

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOILS SEDIMENT CONTROL NOTES 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF II. FOR SITES HAVING DISTURBED AREAS UNDER 5 INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF i. PLACE TOPSOIL (IF REQUIRED) AND APPLY 2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE %%U1994 SOIL AMENDMENTS AS PERMANENT VEGETATION. MARYLAND PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE %%USTANDARDS AND SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE SPECIFICATIONS FOR SOIL FROSION AND SEDIMENT: AND REVISIONS THERETO, %%UCONTROL OPEN SPACE TABILIZATION METHODS AND MATERIALS. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY TO PROVIDE A SUITABLE SOIL MEDIUM FOR STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT III. FOR SITES HAVING DISTURBED AREAS OVER 5 VEGETABLE GROWTH. SOILS OF CONCERN HAVE CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1, (B) 14 DAYS AS LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE I. ON SOIL MEETING TOPSOIL UNACCEPTABLE SOIL GRADATION. SPECIFICATIONS, OBTAIN TEST RESULTS 4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM CONDITIONS WHERE PRACTICE APPLIES DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE . THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 SOIL INTO COMPLIANCE WITH THE 5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE %%U1994 OR FLATTER SLOPES WHERE: MARYLAND STANDARDS AND SPECIFICATIONS IN ACCORDANCE WITH THE FOR PERMANENT SEEDING, A. THE TEXTURE OF THE EXPOSED SOD, %%UFOR SOIL EROSION AND SEDIMENT CONTROL TEMPORARY SEEDING, AND MULCHING (SEC. G). SUBSOIL/PARENT MATERIAL IS NOT A. PH FOR TOPSOIL SHALL BE BETWEEN TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES 6.0 AND 7.5. IF THE TESTED SOIL ADEQUATE TO PRODUCE VEGETATIVE DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES. DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE B. THE SOIL MATERIAL IS SO SHALLOW THAT 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN THE ROOTING ZONE IS NOT DEEP ENOUGH PRESCRIBED TO RAISE THE PH TO 6.5 OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD TO SUPPORT PLANTS OR FURNISH COUNTY SEDIMENT CONTROL INSPECTOR. CONTINUING SUPPLIES OF MOISTURE AND B. ORGANIC CONTENT OF TOPSOIL PLANT NUTRIENTS 7. SITE ANALYSIS: SHALL BE NOT LESS THAN 1.5 C. THE ORIGINAL SOIL TO BE VEGETATED PERCENT BY WEIGHT. CONTAINS MATERIAL TOXIC TO PLANT D. THE SOIL IS SO ACIDIC THAT TREATMENT C. TOPSOIL HAVING SOLUBLE SALT AREA DISTURBED ..0.79 AC± AREA TO BE ROOFED OR PAVED0.36 AC± CONTENT GREATER THAN 500 PARTS WITH LIMESTONE IS NOT FEASIBLE. AREA TO BE VEGETATIVELY STABILIZED.. ..0.43 AC± PER MILLION SHALL NOT BE USED. II. FOR THE PURPOSE OF THESE STANDARDS AND **TOTAL CUT** ..800 CY± D. NO SOD OR SEED SHALL BE PLACED ...0 CY± SPECIFICATIONS, AREAS HAVING SLOPES OFFSITE WASTE/BORRÓW AREA LOCATION.. ON SOIL SOIL WHICH HAS BEEN STEEPER THAN 2:1 REQUIRE SPECIAL TREATED WITH SOIL STERILANTS OR CONSIDERATION AND DESIGN FOR ADEQUATE 8, ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF STABILIZATION. AREAS HAVING SLOPES STEEPER CHEMICALS USED FOR WEED UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. THAN 2:1 SHALL HAVE THE APPROPRIATE CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO STABILIZATION SHOWN ON THE PLANS. 9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD PERMIT DISSIPATION OF COUNTY SEDIMENT CONTROL INSPECTOR CONSTRUCTION AND MATERIAL SPECIFICATIONS PHYTO-TOXIC MATERIALS. 10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY I. TOPSOIL SALVAGED FROM THE EXISTING SITE NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS. AS RECOMMENDED BY A QUALIFIED AGRONOMIST SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT MAY BE USED PROVIDED THAT IT MEETS THE CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER STANDARDS AS SET FORTH IN THESE OR SOIL SCIENTIST AND APPROVED BY THE BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL SPECIFICATIONS. TYPICALLY, THE DEPTH OF APPROPRIATE APPROVAL AUTHORITY, MAY BE TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL USED IN LIEU OF NATURAL TOPSOIL. TYPE CAN BE FOUND IN THE REPRESENTATIVE 11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH ii. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL SOIL PROFILE SECTION IN THE SOIL SURVEY SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER. * PUBLISHED BY USDA-SCS IN COOPERATION WITH AMENDMENTS A SPECIFIED IN 20.0 VEGETATIVE EARTHWORK QUANTITIES ARE SOLELY FOR THE PURPOSE OF CALCULATING FEES. CONTRACTOR TO STABILIZATION - SECTION I - VEGETATIVE MARYLAND AGRICULTURAL EXPERIMENTAL VERIFY ALL QUANTITIES PRIOR TO THE START OF CONSTRUCTION. ** TO BE DETERMINED BY CONTRACTOR, TABILIZATION METHODS AND MATERIALS. WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS V. TOPSOIL APPLICATION TOPSOIL MUST MEET THE FOLLOWING: . WHEN TOPSOILING, MAINTAIN NEEDED EROSION i. TOPSOIL SHALL BE A LOAM, SANDY LOAM. AND SEDIMENT CONTROL PRACTICES SUCH AS SEQUENCE OF CONSTRUCTION DIVERSIONS, GRADE STABILIZATION CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED STRUCTURES, EARTH DIKES, SLOPE SILT FENCE . OBTAIN GRADING PERMIT. AND SEDIMENT TRAPS AND BASINS. IF RECOMMENDED BY AN AGRONOMIST OR NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSE AND PERMITS AT (410) 313-1880 AT A SOIL SCIENTIST AND APPROVED BY THE LEAST 24 HOURS BEFORE STARTING ANY WORK. ii. GRADES ON THE AREAS TO BE TOPSOILED, APPROPRIATE APPROVAL AUTHORITY. INSTALL STABILIZED CONSTRUCTON ENTRANCES FOR LOTS 1-4. REPAIR OR REPLACE ANY EXISTING WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, REGARDLESS, TOPSOIL SHALL NOT BE A SILT FENCE AND SUPER SILT FENCE FROM F-07-041 AS NECESSARY. (1 WEEK) MIXTURE OF CONTRASTING TEXTURED SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN 4. UPON ISSUANCE OF A MARYLAND DEPARTMENT OF THE ENVIRONMENT STREAM CROSSING PERMIT SUBSOILS AND SHALL CONTAIN LESS THAN UTILIZE THE UTILITY CROSSING DETAILS LOCATED ON SHEET 4 TO INSTALL THE DRIVEWAY CULVERT 5% BY VOLUME OF CINDERS, STONES, AND THE PORTION OF THE 4 INCH WATER MAIN THAT CROSSES THE STREAM. THESE UTILITY iii. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN SLAG, COARSE FRAGMENTS, GRAVEL, CROSSINGS CAN BE CONSTRUCTED AT ANYTIME WITH THE APROVED MDE PERMIT AND AN ACTIVE STICKS, ROOTS, TRASH, OR OTHER A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL MATERIAL LARGER THAT 1 AND 1/2" IN ROUGH GRADE SITE AND BEGIN BUILDING CONSTRUCTION. (1 WEEK) BE PERFORMED IN SUCH A MANNER THAT FINISH BUILDING CONSTRUCTION AND PAVE DRIVEWAYS. (4 MONTHS) SODDING OR SEEDING CAN PROCEED WITH A UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE PERMISSION OF THE SEDIMENT ii. TOPSOIL MUST BE FREE OF PLANTS OR MINIMUM OF ADDITIONAL SOIL PREPARATION CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE ANY REMAINING PLANT PARTS SUCH AS BERMUDA GRASS, AND TILLAGE. ANY IRREGULARITIES IN THE QUACKGRASS, JOHNSONGRASS SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN NUTSEDGE, POISON IVY, THISTLE, OR -FOLLOWING INITIAL SOIL DISTURBANCE OR ANY REDISTURBANCES, PERMANENT OR OTHERS AS SPECIFIED. ORDER TO PREVENT THE FORMATION OF TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: DEPRESSIONS OR WATER POCKETS. A. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, iii. WHERE THE SUBSOIL IS EITHER HIGHLY SWALES AND ALL SLOPES GREATER THAN 3:1. iv. TOPSOIL SHALL NOT BE PLACE WHILE THE ACIDIC OR COMPOSED OF HEAVY CLAYS. B. 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS. TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY GROUND LIMESTONE SHALL BE SPREAD AT -DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE THE RATE OF 4-8 TONS/ACRE (200-400 CONDITION, WHEN THE SUBSOIL IS E NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN. POUNDS PER 1,000 SQUARE FEET) PRIOR XCESSIVELY WET OR IN A CONDITION THAT MAY TO THE PLACEMENT OF TOPSOIL. LIME OTHERWISE BE DETRIMENTAL TO PROPER SHALL BE DISTRIBUTED UNIFORMLY OVER GRADING AND SEEDBED PREPARATION DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES PERMANENT SEEDING NOTES **DETAIL 30 - EROSION CONTROL MATTING** APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED. SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED. SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/100 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL, AT THE TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ.FT.) 2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMATIC LIMESTONE (92 LBS/1000 SQ.FT.) AND APPLY 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC **CROSS-SECTION** INTO UPPER THREE INCHES OF SOIL. SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.05 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS, DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY:

DISCIDIAND MEETS TECHNICA

WWARD SOIL CONSERVATION DISTRICT

IATURAL RESOURCES CONSERVATION

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND

SERVICE

OPTION (1) 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND

TEMPORARY SEEDING NOTES

الموافقينيين المادو ووادان والمحارات الربية أأدان والما فالإياريها المكافئة أيها الإيارات

والروادي والمنافر والمراور وال

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

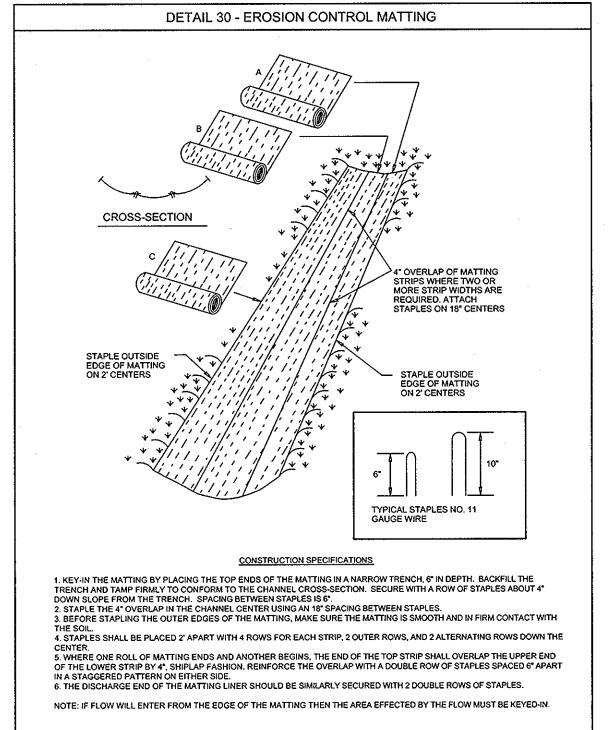
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14. SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED



ENGINEERS CERTIFICATE

PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD

10.16.07

WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE

EDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE

NO.

DESCRIPTION

REVISIONS

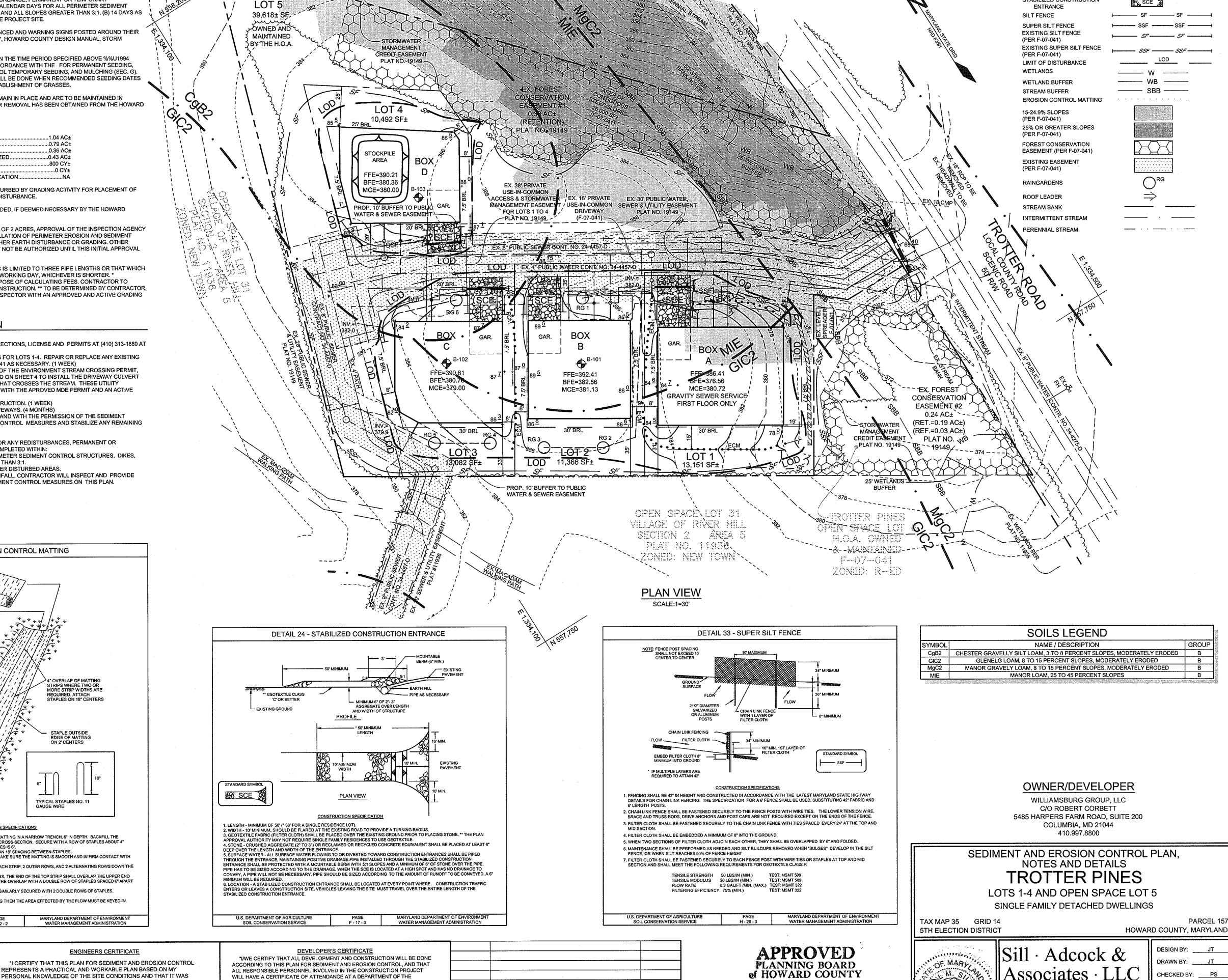
PERIODIC ON SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF

REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY

SOIL CONSERVATION DISTRICT.

PAUL M. SILL, P.E.



DATE JULY 19, 2007

DATE

SDP-07-030

SCALE: AS SHOWN

DATE: OCT. 15, 2007

PROJECT#: 06-016

SHEET#: 2 OF 4

Engineers · Surveyors · Planners

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Ellicott City, Maryland 21043

Email: info@saaland.com

LEGEND

EXISTING CONTOUR

SPOT ELEVATION

PROPOSED CONTOUR

DIRECTION OF FLOW

EXISTING TREES TO REMAIN

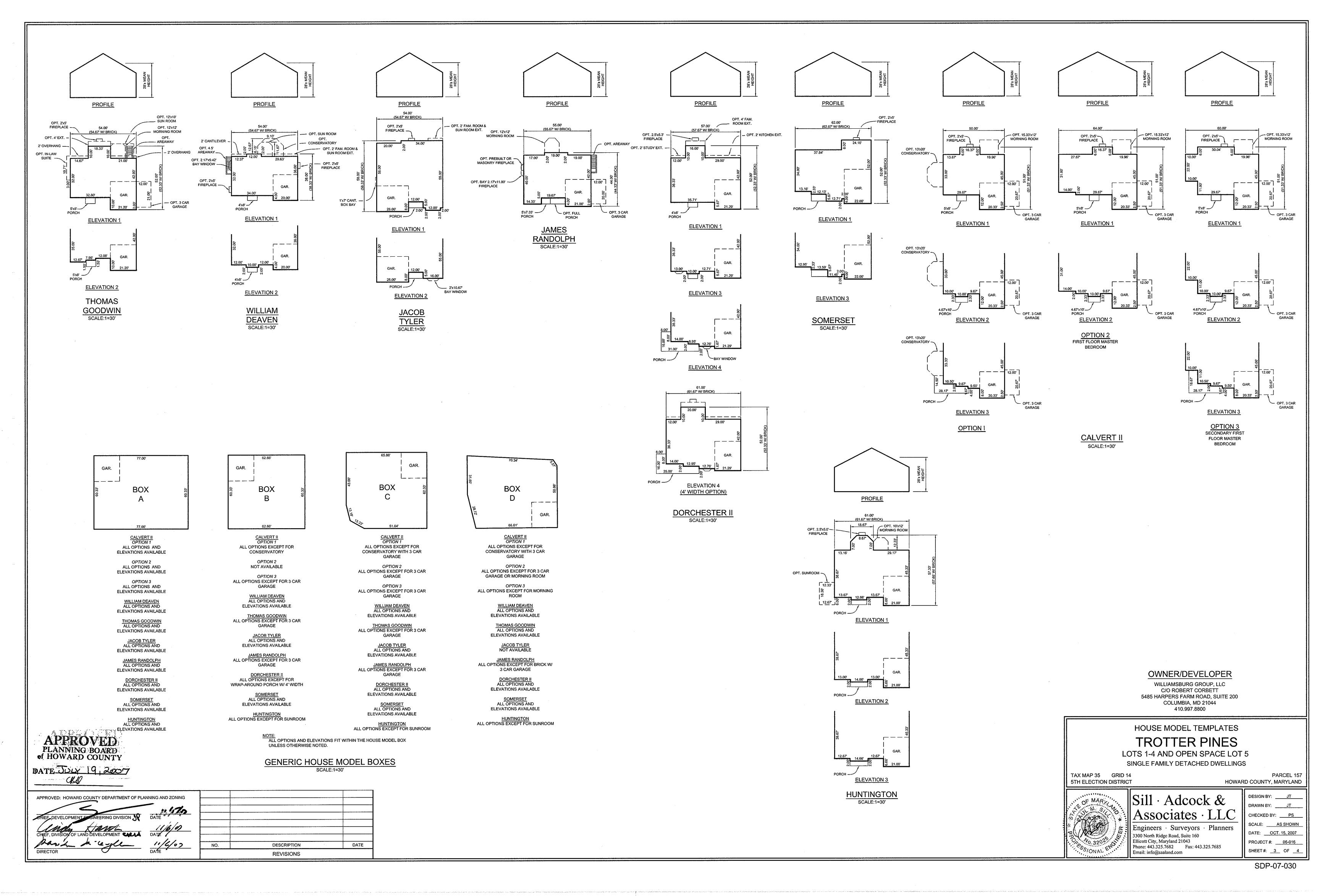
STABILIZED CONSTRUCTION

-----382

+82 53

man

SCE



MGWC 2.: PUMP-AROUND PRACTICE

DESCRIPTION: THE WORK SHALL CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND IN-STREAM CONSTRUCTION SITES.

SEDIMENT CONTROL MEASURES, PUMP AROUNDS, AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:

1. CONSTRUCTION ACTIVITIES INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BEGIN UNTIL ALL NECESSARY EASEMENTS AND/OR RIGHT-OF-WAYS HAVE BEEN ACQUIRED. ALL EXISTING UTILITIES SHALL BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY RESULT FROM CONSTRUCTION AND SHALL REPAIR THE DAMAGE AT HIS/HER OWN EXPENSE TO THE COUNTY'S SATISFACTION.

2. THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT OR WMA SEDIMENT CONTROL INSPECTOR AT LEAST 5 DAYS BEFORE BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHALL INFORM THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION AND THE

PROVIDER OF LOCAL UTILITIES A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION. 3. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ON SITE WITH THE WMA SEDIMENT CONTROL INSPECTOR, THE COUNTY PROJECT MANAGER, AND THE ENGINEER TO REVIEW LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. (THE CONTRACTOR SHALL STAKE OUT ALL LIMITS OF DISTURBANCE PRIOR TO THE PRE-CONSTRUCTION MEETING.) THE PARTICIPANTS WILL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREAS AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS. TREES SHALL NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM

4. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA

5. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHALL BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. THE CONTRACTOR SHALL ONLY BEGIN WORK IN AN AREA WHICH CAN BE COMPLETED BY THE END OF THE DAY (INCLUDING GRADING ADJACENT TO THE CHANNEL). AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING

6. SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS FO THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATER MADE OF RIPRAP OR SANDBAGS.

7. WATER FROM THE WORK AREA SHALL BE PUMPED TO SEDIMENT FILTERING MEASURE SUCH AS A SEDIMENT BAG. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE

8. TRAVERSING A CHANNEL REACH WITH EQUIPMENT WHERE NO WORK IS PROPOSED SHOULD BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHALL BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHALL BE USED ONLY WHEN NECESSARY AND ONLY WHERE NOTED ON THE PLANS OR SPECIFIED BY THE ENGINEER. 9. ALL STEAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CORSS-SECTIONS. ALL GRADING MUST BE PERMANENTLY STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATTING AS SPECIFIED ON THE PLANS. 10. AFTER AN AREA IS COMPLETED AND STABILIZED, SANDBAG DIVERSIONS, THE WATER PUMP, AND SEDIMENT

FILTERING MEASURE SHALL BE MOVED TO THE NEXT WORK AREA. THIS SHALL BE ACCOMPLISHED BY FIRST MOVING THE DOWNSTREAM SANDBAG DIKE TO THE NEW UPSTREAM PUMP AROUND LOCATION AND THEN BY RELOCATING THE UPSTREAM SANDBAG DIKE, VELOCITY DISSIPATER, AND SEDIMENT FILTER TO THE NEW DOWNSTREAM LOCATION. 11. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASE-FLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STEAM FLOW AROUND THE WORK AREA. THIS WATER SHOULD DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STEM PUMP

12. IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHOULD TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND PRACTICES, SHALL FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WHEN CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHALL RESUME. WATER FROM THE TRIBUTARY SHALL CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM. 13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVED THEIR REMOVAL.

14. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILES OR STORED IN NONTIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN. 2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE

WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR

3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS

4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN. 5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL

WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL. 6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100-YEAR FLOODPLAIN TEMPORARILY

IMPACTED BY ANY CONSTRUCTION. 7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING

ANNUAL RYE GRASS (Lolium multiflorum) MILLET (Setaria italica)

BARLEY (Hordeum sp.) OATS (Uniola sp.)

RYE (Secale cereale THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

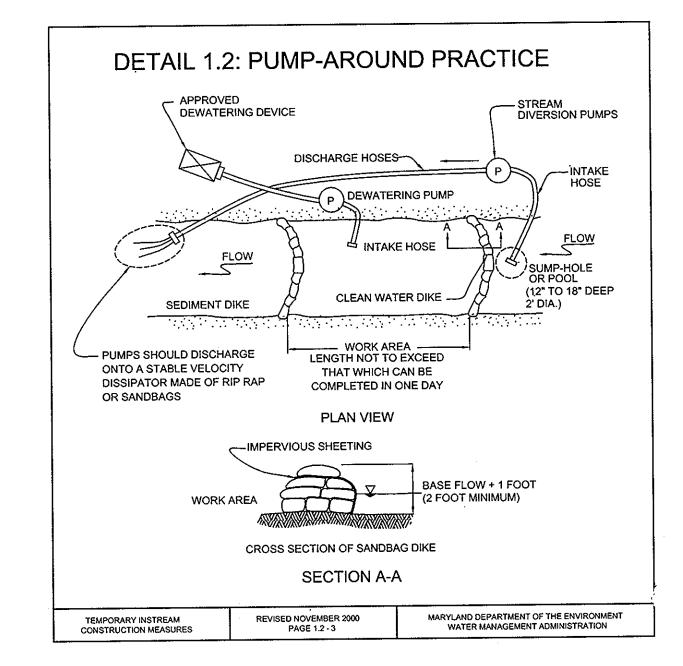
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

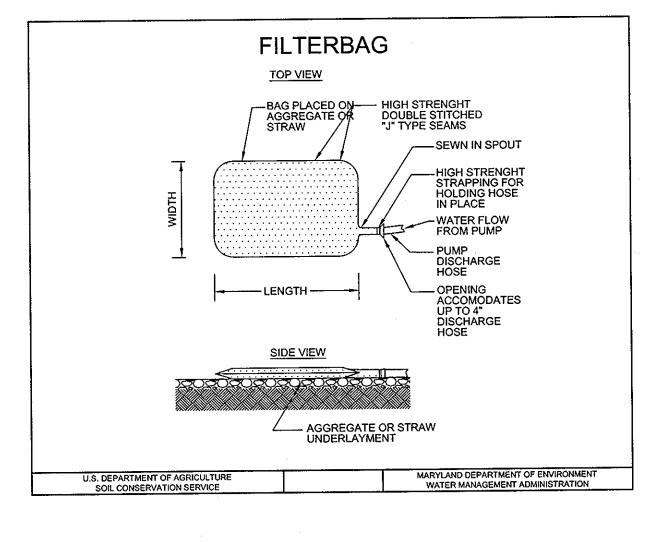
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM

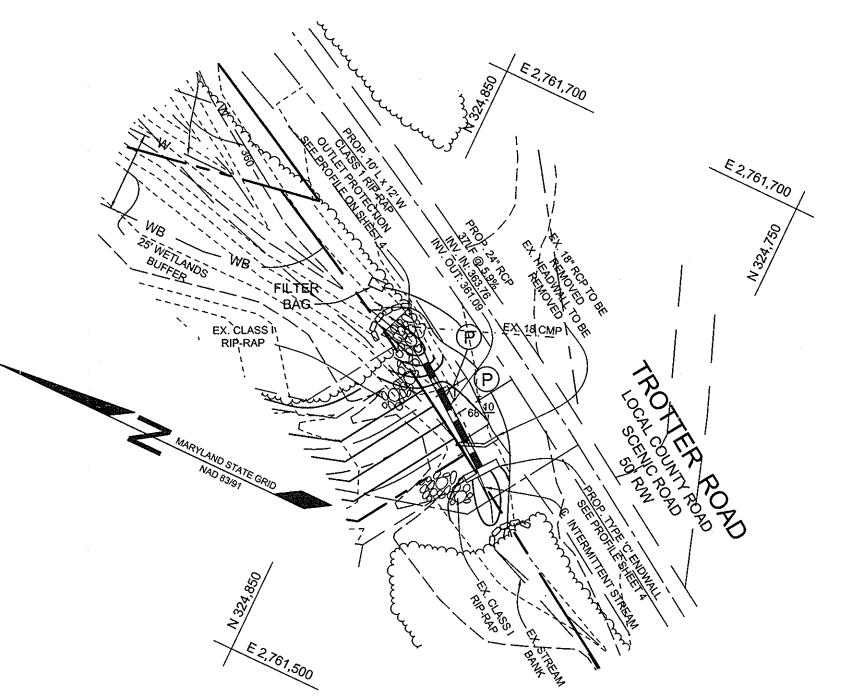
USE I WATERS: IN STREAM WORK SHALL BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR. 10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS

INTO THE WATERWAY. 11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DATE DESCRIPTION **REVISIONS**

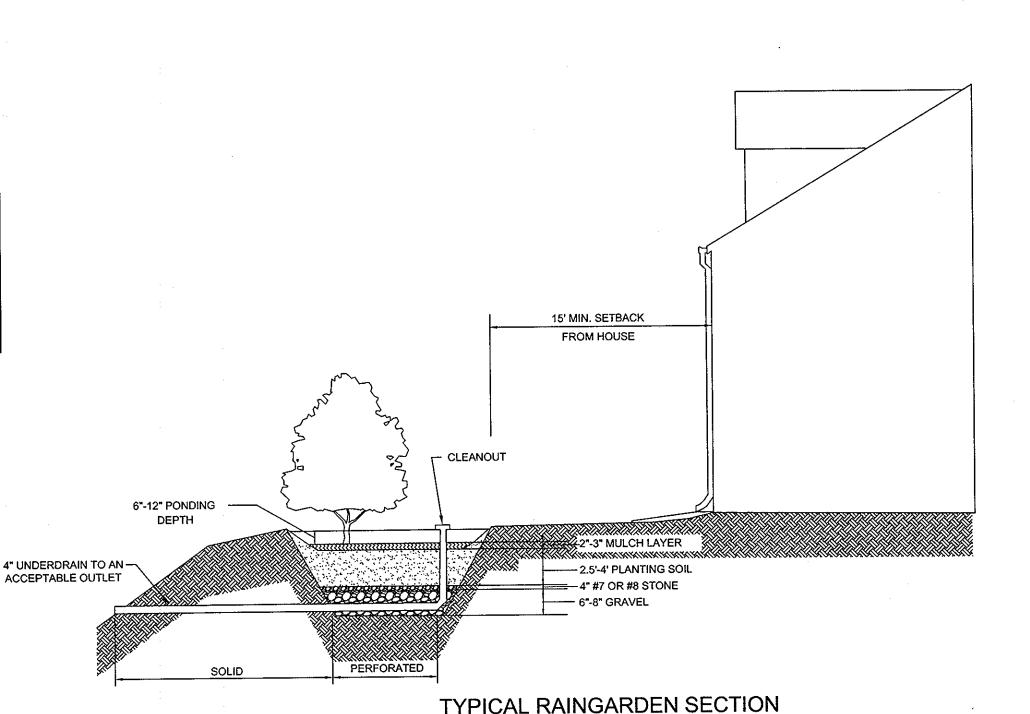




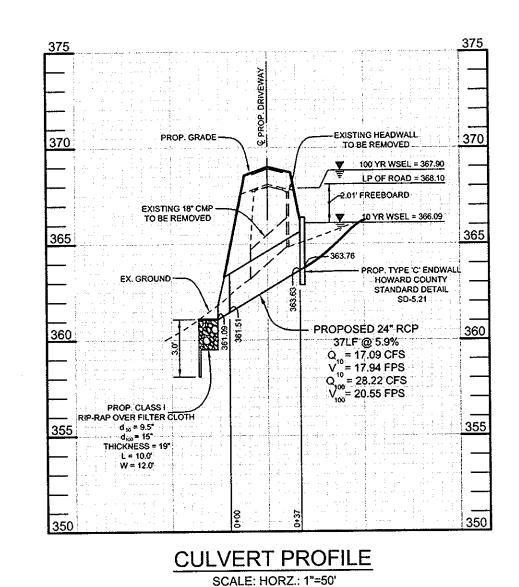


STREAM DIVERSION PLAN

NOTE: PUMP AROUND PRACTICE LOCATION IS SCHEMATIC



NOT TO SCALE



VERT.: 1"=5'

RAINGARDEN CHART									
NUMBER	LOCATION	SIZE	BOTTOM ELEVATION	PONDING DEPTH	GRAVEL DEPTH (Rev STORAGE)	UNDERDRAIN ELEVATION	WEIR ELEVATION		
1	LOT 2	50 SF	386.00	0.5'	2.5'	382.50	386.50		
2	LOT 2	50 SF	386.10	0.5'	2.5'	382.60	386.60		
3	LOT 2	50 SF	386.30	0.5'	2.5'	382.80	386.80		
4	LOT 3	50 SF	385.30	0.5'	2.5'	381.80	385.80		
5	LOT 3	50 SF	383.00	0.5'	2.5'	379.50	383.50		
6	LOT 3	50 SF	386.00	0.5'	2.5'	382.50	386.50		

RAINGARDEN PLANT LIST								
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE				
1	*	PLATANUS x ACERIFOLIA	LONDON PLANE TREE	2-1/2" - 3" CAL.				
1	₩	ILEX GLABRA	INK BERRY	2' - 3' HT.				
6		LOBELIA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER				
4	0	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER				
3	0	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER				

TOTAL: 13 PERENNIALS, 1SHRUB, 1 TREE (PER EACH RAINGARDEN)



RAINGARDEN PLANTING DETAIL

OWNER/DEVELOPER WILLIAMSBURG GROUP, LLC C/O ROBERT CORBETT 5485 HARPERS FARM ROAD, SUITE 200 COLUMBIA, MD 21044 410.997.8800

STREAM CROSSING AND RAINGARDEN DETAILS

TROTTER PINES

LOTS 1-4 AND OPEN SPACE LOT 5 SINGLE FAMILY DETACHED DWELLINGS

TAX MAP 35 GRID 14 5TH ELECTION DISTRICT

Engineers · Surveyors · Planners 3300 North Ridge Road, Suite 160 Ellicott City, Maryland 21043 Phone: 443.325.7682 Fax: 443.325.7685

CHECKED BY: PS DATE: OCT. 15, 2007 PROJECT#: 06-016 SHEET#: 4 OF 4 Email: info@saaland.com

SDP-07-030

PARCEL 157

HOWARD COUNTY, MARYLAND

