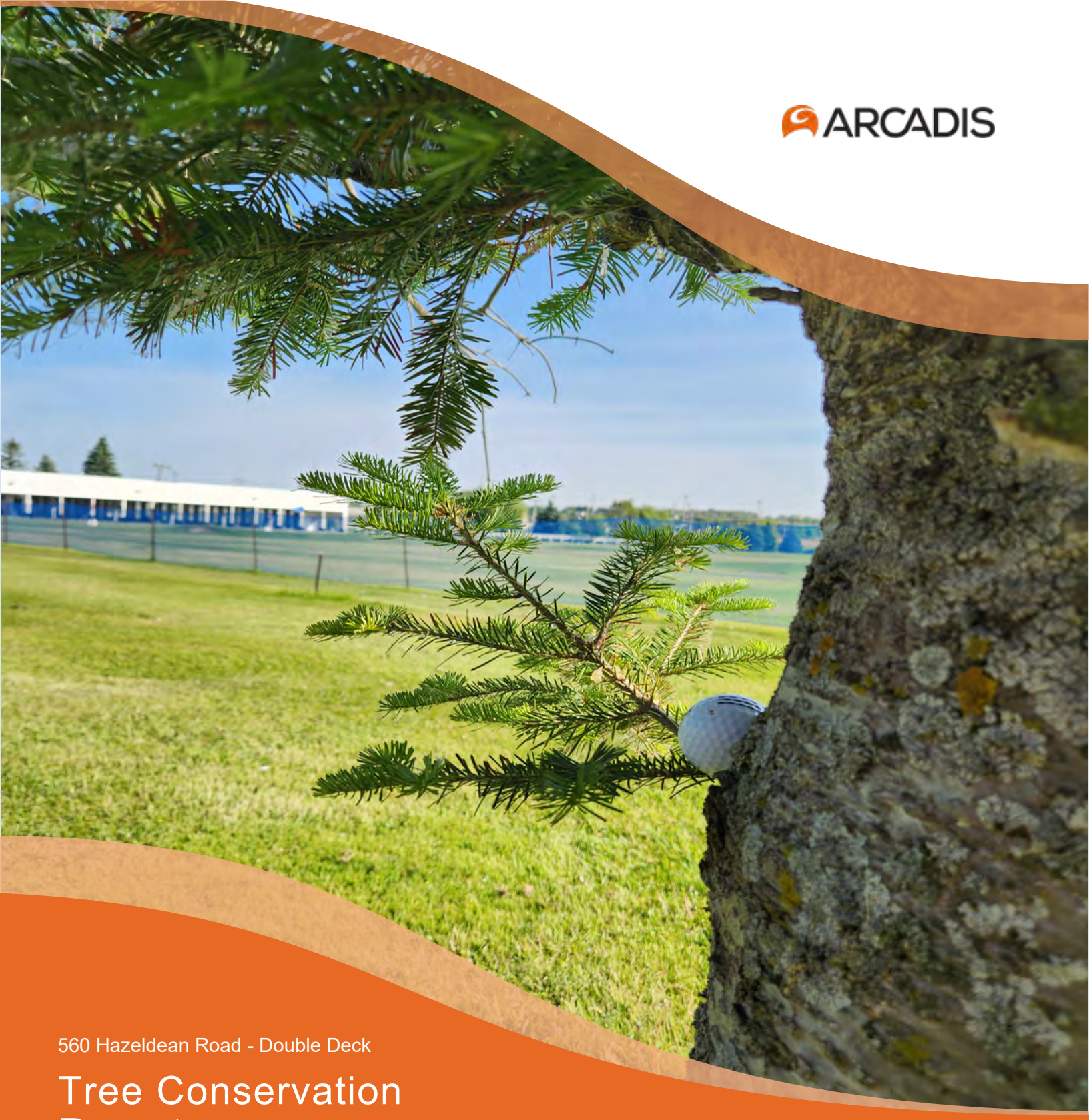

560 Hazeldean Road - Double Deck

Tree Conservation Report

Submitted to Regional Group
1737 Woodward Dr, Second Floor, Ottawa, ON K2C 0P9

Prepared by Arcadis Professional Services (Canada) Inc.
333 Preston Street, Suite 500, Ottawa ON, K1S 5N4

Project Number: 30282688
Submission Date: August 2025

Double Deck Regional Inc (c/o Regional Group)

Tree Conservation Report

Double Deck - 560 Hazeldean Road

August 2025

Tree Conservation Report

Double Deck – 560 Hazeldean Road

August 2025

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Version Control (optional)

Revision No.	Reviewed by	Date Issued	Description
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002	AZ	July 22, 2025	Draft for City Review

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Appendices

Appendix A. Tree Inventory and Protection Plan

Appendix B. City of Ottawa Tree Protection Specification

1 Introduction

Arcadis Canada Inc. (Arcadis) has been retained by Double Deck Regional Inc (c/o Regional Group) (the 'Client') to prepare a Tree Conservation Report (TCR) for the proposed Double Deck residential development located at 560 Hazeldean Road, in Stittsville, Lot 29, Concession 11, City of Ottawa, Ontario (the Subject Site).

1.1 Project Location and Description

The Subject Site is approximately 8.65 ha and generally irregular in shape. The property is located south of Hazeldean Road, approximately 0.5 km west of Terry Fox Drive, and is situated adjacent to the Carp River. The Subject Site is currently operated as a commercial business called Kevin Haime Golf Centre consisting of a golf school and driving range.

The Subject Site property is within the City of Ottawa's Existing Urban Boundary, outside of the Greenbelt, designated as Evolving Neighbourhood Overlay (Schedule B5) as designated in the City's Official Plan (City OP). The eastern extents are located within the Mississippi Valley Conservation Authority (MVCA) Regulation Limit and is designated as 1:100 Floodplain Limits due to proximity of the Carp River (located approximately 20 m east of the Subject Site).

The Double Deck Regional Inc (c/o Regional Group) has proposed the construction of low-rise residential dwellings with associated asphalt-paved local roads, driveways, and landscaped areas within the central and southern portions of the Site. The northern portion of the Site, along Hazeldean Road, is currently listed as a "Future Residential Block" with no specific development plans currently. From preliminary discussions with the civil engineer, it is understood that proposed grade raises at the Site will be in the approximate range of 1.5 m to 2.0 m.

Refer to **Figure 1** on the following page to view the Site Location.

1.2 Objective

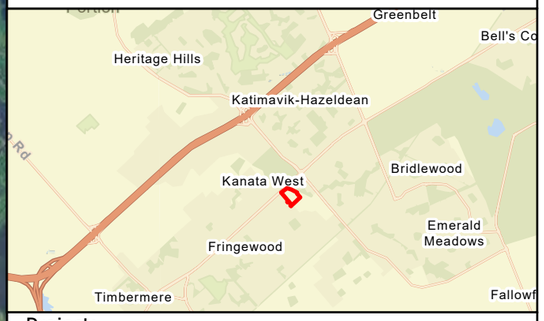
This Tree Conservation Report (TCR) follows the *City of Ottawa Tree Conservation Report Guidelines* (City of Ottawa, 2021), which required a site visit to identify trees larger than 10 cm in diameter that could be impacted by the project. Information on the individual trees, their species, size (diameter-at-breast height, dbh) and health were recorded. The TCR summarizes the results, identifies the ownership of the trees, and based on the current design plans provides commentary on which trees could be retained and those that are recommended to be pruned or removed. This information is depicted on the mandatory Map 1 and Map 2 of the TCR, as per the guidelines. In the paragraphs below, we have outlined the field methodology and findings of the tree inventory. This report will help determine the project's potential impact on existing trees and provide general recommendations to avoid and/or mitigate tree loss and injury.

Legend

- Site Boundary
- Study Area (120m)

0 25 50 100 150 200 Meters

Scale: 1:3,000



Project:

Double Deck - 560 Hazeldean Road

Title:

Site and Study Area

Prepared By:

ARCADIS Design & Consultancy for natural and built assets

Project: 30282688

Date: 7/11/2025

Figure: 1

2 City of Ottawa Tree Protection By-Law

The Site is located within the City of Ottawa's Tree Protection By-law No. 2020-340 (January 1, 2021) limits. The intent of this By-Law is to respect the protection of municipal trees and municipal natural areas in the City of Ottawa and trees on private property in the urban area of the City of Ottawa.

Under the Tree Protection By-law, the following protected trees cannot be injured or removed without a tree permit from the city:

- *All City-owned trees throughout the urban and rural area.*
- *All trees 10 cm or more in diameter at breast height on private properties within the urban area that are subject to a Planning Act application for Site Plan, Plan of Subdivision, or Plan of Condominium.*
- *All trees 10 cm or more in diameter at breast height on private properties within the urban area that are over 1 hectare in size.*
- *All distinctive trees on private properties 1 hectare or less in size, where distinctive trees are defined as:*
    - *Trees measuring 30 cm or more in diameter at breast height within the City's inner urban area.*
    - *Trees measuring 50 cm or more in diameter at breast height within the City's suburban area.*

The Tree Protection By-law requires permits to be obtained before City-owned trees or protected privately owned trees are removed. It also sets out requirements for compensation to be provided when trees are removed, so that they can be replaced.

A Tree Conservation Report (TCR) is required as a part of the application package for all Plans of Subdivision, Site Plan Control Applications, Common Elements Condominium Applications, and Vacant Land Condominium Applications where there is a tree of 10 centimeters in diameter or greater on the site and/or if there is a tree on an adjacent site that has a Critical Root Zone (CRZ) extending onto the development site. The purpose of the TCR is to demonstrate how tree cover will be retained and protected on the Site, including mature trees, stands of trees, and hedgerows, using a design with nature approach. A design with nature approach incorporates the natural features of a site into the design and engineering of a proposed development. The TCR also shows which trees must be removed on the site to accommodate the proposed development.

3 Limitations

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in Chapter 4 (Data Collection) of the *Council of Tree and Landscape Appraisers Guide for Plant Appraisal, 10th Edition, Second Printing* (2020). The trees observed were not climbed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year the inspection took place.

As trees are living organisms, their health and vigor continually change over time due to seasonal variations, changes in site conditions, and other factors. For this reason, the assessment presented in this report is valid at the time of inspection, and no guarantee is made about the continued health of trees that are deemed to be in good condition. It is recommended that the trees be reassessed periodically to identify changes in condition. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

4 Methodology

The tree inventory was undertaken on June 16, 2025. Trees were numbered, identified, measured, and assessed for condition. Information collected on the individual trees included:

- Species
- Diameter at breast height (DBH)
- Approximate crown spread
- Condition

The Tree Inventory and Assessment Table containing this information is included in **Appendix A**. Mandatory Map 1 as per City of Ottawa, 2021, displayed in **Figure 2** below, depicts the locations of the numbered trees assessed. The assessment methodology is outlined in the sections below.

4.1 Tree Size

Size refers to trunk diameter at breast height (DBH or caliper) measured in centimeters (cm) at 1.4 meters (m) above the ground. Where trees had more than one trunk from the base, the size of each trunk was recorded. Where trees forked into codominant trunks the diameter was measured at the narrowest point below the fork.

4.2 Tree Assessment

The assessment involved a visual examination of the above-ground parts of each tree. The crown, trunk, and root structure of each tree were observed and assessed noting any abiotic and/or biotic disorders as well as structural defects present. Several structural defects and health problems are included in the Tree Inventory and Assessment Table (**Appendix A**). The following list provides an explanation of the short forms used in the table of the eleven deficiencies observed on Site:

- DB - Dieback refers to the ends of branches dying, which is often associated with root problems.
- SBR - Sunken areas under scaffold branches is often an indication of internal decay.
- BRF - Bulging root flare can occur on trees growing in soils with poor drainage.
- COD - Codominant leaders (2 trunks or branches of approximately equal size) often have narrow branch angles and are associated with weak branch attachment. Strong branch attachments occur between 2 limbs of unequal size with enough space for branch enlargement and formation of a branch bark ridge.
- EXR - Exposed surface roots can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.
- LE - A tree with a lean can be more susceptible to windthrow and soil failure. Self-correcting lean refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.
- HSS - Heavy seed set, or an abundance of seed production, can be the result of a stressed tree putting energy reserves into seed production in an effort to reproduce while it is still able.
- UC - Unbalanced Crown is a tree's crown that is much more extensive in one direction than another, often due to competition from the crown of a nearby tree or exposure.

- W – Woundwood is the thickened tissue growing around the edges of a wound. The rate of its development can be a sign of the tree's vigour.
- MEC – Mechanical Damage is a generalized term to describe damage to vegetation from using equipment and from weather related events. Damage to vegetation from equipment can be simple carelessness or incorrect use of the equipment.
- EAB – Emerald Ash Borer refers to a species of beetle native to East Asia that feeds on all species ash trees (Fraxinus spp.) during its larval stage. Typical symptoms of infection include heavy seed set, dieback, splitting bark, and adventitious shoots. Almost all infected ash trees will die within a few years of infection.

4.3 Tree Condition

Each tree was given an overall health condition rating of: Excellent, Good, Fair, Poor, or Dead. The following is a summary of how the ratings are determined:

- VERY GOOD: No apparent health problems; good structural form.
- GOOD: Minor problems with health and/or structural form.
- FAIR: Significant problems with health and/or structural form.
- POOR: Major problems with health and structural form.
- DEAD: Dead.

4.4 Tree Ownership

All trees inventoried are located on private property, owned by the Client, and are situated at 560 Hazeldean Road.

4.5 Tree Protection and Impact Analysis

The Critical Root Zone (CRZ) was determined using the *City of Ottawa Tree Conservation Report Guidelines* (City of Ottawa, 2021). The CRZ is established as 10 cm from the trunk of a tree for every cm of trunk DBH.

The minimum CRZ of each tree canopy is illustrated on **Figure 3**: Mandatory Map 2 as per City of Ottawa, 2021, to help determine possible injury and branch pruning that may be required. The Deficiency column of the Tree Inventory and Assessment Table (**Appendix A**) also includes notes about tree form and canopy location that can help determine any pruning that may be required to accommodate construction equipment.

Using data collected during the tree inventory and assessment, drawings showing the tree locations (collected through topographic survey), and the proposed development footprint and anticipated area of impact, tree impact analysis was completed, resulting in recommendations to Retain or Remove trees. Tree impact and associated recommendations is described in Section 7, as well as included in the Tree Inventory and Assessment Table in **Appendix A** and displayed on **Figure 3**.

For all trees to be retained, tree protection fencing must be installed to separate trees from the work area. Tree protection fencing must be installed no closer to the trunk than the Critical Root Zone but should be placed as far as possible from the tree, as displayed in **Figure 3**.

5 Existing Conditions

The dates, timing, and environmental conditions at the time of the assessments are presented below in **Table 1**.

Table 1: Site Investigations Details

Date	Start/End Time	Survey Intent	Weather Conditions
2025/06/16	0730-1330	Visual assessment of all trees ≥10 cm dbh in adjacent areas	Temperature: 19°C Cloud cover / Precipitation: Clear skies, Light wind

The Site is flat with no presence of steep slopes, valleylands or escarpments. There are no valued woodlands designated as Natural Environment Areas, or significant woodlands on or adjacent the Site. There are no rare communities, or other unique ecological features (i.e., Provincially Significant Wetlands, Area's of Natural and Scientific Interest).

The Study Area is located within the Mississippi Valley Conservation Authority (MVA) jurisdiction and associated watersheds (MVCA 2025). Based on the background review, the primary constraint to development for this Project is the location of half of the Subject Site within the MVCA Regulated Area and the 1:100-year Floodplain. The Carp River is approximately 20 m east of the Subject Site boundary.

Seven wetland ecosites were identified within the Study Area associated with the Carp River (three meadow marsh communities and four swamps communities). One of the deciduous swamp communities, located in the southern extents of the Site, is identified by the city as an Urban Natural Feature. According to the most recent Site Plan (Draft Plan of Subdivision; **Figure 3**), these wetland features are to be retained, and Project activities are expected to adhere to applicable environmental protection policies and guidelines (e.g., *City of Ottawa Official Plan*).

Four headwater drainage features were identified within the Subject Site. HDF-1, HDF-2, and HDF-3 were provided with management recommendations of "No Management Required". HDF-4 was classified as "Protection"; however, this feature is not anticipated to be impacted by the proposed development.

No SAR were observed within the Subject Site boundaries. It has been confirmed that there is suitable habitat for SAR turtles, and day roosting habitat for SAR bats. Basic management recommendations and mitigation measures have been provided in an EIS under separate cover to mitigate the potential impacts to SAR and/or SAR habitat from the proposed development.

The Subject Site is mostly comprised of maintained lawn, with scattered trees and shrubs situated along the western and eastern sides, and northern edge of the property. In the northern portion of the property there is a large, paved parking area, as well as a commercial building, currently operating as the Kevin Haime Golf Centre. The ground surface of the property is relatively flat, sloping gently to the east. The wetland communities are associated with the riparian habitat adjacent to the Carp River, and the Urban Natural Feature is located south of the Site. The adjacent lands to the south, east and west are fully developed (commercial and residential, respectively). Parkland dominates the landscape north of the Site.

A total of 71 individual trees were assessed as part of this inventory. The condition of the trees on Site ranged from Very Good to Dead, approximately 56% of which were in Very Good - Good condition. The most common species are Blue Spruce (34%), White Spruce (28%), and Black Willow (23%).

There are 29 trees that meet the definition of a 'Distinctive Tree' as per Tree Protection By-law No. 2020-340 (any tree located on private property with a DBH of 30 cm or greater, within the inner urban area). There are currently 13 Distinctive trees that require removal based on the proposed Draft Plan of Subdivision.

All trees inventoried on Site along with their designated health condition are displayed in **Figure** 2 below.

Legend

- Site Boundary
- Study Area (120m)

Tree Inventory - General Condition

- Excellent
- Very Good
- Good
- Fair
- Poor
- Dead
- Snag

Ecological Land Classification

- 1 - Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)
- 2 - Narrow-leaved Sedge Graminoid Mineral Meadow Marsh (MAMM1-9)
- 3 - Mixed Meadow (MEMM)
- 4 - Fresh Moist Mixed Meadow (MEMM4)
- 5 - Open Water (OA)
- 6 - Thicket Swamp (SWT)
- 7 - Willow Mineral Deciduous Thicket Swamp (SWTM3)
- 8 - Meadowsweet Mineral Deciduous Thicket Swamp (SWTM5-7)
- 9 - Deciduous Swamp (SWD)
- 10 - Deciduous Woodland (WOD)
- 11 - Meadow Marsh (MAM)
- 12 - Stormwater Management Pond (SWMP)
- 13 - Golf Course (CGL_1)
- 14 - Recreational (CGL_4)
- 15 - Constructed (CV)
- 16 - Business Sector (CVC_1)
- 17 - Transportation (CVI_1)
- 18 - Low Density Residential (CVR_1)

0 25 50 100 150 200

Meters

Scale: 1:3,000

Project:

Double Deck - 560 Hazeldean Road

Title:

Current Vegetation

(Map 1 as per City Guidelines)

Prepared By:

ARCADIS Design & Consultancy for natural and built assets

Project: 30282688

Date: 8/5/2025

Figure: 2

6 Description of the Development Proposal

According to the most recent Draft Plan of Subdivision, the Double Deck Regional Inc (c/o Regional Group) has proposed the construction of low-rise residential dwellings with associated asphalt-paved local roads, driveways, and landscaped areas within the central and southern portions of the Site. The northern portion of the Site, along Hazeldean Road, is currently listed as a “Future Residential Block” with no specific development plans currently.

Refer to **Figure 3** below for the proposed Site Plan.

6.1 Construction Activities

Based on the Draft Plan of Subdivision the development of this property will include the following major Project components:

- Surveying and staking out the development;
- Clearing of vegetation, excavation, grading, and site elevation to accommodate construction in the floodplain hazard area;
- Installation of stormwater drainage network and related infrastructure;
- Excavation to accommodate underground utilities including water, sewer, gas, and hydro;
- Construction of roads, homes, and condos; and
- Landscaping and fencing.

7 Impact Assessment and Recommendations

7.1 Impacts on Trees

Based on the conditions of the trees and extent of the proposed construction limits, **Table 2** summarizes the impact and recommended actions of the 71 trees assessed within the Site. It is anticipated that 39 trees >10 cm diameter at breast height (DBH) will need to be removed. These details are depicted in **Figure 3**: Tree Impact Assessment and Recommendation (Mandatory Map 2 as per the City of Ottawa, 2021) and outlined in the Tree Inventory and Assessment Table included in **Appendix A**.

As the northern portion of the Site, along Hazeldean Road, is currently listed as a “Future Residential Block” with no specific development plans, tree removals in this area are anticipated to occur later than the trees proposed for removal situated in the central and southern portions of the Site. As a result, 15 trees, numbers 25-31, and 64-71 will remain on Site until the design plans for the “Future Residential Block” are finalized and construction in this area is initiated.

Refer to **Section 8.2** below for information on measures recommended to protect all remaining trees within the Site prior to and during construction.

Table 2: Impact Assessment and Recommendations for Trees on Site

Trees to be Removed	Trees to be Retained
39	32

8 Mitigation Measures and Construction Management

8.1 Tree Removal

Based on the proposed project design and existing conditions of the trees on site, 17 trees have been recommended for removal. The following recommendations are provided:

- Retain a Certified Arborist during site layout operations to confirm recommended tree removals, pruning, and tree protection fencing in proximity to the construction limits.

8.2 Tree Protection Measures

The most typical construction damage to trees is root damage from compaction and severance. While the drip line of a tree's canopy is typically thought to be associated with the root area, the root zones can extend significantly beyond the drip line of the tree, sometimes up to 2 or 3 times the height of the tree. Some of the trees inventoried are growing close to the edge of proposed construction and will be at risk of contact with, and damage from, heavy equipment. To protect trees, grade changes and construction activities that could cause soil compaction should generally be kept away from trees as much as possible.

To successfully preserve trees that are recommended for on-site retention, the following series of mitigation measures is recommended. These recommended measures largely center on the minimum CRZ of trees (The CRZ is calculated as DBH x 10 cm), as defined by the City's Tree Conservation Report Guidelines. The following measures are recommended to protect the CRZ of all trees slated for retention and/or impact:

- Delineation of the disturbance limits within work areas will be clearly defined in drawings and on the site prior to construction.
- Install Tree Protection Fencing prior to commencement of construction activities, and retain fencing until construction activities have been completed, as per City of Ottawa's Tree Protection (By-law No. 2020-340), Part VI:
    - Tree protection fencing shall be at least 1.2 m in height and installed in such a way that the fence cannot be altered as depicted in **Figure 3**.
    - Refer to **Appendix B** for the City of Ottawa's Tree Protection Fencing Specification.
- Ensure that site clearing is carried out only in areas where it is specifically required, and that the areas to be cleared are carefully and clearly delineated.
- Do not place any material or equipment within the CRZ of a tree.
- Do not raise or lower the existing grade within the CRZ of a tree.
- Do not extend any hard surface or significantly change landscaping.

- If the construction will have to encroach into a tree's minimum CRZ, installing a temporary layer of 150 mm deep partially composed wood chips, or mulch over the root zone can help to protect roots from compaction damage, and conserve soil moisture levels.
- Equipment and materials should not be stored near trees.
- Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy.
- Do not attach any signs, notices, or posters to trees.

8.3 Branch and Root Pruning

- If branches are likely to hang in the way of passing equipment, the branches should be pruned by a Certified Arborist or Registered Forester to avoid tearing and undue injury to the tree.
- All pruning work must be performed under the supervision and guidance of a qualified tree professional in accordance with the latest ANSI A300 Pruning Standards and best management practices identified by the International Society of Arboriculture.
- Do not damage the root system, trunk, or branches of any tree; if any roots are encountered during excavation while working outside the CRZ, they should be cut off cleanly with sharp pruning tools rather than allow them to be torn by large equipment; clean cuts will help to minimize decay and entry points for disease.
- All exposed roots of trees to be retained should be covered in a minimum of 5 cm of firm soil within 24 hours of exposure.
- If root pruning is implemented, the crown of the tree should be reduced proportionately under the direction of a Certified Arborist or Registered Forester, to decrease wind sail. Pruning should be kept to thinning cuts (no major limb removal), and crowns should be monitored, and maintenance carried out for two (2) years after root pruning to remove any dieback under the direction of a Certified Arborist or Registered Forester.

8.4 Tree Planting Recommendations

For new tree planting(s) the Landscape Plan considerations may include:

- Native plantings within the development footprint should be incorporated, where feasible.
    - Specifically, the portion of the current driving range that will be abandoned within the 1:100-year floodplain limits will include an appropriate native wetland seed mix interspersed with some potted or bare root shrub plantings to stabilize this area and encourage the adjacent wetland features return to a naturalized state. The soil containing the manicured grass will be reused on site as fill and re-seeded to prevent the grass from re-establishing and spreading.
    - The Landscape Plan shall include details and specifications addressing vegetation removal, site preparation, invasive species management, and planting means and methods.
- Where post-development growing conditions and landscape management requirements are not favorable for native species, the use of known invasive species shall be restricted.
- The species and health of existing tree as an indicator of appropriateness.
- The age of existing trees and potential for succession planting.
- Diversity of species in newly planted and existing trees.
- Micro-climatic conditions.

Legend

- Site Boundary
- Draft Plan of Subdivision (Annis O'Sullivan. Aug, 2025)
- Tree Protection Fencing

Tree Recommendation

- Retain
- Remove
- Critical Root Zone (CRZ)

0 15 30 60 90 120 Meters

Scale: 1:1,750

Project:

Double Deck - 560 Hazeldean Road

Title:

Tree Impact Assessment and Recommendations

(Map 2 as per City Guidelines)

Prepared By:

ARCADIS Design & Consultancy for natural and built assets

Project: 30282688

Date: 8/11/2025

Figure: 3

9 Permits and Approvals

The City of Ottawa's Tree Protection By-law No. 2020-340 describes the rules that govern tree ownership in Ottawa and the responsibility of tree maintenance, including administration and enforcement. As per Part IV: Sections 42 – 44 Prohibition: *No person shall injure or destroy a tree without a permit.* Sections 45 to 48 - Application for tree permit stipulates the process of applying for a permit under this by law.

Therefore, it is recommended that consultation should be undertaken with the city prior to construction to confirm the requirements for tree removal permits associated with the municipal tree protection by law. Where required, tree removal permits must be obtained from the city prior to the start of construction.

10 Summary

Seventy-one trees were inventoried within the proposed residential development area located at 560 Hazeldean Road, in Stittsville, Lot 29, Concession 11, City of Ottawa, Ontario. Based on the proposed Draft Plan of Subdivision, the inventory resulted in 32 trees to be retained, and 39 trees proposed for removal.

As the northern portion of the Site, along Hazeldean Road, is currently listed as a "Future Residential Block" with no specific development plans, tree removals in this area are anticipated to occur later than the trees proposed for removal situated in the central and southern portions of the Site. As a result, 15 trees, numbers 25-31, and 64-71 will remain on Site until the design plans for the "Future Residential Block" are finalized and construction in this area is initiated.

A list of proposed avoidance and mitigation measures have been included in **Section 8** of this report in relation to tree removals, tree protection, and tree preservation.

Landscape plans will be created separately as part of the development application.

11 Certification and Closure

We certify that all the statements of fact in this assessment are true, complete, and correct to the best of our knowledge and belief, and that they are made in good faith.

Appendix A

Tree Inventory and Protection Plan

Table A1: 560 Hazeldean Road – Double Deck – Tree Impact and Assessment Table

Tree #	Common Name	Scientific Name	No. Stems	DBH (cm) * approx.	Crown Spread (m)	Structural Defects[i]											Condition	Critical Root Zone (m from trunk)	Ownership	Impact / Recommendation
						DB	W	UC	SBR	BRF	LE	EAB	HSS	MEC	EXR	COD				
DD 01	White Spruce	*Picea glauca*	1	25	4	√											Fair	2.5	Private	**Remove**
DD 02	Blue Spruce	*Picea pungens*	1	30	4.5		√				√						Good	3	Private	**Remove**
DD 03	Blue Spruce	*Picea pungens*	1	39	5						√						Very Good	3.9	Private	**Remove**
DD 04	Blue Spruce	*Picea pungens*	3	26	4		√				√						Good	2.6	Private	**Remove**
DD 05	Blue Spruce	*Picea pungens*	1	32	4.5						√						Very Good	3.2	Private	**Remove**
DD 06	Blue Spruce	*Picea pungens*	1	26	4		√			√	√						Fair	2.6	Private	**Remove**
DD 07	White Spruce	*Picea glauca*	1	20	1.5	√				√	√						Poor	2	Private	**Remove**
DD 08	White Spruce	*Picea glauca*	1	29	4	√					√						Fair	2.9	Private	**Remove**
DD 09	White Spruce	*Picea glauca*	1	21	6		√										Very Good	2.1	Private	**Remove**
DD 10	White Spruce	*Picea glauca*	1	20	3	√											Good	2	Private	**Remove**
DD 11	White Spruce	*Picea glauca*	1	23	5	√											Fair	2.3	Private	**Remove**
DD 12	White Spruce	*Picea glauca*	1	20	5												Fair		Private	**Remove**
DD 13	White Spruce	*Picea glauca*	1	18	2	√					√						Poor	1.8	Private	**Remove**
DD 14	Red Pine	*Pinus resinosa*	1	42	5	√					√						Fair	4.2	Private	**Remove**
DD 15	White Spruce	*Picea glauca*	1	19	3				√		√						Good	1.9	Private	**Remove**
DD 16	White Spruce	*Picea glauca*	1	20	3.5				√		√						Good	2	Private	**Remove**
DD 17	White Spruce	*Picea glauca*	1	20	3		√				√						Good	2	Private	**Remove**
DD 18	White Spruce	*Picea glauca*	1	18	2.5	√											Dead	1.8	Private	**Remove**
DD 19	Blue Spruce	*Picea pungens*	1	25	2.5												Very Good	2.5	Private	**Remove**
DD 20	Blue Spruce	*Picea pungens*	1	34	3.5												Very Good	3.4	Private	**Remove**
DD 21	White Spruce	*Picea glauca*	1	25	3.5												Very Good	2.5	Private	**Remove**
DD 22	Blue Spruce	*Picea pungens*	1	32	3.5				√		√						Good	3.2	Private	**Remove**
DD 23	White Spruce	*Picea glauca*	1	28	2.5						√		√				Good	2.8	Private	**Remove**
DD 24	Blue Spruce	*Picea pungens*	1	34	2.5		√										Very Good	3.4	Private	**Remove**
DD 25	Blue Spruce	*Picea pungens*	1	20	2.5												Very Good	2	Private	**Remove**
DD 26	Blue Spruce	*Picea pungens*	1	24	2.5						√						Very Good	2.4	Private	**Remove**
DD 27	Blue Spruce	*Picea pungens*	1	22	2.5						√						Good	2.2	Private	**Remove**
DD 28	Blue Spruce	*Picea pungens*	1	28	2.5												Very Good	2.8	Private	**Remove**
DD 29	White Spruce	*Picea glauca*	3	35	3									√			Good	3.5	Private	**Remove**
DD 30	Blue Spruce	*Picea pungens*	1	21	3												Very Good	2.1	Private	**Remove**
DD 31	Blue Spruce	*Picea pungens*	1	26	2								√				Good	2.6	Private	**Remove**
DD 32	Black Willow	*Salix nigra*	1	37	20						√						Fair	3.7	Private	Retain
DD 33	Black Willow	*Salix nigra*	1	37	18					√							Fair	3.7	Private	Retain
DD 34	Black Willow	*Salix nigra*	3	39	12						√						Fair	3.9	Private	Retain
DD 35	Black Willow	*Salix nigra*	1	28	8			√			√						Fair	2.8	Private	Retain
DD 36	Black Willow	*Salix nigra*	2	29	5			√			√						Fair	2.9	Private	Retain
DD 37	Black Willow	*Salix nigra*	2	41	4			√			√						Fair	4.1	Private	Retain
DD 38	Black Willow	*Salix nigra*	1	41	4			√			√						Fair	4.1	Private	Retain

Tree #	Common Name	Scientific Name	No. Stems	DBH (cm) * approx.	Crown Spread (m)	Structural Defects[i]											Condition	Critical Root Zone (m from trunk)	Ownership	Impact / Recommendation
						DB	W	UC	SBR	BRF	LE	EAB	HSS	MEC	EXR	COD				
DD 39	Black Willow	*Salix nigra*	1	18	5			√			√						Fair	1.8	Private	Retain
DD 40	Black Willow	*Salix nigra*	1	37	5						√						Fair	3.7	Private	Retain
DD 41	Black Willow	*Salix nigra*	3	50	6			√			√						Fair	5	Private	Retain
DD 42	Blue Spruce	*Picea pungens*	1	41	7												Good	4.1	Private	Retain
DD 43	Weeping Birch	*Betula pendula*	1	36	3	√											Good	3.6	Private	Retain
DD 44	Blue Spruce	*Picea pungens*	1	27	3						√						Fair	2.7	Private	Retain
DD 45	Manitoba Maple	*Acer negundo*	1	22	3												Good	2.2	Private	Retain
DD 46	White Spruce	*Picea glauca*	1	21	3				√								Good	2.1	Private	Retain
DD 47	Blue Spruce	*Picea pungens*	1	25	4												Very Good	2.5	Private	Retain
DD 48	Manitoba Maple	*Acer negundo*	1	21	6	√					√						Fair	2.1	Private	Retain
DD 49	Manitoba Maple	*Acer negundo*	1	25	6			√			√						Poor	2.5	Private	Retain
DD 50	White Ash	*Fraxinus americana*	1	14				√				√					Good	1.4	Private	Retain
DD 51	White Ash	*Fraxinus americana*	1	11	5							√					Good	1.1	Private	Retain
DD 52	Black Willow	*Salix nigra*	7	67	9											√	Good	6.7	Private	Retain
DD 53	White Spruce	*Picea glauca*	1	15	3						√						Poor	1.5	Private	Retain
DD 54	Blue Spruce	*Picea pungens*	1	19	3.5								√				Very Good	1.9	Private	Retain
DD 55	White Spruce	*Picea glauca*	1	13	3.5	√											Fair	1.3	Private	Retain
DD 56	White Spruce	*Picea glauca*	1	13	3		√										Fair	1.3	Private	Retain
DD 57	Black Willow	*Salix nigra*	1	64	9						√						Very Good	6.4	Private	Retain
DD 58	Black Willow	*Salix nigra*	1	41	8		√										Good	4.1	Private	Retain
DD 59	Black Willow	*Salix nigra*	1	52	9		√										Fair	5.2	Private	Retain
DD 60	Black Willow	*Salix nigra*	3	61	20		√										Fair	6.1	Private	Retain
DD 61	Black Willow	*Salix nigra*	5	40	7												Good	4	Private	Retain
DD 62	Manitoba Maple	*Acer negundo*	8	56	15	√	√										Good	5.6	Private	Retain
DD 63	American Elm	*Ulmus americana*	1	22	5			√									Very Good	2.2	Private	Retain
DD 64	Kentucky Coffee-tree	*Gymnocladus dioicus*	1	22	4												Very Good	2.2	Private	**Remove**
DD 65	Blue Spruce	*Picea pungens*	1	19	3						√						Fair	1.9	Private	**Remove**
DD 66	Blue Spruce	*Picea pungens*	1	31	3						√		√				Fair	3.1	Private	**Remove**
DD 67	Blue Spruce	*Picea pungens*	1	26	3					√	√						Fair	2.6	Private	**Remove**
DD 68	Blue Spruce	*Picea pungens*	1	38	3		√										Very Good	3.8	Private	**Remove**
DD 69	Blue Spruce	*Picea pungens*	1	39	3												Very Good	3.9	Private	**Remove**
DD 70	White Spruce	*Picea glauca*	1	40	5				√								Good	4	Private	**Remove**
DD 71	Blue Spruce	*Picea pungens*	1	38	3.5				√		√				√		Fair	3.8	Private	**Remove**

i

DB - Dieback refers to the ends of branches dying, which is often associated with root problems.

SBR - Sunken areas under scaffold branches is often an indication of internal decay.

BRF - Bulging root flare can occur on trees growing in soils with poor drainage.

COD - Codominant leaders (2 trunks or branches of approximately equal size) often have narrow branch angles and are associated with weak branch attachment. Strong branch attachments occur between 2 limbs of unequal size with enough space for branch enlargement and formation of a branch bark ridge.

EXR - Exposed surface roots can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.

LE - A tree with a lean can be more susceptible to windthrow and soil failure. Self-correcting lean refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.

HSS - Heavy seed set, or an abundance of seed production, can be the result of a stressed tree putting energy reserves into seed production in an effort to reproduce while it is still able.

UC - Unbalanced Crown is a tree's crown that is much more extensive in one direction than another, often due to competition from the crown of a nearby tree or exposure.

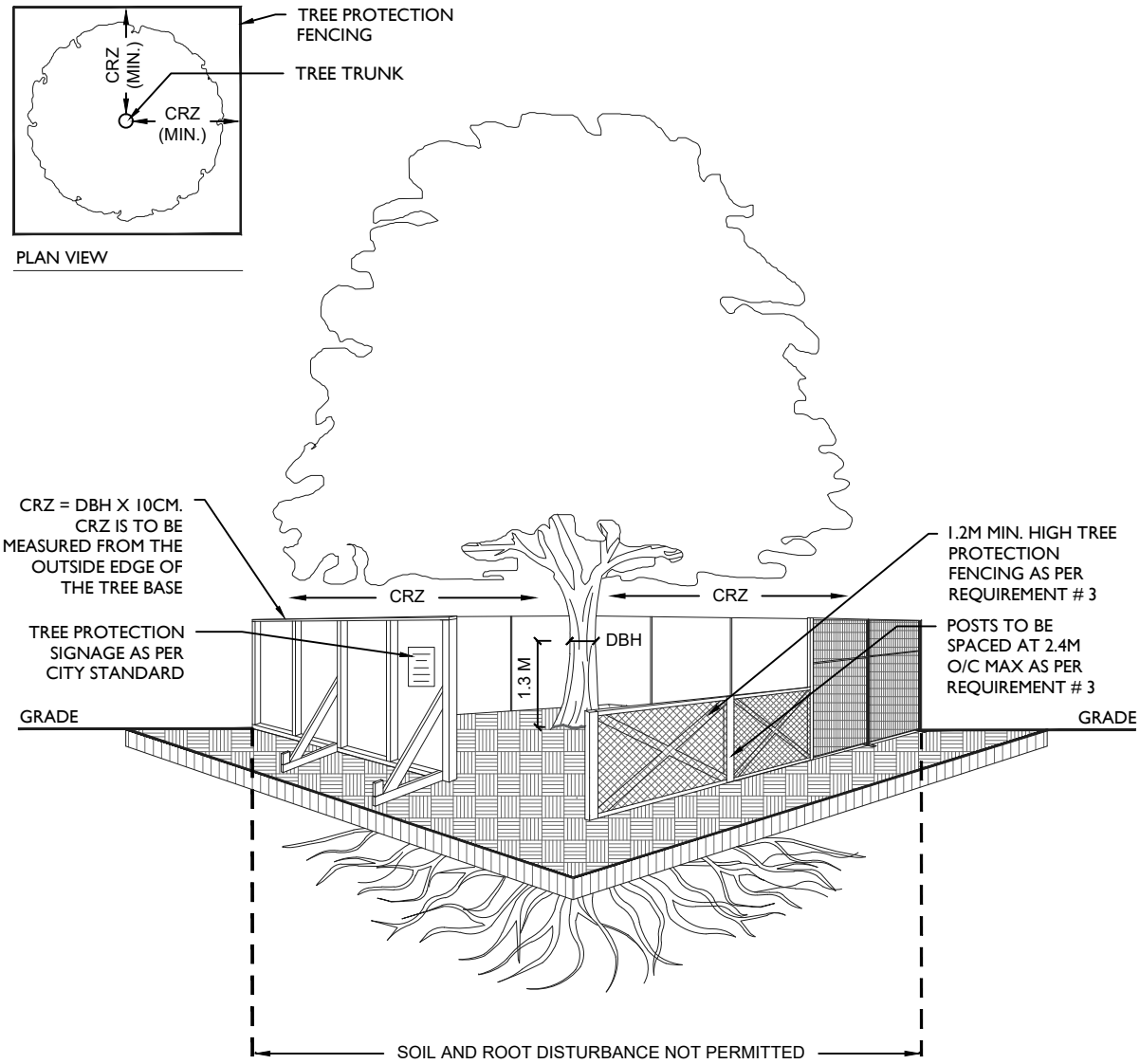
W – Woundwood is the thickened tissue growing around the edges of a wound. The rate of its development can be a sign of the tree's vigour.

MEC – Mechanical Damage is a generalized term to describe damage to vegetation from using equipment and from weather related events. Damage to vegetation from equipment can be simple carelessness or incorrect use of the equipment.

EAB – Emerald Ash Borer refers to a species of beetle native to East Asia that feeds on all species ash trees (Fraxinus spp.) during its larval stage. Typical symptoms of infection include heavy seed set, dieback, splitting bark, and adventitious shoots. Almost all infected ash trees will die within a few years of infection.

Appendix B

Tree Protection Specification (City of Ottawa, 2021)



TREE PROTECTION REQUIREMENTS:

1. PRIOR TO ANY WORK ACTIVITY WITHIN THE CRITICAL ROOT ZONE (CRZ = 10 X DIAMETER) OF A TREE, TREE PROTECTION FENCING MUST BE INSTALLED SURROUNDING THE CRITICAL ROOT ZONE, AND REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.
2. UNLESS PLANS ARE APPROVED BY CITY FORESTRY STAFF, FOR WORK WITHIN THE CRZ:
   - DO NOT PLACE ANY MATERIAL OR EQUIPMENT - INCLUDING OUTHOUSES;
   - DO NOT ATTACH ANY SIGNS, NOTICES OR POSTERS TO ANY TREE;
   - DO NOT RAISE OR LOWER THE EXISTING GRADE;
   - TUNNEL OR BORE WHEN DIGGING;
   - DO NOT DAMAGE THE ROOT SYSTEM, TRUNK, OR BRANCHES OR ANY TREE;
   - ENSURE THAT EXHAUST FUMES FROM ALL EQUIPMENT ARE NOT DIRECTED TOWARD ANY TREE CANOPY.
   - DO NOT EXTEND HARD SURFACE OR SIGNIFICANTLY CHANGE LANDSCAPING
3. TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDING, OR SNOW FENCE ON A 2"X4" WOOD FRAME) WITH POSTS 2.4M APART, SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACING MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. (SEE DETAIL)
4. THE LOCATION OF THE TREE PROTECTION FENCING MUST BE DETERMINED BY AN ARBORIST AND DETAILED ON ANY ASSOCIATED PLANS FOR THE SITE (E.G. TREE CONSERVATION REPORT, TREE INFORMATION REPORT, ETC). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
5. IF THE FENCED TREE PROTECTION AREA MUST BE REDUCED TO FACILITATE CONSTRUCTION, MITIGATION MEASURES MUST BE PRESCRIBED BY AN ARBORIST AND APPROVED BY CITY FORESTRY STAFF. THESE MAY INCLUDE THE PLACEMENT OF PLYWOOD, WOOD CHIPS, OR STEEL PLATING OVER THE ROOTS FOR PROTECTION OR THE PROPER PRUNING AND CARE OF ROOTS WHERE ENCOUNTERED.

THE CITY'S TREE PROTECTION BY-LAW, 2020-340 PROTECTS BOTH CITY-OWNED TREES, CITY-WIDE, AND PRIVATELY-OWNED TREES WITHIN THE URBAN AREA. PLEASE REFER TO WWW.OTTAWA.CA/TREEBYLAW FOR MORE INFORMATION ON HOW THE TREE BY-LAW APPLIES.

ACCESSIBLE FORMATS AND COMMUNICATION SUPPORTS ARE AVAILABLE, UPON REQUEST

Ottawa

TREE PROTECTION SPECIFICATION

TO BE IMPLEMENTED FOR RETAINED TREES, BOTH ON SITE AND ON ADJACENT SITES, PRIOR TO ANY TREE REMOVAL OR SITE WORKS AND MAINTAINED FOR THE DURATION OF WORK ACTIVITIES ON SITE.

SCALE:	NTS
DATE:	MARCH 2021
DRAWING NO.:	1 of 1

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