



TREE PRESERVATION REPORT FOR ZONING BY-LAW AMENDMENT

216 CENTENNIAL AVE.
ST. THOMAS, ONTARIO

Report prepared by
Ron Koudys Landscape Architects Inc

April 5th, 2024

RKLA Project #24-129



Kathleen Garrett
ON-3009A

CONTENTS

1.0	Introduction and Executive Summary	1
1.1	Introduction.....	1
1.2	Executive Summary	1
1.2.1	Tree Species Composition Chart.....	1
1.2.2	Tree Removal and Preservation Recommendations	1
2.0	Subject Site and Scope of Work	2
3.0	Methodology	2
3.1	Health Assessment.....	2
3.2	Critical Root Zones	3
	Tree Inventory and Preservation/Removal Recommendations	4
3.3	Tree Data Table	4
4.0	Potential Construction Impacts on Trees	9
4.1	Soil Compaction.....	9
4.2	Root Loss.....	9
4.3	Grade Changes	10
4.4	Mechanical Damage.....	10
4.5	Changes to Exposure - Sun and Wind	10
4.6	Soil Contamination.....	10
4.7	Water Availability	10
5.0	Construction Impact Mitigation Recommendations	11
5.1	Pre-construction recommendations	11
5.2	Recommendations related to the construction process	11
5.3	Post-construction recommendations	12
6.0	Disclaimer	12
7.0	Contact Information.....	12
8.0	Appendix A - Tree Preservation Drawings.....	14

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

1.1 INTRODUCTION

Ron Koudys Landscape Architects Inc. (RKLA) was retained by the developer to prepare a tree assessment report in conjunction with the proposed development at 216 Centennial Ave., St. Thomas, Ontario. The intent of this report is to summarize the findings of the tree assessment and make recommendations regarding tree preservation and removal based on tree health, the current site plan, and anticipated site grading for the purpose of application for rezoning.

Note that refinement of these recommendations will be made upon design refinement at the time of application for site plan approval.

1.2 EXECUTIVE SUMMARY

The inventory captured 57 individual trees. Trees were identified within the subject site, and within 3 meters of the legal property boundary. No species classified as endangered or threatened under the Ontario Endangered Species Act, 2007, S.O. 2007, c. 6 were observed during the tree inventory. All trees observed are common to the current land uses and can be characterized as anthropogenic or opportunistic.

1.2.1 TREE SPECIES COMPOSITION CHART

The following chart summarizes the amount of each tree species observed.

%	Qty.	Botanical Name	Common Name
56%	32	<i>Juglans nigra</i>	Black Walnut
18%	10	<i>Acer saccharinum</i>	Silver Maple
9%	5	<i>Acer rubrum</i>	Red Maple
5%	3	<i>Malus</i> spp.	Apple
4%	2	<i>Acer negundo</i>	Manitoba Maple
4%	2	<i>Acer platanoides</i>	Norway Maple
2%	1	<i>Picea pungens</i>	Colorado Spruce
2%	1	<i>Prunus</i> spp.	Cherry
2%	1	<i>Ulmus pumila</i>	Siberian Elm
100%	57	Total	

1.2.2 TREE REMOVAL AND PRESERVATION RECOMMENDATIONS

- Remove 15 trees from the subject site due to direct conflict with site construction.
- Remove 10 trees located on the property north of the subject site. Tree removal consent is required from the landowner of this property.
- Remove 7 trees located on the property east of the subject site. Tree removal consent is required from the landowner of this property.
- Remove 6 trees located on the property south of the subject site. Tree removal consent is required from the landowner of this property.
- Preserve 18 trees located within the subject site and beyond the subject site.
- Potential removal of 2 trees located on 212 Centennial Ave.
- Follow pre, during, and post construction recommendations outlined in the Construction Impact Mitigation Recommendations in this report.

2.0 SUBJECT SITE AND SCOPE OF WORK

The subject site is located at 216 Centennial Ave. The trees are generally located close to the property boundary.

Refer to Figure 1 for scope of tree inventory.



Figure 1 - Google mapping with 2023 aerial imagery. NTS

Red dashed line - Limit of inventory



3.0 METHODOLOGY

Field work was completed on March 7th, 2024 by RKLA staff member Kathleen Garrett, ISA certified arborist ON 3009A. A topographic survey provided by LDS Consultants Inc. was used as a base for the field work and determined tree location/ownership. All trees with a minimum DBH of 10cm within the given scope were identified and assessed. Each tree was assigned a number which are identified in the tree data table and on the tree preservation plan. Tree identification numbers include 1-57.

The following information was recorded for each individual tree:

- Genus + specific epithet (Species)
- Diameter at breast height (DBH) (centimetres)
- Crown radius (metres)
- Crown Condition (overall general vigour of crown)
- Structural Form (excellent, good, fair, poor)
- Structural Integrity (good, fair, poor, hazard)
- General Comments

3.1 HEALTH ASSESSMENT

Trees were assessed following accepted arboricultural techniques and best practices using a limited visual inspection. The inspection included a 360-degree visual examination of the above-ground parts of each tree for structural defects including cavities, wounds, scars, external indicators of internal decay, evidence of insect presence, discoloured or deformed foliage, canopy and root distribution, and the overall condition of the tree. Evaluation of tree health was based on visible tree health indicators including live buds, foliage condition, deadwood, structural defects, form, and signs of disease or insect infestation. If needed, field observations were reviewed

against available online imagery of the site to assist in determining tree canopy health. Quantified health assessments included in the inventory are explained here:

Crown Condition Assessment

- 5 Healthy: less than 10% crown decline
- 4 Slight decline: 11% - 30% crown decline
- 3 Moderate decline: 31% - 60% crown decline
- 2 Severe decline: 61% - 90% crown decline
- 1 Dead - No visible indication of living foliage or buds in crown

Structural Form Assessment

- Excellent: An ideal expression of a specific tree species, true to form, balanced canopy, good flare, typical internode length, full crown, etc.
- Good: A satisfactory and generally expected expression of a specific tree species, with only minor or typical variances from an ideal form.
- Fair: Nearly satisfactory, with defects or a combination of defects such as codominant leaders, unbalanced crown, poor/no flare, shortened internodes, has been poorly pruned, etc.
- Poor: Significantly flawed expression of a specific tree species

Structural Integrity Assessment

- Good: Defects if present are minor (e.g. twig dieback, small wounds); defective tree part is small (e.g. 5-8 cm diameter limb) providing little if any risk.
- Fair: Defects are numerous or significant (e.g. dead scaffold limbs); defective parts are moderate in size (e.g. limb greater than 5-8 cm in diameter).
- Poor: Defects are severe (trunk cavity in excess of 50%); defective parts are large (e.g. majority of crown).
- Hazard: Defects are severe and acute; defective part or collective defective parts render the tree a high risk threat to potential targets.

3.2 CRITICAL ROOT ZONES

The critical root zone of a tree is the portion of the root system that is the minimum necessary to maintain tree vitality and stability. Critical root zones are commonly prescribed by municipal bylaws based solely on DBH and/or drip line, and are typically expressed as a circular shape around the tree. There are a number of other factors, however, that are considered when establishing a critical root zone.

Factors that inform location and extent of a tree preservation barriers to protect the critical root zone include: species tolerance to root loss and other construction impacts (as established by authoritative resources and professional experience), tree trunk size (DBH), tree health and vigour, structural condition, landscape context, soil type, moisture availability, topography, ground cover, crown size (drip line) and balance, current physical root restrictions, visible root arrangement, relationship to neighbouring trees, relationship between tree and proposed construction, type of proposed construction, etc.

4.0 BOUNDARY TREE LEGISLATION

There are 4 boundary trees and 19 trees on private property beyond the subject site that are recommended for removal. Note that, according to provincial legislation, a tree is considered a boundary tree if any part of the trunk before the first/ lowest

branch crosses the property line. Boundary trees are shared property of two (or more) adjacent land owners.

Forestry Act, R.S.O. 1990, c. 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.

Offence

(3) Every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the land owners is guilty of an offence under this Act. 1998, c. 18, Sched. I, s. 21.

It is the responsibility of the developer to acquire written consent from the appropriate neighbouring land owners to harm or remove boundary trees or trees located on private property beyond the subject site.

TREE INVENTORY AND PRESERVATION/REMOVAL RECOMMENDATIONS

4.1 TREE DATA TABLE

The following recommendations are based on requirements of the current site plan.

Grey indicates recommended removal.

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
1	<i>Acer saccharinum</i>	Silver Maple	Subject site - retained parcel	86	7	5	Fair	Fair	lower cavities in dead trunk, exposed roots in driveway, old wire grown into branch	no expected construction impacts	preserve	N/A
2	<i>Acer saccharinum</i>	Silver Maple	220 Centennial Ave	36	3	4	Fair	Good	minor deadwood, poor trunk taper	no expected construction impacts	preserve	N/A
3	<i>Acer saccharinum</i>	Silver Maple	220 Centennial Ave	33	3	5	Good	Good	low branched	no expected construction impacts	preserve	N/A
4	<i>Acer saccharinum</i>	Silver Maple	220 Centennial Ave	50	4	5	Fair	Fair	Codominant, included bark	no expected construction impacts	preserve	N/A
5	<i>Acer saccharinum</i>	Silver Maple	Subject site - retained parcel	58	5	5	Fair	Fair	codominant, old stem removed at primary union, codominant trunks fused together	no expected construction impacts	preserve	N/A
6	<i>Acer saccharinum</i>	Silver Maple	Subject site - retained parcel	52	5	5	Fair	Fair	low branched, poor primary union	no expected construction impacts	preserve	N/A

Tree Preservation Report for zoning by-law amendment
216 Centennial Ave. St. Thomas, Ontario

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
7	<i>Acer saccharinum</i>	Silver Maple	Subject site	68	5	5	Fair	Fair	low branched, epicormic growth, included bark at union, old prune wounds	conflict with proposed road	remove	construction conflict
8	<i>Acer saccharinum</i>	Silver Maple	Subject site	54	5	5	Fair	Fair	included bark, low union, multiple prune wounds, canopy through hydro wires	conflict with proposed road	remove	construction conflict
9	<i>Malus</i> spp.	Apple	Subject site	33, 31, 23	5	5	Fair	Poor	old prune wounds at primary union, major epicormic growth, included bark	conflict with proposed road	remove	construction conflict
10	<i>Picea pungens</i>	Colorado Spruce	Subject site	31	3.5	4	Good	Good	limbed up 3 meters, minor dieback	conflict with proposed road	remove	construction conflict
11	<i>Malus</i> spp.	Apple	Subject site - retained parcel	~40	3.5	5	Fair	Fair	epicormic growth, play structure build into tree	no expected construction impacts	preserve	N/A
12	<i>Malus</i> spp.	Apple	Subject site - retained parcel	~33	3	5	Fair	Good	epicormic growth	no expected construction impacts	preserve	N/A
13	<i>Prunus</i> spp.	Cherry	212 Centennial Ave	~40	5	4	Fair	Fair	canopy heavy east, low primary union, dead stubby branches throughout canopy	conflict with critical root zone and grading/ servicing	potential removal	*consent from 212 Centennial Ave required for removal
14	<i>Acer platanoides</i>	Norway Maple	212 Centennial Ave	66	7	5	Fair	Good	minor girdling roots, minor deadwood	conflict with critical root zone and grading/ servicing	potential removal	*consent from 212 Centennial Ave required for removal
15	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	37	5	5	Good	Good	slightly suppressed, canopy heavy north	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
16	<i>Juglans nigra</i>	Black Walnut	Boundary - subject site and property to the north	35	5	5	Fair	Good	old prune wound on trunk, healing	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
17	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	31	4	4	Fair	Fair	base of trunk buried, low union, grapevine throughout crown	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
18	<i>Ulmus pumila</i>	Siberian Elm	Adjacent property to the north	~45	6	4	Poor	Fair	base of trunk buried, low branched, leaning, deadwood throughout	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal

Tree Preservation Report for zoning by-law amendment
216 Centennial Ave. St. Thomas, Ontario

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
19	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	53	4.5	5	Good	Good	grapevine throughout crown	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
20	<i>Acer platanoides</i>	Norway Maple	Boundary - subject site and property to the north	24	3	4	Fair	Good	dead branches throughout	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
21	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	12	2	5	Fair	Good	prune wounds	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
22	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	26	4	5	Fair	Good	low branched, minor deadwood	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
23	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	22	3	5	Good	Good	wide flare	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
24	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the north	31	4	5	Good	Good		minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
25	<i>Acer saccharinum</i>	Silver Maple	Subject site	92	7	3	Poor	Poor	major limbs dead, low primary union, dbh taken below primary union	conflict with proposed construction and critical root zone	remove	construction conflict and tree condition
26	<i>Juglans nigra</i>	Black Walnut	Subject site	13	1.5	4	Fair	Good	deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict
27	<i>Juglans nigra</i>	Black Walnut	Subject site	18	2	4	Fair	Good	deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict
28	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	50	4	5	Fair	Good	minor burls on trunk	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal

Tree Preservation Report for zoning by-law amendment
216 Centennial Ave. St. Thomas, Ontario

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
29	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	37	4	5	Good	Good		conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
30	<i>Acer negundo</i>	Manitoba Maple	Adjacent property to the east	29	3	4	Fair	Good	low branched, deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
31	<i>Acer negundo</i>	Manitoba Maple	Boundary - subject site and property to the east	39	6	5	Fair	Fair	crooked trunk, epicormic growth, wound at base	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
32	<i>Acer rubrum</i>	Red Maple	Subject site	23	4	5	Good	Good	codominant at 2 meters from grade	conflict with proposed grading/ servicing and critical root zone	remove	construction conflict
33	<i>Acer rubrum</i>	Red Maple	Subject site	23	4	5	Fair	Good	minor prune wounds on trunk, healing	conflict with proposed grading/ servicing and critical root zone	remove	construction conflict
34	<i>Acer rubrum</i>	Red Maple	Subject site	20	3	5	Good	Good		conflict with proposed grading and critical root zone	remove	construction conflict
35	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	-11, 10	2	4	Poor	Fair	codominant, primary union at grade, covered in grapevine	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
36	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	-17, 15, 11	3	4	Poor	Poor	codominant , primary union at grade, branches fused, covered in grapevine	minor conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
37	<i>Acer rubrum</i>	Red Maple	Subject site	26	4	5	Fair	Good	old prune wounds, included bark	conflict with proposed construction	remove	construction conflict
38	<i>Acer rubrum</i>	Red Maple	Subject site	27	3.5	5	Fair	Good	codominant stems with fused branched	conflict with proposed construction	remove	construction conflict
39	<i>Acer saccharinum</i>	Silver Maple	Subject site	39	5	5	Good	Good	low branched	conflict with proposed construction and critical root zone	remove	construction conflict

Tree Preservation Report for zoning by-law amendment
216 Centennial Ave. St. Thomas, Ontario

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
40	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	23	3	5	Fair	Fair	low branched, included bark starting at union, covered in grapevine	minor conflict with proposed construction and critical root zone	remove	construction conflict - consent from landowner required for removal
41	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	22	3	5	Fair	Good	canopy heavy east, minor deadwood	minor conflict with proposed construction and critical root zone	remove	construction conflict - consent from landowner required for removal
42	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the east	21	3	5	Good	Good	slight lean	no expected construction impacts	preserve	tree protection fence
43	<i>Juglans nigra</i>	Black Walnut	Subject site	25	1	-	-	-	fully dead	conflict with proposed grading and critical root zone	remove	construction conflict and poor tree condition
44	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	26	3	4	Fair	Good	lower dead epicormic growth, grapevine throughout	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
45	<i>Juglans nigra</i>	Black Walnut	Boundary - subject site and property to the south	34	4	5	Good	Good	canopy heavy north	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
46	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	14	3	4	Fair	Good	low branched, deadwood	potential conflict with grading	preserve	tree protection fence
47	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	15	2.5	5	Good	Good		conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
48	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	12	2	3	Fair	Good	sloughing bark low branched	no expected construction impacts	preserve	tree protection fence
49	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	24	3.5	5	Good	Good		no expected construction impacts	preserve	tree protection fence
50	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	27	3.5	5	Good	Good		no expected construction impacts	preserve	tree protection fence
51	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	32	3	5	Fair	Good	minor trunk wounds	no expected construction impacts	preserve	tree protection fence

GENERAL INFORMATION				SIZE		HEALTH & CONDITION				RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (cm)	CANOPY RADIUS (m)	CROWN CONDITION	STRUCTURAL FORM	STRUCTURAL INTEGRITY	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PRESERVE OR REMOVE	IMPACT MITIGATION (TPZ) or REMOVAL RATIONALE
52	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	27, 21	3	5	Fair	Fair	codominant, low primary union	conflict with proposed grading and critical root zone	remove	construction conflict - consent from landowner required for removal
53	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	43, 38	6	5	Fair	Fair	codominant with included bark	minor conflict with grading	preserve	tree protection fence
54	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	34	4.5	5	Fair	Good	epicormic growth, old deadwood, canopy heavy north east	minor conflict with grading	preserve	tree protection fence
55	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	11	2	5	Good	Good		no expected construction impacts	preserve	tree protection fence
56	<i>Juglans nigra</i>	Black Walnut	Adjacent property to the south	15	2	5	Good	Good		no expected construction impacts	preserve	tree protection fence
57	<i>Juglans nigra</i>	Black Walnut	Subject site	44	4.5	5	Good	Good	lower branches pruned, full form	conflict with proposed road	remove	construction conflict

5.0 POTENTIAL CONSTRUCTION IMPACTS ON TREES

Some trees have been recommended for removal due to direct conflict with the proposed development. Some trees that have been recommended for preservation may be in proximity to the proposed construction. Trees to be preserved may be affected by the construction process, or by the construction itself. It is imperative that the design team and the construction crew understand the potential for, and the causes of tree damage. Trees recommended for preservation may experience some or all of the following potential construction impacts. Strategies and methods to avoid these impacts are outlined in the Construction Impact Mitigation Recommendations section of this report.

5.1 SOIL COMPACTION

Soil compaction is caused by heavy or repeated compression or vibration of the soil around the tree. Soil compaction reduces the amount and size of macro and micro pore space that is vital for subsurface movement of air and water. The harmful effects of soil compaction include, but are not limited to: slower water infiltration, poor aeration, reduced root growth and an overall increased susceptibility to biotic and abiotic stressors.

5.2 ROOT LOSS

Root loss occurs when roots are severed. The majority of roots are typically located within the top 60cm of soil and can extend outward up to three times the extent of the tree drip line. Excavation of any kind within the critical root zone* can sever roots.

Two categories of roots need to be considered when evaluating impacts of root loss - small, fibrous absorbing roots, and large structural roots. Significant loss of either or both of these functions can cause stress and/or affect the structural stability of the tree. Note, however, that it is commonly accepted that healthy trees can typically tolerate and recover from the removal of approximately 33% (up to a maximum of 50%) of their root mass. Thorough consideration regarding extent of acceptable root removal is dependent on individual species characteristics, root loss distribution, and site specific conditions (*ref. Trees and Development: A Technical Guide to Preservation of Trees During Land Development by Nelda Matheny and James R. Clark, 1998. Pg 72*).

* Refer to 'Critical Root Zones' in this report for definition.

5.3 GRADE CHANGES

Lowering of the grade around trees has immediate and long term effects on trees. Lowering of grade requires immediate root loss from cutting the roots which results in water stress from the root removal and potential reduced structural stability.

Raising the grade around a tree can be equally damaging. The addition of fill over the root zone of a tree alters the roots' ability for normal water and gas exchange that is necessary for healthy root growth and stability. Fill essentially suffocates the roots and can lead to the slow and eventual decline of the tree.

5.4 MECHANICAL DAMAGE

Mechanical damage is caused by physical contact with a tree that damages the tree to any degree. During land development and construction activities, there is an increased risk of both minor and fatal mechanical damage to trees from construction equipment. Minor damage can create entry points for insects and pathogens, and fatal damage can cause irreparable structural damage.

5.5 CHANGES TO EXPOSURE - SUN AND WIND

Trees can be negatively affected by increased exposure to sun or wind when neighbouring trees are removed. This can be of particular concern when 'interior trees' (trees that have developed surrounded by other trees) are suddenly exposed to forest edge conditions. These trees may experience higher intensity of direct sunlight resulting in leaf scald, and instability due to increased wind and snow loads.

Trees can be negatively affected by decreased exposure to sunlight. Proposed development that includes tall buildings located to the south and west of mature existing trees can greatly reduce the amount of daily direct sunlight. While this change in environment may not cause the immediate or eventual death of a tree, it can certainly slow development and alter growing habits and patterns, and must therefore be a consideration when evaluating trees for potential preservation.

5.6 SOIL CONTAMINATION

Soil health around a tree can be compromised by contamination from spills or leaks of fuels, solvents, or other construction related fluids.

5.7 WATER AVAILABILITY

Grading and servicing requirements for development can affect water availability for trees. Trees may experience a loss of available water due to a lowered water table or the capture or redirection of subsurface and/or overland flow. Conversely, trees may

experience an increase of available water due to changes in site grading and storm water retention efforts.

The successful survival of the trees to be preserved is largely dependent on adhering to the construction impact mitigation recommendations that follow.

6.0 CONSTRUCTION IMPACT MITIGATION RECOMMENDATIONS

The following general recommendations are provided to guide the removal process, mitigate construction impacts, and ensure compliance with provincial, federal, and municipal regulatory requirements. Some of the recommendations listed below are noted to be undertaken by an ISA certified arborist.

6.1 PRE-CONSTRUCTION RECOMMENDATIONS

- a) Prior to any construction activity, tree preservation fencing is to be installed as per the attached tree preservation drawings and detail.
- b) Trees approved for removal are to be clearly indicated in the field (marked with spray paint or other agreed upon method) by the project arborist or landscape architect prior to any tree removal operations. All removals to be undertaken by an ISA certified arborist.
- c) In accordance with the Migratory Birds Convention Act, 1994, all removals must take place between September 1st and March 31st to avoid disturbing nesting migratory birds. If tree removal occurs between April 1st and August 31st, a biologist is required to complete a search for nests. Once cleared, the contractor has 48 hours to remove. If removal does not occur within 48 hours, another search will be required.
- d) Care should be taken during the felling operation to avoid damaging the branches, stems, trunks, and roots of nearby trees to be preserved. Where possible, all trees are to be felled towards the construction zone to minimize impacts on adjacent vegetation. All removals to be undertaken by an ISA certified arborist.
- e) It is recommended that the existing ground-layer vegetation at the base of trees to be preserved remain intact within the critical root zone so as not to disturb the soil around the base of the existing trees.
- f) Final site grading plans should ensure that the existing soil moisture conditions are maintained.

6.2 RECOMMENDATIONS RELATED TO THE CONSTRUCTION PROCESS

- a) Tree preservation fencing is to be maintained in good condition and effective for the duration of construction until all construction activity is complete or as per the project arborist or landscape architect.
- b) Tree preservation fencing is to remain intact as per the tree preservation drawings, and can only be temporarily removed with the express written consent from the project arborist or landscape architect. Should tree preservation fencing be temporarily relocated or moved, it is to be reinstated as per the tree preservation plans as soon as possible.
- c) No construction, excavation, adding of fill, stockpiling of construction material, or heavy equipment is permitted within the critical root zone/within the tree preservation fencing.

- d) When excavation near a tree is required, and it is anticipated that roots will be severed and exposed, duration of exposure is to be minimized to prevent root desiccation.
- e) During the excavation process, roots 25mm or larger that are severed and exposed should be hand pruned to leave a clean-cut surface. To be undertaken by an ISA certified arborist. Exposed severed roots that cannot be covered in soil on the same day as the cuts are made are to be kept moist. Exposed roots are to be kept moist by covering them with water soaked burlap or any other means available to prevent them from drying out.
- f) Avoid idling heavy equipment under or within close proximity to trees to be preserved to prevent canopy damage from exposure to the heat of the exhaust.
- g) Broken branches on trees within the subject site to be preserved should be cleanly cut as soon as possible after the damage has occurred. To be undertaken by an ISA certified arborist.

6.3 POST-CONSTRUCTION RECOMMENDATIONS

- a) Avoid discharging rain water leaders adjacent to retained trees, as this may result in an overly moist environment which can cause root rot.
- b) After all work is completed, tree preservation fences and any other impact mitigation paraphernalia must be removed.
- c) A final review must be undertaken by the project arborist or landscape architect to ensure that all mitigation measures as described above have been met.

7.0 DISCLAIMER

The assessment of the trees presented within 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, evidence of insect presence, discoloured foliage, the general condition of the trees and the surrounding site, as well as the proximity of property and people. None of the trees examined were dissected, cored, probed, or climbed, and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms and their health and vigour is constantly changing. They are not immune to changes in site conditions or seasonal variations in the weather.

While reasonable efforts have been made to ensure the trees recommended for retention are healthy, no guarantees are offered or implied, that these trees or any part of them will remain standing.

Note that this arborist report has been prepared using the latest drawings and information provided by the client. Any subsequent design or site plan changes affecting trees may require revisions to this report. Any new information or drawings are to be provided to RKLA prior to report submission to planning authorities.

8.0 CONTACT INFORMATION

Office:
Ron Koudys Landscape Architects Inc.

368 Oxford Street East
London, Ontario
N6A 1V7
Ph: 519-667-3322
Fax: 519-645-2474

Staff:

Field work and report author:
Kathleen Garrett, ISA Certified Arborist ON-3009A – katie@rkla.ca

9.0 APPENDIX A - TREE PRESERVATION DRAWINGS

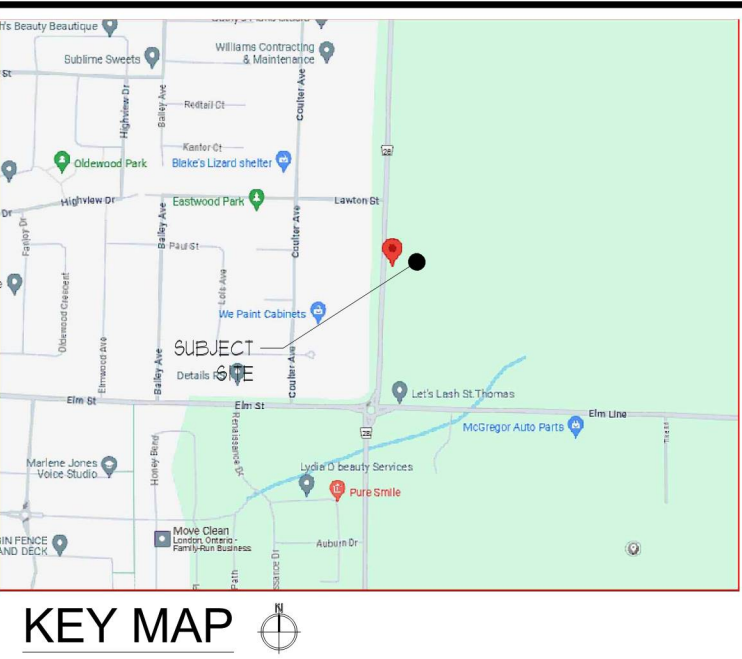


TREES TO BE REMOVED

	GENERAL INFORMATION			SIZE		HEALTH & CONDITION		RECOMMENDATIONS		
ID #	BOTANICAL NAME	COMMON NAME	LOCATION	DBH (in)	CANOPY RADIIUS (m)	STRUCTURAL CONDITION	COMMENTS	EXPECTED CONSTRUCTION IMPACTS	PASSAGE OR BARRIER	IMPACT MITIGATION (P2) or REMOVAL RATIONALE
7	<i>Acer saccharum</i>	Silver Maple	Subject site	68	5	Fair	low branched, epicormic growth, included bark of union, old prune wounds	conflict with proposed road	remove	construction conflict
8	<i>Acer saccharum</i>	Silver Maple	Subject site	54	5	Fair	included bark, low union, multiple prune wounds, canopy through hydro wires	conflict with proposed road	remove	construction conflict
9	<i>Abies</i> spp.	Apple	Subject site	33.3	5	Poor	old prune wounds at primary union, major epicormic growth, included bark	conflict with proposed road	remove	construction conflict
10	<i>Picea canadensis</i>	Colorado Spruce	Subject site	31	35	Good	limbed up, smelter, minor debark	conflict with proposed road	remove	construction conflict
15	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	31	5	Good	slightly sprouting, canopy heavy north	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
16	<i>Asplara nigra</i>	Black Walnut	Boundary - subject site and property to the north	36	5	Fair	old prune wound on trunk, healing	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
17	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	31	4	Fair	bark of trunk barked, low union, gypvine throughout crown	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
18	<i>Ulmus pumila</i>	Siberian Elm	Adjacent property to the north	46	6	Fair	bark of trunk barked, low branched, leaning, deadwood throughout crown	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
19	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	52	45	Good	gypvine throughout crown	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
20	<i>Acer platanoides</i>	Norway Maple	Boundary - subject site and property to the north	24	3	Fair	dead branches throughout	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
21	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	12	2	Fair	old prune wounds	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
22	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	26	4	Fair	low branched, minor deadwood	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
23	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	22	3	Good	wide flare	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
24	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the north	31	4	Good	Good	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
25	<i>Acer saccharum</i>	Silver Maple	Subject site	92	7	Poor	major limbs dead, low primary union, dbh taken below primary union	conflict with proposed construction and critical root zone	remove	construction conflict and tree condition
26	<i>Asplara nigra</i>	Black Walnut	Subject site	13	15	Fair	deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict
27	<i>Asplara nigra</i>	Black Walnut	Subject site	18	2	Fair	deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict
28	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the east	50	4	Fair	minor burns on trunk	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
29	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the east	37	4	Good	Good	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
30	<i>Acer negundo</i>	Manitoba Maple	Adjacent property to the east	29	3	Fair	low branched, deadwood throughout crown	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
31	<i>Acer negundo</i>	Manitoba Maple	Boundary - subject site and property to the east	39	6	Fair	crooked trunk, epicormic growth, wound at base	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
32	<i>Acer rubrum</i>	Red Maple	Subject site	23	4	Good	codominant at 2 meters from grade	conflict with proposed grading/servicing and critical root zone	remove	construction conflict
33	<i>Acer rubrum</i>	Red Maple	Subject site	23	5	Fair	minor prune wounds on trunk, healing	conflict with proposed grading/servicing and critical root zone	remove	construction conflict
34	<i>Acer rubrum</i>	Red Maple	Subject site	20	5	Good	Good	conflict with proposed grading and critical root zone	remove	construction conflict
35	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the east	11	10	Fair	codominant, primary union at grade, covered in gypvine	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
36	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the east	17	15.1	Poor	codominant, primary union at grade, branches fused, covered in gypvine	minor conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
37	<i>Acer rubrum</i>	Red Maple	Subject site	26	4	Fair	old prune wounds, included bark	conflict with proposed construction	remove	construction conflict
38	<i>Acer rubrum</i>	Red Maple	Subject site	27	23	Fair	codominant stems with fused branched	conflict with proposed construction	remove	construction conflict
39	<i>Acer saccharum</i>	Silver Maple	Subject site	39	5	Good	low branched	conflict with proposed construction and critical root zone	remove	construction conflict
40	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the east	23	3	Fair	low branched, included bark starting at union, covered in gypvine	minor conflict with proposed construction and critical root zone	remove	construction conflict – consent from landowner required for
41	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the south	22	3	Fair	canopy heavy east, minor deadwood	minor conflict with proposed construction and critical root zone	remove	construction conflict – consent from landowner required for
42	<i>Asplara nigra</i>	Black Walnut	Subject site	26	1	-	fully dead	conflict with proposed grading and critical root zone	remove	construction conflict and poor tree condition
43	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the south	26	3	Fair	lower dead epicormic growth, gypvine throughout	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
45	<i>Asplara nigra</i>	Black Walnut	Boundary - subject site and property to the south	34	4	Good	canopy heavy north	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for removal
47	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the south	15	25	Good	Good	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
52	<i>Asplara nigra</i>	Black Walnut	Adjacent property to the south	22	3	Fair	codominant, low primary union	conflict with proposed grading and critical root zone	remove	construction conflict – consent from landowner required for
57	<i>Asplara nigra</i>	Black Walnut	Subject site	44	45	Good	lower branches pruned, full form	conflict with proposed road	remove	construction conflict

The diagram shows a cross-section of a tree with its root system extending underground. A vertical line indicates the 'EXISTING TREE CROWN'. To the right of the crown, labels point to specific components of the protection system:

- 'PRUNE BROKEN / DAMAGED BRANCHES USING PROPER ARBORCUTTING TECHNIQUES' points to the upper canopy area.
- 'SNOW FENCE SUPPORTED ON TOP WITH HORIZONTAL 1x4x8 TIMBERS' points to a horizontal support structure above the ground.
- 'ORANGE P.V.C. SNOW FENCE' points to the orange-colored fence material.
- 'METAL BODYPIN (6'-0\"/>



**RON KLOUDYS
LANDSCAPE
ARCHITECTS INC.**



ALL DRAWINGS REMAIN THE PROPERTY OF THE LANDSCAPE ARCHITECTS AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE LANDSCAPE ARCHITECTS WRITTEN PERMISSION


THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION OR FOR OTHER PURPOSES UNLESS SIGNED AND DATED BY
RONALD H. KLOUDYS, OALA, CSLA, LANDSCAPE ARCHITECT,
LONDON, ONTARIO (519) 667-3322.


Ronald H. Koudys, O.A.L.A. C.S.L.A.		DATE
2024-04-05	ISSUED FOR ZBA	2
2024-03-15	ISSUED FOR REVIEW	1
DATE	DESCRIPTION	No.

PLOTTING INFORMATION:

PLOTTED DATE : 2024-04-05

PLOTTED SCALE : 1:1





PROJECT TITLE:		<h1 style="text-align: center;">RESIDENTIAL DEVELOPMENT</h1> <h2 style="text-align: center;">216 CENTENNIAL AVE. ST. THOMAS, ONTARIO</h2>	
DRAWING TITLE:			
<h1>TREE PRESERVATION PLAN</h1>			
DATE:	SCALE:	DRAWING NO.	
MARCH 2024	AS NOTED		
DRAWN:	CHECKED BY:	T-1	
RKLA Inc.	RKAK		
PROJECT NO.			
24-129Lc			