

VICINITY MAP
SCALE: 1" = 2000'

LEGEND

---	LIMIT OF SUBMISSION
---	EXISTING TREELINE
---	WETLAND LIMITS
---	2' EXISTING CONTOUR
---	10' EXISTING CONTOUR
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	EROSION CONTROL MATTING
---	CLEAR WATER DIVERSION PIPE
---	EARTH DIKE
---	STABILIZED CONSTRUCTION ENTRANCE
---	SOILS DELINEATION

- GENERAL NOTES
- SUBJECT PROPERTY ZONED R-20 PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING AMENDMENTS EFFECTIVE 7-28-06.
 - THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
 - PROJECT TOPOGRAPHY WITHIN THE SUBDIVISION AREA ARE BASED ON FIELD RUN BOUNDARY SURVEY AND TOPO PERFORMED BY BENCHMARK ENGINEERS INC. DATED NOVEMBER, 2012.
 - EXISTING TOPOGRAPHY OUTSIDE OF THE SUBDIVISION AREA AND OFFSITE SHOWN HEREON IS BASED ON HOWARD COUNTY GIS.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. GPS RECEIVERS WERE USED TO ESTABLISH THE CONTROL FOR THIS PROJECT.
 - NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM, OR THEIR REQUIRED BUFFERS UNLESS DEEMED NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING.
 - THERE ARE NO STEEP SLOPES (25% OR GREATER) IN EXCESS 20,000 S.F. ON THIS SITE.
 - A FOREST STAND DELINEATION WAS PREPARED BY BENCHMARK ENGINEERING, INC. AND DATED NOVEMBER, 2012.
 - THERE IS NO NEED FOR A PRELIMINARY FLOOD STUDY FOR THIS PROJECT.
 - TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
 - A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
 - THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER WILL BE PUBLIC AND WILL CONNECT TO C-500-S AND 20-WAS.
 - THE FOREST CONSERVATION ACT OBLIGATION FOR THIS PROJECT WILL BE MET BY THE ON-SITE RETENTION OF FOREST AND OFF-SITE RETENTION OF FOREST.
 - THE PREVIOUS DPZ FILES FOR THIS SITE ARE: F-79-120
 - THERE ARE NO EXISTING STRUCTURES ON LOT 5.
 - A 35 FOOT ENVIRONMENTAL BUFFER FROM THE 50 FOOT STREAM BUFFER SHALL BE ESTABLISHED IF THE 50 FOOT STREAM BUFFER BE LOCATED ON THE RESIDENTIAL LOTS.

DESIGN NARRATIVE:

The site was analyzed as woods in good condition and a target RCN was determined. A target rainfall depth (Pe) was determined based on the measured areas and HSG soil types. The target Pe for this site is 1.4 inches. The target Pe was treated using Environmental Site Design practices as outlined in Chapter 5 of the 2000 Maryland Stormwater Design Manual, as amended by Maryland's Stormwater Management Act of 2007. The selected methods include Non-Rooftop disconnects, Landscape Infiltration and Micro-bioretenation facilities.

This site contains a stream, which converge near the southwest corner. This area has an associated wetland. Only the wetland areas contained within the effective site area are described on this plan. The site has no areas of steep slopes in excess of 25%.

Conceptual treatment has been designated based on preliminary grading, the site topography and the driveway. The shared driveway is treated by Non-Rooftop disconnect. Some private driveway areas may be treated by disconnection and/or on-lot micro-bioretenation. Some driveway areas will be treated on the individual lots and within an easement area. The non-rooftop areas are provided a Treatment Pe of 1.0 inches. The remaining treatment not provided in the disconnection is provided by overcompensation split equally among the 6 facilities. Generally rooftop runoff will be piped to on-site micro-bioretenation facilities or a landscape infiltration facility. Multiple outfalls are provided to generally release runoff in natural drainage patterns for the site.

Sediment and erosion controls have been designed based on the 2011 Maryland Specifications for Soil Erosion and Sediment Control. Erosion control matting and super silt fence will be used to prevent runoff containing unacceptable levels of TSS from leaving the site and entering the adjacent wetlands during the construction. It will be the obligation of the contractor to install, inspect and maintain these practices.

The target Pe for this site is 1.4 inches. By using Environmental Site Design practices as outlined in Chapter 5 of the 2000 Maryland Stormwater Design Manual as amended by Maryland Stormwater Management Act of 2007, treatment of the target Pe of 1.4 will be achieved to the maximum extent practicable.

A Design Manual waiver may be required for overdrains or shallow underdrains for on-lot facilities where sufficient head cannot be provided to daylight underdrains. A Waiver Petition may be required to allow disturbance of wetlands, streams and their buffers for the sewer outfall.

PLAN VIEW
SCALE: 1" = 30'

ESD PRACTICE SUMMARY TABLE

Practice	Perf	1.4 inches	Lot	Ref.	Address	DA to practice	Imp Area to practice	Req'd	Provided	2% DA?*	Req'd	Provided	ESDV Req.?	Rev
(M-8) Grass Swale	M-8	#1	1-6	GS 1	Chestnut Hill Dr.	12,586	6,615	252	1300	PASS	768	768	PASS	143
(M-3) Landscape Infiltration	M-3	#1	1	LSI 1	Chestnut Hill Dr.	3,336	2,200	67	201	PASS	250	304	PASS	80
(M-6) Micro-Bioretenation	M-6	#2	2	MBR 2	Chestnut Hill Dr.	6,224	3,217	124	240	PASS	374	354	PASS	96
(M-6) Micro-Bioretenation	M-6	#3	3	MBR 3	Chestnut Hill Dr.	7,185	3,444	143	270	PASS	403	388	PASS	90
(M-6) Micro-Bioretenation	M-6	#4	4	MBR 4	Chestnut Hill Dr.	6,925	3,066	139	200	PASS	382	317	PASS	80
(M-6) Micro-Bioretenation	M-6	#4.2	4	MBR 4.2	Chestnut Hill Dr.	2,837	3,066	57	143	PASS	248	233	PASS	86
(M-6) Micro-Bioretenation	M-6	#5	5	MBR 5	Chestnut Hill Dr.	4,955	2,739	99	233	PASS	317	342	PASS	93
(M-3) Landscape Infiltration	M-3	#6	6	LSI 6	Chestnut Hill Dr.	7,498	2,827	149	233	PASS	340	342	PASS	93
TOTAL (not including disconnection) =											3063	3048	632	760

A. Determine Pre-Developed Conditions

HSG	RCN	Area (R2)	Percent
A	38	98815	23.300
B	55	26702	20.920
C	70	26702	20.920
D	77	10145	8.300
Target RCN	60	133662	25.687

B. Determine Initial Target Pe Using Table 5.3

Soil Conditions Developed Condition	Area (R2)	Impervious Percent**	Target Pe
A	98815	23.300	25%
B	26702	23.97	10%
C	10145	0	0%
Weighted Pe	133662	25.687	20%

* Percent Impervious is rounded to the next higher increment of 5%
** Percent Impervious is rounded to the next higher increment of 5%

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
GhB	B	GLENELG-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GhB*	C	GLENVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES
Job	D	SILT LOAM, 3 TO 8 PERCENT SLOPES

APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW STAGE. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

SITE ANALYSIS DATA/TABULATION

A) TOTAL PROJECT AREA.....	3.55± AC.
B) AREA OF WETLANDS AND BUFFER.....	0.40± AC.
C) AREA OF 100-YR. FLOODPLAIN.....	0.00 AC.
D) AREA OF FOREST.....	0.51± AC.
E) AREA OF STEEP SLOPES 25% OF GREATER.....	0.00 AC.
F) AREA OF DEDICATION.....	0.00 AC.
G) HIGHLY ERODIBLE SOILS (K > 0.35).....	0.00 AC.
H) NUMBER OF UNITS ALLOWED.....	6
I) NUMBER OF RESIDENTIAL UNITS PROPOSED.....	6
J) AREA OF PLAN SUBMISSION.....	3.55± AC.
K) LIMIT OF DISTURBED AREA.....	2.24± AC.
L) OPEN SPACE PROVIDED.....	0.21± AC.
M) PRESENT ZONING DESIGNATION.....	R-20
N) PROPOSED USE: SINGLE FAMILY DETACHED DWELLINGS	
O) IMPERVIOUS COVER.....	0.59± AC.

SHEET INDEX

NO.	DESCRIPTION
1	ENVIRONMENTAL CONCEPT PLAN
2	ENVIRONMENTAL CONCEPT PLAN SEDIMENT CONTROL PLAN AND DETAILS
3	ENVIRONMENTAL CONCEPT PLAN SEDIMENT CONTROL NOTES AND DETAILS

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644

75 THOMAS JOHNSON DRIVE & SUITE E • FREDERICK, MARYLAND 21702
(P) 301-710-5688

WWW.BEI-CIVILENGINEERING.COM

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. 28259, Expiration Date: 7-22-2015.

OWNER: MELVIN PROPERTY
3010 CHESTNUT HILL DRIVE
ELLICOTT CITY, MD 21043-3414

DEVELOPER: HIGHLAND DEVELOPMENT CORP.
PO BOX 228
CLARKSVILLE, MD 21029
410-365-0414

DESIGN: JC **DRAFT:** JC

PROJECT: MELVIN PROPERTY
A RESUBDIVISION OF MELNOR PROPERTY, LOT 5
CREATING LOTS 1-6 AND OPEN SPACE LOT 7

LOCATION: TAX MAP No. 18, GRID No. 20, PARCEL No. 351
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

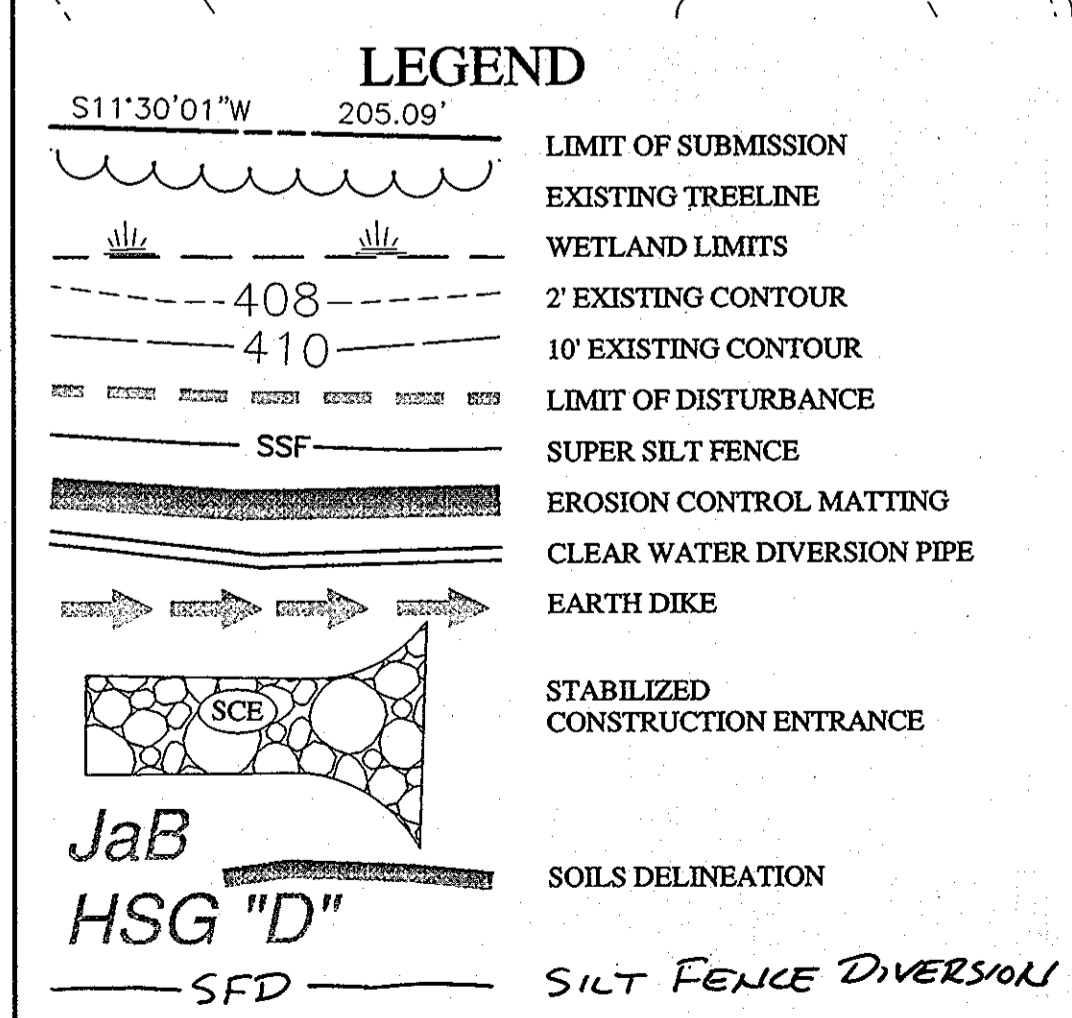
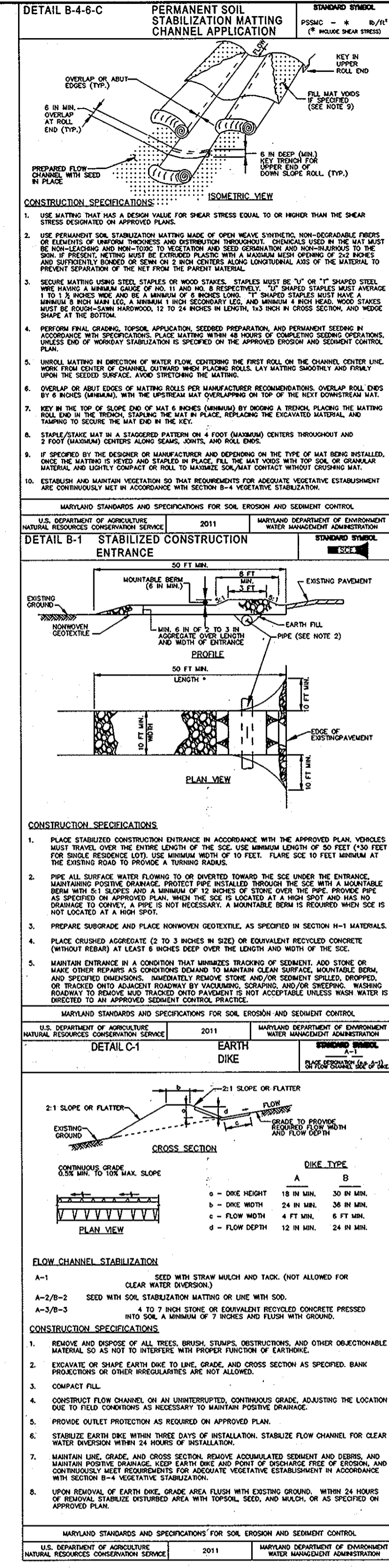
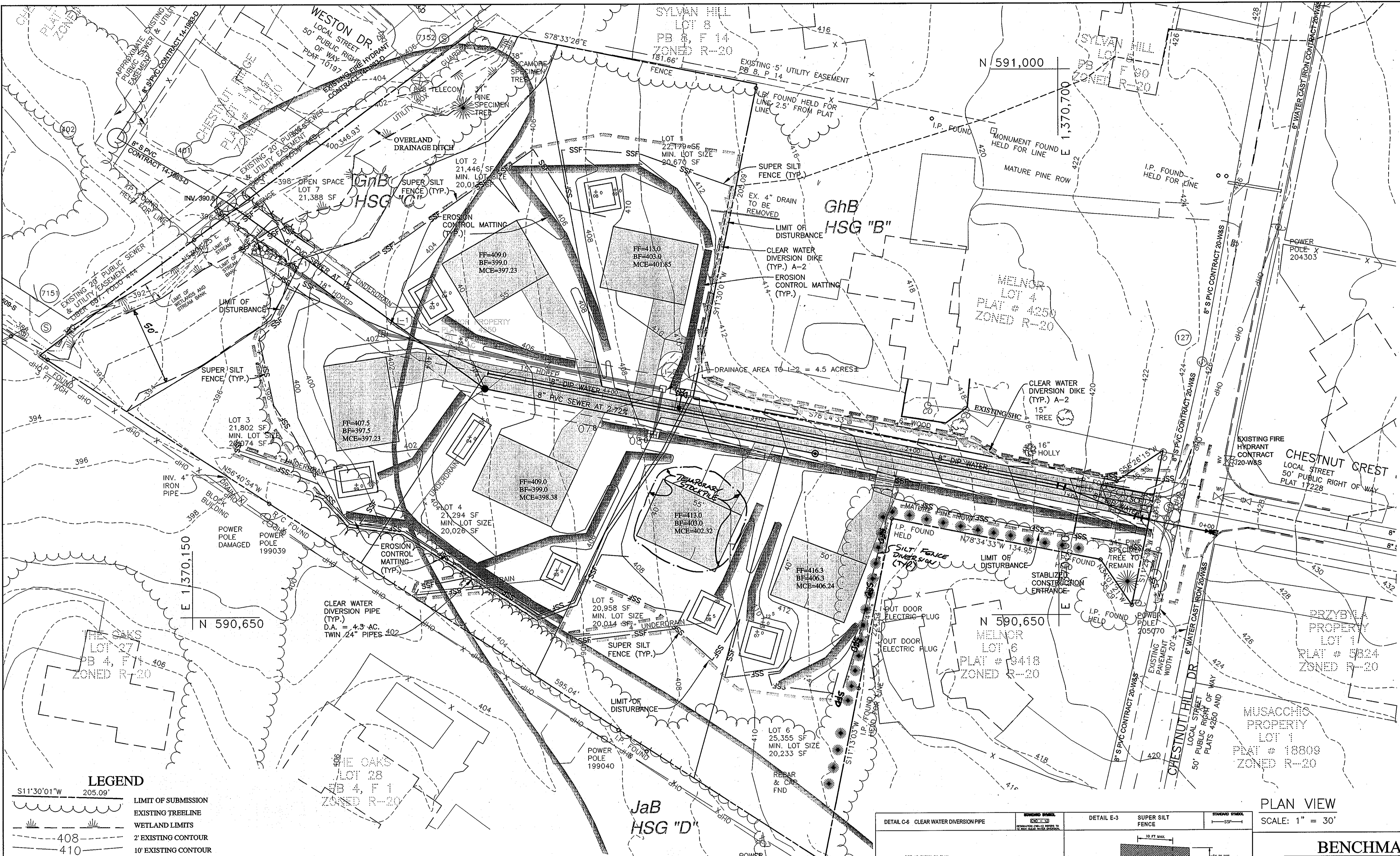
TITLE: ENVIRONMENTAL CONCEPT PLAN

DATE: MARCH, 2013
AUGUST, 2013

PROJECT NO.: 2515

SCALE: AS SHOWN **DRAWING:** 1 OF 3

ECP-13-067



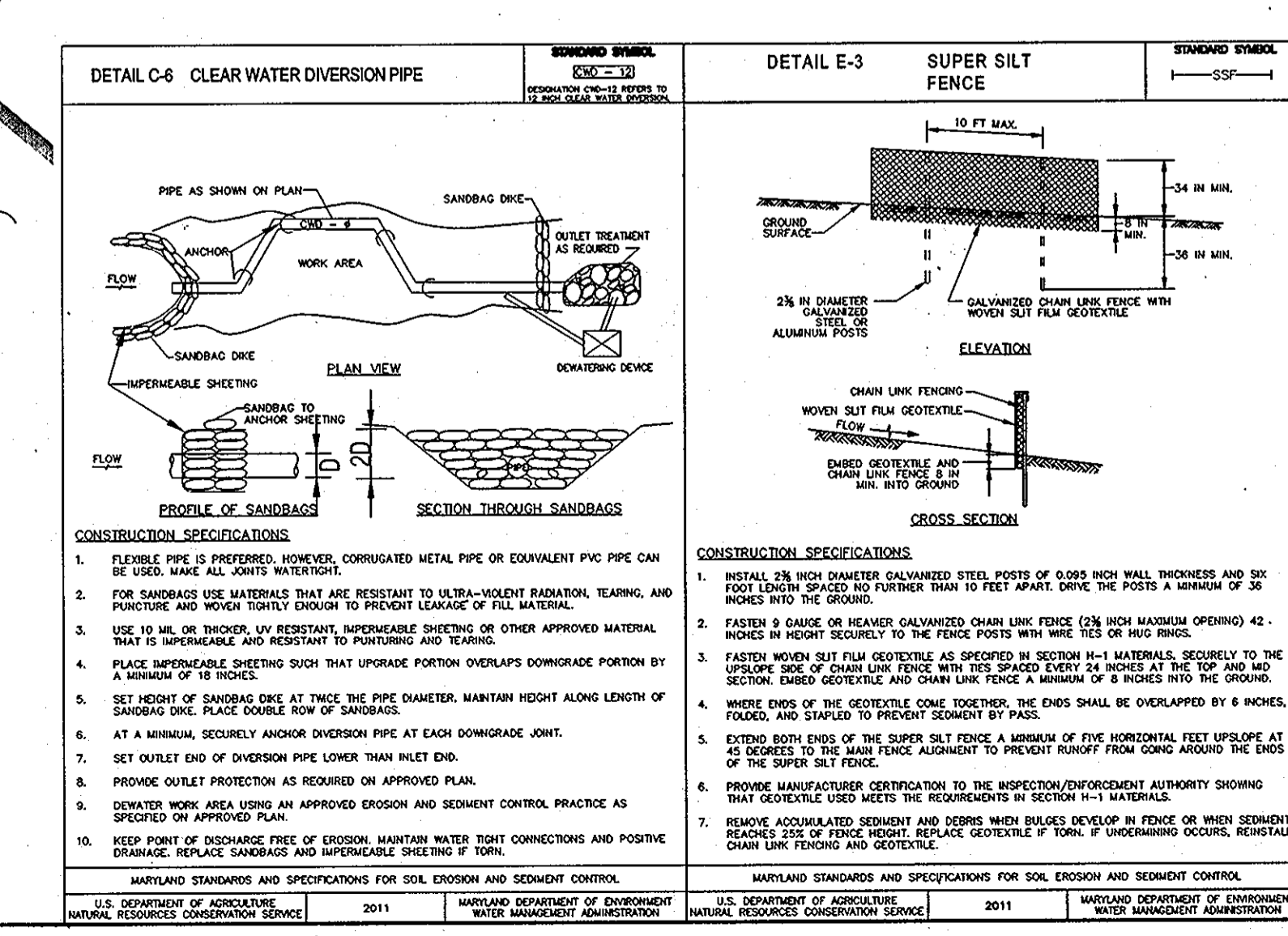
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division

DATE: 3/29/13
 DATE: 9/16/13

APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW STAGE. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
GhB	B	GLENELG-URBAN LAND COMPLEX LOAM, 0 TO 8 PERCENT SLOPES
GhB*	C	GLENEVILLE-BAMLE SILT LOAM, 0 TO 8 PERCENT SLOPES
JaB	D	SILT LOAM, 3 TO 8 PERCENT SLOPES

FROM "NATURAL RESOURCES CONSERVATION SERVICES WEB SOIL SURVEY 2.0 HYDRIC SOILS"



PLAN VIEW
 SCALE: 1" = 30'

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-6844
 75 THOMAS JOHNSON DRIVE & SUITE E • FREDERICK, MARYLAND 21702
 (P) 301-710-5686
 WWW.BEI-CIVILENGINEERING.COM

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. 28559, Expiration Date: 1-22-2015.

OWNER: VERA JEANNE MELVIN
 3010 CHESTNUT HILL DRIVE
 ELLICOTT CITY, MD 21043-3414

DEVELOPER: HIGHLAND DEVELOPMENT CORP.
 PO BOX 228
 CLARKSVILLE, MD 21029
 410-365-0414

DESIGN: JC DRAFT: JC

PROJECT: MELVIN PROPERTY
 A RESUBDIVISION OF MELVIN PROPERTY, LOT 5
 CREATING LOTS 1-6 AND OPEN SPACE LOT 7

LOCATION: TAX MAP NO. 18, GRID NO. 20, PARCEL NO. 351
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: ENVIRONMENTAL CONCEPT PLAN
 SEDIMENT AND EROSION CONTROL PLAN AND
 DETAILS

DATE: MARCH, 2013 PROJECT NO. 2515
 AUGUST, 2013

SCALE: AS SHOWN DRAWING: 2 OF 3

ECP-13-067

SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1855)
- ALL EROSION AND SEDIMENT CONTROL STRUCTURES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL. REVISIONS HERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTORATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 47 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 TO 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, EROSION MANAGEMENT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEDITIONS (SEC. 51) SOD (SEC. 54), TEMPORARY SEDITIONS (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE (THIS SUBMISSION)	3.55	ACRES
AREA DISTURBED	2.24	ACRES
AREA TO BE ROOFED OR PAVED	0.59	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.65	ACRES
TOTAL CUT	2000	CY
TOTAL FILL	N/A*	CY

OFFSITE WASTE/SPILL AREA LOCATION
 *THE PURPOSE OF THIS ENVIRONMENTAL CONCEPT PLAN IS TO ESTABLISH CONCEPTUAL STORMWATER TREATMENT AND SEDIMENT CONTROL. PROJECT GRADING HAS NOT YET BEEN ESTABLISHED, SO DETAILED DISTURBANCE, STABILIZATION, CUT AND FILL INFORMATION IS NOT YET AVAILABLE, AND WILL BE PROVIDED ON CONSTRUCTION PLANS.
 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
 9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 3 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS OBTAINED.
 11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

- Seeding
 - Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-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.4 regarding the quality of seed. Seed lots must be available upon request to the Inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground is frozen.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants 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 inoculants as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Soil 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.
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates 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 seed to soil contact.
 - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm 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 total of soluble nitrogen; P205 (phosphorous), 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.
 - Mix seed and fertilizer on site 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 musty, moldy, caked, decayed, or excessively dirty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformity spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM 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 form a bi-layer-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material must contain elements or compounds at concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1:8 percent maximum and water holding capacity of 90 percent minimum.
 - 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 attain 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 one of the following methods (rate by preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor draw 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 DLR (Aqua-Tack), DCA-70, Petrosol, Terra Tac II, Terra Tac All 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 mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

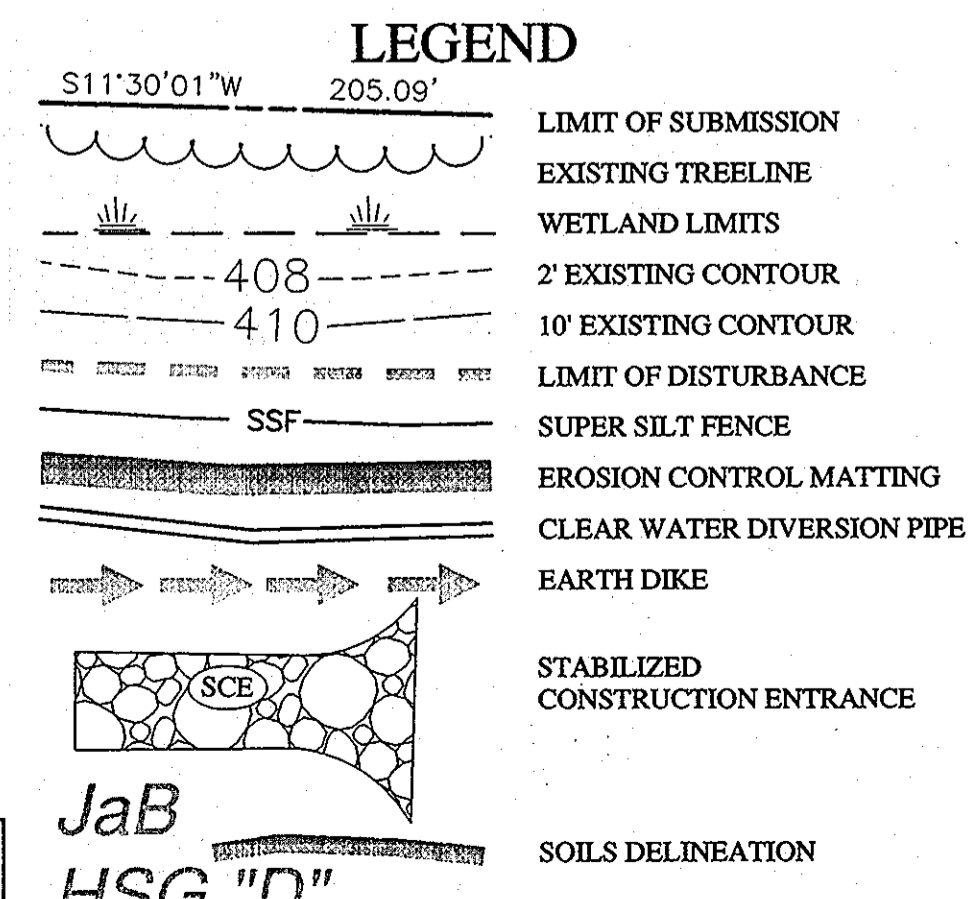
NOTE:
 1. EROSION CONTROL MATING SHALL BE PLACED IN SWALES WHERE DEEMED NECESSARY UNTIL VEGETATION IS ESTABLISHED OR SOLID SOD SHOULD BE USED.
 2. ON-LOT STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED AS A PART OF THE HOUSE CONSTRUCTION AND LOT DEVELOPMENT.

B-4-2 STANDARDS AND SPECIFICATIONS CONTINUED

- Topping is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
- Areas having slopes steeper than 2:1 require special consideration and design. Topsoil Specifications: Soil to be used on topsoil must meet the following criteria:
 - Topsoil must be a loam, sand loam, clay loam, silty loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that seedling seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.
- Soil Amendments (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact rates and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total calcium (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
 - Lime and fertilizer are to be uniformly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
 - Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW STAGE. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

SEQUENCE OF CONSTRUCTION
 NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION
 DAY 1 - 1) OBTAIN GRADING PERMIT.
 DAY 2-30 - 2) INSTALL PERIMETER SEDIMENT AN EROSION CONTROLS AS SPECIFIED ON CONSTRUCTION PLANS.
 DAY 31-38 - 3) INSTALL WATER AND SEWER AS SHOWN ON THE CONTRACT DRAWINGS.
 DAY 39-98 - 4) GRADE DRIVEWAYS AND HOUSE PADS, PAVE DRIVEWAY.
 DAY 99-110 - 5) FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDED NOTES.
 DAY 111-130 - 6) WHEN CONTRIBUTING AREAS ARE STABILIZED, CONSTRUCT STORMWATER MANAGEMENT FACILITIES WHICH TREAT ROAD AREAS.
 DAY 131-135 - 7) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS.



JaB
 HSG "D"

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 3/29/13
 DATE
 9/16/13
 DATE

BENCHMARK
 ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644

75 THOMAS JOHNSON DRIVE & SUITE A FREDERICK, MARYLAND 21702
 (P) 301-711-5686
 WWW.BEI-CIVLENGINEERING.COM

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. 28559, Expiration Date 7-22-2015.

OWNER: VERA JEANNE MELVIN
 3010 CHESTNUT HILL DRIVE
 ELLICOTT CITY, MD 21043-3414

DEVELOPER: HIGHLAND DEVELOPMENT CORP.
 PO BOX 228
 CLARKSVILLE, MD 21029
 410-365-0414

PROJECT: MELVIN PROPERTY
 A RESUBDIVISION OF MELNOR PROPERTY, LOT 5
 CREATING LOTS 1-6 AND OPEN SPACE LOT 7

LOCATION: TAX MAP No. 18, GRID No. 20, PARCEL No. 351
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: ENVIRONMENTAL CONCEPT PLAN
 SEDIMENT AND EROSION CONTROL NOTES
 AND DETAILS

DATE: MARCH, 2013
 AUGUST, 2013

PROJECT NO. 2515

SCALE: AS SHOWN

DESIGN: JC DRAFT: JC

DRAWING 3 OF 3