping BUGLEWEED)
②	IRIS VERSICOLOR (IRIS)
□	CLETHRA (COMMON PERIWINKLE)
△	ELYMUS VIRGINICUS (VIRGINIA WILD RYE)
○	VACCINIUM ATROCOCUM (HIGHBUSH BLUEBERRY)
●	BETULA NIGRA (RIVER BIRCH)



FOREST CONSERVATION WORKSHEET

The Walter Davis Property

Computations by: DBT BEI JOB NO. 2445 Date: 5/21/2012

NET TRACT AREA:

A. Total tract area 3.88 ac.
 B. Other deductions: (floodplain) 0.00 ac.
 C. Net Tract Area 3.88 ac.

LAND USE CATEGORY:
 Select category (AR, MDR, ID, HDR, MPD, CI) HDR

D. Afforestation Threshold 15% x "F" = 0.58 ac.
 E. Conservation threshold 20% x "F" = 0.78 ac.

EXISTING FOREST COVER:

F. Existing forest cover 2.20 ac.
 G. Area of forest above afforestation threshold 1.62 ac.
 H. Area of forest above conservation threshold 1.42 ac.

BREAK EVEN POINT:

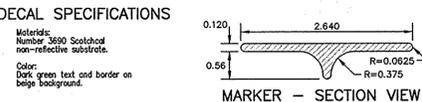
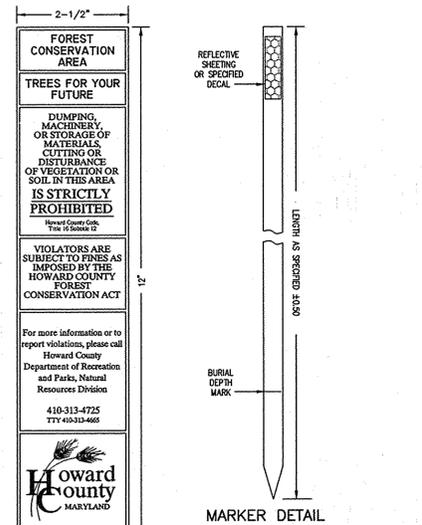
I. Forest retention above threshold with no mitigation 1.06 ac.
 J. Clearing permitted without mitigation 1.14 ac.

PROPOSED FOREST CLEARING:

K. Total area of forest to be cleared 1.37 ac.
 L. Total area of forest to be retained 0.83 ac.

PLANTING REQUIREMENTS:

M. Reforestation for clearing above conservation threshold 0.34 ac.
 N. Reforestation for clearing below conservation threshold 0.00 ac.
 O. Credit for retention above conservation threshold 0.05 ac.
 P. Total reforestation required 0.29 ac.
 Q. Total afforestation required 0.00 ac.
 R. Credit for landscaping - may not exceed 20% of "S." 0.00 ac.
 S. Total reforestation and afforestation required 0.29 ac.



FCE CARSONITE MARKER
NOT TO SCALE

John Chris Ogle
 JOHN CHRIS OGLE
 MD PRR QUALIFIED PROFESSIONAL
 DATE: 8.8.12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John J. R...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 8/24/12
Walter Davis
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 8/27/12

LEGEND

- — — — — PROPERTY BOUNDARY
- — — — — LIMIT OF DISTURBANCE/DRAINAGE AREA
- — — — — SOILS DELINEATION LINE
- MgD(B) SOILS TYPE (AND CLASS)
- [Hatched Pattern] FOREST CONSERVATION EASEMENT
- — — — — FOREST CONSERVATION SIGNAGE
- — — — — EXISTING TREELINE
- — — — — PROPOSED TREELINE

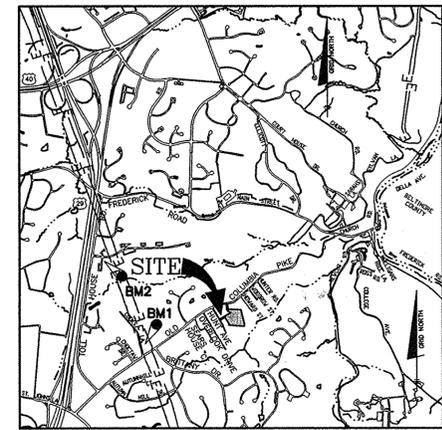
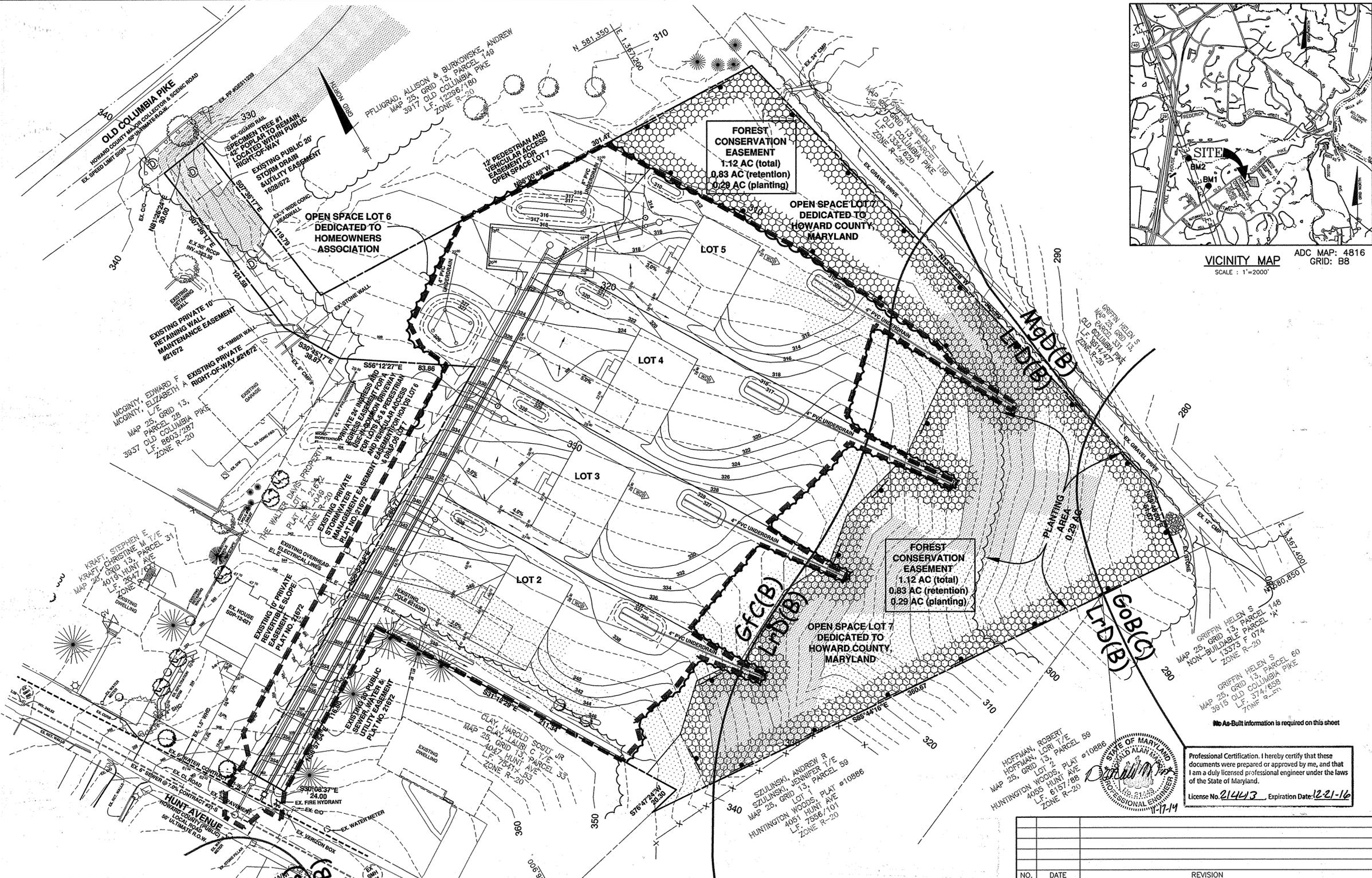
FOREST CONSERVATION NOTES:

1. THE TOTAL FOREST CONSERVATION OBLIGATION HAS BEEN MET BY THE ON-SITE RETENTION OF 0.83 AC. OF NET TRACT AREA FOREST WITHIN A FOREST CONSERVATION EASEMENT AND THE PLANTING OF 0.29 ACRES WITHIN A FOREST CONSERVATION EASEMENT. FINANCIAL SURETY FOR THE PLANTING SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$6,316.20. NO SURETY IS REQUIRED FOR THE ON-SITE RETENTION FOREST CONSERVATION EASEMENT.
2. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
3. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. FOREST CONSERVATION ACT. 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.
4. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
5. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREA, ETC. SHALL OCCUR WITHIN THE FOREST CONSERVATION EASEMENT.
6. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE RETENTION BOUNDARIES WHICH OCCUR WITHIN 50 FEET OF THE PROPOSED LIMITS OF DISTURBANCE THAT DOES NOT ALREADY HAVE A SUPER SILT FENCE PROPOSED.
7. PERMANENT SIGNAGE SHALL BE PLACED 50'-100' APART ALONG THE BOUNDARIES OF ALL FOREST CONSERVATION EASEMENTS. THIS SIGNAGE SHALL STAY IN PERPETUITY.
8. THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON THIS SITE.
9. THE FOREST CONSERVATION WATERSHED FOR THIS PROJECT IS THE PATAPSCO RIVER LOWER NORTH BRANCH #2130906.
10. THERE ARE NO RARE, THREATENED OR ENDANGERED SPECIES LOCATED ON THIS SITE. THERE IS NO STREAM OR WETLANDS LOCATED ON THIS SITE. THERE IS AN EPHEMERAL CHANNEL THAT CROSSES THE NORTHEASTERN CORNER OF THE PROPERTY. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO HISTORIC STRUCTURES LOCATED ON THIS SITE. THERE ARE NO SPECIMEN TREES LOCATED ON THIS SITE. THE SPECIMEN TREE #1 (42' POPULAR) DESIGNATED ON THE FOREST STAND DELINEATION IS LOCATED WITHIN THE RIGHT-OF-WAY OF OLD COLUMBIA PIKE.

SITE DATA TABULATION

1. TOTAL AREA OF SITE.....	3.88± AC.
2. AREA OF 100 YEAR FLOODPLAIN.....	NA
3. NET AREA OF SITE.....	3.88± AC.
4. TOTAL FOREST ON NET AREA.....	2.20± AC.

FOR BEARINGS AND DISTANCES OF FOREST CONSERVATION BOUNDARIES SEE RECORD PLAT



VICINITY MAP ADC MAP: 4816
 SCALE: 1"=2000' GRID: B8

Professional Certification: 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. 21443.3 Expiration Date: 12-21-16

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8450 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE A/FREDERICK, MARYLAND 21702
 (P) 301-371-3506 (F) 301-371-3506
 WWW.BE-CVLENGINEERING.COM

OWNER:
 W R DAVIS PROPERTIES LLC
 3959 OLD COLUMBIA PIKE
 ELLICOTT CITY, MARYLAND 21043

DEVELOPER:
 W R DAVIS PROPERTIES LLC
 3959 OLD COLUMBIA PIKE
 ELLICOTT CITY, MARYLAND 21043

THE WALTER DAVIS PROPERTY
 LOTS 2 thru 5 AND OPEN SPACE LOTS 6 & 7
 ECP-10-011, SP-10-003, F-11-049, WP-11-155, SDP-12-021
 TAX MAP: 25 GRID: 13 PARCEL: 148 ZONED: R-20
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

SUPPLEMENTAL FOREST CONSERVATION PLAN

DATE: AUGUST, 2012 BEI PROJECT NO: 2445
 SCALE: AS SHOWN SHEET: 4 OF 6

PLANTING NOTES

A. Planting Plan and Methods

Plant species selection was based on our knowledge regarding plant communities in Maryland's Piedmont Plateau and information provided in the soil survey on typical vegetation for the soil type on the planting site. Species selection was also based on our knowledge of plant availability in the nursery industry.

Reforestation will be accomplished through a mixed planting of whips and branched transplants. Container grown stock is recommended but bareroot stock may be used to help control afforestation costs. If bareroot stock is used the root systems of all plants will be dipped in an anti-desiccant gel prior to planting to improve moisture retention in the root systems.

Prior to planting the proposed Forest Conservation Easements all multiflora rose in the planting area shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all top growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturer's specifications, as needed. Care should be taken not to spray planting trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.

B. Planting and Soil Specifications

Plant material will be installed in accordance with the Planting Detail and Planting Specifications shown on the Forest Conservation Plan.

Amendments to existing soil will be in accordance with the Planting Specifications shown on the Forest Conservation Plan. Soil disturbance will be limited to individual planting locations.

C. Guarantee Requirements

A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

D. Security for Reforestation

Section 16-1209 of the Howard County Forest Conservation Act requires that a developer shall post a security (bond, letter of credit, etc.) with the County to insure that all work is done in accordance with the FCP.

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the forest in areas where the forest limits occur within 50 feet of the limit of disturbance.

2. Fencing and Signage

Existing forest limits occurring within 50 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be placed around the afforestation area prior to plant installation, as shown on the plan.

B. Pre-Construction Meeting

Upon staking of limits of disturbance a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to area within the LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

D. Sequence of Construction

The following timetable represents the proposed timetable for development. The items outlined in the Forest Conservation Plan will be enacted within two (2) years of subdivision approval.

Below find a proposed sequence of construction.

1. Install all signage and sediment control and tree protection devices.
2. Hold pre-construction meeting between developer, contractor and County inspector.
3. Build access roads, install public water and sewer systems and construct houses. Stabilize all disturbed areas accordingly.

4. Begin multiflora rose/invasive species removal, as needed. Install permanent protective signage for Easements and initiate plantings in accordance with Forest Conservation Plan. Plantings will be completed within two (2) years of subdivision approval.
5. Remove sediment control.
6. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Installation.
7. Monitor and maintain plantings for 2 years.

E. Construction Monitoring

Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

F. Post-Construction Meeting

Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that afforestation plantings have been installed.

POST-CONSTRUCTION MANAGEMENT PLAN

Howard County requires a two year post-construction management plan be prepared as part of the forest conservation plan. The plan goes into effect upon acceptance of the construction certification of completion by the County. Eco-Science Professionals, or another qualified professional designated by the developer, will be responsible for implementation of the post-construction management plan.

The following items will be incorporated into the plan:

A. Fencing and Signage

Permanent signage indicating the limits of the retention/reforestation area shall be maintained.

B. General Site Inspections/Maintenance of Plantings

Site inspections will be performed a minimum of three times during the growing season. The purpose of the inspections will be to assess the health of the afforestation plantings. Appropriate measures will be taken to rectify any problems which may arise.

In addition, maintenance of the afforestation plantings will involve the following steps:

1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending on weather conditions. During the second growing season, once a month during May-September, if needed.
2. Removal of invasive exotics and noxious weeds. Old field successional species will be retained.
3. Identification of serious plant pests and diseases, treatment with appropriate agent.
4. Pruning of dead branches.
5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

C. Education

The developer will provide appropriate materials to property owners informing them of the location and purpose of the afforestation area. Materials may include site plans and information explaining the intent of the forest conservation law.

D. Final Inspection

At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/afforestation requirements have been met. Upon acceptance of this certification, the County will release the developer from all future obligations and release the developer's bond.

Planting/Soil Specifications

1. Installation of bareroot/plug plant stock shall take place between March 15 - April 20; b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plant shall be fertilized with Osmocote 8-6-12.
5. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
6. The contractor shall remove all non-organic debris associated with the planting operation from the site.

Sequence of Construction

1. Sediment control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of (3) years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide. Old field successional species will be retained.
4. Plants shall be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

3. A 75 percent survival rate of forestation plantings will be required at the end of two growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Education of New Occupants

1. The developer shall provide educational information to all property owners within the new development/home about the proper use of forest conservation areas.

Final Inspection and Release of Obligations

1. At the end of the post-construction management and protection period the developer shall submit a certification to the County that all forest conservation areas have remained intact or have been restored to appropriate condition, that the stipulated survival rates have been achieved, and that any permanent protection measures required by the plan are in place. Upon review and acceptance, the County will inform the developer of their release of the development of future obligations related to the Forest Conservation Act.

FCE PLANTING AREA

Planting Units Required: 203
Planting Units Provided: 203

0.29 Ac.

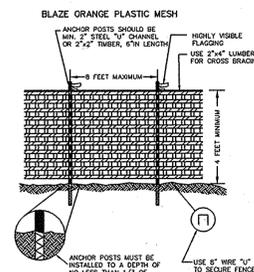
Qty	Species	Size	Spacing	Total FCA Units	
4	Liriodendron tulipifera - Tulip Poplar	2.5" cal.	60' ft	49	
3	Quercus alba - White Oak	2.5" cal.	60' ft		
7	total 2.5" caliper trees x 7.0 units/tree = FCA unit credit				
2	Liriodendron tulipifera - Tulip Poplar	1" cal.	20' o.c.	28	
1	Platanus occidentalis - Sycamore	1" cal.	20' o.c.		
2	Quercus alba - White Oak	1" cal.	20' o.c.		
3	Robinia pseudo-acacia - Black Locust	1" cal.	20' o.c.		
8	total 1" caliper trees x 3.5 units/tree = FCA unit credit				
17	Liriodendron tulipifera - Tulip Poplar	2-3' whip	11' o.c.	128	
14	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.		
8	Acer Palmatum - Japanese Maple	2-3' whip	11' o.c.		
7	Acer Japonicum 'Aureum' - Golden Leaved Japanese Maple	2-3' whip	11' o.c.		
6	Cornus Obligua - Silky Dogwood	2-3' whip	11' o.c.		
11	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.		
63	total 1" whip plantings x 2 units/tree = FCA unit credit				
Total Unit Credit:					203

* Indicates an understory tree
78 Total Trees
32 understory trees
41 % of total trees are understory trees

Planting Notes:

1. Three planting options are provided to allow flexibility for the property owner. Only one planting option schedule needs to be followed.
2. Planting density based spacing requirements: 1" caliper trees @ 15' on center, whips with shelter @ 11' on center.
3. 1" caliper trees should be staggered along the perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 foot spacing. 2.5" caliper trees shall be planted along the property boundary within 10' of boundary edge and approximately 60' apart.
4. Planting may be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance.
5. Multiflora rose/heavy brush removal/control may be required prior to installation of planting.
6. All whips are required to be installed with tree shelters per Howard County FCA requirements.
7. Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1" caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.

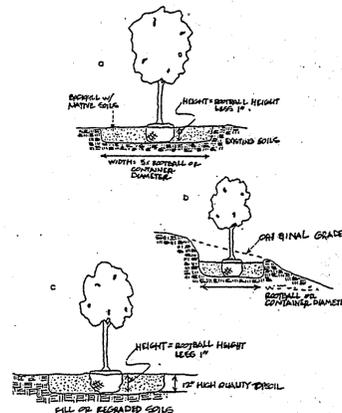
No As-Built information is required on this sheet



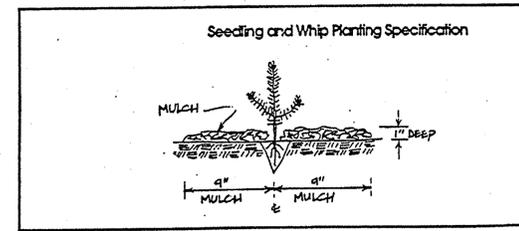
- NOTES:**
1. FOREST PROTECTION DEME ONLY
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
 4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
 5. DEVICES SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION.
 6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

TREE PROTECTION FENCING

Planting Specifications: Container Grown and Balled and Burlapped Stock



Professional Certification. 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. 21443, Expiration Date: 12-21-16



Mulching newly planted seedlings is suggested as it helps the soil retain moisture and it protects the seedling from compaction and stem injury.

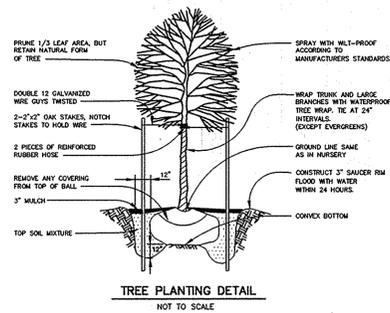
JOHN CHRIS OGLE
MD DNR QUALIFIED PROFESSIONAL
8.8.12
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELLICOTT CITY, MARYLAND 21043
60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702

THE WALTER DAVIS PROPERTY
LOTS 2 thru 5 AND OPEN SPACE LOTS 6 & 7
ECP-10-011, SP-10-003, F-11-049, WP-11-155, SDP-12-021
TAX MAP: 25 GRID: 13 PARCEL: 148 ZONED: R-20
HUNT AVENUE
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SUPPLEMENTAL FOREST CONSERVATION PLAN
DATE: AUGUST, 2012 BEI PROJECT NO: 2445
SCALE: AS SHOWN SHEET 5 OF 6



SCHEDULE A PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO PERIM. TO PERIM. ROADWAY PROPERTY		ADJACENT TO PERIM. TO PERIM. PROPERTY	
	①	②	③	④
LANDSCAPE TYPE	A	A	A	B+
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	410 LF	30 LF	1421 LF	117 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES* 250 LF	YES* 30 LF	YES** 1030 LF	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	74 LF	0 LF	391 LF	117 LF
SHADE TREES	1	0	7	2
EVERGREEN TREES	0	0	0	3
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED				
SHADE TREES	1	0	7	0
EVERGREEN TREES	0	0	0	3
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	0	0	20

* 250 LF OF CREDIT BASED ON PLANTING PROVIDED UNDER SDP-12-021 FOR NORTH SIDE OF LOT 1 AND 26 LF OF CREDIT FOR EXISTING TREES TO REMAIN ON OPEN SPACE LOT.

** 910 LF OF CREDIT FOR FOREST CONSERVATION EASEMENT AND 120 LF OF CREDIT FOR EXISTING TREES TO REMAIN ON OPEN SPACE LOT.

^ 30 LF OF CREDIT FOR EXISTING 42" POPLAR SPECIMEN TREE.

+ A HEAVIER BUFFER IS BEING UTILIZED TO BUFFER USE-IN-COMMON DRIVEWAY FROM EXISTING ADJACENT HOUSE.

PERIMETER LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	8	ACER RUBRUM RED SUNSET (Red Sunset Red Maple)	2.5" - 3" cal.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE BUILDER
	20	AZALEA Delaware Valley White	18"-24" spread	NEEDLE EVERGREEN SHRUB PLANTED ALONG EDGE OF DRIVEWAY TO BE PROVIDED BY THE DEVELOPER
	3	ILEX OPACA (American Holly)	5' - 6' ht.	EVERGREEN TREES ALONG PERIMETER TO BE PROVIDED BY THE BUILDER
	6	PINUS STROBUS EASTERN WHITE PINE	6'-8' ht	EVERGREEN TREES ALONG PERIMETER 3 BY THREE AROUND PER DPZ LETTER DATED MARCH 29, 2013

DEVELOPER'S/BUILDER'S CERTIFICATE

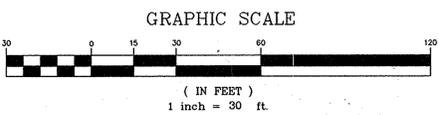
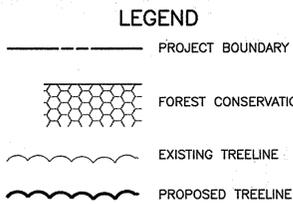
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Robert John Davis 8-6-2012
DEVELOPER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/24/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/27/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



- LANDSCAPE NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
 - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
 - THE STREET TREE REQUIREMENT FOR HUNT AVENUE WAS PROVIDED UNDER SDP-12-021. SURETY IN THE AMOUNT OF \$600.00 FOR THESE STREET TREES WAS POSTED AS PART OF THE BUILDER'S GRADING PERMIT FOR THAT SDP. NO STREET TREES ARE REQUIRED FOR FRONTAGE ALONG OLD COLUMBIA PIKE.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF \$3,450.00 (\$2,400 FOR 8 SHADE TREES, \$450.00 FOR 3 EVERGREEN TREES AND \$600 FOR 20 SHRUBS).

5-24-2013 ADD 6 EVERGREEN TREES ALONG PERIMETER 3 PER DPZ.

NO.	DATE	REVISION
1	5-24-2013	ADD 6 EVERGREEN TREES ALONG PERIMETER 3 PER DPZ.

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 410 BELLETT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6844
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
WWW.BE-CIVLENGINEERING.COM

THE WALTER DAVIS PROPERTY
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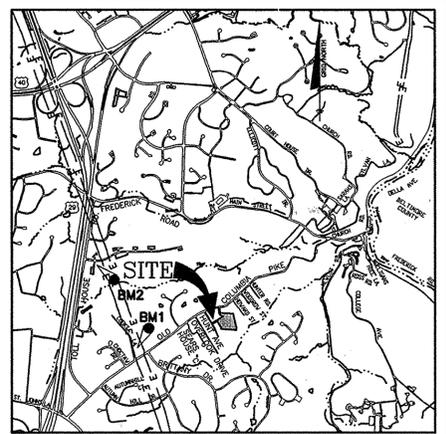
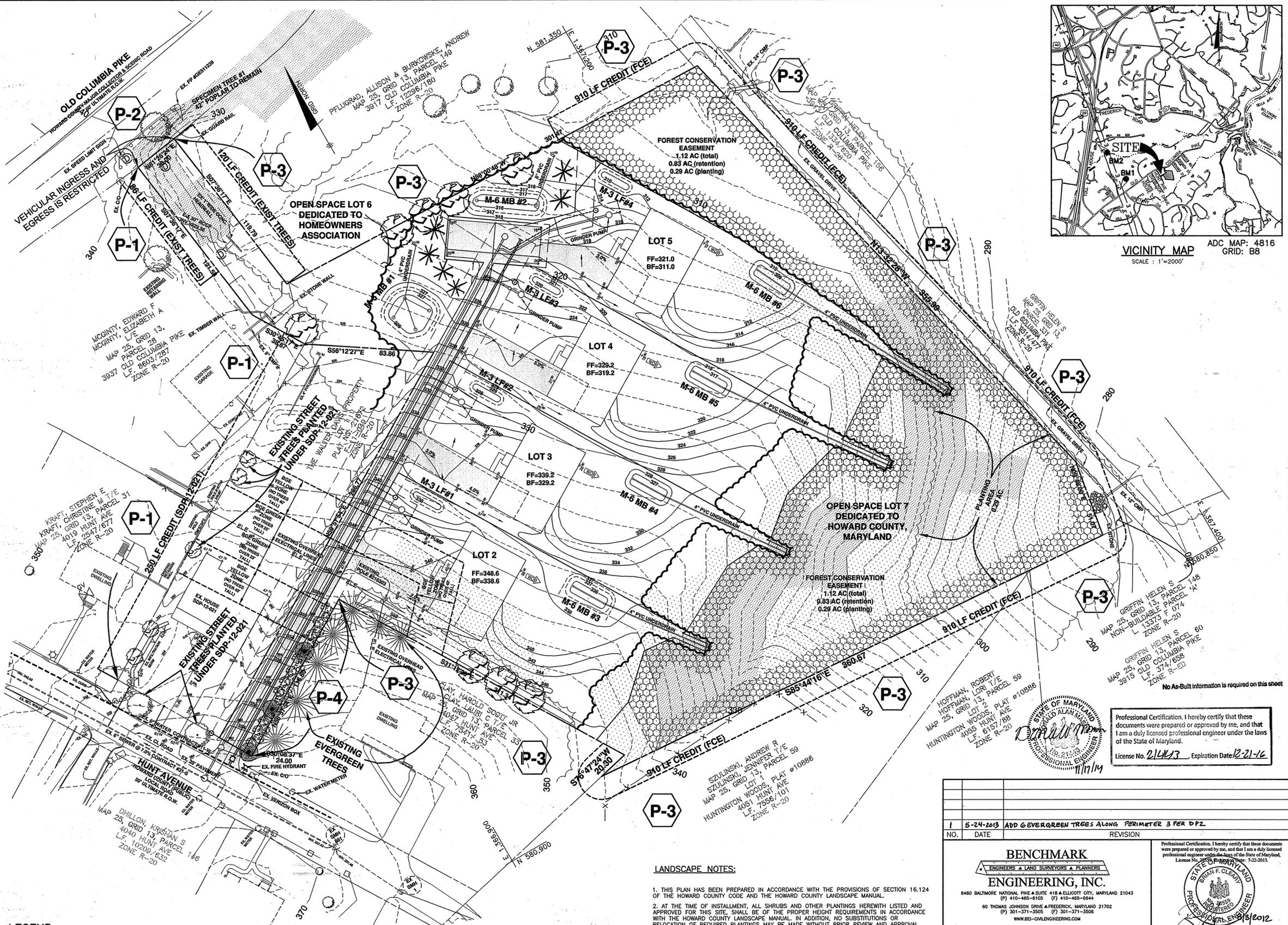
SUPPLEMENTAL LANDSCAPING PLAN

OWNER: W R DAVIS PROPERTIES LLC 3959 OLD COLUMBIA PIKE ELLICOTT CITY, MARYLAND 21043

DEVELOPER: W R DAVIS PROPERTIES LLC 3959 OLD COLUMBIA PIKE ELLICOTT CITY, MARYLAND 21043

DATE: AUGUST, 2012 BEI PROJECT NO: 2445

DESIGN: DBT DRAWN: DBT SCALE: AS SHOWN SHEET 6 OF 6



VICINITY MAP
SCALE: 1"=2000'

Professional Certification. 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. 214413 Expiration Date 12-21-16