COUNTERPOINT LAND DEVELOPMENT BY | DILLON CONSULTING

ASTORIA INC.

NATURAL SITE FEATURES INVENTORY & PRESERVATION STUDY

Residential Development at 3771, 3783, 3793 Howard Avenue, Windsor, Ontario

NOVEMBER 2025 – 24-8888

Corporation of the City of Windsor
350 City Hall Square, Suite 210
Windsor, Ontario
N9A 6S1

Attention: Stefan Fediuk
Landscape Architect

Natural Site Features Inventory & Preservation Study for 3771, 3783, and 3793 Howard Avenue, Windsor, Ontario

Please find enclosed the results of a Tree Inventory and Species at Risk (SAR) Assessment completed to identify existing trees and potential SAR habitat for a proposed residential development at 3771, 3783, and 3793 Howard Avenue, in the City of Windsor. This report outlines the results of the inventory which occurred on November 25, 2024. These results were used to prepare a Natural Site Features Inventory & Preservation Study to support a Zoning By-Law Amendment and Site Plan Control. The report summarizes the results of the tree inventory and SAR assessment conducted for areas potentially impacted by the proposed development and provides recommendations for trees to be removed or retained.

Sincerely,

DILLON CONSULTING LIMITED

Brad McLeod, M.Sc.
Biologist

Steven Greidanus
ISA Certified Arborist – ON-2992A

Our File: 24-8888

TABLE OF CONTENTS

TABLES

APPENDICES

1.0 INTRODUCTION

Dillon Consulting Limited ("Dillon") was retained by Astoria Inc. (the "proponent"), to conduct a tree inventory and Species at Risk (SAR) Assessment to support a Zoning By-Law Amendment and Site Plan Control for a proposed development in the City of Windsor (the "City"). The need for this report was identified within the Stage 1 Planning Consultation letter (dated February 20, 2024).

The proposed development will be located at 3771, 3783, and 3793 Howard Avenue (**Appendix A**; **Figure 1**). Dillon's services included documentation of existing trees within the property (the "Project Location") in addition to a 6 metre buffer onto adjacent lands (the "Study Area"), and an assessment of potential SAR habitat within this same area. The report and figures summarize the tree inventory and SAR assessment conducted by Dillon for lands within and adjacent to the Project Location and provide recommendations regarding tree removals and preservation, as well as information related to applicable tree protection policies.

This report has been written to support the proposed development and will be submitted to the City. It contains a detailed inventory of trees within the Study Area that may be potentially impacted by construction. Additionally, it describes the development and anticipated construction impact to trees and potential SAR habitat.

1.1 DEVELOPMENT DESCRIPTION

The proposed development includes two types of residential buildings: 2-storey townhomes and 6-storey multiple dwelling buildings. The townhome component consists of four buildings, each containing four residential units, for a total of 16 townhome units. These are positioned along Howard Avenue to maintain a compatible streetscape with the surrounding area. Toward the rear of the Project Location, two 6-storey multiple dwelling buildings are proposed. The first building includes 81 residential units, while the second contains 82 units, resulting in a total of 163 dwelling units. In total, there are 179 dwelling units proposed.

2.0 BACKGROUND AND APPLICABLE POLICY

The following section has been prepared to identify the applicable land use planning policies related to the natural environment. Various regulatory agencies and legislative authorities have established policies with the purpose of protecting the ecological features and functions within the province of Ontario and within the City of Windsor specifically. This section is not intended to constitute a complete land use planning assessment as it focuses on the relevant environmental policies and regulations. The documents referenced below can be read in their entirety for a more detailed understanding of the land use policy framework applicable to the Study Area.

2.1 INFORMATION SOURCES

Secondary source information was used to identify known environmental constraint areas and to map the significant natural heritage features such as watercourses, woodlands, and potential wildlife occurrences. **Table 1** lists the relevant policies and legislation applicable to the protection of natural heritage features within the City of Windsor, and more specifically, the Project Location; as well as supporting guidance documents and resources consulted respective to each policy. This table also includes additional background information sources used to help identify and define natural heritage features within the province of Ontario and Eco-region 7E specifically.

Table 1: Policies, Legislation, and Background Resources Searched

SOURCE	RECORD REVIEWED/REQUESTED
GOVERNMENT OF CANADA	
Environment and Climate Change Canada (ECCC)	• Species at Risk Registry: Accessed to determine the at-risk status of wildlife species under Schedule 1 of the Species at Risk Act (SARA; 2002)
GOVERNMENT OF ONTARIO	
Provincial Planning Statement (2024)	• Policies within Section 4.1 related to natural heritage features • Policies within Section 4.2 related to water
Ministry of the Environment, Conservation and Parks (MECP)	• Endangered Species Act (ESA; 2007) • Species at Risk in Ontario (SARO) List (O. Reg. 230/08) • Client's Guide to Preliminary Screening for Species at Risk (2019)
Ministry of Natural Resources and Forestry (MNRF)	• Natural Heritage Information Centre (NHIC) database (Squares: 17LG2480 and 17LG3580; MNRF, 2024) • Technical Memo: Aylmer District MNRF Guidance on Identifying Activities/Areas not Likely to Contravene the Endangered Species Act, 2007 in the County of Essex & City of Windsor (2016)
Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	• Agricultural Information Atlas (OMAFRA, 2024); reviewed area drains

SOURCE	RECORD REVIEWED/REQUESTED
MUNICIPAL GOVERNMENT(S)	
City of Windsor	• Update to the CNHS Inventory (2008) • Official Plan (2013)
ADDITIONAL SOURCES	
Wildlife Atlases and Distribution Data	• Ontario Breeding Bird Atlas (OBBA; Cadman et al., 2008). Second Atlas (2001-2005) – data for square 17LG38 – grid based on 10 km^2 system.
	• Rare Vascular Plants of Ontario (Fourth Edition; Oldham and Brinker, 2009). Distribution data for rare vascular plants.
	• Ontario Reptile and Amphibian Atlas (ORAA; Ontario Nature, 2024). List of reptile and amphibian species occurrences for square 17LG38.
	• Ontario Butterfly Atlas (OBA; Toronto Entomologists Association, 2024). List of butterfly species occurrences for square 17LG38.
	• Atlas of the Mammals of Ontario (Dobbyn, 1994). Distribution data for mammals.

2.1.1 City of Windsor

The requirement for this report is based on the Stage 1 Planning Consultation letter received from the City. Further to this requirement, the City of Windsor Official Plan, Volume I, Chapter 10 – Procedures, Section 10.2.9 has additional specific requirements. The City By-Law 135-2004 (Trees on Highways) applies to this project, as the By-Law regulates the planting of trees and prohibits the destruction or injuring of trees on highways in the City or on any lands owned by the City.

2.1.2 Migratory Birds Convention Act

Environment and Climate Change Canada implements the Migratory Birds Convention Act (MBCA; 1994) to protect migratory birds and their nests. A person shall not harm a migratory bird or nest without authorization under the regulations. To mitigate potential affects to migratory birds, vegetation removals shall occur outside of the breeding bird season (April 1 to August 31) to avoid the core period of bird nesting. If vegetation removal is required within this period, an avian survey is recommended to be conducted by a qualified biologist within the planned vegetation removal area before the removal activities to determine the presence or absence of nesting birds. If no active bird nest is observed during the survey, vegetation removal may proceed if conducted within 48 hours of completing the survey. Avian survey results shall be valid for 48 hours from the completion of the survey. Should an active bird nest be observed during the survey, vegetation removal that may harm a migratory bird or nest shall be avoided until a subsequent survey confirms the nest is no longer active and/or until authorization is obtained.

2.1.3 Endangered Species Act

In June 2008, the Endangered Species Act (ESA; 2007) came into effect in Ontario. The purpose of the ESA is to identify SAR based on the best available scientific information; to protect SAR and their habitats, to promote the recovery of SAR; and to promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are several applicable regulations under the ESA. These regulations serve to identify which species and habitat receive protection and provide direction on the current implementation of the ESA by the MECP.

Ontario has passed Bill 5: Protect Ontario by Unleashing our Economy Act, 2025. As a result, amendments to the current ESA and the enactment of the Species Conservation Act, 2025 (to come into force on a future date), is underway. There are current interim changes to the ESA which has resulted in many ESA sections repealed.

Preliminary screening for SAR was carried out using select sources from **Table 1**. After considering suitable habitat preferences and species ranges, our preliminary screening results show the potential for several SAR in the general area. For more information about the preliminary screening results for SAR, refer to **Section 4.1**.

3.0 METHODS

A tree inventory was conducted on November 25, 2024, within the Project Location and a 6 metre buffer. Trees subject to the inventory were those with a diameter-at-breast-height (DBH) of 10 centimetres (cm) or greater. The collected data pertained to trees that require removal to facilitate development or trees anticipated to be retained and protected during construction operations. The information recorded consisted of the following:

- Identification of species or genus where determinable using reasonable assumptions based on location, leaves, bark, bud, branches, and growth habit;
- Measurement of DBH at 1.4 metres (m) from the ground;
- Assignment of a unique identification number for trees, where applicable. Note: Trees with multiple stems split below breast height were given one unique identification number;
- A Level 2 (basic) qualitative visual assessment to determine tree or tree grouping condition, following the condition health rating system detailed in **Table 2**;
- Marking coordinates using a handheld Global Positioning System (GPS) unit with an accuracy of approximately 1-2 m; and
- If determinable and/or applicable, providing recommendations regarding preservation, protection, or removal.

The Level 2 basic assessment that was completed for trees within the Project Location is a detailed visual inspection of the trees and surrounding area to obtain an opinion of the health condition of each tree. It includes a non-invasive inspection of each tree (i.e. looking at the site conditions, buttress roots, trunk, and branches). This basic assessment is the standard basic assessment that is performed by arborists, though only includes conditions that are detected from the ground. The results from a basic assessment should not be relied on for internal, below-ground, and/or upper-crown condition or defects as these areas may be impossible to see or difficult to assess from ground-level.

The condition rating designated to each tree was based on the results of the basic assessment. The hazard potential of trees was assessed using the method outlined in the International Society of Arboriculture publication A Photographic Guide to the Evaluation of Hazard Trees in Urban Area - 2nd Edition (Mattheny and Clark, 1994). Using this guide, an overall condition rating (i.e. dead, hazard, poor, fair, good, or excellent) was given to each tree included in the inventory. These condition ratings are useful when evaluating the retention and/or replacement value of individual trees. Trees were identified using all reasonable means available at the time of survey, such as leaf, bud, and bark characteristics, tree form, and branch orientations.

For those species of tree where the foliage characteristics is the primary distinguishing feature, the positive identification of tree species may have been hindered due to timing of the surveys occurring during close to the leaf-off period (i.e., November). Trees were identified using reasonable assumptions based on form, bark, and branch orientations to determine species.

Table 2: Tree Condition Rating Categories

CONDITION	DESCRIPTION
Dead	A specimen tree is considered dead when it has no living tissue.
Hazard	The specimen tree could either be alive or dead but the tree in its part could pose an imminent hazard to people or property during normal weather conditions. These trees have the potential for splitting, breaking, and/or falling over during inclement weather, and because of their proximity to various targets (i.e. people or property), could cause personal injury and/or severe damage to municipal infrastructure and/or private property.
Poor	Trees in poor condition show major symptoms of decline. At least 50% of main scaffold branches are dead, missing, or in a diseased state. The trunk shows evidence of advanced rot, deadwood, or is hollow throughout. Twig development on the main branches or throughout the canopy is poor and may have limited sucker growth. Callus growth around wounds is minimal. A tree in poor condition could decline further to become a safety hazard. Removal prior to development should be considered if it is considered a hazard tree.
Fair	Trees in fair condition show moderate symptoms of decline in lower canopy or scaffold branches, but more than 50% of scaffold branches are present and viable. The trunk shows limited evidence of rot or insect damage. Good callus growth is present near wound areas. Trees that have scaffold branches that are healthy, but are in a "Y" formation, may also be included in this category, if "included-bark" is evident as the risk of splitting or breakage increases as the tree matures. Removal or preservation of these trees depends on the location of the specimen and associated target potential, and would depend on the species, and its tolerance to grading, trenching, and surviving in an urban environment. Some major arboricultural maintenance may be required and may include major scaffold or secondary branch removal, bracing, and/or cabling.
Good	The specimen tree shows no symptoms of decline in the trunk, and all scaffold branches are present and are in good condition. Most scaffold branches are at right angles to the trunk and show good vigour. Small amounts of dead wood may be present in secondary branches, but account for less than 25% of the canopy. Depending on the grading in the immediate area, a tree in good condition would be recommended for preservation. Such a tree would typically survive to maturity without major arboricultural maintenance.
Excellent	The specimen tree shows no symptoms of decline in trunk, scaffold, or secondary branches. Trees in this condition have an excellent growth habit and should typically survive to maturity without major arboricultural maintenance.

3.1 ANALYSIS METHODS

Tree information collected during the inventory was analyzed to develop recommendations for tree removals and preservations, which are outlined in subsequent sections of this report. The analysis included the methods outlined in the following subsections.

3.1.1 DBH of Multi-Stemmed Trees

For trees with multiple stems ≥10 cm DBH, the DBH values for each stem were recorded and inputted into the formula below to calculate a derived DBH value for the purpose of estimating the tree's Critical Root Zone (CRZ) radius. The formula is:

DBHD = √([DBH1]2 + [DBH2]2 + [DBH…etc.]2)

Where DDBH is the derived DBH and DBH1…etc. are the measured DBH values of each stem. This method is adapted from Tree Preservation & Protection Standards (The Urban Tree Management Group, 2019) as a best practice in effectively estimating the CRZ.

3.1.2 Determination of the Critical Root Zone

A tree's CRZ is the below-ground area containing the primary roots that are most critical to its survival and which are most susceptible to disturbance and impacts. The CRZ is generally proportional to a tree's stem diameter. As such, it can be approximated as a circular area around the tree's stem with a radius estimated based on the tree's derived DBH. The CRZ also generally aligns with the extent of the tree's above-ground canopy, though canopies may extend beyond the CRZ. The approximated CRZ for each tree in the inventory was determined based on the derived DBH value ranges outlined in **Table 3**, as adapted from other various tree protection standards.

Table 3: Determination of the Critical Root Zone

DERIVED DBH (CM)	CRZ DISTANCES REQUIRED (M)
<10	1.8
11-40	4.0
41-50	5.0
51-60	6.0
61-70	7.0
71-80	8.0
81-90	9.0
91-100+	10.0

3.1.3 Analysis for Tree Remove/Retain Recommendations

To develop recommendations for trees to be removed or retained, the inventoried trees' locations were analyzed compared to the proposed limit of disturbance, which includes the proposed development areas (**Appendix A**). Construction activities in these areas are expected to result in disturbance to trees. The analysis compared the location of each tree and its CRZ to the limit of development in order to identify where tree impacts are expected to occur and categorized each tree to be removed or retained:

Removed

- Tree within the limit of disturbance: Trees located within the limit of development are required for removal to facilitate construction of the project.
- >35% CRZ within the limit of disturbance: Trees located within or near the limit of development and having >35% of their CRZ within the limit are likely to be heavily impacted, causing death or poor health conditions. These trees are recommended for removal.
- Condition: Dead trees or trees in poor condition have the potential to be hazardous if they fall on a person, vehicle, equipment, or sensitive property. Due to the proximity of the future development activities, these trees are recommended for removal.

Retain

- Tree not within the limit of disturbance: Trees (including their CRZ) that are located entirely outside of the limit of development are identified to be retained.
- <35% CRZ within the limit of disturbance: Trees with <35% of their CRZ within the limit of development are expected to sustain only a low level of impact and injury to their roots and/or canopy. Provided appropriate protection measures are applied, they are expected to maintain their condition; therefore, recommended to be retained.

3.2 SAR HABITAT ASSESSMENT

Species at Risk are defined as those species that are listed as Threatened or Endangered under the ESA and aquatic species listed under Schedule 1 of the SARA, as well as migratory birds protected under the MBCA, 1994 and listed under Schedule 1 of the SARA. Based on the results of the preliminary SAR screening, a SAR habitat assessment was conducted on November 25, 2024. The Project Location was assessed for presence of SAR, with a focus on assessing the potential for the Project Location to support SAR habitat given the timing in which the site investigation was completed and also considering the new habitat definition within the ESA:

"habitat" means, subject to subsection (3),

(a) in respect of an animal species, (i) a dwelling-place, such as a den, nest or other similar place, that is occupied or habitually occupied by one or more members of a species for the purposes of breeding, rearing, staging, wintering or hibernating, and (ii) the area immediately around a dwelling place described in subclause (i) that is essential for the purposes set out in that subclause.

(b) in respect of a vascular plant species, the critical root zone surrounding a member of the species, and

(c) in respect of all other species, an area on which any member of a species directly depends in order to carry on its life processes; ("habitat")

Results of the SAR assessment is discussed in **Section 4.1**.

4.0 RESULTS

The inventory documented 175 trees within the Study Area. The locations of the inventoried trees are presented in **Appendix A** with photographs of the assessed trees included in **Appendix B**. Detailed tree inventory results including species, DBH, condition, and other relevant information recorded during the tree inventory are provided in **Appendix C**.

A total of 26 species of trees were documented, with 21 species identified to the species level, four identified to the genus level, and one tree type identified as "Fruit Tree". Additionally, there was one tree that could not be identified due to its poor condition and was labeled as "unknown". Fruit Trees were the dominant species, accounting for 21% of the trees inventoried, followed by Northern Red Oak (*Quercus rubra*) at 15%. A summary of inventoried trees can be found in **Table 4** below.

Overall, out of the 175 documented trees, 94 (54%) are native to Ontario, while 73 (42%) are non-native species. The remaining 8 trees (4%) could not be classified as non-native or native due to their condition or because identification only to genus level was possible.

Table 4: Summary of Inventoried Trees by Species

FAMILY	SCIENTIFIC NAME	COMMON NAME	SARA[1]	ESA[2]	SRANK[3]	INVASIVE PRIORITY FOR CONTROL[4]	COUNT
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar	---	---	S5	---	**16**
	Metasequoia glyptostroboides	Dawn Redwood	---	---	---	---	**2**
Pinaceae	*Picea abies*	Norway Spruce	---	---	SNA	---	**17**
	Pinus nigra	Black Pine	---	---	SNA	---	**6**
	Picea sp.	Spruce species	---	---	---	---	**1**
Fabaceae	*Gleditsia triacanthos inermis*	Thornless Honey-locust	---	---	SNA	---	**1**
Betulaceae	*Ostrya virginiana*	Eastern Hop-hornbeam	---	---	S5	---	**2**
Fagaceae	*Quercus alba*	White Oak	---	---	S5	---	**1**
	Quercus palustris	Pin Oak	---	---	S4	---	**1**
	Quercus rubra	Northern Red Oak	---	---	S5	---	**26**
Platanaceae	*Platanus occidentalis*	Sycamore	---	---	S4	---	**2**
Juglandaceae	*Carya cordiformis*	Bitternut Hickory	---	---	S5	---	**1**
	Carya ovata	Shagbark Hickory	---	---	S5	---	**2**
	Juglans nigra	Black Walnut	---	---	S4	---	**14**

FAMILY	SCIENTIFIC NAME	COMMON NAME	SARA[1]	ESA[2]	SRANK[3]	INVASIVE PRIORITY FOR CONTROL[4]	COUNT
Magnoliaceae	*Liriodendron tulipifera*	Tulip Tree	---	---	S4	---	**2**
Malvaceae	*Tilia americana*	American Basswood	---	---	S5	---	**2**
Rosaceae	*Crataegus sp.*	Hawthorn species	---	---	---	---	**2**
	Prunus cerasifera	Cherry Plum	---	---	---	---	**1**
	Prunus sp.	Cherry species	---	---	---	---	**2**
Fruit Trees	*Fruit Trees*	Fruit Trees	---	---	---	---	**36**
Salicaceae	*Salix sp.*	Willow species	---	---	---	---	**2**
Aceraceae	*Acer X freemanii*	Freeman's Maple	---	---	SNA	---	**9**
Sapindaceae	*Aesculus hippocastanum*	Horse Chestnut	---	---	SNA	C3	**1**
Moraceae	*Morus alba*	White Mulberry	---	---	SNA	C1	**9**
Cannabaceae	*Celtis occidentalis*	Common Hackberry	---	---	S4	---	**2**
Ulmaceae	*Ulmus americana*	American Elm	---	---	S5	---	**14**
unknown	*unknown*	unknown	---	---	---	---	**1**
						Total	**175**

[1]Status identified under the federal Species at Risk Act; [2]Status identified under the provincial Endangered Species Act; [3]SRank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5: S5 = widespread and secure, S4 = common and apparently secure, SNA = not applicable; [4]Invasive Exotic Plant Species Rankings for Southern Ontario (Draft - Urban Forest Associates/MNRF 2014). Category 1 (C1) – Aggressive invasive exotic species that can dominate a site to exclude all other species and remain dominant on the site indefinitely. These are a threat to natural areas wherever they occur because they can reproduce by means that allow them to move long distances. These are the top priority for control, but control may be difficult. Eradication may be the only option for long-term success. Category 2 (C2) – Exotic species that are highly invasive, but tend to only dominate certain niches or do not spread rapidly from major concentrations. Many of these vegetatively or by seeds that drop close to the parent plant. They may have been deliberately planted and persist in dense populations for long periods. Control where necessary and limit their spread to other areas. Category 4 (C4) – Exotic species that do not pose a serious threat to natural areas unless they are competing directly with more desirable vegetation. These can often be tolerated in restoration projects if they are already present. They may eventually be replaced through natural succession or management. Control where necessary and limit their spread to other areas.

4.1 SAR HABITAT ASSESSMENT

Through background review, several SAR listed in **Table 5** have been identified with the potential to occur within the vicinity of the Project Location.

Table 5: Species at Risk with the Potential to Occur within the Vicinity of the Project Location

SCIENTIFIC NAME	COMMON NAME	SARA[1]	ESA[2]	SRANK[3]	INFO SOURCE[4]
MAMMALS					
Myotis leibii	Eastern Small-Footed Myotis	---	END	S2S3	MWH
Myotis lucifugus	Little Brown Myotis	END	END	S4	MWH
Myotis septentrionalis	Northern Myotis	END	END	S3	MWH
Pipistrellus subflavus	Tri-Colored Bat	END	END	S3?	MWH
Lasiurus borealis	Eastern Red Bat	---	END	S3	MWH
Lasiurus cinereus	Hoary Bat	---	END	S3	MWH
Lasionycteris noctivagans	Silver-haired Bat	---	END	S3	MWH
PLANTS					
Gymnocladus dioicus	Kentucky Coffee-tree	THR	THR	S2	NHIC
Fraxinus nigra	Black Ash	THR	END	S4	NHIC
Symphyotrichum praealtum	Willowleaf Aster	THR	THR	S2	NHIC

[1]Status identified under the federal Species at Risk Act: END = Endangered, THR = Threatened; [2]Status identified under the provincial Endangered Species Act: END = Endangered, THR = Threatened; [3]SRank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5: S4 = common and apparently secure, S3 = rare to uncommon and vulnerable, S2 = very rare and imperiled, SU or ? = uncertain due to insufficient information; [4]Information sources include: MWH = Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, NHIC = MNRF Natural Heritage Information Center; --- denotes no information or not applicable.

Although the Project Location has limited potential to support SAR habitat, due to the current and past land use (i.e., agricultural [planted orchard] on parcel 3771, and residential uses on each of the three parcels with regularly-mowed lawn dating back to at least the early 2000's), there is a very low likelihood for the proposed works to impact potential SAR and/or SAR habitat. No SAR were observed during the tree inventory and SAR assessment.

4.1.1 SAR Bats

During the tree inventory, cavities were observed in one tree (tree 153; **Appendix C**). With the presence of tree cavities, suitable SAR bat roosting habitat is present. As such, tree removal for these specific trees should be conducted outside of the bat active season (i.e., no removal between April 1 to September 30). Should removals be required during this season, appropriate bat exit surveys should be conducted by a qualified biologist. Ideally, bat exit surveys should be conducted during June. Each candidate roost should

be monitored on two separate evenings under appropriate weather conditions (i.e., temperature above 10 degrees Celsius, no rain, and low wind). Monitoring should take place from 30 minutes before sunset until 60 minutes after sunset.

4.1.2 SAR Plants

Kentucky Coffee-tree (listed as Threatened under the ESA) typically grows in forests with well-drained soils where they are exposed to full sun, Black Ash (listed as Endangered under the ESA) typically grow in wet, rich soils and are shade intolerant, and Willowleaf Aster (listed as Threatened under the ESA) grows primarily in oak savannah and meadow habitats, as well as along railways, roadsides, and abandoned agricultural fields. SAR plants were not observed during the tree inventory and SAR assessment. Considering the current and past land use, the Project Location does not constitute suitable, natural habitat for these species, and given the results of the tree inventory and SAR assessment, it is concluded that these species are not present within the Project Location.

5.0 TREE PRESERVATION AND REMOVALS

This section provides preliminary recommendations for tree removal and preservation. A summary of the analysis used to determine tree retention or removal is also provided. Based on the current site plan (including building envelopes, hard surfaces, etc.), of the 175 trees identified within the Study Area, 11 are observed to be preserved. Refer to **Appendix A**; **Figure 2** for the locations of identified trees in relation to the site plan. It should be noted that during detailed design, effort will be made to retain as many other trees as possible as landscaping trees. Tree preservation and removals will occur after the Site Plan Control Approval phase of the development.

5.1 TREE REMOVALS

Of the inventoried trees, 164 trees are required to be removed.

Trees recommended for removal are symbolized in red on the Tree Inventory figures (**Appendix A**; **Figure 2**) and are identified in the tree inventory table (**Appendix C**). Of the 164 trees to be removed, 21 are in excellent condition, 122 are in good condition, 6 are in fair condition, 8 are in poor condition, and 7 are dead.

Tree removals should be conducted by qualified and International Society of Arboriculture (ISA)-certified arborist following best arboricultural practices. Removal activities should avoid or minimize impacts to adjacent trees to be preserved (as identified below), and timing of removals should consider the project schedule of other construction activities (e.g., conduct removals following the installation of site fencing and/or tree protection fencing).

Oak species were observed during the tree inventory. As such, special consideration must be undertaken for oak removal due to the potential for Oak Wilt (*Bretziella fagacearum*). This fungi is not currently known to be present in the City, but the insect vector has been positively identified in the area. The City and other local municipalities have enacted a moratorium of oak work (pruning, removals, etc.) during the high-risk susceptibility period from March to November.

Recommended steps for oak removal:

- During the tree removal undertaking, all oak trees must be processed on site immediately.
- Processing to be completed by entire tree chipping, full stump removal, and stump processing. Stump processing to be within 24 hours of the oak tree removal. Processing for stumps can include chipping, burning, or deep burying (at least 2 m deep).
- No unprocessed oak wood to be stored whole for any length of time at any location. The woodchips created from the oak by this process can be used for other purposes such as landscaping.
- Contractor to identify to the City of Windsor Forestry Department the means and location of oak tree disposal in cases of burial or burning, including for the stumps, prior to initiation of the tree removals.
- City of Windsor Forestry Department must be advised in advance of any modifications to the above requirements for oak tree disposal.

5.2 TREE PRESERVATION

Of the inventoried trees, 11 are recommended to be preserved.

During the detailed design stage, if any trees are to be retained, it is important to consider the potential impacts of construction activities on preserved trees. These impacts may include changes to soil conditions due to alterations in grade, as well as physical damage. Compaction of the soil, either by design or due to using heavy machinery within root zones, can affect root systems during construction. Similarly, the placement or removal of fill material within a root zone can cause root system impairments (e.g., lack of oxygen). Trees require a loosely compact soil medium for root growth, oxygen uptake, and absorption of water and nutrients. Soil compaction and grading changes within the root zone can inhibit root growth and function, and these impacts have the potential to result in a decline in the overall condition of a tree. In addition, accidental contact between construction equipment and trees can cause physical damage to the trunk and crown.

The following recommendations are provided regarding the trees to be preserved.

5.2.1 Pre-Construction Maintenance

Prior to construction activities, overhanging limbs of trees to be preserved should be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration. Maintenance of limbs should be carried out by a qualified arborist.

Trees recommended for preservation which have declined in condition or become hazardous since the writing of this report should be reassessed by an arborist upon commencement and/or completion of construction and removed.

5.2.2 Tree Protection Measures

A tree's CRZ is the below-ground area containing the primary roots that are most critical to its survival and which are most susceptible to disturbance impacts. The size of the CRZ is typically proportional to the tree's age and stem diameter and can be estimated as a circular area around the tree's stem, with a radius calculated based on the tree's DBH (**Appendix A**; **Figure 2**).

To minimize the impact of adjacent construction work, a Tree Protection Zone (TPZ) should be established for each tree to be retained. The intent of a TPZ is to protect a tree's roots and soil to ensure impacts on overall health and stability are minimized. The TPZ would align with the CRZ. An example of tree protection fencing is provided in **Appendix D**.

The TPZ calculated for trees to be preserved was made using a standard calculation from the ISA, but modified by the City. The TPZ is calculated by multiplying the DBH by 12 and dividing by 100 to provide the TPZ in metres (**Appendix C**). Protection fencing should be installed outside of the TPZ, where possible. The fenced TPZ should be clear of building materials, waste, soil stockpiles, and construction equipment. Subject to finalization of construction plans, the following activities should not occur within the TPZ:

- Construction;
- Altering of grade by adding fill, excavating, trenching, scraping, dumping, or disturbance of any kind;
- Storage of construction materials, equipment, soil, construction waste, or debris;

- Disposal of any liquids (e.g., concrete sleuth, gas, oil, paint);
- Movement of vehicles, equipment, or pedestrians; and
- Parking of vehicles or machinery.

If the above recommendations are followed, potential impacts to root zones from compaction are expected to be minor and localized. There should be no excavation (e.g. stripping or trenching) within the TPZ though in some instances, a TPZ which extends into the construction zone may require minor adjustments to facilitate access for construction personnel, equipment and may require excavation.

Directional micro-tunneling, track boring, and other sub-surface drilling can generally be undertaken within the limits of a TPZ without impacts on the respective tree, depending on the depth of drilling. Open-face cuts that require root pruning within a TPZ should be completed under the supervision of an ISA Certified Arborist or approved tree professional. An exploratory dig to expose the roots that may be impacted can be completed either by hand, using an air pressure dry-vac method (low air pressure has less impact on roots); air spade or other suitable alternative should be completed prior to commencing with open face cuts within the TPZ.

5.2.3 Post-Construction Tree Maintenance and Monitoring

Post-construction tree maintenance methods will be used as required to repair any damage caused to trees by construction activities. These include, but are not limited to the following:

- Treating trunk and crown injuries (e.g., pruning, cabling, bracing, repairing wounds to damaged bark and trunks, etc.);
- Irrigation and drainage;
- Mulching; and
- Aeration of the root zone for compacted areas.

Within 12 months of the completion of construction, an assessment of preserved trees, if available, within the Project Location should be conducted. Trees which are dead, in poor health, or hazardous should be removed or pruned, as determined by a qualified arborist. Tree removal should occur prior to home occupancy to avoid foreseeable risk of trees falling and causing damage or harm to people and/or property.

Compensation plantings should be monitored periodically after construction to ensure survival. Should tree condition decline, necessary steps should be taken to ensure that the impacted trees are restored or replaced.

Post-construction maintenance and monitoring are to be carried out be a qualified arborist skilled in the above-listed methods.

5.3 COMPENSATION FOR TREE REMOVALS

Tree preservation and removals will occur at the Site Plan Control Approval phase of the development.

Compensation in the form of landscape trees (e.g., within parks, lots, or boulevards) and/or restoration plantings on-site or off-site may be required.

Species, condition, size/DBH, and other characteristics of existing trees should be considered in discussions regarding fair compensation for removals. For compensation on the trees, we recommend that DBH replacement for excellent (21), good (122), and fair (6) trees (149 total trees) may be appropriate to determine the number of plantings required or equal monetary compensation.

6.0 CONCLUSION

Dillon Consulting Limited was retained by Astoria Inc., to undertake a tree inventory and SAR assessment to support a proposed residential development at 3771, 3783, and 3793 Howard Avenue, in the City of Windsor. The SAR assessment indicated that there is potential habitat for several SAR species; however, the site assessment confirmed that the Project Location would not constitute ideal habitat for these species. One cavity tree was identified, but tree removals are not anticipated to be conducted during the active bat season, so there are no concerns for SAR Bats. An inventory of trees was completed on November 25, 2024, and 175 trees were documented. To facilitate construction of the proposed development, 164 trees are required to be removed. A total of 11 trees are recommended for preservation during construction, however it should be noted that during detailed design, effort will be made to retain as many other trees as possible as landscaping trees. Detailed recommendations for tree removals, maintenance, and preservation were provided.

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APPENDIX A

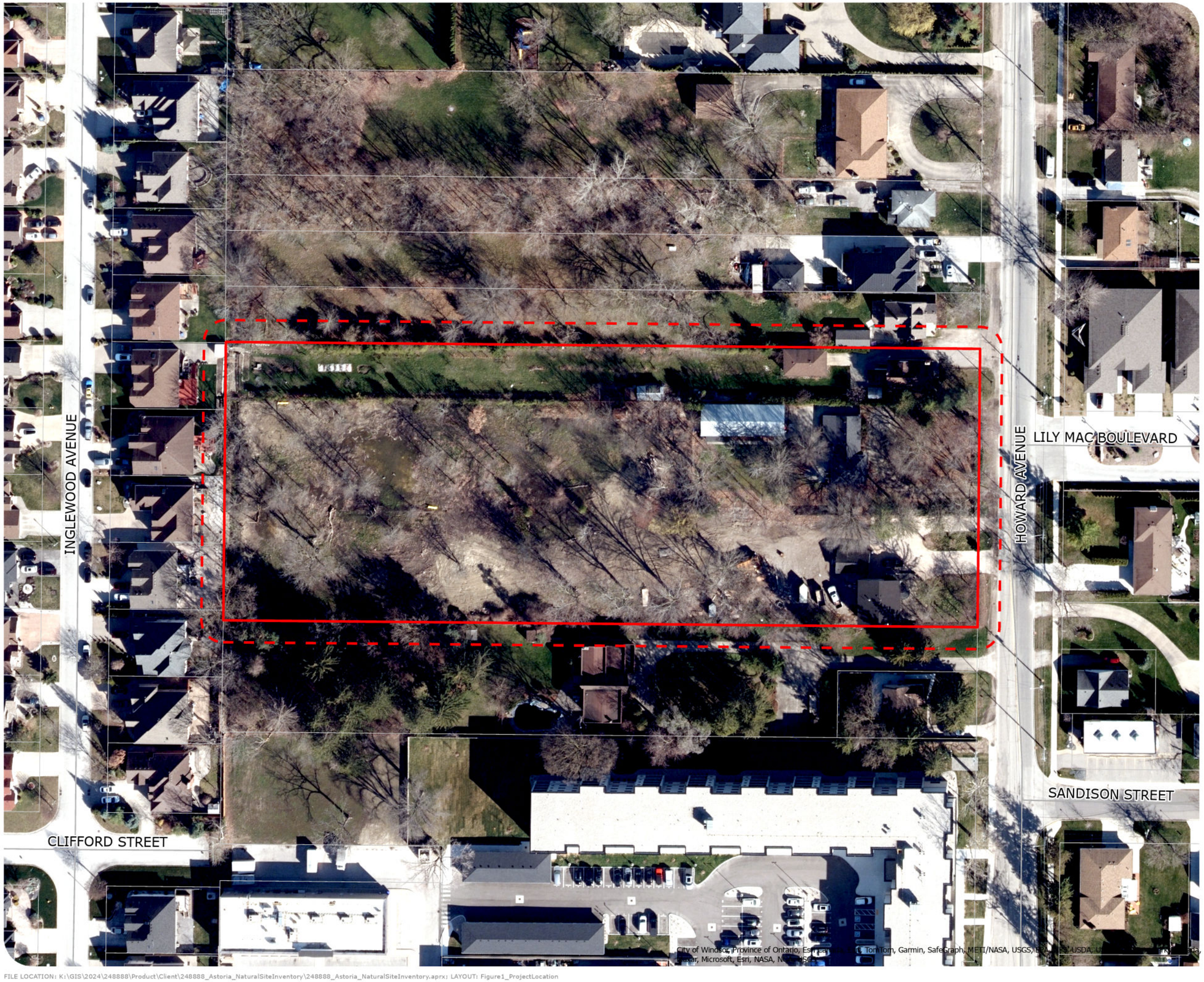
FIGURES

ASTORIA DEVELOPMENT

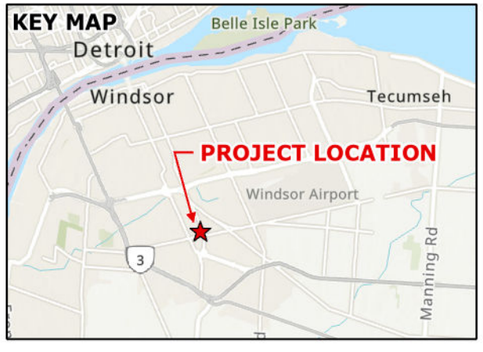
NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

PROJECT LOCATION

FIGURE 1



- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Road
- Parcel Fabric



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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, Essex County Aerial Imagery, Dillon Consulting Limited

MAP CREATED BY: VF
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DILLON CONSULTING

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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

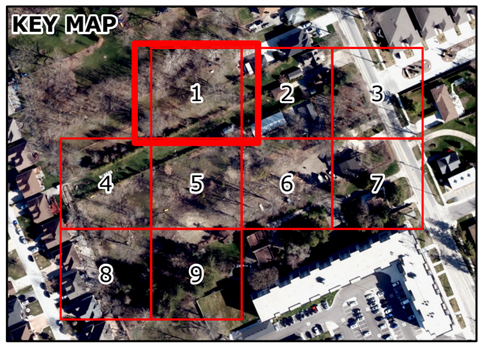
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 1 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan

Tree Analysis

- Remove
- Retain



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DILLON CONSULTING

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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

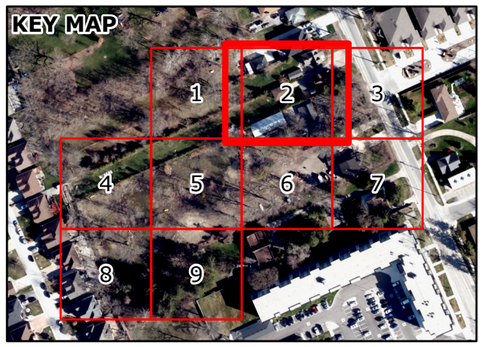
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 2 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan

Tree Analysis

- Remove
- Retain



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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 3 OF 9

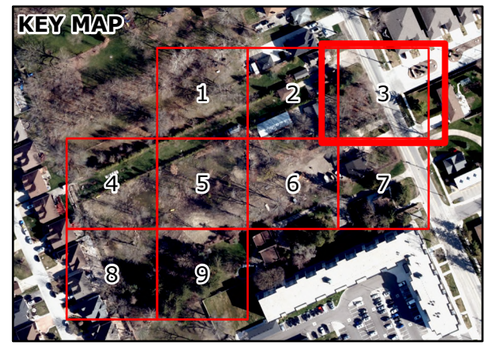
LILY MAC BOULEVARD

HOWARD AVENUE

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Proposed Site Plan
- Road

Tree Analysis

- Remove



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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

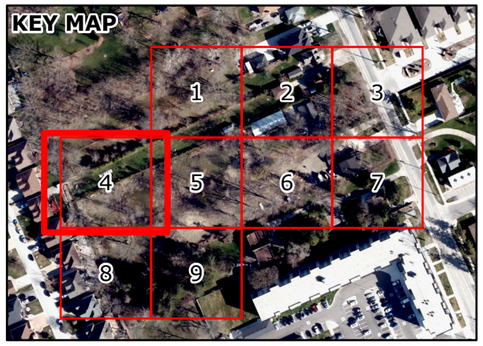
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 4 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan

Tree Analysis

- Remove
- Retain



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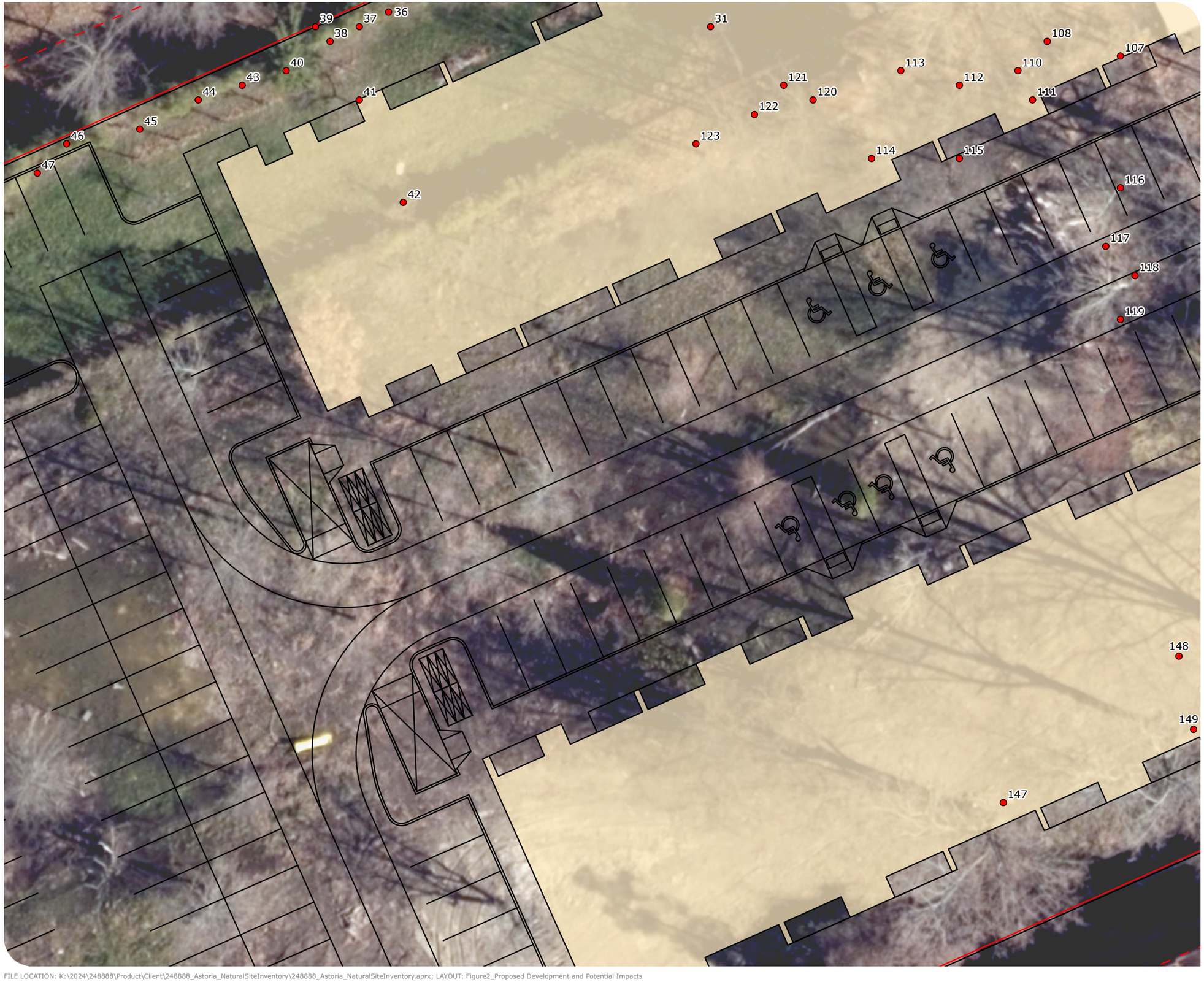


ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

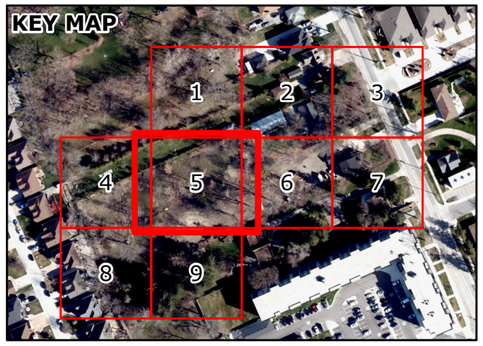
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 5 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Proposed Site Plan

Tree Analysis

- Remove



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PROJECT: 24-8888
STATUS: DRAFT
DATE: 2025-11-04

ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 6 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan

Tree Analysis

- Remove
- Retain

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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

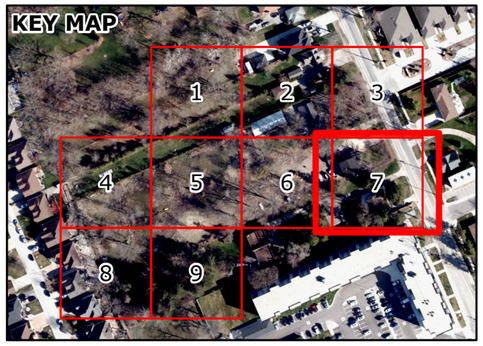
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 7 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan
- Road

Tree Analysis

- Remove
- Retain



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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

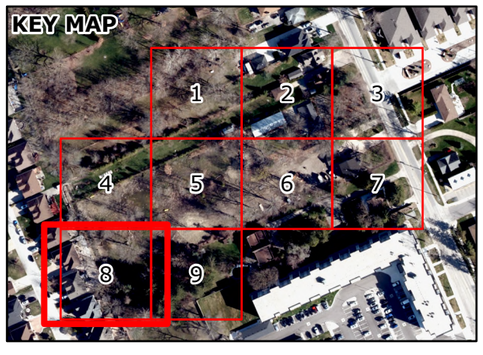
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 8 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan
- Road

Tree Analysis

- Remove
- Retain



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ASTORIA DEVELOPMENT

NATURAL SITE FEATURES
INVENTORY & PRESERVATION STUDY

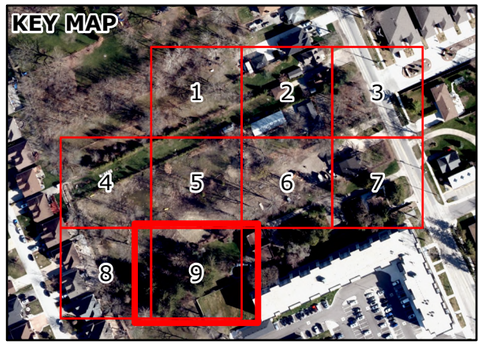
PROPOSED DEVELOPMENT & POTENTIAL IMPACTS

FIGURE 2 PAGE 9 OF 9

- Project Location (1.57 ha)
- Study Area (6m Buffer)
- Critical Root Zone (m)
- Proposed Site Plan

Tree Analysis

- Remove
- Retain



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APPENDIX B

TREE PHOTOGRAPHS

Looking east from Tree #103. Note planted trees and regularly-maintained lawn.

Looking east from Tree #18. Note regularly-maintained lawn.

Looking west from Tree #18. Note planted fruit trees and regularly-maintained lawn.

Looking east from Tree #61. Note planted fruit trees and regularly-maintained lawn.

Looking west from Tree #61. Note planted garden and regularly-maintained lawn.

APPENDIX C

DETAILED TREE INVENTORY

Appendix C - Detailed Tree Inventory

FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
1	*Pinus nigra*	Black Pine	24	2.88	Excellent		Remove - Within Project Limit
2	*Pinus nigra*	Black Pine	22	2.64	Excellent		Remove - Within Project Limit
3	*Pinus nigra*	Black Pine	29	3.48	Excellent		Remove - Within Project Limit
4	*Picea abies*	Norway Spruce	26	3.12	Excellent		Remove - Within Project Limit
5	*Picea abies*	Norway Spruce	38	4.56	Excellent		Remove - Within Project Limit
6	*Thuja occidentalis*	Eastern White Cedar	12	1.44	Excellent		Remove - Within Project Limit
7	*Thuja occidentalis*	Eastern White Cedar	14	1.68	Excellent		Remove - Within Project Limit
8	*Thuja occidentalis*	Eastern White Cedar	13, 10	1.97	Excellent		Remove - Within Project Limit
9	*Thuja occidentalis*	Eastern White Cedar	11	1.32	Excellent		Remove - Within Project Limit
10	Fruit Tree	Fruit Tree	20, 13	2.86	Good		Remove - Within Project Limit
11	Fruit Tree	Fruit Tree	14, 12	2.21	Good		Remove - Within Project Limit
12	*Metasequoia glyptostroboides*	Dawn Redwood	35	4.20	Excellent		Retain - <35% CRZ within Project Development
13	*Picea abies*	Norway Spruce	16	1.92	Excellent		Remove - Within Project Limit
14	*Aesculus hippocastanum*	Horse Chestnut	50, 25	6.71	Good		Retain - <35% CRZ within Project Development
15	*Quercus alba*	White Oak	30	3.60	Good		Retain - <35% CRZ within Project Development
16	*Thuja occidentalis*	Eastern White Cedar	14, 10	2.06	Excellent		Remove - Within Project Limit
17	Fruit Tree	Fruit Tree	19	2.28	Dead		Remove - Within Project Limit
18	Fruit Tree	Fruit Tree	12, 12	2.04	Good		Remove - Within Project Limit
19	Fruit Tree	Fruit Tree	11, 11	1.87	Good		Remove - Within Project Limit
20	Fruit Tree	Fruit Tree	13, 12	2.12	Good		Remove - Within Project Limit
21	Fruit Tree	Fruit Tree	13	1.56	Fair		Remove - Within Project Limit
22	Fruit Tree	Fruit Tree	17	2.04	Fair		Remove - Within Project Limit
23	Fruit Tree	Fruit Tree	15	1.80	Good		Remove - Within Project Limit
24	Fruit Tree	Fruit Tree	16	1.92	Good		Remove - Within Project Limit
25	Fruit Tree	Fruit Tree	14, 11	2.14	Good		Remove - Within Project Limit
26	---	Unknown	10	1.20	Dead		Remove - Within Project Limit
27	Fruit Tree	Fruit Tree	16, 11	2.33	Fair		Remove - Within Project Limit
28	Fruit Tree	Fruit Tree	17	2.04	Good		Remove - Within Project Limit
29	Fruit Tree	Fruit Tree	11	1.32	Good	Snapped top	Remove - Within Project Limit

FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
30	Fruit Tree	Fruit Tree	11	1.32	Good	No main stem above breast height	Remove - Within Project Limit
31	Fruit Tree	Fruit Tree	18	2.16	Good		Remove - Within Project Limit
32	Fruit Tree	Fruit Tree	17	2.04	Good		Remove - Within Project Limit
33	Fruit Tree	Fruit Tree	11	1.32	Good		Remove - Within Project Limit
34	Fruit Tree	Fruit Tree	13	1.56	Good		Remove - Within Project Limit
35	Fruit Tree	Fruit Tree	13, 12	2.12	Good		Remove - Within Project Limit
36	Fruit Tree	Fruit Tree	14	1.68	Good		Remove - Within Project Limit
37	Fruit Tree	Fruit Tree	13	1.56	Good		Remove - Within Project Limit
38	Fruit Tree	Fruit Tree	10	1.20	Good		Remove - Within Project Limit
39	*Thuja occidentalis*	Eastern White Cedar	16	1.92	Excellent		Remove - Within Project Limit
40	Fruit Tree	Fruit Tree	13	1.56	Good		Remove - Within Project Limit
41	Fruit Tree	Fruit Tree	11	1.32	Good		Remove - Within Project Limit
42	Fruit Tree	Fruit Tree	12	1.44	Good		Remove - Within Project Limit
43	Fruit Tree	Fruit Tree	12	1.44	Good		Remove - Within Project Limit
44	*Picea abies*	Norway Spruce	26	3.12	Excellent		Remove - Within Project Limit
45	Fruit Tree	Fruit Tree	11	1.32	Good		Remove - Within Project Limit
46	Fruit Tree	Fruit Tree	12	1.44	Good		Remove - Within Project Limit
47	Fruit Tree	Fruit Tree	13	1.56	Good		Remove - Within Project Limit
48	*Thuja occidentalis*	Eastern White Cedar	19	2.28	Good		Remove - Within Project Limit
49	*Thuja occidentalis*	Eastern White Cedar	16	1.92	Excellent		Remove - Within Project Limit
50	*Thuja occidentalis*	Eastern White Cedar	12	1.44	Excellent		Remove - Within Project Limit
51	Fruit Tree	Fruit Tree	14	1.68	Good		Remove - Within Project Limit
52	Fruit Tree	Fruit Tree	12	1.44	Dead		Remove - Within Project Limit
53	*Thuja occidentalis*	Eastern White Cedar	12	1.44	Good		Remove - Within Project Limit
54	*Picea abies*	Norway Spruce	20	2.40	Excellent		Remove - Within Project Limit
55	Fruit Tree	Fruit Tree	13	1.56	Good		Remove - Within Project Limit
56	Fruit Tree	Fruit Tree	15	1.80	Good		Remove - Within Project Limit
57	*Thuja occidentalis*	Eastern White Cedar	17, 12	2.50	Excellent		Remove - Within Project Limit
58	*Thuja occidentalis*	Eastern White Cedar	14	1.68	Excellent		Remove - Within Project Limit
59	*Thuja occidentalis*	Eastern White Cedar	17	2.04	Excellent		Remove - Within Project Limit
60	Fruit Tree	Fruit Tree	15	1.80	Good		Remove - Within Project Limit

FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
61	Fruit Tree	Fruit Tree	12	1.44	Good		Remove - Within Project Limit
62	*Thuja occidentalis*	Eastern White Cedar	14	1.68	Dead		Remove - Within Project Limit
63	*Thuja occidentalis*	Eastern White Cedar	15	1.80	Excellent		Remove - Within Project Limit
64	*Juglans nigra*	Black Walnut	40	4.80	Good		Retain - <35% CRZ within Project Development
65	*Ulmus americana*	American Elm	35	4.20	Good		Retain - <35% CRZ within Project Development
66	*Quercus rubra*	Northern Red Oak	91	10.92	Good		Remove - Within Project Limit
67	*Quercus rubra*	Northern Red Oak	10	1.20	Good		Remove - Within Project Limit
68	*Juglans nigra*	Black Walnut	10	1.20	Good		Remove - Within Project Limit
69	*Quercus rubra*	Northern Red Oak	12	1.44	Good		Remove - Within Project Limit
70	*Quercus rubra*	Northern Red Oak	14	1.68	Good		Remove - Within Project Limit
71	*Thuja occidentalis*	Eastern White Cedar	28, 16	3.87	Excellent		Remove - Within Project Limit
72	*Quercus rubra*	Northern Red Oak	11	1.32	Good		Remove - Within Project Limit
73	*Quercus rubra*	Northern Red Oak	15	1.80	Good		Remove - Within Project Limit
74	*Quercus rubra*	Northern Red Oak	14	1.68	Good		Remove - Within Project Limit
75	*Quercus rubra*	Northern Red Oak	20	2.40	Good		Remove - Within Project Limit
76	*Gleditsia triacanthos inermis*	Thornless Honey-locust	57	6.84	Good	Thornless	Remove - Within Project Limit
77	*Quercus rubra*	Northern Red Oak	16	1.92	Good		Remove - Within Project Limit
78	*Ulmus americana*	American Elm	15	1.80	Good		Remove - Within Project Limit
79	*Carya cordiformis*	Bitternut Hickory	20	2.40	Good		Remove - Within Project Limit
80	*Celtis occidentalis*	Common Hackberry	12	1.44	Good		Remove - Within Project Limit
81	*Ostrya virginiana*	Eastern Hop-hornbeam	11	1.32	Good		Remove - Within Project Limit
82	*Acer x freemanii*	Freeman's Maple	82	9.84	Good		Remove - Within Project Limit
83	*Ulmus americana*	American Elm	13	1.56	Good		Remove - Within Project Limit
84	*Crataegus sp.*	Hawthorn species	40	4.80	Fair		Remove - Within Project Limit
85	*Quercus rubra*	Northern Red Oak	19	2.28	Good		Remove - Within Project Limit
86	*Ostrya virginiana*	Eastern Hop-hornbeam	14	1.68	Good		Remove - Within Project Limit
87	*Quercus rubra*	Northern Red Oak	10	1.20	Good		Remove - Within Project Limit
88	*Quercus rubra*	Northern Red Oak	13	1.56	Good		Remove - Within Project Limit
89	*Picea sp.*	Spruce species	22	2.64	Dead		Remove - Within Project Limit
90	*Quercus palustris*	Pin Oak	53	6.36	Good		Remove - Within Project Limit
91	*Picea abies*	Norway Spruce	76	9.12	Poor		Remove - Within Project Limit

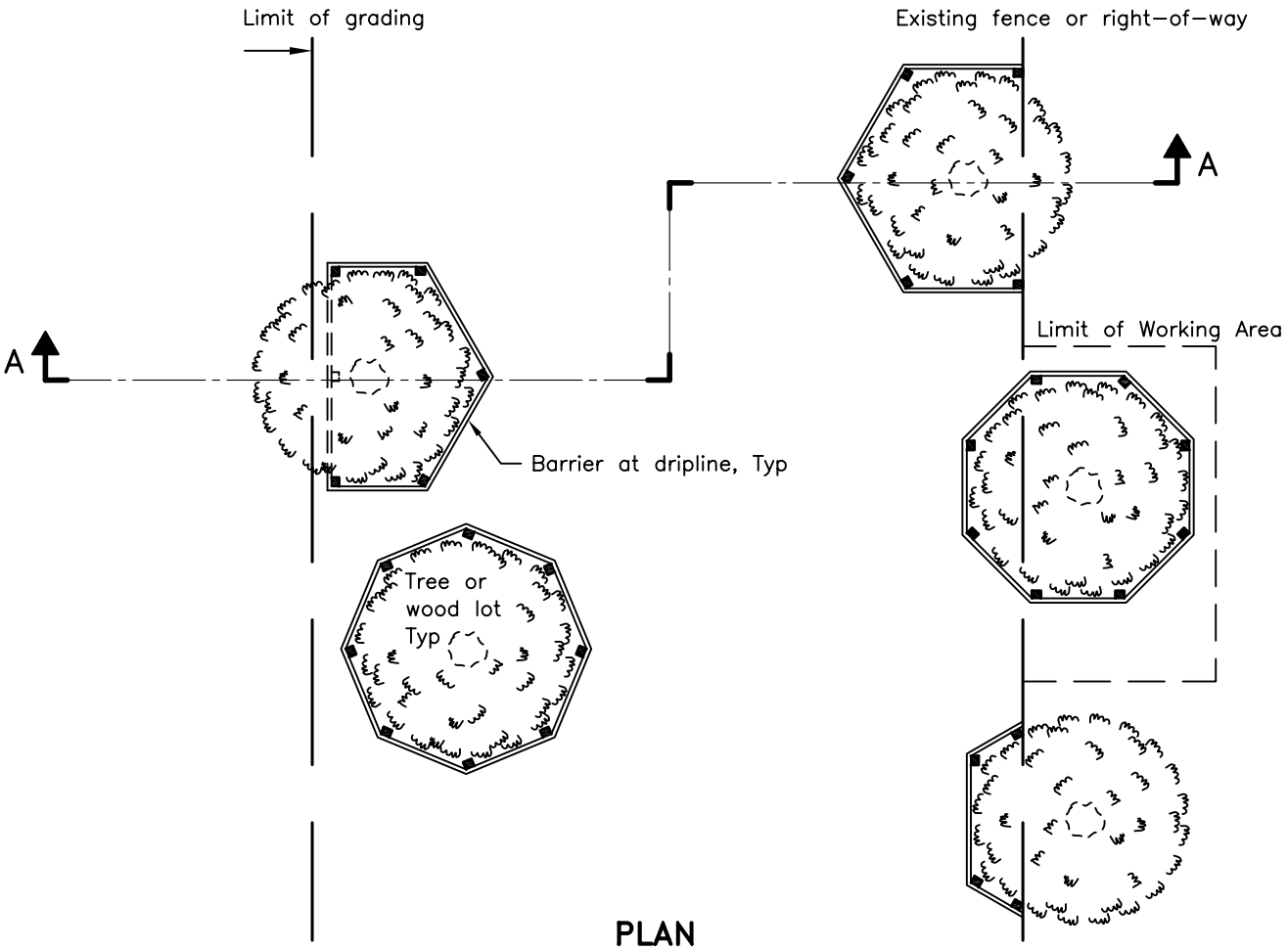
FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
92	*Picea abies*	Norway Spruce	53	6.36	Poor		Remove - Within Project Limit
93	*Picea abies*	Norway Spruce	45	5.40	Good		Remove - Within Project Limit
94	*Quercus rubra*	Northern Red Oak	11	1.32	Good		Remove - Within Project Limit
95	*Quercus rubra*	Northern Red Oak	10	1.20	Good		Remove - Within Project Limit
96	*Liriodendron tulipifera*	Tulip Tree	22	2.64	Good		Remove - Within Project Limit
97	*Quercus rubra*	Northern Red Oak	15	1.80	Good		Remove - Within Project Limit
98	*Prunus sp.*	Cherry species	15	1.80	Good		Remove - Within Project Limit
99	*Ulmus americana*	American Elm	19	2.28	Good		Remove - Within Project Limit
100	*Carya ovata*	Shagbark Hickory	20	2.40	Good		Remove - Within Project Limit
101	*Quercus rubra*	Northern Red Oak	24	2.88	Good		Remove - Within Project Limit
102	*Juglans nigra*	Black Walnut	32	3.84	Fair		Remove - Within Project Limit
103	*Juglans nigra*	Black Walnut	21, 14	3.03	Good		Remove - Within Project Limit
104	*Quercus rubra*	Northern Red Oak	90	10.80	Good		Remove - Within Project Limit
105	*Quercus rubra*	Northern Red Oak	56	6.72	Poor		Remove - Within Project Limit
106	*Ulmus americana*	American Elm	21	2.52	Good		Remove - Within Project Limit
107	*Quercus rubra*	Northern Red Oak	22	2.64	Good		Remove - Within Project Limit
108	*Ulmus americana*	American Elm	19	2.28	Good		Remove - Within Project Limit
109	*Ulmus americana*	American Elm	21, 11	2.84	Good		Remove - Within Project Limit
110	*Acer x freemanii*	Freeman's Maple	49	5.88	Good		Remove - Within Project Limit
111	*Ulmus americana*	American Elm	20	2.40	Good		Remove - Within Project Limit
112	*Quercus rubra*	Northern Red Oak	28	3.36	Good		Remove - Within Project Limit
113	*Metasequoia glyptostroboides*	Dawn Redwood	53	6.36	Good		Remove - Within Project Limit
114	*Quercus rubra*	Northern Red Oak	24	2.88	Good		Remove - Within Project Limit
115	*Carya ovata*	Shagbark Hickory	24	2.88	Good		Remove - Within Project Limit
116	*Platanus occidentalis*	Sycamore	35	4.20	Good		Remove - Within Project Limit
117	*Platanus occidentalis*	Sycamore	28	3.36	Good		Remove - Within Project Limit
118	*Tilia americana*	American Basswood	14, 13, 10	2.59	Good		Remove - Within Project Limit
119	*Acer x freemanii*	Freeman's Maple	36	4.32	Good		Remove - Within Project Limit
120	*Quercus rubra*	Northern Red Oak	30	3.60	Good		Remove - Within Project Limit
121	*Quercus rubra*	Northern Red Oak	30	3.60	Good		Remove - Within Project Limit
122	*Quercus rubra*	Northern Red Oak	30, 12	3.88	Good		Remove - Within Project Limit

FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
123	*Quercus rubra*	Northern Red Oak	20, 20	3.39	Good		Remove - Within Project Limit
124	*Juglans nigra*	Black Walnut	27	3.24	Good		Remove - Within Project Limit
125	*Juglans nigra*	Black Walnut	44, 43	7.38	Good		Remove - Within Project Limit
126	*Juglans nigra*	Black Walnut	23	2.76	Good		Remove - Within Project Limit
127	*Juglans nigra*	Black Walnut	23	2.76	Dead		Remove - Within Project Limit
128	*Juglans nigra*	Black Walnut	26	3.12	Good		Remove - Within Project Limit
129	*Juglans nigra*	Black Walnut	28, 19	4.06	Good		Remove - Within Project Limit
130	*Juglans nigra*	Black Walnut	26	3.12	Good		Remove - Within Project Limit
131	*Celtis occidentalis*	Common Hackberry	25	3.00	Good		Remove - Within Project Limit
132	*Crataegus sp.*	Hawthorn species	20	2.40	Good		Remove - Within Project Limit
133	*Ulmus americana*	American Elm	21	2.52	Good		Remove - Within Project Limit
134	*Ulmus americana*	American Elm	34	4.08	Good		Remove - Within Project Limit
135	*Ulmus americana*	American Elm	15	1.80	Good		Remove - Within Project Limit
136	*Liriodendron tulipifera*	Tulip Tree	45	5.40	Good		Remove - >35% CRZ within Project Limit
137	*Juglans nigra*	Black Walnut	52	6.24	Good		Remove - Within Project Limit
138	*Ulmus americana*	American Elm	30, 25, 18	5.16	Good		Remove - Within Project Limit
139	*Salix sp.*	Willow species	120	14.40	Fair	One dead stem	Remove - Within Project Limit
140	*Pinus nigra*	Black Pine	34	4.08	Good		Retain - <35% CRZ within Project Development
141	*Picea abies*	Norway Spruce	26	3.12	Good		Retain - <35% CRZ within Project Development
142	*Picea abies*	Norway Spruce	79	9.48	Good		Retain - <35% CRZ within Project Development
143	*Ulmus americana*	American Elm	63	7.56	Good		Remove - Within Project Limit
144	*Juglans nigra*	Black Walnut	80	9.60	Good		Remove - Within Project Limit
145	*Pinus nigra*	Black Pine	40	4.80	Good		Remove - >35% CRZ within Project Limit
146	*Pinus nigra*	Black Pine	30	3.60	Good		Remove - Within Project Limit
147	*Acer x freemanii*	Freeman's Maple	81	9.72	Good		Remove - Within Project Limit
148	*Acer x freemanii*	Freeman's Maple	75	9.00	Good		Remove - Within Project Limit
149	*Prunus sp.*	Cherry species	18, 13	2.66	Good		Remove - Within Project Limit
150	*Acer x freemanii*	Freeman's Maple	92	11.04	Good		Remove - Within Project Limit
151	*Acer x freemanii*	Freeman's Maple	66	7.92	Good		Remove - Within Project Limit
152	*Acer x freemanii*	Freeman's Maple	90	10.80	Good		Remove - Within Project Limit
153	*Salix sp.*	Willow species	152	18.24	Poor	Numerous south-facing cavities	Remove - Within Project Limit

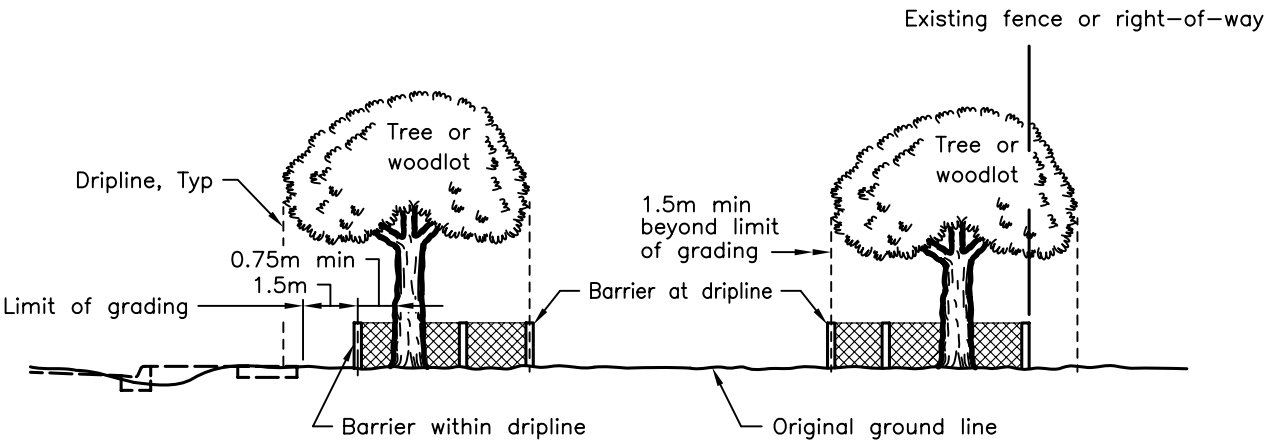
FIGURE ID	SCIENTIFIC NAME	COMMON NAME	DBH (CM)	CRITICAL ROOT ZONE/TREE PROTECTION ZONE (M)	CONDITION	LEVEL 2 ASSESSMENT NOTES	ACTION AND RATIONALE FOR REMOVAL OR RETENTION
154	*Ulmus americana*	American Elm	17, 16	2.80	Good		Remove - Within Project Limit
155	*Picea abies*	Norway Spruce	46	5.52	Good		Remove - Within Project Limit
156	*Morus alba*	White Mulberry	14	1.68	Good		Retain - <35% CRZ within Project Development
157	*Morus alba*	White Mulberry	25	3.00	Good		Retain - <35% CRZ within Project Development
158	*Juglans nigra*	Black Walnut	11	1.32	Good		Retain - <35% CRZ within Project Development
159	*Tilia americana*	American Basswood	12	1.44	Good		Remove - Within Project Limit
160	*Quercus rubra*	Northern Red Oak	98	11.76	Good		Remove - Within Project Limit
161	*Picea abies*	Norway Spruce	59	7.08	Good		Remove - Within Project Limit
162	*Picea abies*	Norway Spruce	88, 30	11.16	Good		Remove - Within Project Limit
163	*Picea abies*	Norway Spruce	59	7.08	Good		Remove - Within Project Limit
164	*Picea abies*	Norway Spruce	53	6.36	Poor		Remove - Within Project Limit
165	*Acer x freemanii*	Freeman's Maple	58	6.96	Good		Remove - Within Project Limit
166	*Morus alba*	White Mulberry	35	4.20	Good		Remove - Within Project Limit
167	*Morus alba*	White Mulberry	32	3.84	Good		Remove - Within Project Limit
168	*Morus alba*	White Mulberry	19, 17	3.06	Dead		Remove - >35% CRZ within Project Limit and dead condition
169	*Morus alba*	White Mulberry	28	3.36	Poor		Remove - Within Project Limit
170	*Morus alba*	White Mulberry	27	3.24	Poor		Remove - Within Project Limit
171	*Morus alba*	White Mulberry	32	3.84	Good		Remove - Within Project Limit
172	*Morus alba*	White Mulberry	24, 21	3.83	Good		Remove - Within Project Limit
173	*Picea abies*	Norway Spruce	29	3.48	Poor		Remove - Within Project Limit
174	*Picea abies*	Norway Spruce	39	4.68	Good		Remove - Within Project Limit
175	*Prunus cerasifera*	Cherry Plum	13	1.56	Good		Remove - Within Project Limit

APPENDIX D

ONTARIO STANDARD BARRIER FOR TREE PROTECTION



PLAN



SECTION A–A

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2007	Rev	0
BARRIER FOR TREE PROTECTION			
	OPSD 220.010		