



CITY OF FALLS CHURCH

Tree Preservation and Replacement Guide for Development and /or Redevelopment on Single Family Residential Lots

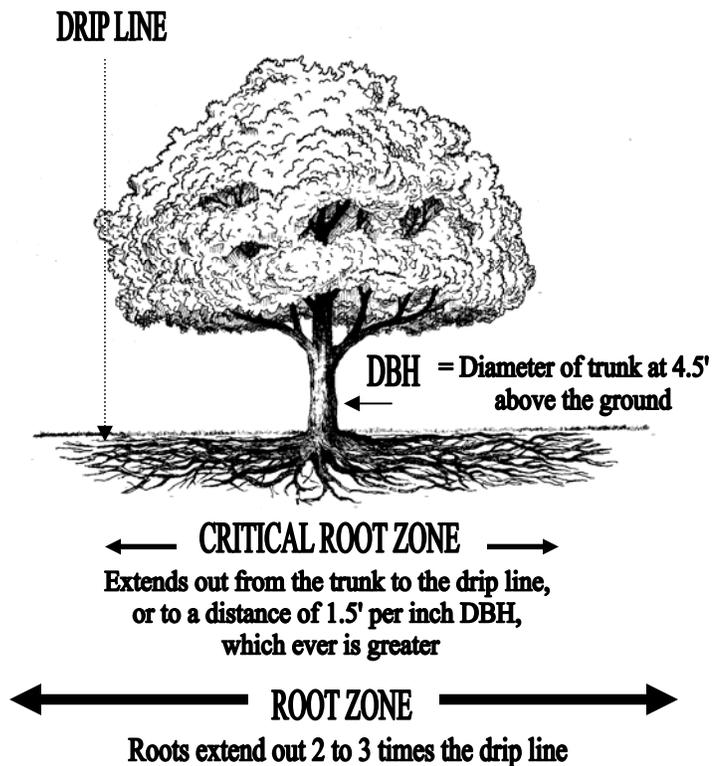


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Updates January 2008

Existing Tree Preservation Plan

✓ Minor grammatical edits have been made to the ‘The City of Falls Church Tree Preservation Standards and Specifications.’

Canopy Coverage

✓ Only those trees **located on the property** under development may be used for canopy coverage credit. Credit will be given for the entire canopy even if the canopy extends into a neighboring property. The former regulation was off site trees qualify for credit for the portion of the canopy over the property given that the offsite tree(s) was an approved species.

✓ Only vegetation **native to the Mid-Atlantic** region may be used for canopy coverage credit.

✓ **Utility Line Compatible Credit** – Has been increased from 110 square feet to 125 square feet of canopy coverage may be taken per tree for small appropriate trees planted under utility lines. This credit applies only when shade trees can not be planted elsewhere on site.

✓ **Species Diversity Credit**- A 10% credit shall be given for replanting plans that have no more than 25% of one type of tree. The former regulation was that a 10% credit for planting no more than 20% of one type of tree species.

✓ **Shrubs** may be planted for canopy coverage credit provided there is not enough space on the property to plant the amount of trees to meet the minimum canopy coverage requirements. See the attached shrub planting guidelines for additional details.

Landscape Revegetation Plan

✓ Minor grammatical edits have been made to the ‘The City of Falls Church Tree Planting Specifications and Details.’

10-year Canopy Coverage Groups /Recommended Trees to Plant

✓ Based on our experience using the previous 10-Year Canopy Coverage list, the most common trees selected for planting were those that had the greatest canopy coverage. This amounted to a very narrow range of trees being planted during development projects. In an effort to encourage greater diversity of tree species being planted within the City of Falls Church trees have been grouped into categories based on their form, growth rate and overall size. By doing so, hopefully trees will be selected based on their individual merits rather than to purely achieve canopy coverage goals.

✓ The 10-year canopy coverage for new tree plantings has been updated. Please see Attachment # 3 for new canopy coverage amounts. Trees are now grouped into five (5) categories with trees of similar growth forms and rates. All trees within each category have the same canopy coverage credit.

Details and Specifications

✓ Root Protection Pad detail has been added. Include this detail on grading plans where compaction has the potential to impact the root zone of vegetation.

**** A checklist has been included in this guide to ensure all of the Urban Forestry requirements are present on the grading plan. ****

Urban Forestry Checklist for Grading Plans

Preliminary Vegetative Survey

- Chart listing existing trees with comments YES NO _____
- All trees 2" DBH and greater listed YES NO _____
- All Shrubs 5' in height and greater listed YES NO _____
- All trees & shrubs identified correctly
by an ISA Certified Arborist (include ISA #) YES NO _____

Existing Tree Preservation Plan

- Adequate Tree Protection Fence locations shown YES NO _____
- Root Pruning locations shown YES NO _____
- Other Tree Preservation Measures shown YES NO _____
- Critical root zone shown YES NO _____
- City of Falls Church "Tree Preservation
Standards and Specifications" YES NO _____
- "Arborist Notification and Verification" YES NO _____
- Root Protection Pad detail (if needed) YES NO _____

Canopy coverage calculations

- Accurate canopy coverage calculations YES NO _____
- Undesirable species included in coverage YES NO _____
- Offsite trees used in coverage YES NO _____
- Declining tree(s) used in coverage YES NO _____

Landscape Revegetation Plan

- Chart listing trees to be planted YES NO _____
- City of Falls Church "Tree Planting
Specification and Details" YES NO _____
- City of Falls Church tree planting detail YES NO _____

Street Tree Plantings shown

YES NO _____

Utilities impacting tree preservation areas

YES NO _____



INSTRUCTIONS FOR PRESERVING AND REPLACING VEGETATION THROUGH OUT THE DEVELOPMENT PROCESS*

Grading plan applicants shall submit the following requirements pursuant to Section 38-30 Landscaping, and Section 38-42 The Chesapeake Bay Preservation Ordinance (CBPO).

SUBMISSION REQUIREMENTS

***FOR COMPLETE INFORMATION SEE ORDINANCES**

- ❖ All development, redevelopment or land disturbance subject to section 38-42 shall include a **Landscape Conservation Plan** as part of plan review and approval. No clearing or grading of any lot shall be permitted without an approved **Landscape Conservation Plan**. This plan shall be a scaled drawing including the following components:
 1. A **Preliminary Vegetative Survey** of all existing vegetation on the site including trees measuring at least two (2) inches in diameter at breast height (DBH) and shrubs that are greater than five (5) feet in height.
 - ✓ A chart shall be provided showing common and botanical name, size, condition, life expectancy, and required preservation measures of all woody vegetation.
 - ✓ All trees shall be identified by an International Society of Arboriculture (ISA) certified arborist. Include the ISA Certified Arborist’s certification number on the grading plan.

Tree #	Common Name / Botanical Name	DBH	Condition	Life Expec.	Preservation Measures
1*	Willow oak <i>Quercus phellos</i>	35"	Good	> 10	To be saved; install fencing, Root prune at LOC, mulch
2	Bradford pear <i>Pyrus calleryana</i>	10"	Fair	< 10	Remove – non desirable species, short lived. Not included in tree canopy coverage requirement.
3	Silver maple <i>Acer saccharinum</i>	42"	Poor	< 10	Remove – in building envelope
4	Red maple <i>Acer rubrum</i>	4"	Good	< 10	To be saved

Data Collected By: John Smith ISA Certified Arborist # PD-065

**Tree numbers match a corresponding number on the plan, showing the tree locations on the property.*

2. An **Existing Vegetation Preservation Plan** that shows land disturbing and any other activities during the construction process that could negatively impact vegetation.
 - ✓ Locations of tree preservation fencing, root pruning and other required tree preservation measures shall be shown on the plan.
 - ✓ Locations of the critical root zone (CRZ) of any vegetation shown on the plan or on adjacent properties, including City right-of-ways (street trees), where the CRZ extends onto the site.
 - ✓ The City of Falls Church “Tree Preservation Standards and Specifications” shall be included on the plan.

3. A **Landscape Revegetation Plan** that shall illustrate the locations of any required vegetation. This applies on lots where the 20% minimum tree canopy cover can not be met through preserving existing tree canopy (Attachment #1).
 - ✓ A chart shall be provided showing common and botanical name, size, quantity, root condition and tree canopy coverage provide by each tree (Attachment #2).
 - ✓ The City of Falls Church “Tree Planting Specifications and Details” shall be included on the plan.

- ❖ **Tree Canopy Coverage Calculations Pre and Post Development** shall be shown on the plan in chart form. Canopy coverage is the area beneath the drip line of the **trees on the lot**. For onsite trees if the canopy extends into a neighboring property credit for that portion of the canopy may also be taken. **Canopy coverage from the following types of vegetation can not be included in the calculations:**
 - Vegetation that is not preserved in accordance with the Landscape Conservation Plan.
 - Vegetation that is not desirable and has a life expectancy less than ten (10) years.
 - Vegetation that is included in the “Vegetation Not Recommended to Plant or Preserve” list (Attachment #3).
 - Vegetation that is not native to the Mid-Atlantic region.

- ❖ **Planting of Street Trees** is required in conjunction with all grading plans. Trees shall be located within the City right of way and the species shall be determined in consultation with the City Arborist.

- ❖ **Bonding of Replacement Vegetation** is required prior to the grading plan sign off and approval. The bond is held for one (1) year from the date of the planting of the vegetation after a successful inspection by the City Arborist (Attachment #4).

- ❖ The cost of any replacement vegetation that can not be planted on the lot, due to physical constraints, shall be placed in the **Tree Canopy Fund**. This fund shall be used to plant vegetation on both private and public property.

- ❖ **Verification of Tree Preservation Measures** is required prior to the issuance of any permits, including demolition and building permits, associated with the grading plan. This means that all tree work and associated tree preservation measures must be installed prior to the entrance of any equipment to the lot (Attachment #5).

- ❖ **Violation of Approved Plans**
 1. **Stop Work Orders.** In the event that any construction or work is performed in violation of the approved **Landscape Conservation Plan**, the City Arborist may issue a written notice to the responsible party to **stop work**. If the permit holder fails to comply with the conditions of the stop work order, they may be subject to revocation of permits and/or any cash bonds held by the City.
 2. **Mitigation Plan.** In the event that the violation of the approved **Landscape Conservation Plan** was an encroachment or evidence of an encroachment into a tree preservation area, the applicant shall submit a Mitigation Plan subject to the approval of the City Arborist. This plan shall list remedial measures and the time within which such measures shall be completed by the applicant to ensure the continued preservation of the existing trees. This may include, but is not limited to, pruning, vertical mulching, and aerating. Bonding of the existing vegetation may be required by the City Arborist.



HOW TO CALCULATE TREE CANOPY COVERAGE

❖ **All lots under going development or redevelopment must provide for twenty (20) percent tree canopy coverage after ten (10) years. Tree canopy coverage is the sum total of preserved vegetation and replacement vegetation.**

- To calculate how much canopy coverage is required, multiply the lot size by 20%.

i.e. A 10,000 sq. ft. lot would require 2,000 sq. ft. of canopy coverage

- Next, calculate how much preserved canopy coverage is all ready present **on the lot** and multiply this by 1.25. This additional “credit” is to encourage the preservation of existing vegetation.

i.e. 1000 sq. ft. of preserved vegetation would be credited an additional 250 sq. ft. for a total of **1250 sq. ft.** of preserved vegetation.

- If this amount is greater than the required 20% canopy coverage number (i.e. greater than 2,000 sq. ft.).

STOP HERE!

If less than

- Subtract the existing tree canopy coverage number (including “credit”) from the total amount required.

i.e. A 10,000 sq.ft. lot that has 1250 sq. ft. of existing canopy coverage would require an additional 750 sq.ft. of canopy coverage.

- Determine how many trees will total 750 sq. ft. from the attached list “Recommended Trees & 10 – Year Canopy Coverage” (Attachment #2). Include any additional canopy coverage “credits” that may apply such as the following:

- **Best Management Practice (BMP)** - 25% for trees planted in rain gardens or bio retention areas.
- **Energy Conservation**- 25% for deciduous trees planted to provide shade to the Southern side of the house. (Southeast, South & Southwest side of the house)
- **Utility Line Compatible**- 125 sq. ft. per tree for small appropriate trees planted under utility lines when shade trees can not be planted else where on site.
- **Native Plant Species** – 25% for trees that are native and are less susceptible to pest and disease and provide habitat and food for wildlife.
- **Species Diversity**- 10% for replanting plans that have no more than 25% of one type of tree.

i.e. 750 sq.ft. of canopy coverage can be met by planting the following trees:

1 - Red Bud 1 x 100 = 100	“Credits” 25% Native plant Species = 137.5
1 - River birch 1 x 175 = 175	10% Species Diversity = 55 sq. ft.
1 - Red oak 1 x 175 = 175	25% Energy Conservation (one Red Oak)
1- Fringe tree 1 x 100 = 100	= 43.75 sq. ft.
550 sq. ft.	+ 236.25 sq. ft.
Tree Canopy Coverage Provided = 786.25 sq. ft.	



RECOMMENDED TREES & 10 – YEAR CANOPY COVERAGE GROUPS

Group I - Canopy Coverage 100 sq. ft

Deciduous / Small Tree: Minimum size at planting 1 ¾” caliper, balled & burlapped.

Common Name	Botanical Name	Moisture Needs / Exposure	* 10 Year Coverage sq. ft.
Red buckeye	<i>Aesculus pavia</i>	Moist to average Part sun to full sun	100
Downey serviceberry	<i>Amelanchier arborea</i>	Average Part sun to full sun	100
Canada serviceberry	<i>Amelanchier canadensis</i>	Moist to average Full sun	100
Allegheny serviceberry	<i>Amelanchier laevis</i>	Average to dry Part sun to full sun	100
Pawpaw	<i>Asimina triloba</i>	Moist to average Full shade to part sun	100
American hornbeam	<i>Carpinus caroliniana</i>	Moist to average Full shade to part sun	100
Red bud	<i>Cercis canadensis</i>	Average to dry Full to part shade	100
Fringe tree	<i>Chioanthus virginicus</i>	Moist to average Part shade to full sun	100
Cockspur Hawthorn	<i>Crataegus crusgalli</i>	Moist to dry Full shade to part shade	100
Southern Hawthorn	<i>Crataegus viridis</i>	Moist to average Full shade to part shade	100
Persimmon	<i>Diospyros virginiana</i>	Average to dry Full shade to part shade	100
Common Silverbell	<i>Halesia teraptera</i>	Moist to average Part sun to full sun	100
Sweetbay Magnolia	<i>Magnolia virginiana</i>	Moist to dry Full shade to part sun	100
Eastern Hornbeam	<i>Ostrya virginiana</i>	Moist to average Part sun to shade	100
Sourwood	<i>Oxydendron arboreum</i>	Moist Part shade to full shade	100
Sassafras	<i>Sassafras albidum</i>	Moist to average Part shade to full sun	100

Group II - Canopy Coverage <u>125 sq. ft</u>			
Deciduous / Large Tree: Minimum size at planting 2- 2 ½” caliper, balled & burlapped. Do not plant closer than fifteen (15) feet from buildings.			
Common Name	Botanical Name	Moisture Needs / Exposure	10 Year Coverage (sq. ft.)
Shagbark Hickory	<i>Carya ovata</i>	Moist Full sun	125
American yellowwood	<i>Cladrastis kentukea</i>	Moist to average Full sun	125
American beech	<i>Fagus grandifolia</i>	Average Shade to full sun	125
Green ash ‘Summit’ and ‘Patmore’ cult.	<i>Fraxinus pennsylvanica</i>	Moist to average Full sun	125
Kentucky coffee tree	<i>Gymnocladus dioicus</i>	Average Full sun	125
Southern Magnolia	<i>Magnolia grandiflora</i>	Moist to average Part shade to full sun	125
Black Walnut	<i>Juglans nigra</i>	Moist Full sun	125
Blackgum	<i>Nyssa sylvatica</i>	Moist to dry Part sun to full sun	125
White oak	<i>Quercus alba</i>	Moist to average Part shade to full sun	125
Swamp white oak	<i>Quercus bicolor</i>	Moist to average Part shade to full sun	125
Scarlet oak	<i>Quercus coccinea</i>	Average Full sun	125
Willow oak	<i>Quercus phellos</i>	Moist to average Full sun	125
Chestnut Oak	<i>Quercus prinus</i>	Average to dry Part shade to full sun	125
Black Willow	<i>Salix nigra</i>	Moist Part shade to full sun	125
Group III - Canopy Coverage <u>175 sq. ft</u>			
Deciduous / Large Tree: Minimum size at planting 2- 2 ½” caliper balled & burlapped. Do not plant closer than fifteen (15) feet from buildings.			
Red maple	<i>Acer rubrum</i>	Moist to average Part shade to full sun	175
Sugar maple	<i>Acer saccharum</i>	Moist to average Part shade to full sun	175
River birch	<i>Betula nigra</i>	Moist to average Part shade to full sun	175
White ash	<i>Fraxinus americana</i>	Moist to average Full sun	175
Honey locust ‘Skyline’ and ‘Shademaster’ cult.	<i>Gleditsia tricanthos var. inermis</i>	Average Part shade to full sun	175
Sweetgum	<i>Liquidambar styraciflua</i>	Average Full sun	175

Tulip poplar	<i>Liriodendron tulipifera</i>	Average Full sun	175
Pin Oak	<i>Quercus palustris</i>	Moist to average Full sun	175
Northern red oak	<i>Quercus rubra</i>	Average Full sun	175
American basswood	<i>Tillia americana</i>	Moist to average Part shade to full sun	175
American elm cultivars resistant to Dutch elm disease: 'Princeton', 'New Harmony', Valley Forge'	<i>Ulmus americana</i>	Moist to average Full sun	175
Group IV - Canopy Coverage <u>100 sq. ft</u>			
Evergreen Tree: Minimum size at planting 2- 2 ½" caliper, balled & burlapped.			
Pitch Pine	<i>Pinus rigida</i>	Well drained soil Full sun	100
Loblolly Pine	<i>Pinus taeda</i>	Well drained soil Full sun	100
Virginia Pine	<i>Pinus virginiana</i>	Well drained soil Full sun	100
Group V - Canopy Coverage <u>25 sq. ft</u>			
Evergreen Tree: Minimum size at planting 6 -7 ft, balled & burlapped.			
Atlantic White Cedar	<i>Chamaecyparis thyoides</i>	Moist to average Full sun	25
American Holly	<i>Ilex opaca</i>	Moist to average Part shade to full sun	25
Eastern Red Cedar	<i>Juniperus virginiana</i>	Moist to dry Part shade to full sun	25
Eastern Arborvitae	<i>Thuja occidentalis</i>	Moist to dry Full sun	25

Source: Adapted from the Virginia Nursery & Landscape Association. *Trees that were not included in the VNLA list are grouped with other trees of similar form and growth rate.*

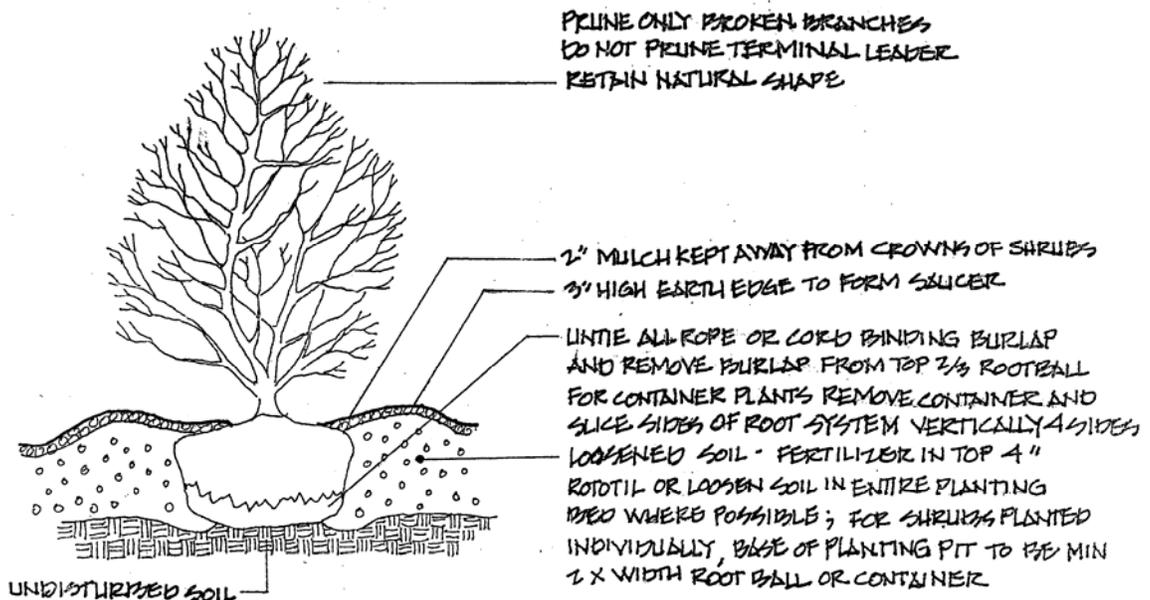


CITY OF FALLS CHURCH

SHRUB PLANTING GUIDELINES FOR THE CITY OF FALLS CHURCH

***Shrubs may be planted for canopy coverage credit provided there is no space on the property (as determined by the Falls Church City Arborist) to plant a sufficient amount of trees to achieve the canopy coverage requirements. ***

- ✓ Shrubs shall measure a minimum of two to three (2 – 3) feet in height at the time of installation and be either balled and burlapped (B&B) or in a minimum of a #3 container.
- ✓ Canopy Coverage for Shrubs is credited at 20 square feet (4 feet by 5 feet) if they are spaced appropriately to achieve this size, otherwise a lower amount of canopy coverage credit shall be credited based on plant spacing.
- ✓ Shrubs that are planted for canopy coverage credit shall not be planted under existing trees or new tree plantings that are being used for credit.
- ✓ Shrubs shall be bonded at \$50 per shrub.
- ✓ The Falls Church Shrub planting detail shall be added to any grading plan that includes shrub plantings for canopy coverage credit.



Shrub Planting Detail

NATIVE SHRUBS

ACCEPTABLE FOR CANOPY COVERAGE

*	<i>Aesculus parviflora</i>	Bottlebrush Buckeye
+	<i>Alnus serrulata</i>	Smooth Alder
+	<i>Aronia arbutifolia</i>	Red Chokeberry
*	<i>Calycanthus florida</i>	Sweetshrub
+ *	<i>Cephalanthus occidentalis</i>	Button Bush
+	<i>Cletlira alnifolia</i>	Summersweet
*	<i>Comptonia peregrina</i>	Sweetfern
+	<i>Cornus amonum</i>	Silky Dogwood
*	<i>Cornus racemosa</i>	Grey Dogwood
+	<i>Cornus serica</i>	Red-Stem Dogwood
*	<i>Corylus americana</i>	American Hazelnut
*	<i>Hamamelis virginiana</i>	Witch Hazel
*	<i>Hydrangea arborescens</i>	Smooth Hydrangea
+	<i>Hypericum kalmianum</i>	St. John's Wort
+	<i>Ilex glabra</i>	Inkberry
+	<i>Ilex verticillata</i>	Winterberry
+	<i>Itea virginica</i>	Virginia Sweetspire
*	<i>Kalmia latifolia</i>	Mountain Laurel
*	<i>Lindera benzoin</i>	Spice Bush
+	<i>Morella (Myrica) pennsylvaitica</i>	Northern Bayberry
*	<i>Photinia (Aronia) melanocarpa</i>	Black Chokeberry
*	<i>Photinia pyrifolia (Aronia arbutifolia)</i>	Red Chokeberry
*	<i>Rhododendron maximum</i>	Rosebay Rhododendron
+	<i>Rhododendron vicosum</i>	Swamp Azalea
*	<i>Rhus copollina</i>	Winged Sumac
*	<i>Rhus glabra</i>	Smooth Sumac
*	<i>Rhus hirta (Rhus typhina)</i>	Staghorn Sumac
+	<i>Salix serecia</i>	Silky Willow
*	<i>Sambucus canadensis</i>	Elderberry
*	<i>Staphylea trifolia</i>	American Bladdernut
* +	<i>Vaccinium corymbosum</i>	Highbush Blueberry
*	<i>Viburnum acerifolium</i>	Maple-leaved Viburnum
* +	<i>Viburnum dentatum</i>	Arrow Wood
* +	<i>Viburnum nudum v. cassanoides</i>	Witherod
* +	<i>Viburnum nudum</i>	Possum-haw Viburnum
*	<i>Viburnum lentago</i>	Nannyberry
*	<i>Viburnum prunifolia</i>	Blackhaw Viburnum
*	<i>Viburnum trilobum</i>	American Cranberry

* Suitable for usually well drained

+ Suitable for moist areas



**VEGETATION NOT RECOMMENDED
TO PLANT OR PRESERVE***

Common Name	Botanical Name	Problems	Comments on Preservation*	Alternatives to Plant
Box elder	<i>Acer negundo</i>	Weak wood, short life span, can develop box elder bug - a nuisance if tree is located near dwelling	Do preserve this tree in its natural habitat along stream banks	River birch, American hornbeam
Norway maple	<i>Acer platanoides</i>	Prolific seeds, highly invasive , dense canopy and chemical poisons in root system allow this tree to displace valuable native plants from our woodlands, as well as grass and garden plantings in your yard	Do not preserve	Tupelo (black gum), White oak, Red oak, Willow oak
Silver maple	<i>Acer saccharinum</i>	Objectionable surface root system, prolific seeds, weak wood	Do preserve this tree in its natural habitat along stream banks	Tupelo (black gum) or Willow oak
Tree of Heaven	<i>Ailanthus altissima</i>	Highly invasive and difficult to eradicate once established, weak wood, and male seeds have a strong odor	Do not preserve	White oak, Willow oak, Red oak, Tupelo
Mimosa	<i>Albizia julibrissin</i>	Invasive , susceptible to wilt disease and mimosa webworm	Do not preserve	Eastern redbud, American fringe tree
White birch	<i>Betula pendula</i>	Short life span, susceptible to severe damage from the bronze birch borer	Do not preserve	River birch or 'Heritage' River birch
Leyland cypress	<i>X Cupressocyparis leylandii</i>	Short life span, susceptible to canker disease and prone to wind-throw	Do not preserve	Eastern Red cedar
Flowering dogwood	<i>Cornus florida</i>	Susceptible to exotic fungal diseases, some of which can be fatal to the plant; will require spraying if plant becomes diseased	Do preserve if found occurring naturally as resistance may eventually occur	Sweet bay magnolia or Serviceberry
Russian Olive, Autumn Olive	<i>Eleagnus augustifolium</i> , <i>E. umbellatum</i> ,	Highly invasive , diminishing the overall quality of wildlife habitat	Do not preserve	Black haw Viburnum, Serviceberry, Red Chokeberry.
Ginkgo (female only)	<i>Ginkgo biloba (female)</i>	Fruit of female can produce objectionable odor	Determine if objectionable fruit can be tolerated (if preserving female)	White oak, Willow oak, Red oak, Tupelo

Common Name	Botanical Name	Problems	Comments on Preservation*	Alternatives to Plant
Osage orange (female only)	<i>Maclura pomifera (female)</i>	Large prolific fruit, thorns, shallow roots; thornless male varieties may prove more acceptable near a residence	Do preserve if in an area where fruit and thorns can be tolerated	Paw paw
White mulberry	<i>Morus alba</i>	Highly invasive and produces messy fruit; a fungal disease associated with this tree has destroyed most of our native red mulberries	Do not save this tree	Sweet bay magnolia, Serviceberry, Fringetree
Empress tree	<i>Paulownia tomentosa</i>	Invasive , weak wood, prolific seeds	Do not save this tree	Eastern redbud
Amur corktree (female only)	<i>Phellodendron amurense (female)</i>	Highly invasive , prolific seeds, use only male varieties	Do not save female trees	American yellowwood, Hophornbeam
Spruce	<i>Picea spp</i>	Susceptibility to mites will require maintenance spraying to maintain tree in good condition throughout life	Determine if maintenance requirements can be tolerated	American holly, Eastern red cedar
Austrian pine	<i>Pinus nigra</i>	Susceptibility to a fungal disease that will require fungicidal spraying	Determine if maintenance requirements can be tolerated	Virginia cedar, American holly, Loblolly pine
White pine	<i>Pinus strobus</i>	Short life span, weak wood and susceptible to storm damage	Determine if objections noted can be tolerated	Virginia cedar, Loblolly pine
Poplars (not to be confused with “tulip poplars” or “tulip tree”)	<i>Populus spp.</i> (to include hybrid poplar)	Short life span, objectionable root system, weak wood susceptible to canker disease	Do not save this tree	Willow oak, red oak, tulip tree
Cherry (edible and ornamental)	<i>Prunus avium, P. cerasus,</i> Japanese species and hybrids	Displaces our native fruit trees on which our wildlife is dependent	Do not save this tree	Trees for flowering: Redbud, Serviceberry, Fringe tree, Sweet bay magnolia; trees for edible fruit: Pawpaw, Persimmon, Serviceberry
‘Bradford’ pear and other ornamental pears	<i>Pyrus calleryana</i> ‘Bradford’ and other ornamental pears	Invasive (overtaking native trees and other native plants in our woodland) highly susceptible to storm damage, and short life span	Do not save this tree	Sweet bay magnolia, Serviceberry, American fringe tree, Silverbell
Sawtooth oak	<i>Quercus acutissima</i>	Invasive – this Asian tree displaces our indigenous forest trees	Do not save this tree	Willow oak, White oak, Red oak

Common Name	Botanical Name	Problems	Comments on Preservation*	Alternatives to Plant
Weeping willow	<i>Salix babylonica</i>	Short life span, weak wood, objectionable root system in yards	Determine if objections noted can be tolerated	River birch, hophornbeam, American hornbeam
Canadian hemlock	<i>Tusga canadensis</i>	Susceptible to insect problems that will require spraying to maintain	Determine if maintenance needs can be met	American holly (for use in similar shade locations where hemlocks occur)
American elm	<i>Ulmus americana</i>	Susceptible to Dutch elm disease (DED), elm necrosis and various insect infestations	Determine if problems can be tolerated	American elm cultivars resistant to Dutch elm disease: 'Princeton', 'New Harmony', 'Valley Forge'
Siberian elm	<i>Ulmus pumilla</i>	Short life span, weak wood, susceptible to various insect and disease problems	Do not save this tree	See American elm cultivars above or use slippery elm in damp soils

Sources for the information in this chart include: *The Fairfax Co. Public Facilities Manual*, *Virginia Dept. of Conservation and Recreation: Natural Heritage Program* and the *Maryland Native Plant Society's Invasive Non-Native Plants*; this information was compiled by the Urban Forestry Division / Development Services.

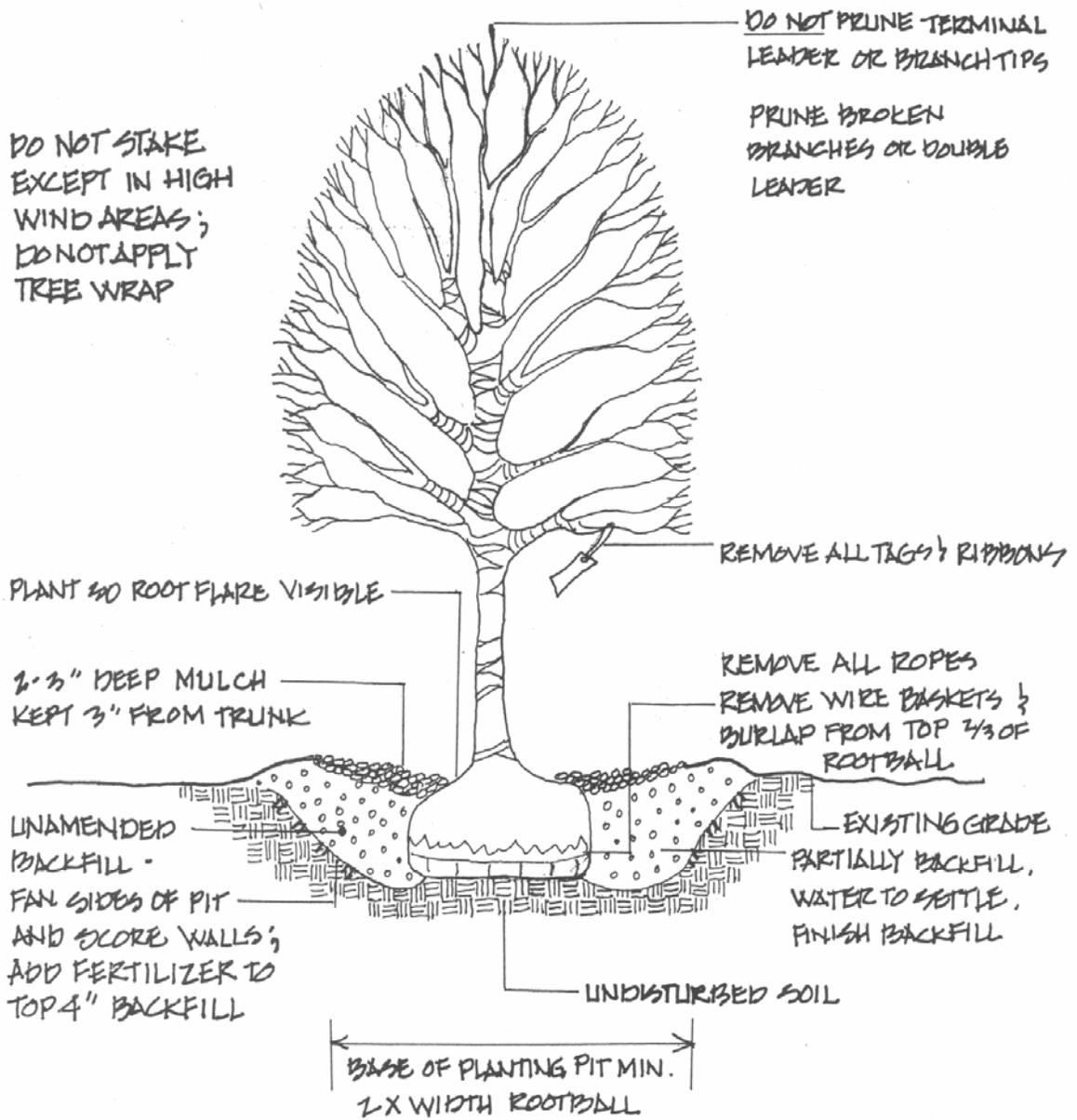
Note: Some of the plants in this list are highly invasive and can cause harm to our native ecosystem while others have nuisance factors that could be problematic to property owners in ways indicated above. In selecting plants to for your property we strongly recommend "native" plants, those that occur naturally in our region. These "natives" support our diminishing population of songbirds, butterflies and beneficial/pollinating insects, as well as providing the most long-lived and least problematic plants for your property.

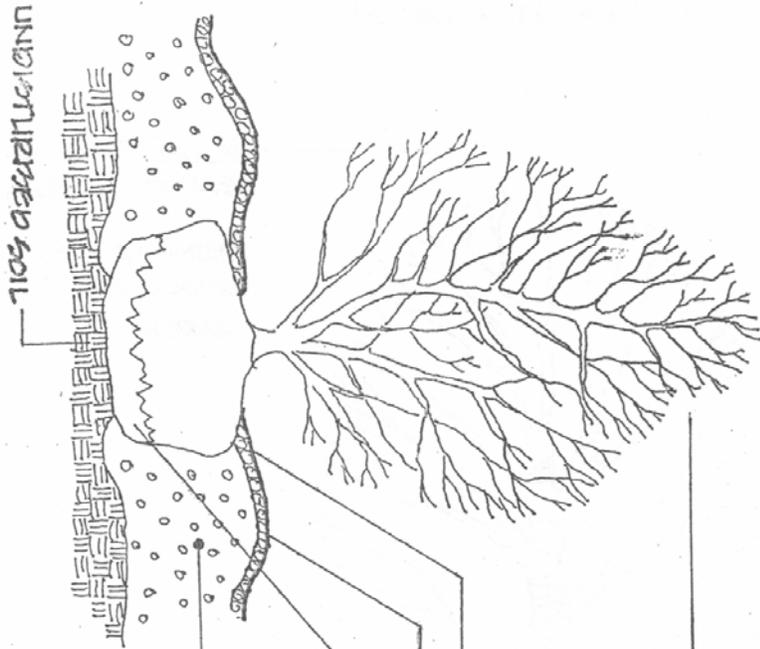


CITY OF FALLS CHURCH

DETAILS AND SPECIFICATIONS TO BE INCLUDED ON GRADING PLANS

TREE PLANTING DETAIL





PRUNE ONLY BROKEN BRANCHES,
DO NOT PRUNE TERMINAL LEADER
RETAIN NATURAL SHAPE

2" MULCH KEPT AWAY FROM CROWNS OF SHRUBS
3" HIGH EXTERIOR EDGE TO FORM SLOPE

UNITE ALL COPE OR CORD BANDING BURGLAP
AND REMOVE BURGLAP FROM TOP 2/3 ROOTBALL
FOR CONTAINER PLANTS REMOVE CONTAINER AND
SLICE SIDES OF ROOT SYSTEM VERTICALLY 4 SIDES,
LOOSENED SOIL - FERTILIZING IN TOP 4"
ROTTIL OR LOOSEN SOIL IN ENTIRE PLANTING
BED WHERE POSSIBLE; FOR SHRUBS PLANTED
INDIVIDUALLY, BASE OF PLANTING PIT TO BE MIN.
1 X WIDTH ROOT BALL OR CONTAINER

TYPICAL SHRUB PLANTING

TREE PRESERVATION TECHNIQUES

(Both techniques described below can be combined with the pruning of roots that may occur beyond the area of treatment).

#1 – For Use in Areas Where Equipment Must Operate in Areas That Will Remain at Existing Grade:

- In the woodchip and plywood or chainlink fence area shown in figure 1 below, spread 10-15" of wood chips by hand.
- On top of the wood chips, lay 5/8 to 3/4 inch plywood or heavy-gauge chain link fence to provide a path for equipment and workers to operate.

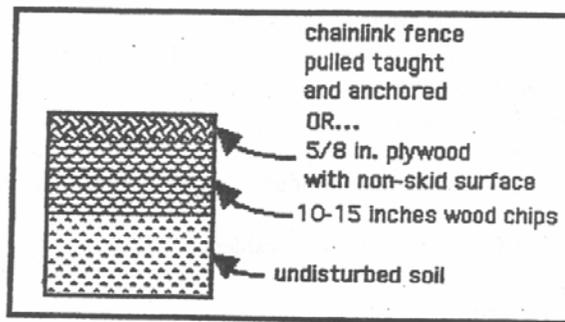


Figure 1

#2 – For Use in Areas Where Fill Soil Will Be Placed Over the Root Zone:

- An aeration system shall be installed in the area shown in figure 2 below prior to grading. The aeration system (see diagram below) shall consist of *geotextile* fabric laid on top of the undisturbed ground; with not less than six inches of river rock on top of it; and with a second layer of *geotextile* fabric laid on top of the rock.
- Fill dirt can then be placed on top of the *geotextile* fabric.

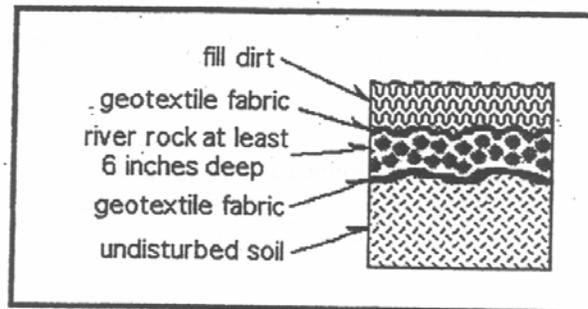


Figure 2

TREE PRESERVATION PROCEDURES AND SPECIFICATIONS
City of Falls Church, VA – Urban Forestry / Development Services

1. Prior to allowing any vehicle or construction equipment to enter the site, the construction foreman and project arborist (also foreman of company doing actual tree work if different from project arborist) is to meet the City Arborist to mark the location of the *limits of clearing/ tree preservation fencing*, erosion control fabric, and root pruning line (where required), access routes, storage areas, and parking areas. The location of the LIMITS OF CLEARING/TREE PRESERVATION FENCING is to be installed in accordance with the approved plan and field located from existing benchmarks, landmarks, and building stakeout survey markers. All work procedures and tree preservation measures are to be discussed at this time. An appointment must be made with the arborist for the City a minimum of three days prior to the establishment of the tree preservation measures is required by City Code (Sec. 35-15 (b), see enclosed. Contact the City Arborist for an appointment at 703-248-5183.
2. Trees to be removed shall be clearly marked and approved by the City Arborist prior to demolition or entry of any equipment on site. A tree contractor licensed and bonded to work in the City shall perform all tree work, including all tree removals. Check with the City Arborist for a copy of the most recent list of Tree Contractors.
3. *Tree preservation fencing* shall be either of the following:
 - a. Six (6) foot high chain link fence sections attached to one and five eighths (1 5/8) inch outside diameter pipe with eleven (11) -gauge mesh in a two (2) inch diamond pattern. The fencing noted above may be temporary panels set in concrete blocks at the base and secured at the top with saddle clamps
 - or
 - b. Four (4) foot high fourteen (14) gauge welded wire fence supported by six (6) foot long metal stakes (2" width) to be spaced eight (8) feet on center and sunk into the ground.

Both of the fencing types noted above shall be flagged with brightly colored surveyor ribbon to improve their visibility. The contractor must maintain fencing in place throughout construction. **In the event fencing must be temporarily removed for any reason, contact must be made first with the arborist at 703-248-5183.** The City Arborist must grant approval before any tree preservation fencing is removed, even temporarily.

4. Erosion and sediment control fencing shall be placed on the inside (toward construction) from the tree preservation fencing and any root-pruning trenches. Erosion control devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion within the tree protection zone. Property owners are advised to impose fines in contracts with construction companies if tree preservation measures are violated.
5. Demolition and Site Clearing:
 - a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.

- b. Trees to be removed shall be felled so as to fall away from tree protection zones and to avoid pulling breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees. This may be accomplished by cutting through the roots by hand, with a vibrating knife, rock saw, and narrow trencher with sharp blades, or other approved root-pruning equipment.
 - c. Trees being cut within the tree preservation zone shall be cut near ground level and the stumps ground out with a walk-behind grinding machine.
 - d. All downed brush and trees shall be removed from the tree protection zone either by hand or with equipment sitting outside the tree protection zone. Extraction shall occur by lifting the material out, not by skidding it across the ground.
 - e. Brush shall be chipped and placed in the tree protection zone to a depth of 6 inches, with no chips against the trunks of trees.
 - f. Structures and underground features to be removed within the tree protection zone shall use the smallest equipment possible and operate from outside the tree protection zone. The City Arborist shall be present during all such operations within the tree protection zone to monitor demolition activity. Phone 703-248-5183 at least three (3) days in advance for an appointment.
 - g. Any damage to trees due to demolition activities shall be reported to the City Arborist within 6 hours so that prompt remedial action can be taken.
 - h. If temporary haul or access roads must pass over the root area of trees to be retained, a roadbed of at least 10 inches of mulch shall be created to protect the soil. The roadbed material shall be replenished as necessary to maintain a 10-inch depth. The City Arborist must approve the use of any such temporary road in the tree protection area.
6. Pruning & Other Preservation Measures Specifications:
- a. The City Arborist shall be notified a minimum of three (3) days in advance of commencing any form of tree work. Call 703-248-5183 for an appointment.
 - b. Root pruning, where required, shall be mechanically done with a narrow trencher with sharp blades. Once a trench is opened up, approximately 18-24" in depth and 4" wide all exposed roots will be hand pruned so that the clean-cut ends can regrow.
The tree preservation fencing shall be placed 6-12" outside the root-pruning trench (construction side of the trench). The erosion and sediment fencing shall be placed outside the tree preservation fencing (construction side of the fence).
 - Where required, apply a slow-release complete fertilizer containing major and trace elements, but low in water-soluble nitrogen during the season before the commencement of construction. An application of a *mycorrhizae* product may also be required to assist in the preservation of highly stressed trees.
 - c. All trees to be saved will be pruned (in accordance with American National Standards Institute (ANSI) Standard Practices for Trees, Shrubs, and Other Woody Plant Maintenance ANSI A300 and adhere to the most recent edition of ANSI Z133.1.
 - d. Treat any disease or insect pest as required to reduce stress on trees.
 - e. Remove all invasive vines growing on trees and from the area around the trees
 - f. Specifications for work to be performed on individual trees shall be indicated under the "maintenance" column of the Tree Survey.
 - g. All trees within the project area shall be pruned to:
 - clear the crown of diseased, crossing, weak, and dead wood to a minimum size of 1 ½ inches diameter;
 - provide 14 feet of vertical clearance over streets and 8 feet over sidewalks;

- remove stubs, cutting outside the woundwood tissue that has formed around the branch;
 - reduce end weight on heavy, horizontal branches selectively removing small diameter branches, no greater than 2 to 3 inches near the ends of the scaffolds.
- h. Where temporary clearance is needed for access, branches shall be tied back to hold them out of the clearance zone. The City Arborist must approve such tying.
 - i. Pruning shall not be performed during periods of flight of adult boring insects because fresh wound attract pests. Pruning shall be performed only when the danger of infestation is past.
 - j. All work must be performed by a tree contractor licensed and bonded to work in the City and in accordance with the direction of the project certified arborist and the City Arborist.
 - k. Interior branches shall not be stripped out.
 - l. Pruning cuts larger than 4 inches in diameter, except for dead wood, shall be avoided.
 - m. Pruning cuts that expose heartwood shall be avoided whenever possible.
 - n. No more than 20 percent of live foliage shall be removed from a tree at one time.
 - o. While in the tree, the arborist shall perform an aerial inspection to identify defects that require treatment. Any additional work needed shall be reported to the City Arborist.
 - p. Brush shall be chipped and chips shall be spread underneath trees within the tree protection zone to a maximum depth of 6 inches, leaving the trunk and root flare clear of chips.
 - q. It may also be necessary to fertilize, aerate and otherwise treat the “trees to be saved” as required by the arborist for the City, following a meeting with the owner’s/developer’s arborist and approval of the “tree preservation plan”. All tree work must be completed prior to construction.
 - r. ‘Selective clearing’ in wooded areas will be allowed only under the direction of the City Arborist. Trees to be removed will be felled by hand so that minimal damage is done to “trees to be saved”.
 - s. No vehicles or storage of materials of any kind will be allowed inside the limits of clearing. No storage of material or debris will be allowed within the “tree save area”. No burning will be allowed on site.
7. Construction Specifications:
- a. Supplemental water shall be supplied to trees being preserved when natural rainfall is less than 1” a week, from early spring until the ground freezes in the fall. Irrigation should be designed to wet the soil to a depth of 2-3 feet. Lacking a source of water early on the construction site, this may be accomplished by constructing a 6” berm around the tree protection zone and filling the basin with a water truck or by injecting the soil using a pressure system from a truck mounted water tank. Shallow frequent watering should be avoided
 - b. Have a licensed and bonded tree contractor remove torn, hazardous, or prominent deadwood as it occurs, using ANSI standards noted under # 4 above. .
 - c. Where construction traffic must occur in the area of tree roots it shall be necessary to apply the following procedure: cover undisturbed soil with 10-15 inches wood chips and topped with chain link fence pulled taught and anchored or topped with 5/8 to 3/4 inch plywood with non-skid surface.
 - d. Where compaction occurs during construction, vertical mulch with good quality compost.
 - e. Before grading, pad preparation, or excavation for foundations, footings, walls, or trenching, relevant trees shall be root pruned 1 foot outside the tree protection zone

by cutting all roots cleanly to a depth of 24 inches to the maximum depth of root penetration, (usually 3 feet). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root-pruning equipment. Pruned roots shall be promptly covered with soil.

- f. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw and promptly covered with moist soil.
 - g. Soil from trenches, basements or other excavations shall not be placed within the tree protection zone, either temporarily or permanently. Soil stockpiles should be placed only in previously designated areas. No vehicles or construction equipment shall be parked in the tree protection zone.
 - h. No burn piles or debris pits shall be placed within the tree protection zone. No ashes, debris or garbage may be dumped or buried within the tree protection zone. No materials of any kind shall be stored in the tree protection zone.
 - i. Maintain fire-safe areas around fenced areas. Also, no heat sources, flames, ignition sources, or smoking is allowed near mulch of trees.
 - j. A copy of the “approved plan” and TREE PRESERVATION PROCEDURES AND SPECIFICATIONS must be maintained on site at all times.
 - k. All underground utilities and drain or irrigation lines shall be routed outside the tree protection zone. If lines must traverse the protection area, they shall be tunneled or bored under the tree(s) with the approval of the City Arborist.
 - l. A licensed and bonded tree contractor must perform additional tree pruning required for clearance during construction under the direction of the City Arborist. Construction workers shall not be allowed to prune trees.
 - m. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.
 - n. If injury should occur to any tree during construction, it should be treated as soon as possible under the direction of the City Arborist.
 - o. The City Arborist must monitor any grading, construction, demolition, or other work that is expected to encounter tree roots.
 - p. At the completion of construction (and all equipment has been removed from site), notify the City Arborist for an inspection before removing the tree preservation fencing. At this time, all trees will be inspected and any repairs needed will be stipulated by the City and promptly made by the Contractor. (Refer to Sec. 35-15(b) of the City Code for guidance on finalizing the requirements of the bond agreement.
8. The planting of the new tree(s) specified on the plan shall take place after the completion of construction. The City Arborist must inspect the trees prior to planting (see Arborist Notification) and also inspect the placement and installation of the tree(s). All products and workmanship related to the planting of the tree(s) must be in accordance with the **Tree Planting Specifications** attached. The Contractor/Owner must present the City with a copy of a one-year guarantee from the landscape contractor for the newly planted tree(s). The tree will need to be thriving and in good condition one year from the date of planting or will need to be replaced.

If you have questions on any of the “procedures” or “specifications” noted above or concerns that may arise during construction, please contact the City Arborist at (703) 248-5183 or the Senior Urban Forester at (703) 248-5016.

SPECIFICATIONS FOR PLANTING

City of Falls Church, VA – Urban Forestry / Development Services

1. Contractor shall verify existing conditions and utility locations. The City Arborist prior to the planting must approve adjustments to locations of plant material due to field conditions. Any substitutions in plant material and sizes specified will not be accepted, unless approved by the City Arborist prior to installation.
2. All plant material shall conform the American Standard for Nursery, latest edition, published by the **American Nursery and Landscape Association**. All plants must be free from injury, insect infestations and disease. All plant material must be inspected by the City Arborist prior to planting. The Contractor shall phone at least three (3) days prior to installation for inspection of the material and for inspection of the planting operation.
3. All plant material must bear original nursery tags indicating the genus, species and if applicable, cultivars and variety. All tags shall be removed after the City Arborist has inspected the plant material.
4. Test soil drainage before planting. Dig a hole as deep as your planting hole and fill with water. If water drains at a rate less than one inch per hour, install drainage to carry water away from the planting hole base, or moving or raising the planting site (berm construction)
5. Examine soil for compaction before planting. If soils are compacted in an area where a group of plants are to be installed, incorporate several inches of a combination of organic materials such as composted yard waste, finely shredded pine bark mulch (*superfines*) or shredded, composted leaf mulch (*leaf-gro*) and till to a depth of twelve (12) to eighteen (18) inches over the entire area. Do not till if planting is within a tree preservation area. Apply the organic matter at a rate of one-quarter organic matter to three-quarters existing soil. Do not incorporate small quantities of sand – compaction will increase and drainage decreases. For single tree plantings, backfill planting holes with unamended soil. Increase the width of the top of the planting hole in area where soil has been compacted. Do not incorporate organic matter such as peat moss into backfill for individual planting holes.
6. Tree pits shall be a minimum of two (2) and a half (1/2) times the width of the root ball and no deeper than the height of the root ball. On balled and burlaped trees, remove pinning nails or rope lacing, then cut away the wrapping and then backfill. Remove the top 12” of the wire basket. Remove all rope, whether jute or nylon, from trunks. For container materials, remove the container completely. Select trees grown in containers with vertical ribs or a copper-treatment on the interior wall. These container modification and treatments minimize circling root formation. If roots are circling around the root ball exterior of container plants (trees, shrubs or perennials) cut through the roots and soil in a few places.

Container tree with multiple circling roots will be rejected. Place shrubs and perennials at the same depth they were in the containers. For bare root perennials plant with the soil even with the top of the crown. Dig the hole wide enough to allow the roots to spread out in the soil. Push the soil back into the hole over the roots and around the top of the plant.

7. A soil test shall be made and the results submitted to the City Arborist prior to the installation of the plant material.

For trees: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicated a need for phosphorus or potassium. Use no more than 1 lb. Actual nitrogen per 1,000 ft. of planting hole surface. (Example – if using 18-6-12 with a 5' diameter hole, incorporate 0.3 oz. per planting hole.)

For shrubs: A slow-release granular fertilizer shall be incorporated into the top four (4) inches of backfill soil to provide nitrogen, or if a soil test indicates a need for phosphorus or potassium. Use quantities in accordance with manufacturer's direction.

For perennials, bulbs and annuals: A slow –release high phosphate fertilizer such as 7:40:6 or approved equal shall be incorporated into the top four (4) inches of the backfill mix. Alternatively, use Plant-tone on approved equal for sun perennials, together with rock phosphate at rates in accordance with manufacturers directions. Alternatively, for shade perennials use Hollytone or approved equal, together with super phosphate at a rate in accordance with manufacturers directions. Use gypsum, a soil conditioner, for clay soils. For bulbs commercial raw finely ground Bone Meal with an analysis of 4% nitrogen and %20 phosphorus acid shall be incorporated into the backfill mix.

8. When half of the backfill has been returned to the planting hole, water shall be applied to provide settlement and eliminate air pockets. The tree shall be thoroughly watered again after the remaining soil has been placed in the planting pit. A three (3) to four (4) inch dam of soil shall be constructed around the planting pit.
9. Two (2) to three (3) inches of mulch shall be placed over the tree-planting pit, but shall be kept three (3) to four (4) inches away from the trunk of the tree or crowns of shrubs. Do not allow mulch to touch the trunks of trees or crowns of shrubs. Use mulch that is compatible with the type of plant used. Avoid mulch that has not been nitrogen composted, as the pH of the soil could change as the mulch degrades. Pine bark mulch will not change the pH of the soil as it degrades. This is the best type of mulch for use with perennials. In mulching perennials, use no more than 1-2". For Mediterranean type of perennials, such as lavender, or for peonies or iris, use no mulch at all.

10. Trees shall be planted at the height of the surrounding grade with root flares visible. Should soil have been piled over the root flare during the digging process, this soil shall be removed so that the flare is slightly above grade.
11. Any pruning must be done with the approval of the City Arborist. Pruning at the time of planting shall be done only to remove broken branches or double (co dominant) leaders.
12. Remove tags and labels from trees and shrubs to prevent girdling branches and trunks.
13. Stakes shall be used only in area of high traffic or highly windy locations. A tree-staking diagram should be provided if staking is necessary. Stake for maximum of one year. Allow trees a slight amount of flex rather than holding them rigidly in place. Use guying or attaching that won't damage the bark. To prevent trunk girdling, remove all guying material after one year.
14. Use tree wrap only on thin barked trees planted in spring or summer into hot or paved areas. In these instances use white wrap, attaching with out the use of wire, rope, ties or tape, and remove after one year.
15. Planting Season – Planting shall be done only within the following dates:
 - a. Deciduous Trees – March 15 to May 30 or September 15 to December 15 (oaks and black gum to be spring dug and planted only).
 - b. Evergreen Trees – March 1 to May 15 or September 15 to November 15.
16. All plant material shall be guaranteed by the Contractor for one year from the date of acceptance to be in good, healthy and flourishing condition. In the event that a plant dies or in the judgment of the City Arborist, fails to flourish; the Contractor shall replace in accordance with the above noted specifications.
17. The Contractor shall be responsible for the maintenance of the plants during this one-year warranty period. This maintenance shall include providing water on a weekly basis when natural rainfall is less than one inch a week. Drip irrigation systems and water reservoir devices can facilitate watering. Root balls of trees should be slowly and thoroughly soaked at time of watering. For planting beds (i.e., trees, shrubs and perennials), water slowly and deeply putting down 1"-2" of water in a 6-12 hour period. This should give a penetration of 12-18" depth.

ARBORIST NOTIFICATION AND VERIFICATION:

PRIOR TO THE SIGN OFF AND SUBSEQUENT RELEASE OF THE GRADING PLAN ALL PRESERVATION MEASURES REQUIRED, AS PART OF THE *LANDSCAPE CONSERVATION PLAN*, MUST BE INSPECTED AND APPROVED BY THE CITY OF FALLS CHURCH ARBORIST. THIS MAY INCLUDE BUT IS NOT LIMITED TO TREE WORK, FENCING, MULCHING AND ROOT PRUNING. VIOLATIONS OF THE *LANDSCAPE CONSERVATION PLAN* SHALL RESULT IN FINES, STOP WORK ORDERS AND/OR THE RESUBMISSION OF A “MITIGATION PLAN”.

THE REQUIRED REPLACEMENT VEGETATION SHALL BE INSPECTED PRIOR TO PLANTING BY THE CITY ARBORIST. VEGETATION THAT IS INSTALLED UNINSPECTED WILL BE REJECTED. TO ARRANGE AN APPOINTMENT CALL THE SENIOR URBAN FORESTER (703) 248-5016.



CITY OF FALLS CHURCH

BONDING INFORMATION DOCUMENTS AND FORMS



BONDING INFORMATION / INSPECTIONS

Grading Plans

*Applicants must submit funds to the City when their grading plan requires the posting of a **New Landscape Elements Bond** and/or **Existing Tree Preservation Bond**. Also, a **Verification of Tree Preservation Measures Inspection** is required to ensure protection of existing vegetation.*

All bonds are required **prior** to the sign off and approval of grading plans. Bond requirements have been established by ordinance of the City Council. The first \$2,000.00 of all bonds is posted by check /cash to the City. Checks are to be made payable to the City of Falls. Information and forms have been included to aid in the acceptable methods of posting the bonds that are in excess of \$2,000.00.

1. The **New Landscape Elements Bond Agreement and Plan** is to ensure the installation and planting of all vegetation material shown on the plan for landscaping. For residential grading plans, trees are bonded at \$350.00 per tree and \$50.00 per shrub. **Sec. 38-29 “Bond for Landscape Elements”** explains how the bond is administered and released. Generally, once the vegetation has been planted, inspected and approved by the Senior Urban Forester, it is one (1) year from this date that the bond is held. Throughout that one-year holding period, if the vegetation declines or dies it is required to be replaced. At the end of the one-year the applicant must notify the Senior Urban Forester, in writing, requesting final release of the bond.

2. The **Tree Preservation Bond Agreement and Plan** is required for the protection of City owned street and park trees, specimen, historic (none designated in the City of Falls Church) and memorial trees. These types of trees are protected under **Sec. 35 “Trees, Shrubs and Weeds”** of the Falls Church City Code. Also, a **Tree Preservation Bond** can be required when there is a violation of the approved **Landscape Conservation Plan**. This purpose of this bond is to ensure that funding will be available to mitigate the damage that was done to existing vegetation.

Sec. 35-15 “Procedure for Administration of Bond and Terms of Bond” explains how the bond is released. Generally, one –half of the bond is released at the end of construction. It is from this date that the remaining part of the bond is held for two (2) years.

3. The **Verification of Tree Preservation Measures** is an inspection performed by the Senior Urban Forester **after** grading plan approval but **prior** to the release of permit(s). Tree preservation measures such as root pruning and fence installation that are required as part of the grading plan are to be installed and inspected prior to the entrance of equipment to the site.



**CITY OF FALLS CHURCH, VIRGINIA
GRADING PLANS**

NEW LANDSCAPE ELEMENTS BOND AGREEMENT AND PLAN

In return for the approval of the grading plans for

_____ (Address)

The Owner, Developer and/or Contractor, _____ (Owner, Developer or Contractor's Name)

does hereby agree to perform all required work as required by the landscape conservation plan and the Falls Church City Code, Chapter 42 by _____ (Date)

To ensure that this work is performed, a bond in the amount of \$ _____

shall be posted prior to the release of permits. The bond shall be held in escrow by the City according to the terms of the City Code, Section 38-29 (attached), and until the conditions stated in Chapter 42 are completed (see narrative and details on plan). If the Developer and/or Contractor fails or refuses to comply with the terms of this Agreement and the City brings suit against either or both to enforce said terms, the Developer and/or Contractor shall be jointly and severally liable to the City for reasonable attorney's fee, not to exceed twenty percent (20%) of the principal amount claimed, plus its costs incurred.

(Owner, Developer or Contractor's Name)

(Date)

(City of Falls Church)

(Date)

Sec. 38-29 (j) (2) (a) Bond for landscape elements. There shall be a bond to insure the planting and maintenance of all plants and trees shown on the plan for landscaping. Prior to the issuance of building or development permits, the owner or his agent shall deposit a cash bond in an interest bearing escrow account upon which the city may draw under the conditions set out below in an amount equal to the total replacement cost of all newly installed plants and trees. Deposit of such funds shall be in a qualified security or insured savings account and any interest earned shall be credited to the owner or his agent.

b. *Time, amount of bond fixed and standard for fixing amount.* The replacement cost of the plants and trees shall be fixed as of the time the approved plan for landscaping is released by the city staff and shall be based upon the most current "Guide for Establishing Values of Trees and Other Plants" prepared by the Council of Tree and Landscape Appraisers. *Other forms of security allowed.* In the event the amount of the bond is fixed in excess of two thousand dollars (\$2,000.00), a surety bond, letter of credit, certified check or other similar forms may be provided in lieu of cash bond for the amount in excess of two thousand dollars (\$2,000.00) if the particular form is approved by the city attorney.

c. *Procedure for administration of bond and term of bond.* The owner or his agent shall notify the city arborist three (3) days prior to the installation of the plants and trees shown on the plan for landscape. The arborist shall inspect the plant and tree material and the method of installation. The arborist shall have the authority to require that healthy stock be planted and that the installation be done in a manner permitted by the most recent edition of "American Standard for Nursery Stock" published by the American Association of Nurserymen. The arborist shall certify in writing when the installation of all new plants and trees shown on the plan for landscaping has been completed in an acceptable manner, based on the standards above. The bond for the site may be apportioned if the property is being developed in phases or discrete parts. The term of the bond shall be one year from the date on which the arborist certified that installation was complete. The arborist shall inspect the site during the one year period and, if the plants or trees are not in good health, the arborist may require corrective measures or replacement, if the plant or tree cannot be saved. At the end of the one year period, the owner may apply to the arborist for a discharge of the unobligated or unexpended portion of the bond. Prior to such discharge the arborist shall make a final inspection and shall require the replacement of any plants or trees not in good health based upon the standards set out in the "American Standard for Nursery Stock." The unobligated or unexpended portion of the bond shall be discharged upon the arborist's certification that the replacement has been made.

d. *Responsibilities of the owner.* If the owner or his agent refuses to comply with the requirements of the arborist, the city may at its option, have the work performed by others or by its own forces. In either case all costs incurred by the city shall be reimbursed from the bond or other funds being held. In the event the owner or his agent has sold all or a portion of the real estate subject to the approved site plan, the original owner or his agent shall continue to be responsible for plants and trees located in common areas and on individual fee-simple lots. If the new owner of a single-family residential property refuses to permit the original owner or the arborist to make the required inspection, repairs or replacements, the original owner shall be considered as having complied with this section.

CITY OF FALLS CHURCH, VIRGINIA

EXISTING TREE PRESERVATION BOND AGREEMENT AND PLAN

BOND AGREEMENT: In return for the approval of the development's plans for

(Development Name)

Developer and/or Contractor of _____, does hereby agree to perform
(Developer's and/or Contractor's Name)

all required preservation measures as required by the Falls Church City Code, Chapter 35, and as they are specified in this Agreement by _____. To insure that these measures are performed, a
(date)

bond in the amount of _____ shall be posted with the City prior to the issuance of the required permits. The bond is to be held in escrow by the City according to the terms of City Code Section 35-15 and until the conditions stated in Section 35-15(b) are completed (See Preservation Measures on plan). If the Developer and/or Contractor fails or refuses to comply with the terms of this agreement and the City brings suit against either or both to enforce said terms, the Developer and/or Contractor shall be severally liable to the City for reasonable attorney's fee, not to exceed twenty percent (20%) of the principal amount claimed, plus its costs incurred.

Tree List and Other Comments:

(Developer and/or Contractor)

Date

(City of Falls Church)

Date

Sec. 35-15. Tree preservation and maintenance agreement and bond.

(a) *Purpose and amount of bond.* Prior to approval of the plan required by this article and prior to the issuance of building and development permits there shall be executed by the owner or his agent and submitted with the plans an agreement to establish the measures provided for on the plans for the protection of existing trees, together with a cash bond, to be deposited in an interest bearing escrow account upon which the city may draw, in accordance with the agreement, in an amount equal to the total replacement cost of the protected trees plus the cost of the measures required by the agreement for the protection of the trees. Deposit of such funds shall be in a qualified security or insured savings account and any interest earned shall be credited to the owner or agent. The agreement and bond shall be provided for the installation, maintenance and performance of these protective measures and to insure the repair and replacement, if necessary, of the protected existing trees.

(1) *Time, amount of bond fixed, and standard for fixing amount.* The replacement cost of the protected trees shall be fixed at the time the agreement is executed and shall be based upon the most recent Guide for Establishing Values of Trees and Other Plants prepared by the Council of Tree and Landscape Appraisers. In fixing the replacement cost of any existing tree, the city shall use the cost of a specimen tree of similar kind which is available from a nursery in the region and which is closest in trunk diameter to the existing tree. The replacement cost shall include the nursery's cost to install and guarantee the replacement tree for one year. The cost of the measures required for the protection of the trees shall also be fixed as of the time the agreement is executed and shall be based upon the standards for protective measures as set out in the most recent Virginia Erosion and Sediment Control Handbook ("Handbook"), prepared by the Virginia Soil and Water Conservation Commission. (Chapter 3, STD & SPEC 1.85). Protective measures may include those items set out in the Handbook, as well as fertilization, disease and insect treatments and pruning.

(2) *Other forms of security allowed.* In the event the amount of the bond is fixed in excess of two thousand dollars (\$2,000.00), a surety bond, letter of credit, certified check or other similar forms may be provided in lieu of cash bond for the amount in excess of two thousand dollars (\$2,000.00) if the particular form is approved by the city attorney.

(b) *Procedure for administration of bond and term of bond.* The agreement and the plan shall describe the kind of measures to be taken and the materials to be used to protect the trees from the stress of construction. The owner or his agent shall notify the city arborist in writing at least three (3) days prior to the installation of the protective measures. The arborist shall then inspect the measures after they are installed to insure that they meet the requirements set out in the agreement. The arborist shall notify the owner or his agent in writing when the inspection is complete as to whether or not compliance has been achieved. No construction activities, which include, but are not limited to, the placement of heavy equipment on the site, excavations, earth movement, or erection of any structures, shall be done by the owner or his agent until the arborist has determined that the measures have been installed according to the agreement. These measures shall remain in place and shall not be modified until all construction on the real estate covered by the agreement is completed. The arborist shall inspect the area for compliance from time to time. The agreement may be amended only by a written instrument and only upon the consent of the arborist.

The owner or his agent shall notify the arborist in writing when all construction on the real estate covered by the agreement is completed. The arborist shall then inspect the area and, upon determining that all construction in that area is completed, the arborist shall notify the owner or his agent in writing that the protective measures may be removed. No additional construction shall take place on the real estate subject to the agreement after the protective measures have been removed unless the written approval of the arborist is obtained. Approval shall be given upon a determination that the construction will not damage the protected trees. The arborist shall also inspect the trees at this time to determine what damage, if any, has been caused by the "stress of construction" as that term is defined in the Handbook in the subsection

entitled "Stresses of Construction." The arborist shall also notify the owner or his agent in writing if any trees must be repaired or replaced because of damage caused by the stress of the construction or shall refund half of the bond if no repairs or replacements are needed. Upon notification by the arborist that repairs or replacements are to be made, the owner or his agent shall make the required repairs and replacements and shall notify the arborist when the repairs and replacements are complete. The arborist shall inspect the repairs and replacement and shall notify the owner when it is determined that the required repairs and replacements have been adequately performed. One-half (½) of the bond shall then be refunded.

The remaining one-half (½) of the bond shall be held for a period of two (2) years from the date of the arborist's notification to the owner that the required repairs or replacement have been completed. The purpose of retaining this portion of the bond is to insure that trees which are damaged by construction, but where the injury becomes apparent only after construction is completed, will be repaired or replaced. At the end of this two-year period, the owner or his agent may apply to the city arborist in writing for a discharge of the unexpended or unobligated portion of such bond. If the protected trees have survived in good health based upon the guidelines set out in the Handbook in the section entitled "Tree Preservation and Protection" the arborist shall release the bond within thirty (30) days of receipt of the application. The bond shall not be discharged until all required repairs and replacements have been made.

If the owner or his agent refuses to comply with the requirements of the arborist as made pursuant to section 35.15(b), the city may, at its option, have the work performed by others or by its own forces. In either case, all costs incurred by the city shall be reimbursed from the bond or other funds being held. In the event the owner or his agent has during the two-year period, sold all or a portion of the real estate subject to the agreement, the original owner or his agent shall continue to be responsible for all measures required by the agreement and for all trees in open space including those located in common areas and on individual fee-simple lots. The original owner or his agent or the purchaser as the case may be shall take the measures, and repair or replace trees as required by the arborist. If the new owner of a single-family residential property refuses to permit the original owner or the arborist to make the required protective measures, inspections, repairs, or replacements, the original owner shall be considered as having complied with this section.



VERIFICATION OF TREE PRESERVATION MEASURES

In return for the approval of the grading plans and/or associated permits for

_____ (Address)

the Developer and / or Contractor _____ (Developer/ Contractor Name)

has installed and completed all required preservation measures as shown on the Landscape Conservation Plan. In accordance with Section 38-42(k)(2)(c)(9) I am submitting in writing a request for an inspection by the City Arborist to verify that all required tree preservation measures have been completed.

I also understand that in the event that any construction or work is performed in violation of the approved plan that a “Stop Work Order” may be issued. Failure to comply with the conditions of the stop work order, may entail revocation of permits and/or any cash bonds held by the City.

In the event that the violation was encroachment or evidence of an encroachment into the tree preservation area, a “Mitigation Plan” subject to the approval of the City Arborist, may be required. This plan shall list all remedial measures and the time within such measures shall be completed by the applicant to ensure the continued preservation of the existing trees. This may include, but is not limited to pruning, vertical mulching, and aerating. Bonding of existing vegetation may be required by the City Arborist.

(Developer's and/or Contractor's Name)

(Date)

(City of Falls Church)

(Inspection Date)



INSTRUCTIONS FOR SUBMISSION OF LETTER OF CREDIT

Attached is a copy of the Irrevocable Letter of Credit form that is acceptable to the City of Falls Church. The Letter of Credit is used to ensure funds for the existing tree preservation measures and/or new landscaping in the event the developer fails to install or maintain the required improvements and/or measures within the agreed time frame.

**PLEASE FOLLOW THE INSTRUCTIONS LISTED BELOW EXACTLY TO ENSURE
TIMELY PROCESSING OF YOUR LETTER OF CREDIT.**

- * The financial institution issuing the Letter of Credit must use the form provided, **DO NOT MAKE ANY CHANGES.**
- * The Letter of Credit must be signed by an officer that is duly authorized to issue Letters of Credit on their behalf.
- * The financial institution used must have a branch authorized to do business in the Commonwealth of Virginia.
- * The date on the Letter of Credit must be a date **AFTER** that on which the Standard Agreement is executed by the City of Falls Church.
- * The initial expiration date for the Letter of Credit must be at least twelve (12) months **AFTER** the Standard Agreement completion date.

Name of Bank _____

Address _____

Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Falls Church City Council
c/o City Arborist
Planning Division
300 Park Avenue
Falls Church, VA 22046

Ladies and Gentlemen:

We hereby authorize you to draw on us for the account of

(Developer's Name and Address)

up to an aggregate amount of US Dollars \$ _____
(Amount)

available by your drafts at sight accompanied by certification of the City Arborist that the developer failed to complete installation in accordance with a plan known as

_____ or otherwise failed
to

(Plan Name and Number)
perform in accordance with an Agreement dated _____

between _____ and the City.
(Developer's Name)

This letter is irrevocable and unconditional.

We hereby further agree that:

(a) drafts drawn under and in compliance with the terms of this Letter of Credit will be duly honored if presented at our offices at _____
(Bank's Name and Address)

on or before _____. (This date at least twelve months after Standard Agreement expiration date).

(b) it is a condition of this Letter of Credit that it will be automatically renewed for successive six month terms from the present or future expiration date hereof until cancelled, in writing, by the City; unless ninety days prior to such date we notify you, in writing by registered mail, that we elect not to renew this Letter of Credit for an additional term.

- c) upon receipt by you of such notice, you may draw hereunder by means of your drafts on us, at sight accompanied by your written certification that you have not released liability under the aforesaid bond or undertaking, and the proceeds of your draft will be used by you to meet eventual payments under your bond or until your undertaking is satisfied. You will refund to us the amount paid, less any amounts which may have been paid by you in the meantime under this bond or undertaking.
- (d) except so far as otherwise expressly stated, this Credit is subject to the Uniform Customs and Practice for Documentary Credits (1974 Revision), International Chamber of Commerce Publication No. 290. The amount of any draft drawn hereunder must be endorsed on the reverse side hereof. All drafts must be marked "Drawn under

_____ (Bank's Name)

Letter of Credit _____ (Number and date as above)

_____ (Bank Name)

BY: _____

_____ (Type Name and Title)

ACKNOWLEDGEMENT

STATE OF _____:

COUNTY OF _____: to wit:

The foregoing instrument was acknowledged before me this

_____ day of _____, _____, by _____ (Name of Person)

_____ Title _____ Notary Public

My commission expires: _____

THREE-PARTY ESCROW AGREEMENT

THIS AGREEMENT, made this _____ day of _____, by and between _____, hereinafter called Developer, party of the first part, and the City of Falls Church, Virginia, hereinafter called City, party of the second part, and _____ hereinafter called Agent, party of the third part:

WITNESSETH:

WHEREAS, the Developer desires approval of plans for _____, which plans include provision for public improvements/erosion and sediment control measures, as described in the attached Agreement or Estimate of Quantities, as required by the Subdivision or Site Plan Ordinances, or the City Code; and

WHEREAS, The City desires to ensure the installation, maintenance, and adequate performance of such improvements/measures,

NOW, THEREFORE, for and in consideration of the foregoing premises and the following terms and conditions, and in further consideration of the approval of the aforesaid plans by the City and the issuance of permits for the work proposed to be done thereunder, the parties hereto agree as follows:

1. Developer has deposited with Agent, and Agent by this execution hereof acknowledges that he holds, the sum of \$ _____ in escrow under and subject to the terms of this agreement.
2. If said improvements/measures are not performed in accordance with the approved plans or approved revision thereof, City shall reserve the right to enter upon Developer's property to construct such measures or do other work as may be deemed necessary by the City for compliance, after first informing the Developer in writing of its intent to do so.
3. In the event City performs or programs work of any nature, including labor, use of equipment, materials, and overhead, or causes same to be performed by others under the provisions of paragraph 2 above, either by force account or contract, Agent shall disburse to City upon its order, within five (5) days of receipt of written demand thereof, such sum or sums as required, provided, however, that Agent's liability so to disburse shall be limited to the undistributed balance of the escrow amount in its hands. A copy of such demand shall be delivered or mailed by City to Developer.
4. In the event Agent makes disbursement pursuant hereto, Developer agrees to deposit within ten (10) days of such disbursement, an amount sufficient to restore escrow amount to its original balance.
5. It is expressly agreed by the parties hereto that this obligation shall remain in effect and the escrow amount shall be held by Agent until released by the City.
6. If the Developer and the Agent fail or refuse to comply with the terms of this agreement and the City brings suit against either or both to enforce said terms, the Developer and the Agent shall be jointly and severally liable to the City for reasonable attorney's fee, not to exceed twenty percent (20%) of the principle amount claimed, plus its cost incurred.
7. The City reserves unto itself all other rights and remedies which it has or may have under law.

