

0.28 N. Reforestation for clearing above conservation threshold ... = 0.00 P. Reforestation for clearing below conservation threshold...= 0.67 Q. Credit for retention above conservation threshold......= 0.00 R. Total reforestation required... 0.00 S. Total afforestation required... 0.00 T. Total reforestation and afforestation required.....

3.88 acres of Forest Conservation Easement (Retention) has been provided onsite.

\* THE REMAINING 0.29 ACRES OF EXISTING FOREST IS NOT BEING PLACED UNDER FOREST CONSERVATION EASEMENT.

APPROVED: DEPARTMENT OF PLANNING AND

#### APPENDIX G SOIL AND FOREST PROTECTION TECHNIQUES FOR FOREST RETENTION AREAS

FOREST CONSERVATION NOTES & DETAILS

02/04/09

14.01

0.00

0.00

. 14.01

2.80

5.29

2.49

1.79

3.86

1.43

1.12

4.17

25% xD=

The soil protection zone is that area which must be protected from construction activity and other stresses (e.g. flooding) to protect a forest retention stand from construction damage. Protecting trees from construction damage means protecting sufficient roots to provide the trees with adequate water and nutrient uptake for the existing leaf area and to maintain the physical stability of the tree. Trees in forest stands become interdependent on each other for physical support during high winds. Removal of adjacent trees and destruction of roots can cause windthrow long after the completion of construction.

The extent of a tree's root system can be quite large. The ratio of root expansion to crown spread can be 2:1 for large open grown specimen trees and can be significantly larger (up to 5:1) for trees growing in the interior of forest stands. The increase of root expansion in forest stands stems from adjacent trees restricting the crown spread of a tree while its roots can constantly grow through the soil medium.

The minimum requirement for root protection varies from species to species and from soil type to soil type. The soil protection zone changes with the proximity of other trees, the amount of past human influence (agriculture or construction) in the vicinity of the tree and changes in soil type or ground water. For open grown trees, protecting the soil within the dripline of the tree is adequate to save the tree in most cases. For trees that have been part of forest communities, however, the soil protection zone must reflect a more complex relationship between crown spread and root growth.

#### Calculating the Soil Protection Zone

A workable set of criteria for determining the limit of the soil protection zone is needed. In general, the soil protection zone is easier to define as a relationship to tree height. The following guidelines will protect most of the trees, most of the time, from construction

- 1) Specimen trees: the limit of the soil protection zone shall be the area within
- Clusters of trees: i.e., groups of trees which are open grown, but growing dose enough so that the individual crowns have grown together. For trees on the exterior of the group, the limit of the soil protection zone shall be the limit of the drip line. For interior trees, the soil protection zone shall be a

distance from the trunk of 40 percent of the height of tree or the limit of the drip line, whichever is greater.

Forest stands: trees with a continuous canopy and an undisturbed ground plane. The limit of the soil protection zone for an individual tree shall be a distance from the trunk of 40 percent of the height of the tree or the limit of the drip line, whichever is greater.

#### Modifications to the Soil Protection Zone

When disturbance of the soil protection zone is unavoidable, tree survival remains

- Disturbance does not exceed 20 percent of the original soil protection zone
- A protected area of equal size and contiguous to the remaining soil protection zone is added back so that the finals soil protection zone area is not decreased, and
- The new limit of the soil protection zone is no closer to the center of any tree to be protected than 20 percent of the tree's height. All reductions to the original soil protection zone shall be deducted from the calculations of the size of the forest retention area.

### Reduction to the Soil Protection Zone for Individual Trees

The soil protection zone for a specific tree may be reduced if it can be demonstrated that a smaller area will have no less impact on the tree's health than the size of the soil protection zone which would have resulted using the standard calculation. Requests for such reductions should include the following information:

- 1) The extent of the rooting system with root diameters 1" or greater; as determined by a field root survey.
- The exact species of the tree and the qualified professional's estimation of this species' ability to withstand construction damage.
- The soil texture and the existing bulk density of the soil as measured in grams per cubic centimeter.
- An estimate of soil moisture conditions before and after construction.

A list of construction impact mitigation practices to be performed before, during, and after construction.

Upon determination that the request does not pose any significant threat to the tree, reductions of the allowable soil protection zone may be made up to the following maximum

10" - 15" db 40 percent 30 percent

## Requirements for the Soil Protection Zone

Unless specifically approved by the forest conservation plan, no construction activity shall be permitted within the soil protection zone. This includes:

- Grading cut or fill. Removal of existing ground plane vegetation or organic leaf layers. Roads or parking. Walks, patios or decks.
- Foundations, walls, or building footprints. Underground utilities. Temporary stormwater or sediment control structures. Storage or stock plling of construction supplies and equipment, including
- machinery, construction trailers, fill, topsoil, trash, etc. Disposal of construction waste, including concrete truck wash off, paints, solvents, contaminated runoff, oils, fuels, or any other substances which are harmful to plants or animals.

### The following activities are permitted within the soil protection zone:

- Removal of tree limbs which are outside of the soil protection zone and interfere with construction.
- Removal of dead or dying trees within the soil protection zone. Forest thinning or tree removal which is consistent with recognized forestry Removal of trees on the edges of tree groups or forest stands whose trunks are within the soil protection zone of other trees, but which do not have sufficient soil protection zones of their own to allow them to survive. Note
- that trees which have a remaining soil protection zone of less than 50 percent of the limit required by these specifications must be removed. Removal of vines or other merbaceous plants which threaten the ecological balance of the remaining plants in the soil protection zone.
- Below ground utilities that can be placed by the use of a tunneling machine. Fences which do not require continuous footings or which have posts no closer than 6'-0" o.c. and which can be manually installed.
- Walks and paths that meet the following requirements:
   They are constructed of materials that can be installed using equipment with a maximum weight of 1/2 ton. They are no wider than 6'-0".

They are placed no closer than 6' from the base of the trunk of any

tree over 12" D.B.H... Are constructed without filling greater than 6". Removal of any existing wallks, walls, roads, or other structures as required. ese items should be removed without the use of heavy equipment.

### Construction Adjacent to Soil Protection Zone

Prior to the start of any construction (including clearing) adjacent to the soil protection zone, a fence must be erected along the boundary round all soil protection zones. This fence shall have 8-1/2" x 11" orange signs which shall read "Tree Preservation Area" in 1" high lettering posted every 50'. The fence shall be one of the following:

- 3 strands of barbed wire spaced 18" apart 4' high.
  4' high wood and wire "snow fencing".
- 4' high chain link fence. 4' high welded wire fence

#### All fencing shall be attached to "U" Channel metal posts set 10' o.c. max. No fencing or wire shall be attached to any tree.

Prior to the start of any grading, all sediment control devices shall be in place to prevent any silt or sediment from entering the soil protection zone. A synthetic filter fabric silt tence of a type acceptable to the U.S.D.A. Soil Conservation Service shall be installed on the uphill side of all soil protection zones. This fence shall be cleaned and maintained on a regular basis through the construction period. All drainage devices, inlets, or swales required to maintain existing surface and subsurface groundwater conditions within the soil protection zone must also be installed and operational prior to grading.

#### Management of the Soil Protection Zone

Forest retention stands, smaller tree stands, and individual trees that the Forest Conservation Plan specifies must be protected and require careful management during

Specimen trees and groups of trees are nearly always growing on soils previously influenced by human activity. If the soils under these trees are already compacted, they

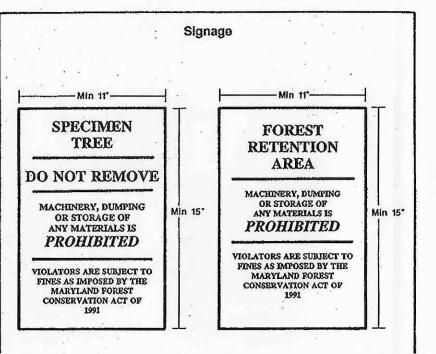
should be core aerated prior to construction and again after construction. Light spring and fall low nitrogen fertilizations will also help these trees adjust to the new environment Very old trees (30" or larger D.B.H.) should be manually imigated several times during the first two summers following grading in their vicinity. Each group of trees must also be monitored for disease and insect problems during and after construction. Trees in construction zones are more susceptible to attack by pests than trees in undisturbed

Landscape practices under trees are as critical to tree survival as how much construction occurs around them. The following management practices must occur in the soil protection

- Bare soil: prior to construction, core aerate. Hand scarify with a steel rake to a depth of 1" max. Top dress with 1" - 2" shredded bark mulch.
- Mown fawn: prior to construction, core aerate. Keep grass mowed during Unmown grass: leave undisturbed during construction. After construction,
- ·mow grass and core aerate. Landscape shrubs and/or groundcovers: leave undisturbed during construction. Hand scarify and mulch any area with bare soil. Leave any paved areas, walks, drives, etc. in place within the dripline until other construction is nearly completed. Fill voids from removed objects with light
- Natural occurring ground plane growth: leave undisturbed except for invasive vines or small trees which could affect growth habits of specimen

# BLAZE ORANGE PLASTIC MESH ANCHOR POSTS SHOULD BE MINIMUM 2' STEEL "U" CHANNEL OR 2"X2" TIMBER 6' IN LENGTH HIGHLY VISIBLE FLAGGING Forest protection device only. Retention Area will be set as part of the review process Boundaries of Retention Area should be staked and flagged prior to Root damage should be avoided. Protective signage may also be used. Device should be maintained throughout construction. PRINCE GEORGES COUNTY, MD COODLAND CONSERVATION MANUAL EXHIBIT K - 8

### EXHIBIT G-17



### GENERAL NOTES

- 1. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code, Landscape Manual and Forest Conservation Manual. 2. The Owner/Developer is responsible for the planting of all plant material required to meet the standards established by the Howard County Landscape
- 3. Financial Surety for the required landscaping (25 shade trees) will be posted as
- part of the Builder's Grading Permit in the amount of \$ 7,500.00. . Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape
- The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when necessary repaired and replaced.
- At the time of installment, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revision made to applicable plans and certificates.

### TREE PLANTING NOTES

- Notify "Miss Utility" 72 hours prior to installation of all plant material. 2. Plant installation must conform to the minimum standards cited in the latest edition of Landscape Specification Guidelines, published by the Landscape
- Contractors Association. 3. Plants to be located in the field by the owner or owner's representative Notify owner 72 hours in advance of planting.
- 4. A Certification of Landscape Installation is required as per the Howard County Landscape Ordinance.
- 5. The number, size, location of plants shall not be changed without the approval of the Landscape Architect. Substitutions must be included in the
- recommended plant list in the Howard County Landscape Ordinance. 6. Trees may not be planted within 5 feet of drain inlets, 5 feet of an open space access strip and 10 feet of a driveway.
- Balled and burlapped plant material shall not be accepted if ball is cracked or broken before or during planting. Protect all plants from drying by either sun of wind.
- 8. Tree pits shall be backfilled with 50% topsoil, 25% peat 25% sand with one bound of 10-10-10 fertilizer per pit.
- Top soil shall be sandy loam soil free from noxious weeds or grasses, roots, clay clumps, stones, sticks, etc. Peat moss shall be commercial with ph 4.5 to 5.5, free of woody material or harmful minerals. 10. All plants shall be watered at planting with weekly watering thereafter for
- the first 80 days. Watering shall continue bimonthly or as necessary to maintain plants in a healthy condition during the guarantee period. Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All rejected or dead materials shall be immediately removed
- from the site. 12. Plant material to be alive and healthy at the time of the guarantee period

TREE PLANTING DETAILS

- (one year), as specified in the Howard County Landscape Ordinance. Maintenance shall begin immediately after planting and continue to the end
- Maintenance consists of pruning, watering weeding, re-mulching, resetting

# plants to proper grades as needed and repairing guys and stakes as needed.

Provide thee stakes

only if necessary.

Remove covering from

top of ball & place tree

root is flush with a rade.

so that first lateral

#### 1. Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape

2. The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when necessary repaired and replaced.

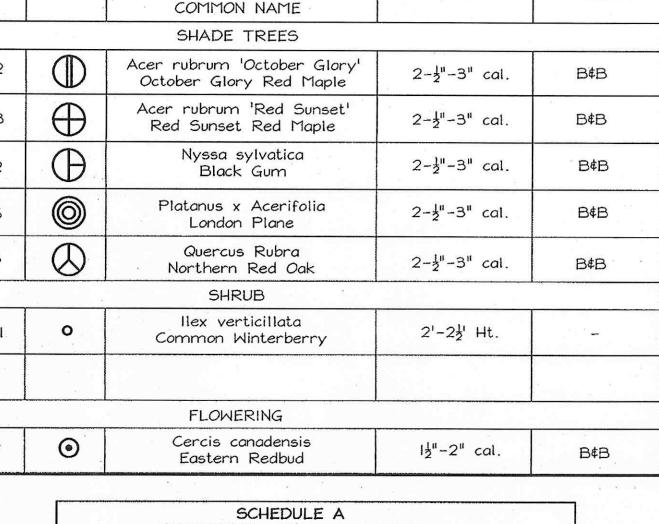
LANDSCAPE PLAN NOTES & DETAILS

NO

KEY

. At the time of installment, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revision made to applicable plans and certificates.

8.2.05 DATE



PERIMETER PLANTING SCHEDULE

SIZE

COMMENT

BOTANICAL/

SCHE PERIMETER LA	DULE A ANDSCAPE I	EDGE		
Category	Per	Adjacent to rimeter Propert	Adjacent to neter Properties	
Perimeter	ı	2	3	
Landscape Type	Α	Α	Α	
Linear Feet of Roadway Frontage / Perimeter	1501 L.F.	428 L.F.	814 L.F.	
Credit for Existing Vegetation* (Yes, No, Linear Feet)	YES 45 LF ¢ 5 SHADES (1) (2)	YES 428 LF	YES 465 LF	
Credit For Wall, Fence or Berm (Yes, No, Linear Feet)	NO (2)	NO	NO	
Number of Plants Required Shade Trees	19	0	6	
Number of Plants Provided				
Shade Trees	17	0	3	
Flowering Trees	4	0	3	
Evergreens	0	0	0	
Shrubs	6 .	. 0	15	

driveway closer than 10' to boundary, provide 60 LF of hedge.

(2) Retain 4 Specimen and I Non Specimen along Perimeter #1. See Sheet 1

provide tree stakes only f necessary burlap from tree ball. Place tree in hole so that first noot (lateral) is flush with grade. evergreen tree planting detail

DECIDUOUS TREE PLANTING DETAIL

Figure 6-3. Planting Details - Shrub - FINISHED GRADE

THAT I AM A DULY LICENSED PROFESSIONAL WINDER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION MAD. 2/30/11." OF MARYLAND, LICENSE NO: 19184, EXPIRA Engineers, Surveyors, Planners 9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045 (410)715-1070 - (301)596-3424 - FAX(410)715-9540 SUPPLEMENTAL, LANDSCAPE AND FOREST CONSERVATION BDB NOTES & DETAILS EDS SHOWN PLEASANT VALLEY FARM RAWN LOTS 1-3 EDS 4 OF 6 LDE HECKED TAX MAP 9 GRID 7 P/O PARCEL 92 JOB NO. 4th ELECTION DISTRICT HOWARD COUNTY, MD 07-017 revious Submittals: WP 09-130, F 09-079 DEVELOPER: CHRISTINA WHEELER RIZZUTO OWNER: KENNETH L. WHEELER, JR. ILE NO. 13893 Forsythe Road 707 Eastshire Drive 8/2009 09-079 Catonsville, MD 21228 410-719-7663 Sykesville, MD 21784 410-442-2678

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND

DEVELOPER'S / BUILDER'S CERTIFICATION I certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I further certify that upon completion a Letter of Landscape Installation, accompanied by an executed One Year Guarantee of Plant Materials will be submitted to the Department of Planning and Zoning.

> REVISIONS Date Description

> > F-09-079

