

Means the creation, on a tract that is not presently in forest cover, of a biological community dominated by trees and other woody plants, at a density of at least 100 trees per acre with at least 50 of the trees having the capability of growing to a diameter, at 4.5 feet above the ground, of 2 inches or more within 7 years.

AFFORESTATION

A specific percentage of forested land on sites with a low percentage of existing forest cover, based on the net tract area.

AFFORESTATION THRESHOLD

Farming activities including plowing, tillage, cropping, installation of best management practices, seeding, cultivating, and harvesting for production of food and fiber products (*except commercial logging and timber harvesting operations*), the grazing and raising of livestock, aquaculture, sod production, and the cultivation of orchard, nursery, and other products as part of a recognized commercial enterprise.

AGRICULTURAL ACTIVITY

Undeveloped areas zoned for a density of less than or equal to one dwelling unit per 5 acres.

AGRICULTURAL &amp; RESOURCE AREAS

The person who is applying for subdivision approval, a grading or sediment control permit, or project plan approval if the applicant is a State or local agency; or has received approval of a forest stand delineation or forest conservation plan.

APPLICANT

An exact level of forest retention that precludes the need for reforestation.

BREAK-EVEN POINT

The diameter measured at 2 inches above the root collar.

CALIPER

The largest tree of its species within the United States, the State, County or Municipality, as appropriate.

CHAMPION TREE

A tree which appears in the State Forest Conservation Manual list of State champion trees.

CHAMPION TREE OF THE STATE

Manufacturing operations, office complexes, shopping centers, and other similar uses and their associated storage areas, yards, and parking areas.

COMMERCIAL &amp; INDUSTRIAL USES

A restriction on the land and the natural features on this land. This easement is shown on the record plat and its terms and conditions are recorded in the county's land records.

CONSERVATION EASEMENT

A specific percentage of forested land on sites where existing forest is being cleared, based on the net tract area.

CONSERVATION THRESHOLD

A habitat occupied by an endangered species as determined or listed under section 4-2A-04 of the Natural Resources article of the Annotated Code of Maryland.

CRITICAL HABITAT FOR ENDANGERED SPECIES

A critical habitat for endangered species and its surrounding protection area. A critical habitat shall:

CRITICAL HABITAT AREA

- (1) be likely to contribute to the long-term survival of the species
- (2) be likely to be occupied by the species for the foreseeable future; and

	(3) constitute habitat of the species which is deemed critical under Title 10, Subtitle 2A, and 6 of the Natural Resources article of the Annotated Code of Maryland.
CRITICAL ROOT ZONE	The designated areas surrounding a tree that must be protected in order for the tree to survive.
DEVELOPMENT APPLICATION	An application made to the Planning Board, Board of Appeals, Department of Environmental Protection, or the Planning Director for plan approval or sediment and erosion control permit.
DEVELOPMENT PLAN	Plan approved under Division 59-D-1 of the County Zoning Ordinance.
DEVELOPMENT PROGRAM	A sequence of construction events and timing for submittal of the major forest conservation program elements.
DEVELOPMENT PROJECT	The grading or construction activities occurring on a specific tract that is 40,000 square feet or greater. This includes redevelopment projects.
DEVELOPMENT PROJECT COMPLETION	The date or event identified as such in the forest conservation plan agreement, but no later than the date on which the first use-and-occupancy permit is issued for the development (or activity) subject to the preliminary plan of subdivision or sediment control permit or, if a use-and-occupancy permit is not required, the date on which the final building or sediment control (for activities not involving building) inspection is conducted by the Department of Environmental Protection. A staged development may have more than one completion date.
DIAMETER AT BREAST HEIGHT (DBH)	The diameter of a tree as measured at a height of 4.5 feet from the ground.
ERODIBLE SOILS	Soils which are classified as highly erodible by the Soil Conservation Service (SCS), as listed in "Environmental Management of Development in Montgomery County, Maryland", M-NCPPC.
EXTENUATING CIRCUMSTANCES	Conditions requiring extension of a set time limit to process an application, render a decision, or conduct a public hearing.
FIELD SURVEY	A field investigation of the environmental characteristics of a site, including existing forest, using sampling techniques which yield at least of 67% confidence interval.
FLOOD, ONE HUNDRED-YEAR	A flood which has a 1 percent chance of being equalled or exceeded in any given year, or which occurs, on average, once every 100 years, after total ultimate development of the watershed.
FLOODPLAIN, ONE HUNDRED-YEAR	<p>The area along or adjacent to a stream or body of water, except tidal waters, that would experience inundation by stormwater runoff equivalent to the a one hundred-year flood.</p> <p>For the purpose of calculating forest conservation requirements using the forest conservation worksheet, floodplains in Use III waters (natural trout streams) and in bodies of water in other Use classes which have a watershed of greater than or equal to 400 acres must be subtracted from the net tract area. Forest within these floodplain areas may not be credited toward forest conservation.</p>
FOREST	A biological community dominated by trees and other woody plants (including plant communities,

the understory, and forest floor) covering a land area of 10,000 square feet or greater. Forest includes:

- (1) areas that have at least 100 trees per acre with at least 50 percent of those trees having a 2 inch or greater diameter at 4.5 feet above the ground; and
- (2) forest areas that have been cut but not cleared

Forest does not include orchards. For the purpose of implementation of the Montgomery County Forest Conservation law, this definition will be interpreted to mean 100 live trees per acre with at least 50 trees per acre having a 2 inch or greater diameter at 4.5 feet above the ground.

The retention of existing forest or the creation of new forest at the levels prescribed by the Planning Board or the Planning Director.

FOREST CONSERVATION

Outlines the strategies and specific plans proposed for retaining, protecting, and reforesting or afforesting areas on a site.

FOREST CONSERVATION PLAN

The percentage of the net tract area at which the reforestation requirement changes from a ratio of 1/4 acre planted for every one acre removed to a ratio of 2 acres planted for every one acre removed.

FOREST CONSERVATION THRESHOLD

A step-by-step form for determining compliance with the requirements of the forest conservation law.

FOREST CONSERVATION WORKSHEET

The area of a site meeting the definition of "forest".

FOREST COVER

An area meeting the definition of forest and growing on an area with a slope of 25 percent or more and covering an area of at least 10,000 square feet.

FORESTED SLOPE

A plan establishing best conservation and management practices for a landowner in assessment of the resource values of forested properties. This plan is approved by the MD Department of Natural Resources forester assigned to the county and may operate as a protective agreement for forest conservation as described in this manual.

FOREST MANAGEMENT PLAN

The evaluation of existing vegetation in relation to the natural resources on a site proposed for development or land disturbing activity.

FOREST STAND DELINEATION

A map showing forested areas divided by dominant species, slope aspects, soil types and location within the site (upland, bottomland).

FOREST STAND MAP

A period of consecutive frost-free days as stated in the current soil survey for the county. In an average year, a period commencing on April 1st and ending on October 31st.

GROWING SEASON

Areas zoned for densities greater than one dwelling unit per acre, including both existing and planned development and their associated infrastructure, such as roads, utilities, and water and sewer service.

HIGH-DENSITY RESIDENTIAL AREAS

Land occupied by uses such as schools, colleges and universities, military installations, transportation facilities, utility and sewer projects, government offices and facilities, golf courses, recrea-

INSTITUTIONAL DEVELOPMENT AREAS

	tion areas, parks, and cemeteries.
INTERMITTENT STREAM	A stream in which surface water is absent during a portion of the year as shown on MNCPPC 1"=200' topographic maps or the most recent 7.5 minute topographic quadrangle published by the U.S. Geologic Survey as confirmed by field verification.
LANDSCAPING PLAN	Drawn to scale, showing dimensions and details for reforesting an area at least 35 ft wide and covering 2,500 square feet or greater in size; using native or indigenous plants when appropriate and which made part of an approved forest conservation plan.
LIMITS OF DISTURBANCE	A clearly designated area within which land disturbance is slated to occur.
LOT	A unit of land, the boundaries of which have been established as a result of a deed or previous subdivision of a larger parcel, and which will not be the subject of further subdivision, as defined under Section 5-1601 of the Natural Resources Article of the Maryland Code, without an approved forest stand delineation and forest conservation plan.
MAINTENANCE AGREEMENT	The short-term management agreement associated with afforestation or reforestation plan.
MANDATORY REFERRAL	Means the required submittal to the Planning Board for their review of projects or activities to be undertaken by governmental agencies and private and public utilities under Section 7-112 of Article 28 of the Maryland Code.
MEDIUM-DENSITY RESIDENTIAL	Areas zoned for densities greater than one dwelling unit per 5 acres and less than or equal to one dwelling unit per 40,000 square feet, including both existing and planned development and their associated infrastructure, such as roads, utilities, and water and sewer service.
MIXED-USE DEVELOPMENT	A single, relatively high-density development project, usually commercial in nature, which includes 2 or more types of uses.
NATIVE	Refers to a plant or animal species whose geographic range during precolonial times included the Piedmont of Maryland. Information on native plants can be found in <b>Woody Plants of Maryland</b> (Brown and Brown, 1972) and <b>Herbaceous Plants of Maryland</b> (Brown and Brown, 1984), as well as other literature sources.
NATURAL REGENERATION	The natural establishment of trees and other vegetation with at least 400 woody, free-to-grow seedlings per acre, which are capable of reaching a height of at least 20 feet at maturity.
NATURAL RESOURCES INVENTORY	Collection and presentation of environmental information for a property according to the guidelines specified in "Environmental Management of Development in Montgomery County, Maryland" (MNCPPC).
NET TRACT AREA	The total area of a site, including both forested and nonforested areas, to the nearest 1/10 acre, reduced by the area found to be within the boundaries of the 100-year floodplain; except that in agriculture and resource areas, it is the portion of the total tract for which land use will be changed or will no longer be used for primarily agricultural activities, reduced by the area found to be

within the boundaries of the 100-year floodplain.	
An area regulated as a nontidal wetland under Title 8, Subtitle 12, of the Natural Resources Article of the Maryland Code.	NONTIDAL WETLAND
Outside the limits of the areas encompassed by a tract.	OFFSITE
Within the limits of an area encompassed by a tract, including an area classified as a 100-year floodplain.	ONSITE
A stream containing surface water throughout most of an average rainfall year, as shown on MNCPPC 1"=200' topographic maps or the most recent 7.5 minute topographic quadrangle published by the U.S. Geologic Survey, as confirmed by field verification.	PERENNIAL STREAM
A development comprised of a combination of land uses or varying intensities of the same land use in accordance with an integrated plan that provides flexibility in land use design approved by the District Council under Chapter 59-D-1 with at least 20 percent of the land permanently dedicated to open space.	PLANNED UNIT DEVELOPMENT
The County Planning Board of the Maryland- National Capital Park and Planning Commission	PLANNING BOARD
The director of the Montgomery County Planning Department or the director's designee.	PLANNING DIRECTOR
A plan showing how areas to be reforested or afforested will be planted.	PLANTING PLAN
A plan subject to the review and approval procedures of Chapter 50, "Subdivision" of the Montgomery County Code.	PRELIMINARY SUBDIVISION PLAN
Four categories of forest types that are ranked from most valuable to save (priority 1) to least valuable (priority 4).	PRIORITY AREAS
A plan approved under Division 59-D-2 of the County Zoning Ordinance.	PROJECT PLAN
A licensed forester, licensed landscape architect, or other qualified professional approved by the State.	QUALIFIED PROFESSIONAL
The creation of a biological community dominated by trees and other woody plants containing at least 100 trees per acre with at least 50 of those trees having the potential of attaining a 2 inch or greater diameter measured at 4.5 feet above the ground, within 7 years. Reforestation includes landscaping of areas under an approved landscaping plan that establishes a forest that is at least 35 feet wide and covering 2,500 square feet of area.	REFORESTATION OR REFORESTED
The deliberate holding and protecting of existing trees, shrubs or plants on the site according to established standards.	RETENTION
Forested areas that will be retained on a site.	RETENTION AREA

---

SEDIMENT CONTROL PERMIT	A permit required to be obtained for certain land disturbing activities under Chapter 19, Article 1 or from the Washington Suburban Sanitary Commission for major utility construction.
SEEDLINGS	An unbranched woody plant, less than 24 inches in height and having a diameter of less than 1/2 inch caliper measured at 2 inches above the root collar.
SELECTIVE CLEARING	The careful and planned removal of trees, shrubs, and plants using specific standards and protection measures under an approved forest conservation plan.
SITE PLAN	A plan subject to the review and approval procedures of Chapter 59, "Zoning," Division 59-D-3, "Site Plan" of the Montgomery County Code.
SPECIAL EXCEPTION	A plan approved under Division 59-G-1 of the County Zoning Ordinance.
SPECIMEN TREE	A tree that is a particularly impressive or unusual example of a species due to its size, shape, age, or any other trait that epitomizes the character of the species.
STREAM BUFFER	An strip of natural vegetation contiguous with and parallel to the bank of a perennial or intermittent stream, the width of which shall be determined according to the latest version of "Environmental Management of Development in Montgomery County, Maryland" as adopted by the Montgomery County Planning Board.
SUBDIVISION	Any division of a unit of land into two or more lots or parcels for the purpose, whether immediate or future, of transfer of ownership, sale, lease, or development.
TRACT	A property subject to an application for a sediment control permit or a preliminary plan of subdivision approval, except that, if property is included in a planned unit development, tract means the entire property subject to the planned unit development.
TREE	A large, woody plant having one or several self-supporting stems or trunks and numerous branches that reach a height of at least 20 feet at maturity.
TREE COVER	The combined area, in square feet, of all trees on a tract. For replanting purposes, tree cover is the typical crown area for the specific tree at maturity.
TREE CONSERVATION PLAN	A plan subject to the review and approval of the Planning Board pursuant to Chapter 22A of the Montgomery County Code.
TREE SAVE AREA	An area designating trees, or stands of trees outside of existing forest cover which are to be retained.
TREE SAVE PLAN	A plan subject to the review and approval of the Planning Board pursuant to the provisions of the 1989 Montgomery County Tree Legislation.

---

---

The methodology for evaluating the existing vegetation on a site proposed for development.

---

TREE STAND DELINEATION

---

All land lying within an area described as a subbasin in water quality regulations adopted by the Department of the Environment under COMAR 26.08.02.08.

---

WATERSHED

---

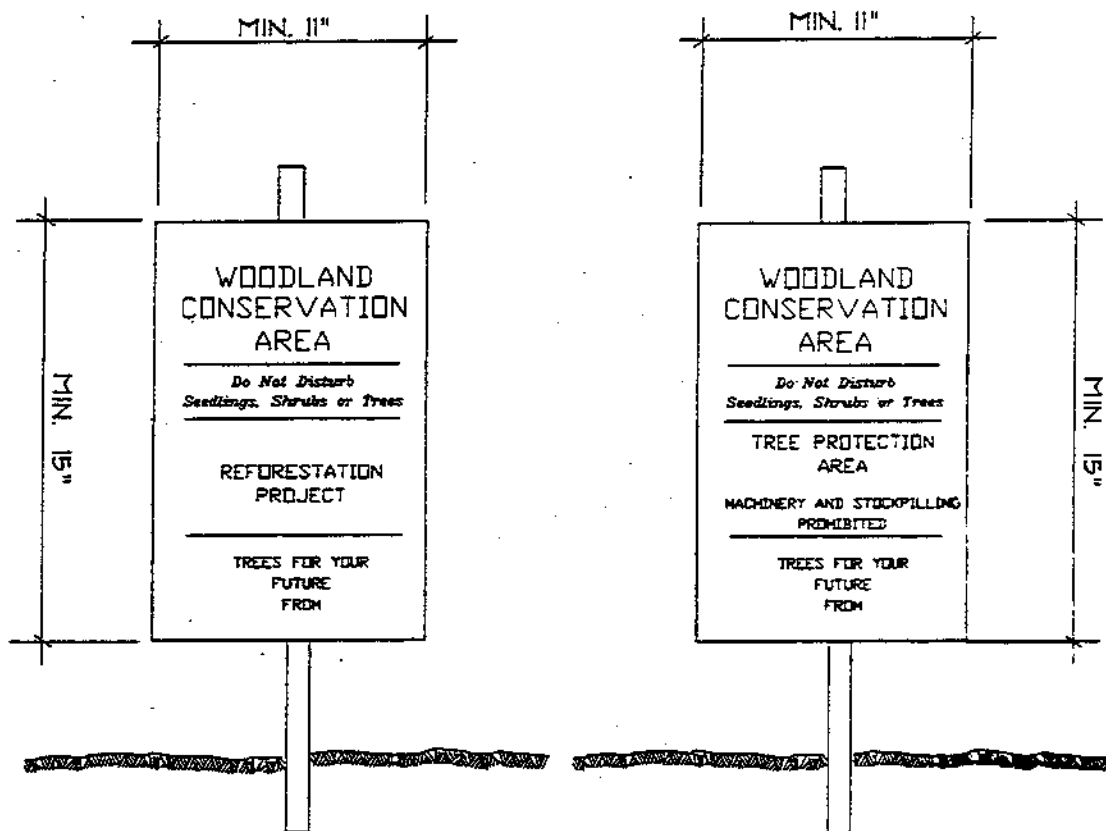
An unbranched woody plant greater than 24 inches in height and having a diameter of less than 1 inch caliper measured at 2 inches above the root collar.

---

WHIP



## SIGNAGE

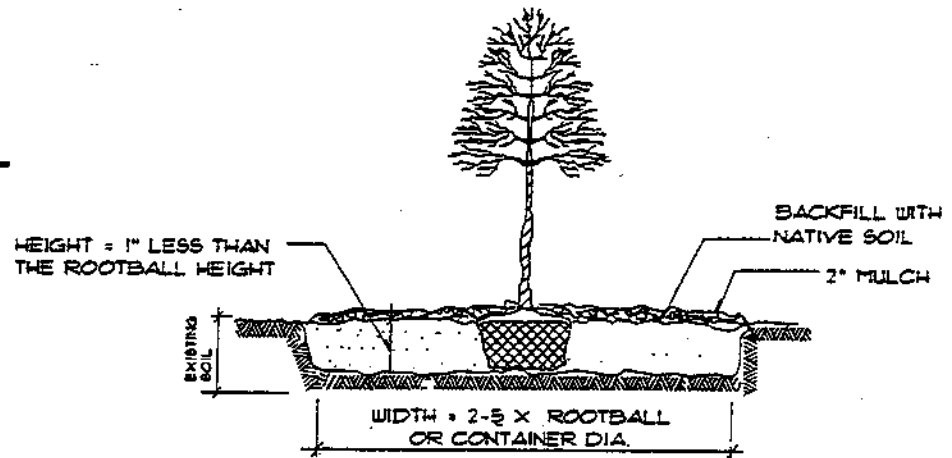


## NOTE:

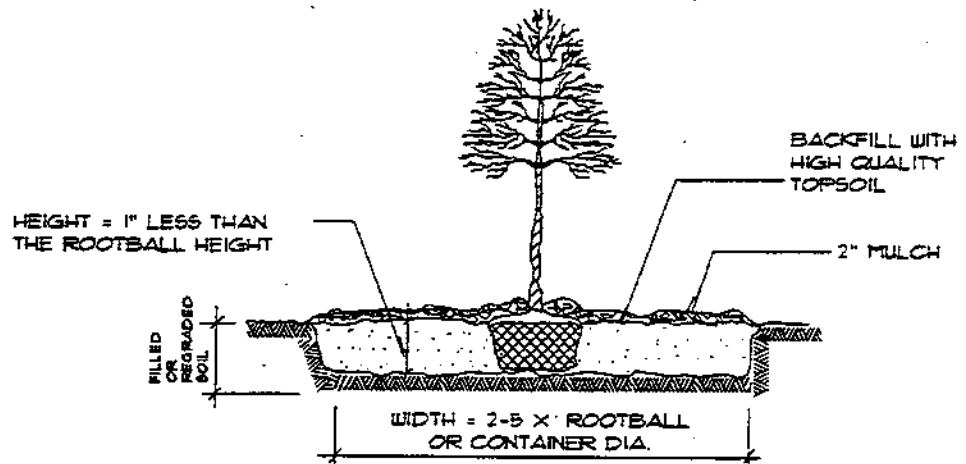
1. Attachment of signs to trees is prohibited.
2. Signs should be properly maintained.
3. Avoid injury to roots when placing posts for the signs.
4. Signs should be posted to be visible to all construction personnel from all directions.

CONTAINER GROWN  
AND BALLED  
AND BURLAPPED STOCK

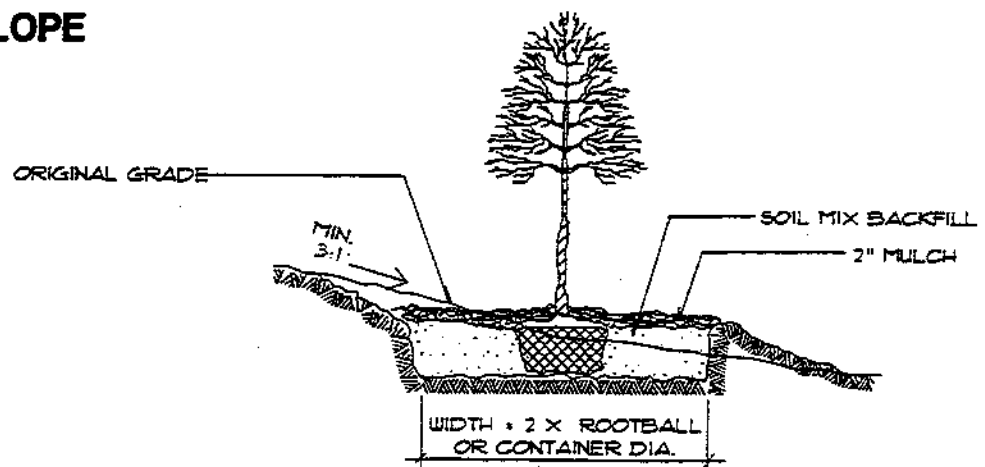
## UNDISTURBED SOIL



## DISTURBED SOIL



## PLANTING ON SLOPE



### NOTE:

Tree pit to be five times the rootball is preferred, particularly in poor soil.

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

## HEELING IN BARE ROOT STOCK

Bare root seedling and ship stock should be heeled in, if left unplanted for more than 24 hours.

HANDLING  
AND  
PLANTING  
OF  
SEEDLINGS  
(1)



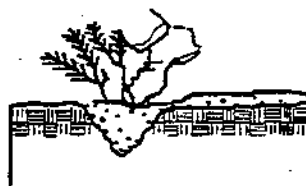
1. DIG V-SHAPED TRENCH  
IN MOIST SHADY PLACE



2. BREAK BUNDLES AND  
SPREAD OUT EVENLY



3. FILL IN LOSE SOIL AND  
WATER WELL

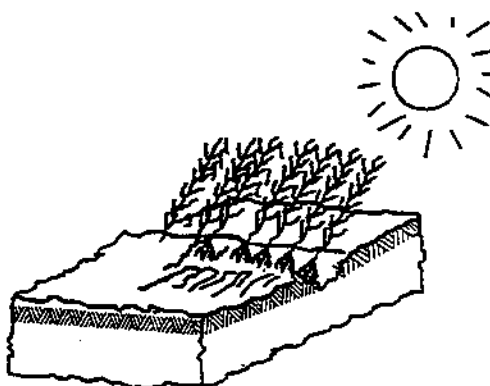


4. COMPLETE FILLING IN SOIL  
AND FIRM WITH FEET

## TREE BANKING

Tree banking should be used, when bare root trees must be held in the open for longer than a few days.

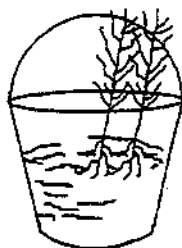
PLACE TREES IN AN EAST WEST TRENCH WITH THE TOPS OF THE TREES POINTING TOWARD THE AFTERNOON SUN. MOST OF SOIL SHOULD BE WORKED AROUND THE ROOTS TO COVER THEM AND MINIMIZE AIR POCKETS. POINT TREE TOPS TOWARD THE AFTERNOON SUN TO EXPOSE THE LEAST SURFACE TO THE SUN SO THE BUDS WILL BE LESS LIKELY TO BEGIN GROWTH.



*Adapted from Maryland State FOREST CONSERVATION MANUAL*

## HANDLING AND PLANTING SEEDLINGS (2)

## HANDLING SEEDLINGS IN THE FIELD



Correct

IN BUCKET WITH SUFFICIENT  
WATER TO COVER ROOTS



incorrect

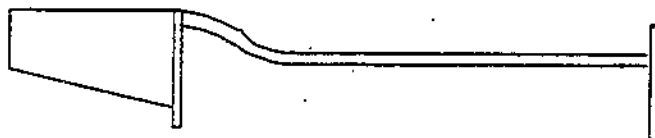
IN HAND: ROOT DRY OUT

### NOTE:

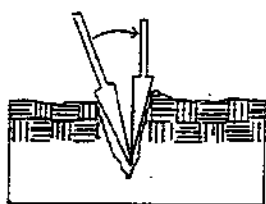
Seedlings dry out very quickly and, once dry, often are not usable even after moistening.

## SEEDLING PLANTING METHODS

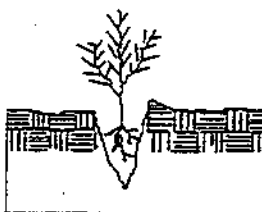
### A. DIBBLE PLANTING



DIBBLE



1. INSERT DIBBLE AT  
ANGLE SHOWN ABOVE  
AND PUSH FORWARD  
TO UPRIGHT POSITION



2. REMOVE DIBBLE AND  
PLACE SEEDLING AT  
CORRECT DEPTH



3. INSERT DIBBLE  
2 INCHES TOWARD  
PLANTER FROM SEEDLING.

SOURCE: Adapted from Maryland State FOREST CONSERVATION MANUAL

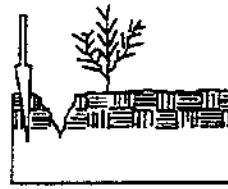
# HANDLING AND PLANTING SEEDLINGS (3)



4. PULL HANDLE OF DIBBLE TOWARD PLANTER FIRMING SOIL AT BOTTOM OF ROOTS



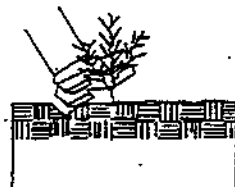
5. PUSH HANDLE OF DIBBLE FORWARD FROM PLANTER FIRMING SOIL AT TOP OF ROOTS



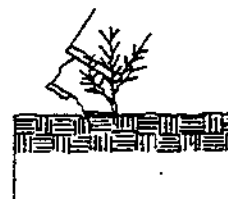
6. INSERT DIBBLE 2 INCHES FROM SEEDLING.



7. PULL FORWARD THEN PULL BACKWARD FILLING HOLE.

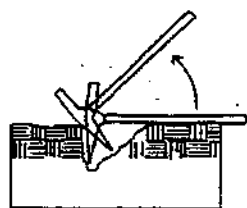


8. FILL LAST HOLE BY STAMPING WITH HEEL.



9. FIRM SOIL AROUND SEEDLING WITH FEET.

## B. MATTOCK PLANTING



1. INSERT MATTOCK LIFT HANDLE AND PULL.



2. PLACE SEEDLING ALONG STRAIGHT SIDE AT CORRECT DEPTH.



3. FILL IN AND PACK SOIL TO BOTTOM OF ROOTS.



4. FIRM AROUND SEEDLING WITH HEEL.

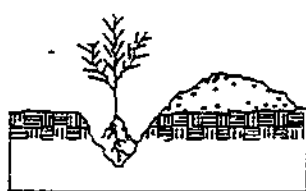


5. FINISH FILLING IN SOIL AND FIRM WITH FEET

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

HANDLING  
AND  
PLANTING  
SEEDLINGS  
(4)

## C. CORRECT AND INCORRECT PLANTING DEPTH



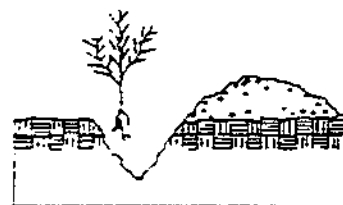
*Correct*

AT SAME DEPTH OR  
1/2 DEEPER THAN  
SEEDLING GREW IN  
NURSERY



*Incorrect*

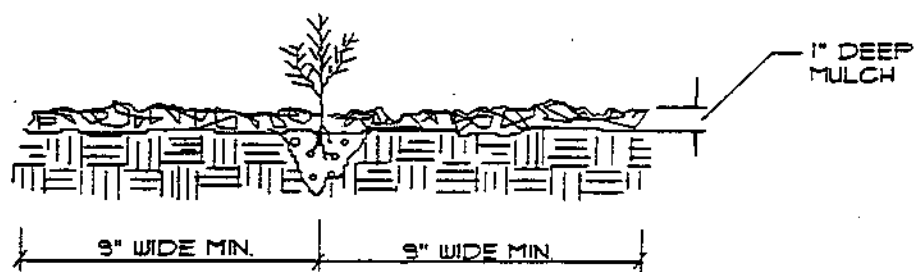
TOO DEEP AND ROOT  
BENT



*Incorrect*

TOO SHALLOW AND ROOTS  
EXPOSED

## SEEDLING AND WHIP PLANTING SPECIFICATION

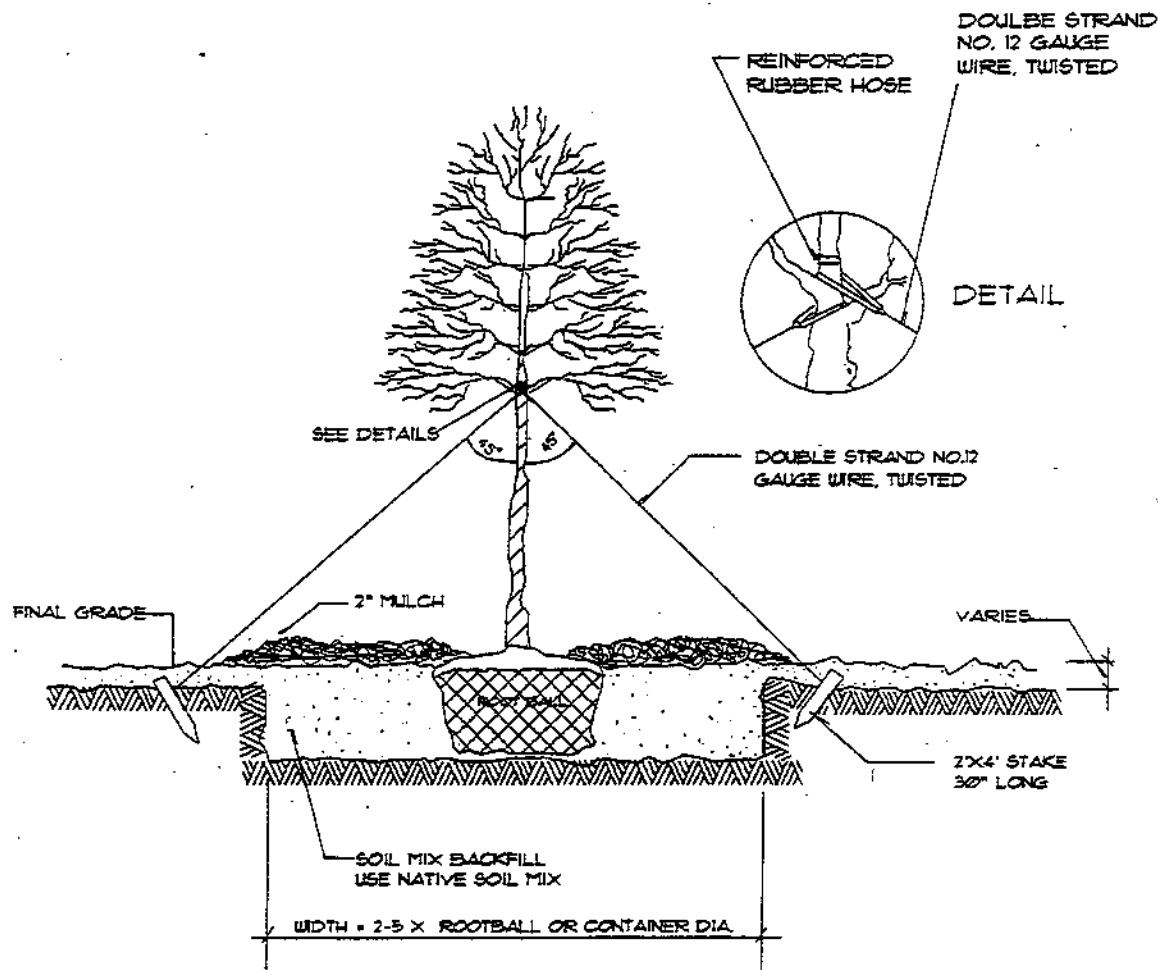


### NOTE:

Mulching newly planted seedlings helps the soil retain moisture and it protects the seedling from compaction and stem injuries.

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

# STAKED TREE SPECIFICATION (1)

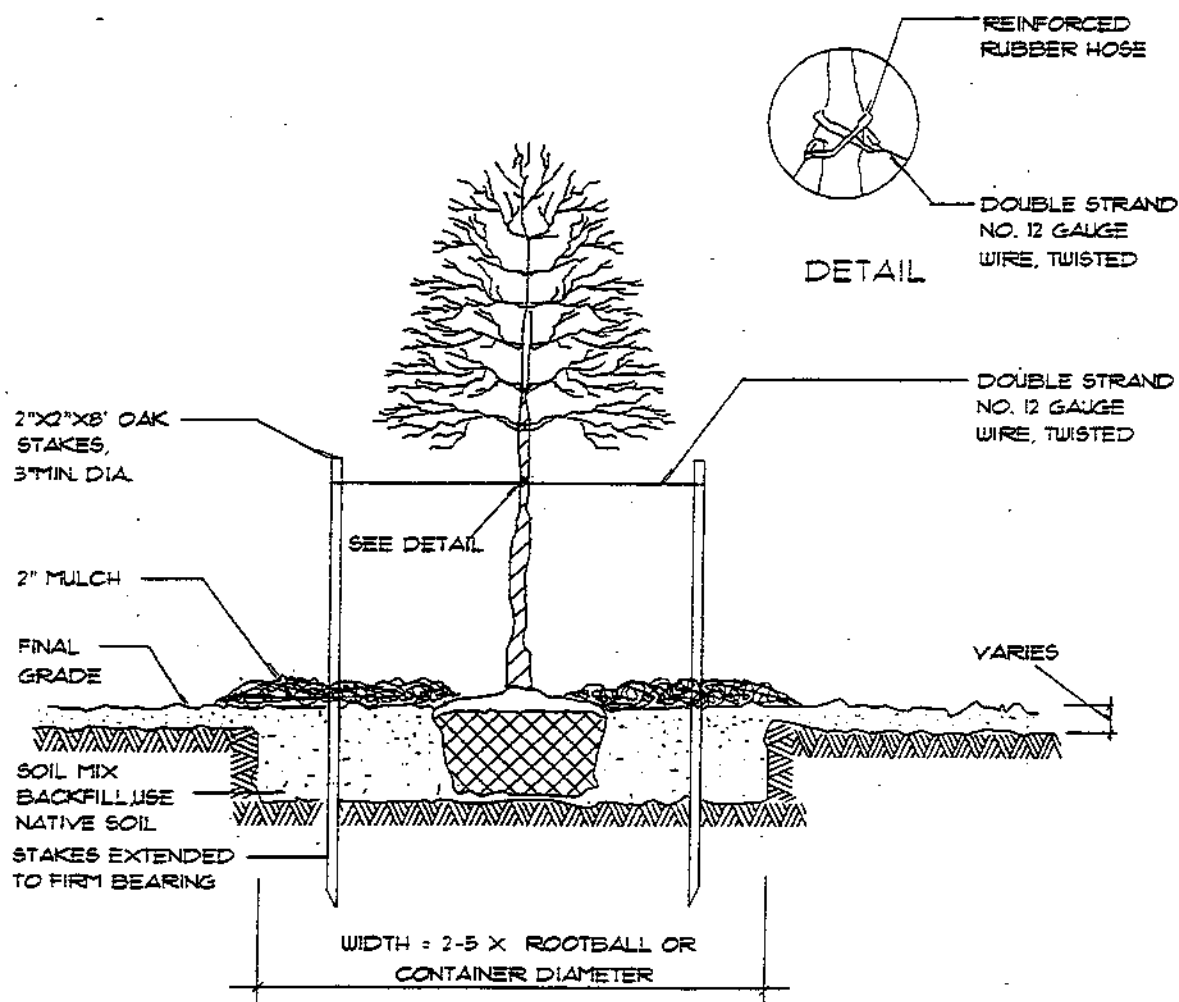


## NOTE:

1. Staking of trees may be used only when specified on the planting plan.
2. Stakes and wires must be removed no later than 12 months after planting.
3. Five times the rootball is preferred, particularly in poor soil.

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

STAKED  
TREE  
SPECIFICATION  
(2)



NOTE:

1. Staking of trees may be used only when specified on the planting plan. Stakes and wires must be removed no later than 12 months after planting.
2. Tree pit to be five times the rootball is preferred, particularly in poor soil.

*SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL*

## NATIVE SPECIES LIST

COMMON NAME	Scientific Name	FORM	SERAL STAGE
Arrowwood, Southern	<i>Viburnum dentatum</i>	S	P
Ash, Green	<i>Fraxinus pennsylvanica</i>	T	P-ES
Ash, White	<i>Fraxinus americana</i>	T	P-ES
Beech, American	<i>Fagus grandifolia</i>	T	C
Birch, River	<i>Betula nigra</i>	T	ES-C
Blueberry, Early low	<i>Vaccinium vacillans</i>	S	P
Boxelder	<i>Acer negundo</i>	T	P
Brambles	<i>Rubus sp.</i>	V	
Cedar, Eastern Red	<i>Juniperus virginiana</i>	T	P-ES
Cherry, Black	<i>Prunus serotina</i>	T	P-ES
Chestnut, American	<i>Castanea dentata</i>	T	C
Choke Cherry	<i>Prunus virginiana</i>	S	P
Cottonwood, Eastern	<i>Populus deltoides</i>	T	ES
Dogwood, Flowering	<i>Cornus florida</i>	T	C
Elderberry	<i>Sambucus canadensis</i>	S	P
Elm, Slippery	<i>Ulmus fulva</i>	T	ES
Grape	<i>Vitis sp.</i>	V	
Greenbriers	<i>Smilax sp.</i>	V	P-ES
Gum, Black	<i>Nyssa sylvatica</i>	T	ES
Gum, Sweet	<i>Liquidambar styraciflua</i>	T	P
Hackberry	<i>Celtis occidentalis</i>	T	
Hawthorn	<i>Crataegus sp.</i>	S	ES-C
Hemlock, Eastern	<i>Tsuga canadensis</i>	T	C
Hickory	<i>Carya sp.</i>	T	ES-C
Holly, American	<i>Ilex opaca</i>	T	C
Hornbeam, American	<i>Carpinus caroliniana</i>	T	P
Huckleberry, dwarf	<i>Gaylussacia dumosa</i>	S	ES
Ironwood	<i>Ostrya virginiana</i>	T	P
Juniper, dwarf	<i>Juniperus communis</i>	S	
Locust, Black	<i>Robinia pseudoacacia</i>	T	P

## NATIVE SPECIES LIST (cont'd)

COMMON NAME	Scientific Name	FORM	SERIAL STAGE
Magnolia, Southern	<i>Magnolia grandiflora</i>	T	
Maple, Red	<i>Acer rubrum</i>	T	P-ES
Maple, Silver	<i>Acer saccharinum</i>	T	ES
Mapleleaf viburnum	<i>Viburnum acerifolium</i>	S	ES
Mountain Laurel	<i>Kalmia latifolia</i>	S	C
Nannyberry	<i>Viburnum Lentago</i>	S	ES
Oak, Black	<i>Quercus velutina</i>	T	C
Oak, Blackjack	<i>Quercus marilandica</i>	T	ES-C
Oak, Chestnut	<i>Quercus prinus</i>	T	C
Oak, Red	<i>Quercus rubra</i>	T	ES
Oak, Pin	<i>Quercus palustris</i>	T	
Oak, Post	<i>Quercus stellata</i>	T	
Oak, Scarlet	<i>Quercus coccinea</i>	T	ES
Oak, Shingle	<i>Quercus imbricaria</i>	T	ES-C
Oak, Southern Red	<i>Quercus falcata</i>	T	
Oak, White	<i>Quercus alba</i>	T	C
Oak, Willow	<i>Quercus phellos</i>	T	
Pine, White	<i>Pinus strobus</i>	T	P-ES
Redbud	<i>Cercis canadensis</i>	T	P
Sassafras	<i>Sassafras albidum</i>	T	P
Serviceberry	<i>Amelanchier sp.</i>	S	ES-C
Spicebush	<i>Lindera Benzoin</i>	S	P
Sycamore	<i>Platanus occidentalis</i>	T	P-C
Tall Deerberry	<i>Vaccinium stamineum</i>	S	P
Tulip Tree	<i>Liriodendron tulipifera</i>	T	ES
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	V	
Witch Hazel	<i>Hamamelis virginiana</i>	S	ES

## KEY TO CODES

FORM: (Plant type) \_\_\_\_\_ T=tree S=shrub V=vine  
 SERIAL STAGE: (Most common position in succession) \_\_\_\_\_ P=pioneer ES=early seral C=climax

**MONTGOMERY COUNTY  
FOREST ASSOCIATION  
SPECIES LIST**  
(BRUSH ET AL., 1977)

## FOREST ASSOCIATIONS

ASSOCIATED SPECIES	FORM	SERIAL STAGE	MOISTURE REGIME	SUN EXPOSURE
white oak	T	C	D-M	A
northern red oak	T	ES	M	F
early low blueberry	S	P	D	F-P
red maple	T	P-ES	M-W	P-S
black oak	T	C	D-M	F-P
sassafras	T	P	D-M	F-P
grape	V	P-ES	D-M-W	S
tall deerberry	S	P	D	F-P
flowering dogwood	T	C	M	A
pignut hickory	T	C	D-M	A
black gum	T	ES	M-W	F
black cherry	T	P-ES	M	F-P
black locust	T	P	D-M	F
hawthorn	S	ES-C	D-M-W	F-P
white pine	T	P-ES	M	F-P
mockernut hickory	T	C	D-M	F
greenbriers	V	P-ES	D-M-W	A
service berries	S	ES-C	W-M	A
mapleleaf viburnum	S	P	M-D	F-P
sweet pignut hickory	T	ES-C	D-M	P-S
Virginia pine	T	P	D-M	F
witch hazel	S	ES	M-W	P-S
chestnut oak	T	C	D-M	F-P
bear oak	T	C	D-M	F-P

## CHESTNUT OAK BEAR OAK

red maple	T	P-ES	M-W	P-S
white oak	T	C	D-M	A
sassafras	T	P	D-M	F-P
northern red oak	T	ES	M	F
black cherry	T	P-ES	M	F-P
black gum	T	ES	M-W	F
black oak	T	C	D-M	F-P
early low blueberry	S	P	D	F-P
pignut hickory	T	C	D-M	A
flowering dogwood	T	C	M	A
American chestnut	T	C	D	P-S

## CHESTNUT OAK

## CHESTNUT OAK (cont'd)

ASSOCIATED SPECIES	FORM	SERAL STAGE	MOISTURE REGIME	SUN EXPOSURE
mockernut hickory	T	C	D-M	F
Virginia creeper	V	ES-C	M-D	A
grape	V	P-ES	D-M-W	S
chestnut oak	T	C	D-M	F-P
tall deerberry	S	P	D	F-P
brambles	V	P-ES	D-M	F-P
mapleleaf viburnum	S	P	M-D	F-P
greenbriers	V	P-ES	D-M-W	F-P
scarlet oak	T	ES	D	F-P
white ash	T	P-ES	M-W	A
witch hazel	S	ES	M-W	P-S

## TULIP POPLAR

red maple	T	P-ES	M-W	P-S
flowering dogwood	T	C	M	A
Virginia creeper	V	ES-C	M-D	A
black gum	T	ES	M-W	F
white oak	T	C	D-M	A
sassafras	T	P	D-M	F-P
black cherry	T	P-ES	M	F-P
grape	V	P-ES	D-M-W	S
mockernut hickory	T	C	D-M	F
southern arrowwood	S	P	M-W	F-P
pignut hickory	T	C	D-M	A
black oak	T	C	D-M	F-P
poison ivy	?	P-ES	D-M	P-S
greenbriers	?	P-ES	D-M-W	A
beech	T	C	M	A
spicebush	S	P	M-W	A
northern red oak	T	ES	M	F
mapleleaf viburnum	S	P	M-D	F-P
early low blueberry	S	P	D	F-P
choke cherry	S	P	M-D	A
brambles	V	P-ES	D-M	F-P
tulip poplar	T	ES	M	F-P

SYCAMORE-GREEN  
ASH-BOX ELDER-  
SILVER MAPLE

red maple	T	P-ES	M-W	P-S
Virginia creeper	V	ES-C	M-D	A
white oak	T	C	D-M	A
flowering dogwood	T	C	M	A
grape	V	P-ES	D-M-W	S

ASSOCIATED SPECIES	FORM	SERIAL STAGE	MOISTURE REGIME	SUN EXPOSURE
black cherry	T	P-ES	M	F-P
northern red oak	T	ES	M	F
spicebush	S	P	M-W	A
tulip poplar	T	ES	M	F-P
black gum	T	ES	M-W	F
sassafras	T	P	D-M	F-P
white ash	T	P-ES	M-W	A
mockernut hickory	T	C	D-M	F
poison ivy	?	P-ES	D-M	P-S
southern arrowwood	S	P	M-W	F-P
black oak	T	C	D-M	F-P
pignut hickory	T	C	D-M	A
brambles	V	P-ES	D-M	F-P
greenbriers	V	P-ES	D-M-V	A
ironwood	T	P	M	A
green ash	T	P-ES	M-W	F
sycamore	T	P-C	M-W	F-P
box elder	T	P	M-W	F-P
silver maple	T	ES	M-W	F-P

## SYCAMORE-GREEN ...[cont'd]

black oak	T	C	D-M	F-P
black cherry	T	P-ES	M	F-P
white oak	T	C	D-M	A
flowering dogwood	T	C	M	A
grape	V			S
poison ivy	V			
red maple	T	P-ES	M-W	P-S
sassafras	T	P	D-M	F-P
black gum	T	ES	M-W	F
shagbark hickory	T	C	D-M	F-P
greenbriers	V			
Virginia creeper	V		M-D	A
white ash	T	P-ES	M-W	A
chestnut oak	T	C	D-M	F-P
dwarf juniper	S	?	D-M	F-P
early low blueberry	S	P	D	F-P
nannyberry	S	ES	M	A
northern red oak	T	ES	M	F
redbud	T	P	M	F-P
spicebush	S	P	M-W	A

## SHINGLE OAK

## SHINGLE OAK (cont'd)

ASSOCIATED SPECIES	FORM	SERAL STAGE	MOISTURE REGIME	SUN EXPOSURE
tulip poplar	T	ES	M	F-P
Virginia pine	T	P	D-M	F
shingle oak T	ESC	D-M	P-S	

## CHESTNUT OAK

## POST OAK

## BLACKJACK OAK

red maple	T	P-ES	M-W	P-S
black gum	T	ES	M-W	F
white oak	T	C	D-M	A
sassafras	T	P	D-M	F-P
greenbriers	V			
American holly	T	C	M-W	A
Virginia pine	T	P	D-M	F
black oak	T	C	D-M	F-P
beech	T	C	M	A
early low blueberry	S	P	D	F-P
flowering dogwood	T	C	M	A
sweet gum	T	P	M-W	F-P
scarlet oak	T	ES	D	F-P
mockernut hickory	T	C	D-M	F
Virginia creeper	V		M-D	A
black cherry	T	P-ES	M	F-P
sweet pignut hickory	T			
dwarf huckleberry	S	ES	M	A
mountain laurel	S	C	D-W	P-S
southern arrowwood	S	P	M-W	F-P
tall deerberry	S	P	D	F-P
chestnut oak T	C	D-M	F-P	
post oak	T	ES	D-M	F
blackjack oak	T	ESC	D	A

## RIVER BIRCH

## SYCAMORE

red maple	T	P-ES	M-W	P-S
poison ivy	V			
Virginia creeper	V		M-D	A
greenbriers	V			
sweet gum	T	P	M-W	F-P
southern arrowwood	S	P	M-W	F-P
tulip poplar	T	ES	M	F-P
spicebush	S	P	M-W	A
black gum	T	ES	M-W	F
grape	V			S
ironwood	T	P	M	A

ASSOCIATED SPECIES	FORM	SERIAL STAGE	MOISTURE REGIME	SUN EXPOSURE
American holly	T	C	M-W	A
flowering dogwood	T	C	M	A
black cherry	T	P-ES	M	F-P
green ash	T	P-ES	M-W	F
white oak	T	C	D-M	A
brambles	V			
elderberry	S	P	M	A
slippery elm	T	ES	M-W	F
sassafras	T	P	D-M	F-P
sycamore	T	P-C	M-W	F-P
river birch	T	ES-C	M-W	F-P

RIVER BIRCH-SYCAMORE (cont'd)

**KEY TO CODES****FORM:**

(Describes plant type) ..... T=tree    S=shrub    V=vine

**SERIAL STAGE:**

(Indicates most common position in succession occupied by the species) ..... P=pioneer    ES=early seral    C=climax

**MOISTURE REGIME:**

(Refers to the amount of moisture required by a plant for optimal growth) ..... D=dry    M=moist    W=wet

**SUN EXPOSURE:**

(The amount of sun required by the species for optimum or adequate development) ..... F=full sun    P=partial shade    S=full shade    A=all

**Sources:**DARR, LONNIE. 1990. A Technical Manual for Woodland Conservation with Development in Prince George's County. MNCPPC, Upper Marlboro, MD.  
HENDERSON, CAROL L. 1981. Landscaping For Wildlife. Minnesota Department of Natural Resources, St. Paul, MN.

[REPRINTED FROM THE STATE FOREST CONSERVATION MANUAL.]

# MONTGOMERY COUNTY MARYLAND LANDSCAPE TREE EVALUATION CRITERIA

COMMON NAME/Scientific Name	MOISTURE REQUIREMENTS	WINDSTAND DRY OR ROOY SHADE SOIL	TYPE OF ROOT SYSTEM	TOLERANCE TO DROGNO SALTS	SENSITIVITY TO AIR POLLUTION				MADDO APPROXID SHEL I LINES	MADDO CANOPY COVERAGE [20-25] DIAMETER
					SO <sub>2</sub>	O <sub>3</sub>	FL	NO <sub>2</sub>		
Ash, Green/ <i>Fraxinus pennsylvanica</i>	MW	X	I	I	S	S	I	-	-	15'
Ash, White/ <i>Fraxinus americana</i>	MW	-	I	I	S	S	I	-	-	23'
Aspen, Bigtooth/ <i>Populus grandidentata</i>	DM	-	I	T	(S)	-	I	-	-	
Beech, American/ <i>Fagus grandifolia</i>	DM	-	S	S	S	-	-	-	-	46'
Birch, River/ <i>Betula nigra</i>	M	-	S	-	S	S	-	-	-	16'
Boxelder/ <i>Acer negundo</i>										20'
Butternut/ <i>Juglans cinerea</i>										
Cedar, Eastern Red/ <i>Juniperus virginiana</i>	DM	X	D	I	*	T	T	-	-	10'
Cherry, Black/ <i>Prunus serotina</i>	M	X	S	T	S	-	-	-	-	39'
Chestnut, Horse/ <i>Aesculus hippocastanum</i>	M	-	I	T	-	*	-	-	-	48'
Cottonwood, Eastern/ <i>Populus deltoides</i>	MW	-	S	I	S	S	I	-	-	
Dogwood, Flowering/ <i>Cornus florida</i>	M	-	S	*	*	*	-	-	Mn	16'
Elm, American/ <i>Ulmus americana</i>	M	-	I	S	(S)	T	-	-	-	26'
Elm, Slippery/ <i>Ulmus rubra</i>	W	-	I	-	I	-	-	-	-	26'
Fir, White/ <i>Abies concolor</i>	M	X	I	-	-	-	-	-	-	
Fringe-tree/ <i>Chionanthus virginicus</i>										
Gum, Black/ <i>Nyssa sylvatica</i>	DW	-	S	I	T	T	-	-	-	26'
Gum, Sweet/ <i>Liquidambar styraciflua</i>	MW	-	S	S	(S)	T	-	-	-	26'
Hackberry/ <i>Celtis occidentalis</i>	DW	X	D	S	T	T	T	-	-	45'
Hemlock, Eastern/ <i>Tsuga canadensis</i>	M	-	S	S	S	(I)	T	-	-	30'
Hickory, Bitternut/ <i>Carya cordiformis</i>	DM	-	D	I	S	-	-	-	-	39'
Hickory, Pignut/ <i>Carya glabra</i>	DM	-	D	I	S	-	-	-	-	39'
Hickory, Shagbark/ <i>Carya ovata</i>	DM	-	D	I	S	-	-	-	-	39'
Holly, American/ <i>Ilex opaca</i>	M	-	I	I	T	T	T	-	-	12'

# MONTGOMERY COUNTY MARYLAND LANDSCAPE TREE EVALUATION CRITERIA

(cont'd)

COMMON NAME/Scientific Name	MOISTURE REQUIREMENTS	WITHSTAND DRY OR POOR STONY SOIL	TOLERANCE TO HEAVY SHADE	TOLERANCE TO OPENING SHADE	SENSITIVITY TO AIR POLLUTION				ACIDOS APPROVED STREET TREES	MAINTENANCE COSTS 120 ft (36.6 m) DIAMETER
					SO <sub>2</sub>	O <sub>3</sub>	FL	NO <sub>2</sub>		
Hornbeam, American/ <i>Carpinus caroliniana</i>	DM	-	S	S	T	-	I	S	Mn	39'
Ironwood/ <i>Ostrya virginiana</i>	DM	-	D	I	S	-	-	-	Mn	20'
Locust, Black/ <i>Robinia pseudoacacia</i>										32'
Maple, Red/ <i>Acer rubrum</i>	WM	-	S	S	S	T	I	-	-	48'
Maple, Silver/ <i>Acer saccharinum</i>	MW	-	S	S	T	S	-	-	-	27'
Maple, Sugar/ <i>Acer saccharum</i>	M	-	S	I	T	T	I	-	Mj	30'
Mulberry, Red/ <i>Morus rubra</i>										22'
Musclewood/ <i>Carpinus caroliniana</i>	DM	-	S	S	T	-	I	S	Mn	39'
Oak, Black/ <i>Quercus velutina</i>	DM	-	D	T	T	-	-	-	-	26'
Oak, Chestnut/ <i>Quercus prinus</i>	DW	-	I	T	T	S	I	-	-	35'
Oak, Northern Red/ <i>Quercus rubra</i>	DM	-	I	T	T	T	I	-	Mj	35'
Oak, Overcup/ <i>Quercus lyrata</i>										26'
Oak, Pin/ <i>Quercus palustris</i>	DM	X	D	T	T	S	I	-	-	24'
Oak, Post/ <i>Quercus stellata</i>	DM	X	I	-	-	-	I	-	-	26'
Oak, Red/ <i>Quercus rubra</i>	DM	-	I	T	T	T	I	-	Mj	35'
Oak, Scarlet/ <i>Quercus coccinea</i>	DM	-	D	T	I	(S)	I	-	-	26'
Oak, Southern Red/ <i>Quercus falcata</i>	DM	X	D	-	T	T	I	-	-	26'
Oak, Swamp White/ <i>Quercus bicolor</i>										26'
Oak, White/ <i>Quercus alba</i>	DM	-	D	T	I	S	I	-	Mj	26'
Oak, Willow/ <i>Quercus phellos</i>	DW	-	I	T	T	S	I	-	Mj	17'
Paw Paw/ <i>Asimina triloba</i>										
Persimmon/ <i>Diospyros virginiana</i>										
Pine, Pitch/ <i>Pinus rigida</i>										
Pine, Shortleaf/ <i>Pinus echinata</i>	DM	X	D	-	-	I	S	-	-	
Pine, Virginia/ <i>Pinus virginiana</i>	DW	X	I	I	S	S	-	-	-	
Pine, White/ <i>Pinus strobus</i>	M	X	S	S	S	S	S	S	-	

# MONTGOMERY COUNTY MARYLAND LANDSCAPE TREE EVALUATION CRITERIA

(cont'd)

COMMON NAME/Scientific Name	MOISTURE REQUIREMENTS	WITHSTANDS DRY OR POOR STERILE SOIL	TYPE OF ROOT SYSTEM	TOLERANCE TO DE-ICING SALTS	SENSITIVITY TO AIR POLLUTION				MCDOT APPROVED STREET TREES	MATURE CANOPY COVERAGE (20" DIAMETER)
					SO <sub>2</sub>	O <sub>3</sub>	FL	NO <sub>2</sub>		
Redbud/ <i>Cercis canadensis</i>	M	-	S	I	S	S	-	-	Mn	20'
Sassafras/ <i>Sassafras albidum</i>	DM	X	D	-	-	-	-	-	-	10'
Serviceberry/ <i>Amelanchier canadensis</i>	M	-	S	T	S	S	I	-	-	20'
Sycamore/ <i>Platanus occidentalis</i>	MW	-	I	I	T	S	T	-	-	-
Tulip Tree/ <i>Liriodendron tulipifera</i>	M	-	D	S	T	S	-	-	-	26'
Walnut, Black/ <i>Juglans nigra</i>	M	-	D	S	-	(I)	I	-	-	26'

## KEY TO SYMBOLS\*

## MOISTURE REQUIREMENTS

- MW** - Moist to wet soil  
**M** - Moist soil  
**DM** - Dry to moist soil  
**D** - Dry soil  
**DW** - Dry to wet soil

## WITHSTANDS DRY OR POOR STERILE SOIL

- X** - Does withstand

## TYPES OF ROOT SYSTEM

- S** - Shallow lateral root  
**I** - Intermediate with wide spreading and deep lateral roots  
**D** - Deep penetrating tap root

**NOTE:** shallow rooted trees are more likely to lift pavement and be subject to wind throw.

## TOLERANCE TO DE-ICING SALTS

- T** - Tolerant  
**I** - Intermediate tolerance  
**S** - Sensitive

## SENSITIVITY TO AIR POLLUTION

- T** - Tolerant  
**I** - Intermediate  
**S** - Sensitive  
**(I)** - Intermediate or Tolerant depending upon reference source  
**(S)** - Sensitive or Intermediate depending upon reference source  
**\*** - Generally tolerant of parking lot conditions

## MCDOT APPROVED TREES (Standard No. 17)

- Mj** - Approved as a major tree  
**Mn** - Approved as a minor tree  
**\*** - Although this key indicates how different trees react to stressful conditions, effort should be taken to permit the trees to grow under the best possible circumstances.

## EXOTIC OR INVASIVE PLANTS

These species may displace native  
vegetation and disrupt forest ecosystems.

COMMON NAME	Scientific Name	COMMON NAME	Scientific Name
Garlic Mustard	<i>Alliaria officinalis</i>	Day-lily	<i>Heemerocallis fulva</i>
	<i>Arthraxon hispidus</i>	Purple Loosestrife	<i>Lythrum alatum</i>
Musk (nodding) thistle	<i>Carduus nutans</i>	Moneywort	<i>Lysimachia nummularia</i>
Plumeless thistle	<i>Carduus acanthoides</i>		<i>Myosoton aquaticum</i>
Spotted knapweed	<i>Centuria maculosa</i>	Wild reed	<i>Phragmites australis</i>
Bull thistle	<i>Cirsium vulgare</i>	Japanese knotweed	<i>Polygonum</i>
Canada thistle	<i>Cirsium arvense</i>	Asian leonchium	<i>Polygonum perfoliatum</i>
Crown vetch	<i>Coronilla varia</i>	Russian thistle	<i>Salsola iberica</i>
Beefsteak Mint	<i>Eulalia vimineus</i>	Johnson grass	<i>Sorghum halepense</i>
		Cocklebur	<i>Xanthium spp.</i>
Climbing Euonymus, Wintercreeper	<i>Euonymus fortunei</i>	English Ivy	<i>Hedera helix</i>
Kudzu	<i>Pueraria lobata</i>	Japanese Honeysuckle	<i>Lonicera japonica</i>
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Periwinkle	<i>Vinca minor</i>
Porcelain Berry	<i>Ampelopsis brevipedunculata</i>		
Wisteria	<i>Wisteria floribunda, W. sinensis</i>		
Japanese Barberry	<i>Berberis thunbergii</i>	Common Buckthorn	<i>Rhamnus Cathartica</i>
Russian Olive	<i>Eleagnus angustifolium</i>	European Buckthorn	<i>Rhamnus frangula</i>
Autumn Olive	<i>Eleagnus umbellata</i>	Multiflora Rose	<i>Rosa multiflora</i>
Winged Euonymus, Wingedahoo	<i>Euonymus alatus</i>	Strawberry-raspberry, Balloonberry	<i>Rubus illecebrosus</i>
Bush Honeysuckles, including	<i>Lonicera sp.</i>	Japanese Spiraea	<i>Spiraea japonica</i>
Belle Honeysuckle	<i>Lonicera x bella</i>	Coralberry	<i>Symphoricarpos orbiculatus</i>
Amur Honeysuckle	<i>Lonicera maackii</i>	Wineberry	<i>Rubus phoenicolasius</i>
Morrow's Honeysuckle	<i>Lonicera morrowii</i>	Privet	<i>Ligustrum sp.</i>
Tartarian Honeysuckle	<i>Lonicera tatarica</i>		
Norway Maple	<i>Acer platanoides</i>	(White Mulberry)	<i>(Morus alba)*</i>
Tree of Heaven	<i>Ailanthus altissima</i>	Empress Tree	<i>Paulownia tomentosa</i>
(Catalpa)	<i>(Catalpa sp.)*</i>	(White Spruce)	<i>(Picea glauca)*</i>
Russian Olive	<i>Eleagnus angustifolia</i>	Sweet Cherry	<i>Prunus avium</i>
Sycamore Maple	<i>Acer pseudoplatanus</i>	Amur Cork Tree	<i>Phellodendron amurense</i>

\*Species in parentheses are minor problems (Maryland Natural Heritage Program, July 25, 1991)

### HERBACEOUS PLANTS

### VINES

### SHRUBS

### TREES

# **SIZE CRITERIA FOR CHAMPION AND SPECIMEN TREES**

COMMON NAME	Scientific Name	SMALL CHAMPION DBH	COUNTY BIG TREES CIRCUMFERENCE	SPECIMEN TREE DBH
Ailanthus	<i>Ailanthus altissima</i>	46"		30"
Apple, Common	<i>Pyrus malus</i>	27"		20"
Ash, White	<i>Fraxinus americana</i>	65"	168"	30"
Beech, American	<i>Fagus grandifolia</i>	68"	175"	30"
Birch, River	<i>Betula nigra</i>	37"	126"	28"
Boxelder	<i>Acer negundo</i>	54"	168"	30"
Butternut	<i>Juglans cinerea</i>	35"		26"
Catalpa, Northern	<i>Catalpa speciosa</i>	62"	196"	30"
Catalpa, Southern	<i>Catalpa bioniodora</i>	66"	188"	30"
Cedar, Atlantic White	<i>Chamaecyparis thyoides</i>	33"		25"
Cedar, Atlas	<i>Cedrus atlantica</i>	37"	115"	28"
Cedar, Eastern Red	<i>Juniperus virginiana</i>	49"		30"
Cherry, Black	<i>Prunus serotina</i>	86"		30"
Cherry, Weeping	<i>Prunus subhirtella</i>	19"	109"	14"
Chestnut, Chinese	<i>Castanea mollissima</i>	57"		30"
Chestnut, Horse	<i>Aesculus hippocastanum</i>	55"		30"
Coffeetree	<i>Gymnocladus dioica</i>	43"	128"	30"
Cryptomeria	<i>Cryptomeria japonica</i>	25"		19"
Cypress, Bald	<i>Taxodium distichum</i>	66"		30"
Dawn Redwood	<i>Metasequoia glyptostroboides</i>	30"	92"	23"
Dogwood, Flowering	<i>Cornus florida</i>	25"		19"
Elm, American	<i>Ulmus americana</i>	76"	185"	30"
Fir, Balsam	<i>Abies balsamea</i>	32"		24"
Fir, White	<i>Abies concolor</i>	23"		17"
Fringe-tree	<i>Chionanthus virginicus</i>	3"		2"
Ginkgo	<i>Ginkgo biloba</i>	66"	141"	30"

**SIZE  
CRITERIA  
FOR  
CHAMPION  
AND  
SPECIMEN  
TREES**  
(cont'd)

COMMON NAME	Scientific Name	STATE CHAMPION DBH	COUNTY BIG TREES CIRCUMFERENCE	SPECIMEN INF DBH
Gum, Black	<i>Nyssa sylvatica</i>	103"	176"	30"
Gum, Sweet	<i>Liquidambar styraciflua</i>	67"		30"
Hackberry	<i>Celtis occidentalis</i>	61"	217"	30"
Hemlock, Eastern	<i>Tsuga canadensis</i>	47"	122"	30"
Hickory, Bitternut	<i>Carya cordiformis</i>	50"		30"
Hickory, Pale-leaved	<i>Carya pallida</i>	30"		23"
Hickory, Pignut	<i>Carya glabra</i>	28"		21"
Hickory, Shagbark	<i>Carya ovata</i>	56"		30"
Holly, American	<i>Ilex opaca</i>	45"	82"	30"
Larch, American	<i>Larix laricina</i>	43"		30"
Linden, American	<i>Tilia americana</i>	60"	135"	30"
Linden, European	<i>Tilia vulgaris</i>	50"		30"
Linden, White	<i>Wilia heterophylla</i>	56"		30"
Locust, Black	<i>Robinia pseudoacacia</i>	70"		30"
Locust, Honey	<i>Gleditsia triacanthos</i>	46"		30"
Magnolia, Big-leaved	<i>Magnolia macrophylla</i>	29"		22"
Magnolia, Cucumber	<i>Magnolia accuminata</i>	80"	111"	30"
Magnolia, Southern	<i>Magnolia grandiflora</i>	36"	125"	27"
Magnolia, Sweetbay	<i>Magnolia virginiana</i>	5"		4"
Maple, Red	<i>Acer rubrum</i>	58"	164"	30"
Maple, Silver	<i>Acer saccharinum</i>	97"	305"	30"
Maple, Sugar	<i>Acer saccharum</i>	86"		30"
Mimosa	<i>Albizia julibrissin</i>	27"		20"
Mulberry, Paper	<i>Broussonetia papyrifera</i>	23"		17"
Mulberry, Red	<i>Morus rubra</i>	48"		30"
Mulberry, White	<i>Morus alba</i>	45"		30"
Musclewood	<i>Carpinus caroliniana</i>	19"		14"

# **SIZE CRITERIA FOR CHAMPION AND SPECIMEN TREES**

(cont'd)

COMMON NAME	Scientific Name	STATE CHAMPION DBH	COUNTY BIG TREES CIRCUMFERENCE	SPECIMEN TREE DBH
Oak, Black	<i>Quercus velutina</i>	63"	175"	30"
Oak, Chesnut	<i>Quercus prinus</i>	79"		30"
Oak, Northern Red	<i>Quercus rubra</i>	70"	242"	30"
Oak, Overcup	<i>Quercus lyrata</i>	87"		30"
Oak, Pin	<i>Quercus palustris</i>	65"	128"	30"
Oak, Post	<i>Quercus stellata</i>	47"	128	30"
Oak, Sawtooth	<i>Quercus acutissima</i>	25"		19"
Oak, Scarlet	<i>Quercus coccinea</i>	61"	182"	30"
Oak, Southern Red	<i>Quercus falcata</i>	105"		30"
Oak, Swamp White	<i>Quercus bicolor</i>	62"		30"
Oak, White	<i>Quercus alba</i>	119"	247"	30"
Oak, Willow	<i>Quercus phellos</i>	89"		30"
Osage Orange	<i>Maclura pomifera</i>	68"		30"
Paulownia, Royal	<i>Paulownia tomentosa</i>	56"	138"	30"
Paw Paw	<i>Asimina triloba</i>	9"		7"
Pear, Bradford	<i>Pyrus calleryana</i>	18"		14"
Pear, Common	<i>Pyrus communis</i>	44"		30"
Pecan	<i>Carya illinoensis</i>	59"	135"	30"
Persimmon	<i>Diospyros virginiana</i>	21"		16"
Pine, Austrian	<i>Pinus nigra</i>	41"		30"
Pine, Loblolly	<i>Pinus taeda</i>	51"		30"
Pine, Pitch	<i>Pinus rigida</i>	27"		20"
Pine, Shortleaf	<i>Pinus echinata</i>	22"		17"
Pine, Virginia	<i>Pinus virginiana</i>	30"		23"
Pine, White	<i>Pinus strobus</i>	37"	107"	28"
Raisin Tree, Japanese	<i>Enia dulcis</i>	16"		12"
Sassafras	<i>Sassafras albidum</i>	50"		30"
Spruce, Norway	<i>Picea abies</i>	53"		30"

# **SIZE CRITERIA FOR CHAMPION AND SPECIMEN TREES**




(cont'd)

COMMON NAME	Scientific Name	STATE CHAMPION DBH	COUNTY AND JRS CHAMPION DBH	SPECIMEN TREE DBH
Sycamore	<i>Platanum occidentalis</i>	97"	212"	30"
Tulip Tree	<i>Liriodendron tulipifera</i>	96"	240"	30"
Walnut, Black	<i>Juglans nigra</i>	80"		30"
Walnut, English	<i>Juglans regia</i>	42"		30"
Willow, Weeping	<i>Salix babylonica</i>	68"		30"

TREE PLANTING  
AND  
MAINTENANCE  
CALENDAR

TASKS	MONTHS											
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
TRANSPLANT OF 2" DBH OR GREATER												
PLANTING SEEDINGS, WHIPS												
MINIMUM MONITORING			*				*				*	
FERTILIZER + (IF NEEDED)												
WATER ++												
PRUNING												

## KEY

- \* ACTIVITIES DURING THESE MONTHS ARE DEPENDANT UPON GROUND CONDITIONS
-  GREATLY RECOMMENDED
-  RECOMMENDED WITH ADDITIONAL CARE
-  RECOMMENDED
- + DEPENDANT UPON SITE CONDITIONS
- ++ DEPENDANT UPON SITE CONDITIONS: WEEKLY WATERING IS GREATLY RECOMMENDED FROM MAY THROUGH OCTOBER UNLESS WEEKLY RAINFALL EQUALS 1"

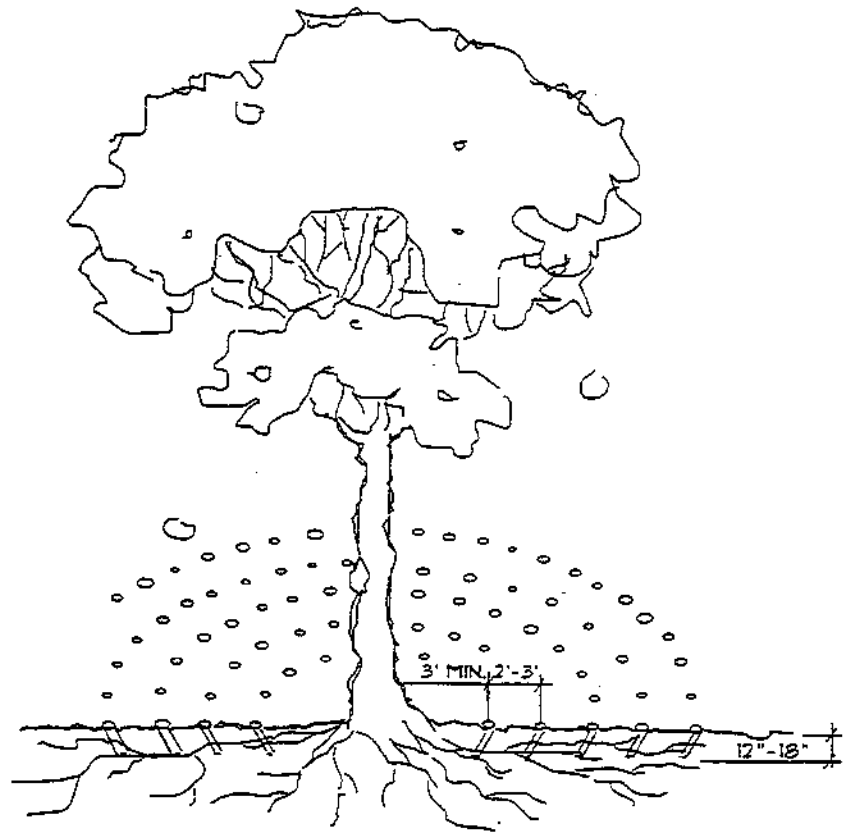
## NOTE:

The planting and care of trees is most successful when coordinated with the local climatic conditions. This calendar summarizes some of the recommended time frames for basic reforestation and stress reduction activities.

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

STRESS  
REDUCTION  
MEASURES  
(1)

## APPLICATION OF FERTILIZERS BY INJECTION



### NOTE:

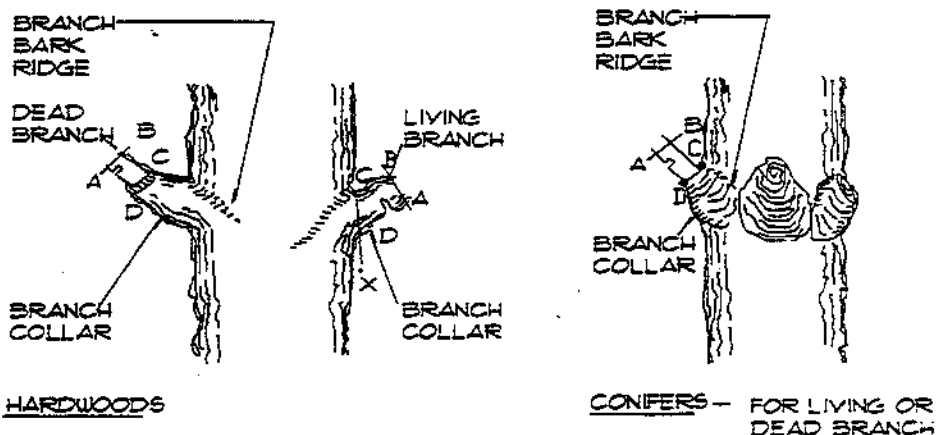
1. No fertilizer within 3 feet of trunk.
2. Apply fertilizer to entire critical root zone.

SOURCE : Adapted from Maryland State FOREST CONSERVATION MANUAL

## CROWN REDUCTION

STRESS  
REDUCTION  
MEASURES  
(2)

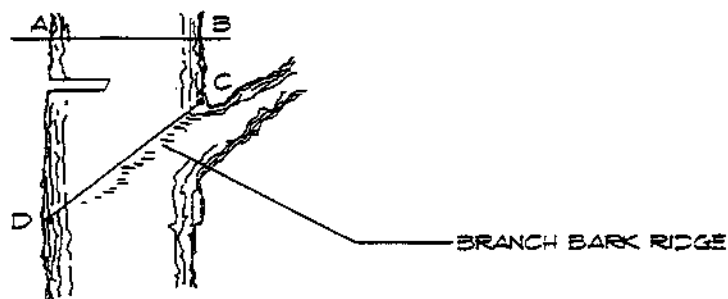
### PRUNING A BRANCH



#### NOTE:

1. Remove branch weight by undercutting at A and remove limb by cutting through at B.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar).
3. If D is difficult to find on hardwoods, drop vertical from C (line CX). Angle  $XCX = XCD$ .

### PRUNING A LEADER OR TO REDUCE SIZE



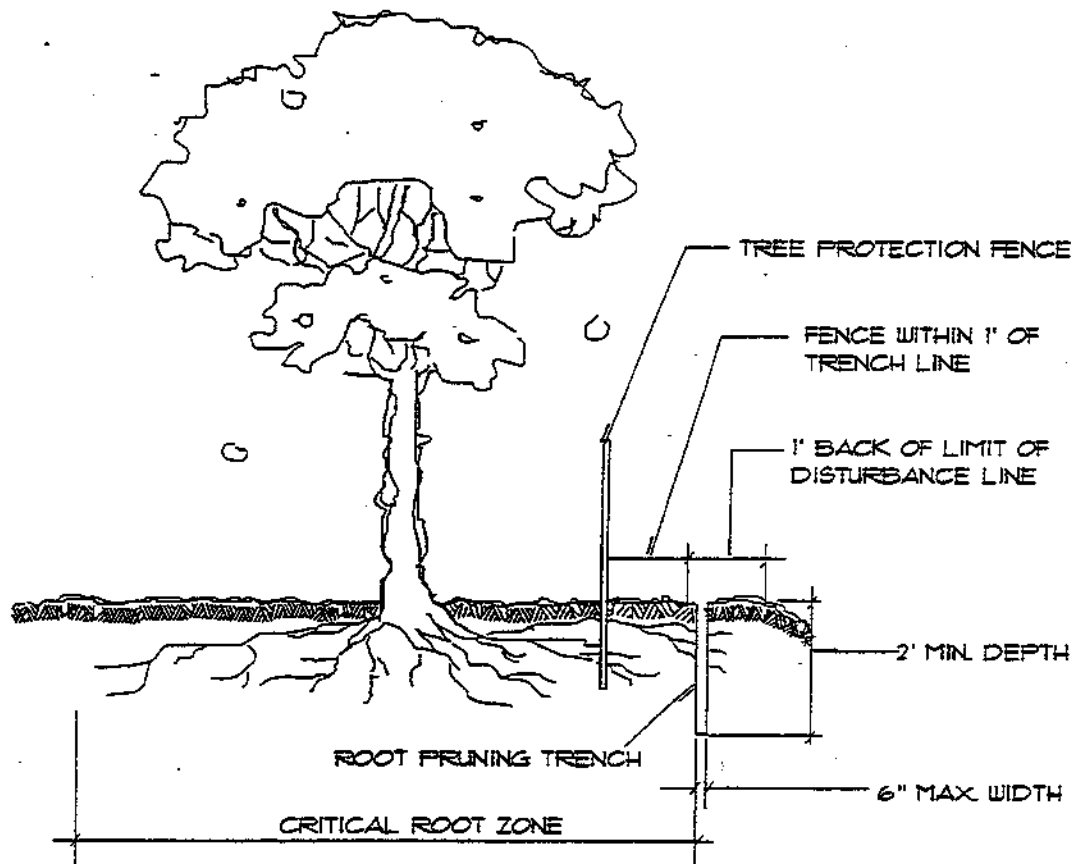
#### NOTE:

1. Only prune at specified times.
2. No more than 30% of crown to be removed at one time.

SOURCE: Fairfax County, Virginia: VEGETATION PRESERVATION & PLANTING  
Adapted from Maryland State FOREST CONSERVATION MANUAL

STRESS  
REDUCTION  
MEASURES  
(3)

## ROOT PRUNING



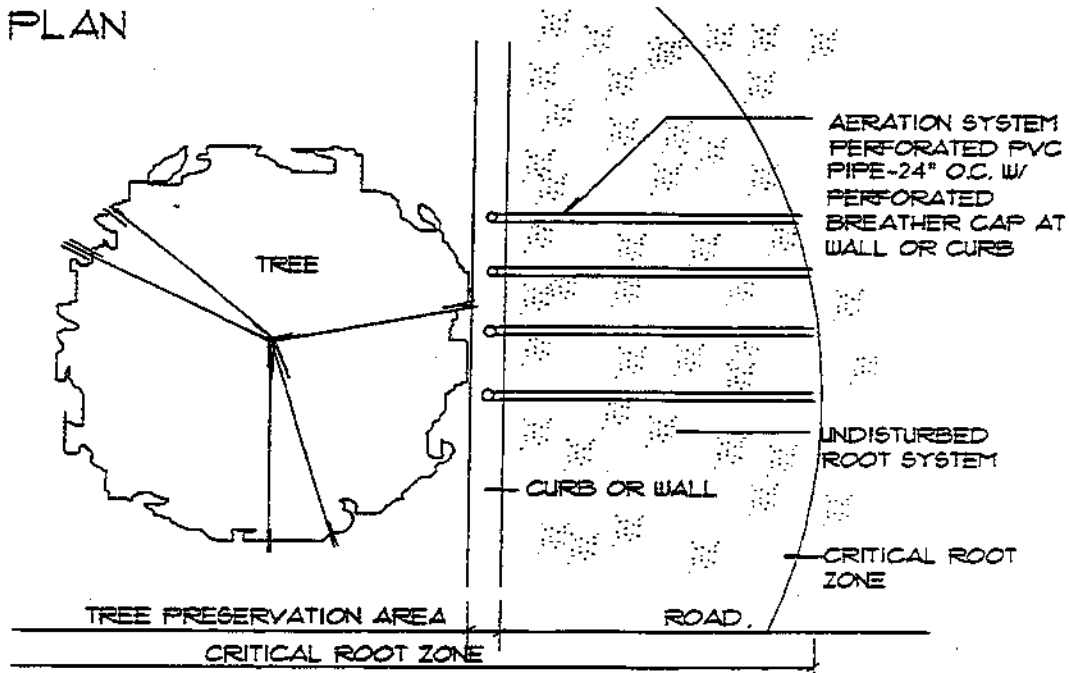
### NOTE:

1. Retention Areas will be set as part of the review process.
2. Boundaries of Retention Areas should be staked and flagged prior to trenching
3. Exact location of trench should be identified.
4. Trench should be immediately backfilled with soil removed or other high organic soil.
5. Roots should be cleanly cut using vibratory knife or other acceptable equipment.

SOURCE : City of Gaithersburg, Maryland: CITY TREE MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

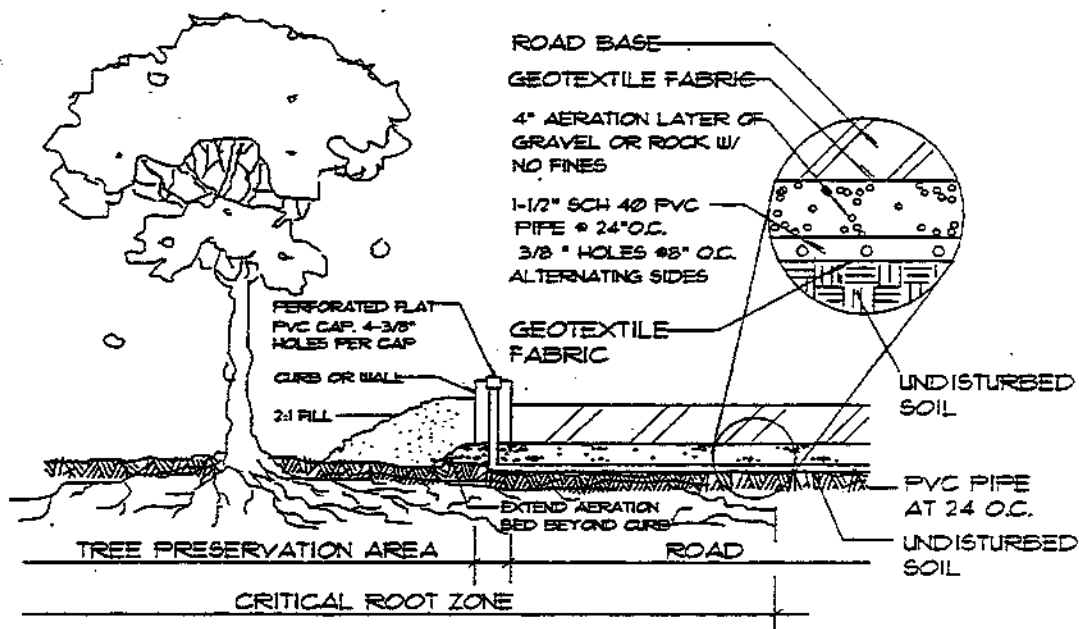
# AERATION SYSTEM

## PLAN



SPECIAL  
TREE  
PROTECTION  
MEASURES  
(1)

## SECTION



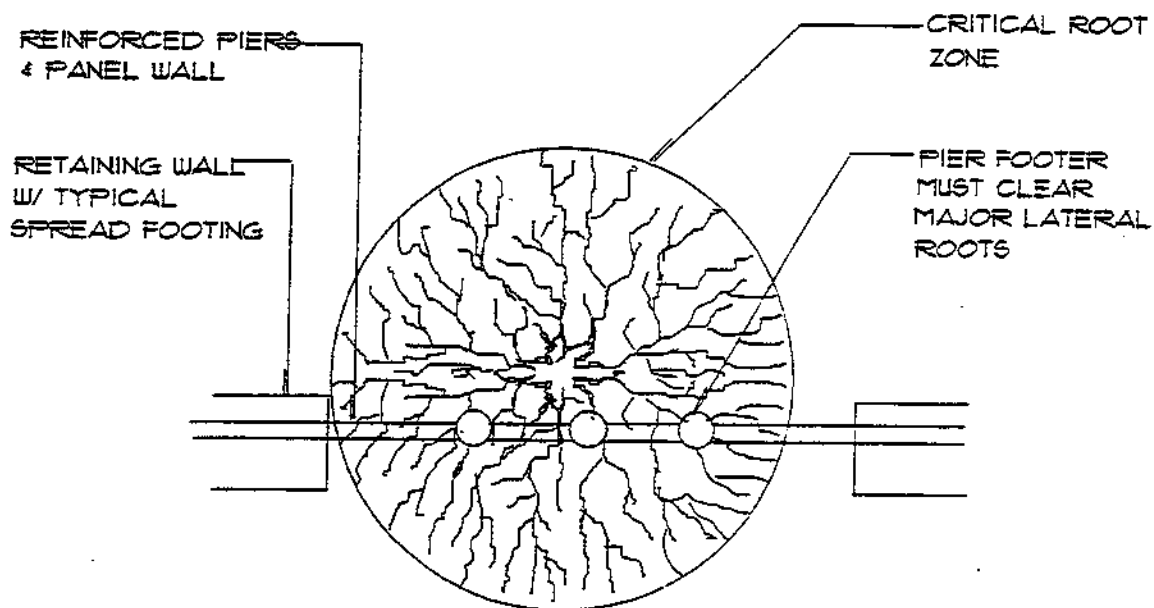
### NOTE:

1. Bed preparation should not exceed two inches.
2. Vertical pipe should be capped with a perforated cap with 4-3/8 inch holes per cap.
3. Gravel or rock should contain no fines.
4. Can also be used when critical root zone is covered by fill instead of asphalt.

SOURCE : Adapted from STEVE CLARK & ASSOCIATES

SPECIAL  
TREE  
PROTECTION  
MEASURES  
(2)

## REINFORCED PIER AND PANEL WALL



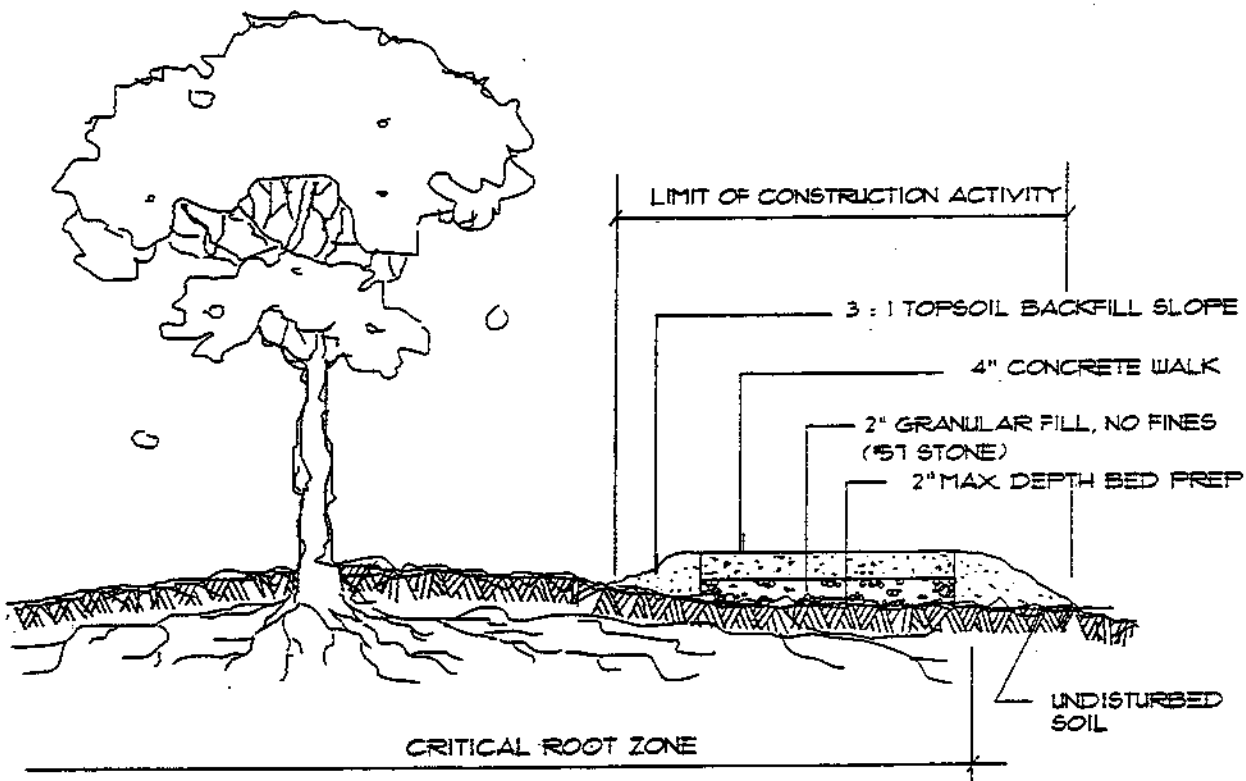
### NOTES:

1. Area of disturbance should be minimized.
2. Care should be taken to avoid major lateral roots.
3. Roots should be cleanly cut using a vibratory knife or othersimilar equipment

SOURCE : Adapted from STEVE CLARK & ASSOCIATES

## RAISED SIDEWALK

SPECIAL  
TREE  
PROTECTION  
MEASURES  
(3)



### NOTES:

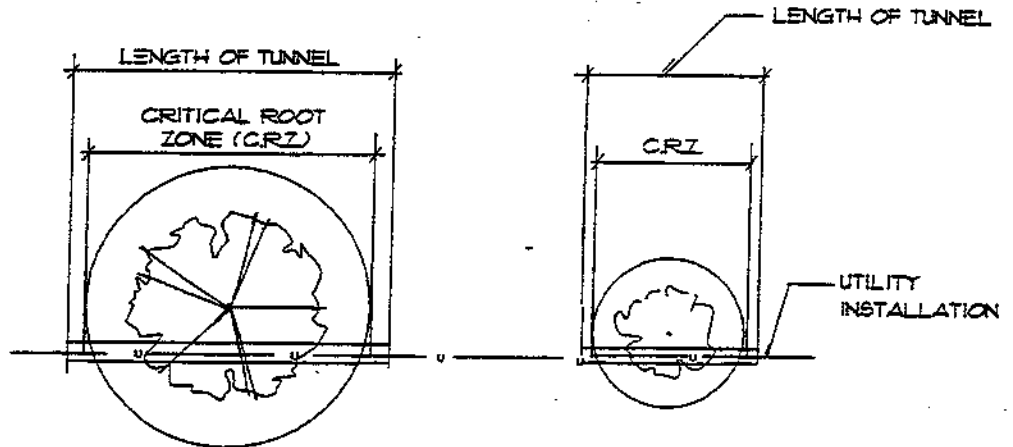
1. Bed preparation should not exceed 2 inches.
2. Granular fill should contain no fines.
3. Extreme care of existing trees around roots must be used during construction.

SOURCE : City of Gaithersburg, Maryland: CITY TREE MANUAL

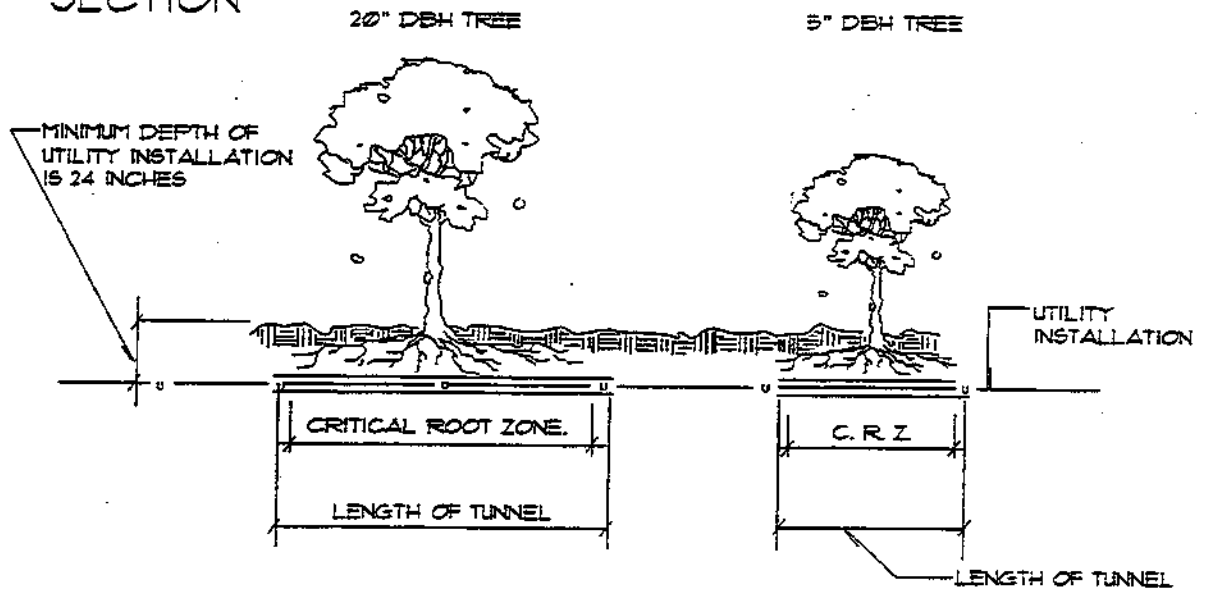
# TUNNELING

## SPECIAL TREE PROTECTION MEASURES (4)

### PLAN



### SECTION



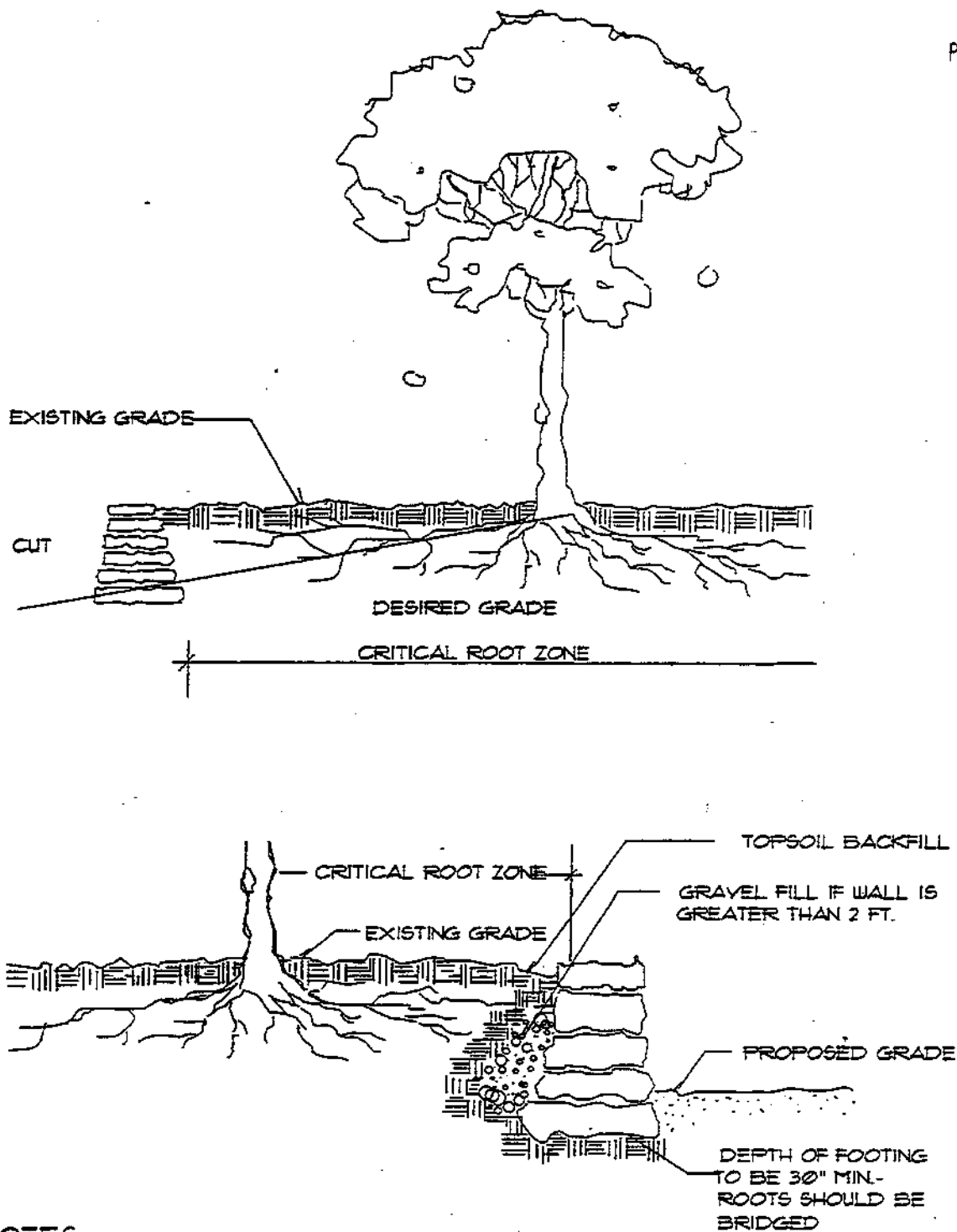
### NOTES:

1. Tunnel should be located under critical root zone at a minimum depth of 24 inches.
2. When tunneling, aim for the trunk of the tree.
3. When trenching, tunnel through the critical root zone.

SOURCE : Adapted from Fairfax County, Virginia: VEGETATION PRESERVATION AND PLANTING

# RETAINING WALL

SPECIAL  
TREE  
PROTECTION  
MEASURES  
(5)



## NOTES:

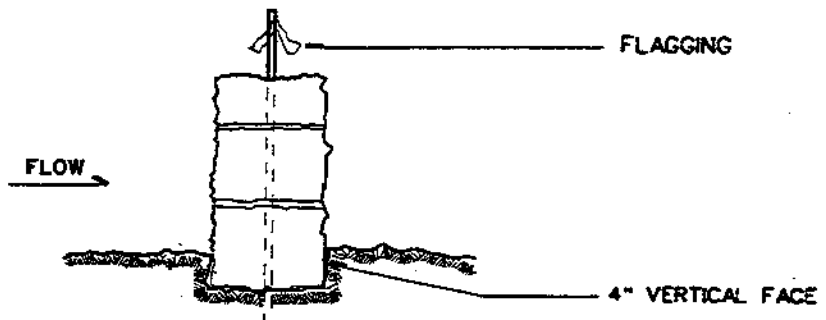
1. Wall should be constructed outside the critical roots should be pruned.
2. Used extreme care to protect existing root while constructing retaining wall including anchoring system.

SOURCE : Adapted from Fairfax County, Virginia: VEGETATION PRESERVATION & PLANTING

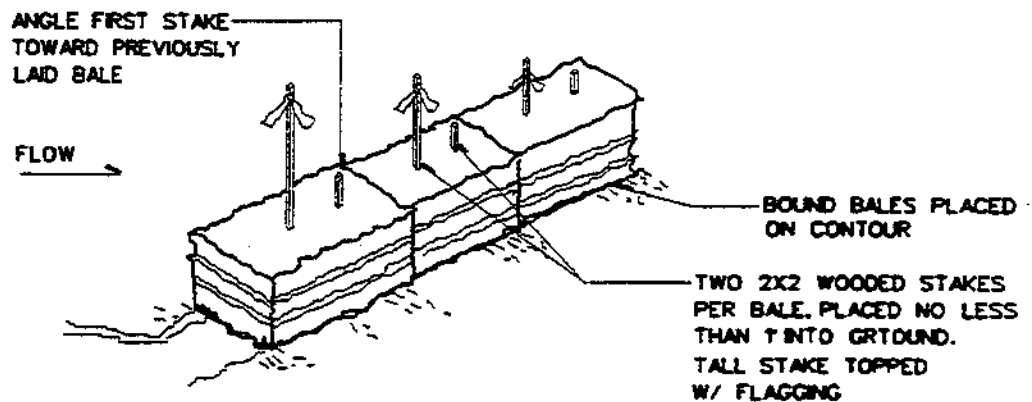
TREE  
PROTECTION  
AND  
SEDIMENT  
CONTROL  
(1)

## STAKED STRAW BALE DIKE

### SECTION



### ANCHORING DETAIL



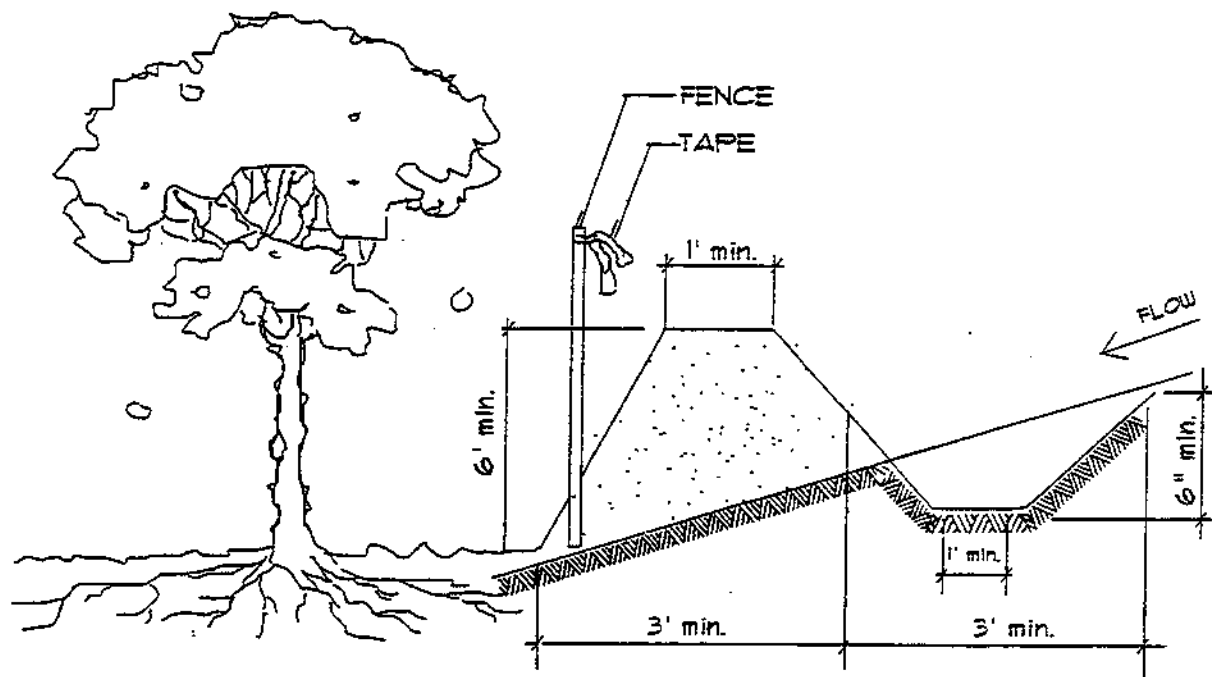
### NOTE:

1. Combine sediment control and protective device.
2. Retention Area will be set as part of review process.
3. Boundaries of limits of disturbance should be staked and flagged prior to installation of device.
4. Root damage should be avoided.
5. This device should only be placed within the limit of disturbance.
6. Protective signage is required.
7. All standard maintenance for sediment control devices apply to these details.

SOURCE: Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

# EARTHEN DIKE AND SWALE

TREE  
PROTECTION  
AND  
SEDIMENT  
CONTROL  
(2)



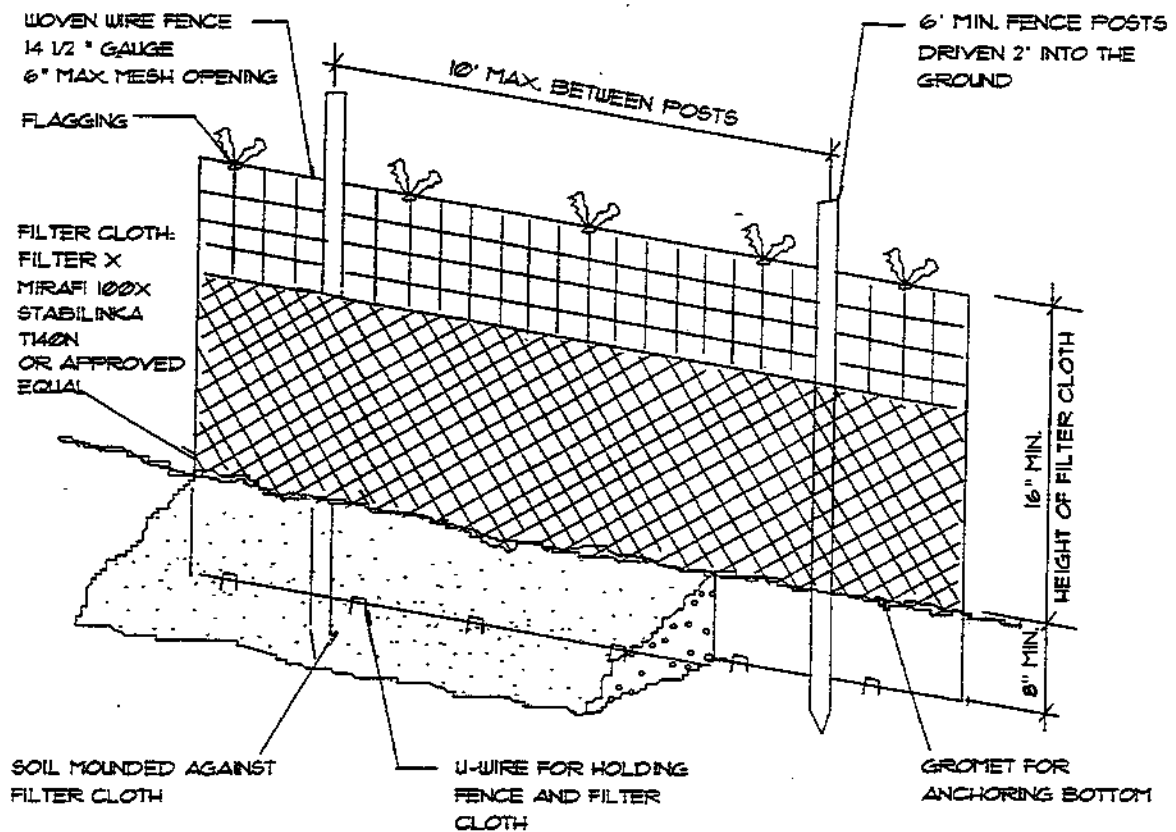
## NOTES:

1. Combine sediment control and protective device.
2. Retention area will be set as part of the review process
3. Boundaries of Retention Area should be staked prior to installing protective device.
4. Root damage should be avoided.
5. The top or toe of slope should be within the limit of disturbance.
6. Equipment is prohibited within critical root zone of retention area; place dike accordingly.
7. All standard maintenance for earth dikes and swales apply to these details.
8. All standard reclamation practices for earth dikes and swales shall apply to these details

SOURCE : Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

TREE  
PROTECTION  
AND  
SEDIMENT  
CONTROL  
(3)

## FILTER CLOTH ON WIRE MESH



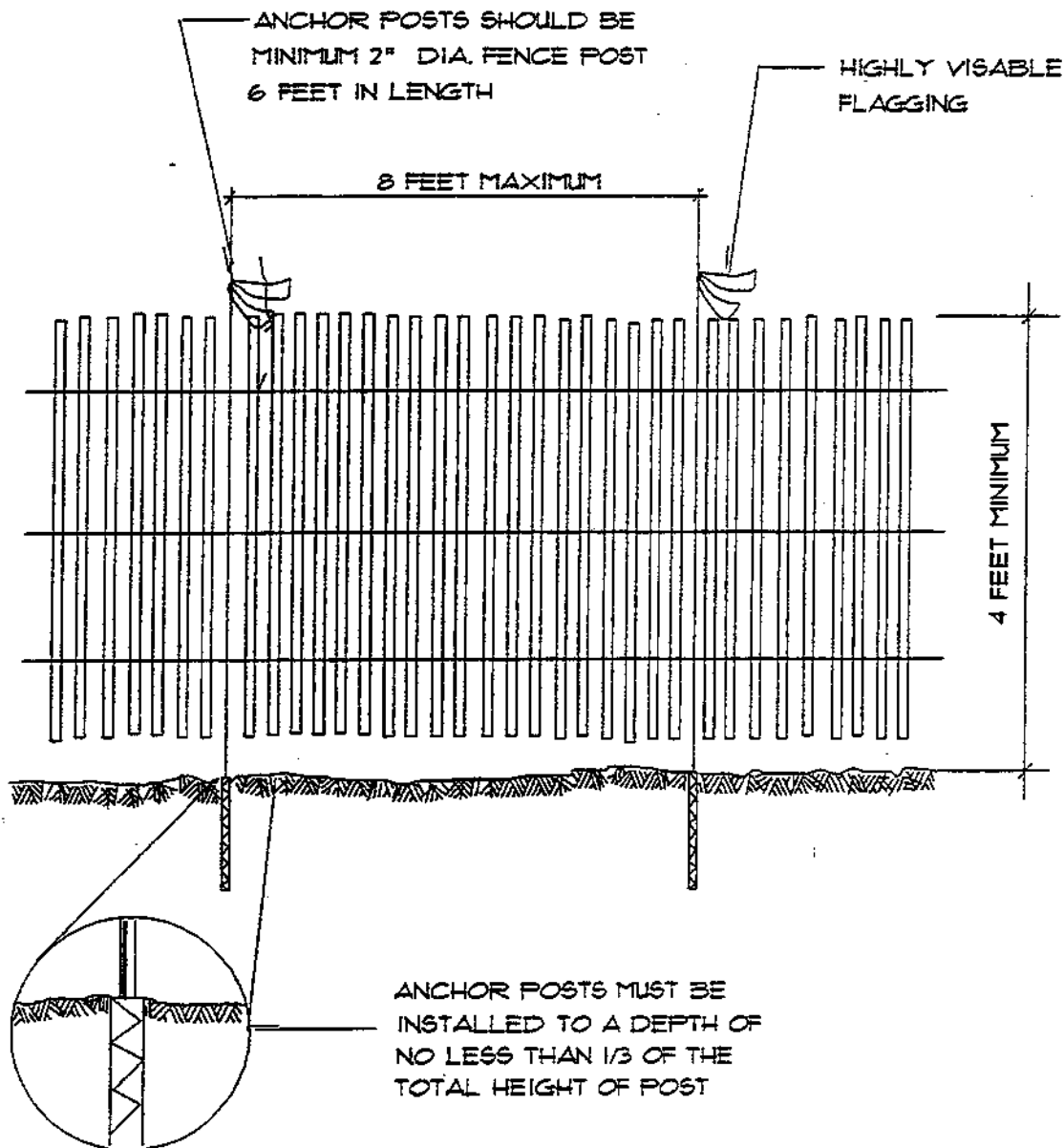
### NOTE:

1. Combine sediment control and protective device.
2. Retention area will be set as part of the review process.
3. Boundaries of Retention Area should be staked prior to installing protective device.
4. Root damage should be avoided.
5. Mound soil only within the limits of disturbance.
6. Protective signage is required.
7. All standard maintenance for sediment control devices apply to these details.

SOURCE : Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

# SNOW FENCE

TREE  
PROTECTION  
FENCING  
(1)



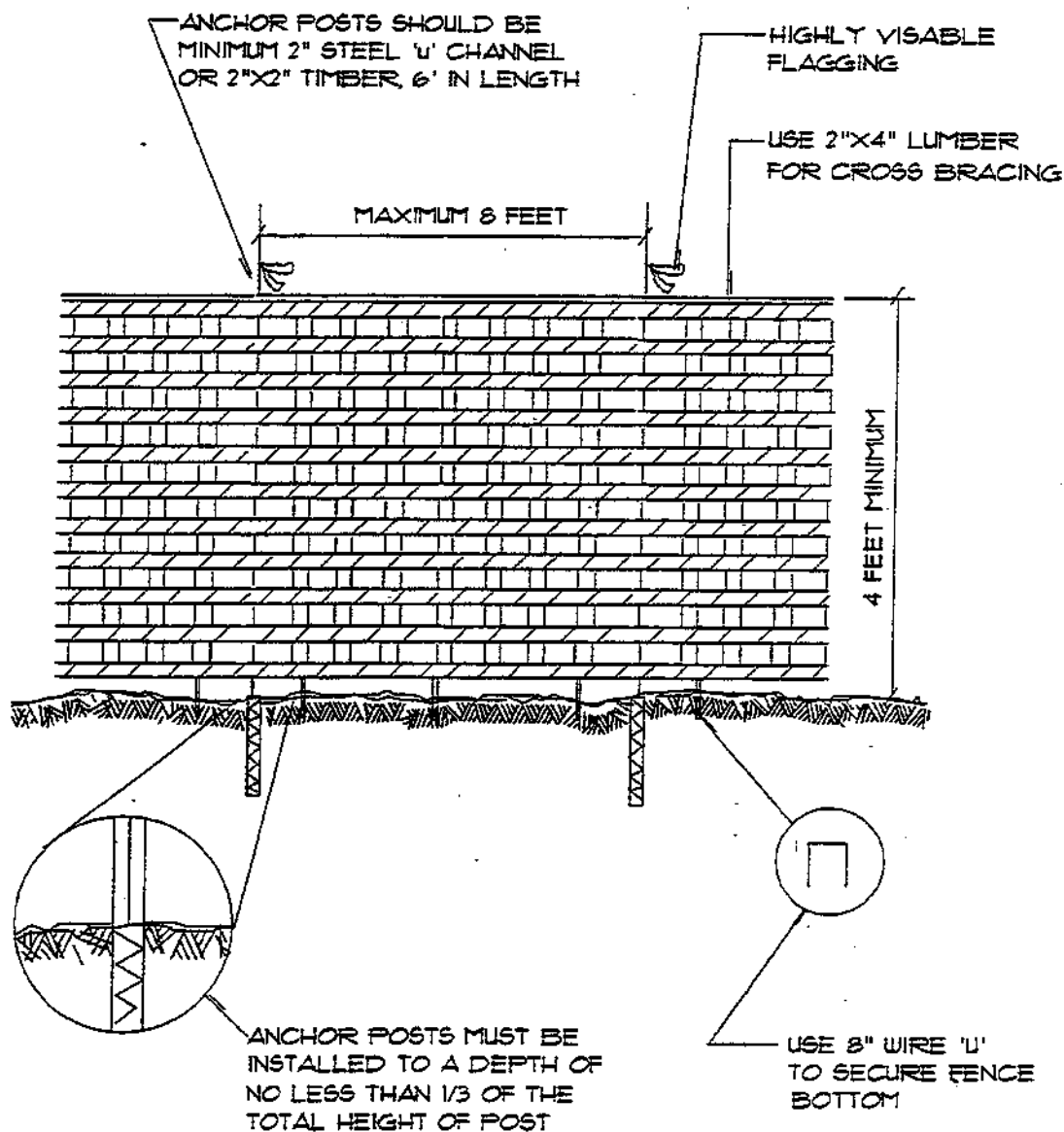
## NOTES:

1. Forest protection device only.
2. Retention area will be set as part of the review process.
3. Boundaries of Retention Area should be staked prior to installing protective device.
4. Avoid root damage when placing anchor posts.
5. Device should be properly maintained during construction.
6. Protective signage is required.

SOURCE : Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

TREE  
PROTECTION  
FENCING  
(2)

## BLAZE ORANGE PLASTIC MESH



### NOTES:

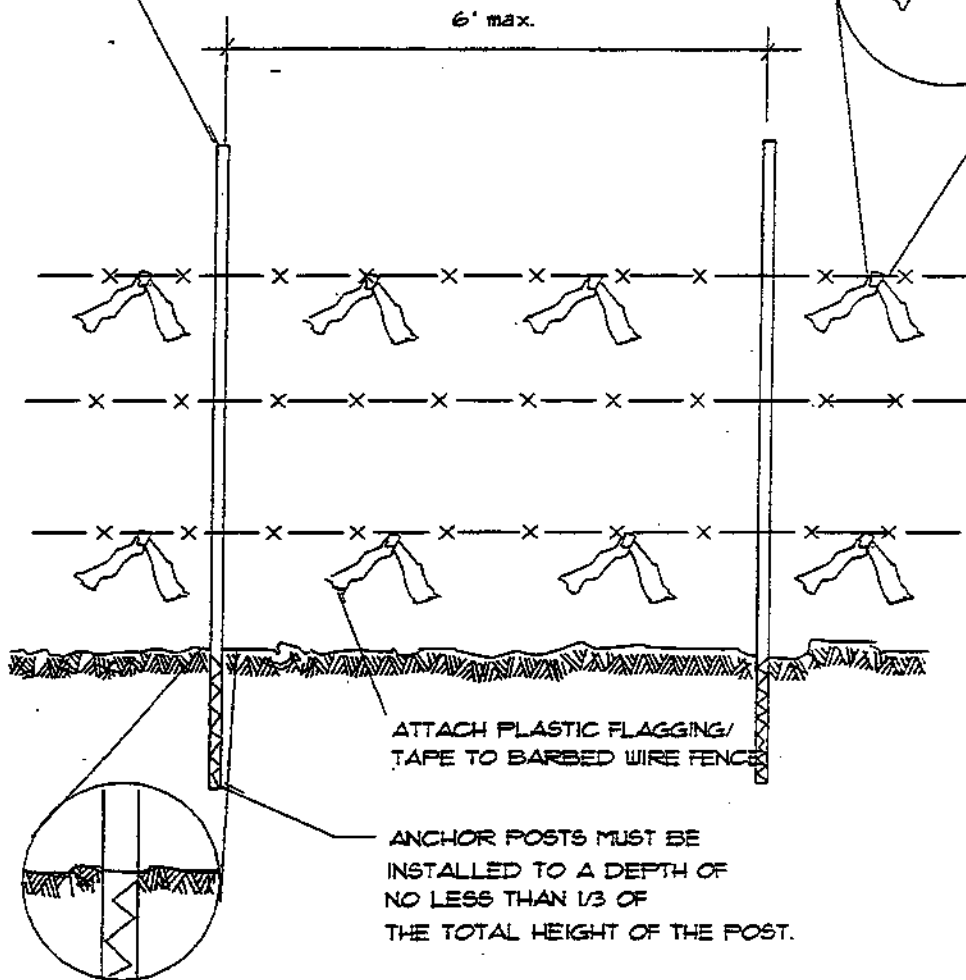
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of retention Area should be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protective signage is required.
6. Device should be maintained throughout construction.

SOURCE : Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

## THREE STRAND BARBED WIRE

TREE  
PROTECTION  
FENCING  
(3)

ANCHOR POSTS SHOULD BE  
MIN. 2" STEEL FENCE POSTS  
6' IN LENGTH



### NOTES:

1. Forest protection device only
2. Retention Area will be set as part of the review process
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Avoid root damage when placing anchor posts.
5. Barbed wire should be securely attached to posts
6. Device should be properly maintained during construction.
7. Protective signage is also required.

SOURCE : Prince George's County, Maryland: WOODLAND CONSERVATION MANUAL  
Adapted from Maryland State FOREST CONSERVATION MANUAL

**SOIL DATA  
FROM THE SCS  
SOIL SURVEY  
INTERIM  
REPORT**

SOIL NAME & MAP SYMBOL	ORDINATION SYMBOL	EROSION HAZARD	EQUIPMENT LIMITATIONS	SEEDLING MORTALITY	WINDHROW HAZARD	K FACTOR	HYDRIC SOIL	HYDRIC INCLUSIONS
CONCERNS FOR WOODLAND MANAGEMENT								
<b>1B GAILA</b>	4A	Slight	Slight	Slight	Slight	0.3		
<b>2A, 2B, 2C GLENELG</b>	4A	Slight	Slight	Slight	Slight	0.32		
<b>2UB*, 2UC** GLENELG</b>	4A	Slight	Slight	Slight	Slight	0.32		
<b>4B, 4C ELIOAK</b>	4C	Slight	Moderate	Slight	Slight	0.32		
<b>5A, 5B</b>	4W	Slight	Moderate	Moderate	Moderate	0.32		Worsham
<b>6A BAILE</b>	4W	Slight	Severe	Severe	Slight	0.43	Yes	
<b>7UB* GAILA</b>	4A	Slight	Slight	Slight	Slight	0.37		
<b>9B*, 9C** LINGANORE</b>	4F	Slight	Slight	Moderate	Slight	0.3		Worsham
<b>HYATTSTOWN</b>	4D	Slight	Slight	Moderate	Slight			
<b>109D HYATTSTOWN</b>	4R	Moderate	Moderate	Moderate	Severe	0.24		
<b>109E HYATTSTOWN</b>	4R	Severe	Severe	Severe	Severe	0.24		
<b>16B* BRINKLOW</b>	4D	Slight	Slight	Slight	Slight	0.28		
<b>BLOCKTOWN</b>	4D	Slight	Slight	Moderate	Severe			
<b>16C* BRINKLOW</b>	4D	Slight	Slight	Slight	Slight	0.28		

# SOIL DATA FROM THE SCS SOIL SURVEY INTERIM REPORT

(cont'd)

SOIL NAME & MAP SYMBOL	ORIGIN SYMBOL	EROSION HAZARD	EQUIPMENT LIMITATIONS	SEEDLING MORTALITY	WINDTHROW HAZARD	K FACTOR	HYDRIC SOIL	HYDRIC INCLUSIONS
CONCERNS FOR WOODLAND MANAGEMENT								
18E <b>PENN</b>	3R	Slight	Moderate	Slight	Slight	0.24		
18C <b>PENN</b>	3R	Slight	Slight	Slight	Slight	0.24		
17B, 17C <b>OCOQUAN</b>	3A	Slight	Slight	Moderate	Slight	0.37		
116E <b>BLOCKTOWN</b>	4R	Severe	Severe	Moderate	Severe	0.24		
<b>BLOCKTOWN</b>	4R	Moderate	Moderate	Moderate	Severe			
16D* <b>BRINKLOW</b>	4R	Moderate	Moderate	Slight	Moderate	0.28		
16C* <b>BLOCKTOWN</b>	4D	Slight	Slight	Moderate	Severe	0.28		
19A, 19B <b>BUCKS</b>	4A	Slight	Slight	Slight	Slight	0.32		
20B, 20C <b>BRENTSVILLE</b>	3A	Slight	Slight	Slight	Slight	0.28		
21A, 21B, 21C <b>PENN</b>	3A	Slight	Slight	Slight	Slight	0.32		
21D <b>PENN</b>	3R	Moderate	Moderate	Slight	Slight	0.32		
21E <b>PENN</b>	3R	Severe	Severe	Slight	Slight	0.32		
22A, 22B <b>READINGTON</b>	4A	Slight	Slight	Slight	Slight	0.43		Croton

**SOIL DATA  
FROM THE SCS  
SOIL SURVEY  
INTERIM  
REPORT**  
(cont'd)

SOIL NAME & MAP SYMBOL	ORIGIN SYMBOL	EROSION HAZARD	EQUIPMENT LIMITATIONS	SEEDLING MORTALITY	WINDTHROW HAZARD	K FACTOR	HYDRIC SOIL	HYDRIC INCLUSIONS
CONCERNS FOR WOODLAND MANAGEMENT								
23A <b>CROTON</b>	3W	Slight	Severe	Severe	Slight	0.43	Yes	
24C <b>MONTALTO</b>	4C	Slight	Moderate	Slight	Slight	0.28		
24D <b>MONTALTO</b>	4C	Moderate	Moderate	Slight	Slight	0.28		
25B, 25C <b>LEGORE</b>	4A	Slight	Slight	Slight	Slight	0.24		
26B, 26C <b>MONTALTO</b>	4C	Slight	Moderate	Slight	Slight	0.32		
27B, 27C <b>NESHAMINY</b>	4A	Slight	Slight	Slight	Slight	0.32		
28A <b>WATCHUNG</b>	4W	Slight	Severe	Severe	Slight	0.32	Yes	
29B <b>JACKLAND</b>	6C	Slight	Moderate	Moderate	Moderate	0.32		Watchung
35B* <b>CHROME</b>	3C	Slight	Slight	Moderate	Slight	0.32		
35B* <b>CONOWINGO</b>	4W	Slight	Moderate	Slight	Slight	0.32		
35C <b>CHROME</b>	3C	Slight	Slight	Moderate	Slight	0.32		
36A <b>CONOWINGO</b>	4W	Slight	Moderate	Slight	Slight	0.43		Calvert
37B <b>TRAVILAH</b>	3W	Slight	Moderate	Slight	Slight	0.43		

# SOIL DATA FROM THE SCS SOIL SURVEY INTERIM REPORT

(cont'd)

SOIL NAME & MAP SYMBOL	ORDINATION SYMBOL	EROSION HAZARD	EQUIPMENT LIMITATIONS	SEEDLING MORTALITY	WINDTHROW HAZARD	K FACTOR	HYDRIC SOIL	HYDRIC INCLUSIONS
CONCERNS FOR WOODLAND MANAGEMENT								
41A, 41B <b>ELSINBORO</b>	4A	Slight	Slight	Slight	Slight	0.37		
43A <b>ELK</b>	7A	Slight	Slight	Slight	Slight	0.37		
45A <b>DELANCO</b>	4W	Slight	Moderate	Slight	Slight	0.37		
46A <b>HUNTINGTON</b>	5A	Slight	Slight	Slight	Slight	0.28		
47A <b>LINDSIDE</b>	5A	Slight	Slight	Slight	Slight	0.32		Melvin
48A <b>MELVIN</b>	7W	Slight	Moderate	Moderate	Severe	0.43	Yes	
50A <b>ROWLAND</b>	4W	Slight	Moderate	Slight	Slight	0.4		Bowmansville
1A <b>BOWMANVILLE</b>	5W	Slight	Severe	Severe	Moderate	0.32	Yes	
53A <b>CODORUS</b>	5W	Slight	Moderate	Slight	Slight	0.49	Yes	
54A <b>HATBORO</b>	3W	Slight	Severe	Slight	Moderate	0.49	Yes	
55C <b>EVEBORO</b>	6S	Slight	Moderate	Slight	Slight	0.17		
57B, 57C <b>CHILLUM</b>	4A	Slight	Slight	Slight	Slight	0.32		
57D <b>CHILLUM</b>	4R	Moderate	Moderate	Slight	Slight	0.32		

**SOIL DATA  
FROM THE SCS  
SOIL SURVEY  
INTERIM  
REPORT**  
(cont'd)

SOIL NAME & MAP SYMBOL	ORDINATION SYMBOL	EROSION HAZARD	EQUIPMENT LIMITATIONS	SEEDLING MORTALITY	WINDTHROW HAZARD	K FACTOR	HYDRIC SOIL	HYDRIC INCLUSIONS
CONCERNS FOR WOODLAND MANAGEMENT								
57UB* <b>CHILLUM</b>	4A	Slight	Slight	Slight	Slight	0.32		
58B, 58C <b>SASSAFRAS</b>	4A	Slight	Slight	Slight	Slight	0.32		
59A, 59B <b>BELTSVILLE</b>	4W	Slight	Moderate	Moderate	Slight	0.43	Yes	
61B, 61C <b>CROOM</b>	3D	Slight	Slight	Moderate	Moderate	0.43		
61UB* <b>CROOM</b>	3D	Slight	Slight	Moderate	Moderate	0.43		
4B*, 64C* <b>CROOM</b>	3D	Slight	Slight	Moderate	Moderate	0.43		
<b>BUCKS</b>	4A	Slight	Slight	Slight	Slight			
116C <b>BLOCKTOWN</b>	4D	Slight	Slight	Moderate	Severe	0.24		
116D <b>BLOCKTOWN</b>	4R	Moderate	Moderate	Moderate	Severe	0.24		
65B <b>WHEATON</b>	4R	Slight	Slight	Slight	Slight	0.49		
66UB*, 66UC* <b>WHEATON</b>	4R	Slight	Slight	Slight	Slight	0.49		
<b>WHEATON</b>	4R	Slight	Slight	Slight	Slight			

\* See description of the map unit in the Montgomery County Soil Survey for composition and behavior characteristics of the map unit.

## Protection And Maintenance Agreements

### CONSERVATION EASEMENTS

As discussed in section III of this manual, a long-term protection plan must be provided for all forest areas that are retained or planted as part of an approved forest conservation plan. The most common method used by the Planning Board for long-term protection is a conservation easement. This appendix contains examples of two types of conservation easement which could be used. These examples are for informational purposes only, and are not part of the regulations. Applicants are encouraged to suggest other methods for long term protection.

### CONSERVATION EASEMENT AGREEMENT

#### Category I / Definitions

*Plan:*

Sediment control permit granted pursuant to Montgomery County Code Chapter 19; preliminary plan approved under Montgomery County Code Chapter 50; site plan, development plan, planned unit development or special exception application approved under Montgomery County Code Chapter 59; request for mandatory referral review submitted pursuant to Article 28 of Maryland State Code Annotated; application for major utility construction as defined by WSSC's regulations; or any development proposed by M-NCPPC Department of Parks that is not subject to exemptions under Chapter 22A of the Montgomery County Code.

*Forest Conservation Plan:*

Forest Conservation Plan approved by the Montgomery County Planning Board or Planning Director pursuant to Chapter 22A, Montgomery County Code ("FCP").

*Grantor:*

Fee simple owner of real property subject to a:

- (i) Plan approval conditioned on compliance with a FCP; or
- (ii) Preliminary or site plan approval conditioned on compliance with a conservation agreement (issued pursuant to Chapters 50 or 59, Montgomery County Code).

*Grantee:*

Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission ("Commission")

*Planning Board:*

Montgomery County Planning Board of the Maryland National Capital Park and Planning Commission.

*Planning Director:*

Director of Montgomery County Planning Department, or Director's designee.

*Exhibit A:*

- (i) FCP approved as a condition of receiving any of the plan approval noted above; or
- (ii) Approved and signed preliminary or site plan.

## WITNESSETH

This Easement Agreement reflects a grant of easement to the Grantee.

WHEREAS Grantor (or Grantor's agent) has obtained a sediment control permit, or preliminary or site approval from the Planning Board, in accordance with Montgomery County, Maryland laws; and

WHEREAS, the Planning Board or other approving authority approved Grantee's plan conditioned upon a requirement that development occur in strict accordance with a FCP approved by the Planning Board after review of the FCP pursuant to the provisions of Montgomery County Code Chapter 22A (Forest Conservation); Chapter 50 (Subdivision Regulations); and/or Chapter 59 (Zoning Ordinance); and

WHEREAS, one condition of Plan approval requires Grantor to subject the property or a portion of the property to a conservation easement for the purposes set forth below running in favor of Grantee; and

WHEREAS, the location of this easement ("Easement") is as shown on Exhibit A (incorporated by reference into the terms of this Agreement); and

WHEREAS, the purpose of this Easement is to protect existing and future forest cover; individual trees; streams and adjacent buffer areas; wetlands and other sensitive natural features; and to maintain existing natural conditions to protect plant habitats, water quality and wildlife; and

WHEREAS, the purpose includes preservation of the natural beauty of the property subject to the Easement and prevention of any alteration or destruction that will tend to mar or detract from such natural beauty; and

WHEREAS, the purpose also includes the protection and preservation of natural features within the area of the Easement which efforts are consistent with the terms and conditions of the approved plan and applicable law; and

WHEREAS, the Parties intend for the conditions and covenants contained in this Easement Agreement to run with the land in perpetuity and to be binding on all subsequent owners and occupants of the Property; and

WHEREAS, the Parties intend that a servitude be placed upon the Property to create a conservation benefit in favor of the Planning Board.

NOW, THEREFORE, the Grantor has executed this conservation easement agreement for no monetary consideration but for the purpose of

ensuring compliance with development standards imposed in accordance with Montgomery County law as a condition of development approval. The Grantor does hereby grant and convey unto the Planning Board, in perpetuity, an Easement on the Property of the size and location described in Exhibit A, and on the applicable record plat(s), of the nature and character described herein. This Easement constitutes a covenant real running with the title of the land, and is granted to preserve, protect and maintain the general topography and natural character of the land. Grantor, its heirs, successors and assigns covenant to abide by the following restrictions within the Easement:

1. The foregoing recitals are agreed to and incorporated herein and shall be binding upon the parties.

2. No living trees or shrubs (of any size or type) shall be cut down, removed or destroyed without prior written consent from the Planning Board. Diseased or hazardous trees or limbs may be removed to prevent personal injury or property damage after reasonable notice to the Planning Board, unless such notice is not practical in an emergency situation or is undertaken pursuant to a forest management plan approved by Maryland's Department of Natural Resources ("DNR").

3. No plant materials (including, but not limited to brush, saplings, undergrowth, weeds and vines) shall be mowed or cut down, dug up, removed or destroyed unless removed pursuant to the terms and conditions of a forest management plan approved by DNR. Noxious weeds (limited to those weeds defined as "noxious" under Maryland State or Montgomery County laws or regulations) may be removed as required by law. Vegetation removal shall be limited to noxious weeds only, and protective measures must be taken to protect nearby trees and shrubs.

4. No mowing, agricultural activities, or cultivation shall occur. Grantor may replace dead trees or undergrowth provided that new plantings are characteristic of trees or undergrowth native to Maryland.

5. Nothing in this Easement precludes activities necessary to implement an afforestation or reforestation effort pursued pursuant to an approved forest conservation plan or maintenance agreement implemented under Chapters 19 or 22A of the Montgomery County Code.

6. The following activities may not occur at any time:

- a. Construction, excavation or grading.
- b. Erection of any building or structural improvements on or above ground, including (but not limited to) sheds, dog pens, play equipment and retaining walls.
- c. Construction of any roadway or private drive.
- d. Activities which in any way could alter or interfere with the natural ground cover or drainage.

- e. Industrial or commercial activities.
- f. Timber cutting, unless conducted pursuant to an approved forest management plan by DNR.
- g. Location of any component of a septic system.
- h. Excavation, dredging, or removal of loam, gravel, soil, rock, sand and other materials.
- i. Diking, dredging, filling or removal of wetlands.
- j. Pasturing of livestock and storage of manure or any other suit.

7. No dumping of unsightly or offensive man-made materials, including trash, construction materials and debris; and no dumping of ashes, sawdust or grass clippings shall occur except in a properly located, designed, managed and maintained compost pile. Upon prior written approval of the Commission, suitable heavy fill and other stabilization measures may be placed to control and prevent erosion, provided that the fill is covered by arable soil or humus and properly stabilized.

8. Fences consistent with the purposes of the Easement may be erected only after written approval from Planning Director.

9. All rights reserved by or not prohibited to Grantor shall be exercised so as to prevent or minimize damage to the forest and trees, streams and water quality, plant and wildlife habitats, and the natural topographic character of the Easement.

10. Planning Board representatives may enter at reasonable hours upon the Property and within the Easement for the purpose of making periodic inspections to ascertain whether the Grantor, its heirs, successors or assigns have complied with the restrictions, conditions, and easements established herein. This Easement does not convey to the general public the right to enter the Property or Easement for any purpose. The Easement does not retract or enlarge access to the public in common open space held under community or homeowner association control beyond the access rights created by those association covenants and by-laws.

11. Grantor further agrees to make specific reference to this Easement in a separate paragraph of any subsequent deed sales contract, mortgage or other legal instrument by which any interest in the Property is conveyed (including a lease agreement).

12. No failure on the part of the Planning Board to enforce any covenant or provision herein shall waive the Planning Board's right to enforce any covenant within this agreement.

13. Upon finding a violation of any of the restrictions, conditions, covenants and easements established by this Agreement, the Planning Board shall have the right to enforce such provisions in accordance with any statutory authority (including, if applicable, the imposition of civil monetary fines or penalties in amounts and by such

means as may be promulgated from time to time) or by injunction or other appropriate relief in any court of competent jurisdiction, including the right to recover damages in an amount sufficient to restore the property to its original natural state and court costs and reasonable attorney fees.

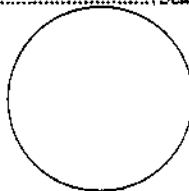
14. All written notices required by this Agreement shall be sent to the Planning Director, M-NCPPC, 8787 Georgia Avenue, Silver Spring, Maryland 29010.

TO HAVE AND TO HOLD unto the Planning Board, its successors and assigns forever, this Grant shall be binding upon the heirs, successors and assigns of the Grantor in perpetuity and shall constitute a covenant real running with the title of the Property.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals.

ATTEST.....

By: ..... (Seal)  
Applicant/Owner



**STATE of MARYLAND, COUNTY of** .....

On this ..... day of ..... before me .....  
the subscriber, personally appeared .....  
known to me (or satisfactorily proven) to be the person whose name is subscribed to the  
within instrument and acknowledged that he executed the same for the purpose therein con-  
tained.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(Type or print name)

\_\_\_\_\_  
My Commission Expires:

## EASEMENT AGREEMENT

### Category II / Definitions

**Plan:**

Sediment control permit granted pursuant to Montgomery County Code Chapter 19; preliminary plan approved under Montgomery County Code Chapter 50; site plan, development plan, planned unit development or special exception application approved under Montgomery County Code Chapter 59; request for mandatory referral review submitted pursuant to Article 28 of Maryland State Code Annotated; application for major utility construction as defined by WSSC's regulations; or any development proposed by M-NCPPC Department of Parks that is not subject to exemptions under Chapter 22A of the Montgomery County Code.

**Forest Conservation Plan:**

Forest Conservation Plan approved by the Montgomery County Planning Board or Planning Director pursuant to Chapter 22A, Montgomery County Code ("FCP").

**Grantor:**

Fee simple owner of real property subject to a:

- (i) Plan approval conditioned on compliance with a FCP; or
- (ii) Preliminary or site plan approval conditioned on compliance with a conservation agreement (issued pursuant to Chapters 50 or 59, Montgomery County Code).

**Grantee:**

Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission ("Commission")

**Planning Board:**

Montgomery County Planning Board of the Maryland National Capital Park and Planning Commission.

**Planning Director:**

Director of Montgomery County Planning Department, or Director's designee.

**Exhibit A:**

- (i) FCP approved as a condition of receiving Plan approval; or
- (ii) Approved and signed preliminary or site plan.

This Easement Agreement reflects a grant of easement to the Grantee.

WITNESSETH

WHEREAS *Grantor (or Grantor's agent) has obtained authority to develop pursuant to a Plan in accordance with Montgomery County, Maryland laws; and*

WHEREAS *the Planning Board or other approving authority approved Grantor's Plan conditioned upon a requirement that development occur in strict accordance with a FCP approved by the Planning Board after full review of the Plan pursuant to the provisions of Montgomery County Code Chapter 22A (Forest Conservation); Chapter 50 (Subdivision Regulations); and/or Chapter 59 (Zoning Ordinance); and*

WHEREAS *one condition of Plan approval requires Grantor to subject the property or a portion of the property to a conservation easement for the purposes set forth below running in favor of Grantee; and*

WHEREAS *the location of this Easement is as shown on Exhibit A (incorporated by reference into the terms of this Agreement); and*

WHEREAS *the purpose includes preservation of trees and the natural beauty of the property subject to the Easement for purposes of screening the approved new development from the sight of adjacent and abutting property owners to ensure maximum compatibility between the existing and proposed new developments; and*

WHEREAS *the purpose includes prevention of any destruction or alteration that will tend to mar or detract from such natural beauty; and*

WHEREAS *the Parties intend for the conditions and covenants contained in this Easement Agreement to run with the land in perpetuity and to be binding on all subsequent owners and occupants of the Property; and*

WHEREAS *the Parties intend that a servitude be placed upon the Property to create a conservation benefit in favor of the Planning Board.*

NOW, THEREFORE, *the Grantor has executed this conservation easement agreement for no monetary consideration but for the purpose of ensuring compliance with development standards imposed in accordance with Montgomery County law as a condition of development approval. The Grantor does hereby grant and convey unto the Planning Board, in perpetuity, an Easement on the Property of the size and location described in Exhibit A, of the nature and character described herein. This Easement constitutes a covenant real running with the title of the land, and is granted to preserve, protect and*

*maintain the general topography and natural character of the land. Grantor, its heirs, successors and assigns covenant to abide by the following restrictions within the Easement:*

*1. The foregoing recitals are agreed to and incorporated herein and shall be binding upon the parties.*

*2. No tree with a diameter greater than six inches (at a height of four and a half feet from the ground) or more than thirty feet in height (measured from the ground) ("Trees") may be cut down, removed or destroyed without prior written consent from the Planning Board staff. Diseased or hazardous Trees or Tree limbs may be removed to prevent personal injury or property damage after a minimum of ten business days notice to the Planning Board, unless such notice is not practical in an emergency situation.*

*3. Understory plant materials including, but not limited to brush, shrubs, saplings, seedlings, undergrowth and vines may be cut down, removed or destroyed without prior written consent of the Planning Board staff, provided their removal does not damage, injure or kill Trees or create erosion or slope stability problems.*

*4. Fences are permitted within the Easement provided their construction and maintenance can be executed in compliance with the restrictions of this agreement.*

*5. Mowing may occur, provided this activity does not damage, injure or kill Trees. Grantor may supplement existing or replace dead trees or undergrowth with new plantings provided that new plantings are characteristic of trees or undergrowth native to Maryland.*

*6. The following activities may not occur without prior written consent from the Planning Board (or its designee):*

- a. Construction, excavation, grading, or retaining walls except as may be used to preserve existing trees.*
- b. Construction of any roadway or private drive.*
- c. Activities which in any way could alter or interfere with the soil or slope stability or drainage, on or off-site.*

*The Planning Board may approve these activities upon a finding that the proposed activity will not interfere with the purposes stated above, and in particular with tree preservation; screening existing and proposed development from adjacent and abutting landowners; and preservation of open space. This approval exception shall be narrowly interpreted, and the Planning Board is under no obligation to authorize any of these activities when approval is requested.*

*7. Timber cutting or any other industrial or commercial*

activities shall not occur.

8. No dumping of unsightly or offensive man-made materials, including trash, construction materials and debris; and no dumping of ashes, sawdust or grass clippings shall occur except in a properly located, designed, managed and maintained compost pile. Upon prior written approval of the Commission, suitable heavy fill and other stabilization measures may be placed to control and prevent erosion, provided that the fill is covered by arable soil or humus and properly stabilized.

10. The Easement shall not be used as a site for any major public utility installations such as, but not limited to, electric generating plants, electric transmission lines, gas generating plants, gas storage tanks, radio or microwave relay stations, and telephone exchanges except upon prior written approval by the Commission. Nothing in this paragraph prevents the construction or maintenance of (on, over or under the property) facilities normally needed to serve a residential neighborhood and which have been approved by the appropriate reviewing agencies. These facilities should be located to prevent or minimize any loss of trees.

11. All rights reserved by or not prohibited to Grantor shall be exercised so as to prevent or minimize damage to the forest and trees, streams and water quality, plant and wildlife habitats, and the natural topographic character of the Easement.

12. Planning Board representatives may enter at reasonable hours upon the Property and within the Easement for the purpose of making periodic inspections to ascertain whether the Grantor, its heirs, successors or assigns have complied with the restrictions, conditions, and easements established herein. This Easement does not convey to the general public the right to enter the Property or Easement for any purpose. The Easement does not restrict or enlarge access to the public in common open space held under community or homeowner association control beyond the access rights created by those association covenants and by-laws.

13. Upon finding a violation of any of the restrictions, conditions, covenants and easements established by this Agreement, the Planning Board shall have the right to enforce such provisions in accordance with any statutory authority (including, if applicable, the imposition of civil monetary fines or penalties in amounts and by such means as may be promulgated from time to time) or by injunction or other appropriate relief in any court of competent jurisdiction, including the right to recover damages in an amount sufficient to restore the property to its original natural state and court costs and reasonable attorney fees.

14. Grantor further agrees to make specific reference to this Easement in a separate paragraph of any subsequent deed sales contract, mortgage or other legal instrument by which any interest in the Property is conveyed (including a lease

agreement).

15. No failure on the part of the Planning Board to enforce any covenant or provision herein shall waive the Planning Board's right to enforce any covenant within this agreement.

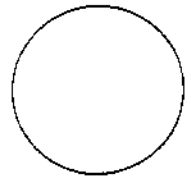
16. All written notices required by this Agreement shall be sent to the Planning Director, M-NCPPC, 8787 Georgia Avenue, Silver Spring, Maryland 20910.

TO HAVE AND TO HOLD unto the Planning Board, its successors and assigns forever, this Grant shall be binding upon the heirs, successors and assigns of the Grantor in perpetuity and shall constitute a covenant real running with the title of the Property.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals.

ATTEST \_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
Applicant/Owner



**STATE of MARYLAND, COUNTY of \_\_\_\_\_**

On this \_\_\_\_\_ day of, before me, \_\_\_\_\_  
the subscriber, personally appeared \_\_\_\_\_  
known to me (or satisfactorily proven) to be the person whose name is subscribed to the  
within instrument and acknowledged that he executed the same for the purpose therein con-  
tained.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
(Type or print name)

\_\_\_\_\_  
My Commission Expires:

## **Forest Conservation And Management Program**

*(Reprinted from the State Forest Conservation Manual)*

A forest conservation and management agreement is a binding contract between a landowner and the Maryland Department of Natural Resources which provides for the freezing of the assessment of forested areas if the property is managed according to sound forest conservation principles. A forest resource management plan, written by a professional forester licensed by the State of Maryland, is required and must be approved by the Department. A tax savings results from the freezing of the property taxes at an agricultural rate at the time the contract is let.

Any owner of 5 or more contiguous acres of forest land may enter the Forest Conservation and Management Program. Open land that was recently planted to forest tree seedlings can be included. So can land that is used to grow Christmas trees if they will be cut at harvest. The agreement does not apply to the assessment on house sites, other structures, crop land, mining sites and other non-forested open space.

Forest Management is often considered the art and science of matching the owners objectives with biological requirements of the forest. Good forest management results in a healthy forest which will produce quality timber, increase income of the owner, reduce soil erosion and flooding, and provide open space for recreation and aesthetic enjoyment. Tree species, soils, topography, tree age, property location and other factors will have to be evaluated as well as the owners desires and the requirements of the law. The plan must contain a detailed schedule of practices to be accomplished and their completion date.

The contract must cover a minimum of 15 years. A memorandum of the contract and any subsequent changes are recorded at the county courthouse. The contract can be renewed indefinitely if forest conservation practices are approved and are accomplished. The contract can be assigned and transferred to a new owner of the property if the buyer agrees to assume the obligation of the agreement. The property will be re-assessed if the agreement ends, the agreement is terminated or the property changes hands. A nominal administrative fee is charged to the owner upon entering the program, when changes to the agreement must be made, and for each five year inspection.

The following pages contain an example of the Forest Management Plan.

FOREST  
MANAGEMENT  
PLAN

F O R

Landowner's Name

Street

City, State

Zip

Property Location, Maryland Grid Coordinates

I N

County

on Acres

P R E P A R E D B Y :

Date

FOREST  
MANAGEMENT  
PLAN  
*(cont'd)*

- A.** LANDOWNER'S OBJECTIVES
- B.** SOIL TYPES: List the primary soil types on the property with a general narrative of their capabilities and productivity.
- C.** TOPOGRAPHY: A brief description of the aspect and slopes, and the limitations it might impose on the proposed management.
- D.** FOREST STAND DELINEATION: This section is to be used by the forester to describe the results of forest data collection. This section shall also include all relevant data about the site collected through any previous field inventories and/or environmental reviews.
- E.** MANAGEMENT RECOMMENDATIONS:
1. Forestland
  2. Open Land
  3. Wetlands
- F.** MANAGEMENT PRACTICE SCHEDULE
- G.** MAP SHALL INCLUDE THE FOLLOWING FEATURES:
1. North arrow
  2. Acreage
  3. Scale
  4. Date of preparation
  5. Critical habitat areas
  6. Stream buffers
  7. Locality or distinguishing landmarks
  8. Specimen trees
  9. Public and private roads
  10. Property boundaries
  11. Slopes greater than 25%
  12. Perennial and intermittent streams
  13. Nontidal wetlands

PREPARATION  
OF FOREST  
MANAGEMENT  
PLANS

Forest Management Plans shall be prepared by professional foresters, licensed by the State of Maryland.

---

SAMPLE  
FOREST  
MANAGEMENT  
OBJECTIVES

1. Provide passive recreation opportunities *(such as nature trails, nature observation, photography, etc.)*.
2. Provide for wildlife habitat.
3. Protect habitat for endangered or special plant/wildlife communities.
4. Improve hunting opportunities.
5. Provide for income through timber resource development and harvesting.
6. Provide firewood and timber products for the landowners use.

TIMBER  
HARVEST  
PLAN**Landowner:** .....**Acreage:** .....**Owner's Management Goal(s):** .....**Dominant Tree Species In Stand:** .....**Dominant Understory Species In Stand:** .....**Dominant Soil Series:** .....**Slope Range:** .....**Type of Harvest** .....*(Clearcut, Shelterwood, Deferred Rotation, Seedtree, Thinning, Selection, etc.)***Current Basal Area:** .....**Post Harvest Basal Area:** .....**DBH of Dominant Timber Size Class:** .....**Proposed Site Preparation Method** *(if necessary):* .....**Proposed Regeneration Method and Desired Stocking:** .....

Other Laws and Ordinances that may apply to the Harvest Site *(Seed Tree, FCMA, Forest Conservation Act, Sediment Control, etc.)*

A Sediment and Erosion Control Plan for Forest Harvest Operations has been/will be *(circle one)* prepared for submittal to the county Soil Conservation District for its review and approval. All work will be done in compliance with the approved plan.

Describe measures that will be taken to provide for wildlife corridors and continuity of habitat.

**HABITAT  
AND  
PROTECTION  
AREAS**

Note if harvesting is to occur in or adjacent to any of the following (yes or no):

- A.** 50 foot buffer along perennial or intermittent streams
- B.** Non-tidal wetlands
- C.** Habitat for threatened and endangered species, and their protection areas
- D.** Natural Heritage Areas

For each positive response to C or D, include an attachment with the following information:

- 1.** Delineation of the critical habitat and protection area within the stand.
- 2.** How the harvest will be modified to conform with the critical habitat protection requirements in the local program.
- 3.** Attach the appropriate survey information and/or Natural Heritage Program recommendations.



## Techniques For Forest Structure Data Collection

(Reprinted from the Maryland  
Forest Conservation Manual)

To measure canopy coverage, herbaceous coverage, dead and downed woody material present and exotic species, it will be necessary to sample in the following way:

1. Construct a sampling tube from a paper towel or toilet paper roll. Attach wires or string on one end of the tube in the configuration of a cross with four evenly spaced openings (see Figure A, below).
2. Select 1 random sampling point within each forest stand. To do this, construct a circular sampling plot of 1/10 acre. Take samples from 4 points around the circle and one within the circle (see Figure B, below).
3. Walk to each sample point and look through the sampling tube at each sample point.
  - a. For canopy coverage, record "yes" or "no" for green seen through the tube when pointed up (tube must be held vertically; count only trees 7" DBH and larger).
  - b. For herbaceous coverage, record "yes" or "no" for green seen through the tube when pointed down (tube must be held vertically).
  - c. For dead and down woody material, record "yes" or "no" for any root wads, logs, downed limbs, or bark seen through the tube (tube must be held vertically).
  - d. For exotic or invasive species, record "yes" or "no" for any of these species (see Appendix C) seen through the tube (tube must be held vertically).
4. Calculate the percentage of sample points at each sample site which were answered by "yes". Use the above information and additional information provided in the forest stand summary sheet to calculate the forest structure value to be assigned to the site for each individual parameter. Overall value is determined by adding them together.
5. Count number of shrubs found within a 1/100 acre plot. Shrubs can be most easily counted if the central stem can be identified.

Figure A

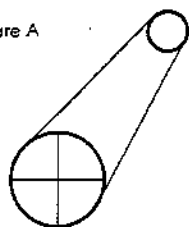
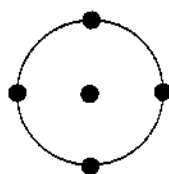


Figure B



(For more information see: James, F.C. and Shugart, H.H. 1970. A Quantitative Method of Habitat Description. Audubon Field Notes. 24:727-36.)

## Forest Structure Analysis

(Reprinted from the MD Forest Conservation Manual)

The following parameters will be measured and evaluated at each site according to the techniques for forest structure data collection described previously. Each parameter at each sample site will be given a value of 3, 2, 1, or 0. Three represents the most valuable structure and 0, the least valuable. Upon completion of the sampling, the person preparing the FSD will calculate the forest structure value for each stand. This analysis, along with the other forest stand data will be used to determine the retention potential and priority level of the stand.

To determine the total habitat value use the following scale:

### Range of Total Habitat Numbers from Samples taken APRIL - OCTOBER

15-21 .....	Priority for forest structure
7-14 .....	Good forest structure
0-6 .....	Poor forest structure

In the Winter and late fall from NOVEMBER - MARCH, only numbers 2,3,4,5,7 can be measured. During that time, the range of total habitat numbers will be:

11-15 .....	Priority forest structure
6-10 .....	Good forest structure
0-5 .....	Poor forest structure

### 1. PERCENT CANOPY CLOSURE OF TREES WITH A DBH GREATER THAN 7 "

70%-100% .....	3
40%-69% .....	2
10%-39% .....	1
0%-9% .....	0

### 2. NUMBER OF UNDERSTORY SHRUBS/TENTH ACRE PLOT <sup>1</sup>

15 or more .....	3
10-15 .....	2
5-10 .....	1
0-5 .....	0

### 3. NUMBER OF STANDING DEAD TREES/TENTH ACRE PLOT <sup>1</sup>

3 or more .....	3
2 .....	2
1 .....	1
0 .....	0

**4. PERCENT OF DEAD AND DOWNED WOODY MATERIAL PRESENT**

15%-100% ..... 3  
 5%-14% ..... 2  
 1%-4% ..... 1  
 0 ..... 0

**5. SIZE CLASS OF DOMINANT TREES <sup>1</sup>**

Greater than 20" ..... 3  
 7"-19.9" ..... 2  
 3"-6.9" ..... 1  
 Less than 3" ..... 0

**6. PERCENT OF UNDERSTORY HERBACEOUS COVERAGE**

75%-100% ..... 3  
 25%-74% ..... 2  
 5%-24% ..... 1  
 0%-4% ..... 0

**7. NUMBER OF TREE SPECIES WITH A DBH GREATER THAN 7"/PLOT <sup>1</sup>**

6 or more ..... 3  
 4-5 ..... 2  
 2-4 ..... 1  
 0-1 ..... 0

<sup>1</sup> Data included in the Forest Stand Field Data Summary Sheet.

# Field Sampling Data Sheet

<b>Property</b>	Property Name:						
	Prepared by:						
	Stand # (from Forest Stand Map):						
	Plot #:						
	Date of Survey:						
<b>Tree species</b>	Tree Species	NUMBER OF TREES PER SIZE CLASS					
	(note dominant* & co-dominant** species)	2-5.9" dbh	6-9.9" dbh	10-17.9" dbh	18-29.9" dbh	>30" dbh	
	Total Number of Trees per Class						
<b>Understory species</b>	(3-5 most commonly occurring):						
<b>Other</b>	Basal Area:						
	Number of Dead Trees per Plot:						
	Comments:						
<b>Forest structure Analysis</b> (at least one plot/stand)	SAMPLE POINT						
		1	2	3	4	5	%Yes
	% Canopy Coverage						
	% Herbaceous Ground Cover						
	% Downed Woody Debris						
	% Invasive Plant Cover						
	Number of Shrub Species (1/100ac. plot)						
	Forest Structure Value:						
	Comments:						

# Forest Stand Field Data Summary Sheet

<b>Property</b>	Property Name:			
	Prepared by:			
	Date:			
<b>Stand Field Data</b>	STAND NUMBER			
	Stand Variable	1	2	3 etc.
	Forest Association (SAF cover type)			
	Average size class of dominant trees			
	Average # of trees/acre			
	Average # of tree species per acre			
	Basal area / acre			
	Average # of dead trees/acre			
	Forest Structure Value			
	Common understory species:			
	Comments:			

## Reforestation Methods Evaluation Criteria

(Significant portions of this section are  
reprinted from the MD Forest  
Conservation Manual.)

### Transplant Of Local Plant Materials

Transplanting of local plant materials may be a desirable alternative for meeting reforestation requirements due to the hardiness and adaptability of local plant materials to local conditions. The decision to utilize transplanted material should be based on the species to be transplanted, and the soil and water conditions of its current location as compared to the conditions in the proposed location. If they are compatible, then the risks associated with the transplanting are for the most part associated with the methods that are used. Trees within existing forested areas that are designated for retention should not be transplanted since their removal would disturb the roots of surrounding trees.

---

The use of on-site or locally obtained <sup>1</sup>, compatible plant materials which are transplanted for use on-site.

---

Description:

---

Is the material to be transplanted tolerant of disturbance? (See Table 4)

Evaluation Criteria:

---

Is the plant material suited for the planting site (sunlight, soils, moisture regime)?

---

Climax species in-general, are less tolerant than pioneer or early successional species.

Design Guidance:

Larger trees (6" dbh) need specialized care and equipment.

Investigative root diggings are recommended for larger trees.

Best times for transfer is late fall(after leaf fall)/early winter.

Transplants are not recommended in spring after the buds start to grow.

Soft rooted species not recommended for transplant with frozen root ball. (See Table 4)

Open grown trees grown in heavy or clay soils are preferred for transplanting because their root patterns are typically denser than forest grown trees.

---

Transplant of local materials must be shown to be the best alternative for the site.

Requirements:

Soils must be prepared in a field pit fashion, with proper amendments.

Root balls must meet or exceed standard nurserymen specifications.

Species stocking requirements described in section 3,B,5 must be met.

If tree banks are used, the location, treatment and schedule for banking and transplant must be described.

---

<sup>1</sup> Locally obtained means material that is located within the same physiographic province as the transplanting site.

## Nursery Stock

The use of nursery stock is also an option for reforestation. Of primary concern is the hardiness of the nursery stock for the climate and conditions of the planting site. For this reason, there is a preference for the use of local genetic stock.

Description:	The use of plant material of local genetic origin ( <i>container-grown is preferred</i> ), transported from nurseries for reforestation or afforestation.
Evaluation Criteria:	Species must be adapted to conditions of the planting site.
Requirements:	Species native to the Piedmont Province of Maryland shall be used unless shown to be unavailable. Local genetic stock are recommended for better survivability. Stock must meet standard nurserymen specifications.

## Landscaping

Landscaping may be counted toward the reforestation and afforestation requirement in certain circumstances. Planting of areas as "forest" should be shown to be infeasible before landscaping is chosen. Landscaping may be appropriate for high use areas adjacent to structures or as visual barriers to adjacent land uses. Other instances where landscaping may be appropriate are high density residential uses, commercial and industrial uses, mixed use and planned development, and institutional uses.

Description:	The planting of trees and shrubs with a primary intent of creating an aesthetic vegetated area adjacent to structures.
Evaluation Criteria:	Is the site 2500 square feet or greater in size with a minimum width of 35 feet? Is the area adjacent to human structures?
Design Guidance:	These areas may be appropriate adjacent to park-like settings, picnic areas, playgrounds and schools. Native plant materials or cultivars of native plants are recommended.
Requirements:	For every 2500 square feet of area, there must be no less than 7 shade trees and 20 shrubs.

## ***Natural Regeneration***

Under natural conditions, the lands of this region have remarkable abilities to regenerate forests. When humans attempt to encourage or recreate this phenomena, the results are much less impressive. The problems lie in the numerous variables which effect the success of this process and the number of unknowns.

---

The preparation and management of cleared areas to allow for the regeneration of forests through natural recruitment by seed bank, standing seed crop or asexual sprouting.

---

Description:

Does the site have suitable regenerative source and distribution mechanism for a stable population of target species?

Evaluation Criteria:

Are the physical conditions (*soils, sunlight, moisture, and cover*) suitable for encouraging natural regeneration or suitable plant growth?

---

Best used in low visibility, low use areas.

Design Guidance:

Treatment is extremely species and site specific. Therefore, it is recommended that the plan must be prepared by a professional forester.

Management and monitoring of these areas should be intensive.

---

Plan must describe in detail how the above factors will be addressed and detailed information on the method of regeneration and the target forest association being designed.

Requirements:

Construction equipment must be prohibited from this area, through signage, fencing and plan delineation.

If using soil seed bank for regeneration, the original seed bed, or other local suitable seed source must not be disturbed.

Financial security and two years of maintenance and monitoring will be required for natural regeneration areas. The financial security will be equal to the fee in lieu that would be collected for the area (*refer to Chapter 22A of the County Code*). At the end of the two year maintenance period, at least 525 trees per acre (*75% of 700 seedlings*) must be present and in good condition.

---

Table 4

GENERAL TRANSPLANT  
TOLERANCE

## HIGH TRANSPLANT TOLERANCE

*Malus* spp. (apple)*Fraxinus* spp. (ash)*Ulmus* spp. (elm)*Celtis occidentalis* (hackberry)*Tilia* spp. (linden)*Plantanus occidentalis* (sycamore)*Populus* spp. (poplar)*Salix* spp. (willow)*Gleditsia triacanthos* (honey locust)*Quercus palustris* (pin oak)

## LOW TRANSPLANT TOLERANCE

*Carya* spp. (hickory)*Juglans* spp. (walnut)*Juglans cinerea* (butternut)*Sassafras albidum* (sassafras)*Nyssa sylvatica* (tupelo)*Quercus alba* (white oak)TRANSPLANTING  
TOLERANCE FROZEN  
ROOT BALL

## HIGH TRANSPLANT TOLERANCE

*Malus* spp. (apple)*Ulmus* spp. (elm)*Gleditsia triacanthos* (honey locust)*Tilia* spp. (linden)*Acer* spp. (maple)*Pinus resinosa* (red pine)*Pinus strobus* (white pine)*Pinus sylvestris* (Scotch pine)

## LOW TRANSPLANT TOLERANCE

*Betula* spp. (birch)*Cornus* spp. (dogwood)*Tsuga* spp. (hemlock)*Magnolia* spp. (magnolia)*Quercus* spp. (oak)*Liquidambar* (sweet gum)*Liriodendron tulipifera* (tulip tree)