

December 23, 2020

Mike Liburdi  
12148 Albion Vaughn Inc.  
27 Fenton Way  
Brampton ON  
L6P 0P4

Dear Mike Liburdi:

**Re: Arborist Report and Tree Preservation Plan for 12148 Albion Vaughan Road, Bolton (PECG#160461)**

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## 1. Introduction

Palmer has completed an Arborist Report for the proposed development of 12148 Albion Vaughan Road, in the community of Bolton, Town of Caledon, Region of Peel (the Subject Property).

Currently, residential buildings, including one house, a barn and manicured lawns with scattered trees occupy the Subject Property (**Figure 1**). Robinson Creek, a headwater tributary of Humber River, enters the property at the northwest corner and runs southward along the western edge, lying within the Toronto and Region Conservation Authority (TRCA) Regulatory Floodplain.

This report includes an assessment of applicable policy, methods and results of the tree inventory completed within the Subject Property, and the identification of trees to be retained and trees to be removed. Recommendations for tree removals, replacement tree species and planting locations are also provided in this report as well as recommended tree protection measures for trees to be retained.

## 2. Guidance Documents

This Arborist Report and Tree Preservation Plan is guided by The Town of Caledon *Development Standards, Policies & Guidelines* (Town of Caledon, 2009), supplemented by the City of Toronto *Tree Protection Policy and Specifications for Construction Near Trees* (2016). The Town of Caledon document guides the content of the report and details the standards for tree protection measures. Where additional construction management and monitoring guidance was required, the City of Brampton *Tableland Tree Assessment Guidelines* (2018) were employed, employing standards from the nearest neighbouring municipality.

## 3. Methods

A tree inventory was completed for trees within and adjacent to the area proposed for development on the Subject Property. The tree inventory was completed by a Certified Arborist on November 7, 2016.

Information collected during the inventory includes species name, tree tag number, diameter at breast height (DBH), location, a general health assessment, and notes on tree trunk and canopy conditions.

## 4. Results

### 4.1 Tree Inventory

The tree inventory comprised 34 individual trees, with an additional grouping of untagged Eastern White Cedar trees. The inventory included 14 trees and one (1) grouping which were native species (43%), nine (26%) trees that were non-native, and 11 (31%) trees were identified to the genus only. There were 32 trees identified as live, two (2) individual dead trees and a grouping of dead trees on the Subject Property (**Table 1**). The inventory included 11 (31%) trees which were deciduous species and 24 (69%) trees that were coniferous species. The trees identified as dead were not tagged during this inventory. All are trees commonly found and/or planted in southern Ontario landscapes. There were no Species at Risk (SAR) trees observed, such as Butternut (*Juglans cinerea*); although there were several trees at high risk of disease or infestation, including Ash species (*Fraxinus* sp.). Complete tree inventory details are provided in **Appendix A**. The locations of inventoried trees are shown on **Figure 2**.

**Table 1. Summary of Tree Inventory Results**

Scientific Name	Common Name	Total Number
<i>Acer x freemanii</i> *	Freeman's Maple	1
<i>Fraxinus</i> sp.	Ash Species	7
<i>Juglans</i> sp.	Walnut Species	2
<i>Malus</i> sp.	Apple Species	1
<i>Picea</i> sp.	Spruce Species	1
<i>Picea abies</i>	Norway Spruce	8
<i>Picea glauca</i> *	White Spruce	7
<i>Picea pungens</i>	Blue Spruce	1
<i>Pinus strobus</i> *	Eastern White Pine	6
<i>Thuja occidentalis</i> *	Eastern White Cedar	1 Grouping
<b>Total</b>		<b>35</b>

\*Native species

### 4.2 Trees to be Retained

A total of five (5) trees are proposed to be retained (**Table 2**). All six are Eastern White Pine, a native species. These trees are considered to be in good to fair health and are located along the northwestern property boundary of the Subject Property (**Figure 2**).

**Table 2. Trees Proposed to be Retained**

Scientific Name	Common Name	Good to Fair Health	Poor Health	Total Count
<i>Pinus strobus</i> *	Eastern White Pine	5	0	5

Total trees to be retained	5	0	5
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#### 4.3 Trees to be Removed

A total of 24 inventoried trees and a tree grouping are proposed to be removed to accommodate the proposed development (**Table 3**). This includes ten (42%) trees of which are native, nine (38%) trees are non-native and six (20%) trees were identified to the genus only. The trees proposed to be removed are scattered throughout the Subject Property (**Figure 2**). Most of these trees were observed to be in good to fair health; however, there were several ash trees that were affected by Emerald Ash Borer (*Agrilus planipennis*) and in poor health. There was also a grouping of dead Eastern White Cedar in the northern portion of the Subject Property. Palmer understands that the five (5) Ash trees located along the hedgerow at the southeastern property boundary were removed subsequent to the inventory (between 2016 and 2018), likely due to adjacent development (**Figure 2, Table 3**). It is assumed that removal conditions have been previously obtained from the municipality for these trees; therefore, these trees will not be proposed for compensation.

**Table 3. Trees Proposed to be Removed**

Scientific Name	Common Name	Fair to Good Health	Poor Health	Dead**	Total Count
<b>Trees to be Removed</b>					
<i>Acer x freemanii</i> *	Freeman's Maple	1	0	0	1
<i>Fraxinus</i> sp.	Ash	1	0	1	2
<i>Juglans</i> sp.	Walnut	2	0	0	2
<i>Malus</i> sp.	Apple	1	0	0	1
<i>Picea</i> sp.	Spruce	0	0	1	1
<i>Picea abies</i>	Norway Spruce	8	0	0	8
<i>Picea glauca</i> *	White Spruce	6	1	0	7
<i>Picea pungens</i>	Blue Spruce	1	0	0	1
<i>Pinus strobus</i> *	Eastern White Pine	1	0	0	1
<i>Thuja occidentalis</i> *	Eastern White Cedar	0	0	1 Grouping	1
<i>Subtotal</i>		21	1	3	25
<b>Trees Removed Subsequent to Inventory (2016 – 2018)</b>					
<i>Fraxinus</i> sp.	Ash	4	1	0	5
<i>Subtotal</i>		4	1	0	5
<b>Total</b>		<b>24</b>	<b>2</b>	<b>3</b>	<b>29</b>

\*Native species

\*\*Dead trees in various stages of decay.

## **5. Tree Preservation Plan**

### **5.1 Tree Protection**

The specifications for tree protection are detailed on the Tree Preservation Plan (**Figure 2**), including the locations of required tree protection fencing. The Tree Preservation Plan is intended to act in concert with this Arborist Report; it is expected that the recommendations of both instruments be implemented within construction drawings and/or Site Plans for the project. The five trees proposed to be retained will be protected by tree protection fencing, which is to be placed at minimum beyond the dripline as determined as per the Town of Caledon *Development Standards, Policies & Guidelines* (Town of Caledon, 2009).

The recommended fencing locations encompass the Tree Protection Zones (TPZ) of the trees to be retained, providing protection from potential damage during construction activities such as the use of machinery near trees and branches, and stockpiling of materials over the root zone. The TPZ have been defined by radii that follow the Tree Protection Zone criteria outlined in the *Tree Protection Policy and Specifications for Construction Near Trees* (City of Toronto, 2016). The TPZ has been used as a conservative measure of the dripline requirements, per the Town of Caledon Specifications.

#### **5.1.1 Tree Protection Fencing**

Tree protection fencing is to consist of rigid snow fencing complete with iron “T” bars placed at a maximum of 2.4 metres (m) on-centre (maximum spacing) as per Town of Caledon Tree Protection Standard #707 (**Appendix B**). Snow fencing is to be 1.2 m high. Prior to the start of any site work, the Contractor shall supply and install tree protection barriers around each tree or group of trees designated to be protected (**Figure 2**), or as directed by the Consulting Arborist or Landscape Architect, and the Town (Town of Caledon, 2009).

Tree fencing, as a minimum, is to be located at the outer limit of the dripline of the tree (**Figure 2**). The dripline is defined as the outside edge of the tree canopy. The TPZ for each tree has been provided in this report as a conservative and quantifiable measure of the dripline. No fill, machinery, chemicals, fuel or materials are to be placed within the protective barrier. No re-grading, including filling or excavation, is to take place within the protected area. If required, all underbrush that is to be removed from within the protective barriers must be cleared by hand. The method of removal of brush from the protected area is to be approved by the Town (Town of Caledon, 2009).

General construction specifications in relation to trees are also detailed on the Tree Preservation Plan (**Figure 2**). These specifications provide additional details regarding tree protection fencing and their management.

#### **5.1.2 Tree Removals**

All trees to be removed should be felled into the Subject Property so as to avoid damage to adjacent trees and property. While most trees to be removed can be root-pulled as necessary to accommodate development, **Tree 390 (Figure 2)** should be cut and the stump ground to below surface in order to protect the roots of adjacent trees.

## 6. Compensation Plantings

### 6.1 Tree Removal and Compensation

A total of 22 live trees are to be removed as a result of the project (**Table 4, Figure 3**). It is recommended that a tree compensation ratio of 2:1 be implemented, resulting in 44 trees to be planted. Planting and restoration efforts will aim to restore the natural areas where disturbances have occurred as a result of anthropogenic disturbance.

**Table 4: Recommended Tree Removal and Compensation**

	Compensation Ratio (2:1)	Total
Total number of tree removals	21	21
Total number of replacement trees	44	44

### 6.2 Tree Species

To match with the restoration activities on the Subject Property as outlined in the Environmental Impact Study (EIS) for the proposed development (Palmer, 2020), the following tree species and composition are proposed to be planted in compensation (**Table 5**). While other species can be considered, another planting criterion should be selecting only native trees to increase the quality and character of the overall natural heritage system. Selecting Ash species should be avoided (at present) due to the advance of Emerald Ash Borer (EAB) in Ontario.

**Table 5: Proposed Compensation Tree Species**

Tree/Shrub Species	Quantity	Recommended Size
Silver Maple ( <i>Acer saccharinum</i> )	10	2 – 4 gallon pot
Tamarack ( <i>Larix laricina</i> )	10	100 - 150 cm wire basket
Paper Birch ( <i>Betula papyrifera</i> )	10	2 – 4 gallon pot
Hackberry ( <i>Celtis occidentalis</i> )	12	2 – 4 gallon pot

The sizes proposed in **Table 5** are reflective of the sizes recommended for ecosystem naturalization, as outlined in the *Guideline for Determining Ecosystem Compensation* (Toronto and Region Conservation Authority, 2018).

### 6.3 Planting Location

The replacement trees are proposed to be planted on the Subject Property. As outlined in the EIS for the proposed development, the restoration Planting Area surrounding Robinson Creek is able to accommodate approximately 330 trees, far in excess of the proposed tree compensation.

The proposed Planting Area includes areas between Robinson Creek and the proposed development along the western boundary of the Subject Property (**Figure 2**). Trees planted adjacent to the stream should be able to tolerate some sun and moist soils along the stream riparian zone.

This tree compensation plan should be incorporated into the landscaping plan for the Project. Trees should be planted a minimum of 2.45 m x 2.45 m from each other and any proposed development structure or feature.

## **7. Management and Monitoring Phase**

The following general management and monitoring actions are submitted to help ensure the protection of the trees to be retained on the Subject Property.

### **7.1 Pre-Construction Phase**

The tree protection fencing erected should be inspected by a Certified Arborist. Any pruning or trimming of trees necessary to accommodate the fencing should be completed by a Certified Arborist using good arboricultural practices. All trees to be removed should be felled into the Subject Property so as to avoid damage to adjacent trees and property.

### **7.2 Construction Phase**

Tree protection fencing should be maintained throughout the project and regularly inspected for damage by construction personnel. Any damage will be reported to the construction supervisor and repaired immediately. Any build up of sediments at tree bases will be removed as part of fencing repairs. All plant material damaged as a result of improper installation or maintenance of protective barriers must be replaced with material of equal value, at the cost of the Developer.

### **7.3 Post-Construction Phase**

The removal of tree protection barriers should only be initiated once all construction activities have been completed and landscaping has been initiated. Planting of compensation trees as per Section 6 will be initiated as part of restoration activities. Planting will occur solely during the spring or fall planting seasons when establishment is most successful; being April 15 - July 1, and September 15 – November 15, respectively.

## 8. Closure

We trust that this letter provides sufficient guidance for the incorporation of tree protection measures into the relevant construction drawings and site plans for the proposed development of 12148 Albion Vaughan Road. Should you need any further clarification concerning this letter, please contact the undersigned at 647-461-2372 or [austin.adams@pecg.ca](mailto:austin.adams@pecg.ca).

Yours truly,

**Palmer**<sup>TM</sup>

Prepared By:



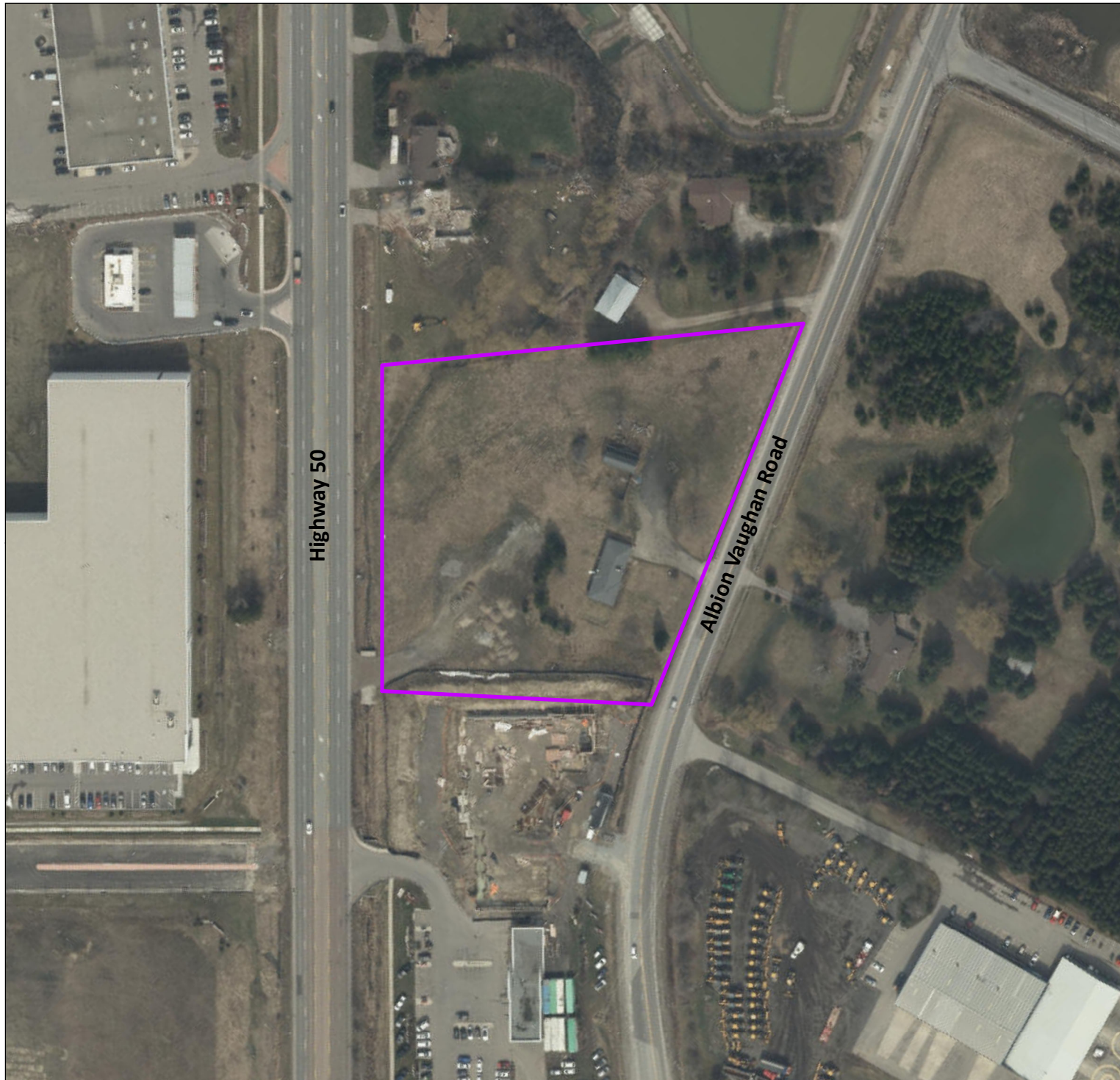
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Austin Adams, M.Sc., EP  
Sr. Ecologist, ISA Certified Arborist ON-2000A

## References

- City of Toronto. (2016). *Tree Protection Policy and Specifications for Construction Near Trees*. Toronto. Retrieved from <https://www.toronto.ca/data/parks/pdf/trees/tree-protection-specs.pdf>
- City of Brampton. (2018). *Tableland Tree Assessment Guidelines*. Retrieved July 5, 2018, from [http://www.brampton.ca/EN/Business/planning-development/guidelines-manuals/Documents/Tableland\\_Tree\\_Assessment\\_Guidelines.pdf](http://www.brampton.ca/EN/Business/planning-development/guidelines-manuals/Documents/Tableland_Tree_Assessment_Guidelines.pdf)
- Palmer. (2020). 12148 Albion Vaughan Road - Scoped Environmental Impact Study. Prepared for 12148 Albion Vaughan Inc.
- Town of Caledon. (2009). *Development Standards, Policies and Guidelines*. Retrieved from <https://www.caledon.ca/en/townhall/resources/DevelopmentStandardsPoliciesGuidelines.pdf>



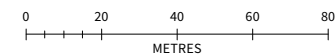


## OVERVIEW



## LEGEND

- SUBJECT PROPERTY (1.57 ha)  
12148 Albion Vaughan Road,  
Bolton, Town of Caledon



COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N  
SCALE: 1:2,000

DATA SOURCES: Imagery provided York Region (2018). Watercourse (edited) provided by Ontario Hydro Network. Overview basemap: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

**Project:** 12148 Albion Vaughan  
**Client:** Aztec Restoration

PREPARED BY:

**Palmer™**

DRAWN: B. Elder  
CHECKED: A. Adams  
PROJECT: 160461  
DATE: Nov 25, 2020

**Site Location**

**FIGURE 1**







## Appendix A

- Tree Inventory

### Appendix A. Tree Inventory

Tree ID	UTM	Common Name	Species Name	# of trunks	DBH (cm)	Effective DBH (cm)*	Tree Protection Zone (m)	Health/ Condition	Recommendation	Comments
400	604618, 4856207	Ash sp.	<i>Fraxinus</i> sp.	1	21.5	21.5	1.8	F	previously removed	3 stems, 2 cut, EAB
399	604629, 4856218	Ash sp.	<i>Fraxinus</i> sp.	1	23.6	23.6	1.8	F	previously removed	EAB, large wound at base
398	604636, 4856224	Ash sp.	<i>Fraxinus</i> sp.	1	22	22	1.8	F	previously removed	No signs of decay or wounds, EAB
397	604640, 4856228	Ash sp.	<i>Fraxinus</i> sp.	1	27.7	27.7	1.8	F	previously removed	Significant branch dieback, piece of fence through tree, epicormic branching
396	604648, 4856234	Ash sp.	<i>Fraxinus</i> sp.	1	21.2	21.2	1.8	P	previously removed	EAB, epicormic branching, top is broken, branch dieback
395	604644, 4856258	Apple sp.	<i>Malus</i> sp.	1	39.5	39.5	2.4	G	remove	Callused wound on trunk, slight lean, good canopy vigour
394	604649, 4856263	Blue Spruce	<i>Picea pungens</i>	1	42.5	42.5	3	G	remove	Lower branches pruned
393	604628, 4856303	Walnut sp.	<i>Juglans</i> sp.	1	48.6	48.6	3	G	remove	
392	604624, 4856300	Walnut sp.	<i>Juglans</i> sp.	1	35	35	2.4	G	remove	Minor branch dieback
A, No tag	604607, 4856286	Spruce sp.	<i>Picea</i> sp..	1	44.6	44.6	3	Dead	remove	Woodpecker damage, beetle holes
391	604583, 4856310	Freeman's Maple	<i>Acer x freemanii</i>	1	32.7	32.7	2.4	G	remove	Minor epicormics, possible butt rot, mechanical damage at base, good canopy
B, No tag	604617, 4856316	Ash sp.	<i>Fraxinus</i> sp.	1	N/A	N/A	N/A	Dead	remove	Top broken, codominant stems
390	604572, 4856332	Eastern White Pine	<i>Pinus strobus</i>	1	34.5	34.5	2.4	G	remove	
389	604568, 4856328	Eastern White Pine	<i>Pinus strobus</i>	1	34.2	34.2	2.4	G	retain	Top broken
388	604565, 4856327	Eastern White Pine	<i>Pinus strobus</i>	1	25	25	1.8	G	retain	

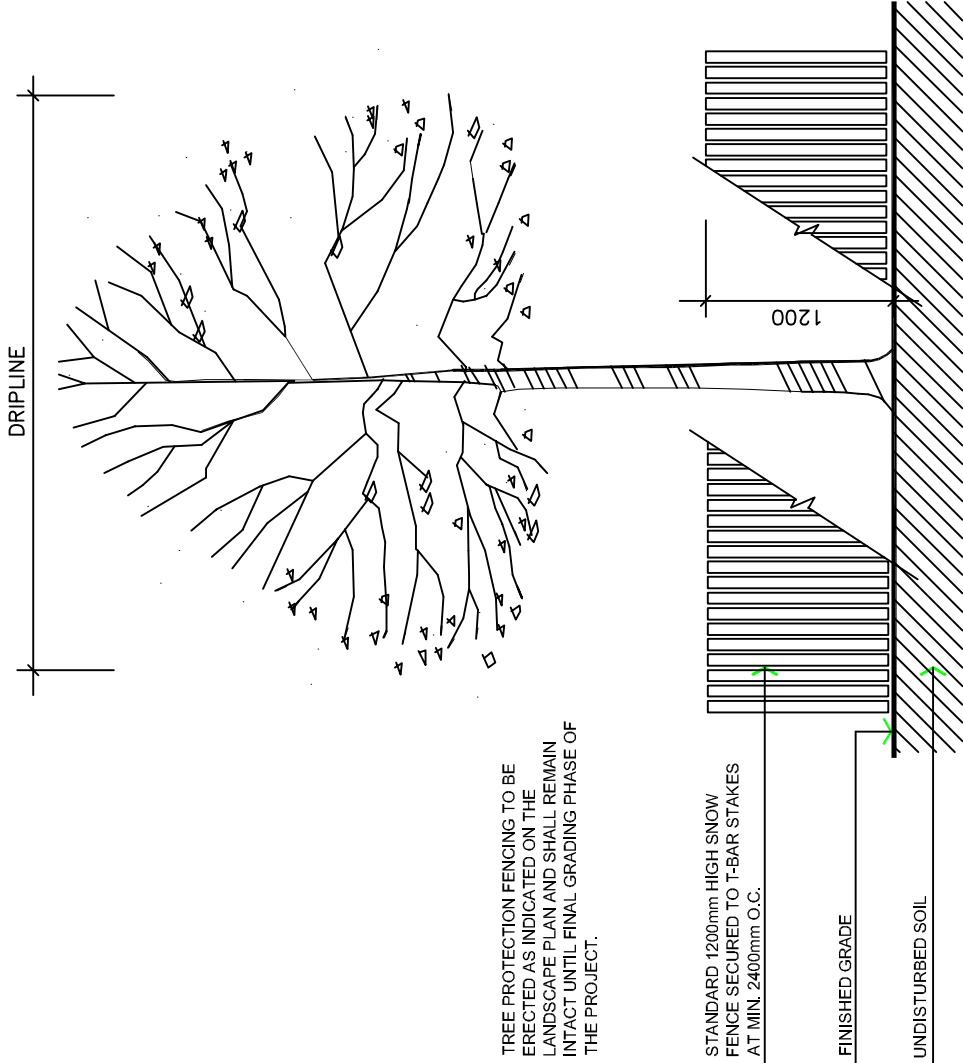
Tree ID	UTM	Common Name	Species Name	# of trunks	DBH (cm)	Effective DBH (cm)*	Tree Protection Zone (m)	Health/ Condition	Recommendation	Comments
387	604565, 4856327	Eastern White Pine	<i>Pinus strobus</i>	1	26.3	26.3	1.8	G	retain	
386	604563, 4856322	Eastern White Pine	<i>Pinus strobus</i>	1	37	37	2.4	G	retain	
385	604559, 4856321	Eastern White Pine	<i>Pinus strobus</i>	1	28.7	28.7	1.8	G	retain	
No tag, TG1	604578, 4856291	Eastern White Cedar	<i>Thuja occidentalis</i>	~50	~10	70	4.2	Dead	remove	Majority of stems ≤10 cm dbh, width 5 m, approx. 50 stems. Surrounded by thicket of buckthorn.
384	604595, 4856263	Ash sp.	<i>Fraxinus</i> sp.	1	6.5	6.5	1.2	G	remove	
383	604597, 4856262	Norway Spruce	<i>Picea abies</i>	1	19	19	1.8	G	remove	
382	604600, 4856264	Norway Spruce	<i>Picea abies</i>	1	14.7	14.7	1.8	G	remove	
381	604602, 4856262	Norway Spruce	<i>Picea abies</i>	1	33	33	2.4	G	remove	
380	604604, 4856258	Norway Spruce	<i>Picea abies</i>	1	19.8	19.8	1.8	G	remove	
379	604602, 4856253	Norway Spruce	<i>Picea abies</i>	1	19	19	1.8	G	remove	
378	604606, 4856251	Norway Spruce	<i>Picea abies</i>	1	14	14	1.8	G	remove	
304	604606, 4856248	Norway Spruce	<i>Picea abies</i>	1	12.5	12.5	1.8	G	remove	
311	604610, 4856246	Norway Spruce	<i>Picea abies</i>	1	30.8	30.8	2.4	G	remove	Lower branches pruned
312	604609, 4856238	White Spruce	<i>Picea glauca</i>	1	12.9	12.9	1.8	G	remove	
307	604612, 4856240	White Spruce	<i>Picea glauca</i>	1	18	18	1.8	G	remove	
306	604615, 4856240	White Spruce	<i>Picea glauca</i>	1	14.2	14.2	1.8	G	remove	
305	604617, 4856241	White Spruce	<i>Picea glauca</i>	1	17.5	17.5	1.8	G	remove	
308	604619, 4856242	White Spruce	<i>Picea glauca</i>	1	16.9	16.9	1.8	F	remove	Top broken
310	604620, 4856244	White Spruce	<i>Picea glauca</i>	1	17	17	1.8	G	remove	
301	604624, 4856246	White Spruce	<i>Picea glauca</i>	1	14	14	1.8	P	remove	Top broken, majority of leaves dead.

\* Effective DBH calculated as the square root of the sum of squares for all tree stems.

\*\*Dead trees in various stages of decay.

## **Appendix B**

- Town of Caledon Standard #707 – Tree Preservation



SPECIFICATIONS FOR THE PROTECTION AND PRESERVATION OF EXISTING VEGETATION:

1. PRIOR TO ISSUANCE OF THE BUILDING PERMIT, ALL EXISTING TREES THAT ARE TO BE PRESERVED SHALL BE FULLY PROTECTED WITH HOARDING (IE SNOW FENCING) OUTSIDE THEIR 'DRIPLINES', TO THE SATISFACTION OF THE TOWN.
2. GROUPS OF TREES AND OTHER EXISTING PLANTINGS TO BE PROTECTED SHALL BE TREATED IN A LIKE MANNER WITH HOARDING AROUND THE ENTIRE CLUMP(S).
3. AREAS WITHIN THE PROTECTIVE FENCING SHALL REMAIN UNDISTURBED AND SHALL NOT BE USED FOR THE STORAGE OF BUILDING MATERIALS OR EQUIPMENT. NO CONTAMINANTS SHALL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OF TREES EXIST.
4. PRUNE BRANCHES TO REMOVE DAMAGED LIMBS ONLY. DO NOT DAMAGE LEADERS. ALL CUTS OVER 25mm SHALL BE TREATED IN ACCORDANCE WITH APPROPRIATE HORTICULTURAL PRACTICES AS APPROVED BY THE TOWN.
6. CUTTING OF ROOTS OR CHANGING OF GRADES AROUND EXISTING TREES TO BE PRESERVED WILL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE PUBLIC WORKS AND ENGINEERING DEPARTMENT.
7. TREES THAT HAVE DIED, OR HAVE BEEN DAMAGED BEYOND REPAIR SHALL BE REPLACED AT THE DEVELOPER'S EXPENSE, WITH TREES OF A SIZE AND SPECIES APPROVED BY THE TOWN.
8. IF TREES ARE BEING ADVERSLY AFFECTED BY CONSTRUCTION, A WATERING AND FERTILIZING PROGRAM IS TO BE SET UP TO THE SATISFACTION OF THE TOWN.
9. TREE PRESERVATION FENCE TO BE INSPECTED BY THE CONSULTING LANDSCAPE ARCHITECT AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

TOWN OF CALEDON

TREE PRESERVATION

			APR'D:	C.C.	DATE: JUNE 08
2	STANDARD No. 1135 NOW 707, NOTES EDIT	JUNE 08		abal	SCALE: NTS
1	NOTE NO. 9 ADDED	MARCH 08			
NO.	REVISION	APR'D	DATE	STANDARD No. 707	