

PLANTING SPECIFICATIONS FOR BIO-RETENTION

- SCOPE: THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES OF PLANT MATERIAL SHOWN ON THE PLAN IN THE PLANT LIST, AND SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT TO COMPLETE ALL LANDSCAPE WORK AS SHOWN ON THE PLANS AND SPECIFICATIONS.
- B. UTILITIES: THE LANDSCAPE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-257-7777) TO VERIFY THE LOCATION OF ALL MAIN UTILITIES AND SHALL ASK THE GENERAL CONTRACTOR TO LOCATE LIGHTING AND OTHER ON-SITE UTILITIES IN THE FIELD BEFORE PROCEEDING WITH THE INSTALLATION OF ANY PLANTING. IF CONDITIONS ARISE IN THE FIELD WHICH NECESSITATE THE SHIFTING OF A PLANT LOCATION MORE THAN 15', THE LANDSCAPE
- C. SUBSTITUTIONS: ANY CHANGE IN THE TYPE, SIZE AND QUANTITY OF PLANT MATERIAL BY THE LANDSCAPE CONTRACTOR MUST BE APPROVED BY THE
- D. PLANT STANDARDS: PLANTS SUPPLIED SHALL CONFORM IN ALL RESPECTS TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI ZGO.I). THEY SHALL BE FIRST CLASS REPRESENTATIVES OF THEIR SPECIES AND VARIETIES, NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. PLANT NAMES SHALL BE THOSE GIVEN IN THE LATEST EDITION OF STANDARD PLANT NAMES, AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.
 - PLANTS SHALL BE SOUND, VIGOROUS AND HEALTHY, MELL BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS AND SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SUBSTANCE. TRUNKS AND BRANCHES SHALL BE FREE OF CUTS AND abrasions over one inch (1º) in and dimension. Plants in leaf shall be sprayed with anti-desiccant immediately before digging to FILM THE LEAVES, BRANCHES, AND THIGS.
 - SHADE TREES WITH BROKEN, DAMAGED OR MULTIPLE LEADERS WILL BE REJECTED.
 - BALLED AND BURLAPPED PLANTS SHALL BE DUG WE'RE A FIRM NATURAL ROOT BALL. PLANTS WITH SOFT, BROKEN OR DAMAGED LIMBS WILL BE
 - PLANTS SHALL BE TAGGED WITH LABELS IDENTIFYING THE BOTANICAL AND COMMON NAMES OF THE PLANTS. NO CHANGE IN THE KIND, QUANTITY, QUALITY, OR SIZE OF PLANTS SPECIFIED SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE APPROVING AGENCY.
 - ALL PLANTS SHALL BE CERTIFIED PEST-FREE BY THE DEPARTMENT OF AGRICULTURE OF THEIR STATE OF ORIGIN.
 - MAJOR SHADE TREES SHA! BE 2-V2' CALIPER OR LARGER (EXCEPT WHEN WITHIN 2 YEAR WSEL, THEN 1-1/4' 1-V2' CAL. WILL BE PERMITTED);
 ORNAMENTAL TREES SHALL PAVE A MINIMUM CALIPER OF 1-1/4'; EVERGREEN TREES SHALL HAVE A MINIMUM HEIGHT OF 6' AND SHALL BE FULL TO THE GROUND AND HEAVILY BRANCHED. SHRUBS SHALL HAVE A SPREAD OF AT LEAST 18". NO BARE ROOT TREES OR SHRUBS WILL BE ACCEPTED
- E. PLANTING MATERIALS: TOPSOIL SHALL BE FERTILE, FRIABLE AND TYPICAL OF THE PROJECT SITE BEFORE DISTURBANCE. IT SHALL HAVE A MINIMUM ORGANIC CONTENT OF 2.5 % BY VOLUME AND SHALL BE FREE OF STONES, LUMPS, ROOTS, STICKS, AND DEBRIS LARGER THAN 2° IN ANY DIMENSION. IT SHALL NOT BE LOADED, DELIVERED, SPREAD OR OTHERWISE HANDLED IN A MUDDY OR FROZEN CONDITION. (SEE BIORETENTION SPECS.)
 - PLANTING (BACKFILL) MIX SWALL BE COMPOSED OF THREE PARTS OF THE SOIL IMMEDIATELY ADJACENT TO THE PLANT PIT OR BED TO ONE PART
 - APPROVED ORGANIC MATTER. TREE STAKING MATERIALS SHALL BE ROUGH-SAWN HARDWOOD 2º BY 2º STOCK OF A LENGTH TO CONFORM TO THE REQUIREMENTS OF THE TREE

 - STAKING TIES SHALL BE DOUBLE STRANDS OF 12 OR 14 GAUGE GALVANIZED STEEL WIRE, TWISTED, FURNISHED WITH PROTECTIVE SECTIONS OF CORDED 3/4" DIAMETER RUBBER HOSE OR NYLON WEBBING AT LEAST 1-1/2" WIDE OR POLYPROPYLENE CHAINLOCK STRAPPING MANUFACTURED FOR THE PURPOSE OR OTHER MATERIALS APPROVED BY THE APPROVING AGENCY.
- ALL DIG PLANT MATERIAL SHALL HAVE BEEN DUG BEFORE BUD BREAK OR AFTER LEAF MATURATION. ANY PLANT MATERIAL EXHIBITING DROOPING NEW GROWTH WITHIN TWO 🎊 - MEEKS 💯 BEING PLANTED WILL BE REJECTED AND MUST BE REMOVED FROM THE JOB.
- POOR DRAINAGE: NO PLANT BROUGHT TO THE ATTENTION RELOCATED OR THE CONTRA
- LANTED IN SITUATIONS THAT SHOW OBVIOUS POOR DRAWAGE. SUCH SITUATIONS SHALL IMMEDIATELY BE SYIRONMENTAL CONSULTANT AND OWNER, AND IF THEY DEEM NECESSARY, THE PLANTS SHALL BE BE ADJUSTED TO ALLOW FOR DRAINAGE CORRECTION AT A NEGOTIATED COST.
- SITE PREPARATION: IT SHALL CONTRACTOR PRIOR TO AN ROOT SYSTEMS. PETROLEU DIAMETER. THE "CLEAN" S PROPOSED AND 4' WHERE
 - eneral contractor's responsibility to present 'clean' soil conditions to the landscape 28 Installation. "Clean" soil may include on-site soil must be free of pavement materials, muck, ? Chemical Substances, blue stone, construction debris and other materials larger than 2' in EXTEND TO THE FOLLOWING MINIMUM DEPTHS: 18" WHERE TREES ARE PROPOSED, 12" WHERE SHRUBS ARE "CLEAN" SOIL SPECIFICATION 113. REPORT THIS CONDITION TO THE ENVIRONMENTAL CONSULTANT AND OWNER PRIOR TO PLANTING IN THOSE
- WORKMANSHIP: DURING PLAN DAMAGE TO EXISTING PLAN OPERATIONS SHALL BE RE CONDITION.

CHARACTER OF THE PLANT.

- AREAS SHALL BE KEPT-NEAT AND CLEAN, AND ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO AVOID AND STRUCTURES. UPON COMPLETION, ALL DEBRIS AND WASTE MATERIAL RESULTING FROM PLANTING 1991 THE PROJECT AND THE AREA CLEANED UP. ANY DAMAGED AREAS SHALL BE RESTORED TO THEIR ORIGINAL
- OWNER SHALL SUPPLY WATER AT NO EXTRA COST. IT WILL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY WATER: IF AVAILABLE OF TO SUPPLY WATER IF THE we an the site.

PLANTING METHODS:

- PLANTING BEDS: STAKE 25 OF PLANTING BEDS AND CENTERS OF INDIVIDUAL PLANTING PITS. THESE LOCATIONS ARE TO BE APPROVED IN THE FIELD BY THE \wedge
 - TENCY BEFORE PLANTING OPERATIONS BEGIN.
- AND PREPARE PLANTING MIX (SEC. EI & 2). ONLY PLANTING MIX SHALL BE USED TO BACKFILL THE PLANTING PITS AND EXCAVATE STAKE OUT
- TREE/SHRUB PIT: SET PLANTS SO THAT THE ROOTBALL REST ON FIRM GROUND AND THE ROOT CROWN IS 3'-4' HIGHER THEN THE SURROUNDING GRADE. BACKFILL WITH PLANTING MIX AND TAMP LIGHTLY IN EIGHT INCH (8') INCREMENTS. WATER THOROUGHLY TO ELIMINATE AIR POCKETS IN THE BACKFILL. REMOVE ALL MATERIALS OTHER THAN UNTREATED BURLAP, JUTE THINE AND WIRE BASKET FROM THE TOP 1/3 OF THE BALL. COMPLETE BACKFILLING WITH PLANTING MIX TO BRING SOIL LEVEL TO SURROUNDING GRADE
- WELL PROTECTED WITH TOPSOIL, PEAT MOSS OR OTHER ACCEPTABLE MATERIAL AND SHALL BE KEPT WELL WATERED. PLANTS SHALL NOT REMAIN UNPLANTED FOR MORE THEN THREE (3) CALENDAR DAYS.
- PLANTS SHALL NOT BE BOUND WITH MIRE OR ROPE AT ANYTIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES AND TWIGS. PLANTS SHALL BE LIFTED FROM THE BOTTOM OF THE BALL ONLY.

protect plants at all times from sun and drying winds. Plants that cannot be planted immediately shall be kept in the shade,

- MULCH ALL BED'S AND PLANTING PITS WITH A THREE INCH (3") LAYER OF MULCH IMMEDIATELY AFTER PLANTING.
- ALL PLANTS ARE TO BE WATERED THOROUGHLY ON THE DAY OF PLANTING, EVEN IF IT IS RAINING.
- TREE BRACING: STAKE PLANTS IMMEDIATELY AFTER PLANTING, TAKING CARE THAT THEY STAND PLUMB AFTER STAKING. STAKED AND STAKING MATERIALS SHALL BE REMOVED AT THE END OF THE GUARANTEE PERIOD AND DISPOSED OF OFF-SITE BY THE CONTRACTOR.
- D. TREE WRAP: WRAP DECIDUOUS TREE TRUNKS STARTING AT THE BASE OF THE TREE UP TO THE SECOND BRANCH. REMOVE WRAPPING AT THE END
- OF THE GUARANTEE PERIOD. PRUNING: PRUNE PLANT AT THE TIME OF PLANTING AS DIRECTED BY THE APPROVING AGENCY, TAKING CARE TO RETAIN THE NATURAL FORM AND
- MISC. ANY ITEMS NOT ADDRESSED IN THIS SECTION SHALL BE IN CONFORMANCE WITH THE APPLICABLE REQUIREMENTS OF THE LANDSCAPE SPECIFICATION GUIDELINES OF THE LANDSCAPE CONTRACTORS ASSOCIATION, MD-DC-VA.
- WETLAND PLANTING NOTES: CONTRACTOR SHALL PROVIDE A MINIMUM SOIL DEPTH OF 4' AT THE COMPLETION OF FINAL GRADING. ANY LARGE STONES, DEBRIS OR CONSTRUCTION MATERIALS SHALL BE REMOVED AT THIS TIME. COMPACTED SOILS SHALL BE DISKED TO A DEPTH NO LESS THAN 6 PRIOR TO BASIN PLANTING AND FLOODING.
- A SPRING OR EARLY SUPPLER PLANTING SHALL BE REQUIRED. PLANTING MATERIALS SHALL NOT BE STORED ON-SITE LONGER THAN 48 HOURS. PLANT ROOTS SHALL BE KEPT MOIST AT ALL TIMES. PLANTS SHALL BE STORED OUT OF DIRECT SUBLIGHT.
- FOR PLANTING POTTED PLANTS, MAKE A HOLE IN THE SUBSTRATE HIDE ENOUGH TO TAKE THE POTTED PLANT, AND DEEP ENOUGH THAT THE WETLAND SUBSTRATE IS AT THE SAME DEPTH (OR A LITTLE DEEPER) THAT THE SOIL LEVEL IN THE POT. THE POT SHALL BE REMOVED RIGHT BEFORE PLANTING TO FACILITATE THE ROOT SPREADING. THE OVERALL DEPTH SHOULD BE APPROXIMATELY 4"-6". PRESS THE SUBSTRATE FIRMLY AROUND
- EACH PLANT IS TO BE SIDE DRESSED AT THE TIME OF PLANTING WITH 30 GRAMS OSMOCOTE 18-6-12 SLOW RELEASE FERTILIZER OR AN EQUIVALENT. SOURCE OF AQUATIC PLANTS: RUPPERT ENVIRONMENTAL, ASHTON, MARYLAND (301)774-0400 AND ENVIRONMENTAL CONCERN, INC., ST. MICHAELS, MARYLAND (410)745-9620.

III. SEEDING AND SODDING

ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVEMENTS AND PLANTING BEDS ARE TO BE ESTABLISHED IN A LAWN OF KENTUCKY-31 TALL FESCUE EITHER BY SEEDING OR SOD, OR COMBINATION, DEPENDING ON THE TIME OF YEAR, AVAILABILITY OF MATERIALS AND OWNER'S PREFERENCE. THE STABILIZATION SHALL BE IN CONFORMANCE TO STANDARDS AND SPECIFICATIONS FOR SOIL AND SEDIMENT CONTROL, PUBLISHED BY THE STATE OF MARYLAND.

IV. GUARANTEE

ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN HEALTHY AND VIGOROUS CONDITION AT THE BEGINNING OF THE SECOND GROWING SEASON FOLLOWING ACCEPTANCE BY THE APPROVING AGENCY. PLANTS WITH GREATER THAN 33 IDEBACK, OR HAVE NOT GROWN SO AS TO EMERGE FROM THE WATER SURFACE, SHALL BE REPLACED AT THE NEXT PLANTING SEASON.

V. MAINTENANCE

REMOVE LITTER AND DEBRIS AS RECUIRED DURING THE FIRST GROWING SEASON AND AT THE BEGINNING OF THE SECOND GROWING SEASON. REPLACE UNSUCCESSFUL TRANSPLANTS MONTHLY FOR 6 MONTHS AND AT THE BEGINNING OF THE SECOND GROWING SEASON.

<u>BIO-RETENTION SOIL & MATERIAL REQUIREMENTS</u>

SOIL TEXTURE AND STRUCTURE:

TOPSOIL FOR BIORETENTION SHALL HAVE A SANDY LOAM, LOAMY TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT IS 5%; SOIL MIXTURE SHALL BE 50-60 % SAND; 20-30 % LEAF MULCH; 20-30 % TOPSOIL. 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 Bioretention 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, CUACKGRASS, JOHNSON GRASS, MUGHORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARTHUB, OR OTHER NOXIOUS WEEDS.

PLANTING SOIL FOR BIORETENTION AREAS MUST BE TESTED PRIOR TO INSTALLATION FOR PH AND ORGANIC MATTER. THE SOIL SHOULD MEET THE FOLLOWING CRITERIA (LANDSCAPE CONTRACTORS ASSOCIATION, 1986).

ORGANIC MATTER 1.5-3.0 %

IT IS REQUIRED THAT A SEIVE ANALYSIS, PH, AND ORGANIC MATTER TEST BE PREFORMED PER EACH BIORETENTION AREA.

placement of the planting boil in the bioretention area should be in lifts of 12 to 18. Inches and lightly compacted. Minimal compaction effort can be applied to the soil by tamping with a bucket from a dozer or backhoe. Refer also to

MULCH SPECIFICATIONS

INDIVIDUAL PLANTING SHALL BE MULCHED (REFER TO LANDSCAPING DETAILS). ACCEPTABLE MULCH SHALL BE SHREDDED HARDWOOD ONLY. MULCH MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL AGED MULCH IS defined as mulch that has been stockpiled for stored for at least twelve (12) months.

SAND SPECIFICATIONS:

proyide clean sand, free of deleterious materials. Sand shall meet aashto M-6 or astm c-33 with grain size of 0.02°-0.04°.

GEOTEXTILE SPECIFICATIONS:

GEOTEXTILE FABRIC SHALL MEET ASTM D-751 (PUNCTURE STRENGTH - 125 LB) ASTM D-1117 (MULLEN BURST STRENGTH - 400 PSI)

ASTM D-1682 (TENSILE STRENGTH - 300 LB) FABRIC SHALL HAVE 0.08' THICK E.O.S. OF #80 SLEVE, AND MAINTAIN 125 GPM PER SQ. FT. FLOW RATE.

INSPECTION REQUIREMENTS:

GRAVEL FILTER SPECIFICATIONS: underdrain gravel blanket shall be double washed, #57 stone, 1-1/2° in size. Pea gravel shall be washed, river-run, round

DIAMETER 1/4" -1/2" IN SIZE.

- THE CONTRACTOR SHALL ARRANGE A "PRECONSTRUCTION MEETING" WITH THE OWNER AN LANDSCAPE ARCHITECT/ENGINEER PRIOR TO BEGINNING WORK IN THE BIORETENTION FACILITY.
- AT THE COMPLETION OF EXCAVATION TO INSPECT SUB GRADE PREPARATION.
- DURING UNDERDRAIN AND FILTER INSTALLATION
- BACK FILL OF SOIL INTO THE BIORETENTION AREAS. SOIL CERTIFICATIONS FOR BACK FILL ARE
- THE FINAL TOPSOIL LAYERS SHOULD BE THOROUGHLY WETTED TO ACHIEVE SETTLEMENT OF THE
- SOIL/SAND BACKFILL MIX.
- THE WORK SHALL BE INSPECTED BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO FINAL STABILIZATION AND
- SEDIMENT AND EROSION CONTROL PRACTICES MAY BE REMOVED UPON APPROVAL BY THE

construction specifications for bio-retention

RAIN GARDEN AREA PLANT SPECIFICATIONS

GENERAL PLANTING SPECIFICATIONS

FERTILIZER

- ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE TO THE JOB SITE AND UNTIL PLANTED.
- WALLS OF PLANTING PITS SHALL BE DUG SO THAT THEY ARE VERTICAL.
- THE DIAMETER OF THE PLANTING PIT MUST BE A MINIMUM OF SIX INCHES (6") LARGER THEN THE DIAMETER OF THE BALL OF THE TREE.
- THE PLANTING PITS SHALL BE DEEP ENOUGH TO ALLOW 1/4" OF THE BALL TO BE ABOVE THE EXISTING GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE
- THE APPROPRIATE AMOUNT OF FERTILIZER IS TO BE PLACED IN THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS' BALL (NEVER LIFT BY BRANCHES OR TRUNK).
- SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO THAT THE TOP OF THE BALL IS APPROXIMATELY 1/4" ABOVE THE FINAL GRADE.
- BACKFILL PLANTING PIT WITH EXISTING SOIL.
- MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING PROCEDURE
- NEVER COVER THE TOP OF THE BALL WITH SOIL. MOUND SOIL AROUND THE EXPOSED BALL (1/4")
- TREES SHALL BE BRACED BY USING 2º BY 2º WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL, UTILIZING HOSE AND WIRE SO THE TREE IS BRACED TO THE STAKES.
- GRASSES AND LEGIME SEED SHALL BE TILLED INTO THE SOIL TO A DEPTH OF AT LEAST 2 INCHES BY WITHER HARROWING OR DISCING. FERTILIZER SHALL BE APPLIED AT THE SAME RATE AND UTILIZING THE SAME PROCESS FOR NON-GRASS GROUND COVER.
- GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING TECHNIQUES.
- ALL GROUND COVERS SHALL BE FERTILIZED WITH A 10-6-4 ANALYSIS FERTILIZER AS A WET APPLICATION AT THE RATE OF 3 LBS. PER 100 SQUARE FEET OF THE BIORETENTION AREA PRIOR TO PLANTING NON-GRASS GROUND COVER AS PART OF THE GRASS SEED GROUND COVER. **FERTILIZATION**
- TREE AND SHRUB FERTILIZER SHALL BE 21 GM. TIGHTLY COMPRESSED, LONG LASTING, SLOW RELEASE (2 YEAR) FERTILIZER TABLET WITH A MINIMUM GUARANTEED
- TOTAL NITROGEN (N) 201 WATER SOLUBLE ORGANIC NITROGEN 7 % WATER INSOLUBLE ORGANIC NITROGEN IS \$ AVAILABLE PHOSPHORIC ACID (P203) 10 \$
- FOR CONTAINERIZED TREES AND SHRUBS, PLACE THE SPECIFIC FERTILIZER TABLET(S) IN THE BOTTOM OF THE PLANTING PIT ACCORDING TO THE FOLLOWING
- I GAL. CONTAINER I EA. 21 GM. TABLETS 3 GAL, CONTAINER 2 EA, 21 GM, TABLETS 5 GAL. CONTAINER 3 EA. 21 GM. TABLETS

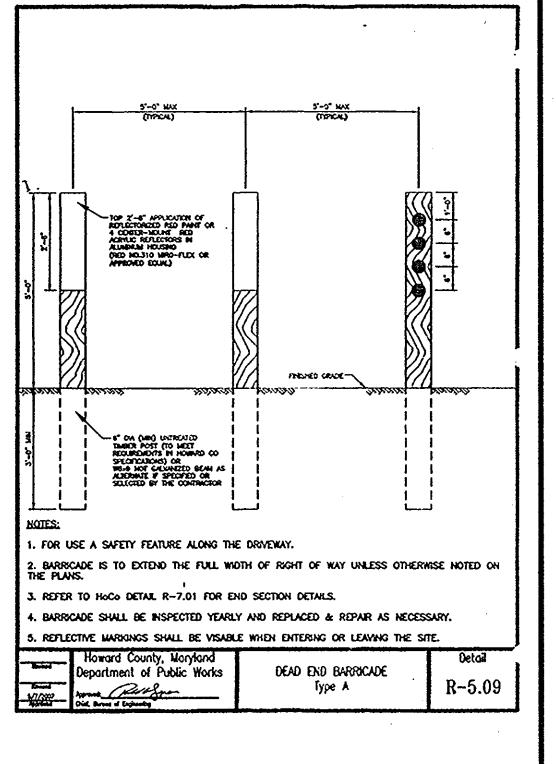
7 GAL. CONTAINER 5 EA. 21 GM. TABLETS PLANTING NON-GRASS GROUND COVER

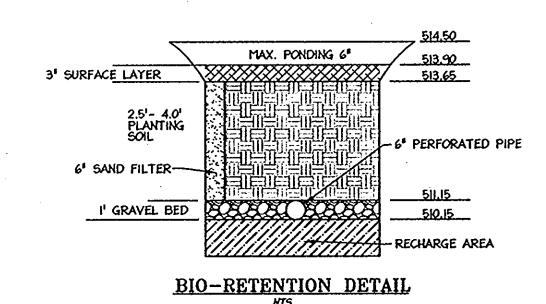
SOLUBLE POTASH (K20) 5%

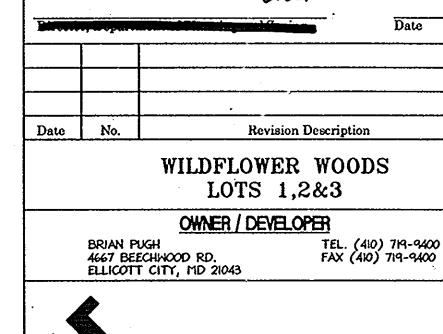
- THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH WITH ONE OF THE FOLLOWING: HAND TROWEL, SHOVEL, BULB PLANTER, OR HOE (THIS DOES NOT APPLY TO GRASSES OR LEGUMES). SPACING SHALL BE 2' ON CENTER.
- BEFORE PLANTING, BKODEGRADABLE POTS SHALL BE SPLIT, AND NON-BKODEGRADABLE POTS SHALL BE REMOVED. ROOT SYSTEMS OF ALL POTTED PLANTS SHALL BE SPLIT OR CRUMBLED.
- THE GROUND COVER SHALL BE PLANTED SO THAT THE ROOTS ARE SURROUNDED BY THE SOIL BELOW THE MULCH, POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. THE ROOT OF BARE ROOT PLANTS SHALL BE COVERED TO THE CROWN.
- THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED

SPRAY THE MULCHED AND PLANTED GROUND COVER BED WITH A PRE-EMERGENT HERBICIDE.

SECTION	MAD AND STREET	CAUFORNIA BELIANG RUTO (CBR)	3 10 G	\$ 10 <7	27	370 43	5 70 C7	27	
NUCER	CUASSITICATION	PANDADA HUTERAL (NORES)	MA	PUN HAY ALLA CYS			HAN BUCH CONSTANT CAS		
P-1	PACKET DAYS AND AND PRISOD THE	HALL SUPERFACE FROM, SUPERCE 9.5 MI PG 44-22, LEVEL 1 (ESM.)	1.5			1.5	1.5	1.5	
	PESSODIFIE AND HOM-RESODUTAL WITH NO BOME THAN 2 HEAVY TRUCKS PER CAY	HA SUPERFACE ATTEMPTION CHAPTER (NA)	M	M	KA.	NA.	, w	244	
		18.0 SV, PO 64-22, UND, 1 (USA)	2.0	2.0	2.0	35	2.0	2.5	
		CRUSED ACCRECATE BASE (CAS)	8.5	- 22	-44	40	4.0	4.0	
P-2	PARKING CONE ABLES: RESOURCE, AND HON-RESOURCE WITH NO HORE THAN TO HEAVY TRUCKS POR CAY	HAN SUPPOPANE PRINCE SUPPLICE \$5 HAN, PO 64-22, LEVEL 1 (CSN.)	1.5	1.5	1.5	1.5	1.5	1.5	
	ACCES PLACE ACCESS STREET	MAN SUPPLYENT INTERVEDING SURFACE 8.5 MAI, PO 64-22, LEVEL 1 (CSAL)	1.0	1.0	1.0	1.0	io	1.0	
r-2	CAL-OC-SACS: RESIDENAL	19.0 INC PO 64-22, LEVEL 1 (CSAL)	2.0	20	2.0	3.5	20	20	
		GRADED ACCRECATE BASE (Q48)	8.0	4.0	70	140	4.0	6.0	
	PASCING CHOME ASSESS RESERVENCE AND FORM-RESIDENTIAL WITH MO MORE THAN TO HEAVY DRUGST FOR DAY	HALL SUPERFACE FINAL SURFACE 8.5 NM. PO 64-22, LEVOL 1 (CSU)	1.5	13		-13	1.5	14	
P-3	LOCAL MONOS ACCESS PLACE ACCESS STREET	AS MA SC 64 AT TEXT (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0	
1 - 0	CAL-OE-SACS: HOK-RESDOOM	19.0 LAL PC 64-22, LOVE 1 (CSU)	3.0	3.0	3.0	4.5	3.0	20	
•••	MANOR COLUMNIA	CRUDED ACCREGATE BASE (CAS)	10.0	8.0		6.0	6.0	40	
P-4	MANUEL COLLECTORS	12.5 MM, PO 64-27, LD-D, 2 ROW (SAL)	2.0	20_		2.0	2.0	20	
	MAKOR COLLECTORS	125 MA FO SA SA COLT T (LOS ESM)	2.0	2.0	20	20	2.0	20	
		19.0 HAL PG 64-22, LEVE, 2 (LOW 25%)	4.0	4.0	70	60	5.0	70	
		GRACED ACCREGATE BASE (GAB)	170	725		9.6	6.0	6.C	
NOTOS: 1) MENY TRICKS AND DEFINED AS THOSE WITH SIX (6) INCELS OR MORE INCLUDING CARRIAGE TRICKS. 2) NAM SUPERANG LUCKS SHALL BE PLACED IN APPROPRIATE COLUMNICAD LIFT TRICKNESS. 12.0 MM BASE (2.0" MM TO 4.0" MM). 12.5 MM SUPERANG LUCKS SHALL BE PLACED IN APPROPRIATE COLUMNICAD LIFT TRICKNESS. LUCKS. 4) THE INTERNEDIATE SUPPLIES OF THE BEST APPLIES OF PLACE BOTH THE SUPPLIES OF BASE COURSE, AND 'S ROCCURS. 4) THE INTERNEDIATE SUPPLIES INTERNATE OF ASSET LUCKS FOR COMMERCIAL PROPRIED THE SUPPLIES AND SECONDS OF THE BUTCH APPLIES OF THE BUTCH APPLIES OF THE BUTCH APPLIES WHEN THE COUNTY BOOK—C—THAT WHERE ALL BOTH THE COURTS OF THE BUTCH APPLIES OF TH									
Feath Street	Howard County, Maryland Department of Public Works	PAYING SECTIONS P-1 to P-4	•				0eto R-2		







APPROVED: DEPARTMENT OF PLANNING AND ZONING



WATER CODE

PRIVATE

christopher consultants engineering surveying land planning christopher consultants, ltd. 7172 columbia gazaway drive (suito 100) columbia, md. 21046 2990 410 872 8690 - mcIro 301 861 0145 - fex 410 872 8893

4TH

PRIVATE

ADDRESS CHART LOT/PARCEL STREET ADDRESS 3301 ROSEMARY LANE LOT I ---- ROSEMARY LANE LOT 2 ---- ROSEMARY LANE LOT 3 PERMIT INFORMATION CHART PROJECT NAME LOT/PARCEL NO. CENSUS TRACT WILDFLOWER WOODS LOTS 1,243 PLAT NO. | GRID NO. | ZONE TAX MAP ELECTION DISTRICT

SITE AND SWM NOTES SHEET

SEWER CODE

SCALE: AS SHOWN PROJECT: 05R801.00 DATE: AUGUST 2007 APPROVED:

6.13.09 DATE "HOUSE!

LOTS 1-3Design, enj DRAWN: DAM CHECKED: JMH

RR-DEO

F #07-046

19.0 STANDARDS AND SPECIFICATIONS FOR LAND GRADING

DEFINITIONS

RESHAPING OF THE EXISTING LAND SURFACE IN ACCORDANCE WITH A PLAN AS DETERMINED BY , ENGINEERING SURVEY AND LAYOUT

THE PURPOSE OF A LAND GRADING SPECIFICATION IS TO PROVIDE FOR EROSION CONTROL AND VEGETATIVE ESTABLISHMENT ON THOSE AREAS WHERE THE EXISTING LAND SURFACE IS TO BE RESHAPED BY GRADING ACCORDING TO PLAN.

DESIGN CRITERIA

THE GRADING PLAN SHOULD BE BASED UPON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDING TO AVOID EXTREME GRADE MODIFICATIONS. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE IMPOSED ON THE GRADING OPERATION RELATED TO SLOPE STABILITY, EFFECT ON ADJACENT PROPERTIES AND DRAINAGE PATTERNS, MEASURED FOR DRAINAGE AND WATER REMOVAL AND VEGETATIVE TREATMENT, ETC.

MANY COUNTRIES HAVE REGULATIONS AND DESIGN PROCEDURES ALREADY ESTABLISHED FOR LAND GRADING AND CUT AND FILL SLOPES. WHERE THESE REQUIREMENTS EXIST, THEY SHOULD BE FOLLOWED. THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS OF THE AREA(S) TO BE GRADED. THE PLAN SHALL ALSO INCLUDE PRACTICES FOR EROSION CONTROL, SLOPE STABILIZATION, SAFE DISPOSAL OF RUNOFF WATER AND DRAINAGE, SUCH AS WATERWAYS, LINED DITCHES, REVERSE SLOPE BENCHES (INCLUDING GRADE AND CROSS-SECTION), GRADE STABILIZATION STRUCTURES, RETAINING WALLS, AND SURFACE AND SUBSURFACE DRAINS. THE PLAN SHALL ALSO INCLUDE PHASING OF THESE PRACTICES. THE FOLLOWING SHALL BE INCORPORATED

I. PROVISIONS SHALL BE MADE TO SAFETY CONDUCT SURFACE RUNOFF TO STORM DRAINS. PROTECTED OUTLETS OR TO STABLE WATER COURSES TO INSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.

2. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASSES SHALL NOT BE STEEPER THEN 2:1. (WHERE THE SLOPE ID TO BE MOVED THE SLOPE SHOULD BE NO STEEPER THEN 3:1: 4:1 IS PREFERRED BECAUSE OF SAFETY FACTORS RELATED TO MOWING STEEP SLOPES.

3. REVERSE BENCHES SHALL BE EROYIDED WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 2:ISLOPES EXCEEDS 20 FEET; FOR 31 SCOPES IT SHALL BE INCREASED TO 30 FEET AND FOR 4:1 TO 40 FEET. BENCHES SHALL BE LOCATED TO DIVIDE THE SLOPES FACE AS EQUALLY AS POSSIBLE AND SHALL CONVEY THE WATER TO A STABLE OUTLET. SOILS, SEEPS, ROCK OUTCROPS, ETC., SHALL ALSO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.

- A. BENCHES SHALL BE A MINIMUM OF SIX-FEET WIDE TO PROVIDE EASE OF MAINTENANCE.
- B. BENCHES SHALL BE DESIGNED WITH A REVERSE SLOPE OF 6:1 OF FLATTER TO THE TOE OF THE UPPER SLOPE AND WITH A MINIMUM OF ONE FOOT IN DEPTH. BENCH GRADIENT TO THE OUTLET SHALL BE BETWEEN 2 PERCENT AND 3 PERCENT, UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND
- C. THE FLOW LENGTH WITHIN A BENCH SHALL NOT EXCEED 800" UNLESS. ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS. FOR FLOW CHANNEL STABILIZATION SEE TEMPORARY SWALES.

4. SURFACE WATER SHALL BE DIVERTED FROM THE FACE OF ALL CUT AND/OR FILL SLOPES BY THE USE OF EARTH DIKES, DITCHES AND SWALES OR CONVEYED DOWNSLOPE BY THE USE OF A DESIGNATED STRUCTURE, EXCEPT WHERE

A. THE FACE OF THE SLOPE IS OR SHALL BE STABILIZED AND THE FACE OF ALL GRADED SLOPES SHALL BE PROTECTED FOR SURFACE RUNOFF UNTIL THEY ARE

THE FACE OF THE SLOPE SHALL NOT BE SUBJECTED TO ANY CONCENTRATED SLOWS OF SURFACE WATER SUCH AS FROM NATURAL DRAINWAYS, GRADED SWALES, DOWNSPOUTS, ETC.

C. THE FACE OF THE SLOPE WILL BE PROTECTED BY SPECIAL EROSION CONTROL MATERIALS, TO INCLUDE, BUT NOT LIMITED TO: APPROVED VEGETATIVE STABILIZATION PRACTICES (SEE SECTION G), RIP-RAP OR OTHER APPROVED STABILIZATION METHODS.

5. CUT SLOPES OCCURRING IN RIPABLE ROCK SHALL BE SERRATED AS SHOWN ON THE FOLLOWING DIAGRAM. THESE SERRATIONS SHALL BE MADE WITH CONVENTIONAL EQUIPMENT AS THE EXCAVATION IS MADE. EACH STEP OR SERRATION SHALL BE CONSTRUCTED ON THE CONTOUR AND WILL HAVE STEPS CUT AS NOMINAL TWO-FOOT INTERVALS WITH NOMINAL THREE-FOOT HORIZONTAL SHELVES. THESE STEPS WILL VARY DEPENDING ON THE SLOPE RATIO OR THE CUT SLOPE. THE NOMINAL SLOPE LINE IS 1:1. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER AND SEED THUS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION. OVER LAND FLOW SHALL BE DIVERTED FROM THE TOP OF ALL SERRATED OUT SLOPES AND CARRIED TO A SUITABLE OUTLET.

6. SURFACE DRAINAGE SHALL BE PROVIDED WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.

1. SLOPES SHALL NOT BE CREATED TO CLOSE TO PROPERTY LINES AS THE ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATELY PROTECTING SUCH PROPERTIES AGAINST SEDIMENT, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGES.

8. FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIAL. IT SHOULD BE FREE OF STONES OVER TWO (2) INCHES IN DIAMETER WHERE COMPACTED BY HAND OR MECHANICAL TEMPERS OVER EIGHT (8) INCHES IN DIAMETER WHERE COMPACTED BY ROLLERS OR OTHER EQUIPMENT. FROZEN MATERIAL SHALL NOT BE PLACED IN THE FILL NOR SHALL THE FILL MATERIAL BE PLACED ON A FROZEN FOUNDATION.

9. STOCKPILES, BORROW AREAS AND SPOIL SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECTED TO THE PROVISIONS OF THE STANDARD AND SPECIFICATIONS.

ALL DISTURBED AREAS SHALL BE STABILIZED STRUCTURALLY OR VEGETATIVELY IN COMPLIANCE WITH 20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITIONS

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILD OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

- A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IN 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 VIGE DED CONTAINS MATERIALS TOXIC TO PLANT GROWTH
- D. THE SOIL IS SO ACIDIC THE TREATHENT WITH LIMESTONE IS NOT FEASIBLE.

FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATION, AREAS HAVING SLOPES STEEPER THAT 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAT 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE

CONSTRUCTION AND MATERIAL SPECIFICATIONS

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

- I. 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 BOT BE A MIXTURE OF CONTRASTINF TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGE THAN I 1/2 IN DIAMETER.
- II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHER AS SPECIFIED.
- III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD TO THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED IN TO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING.

- A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF TESTED SOIL DEMONSTRATES A PH OF LESS THE 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE PH TO 6.5 OR HIGHER.
- B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THEN 1.5 PERCENT BY
- C. TOPSOIL HAVING SOLUBLE SALT CONTENT GRATER THEN 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 DAY MIN.) TO PERMIT DISSIPATION OF

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS AS RECOMMENDED BE A QUALIFIED AGRONOMIST OR SOIL SCIENTIST APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED ON 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

TOPSOIL APPLICATION

PHYTO-TOXIC MATERIALS.

WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICED SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCES AND SEDIMENT TRAPS AND BASINS.

GRADES IN THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.

TOPSOIL SHALL BE UNIFORMY 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 SEEDING 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.

TOPSOIL SHALL NOT BE PLACE WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL ID EXCESSIVELY WET IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIKE AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAT BE APPLIED AS SPECIFIED

COMPOSTED SLUDGE MATERIALS FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATED 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.
- B. COMPOSTED SLUDGE SHALL CONTAIN AS 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.
- C. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF I TON/1,000 SQUARE FEET.

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. MD-VA, PUB #1, COOPERATIVE EXTENTION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

30.0 DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHER IN AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS

I, MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.

2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.

3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.

5. BARRIERS - SOILD BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STAW BALES, AND SIMILAR MATERIALS CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO [REVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING. 6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED

PERMANENT METHODS

I. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

2. TOPSOIL - COVERING WITH LESS EROSIVE MATERIALS. SEE STANDARDS FOR TOPSOILDING.

3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL

REFERENCES

INCHES OF SOIL.

POSSIBLE IN THE SPRING.

1. AGRICULTURE HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATE AND THEIR USE IN PREDICTING SOIL LOSS.

2. AGRICULTURE INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA - ARS.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES: 1. PREFERRED--APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/ACRE 10-10-10

FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING APPLY 400 LBS/ACRE 30-0-0 UREA FORM FERTILIZER (9 LBS/1000 SQ. 2. ACCEPTABLE--APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE

SEEDING -- FOR THE PERIODS MARCH I -- APRIL 30, AND AUGUST I -- OCTOBER 15, SEED WITH 60 LBS/ACRE (I.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY I -- JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 --FEBRUARY 28, PROTECT SITE BY: OPTION I - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS

OPTION 2 - USE SOD, OPTION 3 -- SEER: WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW. MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER

APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.)

OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS

TEMPORARY SEEDING NOTES.

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

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

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

SEEDING: -- FOR PERIODS MARCH I -- APRIL 30 AND FROM AUGUST 15 -- OCTOBER 15, SEED

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

WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY I -- AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 -- FEBRUARY 28 PROTECT THE SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD. MULCHING: -- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED

WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.)FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).

2. All yeaetative 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

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, dikes, perimeter slopes and all slopes greater than 3:1, b 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specific above in accordance with the 1995 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Section 52). Temporary stabilization with mulch along can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

5. 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 by the Howard County Sediment Control Inspector.

. Site Analysis: Total Area of Site 10.554 Acres
Area Disturbed 0.97 Acres Area to be roofed or paved _____O.l__Acres
Area to be vegetatively stabilized ____O.87___Acres
Total Cut _____IOO___Cu. Yds. ___O__Cu. Yds. Total Fill Offsite waste/borrow area location:

B. 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 Howard County Sediment Control

10. On all site with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of institution 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.

. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized any construction as shown on these plans by the end of each work day, whichever is shorter.

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 conservation district.'

ENGNEER'S CERTIFICATE

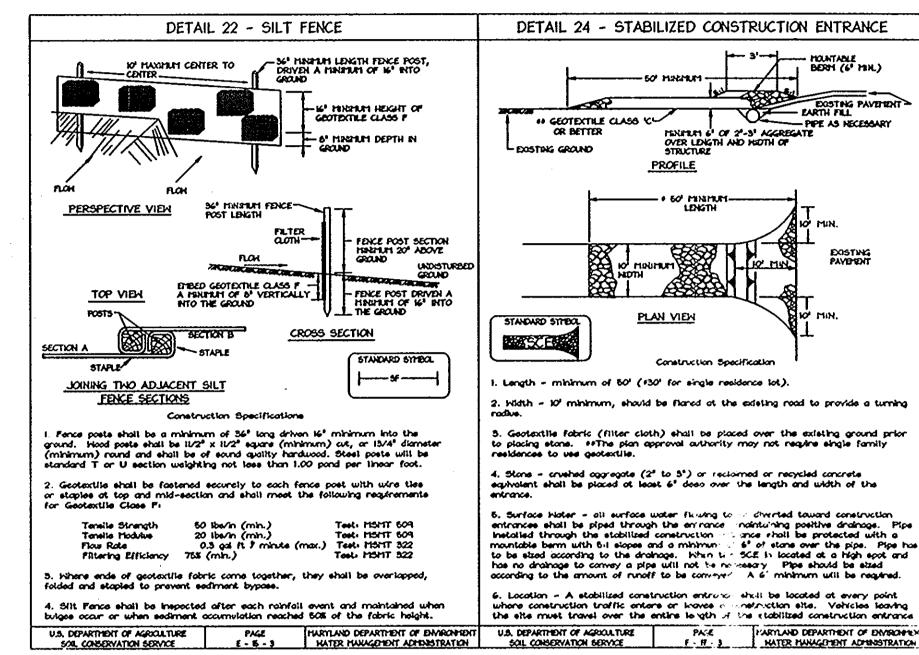
PRINT NAME BELOW SIGNATURE

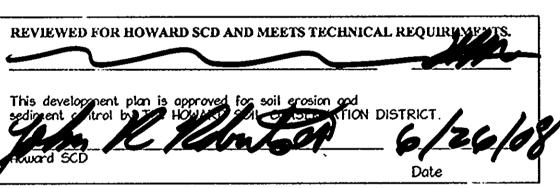
SIGNATURE OF DEVELOPER

Being Yound

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.

DATE JOHN HOUSEHOLDER, P.E.





WILDFLOWER LOT 2 SEQUENCE OF CONSTRUCTION

A: THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS INCLUDING A GRADING PERMIT PRIOR TO COMMENCING ANY LAND DISTURBANCE ACTIVITIES.

B. AN ONSITE PRECONSTRUCTION MEETING SHALL BE CONDUCTED ON SITE WITH THE CONTRACTOR AND THE HOWARD COUNTY INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS AT (410) 313-1880 TO SCHEDULE THIS PRECONSTRUCTION

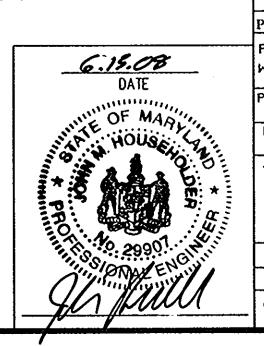
. CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER SEDIMENT CONTROL DEVICES INCLUDING SILT FENCE AND THE STABILIZED CONSTRUCTION ENTRANCES. (2 DAYS)

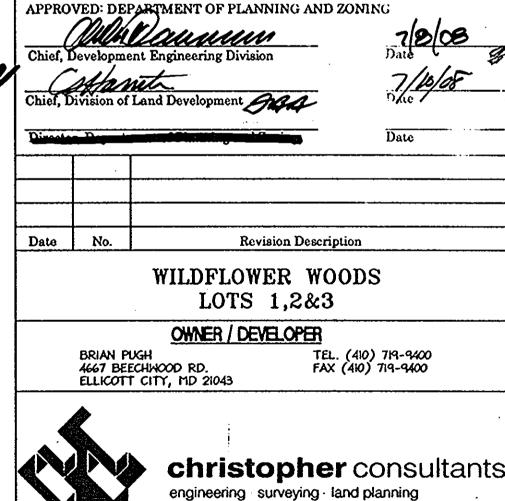
2. BEGIN ROUGH GRADING THE SITE AND ROADWAY PAVING. (15 DAYS) 3. BEGIN ORMORAIN INSTALLATION, INSTALL ALL OTHER UNDERGROUND UTILITIES INCLUDING WELL AND SEPTIC SYSTEMS. BEGIN BIOR: FENTION CONSTRUCTION, (15 DAYS)

4. BEGIN HO. 5 CONSTRUCTION, FINE GRADE THE LOT AND COMPLETE ALL REMAINS LOT IMPROVEMENTS (20 DAYS)

5. STABILIZE GL DISTURBED AREAS. (3 DAYS)

6. WITH WRITTEN APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES. (5 DAYS) TOTAL TIME: 60 DAYS





christopher consultants, fld

·		410 872 8690 - metro 3	01 881 0148 - S ex 410 872 80	333
DDRESS C	HART			
OT/PARCEL		STREET AD	DRESS	
LOT I		3301 R05E	TARY LANE	
LOT 2		ROSE	MARY LANE	
LOT 3		ROSE	MARY LANE	
ERMIT IN	FORMATIC	N CHART		
PROJECT NAME WILDFLOWER WOODS		LOT/PARCEL NO. LOTS 1,243		CENSUS TRACT 603000
LAT NO.	GRID NO. 5	ZONE RR-DEO	TAX MAP 22	ELECTION DISTRICT 4TH
WATER CODE PRIVATE			SEMER CODE	PRIVATE

7172 columbia gatoway driva (suita 100) - columbia, md. 21046 2990

SEDIMENT CONTROL NOTES LOTS 1-3

SCALE: N/A DESIGN: ENJ PROJECT: 05R801.00 DRAWN: DAM DATE: AUGUST 2007 3 of CHECKED: JMH APPROVED:

F #07-048

