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#### 20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION DEFINITION

USING VEGETATION AS COVER FOR BARREN SOIL TO PROTECT IT FROM FORCES THAT CAUSE EROSION.

VEGETATIVE STABILIZATION SPECIFICATIONS ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUN-OFF TO DOWNSTREAM AREAS, AND IMPROVING WILDLIFE HABITAT AND VISUAL RESOURCES

#### CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE SHALL BE USED ON DENUDED AREAS AS SPECIFIED ON THE PLANS AND MAY BE USED ON HIGHLY ERODIBLE OR CRITICALLY ERODING AREAS. THIS SPECIFICATION IS DIVIDED INTO TEMPORARY SEEDING, TO QUICKLY ESTABLISH VEGETATIVE COVER FOR SHORT DURATION OUP TO ONE YEAR, AND PERMANENT SEEDING, FOR LONG TERM VEGETATIVE COVER. EXAMPLES OF APPLICABLE AREAS FOR TEMPORARY SEEDING ARE TEMPORARY SOIL STOCKPILES CLEARED AREAS REINGLEFT IN E RETWEEN CONSTRUCTION PHASES FARTH DIKES FTC AND FOR PERMANENT SERVING ARE LAWNS, DAMS, CUT AND FILL SLOPES AND OTHER AREAS AT FINAL GRADE, FORMER STOCKPILE AND STAGING AREAS, ETC.

#### EFFECTS ON WATER QUALITY AND QUANTITY

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF. INFILITRATION EVAPORATION TRANSPIRATION PERCOLATION AND GROUNDWATER RECHARGE. VEGETATION OVER TIME, WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE. SEDIMENT CONTROL DEVICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE ESTABLISHMENT TO PREVENT LARGE QUANTITIES OF SEDIMENT AND ASSOCIATED CHEMICALS AND NUTRIENTS FROM WASHING INTO SURFACE WATERS.

#### SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS A. SITE PREPARATION

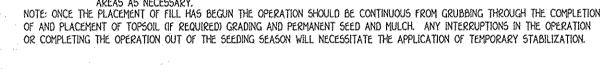
- I. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OF PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- II. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES
- HAVING DISTURBED AREA OVER 5 ACRES. B. 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 OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE
- UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES. II. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE
- APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTEE OF THE PROPRIETE III. LIME MATERIALS SHALL BE GROUND LIMESTONE GHYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS
- AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST BOY WILL PASS THOOLICH A \*100 MESH SIEVE AND 98-100X WILL PASS THOOLICH A \*20 IV. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- SEEDBED PREPARATION TEMPORARY SEEDING
- A. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" 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 SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION, SLOPED AREAS (GREATER THAN 3:D SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- IN CORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS. II. PERMANENT SEEDING
- A. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
  1. 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 030% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZAS IS TO BE PLANTED, THEN A SANDY SOIL K30% SILT
- PLUS CLAY) WOULD BE ACCEPTABLE. 4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT. . SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION
- 6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL. B. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND
- EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
- APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS. D. MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES. AND READY THE AREA FOR SEED AND APPLICATION, WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE, STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. NEWLY DISTURBED AREAS.
- D. SEED SPECIFICATIONS ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.
- NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED. I. INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING, NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLIUNTIL USED. TEMPERATURES ABOVE 75°-80° F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE. METHODS OF SEEDING
- HYDROSEEDING APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDED, OR A CULTIPACKER SEEDER. A. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING. THE APPLICATION RATES AMOUNTS WILL NOT
- EXCEED THE FOLLOWING: NITROGEN: MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN: P205 (PHO5PHOROUS): 200 L85/AC: K20 (POTASSIUM): 200 L85/AC B. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE. (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROGEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROGEEDING AT ANY ONE TIME, DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING
- C. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION. II. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. A. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON
- TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 265 OR 26. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

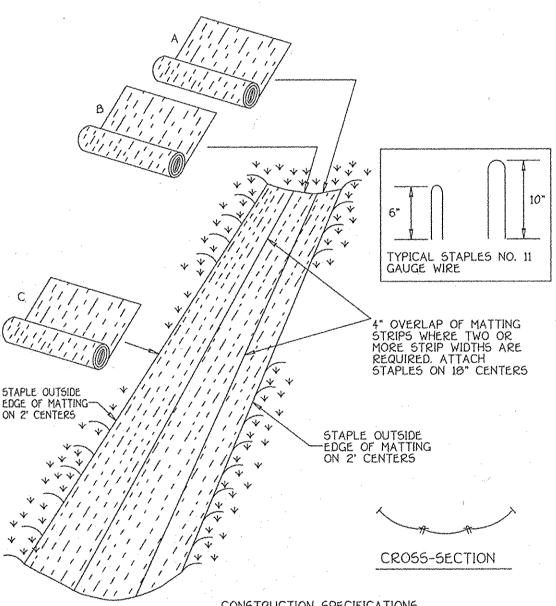
  B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- III. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. A. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING. B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE) STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLE BRIGHT IN COLOR AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
- II. WOOD CELLULOSE FIBER MULCH (WCFM) WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- B. WCFM SHALL 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. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. WORM MATERIALS SHALL 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 SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED
- IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

  E. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTOL-TOXIC F. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH T
- APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF LEX MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

- G. MULCHING SEEDED AREAS MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. . IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONG SHALL BE APPLIED AS PRESCRIBED I this section and maintained until the seeding season returns and seeding can be performed in ACCORDANCE WITH THESE SPECIFICATIONS.
- II. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE. III. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE
- WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE DEPENDING LIPON SIZE OF 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 TWO (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
- IND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER A E MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS
- III. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND CREST OF BANKS. THE REMAINDER OF AREA SHOULD BE APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70 PETROSET, TERRA TAX I, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MUICH.
- IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOM-MENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4' TO 15' FEET WIDE AND 300 TO 3,000 FEET LONG. INCREMENTAL STABILIZATION - CUT SLOPES
- I. ALL CUTS SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN FOLIAL INCREMENTS NOT TO EXCEED 15
- II. CONSTRUCTION SEQUENCE (REFER TO FIGURE 3 BELOW): EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE TO CONVEY RUNOFF FROM THE EXCAVATION.
- PERFORM PHASE I EXCAVATION, DRESS, AND STABILIZE. PERFORM PHASE 2 EXCAVATION, DRESS AND STABILIZE. OVERSEED PHASE I AREAS AS PERFORM FINAL PHASE EXCAVATION, DRESS AND STABILIZE. OVERSEED PREVIOUSLY SEEDED
- NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL OF REQUIRED AND PERMANENT SEED AND MULCH ANY INTERRUPTIONS IN THE OPERATION OF COMPLETING THE OPERATION
- OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION. J. INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES
- EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS.
- II. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15", OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS. III. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE IF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER T
- A SEDIMENT TRAPPING DEVICE.

  7. CONSTRUCTION SEQUENCE: REFER TO FIGURE 4 (BELOW). EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN
- N FIGURE 5, UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA. PLACE PHASE 2 EMBANKMENT, DRESS AND STABILIZE
- PLACE FINAL PHASE EMBANKMENT, DRESS AND STABILIZE. OVERSEED PREVIOUSLY SEEDED





#### CONSTRUCTION SPECIFICATIONS

- 1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
- 2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES. 3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL
- 4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER. 5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES
- SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE. 6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.
- NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

## EROSION CONTROL MATTING

NOT TO SCALE

## STANDARDS AND SPECIFICATIONS FOR TOPSOIL

- PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. CONDITIONS WHERE PRACTICE APPLIES
- 1. THIS PRACTICE 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 FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. 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.
- II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS. CONSTRUCTION AND MATERIAL SPECIFICATIONS
- I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT 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-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION
- TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2" in diameter.
- II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON MY, THISTLE, OR OTHERS AS SPECIFIED. III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE
- PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKEDL INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES. II. FOR SITES HAVING, DISTURBED AREAS UNDER 5 ACRES:
- 1. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS. III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENOMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING: A PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
- B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT. C. TOPSOIL HAVINA SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED. D. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPOPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL II PLACE TOPSOL (IF PROLIPED) AND APPLY SOLL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS
- I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- II. GRADES ON THE AREAS TO BE TOPSOILED. WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION. III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDINE CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT
- THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IV. TOPSOIL SHALL NOT BE PLACED WHILE 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. VI. ALTERNATIVE FOR PERMANENT SEEDING -- INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW: I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5
- ACRES SHALL BE TESTED TO PRESCRIBE AMENOMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: A COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE
- PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06. 8. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST I PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
- COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET. N. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE. REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MO-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

TEMPORARY SEEDING NOTES

SHORT-TERM VEGETATIVE COVER IS NEEDED.

POSSIBLE IN THE SPRING, OR USE SOD.

LBS. PER 1000 SQFT.)

1. OBTAIN GRADING PERMIT

CONSTRUCT BUILDINGS

4. INSTALL TEMPORARY SEEDING

3. CLEAR AND GRUB TO LIMITS OF DISTURBANCE

APPLY TO COADED OF CLEARED AREAS LIKELY TO BE DEDISTURBED WHERE A

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING.

DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

SEEDING : FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU

PER 1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3

LBS. PER ACRE OF WEEPING LOVEGRASS (0.07 LBS. PER 1000 SQ.FT.). FOR

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000

ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING

SOFT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING.

TOOL OR 218 GAL, PER ACRE (5 GAL, PER 1000 SQ.FT.) OF EMULSIFIED

ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL

SEQUENCE OF CONSTRUCTION

2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN 7 DAYS

6. FINE GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPE

AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR.

8. INSTALL BIO-SWALE & MICRO-BIORETENTION FACILITIES

7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED

EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.

NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS.

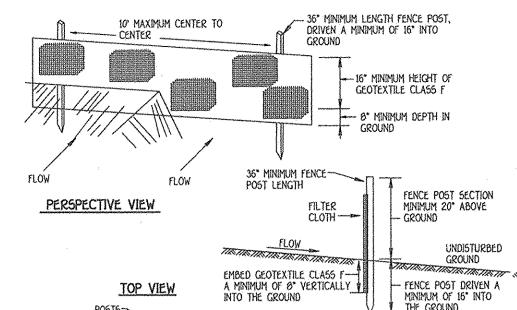
THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2

TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14

#### SEDIMENT CONTROL NOTES

- D A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855). 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS
- AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIVES PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 34 B) 14 DAYS
- AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASING SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1
- CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50). AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER
- GERMINATION AND ESTABLISHMENT OF GRASSES. 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 OBTAINED FROM THE HOWARD COUNTY SEDIMEN CONTROL INSPECTOR
- 7) SITE ANALYSIS: TOTAL AREA OF SITE 1.9455 ACRES 1.70 ACRES AREA DISTURBED AREA TO BE ROOFED OR PAVED 0.52 ACRES AREA TO BE VEGETATIVELY STABILIZED 118 ACRES 505 CU.YDS TOTAL CUT TOTAL FILL
- OFFSITE WASTE/BORROW AREA LOCATION STOCKPILING WILL NOT BE PERMITTED ON SITE 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- 9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION ACENCY SHALL BE DECLIFFED LIDON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL
- BY THE INSPECTION AGENCY IS MADE. 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



#### JOINING TWO ADJACENT SILT FENCE SECTIONS CONSTRUCTION SPECIFICATIONS

SECTION B

STADIF.

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT

CROSS SECTION

STANDARD SYMBOL

------ SF ------

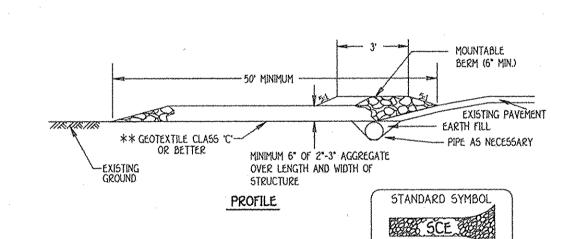
- 2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F TEST: MSMT 509 TENSILE STRENGTH 50 LBS/IN (MIN.) TENSILE MODULUS 20 L85/IN (MIN.) TEST: MSMT 509 0.3 GAL FTZ/ MINUTE (MAX.) TEST: MSMT 322 FLOW RATE FILTERING EFFICIENCY 75% (MIN.) TEST: MSMT 322
- 3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED. FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS. 4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

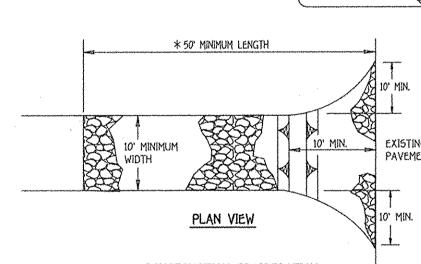
		***************************************		maranetala.	
	SLOPE STEEPNESS	(MAXI SLOPE		(MAXIMUM) SILT FENCE LENGTH	
	FLATTER THAN 50:1	UNL	IMITED	UNLIMITED	
	50:1 TO 10:1	125	FEET	1,000 FEET	
	10:1 TO 5:1	100	FEET	750 FEET	
	5:1 TO 3:1	60	FEET	500 FEET	
	3:1 TO 2:1	40	FEET	250 FEET	
	2:1 AND STEEPER	20	FEET	125 FEET	
N	AREAS OF LESS THAN 2	SLOPE AND	SANDY SOILS	(USDA GENERAL CLASSIFICATION	(

SILT FENCE DESIGN CRITERIA

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL

#### SILT FENCE NOT TO SCALE



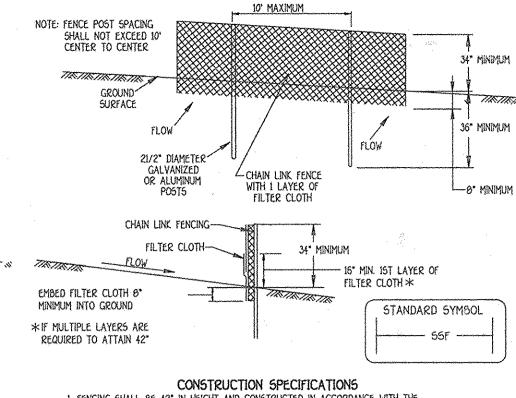


- CONSTRUCTION SPECIFICATION 1. LENGTH - MINIMUM OF 50' (\*30' FOR SINGLE RESIDENCE LOT). 2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS. 3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. \*\*THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY
- RESIDENCES TO USE GEOTEXTILE 4. STONE - CRUSHED AGGREGATE (2° TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE. 5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED

LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.

## STABILIZED CONSTRUCTION ENTRANCE



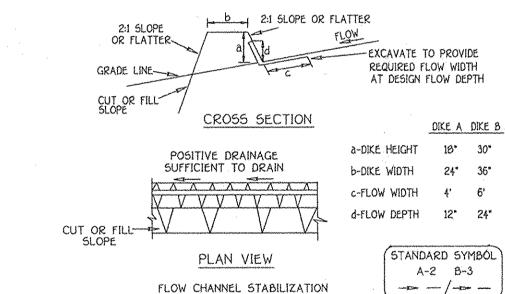
1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS. 2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. 3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED

- EVERY 24" AT THE TOP AND MID SECTION. 4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
- 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- 6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
- 7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

ENSILE STRENGTH	50 LB	5/IN (MIN.)		TEST	MSMT	509	
ENSILE MODULUS		S/IN (MIN)			: MSMT		
LOW RATE	0.3 GA	L/FT <sup>2</sup> /MINL	JTE (MAX.)	TEST	: MSMT	322	
LTERING EFFICIENCY	75% (M	N.)		TEST	: MSMT	322	
	DE	SIGN CRIT	TERIA			2	
	CLADE	ELADE	1 CNCTU	CHT	elice '	ENCT	í

(MAXIMUM) (MAXIMJM) 0 - 10% 0 - 10:1 LINI IMITEO UNLIMITED 10 - 20X 10:1 - 5:1 200 FFFT 1500 FFET 20 - 33% 5:1 - 3:1 100 FEET 1,000 FEET 3:1 - 2:1 100 FEET 500 FEET 33 ~ 50% 50 FEET 250 FEET 2:1 +

> SUPER SILT FENCE NOT TO SCALE



GRADE 0.5% MIN. 10% MAX. 1. SEED AND COVER WITH STRAW MULCH. 2. SEED AND COVER WITH FROSION CONTROL MATTING OR LINE WITH SOD. 3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM

### CONSTRUCTION SPECIFICATIONS

- 1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1 %. 2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A
- SEDIMENT TRAPPING DEVICE. 3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY. 4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE

WITH THE PROPER FUNCTIONING OF THE DIKE.

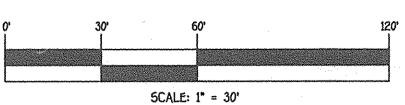
EACH RAIN EVENT.

SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE 6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.

5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS

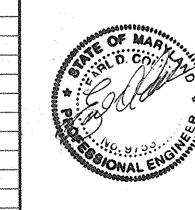
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE. 8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER

> EARTH DIKE NOT TO SCALE



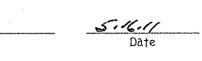
# NOT TO SCALE

FISHER, COLLINS & CARTER, INC. IL ENGINEERING CONSULTANTS & LAND SURVEYORS



ENGINEER'S CERTIFICATE 'I 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."





I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any 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

plan is approved for soil erosion and sediment control by L purple VATION DISTRICT.

OWNER/DEVELOPER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING ivision of Land Development & Director - Department of Planning and Zoning PROJECT OT NO. SECTION 1 THRU 6 N/A TROTTER CREST ZONE TAX/ZONE | ELEC. DIST. | CENSUS TR. BLOCK NO. 21613 6069.02 R-20 35 TEST GRADIENT WATER ZONE 630 780

SEDIMENT/EROSION CONTROL STORMWATER MANGEMENT NOTES & DETAILS

SINGLE FAMILY DETACHED TROTTER CREST LOTS 1 THRU 6

TAX MAP NO.: 35 PARCEL NO.5: 201 & 202 GRID NO.: 2 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: 1" = 30' DATE: APRIL, 2011

5DP-11-031

ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855

signature of Engineer

BUILDER/DEVELOPER'S CERTIFICATE

OWNER/DEVELOPER DAVOUD TAJ & VIDA TAJ

5847 TROTTER ROAD CLARKSVILLE, MARYLAND 21029 410-531-1069

CLARKSVILLE, MARYLAND 21029 410-531-6093

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF

THE FOLLOWING SCHEDULES :

IPPER THREE INCHES OF SOI

AS POSSIBLE IN THE SPRING.

PER 1000 SOFT) FOR ANCHORING

REPLACEMENTS AND RESEEDINGS

DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS.

PER 1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14

UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS.

PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1000 SQ.FT.).

2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS.

PER 1000 SOFT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23

LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO

THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS. PER 1000 5Q.FT.) OF

KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH

PER 1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 -

THRU FEBRUARY 28, PROTECT SITE BY ONE OF THE FOLLOWING OPTIONS:

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 L85. PER 1000

SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING.

MAINTENANCE : INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS,

WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.05 LBS.

1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON

3) SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH

ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL

OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON

FLAT AREAS. ON SLOPES, & FT. OR HIGHER, USE 347 GAL. PER ACRE 18 GAL.

SEEDING: FOR THE PERIOD MARCH I THRU APRIL 30 AND FROM AUGUST 1

LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO

DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED

4 DAYS

2 DAYS

60 DAYS

7 DAYS

7 DAYS

14 DAYS

JOHN M. LEE/PATRICIA A. CHILDS

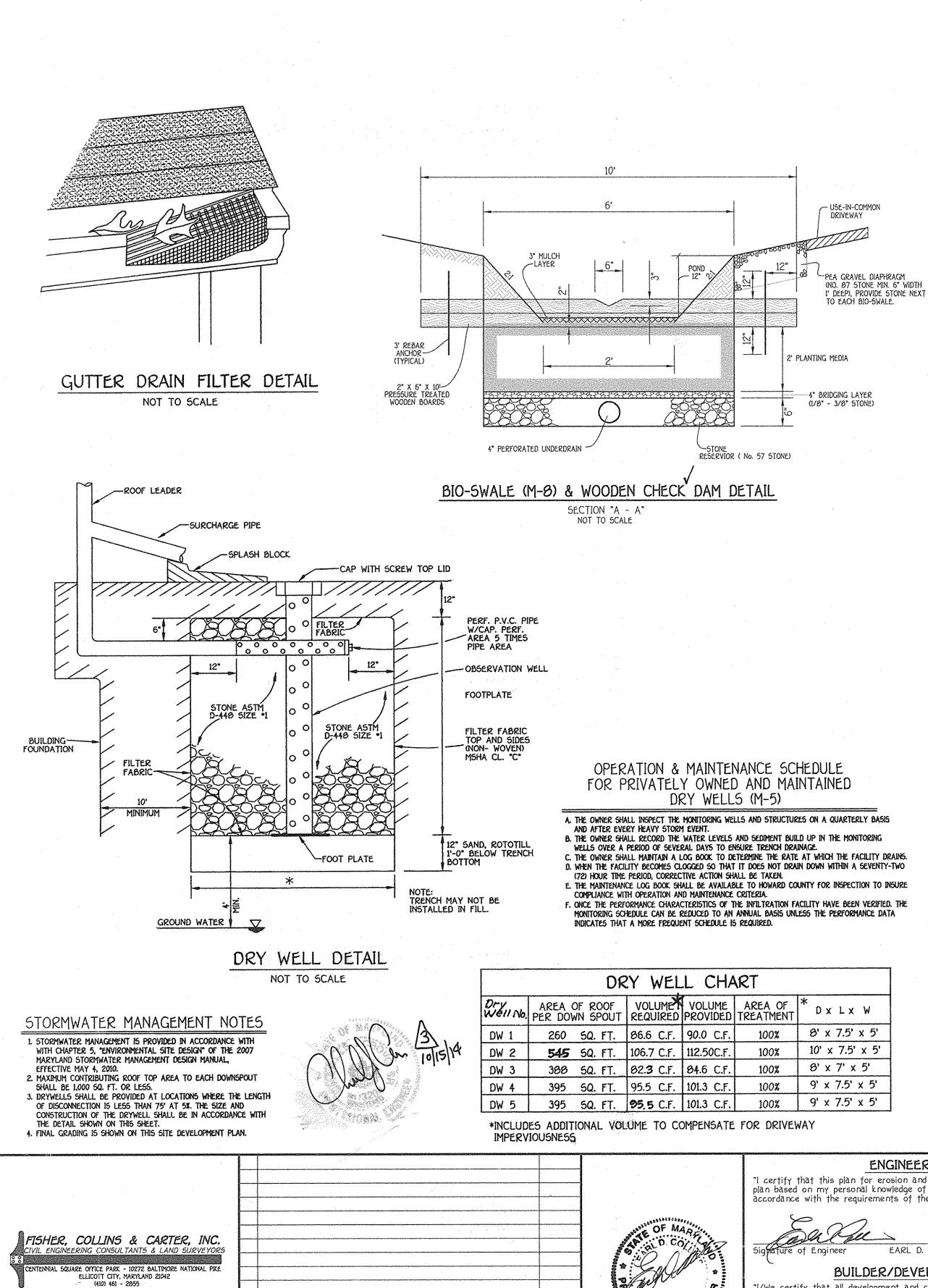
8-18-11

REVISION

DATE

5835 TROTTER ROAD

SHEET 3 OF 4

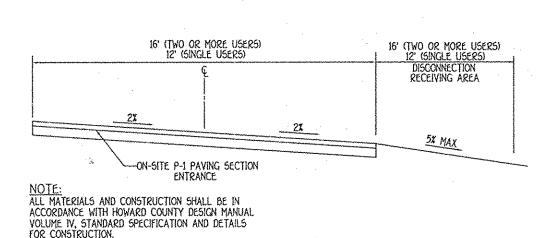


BIO-SWALE AG-BUILT

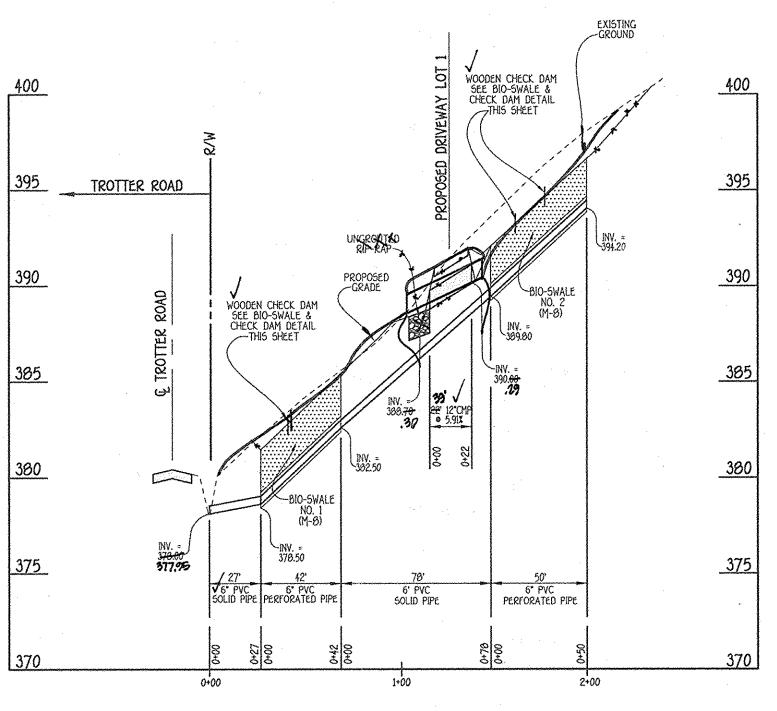
Add Drywell Notes And Defails

Rev. micro bio-retention facilities 344

**REVISION** 



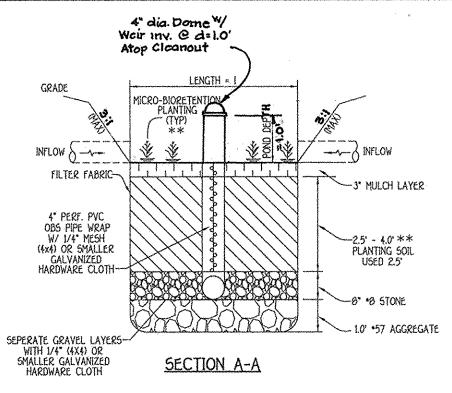
TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION

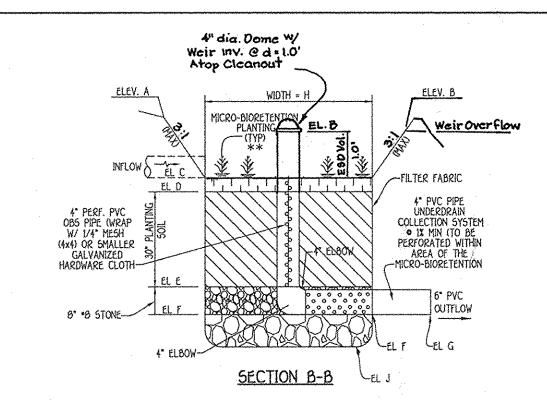


BIO-SWALES FOR THE USE-IN-COMMON DRIVEWAY SCALE: VERT. 1" = 5" HORIZ. 1" = 50"

> THE PLANTING MEDIA, MULCH AND UNDERDRAIN SYSTEMS SHALL CONFORM TO THE SPECIFICATIONS FOUND IN APPENDIX B.4 OF THE 2000 MARYLAND STORMWATER DESIGN MANUAL.

> > 410-531-6093





#### MICRO-BIORETENTION DETAIL (M-6) NOT TO SCALE

#### OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP (N-1) & NONROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

### OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6) AND BIORETENTION SWALE (M-8)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING, ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING. 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A4.1 AND 2. B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING

THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES. C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER

D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

SILKY DOGWOOD

\* SEE PLANT MATERIAL CHARTS PLANT MATERIAL MUST COVER FOR QUANTITIES AND SPACING AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

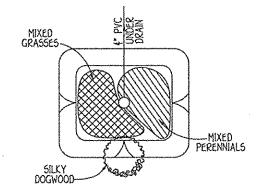
MICRO-BIORETENTION PLANT MATERIAL QUANTITY NAME MAXIMUM SPACING (FT.)

1 FT.

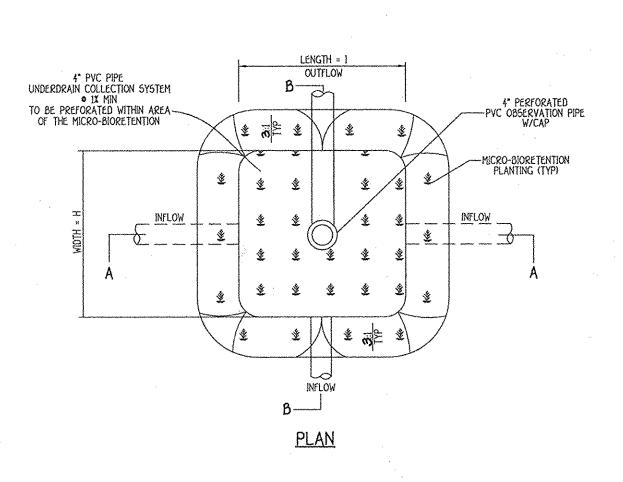
PLANT AWAY FROM INFLOW LOCATION

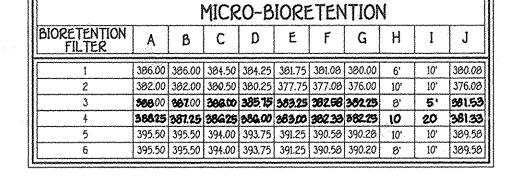
MIXED GRASSES

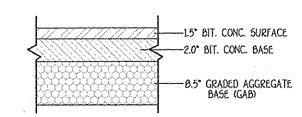
5ILKY DOGWOOD



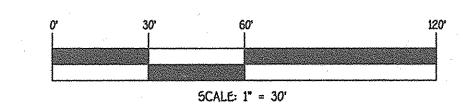
MICRO-BIORETENTION PLANTING DETAIL







P-1 DRIVEWAY PAVING SECTION NOT TO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 9/08/11 Date

1 THRU 6 ROTTER CREST N/A TAX/ZONE | ELEC. DIST. | CENSUS TR. BLOCK NO. ZONE PLAT 21613 R-20 6069.02 WATER ZONE TEST GRADIENT

780

LANDSCAPE, STORMWATER MANGEMENT DETAILS & NOTES

> SINGLE FAMILY DETACHED TROTTER CREST LOTS 1 THRU 6

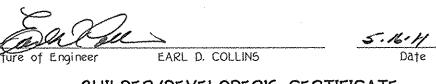
SCALE: 1" = 30' DATE: APRIL, 2011 SHEET 4 OF 4 5DP-11-031

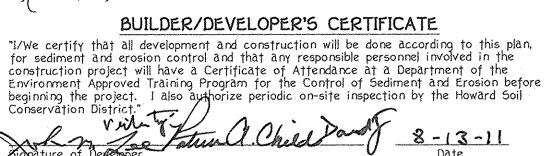


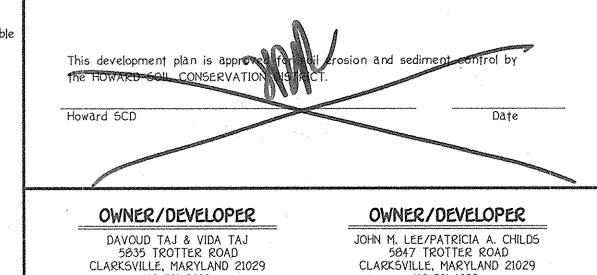
7.26.12

5/2/12

ENGINEER'S CERTIFICATE I 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."







410-531-1069

630

TAX MAP NO.: 35 PARCEL NO.5: 201 & 202 GRID NO.: 2 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND