



TREE PRESERVATION REPORT FOR ZONING BY-LAW AMENDMENT

**553-557 UPPER QUEENS STREET
LONDON, ONTARIO**

Report prepared by
Ron Koudys Landscape Architects Inc

On April 23rd, 2024

RKLA Project #23-223



Kathleen Garrett
ON-3009A

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1.0 INTRODUCTION AND EXECUTIVE SUMMARY

1.1 INTRODUCTION

Ron Koudys Landscape Architects Inc. (RKLA) was retained by Melchers Construction to prepare a tree assessment report in conjunction with the proposed development at 553-557 Upper Queens Street. 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 70 individual trees and 4 vegetation units. 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. The subject site is NOT within or immediately adjacent to a City of London Tree Protection Area.

1.2.1 TREE SPECIES COMPOSITION CHART

THE FOLLOWING CHART SUMMARIZES THE AMOUNT OF EACH TREE SPECIES OBSERVED.

| % | Qty. | Botanical Name | Common Name | % | Qty. | Botanical Name | Common Name |
|-----|------|---------------------------|----------------|------|------|-------------------------|-----------------|
| 17% | 12 | <i>Acer platanoides</i> | Norway Maple | 1% | 1 | Dead Coniferous | Dead Coniferous |
| 16% | 11 | <i>Juglans nigra</i> | Black Walnut | 1% | 1 | <i>Fraxinus</i> spp. | Ash |
| 10% | 7 | <i>Catalpa</i> spp. | Catalpa | 1% | 1 | <i>Juniperus</i> spp. | Juniper |
| 7% | 5 | <i>Acer negundo</i> | Manitoba Maple | 1% | 1 | <i>Picea glauca</i> | White Spruce |
| 7% | 5 | <i>Picea abies</i> | Norway Spruce | 1% | 1 | <i>Picea pungens</i> | Colorado Spruce |
| 6% | 4 | <i>Acer saccharinum</i> | Silver Maple | 1% | 1 | <i>Picea</i> spp. | Spruce |
| 6% | 4 | <i>Quercus macrocarpa</i> | Bur Oak | 1% | 1 | <i>Pinus sylvestris</i> | Scotch Pine |
| 4% | 3 | <i>Morus alba</i> | White Mulberry | 1% | 1 | <i>Prunus</i> spp. | Cherry |
| 4% | 3 | <i>Pyrus</i> spp. | Pear | 1% | 1 | <i>Salix alba</i> | White Willow |
| 3% | 2 | <i>Pinus strobus</i> | White Pine | 1% | 1 | <i>Thuja</i> spp. | Cedar |
| 3% | 2 | <i>Ulmus americana</i> | White Elm | 1% | 1 | <i>Tilia americana</i> | Basswood |
| 1% | 1 | <i>Acer rubrum</i> | Red Maple | 100% | 70 | Total | |

1.2.2 TREE REMOVAL AND PRESERVATION RECOMMENDATIONS

- Removal of 53 from the subject site due to direct conflict with proposed construction.
- Removal of 1 boundary tree located between 557 Upper Queen Street and 559 Upper Queen Street. Tree removal consent required from 559 Upper Queen Street. Consent will be acquired at SPA.
- Removal of 1 vegetation unit from the City ROW of Upper Queen Street. Tree removal consent required from the City of London. Consent will be acquired at SPA.
- Preserve 18 trees located beyond the subject site.

- Preserve 1 vegetation unit located on 547 Upper Queen Street.
- 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 553-557 Upper Queens Street. There are two existing dwellings located on the site. The trees are generally located along the west and site sides of the properties.

Refer to Figure 1 for scope of tree inventory.



Figure 1 - City of London mapping with 2019 aerial imagery. NTS

Red dashed line - Limit of inventory

3.0 METHODOLOGY

Field work was completed on November 6th, 2023 by RKLA staff member Kathleen Garrett, ISA certified arborist ON 3009A. A topographic survey provided by MTE dated May 23th, 2023 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. Groups of trees and hedges were identified and assessed as vegetation units, and include trees smaller than 10cm DBH. Trees were NOT tagged in the field. Each tree and vegetation unit were assigned a number which are identified in the tree data table and on the tree preservation plan. Tree identification numbers include 1-70 and vegetation units 1-4.

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.

The City of London Tree Protection By-Law (C.P.-1555-252) defines the Critical Root Zone as “the area of land within a radius of ten (10) cm from the trunk of a tree for every one (1) cm of trunk diameter”. The Tree Preservation drawing graphically represents this radius for trees to be preserved.

4.0 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 or REMOVAL RATIONALE (TP = tree protection) |
| 1 | <i>Quercus macrocarpa</i> | Bur Oak | Subject Site - 557 Upper Queen Street | 77 | 5 | 5 | Fair | Good | Vines growing up trunk, one branch broken | direct conflict with development | remove | |
| 2 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 17 | 5 | 4 | Fair | Good | | direct conflict with development | remove | |
| 3 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 553 Upper Queen Street | 18 | 5 | 9 | Poor | Fair | Leaning north on fence, epicormic growth, only half of canopy present, prune at 2m | direct conflict with development | remove | |
| 4 | Dead Coniferous | Dead Conifer | Subject Site - 557 Upper Queen Street | 16 | 1.5 | 1 | - | - | Fully dead | direct conflict with development | remove | |
| 5 | <i>Quercus macrocarpa</i> | Bur Oak | Subject Site - 557 Upper Queen Street | 54,55 | 7 | 5 | Fair | Fair | Primary union at grade, one stem completely split | direct conflict with development | remove | |
| 6 | <i>Ulmus americana</i> | White Elm | Subject Site - 557 Upper Queen Street | 20 | 2.5 | 5 | Good | Good | | direct conflict with development | remove | |
| 7 | <i>Quercus macrocarpa</i> | Bur Oak | Subject Site - 557 Upper Queen Street | 42 | 3 | 4 | Fair | Fair | Dead lower limbs | direct conflict with development | remove | |
| 8 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 31 | 4 | 5 | Fair | Good | Lower limbs poorly pruned | direct conflict with development | remove | |
| 9 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 17 | 2 | 5 | Fair | Good | | direct conflict with development | remove | |
| 10 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 37 | 4 | 5 | Good | Good | | direct conflict with development | remove | |

Tree Preservation Report for zoning by-law amendment
553-557 Upper Queens Street London, Ontario

| GENERAL INFORMATION | | | | SIZE | | HEALTH & CONDITION | | | | RECOMMENDATIONS | | |
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| 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 or REMOVAL RATIONALE (TP = tree protection) |
| 11 | <i>Acer platanooides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 10 | 1 | 5 | Good | Good | Growing on angle within bush | direct conflict with development | remove | |
| 12 | <i>Picea abies</i> | Norway Spruce | 559 Upper Queen Street | 64 | 4 | 5 | Fair | Good | Dead leader, new leader re-established | potential conflict with proposed grading | preserve | tree protection barrier |
| 13 | <i>Picea abies</i> | Norway Spruce | 559 Upper Queen Street | 35 | 3 | 5 | Good | Good | | potential conflict with proposed grading | preserve | tree protection barrier |
| 14 | <i>Acer rubrum</i> | Red Maple | Subject Site - 557 Upper Queen Street | 32 | 2.5 | 5 | Fair | Good | Minor wounds, cavities forming on trunk | conflict with anticipated grading | remove | |
| 15 | <i>Picea glauca</i> | White Spruce | Boundary 557 Upper Queen Street and 559 Upper Queen Street | 31 | 3 | 4-5 | Fair | Good | Sparse crown | conflict with anticipated grading | remove | Consent from 559 Upper Queen Street required |
| 16 | <i>Picea pungens</i> | Colorado Spruce | Subject Site - 557 Upper Queen Street | 30 | 2 | 3-4 | Fair | Good | Sparse crown | direct conflict with development | remove | |
| 17 | <i>Morus alba</i> | White Mulberry | Subject Site - 557 Upper Queen Street | 17 | 2 | 5 | Fair | Good | Sucker growing out of trunk | direct conflict with development | remove | |
| 18 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 16 | 2 | 5 | Fair | Good | Leaning north | direct conflict with development | remove | |
| 19 | <i>Acer platanooides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 26 | 4 | 5 | Fair | Fair | Growing between fence and shed | direct conflict with development | remove | |
| 20 | <i>Acer platanooides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 38 | 4 | 5 | Fair | Fair | Grown into shed | direct conflict with development | remove | |
| 21 | <i>Salix alba</i> | White Willow | Subject Site - 557 Upper Queen Street | 142 | 7 | 4 | Fair | Good | Major branches removed, epicormic growth | direct conflict with development | remove | |
| 22 | <i>Acer platanooides</i> | Norway Maple | 559 Upper Queen Street | 14 | 2.5 | 5 | Poor | Fair | Grown into fence | no conflict | preserve | tree protection barrier |
| 23 | <i>Acer saccharinum</i> | Silver Maple | 559 Upper Queen Street | 84 | 8 | 5 | Fair | Fair | Buttress roots grown into fence | no conflict | preserve | tree protection barrier |
| 24 | <i>Morus alba</i> | White Mulberry | Subject Site - 557 Upper Queen Street | 15,19 | 2 | 1 | - | - | Fully dead, primary union at grade | direct conflict with development | remove | |

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| 25 | <i>Morus alba</i> | White Mulberry | Subject Site - 557 Upper Queen Street | 13,21 | 2 | 2-3 | Poor | Fair | Moribund | direct conflict with development | remove | |
| 26 | <i>Fraxinus</i> spp. | Ash | Subject Site - 557 Upper Queen Street | 11 | 1.5 | 2-3 | Poor | Poor | Woodpecker holes, moribund, suspect tree is dead | direct conflict with development | remove | |
| 27 | <i>Acer negundo</i> | Manitoba Maple | 559 Upper Queen Street | 38 | 3 | 5 | Fair | Fair | Bark sloughing, slight lean | no conflict | preserve | tree protection barrier |
| 28 | <i>Acer platanoides</i> | Norway Maple | 559 Upper Queen Street | 21 | 3.5 | 5 | Good | Good | | no conflict | preserve | tree protection barrier |
| 29 | <i>Acer platanoides</i> | Norway Maple | 559 Upper Queen Street | 18 | 3 | 5 | Good | Good | | no conflict | preserve | tree protection barrier |
| 30 | <i>Acer saccharinum</i> | Silver Maple | 559 Upper Queen Street | 34,39,42,48 | 8 | 5 | Fair | Fair | Four stems at primary union | potential conflict with proposed grading | preserve | tree protection barrier |
| 31 | <i>Pyrus</i> spp. | Pear | 559 Upper Queen Street | 68 | 4.5 | 5 | Fair | Good | Low primary union | no conflict | preserve | tree protection barrier |
| 32 | <i>Juglans nigra</i> | Black Walnut | 1922 Highland Heights | 17 | 2 | 5 | Good | Good | | no conflict | preserve | tree protection barrier |
| 33 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 16 | 2 | 5 | Good | Good | | direct conflict with development | remove | |
| 34 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 557 Upper Queen Street | 20,24 | 3.5 | 5 | Good | Good | Primary union at grade, low canopy | direct conflict with development | remove | |
| 35 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 60 | 5 | 5 | Fair | Good | Lower branches pruned | direct conflict with development | remove | |
| 36 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 557 Upper Queen Street | 39 | 4.5 | 5 | Fair | Good | Slight lean to south | direct conflict with development | remove | |
| 37 | <i>Acer negundo</i> | Manitoba Maple | Subject Site - 557 Upper Queen Street | 47 | 4 | 4 | Poor | Poor | Leaning south, fruiting bodies, buttress root grown into fence, large cavity | direct conflict with development | remove | |
| 38 | <i>Acer negundo</i> | Manitoba Maple | Subject Site - 557 Upper Queen Street | 14 | 2 | 5 | Fair | Fair | Leaning west | direct conflict with development | remove | |

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| 39 | <i>Acer negundo</i> | Manitoba Maple | Subject Site - 557 Upper Queen Street | 13 | 1 | 3 | Poor | Poor | Leader snapped, suckers | direct conflict with development | remove | |
| 40 | <i>Picea</i> spp. | Spruce | Subject Site - 557 Upper Queen Street | 44 | 3 | 2 | Fair | Good | Sparse | direct conflict with development | remove | |
| 41 | <i>Picea abies</i> | Norway Spruce | Subject Site - 557 Upper Queen Street | 48 | 4 | 4 | Fair | Good | Sparse, grown into fence | direct conflict with development | remove | |
| 42 | <i>Picea abies</i> | Norway Spruce | Subject Site - 557 Upper Queen Street | 63 | 4 | 4 | Fair | Good | Sparse, grown into fence | direct conflict with development | remove | |
| 43 | <i>Picea abies</i> | Norway Spruce | Subject Site - 557 Upper Queen Street | 69 | 4 | 4 | Poor | Fair | Codominant leaders, included bark, one stem pushing into fence, leaning | direct conflict with development | remove | |
| 44 | <i>Acer negundo</i> | Manitoba Maple | Subject Site - 557 Upper Queen Street | 34 | 5 | 3 | Fair | Fair | Heavy lean south | direct conflict with development | remove | |
| 45 | <i>Pyrus</i> spp. | Pear | Subject Site - 557 Upper Queen Street | 32 | 3 | 5 | Fair | Good | | direct conflict with development | remove | |
| 46 | <i>Pyrus</i> spp. | Pear | Subject Site - 557 Upper Queen Street | 33 | 3 | 5 | Fair | Good | | direct conflict with development | remove | |
| 47 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 553 Upper Queen Street | 40 | 3.5 | 5 | Fair | Good | Old leader broken, new leader establishing | direct conflict with development | remove | |
| 48 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 37 | 2 | 5 | Fair | Fair | Growing between fences | direct conflict with development | remove | |
| 49 | <i>Acer platanoides</i> | Norway Maple | Subject Site - 557 Upper Queen Street | 23 | 2 | 5 | Fair | Fair | Growing between fences, beside shed | direct conflict with development | remove | |
| 50 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 31 | | 5 | Poor | Fair | Cavity, pollarded | direct conflict with development | remove | |
| 51 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 30 | | 5 | Poor | Fair | Cavity, pollarded | direct conflict with development | remove | |
| 52 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 33 | | 5 | Poor | Fair | Cavity, pollarded, measured below DBH, split to grade, basal damage | direct conflict with development | remove | |

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| 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 or REMOVAL RATIONALE (TP = tree protection) |
| 53 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 30 | | 5 | Poor | Fair | Cavity, pollarded | direct conflict with development | remove | |
| 54 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 34 | | 5 | Poor | Fair | Cavity, pollarded, basal damage | direct conflict with development | remove | |
| 55 | <i>Catalpa</i> spp. | Catalpa | Subject Site - 553 Upper Queen Street | 31 | | 5 | Poor | Fair | | direct conflict with development | remove | |
| 56 | <i>Prunus</i> spp. | Cherry | Subject Site - 553 Upper Queen Street | 14,18 | 3 | 5 | Fair | Fair | Primary union .5m off grade | direct conflict with development | remove | |
| 57 | <i>Acer saccharinum</i> | Silver Maple | Boundary 553 Upper Queen Street & 547 Upper Queen Street | -85 | 7 | 5 | Fair | Fair | Low primary union | potential conflict with proposed grading | preserve | tree protection barrier |
| 58 | <i>Ulmus americana</i> | White Elm | 547 Upper Queen Street | 23 | 2 | 5 | Good | Good | | potential conflict with proposed grading | preserve | tree protection barrier |
| 59 | <i>Acer saccharinum</i> | Silver Maple | Boundary 553 Upper Queen Street & 547 Upper Queen Street | - 80,70 | 5 | 4 | Fair | Fair | Fence grown | potential conflict with proposed grading | preserve | tree protection barrier |
| 60 | <i>Pinus sylvestris</i> | Scotch Pine | Subject Site - 553 Upper Queen Street | 33 | 3 | 4-5 | Fair | Good | Low union with inclusive bark | direct conflict with development | remove | |
| 61 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 553 Upper Queen Street | 79 | 6 | 5 | Good | Good | | direct conflict with development | remove | |
| 62 | <i>Juniperus</i> spp. | Juniper spp. | Subject Site - 553 Upper Queen Street | 27 | 3 | 2.5 | Good | Good | | direct conflict with development | remove | |
| 63 | <i>Thuja</i> spp. | Cedar spp. | Subject Site - 553 Upper Queen Street | 22 | 3 | 2.5 | Fair | Good | | direct conflict with development | remove | |
| 64 | <i>Juglans nigra</i> | Black Walnut | 1922 Highland Heights | 60 | 4 | 5 | Fair | Good | Close to fence | potential conflict with proposed grading | preserve | tree protection barrier |
| 65 | <i>Tilia americana</i> | Basswood | 1922 Highland Heights | 6,7,8,14 | 2 | 5 | Fair | Fair | Epicormic growth, leaning on fence | potential conflict with proposed grading | preserve | tree protection barrier |
| 66 | <i>Juglans nigra</i> | Black Walnut | 1922 Highland Heights | 35 | 4 | 5 | Fair | Fair | | potential conflict with proposed grading | preserve | tree protection barrier |

| GENERAL INFORMATION | | | | SIZE | | HEALTH & CONDITION | | | | RECOMMENDATIONS | | |
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| 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 or REMOVAL RATIONALE (TP = tree protection) |
| 67 | <i>Juglans nigra</i> | Black Walnut | Subject Site - 553 Upper Queen Street | 93 | 8 | 5 | Fair | Good | Lower union | direct conflict with development | remove | |
| 68 | <i>Quercus macrocarpa</i> | Bur Oak | Subject Site - 553 Upper Queen Street | 11 | 2 | 5 | Good | Good | | direct conflict with development | remove | |
| 69 | <i>Pinus strobus</i> | White Pine | 547 Upper Queen Street | 16 | 1.5 | 5 | Good | Good | | no conflict | preserve | tree protection barrier |
| 70 | <i>Pinus strobus</i> | White Pine | 547 Upper Queen Street | 15 | 1.5 | 5 | Good | Good | | no conflict | preserve | tree protection barrier |
| V1 | <i>Thuja</i> spp. | Cedar | Subject Site - 553 Upper Queen Street | 5-10 | 1.5 | 5 | Good | Good | Approximately 35 individuals, sparse hedge | direct conflict with development | remove | |
| V2 | <i>Thuja</i> spp. | Cedar | Subject Site - 553 Upper Queen Street | 5-10 | 1.5 | 5 | Good | Good | Approximately 50 individuals, dense hedge | conflict with anticipated grading | remove | |
| V3 | <i>Thuja</i> spp. | Cedar | City ROW Upper Queen Street | 5-8 | 1 | 5 | Good | Good | Approximately 12 individuals, dense hedge | conflict with development | remove | |
| V4 | <i>Thuja</i> spp. | Cedar | 547 Upper Queen Street | 5-8 | 1 | 5 | Good | Good | Approximately 8 individuals, recently planted | no conflict | preserve | tree protection barrier |

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.

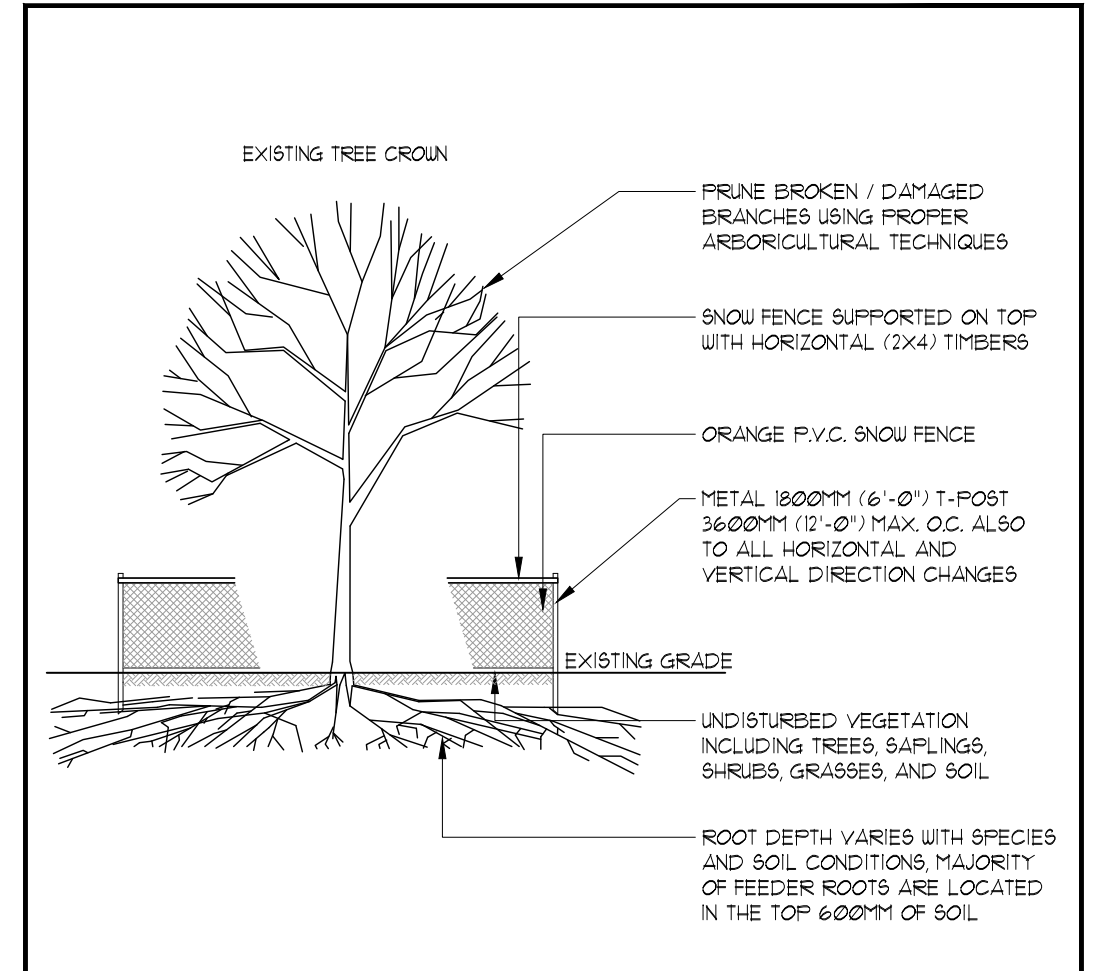
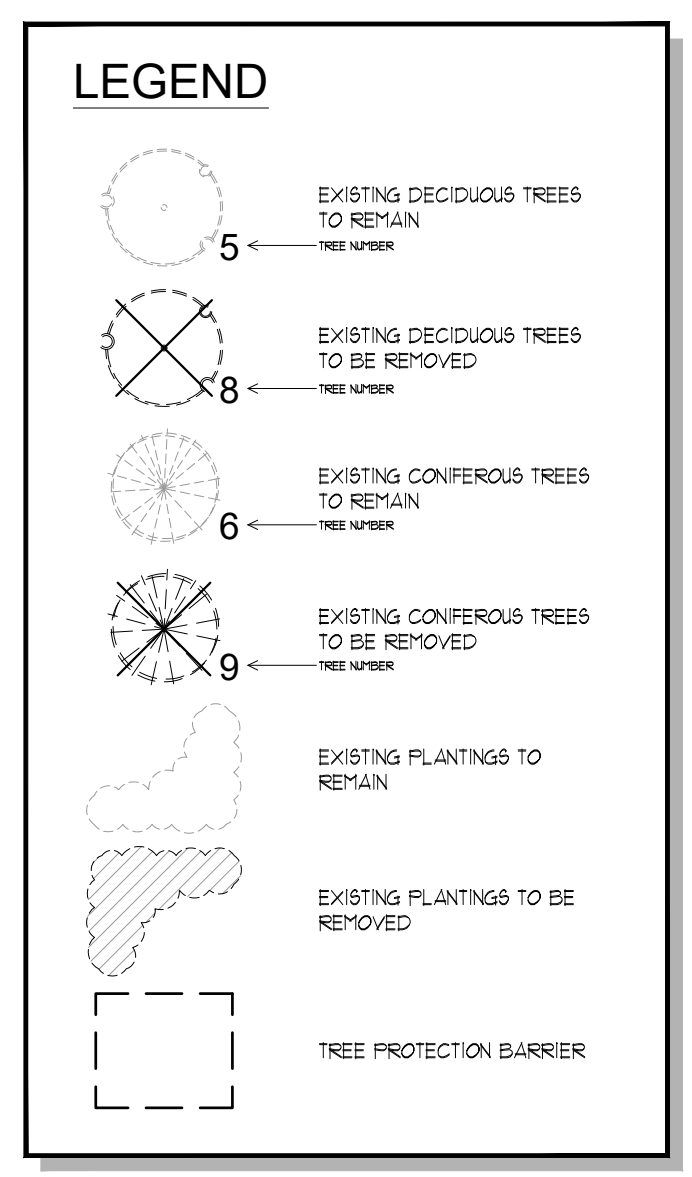
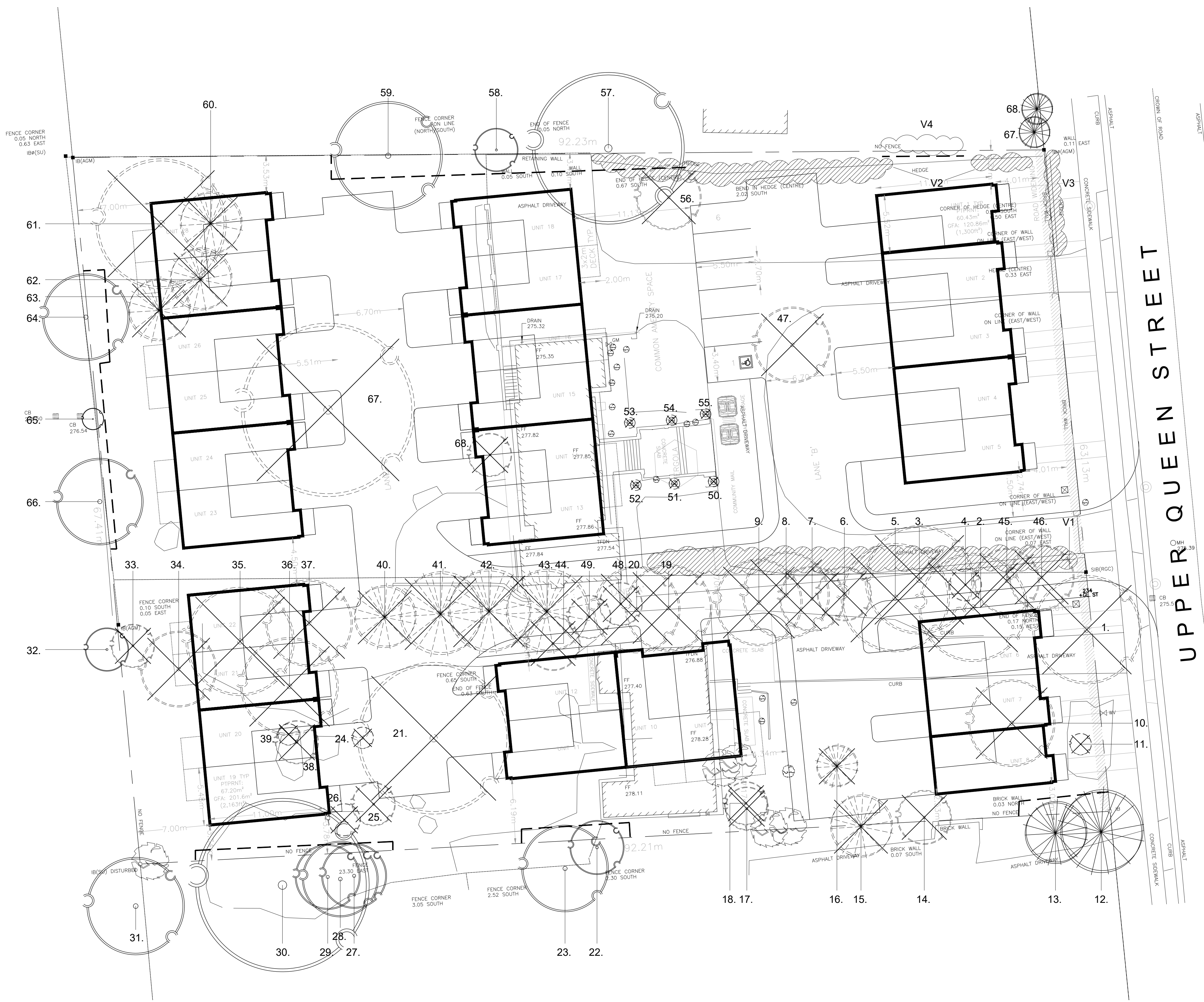
Note that this arborist report has been prepared using the latest drawings and information provided by the client. Any subsequent design or site plan changes affecting trees may require revisions to this report. Any new information or drawings are to be provided to RKLA prior to report submission to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

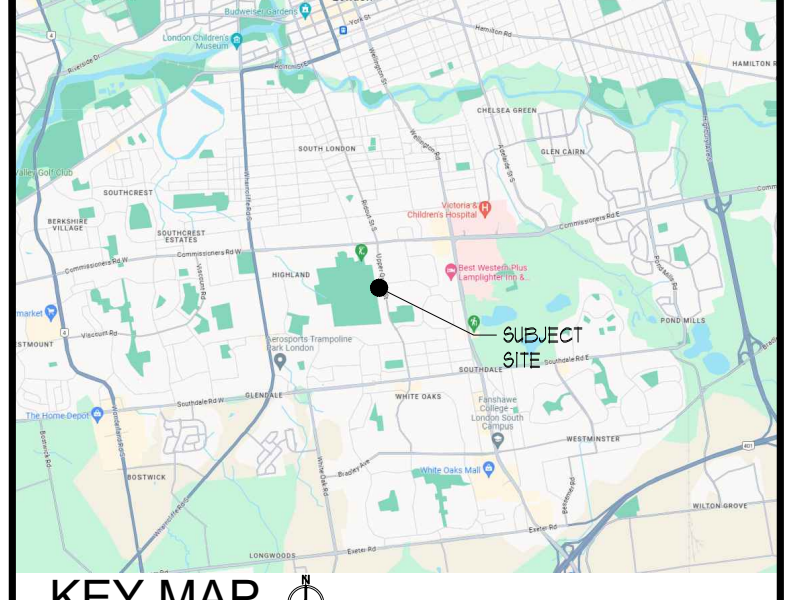
9.0 APPENDIX A - TREE PRESERVATION DRAWINGS



- NOTES:**
- EXISTING TREES ARE TO BE PROTECTED FROM CONSTRUCTION WITH THE INSTALLATION OF A 1800MM (4'-0") HIGH SNOW FENCE, HELD IN PLACE WITH 1800MM (6'-0") T-BAR.
 - THE BARRIER IS TO BE INSTALLED PRIOR TO ANY CONSTRUCTION AND MUST REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETED.
 - ALL SUPPORTS AND BRACING SHOULD BE INSIDE THE TREE PROTECTION ZONE. ALL SUCH SUPPORTS SHOULD MINIMIZE DAMAGING ROOTS IN THE TREE PROTECTION ZONE.
 - NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT, OR EXCAVATION OF ANY KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE.
 - NO MOVEMENT OF EQUIPMENT, STORAGE OF BUILDING SUPPLIES, CLEANING OR EQUIPMENT, OR DUMPING OF SOLVENTS, GASOLINE, ETC. MAY OCCUR WITHIN THIS FENCE LINE.
 - WHERE HIGH QUALITY SPECIMENS OCCUR ADJACENT TO AREAS SUBJECTED TO INTENSIVE CONSTRUCTION ACTIVITY, WOODEN CRIBBING SHOULD BE INSTALLED TO PROTECT TRUNKS FROM DAMAGE IN THE EVENT THAT HEAVY EQUIPMENT BREAKS DOWN THE SNOW FENCING. FENCE TO BE INSPECTED BY ENVIRONMENTAL CONSULTANT ON A REGULAR BASIS AND BE MAINTAINED BY THE SUBDIVIDER / BUILDER.

TEMP. TREE PROTECTION BARRIER - N.T.S.

TREE PRESERVATION PLAN
SCALE = 1:200



RON KOUDYS LANDSCAPE ARCHITECTS INC.

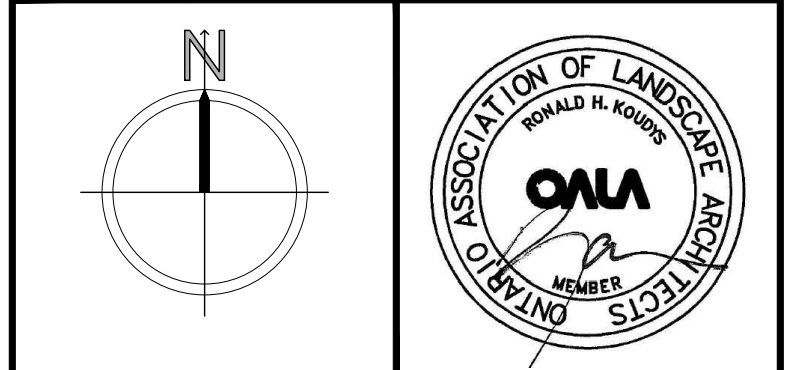
ALL DRAWINGS REMAIN THE PROPERTY OF THE LANDSCAPE ARCHITECT AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE LANDSCAPE ARCHITECTS WRITTEN PERMISSION.

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION OR TENDER PURPOSES UNLESS SIGNED AND DATED BY RONALD H. KOUDYS, O.A.L.A. C.S.L.A. LANDSCAPE ARCHITECT, LONDON, ONTARIO (519) 667-3322.

Ronald H. Koudys, O.A.L.A. C.S.L.A. DATE

| DATE | DESCRIPTION | No. |
|------------|-------------------|-----|
| 2024-04-23 | ISSUED FOR ZBA | 3. |
| 2023-11-30 | ISSUED FOR ZBA | 2. |
| 2023-11-22 | ISSUED FOR REVIEW | 1. |

PLOTTING INFORMATION:
PLOTTED DATE: 2024-04-23
PLOTTED SCALE: 1:1



PROJECT TITLE:
553-557 UPPER QUEEN STREET
LONDON, ONTARIO

DRAWING TITLE:
TREE PRESERVATION PLAN

| | | |
|-------------------------|--------------------|---------------------------|
| DATE: NOVEMBER 2023 | SCALE: AS NOTED | DRAWING No. T-1 |
| DRAWN: RKL/A Inc. | CHECKED BY: RHK | |
| PROJECT No. 23-223Ld | | |