



JACKSON ARBORICULTURE INC.

CONSULTING AND GIS ANALYSIS

118 Pleasant Ridge Road, Brantford ON, N3R 0B8

905-512-6303, jeremy@jacksonarbor.ca

Tree Inventory and Preservation Plan Report

Subject Property:

1839 Four Mile Creek Road
Niagara-on-the-Lake, ON

Prepared For:

Harvest Heights
657 East West Line
Niagara-On-The-Lake, ON L0S 1J0

Prepared By:

Jackson Arboriculture Inc.
118 Pleasant Ridge Road
Brantford, ON N3R 0B8

6 January 2024

Jackson Arboriculture Inc. Project No. 542

1.0 Introduction

Jackson Arboriculture Inc. was retained by Harvest Heights to complete a Tree Inventory and Preservation Plan report for a property situated at 1839 Four Mile Creek Road in the Town of Niagara-on-the-Lake, Ontario, hereby referred to as the subject property. It is understood that an application will be filed with the Town for the construction of a residential development.

This study has been completed in accordance with the Town of Niagara-on-the-Lake private tree by-law No. 5139-19. The private tree by-law regulates the removal of trees 12.5 cm in diameter and larger.

2.0 Methodology

At the onset of the project the scope of work was coordinated with the client and the consulting team. Prior to conducting a site visit, the topographic survey and current aerial photography were overlaid utilizing geographic information software for use on site during the completion of the tree inventory. The tree locations and the site plan were then overlaid and a tree preservation analysis was completed to determine the impacts to the trees included in the inventory.

2.1 Tree Inventory

A site visit was conducted on the 23rd of December 2024 to complete the tree inventory. All trees 12.5 cm in diameter and larger situated on subject property, on neighbouring property within 6 m and within the road allowance were included in the inventory. A visual assessment was completed on each tree included in the inventory and the following information is provided in the tree inventory table (Table 1):

- **Tree #:** A number assigned to each tree corresponding to the tree inventory (Table 1) and the Tree Preservation Plan (Sheet 1).
- **Species:** Common and scientific (Latin) species names.
- **DBH:** The trunk diameter at breast height, measured in centimeters at 1.4 m from the ground.
- **Condition:** The health of the tree considering the trunk integrity, the crown structure and the crown vigour; each rated as good, fair or poor. The condition ratings are based on the signs, symptoms and defects exhibited by each tree, considering the surroundings in which it is growing.
- **mTPZ:** Minimum tree preservation zone distance as measured in meters from the base of the tree. This is the distance at which tree protection fence is to be installed (unless noted otherwise below).
- **Location:** The property where the tree is situated, based on the topographic survey and gps locations taken on site.
- **Comments:** Any additional notes relevant to the tree's health or growing conditions.
- **Recommendation:** The recommended removal or preservation of each tree based on the results of the impact assessment.

The trees included in the inventory were identified with numbers 1-24 and were located using the topographic survey provided and a tablet computer with a GPS receiver.

2.2 Impact Assessment

A tree preservation analysis was completed on each tree included in the tree inventory considering the impacts from the proposed development and many other factors including, but not limited to, tree condition, species, DBH and the existing site conditions. The impacts from the proposed development will occur where tree roots conflict with construction machinery during pre-grading, construction, grading and servicing.

During the tree preservation analysis the minimum Tree Preservation Zone (mTPZ) distance was utilized to determine the potential impacts to each tree included in the inventory. Where encroachment is required within the mTPZ, tree removal may be required.

The mTPZ distance is the minimum distance at which development can safely occur without considerably impacting a tree's root system. The mTPZ distance is based on the diameter of the tree and measured in meters from the base of the stem. Refer to Table 2 for the mTPZ distances based on trunk diameter.

Table 2. Minimum tree preservation zone distances.

DBH (cm)	Min. Tree Preservation Zone Distance (m)*
	Radius
< 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
101 – 110	6.6

*As measured from the outside of the tree trunk.

3.0 Existing Conditions

The subject property is currently occupied by manicured lawn and disturbed ground from recent home demolition. The property is bound by residential development to the north and south, a vineyard to the east and Four Mile Creek Road to the west.

4.0 Tree Inventory Results

The results of the tree inventory indicate that a total of 22 trees 12.5 cm in diameter or larger and 2 tree units reside on subject property, on neighbouring property within 6 m and within the road allowance. The trees included in the inventory appear to be comprised of landscape plantings.

No rare, threatened or endangered tree species were documented in the tree inventory. Refer to Table 1 for the complete tree inventory and Sheet 1 for the tree locations.

5.0 Proposed Development

The proposed development includes the construction of a 3-storey residential building with a total of 29 units and below ground parking.

6.0 Discussion

The following sections discuss the tree removal requirements, tree preservation opportunities and tree preservation recommendations based on the results of the impact assessment.

6.1 Tree Removal

The results of the impact assessment indicate that the removal of Trees and Tree Units 1-11, 12, 17-21 and 24 will be required to accommodate the proposed development. Of the 18 trees and tree units identified for removal, 3 are weed species and are unregulated by the private tree by-law.

It may be possible to preserve Tree 1, however, it is identified as a weed species and the tree also has two large pruning wounds. Considering the species type, the large pruning wounds and the impacts from development, Tree 1 should be removed and replaced with a tree species more suitable to urban conditions such as a shademaster honey locust (*Gleditsia triacanthos* var. *inermis* 'Shademaster') or little leaf linden (*Tilia cordata*).

Tree Unit 11 and Tree 12 appears to reside on the shared property boundary to the south. Permission from the neighbouring property owner will be required prior to removal, as per the Forestry Act, R.S.O. 1990.

6.2 Tree Preservation

The results of the impact assessment indicate that the preservation of Trees and Units 13-16, 22 and 23 will be possible with the use of appropriate tree protection measures.

The tree protection fence must be installed prior to the commencement of construction to ensure that the trees identified for preservation are not impacted by the proposed development. Tree

protection fence must be installed at the mTPZ distance as outlined this report and on Sheet 1 unless noted otherwise in this report.

Refer to Sheet 1 for the prescribed tree protection fence locations, additional tree protection plan notes and the tree protection fence detail.

6.3 Tree Preservation Recommendations

The following recommendations are made in attempts to reduce the impacts to trees identified for preservation:

- Tree protection fence must be installed prior to the commencement of construction to ensure that the trees identified for preservation are not damaged during construction.
- Tree protection fence must be installed at the mTPZ distance as outlined in this report and on Sheet 1.
- Once tree protection fence has been installed it must not be moved, relocated or altered in any way (unless repairing fallen fence etc.) for the duration of the construction period.
- No intrusion into an area identified on Sheet 1 as a tree preservation zone (TPZ) is allowed at anytime during construction unless noted otherwise in this report and on Sheet 1.
- No storage of machinery, construction debris, materials, waste or any other items is allowed within a TPZ.
- Any tree branches and roots that conflict with the proposed development must be pruned by a Certified Arborist in accordance with good arboricultural practice.
- Tree protection fencing should be inspected by a Certified Arborist prior to and during construction to ensure that the fencing remains intact and in good repair throughout the stages of development.

7.0 Summary

Jackson Arboriculture Inc. was retained by Harvest Heights to complete a Tree Inventory and Preservation Plan report for a property situated at 1839 Four Mile Creek Road in the Town of Niagara-on-the-Lake, Ontario. A tree inventory was conducted and an impact assessment was completed in the context of the proposed development plan.

The tree inventory documented a total of 22 trees and 2 units situated on subject property, in the road allowance and on neighbouring property within 6 m. The results of the impact assessment indicate that the removal of 17 trees and 1 tree unit will be required to accommodate the proposed development. Of the trees and tree units identified for removal, 3 are defined as weed species and are unregulated by the private tree by-law.

Respectfully submitted,
Jackson Arboriculture Inc.

Jeremy Jackson

Jeremy Jackson, H.B.Sc.,
ISA Certified Arborist #ON-1089A
GIS Analyst

8.0 Limitations of Assessment

It is our policy to attach the following limitations of assessment to ensure that the client, municipalities and agencies are fully aware of what is technically and professionally realistic when visually assessing and retaining trees.

The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These include a visual examination of the above ground parts of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree and direction of any lean, the general condition of the trees and the surrounding site, and the proximity of property and people.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms and their health and vigour constantly change. They are not immune to changes in site conditions, or seasonal variations in the weather conditions, including severe storms with high-speed winds.

While reasonable efforts have been made to ensure that the trees recommended for retention are healthy no guarantees are offered, or implied, that these trees, or any parts of them, will remain standing. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or group of trees or their component parts in all circumstances. Inevitably a standing tree will always pose some risk. Most trees have the potential for failure under adverse weather conditions, and the risk can only be eliminated if the tree is removed.

Although every effort has been made to ensure that this assessment is reasonably accurate, trees should be re-assessed periodically. The assessment presented in this report is valid at the time of the inspection.

Table 1. Tree Inventory

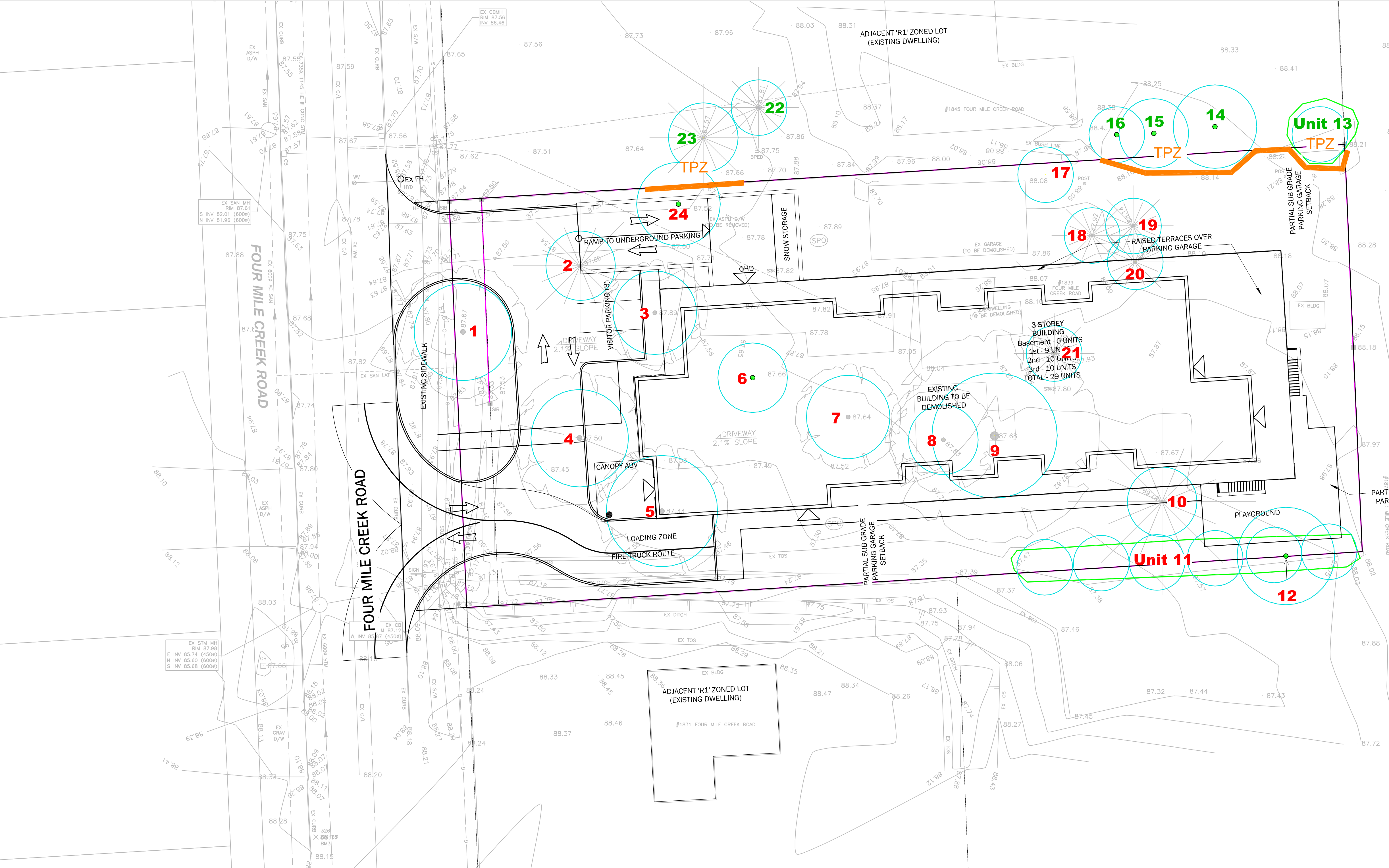
Location: 1839 Four Mile Creek Rd, NOTL

Date: 23 Dec. 2024

Surveyors: JJJ

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	DL	mTPZ	Location	Comments	Action
1	Manitoba Maple	<i>Acer negundo</i>	69	F	FG	FG	6	4.2	Subject Property	Spiral grain, heavy pruning wounds	Remove
2	Norway Spruce	<i>Picea abies</i>	48	G	G	G	6	3.0	Subject Property		Remove
3	Honey Locust cultivar	<i>Gleditsia triacanthos</i> var. 'inermis'	53	G	G	G	7	3.6	Subject Property	Union at 2 m	Remove
4	Honey Locust cultivar	<i>Gleditsia triacanthos</i> var. 'inermis'	63	G	G	G	9	4.2	Subject Property		Remove
5	Norway Maple	<i>Acer platanoides</i>	71	F	F	FG	8	4.8	Subject Property	Stem wound, pruning wound, seam	Remove
6	Blue Spruce	<i>Picea pungens</i>	48	G	FG	G	3.5	3.0	Subject Property	Vertical scaffold limb	Remove
7	Little-leaf Linden	<i>Tilia cordata</i>	51	F	FG	FG	5	3.6	Subject Property	Coppice growth, epicormic branching	Remove
8	Northern Catalpa	<i>Catalpa speciosa</i>	41	PF	F	F	6	3.0	Subject Property	Cavity at flare with heart rot, stem wound, seam, understorey	Remove
9	Northern Catalpa	<i>Catalpa speciosa</i>	88	FG	G	G	6	5.4	Subject Property	Union at 2 m	Remove
10	Scots Pine	<i>Pinus sylvestris</i>	35, 29, 38	F	FG	FG	5	3.0	Subject Property	Union at 0.4 m with included bark	Remove
Unit 11	Eastern White Cedar	<i>Thuja occidentalis</i>	12.5-17	G	G	G	1.5	2.4	Boundary	14 white cedar \geq 12.5 cm	Remove
12	Eastern Cottonwood	<i>Populus deltoides</i>	66	G	G	G	8	4.2	Boundary		Remove
Unit 13	Eastern White Cedar	<i>Thuja occidentalis</i>	12.5-17	FG	G	G	1.5	2.4	Neighbouring	Union at ground, 6 white cedar > 12.5 cm	Preserve
14	Cherry species	<i>Prunus</i> spp.	~45, 35	FG	G	G	4.5	3.6	Neighbouring	Union at 1 m	Preserve
15	Norway Maple	<i>Acer platanoides</i>	~45	F	FG	G	5	3.0	Neighbouring	Sun scald/frost crack	Preserve
16	Sweet Cherry	<i>Prunus avium</i>	~25, 30	F	PF	PF	5	2.4	Neighbouring	Union at 0.5 m, heavy pruning wounds, epicormic branching, understorey	Preserve
17	Emerald Cedar	<i>Thuja occidentalis</i> 'Smaragd'	24, 22, 20	FG	G	G	1.5	2.4	Subject Property	Union at 0.5 m	Remove
18	Blue Spruce	<i>Picea pungens</i>	35	G	G	G	2	2.4	Subject Property		Remove
19	Blue Spruce	<i>Picea pungens</i>	20, 30	F	FG	G	2	2.4	Subject Property	Union at ground	Remove
20	Blue Spruce	<i>Picea pungens</i>	28, 25	F	FG	G	2.5	2.4	Subject Property	Union at 0.4 m	Remove
21	Blue Spruce	<i>Picea pungens</i>	33	G	G	G	3	2.4	Subject Property		Remove
22	White Spruce	<i>Picea glauca</i>	~31	G	G	G	3	2.4	Neighbouring		Preserve
23	Blue Spruce	<i>Picea pungens</i>	~45	G	G	G	3.5	3.0	Neighbouring		Preserve
24	Blue Spruce	<i>Picea pungens</i>	51	G	G	G	4	3.6	Subject Property	Asphalt driveway 0.5 m from base of tree	Remove

Legend		
DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
DL	Dripline	(m)
mTPZ	Minimum Tree Preservation Zone	(m)
G	Good	
F	Fair	
P	Poor	
~	Estimate	



LEGEND

- Surveyed Tree Location
- GPS Tree Location
- 10 Tree Number Identified for Preservation (GREEN)
- 15 Tree Number Identified for Removal (Red)
- TPZ Tree Preservation Zone Symbol
- Minimum Tree Protection Zone (mTPZ)
- Tree Protection Fence Location
- Property Boundary
- Tree Unit Boundary

Tree Protection Recommendations

The following recommendations are made in attempts to reduce the impacts to trees identified for preservation:

- Tree protection fence must be installed at the mTPZ distance outlined on this drawing prior to the commencement of construction, unless noted otherwise on this drawing.
- Once tree protection fence has been installed it must not be moved, relocated or altered in any way (unless repairing fallen fence etc.), for the duration of the construction period.
- No intrusion into an area identified on this drawing as a tree preservation zone (TPZ) is allowed at anytime during construction unless noted otherwise on this drawing.
- No storage of machinery, construction debris, materials, waste or any other items is allowed within a TPZ.
- Any tree branches and roots that conflict with the proposed development must be pruned by a Certified Arborist in accordance with good arboricultural practice.
- Tree protection fencing should be inspected by a Certified Arborist prior to and during construction to ensure that the fencing remains intact and in good repair throughout the stages of development.

TREE PROTECTION PLAN NOTES

Prior to site disturbance the owner must confirm that no migratory birds are making use of the site for nesting. The owner must ensure that the works are in conformance with the Migratory Bird Convention Act and that no migratory bird nests will be impacted by the proposed work. It is the applicants' responsibility to discuss potential tree injury of trees on shared property lines with their neighbours. Should such trees be injured to the point of instability or death the applicant may be held responsible for removal and such issues would be dealt with in civil court or through negotiation.

TREE PROTECTION ZONE: No construction activity including grade changes, surface treatments or excavations of any kind is permitted within the area identified on the Tree Protection Plan or Site Plan as a Tree Protection Zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. No movement or storage of vehicles or equipment is permitted within the TPZ. Grade changes are not permitted within established TPZ. The area(s) identified as a TPZ must remain undisturbed at all times.

TREE PROTECTION BARRIERS:

Tree protection barriers must be installed around trees to be protected using paige wire fence supported on metal T-bars. All supports and bracing to safely secure the barrier should be outside the TPZ. All such supports and bracing should minimize damage to roots outside the TPZ.

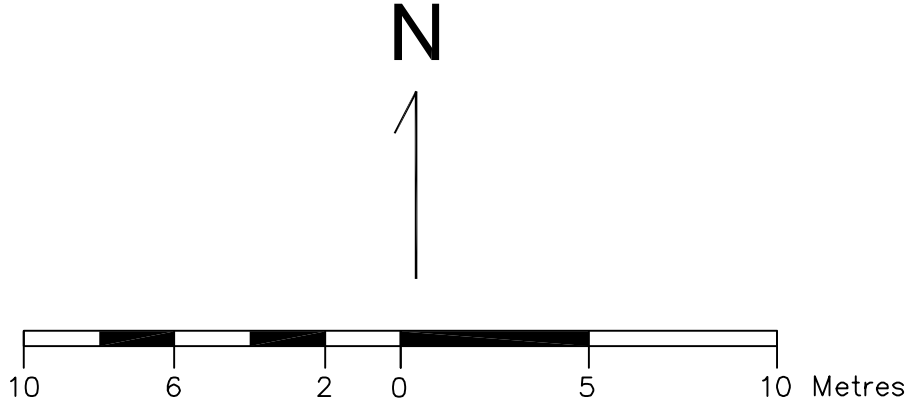
General Note:

Prior to the commencement of any site activity the tree protection barriers specified on this plan must be installed. Established tree protection zones must not be used as construction access, storage or staging areas. The tree protection barriers must remain in effective condition until all site activities including landscaping are complete. Permission from the City/Town must be provided prior to the removal of tree protection fence.

ARBORICULTURAL WORK:

Any roots or branches which extend beyond the TPZ indicated on this plan which require pruning, must be pruned by a Certified Arborist. All pruning of tree roots and branches must be in accordance with good arboricultural standards. Roots located outside the TPZ that have received approval from the City/Town to be pruned must first be exposed by hand digging or by using an air spade. This will allow a proper pruning cut and minimize tearing of the roots.

Table 1. Tree Inventory									
Location: 1839 Four Mile Creek Rd, NOTL			Date: 23 Dec. 2024			Surveyors: JJJ			
Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	DL	mTPZ	Location
1	Manitoba Maple	<i>Acer negundo</i>	69	F	FG	FG	6	4.2	Subject Property
2	Norway Spruce	<i>Picea abies</i>	48	G	G	G	6	3.0	Subject Property
3	Honey Locust cultivar	<i>Gleditsia triacanthos</i> var.	53	G	G	G	7	3.6	Subject Property
4	Honey Locust cultivar	<i>Gleditsia triacanthos</i> var.	63	G	G	G	9	4.2	Subject Property
5	Norway Maple	<i>Acer platanoides</i>	71	F	F	FG	8	4.8	Subject Property
6	Blue Spruce	<i>Picea pungens</i>	48	G	FG	G	3.5	3.0	Subject Property
7	Little-leaf Linden	<i>Tilia cordata</i>	51	F	FG	FG	5	3.6	Subject Property
8	Northern Catalpa	<i>Catalpa speciosa</i>	41	PF	F	F	6	3.0	Subject Property
9	Northern Catalpa	<i>Catalpa speciosa</i>	88	FG	G	G	6	5.4	Subject Property
10	Scots Pine	<i>Pinus sylvestris</i>	35, 29, 38	F	FG	FG	5	3.0	Subject Property
Unit 11	Eastern White Cedar	<i>Thuja occidentalis</i>	12.5-17	G	G	G	1.5	2.4	Boundary
12	Eastern Cottonwood	<i>Populus deltoides</i>	66	G	G	G	9	4.2	Boundary
Unit 13	Eastern White Cedar	<i>Thuja occidentalis</i>	12.5-17	FG	G	G	1.5	2.4	Neighbouring
14	Cherry species	<i>Prunus</i> spp.	~45, 35	FG	G	G	4.5	3.6	Neighbouring
15	Norway Maple	<i>Acer platanoides</i>	~45	F	FG	G	5	3.0	Neighbouring
16	Sweet Cherry	<i>Prunus avium</i>	~25, 30	F	PF	PF	5	2.4	Neighbouring
17	Emerald Cedar	<i>Thuja occidentalis</i> 'Smarag	24, 22, 20	FG	G	G	1.5	2.4	Subject Property
18	Blue Spruce	<i>Picea pungens</i>	35	G	G	G	2	2.4	Subject Property
19	Blue Spruce	<i>Picea pungens</i>	20, 30	F	FG	G	2	2.4	Subject Property
20	Blue Spruce	<i>Picea pungens</i>	28, 25	F	FG	G	2.5	2.4	Subject Property
21	Blue Spruce	<i>Picea pungens</i>	33	G	G	G	3	2.4	Subject Property
22	White Spruce	<i>Picea glauca</i>	~31	G	G	G	3	2.4	Neighbouring
23	Blue Spruce	<i>Picea pungens</i>	~45	G	G	G	3.5	3.0	Neighbouring
24	Blue Spruce	<i>Picea pungens</i>	51	G	G	G	4	3.6	Asphalt driveway 0.5 m from base of tree
Legend									
DBH	Diameter at Breast Height		(cm)						
TI	Trunk Integrity		(G, F, PF)						
CS	Crown Structure		(G, F, PF)						
CV	Crown Vigor		(G, F, PF)						
DL	Dropline		(m)						
mTPZ	Minimum Tree Preservation Zone		(m)						
G	Good								
F	Fair								
P	Poor								
~	Estimate								



NOTES:

1. THIS DETAIL DOES NOT REPRESENT ANY PARTICULAR TREE SPECIES

2. NO CONSTRUCTION ACTIVITY, GRADE CHANGE, SURFACE TREATMENT, COMPACTION, EXCAVATION OR STOCKPILING OF ANY KIND IS PERMITTED WITHIN THE PROTECTED AREA.

TREE PROTECTION FENCE DETAIL

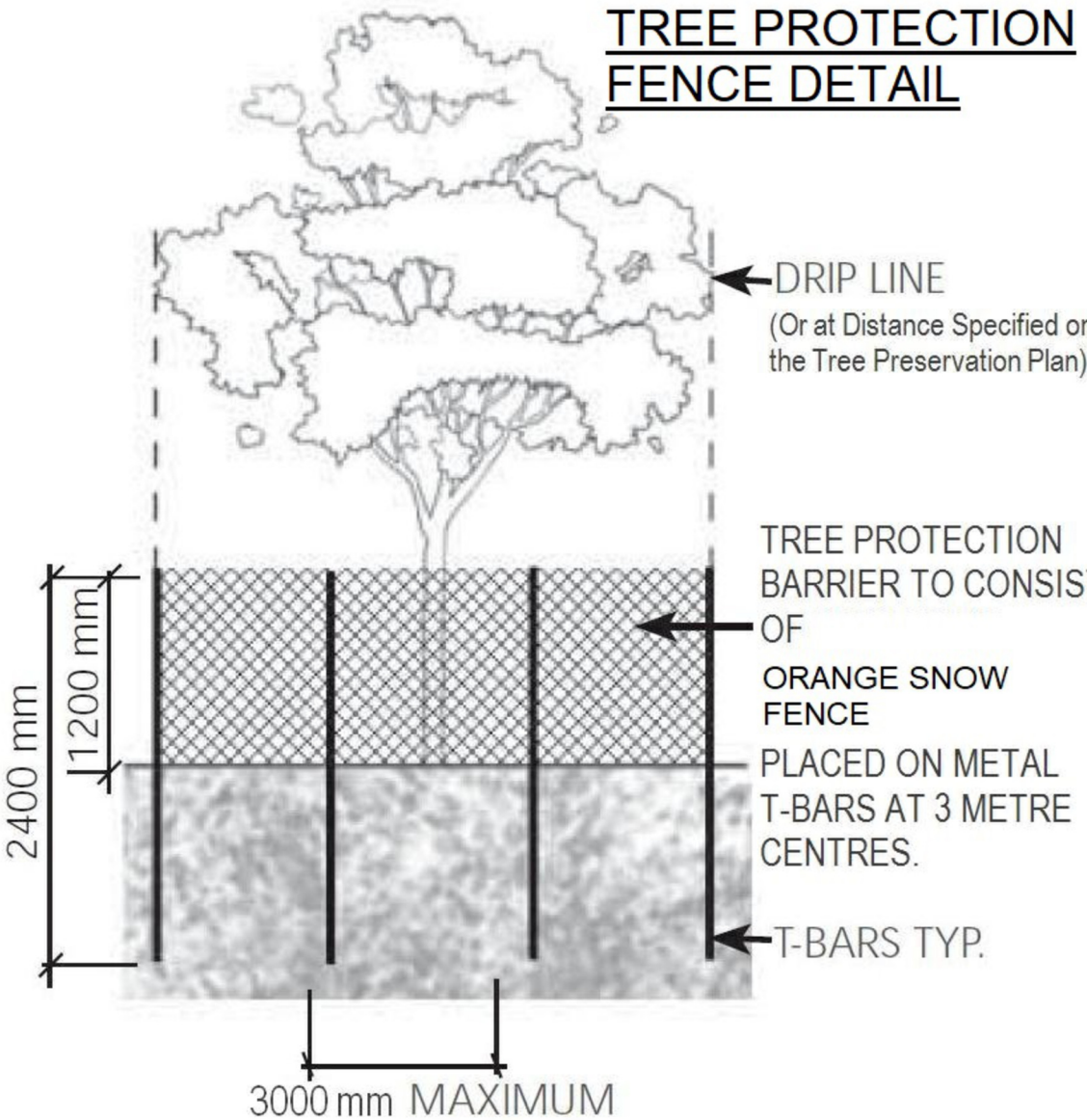


Table 2. Minimum tree preservation zone distances.

DBH (cm)	Min. Tree Preservation Zone Distance (m)*
	Radius
< 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
101 – 110	6.6

*As measured from the outside of the tree trunk

No.	Description	Date	By
1	Issued for Submission	6 Jan. 2025	JJ

Data Source: AGC

1839 Four Mile Creek Road
Niagara-on-the-Lake, ON

Harvest Heights
657 East West Line
Niagara-On-The-Lake, ON L0S 1J0

Tree Preservation Plan

JACKSON ARBORICULTURE INC.
CONSULTING AND GIS ANALYSIS

118 Pleasant Ridge Road
Bramford ON N3A 6H6
905-221-2480
jeremy@jacksonarbor.com

Project # P542
Date 6 January 2025
Scale 1:200 @ 24x36

Sheet # 1