

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

A PRE-CONSTRUCTION MEETING MILEST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIMISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD A

MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: PRIOR TO THE START OF EARTH DISTURBANCE UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.

PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING F ANOTHER GRADING UNIT. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO

AVOID CONFLICTS WITH THIS PLAN. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING. 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 TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). FEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FULL STOCKPUES (SEC. R-4-8) IN EXCESS OF 20 FT MUST BE RENCHED WITH STABLE OUTLET, ALL CONCENTRATED FLOW STEEP SLOPE, AND HIGHLY ERODIRLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. R-4-6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE

MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN

__ ACRES

_ ACRES

0.72 ACRES

SHE	ANALYSIS:
~~	TOTAL AREA OF SITE:
	AREA DISTURBED:
	AREA TO BE ROOFED OR PAVED:
	AREA TO BE VEGETATIVELY STABILIZED
	TOTAL CUT:
	TOTAL FILL:
	negation and to an animal contraction of the c

500 CU. YDS. OFFSITE WASTE/BORROW AREA LOCATION:

ESTIMATE ONLY; CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION. TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT

ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED. IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR

- MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE: INSPECTION DATE INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) NAME AND TITLE OF INSPECTOR WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND
- AMOUNT OF LAST RECORDED PRECIPITATION) BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES EVIDENCE OF SEDIMENT DISCHARGES
- IDENTIFICATION OF PLAN DEFICIENCIES IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
- IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS PHOTOGRAPHS
- MONITORING/SAMPLING MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR

STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE). TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION, MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LO.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA

IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE OID LINEESS OTHERWISE SPECIFIED AND APPROVED BY THE CID NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO

ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): USE I AND IP MARCH 1 - JUNE 15

USE III AND HIP OCTOBER 1 - APRIL 30 USE IV MARCH 1 - MAY 31 A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE on—site and available when the site is active.

BY THE DEVELOPER:

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

BY THE ENGINEER:

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



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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

2.24.16 5-19-16 5-19-16

DATE

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

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.

A SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S). APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY, THE SUMMARY IS TO BE PLACED ON THE PLAN. B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES. STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) 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

2. TURFGRASS MIXTURES A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS. PARKS. PLAYGROUNDS. AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. B. 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 EDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED

KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM F THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. 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 MANAGEMENT CERTIFIED PERENNIAL RYEGRASS CHILTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET, CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT. III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CHITIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED. IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH

SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY

MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS

CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET. SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #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

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

- WESTEM MD: MARCH 15 TO JUNE 1, AUGUST ITO OCTOBER 1 (HARDINESS ZONES: SB, 6A) - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED, REMOVE STONES AND DEBRIS OVER 11/4 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 SEEDINGS 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 ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

8. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED, SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE C. 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. D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED 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 TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR

A DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD. B LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSPOUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER 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 VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS, ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SUPPAGE ON SLOPES, ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE). 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 WITHIN EIGHT

3. SOD MAINTENANCE A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES, WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING. B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN

ADEQUATE MOISTURE CONTENT. C. 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.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3); ZONE 6b FELIZER RATE SEED MIXTURE (FROM TABLE B.3): 9 (10-20-20)								LIME RATE
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	к ₂ 0	
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC		1/4-1/2 IN.	(1 LB PER	(2 LB PER	90 LB/AC (2 LB PER 1000 SF)	

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

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, 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.

B. 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. P. PERMANENT STABILIZATION A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE

MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: I. SOIL PH BETWEEN 6.0 AND 7.0. II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM). III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE

PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. 1. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE AROVE CONDITIONS

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON

THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST. E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR

OF THE SLOPE, LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE.

SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

I. 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 CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH. MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF

TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE representative soil profile section in the soil survey published by USDA-. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH

TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING A 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 CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER. B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON MY, THISTLE, OR OTHERS

C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROP authority, may be used in Lieu of Natural Topsoil TOPSOIL APPLICATION A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL soil preparation and tillage. Any irregularities in the surface resulting from TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR

MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT

MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE, SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY, SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES. 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR CCURATE APPLICATION BY APPROPRIATE EQUIPMENT, MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDF). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE 4 LIME AND FERTHIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS

PER 1,000 SOUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

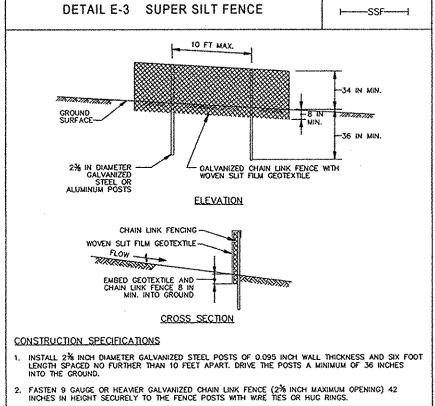
DETAIL B-1 STABILIZED CONSTRUCTION I Z SCE Y **ENTRANCE** EXISTING PAVEMENT *489A -MIN. 6 IN OF 2 TO 3 IN AGGREGATE OVER LENGTH AND WIDTH OF ENTRANCE -- PIPE (SEE NOTE 6) PROFILE 50 FT MIN. LENGTH PLAN VIEW

CONSTRUCTION SPECIFICATIONS PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF SO FEET (*30 FEET FOR SINGLE RESIDENCE LOT), USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

, PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE, PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN, WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGT TO CONVEY, A PIPE IS NOT NECESSARY, A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. , MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPE	CIFICATIONS FOR SOIL EF	ROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF ACRICULTURE RAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF EMMRONMEN WATER MANAGEMENT ADMINISTRATION



STANDARD SYMBOL

FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. EXTEND BOTH ENDS OF THE SUPER SLT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE AUGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SLT FENCE. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

B-4-3 STANDARDS AND SPECIFICATIONS SEEDING AND MULCHING

DEFINITION THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

CRITERIA

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

A. SEEDING 1.SPECIFICATIONS A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE 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 AND PROJECT REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED, SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

B. 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 C INOCHLANTS: THE INOCHLANT FOR TREATING LEGIME SEED IN THE SEED MIXTURES MIST RE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH NOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN PYDROSFFORM NOTE: IT IS VERY IMPORTANT TO KEFP INOCULANT AS COOL AS POSSIBLE UNTIL USED, TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE HE INOCULANT LESS EFFECTIVE. d, sod or seed must not be placed on soil which has been treated with soil sterilant: OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. I 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. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT 8. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING, SEEDBED MUST BE FIRM AFTER PLANTING. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING

RATE IN EACH DIRECTION. C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN. 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN: P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE, II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME, DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING. III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

I. MULCH MATERIALS (IN ORDER OF PREFERENCE) A STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY, NOTE USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED. B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. II. WCFM. INCLUDING DYF. MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. III, WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A RIOTTER-LIKE GROUND COVER ON APPLICATION, HAVING MOISTURE ARSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS. IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE V. 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.

A APPLY MUICH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. B. 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

MUICH ANCHORING TOOL INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE. C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. ANCHORING

A 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: I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR. II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW, APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX 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 VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET

B-4-8 STANDARDS AND SPECIFICATIONS STOCKPILE AREA

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE. CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE FROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY

IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE

ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST

EROSION, IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES. 30 FEET FOR

ST SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION

RE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO THE STOCKPILE AREA MUST BE KEPT FREE OF

B-4-4 STANDARDS AND SPECIFICATIONS TEMPORARY STABILIZATION

DEFINITION TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES

FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED. 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS.

AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN. 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED rates by the testing agency, soil tests are not required for temporary 3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

		HARDINESS Z SEED MIXTUR	FEUZER RATE	LIME RATE			
***************************************	NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	(10-20-20)	
***************************************	1	COOL SEASON ANNUAL RYEGRASS 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	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.		

OBTAIN GRADING PERMIT. - 1 DAY

DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION.(1 DAY) NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)

SEQUENCE OF CONSTRUCTION

STAKEOUT LIMITS OF DISTURBANCE. - 3 DAYS

INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY) IN ACCORDANCE WITH DETAILS HEREON, INSTALL SEDIMENT CONTROL MEASURES AS SHOWN IN PLAN VIEW OR INSTALL AS DIRECTED BY SEDIMENT CONTROL INSPECTOR

ÀFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED.

ROUGH GRADE INDIVIDUAL LOT FOR HOUSE CONSTRUCTION. (2 DAYS) STOCKPILING SHALL BE LIMITED TO ONLOT OR AS SHOWN HEREON. STOCKPILES SHALL

BE STABILIZED AS DETAILED HEREON. (1 DAY) CONSTRUCT HOUSES, THE FIRST FLOOR ELEVATIONS CANNOT BE MORE THAN 1' HIGHER

OR 0.2' LOWER THAN THE ELEVATIONS SHOWN ON THIS PLAN. (6 MONTHS) 10. FINE GRADE LOT AS DETAILED HEREIN AND PER SPOT ELEVATIONS AS SHOWN TO BE IN CONFORMANCE WITH STORMWATER MANAGEMENT SCHEME APPROVED FOR THE

11. UPON COMPLETION OF HOME CONSTRUCTION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMPLETE ANY REMAINING FINE GRADING, CONSTRUCT ONLOT STORMWATER MANAGEMENT FACILITIES TO INCLUDE: DRYWELLS, CONSTRUCT ONLOT PRIVATE RAIN GARDENS.

INSTALL ROOF GUTTER DOWNSPOUTS TO DIRECT ROOFTOP RUNOFF AS DIRECTED. LOT GRADING SHALL MEET COMPLY (5% OR LESS) FOR THE DETAILED LENGTH FOR PROPER "DISCONNECTION CREDIT". (1 WEEK) 12. ADD TOPSOIL PER THE SPECIFICATIONS SHOWN HEREON AND INSTALL STABILIZATION

MATTING (1 WEEK) 13. WITH ALL ONLOT DISTURBANCES COMPLETED, STABILIZE WITH PERMANENT SEEDING

MIXTURE AND STRAW MULCH OR EQUAL. (1 DAY) 14. AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING E/S CONTROLS AND STABILIZE THE DISTURBED AREAS FROM THE AFOREMENTIONED DISTURBANCES WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. (1 WEEK)

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

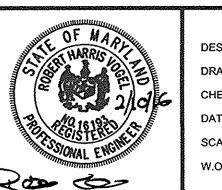
REVISION DATE NO.

SITE DEVELOPMENT PLAN GRADING AND SOIL EROSION, AND SEDIMENT CONTROL PLAN - DÉTAILS **CYPRESS SPRINGS - PHASE 3** LOTS 48 AND 49

T ELECTION DISTRICT DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, F-10-028, F-12-081, F-13-037, WP-11-202, WP-10-175, NP-13-167, PB CASE 405, WP-15-105, F-14-127



ENGINEERING, INC. ENGINEERS · SURVEYORS · PLANNERS 8407 MAIN STREET TEL: 410.461.7666 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



DESIGN BY: DRAWN BY: CHECKED BY: RHV DATE: DECEMBER, 2015 SCALE: AS SHOWN W.O. NO.:

PROFESSIONAL CERTIFICATE HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND THAT I AM A DULY LICENSED PROFESSIONA ENGINEER UNDER THE LAWS OF THE STAT OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

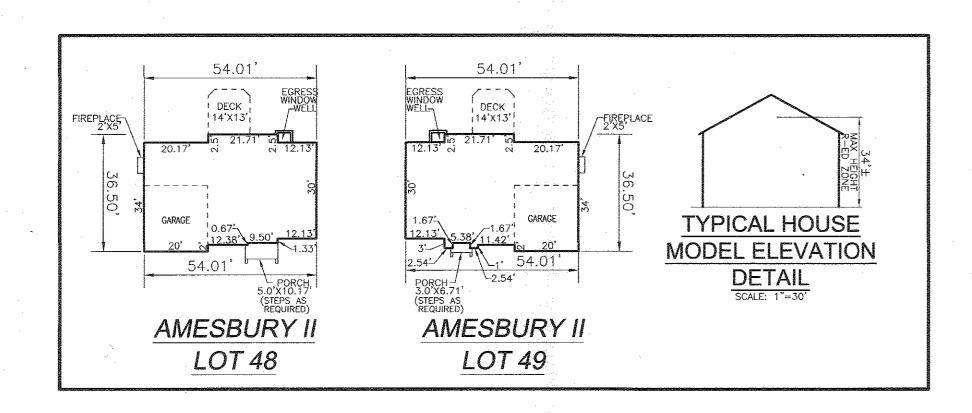
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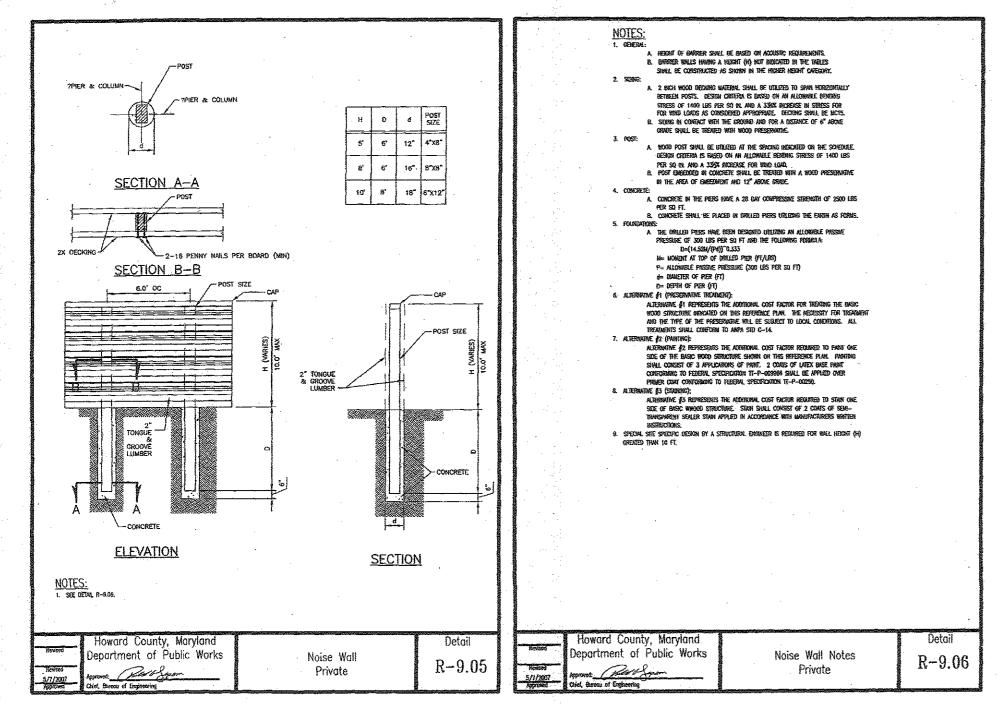
HOWARD COUNTY, MARYLAN

ZONED: R-EL

SDP-16-008



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SECTION	ROAD AND STREET	CALIFORNIA SEARING RATIO (CER)	3 TO <5	5 10 <7	≥ 7	3 10 <5	5 TO <7	≥ 7
KUWBER	CLASSIFICATION	PAVEMENT MATERIAL (INCHES)	MH	HMA WITH	QA9	HIMA WI	TH CONSTA	NT GAE
	PARKING BAYS: RESDENTIAL AND NON-RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1,5	1.5	1.5	1.5	1.5
P-1	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HIMA SUPERPAVE INTERMEDIATE SURFACE (NA)	NA .	NA	NA	NA.	NA.	NA
£-1	THE Z PERT INDUST PER DAT	HMA SUPERPAYE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2,0	2.6	2.0	3.5	3.0	2.8
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.9	4.0
	PARKING DRIVE AISLES. RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
P-2	THAN TO HEAVY TRUCKS PER DAY LOCKS CADS: ACES PLACE, ACCESS STREET	HMA SUPERPAVE INTERHEDIATE SURFACE 9.5 HM, PG 84—22, LEVEL 1 (ESAL)	1.0	1.0	1.0		1.0	1.0
F-2	CUIDE_SACS: RESIDENTIAL	HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	80-	4.0	3.0	4.0	4.9	4.5
	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE	HMA SUPERPAVE FINAL SUPEROS 9.5 MM, PG 84-22, UDVET (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
P-3	THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS:	HMA SUPERPAYS INTERMEDIATE SURFACE	1.0	1.0	1,0	1,0	1.0	.1.0
r-J	ACCESS PLACE, ACCESS STREET CUL-DE-SACS:	ANS SUPERPANE BASE	3.0	3.6	3.0	4.5	3.0	2.0
	NON-RESIDENTIAL MINOR COLLECTORS: RESIDENTIAL	19.0 MM, PG 64-82 LEVEL 1 (ESAL) GRADED AGGREGATE BASE (BAB)	10.0	6.0	3.0	6.0	6.0	6.0
	MINOR COLLECTORS: NON-RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 84-22, LEVEL 2 (LOW ESAL)	2:0	2.0	2.0	2.0	2.0	2.0
D /	MAJOR COLLECTORS	HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	20	2.0	2.0	2.0
P-4		HAVA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	-50	5.0	3.6
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	8.0	8.0	2.8
2) HAVA SUPER 12.5 MM SURF 3) GRADED AG 4) THE INTERA PRIOR TO SUB 5) BY LIEU OF COUNTY RIGHT ADDED TO THE	CKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING IN PAPER LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKN FACE (1.2" MAY TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MAY TO 3.0" INCREASE BASE (0AB) TO BE PLACED AND COMPACTED HI 6" MAX COMPACTED SHAPE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PISTANTIAL COMPLETION INSPECTION AND BOND REDUCTION. "FLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/NO-OF-MAY WHERE AUXILIARY LAYES ARE NOT REQUIRED, THE THICKNESS OF REQUIRED THICKNESS OF THE BASE ASPHALT LAYER. "REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.	iess: 19.0 mm base (2.0" min to 4.0" max), anc) Thed Thickness layers, lacement of base course, and is recurred Adustrial entrance approns within the fithe intermediate pavement layer can be			hma supi Hma supi	erpave fin Erpave ba Erpave ba Corecate	ermediate Se	SURF/
Research	Howard County, Maryland		A CONTRACTOR OF THE PARTY	and province of the following	and the second second		Deta	ii)
Kensea	Department of Public Works	PAVING SECTIONS				8	D 0	Λ.
Revised	Account Child Gram	P-1 to P-4			271		R-2	.VI
5/7/2007 Approved	Chief, Bureau of Engineering				1.4	¥		



NOISE / PRIVACY WALL - 6 FEET TALL

		مین د میت
APPROVED: HOWARD COUNTY DEPARTMENT OF F	PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	Z.Z4.16 DATE	***************************************
Ket Sledwork	5-19-16	***************************************
CHIEF, DIVISION OF LAND DEVELOPMENT &	DATE 5-19-10	***************************************
DIRECTOR	DATE	1

	•	3			-	
	NOIS	E WALL LOC	ATION CHAP	RT		
STREET NAME	POINT	NORTHING	EASTING	GROUND	WALL	WALL HEIGHT
LOT 48	W1	N 564030	E 1392725	175	181	6 FEET TALL
LOT 48	W2	N 564020	E 1392805	171	177	6 FEET TALL
LOT 48/49	W3	N 564097	E 1392861	177	183	6 FEET TALL
					:	
					. :	

NOISE WALL SHALL BE CONSTRUCTED UNDER FUTURE SITE DEVELOPMENT PLAN

N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:

 EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF

- SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION, 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 SIZING FOR TREATMENT AREAS HAVE BEEN MET 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, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

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

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 SIMILAR 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 HINDRANCE 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 COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA: * SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION). * ORGANIC CONTEN - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).

* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.

* 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 SITE STOCKPILED TOPSOIL IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

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 LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS,

OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE 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 BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED

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 FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION 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 SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED 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, SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH 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 PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE MON-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 DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET. 6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

WATER BEFORE PREPARING (ROTOTILLING) BASE.

- * PIPE SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).

 * PERFORATIONS IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.

 * GRAVEL THE GRAVEL LAYER (NO. 57 STONE PREFERRED) CONT.

 * THE MAN COLLECTOR DIDE SHALL BE AT A MAINTAIN A SET CLOTT.
- * THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

 * A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

 * A 4" LAYER OF PEA GRAVEL (1/8" 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 PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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

LAYOUT OPTION 2

— OBSERVATION WELL / CLEANOUT SELF FLUENT WITH PROPERTY EXSTRACE GRACE

D-9.01

AC 80 DECEMBE WORD 40 2/8, HOTER 4,

PVC BYE TO SPLASH BLOCK

MOTES

1. ISBANDACTURED SAND IS NOT ACCEPTABLE IN DOMENLES.
2. ALL PRES STORED BE SON 40 PRC 4 MBN X 1/2'
2. DOMENLES MUST DE A MANDAM OF SEEL FOOT PLATE — TYPICAL SECTION OF SOURCE PROPERTY — TYPICAL SECTION MOTE AND SEPLEMENT SEEL MOST TO SCALE

MOTES SPECIAL MOST TO SEEL MOST TO SEEL FOOT TYPICAL SECTION MOTE TO SCALE MOST TO SCALE MAY DISCHARGE MAY DINCHARGE MAY DISCHARGE MAY DISCHARGE MAY DISCHARGE MAY DISCHARGE M

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRYWELL (M-5)

PIPES GUTTERS DOWNSPOUTS AND FILTERS.

DEMPINE.

1 HONDOM NUMBER OF PERFORATIONS SHALL BE'S TIMES

1 FRE AREA

5. THENCH HAY NOT BE INSTALLED IN FALL.

Department of Public Work

Bushan

STACHABLE SEE

Drywell Private

A. THE OWNER SHALL INSPECT & CLEAN ANNUALLY, INCLUDING

B PONDING STANDING WATER OR ALGA! GROWTH ON THE TOP OF

A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS

ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND

A DRYWELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE

GRAVEL MEDIA. IF WATER PONDS FOR MORE THAN 48 HOURS AFTER



TYPICAL PLANTING DETAIL FOR RAINGARDENS

		ONLOT RAINGARDEN PLANTING SC	HEDULE	
	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
(x)	2	ILEX GLABRA INKBERRY	3 GALLON	CONT
0	4	SPICEBUSH LINDERA BENZOIN	3 GALLON	CONT

TYP. 100 SF X 75% X .0229 STEMS PER SQUARE FOOT = 2 PLANTS FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

OPERATION AND MAINTENANCE SCHEDULE FOR (M-7) RAIN GARDEN AREAS

- 2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, FREATMENT OF ALL DEFICIENT STAKES AND WIRES. 3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3
- 4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

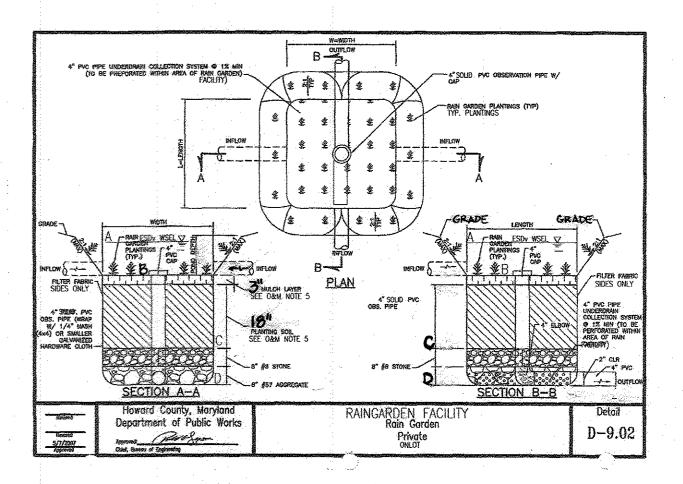
A 10-YEAR STORM EVENT."

5. FILTER MATERIAL MUST BE REPLACED WHEN WATER REMAINS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 24 HOURS FOLLOWING A 1- OR 2-YEAR STORM EVENT OR MORE THAN 48 HOURS FOLLOWING

> OWNER / DEVELOPER / MATTHEW PFAU 3675 PARK AVENUE, SUITE 301 ELLICOTT CITY, MARYLAND 21043 (410) 480-0023

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" 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" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f' _c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Marylan - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic san substitutions are acceptable. No "rock dust" can be used for san



LOT 49	175.80	174,80	173.05	171.70	135 SF	SEE PLAN
LOT 48	174.60	173.60	171.85	170.50	1 78 SF	SEE PLAN
FACILITY #	A	B	С	D	SURFACE AREA	APPROX. DIMENSIONS

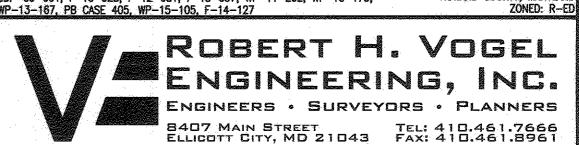
FACILITY #	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
LOT 48	178 SF	3	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY ILEX GLABRA INKBERRY SPICEBUSH LINDERA BENZOIN
LOT 49	185 SF	3	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY ILEX GLABRA INKBERRY SPICEBUSH LINDERA BENZOIN

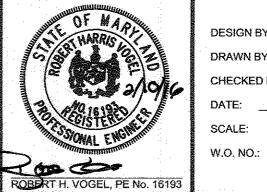
 		
		
1	REVISE FLOOR ELEVATIONS, GRADING, AND SWM	3/8/17
NO.	REVISION	DATE
	CITE DEVELOPMENT DLAN	and the state of the second of

SHE DEVELOPMENT PLAN STORMWATER MANAGEMENT - NOTES & DETAILS AND MISCELLANEOUS SITE DETAILS **CYPRESS SPRINGS - PHASE 3**

LOTS 48 AND 49

DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, F-10-028, F-12-081, F-13-037, WP-11-202, WP-10-175,





PROFESSIONAL CERTIFICATE DESIGN BY: DRAWN BY: CHECKED BY: RHV DECEMBER, 2015

AS SHOWN

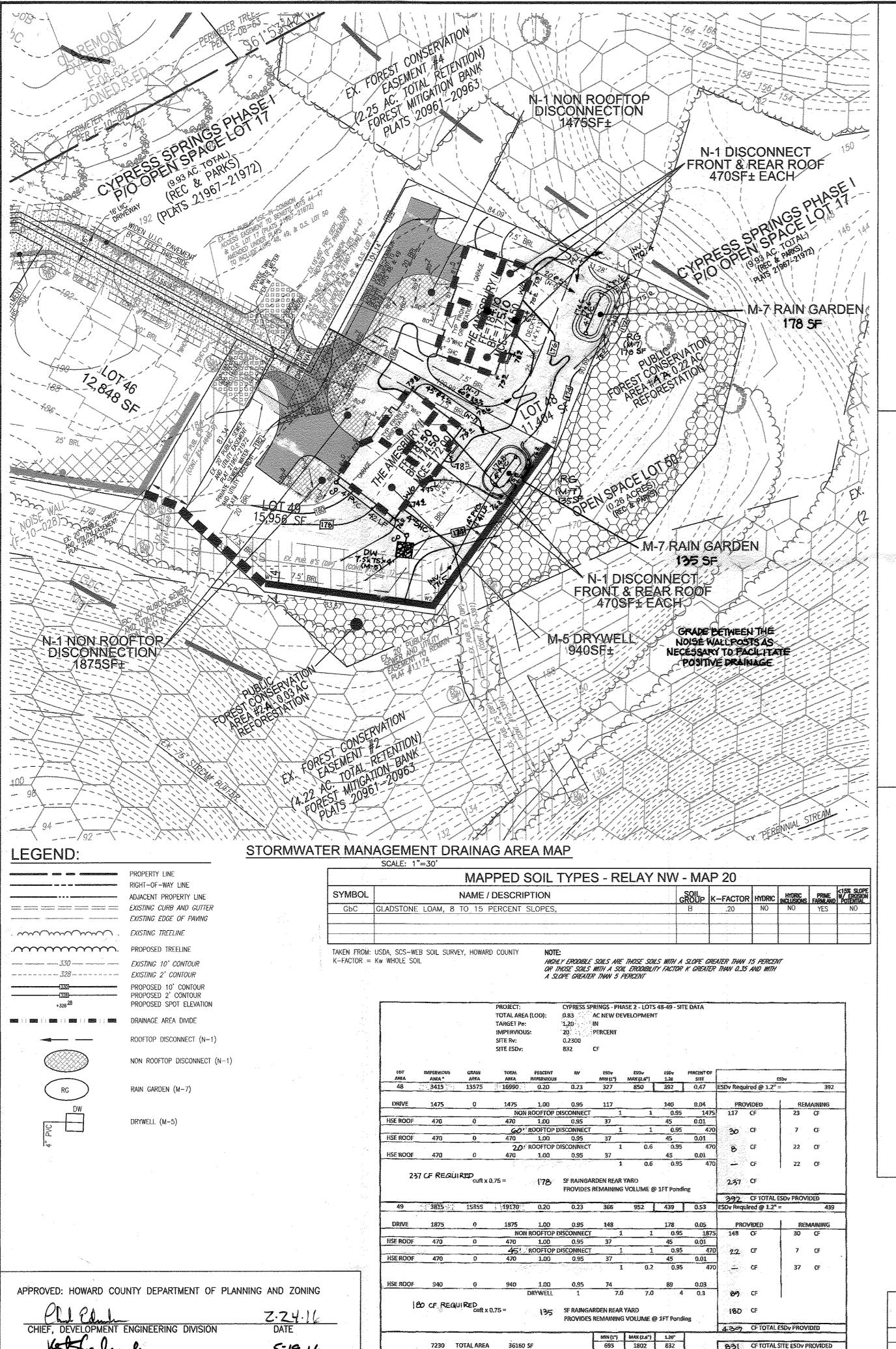
04-30

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: 09-27-2016

SHEET

HOWARD COUNTY, MARYLAND

SDP-16-008



5-19-16

DATE

ESDv Area 2 1 14.xls

AASCD/MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR THE PROJECT WITHIN 4 MILES OF BWI AIRPORT

References to ITEM #s noted below are found in Maryland Aviation tration's manual entitled Specifications for Performing Landscaping Activities for the Maryland Aviation Administration dated May 2001

SOIL TESTS

1. Following initial soil disturbances or re-disturbance, permanent or temporary stabilization shall be completed within seven calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater han 3 horizontal to 1 vertical (3:1) and fourteen days for all other disturbed or graded areas on the project site. Occurrence of acid sulfate soils (grayish black color) will require covering with a ninimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before

and after a 6-week incubation period to allow oxidation of sulfates. 3. The minimum soil conditions required for permanent vegetative

- a. Soil pH shall be between 6.0 and 7.0. Soluble salts shall be less than 500 parts per million (ppm)
- . The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture.

 d. Soil shall contain 1.5% minimum organic matter by weight.
- f. If these conditions cannot be met by soils on site, adding topsoil it required in accordance ITEM 901 or amendments made as

e. Soil must contain sufficient pore space to permit adequate re

Temporary Cover of Annual Rye/Rectop | March I to April 30 and August I to November 30, inclusive

Seeding seasons are based on typical years and can be subject to variation, which may be

If the time required to complete any of the operations necessary under this item, within

the specified planting season or any authorized extensions thereof, extends beyond the

Contract period, then such time will be charged against the Contract time, and liquidated

903-2.2 LIME. Lime shall consist of ground limestone and contain at least 85 percent

total carbonates. Lime shall be ground to a fineness so that at least 90 percent will pass

through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve

Dolomitic lime or a high magnesium lime shall contain at least 10 percent magnesium

oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied

analysis of soil samples. (Approved fertilizer rate: 21 pounds of 10-10-10 per 1,000

square feet.) Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are

clearly labeled with name, weight, and guaranteed analysis of the contents (percentage of

total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers

shall not contain any hydrated lime or cyanamide compounds. Fertilizers failing to mee the specified analysis may be approved by the MAA Engineer, providing sufficient

materials are applied to conform with the specified nutrients per unit of measure without

A dry, free-flowing fertilizer suitable for application by a common fertilizer

A finely ground fertilizer soluble in water, suitable for application by power

separately or in mixtures) and meet the requirements of applicable state and federal laws (O-F-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen-Phosphorus-Potassium (N-P-K) concentrations shall be determined from

recommended by a certified agronomist.

March I to April 20 and August I to October 20, inclusive

May I to July 31, inclusive. Rate of application should be 13.6 lbs PLS per acre.

SEEDING

FTEM 903 SEEDING

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and nethods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application, fertilization, and maintenance shall also conform to these approved standards

MATERIALS

903-2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All laws and turf seed and nixtures shall be free from the following state-listed restricted mexicus weeds:

> com cockle (Agrostemma githago), bentgrass (Agrostis spp.)1 wild onion (Allium canadense wild garlic (Allium vineale),

dodder (Cuscuta spp.), Bermuda grass (Cynodon dactylon orchardgrass (Dactylis glomerata tall fescue (Festuca arundinacea meadow fescue (Festuca pratensis) velvetgrass (Holcus lanatus), annual bluegrass (Poa annua)

rough bluegrass (Poa trivialis)¹ timothy (Phleum pratense), and

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture. In addition, all seeds sold in Maryland shall be free from the following listed prohibite

A granular or pellet form suitable for application by blower equipment.

The rate of application will be based on results of soil tests performed by the University

land shall follow the recommendations of the University of Maryland as set forth in the

"Plant Nutrient Recommendations Based on Soil Tests for Sod Production" (see

Appendix B). Application of the fertilizer shall be in a manner that is consistent with the

903-3.1 GENERAL. This section provides approved methods for the application of and

includes standards for seedbed preparation, methods of application, and equipment to be

used during the process. Lime and fertilizer shall be applied to seeded areas before the

seed is spread. The mixture of seed will be determined for sites based on environmental

903-3.2 ADVANCE PREPARATION, Areas designated for meeting shall be properly

amplication of time and fertilizer, and the surface area shall be cleared of any stones large

than I inch in diameter, sticks, stumps, and other debris that might interfere with sowing

of seed, growth of grasses, or subsequent maintenance of grass covered areas. Damage caused by erosion or other forces that occur after the completion of grading shall be

renaired prior to the application of fertilizer and time. The Contractor will repair such

damage, which may include filling gullies, smoothing irregularities, and repairing other incidental damage before beginning the application of fertilizer and ground limestone.

If an area to be seeded is snarsely sadded, weedy, harren and incorrided, or nacked and

hard, all grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the

soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm).

Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a

An area to be seeded shall be considered a satisfactory seedbad (without requiring

large clods, rocks, large roots, or other undesirable matter; appropriate amounts of

fertilizer and lime have been added; and, if it has been shaped to the required grade

After completion of tilling and grading, lime and fertilizer shall be applied within 48

hours according to the specified rate (Paragraphs 903-2.2 and 2.3) and methods

additional treatment) if it has recently been thoroughly loosened and worked to a depth of

not less than 5 inches; the top 3 inches of soil is loose, friable, and is reasonably free from

diately prior to seeding. For slope areas steeper than 3:1 (three horizontal to one

satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or

prepared in advance of seed application. The area shall be tilled and graded prior to

ecommendations of the University of Maryland Cooperative Extension.

CONSTRUCTION METHODS AND EQUIPMENT

onditions as described in Paragraph 903-2.1.3.

other appropriate means.

of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned

Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the

These species may be included as a labeled component of a mixture when each is present in excess of five

repens), sicklepod (Senna obtusifolia), sorghum (Sorghum spp.), Canada thistle (Cirstum arvense), plumeless thistle (Carduus spp.-includes musk thistle and curied thistle), and

903-2.1.1 APPROVED SPECIES. The following table contains species that are approved by MAA for use in seed mixtures. Purity requirements and germination

noxious weeds: balloonvine (Cardiospermum halicacabum), quackgrass (Elytrigia

equirements are also provided.

estuca rubra coma nual Ryegrass Lolium multiflorum) erenniai Ryegrass Lolium perenne) owl Meadow Gras (Andropogon scoparius)

* The percentage weight of pure seed present shall be free of any agriculture seeds, men matter, and other seeds distinguishable

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the Turf and Seed Section, Maryland Department of Agriculture (MDA). The Contractor shall furnish the MAA Engineer with dualicate signed copies of a statement by the Turf and Seed Section certifying that each lot of seed has been laboratory tested within six months of date of delivery. This statement shall include the following information:

centage of germination shall be actual spreats and shall not include hard seeds unless specifically permitted by the MA.

name and address of laboratory,

the results of tests as to name, percentages of purity and of germination, percentage of weed content for the seed furnished, and, in the case of a mixture, the proportions of each kind of seed.

(Paragraphs 903-3.3.1 and 903-3.3.2) approved by MAA. The seeding mixture shall be oplied within 48 hours after application of lime and fertilizer. To firm the seeded areas, ultipacking shall occur immediately after seeding.

applied by either the dry or wet application methods that have been approved by MAA

903-3.3 METHODS OF APPLICATION. Lime, fertilizer, and seed mixes shall be

983-3.3.1 DRY APPLICATION METHOD

a. Liming. If soil test results indicate that lime is needed, the following procedures will be used: following advance preparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on seedbeds that have been prepared as described in paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which the seedbed shall be properly graded again.

b. Fertilizing. Following advance preparations (and liming if necessary) fertilizer shall be spread uniformly at the specified rate to provide no less than

c. Seeding. Seed mixtures shall be sown immediately after fertilization of the seedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted using a cultipacker or an approved lawsroller.

903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

a. General. The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge capable of reading increments of 50 gallons or less over the entire range of the tank capacity. The liquid level gauge shall be mounted so as to be visible to the nozzle operator at all times. he container or tank shall also be equipped with a mechanical power-driven gitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The spraying equipment shall also include a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The

pressure pump assemblage shall be configured to allow the mixture to flow through the tank when not being sprayed from the nozzle. All pump passages and pipelines shall be capable of providing clearance for 5/8-inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. A pressure gauge shall be connected to and mounted immediately behind the nozzle.

Seed shall be furnished in standard containers with the seed name, lot number, net

MDA supervised mix program seed tag.

131 lbs PLS/acre).

enditions (Application rate = 234 lbs PLS/acre

85% Certified Turf-Type Tall Fescue

10% Certified Kentucky Bluegrass

5% Perennial Ryegrass

weight, percentages of purity, germination rate and hard seed, and percentage of maximum weed seed content clearly marked. All seed containers shall be tagged with a

903-2.1.3 MIXTURES AND APPLICATION RATES. Only seed mixtures and

application rates described in this item may be used unless otherwise approved by the

mixtures have been formulated to minimize the attractiveness of areas to wildlife of

common landscape scenarios. The appropriate seed mixture for application will be

designated based on environmental conditions and may vary from site to site. All

Seed mixtures, application scenarios, and rates for permanent cool-season grasses are as

a. Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to

conditions and regular maswing (Application rate = 234 lbs PLS/acre);

Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to

Seed Mixture No. 3 - wetlands and their associated buffer zones (Application

(lbs of LS/acre

planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

mowing (Application rate = 115 lbs PLS/acre); and

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal

MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed

manner that it can be rotated through 36% degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture to be supplied so that mixtures may be properly sprayed over a distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings. In order to reach sreas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles

The pozzle pine shall be mounted on an elevated supporting stand in such a

c. Mixtures. Lime shall be applied separately in the quantity specified, prior to the fertilizing and seeding operations. Lime should be added to and mixed with water at a concentration not to exceed 220 pounds of lime for every 100 gallons of water. After time has been applied, the tank should be emptied and rinsed with fresh water. Seed and fertilizer shall be mixed together in the relative proportions specified, but the resulting concentration should not exceed 220 pounds of mixture per 100 gallons of water and should be applied within 30 nimites to reevent fertilizer burn of the seeds.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the MAA Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed or they shall be wasted and disposed o at a location acceptable to the Engineer.

d. Spraying. Lime shall be sprayed upon previously prepared seedbeds on which the lime, if required, shall have been worked in already. The mixtures

shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzies or sprays shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to guard against misses and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To checks the rate and uniformity of application, the applicator will observe the degree of wetting of the ground or distribute test

Seed Mixture No. 2; Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed Mixture No. 3 - Wetland areas and their associated buffer zones (Application rate =

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur

within a specified seeding season unless otherwise approved by the MAA Engineer. No

seed or seed mixtures are to be applied on frozen ground or when the temperature is at or

below 35 degrees Farenheit (7.2 degrees Centigrade). Under these conditions, a layer of mulch should be applied in accordance with Item 905, Mulching, to stabilize the site, and

permanent seeding should occur in the subsequent seeding season. Seed application may

should be a temporary cover of annual ryegrass and followed by overseeding of the

occur during the seeding season dates listed below. Seeding performed after October 20

75% Hard Fescue

20% Chewings Fescue 5% Kentucky Bluegra

60% Fowl Meadow Grass

30% Chewings Fescue 10% Perennial Ryegra:

appropriate seed mixture during the spring seeding season.

Rate of Application

(lbs of PLS/acre)

(lbs of PLS/acre)

On surfaces that are to be mulched as indicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried

sheets of paper or pans over the area at intervals and observe the quantity of

963-3.4 MAINTENANCE OF SEEDED AREAS. The contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and

When either the dry or wet application method outlined above is used for work performed out of season, the Contractor will be required to establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met

Mulch shall be applied to all seeded areas immediately after seeding. During the time

Mulch shall be applied as per ITEM 905.

WINING OPERATIONS

vertical), the subsoil shall be loose to a depth of 1 inch.

15 pounds of 10-10-10 per 1,000 square feet. Per ITEM 903

100 pounds of dolomitic limestone per 1,000 square feet

Mulch shall be applied as per ITEM 905.

July 1, 2004

SEEDING SEASONS

Permanent Cool-Season Grasses

Temporary Cover of Warm-Season Grasses (Little Bluestern only)

modified by the MAA Engineer based on seasonal trends.

damages will be enforced with respect to this portion of work.

item. The rate of application will be based on results of soil tests

The fertilizers may be supplied in the following forms:

TEMPORARY SEEDING

No fills may be placed on frozen ground. All fill to be placed in approximatel horizontal layers, each layer having a loose thickness of not more than 8 inches. All ill in roadways and parking areas is to be classified Type 2 as per Anne Arundel ounty Code - Article 21, Section 2-308, and compacted to 90% density; compaction to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within the building area is to be compacted to a minimum of 95% density as determined by methods previously mentioned. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

SODDING

astallation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted above. Lime and fertilizer per permanent seeding specifications and ightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends ightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to asure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional vatering for establishment may be required. Sod is not to be installed on frozen ground Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, rrigation should be performed to ensure establishment of sod.

IMP. AREA

HOUSE & DRIVEWAY

HOUSE & DRIVEWAY

Install sod as per ITEM 904

July 1, 2004

LOT #

LOT 48

LOT 49

STORMWATER MANAGEMENT

PRACTICES CHART

ESD PRACTICE

MISCONNECTIONS & (1) RAIN GARDEN (M-7)

DRYWELL (M-5) & (1) RAIN GARDEN (M-7)

(N-1) ROOFTOP & NON ROOFTOP DISCONNECTIONS

N-1) ROOFTOP & NON ROOFTOP

For seeding dates of: February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and red top at the minimum rate of 0.5 pounds per 1,000 square feet NOTE: Use of this information does not preclude meeting all of the requirements of the

current Maryland Standards and Specifications for Soil Erosion and Sediment Control

diment control plans for mining operations must include the following seeding dates

AASCD/MAA NOTES

THE PROPOSED PROJECT IS LOCATED IN HOWARD COUNTY, MARYLAND ON TAX MAP 38, BLOCK 3, PARCEL 42,44,45 & 46. THE PROPOSED PROJECT IS LOCATED NEAR THE BALTIMORE WASHINTON INTERNATIONAL THURGOOD MARSHALL

1. SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION

2. SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAR WATER OUTFALL WITHIN 24 HOURS FOLLOWING

ANY DEVIATION TO PLANT SPECIES AND VEGETATION USED ON THESE PLANS NEED APPROVAL FROM HCSCD/MAA. THE PLANT SPECIES USED ON THIS SITE ARE TO AVOID ITS POTENTIAL TO ATTRACT WILDLIFE THAT COULD POSE STRIKE HAZARD TO AIRCRAFT.

BWI AIRPORT NOISE ZONE:

THE SITE FOR THIS PROJECT IS LOCATED OUTSIDE THE BOUNDARIES OF THE AIRPORT NOISE ZONE.

5. THE ALLOWABLE HEIGHT FOR ANY PERMANENT OR THE AIRPORT ZONE.

6. THE STORM WATER MANAGEMENT FACILITIES WITHIN 10,000 FEET OF ACTIVE RUNWAYS OR WITHIN 5 MILES OF AN APPROACH SURFACE MUST DRAIN WITHIN 24 HOURS FOLLOWING . THE 1 OR 2 YEAR STORM EVENTS AND WITHIN 48 HOURS FOLLOWING. THE 10 OR 100 YEAR STORM

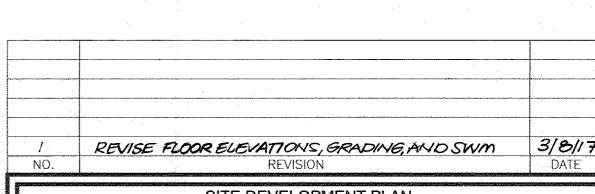
AIRPORT (BWI), APPROXIMATELY 14,000 FEET NORTH OF RUNWAY 15R-33L.

CONTROL DURING CONSTRUCTION.

ANY RAINFALL EVENT. 3. LANDSCAPING & STORM WATER POND LANDSCAPING ON SITE:

TEMPORARY STRUCTURES TALLER THAN 277 FEET ABOVE MEAN SEA LEVEL NEED OBSTRUCTION ANALYSIS REVIEW AND PERMIT FOR

> OWNER / DEVELOPER / 3675 PARK AVENUÉ, SUITE 301 ELLICOTT CITY, MARYLAND 21043 (410) 480-0023



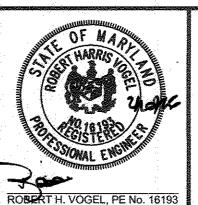
SITE DEVELOPMENT PLAN

CYPRESS SPRINGS - PHASE 3 LOTS 48 AND 49

ST ELECTION DISTRICT DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, F-10-028, F-12-081, F-13-037, WP-11-202, WP-10-175,



W.O. NO.:



DESIGN BY: DRAWN BY: CHECKED BY: RHV DECEMBER, 2015 AS SHOWN SCALE:

04-30

PROFESSIONAL CERTIFICATE 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: 09-27-2016

SHEÉT

TAX MAP 38 - BLOCK

ZONED: R-ED