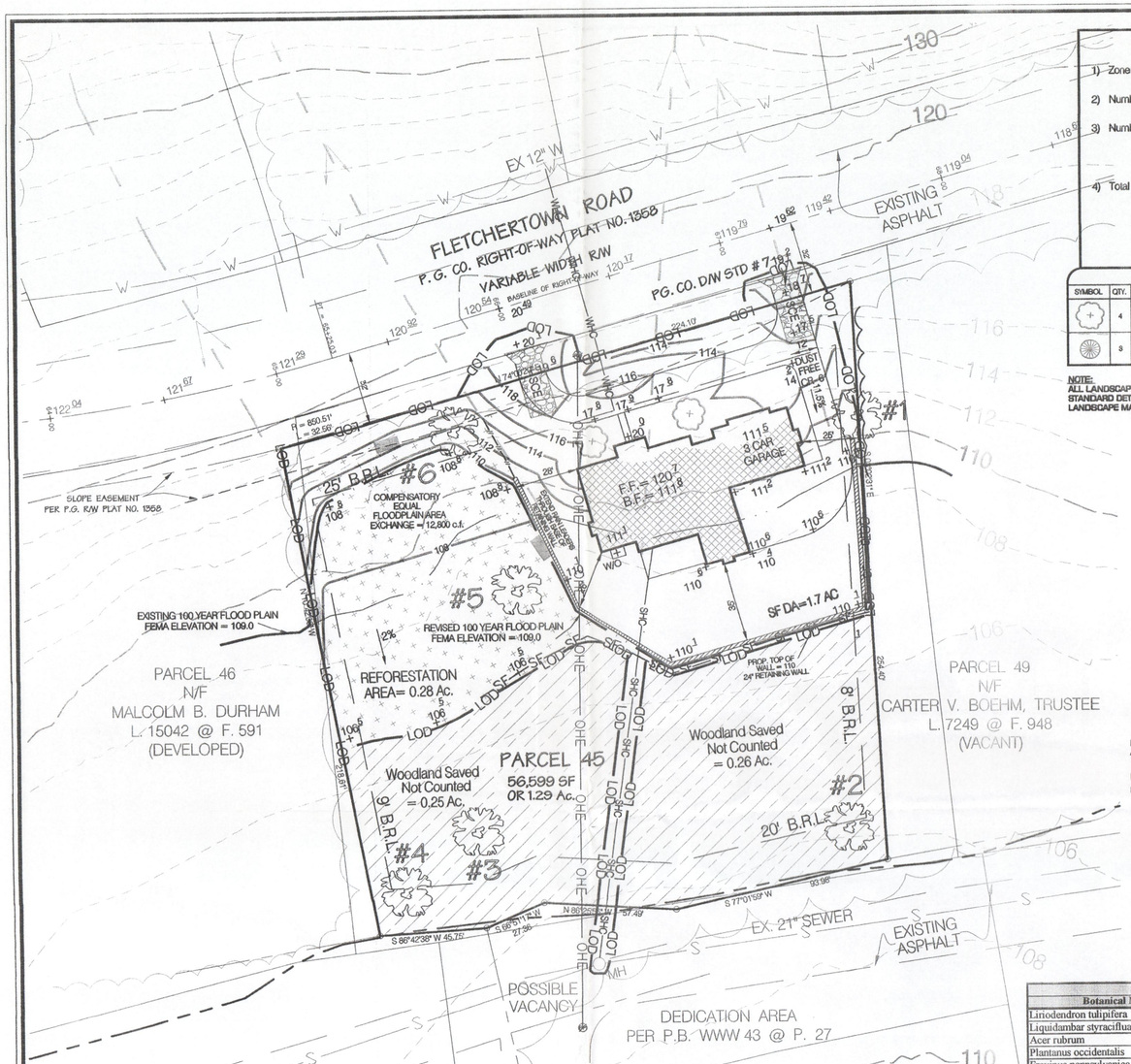


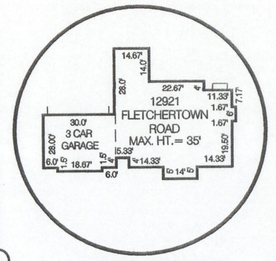
4.1 RESIDENTIAL REQUIREMENTS

1) Zone: R-R
2) Number of lots: 1
3) Number of trees required per lot: 4 shade trees; 3 ornamental trees or evergreen trees
4) Total number of trees provided: 4 shade trees; 3 ornamental trees or evergreen trees

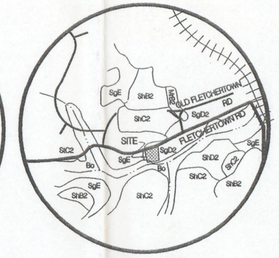
PLANT LIST

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
	4	ACER RUBRUM	RED MAPLE	2.5" CAL.	AS SHOWN	B&B
	3	CORNUS KOUSA	KOUSA DOGWOOD	3/4" - 1" CAL.	AS SHOWN	B&B

NOTE:
ALL LANDSCAPING SHALL BE PLANTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE M.N.C.P. & P.C. LANDSCAPE MANUAL.

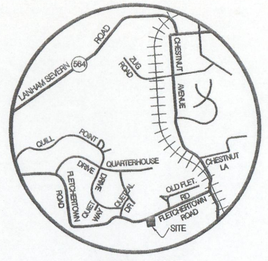


HOUSE DETAIL
SCALE: 1" = 30'



SOILS MAP
SCALE: 1" = 1320'

SOIL SURVEY SHEET No. 9
PREDOMINANT SOIL TYPES:
Bo: Bibb silt loam.
SgD2: Sassafras gravelly sandy loam, 10 to 15 prcent slopes, moderately eroded.



VICINITY MAP
SCALE: 1" = 2500'

A.D.C. STREET MAP No. 9 , GRID H- 10
W.S.S.C. 210 NE 11
TAX MAP No. 37 , GRID A -2

SITE ANALYSIS

1) Zoning: R - R
Property Street Address:
12921 FLETCHERTOWN ROAD
BOWIE, MD 20720
Tax Account Number: 14- 1701184

2) Minimum Building Restriction Lines:
Front B.R.L.: 25'
Side B.R.L.: 17' total 8' minimum
Rear B.R.L.: 20'

3) Gross Tract 56,599 s.f. or 1.299 ac.
Flood Plain Area 37,462 s.f. or 0.86 ac.
Net tract 19,137 s.f. or 0.44 ac.
Disturbed Area 35,810 s.f. or 0.82 ac.
Undisturbed Area 20,789 s.f. or 0.477 ac.
Impervious Area 5,092 s.f. or 0.12 ac.
Vegetatively Stabilized Area 7,543 s.f. or 0.17 ac.
Percent of coverage 13 % (25% IS MAX)

4) Boundary And Topographic information shown hereon taken from County GIS Aerial Topography and other existing records and should be field checked prior to construction or other reliance thereon.

5) All fill under buildings to be Class 1; all fill under driveways and walks to be Class 2; all remaining fill to be Class 3.

6) All Sediment Control and Stabilization measures shall be performed in accordance with the Standards and Specifications of the 1994 MDE Manual.

Woodland Conservation Worksheet
for
Prince George's County

Zone:	R-R		
Gross Tract:	1.30		
Floodplain:	0.87		
Previously Dedicated Land:	0.00		
Net Tract (NTA):	0.43	0.00	0.00

*include acreage in the corresponding columns for each

Property Description or Subdivision Name:	FLETCHERTOWN ROAD
Is this site subject to the 1989 Ordinance?	N
Reforestation Requirement Reduction Questions	
Is this one (1) single family lot? (y,n)	Y
Are there prior TCP approvals which include a combinationof this lot and/or other lots. (y,n)	N
Is this a Mitigation Bank	N
Break-even Point (preservation) =	0.14 acres
Clearing permitted w/o reforestion=	0.23 acres

Woodland Conservation Calculations:		Net Tract (acres)	Floodplain (acres)	Off-site Impacts (acres)
Existing Woodland		0.37	0.87	
Woodland Conservation Threshold (NTA) =	20.00%	0.09		
Smaller of a or b		0.09		
Woodland above WCT		0.28		
Woodland cleared		0.37	0.34	0.00
Smaller of d or e		0.28		
Clearing above WCT (0.25 : 1) replacement requirement		0.07		
Clearing below WCT (2:1 replacement requirement)		0.09		
Afforestation Threshold (AFT) =	15.00%	0.00		
Off-site Mitigation being provided on this property		0.00		
Woodland Conservation Required		0.58		

Woodland Conservation Provided:	(acres)	
Woodland Preservation	0.00	
Afforestation / Reforestation	0.28	
Area approved for fee-in-lieu	0.30	$3,920.40
Credits for Off-site Mitigation on another property	0.00	
Off-site Mitigation being provided on this property	0.00	
Total Woodland Conservation Provided	0.58	

Area of woodland not cleared 0.00 acres
Woodland retained not part of requirements: 0.00 acres

Name: John P. Markovich
Address: 11552 Timberbrook Drive, Waldorf, Md 20601
Phone: (301)-645-4977
License: Qualified Professional

REFORESTATION AREA #1 — Acreage 0.28

Species: Botanical Name	Common Name	Large Caliper Planting Stock: Caliper	Height	Credits/Unit	Type	Quantity	Reforestation Credits	Percent of Stocking	Bottomland Plantings
Liriodendron tulipifera	Tulip Poplar	1-1.5"		3	B&B	15	45	16.0%	
Liquidambar styraciflua	Sweetgum	1-1.5"		3	B&B	13	39	13.8%	
Acer rubrum	Red Maple	1-1.5"		3	B&B	20	60	21.3%	
Plantanus occidentalis	American Sycamore	1-1.5"		3	B&B	18	54	19.1%	
Fraxinus pennsylvanica	Green Ash	1-1.5"		3	B&B	0	0	0.0%	
Quercus phellos	Willow Oak	1-1.5"		3	B&B	11	33	11.7%	
Betula nigra	River Birch	1-1.5"		3	B&B	7	21	7.4%	89.4%
Lindera benzoin	Spicebush		1.5-2'	1	Container	10	10	3.5%	
Ilex verticulata	Winterberry Holly (male)		1.5-2'	1	Container	5	5	1.8%	
Ilex verticulata	Winterberry Holly (female)		1.5-2'	1	Container	5	5	1.8%	
Viburnum prunifolium	Blackhaw Viburnum		1.5-2'	1	Container	5	5	1.8%	
Viburnum dentatum	Arrowwod Virburnum		1.5-2'	1	Container	5	5	1.8%	10.6%
Liquidambar styraciflua	Sweetgum	Seedling		1	Seedling		0	0.0%	
Liriodendron tulipifera	Tulip Poplar	Seedling		1	Seedling		0	0.0%	
Quercus phellos	Willow Oak	Seedling		1	Seedling		0	0.0%	0.0%
						Reforestation Units Provided	282		
						Total Reforestation Units Required	280		
						Excess	2		

SPECIMEN TREES

TREE #	SPECIES	SIZE	CONDITION	DISPOSITION
1	Yellow Poplar (*Liriodendron tulipifera*)	38	Fair – Top damage	Remove
2	Yellow Poplar (*Liriodendron tulipifera*)	36	Good	Keep
3	Yellow Poplar (*Liriodendron tulipifera*)	33	Fair – Top damage	Keep
4	Yellow Poplar (*Liriodendron tulipifera*)	39	Fair – Top damage	Keep
5	Red Maple (*Acer rubrum*)	30	Poor – V-fork, decay, hollow, branching	Remove
6	Red Maple (*Acer rubrum*)	38	Poor – Top damage, decay, hollow, branching	Remove

"MISS UTILITY"
FOR LOCATION OF UTILITIES CALL 1-800-257-7777 48 HOURS IN ADVANCE OF ANY WORK IN THIS VICINITY.

LEGEND

Existing 10' Contour
Existing 2' Contour
Proposed Contour
Existing Spot Shot 100+1
Proposed Spot Shot 100^1+
Existing Tree Line
Proposed Tree Line
Ex. Water —W—W—W—
Ex. Sewer —S—S—S—
Limits of Disturbance —LOD—LOD—LOD—
Silt Fence —SF—SF—SF—SF—
Drainage Area
Stabilized Construction Entrance SCE
Class I Fill
Reforestation Area
Woodlands Saved but not counted towards TCP requirements
Tree Protection Fence (split rail) —//—//—//—
Reforestation Sign
100 YR. Flood Plain
Overhead Electric —OHE—OHE—OHE—

SEQUENCE OF CONSTRUCTION

Prior to issuing a grading or building permit a pre-construction meeting must be conducted on site with a sediment control inspector. (Department of Enviromental Resources, Phone: 301-888-5390)
Additionally prior to installing sediment control measures of land disturbances, please refer note C of general sediment control notes.

1.) The limit of disturbance must be marked prior to clearing of trees, instalation sediment control or other land disturbance activities. — day 1
2.) Clear, grub, install construction entrance and all sediment control measures. — days 2 - 3
3.) Clear, grub and rough grade lot while maintaining positive drainage to the sediment measures. Temporarily stabilize all disturbed areas immediately. — days 4 - 10
4.) Install driveway, foundation, utilities and construct the house. — days 11 - 85
5.) Clear, grub and fine grade lot while maintaining positive drainage to the sediment control measures. Permanently stabilize all disturbed areas immediately. — days 86 - 95
6.) Upon completion of final grading, stabilizing all contibuting drainage areas and with written approval of the sediment control inspector, remove all sediment mesures. Immediately stabilize all disturbed areas permanently. — day 96

TOTAL ESTIMATED CONSTRUCTION TIME 96 DAYS

NOTE: UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY AND WERE TAKEN FROM SURFACE OBSERVATION, CONSTRUCTION DRAWINGS AND RECORDS. FOR MORE PRECISE LOCATION OF UNDERGROUND UTILITIES CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS IN ADVANCE OF ANY WORK OR PRECISE DESIGN NEED IN THIS VICINITY.

OWNER / APPLICANT:
AHMAD BIZRI
7317 WESTWIND DRIVE
BOWIE, MD 20715
CELL (301) 755- 7186

I HAVE REVIEWED THIS PLAN AND BEEN MADE AWARE OF THE WOODLAND CONSERVATION REQUIREMENTS. I UNDERSTAND THAT ANY ADDITIONAL WOODLAND CLEARING BEYOND THAT SHOWN ON THIS PLAN WILL REQUIRE A REVISED PLAN AND APPROVAL BY M-NCPPC.

I AM AWARE THAT ADDITIONAL CLEARING AND STRUCTURES WITHIN 100 YR FLOOD PLAIN ARE ARE NOT PERMITTED.

SIGNED BY: AHMAD BIZRI 5 - 18 - 07 DATE

OWNER'S/DEVELOPER'S CERTIFICATION

"I/we hereby certify that I/we have reviewed this erosion and sediment control plan and that all clearing, grading, construction and/or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a certificate of attendance at a Department of Environment approved training program for the control of sediment and erosion before beginning the project."

Signature _____ Date 5 - 18 - 07
Name (printed) AHMAD BIZRI Phone# (301) 755- 7186
Firm _____ Complete Address 7317 WESTWIND DRIVE BOWIE, MD 20715

CONSULTANT'S CERTIFICATION

"I certify that this plan of erosion and sediment control represents a practicable and workable plan based on my personal knowledge of the site, and that this plan was prepared in accordance with the requirements of the Prince Georges County Soil Conservation District and "Standards and Specifications for Soil Erosion and Sediment Control". I have reviewed this erosion and sediment control plan with the owner/developer.

Signature _____ MD. License No. # 8231
Date 5/7/07 Name (printed) CHANDER S. DHALWALA P.E.
(include seal, company name, address and phone number if not included elsewhere on plan).

CERTIFICATE OF COMPLIANCE

I certify that this plan has been designed in accordance with the requirements of Subtitle 4, Division 3 of the Code of Prince George's County, Maryland; and that I or my staff have inspected this site and that drainage flows from uphill properties onto this site, and from this site onto downhill properties have been addressed in substantial accordance with applicable codes.

Chander S. Dhalwala, P.E. Maryland Registration No. 8231 — 5/7/07 Date

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
TREE CONSERVATION PLAN
TCP II / 025 / 07

Approved by	Date
01	
02	
03	
04	
05	

PRINCE GEORGE'S SOIL CONSERVATION DISTRICT
APPROVAL
SEDIMENT CONTROL, GRADING, SOILS & DRAINAGE

SC# 278 - 07

POND EXPIRATION DATE
P#

DISTRICT SIGNATURE APPROVAL DATE

ENGINEERS
LAND PLANNERS
LAND SURVEYORS
RDA
Rodgers Consulting, Inc.
14603 MAIN STREET – UPPER MARLBORO, MD. 20772
(301)952-9500 (410)535-8600
TOLL FREE (800)-PRINCE-1 FAX (301)952-8600

REVISIONS
10/17/06 Revised for Comp. Storage. DK
01/02/07 Revised for Flood Plain and new house. DK
01/25/07 Revised new house location. DK
02/16/07 Rev. FP – compensatory storage
05/03/07 MOVING RET. WALL 35' FROM H. (S.H.)

JOB NO. PG - 98225
SCALE: 1"= 30'
DRAWN BY: K.KARZOUN
CHECKED BY: CSD
DATE: AUGUST, 2006

SITE GRADING, LANDSCAPE, TCP II, EROSION & SEDIMENT CONTROL PLAN
PARCEL 45
FLETCHERTOWN ROAD
BOWIE (14th) ELECTION DISTRICT
PRINCE GEORGE'S COUNTY, MARYLAND

RECORD REFERENCES: LIBER 24949 @ FOLIO 274 , TAX MAP No. 37 , GRID A-2 & B-2 , ADC STREET MAP No. 9 , GRID H - 10 , W.S.S.C. 210 NE 11

MD. DEPT. OF ENV. CAP. PK. & PL. COMM. PRINCE GEORGE'S COUNTY
MAY 21 2007
COUNTYWIDE PLANNING DIVISION
ENVIRONMENTAL PLANNING SECTION

SC # 1 of 3

O:\SURVEY\PG98225\98225SHEET.dwg, 5/16/2007 5:25:16 PM, Admin

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

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

I. 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 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 nad 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 to provide that it meets the standards 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 USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. 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 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 1 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 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 worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply topsoil amendments as specified in 20.0 vegetative stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

i. 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 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 having 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 apprpriate approval authority, may be used in lieu of natural topsoil.

ii. Place topsoil (if required) and apply soil amendments as specifiedin 20.0 Vegetative Stabilization – section I – Vegetative Stabilization Methods and Materials

V. Topsoil Application

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 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.

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 perscribed amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Compacted sludge shall be supplied by, or organic from, a person or persons that are permitted (at the time of aquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

b. Composted sludge shall contain at least 1 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 1 ton per 1,000 square feet.

iv. Compacted 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.

GENERAL SEDIMENT AND EROSION CONTROL NOTES

1. The Developer is responsible for the aquisition of all required easement, right and/or rights of way pursuant to the discharge from the erosion & sediment control practices, stromwater management practices and the discharge of storm water onto or across the grading or other work to be performed on adjacent or downstream properties affected by this plan.
2. Following the initial soil disturbance, or redisturbance, permanent or temporary stabilization shall be completed within:
   a) Seven calender days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3' horizontal to 1' vertical (3:1).
   b) Fourteen days for all other disturbed or graded areas on the project site.
   The in-place sediment control measures shall be maintained on a continuing basis until the site is permanently stabilized and all other permit requirements have been met.
3. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of the installation of perimeter erosion and sediment controls before proceeding with any other earth disturbing or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
4. Approval shall be requested upon final stabilization of all sites with disturbed areas in excess of 2 acres before the removal of controls.
5. The owner/ developer that signs the certification on an erosion and sediment control plan is the responsible party regarless of any sale of the property or work of subcontractors. Erosion and sediment control plans are approved for one owner/ developer only. All permits under an erosion and sediment control plan must and can only be issued to the owner / developer that signs the certification on the plan.
6. PGSCD approval of an erosion and sediment control plan, pursuant to meeting local permit requirements for grading, building or street permits, etc., is valid only when the work to be performed under the permit is same as (no more/ no less than) that contained in the plan as approved by the PGSCD.
7. Any changes or modifications to an approved erosion & sediment control plan, not approved by the PGSCD, shall invalidate the plan approval.
8. Offsite borrow or spoil areas must have an approved and active erosion & sediment control plan.
9. Temporary designed sediment basins shall be removed within 36 months after the beginning of construction of the basin.
10. On small pond approvals:
    a) The owner or engineer will notify PGSCD promptly in writing when construction has begun and when construction is completed.
    b) The project shall be constructed under the supervision of the engineer-in-charge. Within 30 days of the completion of construction, the engineer-in-charge that designed the structure shall provide PGSCD with an As-built plan and shall certify, with the engineer's seal, that the MD378 pond was constructed as shown on the As-built Plans.
    c) The approval is valid only for use by the applicant and may not be transferred to another unless written approval for such transfer is obtained from PGSCD.
11. Disturbed surface area: 0.82 Ac.
12. List of predominant soil types and general description per PGSCD Soil Survey:

SgD2 – Sassafras gravelly sandy loam

19.0 STANDARDS AND SPECIFICATIONS FOR LANDGRADING

Definition

Reshaping of the existing land surface in accordance with a plan as determined by engineering and survey layout.

Purpose

The purpose of land grading specification is to provide for erosion control and vegetative establishment on those areas where 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, measures for drainage and water removal and vegetative treatment, etc.

Many counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they shall be followed. The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices of erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (include 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 into this plan:

1. Provisions shall be made to safely 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 than 2:1. (Where the slope is to be mowed, the slope should be no steeper than 3:1. 4:1 is preferred because of safety factorsrelated to mowing steep slopes.) Slopes exceeding 2:1 shall require special design and stabilization considerations that shall be adequately shown on the plans.
3. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slope it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slope 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 for ease of maintenance.
   b. Benches shall be designed with a reverse slope of 6:1 or 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 and 3 percent, unless accompanied by appropriate design and computations.
   c. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary swale.
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 designed structure, except where:
   a. The face of the slope is or it shall be stabilized and the face of all graded slopes shall be protected from surface runoff until they are stabilized.
   b. The face of the slope shall not be subject to any concentrated flows or surface water such as from natural drainageways, 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), riprap or other approved stabilization methods.
5. Cut slopes occuring 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 at 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. Overland flow shall be diverted from the top of all serrated slopes and carried to a suitable outlet.
6. Subsurface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.
7. Slopes shall not be created so close to property lines as to endanger adjoining properties without adequately protecting such properties against sedimentation, slippage, settlement, sudsidence 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 tampers or 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 fozen foundation.
9. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subject to the provisions of this standard and specifications.
10. All disturbed areas shall be stabilized structurally or vegetatively in compliance 20.0 Standards and Specifications for Vegetative Stabilization.

24.0 MATERIALS SPECIFICATIONS

Table 27 - Geotextile Fabrics

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI. MIN.
A	0.30	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (Silt Fence)	0.40–0.80**	90	190

** US Std. Sieve CW–02215

The properties shall be determined in accordance with the following procedures:
- Apparent opening size MSMT 323
- Grab tensile strength ASTM D 1682: 4 x 8" specimen, 1 x 2" clamps, 12"/min. strain rate in both principal directions of goetextile fabric.
- Burst strength ASTM D 3786

24.0 MATERIALS SPECIFICATIONS

Table 28 - Stone Size

	SIZE RANGE	D_{50}	D_{100}	ASSHTO	WEIGHT
NUMBER 57*	3/8"–1 1/2"	1/2"	1 1/2"	M–43	N/A
NUMBER 1	2"–3"	2 1/2"	3"	M–43	N/A
RIP–RAP**	4"–7"	5 1/2"	7"	N/A	N/A
CLASS I	N/A	9.5"	15"	N/A	150lb.max.
CLASS II	N/A	16"	24"	N/A	700lb.max.
CLASS III	N/A	23"	34"	N/A	2,000lb.max.

* This classification is to be used on the inside face of stone outlets and check dams.

** This classification is to be used whenever small rip–rap is required. The State Highway Administration designation for this stone is Stones for Gabions (905.01.04)

Permanent and temporary seeding, sodding and mulching.

I. SITE PREPARATION

Permanent or temporary vegetation shall be established within (7) seven calendar days on the surface of all sediment control practices such as diversions, grade stabilization structures, berms, waterways, sediment control basins, and all slopes greater than 3 horizontal to 1 vertical (3:1) and within (14) fourteen calendar days for all other disturbed or graded areas on the project site. Mulching may only be used on disturbed areas as temporary cover where vegetation is not feasible or where seeding cannot be completed because of weather.

II. SEEDBED PREPARATION AND SEEDING APPLICATION

Loosen the top layer of the soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment or such as disc harrows, chisel plows or rippers mounted on construcrtion equipment. Incorporate the lime and fertilizer into the top 3 to 5 inches of the soil by discing or by other suitable means. Rough areas should not be rolled or dragged smooth, but left in a roughened condition. Steep slopes greater than 3:1 grade should be tracked by a dozer, leaving the soil in an irregular condition with the ridges running parallel to the contour of the slope. The top 1 to 3 inches of soil should be loose and friable. Permanent cover may require an application of topsoil. If so, it must meet the requirements set forth in section 21.0 Standards and Specifications for topsoil from the 1994 Standards and Specifications.

III. SOIL AMENDMENTS

Soil tests shall be made on sites over five acres to determine the exact requirements for both lime and fertilizer. For sites under five acres, in lieu of soil test, apply the following:

Fertilizer	Nitrogen	2 lbs/ sq. ft.	(90 lbs/ac)
	P_2O_5	4 lbs/ sq. ft.	(175 lbs/ac)
	K_2O	4 lbs/1,000 sq. ft.	(175 tons/ac)

For low maintenance areas apply 150 lbs/ac ureaform fertilizer (38–0–0) at 3.5 lbs/1,000 sf in addition to the above fertilizer at the time of seeding.

Ground limestone: 2tons/ac

IV. SEDIMENT CONTROL PRACTICE SEEDING

Select a seeding mixture from tables 25 or 26 in section G of the 1994 Standards and Specifications. Document seeding on the erosion and sediment control plan using appropriate chart below. Note: if sediment control practices are in for longer than 12 months, permanent seeding is required.

V. TEMPORARY/PERMANENT SEEDING MIXTURES AND RATES

Select a seeding mixture from tables 25 and 26 in section G of the 1994 Standards and Specifications. Document seeding on the erosion and sediment control plan using appropriate chart below.

Permanent Seeding Summary

	Seed Mixture (Hardiness Zone 6 b) From Table 25					Fertilizer Rate 10-10-10	Lime Rate
	No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
*	Mix #7	Tall Fescue 83% Weeping Lovegrass (2%) Serecia Lespedeza (15%)	110 3 20	3/1 - 5/15 5/16 - 8/14 8/15 - 10/15	1/4"-1/2"	600 lb/ac (15 lb/1,000sf)	2 tons/ac (100lb/1,000sf)
**	Mix #3	Tall Fescue 85% Perennial Ryegrass (10%) Kentucky Bluegrass (5%)	5-8 lbs. 1000sf	3/1 - 5/15 8/15 - 10/15	1/4"-1/2"		

* For low maintenance areas only
** For lawn areas

Temporary Seeding Summary

Seed Mixture (Hardiness Zone 6 b) (From Table 26)					Fertilizer Rate 10-20-20			Lime Rate
No.	Species	Application rate(lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
1	Annual ryegrass	50 lbs	3/1 - 4/30 8/15 - 11/1	1/4"-1/2"	90 lb/ac (2.0lb/ 1,000sf)	175 lb/ac (4 lb/ 1,000sf)	175 lb/ac (4 lb/ 1,000sf)	2tons/ac (100lb/ 1,000sf)
2	Weeping lovegrass	4 lbs	5/1 - 8/14	1/4"-1/2"				
					Equals 900 lbs. of 10-20-20 per acre			

VI. TURFGRASS ESTABLISHMENT

This includes lawns, parks, playgrounds, and commercial sites whichwill recieve a medium to a high level of maintenance. Areas to recieve seed shall be tilled by discing or other approved methods to a depth of 3 to 5 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such a condition that future mowing of grasses will pose no difficulty. Use certified material and choose a turfgrass mixture from page G–20 of the 1994 Standards and Specifications or select from the list in the most current University of Maryland publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland". See mimeo at the end of this section.

VII. Mulching

All seedings require mulching. Also mulch during non seeding dates until seeding can be done. Mulch shall be unchopped, unrotted, small grain straw applied at a rate of 2 tons/acre or 90 lbs./1,000 sf (2 bales). If mulch anchoring tool is used, apply 2.5 tons/acre. Mulch materials shall be relatively free of all kinds of weeds and shall be competely free of noxiuos weeds. Spread mulch uniformly, either mechanically or by hand, to a depth of 1 to 2 inches. Mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by mulch nettings, mulch anchoring tool, wood cellulose fober or liquid mulch binders.

Apply wood cellulose fiber at a dry weight of 1500 lbs/acre. If mixed with water, use 50 lbs. of wood cellulose fiber per 100 gallons of water.

Liquid binder should be applied heavier at the edge, where wind catches mulch in valleys, and on crest of banks. The remainder of the area should appear uniform after binder application. Apply rates recommended by the manufacturer to anchor and mulch. Staple light weight, plastic netting over mulch according to manufacturer's recommendations.

VIII. SODDING

Class of turfgrass sod shall be Maryland or Virginia State certified or approved sod. Sod shall be harvested, delivered and installed within a period of 36 hours. Sod is to be laid with long edges parallel to the contour using staggered and with all ends tightly abutted and not overlapping. Sod shall be rolled and thoroughly watered after installation. Daily watering to maintain 4 inches of moisture for the first week is required in the absence of rainfall. Sod is not to be applied on frozen ground.

IX. MAINTENANCE

a. Irrigate – Apply minimum 1" of water every 3 to 4 days depending on soil texture, when soil moisture becomes deficient to prevent loss of stand of protective vegetation.

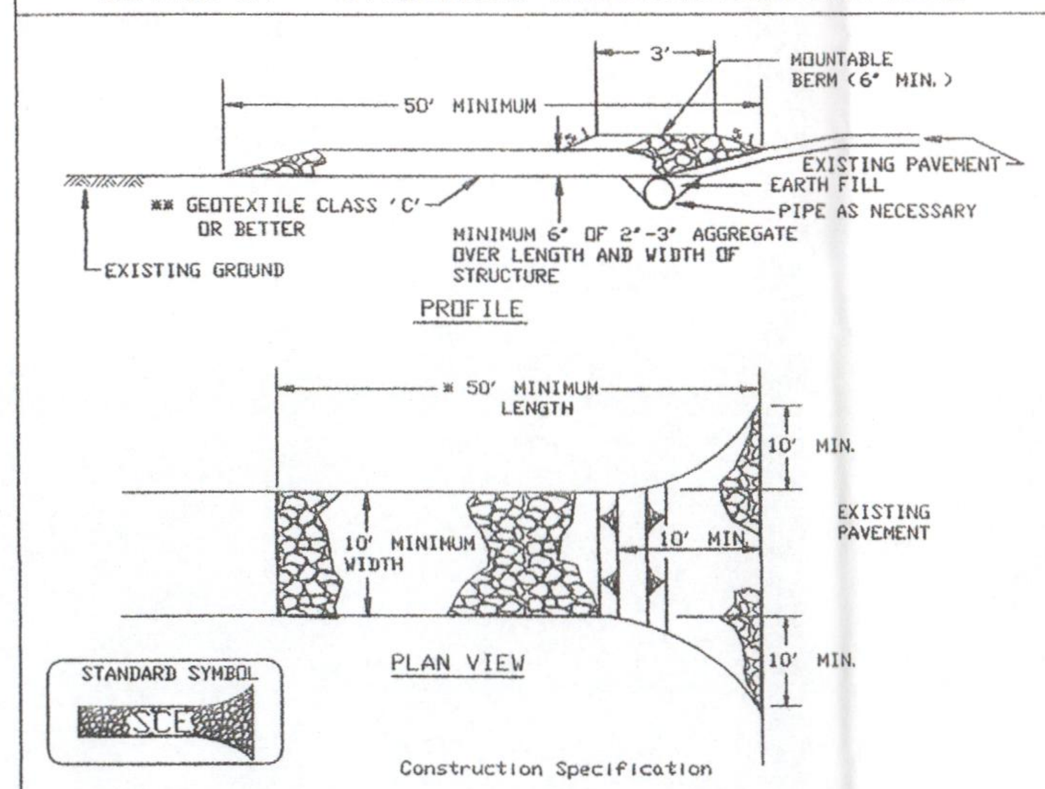
b. Repairs – If stand provides between 40% and 94% ground coverage, overseed and fertilize using half of the rates originally applied. If stand provides less than 40% coverage, reestablish stand following original rates and procedures.

Note: Use of this information does not preclude meeting of all the requirements of the 1994 Standards and Specifications for Soil Erosion and Sediment Control Vegetative Practices.

TREE CONSERVATION PLAN NOTES

1. Cutting or clearing of woodland not in conformance with this Plan or without the expressed written consent of the Planning Director or designee shall be subject to a $1.50 per square foot mitigation fee.
2. The Department of Environmental Resources (DER) must be contacted at (301) 731 - 8790 prior to the start of any work on the site to address implementation of Tree Conservation measures shown on this plan.
3. Property owners shall be notified by the Developer or Contractor of any Woodland Conservation Areas (Tree Save Areas, Reforestation Areas, Afforestation Areas, or Selective Clearing Areas) located on their lot or parcel of land and the associated fines for unauthorized disturbances to these areas. Upon the sale of the property the owner/developer or owners representative shall notify the purchaser of the property of any Woodland Conservation Areas.
4. All appropriate bonds will be posted with the Building Official prior to the issuance of any permits. These bonds will be retained as surety by the Building Official until all required activities have been satisfied.
5. The location of all Tree Protection Devices (TPD's) shown on this Plan shall be flagged or staked in the field prior to the pre-construction meeting with the Sediment and Erosion Control Inspector from DER. Upon approval of the flagged or staked TPD locations by the Inspector, installation of the TPDs may begin. TPD installation shall be completed prior to installation of initial Sediment Controls. No cutting or clearing of trees may begin before final approval of TPD installation.
6. Woodland Conservation - Tree Save Areas and/or Reforestation Areas shall be posted as shown at the same time as Tree Protective Device Installation and/or start of reforestation activities. These signs shall remain in place.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



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 according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. 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.

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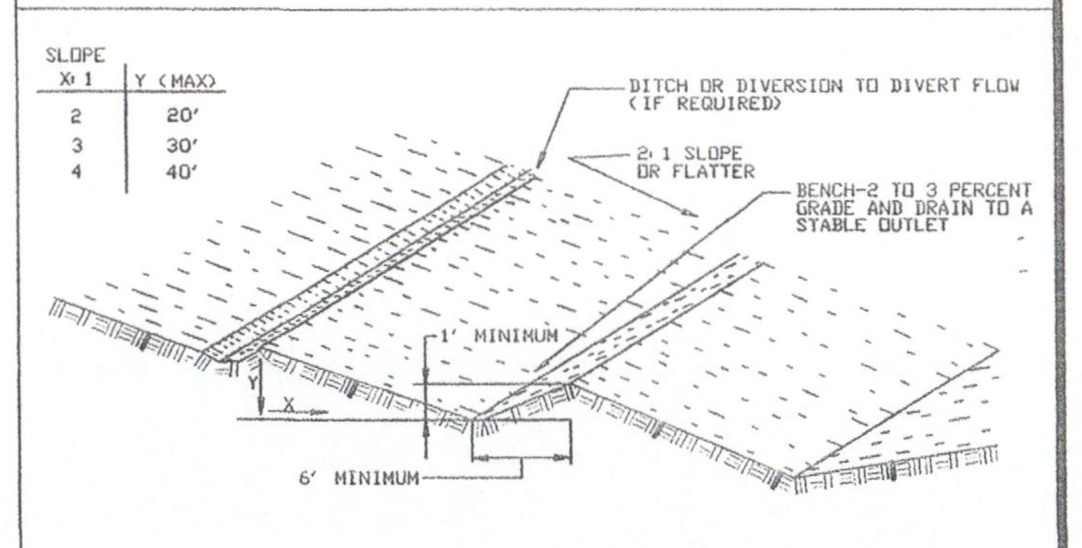
DETAIL 28 - BENCHED SLOPES



Construction Specifications

1. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.
2. All fill shall be placed and compacted in layers not to exceed 8" in thickness.
3. Except for approved landfills or nonstructural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fills.
4. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills. Fill shall not be placed on a frozen foundation.
5. All benches shall be kept free of sediment during all phases of development.
6. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain or other approved methods.
7. All graded areas shall be permanently stabilized immediately following finished grading.

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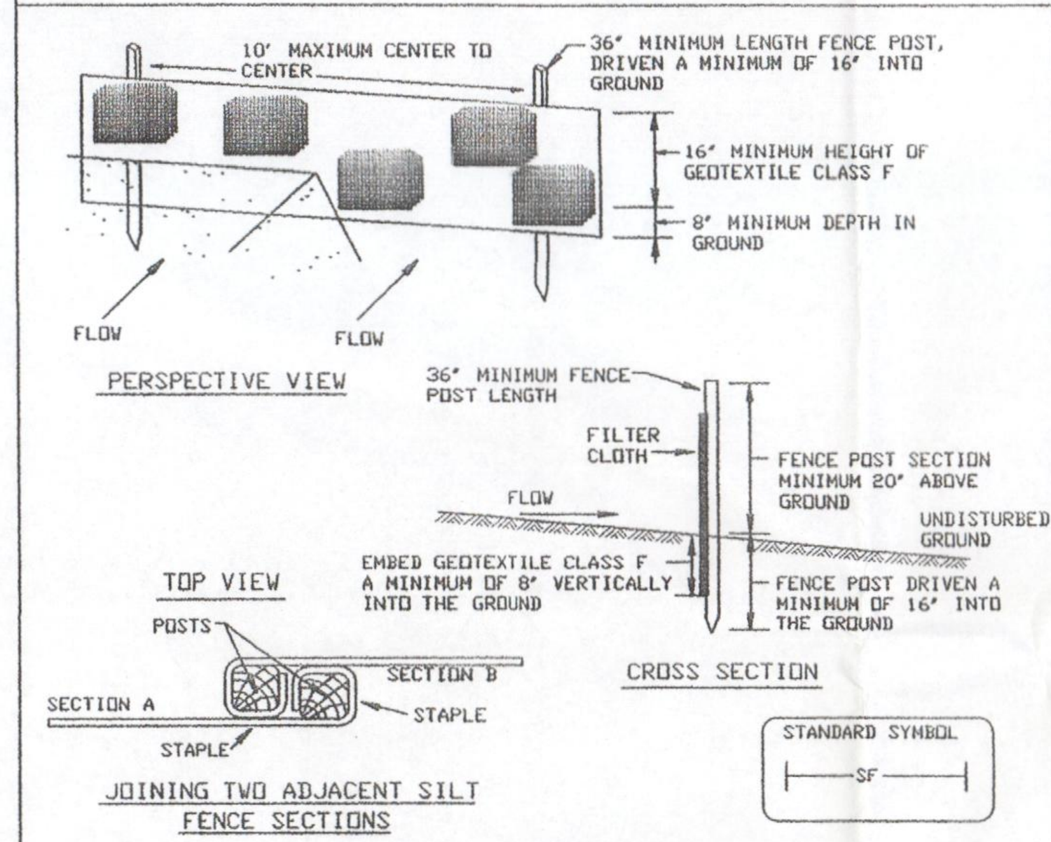
DETAIL 22 - SILT FENCE



Construction Specifications

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.
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:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
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.

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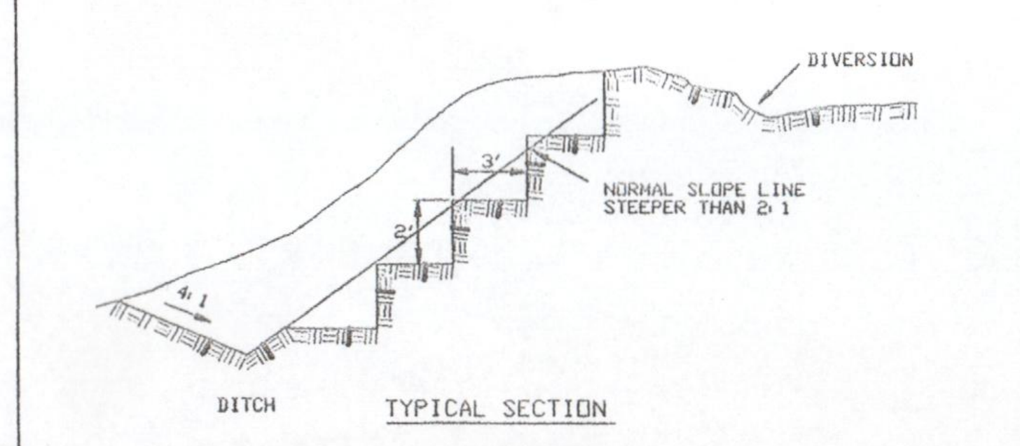
DETAIL 29 - SERRATED SLOPES



Construction Specifications

1. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.
2. All fill shall be placed and compacted in layers not to exceed 8" in thickness.
3. Except for approved landfills or nonstructural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fills.
4. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills. Fill shall not be placed on a frozen foundation.
5. All benches shall be kept free of sediment during all phases of development.
6. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain or other approved methods.
7. All graded areas shall be permanently stabilized immediately following finished grading.

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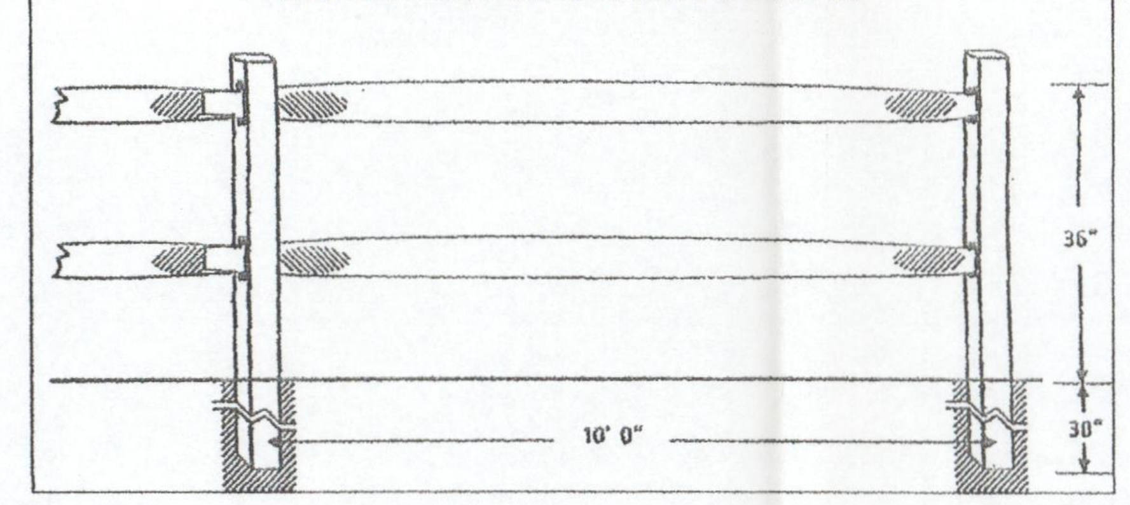
LONG® FENCE

TREE PROTECTIVE DEVICE FOR REFORESTATION AREAS



Name: John P. Markovich
Address: 11552 Timberbrook Drive, Waldorf, Md 20601
Phone: (301)-645-4977
License: Qualified Professional

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
TREE CONSERVATION PLAN
TCP II / 025 / 07

Approved by	Date
01	
02	
03	
04	
05	

SC # 2 of 3

TCP 2, GRADING, EROSION & SEDIMENT CONTROL DETAIL SHEET
PARCEL 45
FLETCHERTOWN ROAD
BOWIE (14th) ELECTION DISTRICT
PRINCE GEORGE'S COUNTY, MARYLAND

REVISIONS

JOB NO.	PG-9825
SCALE	AS SHOWN
DRAWN BY:	D. KARZOUN
CHECKED BY:	CSD
DATE:	AUGUST, 2006

RDA
ENGINEERS
LAND PLANNERS
LAND SURVEYORS
14603 MAIN STREET – UPPER MARLBORO, MD. 20772

Section I - Vegetative Stabilization Methods and Materials

A. Site Preparation

i. Install erosion and sediment control structures (either temporary or permanent) such as diversion 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 producer.

iii. Lime materials shall be ground limestone (hydrated 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 *50%* will pass through a #100 mesh sieve and 98 - 100% will pass through a mesh sieve.

iv. Incorporate lime and fertilizer into the top 3 - *5"* of soil by disking or other suitable means.

C. Seedbed Preparation

i. 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 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 - *5"* of soil by disking or other suitable means.

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ii. Permanent Seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0
2. Soluble salts shall be less than 500 parts per million (ppm).
3. 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. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. 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 loostened 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 from sliding down a slope.

c. 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 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. The top 1 - 3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. 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.

ii. 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 possible until used. Temperatures above 75800 F. can weaken bacteria and make the inoculant less effective.

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E. Methods of Seeding

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, 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 (phosphorous): 200 lbs/ac; 1(20 (potassium): 200 lbs/ac.

b. 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.

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 the Temporary or Permanent Seeding Summaries or Tables *25* 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.

F. Mulch Specifications (In order of preference)

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably 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)

a. 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.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors.

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d. WCFM 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 coicentration levels that will be phyto-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to *8.5*, ash content of 1.6% 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.

i. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in 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.

H. 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 upon 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 land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests 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 II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

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iv. Lightweight plastic netting may he stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization Cut Slopes

i. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will he used to convey runoff from the excavation.

b. Perform phase 1 excavation, dress, and stabilize.

c. Perform phase 2 excavation, dress, and stabilize. Overseed phase I areas as necessary.

c. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should he continuous from grubbing through the completion of grading and placement of topsoil *(if* required) and permanent seed and mulch. Any interruptions in the operation or completing the operation Out of the seeding season will necessitate the application of temporary stabilization.

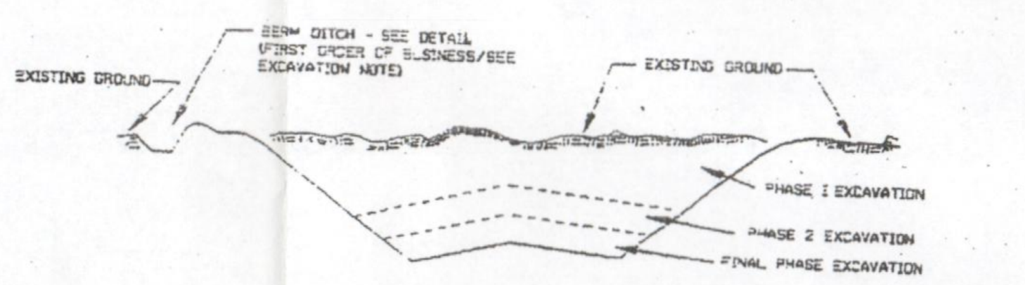

Figure 4 Incremental Stabilization - Cut

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J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall he constructed in lifts as prescribed on the plans.

ii. Slopes shall he 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 he constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

iv. Construction sequence: Refer to Figure 4 (below).

a. 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 in Figure 5, unless other methods shown on the plans address this area.

b. Place phase 1 embankment, dress and stabilize.

c. Place phase 2 embankment, dress and stabilize.

d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

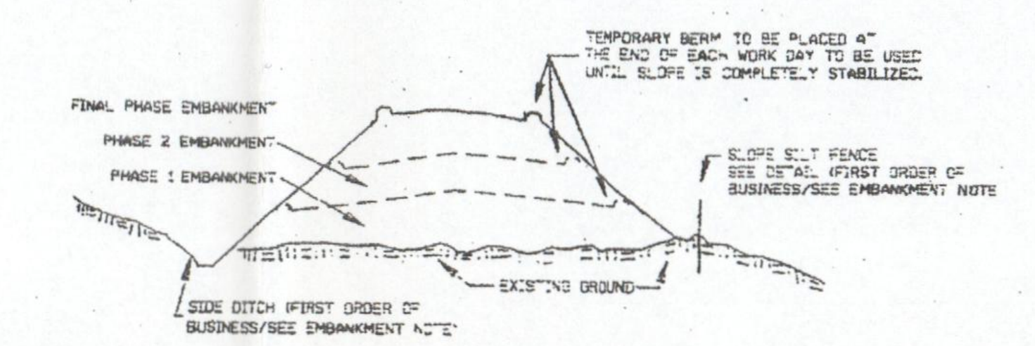

Figure 5 Incremental Stabilization - Fill

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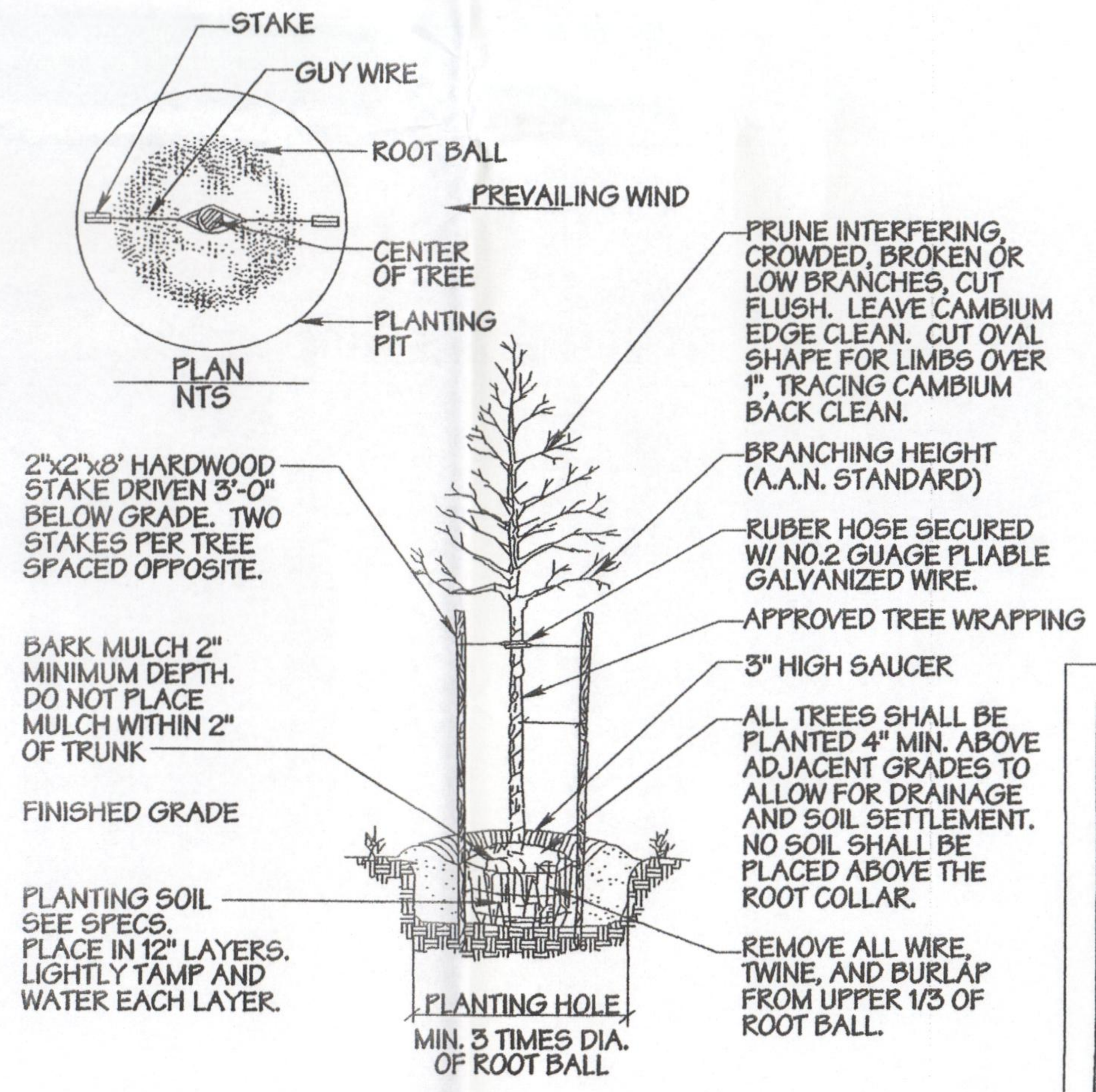


TYPICAL SMALL TREE PLANTING DETAIL

(2" CALIPER OR LESS)
NOT TO SCALE

Name: John P. Markovich
Address: 11652 Timberbrook Drive
Waldorf, Md 20601
Phone: (301)-645-4977
License: Qualified Professional

Reforestation Inspection and Planting Narrative

1. There shall be five inspections for Woodland Conservation.

A. The first inspection shall occur after flagging/staking of the L.O.D. and prior to any clearing, grading or sediment control measures. This inspection is to address the issues of tree protection and sediment control. The developer and representatives from DER and Sediment Control will meet to walk the proposed limits of disturbance and determine the final locations of sediment control devices and tree protection devices.

B. The second inspection shall occur after placement of sediment control devices and tree protection devices, and prior to clearing and grading. This inspection is to determine the completion and adequacy of protective measures.

C. The third inspection shall occur prior to planting in reforestation areas. This preplanting inspection is to make final decisions regarding the best implementation of the planting plan, including, but not limited to, the final placement and selection of plant species, determination of the regeneration potential of existing plants to remain and a determination of the best edge planting treatment. The purchase and delivery of plant materials should not be made until after this inspection since a determination may be made in the field to alter the choice of plant material.

A. The fourth inspection shall occur immediately following the completion of the reforestation planting. The inspection is to determine the completion and adequacy of the planting.

B. The fifth and final inspection shall occur at the completion of the two year maintenance program. The purpose of this inspection is to determine the success and adequacy of the maintenance program (and deer management program). A final determination will be made at this time as to whether additional plants and a further maintenance program are necessary.

2. Pre-planting Considerations

A. In areas with substantial growth of invasive groundcover species, measures shall be taken to remove and control invasive species. The infested areas should be mown prior to commencement of planting. Necessary weed control measures should be determined during the pre planting inspection, including, but not limited to, mulching, periodic mowing around the reforestation plants, and fabric coverings. The use of chemical weed controls will be limited to extreme cases, and only with prior written approval by DER staff. Where periodic mowing will occur as a weed control measure, the typical tree planting distribution pattern should be modified so as to allow access by moving equipment without damage to plants.

B. A soils analysis will be conducted prior to commencement of reforestation, on land where extensive agricultural use has occurred in the past. Test pits will be dug in areas of undisturbed soil to determine if a fragipan layer is present. If fragipan is present, it should be pierced by auguring and planting holes should be dug to twice the normal diameter for the material planted.

C. Soils should be treated by incorporating natural mulch with the top 12 inches,or amendments as determined by the soils analysis. Natural amendments, such as organic mulch or leaf mold compost are preferred.

D. If fill material is used at the planting site, it should be clean fill with 12 inches of native soil. Stockpiling of native top soils must be done in such a way that the height of the pile does not damage the seed bank.

3. Plant Material Storage

A. It is recommended that planting occur within 24 hours of delivery to the site. Plant materials whichre left unplanted for more than 24 hours should be protected from direct sun and weather and kept moist. Nursery stock should not be left unplanted for more than two (2) weeks.

4. On-site Inspection

A. Prior to planting, planting stock should be inspected. Plants not conforming to standard nurseryman specifications for size, form, vigor, roots, trunk wounds, insects, and disease should be replaced.

5. Planting Specifications

A. Container Grown Stock: successful planting of container grown stock requires careful site preparation and inspection of the plant material root system. Caution is recommended when selecting plants grown in a soils medium differing from that of the planting site. The plant should be removed from the container and the roots gently loosened from the soils. If the roots encircle the root ball, substitution is strongly recommended. J-shaped or kinked root systems should also be noted, and substituted if necessary. Roots may not be trimmed on-site, due to the increased chances of soil borne diseases. The planting field should be prepared as specified. Native stockpiled soils should be used to backfill planting field. Rake soils evenly over the planting field and cover with 2 to 4 inces of mulch.

B. Balled and Burlapped Trees: balled and burlapped trees must be handled with care while planting. Trees should not be picked up by the trunck or dropped, as both practices will tend to seperate the trunck from the root ball. Prior to planting, root balls should be kept moist.

C. Seedlings: Seedlings shall be planted by an experienced landscape contractor either using the dribble or Mattock planting method. Each seedling must be planted immediately following its removal from packaging as its roots can dry out in less than one minute. Seedlings should be planted at the same depth or 1/2 deeper than the seedlings grew in the nursery. Each seedling should be mulched after planting. Container seedlings can be planted in Fall through Spring. Bare-root seedlings can be only planted from November until early Spring (during their dormant stage).

D. Planting fields should be created equal to 2.5 times the diameter of the root ball.

6. Layout and Excavation of Planting Areas

A. Layout plants in random distribution throughout reforestation area. No grid patterns.

B. Trees shall be spaced at least 10 feet apart.

C. Subsoil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that clods will not readily break. Water shall be applied, if necessary, to bring soil to an optimum moisture content before tilling and planting.

D. Do not excavate tree pits more than 24 hours in advance of planting operation.

7. Installation of Plant Material

A. Place plants carefully in the prepared planting pit. Do not disturb root ball or untie twine or roping until backfill settlement is complete and tree is stacked, if applicable. Fill plant pits with soil mix to depth to receive plant root ball, so that top of ball is 2 inches above finished grade.

B. Wells around trees and shrubs: after planting is complete, form a soil well 3 inches high around each plant, extending to the outer limit of the plant pit.

C. Water all plants immediately after planting.

D. Where water is not available of site, the contractor shall furnish sufficient quantities to complete the work at no additional cost to the owner.

E. Spread mulch in required areas to the compacted depth of 2 inches.

F. For trees 1" cal. and larger, tubing material, i.e., Tubex, must be installed loosely around tree trunks to discourage deer browse and rub. The tree tube should be anchored in the ground and buried at its base.

G. For trees less than 1" cal., wire fencing is recommended around the entire tree to discourage deer browse.

8. Maintenance by the Contractor.

A. The contractor's maintenance period shall begin after the planting has been accepted by DER or Natural Resources staff and shall last through 2 years.

9. Warranty

A. MNCP&PC requires at least 75% of the plants to be alive at the end of the two year warranty period. This percentage of the plants shall be warranted by the contractor to remain alive and healthy for a period of two years after the date of acceptance. Plants in a impaired, dead or dying condition after intial acceptance or within 24 months shall be removed and replaced. New planting and method of placing shall comply with the requirements of the specifications.

B. Contractor shall not be held responsible for failure due to neglect by owner, vandalism, etc., during warranty period. Report such conditions to the landscape architect or engineer in writing when discovered.

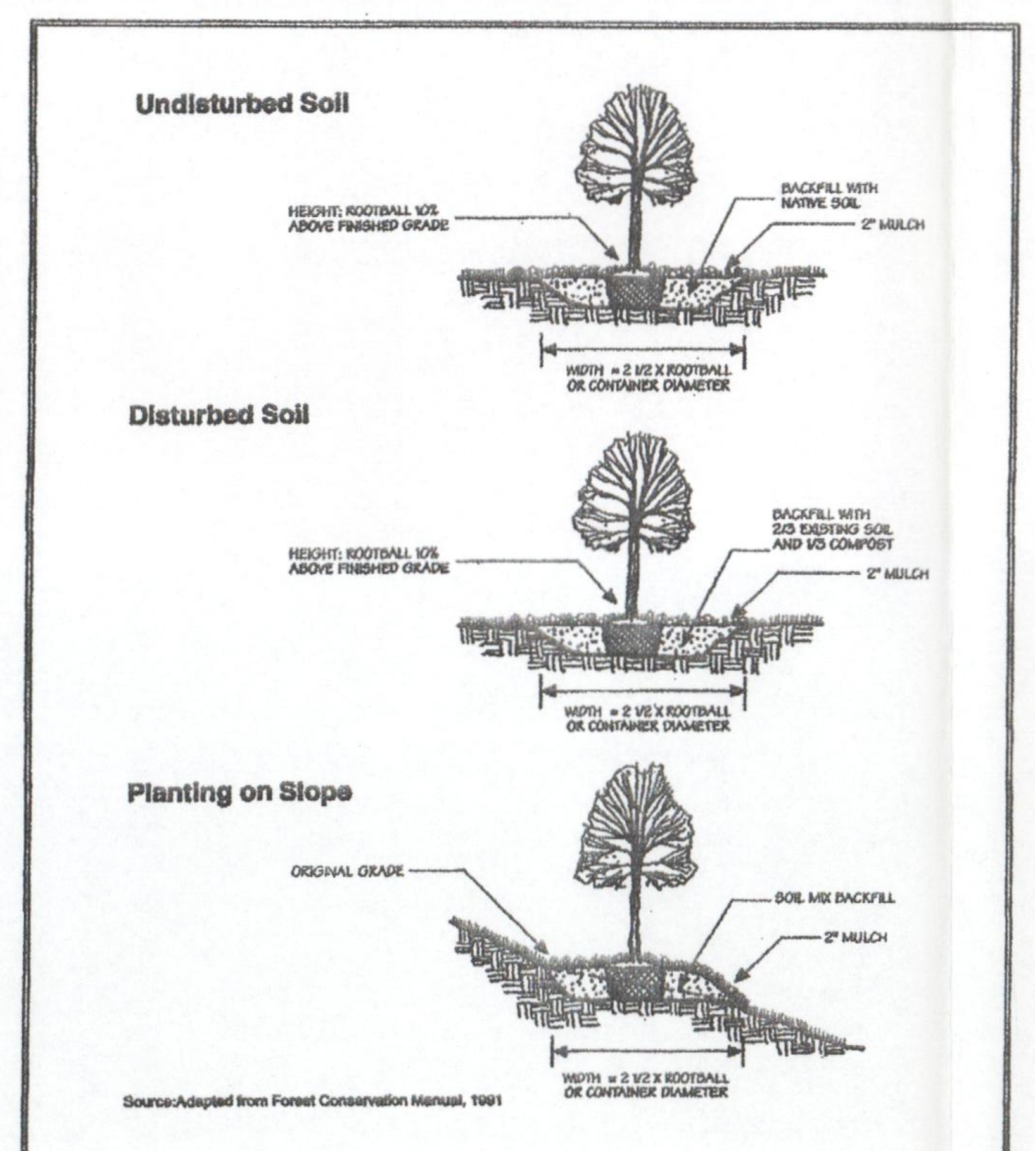
All tree planting for woodland replacement, reforestation or afforestation will be completed prior to Use and Occupancy Permit. Failure to establish the woodland replacement, reforestation or afforestation within the prescribed time frame will result in the forfeiture of the Reforestation Bond and / or a violation of this Plan including the associated $1.50 per square foot penalty unless a written extension is approved by the DER Inspector.

The DER Inspector shall be notified prior to soil preparation or initiation of any tree planting on this site.

Results of survival checks for all tree plantings shall be reported to the DER Inspector for the site and M-NCPPC, Environmental Planning Section.

Prior to the issuance of any permits the contractor responsible for soil preparation, site preparation, tree planting, and tree maintenance must be identified.

Name
Business Name
Address
Phone Number



Container Grown and B&B Planting Techniques

Figure D:16

WOODLAND CONSERVATION AREA MANAGEMENT NOTES

REMOVAL OF HAZARDOUS TREES OR HAZARDOUS LIMBS BY DEVELOPERS OR BUILDERS

The developer and/or builder is responsible for the complete preservation of all forested areas shown on the approved plan to remain undisturbed. Only trees or parts thereof designated by the Department of Environmental Resources as dead, dying, or hazardous may be removed.

1. A tree is considered hazardous if a condition is present which leads a Licensed Arborist or a Licensed Tree Expert to believe that the tree or a portion of the tree has a potential to fall and strike a structure, parking area, or other high use area and result in personal injury or property damage.

2. If a hazardous condition may be alleviated by corrective pruning, the Licensed Arborist or a Licensed Tree Expert may proceed without further authorization. The pruning must be done in accordance with the latest edition of the ANSI A-300 Pruning Standard ("Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices").

3. Corrective measures requiring the removal of the hazardous tree or portions thereof shall require authorization by the building or grading inspector if there is a valid grading or building permit for the subject lots or parcels on which the trees are located. Only after approval of the appropriate inspector may the tree be cut by chainsaw to near the existing ground level. The stump may not be removed or covered with soil, mulch or other materials that would inhibit sprouting.

4. Debris from the tree removal or pruning that occurs within 35 feet of the woodland edge may be removed and properly disposed of by recycling, chipping or other acceptable methods. All debris that is more than 35 feet from the woodland edge shall be cut up to allow contact with the ground, thus encouraging decomposition. The smaller materials shall be placed into brush piles that will serve as wildlife habitat.

REMOVAL OF HAZARDOUS TREES, HAZARDOUS, LIMBS, NOXIOUS PLANTS OR NON-NATIVE PLANTS IN WOODLAND CONSERVATION AREAS OWNED BY INDIVIDUAL HOMEOWNERS

1. If the developer or builder no longer has an interest in the property the home owner shall obtain a written statement from the Licensed Arborist or Licensed Tree Expert identifying the hazardous condition and the proposed corrective measures prior to having the work conducted. The tree may then be removed by the arborist or tree expert. The stump shall be cut as close to the ground as possible and left in place. The removal or grinding of the stumps in the woodland conservation area is not permitted.

2. The removal of noxious, invasive, and non-native plant species from the woodland conservation areas may be done with the use of hand-held equipment only such as pruners or a chain saw. These plants may be cut near the ground and the material less than two inches in diameter may be removed from the area and disposed of appropriately. All material from these noxious, invasive, and non-native plants greater than two (2) inches in diameter shall be cut to allow contact with the ground, thus encouraging decomposition.

3. The use of broadcast sparying of herbicides is not permitted. However, the use of herbicides to discourage re-sprouting of invasive, noxious, or non-native plants is permitted if done as an application of the chemical directly to the cut stump immediately following cutting of plant tops. The use of any herbicide shall be done in accordance with the lable instructions.

NOTE: The use of chainsaws is extremely dangerous and should not be conducted with poorly maintained equipment, without safety equipment, or by individuals not trained in the use of this equipment for the pruning and/or cutting of trees.

WOODLAND AREAS NOT COUNTED AS PART OF THE WOODLAND CONSERVATION REQUIREMENTS

1. A revised Tree Conservation Plan is required prior to clearing any woodland area which is not specifically identified to be cleared on the most recently approved Type II Tree Conservation (TCP) on file in the office of the M-NCPPC, Environmental Planning Section located on the 4th floor of the County Administration Building at 14741 Governor Oden Bowie Drive, Upper Marlboro, Maryland 20772, phone 301-952-3650. Additional mitigation will be required for the clearing of all woodlands beyond that reflected on the approved plans. Although clearing may be allowed, it may be subject to additional replacement requirements, mitigation, and fees which must be reflected on TCP revisions approved by the M-NCPPC Environmental Planning Section.

2. Homeowners or property owners may remove trees less than two (2) inches diameter, shrubs, and vines in woodland areas which are saved but not part of the Woodland Conservation requirements after all permits have been released for the subject property. This area may not be tilled or have other ground disturbances which would result in damage to the tree roots. Raking the leaves and overseeding with native grasses, native flowers or native ground covers is acceptable. Seeding with invasive grasses including any variety of Kentucky 31 fescue is not acceptable.

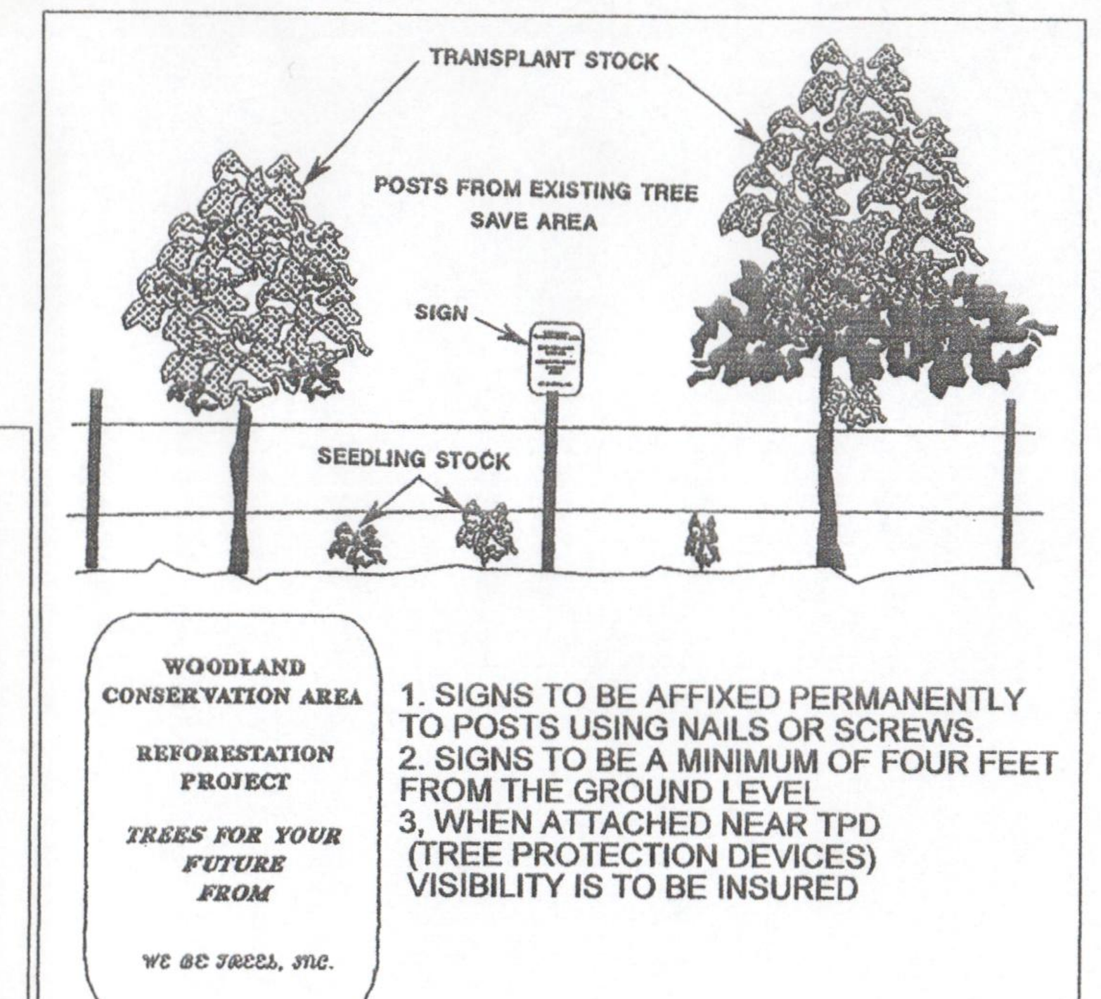


FIGURE 32: SHOWS POSSIBLE PERIMETER TREATMENT FOR REFORESTATION AREA EDGE AND SIGN DETAIL.

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
TREE CONSERVATION PLAN
TCP II / 025 / 07

	Approved by	Date
01		
02		
03		
04		
05		

TCP 2, GRADING, EROSION & SEDIMENT CONTROL DETAIL SHEET
PARCEL 45
FLETCHERTOWN ROAD
BOWIE (14th) ELECTION DISTRICT
PRINCE GEORGE'S COUNTY, MARYLAND

JOB NO.	PG - 9825
SCALE:	AS SHOWN
DRAWN BY:	D. KARZOUN
CHECKED BY:	CSD
DATE:	AUGUST, 2006

REVISIONS

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