



CITY OF **FALLS**
CHURCH

TITLE OF IFB

IFB #
ATTACHMENT I

**TREE & LANDSCAPE
SPECIFICATIONS**

**FOR
CITY PROJECTS**

**DEPARTMENT OF PUBLIC WORKS
CITY OF FALLS CHURCH**

TREE & LANDSCAPE SPECIFICATIONS

CITY OF FALLS CHURCH DEPARTMENT OF PUBLIC WORKS

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TREE & LANDSCAPE SPECIFICATIONS

CITY OF FALLS CHURCH DEPARTMENT OF PUBLIC WORKS

A. GENERAL STANDARDS & SPECIFICATIONS

All tree and landscape-related work shall be performed in full compliance with the following documents, read together as a single specification:

- ANSI A300, *Tree Care Operations*
- ANSI Z133, *Standards for Safety in Tree Care Operations*
- ANSI Z60, *Standards for Nursery Stock*
- VDOT *Road & Bridge Specifications*, most current edition, Sections:
 - 244.02(a through h) – Materials
 - 602 – Topsoil
 - 603 – Seeding
 - 604 – Sodding

The aforementioned documents, as amended by issuing entities, are hereby incorporated into this contract by reference.

B. CITY ARBORIST

The City Arborist shall be notified a minimum of three days in advance of commencing any form of tree or planting work: 703-248-5183 or arborist@fallschurchva.gov.

Per the City's Department of Public Works (DPW) General Provisions for Construction Projects, the City Arborist has the authority to direct and inspect all work and materials used for any landscape planting, tree protection or tree removal, as well as the authority to require additional tree protection measures and mitigation work.

C. PROTECTION

1. Description

Existing vegetation, where shown in the construction plans or designated by the City Project Manager, shall be saved and protected throughout construction and through the life of the Contract. Tree Preservation shall consist of any and all measures specified in construction plans to help existing trees survive during construction. These measures may include (but are not limited to): watering, mulching, pruning, fertilizing, control of pests or invasive plants, root padding, root pruning and installation of protective fencing.

2. Prior to Construction

All required tree work must be completed and tree preservation measures installed before any vehicle or construction equipment may enter the site. The Contractor's construction foreman, the Contractor's arborist and the City Arborist shall meet to mark the location of the limits of disturbance, tree preservation fencing and root pruning line (where required), erosion control measures, access routes, and areas for storage, concrete wash-out and parking. All tree preservation measures, invasive plant control and tree removal are to be discussed at this time.

3. Plant Protection Area (PPA)

- A. No construction equipment may enter the Plant Protection Area (PPA), **before or after the PPA is marked**, except under a temporary access plan approved by the City Arborist.
- B. Plant protection fencing shall be six-foot high chain link fence with 11-gauge mesh. Supports shall be 1 5/8 inch outside-diameter pipes, set at least 2 feet into the ground, no more than 8 feet apart. Temporary fencing set in concrete blocks shall not be used unless absolutely necessary; block locations must be marked on the ground with stakes and paint.
- C. Weatherproof signs at least 8.5" x 11" saying "PLANT PROTECTION AREA: No Entry, No Materials" or equivalent language, shall be placed a maximum of 20 feet apart on the plant protection fencing.
- D. **No vehicles or materials or debris of any kind, nor concrete washouts nor rinse water from any substance shall be allowed inside the Plant Protection Area.** No burning shall be allowed on site.
- E. All erosion and sediment control measures shall be installed outside of the PPA. Devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion from affecting the PPA.
- F. All underground utilities and drain or irrigation lines shall be routed outside the PPA. If alternative routes are not possible, lines shall be tunneled or bored under the PPA with the approval of the City Arborist.
- G. **The Contractor shall maintain the plant protection fencing in place at all times throughout construction.** The City Arborist must grant approval before any plant protection fencing may be removed, even temporarily.

4. Work Within the PPA

- A. **Irrigation for preserved vegetation shall be supplied by the Contractor from early spring until the ground freezes in the fall** when natural rainfall is less than 1 inch per week. Irrigation must be designed to deliver a minimum of 1 inch of water at a time.
- B. All materials to be removed from within the PPA, including trees, brush, debris, pavement, structures or underground features, shall be performed by hand or using equipment operated from outside the PPA. Materials must be lifted out, not skidded across the ground. The City Arborist shall be present during all such operations within the TPA to monitor demolition activity.
- C. Selective tree removal within the PPA will be allowed only under the direction of the City Arborist. The work must be performed by an experienced tree service contractor, not construction workers. Trees to be removed shall be felled in such a way that damage to preserved trees is avoided or minimized.
- D. All tree work contractors are required to have a City of Falls Church annual Tree Contractor license; the most recent list of licensed Tree Contractors is posted on the City's website.
- E. Root pruning, where required, shall be performed outside the PPA by cutting all roots cleanly to a depth of at least 24 inches. Roots shall be cut using a vibrating knife or narrow mechanical trencher with sharp blades, or by manually digging a trench and cutting exposed roots with a saw. Once a trench is opened up, approximately 4" wide,

all exposed roots shall be hand pruned to make clean-cut ends. Pruned roots shall be promptly covered with moist soil.

- F. All pruning on preserved trees must be performed to ANSI A300 and Z133 standards by an arborist certified by the International Society of Arboriculture (ISA), and in accordance with the construction plans and the direction of the City Arborist. Construction workers shall not be allowed to prune trees.
- G. If the City Arborist approves temporary access over the root area of trees to be retained, a roadbed of at least 15 inches of wood chips or crushed rock shall be created and replenished as necessary by the Contractor to protect the soil from compaction.
- H. When the roots of trees designated to be saved are exposed by the Contractor's operation, they shall be wrapped with heavy, moist material, such as burlap or canvas, for protection and to prevent excessive drying. The material shall be kept moist and securely fastened until the roots are covered to finish grade. All material and fasteners shall be removed from the roots before covering.
- I. Fertilizers shall not be applied unless specified in the construction plan or soil tests indicate the need, and shall be applied at the rate indicated by the soil test. Fertilizer products shall be in slow-release granular form, uniform in composition, free flowing, and delivered to the project in original containers with manufacturer labels attached.
- J. Pesticides shall not be applied unless specified in the construction plan or by the City Arborist. All pesticides shall be registered with the Virginia Department of Agriculture and Consumer Services; copies of the MSDS for each product shall be supplied to the City. All materials and applications shall be in accordance with all Commonwealth of Virginia pesticide laws and regulations and be approved by the City Arborist before application. All pesticide applications must be performed by an individual with a valid Virginia Commercial Pesticide Applicator License.
- K. Mulch shall consist of double shredded hardwood, shredded hardwood bark, or arborist wood chips from tree removal and pruning operations only (no tub-grinder chips or hog fuel). Mulch shall be placed where specified on the construction plan, no less than 3 inches and no more than 4 inches deep, and shall be kept 4 inches away from tree trunks.
- L. Wood chips from on-site tree work operations may be spread in vegetated areas of the site if approved by the City Arborist, to a depth of no more than 4 inches, with no chips against tree trunks.

5. At Completion of Project

At the completion of construction (and all equipment has been removed from site), notify the City Arborist for an inspection before removing the plant protection 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.

6. Damage to Preserved Vegetation

Refer also to Job Site Damages, in the City of Falls Church's Contract General Provisions.

- A. If damage occurs to any preserved tree during construction, it shall be reported to the City Arborist as soon as possible so that prompt remedial action can be taken. Such repairs, and the replacement in kind of those trees that cannot be satisfactorily repaired, shall be performed at the Contractor's expense.

- B. If due to, or for any reason related to the Contractor's operation, any tree, shrub, ground cover or herbaceous vegetation designated to be saved is destroyed, disfigured, or damaged to the extent that continued life is questionable as determined by the City Arborist, it shall be removed by the Contractor at the direction of the City Arborist. The Contractor will be assessed damages equal to the value of the vegetation as determined in the Guide for Plant Appraisal, Current Edition, published by the International Society of Arboriculture, **plus** the estimated cost of restoration with a similar species.
- C. Damage which may require replacement of vegetation includes torn or broken bark, stripping, broken branches, exposed root systems, cut root systems, poisoned root systems, compaction of surface soil and roots, puncture wounds, drastic reduction of surface roots or leaf canopy, changes in grade greater than 6 inches, or any other changes to the site that may jeopardize the survival or health of the vegetation to be preserved.
- D. Any damage so assessed will be deducted from the monies due or that may become due the Contractor.

D. TREE & STUMP REMOVAL

1. Description

This work shall consist of the selective removal and disposal of trees, stumps and woody debris on construction projects. Stumps to remain shall be treated with an approved herbicide to prevent sprouting.

2. Materials

Herbicides used shall be registered with the Virginia Department of Agriculture and Consumer Services; copies of the MSDS for each product shall be supplied to the City. All materials and applications shall be in accordance with all Commonwealth of Virginia pesticide laws and regulations and be approved by the City Arborist before application. All pesticide applications must be performed by an individual with a valid Virginia Commercial Pesticide Applicator License.

3. Procedures

- A. Trees to be removed shall be clearly marked and approved by the City Arborist prior to demolition or entry of any equipment on site.
- B. The Contractor's tree removal operations shall not damage trees and shrubs that are to remain (including off-site trees). If roots are entwined, the City Arborist may require root pruning before commencing tree removal. Tree removal within 50 feet of a tree to remain must be performed by an experienced tree service contractor, not construction workers.
- C. All tree work contractors are required to have a City of Falls Church annual Tree Contractor license; the most recent list of licensed Tree Contractors is posted on the City's website.
- D. Stumps and any visible surface roots shall be ground to a depth of at least 18 inches. Stump chips shall be hauled away and the resulting depression filled with Class A or B Topsoil conforming to VDOT 244.02(b), compacted to match the surrounding soil.

- E. Where the construction plan calls out stumps to remain, they shall be cut not higher than 4 inches above the ground unless otherwise specified on the plan. Stumps of living trees and shrubs shall be coated with a herbicide solution within 48 hours after they are cut. The exposed surface of stumps and exposed live roots shall be saturated with herbicide to the point of runoff.
- F. Woody plant debris shall be disposed of by either hauling from the site or chipping. Wood greater than 6 inches in diameter shall be disposed of as saw logs, pulpwood, firewood or other usable material. Chips may be spread in vegetated areas of the site if approved by the City Arborist, to a depth of no more than 4 inches, with no chips against tree trunks.

4. Damage to Preserved Vegetation

- A. Any damage to remaining trees due to tree removal activities shall be reported to the City Arborist as soon as possible so that prompt remedial action can be taken.
- B. If due to, or for any reason related to the Contractor's operation, any tree, shrub, ground cover or herbaceous vegetation designated to be saved is destroyed, disfigured, or damaged to the extent that continued life is questionable as determined by the City Arborist, it shall be removed by the Contractor at the direction of the City Arborist. The Contractor will be assessed damages equal to the value of the vegetation as determined in the Guide for Plant Appraisal, Current Edition, published by the International Society of Arboriculture, plus the estimated cost of restoration with a similar species.
- C. Damage which may require replacement of vegetation includes torn or broken bark, stripping, broken branches, exposed root systems, cut root systems, poisoned root systems, compaction of surface soil and roots, puncture wounds, drastic reduction of surface roots or leaf canopy, changes in grade greater than 6 inches, or any other changes to the site that may jeopardize the survival or health of the vegetation to be preserved.
- D. Any damage so assessed will be deducted from the monies due or that may become due the Contractor.

E. PLANTING SPECIFICATIONS

1. Description

This work shall consist of furnishing and installing plant material as indicated on the construction plans, including all labor, materials, plants, equipment, incidentals, and clean-up.

2. General Workmanship

- A. During installation of trees and shrubs, all work areas shall be kept neat, clean and free of all trash and debris, and all reasonable precautions shall be taken to avoid damage to existing plants, turf, structures, and private property.
- B. The Contractor shall be responsible for removal and disposal off-site of all trash, excess backfill and any materials incidental to the project.

3. Plant Materials

- A. The Contractor shall acquire plant materials from certified nurseries that have been inspected by state and/or federal agencies.

- B. All plant materials shall conform to the American Standard for Nursery Stock, ANSI Z60 latest edition, published by American Hort. **Pay particular note to the fact that all trees must have their root crowns visible at or near the soil surface**, and that circling roots are not acceptable. Plants that do not meet all elements of ANSI Z60 will be rejected.
 - C. All plant materials shall bear nursery tags indicating the genus, species and if applicable, cultivar or variety. The Contractor shall remove all tags after the City Arborist has inspected and approved the plant material.
 - D. The Contractor and her/his suppliers shall keep all plant materials damp and protected from damage, sun, wind and temperature extremes during transport. Plants shall be handled by their root balls or containers only.
 - E. All plant materials must pass inspection by the City Arborist prior to planting. The Contractor shall phone at least three days prior to installation to schedule inspections.
 - F. Substitutions in plant material or sizes specified will not be accepted unless approved by the City Arborist prior to delivery.
4. Other Materials
- A. Unless otherwise specified, imported topsoil shall meet the specifications of VDOT *Road & Bridge Specifications* Section 244.02(b).
 - B. Fertilizers, if required, shall be formulated to supply required elements as indicated by soil testing. Fertilizer products shall be in slow-release granular form, uniform in composition, free flowing, and delivered to the project in original containers with manufacturer labels attached.
 - C. Unless otherwise specified in the construction plans, compost shall consist of decomposed vegetable matter which has been composted to support bacterial cultures. Such compost shall not contain live plant seeds or plant disease organisms.
 - D. Unless otherwise specified in the construction plans, mulch shall consist of double shredded hardwood, shredded hardwood bark, or arborist wood chips from tree removal and pruning operations only (no tub-grinder chips or hog fuel). Mulch shall be placed as specified on the construction plan, no less than 3 inches and no more than 4 inches deep, and shall be kept 4 inches away from tree trunks.
5. Planting Schedule
- A. The Contractor shall not begin soil or planting work until all construction is finished and all irrigation work is complete and approved.
 - B. Planting operations shall be performed during periods within the planting season when weather and soil conditions are suitable and in accordance with accepted local practice. The Contractor shall not install plants in soil that is muddy or frozen.
 - C. Planting season dates:
 - 1. Deciduous Trees – March 1 to May 30 or September 1 to December 15.
 - 2. Evergreen Trees – March 1 to May 15 or September 1 to November 15.
 - 3. Other Plants: March 1 to December 15.

- D. Plant material shall be planted on the day of delivery if/when practical. In the event that this is not possible, the Contractor shall keep plants damp and protect them from damage, sun, wind and temperature extremes until they are planted. Any plants not installed within three days after delivery shall be rejected, unless the City Arborist and Contractor provide otherwise by written agreement.
6. Seeding and Sodding
- A. Seeding shall follow VDOT *Road & Bridge Specifications*, Section 603.
- B. Sodding shall follow VDOT *Road & Bridge Specifications*, Section 604.
7. Prior to Planting
- A. Soil shall be prepared, and topsoil applied if specified in the construction plans, following VDOT *Road & Bridge Specifications*, Section 602.03(b & c).
- B. If soils are compacted in a planting area, the Contractor shall spread six inches of compost over the area and till to a depth of eighteen inches. The Contractor shall not add sand, and shall not till within a tree preservation area.
- C. The Contractor shall have the soil fertility tested at an accredited laboratory and submit the results to the City Arborist prior to installing plant material. Only if needed, the Contractor shall supply and apply fertilizer at the rate indicated by the soil test.
- D. If the soil drains at a rate less than one inch per hour, the Contractor shall install drainage to carry water away from bottom of the planting hole, or move or raise the planting site (berm construction).
- E. The Contractor shall verify existing conditions and utility locations before digging planting holes or planting beds. The City of Falls Church may require the Contractor to stake the locations of individual plants within the approved planting areas.
- F. The City Arborist must approve plant material location adjustments from the construction plans prior to planting.
8. Planting Procedure
- A. Remove any excess soil from the top of the soil ball so that the top of the root flare is exposed and the top of the ball is as level as possible.
- B. Dig tree and shrub planting holes a minimum of two and a half times the width of the root ball and no deeper than the height of the root ball.
- C. Remove all ropes, ties and tags from trees and shrubs to prevent girdling branches and trunks.
- D. **Plant trees and shrubs at the height of the surrounding grade. Root flares must be visible at or barely above the final soil surface.**
- E. Pruning at the time of planting shall be done only to remove dead or damaged branches or co-dominant leaders.
- F. Balled and burlapped plants: Remove pinning nails and rope lacing, remove the top 12" of the wire basket, then cut away the wrapping.
- G. Container plants: Remove the container completely. Using a sharp tool, **cut the outer 1 inch off from the entire root/soil ball to remove any small circling roots.**

- H. Backfill planting holes with soil only. Do not add fertilizer or organic matter such as peat moss into the backfill. Do not add gravel or sand. When half of the soil has been returned to the planting hole, use water to settle soil and eliminate air pockets. Water again after the remaining soil has been placed.
- I. Form a three-inch rim of soil around the planting holes for individual trees in turf areas, to hold water and mulch.
- J. Plant perennials at the same depth they were in the containers. For bare root perennials, plant with the soil even with the top of the root 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 use water to settle the soil.
- K. Stake trees only where requested by the City Arborist, in areas of high traffic or highly windy locations. Unless otherwise specified, pound three six-foot stakes at least two feet into the ground outside the root ball. Use plastic chain lock tie or fabric straps that won't damage the bark, and allow trees 2-3 inches of flex. Place the ties at 1/3 of the tree's height. Remove all staking material after one year.
- L. Use tree wrap only if specified by the City Arborist. In these instances use white wrap, attaching without the use of wire, rope or ties, and remove after one year.
- M. The Contractor shall supply and place mulch as specified on the construction plan. For trees and shrubs, place mulch no less than 3 inches and no more than 4 inches deep, and keep it 4 inches away from tree trunks. For perennials, place mulch no more than 2 inches deep.

9. Prior to Acceptance

Upon the completion of all planting work and before final acceptance, the Contractor shall remove all material, equipment and debris resulting from his work. All paved areas shall be broom cleaned and the site left in a neat and acceptable condition as approved by the City Arborist.

10. Warranty of Plant Material

- A. The Contractor shall warranty (guarantee) all plant material to be in vigorous growing condition at planting, and shall guarantee plant growth for at least one year from the date of final acceptance of the planting. If any plants die or fail to flourish within that year, replacements shall be made at the beginning of the first succeeding planting season.
- B. During the Warranty Period, the Contractor shall maintain all plantings as required for healthy growth. This work shall include watering when natural rainfall is less than 1 inch per week; controlling weed growth; mowing turf areas; restoring planting saucers and mulch; repairing stakes and guy supports; resetting plants to proper grades or vertical position as required; and pest control as required to keep plants healthy.