

1.0 GENERAL

1.1 SCOPE

These specifications describe the measures required to protect trees not designated for removal for all works within the City of Medicine Hat. Although the Tree Preservation Bylaw does not apply to private trees, this specification should be considered best practice and Developers should give consideration to applying the same standard to private trees, in order to protect all trees within the city.

1.2 DEFINITIONS

For the purpose of these specifications, the following definitions apply:

- .1 **City Arborist:** Individual identified as persons responsible for arboriculture services for the City of Medicine Hat. Horticulture Services Foreman/Urban Forestry Foreman or designate.
- .2 **Certified Arborist:** An arborist certified by the International Society of Arboriculture (ISA). They may be required to provide their ISA Certification number and proof of experience. The arborist must have minimum job experience as a Certified Arborist, and at least five (5) years in Tree Protection and Mitigation.
- .3 **Consultant:** The person or entity identified as such in the Articles of Agreement. The term Consultant includes the Consultant or the Consultant's authorized representatives. Reference to the Architect or Engineer in the Contract Documents refers to the Consultant and the Consultant's authorized representative.
- .4 **City, Contractor, and Consultant:** The parties identified in the Articles of Agreement including their authorized representatives, as designated in writing to each of the other parties.
- .5 **Dripline:** The location on the ground surface directly beneath the theoretical vertical line from the tips of the outermost branches of the trees.
- .6 **Diameter at Breast Height (DBH):** The standard method of expressing the diameter of the trunk on a standing tree. It is measured at 1.3 m (4.3 ft.) above grade.
- .7 **Superintendent of Parks:** The person or designate within the Parks and Recreation Department who is responsible for approving all tree protection plans.

1.3 APPLICATION OF SPECIFICATIONS

- .1 All trees situated on City property are protected under provisions of Bylaw No. 4218.
- .2 Trees protected by Bylaw No. 4218 may not be removed, injured or destroyed in any way without authorization from the City Arborist. Note that the term “tree” refers to all parts of the tree, including all roots.
- .3 These specifications shall be the standard for tree protection measures during construction whenever tree protection measures are required by the City.
- .4 The Consultant shall be responsible for consulting with the City Arborist when there are any changes to the construction activity, including to but not limited to grade changes, surface treatment or excavations that may have an impact on any City owned trees.
- .5 Anyone failing to adhere to the tree protection specifications outlined below will be in violation of City of Medicine Hat Bylaw No. 4218 and will be responsible for any related damages.

1.4 TREE PROTECTION ZONE (TPZ)

- .1 The Tree Protection Zone (TPZ) is the area around the City owned tree that is marked by fencing in which construction activities are restricted. The TPZ for each tree shall be identified as part of a Tree Protection Plan in the Issued for Construction drawings.
- .2 The Contractor must keep copies of the Tree Protection Plan as shown on the Issued for Construction drawings, on site during construction and must adhere to the Tree Protection Plans and these specifications.
- .3 If a tree protection plan has not been prepared as part of the construction drawing submission, and there is construction activity planned within four (4) metres of a City owned tree, the Consultant will contact the City Arborist to review the site conditions. The Superintendent of Parks in consultation with the City Arborist will provide written approval for a tree protection plan. The Consultant will then provide written direction to the Contractor on how to address the protection of the City owned tree.
- .4 The Tree Protection Zone shall extend to the drip line of the tree where possible.

- .5 The minimum required distances for determining a Tree Protection Zone are shown in Table 1 or as indicated on the Issued for Construction drawings.

Table 1 – Tree Protection Zones

DBH (cm)	TPZ Distance Required (m)
10	0.5
15	0.75
20	1.0
25	1.25
30	1.5
35	1.75
40	2.0
45	2.25
50	2.5
55	2.75
60	3.0

- .6 Any trees with greater than 60 cm DBH shall be set up at the same ratio of 0.5 metres for every 10 cm of DBH of each tree.
- .7 Tree Protection Zone distances are to be measured from the outside edge of the tree base towards the drip line and may be limited by an existing paved surface, provided the existing paved surface remains intact throughout the construction work.
- .8 In cases where the TPZ cannot not be achieved, the Contractor shall notify the Consultant and request a site meeting. The Contractor will be required to stake the original and proposed tree protection plan and state the reason for the request. The Consultant in consultation with the City Arborist will provide the Contractor with a written direction of any approved changes to the tree protection zones.

2.0 TREE PROTECTION

2.1 PREVENTION OF DAMAGE TO TREES

- .1 Construction activities near trees may result in injury to the trunk, limbs or roots of trees causing damage or death of the tree and the Contractor shall take care and caution when working within the dripline of a tree.

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- .2 Equipment or vehicles shall not be operated, parked, repaired or refueled within the dripline of trees.
 - .3 Construction material, supplies, or earth shall not be stockpiled within the dripline of any tree.
 - .4 No objects may be attached to trees protected by Bylaw No. 4218 without written authorization by the Consultant.
 - .5 Activities which are likely to injure or destroy the tree are not permitted within the Tree Protection Zone.
 - .6 No materials or fill may be stored within the Tree Protection Zone.
 - .7 Equipment or vehicles shall not be operated, parked, repaired, or refueled within or directly adjacent to a Tree Protection Zone.
 - .8 No construction activity, grade changes, surface treatment or excavations of any kind are permitted within the Tree Protection Zone without written authorization from the Consultant.
 - .9 No City tree or tree protected by Bylaw No. 4218 may be removed without the written permission of the Consultant, unless it is identified as a removal on an Issued for Construction drawings.
 - .10 Exposed roots from excavation must be covered with soil, mulch or burlap and watered within twenty-four (24) hours of exposure to prevent drying out.
 - .11 Where it is not possible to comply with the requirements of this section, the Contractor shall notify the Consultant and request a site meeting to review the site constraints. The Consultant in consultation with the City Arborist will provide the Contractor with a written direction of on how to address the concern.

2.2 TREE PROTECTION BARRIERS

- .1 The tree protection barrier shall consist of a 1.2 metre (4 ft.) high orange plastic web snow fencing attached to wooden fence posts or metal T-bars.
- .2 Prior to installation of the tree protection barrier, the contractor shall call Alberta 1- Call for utility locates and City of Medicine Hat Parks and Recreation (general inquiry number 403 529-8333) for irrigation locates to ensure buried utility lines are not impacted.

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- .3 The fencing must not interfere with access to fire hydrants or obscure intersections or traffic signage. Should the orange plastic web snow fencing create a restriction to traffic sightlines, poultry wire fencing with reflective tape can be used.
 - .4 Tree protection barriers are to be erected prior to the commencement of any construction or grading activities on the site and are to remain in place throughout the entire duration of the project.
 - .5 Tree protection barriers shall be maintained erect and in good repair throughout the duration of construction with breaks and unsupported sections repaired immediately.
 - .6 Tree protection barriers may not be removed prior to the completion of construction without written authorization from the Consultant.
 - .7 All supports and bracing used to safely secure the barrier should be located outside the Tree Protection Zone. All supports and bracing should minimize damage to roots.
 - .8 "Tree Protection Zone" signs shall be attached to the tree protection fencing, where it will be clearly visible by anyone entering or working on the site.

3.0 TREE REMOVAL, PRUNING, AND RELOCATION

- .1 Any requests for removal, pruning or potential relocation of a tree must be made to the Consultant prior to work commencing.
- .2 If approval is granted for removal of a tree, all rules and guidelines found in Bylaw No. 4218 will apply including three (3) to one (1) replacement costs and removal costs being the responsibility of the Contractor.
- .3 Above ground clearance for overhanging branches in the work zone must be anticipated. The Contractor is required to have a City-approved Arboriculture Contractor raise the crown of all branches to provide adequate clearance for construction equipment. The cost of above ground pre-construction pruning is to be the responsibility of the Contractor.
- .4 If a list of Arboriculture Services contractors pre-qualified by the City of Medicine Hat is not available, the work shall be completed by an Arboriculture Contractor under the supervision of a Certified Arborist.
- .5 Pruning of Elm trees can only take place from October 1 to March 31.

4.0 SITE SERVICES OR EXCAVATIONS WITHIN THE TREE PROTECTION ZONE

- .1 It is recognized that there may be cases where trees are growing over existing underground utilities that may require inspection, upgraded or new installation. The objective is to avoid severance of anchor roots and minimize damage to the tree(s).
- .2 When excavation is required for inspection (only) of underground utilities, and are within the limits of a Tree Protection Zone with potential to damage tree roots, excavation must be completed under the supervision of a Certified Arborist using a hydro vacuum unit or air powered soil excavation tools in order to preserve the integrity of the tree roots.
- .3 When any work is within the limits of the Tree Protection Zone and have the potential to damage tree roots where root pruning may be required, the Consultant shall contact the City Arborist for assessment and work requirements.

5.0 TREE REPAIR AND DAMAGE

- .1 Trees damaged by construction must be reported to the City Arborist immediately.
- .2 Any canopy damage must be repaired by a City-approved Arboriculture Contractor at the expense of the Contractor. If a list of Arboriculture Services Contractors pre-qualified by the City of Medicine Hat is not available, the work shall be completed by an Arboriculture Contractor under the supervision of a Certified Arborist.
- .3 Bark that is damaged shall be neatly trimmed back and/or bark traced to the uninjured bark without causing further injury to the tree by a Certified Arborist.
- .4 Damaged roots under seven (7) cm in diameter shall be pruned using a sharpened tool such as hand pruners, hacksaw or any other clean/sharp cutting tool back to undamaged material.
- .5 The Contractor shall contact the Consultant for assessment and work requirements when roots over seven (7) cm in diameter are damaged.
- .6 Irreparable damage to any tree resulting in full tree removal will be handled in conjunction with penalties outlined in Bylaw No. 4218 and will include, but not limited to, all costs for removal and three (3) to one (1) replacement costs. These costs will be the responsibility of the Contractor.