



# Arborist Report & Tree Preservation Plan

358 Reynolds Street  
Oakville, ON

**Prepared for:**

MacDonald Rose Inc.  
c/o Melrose Investments Inc.  
145 Reynolds Street, Suite 400  
Oakville, ON L6J 0A7

[lwu@melroseinvestments.com](mailto:lwu@melroseinvestments.com)

416-305-6835

**Prepared By:**

Davide Carnevale  
ASCA Registered #370  
GreenPrint Consulting Arborists

[dcarnevale@greenprintca.com](mailto:dcarnevale@greenprintca.com)

36 Southwind Terrace  
Oakville, On L6L 6K6  
(T) 289-813-9250

April 24, 2023

**Revised May 18, 2023**

# Table of Contents

	<b>Page No.</b>
<b>Executive Summary</b>	
Executive Summary.....	<b>1</b>
<b>Introduction</b>	
Introduction and History.....	<b>2</b>
Assignment.....	<b>3</b>
<b>Tree Survey and Recommendations</b>	
Tree Survey and Recommendations.....	<b>4</b>
Site Notes and Comments.....	<b>6</b>
<b>Conclusion</b>	
Summary Table.....	<b>10</b>
Conclusion.....	<b>11</b>
<b>Appendix I</b>	
Tree Preservation Guidelines.....	<b>12</b>
<b>Appendix II</b>	
Digital Images.....	<b>15</b>
<b>Appendix III</b>	
Trunk Formula Method.....	<b>27</b>
<b>Appendix IV</b>	
Assumptions and Limiting Conditions.....	<b>28</b>
<b>Attachments: Tree Preservation Plan – TPP-1</b>	

## **EXECUTIVE SUMMARY:**

The above subject site is scheduled for development. As mandated by the Town of Oakville's Site Plan Bylaw the client is required to submit an Engineering Permit Application which necessitates an Arborist Report and Tree Preservation Plan. Such a report must be completed in accordance with the Town of Oakville's Tree Protection During Construction Procedure Policy, which takes into account both the Town of Oakville's *Private Tree Protection* (2017-038) and *Town Tree* By-laws (2009-025).

There are 23 regulated trees involved with this project of which 6 require removal and 4 will incur injury as a consequence of construction. All remaining trees are clear of proposed construction and are scheduled to retain 100% of their prescribed tree preservation zones. The client will be required to submit a permit application to remove 6 trees and injure 4. As compensation for the removal of 6 trees, it's anticipated that the client will be responsible to plant 23 replacement trees on site pending the Town's review process.

It's the consultant's opinion that if tree preservation recommendations outlined in this report are implemented, which includes installing tree protection hoarding as mandated by the Town of Oakville, this proposed development will not adversely affect the long-term health, safety and/or existing condition of all trees scheduled for preservation

Using the Trunk Formula Method, the appraised value of town owned trees no. T1- T6 is \$24,570.00.

Successful tree preservation requires both the client and all associated parties become privy to the recommendations in this report and that such recommendations are implemented accordingly. Alternatively, failure to implement all the recommendations will cause unnecessary injury predisposing each tree to the potential of decline and/or increased risk of failure. Lastly, it's the client responsibility to fulfill all additional conditions as outlined in the Town issued permit.

## **INTRODUCTION:**

I have been retained by the client to complete an arborist report concerning the above subject site. As mandated by the Town of Oakville's *Site Plan Bylaw* the client is required to submit an Engineering Permit Application which necessitates an Arborist Report and Tree Preservation Plan. Such a report must be completed in accordance with the Town of Oakville's Tree Protection During Construction Procedure Policy, which takes into account both the *Town of Oakville's Private Tree Protection (2017-038)* and *Town Tree By-laws (2009-025)*.

## **HISTORY:**

Prior to our site visit, the client provided GreenPrint Consulting Arborists a set of drawings that included a Plan of Survey and Topography, completed by R-PE Surveying Ltd, dated January 19, 2023 and a Site Plan (A1) completed by Hunt Design Associates Inc. Together, both Plans detail existing conditions and the proposed development changes, which includes the demolition of existing structures and construction of 11 proposed new 3-storey townhouse units with landscape features such as new asphalt driveways and rear elevated patios – see attached Tree Preservation Plan-TPP-1 for details.

The site is located in a mature residential community that is experiencing redevelopment and landscaping with active projects located within the immediate area. The tree resource consists primarily of mature landscape trees and shrubs.

In accordance to the below listed relevant Laws, By-laws, Policies and forms, the applicant is required to complete an Arborist Report and Tree Preservation Plan as part of the Site Plan application process:

- Planning Act, R.S.O. 1990, c. P.13 - <https://www.ontario.ca/laws/statute/90p13?search=planning+act>
- Site Plan By-law 2005-062 - <https://www.oakville.ca/assets/2011%20planning/SitePlanBylaw2005062.pdf>
- Town of Oakville Private Tree Protection By-law 2017-038 - <https://www.oakville.ca/assets/general%20-%20residents/2017-038-PrivateTreeBylaw.pdf>
- Town of Oakville Town Tree By-law 2009-025- <https://assets.oakville.ca/blis/BylawIndexLibrary/2009-025.pdf>
- Town of Oakville Tree Protection During Construction Procedure policy - <https://www.oakville.ca/townhall/en-tre-001-001.html>
- Building, Planning and Development Engineering Applications and Forms - <https://www.oakville.ca/business/application-forms-guidelines.html>
- Forestry Act - <https://www.ontario.ca/laws/statute/90f26>
- Endangered Species Act - <https://www.ontario.ca/laws/statute/07e06>

## **ASSIGNMENT:**

1. Survey all regulated trees within 6.0m of the edge of site disturbance, including construction related traffic and material storage, which will be affected by the proposed project, assess their condition and determine if they are suitable for preservation.
2. Using the client supplied Site Plan, complete tree impact assessment as it relates to all proposed works and provide recommendations for tree preservation.
3. Determine if proposed demolition and construction will adversely affect the health of such trees.
4. Calculate the total number of trees requiring removal and/or will incur injury as a consequence of construction and provide a quantitative summary for permit application purposes.

All field and appraisal work was completed by the author of this report being Davide Carnevale ASCA Registered #370 on April 21, 2022.

As the consulting arborist retained for this project, *GreenPrint Consulting Arborists* can be further retained (if necessary) to act as the Project Consulting Arborist (PCA) to provide on-site monitoring and implement any necessary remedial actions as required by the municipality.

## TREE SURVEY AND RECOMMENDATIONS:

See attached Tree Preservation Plan - TPP-1 plan for tree location, Table #1 for species identification, condition, and recommendations and Appendix II for corresponding Digital Images.

Table #1: 358 Reynolds Street – Oakville

Tree #	Species	D <sup>1</sup> B H (cm)	Dripline Diameter (m)	Condition <sup>2</sup>	Category <sup>3</sup>	Comments	Suitability <sup>4</sup> for Conservation	Recommendation <sup>5</sup>	M <sup>6</sup> T P Z (M)
T1	<i>Picea abies</i> Norway spruce	45	8	G	5	- vigorous with good form & structure - clear of proposed construction - shall retain 100% of prescribed TPZ	G	Ps	3.0
T2	<i>Picea abies</i> Norway spruce	50	12	G	5	- vigorous with good form & structure - proposed driveway encroaches within prescribed TPZ by 12%	G	PsI	3.0
T3	<i>Picea abies</i> Norway spruce	36	8	G	5	- vigorous with good form & structure - proposed driveway encroaches within prescribed TPZ by 27%	G	PsI	3.0
T4	<i>Picea abies</i> Norway spruce	31	5	D	5	- 90% dead - not suitable candidate for preservation - in direct conflict with proposed new driveway	P	Rv	3.0
T5	<i>Picea abies</i> Norway spruce	44	8	P	5	- poor vigour, average form & structure, dead top, in irreversible decline - not suitable candidate for preservation - proposed new driveway heavily encroaches upon prescribed TPZ and requires excavation to base of trunk	P	Rv	3.0
T6	<i>Juglans nigra</i> Black walnut	72	12	F	5	- average vigour form and structure - clear of proposed construction - shall retain prescribed TPZ	M	Ps	4.2

<sup>1</sup> **DBH:** Diameter at Breast Height is a measurement in centimeters, using a caliper tape, of the tree stem at 1.37 meters above existing grade. Neighbouring trees may be estimated due to restricted access.

<sup>2</sup> **Condition:** A rating of **H**azardous/**D**ead/**P**oor/**F**air/**G**ood/**E**xcellent was determined for each tree by visually assessing all the above ground components of the tree, using acceptable arboricultural procedures as recommended in the “*Guide for Plant Appraisal*”, prepared under contract by the “*Council of Tree & Landscape Appraisers (CTLA)*”, an official publication of the *International Society of Arboriculture (I.S.A.)*, 9<sup>th</sup> Edition, 2000”.

<sup>3</sup> **Category:** 1. Trees with diameters of 15 cm or more situated on private property on the subject site.  
2. Trees with diameters of 15 cm or more situated on private property, within 6 m of the subject site.  
3. Trees of all diameters situated on Town owned parkland within 6 m of the subject site.  
4. Trees of all diameters situated within a designated natural feature.  
5. Trees of all diameters situated within the Municipal road allowance adjacent to the subject site.

<sup>4</sup> **Suitability for Conservation:**

A rating of **P**oor/**M**oderate/**G**ood is assigned to each tree taking in to account four factors which include, 1) Tree health 2) Structural integrity 3) Species response and 4) Tree Age and longevity, as recommended in the “*For Tree Care Operation – Trees, Shrubs, and Other Woody Plant Maintenance Standard Practice*” prepared as part of the “*ANSI A300 Standards*.”

<sup>5</sup> **Recommendation:** Preserve (**Ps**), Preserve with Injury (**PsI**), Remove (**Rv**), Transplant (**Tp**)

<sup>6</sup> **MTPZ:** Minimum tree protection zone distance as mandated by the Town of Oakville as per the Oakville Parks and Open Space Policy – Procedure no. 01-03-08 - “*Tree Protection Specification For Construction Near Trees*” – [http://www.oakville.ca/Media\\_Files/DevelopmentProcess/TreeProtectionPolicy-Appendix3.pdf](http://www.oakville.ca/Media_Files/DevelopmentProcess/TreeProtectionPolicy-Appendix3.pdf)

Tree #	Species	D B H (cm)	Dripline Diameter (m)	Condition	Category	Comments	Suitability for Conservation	Recommendation	M T P Z (M)
N1	<i>Morus alba</i> White mulberry	24	6	F	2	- multi-stem (17/14/11) - vigorous, average & structure - clear of proposed construction - shall retain prescribed TPZ	P	Ps	2.4
N2	<i>Juglans nigra</i> Black walnut	55	14	G	2	- vigorous, good form & structure - clear of proposed construction - shall retain prescribed TPZ	G	Ps	3.6
N3	<i>Ulmus pumila</i> Siberian elm	90	18	F	2	- vigorous, average form & structure, large deadwood in crown, poorly attached main and scaffold unions - proposed construction access encroaches within prescribed TPZ by 3%	M	PsI	5.4
N4	<i>Picea glauca</i> White Spruce	25	6	P	2	- poor vigour, average form & structure - clear of proposed construction - no portion of prescribed TPZ extends onto subject site	P	Ps	2.4
N5	<i>Ulmus pumila</i> Siberian elm	65	14	F	2	- average vigour form & structure - clear of proposed construction - shall retain prescribed TPZ	F	Ps	4.2
N6	<i>Ulmus pumila</i> Siberian elm	65	16	H	2	- vigorous with poor form and structure, poorly attached unions with advanced decay and open seams evident in main and scaffold unions - clear of proposed construction - shall retain prescribed TPZ	P	Ps	4.2
N7	<i>Morus alba</i> White mulberry	25	7	F	2	- vigorous, average form & structure - clear of proposed construction - no portion of prescribed TPZ extends onto subject site	M	Ps	2.4
B1	<i>Juglans nigra</i> Black walnut	65	14	G	2	- boundary line tree - vigorous with good form & structure - clear of proposed construction - shall retain prescribed TPZ	G	Ps	4.2
B2	<i>Ulmus pumila</i> Siberian elm	35	6	P	2	- boundary line tree - vigorous with poor form, average structure, large deadwood in crown - clear of proposed construction - shall retain prescribed TPZ	P	Ps	3.0
B3	<i>Ulmus pumila</i> Siberian elm	25	4	D	2	- boundary line tree - 85% dead - clear of proposed construction - shall retain prescribed TPZ	P	Ps	2.4
B4	<i>Juglans nigra</i> Black walnut	23	6	F	2	- boundary line tree - average vigour form & structure - clear of proposed construction - shall retain prescribed TPZ	G	Ps	2.4
1	<i>Morus alba</i> White mulberry	51	12	F	1	- vigorous with average form and structure, excessive suckergrowth - in direct conflict with proposed driveway	F	Rv	3.6
2	<i>Juglans nigra</i> Black walnut	43	10	F	1	- vigorous with average form & structure - in direct conflict with proposed driveway	G	Rv	3.0
3	<i>Betula papyrifera</i> White Birch	17	6	G	1	- multi-stem (12/4/7/6/8) - vigorous with good form & structure - in direct conflict with structure	G	Rv	2.4

Tree #	Species	DBH (cm)	Dripline Diameter (m)	Condition	Category	Comments	Suitability for Conservation	Recommendation	MTPZ (M)
4	<i>Morus alba</i> White mulberry	43	10	P	1	- multi-stem (24/20/22/12/17) - vigorous, poor form and structure, growing on severe lean - not a suitable candidate for preservation - clear of proposed construction - shall retain prescribed TPZ	P	Rv	3.0
5	<i>Morus alba</i> White mulberry	18	4	P	1	- vigorous, average form & structure - clear of proposed construction - shall retain prescribed TPZ	P	Ps	2.4
6	<i>Juglans nigra</i> Black walnut	64	14	G	1	- vigorous, good form and structure - proposed deck and construction access encroach within the prescribed TPZ by 6%	G	PsI	4.2

### SITE NOTES AND COMMENTS:

As listed above there are 23 regulated trees involved with this project of which 6 are Town owned located within the municipal road allowance, 7 are privately owned located on a neighbouring property, 4 are boundary line trees located on a property line and 6 are privately owned located on the subject site, being trees no. T1-T6, N1-N7, B1-B4 and 1-6, respectively,

Due to limited site access the DBH measured was estimated for all neighbouring trees. Boundary line trees are those that appear to be located on a mutual property line and have a portion of their trunk growing on the boundary between adjoining properties. The trunk is defined as the area that extends between the root collar to the first branch of the tree. Pursuant to the Ontario Forestry Act R.S.O. 1990, trees growing on the boundary are considered common property per Section 10(2) and any person who injures or destroys a tree growing on the boundary without the consent of the land owners is guilty of an offence per Section 10(3).

#### Dead, Hazardous, Terminally Diseased and/or Trees not Suitable for Preservation:

1. From the above list, there are 2 town-owned and 1 privately owned tree located on the subject site that are either dead and/or are not suitable candidates for preservation and as such are recommended for removal regardless of proposed construction activities, being trees no. T4, T5 and 4. Pursuant to the Town of Oakville Town Tree and Private Tree Protection Bylaws, the client will submit a permit application to remove all 3 trees.

#### Tree Removal as a Consequence of Construction:

1. Tree (3) trees are in direct conflict with the proposed structure and/or new driveways and as such require removal as a consequence of construction, being trees 1-3. Pursuant to the Town of Oakville Private Tree Protection Bylaw, the client will be required to submit a permit application to remove 3 additional trees.



2. As per the Town's replacement compensation policy, one (1) tree must be planted for every 10cm DBH of healthy tree removed. The above 6 trees have a total DBH of 231cm and the client will be responsible to plant 23 replacement trees on site, the exact number will be determined pending the Town's review process, which includes reviewing the condition of each tree scheduled for removal and adjusting the total accordingly.

Tree Injury due to Encroachment within Prescribed TPZ:

1. Excavation to facilitate the installation of the proposed driveway fronting unit 11 encroaches within the prescribed TPZ of tree no. T2 by 12%. In addition, the rear decks and construction access encroach within the prescribed TPZs of trees no. N3 and 6 by 3% and 6% respectively. In all cases, each encroachment is located outside of the root zone responsible for structural support along the outer edge of each tree preservation zone. Tertiary roots disturbed within these areas are likely to be no larger than 2-3cm in diameter and can easily be ameliorated by retaining a qualified arborist to be on site to supervise excavation, root prune as required and fertilize to promote root regeneration. These trees are healthy and vigorous and have an excess of stored energy (carbohydrates) to easily recover from these minor disturbances. In this case, as mandated by the Town of Oakville Town Tree and Private Tree Protection Bylaws, a permit to injure 3 trees is required as it's not possible to protect 100% of their prescribed TPZs.
2. Located within the TPZ of trees no. N2, N3, N5, N6 B1, B2, B3, B4, 5 and 6 is an existing asphalt parking lot scheduled to be removed and replaced with soft landscaping (sod). The following steps shall be implemented to avoid disturbance to roots.
  - Prior to the demolition phase, with a qualified project consulting arborist (PCA) on site to supervise activities within the TPZ, remove the asphalt and sub-base material without disturbance to roots.
  - Subsequently install both vertical and horizontal hoarding, as outlined in the Tree Preservation Plan – TPP-1 to protect roots within the TPZ from any future construction disturbance.

Installation of New Permeable Paver Driveway (within TPZ of tree no. T3)

3. The proposed asphalt driveway fronting unit 11 encroaches upon the prescribed TPZ of tree no. T3 by 27%, located 1.22m from the base of the tree. To prevent damage to structural roots, the driveway will be required to be installed over a load support system. The new driveway will use the GEOWEB® load support system with permeable pavers, which will eliminate the need for large root pruning. The following steps shall be implemented to protect this tree from root damage during this procedure:
  - The Project Consulting Arborist (PCA) shall be on site to supervise all activities within the TPZ of any tree and root prune as required.
  - Upon completion of the construction phase, remove existing vertical hoarding within the proposed driveway and install Phase-2 hoarding along the west edge of the proposed driveway as outlined on the TPP-1 plan.

- Using pneumatic air spade and/or manually using hand tools, within the TPZ's, remove humus layer to parent soil to a depth of 10cm. Expose roots less than 50mm diameter may require pruning. Any root  $\geq 50$ mm diameter shall not be pruned.
- Fill in void with base material to level as best as possible.
- Apply woven Geotextile membrane on top of base material.
- Install 4" pocket GEOWEB® cells on top of woven Geotextile membrane.
- Fill GEOWEB cells with High Performance Bedding (HPB) material until level.
- Lay permeable interlocking pavers on top of filled GEOWEB® cells.
- See GEOWEB INSTALLATION SPECIFICATION below for details.

### GEOWEB INSTALLATION SPECIFICATION



1. - Using pneumatic air spade, scrape away humus layer down to parent soil, not to exceed 10cm depth.
  - Prune exposed roots <5.0cm diameter. Exposed roots >5.0cm shall NOT be pruned. All excavation and root pruning to be done under the supervision of the PCA, the driveway may have undulated features if large roots are exposed.
  - Level base layer.
2. - Install woven Geotextile membrane on top of soil.
3. - Install 4" pocket GeoWeb cells on top of woven Geotextile membrane.
4. - Fill GeoWeb cells with High Performance Bedding (HPB) material until level.
5. - Lay permeable interlocking pavers on top of filled GeoWeb Cells.

By installing the GEOWEB® support system, thus preserving all roots  $\geq 50$ mm diameter, it's anticipated that the proposed driveway fronting unit 11 will not adversely affect the health, safety and/or condition of tree no. T3. As mandated by the Town of Oakville Town Tree Bylaw, a permit to injure 1 tree is required as it's not possible to protect 100% of its prescribed TPZ.

### Trees Requiring Horizontal Tree Protection (HTPZ)

1. In specific situations where the required full minimum TPZ cannot be provided, a horizontal (on grade) root protection system shall be installed to prevent soil compaction within the tree protection zone. In this case, the proposed construction access routes encroach within the prescribed TPZ of trees no. B1, N3 and 6, thus requiring the installation of HTPZ system – see Tree Protection Plan in Appendix I for location.

The HTPZ shall consist of the following:

- Apply a base layer of wood chips spread at a 15 cm (6”) depth over the root area keeping 30cm clear of the trunk.
- Cover the wood chips with 3/4” overlapping plywood and subsequently bind together to prevent sheets from spreading apart.
- Once the construction project is completed, the plywood and wood chips shall be carefully removed without disturbing the original soil surface.

### General Notes:

1. During the time of inspection, no endangered species or high risk trees were surveyed while on site.
2. All remaining trees located on or within 6.0m of the subject site have a DBH less than 15cm, are non-regulated trees and therefore, were not included in this report.
3. There are several trees listed in this report that are not impacted upon by proposed construction which are either hazardous (N6), dead (B3), have large deadwood (B2) and/or are in irreversible decline (N4) requiring maintenance pruning or removal to reduce the risk of failure. With the above in mind, it is recommended that each corresponding owner contact a qualified Tree Service Provider to create and implement a tree maintenance plan in accordance to their goals and objects and subject to all municipal tree ordinances.
4. Tree no. B1 requires pruning to clear the proposed new structure. Tree no. N3 requires pruning to remove lower over-extended limbs to also clear the proposed new structure. In both cases, such pruning will remove  $\leq 10\%$  of the total canopy, which is well within industry standards. All pruning shall be completed by a qualified arborist in accordance to ANSI A300 Pruning Standards.
5. The Private Tree Protection By-law 2008-156 amended as per 2009-145 regulates all trees, regardless of size, up until the Site Plan application date. During the Site Plan process trees shall not be removed as they are part of the formal submission. Once final Site Plan approval has been granted, the by-law is then superseded by conditions that are set out in the approved Site Plan.

6. Recommendations regarding neighbouring and/or boundary line trees do not supersede civil or common law property rights. The recommendation does not determine ownership and does not authorize the client to encroach or enter upon any property to remove or prune a tree without the corresponding owner's consent. It is the responsibility of all corresponding owners to manage their property in accordance to municipal standards, individual management objectives and pursuant to all related bylaws. It is the responsibility of the client to resolve any civil property laws and other property disputes regarding neighbouring trees listed in this report.
  
7. The appraised value of trees no. T1-T6 is \$24,570.00. The Trunk Formula Method (TFM) was used to appraise the tree as described in the "Guide for Plant Appraisal", prepared under contract by the "Council of Tree and Landscape Appraisers, an official publication of the International Society of Arboriculture (I.S.A.), 9th Edition, 2000", see Appendix III for Key Inputs and Trunk Formula Summary.
  
8. To further protect each tree scheduled for preservation from the potential of construction disturbance, the Tree Preservation Guidelines shall be implemented as outlined in Appendix I.

**SUMMARY TABLE:**

Tree Category	Total	Scheduled for Preservation		Remove	
		Preserve	Preserve with Injury	Due to construction	Regardless of construction
Town (tree located within municipal road allowance)	6	2	2	0	2
Neighbour (regulated tree located within 6m of subject site)	7	6	1	0	0
Boundary (Regulated tree located on mutual property line)	4	4	0	0	0
Private (Regulated tree located on the subject site)	6	1	1	3	1
<b>Total</b>	<b>23</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>3</b>

## CONCLUSIONS:

As listed in the Summary Table above, there are 23 regulated trees involved with this project of which 3 requires removal and 4 will incur injury as a consequence of construction. In addition, 3 trees are either dead and/or in irreversible decline, are not suitable candidates for preservation and are recommended for removal rather than attempting to preserve and protect during construction. The client will submit a permit application to remove 6 trees and injure 4. Finally, with the above in mind, it's the consultant's opinion that if the Tree Preservation Guidelines are implemented, which includes installing tree protection hoarding as outlined in this report, proposed construction will not adversely affect the long-term health, safety and/or existing condition of all trees scheduled for preservation.

Trusting this report meets your needs. For further information, you may contact me directly at (289) 813-9250 or at [dcarnevale@greenprintca.com](mailto:dcarnevale@greenprintca.com)

## GREENPRINT CONSULTING ARBORISTS



Davide Carnevale *H.B.Sc.F.*  
Senior Consulting Arborist  
ASCA Registered #370  
E-mail: [dcarnevale@greenprintca.com](mailto:dcarnevale@greenprintca.com)

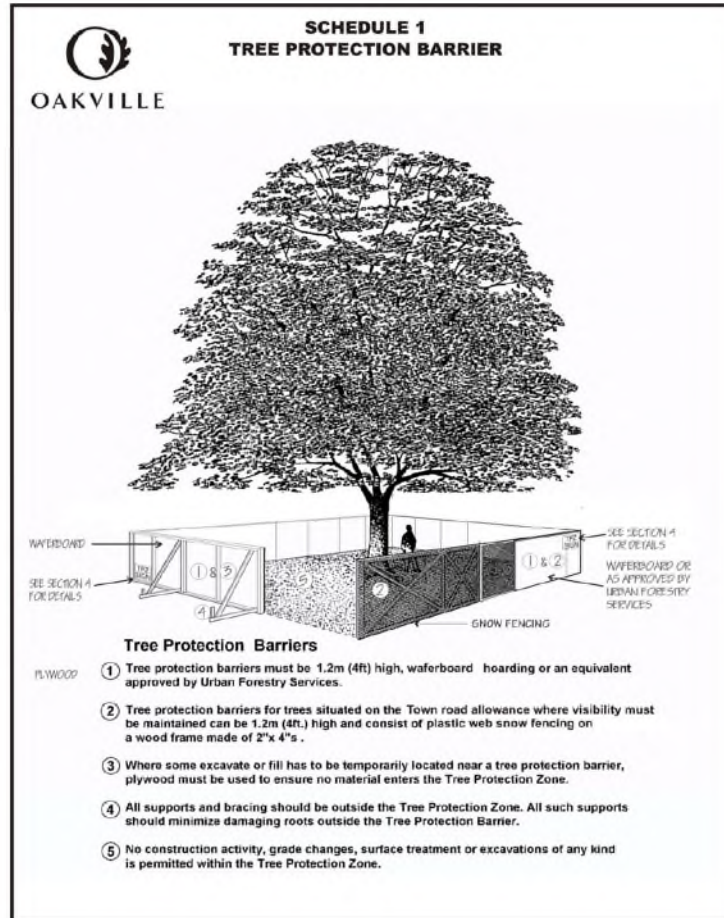
## Appendix I: TREE PRESERVATION GUIDELINES

### 1.0 ESTABLISH TREE PROTECTION ZONE

The purpose of the tree protection zone (TPZ) is to prevent root damage, soil compaction and soil contamination. Workers and machinery shall not disturb the tree protection zone in any way. To prevent access, the following is required:

1.1 Install hoarding as per attached Tree Protection Plan in Appendix I.

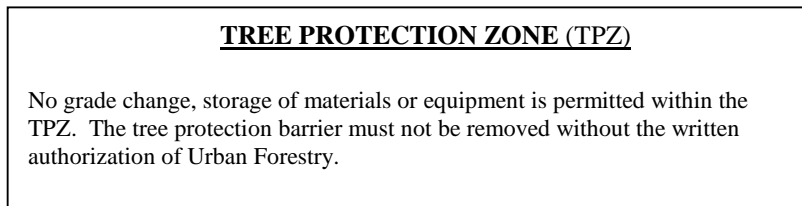
1.2 Hoarding shall consist of the following:



1.3 When visibility is a consideration and **upon approval from the Town**, 1.2 meter high orange plastic web snow fencing on a 2"X4" frame is recommended.



- 1.4 No fill, equipment or supplies are to be stored within the tree protection zone.
- 1.5 Activities, which are likely to injure or destroy tree(s), are not permitted within the TPZ.
- 1.6 No objects may be attached to tree(s) within the TPZ.
- 1.7 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 in good condition throughout the entire duration of the project.
- 1.8 Once all tree/site protection measures have been installed you must notify Urban Forestry staff to arrange for an inspection of the site and approval of the site protection requirements.
- 1.9 All Hoarding shall not be removed until all construction activity is complete.
- 1.10 A sign that is similar to the illustration below must be mounted on all sides of a tree protection barrier for the duration of the project. The sign should be a minimum of 40cm X 60cm and made of white gator board, laminates or equivalent material.



## 2.0 ROOT PRUNING

Where possible, hand dig areas closest to each tree to prevent any unnecessary tearing or pulling of roots. Removal of roots that are greater than 2.5 centimetres in diameter or roots that are injured or diseased should be performed as follows:

- 2.1 Preserve the root bark ridge (similar in structure to the branch bark ridge). Directional Root Pruning (DRP) is the recommended technique and should be used during hand excavation around tree roots. Roots are similar to branches in their response to pruning practices. With DRP, objectionable and severely injured roots are properly cut to a lateral root that is growing downward or in a favorable direction.
- 2.2 All roots needing to be pruned or removed shall be cut cleanly with sharp hand tools, by a Certified Arborist or by the PCA.
- 2.3 No wound dressings/pruning paint shall be used to cover the ends of each cut.

2.4 All roots requiring pruning shall be cut using any of the following tools:

- Large or small loppers
- Hand pruners
- Small hand saws
- Wound scribes

2.5 Avoid prolonged exposure of tree roots during construction - keep exposed roots moist and dampened with mulching materials, irrigation or wrap in burlap if exposed for longer than 4 hours.

### 3.0 ESTABLISH MAINTENANCE PROGRAM

All maintenance work must be completed by the approved Project Consulting Arborist or an equivalent qualified arborist.

*Pre-Construction:*

3.1 Prune trees to remove deadwood, objectionable limbs while maintaining crown form.

*During- Construction:*

3.2 Irrigate tree preservation zones during drought conditions, June – September, to reduce drought stress.

3.3 Inspect the site every month to ensure that all hoarding is in place and in good condition. Inspect the trees to monitor condition.

*Post-Construction:*

3.4 Trees require several years to adjust to the stress/injury and environmental changes that may occur during the development phase. In response, inspect the trees two times per year – May and September – to monitor condition for a minimum of 2 additional years.

### 4.0 LANDSCAPING

Any landscaping completed within the tree preservation zones, after construction is completed and hoarding has been removed, cannot cause damage to any of the trees or their roots. The trees must be protected for the same reasons listed above but without using hoarding.

4.1 **No grade changes** are permitted which include adding and/or removing soil.

4.2 **No excavation** is permitted that can cause damage to the roots of the tree.

4.3 **No heavy equipment** can be used to compact the soil within the tree preservation zone. Compaction is one of the leading agents that cause tree decline within urban settings.

4.4 Any hard -surface sidewalks, paths, etc. should be constructed using permeable products such as interlocking stone, etc.



**Appendix: II**

**DIGITAL IMAGES**

**Photo #1:**



**Photo #2:**



**Photo #3:**



**Photo #4:**



**Photo #5:**



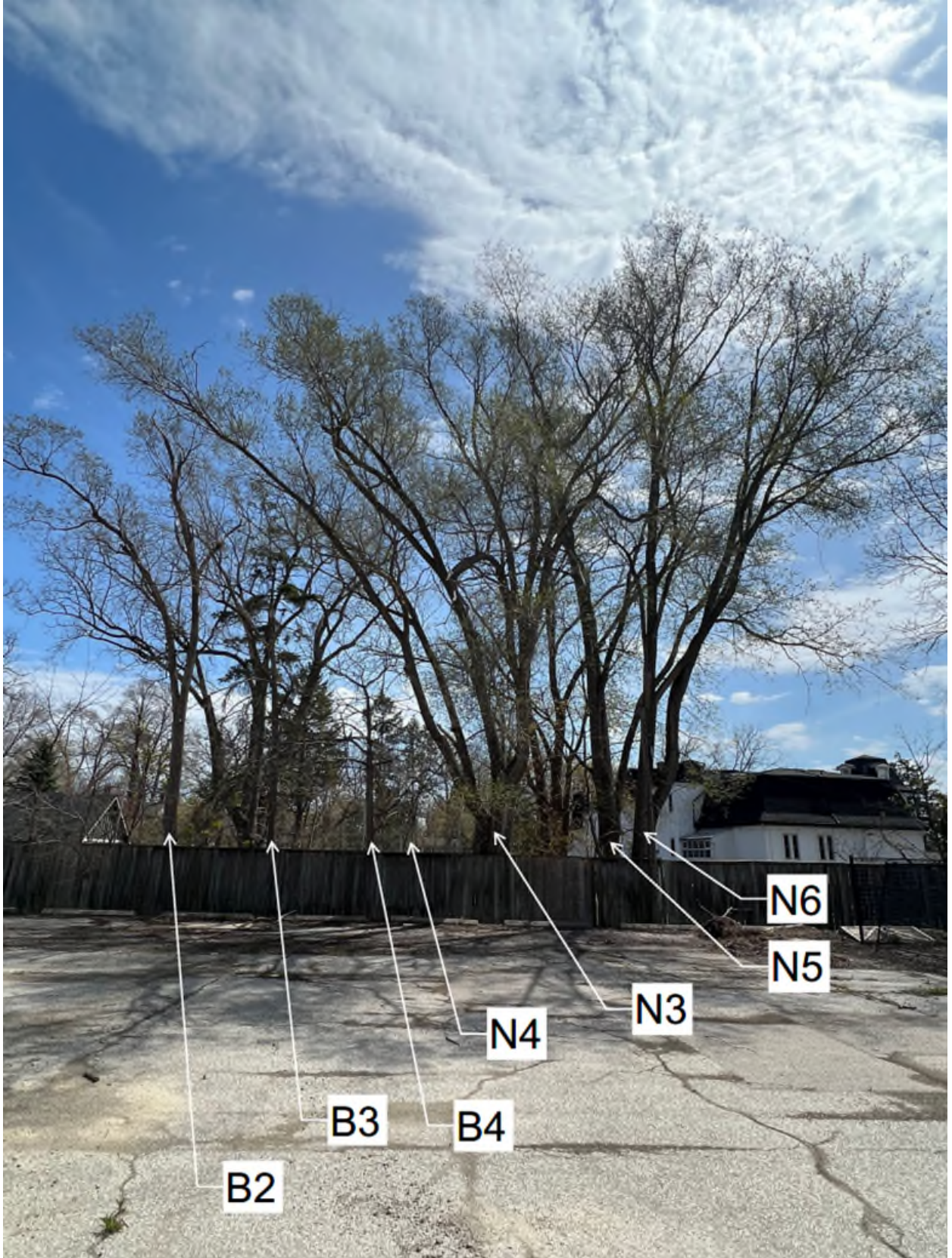
**Photo #6:**



**Photo #7:**



**Photo #8:**





**Photo #9:**



N6: Advanced decay with open seams in main union

**Photo #10:**



N6: Advanced decay with open seams in scaffold leaders

**Photo #11:**



**Photo #12:**



**Appendix III:**

**TRUNK FORMULA METHOD**

The method that will be used to appraise the tree is the Trunk Formula Method (TFM) as described in the “*Guide for Plant Appraisal*”, prepared under contract by the “*Council of Tree and Landscape Appraisers*, an official publication of the *International Society of Arboriculture (I.S.A.)*, 9<sup>th</sup> Edition, 2000”. The trunk formula method is used to appraise the monetary value of trees considered too large to be replaced with nursery or field-grown stock. Determination of the value of a tree is based on the cost of the largest commonly available transplantable tree and its cost of installation, plus the increase in value due to the larger size of the tree being appraised. These values are adjusted according to the species, health and location. This method of appraisal is endorsed by several reputable organizations including the *American Society of Consulting Arborist*, the *I.S.A.* and the *Tree Care Industry*.

**TABLE 1: KEY INPUTS**

Replacement Cost	<b>\$815.00</b>
Species factor <sup>7</sup>	
<ul style="list-style-type: none"> <li>• Norway Spruce (<i>Picea abies</i>)</li> <li>• Black Walnut (<i>Juglans nigra</i>)</li> </ul>	<b>71%</b> <b>67%</b>
Basic Price <sup>8</sup>	<b>\$6.51 cm<sup>2</sup></b>
Location Factor taking into account the following:	
<ul style="list-style-type: none"> <li>▪ Site Rating – (75%)</li> <li>▪ Contributing Rating – (77%)</li> <li>▪ Placement Rating – (78%)</li> </ul>	<b>77%</b>

**TABLE 2: TRUNK FORMULA SUMMARY**

TREE #	DBH (CM)	Replacement Cost	BASIC PRICE \$	TRUNK AREA DIFFERENCE	SPECIES %	CONDITION %	LOCATION %	APPRAISED VALUE \$
T1	45	815	6.51	1590	71	80	77	4800
T2	50	815	6.51	1963	71	80	77	5900
T3	36	815	6.51	1018	71	80	77	3170
T4	31	815	6.51	755	71	0	77	0
T5	44	815	6.51	1521	71	40	77	2300
T6	72	815	6.51	4072	67	60	77	8400
							<b>TOTAL</b>	<b>\$24,570.00</b>

<sup>7</sup> Ontario Supplement to the Guide for Plant Appraisal, 8th Edition

<sup>8</sup> See above.

#### **Appendix IV:**

### **ASSUMPTION AND LIMITING CONDITIONS**

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however *GreenPrint Consulting Arborists* can neither guarantee nor be responsible for the accuracy of information provided by others.
2. Excerpts or alterations to the report, without the authorization of the author or his company invalidates its intent and/or implied conclusions. This report may not be used for any expressed purpose other than its intended purpose and alteration of any part of this report invalidates the report.
3. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflect the condition of those items at the time of inspection; and 2) the inspection was made using accepted arboricultural techniques and is limited to visual examination of accessible items without climbing, dissection, probing or coring and detailed root examination involving excavation. While reasonable efforts have been made to assess trees outlined in this report, there is no warranty or guarantee, expressed or implied, that problems or deficiencies with the tree(s) or any part(s) of them may not arise in the future. All trees should be inspected and re-assessed periodically.
4. This Report has been prepared by using the latest drawings and information provided by the client and may be intended for inclusion in a site plan approval or a similar planning submission. However, any subsequent design or site plan alteration affecting regulated trees may require revisions to this report.
5. Links / URLs found within the report to access web-based resources are current to the date of the report.
6. The determination of ownership of any subject tree(s) is the responsibility of the owner and any civil or common-law issues, which may exist between property owners with respect to trees, must be resolved by the owner. A recommendation to remove or maintain tree(s) does not grant authority to encroach in any manner onto adjacent private properties.