

TREE PRESERVATION AND CLEARING GUIDELINES FOR NEW DEVELOPMENTS

SUBDIVISIONS & SITE PLANS



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Planning & Development Division
Planning Department
Town of Whitby
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APPENDIX 'A'

1.0 INTRODUCTION AND INTENT

- 1.1. The following are general guidelines for the preservation and avoidance of injuries to trees within construction projects. The guidelines should be applied subject to such adjustments as may be deemed reasonable and appropriate due to the proximity and number of trees involved and site servicing requirements.
- 1.2 The intent of the guidelines is:
- to establish objectives and performance standards which will ensure that tree management, assessment and evaluation for new developments will be optimized
 - to ensure that the Tree Preservation Plans are more uniform and the approval process is more efficient
 - to ensure responsibilities are formally addressed
 - to enhance communication between development agencies and the Town to preserve trees in plans of subdivision wherever appropriate.
- 1.3 In addition to the provisions of the Tree Protection By-law No 4640-00, Official Plan section 5.3.12, the requirements of the Subdivision Agreement and all other applicable legislation, Developers and Builders are required to comply with these guidelines through the Subdivision Servicing and Building process.
- 1.4 The Tree Preservation Plan will be included as part of the formal submission of a draft plan of a subdivision or site plan to the Town of Whitby and should be read in conjunction with these guidelines.
- 1.5 If pre-grading is requested, the Tree Preservation Plan must be approved prior to issuance of a grading permit. If the Tree Preservation Plan will affect final design, adjustments to the plan may be required prior to draft approval.
- 1.6 It is the responsibility of the Developer to acquire a reputable Consultant - preferably a Landscape Architect, to prepare a viable Tree Preservation Plan, while an ISA Certified Arborist should be involved in the tree assessment process and field work.
- 1.7 Any questions regarding the Tree Preservation Guidelines will be directed to the Town's Planning Department.

2.0 TREE ASSESSMENT AND EVALUATION

- 2.1 The initial evaluation will assess the site vegetation as it relates to its condition, health and susceptibility to development impacts, aesthetics and contribution to an ecosystem. The developer should acquire a recognized professional in tree management - preferably ISA Certified Arborist, who will assess and evaluate vegetation on the proposed development site **prior to designing the draft plan of subdivision or site plan**. Large woodlots require an Urban Forester. Detailed

information required may be obtained by contacting the Planning Department, including requirements for incorporation of additional agency standards (such as CLOCA, etc.) and compliance with completed Environmental Impact Studies associated with the development proposal.

2.2 The evaluation process will generally:

- *Locate, categorize and describe* the major vegetation (stands of trees/woodlots), ecological or landscape units, including:
 - stream side protection areas
 - wildlife and "species at risk" habitat requirements
 - connections to off-site habitat areas
 - assign a value to the units (low, medium and high)
- *Identify potentially hazardous tree(s)* that necessitate additional protective measures such as greater setback requirements, and/or removal
- *Identify individual specimen trees* of substantial size and heritage, rare or significant value and assign a location number on map (if outside wood lots and in areas of potential disturbance)
- Assess how the proposal will impact the units and individual specimen trees
- Assess the potential for preservation and ecological salvage
- *Identify tree removal measures:*
 - Where removal is necessary and ecological salvage is not possible, the evaluation should require on-site utilization (ie. wood chips, bioengineering, saw logs, fire wood, etc.)
 - Where removal is necessary, calculate compensation, if applicable, in accordance with Official Plan Section 5.3.12.
 - Compensation plantings will be incorporated into woodlot edges, street frontages, parks and stormwater management areas
 - In locations that necessitate clear cutting, the I.S.A. Certified Arborist will determine if there is a potential to transplant trees

2.3 This evaluation will result in a Tree Preservation Plan that optimises existing quality trees and identifies all procedures that will be taken to maximize tree saving potentials.

3.0 TREE PRESERVATION GUIDELINES

3.1 The Contractor will be carefully and thoroughly informed by the Developer of his contractual obligations regarding tree avoidance and preservation, as well as maintenance measures to be undertaken prior to commencement of any site work.

3.2 The Developer is required to be informed about the Wildlife Act and Migratory Bird Convention Act, 1994 (M-7.01-C.R.C., c.1035 General Prohibitions, Section 6) requirements to ensure conformance with provincial and federal regulations. It is an offence to destroy active nests and/or eggs during bird nesting periods. Common nesting periods extend from April 15th to July 31st for most birds. Nesting can occur

at other times as well. Large scale clearing operations are prohibited during this period, unless appropriate monitoring is undertaken. Should tree removal during bird nesting season be unavoidable, the Developer is required to conduct a nesting survey. In addition, the Developer is also required to provide on-site monitoring by a registered professional biologist to ensure nests will not be damaged.

More detailed information regarding these requirements may be obtained by contacting the Planning Department.

3.3 The ISA Certified Arborist must be retained on site by the Developer with a copy of the approved Tree Preservation Plan during critical stages of grading and construction to ensure strict adherence to its recommendations and to supervise those elements of the project that relate to the preservation of the trees.

3.4 The ISA Certified Arborist is required to conduct and prepare inspection reports (identifying problems, progression, successes, etc.) for submission to the Planning Department. Detailed information required may be obtained by contacting the Planning Department. General requirements include:

- tree removals
- maintenance measures
- grading adjacent to protective areas

3.5 Contractors are responsible for all protection techniques, to the satisfaction of the ISA Certified Arborist. Where directed by the ISA Certified Arborist, the Contractor will replace all damaged or destroyed existing plant material affected during the course of construction with the following conditions and to the satisfaction of the ISA Certified Arborist and the Town:

- with plant material of identical or similar species;
- of equal or greater size; and,
- in the same quantity

3.6 Protective Fencing

- The Contractor will provide protective fencing prior to commencement of any site work to all existing individual trees and associated understorey and ground cover, which are to remain. Groups of trees and other existing plantings to be protected will be done in a like manner with fencing around the entire clump(s). The fencing will be located 360 degrees around single or clump(s) of protected trees.
- Protective tree fencing will be defined as orange plastic coated wire fencing with a height of 1200 mm.
- Paige wire fencing and silt fencing may be required wherever grading is proposed near a wooded area, wetland or watercourse. This will be determined

during the site visit - see paragraph 4.4 under Approvals of the Tree Preservation Plans and Site Inspections.

- The Contractor will install protective fencing on (50 mm x 50 mm x 6 mm) -2400 mm length steel T-bars positioned 1200 mm on centre maximum. The protective fencing will be wired in three (3) places evenly spaced along the steel T- bar with #10 galvanized wire.
- Protective fencing for individual specimen trees will be positioned in accordance with distances identified in Section 3.12, Table 1: Tree Protection Zones.
- Protective fencing for wood lots or groups of trees to be protected, will be positioned at a minimum distance of 5.0 m beyond the drip line of each wood lot or grouping of trees to be preserved. In cases where drip lines are close or touching, the Contractor will install a line of protective fencing between construction activity and the tree trunk(s), in order to minimize construction activity within the drip line.
- The ISA Arborist will inspect and the Contractor will maintain protective fencing regularly in good repair. Protective fencing shall remain in place throughout the duration of construction and shall not allow traffic, vehicles, foot traffic or equipment to compact soil within the Tree Protection Zones. Access routes should be established away from protected areas.
- Installation of protective fencing will be completed prior to the commencement of site clearance, demolition or any other type of construction, to the satisfaction of the ISA Certified Arborist and the Town, and remain intact through the completion of construction works. Any protective fencing installed is the responsibility of the Contractor. Once construction works have been completed, the Contractor is responsible for the complete removal of the protective fencing.
- Areas within the protective fencing will remain undisturbed and will not be used for the storage of building materials or equipment. Negligence to these standards will lead to halting of operations along with penalties up to \$10,000 as defined under the Tree Protection By-law No.4640-00.

3.7 No trees will be cut or removed without the Town's written approval as deemed under the Tree Protection By-law No. 4640-00 and for larger areas, 0.5 acres or more, defined as woodlots under the Durham Region Tree Conservation By-law 148-91.

3.8 Where root systems of protected areas are exposed directly, adjacent to or are damaged by construction work, they will be trimmed neatly and the area backfilled with appropriate material to prevent desiccation.

3.9 Should the root system or above ground components, of any tree designated to remain sustain minor damage, as determined by an ISA Certified Arborist,

remediation of the damage will be the responsibility of the Contractor and at the advice of the ISA Certified Arborist. If irreparable damage has occurred, the tree becomes unsafe or liability is questionable, the Contractor will be required to remove the tree(s) and re-establish the tree(s) to the satisfaction of the ISA Certified Arborist and the Town.

3.10 In the event that it is essential for large (7cm to 8 cm diameter) roots to be cut, excavated or injured during construction, the roots will be cut flush under the ISA Certified Arborist's supervision and in accordance with approved arboricultural practices.

3.11 Should the branches or any tree designated to remain sustain damage due to Contractor negligence, remediation will be as directed by the ISA Certified Arborist at the Contractor's expense.

3.12 Protective Measures

Sanitation, pruning, root feeding, watering during dry season, and other tree protective measures should be carried out during construction for optimum results, as follows:

Pruning Practices

- All limbs damaged or broken during the course of construction will be pruned cleanly, utilizing clean, scissor action (not anvil type) secateurs in accordance with approved arboricultural practices.
- Roots of existing trees that are disturbed by excavation or any other construction activity will be cleanly pruned, as directed by the ISA Certified Arborist. Tools must be disinfected after pruning a tree and when pruning many members of the same genera, to prevent the spread of disease.
- All pruning cuts will be made to a growing point such as a bud, twig or branch. No stubs should be left. Poor cut location, poor cut angle and torn cuts are not acceptable. Pruning of those trees, where heavy bleeding may occur, is to be postponed until in full leaf. Do not damage lead branches or remove smaller twigs along main branches.
- Pruning should include the careful removal of:
 - deadwood
 - branches that are weak, damaged, or diseased
 - secondary leaders of conifers
 - trunk and root suckers
 - trunk waterspouts
 - tight V-shaped or weak crotches
 - branches that rub causing damage to bark

Root feeding

- All trees to be preserved will be deep root fertilized by using a soil injection method by applying a complete, balanced, slow release high nitrogen fertilizer such as 30-10-7 or approved type with 50% of elements derived from organic sources. This work should be completed by commercial tree care experts prior to construction.

Watering during a dry season

- The Contractor, on direction from the ISA Certified Arborist, will be required to water the large trees a minimum of three (3) times during the summer or as required.

3.13 Excavating Around Existing Trees

This procedure is to be undertaken only at the direction, supervision and approval of the ISA Certified Arborist and in reference to the following chart - Table 1: Tree Protection Zones for Individual Specimen Trees, showing minimum distances required for determining a Tree Protection Zone. Some trees and some site conditions may require a larger Tree Protection Zone.

Table 1: Tree Protection Zones for Individual Specimen Trees

<p align="center">Trunk Diameter (cm)</p> <p align="center">(measurement of a tree trunk taken at 1.4m above grade)</p>	<p align="center">Minimum Protection Distance Required Beyond Dripline (m)</p> <p align="center">(tree protection zone distances measured <u>from outside edge</u> of dripline)</p>
less than 10	1.8
11 - 40	2.4
41 - 50	3.0
51 - 60	3.6
61 - 70	4.2
71 - 80	4.8
81 - 90	5.4
91 - 100	6.0

- The developer/owner may be required to undertake preservation techniques such as dry welling and root feeding.
- All filling and grading that is approved within a tree retention area will be completed by hand.
- Excavation to be performed on only one side of the tree. All other grade changes will be made outside of the drip line. Cut slope from Minimum

Protection Distance to Dripline Required in Table 1: Tree Protection Zones for Individual Specimen Trees to new grade level. Build a topsoil dyke around drip lines to retain water as required.

- If excavation through roots is required, excavate by hand and prune roots with a sharp axe, tree lopper or saw. Conduct root pruning according to aforementioned guidelines on pruning.
- The areas surrounding the root system shall be backfilled immediately with native material after damage occurs to prevent drying and / or die-back.
- Once grading is complete, fertilizer may be applied.

3.14 Clearing operations should be identified in areas including building sitings, parking lots, right of ways and cut/fill earthwork zones. Any trees located downhill of water flow will be protected from siltation by straw bales and/or siltation fence.

3.15 After construction, all preservation vegetation should be inspected for its state of health by the ISA Certified Arborist and the Town of Whitby.

4.0 APPROVALS OF THE TREE PRESERVATION PLANS AND SITE INSPECTIONS

4.1 Tree Preservation Plan Checklist

- All measurements shown in Metric
- An appropriate scale (generally 1:500)
- Key map
- Legend
- Property lines / site boundaries
- Features intersecting or outside the development area that may affect the site vegetation or the adjacent site vegetation (streams, wetlands, "species at risk" habitat areas, etc.)
- Air photos may be required
- Identify all existing trees, including those trees adjacent properties with canopies extending into the site development, by:
 - Location (Forestry Tag #)
 - Size (Caliper, D.B.H. in centimetres)
 - Species (Common and Botanical Name)
 - Condition (excellent, fair, poor, dead)
 - Recommendation (remain, relocate, remove)
- Indicate Trees to be Removed
- Highlight and label Tree Protection Fences and Tree Protection Zones
- Show extent of Crown of all Existing Trees and/or groups of Trees
- Indicate Location of any excavation that requires root pruning
- Indicate Location of Construction Staging Areas

- Indicate Replacement Trees by Location, Quantity, Size, Common name and Botanical Species
- Include Town of Whitby Standard Tree Protection and Preservation Detail - see Appendix 'A'
- Include the following General Tree Preservation and Protection Notes

4.2 General Tree Preservation and Protection Notes

- 4.2.1 The area within the dripline of all existing trees and / or areas to be protected will be properly protected with fencing as detailed. All existing trees which are to remain on site, or on adjacent properties which may be affected, will be fully protected with protective fencing erected 1.0 m outside the "Drip Line" of trees, or in the case of individual specimen trees, as per Table 1: Tree Protection Zones for Individual Specimen Trees, prior to commencement of construction.
- 4.2.2 Groups of trees and other existing plantings to be protected will be done in a like manner with similar structures around the entire clump(s).
- 4.2.3 Areas within the protective fencing will remain undisturbed, and will not be used for the storage of building materials, equipment, surplus soil, or construction debris. This will be completed prior to the commencement of site clearance, demolition, or any other type of construction works to the satisfaction of the ISA Certified Arborist, and the Town of Whitby.
- 4.2.4 All supports and bracing should be outside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Fence.
- 4.2.5 No construction activity, grade changes, surface treatment or excavations of any kind are permitted within the Tree Protection Zone.
- 4.2.6 No rigging cables will be wrapped around or installed in trees and/or protected areas.
- 4.2.7 No contaminants will be dumped or flushed where feeder roots of protected trees and/or areas exist.
- 4.2.8 The Developer and/or Contractor will take every precaution necessary to prevent damage to trees, shrubs or other plants to be retained.
- 4.2.9 All limbs damaged or broken during the course of construction will be pruned cleanly, utilizing clean, scissor action (not anvil type) secateurs in accordance with accepted arboricultural practices.
- 4.2.10 Damaged limbs will be pruned to remove damaged branches. All pruning cuts will be made to a growing point such as a bud, twig or branch. No stubs should be left. Poor cut location, poor cut angle and torn cuts are not acceptable. Pruning of those trees where heavy bleeding may occur to be postponed until in full leaf. Do not damage lead branches or remove smaller twigs along main branches.

- 4.2.11 Where ISA Certified Arborist approves, limbs or portions of trees are to be removed to accommodate construction work, they will be removed carefully in accordance with accepted arboricultural practice and measures will be taken to prevent any further damage.
- 4.2.12 Where root systems of protected trees are exposed directly adjacent to or damaged by construction work, they will be trimmed neatly and sprayed with an approved anti-dessicant to prevent drying, and the area back-filled with appropriate material.
- 4.2.13 Roots of existing trees disturbed by excavation will be cleanly pruned, as directed by the ISA Certified Arborist. Tools must be disinfected after pruning trees and when pruning many members of the same genera, to prevent the spread of disease.
- 4.2.14 If grades around trees to be protected are likely to change, precautions must be undertaken to the satisfaction of the ISA Certified Arborist and the Town. These precautions are the responsibility of the Developer and/or the Contractor. These precautions may include dry welling and root feeding, and must be in accordance with the aforementioned Tree Preservation Guidelines.
- 4.2.15 Where necessary and as directed by the ISA Certified Arborist, trees will be given an overall pruning to restore the balance between roots and top growth or to restore the appearance of the tree.
- 4.2.16 Trees that have died or been damaged beyond repair will be replaced by the Contractor at his own expense by trees of a similar size and species or such size and species as may be approved by the ISA Certified Arborist and the Town of Whitby.
- 4.2.17 Any trees designated for removal will have the stumps completely excavated and removed unless such removal will adversely affect existing trees / ecology to remain, in which case trunks will be cut flush to existing grades.
- 4.2.18 All woody material removed will be recycled as directed by the Town of Whitby, and used for fence posts, saw logs, firewood or woodchips where appropriate. Material to remain on the site will be dropped and bucked to a maximum 1.8 metre length.
- 4.3 Approval Process
- As a condition of draft plan approval, five (5) copies of the Tree Preservation Plan are required to be submitted by the Consultant to the Town of Whitby Planning Department for circulation, review and comment.
 - Town of Whitby approvals must be sought in conjunction with Conservation Authority (CLOCA) approvals where deemed necessary.
 - The comments of all reviewing departments are consolidated and provided to the consultant/developer/owner through the Town of Whitby Planning Staff. The consultant/developer/owner will be advised of any changes to the proposed plan

of subdivision or site plan that will be recommended with approval. If there is no objection to the Plans, they will be approved.

- When the plans are stamped approved, two copies of the approved plans will be sent to the consultant/developer/owner with the cover letter.
- The Tree Preservation Plan must be approved prior to commencement of any site work and before the grading plans are approved. Once approved, the tree management and preservation areas should be identified on all the grading plans and servicing drawings to ensure coordination between tree management and site development.

4.4 Site Inspections

- 4.4.1 Prior to any removal of the trees and/or plant material, installation of protective barriers and any site grading, a construction management meeting will be held on the site with representatives from the Town of Whitby Planning Department and Forestry Division, the Landscape Architect, CLOCA (if necessary), the ISA Certified Arborist and the Developer/Owner and/or Contractor.

During the meeting /inspection:

- trees to be removed will be spray painted;
- protective fencing will be staked out where required; and,
- agreement will be made on when and how the works begin, and when the works will be completed.

- 4.4.2 All site inspections require Tree Maintenance Reporting. The Tree Maintenance Report is to be prepared by the ISA Certified Arborist and is intended to:

- document compliance with the tree protection measures as described in the approved Tree Preservation Plan;
- identify all the deficiencies; and,
- determine time frame for the works to be completed.

- 4.4.3 The Preservation Area will be inspected by the required representatives from the Town of Whitby (Planning Department and/or Forestry Division), Landscape Architect, CLOCA, ISA Certified Arborist and the Developer/Owner and/or Contractor following installation of protective barriers and removal of all dead or declining material.

- 4.4.4 The ISA Certified Arborist is required to conduct a Post-Grading Tree Maintenance Report as well. This Report should coincide with the implementation of all tree protection measures and the completion of the initial site grading. All of the needs of the retained trees will be assessed immediately and will detail recommended tree maintenance measures. This should be submitted to the Planning Department for review and approval by the Forestry Division.

The following information is generally required to be included:

- assess damage to trees that are to be retained caused by initial site grading and clearing
- identify and provide a dollar value of trees that were to be retained but have been inadvertently damaged or removed
- propose a compensation / enhancement plan indicating replacement trees of equal or greater dollar value and proposed tree planting locations for the rehabilitation of the disturbed areas
- identify areas designated for removal or where removals have not been conducted
- recommend additional trees to be removed or transplanted
- recommend scheduled preservation methods (root and crown pruning, fertilization / watering, welling, and structural surgery)

4.4.5 The Landscape Architect and/or Contractor will contact the Planning Department when the tree preservation works have been completed, to conduct an inspection while the trees are in leaf. If all tree preservation works and all works adjacent to the tree preservation areas have been completed, a Certificate of Completion will be issued by the Planning Department to the Landscape Architect/Developer/Owner. The Certificate of Completion will indicate the start of the warranty period (to be determined). The completion of all works shall mean the full implementation of the Tree Preservation Guidelines, including the relocation/restoration of any plant material and the fine grading, top soiling and sodding/seeding of any adjacent lots or blocks.

APPENDIX 'A'

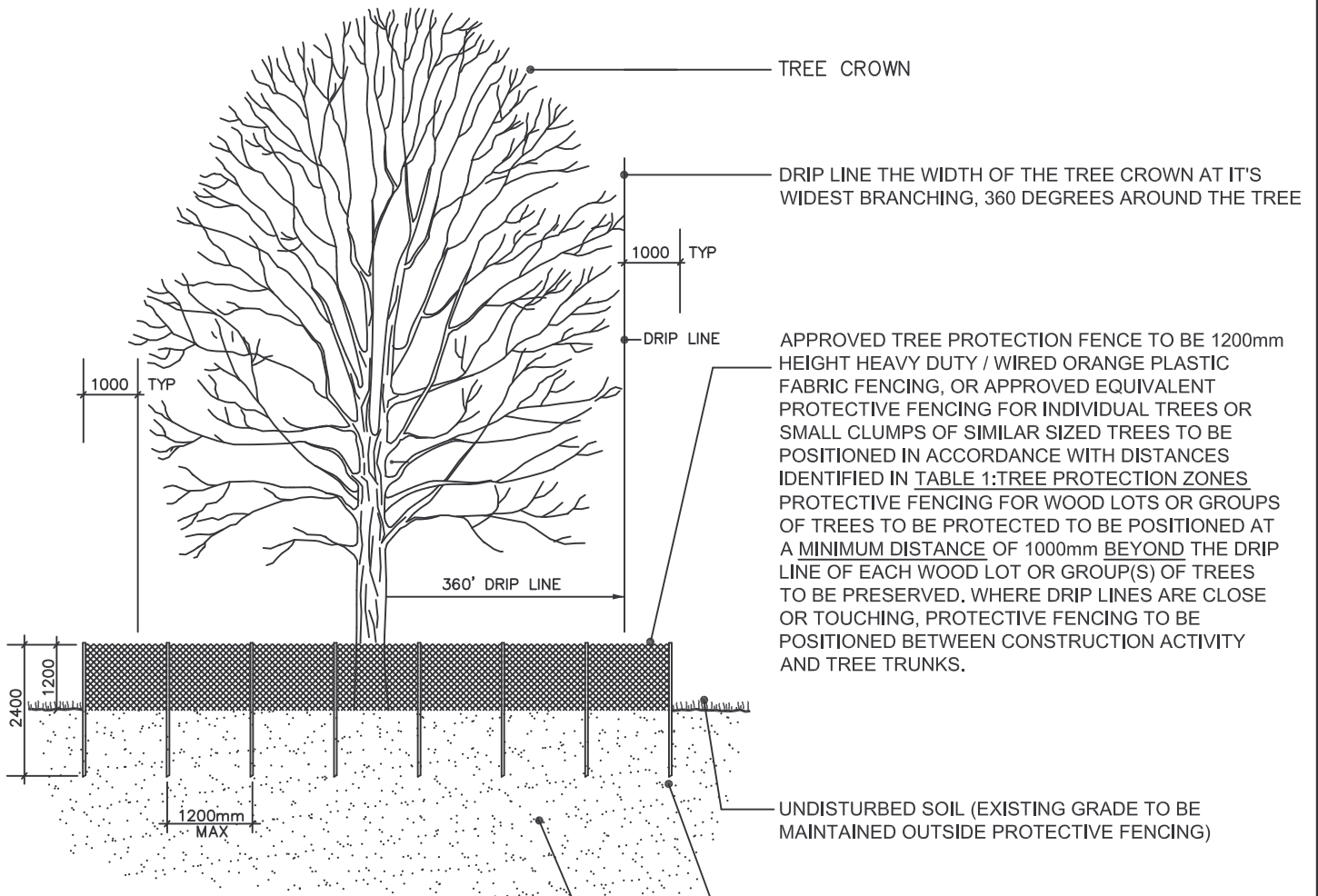


Table 1 : Tree Protection Zones

Tree Diameter (cm)*	Minimum Protection Distance Required Beyond Dripline (m)**
less than 10	1.8
11 - 40	2.4
41 - 50	3
51 - 60	3.6
61 - 70	4.2
71 - 80	4.8
81 - 90	5.4
91 - 100	6

* measurement of tree trunk taken at 1.4m above grade

** tree protection zone distances measured from outside edge of drip line

NOTE: ALL PROTECTIVE FENCING TO BE LOCATED AS DIRECTED BY I.S.A. CERTIFIED ARBORIST



PLANNING DEPARTMENT

PROJECT NAME:

DETAIL STANDARD

DRAWING TITLE:

TREE PRESERVATION AND PROTECTION DETAIL

SCALE:

DRAWING NOT TO SCALE
ALL MEASUREMENTS IN mm

DATE:

FEBRUARY 2005