

## **SECTION 721- TREE PRESERVATION**

### **721.01      DESCRIPTION**

Work in this section includes all arboricultural activities related to tree preservation and protection of existing trees on site as shown on plans and directed by the M-NCPPC Construction Manager and Site Plan Enforcement Inspector (when under permit). The work includes, but is not limited to, tree protection fencing and signs, pruning, root pruning, mulching, fertilization, and other remedial activities.

### **721.02      REFERENCE STANDARDS**

|         |  |
|---------|--|
| ANSI    | American Standard for Nursery Stock, current edition   |
| M-NCPPC | Trees Technical Manual: Guidance for Implementation of Montgomery County's Forest Conservation Law |
| MC      | Chapter 22A of the Montgomery County Code, Forestry Conservation Law                               |

### **721.03      DEFINITIONS**

- A. Tree Diameter shall be defined as diameter at breast height (dbh) which is the average tree diameter at 4.5 feet, measured from the ground on the uphill side of the tree.
- B. Tree Caliper shall be defined as the diameter of the trunk at six (6) inches above the ground level for trees up to and including four (4) inches caliper and diameter at twelve (12) inches above the soil for trees up to twelve (12) inches caliper.
- C. Critical Root Zone shall be defined as one and half (1.5) foot of radius for every one (1) inch of trunk diameter at four (4) feet six (6) inches above ground level on the uphill side of the tree.
- D. Tree Preservation Area shall be defined as all areas outside limits of construction that contain trees and all areas within the limits of construction that are designated as tree preservation areas on the plans and/or in the field by fencing and signage.
- E. NPK refers to a fertilizer's relative macronutrient content. The first number of a fertilizer's classification shall refer to its nitrogen content, the second number shall refer to its phosphorus content and the third number shall refer to its potassium content. Each number is separated by a dash.

### **721.04      MATERIALS**

- A. Fertilizer: All fertilization must meet Maryland's Lawn Fertilizer Law - [Mda.maryland.gov/Pages/fertilizer.aspx](http://Mda.maryland.gov/Pages/fertilizer.aspx). A single fertilizer application may not exceed 0.9 pounds total nitrogen per 1,000 square feet and 0.7 pound of soluble nitrogen per 1,000

square feet except when using enhanced efficiency fertilizer.

1. Granular: 30-7-7 with fifty (50) percent of nitrogen in slow release form. Formula shall contain micronutrient compliment.
  2. Liquid: 30-10-7 arboricultural grade. Nitrogen shall be sixty-seven (67) percentage slow release in the form of urea formaldehyde. Potassium shall be derived from soluble potash. Phosphorous shall be in the form of phosphoric acid.
- B. Root stimulant: Roots<sup>tm</sup> concentrate; Essential<sup>tm</sup>, manufactured by Growth Products Limited; MycorTree Saver Injectable, manufactured by Plant Health Care, Incorporated, 440 William Pitt Way, Pittsburgh, Pennsylvania, 15238, (412) 826-5445; or equivalent product subject to approval of Construction Manager.
- C. Tree Protection Fence: Tree protection fence shall be a minimum of four (4) feet high above ground level.
1. Welded Wire: Fourteen (14) gauge galvanized welded wire with 2" x 4" openings attached to six (6) foot minimum "T"- steel posts, driven at least two (2) feet into ground at ten (10) foot intervals or approved equivalent. Brightly colored flagging shall be attached to top of fence to ensure visibility.
  2. Chain Link: 1 ½ gauge Galvanized. All posts are 1.5 to 2-inch O.D. driven at least two (2) feet into ground at ten (10) foot intervals or approved equivalent.
- D. Tree Protection Signage: Signs shall be made of plastic and printed in bold text to be easily read from twenty (20) feet. Wording on signage shall be provided in both English and Spanish. Minimum size shall be 10 x 12 inches.
- F. A Vermeer RT 200 with the optional root cutter or an approved equal trencher or vibratory plow shall be used to prune roots. The blade will be sharpened daily prior to the beginning of the operations.

#### **721.05            SUBMITTALS**

- A. Supply three (3) references specific to the work in this specification with the bid. The Contractor must also provide a list of at least three (3) projects completed in the past five (5) years that demonstrate experience in the work outlined in this specification.
- B. The Contractor will submit for approval a current certification from the International Society of Arboriculture (ISA) and the American Society of Consulting Arborists (ASCA) for the Construction Arborist and verification of membership in good standing in the National Arborist Association (NAA).
- C. The Contractor shall submit for approval the name and certification number of the Maryland State Certified Pesticide Applicator(s) assigned to this job.

- D. The Contractor shall submit for approval all pesticide and fertilizer labels and Material Safety Data sheets for all pesticides and fertilizer used on the site. Also, provide recommended application rates for approval.
- E. The Contractor shall submit for approval all equipment to be used for work within tree preservation area.

**721.06            QUALITY ASSURANCE**

- A. All trees on site to be preserved will be prepared and treated to maximize their potential for survival and improve their health and condition. All work will be performed to meet or exceed current industry standards. Minimum standards include the most recently published by the ANSI and the “Trees Technical Manual; Guidance for Implementation of Montgomery County’s Forest Conservation Law”.
- B. Company Qualifications: Qualifications include the following: The Contractor will provide an arborist with current certification from the International Society of Arboriculture (ISA) and the American Society of Consulting Arborists (ASCA) and membership-in-good standing in the National Arborist Association (NAA). This person shall be responsible for seeing that all work is performed to standards in a safe and professional manner.
- C. Equipment and Safety:
  - 1. Equipment: All applicable Federal, State, and Local regulations shall be followed. The Contractor will be responsible for damage to property resulting from equipment, including fluid leakage or damage resulting from equipment failure. All incidents of this type shall be reported immediately to the M-NCPPC Construction Manager.
  - 2. Safety shall be a primary concern while working on the property. Qualified company shall have an established safety program and adhere to all NAA, OSHA, and ANSI standards applicable to the tree care industry. This includes all electrical and utility requirements as well as personal equipment and safe work procedures. All accidents resulting in property damage or personal injury shall be reported immediately to the M-NCPPC Construction Manager.
  - 3. The Contractor shall be responsible for any damage to structures, installations, fixtures, paving, concrete, plant materials and any other items on the property which result from the execution of work prescribed. All work is to be performed in the safest manner possible in order to avoid damage of any kind.
  - 4. Pesticide Applications
    - a. If pesticide applications are required, a Maryland State Certified Pesticide Applicator shall be responsible for supervision of all applications of pesticides on the property.

- b. All pesticides shall be applied in strict accordance with label instructions and all applicable federal, state, and local requirements. All pesticide applications shall be approved by the M-NCPPC Construction Manager prior to application. Pesticide labels and material safety data sheets shall be available for all pesticides while on the site.

**721.03            CONSTRUCTION**

- A. The Contractor's Arborist shall be responsible for performing all arboricultural activities included within the scope of this specification. All activities will commence immediately upon notice to proceed. Activities will be completed in a continuous manner and coordinated to prevent delay of other construction processes.
- B. The Contractor's Arborist will dedicate labor and equipment as necessary to complete the work. It shall be the Contractor's Arborist's responsibility to maintain a consistent crew on the job site in order to complete work in a timely manner. It will be the Contractor's Arborist's responsibility to supervise work and scheduling and see that work progresses in an efficient manner.
- C. The Contractor shall be required to contact the M-NCPPC Construction Manager and M-NCPPC Site Plan Enforcement Inspector to set up a meeting in the field to review the location of trees to be saved and limits of construction. Any potential conflicts between construction and preservation shall be addressed at that time.
- D. The Contractor's Arborist shall notify the M-NCPPC Site Plan Enforcement Inspector and the M-NCPPC CM of any site condition changes which may affect work progress.
- E. No other construction activity may occur on site until tree preservation fencing has been installed and approved by the M-NCPPC Site Plan Enforcement Inspector and the M-NCPPC Construction Manager.
- F. Construction Activity: All construction activity within the designated tree protection areas shall be prohibited without express written permission by M-NCPPC Construction Manager. This shall include but not limited to the following activities:
  - 1. Parking or driving of equipment, machinery or vehicles of any type.
  - 2. Storage of any construction materials, equipment, stockpiling, excavation or fill, soil, gravel, etc.
  - 3. Dumping of any chemicals, (i.e. paint thinner from cleaning brushes), wash-out materials from cleaning equipment, concrete or mortar remainder, trash, garbage, or debris of any kind.
  - 4. Burning within or in proximity to protected areas.

5. Felling trees into protected areas.
  6. Dumping plant material (branches, brush, mulch, etc.)
- F. Notify the M-NCPPC Construction Manager in writing at least ten (10) days in advance of any trenching or grading within the Critical Root Zones of protected trees for any purpose. This includes utilities, lighting, irrigation, drainage etc.
- G. Tree Preservation Area: Any work required by plans which is in a tree preservation area shall be performed by hand. All work will be performed in a manner to prevent compaction, siltation and disturbance of the root mat of all associated trees and understory trees. At no time shall tree protection fencing be removed or relocated without permission of the M-NCPPC Construction Manager. Any tree removal within the area shall be brought down in sections using ropes. All material shall be removed unless with prior approval of the M-NCPPC Construction Manager. All trunks shall be flush cut unless with prior approval of the M-NCPPC Construction Manager.
- H. Subcontractor: The Contractor shall be responsible for ensuring that all subcontractors are aware of tree preservation specifications.
- I. Critical Root Zone: The Contractor may operate equipment within the root zone of trees to be preserved only if buffered with half (1/2) inch plywood with a six (6) inch layer of wood chips underneath; or twelve (12) inches of wood chips. Approval from M-NCPPC Construction Manager is required prior to operation of any equipment in tree preservation areas. Root protection measures shall be inspected and maintained throughout construction.
- J. Location: The Contractor will be responsible for installation of tree protection fencing around trees and groups of trees to be preserved. See plan for location.
- K. Flagging: Prior to installation, the Contractor shall flag or paint location of fencing in field for verification by the M-NCPPC Construction Manager.
- M. Tree Protection Fence: Fencing shall remain in place and be continuously maintained for duration of construction.
- N. Signs: Signs prohibiting access to preservation areas shall be placed at least every thirty (30) feet along preservation fencing. Signs shall be as shown on the drawings.
- O. Root Pruning:
1. See plan for locations for root pruning to be performed. Final locations for root pruning shall determine in the field in conjunction with both tree protection and sediment control fencing and approved by the M-NCPPC Construction Manager and Site Plan Inspector.
  2. Root pruning shall be performed wherever grades will be lowered within the critical root zone of a tree to be preserved. Root pruning shall be to the depth of excavation, or

twenty-four (24) inches, whichever is less.

3. Root pruning work shall not be done when more than the top inch of soil is frozen, or when the soil is wet, and conditions are muddy.
  4. The supersonic air tool will be used when roots larger than two (2) inches in diameter are exposed to facilitate root pruning or when root pruning the inner third of a tree's critical roots. After exposure of the roots, the Contractor's Arborist and the M-NCPPC Construction Manager and Site Plan Inspector will determine if a root should remain and be protected.
  5. Roots to be removed over one and one half (1-1/2) inches in diameter shall have a clean cut made on the surface of the root which is still attached to the tree. This cut shall be made with a handsaw or chainsaw.
  6. Backfill the root-pruning trench with excavated soil and mulch and mark location for future reference. Silt fence may be installed in trench prior to backfilling if trench is not open for longer than forty-eight (48) hours without watering.
  7. Water root-pruning trench weekly as necessary throughout construction.
- P. Fertilizer: All trees indicated shall receive a liquid fertilization. Fertilizer will be applied at a rate of one and a half (1.5) pounds of nitrogen per thousand (1,000) square feet of root zone treated. Fertilizer shall be injected using a soil probe at a depth of six (6) inches. Fertilizer shall be applied in three (3) foot grid pattern evenly distributed throughout the root zone. Do not apply fertilizer within fifteen (15) feet of a waterway.
- Q. Damage: The Contractor will provide services as necessary to respond to damage by construction activities within 48 hours of notification by the M-NCPPC Construction Manager.
- R. Penalties: Failure to comply with specifications may result in penalties as prescribed by Chapter 22A of the Montgomery County Code, Forestry Conservation Law.

#### **721.04            MEASUREMENT AND PAYMENT**

Payment will be full compensation for all material, labor, equipment, tools and incidental items necessary to complete the work. Payment shall be made on a lump sum rate basis as shown in the bid proposal for the various item stipulated in the proposal.