

SUPPLEMENTAL INFORMATION PLAN

WRIGHT PROPERTY - LOTS 5 & 6

5110 TALBOTS LANDING

ELLCOTT CITY, MD 21043

L. 1254 / F. 173

BENCHMARKS

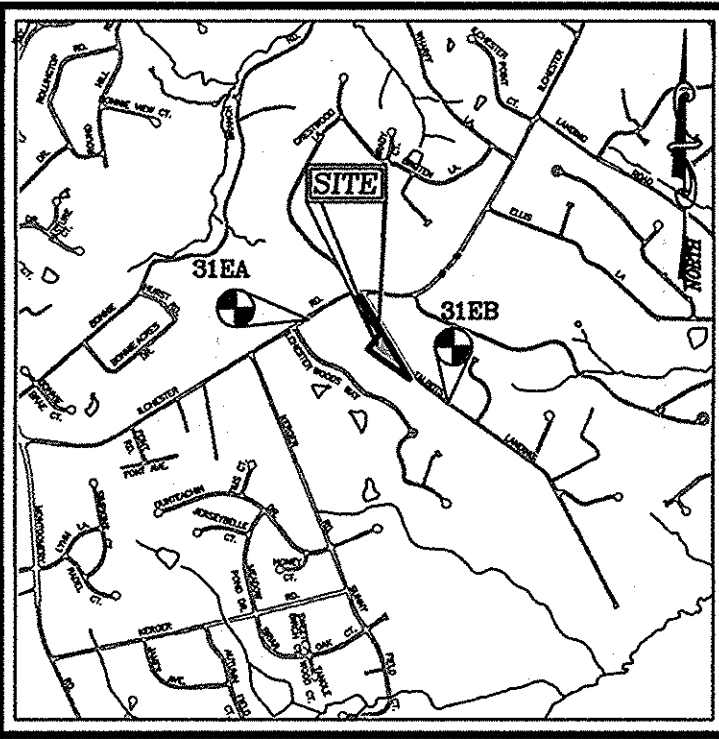
HOWARD COUNTY BENCHMARK 31EA
N 569641.17 E 1374816.01 ELEV. 468.84
LICHESTER RD. 3/4 MI NE OF RT-103

HOWARD COUNTY BENCHMARK 31EB
N 568731.03 E 1376273.569 ELEV. 452.63
TALBOT LANDING RD 0.3 MI EAST OF LICHESTER RD.

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
5	43,171 SF	10,992 SF	32,179 SF	20,000 SF
6	29,709 SF	NA	29,709 SF	20,000 SF

COORDINATE TABLE

NO.	NORTH	EAST
2011	569679.46511	1375332.49226
202	569882.7767	1375338.8284
203	569019.6197	1375874.4345
204	569497.2082	1375560.4792
6101	569330.3517	1375440.8895



VICINITY MAP
SCALE: 1"=2,000'
ADC MAP COORDINATE: 4936, F-4

GENERAL NOTES

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 - MESS UTILITY: 1-800-257-7777
 - VERIZON TELEPHONE COMPANY: 1-410-954-6281
 - HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2385
 - AT&T CABLE LOCATION DIVISION: 1-800-333-2385
 - B.G.&E. CO. CONTRACTOR SERVICES: 410-850-4620
 - B.G.&E. CO. UNDERGROUND DAMAGE CONTROL: 410-787-6620
 - STATE HIGHWAY ADMINISTRATION: 410-531-5633
- THIS SUPPLEMENTAL INFORMATION PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES: ECP-14-048 (APPROVED 04/02/2014), CONT. #14-4775-0, CONT. #10-3470, AND F-83-07.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN TOPOGRAPHIC SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED AUGUST 2013.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT AUGUST, 2013 BY ROBERT H. VOGEL ENGINEERING, INC.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
- STORMWATER MANAGEMENT FOR THIS PROJECT IS BEING PROVIDED BY ENVIRONMENTAL SITE DESIGN UTILIZING MICRO BIOTRETENTION FACILITIES (M-6), AND NON-ROOFTOP DISCONNECTS (N-2) TO ACCOMMODATE THE TOTAL ESQ VOLUME REQUIRED. SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER. REFERENCE MDE STORMWATER DESIGN MANUAL (CHAPTER 5).
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION, OR BUILDING AND GRADING PERMITS.
- THE SUBJECT PROPERTY IS ZONED "R-20" IN ACCORDANCE WITH THE 10/06/13 COMPREHENSIVE ZONING PLAN.
- THIS PROPERTY IS NOT LOCATED IN A HISTORIC DISTRICT.
- THE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL HAVE MINIMAL IMPACT ON EXISTING ENVIRONMENTAL FEATURES AND BUFFERS.
- EXISTING UTILITIES ARE BASED ON ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 14-4775-0 AND PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 10-3470.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 31EA AND 31EB WERE USED FOR THIS PROJECT.
- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THE PROPERTY.
- THERE ARE NO STEEP SLOPES LOCATED WITHIN THE LIMITS OF THIS SITE.
- THERE ARE NO STREAMS, OR STREAM BUFFERS LOCATED WITHIN THE LIMITS OF THIS SITE.
- THERE ARE NO WETLANDS, OR WETLAND BUFFERS LOCATED WITHIN THE LIMITS OF THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THERE IS A 30.5' AMERICAN BEECH SPECIMEN TREE (ST-1) LOCATED ON LOT 6 THAT IS TO REMAIN.
- THE FOREST CONSERVATION OBLIGATION WILL BE MET BY A FEE-IN-LIEU PAYMENT OF \$6,534.00 MADE OUT TO HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 0.20 ACRE APPROPRIATION REQUIREMENT FOR THIS PROJECT. FEE-IN-LIEU = (0.20 AC.) 8,712 SF x .75 = \$6,534.00
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - a) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - b) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1-1/2" MIN).
 - c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45-FOOT TURNING RADIUS.
 - d) STRUCTURE (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - f) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THERE IS AN EXISTING HOUSE AND BARBECUE AREA LOCATED ON LOT 5 WHICH ARE TO REMAIN. THE EXISTING DWELLING WAS CONSTRUCTED IN COMPLIANCE WITH THE MINIMUM SETBACK REQUIREMENTS IN EFFECT AT THE TIME OF CONSTRUCTION AND AS RECORDED ON PLAT #5410; HOWEVER, WITH THE RECORDED OF THE PLAT FOR F-15-002, THE FRONT SETBACK HAS BECOME NON-COMPLYING WITH RESPECT TO THE FRONT BUILDING RESTRICTION LINE REQUIREMENTS IN ACCORDANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND SECTION 108.0(D) OF THE CURRENT R-20 ZONING REGULATIONS. ANY PROPOSED EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ON LOT 5 MUST UPHOLD THE CURRENT MORE RESTRICTIVE FRONT SETBACK REQUIREMENT. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
- TALBOTS LANDING IS NOT A SCENIC ROAD.
- LANDSCAPING FOR LOT 6 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$900.00 FOR THE REQUIRED 3 SHADE TREES SHALL BE POSTED WITH ~~GRADING PERMIT~~.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL.

LEGEND:

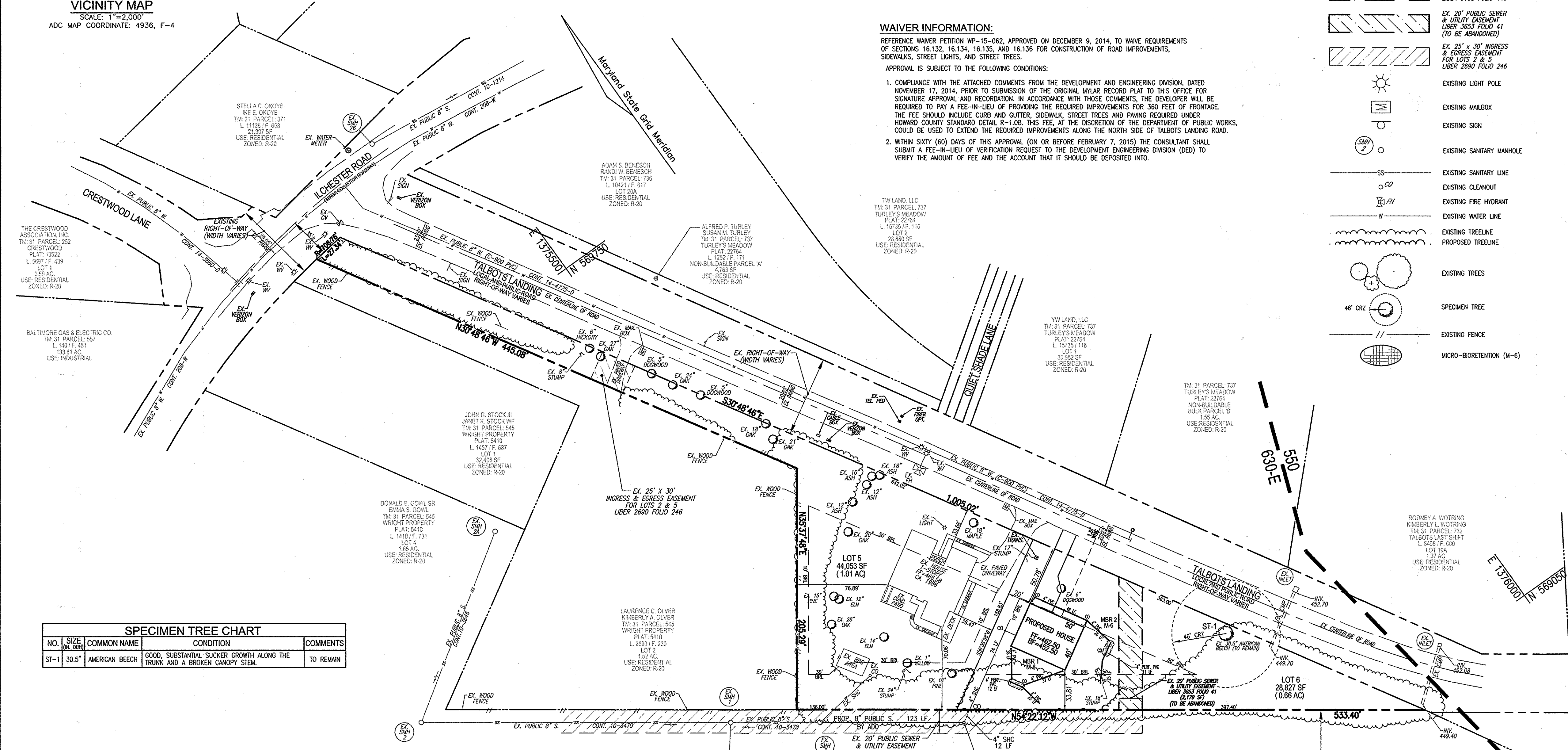
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVING
- EX. 20' PUBLIC SEWER & UTILITY EASEMENT LIBER 3658 FOLIO 446
- EX. 20' PUBLIC SEWER & UTILITY EASEMENT FOR LOTS 5 & 6 LIBER 2880 FOLIO 246
- EX. 25' x 30' INGRESS & EGRESS EASEMENT LIBER 2880 FOLIO 246
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING TREES
- SPECIMEN TREE
- EXISTING FENCE
- MICRO-BIOTRETENTION (M-6)

WAIVER INFORMATION:

REFERENCE WAIVER PETITION WP-15-062, APPROVED ON DECEMBER 9, 2014, TO WAIVE REQUIREMENTS OF SECTIONS 16.132, 16.134, 16.135, AND 16.136 FOR CONSTRUCTION OF ROAD IMPROVEMENTS, SIDEWALKS, STREET LIGHTS, AND STREET TREES.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

- COMPLIANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT AND ENGINEERING DIVISION, DATED NOVEMBER 17, 2014, PRIOR TO SUBMISSION OF THE ORIGINAL MYLAR RECORD PLAT TO THIS OFFICE FOR SIGNATURE APPROVAL AND RECORDATION. IN ACCORDANCE WITH THOSE COMMENTS, THE DEVELOPER WILL BE REQUIRED TO PAY A FEE-IN-LIEU OF PROVIDING THE REQUIRED IMPROVEMENTS FOR 350 FEET OF FRONTAGE. THE FEE SHOULD INCLUDE CURB AND GUTTER, SIDEWALK, STREET TREES AND PAVING REQUIRED UNDER HOWARD COUNTY STANDARD DETAIL R-1.08. THIS FEE, AT THE DISCRETION OF THE DEPARTMENT OF PUBLIC WORKS, COULD BE USED TO EXTEND THE REQUIRED IMPROVEMENTS ALONG THE NORTH SIDE OF TALBOTS LANDING ROAD.
- WITHIN SIXTY (60) DAYS OF THIS APPROVAL (ON OR BEFORE FEBRUARY 7, 2015) THE CONSULTANT SHALL SUBMIT A FEE-IN-LIEU OF VERIFICATION REQUEST TO THE DEVELOPMENT ENGINEERING DIVISION (DED) TO VERIFY THE AMOUNT OF FEE AND THE ACCOUNT THAT IT SHOULD BE DEPOSITED INTO.



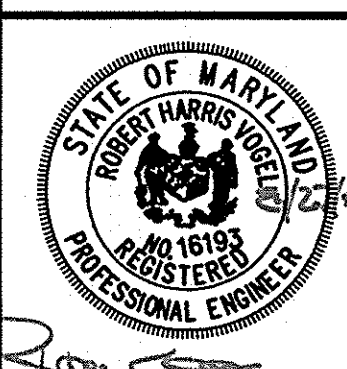
OWNER/DEVELOPER

ALGIRDAS J. BRASAUSKAS
ELIZABETH A. BRASAUSKAS
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
240-876-4471

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
LAYOUT PLAN
WRIGHT PROPERTY LOTS 5 & 6
A RE-SUBDIVISION OF WRIGHT PROPERTY LOT 3, PLAT 5410
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
ZONED: R-20
TAX MAP: 31 GRID: 15
1ST ELECTION DISTRICT

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



DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: AUGUST 2015
SCALE: AS SHOWN
W.O. NO.: 12-27

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A duly licensed PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 16193 EXPIRATION DATE: 09-27-2016

1 SHEET OF 5

SITE DATA

LOCATION: TAX MAP 31, BLOCK 15
PARCEL: 545
DEED REFERENCE: L. 1254/F. 173
1ST ELECTION DISTRICT
PRESENT ZONING: R-20
GROSS AREA OF PROJECT: 1.67 AC.
LIMIT OF DISTURBANCE: 0.38 AC.
PROPOSED USE OF SITE: RESIDENTIAL (SFD)
NUMBER OF RESIDENTIAL LOTS PROPOSED: 2 LOTS
AREA OF RESIDENTIAL LOTS PROPOSED: 1.87 AC
OPEN SPACE REQUIRED: 0.10 AC. (1.87 AC. x 6% = 0.10 AC. (4,356 SF))
OPEN SPACE PROVIDED: 0.00 AC. (FEE-IN-LIEU)
IMPERVIOUS AREA: 0.07 AC.
GREEN AREA: 0.31 AC.
AREA OF STREAM/BUFFER: 0.00 AC.
AREA OF WETLANDS/BUFFER: 0.00 AC.
AREA OF STEEP SLOPES (25% OR GREATER): 0.00 AC.
AREA OF MODERATE SLOPES (15% TO 25%): 0.23 AC.
AREA OF FLOOD PLAIN: 0.00 AC.
NET PROJECT AREA: 1.67 AC.
AREA OF EXISTING FOREST COVER: 0.00 AC.
AREA OF ERODIBLE SOILS: 0.00 AC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9.9.15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9-10-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

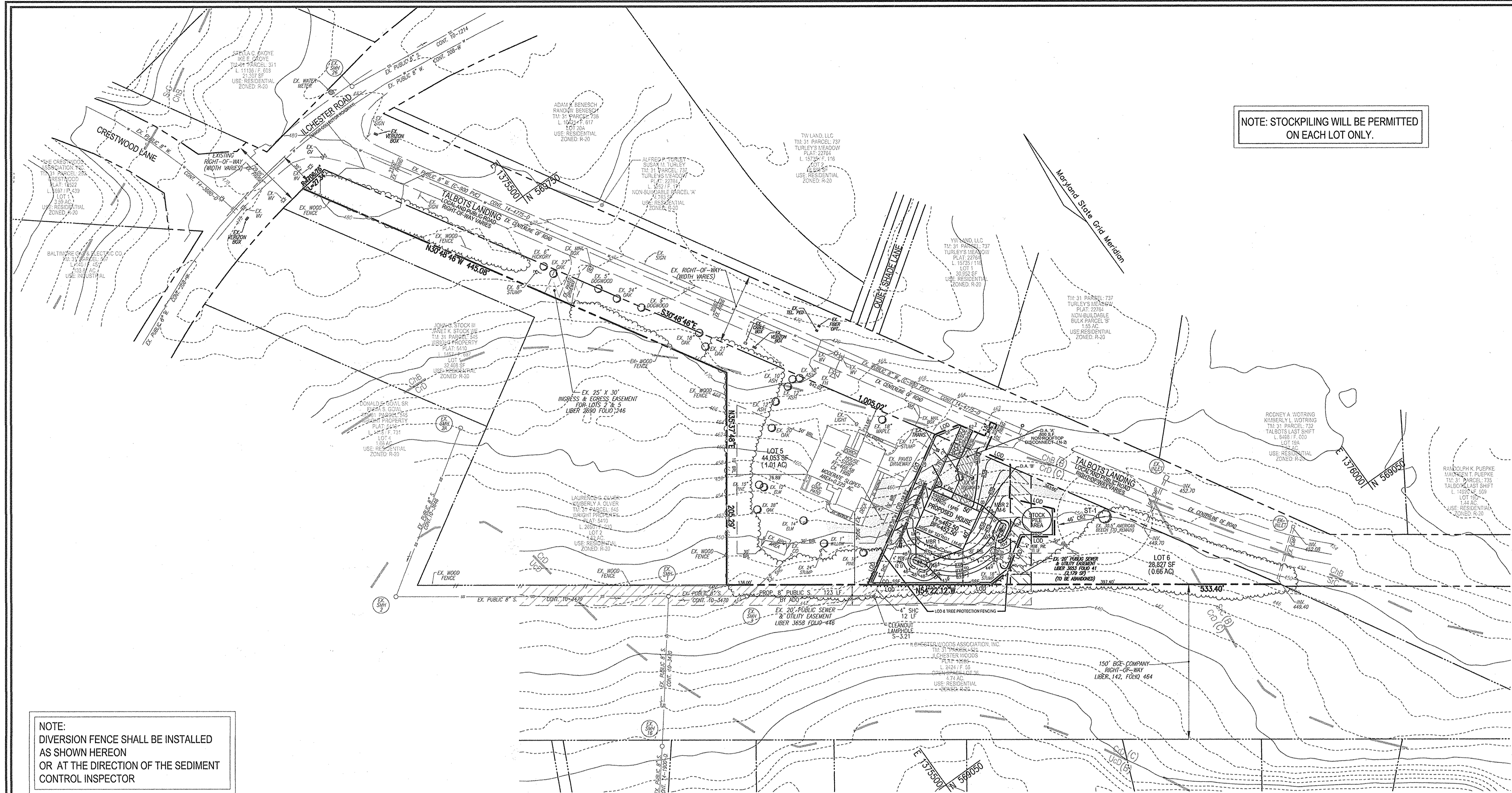
SHEET INDEX		
DESCRIPTION	SHEET NO.	
LAYOUT PLAN	1 OF 5	
LANDSCAPING, SEDIMENT, AND EROSION CONTROL PLAN AND SOILS MAP	2 OF 5	
GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS	3 OF 5	
SWIM DRAINAGE AREA MAP, SWIM NOTES AND DETAILS	4 OF 5	
LANDSCAPE AND MICRO-BIOTRETENTION PLANTING PLAN, NOTES, AND DETAILS	5 OF 5	

LAYOUT PLAN

SCALE: 1"=50'



- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THAT GROUNDWATER AND ROCK ARE NOT PRESENT AT RAIN GARDEN AND MICRO-BIOTRETENTION LOCATIONS.
- BGA&E HAS REVIEWED AND APPROVED PROPOSED PERIMETER TREE PLANTINGS.
- THE OPEN SPACE REQUIREMENT FOR THIS RE-SUBDIVISION PLAN HAS BEEN SATISFIED THROUGH THE PAYMENT OF A FEE-IN-LIEU IN THE AMOUNT OF \$1,500.00.
- THE DEVELOPMENT PLAN APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING IS REQUIRED PRIOR TO A BUILDING PERMIT BEING ISSUED FOR THE CONSTRUCTION OF THE RESIDENTIAL DWELLING ON LOT 6.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERRAS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- A COMMUNITY MEETING WAS CONDUCTED ON OCTOBER 30, 2013 FOR THE PURPOSE OF THE DEVELOPER TO PROVIDE INFORMATION TO THE COMMUNITY REGARDING THE PROPOSED RESIDENTIAL DEVELOPMENT AND TO ALLOW THE COMMUNITY TO ASK QUESTIONS AND TO MAKE COMMENTS, PER THE REQUIREMENTS OF SECTION 16.128(d) OF THE SUBDIVISION REGULATIONS.



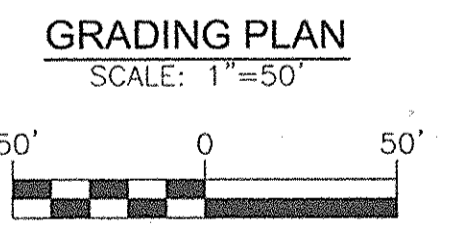
NOTE: STOCKPILING WILL BE PERMITTED ON EACH LOT ONLY.

- LEGEND:**
- PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - ADJACENT PROPERTY LINE
 - EXISTING CURB AND GUTTER
 - EXISTING EDGE OF PAVING
 - EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3638 FOLIO 446
 - EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3633 FOLIO 41 (TO BE ABANDONED)
 - EX. 25" x 30" INGRESS & EGRESS EASEMENT FOR LOTS 2 & 5 LIBER 2850 FOLIO 246
 - EXISTING UTILITY POLE
 - EXISTING SIGN
 - EXISTING SANITARY MANHOLE
 - EXISTING SANITARY LINE
 - EXISTING CLEANOUT
 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - EXISTING TREELINE
 - EXISTING TREES
 - 45' CRZ
 - EXISTING FENCE
 - EXISTING 10' CONTOUR
 - EXISTING 2' CONTOUR
 - SHE SIC2
 - SOILS
 - PROPOSED TREELINE
 - PROPOSED 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - PROPOSED SPOT ELEVATION
 - PROPOSED DIVERSION FENCE
 - PROPOSED SILT FENCE
 - PROPOSED LIMIT OF DISTURBANCE
 - PROPOSED EROSION CONTROL MATTING
 - PROPOSED STABILIZED CONSTRUCTION ENTRANCE
 - MICRO-BIORETENTION (M-6)
 - PROPOSED TEST PIT
 - EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)

NOTE:
DIVERSION FENCE SHALL BE INSTALLED AS SHOWN HEREON OR AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR

NOTE:
STABILIZATION IS TO BE DONE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STDS. & SPECS. WHICHEVER IS MORE RESTRICTIVE.

NOTE:
- SILT FENCE SHALL BE CURLED UP HILL NO MORE THAN 35 FEET APART
- DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.



NOTE:
SUPER SILT FENCE MAY BE REPLACED BY STANDARD SILT FENCE WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR

OWNER/DEVELOPER
ALGIRDAS J. BRASAUSKAS
ELIZABETH A. BRASAUSKAS
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
240-876-4471

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9-9-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9-10-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
ChB	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES	B	.37	YES
CrD	CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	C	.28	NO
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	.37	YES
UdD	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	B	.37	YES

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
- HOWARD COUNTY SOILS MAP NUMBER 19 - SAWAGE NE

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT ON THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
GRADING, SEDIMENT, AND EROSION CONTROL
PLAN AND SOILS MAP
WRIGHT PROPERTY LOTS 5 & 6
A RE-SUBDIVISION OF WRIGHT PROPERTY LOT 3, PLAT 5410
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
(L. 1254 / F. 173)

PARCEL: 545 ZONED: R-20
TAX MAP: 31 GRID: 15 USE: RESIDENTIAL
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
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DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: AUGUST 2015
SCALE: AS SHOWN
W.O. NO.: 12-27

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2018

2 SHEET OF 5

**HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. (B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 8-4-3), TEMPORARY SEEDING (SEC. 8-4-4) AND MULCHING (SEC. 8-4-5). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER ESTABLISHMENT 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 SITE AREA: 1.67 ACRES
AREA TO BE RESTORED OR PAVED: 0.07 ACRES
AREA TO BE TEMPORARILY STABILIZED: 0.31 ACRES
TOTAL CUT: 400 CU. YDS.
TOTAL FILL: 400 CU. YDS.
OFFSITE WASTE/BORROW LOCATION: _____

**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 SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH THE SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 - FOR SITES HAVING SOIL TESTS 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 8-4-3, 8-4.1B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P ₂ O ₅	K ₂ O	
1	COOL SEASON ANNUAL PERENNIALS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)		
2	WARM SEASON FOLIAGE MULLETS OR EQUAL	30 LB / AC	MAY 15 TO JUL 31	1/2 IN.				

PERMANENT SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P ₂ O ₅	K ₂ O	
1	COOL SEASON ANNUAL PERENNIALS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)		
2	WARM SEASON FOLIAGE MULLETS OR EQUAL	30 LB / AC	MAY 15 TO JUL 31	1/2 IN.				

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT. (1 DAY)
- DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AGENCY PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)
- NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS AT (410) 313-1855) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)
- CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER CONTROLS (1 DAY)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER CONTROLS AS SHOWN HEREON AND STABILIZE DISTURBANCES. (2 DAYS)
- AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED COMPLETE ANY REMAINING GRADING WITHIN THE INSTALLED PERIMETER CONTROLS. (5 DAYS)
- COMPLETE HOUSE AND UTILITY WORK AS REQUIRED BY PLAN. (8 MONTHS)
- INSTALL DRIVEWAY PAVING AS SHOWN HEREON (3 DAYS)
- INSTALL STORMWATER MANAGEMENT FEATURES (3 DAYS)
- COMPLETE ANY REMAINING FINE GRADING WITHIN THE INSTALLED PERIMETER CONTROLS AND STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH (5 DAYS)
- UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBANCES WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH.

NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

NOTES

DURING GRADING AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN HEREON.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

- A 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
- B 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

**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**
- GENERAL USE
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), 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 DIKES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 47 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT (4B-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 TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES 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 MIXTURE(S), 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 MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATES: 15 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 RYE: FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MAINTENANCE. CERTIFIED PERENNIAL PRAIRIE CULTIVARS SEEDING RATES: 15 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 RYE: FULL SUN MIXTURE; FOR USE IN DROUGHT PRONE AREAS AND/OR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURES: CERTIFIED LATE FESCUE CULTIVARS 85 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 15 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - KENTUCKY BLUEGRASS/FESCUE: SHADE MIXTURE; FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MAINTAINED TURF AREA MIXTURES INCLUDING CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 50 TO 40 PERCENT AND CERTIFIED FESCUE 60 TO 70 PERCENT. SEEDING RATE: 15 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTE: SELECT TURFGRASS MIXTURES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, HORTICULTURE HANDBOOK #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD, MARCH 15 TO JUNE 1, AUGUST TO OCTOBER 1 (HARDNESS ZONE: 6B, 6A)
 - CENTRAL MD, MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONE: 6B)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONE: 7A, 7B)
- TILL AREAS TO BE SEEDING: SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE AREAS TO PREPARE A PROPER SEEDING SURFACE. STONES AND DEBRIS OVER 1/4 INCHES IN DIAMETER, THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ANOMALY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

- GENERAL SPECIFICATIONS
 - CLASS OF TURFGRASS COVER MUST BE MARYLAND STATE CERTIFIED. SOU LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 - SOD MUST BE MACHINED OUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS, OR PLUS 3/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND HATCH. BROKEN PADS AND TOM OR UNLINED ENDS WILL NOT BE ACCEPTABLE.
 - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 - SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 - SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
- SOD INSTALLATION
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY BRIDGE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. SMOOGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT WINDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP FIRM OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOIL CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLIEING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITH EIGHT HOURS.
- SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENT AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

**R-4-2 STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS**

- DEFINITION**
THE PROCESS OF PREPARING THE SOILS TO SUSAIN ADEQUATE VEGETATIVE STABILIZATION.
- PURPOSE**
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- CONDITIONS WHERE PRACTICE APPLIES**
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.
- CRITERIA**
- TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCS, IMPROVERS OR CHISEL PLOWS, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENEED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - AS TESTS ARE REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE, THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 400 CENT CLAY BUT ENOUGH FINE GRANDED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOESS/CLAY WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IN EACH DIRECTION OF TOWARD THE SEEDING AREA, APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A ROLLED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DURING CULTIVATION SEEDING, MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL, OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT REASSIMILATION OF PHYTO-TOXIC MATERIALS.
 - APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A ROLLED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DURING CULTIVATION SEEDING, MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL, OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT REASSIMILATION OF PHYTO-TOXIC MATERIALS.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - CROSSSEEDING: 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; SOLUBLE NITROGEN, 200 POUNDS PER ACRE; POTASSIUM, 200 POUNDS PER ACRE; PHOSPHORUS, 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.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

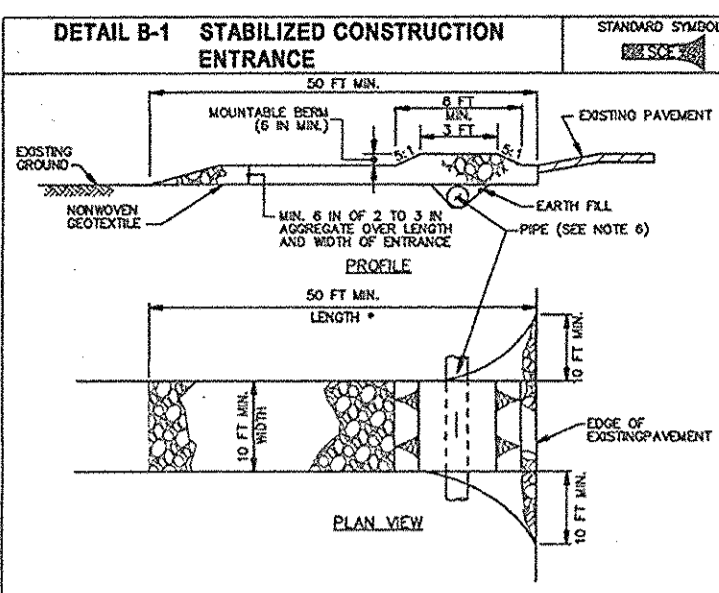
- TOPSOILING
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW NUTRIENT CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL COMPOSITION.
 - TOPSOIL SAMPLES FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SAWAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE RECOMMENDED SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - TOPSOILING 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 CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND APPROVAL.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT 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 NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CONCRETE, STONES, SLAG, COMESTIBLES, CORALS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOxious PLANTS OR PLANT PARTS SUCH AS BERNARDIA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, PISONIUM, NETTLE, 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.

- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY BRIDGE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. SMOOGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT WINDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP FIRM OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOIL CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLIEING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITH EIGHT HOURS.
- SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENT AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

**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 AREA NOT UNDER ACTIVE CONSTRUCTION.
- CRITERIA**
- SEEDING
 - 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 8.4 REGARDING THE QUALITY OF SEED. SEED TAGS 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 THAWED.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIALLY 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 INCUBATING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN KILL 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 REASSIMILATION OF PHYTO-TOXIC MATERIALS.
 - APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A ROLLED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DURING CULTIVATION SEEDING, MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL, OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT REASSIMILATION OF PHYTO-TOXIC MATERIALS.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - CROSSSEEDING: 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; SOLUBLE NITROGEN, 200 POUNDS PER ACRE; POTASSIUM, 200 POUNDS PER ACRE; PHOSPHORUS, 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.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

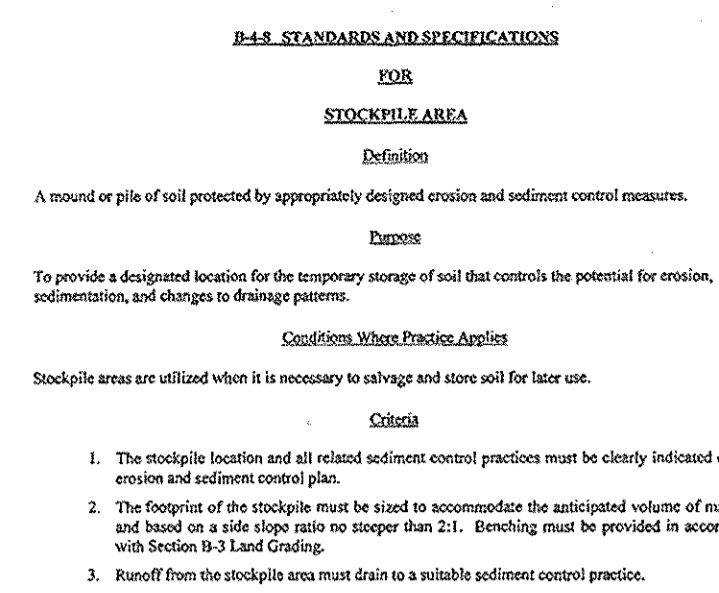
- MULCHING
 - MULCH MATERIALS (IN ORDER OF PREFERENCE):
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOxious WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND MUST NOT BE MOLDY, CAVED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE OF THE 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 DIED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SLURRY.
 - WCFM INCLUDING DYES 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 AGRITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERMEATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - 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 1.6 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 MULCH ANCHORING TOWEL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER MULCH 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 (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - A MULCH ANCHORING TOWEL 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 MULCH 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 OIL (A60-100), 624-70, PETROSEAL, TERRA TAC II, TERRA TACK AR 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 WALLS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LEIGHTWEIGHT 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.



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SEED. USE MINIMUM LENGTH OF 50 FEET FOR FEET FOR BRIDGE (SEE NOTE 1) USE MINIMUM WIDTH OF 10 FEET. PLACE SIDE TO FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TIBRID RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO BE DIVERTED TOWARD THE SIDE OF THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SEED WITH A MOUNTAINABLE BENCH. A MINIMUM OF 6 INCHES OF STONE OR OTHER MATERIAL SHALL BE PLACED OVER ANY PIPE OR DRAINAGE TO PROTECT THE SEED FROM DAMAGE.
- PREPARE SUBGRADE AND PLACE HOMOGENEOUS GENTLE SLOPE AS SPECIFIED IN SECTION 4-1 MATERIALS.
- PLACE OBVIOUS AGGRESSIVE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CORNERS (NEHROT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE CURB.
- MAINTAIN STRAIGHT CHANNELS THAT MINIMIZE TRAPPING OF DEBRISH AND STONE OR OTHER TRAP AS CONDITIONS EXIST TO MAINTAIN CLEAN SURFACE. MOUNTAINABLE BENCH AND STRIPES WITH ADJUSTED SPACING BY VEHICULAR, PERFORM AND/OR SPEEDING. WASHING ROADWAY TO BRUSH AND TRASH. ROADWAY 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 2011 MARYLAND DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES CONSTRUCTION SECTION 2011 MARYLAND DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES CONSTRUCTION SECTION 2011



CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR GREATER THAN THE SHEAR STRESS OF APPROVED PLANE.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF STRAW OR WOOD CELLULOSE FIBER OR OTHER MATERIALS THAT MEET THE REQUIREMENTS OF SECTION 8-4-3. THE MATTING SHALL BE NON-TOXIC AND NOT BE CONTAMINATED BY OILS, GREASES, OR OTHER POLLUTANTS. THE MATTING SHALL BE APPLIED TO THE ENTIRE LENGTH AND WIDTH OF THE CHANNEL. THE MATTING SHALL BE APPLIED TO THE ENTIRE LENGTH AND WIDTH OF THE CHANNEL. THE MATTING SHALL BE APPLIED TO THE ENTIRE LENGTH AND WIDTH OF THE CHANNEL.
- REMOVE MATTING FROM THE CHANNEL WHEN THE SEED HAS ESTABLISHED. REMOVE MATTING FROM THE CHANNEL WHEN THE SEED HAS ESTABLISHED. REMOVE MATTING FROM THE CHANNEL WHEN THE SEED HAS ESTABLISHED.
- PERFORM FINE GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR PERMANENT SEEDING. REMOVE MATTING FROM THE CHANNEL WHEN THE SEED HAS ESTABLISHED.
- MAINTAIN MATTING IN POSITION OF WATER FLOW. REMOVE THE FIRST ROW ON THE CHANNEL CENTER LINE. REMOVE ROWS OF MATTING DOWNWARD WITH PLACING ROWS OF MATTING DOWNWARD WITH PLACING ROWS OF MATTING DOWNWARD WITH PL

N-2. DISCONNECTION OF NON-ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH NON-ROOFTOP DISCONNECTIONS:

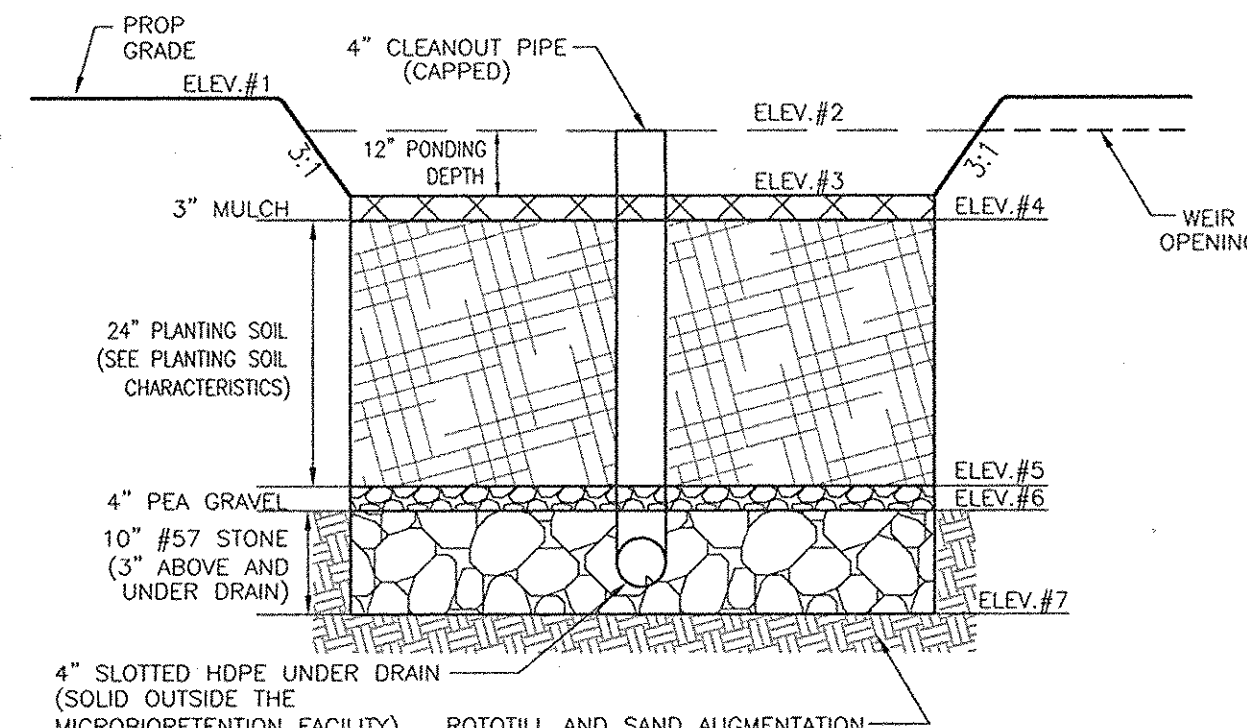
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN AREAS DESIGNATED FOR NON-ROOFTOP DISCONNECTIONS.
- SITE DISTURBANCE: TO MINIMIZE DISTURBANCE AND COMPACTION, CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:

A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT ADEQUATE TREATMENT AREAS AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

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 (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, HIGH FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.



DETAIL - MICROBIORETENTION/RAIN GARDEN (M-6)
NOT TO SCALE

NOTES

- THE SIDES OF THE MBR'S ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC SHALL NOT BE INSTALLED BETWEEN THE MBR LAYERS OR AT THE BOTTOM OF THE MICRO-BIORETENTION AS IT WILL CAUSE THE MBR TO FAIL.
- THE PERFORATED UNDERDRAIN PIPE OF THE MBR SHOULD BE WRAPPED WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

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

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

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SOLID OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE A HAZARD TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COVER 15.01010. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
• SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)
• ORGANIC CONTENT - MINIMUM 10% BY WEIGHT (ASTM D 2974). ORGANIC MATTER CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (50%), COMPOST SAND (50%), AND COMPOST (40%).
• CLAY CONTENT - MINIMUM 1% BY WEIGHT (ASTM D 2974).
• PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SHEET STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TYRES, RUBBER TYRES WITH LARGE LUGS, OR HIGH-PRESSURE TYRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE AVOIDED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, ROLLER, OR HIGH-PRESSURE TYRES TO BREAK UP THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY POOLED WATER BEFORE ROTOTILLING (ROTOTILL) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINISH GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12 TO 15". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SAND AND SAND. GROUND BORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SUBSEQUENT TO A UNIFORM THICKNESS OF 2" TO 3" SHREDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTBOOTS OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/2" OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE BALL. MULCH SHOULD BE PLACED 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLANTS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS BEYOND, OR AT A MINIMUM, IMPROVES THIS SOIL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL LIME FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
• PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER.
• PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER FOOT. PERFORATIONS SHOULD BE WRAPPED WITH A 1/4" (60 x 60) GALVANIZED HARDWARE CLOTH.
• GRAVEL - THE GRAVEL LAYER (NO. 57 STONE) SHOULD BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
• THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
• BEHIND PERFORATED UNDERDRAIN MULCH MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PRODUCE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
• A 4" LAYER OF PEA GRAVEL (1/2" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM FOR EVERY 1,000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

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

MICRO BIO-RETENTION (M-6) ELEVATIONS										
LOT #	FACILITY #	SIZE	1	2	3	4	5	6	7	4" INV. OUTFALL
LOT 6	MBR-1	78 CF	448.40	448.00	447.00	446.75	444.75	444.42	443.59	443.84
	MBR-2	78 CF	450.40	450.00	449.00	448.75	446.75	446.42	445.59	445.84

SWM PRACTICE CHART		
ESD PRACTICES BY LOT		
LOT #	ADDRESS	ESD PRACTICE
#6	TALBOTS LANDING	NON-ROOFTOP DISCONNECT (N-2), AND MICRO BIO-RETENTION (M-6)

OWNER/DEVELOPER

ALGIRDAS J. BRASAUŠKAS
ELIZABETH A. BRASAUŠKAS
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
240-876-4471

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
SWM DRAINAGE AREA MAP;
SWM NOTES AND DETAILS
WRIGHT PROPERTY LOTS 5 & 6
A RE-SUBDIVISION OF WRIGHT PROPERTY LOT 3, PLAT 5410
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
(L. 1254 / F. 173)
ZONED: R-20
USE: RESIDENTIAL
HOWARD COUNTY, MARYLAND
PARCEL 545
TAX MAP: 31 GRID: 15
1ST ELECTION DISTRICT

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

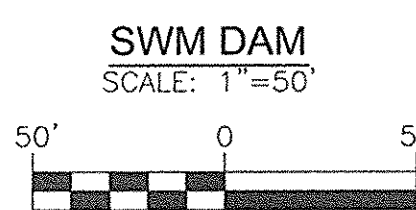
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15193, EXPIRATION DATE: 09-27-2016.
DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: AUGUST 2015
SCALE: AS SHOWN
W.O. NO.: 12-27
4 SHEET OF 5

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

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

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

Material	Specifications	Size	Notes
Planting soil	See Appendix A, Table A.4	n/a	Plantings are site-specific
Planting soil (1" to 4" deep)	loamy sand (60-65%) & loess (35-40%) or sandy loam (35%) course sand (30%) & compost (35%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	shredded hardwood	n/a	aged 6 months, minimum, no pine or wood chips
Filter gravel diaphragm	pea gravel: ASTM D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 3" to 5"	
Geotextile	n/a	n/a	FS Type I nonwoven
Gravel (underdrains and infiltration basins)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (1 1/2" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe, 3/8" per 6" on center, 4 holes per row, minimum of 2' of gravel cover pipe, not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4" galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Min. No. 3; F _c = 3500 psi @ 28 days, normal weight, air-entrained, conforming to most ASTM-615-00	n/a	on-site testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved design or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 309.8.2.9; vertical loading (10-10 or 10-20) allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO M-66 or ASTM C-33	0.00" to 0.04"	Small substitutions with Dri-Sand and Crystalline (AASHTO #10 are not acceptable. No calcium carbide or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



LEGEND:

	PROPERTY LINE		
	RIGHT-OF-WAY LINE		EXISTING FENCE
	ADJACENT PROPERTY LINE		EXISTING 10' CONTOUR
	EXISTING CURB AND OUTER EDGE OF PAVING		EXISTING 2' CONTOUR
	EX. 20' PUBLIC SEWER & UTILITY EASEMENT		PROPOSED TREE LINE
	EX. 25' x 30' INGRESS & EGRESS EASEMENT		PROPOSED 10' CONTOUR
	EXISTING UTILITY POLE		PROPOSED 2' CONTOUR
	EXISTING SIGN		PROPOSED SPOT ELEVATION
	EXISTING SANITARY MANHOLE		DRAINAGE AREA DIVIDE
	EXISTING SANITARY LINE		PROPOSED TEST PIT
	EXISTING CLEANOUT		MICRO-BIORETENTION (M-6)
	EXISTING FIRE HYDRANT		EXISTING MODERATE SLOPES
	EXISTING WATER LINE		EX. 20' PUBLIC SEWER & UTILITY EASEMENT
	EXISTING TREE LINE		EX. 25' x 30' INGRESS & EGRESS EASEMENT
	EXISTING TREES		EX. 20' PUBLIC SEWER & UTILITY EASEMENT

SOILS LEGEND

SYMBOL	CHILLUM-RUSSETT NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
CHD	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES	B	.37	YES
CID	CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	C	.28	NO
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	.37	YES
UCd	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	B	.37	YES

-SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
-HOWARD COUNTY SOILS MAP NUMBER 19 - SAVAGE NE

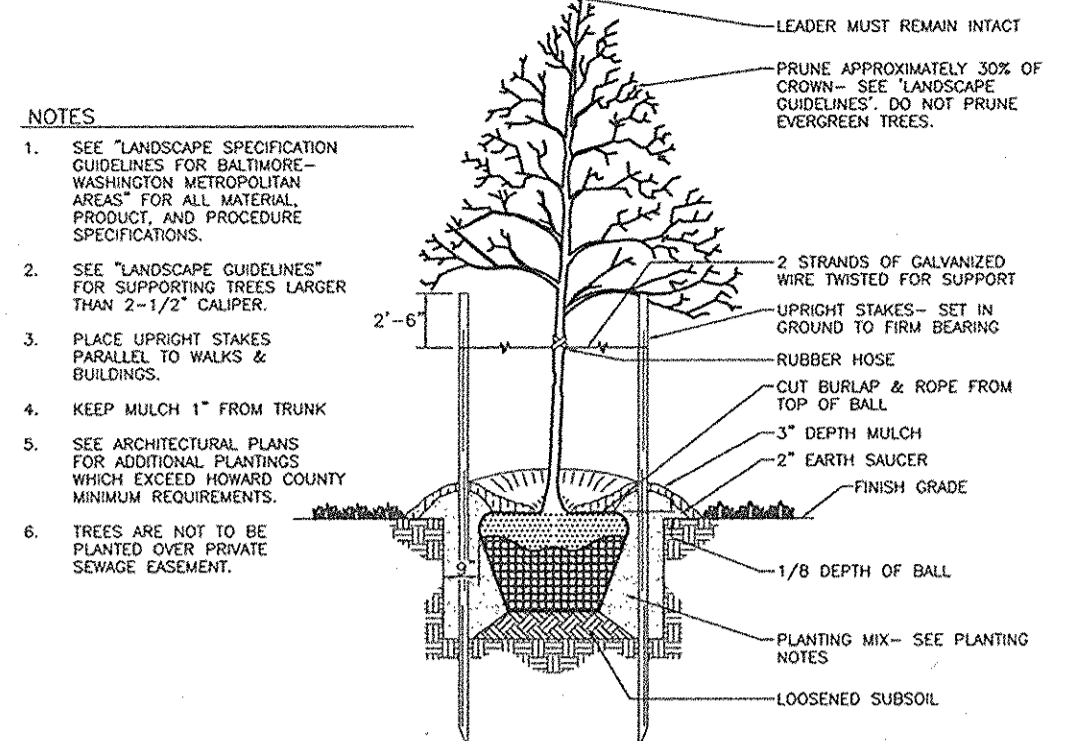
NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 8-9-15
DATE: 9-10-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT

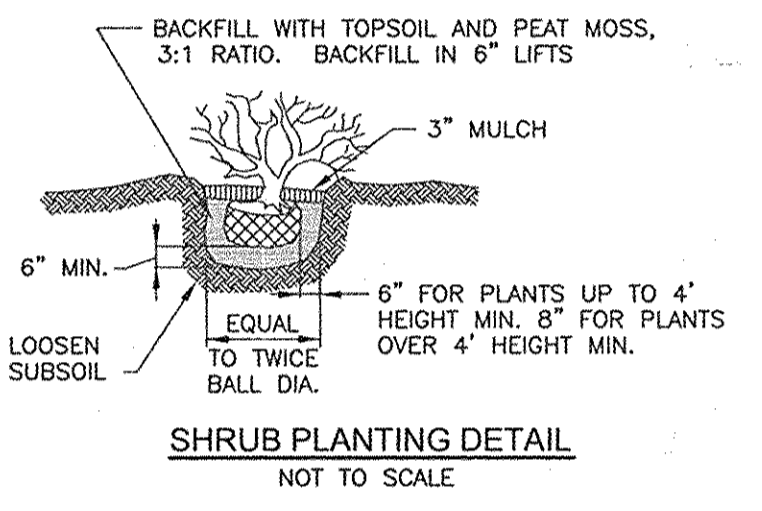
LANDSCAPE SCHEDULE					
SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
(+)	AR	2	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2"-3" CAL.	B & B
(O)	GB	1	GINKGO BILOBA 'AUTUMN GOLD' AUTUMN GOLD GINKGO (MALE ONLY)	2-1/2"-3" CAL.	B & B

FOREST CONSERVATION WORKSHEET		
Version 1.0		
Project: 5110 Talbot's Landing Road		
Date: December 17, 2013		
NET TRACT AREA		
A. Total tract area	Acres	1.6
B. Area within 100 Year Floodplain		0
C. Area to remain in agricultural production		0
D. Net Tract Area		1.6
LAND USE CATEGORY (from table 3.2.1, page 40, Manual)		
ARA MDR IDA HDR MPD CIA		
E. Afforestation Threshold (percentage)	15	0.2
F. Conservation Threshold (percentage)	20	0.3
EXISTING FOREST COVER:		
G. Existing forest cover (excluding floodplain)		0
H. Area of forest above afforestation threshold		0
I. Area of forest above conservation threshold		0
BREAK EVEN POINT:		
J. Forest retention above threshold with no mitigation	Break-Even Point	NA
K. Clearing permitted without mitigation		
PROPOSED FOREST CLEARING		
L. Total area of forest to be Cleared or Retained Outside FCE		
M. Total area of forest to be Retained in FCE		
PLANTING REQUIREMENTS		
N. Reforestation for clearing above Conservation Threshold		0
O. Reforestation for clearing below Conservation Threshold		0
P. Credits for retention above conservation threshold		0
Q. Total reforestation required		0
R. Total afforestation required		0.2
T. Total reforestation and afforestation required		0.2



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER
NOT TO SCALE

LEGEND:	
(---)	PROPERTY LINE
(---)	RIGHT-OF-WAY LINE
(---)	ADJACENT PROPERTY LINE
(---)	EXISTING CURB AND GUTTER
(---)	EXISTING EDGE OF PAVING
(---)	EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3638 FOLIO 446
(---)	EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3635 FOLIO 411 (TO BE ABANDONED)
(---)	EX. 25' x 30' INGRESS & EGRESS EASEMENT FOR LOTS 2 & 3 LIBER 2890 FOLIO 246
(---)	EXISTING UTILITY POLE
(---)	EXISTING SIGN
(---)	EXISTING SANITARY MANHOLE
(---)	EXISTING SANITARY LINE
(---)	EXISTING CLEANOUT
(---)	EXISTING FIRE HYDRANT
(---)	EXISTING WATER LINE
(---)	EXISTING TREELINE
(---)	EXISTING TREES
(---)	EXISTING FENCE
(---)	EXISTING 10' CONTOUR
(---)	EXISTING 2' CONTOUR
(---)	SOILS
(---)	PROPOSED TREELINE
(---)	PROPOSED 10' CONTOUR
(---)	PROPOSED 2' CONTOUR
(---)	MICRO-BIORETENTION (M-B)

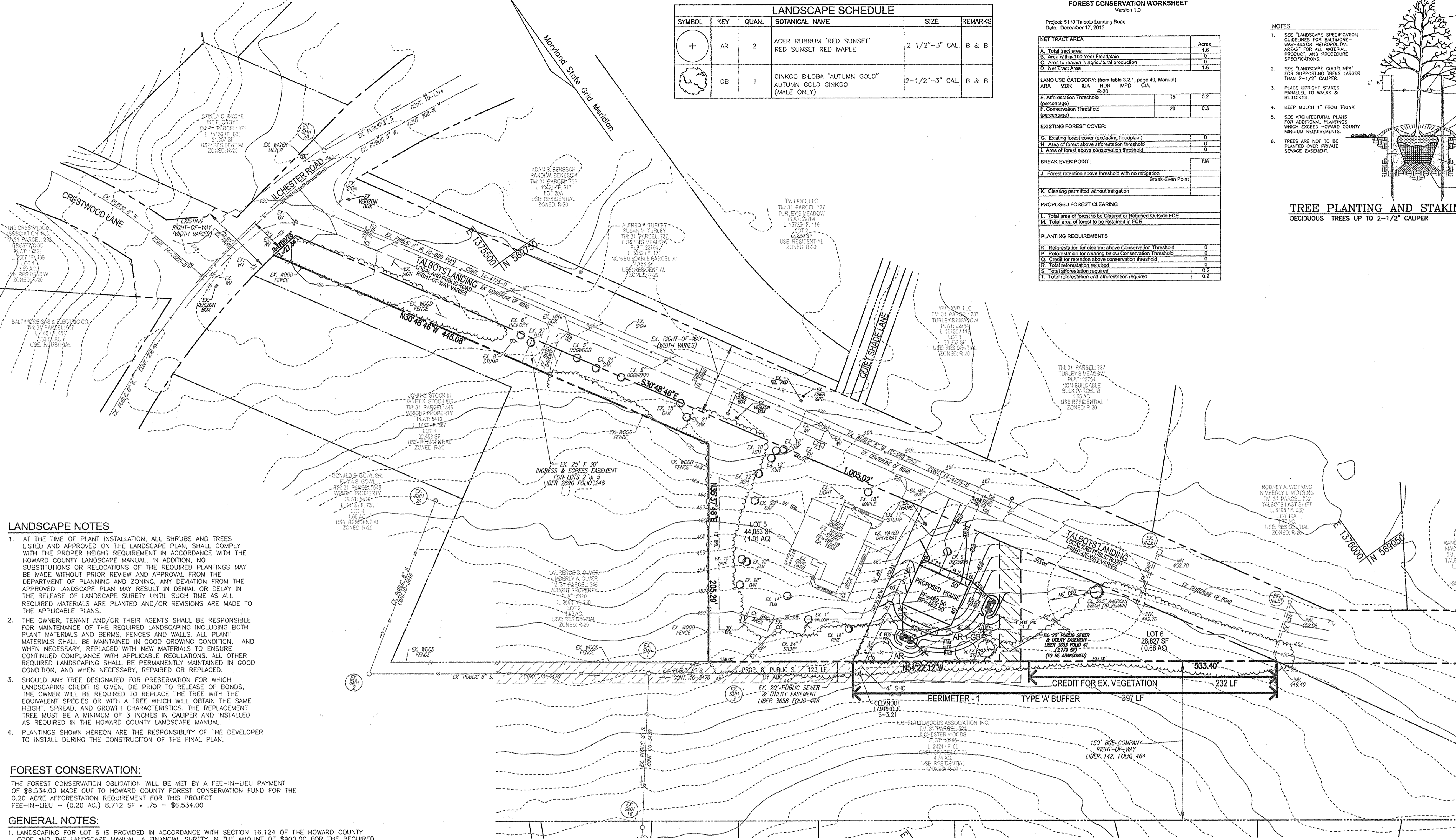


SHRUB PLANTING DETAIL
NOT TO SCALE

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.
6. FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH.

OWNER/DEVELOPER
ALGIRDAS J. BRASAUŠKAS
ELIZABETH A. BRASAUŠKAS
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
240-876-4471



LANDSCAPE NOTES

1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
2. THE OWNER, TENANT 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 MATERIALS SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

FOREST CONSERVATION:

THE FOREST CONSERVATION OBLIGATION WILL BE MET BY A FEE-IN-LIEU PAYMENT OF \$6,534.00 MADE OUT TO HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 0.20 ACRE AFFORESTATION REQUIREMENT FOR THIS PROJECT.
FEE-IN-LIEU - (0.20 AC.) 8,712 SF x .75 = \$6,534.00

GENERAL NOTES:

1. LANDSCAPING FOR LOT 6 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$900.00 FOR THE REQUIRED 3 SHADE TREES SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PLAN.
2. THERE IS NO 100-YEAR FLOODPLAIN WITHIN THE LIMITS OF THIS PROJECT.
3. THERE ARE NO WETLANDS, OR WETLAND BUFFERS LOCATED WITHIN THE LIMITS OF THIS SITE.
4. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS AND THEIR REQUIRED BUFFERS.
5. THE SUBJECT PROPERTY IS ZONED "R-20" IN ACCORDANCE WITH THE 10/06/13 COMPREHENSIVE ZONING PLAN.
6. THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT AUGUST, 2013 BY ROBERT H. VOGEL ENGINEERING, INC.
7. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN TOPOGRAPHIC SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED AUGUST 2013.
8. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
9. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO GRAVE SITES, OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
10. THE REMOVAL OF TREES 30" OR GREAT DBH IS PROHIBITED WITHOUT COUNTY WAIVER APPROVAL.

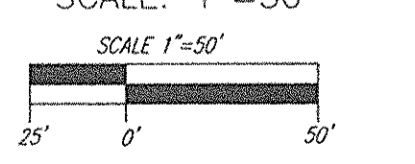
LANDSCAPE SCHEDULE NOTE:

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

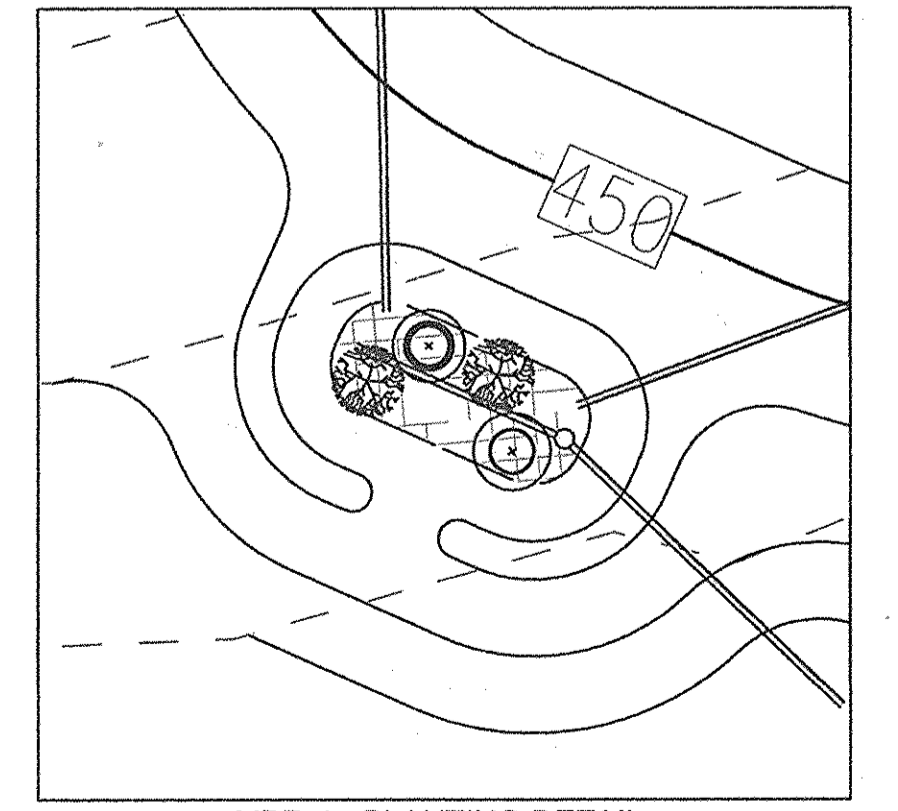
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
9.9.15
Chief, Division of Land Development
9.10.15

LANDSCAPE PLAN
SCALE: 1"=50'



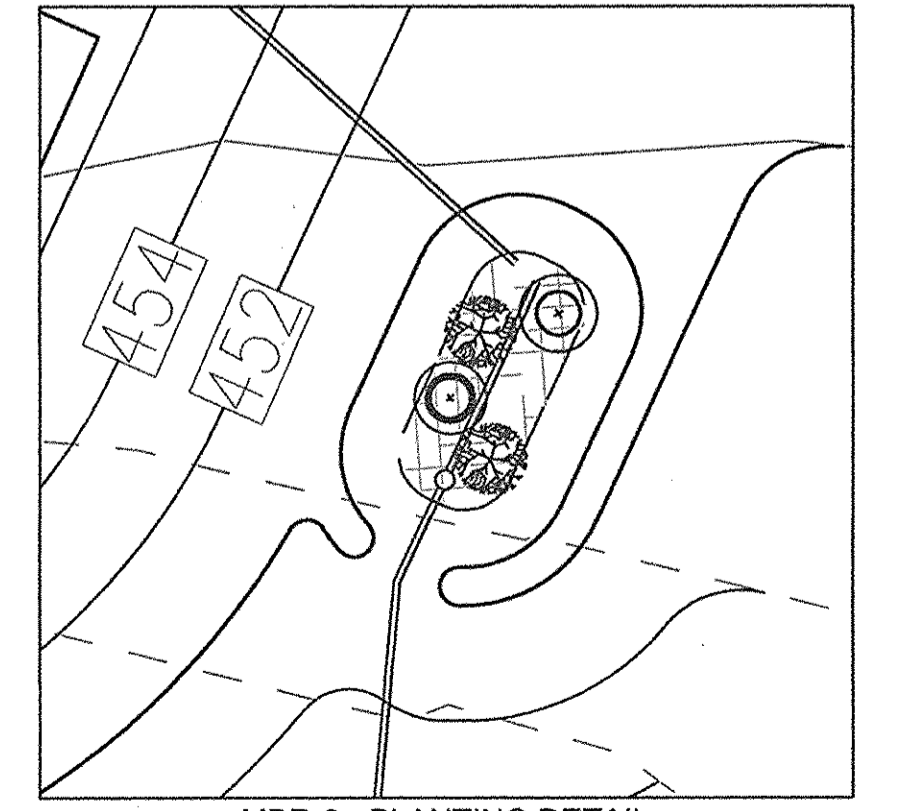
SCHEDULE A: PERIMETER LANDSCAPE EDGE		
CATEGORY	ADJACENT TO PERIMETER PROPERTIES	TOTAL
PERIMETER/FRONTAGE DESIGNATION	1	
LANDSCAPE TYPE		
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	397'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES	232'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	
NUMBER OF PLANTS REQUIRED (IF REMAINING)	165	
SHADE TREES	1:60 3	3
EVERGREEN TREES		
SHRUBS		
NUMBER OF PLANTS PROVIDED		
SHADE TREES	3	3
EVERGREEN TREES		
OTHER TREES (2:1 SUBSTITUTION)		
SHRUBS (10:1 SUBSTITUTION)		
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)		



MBR-1 - PLANTING DETAIL
SCALE: 1"=10'

MICRO-BIORETENTION PLANTING SCHEDULE			
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
1	LINDERA BENZON SPICEBUSH	5 GALLON	CONT
1	ILEX GLABRA INKBERRY	3 GALLON	CONT
2	VIORUM TRILOBUM AMERICAN HICHOUSH CRANBERRY	3 GALLON	CONT

78 SF X 75% X .0229 STEMS PER SQUARE FOOT = 2 PLANTS REQUIRED



MBR-2 - PLANTING DETAIL
SCALE: 1"=10'

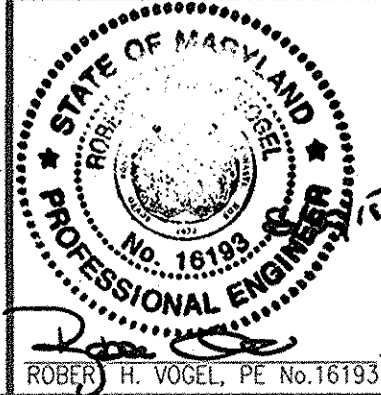
MICRO-BIORETENTION PLANTING SCHEDULE			
QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
1	LINDERA BENZON SPICEBUSH	5 GALLON	CONT
1	ILEX GLABRA INKBERRY	3 GALLON	CONT
2	VIORUM TRILOBUM AMERICAN HICHOUSH CRANBERRY	3 GALLON	CONT

78 SF X 75% X .0229 STEMS PER SQUARE FOOT = 2 PLANTS REQUIRED

NO.	REVISION	DATE

SUPPLEMENTAL INFORMATION PLAN
LANDSCAPE AND MICRO-BIORETENTION PLANTING PLAN, NOTES, AND DETAILS
WRIGHT PROPERTY LOTS 5 & 6
A RE-SUBDIVISION OF WRIGHT PROPERTY LOT 3, PLAT 5410
5110 TALBOTS LANDING
ELLCOTT CITY, MD 21043
ZONED: R-20
TAX MAP: 31 GRID: 15
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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



DESIGN BY: RHY
DRAWN BY: JMR
CHECKED BY: RHY
DATE: AUGUST 2015
SCALE: AS SHOWN
W.O. NO.: 12-27
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18193 EXPIRATION DATE: 09-29-2016
5 SHEET OF 5