



# CITY OF FALLS CHURCH

**IFB #0823-22-TBCI**

**ATTACHMENT G**

## **TREE & LANDSCAPE SPECIFICATIONS**

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

January 2021

## **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 Parts 1 - 8*
- ANSI Z133, *Standards for Safety in Tree Care Operations*
- ANSI Z60, *Standards for Nursery Stock*
- DEQ, *Virginia Erosion and Sediment Control Handbook (VESCH)*
- VDOT, *Road & Bridge Specifications*, most current edition (VDOT), Sections:
  - 106.04 (3) - Disposal
  - 244.02 (a through h) – Materials
  - 601 - Selective Tree Removal, Trimming, And Cleanup
  - 602 – Topsoil
  - 603 – Seeding
  - 604 – Sodding
  - 605 – Planting

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](mailto: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 OF EXISTING VEGETATION**

##### **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 and described in section C, herein, 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 and removal of protective fencing.

##### **2. Prior to Construction**

The Contractor's construction foreman, the Contractor's ISA Certified Arborist or Certified Landscape Architect and the City Arborist shall meet prior to commencement of any activity

on the site, 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.

**All required tree work must be completed and tree preservation measures installed before any vehicles or construction equipment may enter the site.** Vehicles used for tree work operations MUST NOT enter any tree preservation or plant protection areas without express written permission from the City Arborist. Crews installing tree protection measures shall be supervised by an ISA Certified Arborist or Certified Landscape Architect.

### **3. Plant Protection Area (PPA)**

- A. 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.
- B. No construction equipment or vehicles 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.
- C. **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.
- D. Depending upon the project specifications, plant protection fencing shall be:
  - Super-silt fencing, or
  - Six-foot high chain link fence with 11-gauge mesh. Supports shall be pipes of at least 1<sup>5</sup>/<sub>8</sub> inch outside diameter, set at least 2 feet into the ground, and no more than 8 feet apart, or
  - Temporary fencing set in concrete blocks where necessary, if pre-approved by the City Arborist; block locations must be marked on the ground with stakes and paint.
- E. 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.
- F. **No activities, 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.
- G. 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.

### **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 removal of materials 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. Backfill voids created by demolition within the PPAs with loosely placed topsoil.

Only the amount of topsoil necessary to fill the void without spreading over existing grades shall be allowed. 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, City licensed tree service contractor, not by 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. 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. 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. If specified, herbicide application shall follow VDOT 605.03© and 244.02(a).
- 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 plant protection measures, including 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 *DPW General Provisions for Construction Projects*.

- A. If damage occurs to any preserved tree during construction, it shall be reported to the City Arborist as soon as possible, not to exceed two business days so that prompt remedial action can be taken. Such repairs, removal, and/or 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 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 4 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. Clearing & Grubbing

### 1. Description

Site clearing and grubbing shall be defined by VDOT Section 301.01, except that tree and stump removal are defined within this section, below. Clearing and grubbing shall not occur outside the project's Limits of Disturbance without express permission in writing from the City Arborist.

### 2. Tree and Stump Removal

- 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. Tree and stump removal shall follow VDOT Section 601, Selective Tree Removal, Trimming and Cleanup, except as listed in this section, below.
- C. If roots are entwined, the City Arborist may require root pruning before commencing tree removal.

- 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. Stump grinding, where called for in the project specifications, shall consist of grinding stumps and any visible surface roots 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.
- F. Where the construction plan calls out stumps to remain, they shall be treated in accordance with VDOT 601.03(a). Herbicide application shall conform to VDOT 605.03(c) and 244.02(a).

### **3. Disposal**

Woody plant debris shall be disposed of by either:

- Hauling from the site by the Contractor to a legal disposal or recycling site for green waste, or
- Chipping and spreading the chips 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.

Stones, concrete and other non-plant debris from clearing and grubbing shall be hauled by the Contractor to a legal disposal site.

## **E. PLANTING**

### **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. Site Preparation**

- A. Soil shall be prepared, and topsoil applied if specified in the construction plans, following VDOT 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 tested for available nutrients, percentage of organic matter, and soluble salts at an accredited laboratory and submit the results to the City Arborist **10 days** prior to installing plant material to ensure any and all soil remediation measures can be discussed and addressed by the Contractor.
- 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.

#### **4. Plant Materials**

- A. All plant materials shall meet the specifications of VDOT Section 244.02 (h) and (i), and 605 - PLANTING.
- B. **Pay particular note to the fact that all trees must be planted with 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 must pass inspection by the City Arborist prior to planting. The Contractor shall phone **at least three days prior to installation to schedule inspections.**

#### **5. Other Materials**

- A. Unless otherwise specified in the construction plans, imported topsoil shall meet the specifications of VDOT Section 244.02(b).
- B. Fertilizers, if required (see Section 3 C, above), shall comply with VDOT 244.02(d).
- 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.

#### **6. 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:
  - Deciduous Trees – March 1 to May 30 or September 1 to December 15.
  - Evergreen Trees – March 1 to May 15 or September 1 to November 15.
  - 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.

## **7. Planting Procedure**

- A. Planting and establishment shall follow all parts of VDOT Section 605 – PLANTING and ANSI A300, except as described herein.
- B. **Plant trees and shrubs at the height of the surrounding grade. Root flares must be visible at or barely above the final soil surface.** Failure to do so will result in rejection of the planting.
- C. 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.**
- D. Form a three-inch rim of soil around the planting holes for individual trees in turf areas, to hold water and mulch.
- E. Stake trees **only where requested by the City Arborist**, in areas of high traffic or highly windy locations.
- F. Do not use herbicides unless specified in the Project specifications.
- G. 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.

## **8. Seeding and Sodding**

- A. Seeding shall follow VDOT Sections 244.02(c) & (g) and 603.
- B. Sodding shall follow VDOT Sections 244.02(h) and 604.

## **9. Measurement and Payment**

Plants will be measured in each, on an actual count of living plants in a healthy growing condition, and shall be paid for at the contract unit price per each. This price shall include furnishing and installing plants and miscellaneous planting materials; preparing planting pits; initial watering when planting; water during Installation Phase and the Established Period; furnishing and applying fertilizer; backfilling with approved soil mixture; staking; guying; anchoring; pruning; applying mulch; applying pre-emergent herbicide to beds and individual plant pits; pest management; controlling weeds in plant beds and tree rings (vegetation control) throughout the Establishment Period; replacing dead or damaged plants; repairing, replacing and removing stakes and guys when no longer needed; and maintaining plants in a healthy growing condition until final acceptance.

## **10. 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.

## **11. Plant Material Establishment and Warranty**

Plant material establishment and warranty shall follow VDOT Section 605.09.