

# **APPENDIX 'K'**

## **UNIVERSITY OF MANITOBA TREE PROTECTION SPECIFICATION**

## **1 General**

### **1.01 SUMMARY**

#### **.1 Section Includes:**

- .1 This Specification covers the protection of all existing trees. The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

### **1.02 RELATED SECTIONS**

- .1 Section 32 93 50 Tree Removals

### **1.03 DEFINITIONS**

- .1 Tree Protection Area: Generally, a tree protection area should consist of the ground encompassing from 1.0 (minimum) to 1.5 times the distance between the trunk and dripline, or as shown in the table below, whichever is greater. Areas of ground covered by pavement, buildings, or other permanent structures where the presence of roots is minimal or negligible may be excluded at the discretion of the Contract Administrator and/or UM Arborist.

Trunk Diameter	Minimum Protection Area Radius
< 100 mm	2.4 m
100–400 mm	3.0 m
400–500 mm	3.6 m
500–600 mm	4.2 m
600–700 mm	4.8 m
700–800 mm	5.4 m
800–900 mm	6.0 m
> 900 mm	6.6 m

With groups of trees or where an array effect is present, there may be discontinuous (non-overlapping) perimeters of tree protection areas, which result in difficult to maintain or ineffective tree protection fencing. In these cases, even though tree protection areas do not overlap, they should be treated as though they do if the distance between the perimeters of such areas is less than 10M. In effect, this will artificially enlarge the area of tree protection, but will result in a more clearly defined, manageable area.

- .2 Dripline: The outermost edge of the tree's canopy or branch spread. The area within a tree's dripline is all the ground under the total branch spread.
- .3 Critical Root Zone: Generally, all of the ground area included in the dripline.
- .4 Diameter (Caliper): The size (millimeters) of a tree's trunk is measured at:
  - .1 150mm above grade for trunk diameters up to and including 100mm;

- .2 600mm above grade for trunk diameters from 100mm up to and including 200mm; and
- .3 1.2M above grade for trunk diameters greater than 200mm.
- .5 Arborist: An individual who has obtained accreditation from the Manitoba Arborists Training and Examination Program or the International Society of Arboriculture Arborist Certification Program (ISA).
  - .1 To practice arboriculture at the University of Manitoba you must either:
    - .1 Have in your possession a previously issued Manitoba Arborists Licence that was valid after October 1, 2017, or
    - .2 have proof of successfully completing the Manitoba Arborists Training Course from the University of Manitoba before July 1, 2019, or
    - .3 hold and maintain arborist certification from the International Society of Arboriculture (ISA).

## **2 Products**

### **2.01 MATERIALS**

- .1 Protection Barrier Fence Verify project requirements.
  - .1 Moulded Mesh Vinyl Construction Fence, Snow Fence or other similar product. - Rolled; 1.2m high; Commercial Grade; Colour: Orange
  - .2 Steel T-Bar Stakes; 1.8m high; c/w tie holes; Galvanized, Painted or Powder Coated. In sufficient quantity to hold the fence taught and erect without slumping.
  - .3 Steel Tie Wire; heavy gauge

## **3 Execution**

### **3.01 TREE PROTECTION AREA**

- .1 All existing trees and planted areas shall be protected and preserved unless otherwise noted on the drawings. The Tree Protection Area shall be as described above, unless otherwise approved by the Contract Administrator and/or UM Arborist.
- .2 Motorized equipment and trailers, including but not limited to tractors, bobcats, bulldozers, trackhoes, trucks, cars, and carts shall not be allowed access within tree protection areas. Should access be necessary within designated tree protection areas, the Contract Administrator and/or UM Arborist must approve the access and protective driving surface prior to its use. Equipment shall not be parked, repaired or refuelled within the tree protection areas.
- .3 Materials and supplies shall not be stockpiled or stored within the tree protection area.

- .4 No objects or materials may be leaned against or supported by a tree's trunk, branches, or exposed roots. The attachment or installation to trees of any sign, cable, wire, nail, swing, or any other material that is not needed to help support the natural structure of the tree is prohibited. Standard arboriculture techniques such as bracing or cabling that are performed by a professional arborist are acceptable upon approval by the Contract Administrator and/or UM Arborist.
- .5 Appropriate tree pruning permits, removal permits, bird nesting surveys (in accordance with the Migratory Birds Convention Act) and any other supporting Provincial Regulations), etc. as may be required by Authorities Having Jurisdiction must be secured prior to beginning work. Pruning and/or removals may only be performed with written approval from Contract Administrator and/or UM Arborist. Permits, surveys, etc. required for tree removals and/or pruning are considered incidental to the contract. All tree removals to be in accordance with UM procedures.
  - .1 All tree removals and relocations to be in accordance with Section 32 93 50 Tree Removals as applicable.
- .6 The Contractor shall ensure that equipment operations surrounding the tree protection area do not cause flooding or sediment deposition on areas where trees are located.

### **3.02 TREE PROTECTION FENCING**

- .1 Tree protection areas and fencing locations shall be in place, secured and approved by the Contract Administrator and/or UM Arborist prior to commencing construction. Layout and staking shall be done by the Contractor.
- .2 T-Bar stakes to be driven a minimum 600mm into the ground at a maximum of 3m intervals. Wooden stakes and Steel Rebar are not considered alternatives for T-Bar Stakes.
- .3 Fencing should be installed to completely surround the limits of tree protection areas, and should extend at least 3.0M beyond the designated construction limits.
- .4 Tree protection fencing must be installed prior to any site activity and shall remain in good condition. The contractor is responsible for repairing, maintaining, and replacing all tree protection fencing until its removal is authorized by the Contract Administrator and/or UM Arborist.

### **3.03 TREE PROTECTION MODIFICATIONS**

- .1 The location of barriers around a tree as described above may be altered under the following conditions with the approval of the Contract Administrator and/or the UM Arborist:
  - .1 Where the tree is flanked by a hard surface area, the barrier may be installed at the furthest extent of the hard surface area
  - .2 Where barriers are not feasible for completion of a construction project as determined by the Contract Administrator and/or the UM Arborist:

- .1 Trees with a DBH greater than 100mm shall have trunk protection installed consisting of planks with a minimum thickness of 25mm and minimum length of 2.4m attached around the trunk with strapping in a manner that will not harm the trees,
- .2 Nails or other penetrating fasteners must not be used,
- .3 The width of protection planks should be appropriate to the size of the tree being protected. Length of tree protection planks may be reduced to suit the tree as approved by the Contract Administrator and/or the UM Arborist.

### **3.04 OVERHEAD BRANCH AND LIMB PROTECTION AND PRUNING**

- .1 Tree limbs and branches overhanging the construction area shall not be damaged. The Contractor shall be responsible for ensuring that the above ground portions of trees are not damaged during Work.
- .2 Should pruning be required, the Contractor shall contact the Contract Administrator and/or UM Arborist for approval. Pruning work must be performed using proper pruning techniques by an Arborist.
- .3 Elm trees are not to be pruned between April 1st and August 1st of any year under the provisions of The Dutch Elm Disease Act

### **3.05 EXCAVATION**

- .1 In order to excavate within 2.0m of a tree, written approval from the Contract Administrator and/or UM Arborist is to be obtained prior to excavation.
- .2 Should root pruning be required, such as in advance of or during excavation, demolition and/or removals, the Contractor must ensure proper root pruning techniques are employed by an Arborist.
- .3 All work under the Dripline of any tree shall be done by hand or by other methods which will prevent breakage or other injury to branches and roots.

### **3.06 NOTIFICATION**

- .1 The Contract Administrator and/or UM Arborist is to be notified three (3) business days in advance of any large equipment to be working in the vicinity of existing trees. The Contractor shall provide adequate personnel on foot to supervise equipment operators in the vicinity of the trees to ensure that no damage occurs.
- .2 Special care is required during excavation to ensure existing tree root structure is not damaged. Should root pruning be required, the Contractor must inform the Contract Administrator and/or UM Arborist, and must ensure proper root pruning techniques are employed by an Arborist.

### **3.07 CLEANING**

- .1 Remove debris and leave work site clean, upon completion of Work

- .2 Use cleaning solutions and procedures, which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

### **3.08 DAMAGE TO TREES**

- .1 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and/or UM Arborist at the cost of the Contractor. Damages must be repaired by an Arborist.
- .2 Any trees deemed to have died or that are dying due to damage from carelessness during Construction will be assessed by UM for removal and replacement under the contract. Costs will be determined by factors such as size, market price of the largest transplantable tree of same or different species and may include appraised value of existing tree as determined by current International Society of Arboriculture evaluation procedures.

### **3.09 MEASUREMENT AND PAYMENT**

- .1 Protection of trees and natural areas is considered incidental to all Work. No measurement or payments shall be made.

**END OF SECTION**