20 crown steel dr, suite 2
markham, on l3r 9x9
T 905 940 4443
cosburnnauboris.ca

cosburn nauboris LTD
landscape architects

City of Pickering File #

ARBORIST REPORT

Proposed 3 Storey Condo Townhouses Development
666, 668, 672, 678, 682 Liverpool Rd.

City of Pickering

Prepared for Plaza 6 Inc.

Prepared by

Goran Olbina
golbina@cosburnnauboris.ca
ISA Certified Arborist ON-1249A
ISA Tree Risk Assessment Qualification
Butternut Health Expert
Senior Landscape Architect

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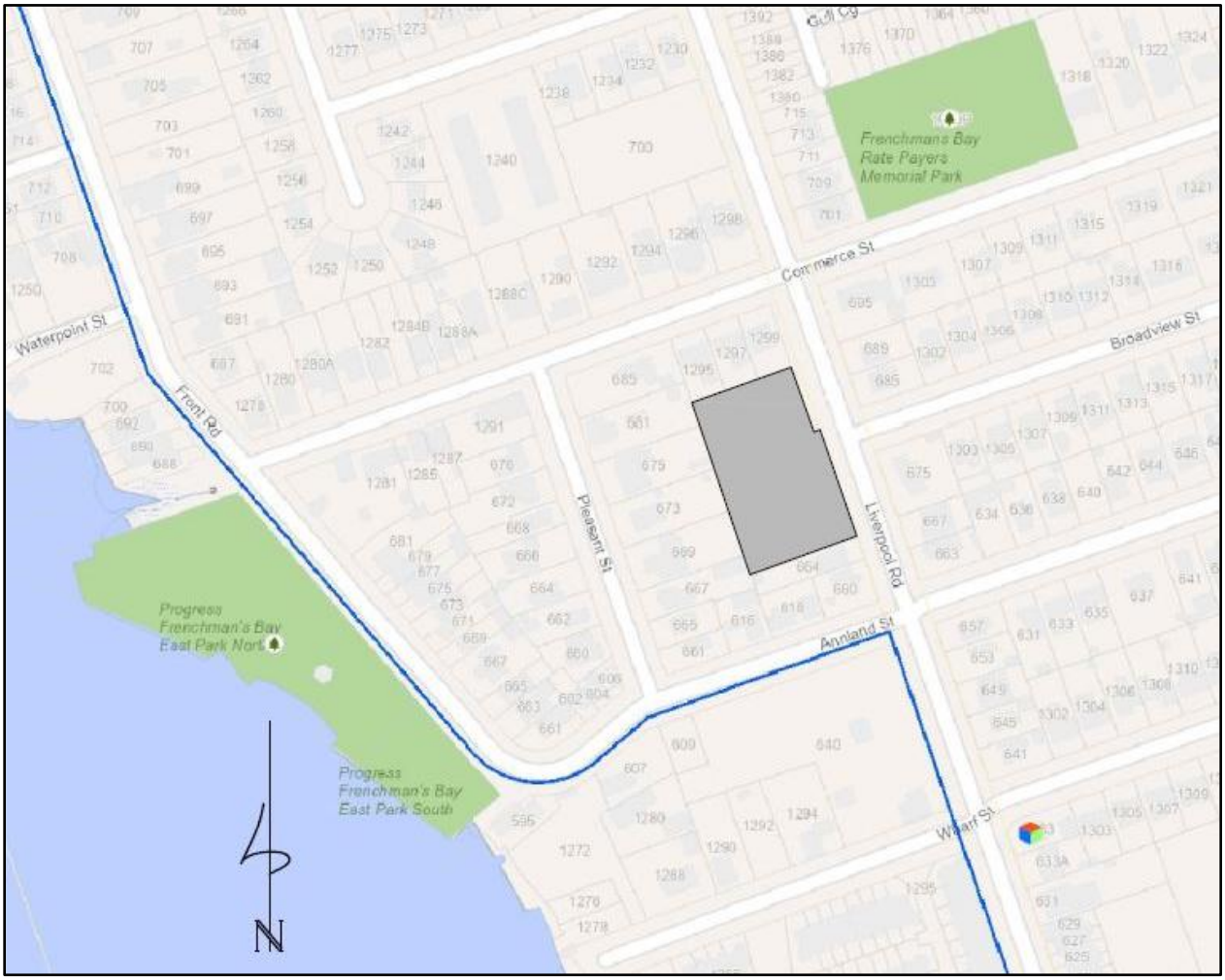
TABLE OF CONTENTS

1.0 Introduction

Cosburn Nauboris Ltd. was retained to conduct a Tree Inventory and Assessment by Plaza 6 Inc. for a proposed 3 storey condominium townhouses development including at grade parking. The subject site shaded in grey below contains the following addresses 666, 668, 672, 678, 682 Liverpool Road in the City of Pickering, Regional Municipality of Durham.



KEY MAP - Source: Concept Plan – Cassidy + Company N.T.S.

The scope of this report discusses trees 10cm DBH in size (diameter measured at 1.4m from the ground) and larger on the subject site and within approximately 6m of the property boundaries. Any size public trees fronting the subject site in the road allowance of Liverpool Road are also included in this report.

The site is currently 5 single-family residential lots. The neighbouring properties to the north, south, and west are single-family residential lots.

This report and accompanying Tree Preservation Plan addresses the existing trees involved within the subject site and identifies trees within our scope to be removed or preserved considering their condition and proposed construction impacts.

This report is prepared in support of obtaining the required tree removal approvals and permits for development applications.

2.0 Methodology

An inventory and assessment of the trees for this site was conducted on January 17, 2025.

The trees within the site where accessible and on adjacent public land (ROW) were tagged with numbered metal tags while inaccessible private trees on the subject site and on adjacent lands were not physically tagged and are noted and identified by a combination of an alphabetic letter followed by a number.

Tree inventory attributes were recorded in Table 1 using the following parameters:

Tree #:	Metallic tag number or letter/number reference
Owner:	Trees are listed under the ownership categories of *City ROW Trees, Private Site Trees, Adjacent Land Trees.*
Genus & Species:	Scientific nomenclature of genus and species
Common Name:	Commonly used name
DBH (cm):	Diameter at Breast Height (1.4m from the ground using a diameter tape) for trees on site/estimated for trees on neighbouring private properties. For multi-stemmed trees, ISA standard calculation (square root of the sum of all squared tree stem diameters measured at 1.4m above grade).
Crown spread (m):	Estimated extent of the branch structure from the trunk
Overall Condition:	Health and Structure are both factored in the overall condition rating and expressed as a percentage based on; root, trunk, branch, leaf, and bud conditions as defined by the Council of Tree and Landscape Appraisers Guide for Plant Appraisals. Or more generally as: Good (67-100%), Fair (34-66%), Poor (1-33%), Dead (0%).
Comments:	Comments relating to the health and structure of the tree including defects, dieback, etc.
TPZ radius (m):	The Tree Protection Zone as defined by the municipality. Measured from the outside edge of the tree base towards the dripline. Canopy dripline plus 1.0m.
Min. TPZ radius (m):	The minimum tree protection zone (MTPZ) calculated based on ISA general guideline of 6cm radius protection for each 1cm of DBH where the municipal standard canopy dripline plus 1m TPZ cannot be achieved due to proposed construction works.
Action:	Recommended action to preserve or remove.

Tree locations are based on a survey plan dated October 29, 2023 prepared by Richmond Surveying Inc. The tree symbols drawn at the TPZ radii, tree protection barriers and identifying reference are illustrated on the Tree Preservation Plan. Additional estimated tree locations were added to the TPP based on field observations as required.

3.0 Tree Assessment

Trees were assessed to determine their condition based on guidelines outlined in the Guide for Plant Appraisal 10th Edition as published by the Council of Tree and Landscape Appraisers 2019. Factors such as the health and structure of roots, trunks, branches, twigs, and leaves are considered in this evaluation.

Trees with poor form, double trunks with included bark, split trunks or branches, poor branch connections, excess dead wood, reduced branching in the crown, poor leaf development, signs of insect, fungal or bacterial infestations, have reduced ratings.

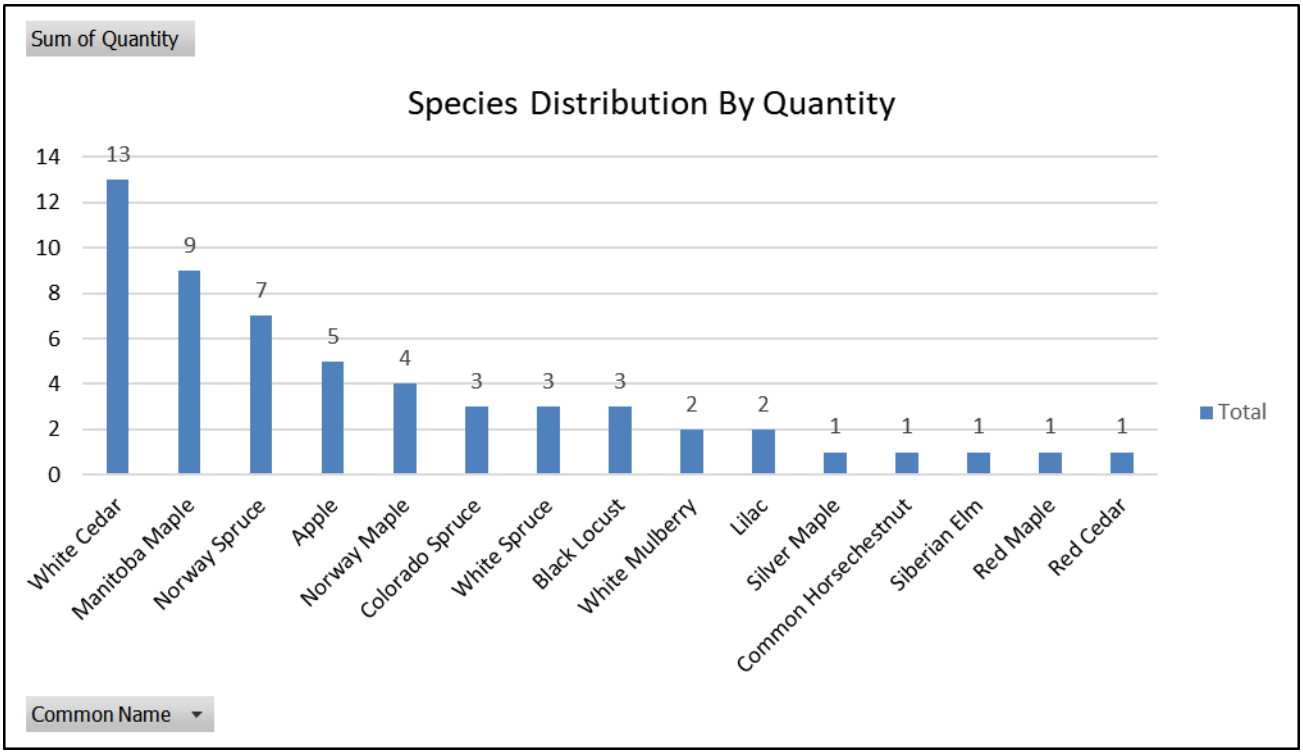
3.1 Individual Trees

Individual trees were inventoried, and statistics were compiled in Table 1. This table is attached to this report and is also included on the TPP. The statistics are to be used for determining the value of trees for retention or removal, the location of Tree Protection Zones (TPZ) and Barriers, and a quantitative assessment of trunk diameter and species for tree compensation as may be required by the municipality for removals.

The tree inventory found at total of 56 individual trees, of which 8 are boundary trees. 41 trees are within the private subject site. There are 10 trees on the adjacent private lands within approximately 6.0m of the property line, and there are 5 street trees within the road allowances fronting the subject site.

The individual trees encountered were a mix of non-native and native tree species.

A summary of the species distribution by quantity of the total is shown below in the bar graph.



Most of the trees were in fair condition, 5 trees were in poor condition, and 1 tree was dead.

Of the trees in poor condition, private site tree #718 – 28cm Black Locust was assessed as a high-risk tree with the likelihood of failure as imminent. This tree has a transverse trunk crack at 1.8m height, with numerous epicormics along the trunk below the crack. The failure has started in this tree and this tree is recommended for removal as soon as possible to mitigate risk to people (threat to health and safety) and property damage. The owner was notified via email on January 20, 2025 of this high-risk tree, and we received a reply email from the owner the same day that the tenants will be notified, and removal of the tree will be arranged.

A summary of the tree condition analysis is provided below.

Individual Tree Condition Analysis

Condition	Condition Count	% Total
Good	1	2%
Fair	49	87%
Poor	5	9%
Dead	1	2%
Total	**56**	**100%**

4.0 Federally and Provincially Protected Tree Species

There were no endangered or threatened tree species encountered within our scope of work listed under *Canada's Species At Risk Act (SARA) in 2005* or on the Species At Risk in Ontario (SARO List) under O. Reg. 230/08, or under the Ontario *Endangered Species Act (ESA 2007).*

5.0 Discussion and Recommendations

The following discussion and recommendations were established after review of the proposed site plan, condition of the trees, and analysis of the existing site. The following will describe the trees that are anticipated to be impacted by the proposed construction and to what extent. Also, the trees that will have minimal to no impact will be noted. Appropriate recommendations and mitigation measures will be noted where applicable.

Due to the proposed grade changes within the subject site, layout of driveways, parking area, building fabric and adjacent road widening, 41 private subject site trees, and 4 ROW trees will be in conflict and are recommended for removal. All other smaller caliper trees not By-law regulated within the existing subject site that will be in conflict with construction activities are to be removed as required to facilitate the proposed development.

City ROW tree #713 will have excavation occurring within approximately 20% of its TPZ up to the trunk base for the removal of the existing curb stop. This tree will not survive the proposed construction impacts and may become destabilized. This tree has also been topped due to overhead utility lines. It is recommended this tree be removed.

Adjacent land tree N7 will have grade changes (cut & fill) in excess of 15cm occurring within approximately 45% of its TPZ area with removals of existing shed structures and bases under its canopy. In addition, the existing trunk will be in conflict with the proposed new privacy wood fence alignment along the property line. This tree will not survive the construction impacts and is recommended for removal.

Adjacent land tree N10 will have grade changes (fill) in excess of 15cm to approximately 50% of its TPZ area and there will be trunk / buttress root conflicts with the new privacy wood fence alignment along the property line. This tree will not survive the construction impacts and is recommended for removal.

For 7 adjacent land trees N1 N2, N3, N4, N5, N6, N8, there will be minor to moderate construction impact (encroachment with the MTPZ) as municipal standard canopy dripline plus 1m TPZ cannot be achieved to allow for proposed grading swale and new wood privacy fencing along the property line. Mitigation measures are outlined below. Adjacent land tree N9 is not anticipated to be impacted by the proposed construction as the proposed wood privacy fencing along the property line will not encroach within the minimum tree protection zone (MTPZ).

5.1 Preservation Methods

For the proposed development, 8 private adjacent land trees N1, N2, N3, N4, N5, N6, N8, N9 are to be protected and preserved. Tree N9 will have 100% of its MTPZ area protected.

Any branches from trees scheduled for protection and preservation overhanging the subject site that may interfere with proposed construction works are to be pruned for construction clearance to prevent mechanical injuries. All required pruning to be performed by an ISA Certified Arborist. No trades personnel are permitted to prune tree canopies or branches.

Tree Injury

Due to the proposed construction within their MTPZ's, 7 trees will be preserved, but are considered injured. Tree #'s with the % encroachment within their respective minimum TPZ area is noted below:

Private adjacent land trees N1 – 19%, N2– 4%, N3 – 7%, N4 – 10%, N5 – 6%, N6 – 2%, N8 – 16%.

The above noted 7 trees may have minor to moderate construction impacts due to grade changes related to proposed drainage swales and the new privacy wood fence installation along the property line.

Mitigation measures are noted below to minimize tree injuries.

Root-Sensitive Excavation

After the tree protection fencing has been installed as illustrated on the tree preservation plan, ensure an ISA Certified Arborist qualified in root pruning is present on-site during any work within the TPZ's of trees. Within the minimum TPZ's of any tree(s), and prior to open-faced excavations, conduct root-sensitive excavation either by careful hand-digging or using pneumatic (air) excavation (max. pressure 90psi) to reveal any encountered roots. Pneumatic excavation must be undertaken by an experienced operator under the supervision of a qualified and experienced arborist. The air pressure excavation must be low enough that root bark is not damaged or removed. Any encountered roots shall be inspected by the on-site arborist to identify any existing roots that may be impacted by the proposed construction. Any encountered roots less than 50mm (2") in diameter shall be cleanly pruned by the qualified Arborist using acceptable arboricultural practices. Any exposed roots 50mm (2") and greater in diameter shall be left intact and incorporated into the subgrade if possible or assessed on-site by the Certified Arborist and municipal staff to determine if roots can be pruned without destabilizing the tree or causing too much injury that will result in tree health decline. No roots shall be exposed to air longer than one hour without being wrapped in wetted burlap and kept continuously damp.

Root Zone Compaction Protection

Construction access, material/equipment staging, and parking of machinery is to stay clear from TPZ's of all trees. If temporary access or material/equipment staging through a portion of a TPZ of any tree(s) is necessary to facilitate the proposed construction, prior to encroachment through or within the TPZ's, install the appropriate root zone compaction protection measures to prevent soil compaction within the tree root

zones. The 3 categories of root zone compaction protection measures are noted below with construction specifications.

a) Light Root Zone Compaction Protection – shall be implemented where limited non-vehicular access in the TPZ is anticipated (e.g., occasional foot traffic, wheelbarrow). Construction specifications – minimum 150mm (6") depth of wood chip mulch installed over a permeable geotextile fabric sitting on existing grade.

b) Medium Root Zone Compaction Protection – shall be implemented where more frequent non-vehicular access or occasional light vehicle (e.g., pickup truck, bob-cat) access across the TPZ is anticipated. Construction specifications – ¾" thick plywood laid on top of minimum 200mm (8") depth of wood chip mulch installed over a permeable geotextile fabric sitting on existing grade.

c) Heavy Root Zone Compaction Protection – shall be implemented where regular vehicular access or similar impacts are anticipated in the TPZ such as storage of materials or machinery. Construction specifications – ¾" thick plywood laid on top of minimum 150mm (6") depth of wood chip mulch installed over a permeable geotextile fabric and below the fabric is a minimum 100mm (4") depth of ¾" diameter clear drainage stone base sitting on another permeable geotextile fabric layer over existing grade.

These temporary root zone compaction materials are to be carefully removed off of the existing grade and disposed of off-site after all construction works has been completed or as directed by approving authorities and on-site Certified Arborist.

5.2 Tree Protection Fencing

Before any site disturbance or work within the subject site, install tree preservation fencing for all trees being preserved. Ensure the fencing complies with the City of Pickering Standard Detail P-1100 (Tree Protection Fencing) and P-1101 (Tree Protection Notes) and as indicated on the approved Tree Preservation Plan.

For trees N1, N2, N3, N4, N5, N6, N8, N9 the minimum tree protection zone (MTPZ) calculated based on ISA 6cm protection for each 1cm diameter is used where the municipal standard canopy dripline plus 1m TPZ cannot be achieved due to proposed construction works requiring partial encroachment into the TPZ's.

Tree protection shall be inspected and approved by the consulting ISA Arborist and City prior to commencement of construction and be maintained in good condition throughout the construction period by the contractor/owner.

Protective fencing locations and details are indicated on the Tree Preservation Plan.

Within the Tree Protection Zone (TPZ) there must be no:

Construction;
Altering of grades;
Storage of construction materials, equipment, soil, waste, or debris;
Disposal of concrete, gas, oil, or paint;
Movement of vehicles, equipment, or pedestrians.

Minor grading works may be permitted at the edge of the tree protection fencing as required to correct localized grading issues adjacent to the proposed development at the discretion of the City. This work is to be undertaken under the supervision of the consulting Arborist. The consulting Arborist is to verify in writing to the City, confirming that the work has been completed as per the approved design using best arboricultural practices.

Tree protection fencing shall be monitored by the consulting ISA Arborist with repairs completed by the owner/contractor as required.

5.3 Removals

The owner/developer must be aware that tree clearing shall be subject to the Migratory Bird Convention Act, S.C. 1994 c 22 current to May 5 2011 Sections; 4-Purpose, 5-Prohibitions, 12 –Regulations, Schedules section 2 Article 5 and the Fish and Wildlife Conservation Act, 1997, SO 1997, c 41

These provincial and federal regulations have restrictions on disturbing, taking, or killing nests, eggs, or birds particularly during bird nesting periods. We are in the Canadian Wildlife area C2 that indicates peak nesting season is from April 1 to August 31, however nesting can occur at other times as well. Clearing operations should not be conducted during this period unless appropriate monitoring such as bird nesting surveys are provided by a qualified naturalist that confirms birds are not actively nesting at the time of clearing.

Tree removals should occur outside of the breeding bird season (late March-late August, as per the Canada Nesting Periods website). If this is not possible, clearance with an ecologist shall occur prior to construction to ensure no loss of bird nest, egg or unfledged young.

To facilitate the proposed development and associated grade changes and servicing occurring within the subject site and considering the health/condition of the trees it will be necessary to remove a total of 48 trees consisting of 5 ROW trees (#712, 713, 723, 739, 740), and 41 private site trees (#710, 711, 714-722, 724-738, 741-752, P1-P3), and 2 private adjacent land trees N7, N10.

All other smaller trees and vegetation not discussed in this report will also be removed from the subject site where necessary for the proposed development.

Trees that are to be removed should be cut down in such a way that falling trees do not damage the vegetation which does not require removal. Ensure root systems of trees being preserved are not injured or damaged during tree removal operations.

Unless specified otherwise, trees and other vegetation designated for removal shall have the stumps completely excavated and be disposed of off-site.

Ontario Forestry Act
R.S.O. 1990, CHAPTER F.26

Boundary trees
10. (1) An owner of land may, with the consent of the owner of adjoining land, plant trees on the boundary between the two lands. 1998, c. 18, Sched. I, s. 21.

Trees common property
(2) Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands. 1998, c. 18, Sched. I, s. 21.

There are 8 observed boundary trees (#720, 722, 724, 725, 726, 727, 738-boundary with City), (#749-boundary with private adjacent landowner(s)) that were bisecting the private subject site that are recommended for removal. Written consent from the respective co-owner(s) of these trees will be required to be forwarded to the City through the development application process prior to the removal of these trees.

Written permission must be obtained from landowners of any trees or hedges / vegetation (all smaller trees and vegetation not discussed in this report) on neighbouring properties or bisecting the property line or for any shared ownership trees prior to any scheduled removals or any commencement of construction activities that may injure neighbour owned or shared boundary trees / vegetation that are scheduled to be protected and preserved.

6.0 Assumptions / Limitations

Assessments occur in different seasons and not all identifying traits of trees are present at the time of an inspection, features such as: buds, flowers, leaves, fruit, diseases, and insect infestation may not all be visible to complete a thorough investigation.

The inspection and assessment of the trees was made using accepted arboriculture practices and is limited to visual examination from the ground and limiting observations of the tops of crowns. There was no climbing, probing, coring, dissection, and detailed root examination involving excavation. While reasonable efforts have been made to assess trees in this report, there is no guarantee offered, or implied that these trees or any of their parts may have problems or deficiencies that may arise in the future. Trees are living organisms and their health and vigour change over time and are subject to changes in site and weather conditions. As such this report is as accurate as possible at the time of the inspection.

Unless otherwise noted, the assessments of the trees on adjacent private lands were limited to observations from the subject site only and from one side of the tree. The determination of ownership of any subject tree(s) is the responsibility of the landowner(s). Any civil or common-law issues, which may exist between property owners with respect to trees, must be resolved by the owner(s). Any recommendation to remove or retain trees does not grant permission to encroach in any manner onto adjacent private properties.

7.0 Tree Replacement / Compensation

The City of Pickering tree removal compensation policy notes:

> *Tree compensation shall be calculated as follows. Multi-stemmed trees shall be calculated on a per stem basis.*
> *Trees with a caliper of 15 cm to 29 cm DBH at a compensation ratio of 1:1*
> *Trees with a caliper of 30 cm to 49 cm DBH at a compensation ratio of 2:1*
> *Trees with a caliper of 50 cm to 74 cm DBH at a compensation ratio of 3:1*
> *Trees with a caliper of 75 cm DBH or greater at a compensation ratio of 4:1*

Replacement planting is in the form of deciduous trees with a minimum caliper of 60 mm and/or coniferous trees with a minimum height of 1.8 m. The required boulevard tree planting for municipal rights-of-way is not considered as part of the tree replacement compensation. Should compensation planting take the form of naturalization planting in an open space area where smaller sized plant material may be more suitable, the City determines what the appropriate total quantity/value of the plant material will be. Reasonable effort must be taken to compensate for tree loss through on-site and/or off-site plantings by the developer. Recognizing that many development sites will have insufficient space to plant all the trees required for compensation, the City may take cash-in-lieu with the funds to be used for tree planting initiatives within the neighbouring community if possible. At this time, staff have been requesting cash-in-lieu compensation at a rate of $620 per tree (2025) for the quantity of trees that are not planted. As some development sites may be densely forested or contain many large trees, the compensation required for these developments may be cost prohibitive. As such, a maximum value required for cash-in-lieu has been currently set at:
• $3,720 per dwelling unit for residential developments (2025).

The quantity and species of trees to be planted in compensation for tree removal and/or the cash in-lieu amount shall be approved by the Director, Engineering Services.

7.1 Tree Compensation

Refer to Table 2 – Tree Compensation Calculation for a tally of private compensation trees required.

Based on the compensation ratio, 77 replacement trees with a value of $47,740.00 are required for the removal of 48 trees for the proposed development.

Tree compensation is subject to change based on proposed tree plantings within the site developed through the detailed design stage of this proposed development.

Final compensation will be determined through consultation with the City of Pickering.

8.0 Conclusions

Cosburn Nauboris Ltd. was retained to conduct a tree inventory and assessment by Plaza 6 Inc. for a subject site encompassing 666, 668, 672, 678, 682 Liverpool Road in the City of Pickering, Regional Municipality of Durham. 3 storey condominium townhouses including at grade parking is proposed for the site and construction activities are anticipated to occur throughout the site up to the property line.

A total of 56 trees were inventoried and assessed in this report.

To facilitate the proposed development and associated grading / servicing and considering the health / condition of the trees it will be necessary to remove a total of 48 trees consisting of 5 ROW trees (#712, 713, 723, 739, 740), and 41 private site trees (#710, 711, 714-722, 724-738, 741-752, P1-P3), and 2 private adjacent land trees N7, N10.

From the total 48 trees to be removed there are 8 observed boundary trees (#720, 722, 724, 725, 726, 727, 738-boundary with City), (#749-boundary with private adjacent landowner(s)) that were bisecting the property line. Prior to removals, written consent from the respective co-owner(s) of private tree #749 will be required to be forwarded to the City, and approval for the 7 boundary trees shared with the City will be obtained through the development application process.

Written permission must be obtained from landowners of any trees or hedges / vegetation (all smaller trees and vegetation not discussed in this report) on neighbouring properties or bisecting the property line or for any shared ownership trees prior to any scheduled removals or any commencement of construction activities that may injure neighbour owned or shared boundary trees / vegetation that are scheduled to be protected and preserved.

A total of 8 private adjacent land trees N1, N2, N3, N4, N5, N6, N8, N9 are to be protected and preserved.

Of the trees to be preserved as noted above, 7 trees N1, N2, N3, N4, N5, N6, N8 may sustain minor to moderate injuries to their root systems as encroachment within their respective minimum TPZ's will be required to facilitate proposed construction works and specifically grade changes related to proposed drainage swales and the new privacy wood fence installation along the property line. Mitigation measures have been outlined in this report to minimize injuries to these trees.

Prior to any site disturbance or works, the trees noted in this report for preservation are to have tree protection fences installed as per City of Pickering standards and as shown on the Tree Preservation Plan TP1. Tree protection fencing to be maintained in good condition throughout the construction period.

The tree compensation calculated for the removal of 48 trees is 77 replacement trees with a value of $47,740.00. A cash-in-lieu amount may be considered by the City for any replacement trees not planted on the subject site.

Tree compensation is subject to change based on proposed tree plantings within the site developed through the detailed design stage of this proposed development.

Final compensation will be determined through consultation with the City of Pickering.

Goran Olbina, OALA, CSLA, ISA
ISA Certified Arborist ON-1249A

COSBURN NAUBORIS LTD

Table 1 – Tree Inventory

Tree #	Genus Species	Common Name	DBH cm	Crown spread -m	Health Condition	Comment	TPZ radius m (dripline + 1m)	Min. TPZ (MTPZ) radius m	Action
	City ROW Trees								
712	*Malus sp.*	Apple	12	3	Fair	12/10 stems, union @ 0.7m	2.5		Remove
713	*Malus sp.*	Apple	40	5	Fair	unions @ 1.4m, topped	3.5		Remove
723	*Thuja occidentalis*	White Cedar	13	2	Fair	thinning canopy	2		Remove
739	*Acer negundo*	Manitoba Maple	12	4	Fair	12/10/9/7 stems	3		Remove
740	*Thuja occidentalis*	White Cedar	26	3	Fair		2.5		Remove
	Private Site Trees								
710	*Acer negundo*	Manitoba Maple	110	16	Fair	branch dieback	9		Remove
711	*Acer negundo*	Manitoba Maple	41	6	Fair	41/12 stems, suckering, trunk decay	4		Remove
714	*Syringa sp.*	Lilac	24	5	Fair	24/15/9 stems, union @ 0.7m	3.5		Remove
715	*Juniperus virginiana*	Red Cedar	16	3	Fair		2.5		Remove
716	*Malus sp.*	Apple	22	3	Fair	22/16 stems, hollow trunk, internal decay	2.5		Remove
717	*Malus sp.*	Apple	24	3	Fair	branch dieback	2.5		Remove
718	*Robinia pseudoacacia*	Black Locust	28	6	Poor	**high-risk hazardous,** transverse trunk crack @ 1.8m, failure imminent, owner notified to remove ASAP	4		Remove
719	*Robinia pseudoacacia*	Black Locust	47	8	Fair		5		Remove
720	*Acer platanoides*	Norway Maple	37	6	Fair	**boundary tree w/City**	4		Remove
721	*Thuja occidentalis*	White Cedar	20	3	Fair	thinning canopy	2.5		Remove
722	*Thuja occidentalis*	White Cedar	24	4	Fair	**boundary tree w/City,** 24/17/14/13 stems	3		Remove
724	*Thuja occidentalis*	White Cedar	15	2	Fair	**boundary tree w/City,** 15/6 stems, thinning	2		Remove
725	*Thuja occidentalis*	White Cedar	15	3	Fair	**boundary tree w/City,** 15/9 stems, thinning	2.5		Remove
726	*Thuja occidentalis*	White Cedar	20	3	Fair	**boundary tree w/City,** 20/17 stems, thinning	2.5		Remove
727	*Thuja occidentalis*	White Cedar	11	2	Fair	**boundary tree w/City,** 11/7/6 stems, thinning	2		Remove
728	*Thuja occidentalis*	White Cedar	30	7	Fair		4.5		Remove
729	*Thuja occidentalis*	White Cedar	33	7	Poor	split trunk	4.5		Remove

730	*Thuja occidentalis*	White Cedar	40	7	Poor	split trunk	4.5		Remove
731	*Morus alba*	White Mulberry	15	6	Fair	15/15/14/13 stems	4		Remove
732	*Thuja occidentalis*	White Cedar	29	3	Poor	70% dieback, declining	2.5		Remove
733	*Picea glauca*	White Spruce	40	6	Fair		4		Remove
734	*Aesculus hippocastanum*	Common Horsechestnut	52	10	Fair		6		Remove
735	*Malus sp.*	Apple	54	7	Fair	trunk hollow, decay	4.5		Remove
736	*Acer rubrum*	Red Maple	10	6	Good	10/10/9/9/9/8/6 stems	4		Remove
737	*Thuja occidentalis*	White Cedar	36	4	Fair	thinning canopy	3		Remove
738	*Acer negundo*	Manitoba Maple	16	5	Fair	**boundary tree w/ City,** 16/12/12/12/10/6 stems	3.5		Remove
741	*Acer platanoides*	Norway Maple	36	6	Fair		4		Remove
742	*Acer saccharinum*	Silver Maple	149	18	Fair	in raised planter around base	10		Remove
743	*Picea abies*	Norway Spruce	45	7	Fair		4.5		Remove
744	*Picea pungens*	Colorado Spruce	36	7	Fair	36/24 stem union @0.4m	4.5		Remove
745	*Picea pungens*	Colorado Spruce	32	6	Fair		4		Remove
746	*Picea pungens*	Colorado Spruce	17	4	Dead		3		Remove
747	*Picea glauca*	White Spruce	23	6	Fair	23/20 stem union @0.3m	4		Remove
748	*Picea glauca*	White Spruce	24	5	Fair	thinning canopy	3.5		Remove
749	*Acer negundo*	Manitoba Maple	33	6	Fair	**boundary tree w/neighbour**	4		Remove
750	*Acer negundo*	Manitoba Maple	17	4	Poor	80% dieback, topped	3		Remove
751	*Acer negundo*	Manitoba Maple	16	3	Fair	branch dieback	2.5		Remove
752	*Acer negundo*	Manitoba Maple	14	3	Fair	dieback, topped	2.5		Remove
P1	*Acer negundo*	Manitoba Maple	20	4	Fair	1-sided canopy	3		Remove
P2	*Robinia pseudoacacia*	Black Locust	45	8	Fair	spoils around base	5		Remove
P3	*Syringa sp.*	Lilac	11	5	Fair	11/10/10/9/8 stems	3.5		Remove
	Adjacent Land Trees								
N1	*Picea abies*	Norway Spruce	55	8	Fair	canopy raised/pruned	5	3.3	Preserve
N2	*Picea abies*	Norway Spruce	35	6	Fair	canopy raised/pruned	4	2.1	Preserve
N3	*Picea abies*	Norway Spruce	38	6	Fair	canopy raised/pruned	4	2.3	Preserve
N4	*Picea abies*	Norway Spruce	38	5	Fair	canopy top broken away/failed	3.5	2.3	Preserve
N5	*Picea abies*	Norway Spruce	55	8	Fair	canopy raised/pruned	5	3.3	Preserve
N6	*Picea abies*	Norway Spruce	70	9	Fair	canopy raised/pruned	5.5	4.2	Preserve
N7	*Ulmus pumila*	Siberian Elm	80	16	Fair	80/40 stems, branch dieback	9		Remove
N8	*Acer platanoides*	Norway Maple	75	10	Fair	lean to west, broken stem @4.0m	6	4.5	Preserve
N9	*Morus alba*	White Mulberry	23	6	Fair	23/23 stems union @ 0.6m	4	1.8	Preserve
N10	*Acer platanoides*	Norway Maple	38	6	Fair		4		Remove

Table 2 – Tree Compensation Calculation

Tree #	Genus Species	Common Name	DBH cm	Health Condition	Comment	Action	Comp. Trees 15cm+	tree value
	City ROW Trees							
712	*Malus sp.*	Apple	12	Fair	12/10 stems, union @ 0.7m	Remove	FALSE	
713	*Malus sp.*	Apple	40	Fair	unions @ 1.4m, topped	Remove	2	$ 1,240.00
723	*Thuja occidentalis*	White Cedar	13	Fair	thinning canopy	Remove	FALSE	
739	*Acer negundo*	Manitoba Maple	12	Fair	12/10/9/7 stems	Remove	FALSE	
740	*Thuja occidentalis*	White Cedar	26	Fair		Remove	1	$ 620.00
	Private Site Trees							
710	*Acer negundo*	Manitoba Maple	110	Fair	branch dieback	Remove	4	$ 2,480.00
711	*Acer negundo*	Manitoba Maple	41	Fair	41/12 stems, suckering, trunk decay	Remove	2	$ 1,240.00
714	*Syringa sp.*	Lilac	24	Fair	24/15/9 stems, union @ 0.7m	Remove	2	$ 1,240.00
715	*Juniperus virginiana*	Red Cedar	16	Fair		Remove	1	$ 620.00
716	*Malus sp.*	Apple	22	Fair	22/16 stems, hollow trunk, internal decay	Remove	2	$ 1,240.00
717	*Malus sp.*	Apple	24	Fair	branch dieback	Remove	1	$ 620.00
718	*Robinia pseudoacacia*	Black Locust	28	Poor	**high-risk hazardous,** transverse trunk crack @ 1.8m, failure imminent, owner notified to remove ASAP	Remove	0	$ -
719	*Robinia pseudoacacia*	Black Locust	47	Fair		Remove	2	$ 1,240.00
720	*Acer platanoides*	Norway Maple	37	Fair	**boundary tree w/City**	Remove	2	$ 1,240.00
721	*Thuja occidentalis*	White Cedar	20	Fair	thinning canopy	Remove	1	$ 620.00
722	*Thuja occidentalis*	White Cedar	24	Fair	**boundary tree w/City,** 24/17/14/13 stems	Remove	2	$ 1,240.00
724	*Thuja occidentalis*	White Cedar	15	Fair	**boundary tree w/City,** 15/6 stems, thinning	Remove	1	$ 620.00
725	*Thuja occidentalis*	White Cedar	15	Fair	**boundary tree w/City,** 15/9 stems, thinning	Remove	1	$ 620.00
726	*Thuja occidentalis*	White Cedar	20	Fair	**boundary tree w/City,** 20/17 stems, thinning	Remove	2	$ 1,240.00
727	*Thuja occidentalis*	White Cedar	11	Fair	**boundary tree w/City,** 11/7/6 stems, thinning	Remove	FALSE	
728	*Thuja occidentalis*	White Cedar	30	Fair		Remove	2	$ 1,240.00
729	*Thuja occidentalis*	White Cedar	33	Poor	split trunk	Remove	2	$ 1,240.00
730	*Thuja occidentalis*	White Cedar	40	Poor	split trunk	Remove	2	$ 1,240.00
731	*Morus alba*	White Mulberry	15	Fair	15/15/14/13 stems	Remove	2	$ 1,240.00
732	*Thuja occidentalis*	White Cedar	29	Poor	70% dieback, declining	Remove	1	$ 620.00
733	*Picea glauca*	White Spruce	40	Fair		Remove	2	$ 1,240.00
734	*Aesculus hippocastanum*	Common Horsechestnut	52	Fair		Remove	3	$ 1,860.00
735	*Malus sp.*	Apple	54	Fair	trunk hollow, decay	Remove	3	$ 1,860.00

736	*Acer rubrum*	Red Maple	10	Good	10/10/9/9/9/8/6 stems	Remove	FALSE	
737	*Thuja occidentalis*	White Cedar	36	Fair	thinning canopy	Remove	2	$ 1,240.00
738	*Acer negundo*	Manitoba Maple	16	Fair	**boundary tree w/ City,** 16/12/12/12/10/6 stems	Remove	1	$ 620.00
741	*Acer platanoides*	Norway Maple	36	Fair		Remove	2	$ 1,240.00
742	*Acer saccharinum*	Silver Maple	149	Fair	in raised planter around base	Remove	4	$ 2,480.00
743	*Picea abies*	Norway Spruce	45	Fair		Remove	2	$ 1,240.00
744	*Picea pungens*	Colorado Spruce	36	Fair	36/24 stem union @0.4m	Remove	3	$ 1,860.00
745	*Picea pungens*	Colorado Spruce	32	Fair		Remove	2	$ 1,240.00
746	*Picea pungens*	Colorado Spruce	17	Dead		Remove	0	$ -
747	*Picea glauca*	White Spruce	23	Fair	23/20 stem union @0.3m	Remove	2	$ 1,240.00
748	*Picea glauca*	White Spruce	24	Fair	thinning canopy	Remove	1	$ 620.00
749	*Acer negundo*	Manitoba Maple	33	Fair	**boundary tree w/neighbour**	Remove	2	$ 1,240.00
750	*Acer negundo*	Manitoba Maple	17	Poor	80% dieback, topped	Remove	1	$ 620.00
751	*Acer negundo*	Manitoba Maple	16	Fair	branch dieback	Remove	1	$ 620.00
752	*Acer negundo*	Manitoba Maple	14	Fair	dieback, topped	Remove	FALSE	
P1	*Acer negundo*	Manitoba Maple	20	Fair	1-sided canopy	Remove	1	$ 620.00
P2	*Robinia pseudoacacia*	Black Locust	45	Fair	spoils around base	Remove	2	$ 1,240.00
P3	*Syringa sp.*	Lilac	11	Fair	11/10/10/9/8 stems	Remove	FALSE	
	Adjacent Land Trees							
N1	*Picea abies*	Norway Spruce	55	Fair	canopy raised/pruned	Preserve	0	$ -
N2	*Picea abies*	Norway Spruce	35	Fair	canopy raised/pruned	Preserve	0	$ -
N3	*Picea abies*	Norway Spruce	38	Fair	canopy raised/pruned	Preserve	0	$ -
N4	*Picea abies*	Norway Spruce	38	Fair	canopy top broken away/failed	Preserve	0	$ -
N5	*Picea abies*	Norway Spruce	55	Fair	canopy raised/pruned	Preserve	0	$ -
N6	*Picea abies*	Norway Spruce	70	Fair	canopy raised/pruned	Preserve	0	$ -
N7	*Ulmus pumila*	Siberian Elm	80	Fair	80/40 stems, branch dieback	Remove	6	$ 3720.00
N8	*Acer platanoides*	Norway Maple	75	Fair	lean to west, broken stem @4.0m	Preserve	0	$ -
N9	*Morus alba*	White Mulberry	23	Fair	23/23 stems union @ 0.6m	Preserve	0	$ -
N10	*Acer platanoides*	Norway Maple	38	Fair		Remove	2	$ 1,240.00
					Private tree Compensation req'd / Value		**77**	**$ 47,740.00**
					Proposed private trees and value		0	$ -
					Balance cash-in-lieu			**$ 47,740.00**

Appendix A - Guidelines for Tree Management

General Guidelines

The survival rates for trees, which are in close proximity to construction, are dependent on the resultant changes to a variety of environmental and anthropogenic factors including; species resilience to construction, extent of root damage or removal, changes to soil grades over the roots and removal of limbs and branches.

Construction activities bring about changes to a variety of environmental factors, including the existing microclimate, winds, temperature, soil moisture, amount of available sunlight, soil quality, and the level of the water table. Subsequent human activities also may damage the structure and/or physiological activities of the trees. Following construction trees should be monitored for signs of deteriorating health, these signs may not become visible for several years after the damage has occurred. Therefore, recommendations for tree preservation are to be re-assessed over time, and trees are to be monitored as their potential to deteriorate and become hazardous can increase or change over time.

Tree Protection Fencing

Tree protection fencing should be installed for all trees to be protected per Municipal requirements and inspected and approved by the consulting ISA Arborist/Forester/Town/City/Region prior to commencement of site soil stripping or construction and be maintained throughout construction period by the contractor/owner.

Protective Fencing location and details are indicated on the Tree Assessment and Preservation Plan.

Within the Tree Protection Zone (TPZ) there must be no:

Construction;

Altering of grades;

Storage of construction materials, equipment, soil, waste, or debris;

Disposal of concrete, gas, oil, or paint;

Movement of vehicles equipment or pedestrians.

Tree protection fencing shall be monitored by the consulting ISA Arborist/Forester on a regular basis with repairs completed by the contractor as required.

Excavation and Fill

Excavation and filling works are not to occur inside the Tree Protection Zone.

When excavating near protected tree roots, Air Knives or low-pressure Hydro Vac excavation are the preferred method to expose roots. All exposed roots should be pruned cleanly back to the remaining soil using acceptable horticultural pruning practices. All root pruning to be performed by or under supervision of a Certified Arborist or tree professional.

When installation of conduits, irrigation lines or other service, is required directional micro tunnelling below the root system is the preferred method. When trenching is required, it is preferred that trenching occurs at a distance from the trunk of at least 12 times the diameter of the trunk.

Trenching should be completed utilizing low pressure (90psi max.) Air Knives or low-pressure Hydro Vac excavation, exposing roots to be pruned for insertion of pipes or lines.

Pruning Practices

All roots to be removed are to be exposed by Air Knife or Low-Pressure Hydro Vac excavation. Roots are to be cut clean with accepted horticultural practises under supervision of the consulting ISA Arborist, using secateurs, loppers, or saws prior to excavation. All exposed roots are to be watered and back filled as soon as possible to prevent desiccation.

All limbs to be removed to provide access for construction should be pruned cleanly, utilizing clean; secateurs in accordance with approved horticultural practices under supervision of the consulting ISA Arborist. All pruning cuts should be made to a growing point such as a bud, twig, or branch. Poor cut location, poor cut angle and torn cuts are not acceptable

All limbs damaged or broken during the course of construction should be pruned cleanly, utilizing clean secateurs in accordance with approved horticultural practices under supervision of the consulting ISA Arborist. All pruning cuts should be made to a growing point such as a bud, twig, or branch. Poor cut location, poor cut angle and torn cuts are not acceptable.

Extensive pruning is best completed before plants break dormancy. Pruning should be limited to the removal of no more than a quarter (1/4) of the total bud and leaf bearing branches.

Pruning should include the careful removal of:

deadwood,
branches that are weak, damaged, diseased,
secondary leaders of conifers,
trunk and root suckers,
trunk waterspouts, and
tight V-shaped or weak crotches.

Root Feeding

When the construction requires roots to be removed the ability of the trees to provide nutrients and water to the upper portions of the trees will be reduced and will potentially reduce health and vigor of the trees. Where grades adjacent to trees that are slated for preservation have changed, root feeding is recommended. To supplement new root development, affected trees should receive an application of granular slow-release fertilizer with a high phosphate component and a mycorrhizal fungus inoculant to improve the symbiotic relationship that aids in nutrient uptake. This should be worked into the soil that is placed back over the roots so that it is not visible to children or animals. Trees should be well irrigated during and post construction to reduce desiccation of the roots, encourage development of soil microorganisms and this should be continued during the dry conditions.

Removals

Dead or dying specimens are to be removed to prevent further damage to the existing vegetation.

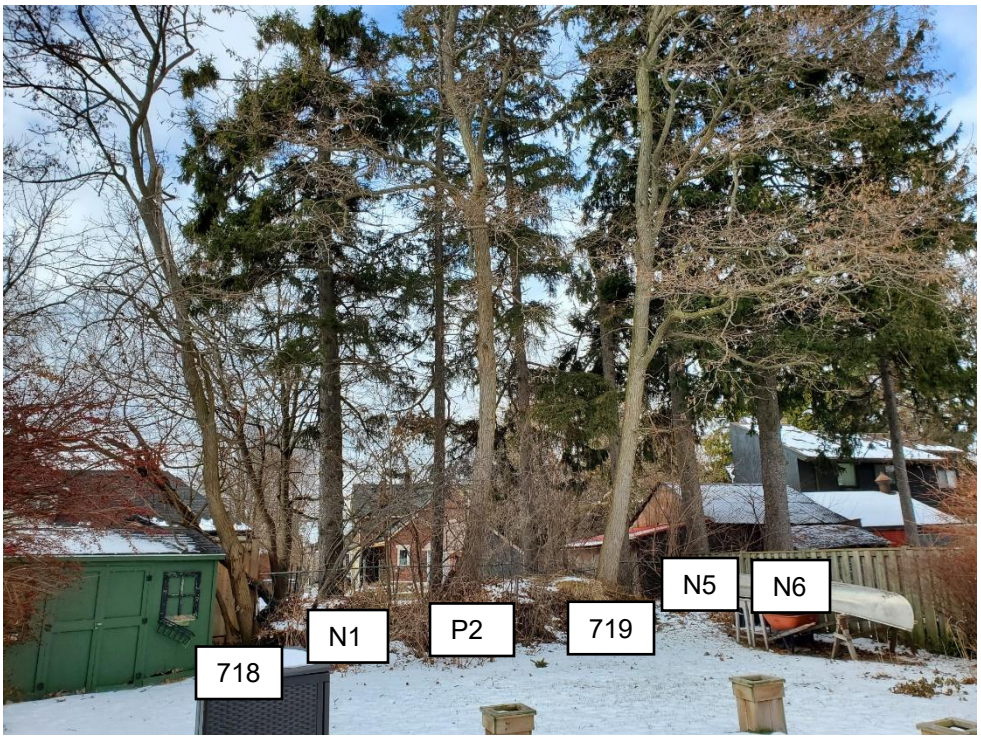
Trees that are to be removed should be cut down in such a way that falling trees do not damage the vegetation which does not require removal.

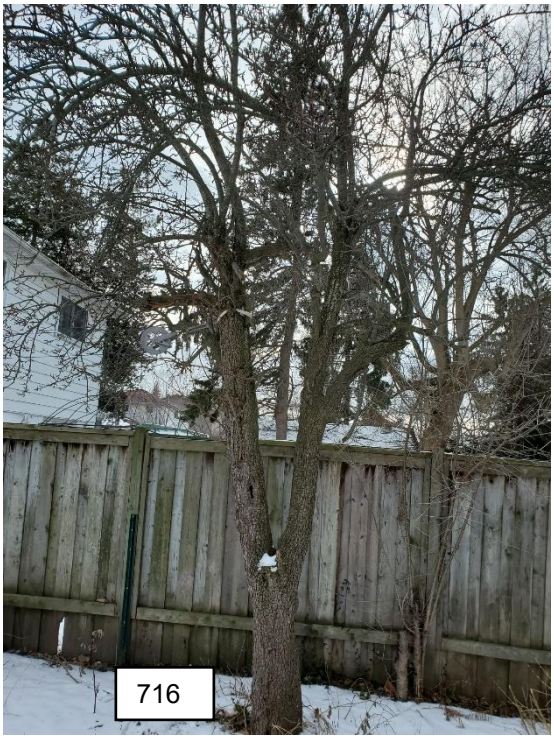
Unless specified otherwise, downed trees and other vegetation that is removed should be disposed of off-site and should not under any circumstances be discarded onto any areas for retention.

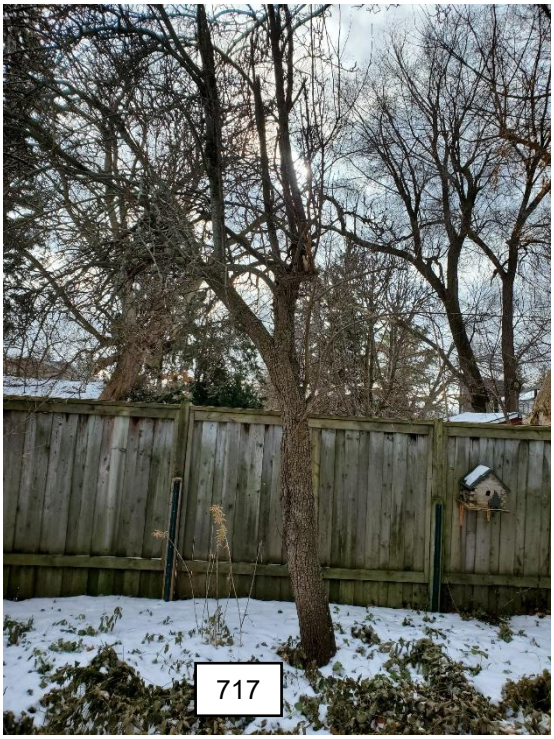
Risk (Hazard) Trees

Trees that present a potential risk to people or property will be identified by the consulting ISA Arborist/Forester for removal prior to start of construction. Trees along an exposed edge or where grades changes have occurred close to the TPZ should be monitored annually for signs of decline in health or vigour. Additional crown pruning, limb, or tree removal recommendations will be provided to the Owner and appropriate Municipality in a report as required.

Appendix B – Site Photos





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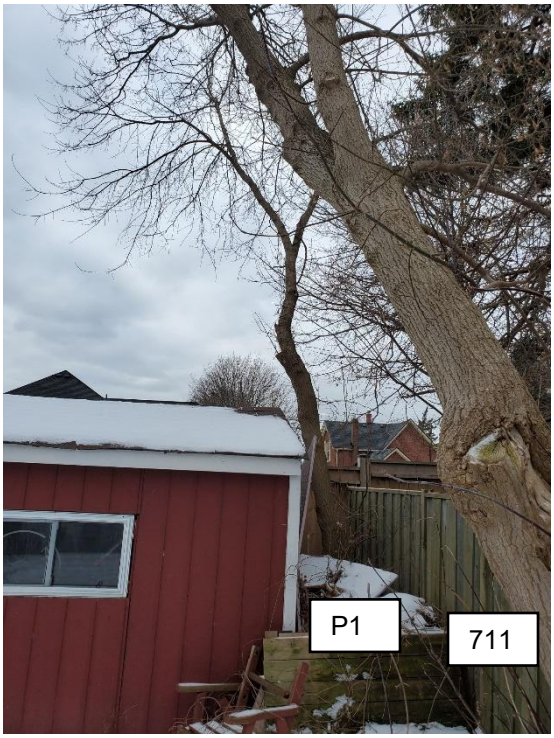
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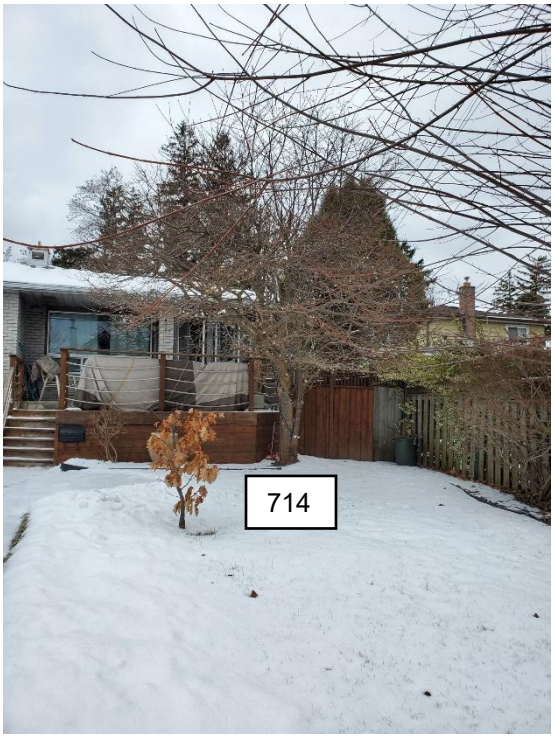
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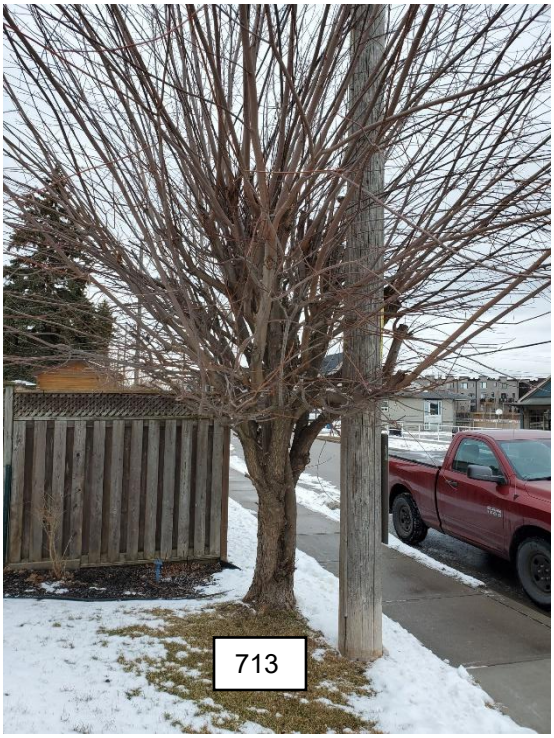

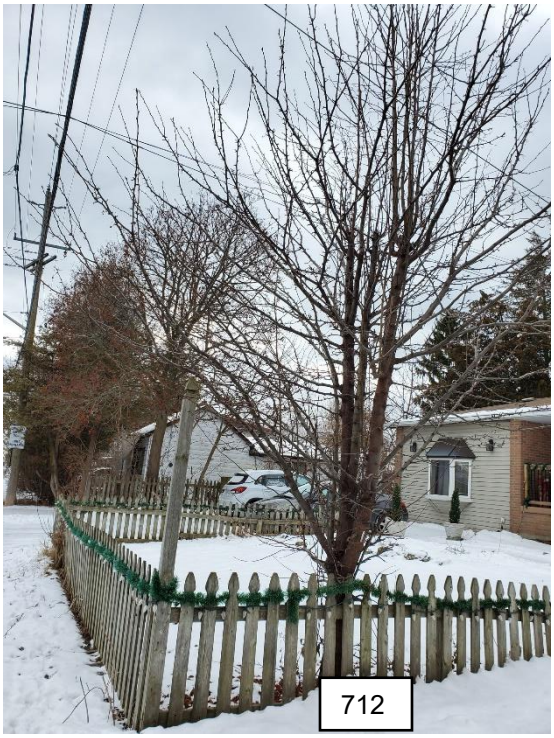

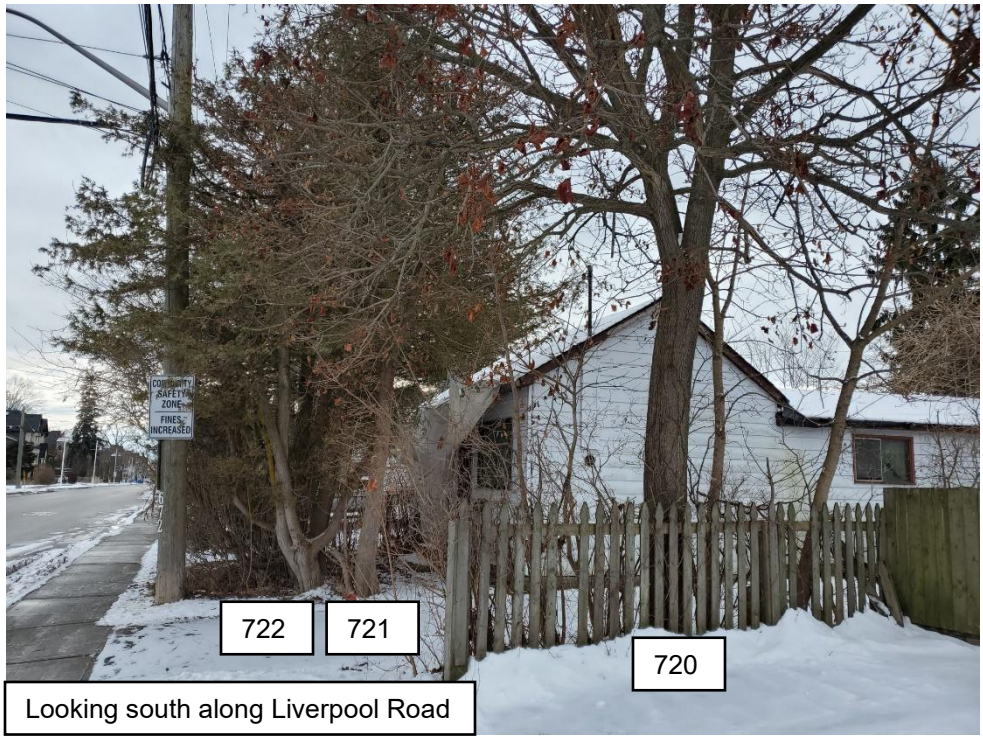

Looking south along Liverpool Road


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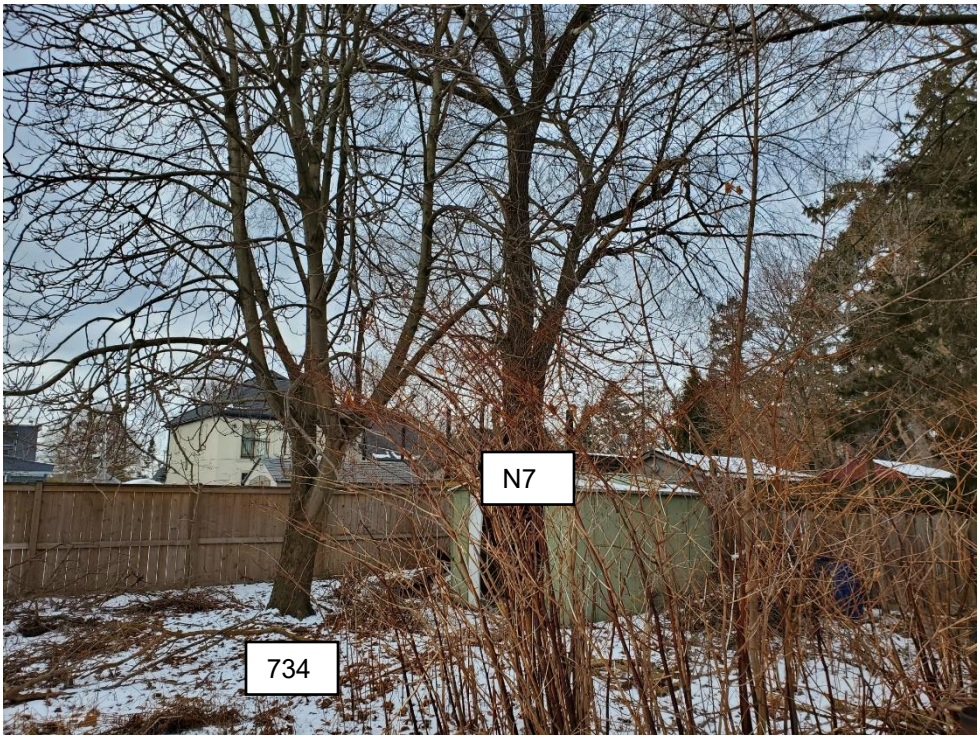
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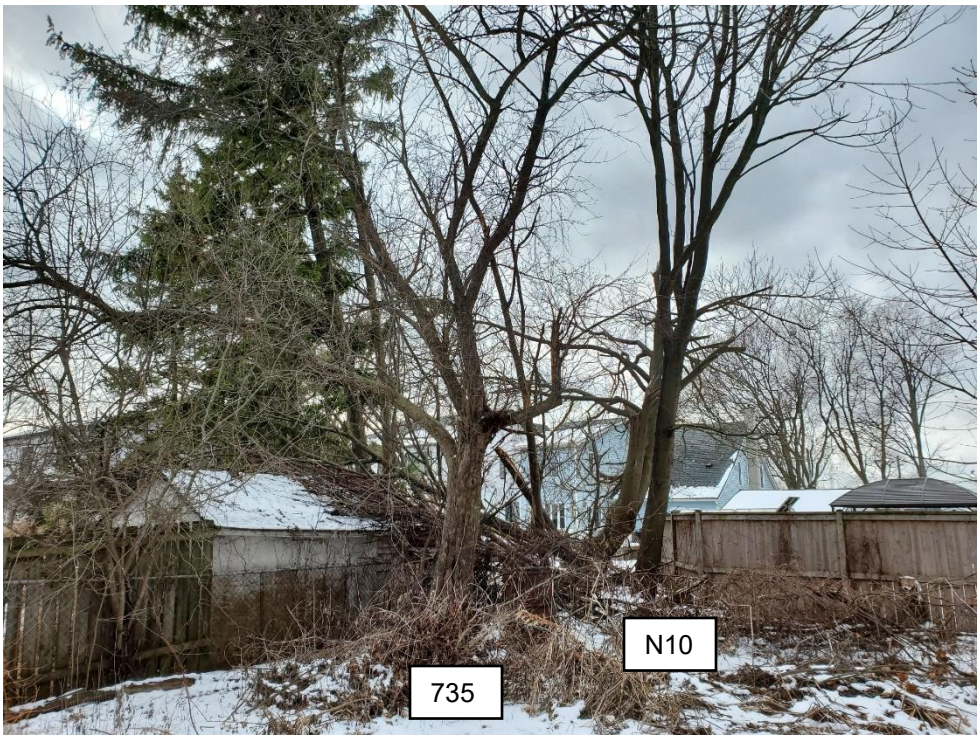
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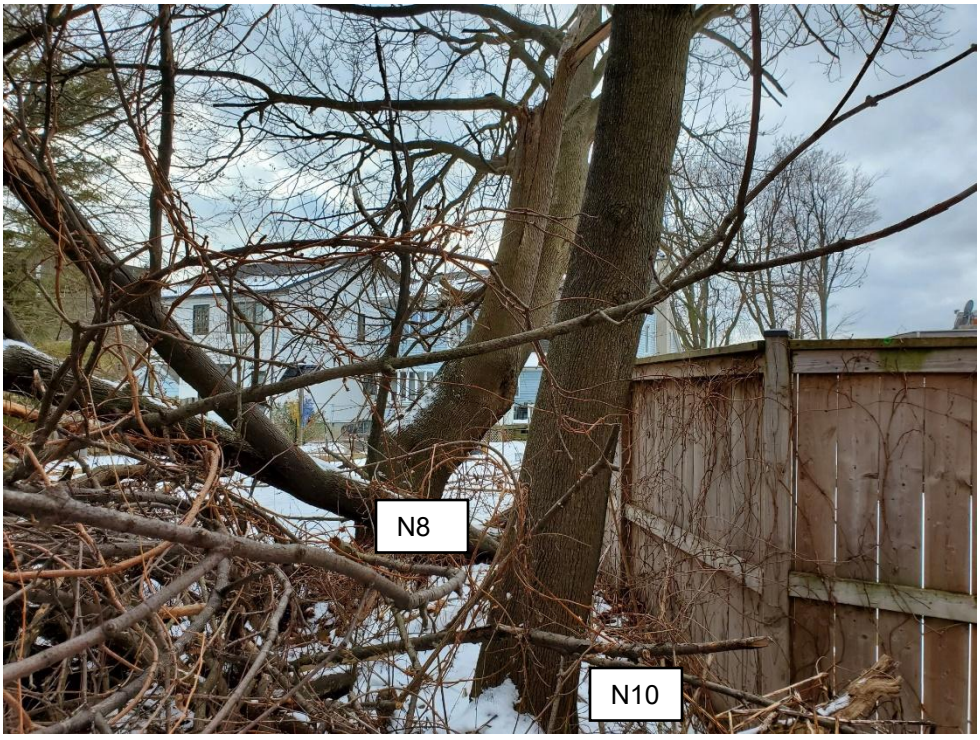
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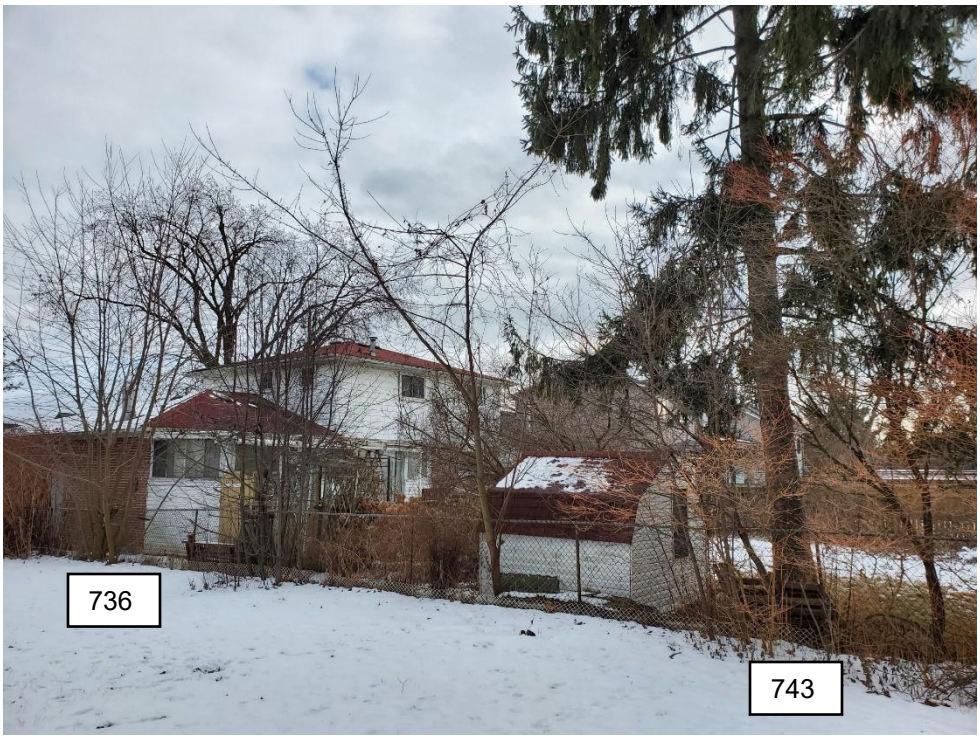
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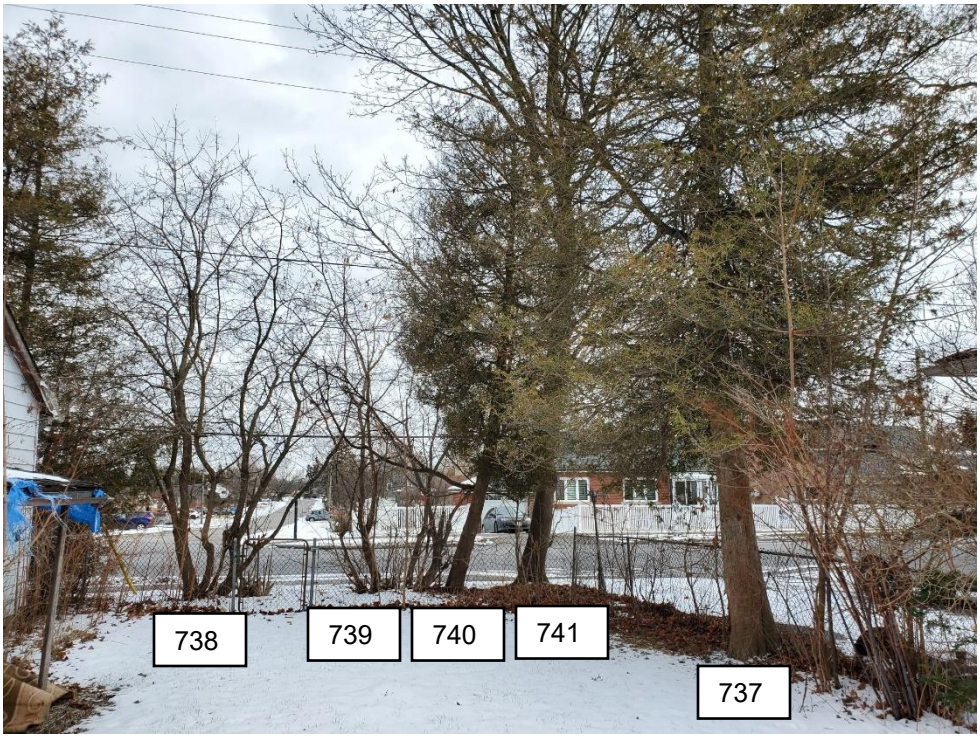
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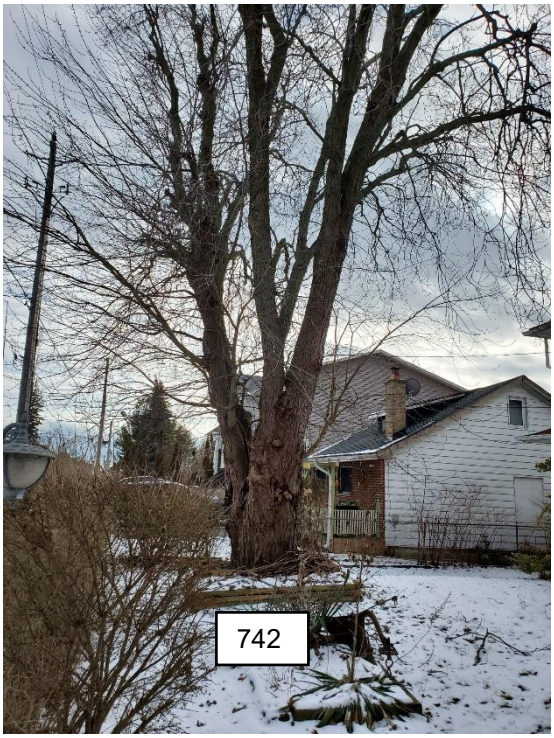
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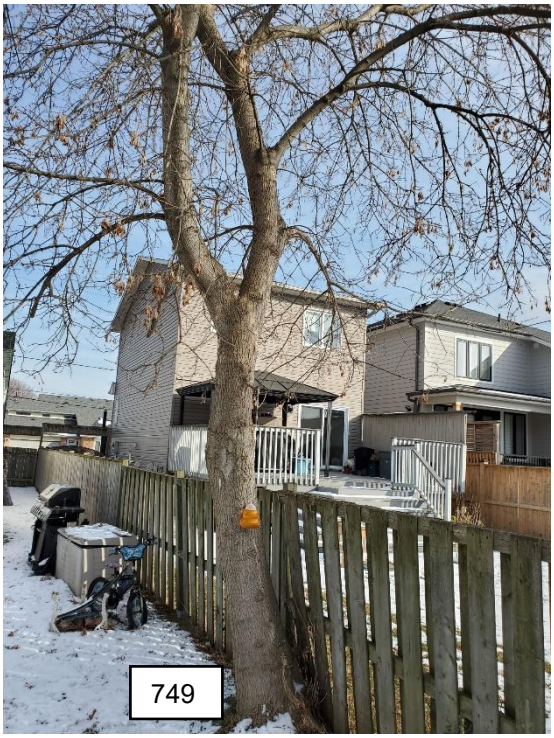
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