

# ATTACHMENT 8

**Tree Inventory and Preservation Plan Report  
9929 Keele Street  
Vaughan, Ontario**

prepared for

**Sharewell Investments Ltd.  
8700 Dufferin Street  
Vaughan, ON L4K 4S6**

prepared by



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16 April 2020, revised 1 December 2020

KUNTZ FORESTRY CONSULTING Inc. Project P2374

## Introduction

Kuntz Forestry Consulting Inc. was retained by Sharewell Investments Ltd. to complete a Tree Inventory and Preservation Plan in support of a development application for a property located at 9929 Keele Street, in the City of Vaughan, Ontario. The subject property is located on the southeast side of Keele Street and Major MacKenzie Drive West, within a mix-used area.

The work plan for this tree preservation study included the following:

- Prepare inventory of the tree resources over 15cm diameter at breast height (DBH) on and within six metres of the subject property, and trees of all sizes within the road right-of-way surrounding the property;
- Evaluate potential tree saving opportunities based on proposed development plans; and
- Document the findings in a Tree Inventory and Preservation Plan Report.

Tree resources were assessed utilizing the following parameters:

**Tree #** - number assigned to tree that corresponds to Figure 1.

**Species** - common and botanical names provided in the inventory table.

**DBH** - diameter (centimeters) at breast height, measured at 1.4 m above the ground.

**Condition** - condition of tree considering trunk integrity, crown structure and crown vigor. Condition ratings include poor (P), fair (F) and good (G).

**Comments** - additional relevant detail.

The results of the evaluation are provided below.

## Methodology

Trees greater than 15cm DBH on and within six metres of the subject property and trees of all sizes within the road right-of-way surrounding the property were included in the tree inventory. Trees were located using aerial imagery and measurements taken from known points in-field. Trees on the road right-of-way along Keele Street are protected by the York Region Boulevard Trees By-law and not protected by the City of Vaughan Tree By-law. Trees individually inventoried were numbered 1-37. Tree locations are shown on Figure 1. See Table 1 for the results of the inventory.

## Existing Site Conditions

The subject property is currently occupied by two commercial buildings and associated parking lot. Tree resources exist in the form of landscaping trees and naturally-occurring trees. Refer to Figure 1 for the existing site conditions.

## Tree Resource

The tree inventory was conducted on 14 April 2020. The inventory documented 37 trees on and within six metres of the subject property. Refer to Table 1 for the full tree inventory, Figure 1 for the location of trees reported in the tree inventory, and Appendix A for the photographs of trees.

Tree resources were comprised of Norway Maple (*Acer platanoides*), Sugar Maple (*Acer saccharum*), Black Walnut (*Juglans nigra*), White Spruce (*Picea glauca*), Colorado Blue Spruce (*Picea pungens*), Austrian Pine (*Pinus nigra*), Bur Oak (*Quercus macrocarpa*), Eastern White Cedar (*Thuja occidentalis*), and Little-leaf Linden (*Tilia cordata*).

## Proposed Development

The proposed development includes the demolition of the existing building and the construction of a four-storey mix-used building and associated underground parking. The installation of street parking spaces is also proposed along Keele Street. Refer to Figure 1 for the proposed development.

## Discussion

The following sections provide a discussion and analysis of tree impacts and tree preservation relative to the approved development and existing conditions.

### *Development Impacts/Tree Removal*

The removal of 32 trees is required to accommodate the approved development. Trees required removal include Trees 1-8, 10-18, 20-24, 26, 27, and 29-36. Trees 2-8, 13-18, 20-24, 26, 27, and 29-36 (28 trees) are over 20cm DBH and protected by the City of Vaughan Private Tree By-law; a permit from the City is required prior to their removal. Tree 10 is located on the York Regional Road; a permit from the York Region is required prior to its removal. Trees 14, 15, and 18 are located on the neighbouring property; written consent from the property owner will be required prior to their removal.

In addition, the removal of four dead trees on the subject property is recommended regardless of the site plan, including three Ash trees and one Norway Maple. Refer to Figure 1 for the location of required tree removals.

### *Tree Preservation*

The preservation of Trees 9, 19, 25, 28, and 37 (5 trees) will be possible with the use of appropriate tree protection measures as indicated on Figure 1. Tree protection measures are required to be implemented prior to any grading or construction activity on site to ensure tree resources designated for retention are not impacted. Refer to Figure 1 for the location of required tree preservation fencing and general Tree Protection Plan Notes and Appendix B for the tree preservation fence detail.

## Tree Compensation

### *The City of Vaughan Private Tree By-law*

The City of Vaughan requires replacement for any by-law protected tree removal. The number of replacement trees is determined by the size of the tree for removal. Trees in 20-30cm DBH require 1 replacement tree; trees in 31-40cm DBH require 2 replacement trees; and trees in 41-50cm DBH requires 3 replacement trees. As such, a total of 40 replacement plantings is required. Refer to Table 2 for the summary of the number of replacement trees and Landscape Plan for the proposed plantings.

**Table 2. Summary of Replacement Trees for the City of Vaughan**

Tree No.	DBH in cm	Combined DBH**	DBH range	Number of Replacement Trees Required
1	18	18	<20	0
2	28.5	28.5	20-30	1
3	25	25	20-30	1
4	26	26	20-30	1
5	29	29	20-30	1
6	26.5	26.5	20-30	1
7	~24	24	20-30	1
8	~32	32	31-40	2
11	17.5	17.5	<20	0
12	15.5	15.5	<20	0
13	16.5, 15.5	22.5	20-30	1
14	26	26	20-30	1
15	31.5	31.5	31-40	2
16	31.5	31.5	31-40	2
17	24.5	24.5	20-30	1
18	~35	35	31-40	2
20	34	34	31-40	2
21	40	40	31-40	2
22	36	36	31-40	2
23	36.5	36.5	31-40	2
24	31.5	31.5	31-40	2
26	33	33	31-40	2
27	28	28	20-30	1
29	29.5	29.5	20-30	1
30	32.5	32.5	31-40	2
31	22.5	22.5	20-30	1
32	29	29	20-30	1
33	29.5	29.5	20-30	1
34	~25	25	20-30	1
35	~30	30	20-30	1
36	35	35	31-40	2
<b>TOTAL</b>				<b>40</b>

\*\* Combined DBH is the DBH of multi-stem trees, which is calculated by multiplying each stem diameter by itself (the square), adding up all stem amounts and calculating the square root of the total.

## Tree Valuation

### *Trees on the Regional Road Right-of-Way for Removal*

A valuation was calculated for a tree situated on the York Regional Road for removal, including Tree 10. Refer to Appendix C for the individual compensation requirement. See below for the methodology used to calculate the compensation value.

Compensation must be provided in the form of replacement plantings or through payment of equivalent compensation value.

The number of replacement trees is calculated as follows:

$$\text{Number of Replacement Trees} = \frac{(\text{DBH of tree to be removed})}{(\text{Replacement Tree Caliper Size})} \times \text{Condition Rating}$$

Compensation value is calculated as follows:

$$\text{Compensation value (\$)} = (\text{Number of replacement trees}) \times \text{Replacement Cost}$$



The replacement cost is \$846.84 per tree including the planting and maintenance in good condition and under warranty for 3 years.

The total valuation of trees for removal was calculated to be \$846.84.

## Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Sharewell Investments Ltd. to complete a Tree Inventory and Preservation Plan in support of a development application for the property located at 9929 Keele Street in the City of Vaughan, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 37 trees on and within six metres of the subject property. The removal of 32 trees is required to accommodate the proposed development. The remaining 5 trees can be saved provided appropriate tree protection measures are installed prior to the development.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for the location of required tree preservation fencing and general Tree Protection Plan Notes, and Appendix B for the tree preservation fence detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.
- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,  
**Kuntz Forestry Consulting Inc.**

Kaho Hayashi

Kaho Hayashi, B.Sc., M.Sc.F.  
Associate Forest Ecologist  
ISA Certified Arborist #ON-2153A

## Reference

York Region. Street Tree and Forest Preservation Guidelines

### Limitations of Assessment

*Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the 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 of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (ie. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.*

*Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree location in the report may not be exact. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.*

*Furthermore, recommendations made in this report are based on the site plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the site plan and/or grading, servicing, or landscaping plans following report submission.*

*Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.*

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

Table 1. Tree Inventory

Location: 9929 Keele Street, Vaughan

Date: 14 April 2020 Surveyors: KH

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	mTPZ	Comments	Protected by the City By-law	Regional Road Right-of-way	Action
1	Little-leaf Linden	<i>Tilia cordata</i>	18	G	G	F/G		2	1.8	Epicormic branches (H)	No	No	Remove
2	Little-leaf Linden	<i>Tilia cordata</i>	28.5	G	G	F/G		3	1.8		Yes	No	Remove
3	Little-leaf Linden	<i>Tilia cordata</i>	25	G	G	F/G		3	1.8	Epicormic branches (M)	Yes	No	Remove
4	Little-leaf Linden	<i>Tilia cordata</i>	26	G	G	F/G		3	1.8	Exposed roots (M), lean (VL), epicormic branches (M)	Yes	No	Remove
5	Little-leaf Linden	<i>Tilia cordata</i>	29	G	G	F/G		3	1.8		Yes	No	Remove
6	Little-leaf Linden	<i>Tilia cordata</i>	26.5	G	G	F/G		3	1.8		Yes	No	Remove
7	Colorado Blue Spruce	<i>Picea pungens</i>	~24	G	G	F		2	1.8		Yes	No	Remove
8	Colorado Blue Spruce	<i>Picea pungens</i>	~32	G	G	F		2	2.4		Yes	No	Remove
9	Bur Oak	<i>Quercus macrocarpa</i>	8	G	G	F/G		1	1.2		No	Yes	Preserve
10	Bur Oak	<i>Quercus macrocarpa</i>	8	G	G	F/G		1	1.2		No	Yes	Remove
11	Norway Maple	<i>Acer platanoides</i>	17.5	F/G	F/G	F/G		2	1.8	Seam (L), asymmetrical crown (M), exposed roots (L)	No	No	Remove
12	Norway Maple	<i>Acer platanoides</i>	15.5	G	G	F/G		2	1.8		No	No	Remove
13	Norway Maple	<i>Acer platanoides</i>	16.5, 15.5	F/G	G	G		3	1.8	Co-dominance at base	Yes	No	Remove
14	Black Walnut	<i>Juglans nigra</i>	26	F	F	F	30	3	1.8	Co-dominance at 4m, broken branches (M), 1 stem lost leader at 6m	Yes	No	Remove
15	Black Walnut	<i>Juglans nigra</i>	31.5	F/G	F/G	F	15	3	2.4	Co-dominance at 4m, stem wound (L), broken branches (L)	Yes	No	Remove
16	Austrian Pine	<i>Pinus nigra</i>	31.5	G	G	F		3	2.4	Asymmetrical crown (M), pruning wounds (L)	Yes	No	Remove
17	Austrian Pine	<i>Pinus nigra</i>	24.5	G	F	P/F	30	3	1.8	Dead branches (L), lean (L) to north, sparse crown (M), asymmetrical crown (M), pruning wounds (L)	Yes	No	Remove
18	Norway Maple	<i>Acer platanoides</i>	~35	F/G	G	F/G		3	2.4	Bow (L) to north	Yes	No	Remove
19	White Spruce	<i>Picea glauca</i>	~20	G	G	F	20	2	1.8		Yes	No	Preserve
20	Austrian Pine	<i>Pinus nigra</i>	34	G	G	F/G		3	2.4	Pruning wounds (L)	Yes	No	Remove
21	Austrian Pine	<i>Pinus nigra</i>	40	F/G	G	F/G		3	2.4	Co-dominance at 2m with included bark (L), pruning wounds (L)	Yes	No	Remove
22	Austrian Pine	<i>Pinus nigra</i>	36	F/G	G	F/G		3	2.4	Sweep (L), pruning wounds (L)	Yes	No	Remove
23	Sugar Maple	<i>Acer saccharum</i>	36.5	G	G	F/G		3	2.4		Yes	No	Remove
24	Sugar Maple	<i>Acer saccharum</i>	31.5	G	G	F/G		3	2.4	Exposed roots (L)	Yes	No	Remove
P25	Eastern White Cedar	<i>Thuja occidentalis</i>	<15	G	G	F/G		1	1.8	Row of 67 trees, average DBH 8cm	No	No	Preserve
26	Sugar Maple	<i>Acer saccharum</i>	33	F	G	F/G		4	2.4	Exposed roots (L), seam (M)	Yes	No	Remove
27	Sugar Maple	<i>Acer saccharum</i>	28	F/G	F	F		4	1.8	Exposed roots (M), girdling roots (M), broken branches (L)	Yes	No	Remove
P28	Eastern White Cedar	<i>Thuja occidentalis</i>	<10	G	G	F/G		1	1.2	Row of 23 trees, average DBH 6cm	No	No	Preserve
29	Sugar Maple	<i>Acer saccharum</i>	29.5	F	F	F	15	4	1.8	Dead leader, seam (L)	Yes	No	Remove
30	Sugar Maple	<i>Acer saccharum</i>	32.5	G	G	F/G		4	2.4	Exposed roots (M)	Yes	No	Remove
31	Colorado Blue Spruce	<i>Picea pungens</i>	22.5	G	F	F		2	1.8	Lean (L)	Yes	No	Remove
32	Sugar Maple	<i>Acer saccharum</i>	29	G	G	F/G	10	3	1.8	Dead branches (L)	Yes	No	Remove
33	Sugar Maple	<i>Acer saccharum</i>	29.5	G	G	F/G		4	1.8	Exposed roots (L)	Yes	No	Remove
34	Colorado Blue Spruce	<i>Picea pungens</i>	~25	G	G	F		2	1.8	Lean (VL)	Yes	No	Remove
35	Colorado Blue Spruce	<i>Picea pungens</i>	~30	G	G	F/G		2	2.4		Yes	No	Remove
36	Sugar Maple	<i>Acer saccharum</i>	35	F/G	F/G	F	20	4	2.4	Exposed roots (L), dead leader, broken branches (M)	Yes	No	Remove
37	Colorado Blue Spruce	<i>Picea pungens</i>	~24	G	G	F/G		2	1.8		Yes	No	Preserve

Codes		
DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
CDB	Crown dieback	%
DL	Dripline	(m)
mTPZ	minimum Tree Protection Zone	(m)
P = poor, F = fair, G = good, ~ = estimate, (VL) = very light, (L) = light, (M) = moderate, (H) = heavy		

## Appendix A. Photographs of trees



Image 1. Trees 1 (right) and 2



Image 2. Trees 3 (right) and 4





Image 3. Trees 5 (right) and 6



Image 4. Trees 7 (left) and 8



Image 5. Trees 9 (right) and 10



Image 6. Dead Maple, Trees 11 and 12 (from left)





Image 7. Trees 13 (left) and 14



Image 8. Trees 14 (left) and 15



Image 9. Trees 16 (right), 17 (left), and 18 (back)





Image 10. Trees 20-22 (from right)



Image 11. Tree 23





Image 12. Tree 24



Image 13. Trees P25 and P28 (behind the board fence)



Image 14. Tree 26





Image 15. Tree 27



Image 16. Tree 29





Image 17. Tree 30





Image 18. Tree 31



Image 19. Tree 32





Image 20. Tree 33



Image 21. Tree 34





Image 22. Tree 35



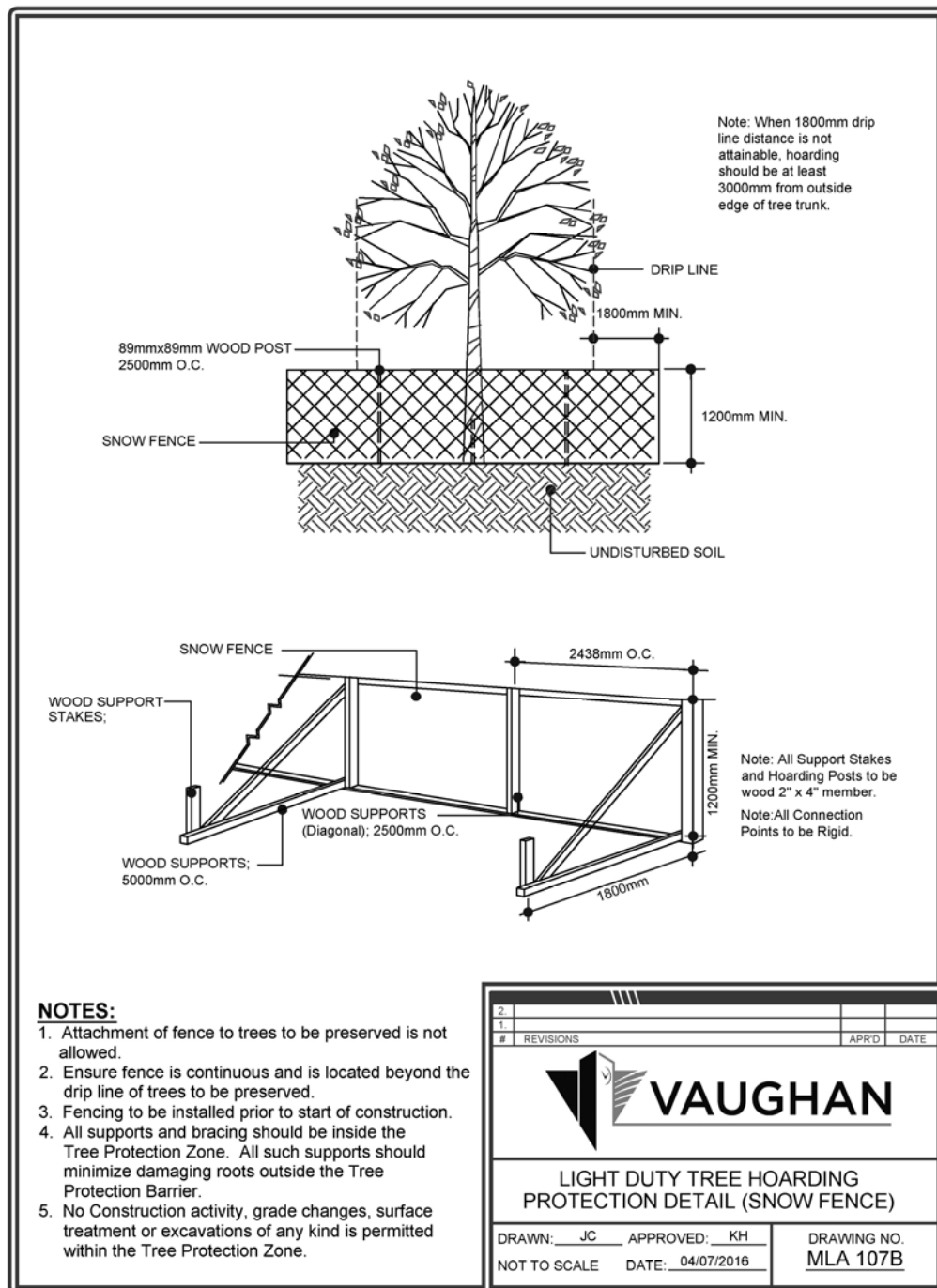
Image 23. Tree 36



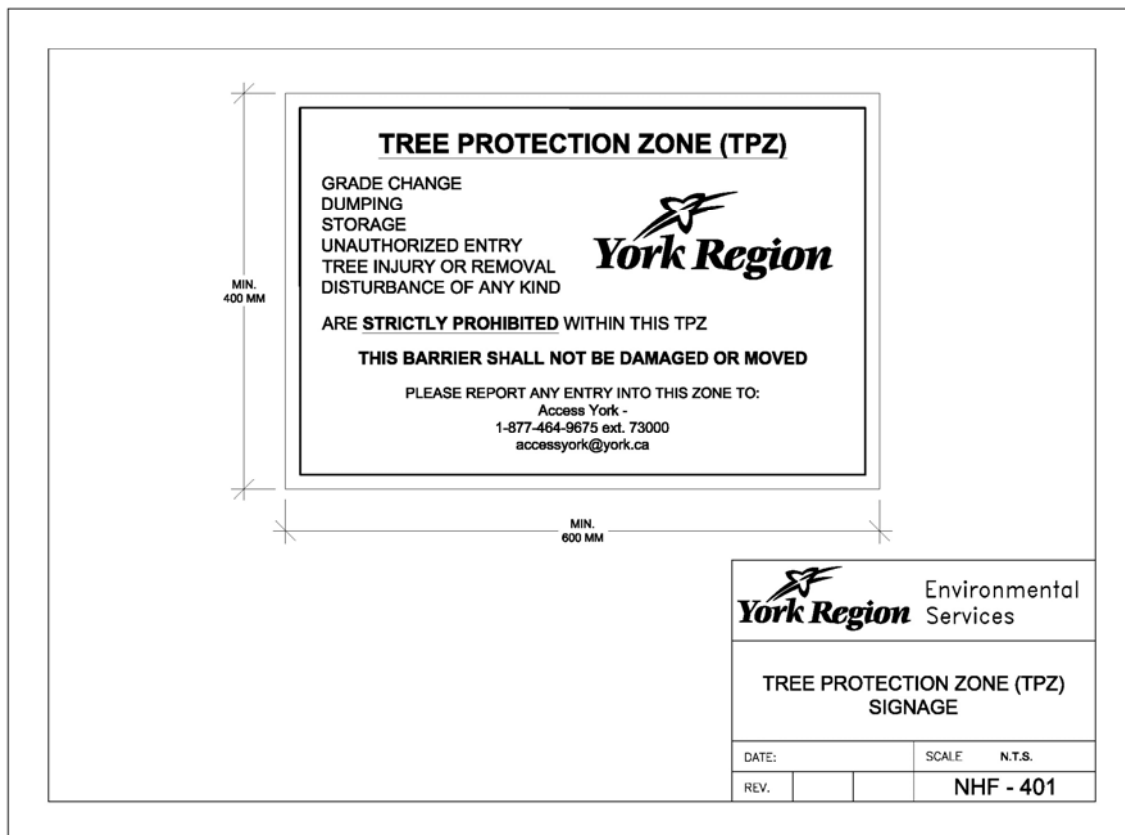
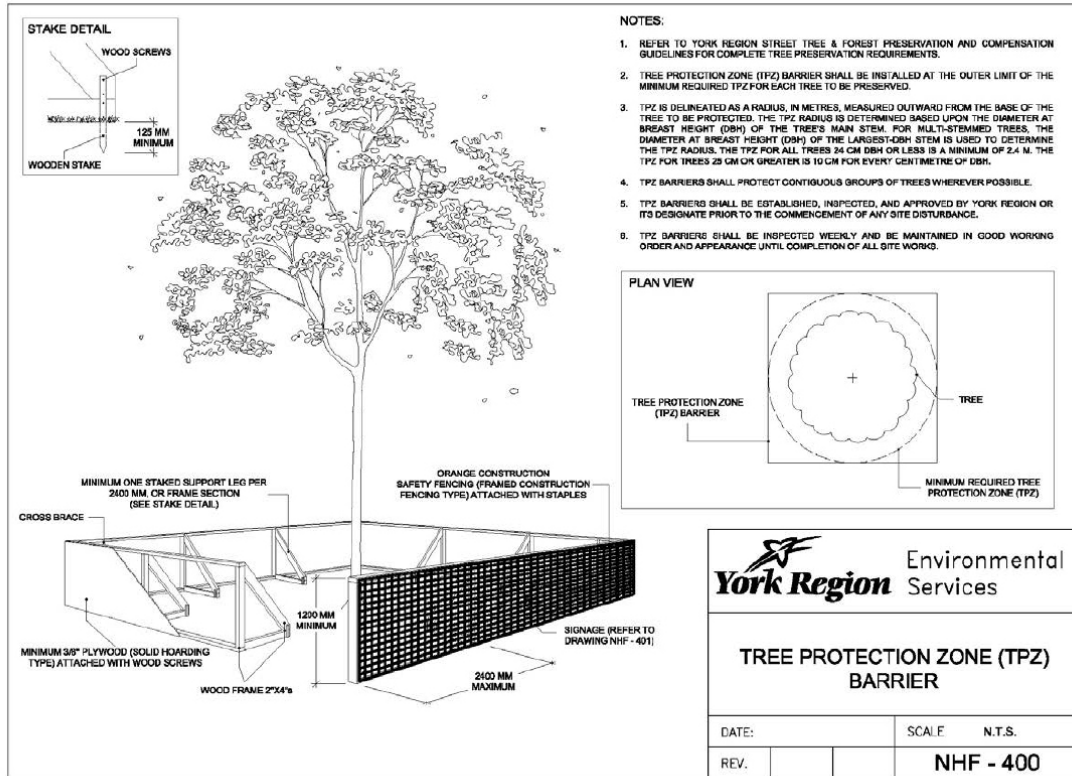


Image 24. Tree 37

## Appendix B. Tree Preservation Fence Detail







## General

- These notes are in support of York Region's Street Tree and Forest Preservation and Compensation Guidelines. Refer to the Guidelines prior to undertaking any site disturbance in proximity to trees on York Region-owned property.
- York Region Street Tree and Forest Preservation and Compensation Guidelines must be implemented if there is a reasonable likelihood that any site works will in any way encroach upon minimum required Tree Protection Zones (TPZs), whether such encroachment is planned or inadvertent, or if trees to be preserved are located within 10 metres of the limits of proposed site disturbance.

## Tree Protection Zone (TPZ)

- A minimum Tree Protection Zone (TPZ) will be established around every tree to be preserved in accordance with the York Region Street Tree and Forest Preservation and Compensation Guidelines and a York Region-approved Tree Preservation Plan.
- No entry or activity shall be permitted within the TPZ without prior written approval of York Region Environmental Services Department, Natural Heritage and Forestry Division.
- Prohibited activities within the TPZ include but are not limited to: installation or attachment of any items to the tree; operation of equipment or machinery; storage of equipment, machinery or materials; access by any personnel; placement of trailers, temporary buildings or structures; flushing, storage or dumping of fuels, chemicals or other contaminants; stockpiling of soil, digging, trenching, or excavation; and/or change to existing grade.

## Tree Protection Zone (TPZ) Barrier

- A Tree Protection Zone (TPZ) barrier shall be constructed around the TPZ of every tree to be preserved in accordance with the York Region Street Tree and Forest Preservation and Compensation Guidelines and a York Region-approved Tree Preservation Plan.
- Where trees to be protected are located in close proximity to each other, the TPZ barrier shall be installed to protect trees in contiguous groups.
- The TPZ barrier shall be installed prior to commencement of any site disturbance. Site disturbance shall not commence until the installation of all TPZ barriers has been completed, and has been verified and approved by York Region or its designee.
- The TPZ barrier shall be constructed on a 2x4 frame. The height of the frame shall measure a minimum of 1.2 m (4 feet), and the width of individual frame sections shall not exceed 2.4 m (8 feet).
- The frame shall be supported by diagonal 2x4 support legs installed inside the TPZ, secured to the frame using wood screws, and secured to the ground using an wooden stake installed a minimum of 125 mm into the ground. A minimum of 1 support leg shall be installed per 2.4 m (8 feet) of linear TPZ barrier distance, or per frame section.
- Framed construction fencing is the primary method for TPZ barrier construction. Orange construction safety fencing shall be securely and tightly stapled to the outside of the TPZ barrier frame to construct the framed construction fencing TPZ barrier type. Other fencing materials (e.g., chicken wire, green snow fence, etc.) shall not be used.
- Solid hoarding shall be installed where there is a significant risk of fill or other material being piled against the TPZ barrier, or where heavy machinery is to be operated in close proximity to the TPZ barrier. Plywood or oriented strand board (OSB) sheathing with a minimum thickness of 3/8" shall be affixed using wood screws to the outside of the TPZ barrier frame to construct the solid hoarding TPZ barrier type. Nails, staples or other fasteners shall not be used.
- Signage, as shown in typical detail drawing 'Tree Protection Zone (TPZ) Signage NHF-401', shall be installed on all sides of the TPZ barrier. The distance between individual signs shall not exceed 10 metres on any one side of the TPZ barrier.
- If described as required in the Tree Preservation Report, silt barrier fencing shall be installed using a "no-dig" method as described in the York Region Street Tree and Forest Preservation and Compensation Guidelines.

## Maintenance

- TPZ barriers shall remain in place and in good working order and appearance throughout the duration of site disturbance until completion of all works.
- TPZ barriers shall not be moved, modified or relocated at any time without the approval of York Region or its designee.
- TPZ barriers shall be inspected by a qualified tree professional once-weekly or on a schedule approved by York Region or its designee. Any deficiencies shall be noted in writing and any TPZ barriers found to be in substandard condition shall be repaired, modified or replaced as necessary within five working days of formal notification by York Region or its designee.

## Pruning

- No tree branches or tree roots shall be pruned without written approval of York Region or its designee. Any proposed pruning must be described in the Tree Preservation Report and must be approved by York Region or its designee prior to its undertaking.
- Approved pruning must be undertaken by an ISA Certified Arborist or an Ontario College of Trades 444A Arborist or Arborist Apprentice only.
- No trades personnel are permitted to prune tree branches or tree roots.

## Other

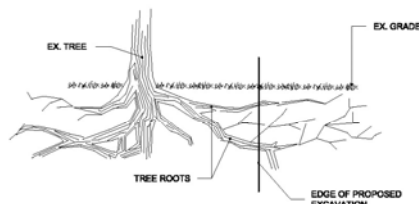
- Other tree preservation measures may be required to be implemented wherever site disturbance is proposed, anticipated or likely to occur within or in close proximity to Tree Protection Zones (TPZs) and trees to be preserved. Other acceptable tree preservation measures are described in the York Region Street Tree and Forest Preservation and Compensation Guidelines.
- All proposed tree preservation measures must be described in the Tree Preservation Report and shown on the Tree Preservation Plan.



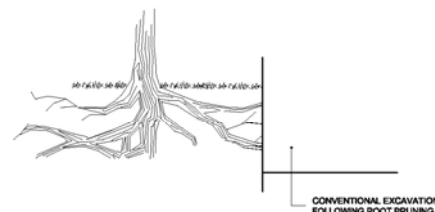
## STANDARD TREE PROTECTION NOTES

DATE:	SCALE	N.T.S.
REV.		NHF - 402

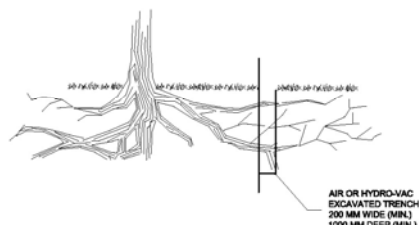
## 1. EXISTING CONDITIONS (TYP.)



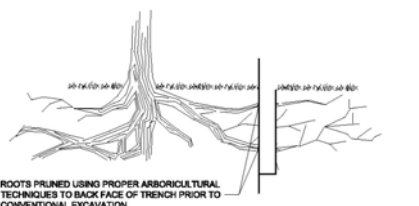
## 4. CONVENTIONAL EXCAVATION (TYP.)



## 2. ROOT-SENSITIVE EXCAVATION (TYP.)

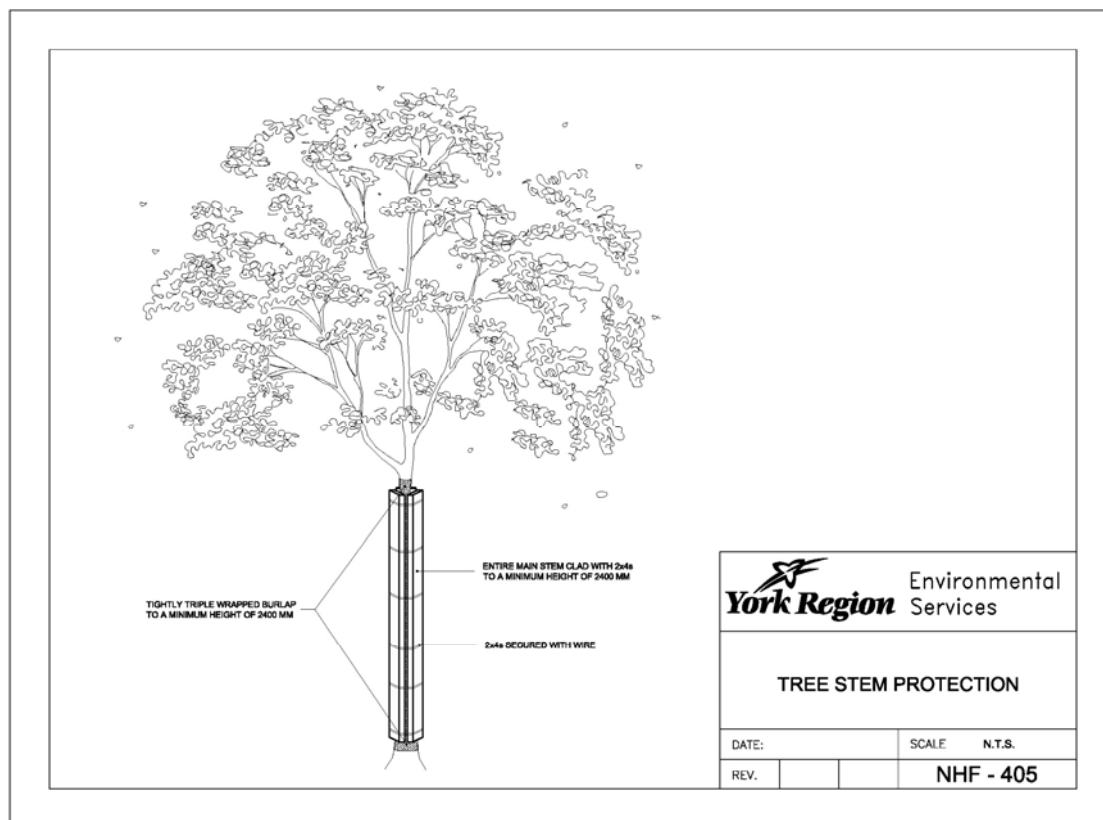
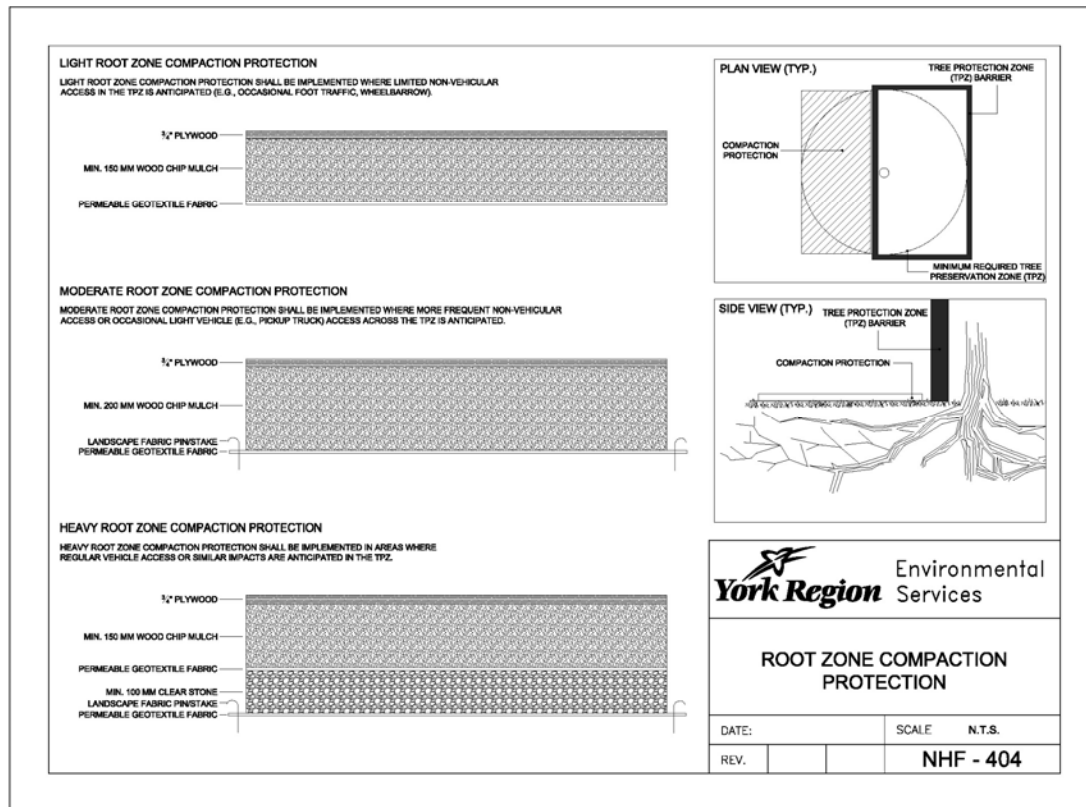


## 3. ROOT PRUNING (TYP.)



## ROOT-SENSITIVE EXCAVATION AND ROOT PRUNING

DATE:	SCALE	N.T.S.
REV.		NHF - 403



## Appendix C. Tree Valuation for the Tree for Removal on Regional Road

Location: 9929 Keele Street, Vaughan

Tree #	Common Name	Scientific Name	DBH	Condition Rating	Owner	Action	Total DBH	DBH/50mm caliper	Number of Replacement Trees
10	Bur Oak	<i>Quercus macrocarpa</i>	8	0.8	Region	Remove	8	1.6	1.28
									<b>TOTAL</b>
									1.28
									<b>Rounded Total</b>
									1
									\$846.84 per tree
									<b>\$846.84</b>