

DILLON
CONSULTING

1495754 ONTARIO INC.

Tree Inventory & Preservation Study

0 Esplanade Drive



May 17, 2024



SENT BY ELECTRONIC MAIL ONLY

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

Attention: Yemi Adeyeye, City Forester/Manager Forests & Natural Areas

Tree Inventory & Preservation Study for 0 Esplanade Drive

Please find enclosed the results of a Tree Inventory completed to identify existing trees for a proposed development at 0 Esplanade Drive, in the City of Windsor. This report outlines the results of the inventory which occurred on April 19, 2024. These results were used to prepare a Preservation Study report to support a Zoning By-law Amendment. The report summarizes the results of the tree inventory conducted for areas potentially impacted by the proposed development and provides recommendations for trees to be removed or retained.

Sincerely,

DILLON CONSULTING LIMITED

Handwritten signature of Brad McLeod in black ink.

Brad McLeod, M.Sc.
Biologist
BM:jb

Handwritten signature of Jonathan Harris in black ink.

Jonathan Harris
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Our File: 23-7174

Encls. Tree Inventory & Preservation Study

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1.0 Introduction

Dillon Consulting Limited (“Dillon”) was retained by 1495754 Ontario Inc. (the “proponent”), to conduct a Tree Inventory & Preservation Study to support a Zoning By-law Amendment for a proposed development in the City of Windsor (the “City”). The need for this report was identified during the Stage 1 Planning Consultation letter received from the City on March 4, 2024.

The proposed development will be located at 0 Esplanade Drive, north of Esplanade Drive and east of the Ganatchio Trail (**Appendix A**; Figure 1). Dillon’s services included documentation of existing trees within the property in addition to a 6 m buffer onto adjacent lands (the “Project Location”). The report and figures summarize the tree inventory 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 Project Location that may be potentially impacted by construction. Additionally, it describes the development and anticipated construction impact to trees.

1.1 Development Description

The proponent is proposing to develop the Project Location into a 4-storey multiple dwelling with an associated parking lot.

1.2 Applicable Policy

1.2.1 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, Volume I (Procedures), Chapter 10, Section 10.2.14 of the City’s Official Plan 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.

1.2.2 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. In order 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.

2.0 Methods

A tree inventory was conducted on April 19, 2024, by a qualified Dillon Biologist within the Project Location and a 6 m buffer. Trees subject to the inventory were those with a diameter-at-breast-height (DBH) of 10 centimetres (cm) or greater, as well as City-owned trees with a DBH of less than 10 cm. 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 1**;
- Marking coordinates using a handheld Global Positioning System (GPS) unit with an accuracy of approximately 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* (Matthey 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 the leaf-off period (i.e. April). Trees were identified using reasonable assumptions based on form, bark, and branch orientations to determine species.

Table 1: 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.

2.1 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.

2.1.1 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:

$$DBHD = \sqrt{([DBH1]^2 + [DBH2]^2 + [DBH\dots\text{etc.}]^2)}$$

Where DBHD 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.

2.1.2 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 2, as adapted from other various tree protection standards.

Table 2: 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

2.1.3 Analysis for Tree Remove/Retain Recommendations

To develop recommendations for trees to be removed or retained, the inventoried trees' location 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.

3.0 Results

The inventory documented 40 trees (26 client-owned trees and 14 City-owned trees) within the Study Area including City-owned trees with DBH under 10 cm. 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 11 species of trees were documented. Sugar Maple (*Acer saccharum*) was the dominant species, accounting for 25% of the trees inventoried, followed by White Elm (*Ulmus americana*) at 18%. One tree, a Kentucky Coffee-tree (*Gymnocladus dioicus*) which is City-owned and planted, is listed as threatened in both the federal *Species at Risk Act* (SARA), 2002 and the provincial *Endangered Species Act* (ESA), 2007. A summary of inventoried trees can be found in **Table 2** below.

Overall, out of the 40 documented trees, 31 (78%) are native to Ontario, while 9 (22%) are non-native species.

Table 3: Summary of Inventoried Trees by Species

Family	Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Invasive Priority for Control ⁴	Count
Fabaceae	<i>Gleditsia triacanthos inermis</i>	Thornless Honey-locust	---	---	SNA	---	2
Fabaceae	<i>Gymnocladus dioicus</i>	Kentucky Coffee-tree	THR	THR	S2	---	1
Tiliaceae	<i>Tilia cordata</i>	Little-leaf Linden	---	---	SNA	---	1
Salicaceae	<i>Populus deltoides</i> ssp. <i>deltoides</i>	Eastern Cottonwood	---	---	S5	---	1
Aceraceae	<i>Acer saccharinum</i>	Silver Maple	---	---	S5	---	4
Aceraceae	<i>Acer x freemanii</i>	Freeman's Maple	---	---	SNA	---	6
Aceraceae	<i>Acer saccharum</i>	Sugar Maple	---	---	SNA	---	10
Ulmaceae	<i>Ulmus americana</i>	White Elm	---	---	S5	---	7
Pinaceae	<i>Picea pungens</i>	Blue Spruce	---	---	SNA	---	6
Magnoliaceae	<i>Liriodendron tulipifera</i>	Tulip Tree	---	---	S4	---	1

Family	Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Invasive Priority for Control ⁴	Count
Cannabaceae	<i>Celtis occidentalis</i>	Common Hackberry	---	---	S4	---	1
Total							40

¹Status identified under the federal Species at Risk Act. THR = Threatened; ²Status identified under the provincial Endangered Species Act. THR = Threatened; ³SRank 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, S2 = very rare and imperiled, SNA = not applicable; --- denotes no information or not applicable.

4.0 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 40 trees identified within the Study Area, 32 are observed to be preserved (19 client-owned trees and 13 City-owned trees). 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 at the Site Plan Control Approval phase of the development.

4.1 Tree Removals

Of the inventoried trees, 8 trees are required to be removed (7 client-owned trees and 1 City-owned tree).

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**). All 8 trees identified for removal are in good condition.

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).

4.2 Tree Preservation

Of the inventoried trees, 32 are recommended to be preserved (19 client-owned trees and 13 City-owned trees). The one Kentucky Coffee-tree is part of the recommended trees 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.

4.2.1 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.

4.2.2 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 at the edge 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 slurry, 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.

4.2.3 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 by a qualified arborist skilled in the above-listed methods.

4.3 Compensation for Tree Removals

A Landscape and Planting Plan, detailing where tree compensation will occur and what species are recommended for planting will be submitted to the City after exact development extents are known and therefore, the number of trees to be preserved is also known, and following Zoning By-law Amendment Approval. Tree preservation and removals will occur at the Site Plan Control Approval phase of the development.

Upon finalization of the Landscape and Planting Plan, and subject to discussion with the City, 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 client-owned trees, we recommend that DBH replacement for excellent (0), good (7), and fair (0) trees (7 total trees) may be appropriate to determine the number of plantings required or equal monetary compensation.

5.0

Conclusion

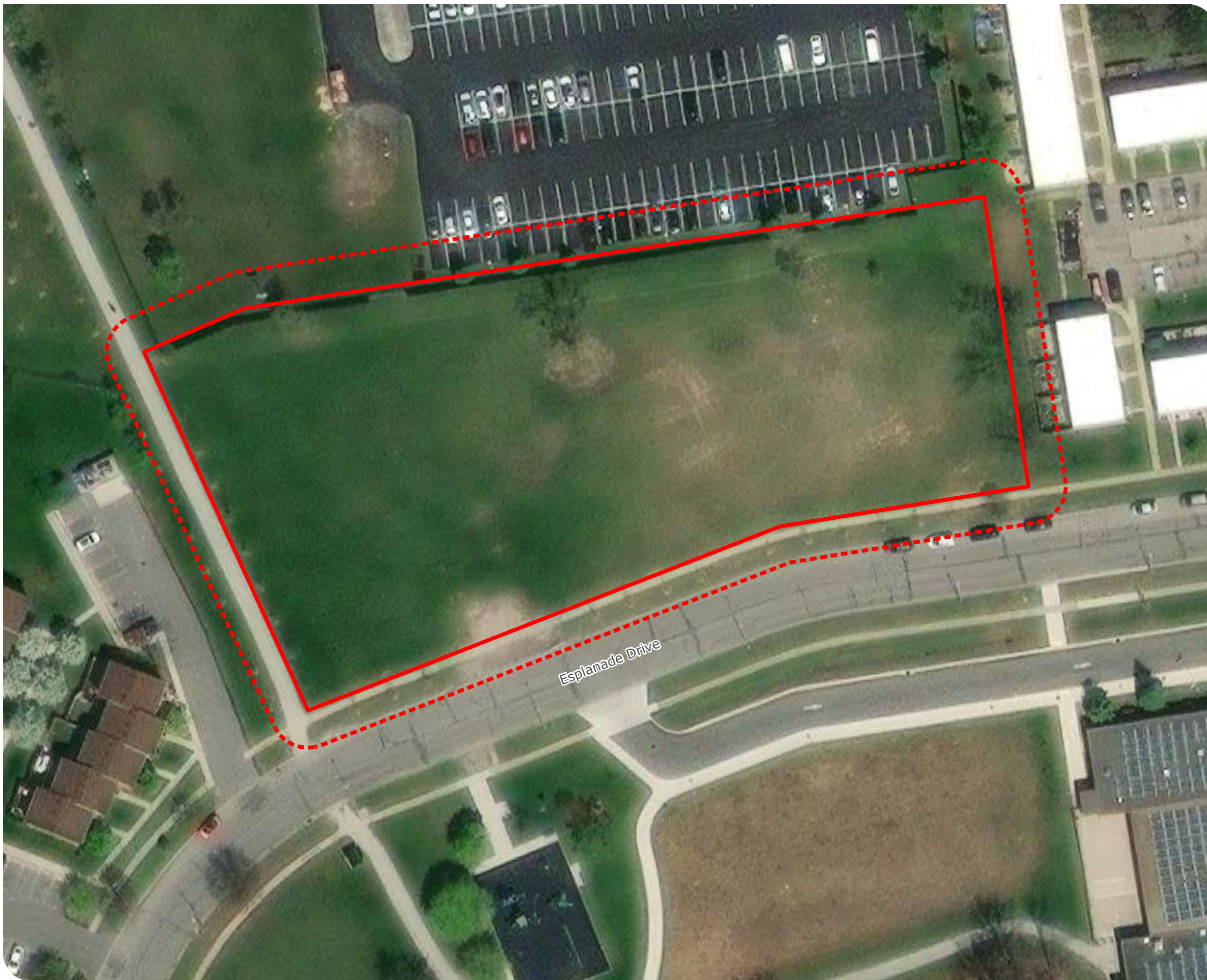
Dillon Consulting Limited was retained by 1495754 Ontario Inc., to undertake a Tree Inventory and Preservation Study to support a proposed development located at 0 Esplanade Drive in the City of Windsor. An inventory of trees was completed on April 19, 2024, and 40 trees were documented. To facilitate construction of the proposed development, 7 client-owned, private trees and one City-owned tree are required to be removed. A total of 32 trees (19 client-owned trees and 13 City-owned 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.

References

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- Smiley, E.T., N.P. Matheny, and S. Lilly. 2012. Tree Risk Assessment: Levels of Assessment. ISA News, April 2012 Issue. pp. 12-20.
- Urban Tree Management Group, The. 2019. Tree Preservation & Protection Standards. pp. 1-14.



Appendix A

Figures



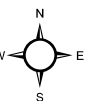
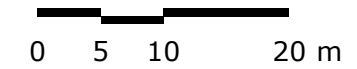
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*TREE INVENTORY AND
PRESERVATION STUDY*

PROJECT LOCATION
FIGURE #1

-  Project Location
-  Study Area



SCALE 1:600



MAP DRAWING INFORMATION:
BASEMAP IMAGERY PROVIDED BY ESRI










MAP CREATED BY: CWM
MAP CHECKED BY: LG
MAP PROJECTION: NAD 83 / UTM Zone 17N



PROJECT: 23-7174
STATUS: DRAFT
DATE: 2024-04-24

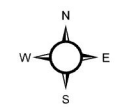
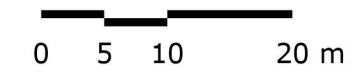
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TREE INVENTORY AND PRESERVATION STUDY

TREE INVENTORY
FIGURE #2

-  Project Location
-  Study Area
-  Tree Location (Retained)
-  Tree Location (Removed)
-  Critical Root Zone
-  Site Plan
-  Parking Lot
-  Grass
-  Proposed Building



SCALE 1:600

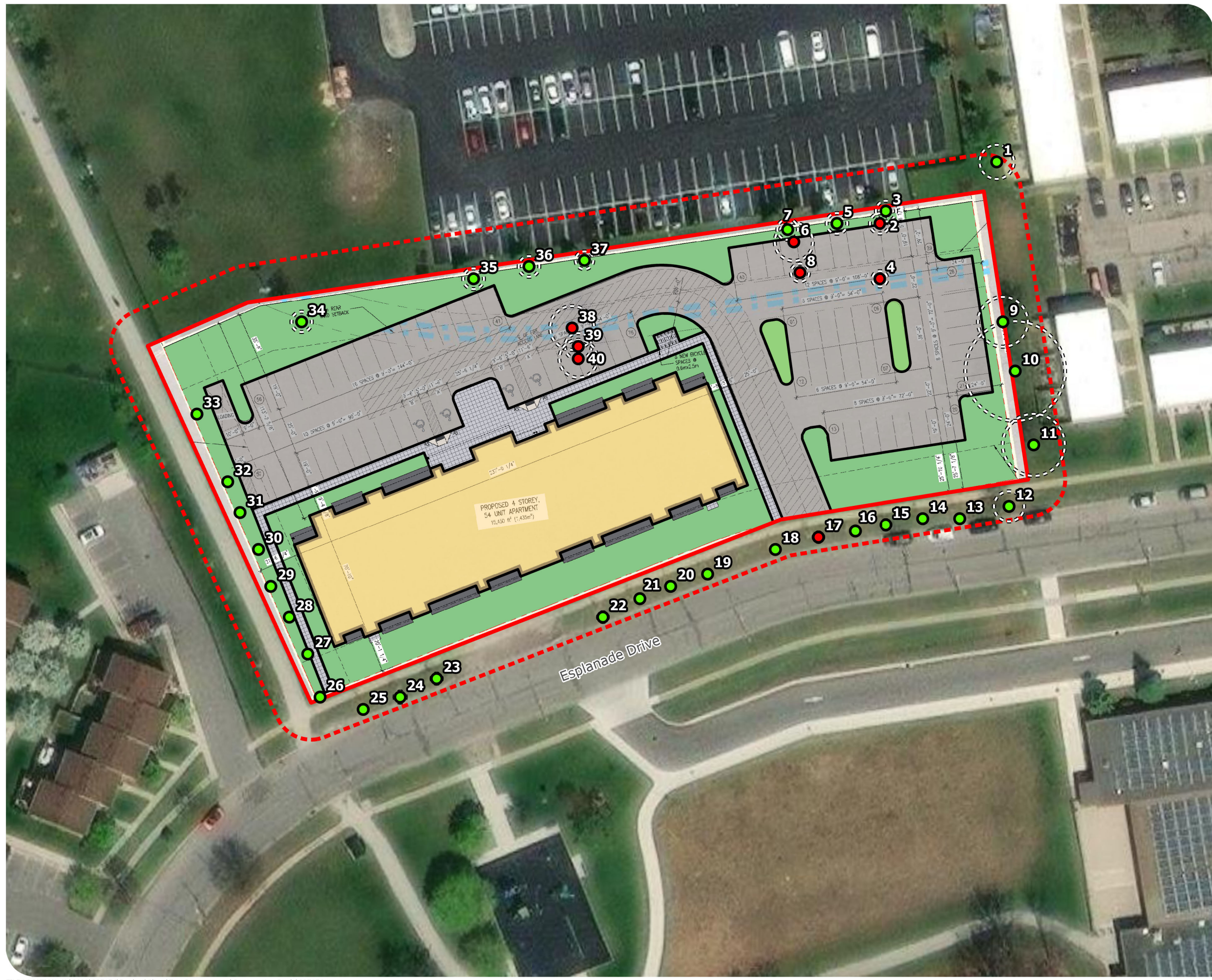


MAP DRAWING INFORMATION:
 BASEMAP IMAGERY PROVIDED BY ESRI

MAP CREATED BY: CWM; AVA
 MAP CHECKED BY: BTM
 MAP PROJECTION: NAD 83 / UTM Zone 17N



PROJECT: 23-7174
 STATUS: DRAFT
 DATE: 2024-09-09



Appendix B

Tree Photographs



Tree 1: Silver Maple



Tree 2 (left): White Elm
Tree 3 (right): Blue Spruce



Tree 4: White Elm



Tree 5: Blue Spruce



Tree 6 (left): Eastern Cottonwood
Tree 7 (right): Blue Spruce



Tree 8: White Elm



Tree 9: Silver Maple



Tree 10: Silver Maple



Tree 11: Silver Maple



Tree 12: Little-leaved Linden



Tree 13: Freeman's Maple



Tree 14: Sugar Maple



Tree 15: Thornless Honey-locust



Tree 16: Common Hackberry



Tree 17: Freeman's Maple



Tree 18: Sugar Maple



Tree 19: Kentucky Coffee-tree



Tree 20: Freeman's Maple



Tree 21: Freeman's Maple



Tree 22: Sugar Maple



Tree 23: Freeman's Maple



Tree 24: Sugar Maple



Tree 25: Sugar Maple



Tree 26: Thornless Honey-locust



Tree 27: Sugar Maple



Tree 28: Sugar Maple



Tree 29: Sugar Maple



Tree 30: Sugar Maple



Tree 31: Sugar Maple



Tree 32: Tulip Tree



Tree 33: Freeman's Maple



Tree 34: White Elm



Tree 35: Blue Spruce



Tree 36: Blue Spruce



Tree 37: Blue Spruce



Tree 38 (right), 39 (centre), and 40 (left): White Elm



Looking east from the centre of the Project Location. Note: Regularly maintained lawn.



Looking west from the centre of the Project Location. Note: Regularly maintained lawn.

Appendix C

Detailed Tree Inventory

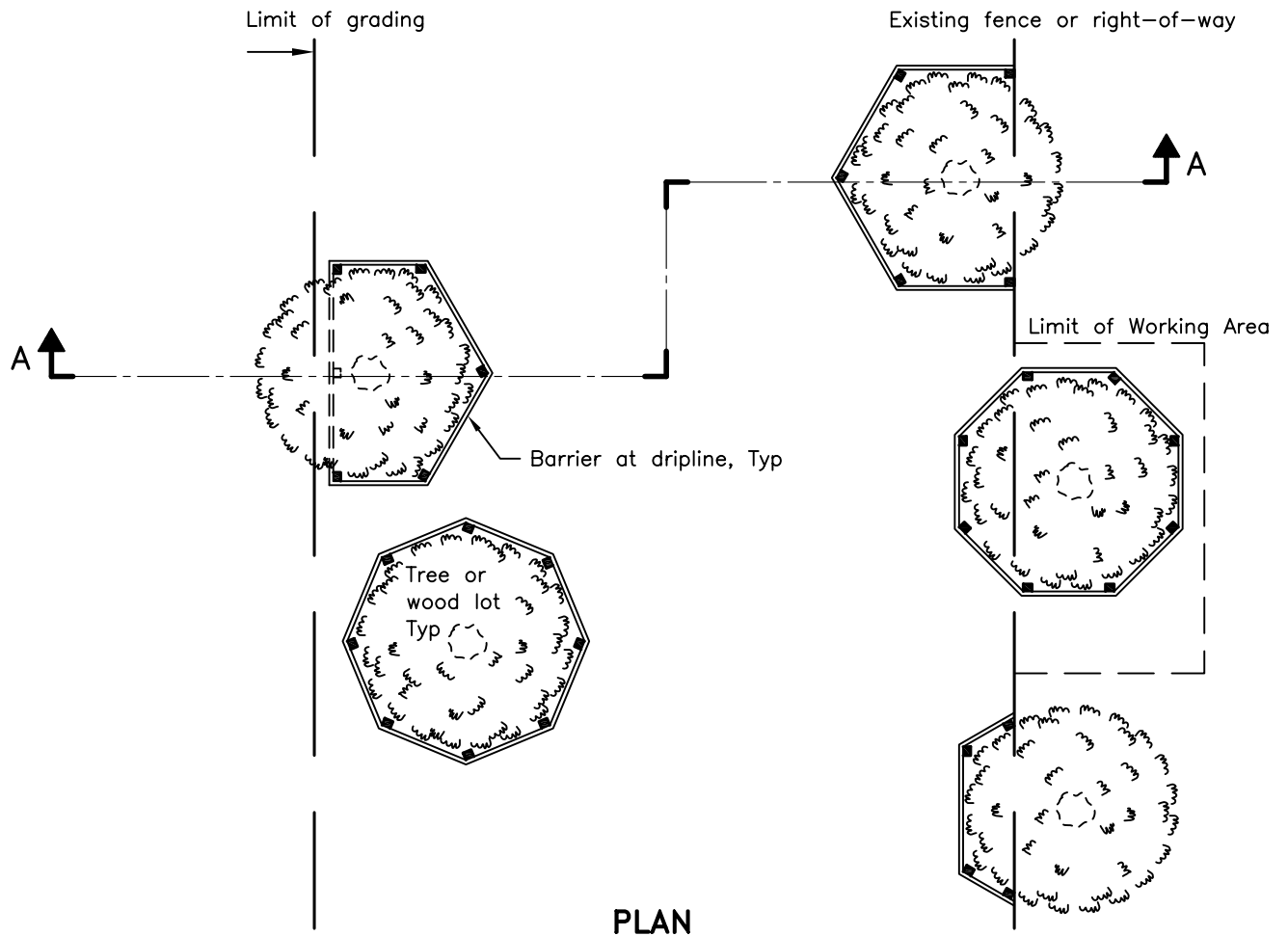
Appendix C - Detailed Tree Inventory

Figure ID	Scientific Name	Common Name	DBH (cm)	Critical Root Zone/Tree Protection Zone (m)	Condition	Level 2 Assessment Notes	Action	Rationale for Removal or Preservation
1	<i>Acer saccharinum</i>	Silver Maple	23.1,19.5	2.77	Good		Retain	Not within construction footprint
2	<i>Ulmus americana</i>	White Elm	13.7	1.64	Good		Remove	Within construction footprint
3	<i>Picea pungens</i>	Blue Spruce	~14	1.68	Good		Retain	Not within construction footprint
4	<i>Ulmus americana</i>	White Elm	10.4	1.25	Good		Remove	Within construction footprint
5	<i>Picea pungens</i>	Blue Spruce	~14	1.68	Good		Retain	Not within construction footprint
6	<i>Populus deltoides</i> ssp. <i>Deltoides</i>	Eastern Cottonwood	25.8	3.10	Good		Remove	Within construction footprint
7	<i>Picea pungens</i>	Blue Spruce	~14	1.68	Good		Retain	Not within construction footprint
8	<i>Ulmus americana</i>	White Elm	12.2,11.5,10.8	1.46	Good		Remove	Within construction footprint
9	<i>Acer saccharinum</i>	Silver Maple	33.7	4.04	Good		Retain	Not within construction footprint
10	<i>Acer saccharinum</i>	Silver Maple	67.5	8.10	Good		Retain	Not within construction footprint
11	<i>Acer saccharinum</i>	Silver Maple	42	5.04	Good		Retain	Not within construction footprint
12	<i>Tilia cordata</i>	Little-leaved Linden	20.4	2.45	Good		Retain	Not within construction footprint
13	<i>Acer x freemanii</i>	Freeman's Maple	4.7	0.56	Good		Retain	Not within construction footprint
14	<i>Acer saccharum</i>	Sugar Maple	5.9	0.71	Good		Retain	Not within construction footprint
15	<i>Gleditsia triacanthos inermis</i>	Thornless Honey-locust	6.4	0.77	Good		Retain	Not within construction footprint
16	<i>Celtis occidentalis</i>	Common Hackberry	4.3	0.52	Good		Retain	Not within construction footprint
17	<i>Acer x freemanii</i>	Freeman's Maple	6.5	0.78	Good		Remove	City-Owned, Within construction footprint
18	<i>Acer saccharum</i>	Sugar Maple	4.4	0.53	Good		Retain	Not within construction footprint
19	<i>Gymnocladus dioicus</i>	Kentucky Coffee-tree	4.2	0.50	Good		Retain	Not within construction footprint
20	<i>Acer x freemanii</i>	Freeman's Maple	5.2	0.62	Good		Retain	Not within construction footprint
21	<i>Acer x freemanii</i>	Freeman's Maple	5.9	0.71	Good		Retain	Not within construction footprint
22	<i>Acer saccharum</i>	Sugar Maple	6.6	0.79	Good		Retain	Not within construction footprint
23	<i>Acer x freemanii</i>	Freeman's Maple	6.9	0.83	Good		Retain	Not within construction footprint
24	<i>Acer saccharum</i>	Sugar Maple	7.6	0.91	Good		Retain	Not within construction footprint
25	<i>Acer saccharum</i>	Sugar Maple	5.8	0.70	Good		Retain	Not within construction footprint
26	<i>Gleditsia triacanthos inermis</i>	Thornless Honey-locust	5.5	0.66	Good		Retain	Not within construction footprint
27	<i>Acer saccharum</i>	Sugar Maple	5.8	0.70	Good		Retain	Not within construction footprint
28	<i>Acer saccharum</i>	Sugar Maple	5.3	0.64	Good		Retain	Not within construction footprint

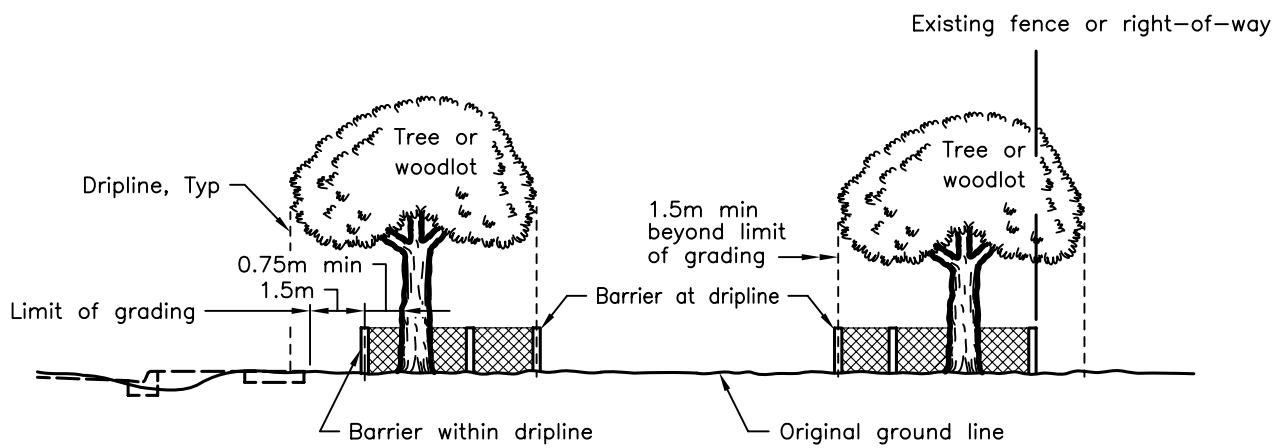
Figure ID	Scientific Name	Common Name	DBH (cm)	Critical Root Zone/Tree Protection Zone (m)	Condition	Level 2 Assessment Notes	Action	Rationale for Removal or Preservation
29	<i>Acer saccharum</i>	Sugar Maple	5	0.60	Good		Retain	Not within construction footprint
30	<i>Acer saccharum</i>	Sugar Maple	3.8,2.6,2.3	0.46	Good		Retain	Not within construction footprint
31	<i>Acer saccharum</i>	Sugar Maple	5.4	0.65	Good		Retain	Not within construction footprint
32	<i>Liriodendron tulipifera</i>	Tulip Tree	3	0.36	Poor	Snapped top	Retain	Not within construction footprint
33	<i>Acer x freemanii</i>	Freeman's Maple	N/A	N/A	Poor	No main stem above breast height	Retain	Not within construction footprint
34	<i>Ulmus americana</i>	White Elm	13.8,13.4,12.3,11.5	1.66	Good		Retain	Not within construction footprint
35	<i>Picea pungens</i>	Blue Spruce	~14	1.68	Good		Retain	Not within construction footprint
36	<i>Picea pungens</i>	Blue Spruce	~14	1.68	Good		Retain	Not within construction footprint
37	<i>Picea pungens</i>	Blue Spruce	~12	1.44	Good		Retain	Not within construction footprint
38	<i>Ulmus americana</i>	White Elm	29.7,27.3,20.8	3.56	Good		Remove	Within construction footprint
39	<i>Ulmus americana</i>	White Elm	18	2.16	Good		Remove	Within construction footprint
40	<i>Ulmus americana</i>	White Elm	25.6,20.5,19.9	3.07	Good		Remove	Within construction footprint

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