



Tree Conservation Report

Gladstone Village
933 Gladstone Avenue

May 31, 2021

Prepared for:

Ottawa Community Housing
Corporation

Prepared by:

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Project No. 160401614



TREE CONSERVATION REPORT

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TREE CONSERVATION REPORT

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Prepared by Carina T. Lood
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Carina Lood

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Isabelle Lalonde



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Glossary

Critical Root Zone (CRZ)	Zone under a tree where there should be no disturbance before, during and after construction. The CRZ is established as being 10 centimetres from the trunk of a tree for every centimetre of trunk diameter.
Diameter at Breast Height (DBH)	Diameter of a tree trunk measured at 1.4 metre above ground, standardized by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture. DBH are generally measured in centimetres.
Dieback	Condition in which the ends of the branches are dying.
Distinctive Tree	Any tree with a DBH of 50 centimetres or greater.
Drip Line	Perimeter of the area under a tree delineated by the crown.
Leader	The primary terminal shoot or trunk of a tree.
Sapling	A young tree measuring one (1) to two (2) metres high and having a DBH of two (2) to four (4) centimetres.
Scaffold Branches	The permanent or structural branches of a tree.
Seedling	A plant grown from a seed with a height of not more than one (1) metre.
Significant Tree	Tree / shrub deemed valuable because it is unusually beautiful or distinctive, comparatively old, distinctive in size or structure for its species, rare or unusual in the subject area, provides a habitat for rare or unusual wildlife species in the subject area, or has an historical, cultural, or landmark significance.



TREE CONSERVATION REPORT

Significant Woodland	Woodland that contain mature stands of trees 80 years or older, have interior forest habitat more than 100 metres from forest edge, and are adjacent to a surface water feature.
Specimen Tree	Individual tree located in the middle of a field or open space. A specimen tree is not automatically a significant tree.
Stress	Any factor that negatively affects the health of a tree.
Structural Defect	Flaws, decay, or other faults in the trunk, branches, or root collar of a tree, which may lead to failure.
Topping (Topped)	Cutting back a tree to buds, stubs, or laterals not large enough to become a new leader on the tree.
Tree Protection Zone (TPZ)	The area surrounding a tree that is marked and fenced off and where there is no storage of materials of any kind, no parking or moving of vehicles, and no disturbance of the soil or grade.
Tree Shoots	Tree shoots are sprouts that emerge from dormant buds along the trunk or branch of a tree. In an urban environment shoots are often associated with stress to the tree. Trees with severe dieback due to winter injury, drought and salt spray often produce many shoots as a means of compensating for the loss of leaf surface due to stress or injury.
Tree Suckers	Tree suckers are sprouts that form from the roots of existing trees and tend to form new trees or shrubs. In an urban environment suckers can be associated with stress to the tree and are prevalent after a disturbance such as when mature trees are cut down. Some tree species have the tendency to sucker.
Vigour	Overall health; capacity to grow and resist stress.



TREE CONSERVATION REPORT

INTRODUCTION

1.0 INTRODUCTION

Stantec Consulting Ltd. was retained by the Ottawa Community Housing Corporation to complete a Tree Conservation Report for 933 Gladstone Avenue in support of the development of a new residential community. The subject land, 933 Gladstone Avenue, is located north of Gladstone Avenue, east of the existing public pathway and O-Train currently being converted into LRT north-south line, south of Somerset Street West and east of Preston Street. A total of four (4) residential streets currently terminate at the eastern property line: Oak Street, Laurel Street East, Larch Street, and Balsam Street.



Figure 1 Location Plan

The subject land is currently undeveloped; it was previously occupied by a large federal government warehouse prior to 2015. This area is designated as a Mixed-Use Centre in the Official Plan of the City of Ottawa and Mixed Use Center Zone in the Zoning By-law (MC-F(1.5)).



TREE CONSERVATION REPORT

INTRODUCTION

The proposed development is approximately 3.21 ha and includes residential blocks and a public right-of-way (ROW) extending Oak Street and bisecting the site to connect to Gladstone Avenue. This residential community will be developed in two (2) main phases:

- Phase 1 of the development includes the engineering associated to servicing the land in order to permit development. Development will occur only in the street blocks.
- Phase 2 will include the development of each residential blocks.

Phase 1 of this project is currently in progress. A copy of the latest site plan, dated July 2020, is included in Appendix A of this report.

This Tree Conservation Report provides a review of the site development associated to Phase 1 and the proposed overall development of the site in the long term. The objectives of this report are to:

- Describe the existing woody vegetation growing on site including trees, and large shrubs. The description for each tree and / or large shrub includes species, size, vigour, and health condition.
- Assess the environmental value and suitability for retention of the woody vegetation.
- Evaluate the anticipated impact(s) of the proposed development on the existing woody vegetation.
- Provide recommendations related to tree protection and mitigation measures to reduce negative impact on the woody vegetation to the retained.
- Provide recommendations for the development of a compensation planting plan.



TREE CONSERVATION REPORT

TREE ASSESSMENT

2.0 TREE ASSESSMENT

On May 18, 2021, Carina Thulin Lood, Landscape Architect with Stantec Consulting Ltd. carried out a detailed inventory of trees found within the project area located on 933 Gladstone Avenue, and the areas adjacent to the subject property. Tree species were determined, and overall health conditions were assessed for each tree during this site investigation.

2.1 METHODOLOGY

The complete assessment of every tree growing on the subject land was completed as part of this site investigation. Additionally, trees growing on adjacent properties and those located along the bicycle pathway directly to the west of the property and adjacent to the future LRT were visually assessed and their approximate location was established on the plan. Due to construction of the LRT, a section of the property and the asphalt bicycle pathway was not accessible for the tree assessment because it is currently used as a staging area. Some pathway trees are located within the LRT staging area; using the typical spacing of the existing trees planted along the asphalt bicycle pathway as an indicator, it is estimated that there are eight to ten trees planted within this construction zone and staging area. Based on a visual assessment at a distance, these trees appear to be of a similar size (< 15cm DBH) and age as the existing, recently planted trees located along the section of the pathway that was inventoried.

All the trees growing on site are included on the topographical survey prepared by Stantec Geomatics Ltd. and dated January 29, 2021; the topographical survey does not include the location of the trees growing along the bicycle pathway and those in the private residential properties. The location of all trees is indicated on the accompanying **Tree Preservation Plan (TC-1)**. The locations of the trees indicated along the bicycle pathway and inside the private residential properties are approximate and were established based on site observations; these locations are for reference purposes only.

In general, all existing trees located on the property and directly adjacent, including those with a DBH of less than 10cm, were assessed. In total, 46 trees and 1 grouping of vegetation were assessed in terms of their health condition and their DBH measured during the site visit. Out of the total number of trees assessed, 31 were located along the public bicycle pathway. The remaining trees are located along the eastern fence line, with the interior of the subject property being entirely devoid of trees.

During this investigation, the species were determined based on bark, bud, and leaves identification and the vigour was assessed based on visible defects only.

2.2 OBSERVATIONS

The subject land is currently an undeveloped property with only a few trees growing along the eastern property line, near the existing residential properties. The southern portion of the site, near Gladstone Avenue, is currently used as a staging area for the future LRT; a large portion of the site is fenced-off and



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TREE ASSESSMENT

the bicycle pathway has been detoured across the subject land to provide direct access to the LRT corridor for the construction workers and equipment. The site, except for the area used as a staging area for the LRT project, is grassed. The public pathway located west to the site is elevated compared to the subject land.

All trees and groupings of vegetation inventoried are indicated on drawing TC-1 inserted in Appendix B, at the end of this report. This report should be read in conjunction with drawing TC-1.

2.2.1 Species Distribution

The breadth and frequency of species in all the areas surveyed is depicted in **Table 1 – Species Summary** below. Sugar Maple, Manitoba Maple, and Red Oak are the most prevalent native species found within the limits of the property and areas directly adjacent, accounting for 72% of the species distribution. Added together, native deciduous and coniferous species make up 98% of the total number of trees inventoried in terms of species identified (total 46 trees). Along the fence line on the eastern side of the property, Manitoba maple and Siberian elm have naturalized and are growing through the existing chain link fence; the Siberian elms are only found within a grouping of saplings along the fence (tree ID 3) and as such are not included in Table 1 below.

Table 1 Species Summary

Species – Common Names	Species – Scientific Name	Quantity	% of Total
Manitoba Maple	<i>Acer negundo</i>	10	22
Red Maple	<i>Acer rubrum</i>	3	7
Silver Maple	<i>Acer saccharinum</i>	1	2
Sugar Maple	<i>Acer saccharum</i>	11	24
Hackberry	<i>Celtis occidentalis</i>	1	2
White Spruce	<i>Picea glauca</i>	3	7
Bur Oak	<i>Quercus macrocarpa</i>	2	4
Red Oak	<i>Quercus rubra</i>	12	26
Golden Weeping Willow	<i>Salix alba var. tristis</i>	1	2
Eastern White Cedar	<i>Thuja occidentalis</i>	1	2
American Elm	<i>Ulmus americana</i>	1	2
	TOTAL	46	100%

2.2.2 Size Distribution

The size of inventoried trees within the subject lands and the area adjacent to the bicycle pathway is mostly composed of recently planted trees; 67% of the trees inventoried have a DBH equal to or less than 15 cm. Most of these trees have recently been planted along the asphalt bicycle pathway to the west of the subject land. Four (4) trees have a DBH exceeding 30cm, three (3) of which are mature white



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TREE ASSESSMENT

spruces. Trees over 30 cm are typically considered to be trees of significant size. It should be noted the three (3) spruces are considered in fair conditions.

Table 2 Size Distribution (based on DBH)

	Less than 15 cm DBH	15 to 29 cm DBH	30 to 49 cm DBH	Total
No. of trees	31	11	4	46
% of Total	67	24	9	100%

2.2.3 Health Condition Distribution

The overall health condition of the trees was found to be mostly good (89%), with only five (5) trees being in good/fair to fair condition. No major health issues were identified during the visit.

Table 3 Condition Distribution

	Good	Good to fair	Fair	Total
No. of trees	41	1	4	46
% of Total	89	2	9	100%

2.2.4 Species-at-Risk

No Species-at-Risk, butternut trees, were observed on site during the tree assessment investigation.

2.3 VEGETATION QUALITY AND SUITABILITY FOR RETENTION

Although a quantity of trees growing on this property show good health conditions, other factors should be evaluated when establishing the suitability for retention of a tree. These factors include the following:

- Structural condition;
- Age and expected longevity of the tree;
- Species invasiveness; and
- Species response and tolerance to disturbance.

By considering all the factors listed above, trees recommended for retention will have a higher chance to respond positively to new site conditions for an extended period of time providing a safe environment for the property users.

In addition to the factors listed above, **Table 4 – Retention Qualities** describes the suitability for each tree species for retention. The suitability for retention considers the capacity of the trees to survive to stress and changes in their environment. As noted above, the suitability for retention should also study the proposed development of the property including grading works around the Critical Root Zones (CRZ)



TREE CONSERVATION REPORT

TREE ASSESSMENT

of trees and the proximity to construction, access roads, and / or built structures. This type of analysis will be completed in the following section of this report.

Table 4 Retention Qualities

Tree Species (Botanical Name / Common Name)	Remarks	Suitability for Retention
<i>Acer negundo</i> / Manitoba maple	Invasive species. Branches have tendency to lean and break easily.	Moderate to Poor
<i>Acer rubrum</i> / Red maple	Grows in moist acid to neutral soils; intolerant of wounding; tolerates some compactions. Root system is tolerant to excavation works.	Moderate
<i>Acer saccharinum</i> / Silver maple	Can tolerate some wounding; tolerant to additional fill and soil compaction. Root system is intermediate to excavation works.	Moderate
<i>Acer saccharum</i> / Sugar maple	Grows in well drain and moist and fertile soils; intolerant of fill, of increased light, and of restricted root space; can be sensitive to urban conditions. Root system is intermediate to excavation works.	Moderate
<i>Celtis occidentalis</i> / Common hackberry	Grows well in dry, alkaline soils; does well in all type of soils; tolerant of urban conditions including restricted root space; tolerates some fill. Root system is tolerant to excavation works.	High to Moderate
<i>Picea glauca</i> / White spruce	Does well in all type of soils; tolerant to construction stress; tolerant to drought.	Moderate
<i>Quercus macrocarpa</i> / Bur oak	Grows well in dry locations; thick bark provides protection from fire and mechanical damage; tolerant of alkaline soil; tolerant to low oxygen sites and to some fill; prefers deep soils. Root system is tolerant to excavation works.	Moderate
<i>Quercus rubra</i> / Red oak	Grows well in dry, rocky locations; shorter lived and less tolerant of disturbance than the white oak group; one of the most fast-growing oak. Root system is tolerant to excavation works.	Moderate
<i>Salix alba var. tristis</i> / Golden weeping willow	Shallow invasive root system; grows in wet areas, in full sun; intolerant to dry soils.	Moderate
<i>Thuja occidentalis</i> / Eastern white cedar	Root disturbance can be fatal; tolerates excess moisture if given time to adapt; tolerates wounding; tolerates some fill and soil compaction.	High to Moderate



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<i>Ulmus americana</i> / American elm	Tolerate to some fill. Root system is tolerant of excavation works. Sensitive to Dutch elm disease.	Moderate to Poor
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TREE CONSERVATION REPORT

PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

3.0 PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

3.1 PROPOSED DEVELOPMENT

The proposed development is approximately 3.21 ha and includes residential blocks and a public right-of-way (ROW) extending Oak Street inside the subject land, bisecting the site and connecting to Gladstone Avenue. This residential community will be developed in two (2) main phases:

- Phase 1 of the development includes the engineering associated to servicing the land in order to permit development. Development will occur only in the street blocks during this phase.
- Phase 2 will include the development of each residential blocks as separate or combined site plan applications.

A copy of the latest site plan, dated July 2020, is included in Appendix A of this report for reference. This plan was used to develop the tree retention recommendations listed below.

Phase 1 of this project is currently in progress and provides the engineering design of all underground services for the new road. Based on the latest site plan, Balsam Street will be extended to connect to the new road; Larch Street and Laurel Street are being shown to extend along the eastern property line as lanes at the back of residential blocks.

3.2 TREE RETENTION RECOMMENDATIONS

3.2.1 Tree Retention

Following the review of the engineering plan developed as part of Phase 1 and the overall site plan for the subject land it is determined only those trees located on private residential properties and public lands may be preserved as part of this project. The proximity of the roadway and lanes to the trees growing on the subject land does not provide confirmation these trees may be preserved. It is assumed trees growing along the existing public pathway will be retained as part of this development.

To ensure tree survival during and after construction of the trees to be retained, mitigation measures should be considered during construction. Adequate protection of the trees to be retained and their immediate environment is crucial for the survival of these trees. As such, the Contractor shall apply the following measures to prevent damages to the trees to be retained.

3.2.1.1 Monitoring Tree Health

Trees located adjacent to construction works will experience change in their immediate environment. As a result, tree health should be monitored. Photographs of trees to remain should be taken prior to



TREE CONSERVATION REPORT

PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

construction, if possible when the trees are in full leaf, as a record of their condition. This is especially important for those trees that could not be assessed and are currently located inside the construction staging area for the LRT project.

Monitoring tree health both during and after construction should be made a priority. Actions should be taken as early as possible if / when the health of a protected tree declines. Damages may include:

- Physical damage on tree bark;
- Broken branches;
- Compaction of root systems due to equipment and materials stored within the protected areas;
- Cutting of the roots; and
- Root exposure following excavation adjacent to trees to be preserved.

Services of an arborist should be used in order to give adequate care to damaged trees.

Trees that have died or have been damaged beyond repair by the Contractor during construction shall be removed and replaced by the Contractor as directed by the City Inspector at no additional cost for the City.

3.2.1.2 Protecting Trees to be Retained

All trees shall be preserved and protected using a temporary tree protection fence. The roots of a tree are located in the top 150 to 250 millimetres of soil and can very easily be inadvertently damaged. To ensure protection of the root system of trees to remain, temporary tree protection fencing shall be installed at the critical root zone (CRZ) of trees located inside or adjacent to the construction area. **The CRZ of a tree is the zone around the trunk where there should be no disturbance before, during, and after construction. The CRZ is established as being 10 centimetres from the trunk for every centimetre of trunk diameter. For trees with a DBH of less than 10 centimetres, the CRZ is established as 1.5 metre from the trunk.**

Temporary tree protection fencing shall be installed according to the detail inserted in Appendix C of this report and on drawing *Tree Preservation Notes and Details (TC-2)*. Fencing shall always be maintained in good repair during construction operations and shall only be removed upon completion and when agreed by the contract administrator. Temporary removal of fencing shall not be permitted without the approval from the contract administrator.

Within the CRZ of trees, as delineated by temporary tree protection fencing there should be:

- No disturbance or alteration of the existing grade without approval including addition of fill, excavation, or scraping of the soil;
- No installation of signs, notices or posters on trees;
- No storage of construction materials, surplus soil, construction waste, or equipment;
- No disposal (dumping or flushing) of contaminants or liquids; and,
- No movement of vehicles (personal or business), equipment or pedestrians.



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PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

Should disturbances or alterations within the tree protection zone be unavoidable, the following additional mitigation strategies are recommended:

3.2.1.3 Working within Protected Areas

Excavation Work

To ensure the roots are not disturbed more than necessary and where excavation works are unavoidable within the CRZ of trees, the following mitigation measures shall be used:

- **All excavation within the CRZ of trees shall be by hand or hydro excavation using the smallest tools.** Root cutting shall be made using a sharp spade or knife at the limit of disturbance prior to any construction activities.
- **The Contractor shall only tunnel or bore within the CRZ, instead of creating a trench.**
- **Any roots that are exposed by construction activities must be covered with native topsoil immediately,** to ensure that the roots do not dry out or have any further damage occur to them.

In all those instances where root pruning is required, the service of a Certified Arborist or Qualified Tree Worker under the supervision of a Certified Arborist shall be retained. In addition, all remedial works must be conducted by a certified care professional to ensure proper care is administered in order to enable the continued health of the trees.

Grading Work

Where re-grading is required within the CRZ, it should be performed by hand under the supervision of a Certified Arborist.

3.2.1.4 Additional Protection Measures

The following mitigation measures shall also be respected:

- When working near vegetation, **the Contractor shall ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.**
- **Where limbs or portions of trees are removed to accommodate construction work, they will be removed carefully in accordance with accepted arboricultural practices.**
- **Where necessary, the trees will be given an overall pruning to restore their appearance.** Not more than one-third of the total branching shall be removed during a single operation. The services of a Certified Arborist shall be retained for this task.

3.2.2 Tree Removal

A total of eleven (11) trees and one (1) grouping of saplings are proposed for removal. All these trees are located along the eastern property line and will be impacted by the construction of the new road and lanes. These trees to be removed are generally in good health conditions and have a DBH of less than 20



TREE CONSERVATION REPORT

PROPOSED DEVELOPMENT & TREE RETENTION RECOMMENDATIONS

centimetres with the exception of the three (3) white spruces, having a larger DBH but in fair health conditions, and one (1) Manitoba maple growing at the end of Balsam Street.

It should be noted that no tree shall be removed without the City of Ottawa written approval as deemed under the Tree Protection By-law number 2020-340.

The following lists mitigation measures to consider at time of tree removal.

3.2.2.1 Clearing and Grubbing of Trees

Any trees designated for removal and located outside a tree protected area will have the stumps completely excavated and removed unless such removal will adversely affect existing trees / ecology to remain.

3.2.2.2 Wildlife Protection

Clearing operations are prohibited between April 8 to August 28 of any year to protect breeding migratory birds and at-risk bat species. Should tree removal during this period be unavoidable, the contractor is required to retain the services of a qualified Biologist who will conduct a breeding migratory bird screening. This screening will identify and ensure there is no evidence of breeding migratory bird activities. Tree removal will be allowed within five (5) days of conducting the screening.

3.2.3 Compensation Plantings

Due to the nature of the development proposed for the subject land full compensation for the loss of vegetation should be attainable. It is recommended to plant a mix of deciduous and coniferous trees and shrubs to ensure the development is well integrated in the neighbourhood. In addition, the following are recommended for this new community:

- Planting of new street trees along the internal road and vehicular access aisles;
- Planting of new street trees along Gladstone Avenue;
- Planting of non-invasive trees and shrubs species only;
- Planting of shade trees along walkways and near seating and gathering areas.



TREE CONSERVATION REPORT

CONCLUSION

4.0 CONCLUSION

This Tree Conservation Report was intended to provide a detailed description of the quality, size, and quantity of trees growing within the project area, as well as the areas adjacent to the property. Although the subject property is largely devoid of trees, none of the vegetation growing on the subject land is proposed for retention. Trees assessed are mostly native trees, except the Siberian elm saplings that are naturalizing along the fence line. Trees growing on public land including those along the public bicycle pathway on the western side of the property should be protected.

To ensure survival of the trees to be retained, protection measures recommended in this report shall be applied. Preservation of those trees will be possible by limiting the footprint of the work area and visually delineating the protected zones from the construction zones. By installing a tree protection fence, damages to trunks, branches, and root systems will be limited. In addition, it is recommended to plant trees and shrubs as part of the development of this community to compensate for the loss of vegetation and to ensure its integration within the neighbourhood.

By following the mitigation recommendations outlined in this report and ensuring new plantings is included as part of this development, we believe this development respond to the character of the community.



TREE CONSERVATION REPORT

References

5.0 REFERENCES

City of Ottawa Tree Protection By-law number 2020-340.



APPENDICES

TREE CONSERVATION REPORT

Appendix A – Proposed Site Plan

Appendix A – PROPOSED SITE PLAN





Highrise
 Midrise
 Lowrise

PLAZA AREA (OCH) : 200m²
 PLAZA AREA (Municipal) : 1,275m²
 TOTAL PLAZA AREA : 1,475m²
GLADSTONE STATION

*** CONCEPTUAL PLAN**
NOTE: This is an Ottawa Community Housing concept plan depicting possible building massing and street/pathway connections. A comprehensive transportation study has yet to be undertaken to support this concept plan and its assumptions. This plan will be updated pursuant to (among other things) a neighbourhood scale transportation study and its findings, supporting appropriate street connections to Preston and Gladstone, coupled with possible traffic calming measures.



Gladstone Village

Site Plan

Site Plan
 scale = 1:1500
 JULY 10, 2020

TREE CONSERVATION REPORT

Appendix B – Tree Conservation Drawings

Appendix B – TREE CONSERVATION DRAWINGS



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Legend

- TREE IDENTIFICATION NUMBER
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING GROUPING OF VEGETATION TO REMAIN
- EXISTING GROUPING OF VEGETATION TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- CRITICAL ROOT ZONE (CRZ)
- TREE PROTECTION FENCE
- APPROXIMATE LIMIT OF LRT CONSTRUCTION ZONE AND STAGING AREA
- PROPERTY LINE

Notes

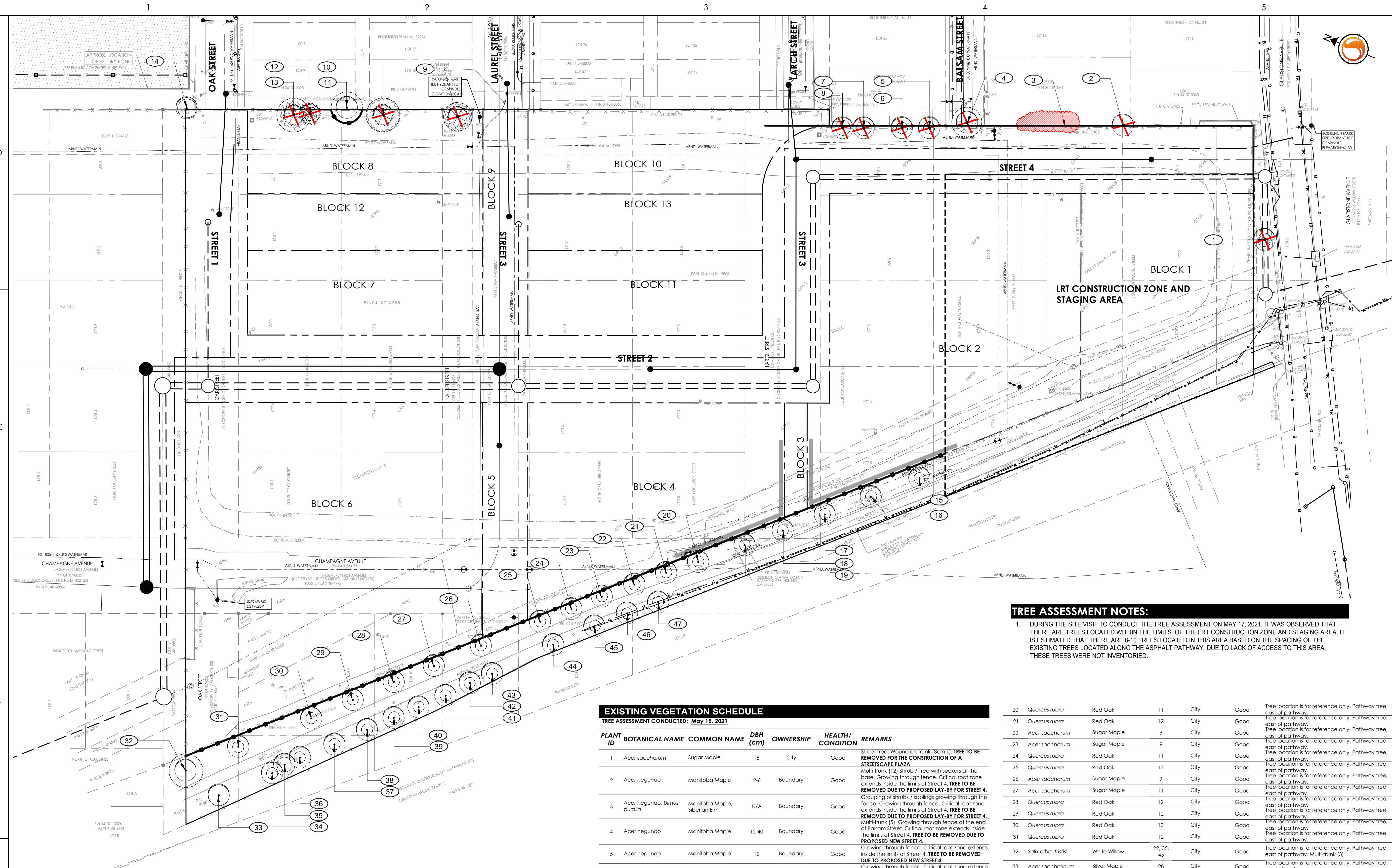
- DRAFT PLAN PREPARED BY STANTEC GEOMATICS LTD. DATED JANUARY 29, 2021.
- TOPOGRAPHIC SURVEY PREPARED BY STANTEC GEOMATICS LTD. DATED JANUARY 29, 2021.
- THE LOCATION OF TREES NO. 15-47 ARE FOR REFERENCE ONLY.
- REFER TO CIVIL ENGINEERING DRAWINGS FOR CONCEPTUAL SERVICING AND GRADING PLAN.
- REFER TO CONCEPTUAL SITE PLAN FOR GLADSTONE VILLAGE DATED JULY 10, 2020.

1	ISSUED FOR REVIEW	CTL	ILL	2021.05.31
Revision		By	Appd.	YY.MM.DD
File Name:	160401614-LB	CTL	ILL	2021.05.18
		Dwn.	Chkd.	Dsgn.
Permit-Seal				YY.MM.DD

Client/Project
OTTAWA COMMUNITY HOUSING CORPORATION
GLADSTONE VILLAGE
933 GLADSTONE AVENUE
OTTAWA, ON

Title
TREE PRESERVATION PLAN

Project No.	160401614	Scale	0 5 15 25m 1:500
Drawing No.	Sheet	Revision	



TREE ASSESSMENT NOTES:

1. DURING THE SITE VISIT TO CONDUCT THE TREE ASSESSMENT ON MAY 17, 2021, IT WAS OBSERVED THAT THERE ARE TREES LOCATED WITHIN THE LIMITS OF THE LRT CONSTRUCTION ZONE AND STAGING AREA. IT IS ESTIMATED THAT THERE ARE 8-10 TREES LOCATED IN THIS AREA BASED ON THE SPACING OF THE EXISTING TREES LOCATED ALONG THE ASPHALT PATHWAY. DUE TO LACK OF ACCESS TO THIS AREA, THESE TREES WERE NOT INVENTORIED.

EXISTING VEGETATION SCHEDULE

TREE ASSESSMENT CONDUCTED: May 18, 2021

PLANT ID	BOTANICAL NAME	COMMON NAME	DBH (cm)	OWNERSHIP	HEALTH/CONDITION	REMARKS
1	Acer saccharum	Sugar Maple	18	City	Good	Street tree. Wound on trunk (8cm L). TREE TO BE REMOVED FOR THE CONSTRUCTION OF A STREESCAPE PLAZA.
2	Acer negundo	Manitoba Maple	2-6	Boundary	Good	Multi-trunk (12) Shrub / Tree with suckers at the base. Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED LAY-BY FOR STREET 4.
3	Acer negundo, Ulmus pumila	Manitoba Maple, Siberian Elm	N/A	Boundary	Good	Grouping of shrubs / saplings growing through the fence. Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED LAY-BY FOR STREET 4.
4	Acer negundo	Manitoba Maple	12-40	Boundary	Good	Multi-trunk (5). Growing through fence at the end of Balsam Street. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED NEW STREET 4.
5	Acer negundo	Manitoba Maple	12	Boundary	Good	Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED NEW STREET 4.
6	Acer negundo	Manitoba Maple	10	Boundary	Good	Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED NEW STREET 4.
7	Acer negundo	Manitoba Maple	20	Boundary	Good	Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED NEW STREET 4.
8	Acer negundo	Manitoba Maple	20	Boundary	Good	Growing through fence. Critical root zone extends inside the limits of Street 4. TREE TO BE REMOVED DUE TO PROPOSED NEW STREET 4.
9	Picea glauca	White Spruce	38	Private	Fair	All the lower branches have been pruned. Large wound at base of the trunk (50cm L). Overhead wires. TREE TO BE REMOVED DUE TO PROPOSED LANEWAY ALONG PROPERTY LINE.
10	Picea glauca	White Spruce	45	Private	Fair	All the lower branches have been pruned. Large wound on the trunk at the juncture of branches. Overhead wires. TREE TO BE REMOVED DUE TO PROPOSED LANEWAY ALONG PROPERTY LINE.
11	Acer negundo	Manitoba Maple	42	Boundary	Good	TREE TO BE PROTECTED.
12	Thuja occidentalis	Eastern White Cedar	18	Private	Fair	Poor form. Loose bark. Uneven growth / structure due to overhead wires. TREE TO BE REMOVED DUE TO PROPOSED LANEWAY ALONG PROPERTY LINE.
13	Picea glauca	White Spruce	42	Private	Good/Fair	Some dead branches. TREE TO BE REMOVED DUE TO PROPOSED LANEWAY ALONG PROPERTY LINE.
14	Acer negundo	Manitoba Maple	8-25	Adjacent	Fair	Multi-trunk (7). Growing through fence. Critical root zone extends inside the limits of Street 1. TO BE PROTECTED. PARK ENHANCEMENTS MAY AFFECT TREE.
15	Quercus macrocarpa	Bur Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
16	Quercus rubra	Red Oak	10	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
17	Quercus rubra	Red Oak	9	City	Good	Tree location is for reference only. Pathway tree, east of pathway. Wound on one branch.
18	Acer saccharum	Sugar Maple	9	City	Poor	Tree location is for reference only. Pathway tree, east of pathway. Lots of dead branches.
19	Acer saccharum	Sugar Maple	11	City	Poor	Tree location is for reference only. Pathway tree, east of pathway. Lots of dead branches. Large wound on the trunk.

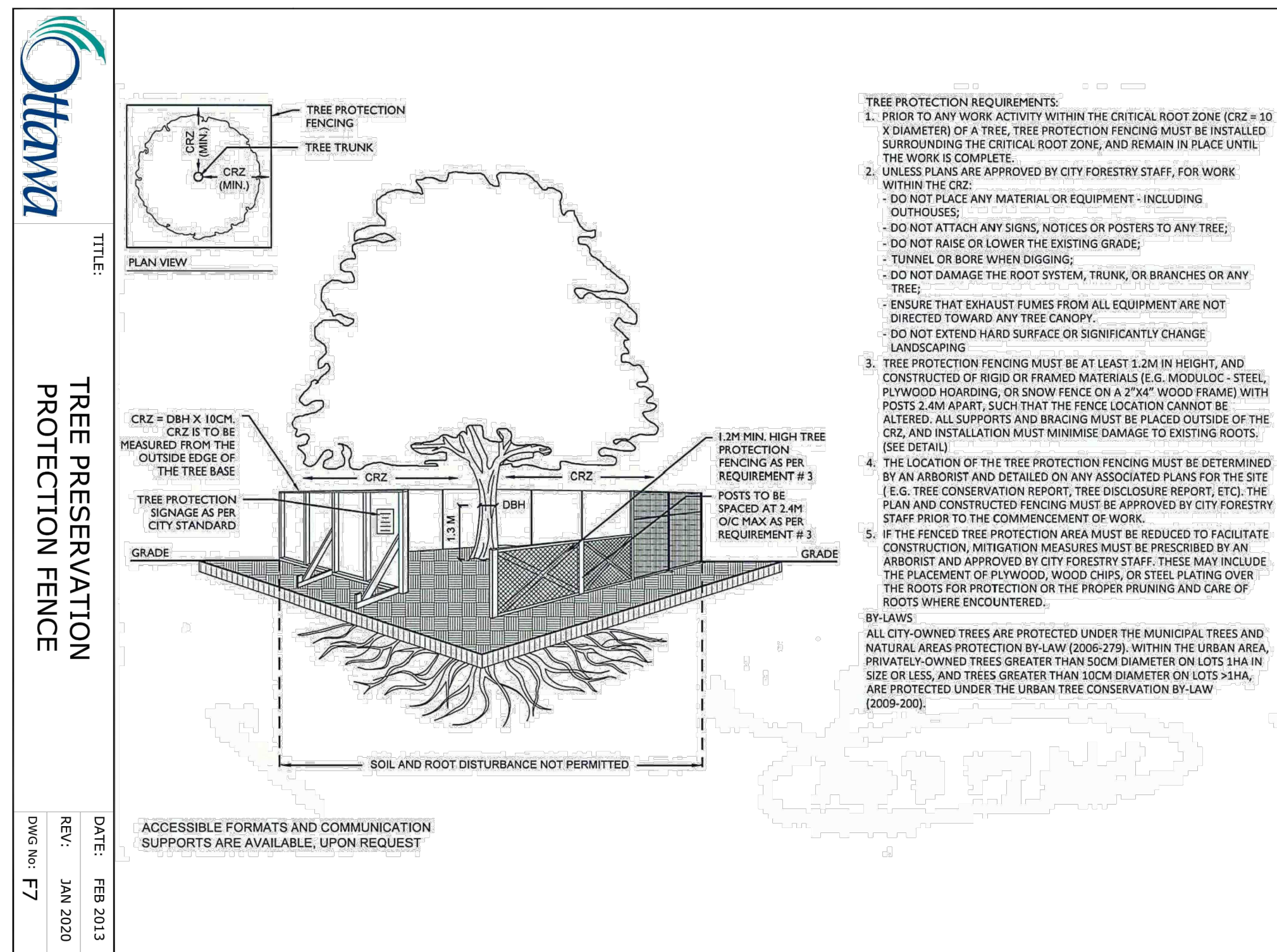
20	Quercus rubra	Red Oak	11	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
21	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
22	Acer saccharum	Sugar Maple	9	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
23	Acer saccharum	Sugar Maple	9	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
24	Quercus rubra	Red Oak	11	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
25	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
26	Acer saccharum	Sugar Maple	9	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
27	Acer saccharum	Sugar Maple	11	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
28	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
29	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
30	Quercus rubra	Red Oak	10	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
31	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, east of pathway.
32	Salix alba 'Tristis'	White Willow	22, 35, 45	City	Good	Tree location is for reference only. Pathway tree, east of pathway. Multi-trunk (3)
33	Acer saccharum	Silver Maple	28	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
34	Quercus rubra	Red Oak	12	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
35	Acer negundo	Manitoba Maple	15, 20	City	Good	Tree location is for reference only. Pathway tree, west of pathway. Multi-trunk (2). Suckers at the base.
36	Quercus macrocarpa	Bur Oak	8	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
37	Acer saccharum	Sugar Maple	11	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
38	Quercus rubra	Red Oak	10	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
39	Celtis occidentalis	Hackberry	11	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
40	Ulmus americana	American Elm	14,15	City	Good	Tree location is for reference only. Pathway tree, west of pathway. Multi-trunk (2).
41	Acer negundo	Manitoba Maple	13,15	City	Good	Tree location is for reference only. Pathway tree, west of pathway. Multi-trunk (2).
42	Acer rubrum	Red Maple	8	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
43	Acer rubrum	Red Maple	10	City	Good	Large wound on the trunk (50cm L). Tree location is for reference only. Pathway tree, west of pathway.
44	Quercus rubra	Red Oak	10	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
45	Acer saccharum	Sugar Maple	12	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
46	Acer saccharum	Sugar Maple	11	City	Good	Tree location is for reference only. Pathway tree, west of pathway.
47	Acer saccharum	Sugar Maple	11	City	Good	Tree location is for reference only. Pathway tree, west of pathway. Wound at the base of the trunk (50cm L).

1 TREE PRESERVATION PLAN

1:500

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TREE PROTECTION REQUIREMENTS:

- 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.
- 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.
- TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDINGS, OR SNOW FENCE ON A 27x45 WOOD FRAME) WITH POSTS 2.4M APART, SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACINGS MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. [SEE DETAIL]
- 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 DISCLOSURE REPORT, ETC.). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
- 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.

BY-LAWS:
ALL CITY-OWNED TREES ARE PROTECTED UNDER THE MUNICIPAL TREES AND NATURAL AREAS PROTECTION BY-LAW (2009-279). WITHIN THE URBAN AREA, PRIVATELY-OWNED TREES GREATER THAN 30CM DIAMETER ON LOTS 1HA IN SIZE OR LESS, AND TREES GREATER THAN 10CM DIAMETER ON LOTS >1HA, ARE PROTECTED UNDER THE URBAN TREE CONSERVATION BY-LAW (2009-200).

1 TEMPORARY TREE PROTECTION FENCE - SECTION
N.T.S.

TREE PRESERVATION NOTES

- NO VEGETATION SHALL BE REMOVED WITHOUT MUNICIPAL WRITTEN APPROVAL.
- LOCATION OF EXISTING TREES IS FOR REFERENCE ONLY AND SHALL BE CONFIRMED BY AN ARBORIST AND SURVEYOR.
- NO VEGETATION REMOVAL SHALL OCCUR BETWEEN APRIL 8 AND AUGUST 28 OF ANY YEAR TO PROTECT BREEDING MIGRATORY BIRDS, AS WELL AS AT RISK BAT SPECIES. SHALL TREE REMOVAL DURING THIS PERIOD BY UNAVOIDABLE, THE CONTRACTOR IS REQUIRED TO CONDUCT A NESTING SURVEY BY A REGISTERED PROFESSIONAL AVIAN BIOLOGIST TO IDENTIFY AND ENSURE NO NESTING ACTIVITIES ARE PRESENT. TREE REMOVAL WILL BE ALLOWED WITHIN FIVE (5) DAYS OF CONDUCTING THE SURVEY.
- CONTRACTOR SHALL ENSURE THE PROTECTION OF MATURE TREES IDENTIFIED TO BE RETAINED. TREE PROTECTION FENCING SHALL BE INSTALLED AT THE CRITICAL ROOT ZONE (CRZ) OF TREES WHERE THE CRZ IS ESTABLISHED AS BEING 10 CENTIMETRES FROM THE TRUNK OF A TREE FOR EVERY CENTIMETRE OF TRUNK DIAMETER AT BREAST HEIGHT (DBH). THE CRZ IS CALCULATED AS DBH X 10 CM. TREE PROTECTION FENCING SHALL BE INSTALLED AS SPECIFIED.
- DURING EXCAVATION EQUIPMENT MUST BE MAINTAINED WITHIN THE CONFINES OF THE WORK AREA SO AS NOT TO DISRUPT ANY TURF OR TREE ROOTS UNNECESSARILY. DO NOT PLACE ANY MATERIAL OR EQUIPMENT WITHIN THE CRITICAL ROOT ZONE (CRZ) OF ANY TREE TO BE RETAINED.
- CONTRACTOR SHALL ENSURE THAT NO FILL WILL BE ALLOWED TO OCCUR ON THE SURFACE ABOVE THE CRITICAL ROOT ZONE (CRZ) OF TREES.
- ALL EXCAVATED MATERIAL, INCLUDING IMPORTED MATERIAL, MUST BE REMOVED IMMEDIATELY AND NOT PLACED ON GRASS OR NEAR TREES IN ORDER TO PREVENT ROOT DAMAGE, ACCIDENTAL HITTING OF ADJACENT TREES, AND TURF DAMAGE OUTSIDE OF WORK AREA.
- CONTRACTOR SHALL MINIMIZE SOIL COMPACTION BY KEEPING OPERATION OF MACHINERY AND EQUIPMENT CONFINED TO DESIGNATED WORK AREA.
- CONTRACTOR SHALL KEEP A SPILL KIT ON SITE.
- CONTRACTOR SHALL DEVELOP AN EMERGENCY RESPONSE PLAN.
- CONTRACTOR SHALL AVOID SOIL CONTAMINATION AND FUTURE LIABILITY BY CONFINING THE OILING AND REFUELING OF MACHINERY AND EQUIPMENT TO DESIGNATED STAGING AREA.
- NO FUEL IS TO BE STORED WITHIN THE CRITICAL ROOT ZONE (CRZ) OF ANY TREE AND EXHAUST FUMES FROM ALL EQUIPMENT MUST NOT BE DIRECTED TOWARDS ANY TREE'S CANOPY.
- CONTRACTOR SHALL PREVENT ANY DAMAGE TO THE ROOT SYSTEM, TRUNK OR BRANCHES OF ANY TREES TO BE RETAINED ON SITE AND ON ADJACENT PROPERTIES.
- STORAGE OF EQUIPMENT AND VEHICLES WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES IS STRICTLY PROHIBITED.
- WHERE LIMBS OR PORTIONS OF TREES ARE REMOVED TO ACCOMMODATE CONSTRUCTION WORK, THEY WILL BE REMOVED CAREFULLY IN ACCORDANCE WITH ACCEPTED ARBORICULTURAL PRACTICES.
- WHERE NECESSARY, THE TREES WILL BE GIVEN AN OVERALL PRUNING TO RESTORE THEIR APPEARANCE. NOT MORE THAN ONE THIRD OF THE TOTAL BRANCHING SHALL BE REMOVED DURING A SINGLE OPERATION. THE SERVICES OF A CERTIFIED ARBORIST SHALL BE RETAINED FOR THIS TASK.

WORK WITHIN PROTECTED AREAS

- EXCAVATION WORK:
 - TO ENSURE THE ROOTS ARE NOT DISTURBED MORE THAN NECESSARY AND WHERE EXCAVATION WORKS ARE UNAVOIDABLE WITHIN THE CRZ OF TREES, THE FOLLOWING MITIGATION MEASURES SHALL BE USED:
 - ALL EXCAVATION WITHIN THE CRZ OF TREES SHALL BE BY HAND OR HYDRO EXCAVATION USING THE SMALLEST TOOLS. ROOT CUTTING SHALL BE MADE USING A SHARP SPADE OR KNIFE AT THE LIMIT OF DISTURBANCE PRIOR TO ANY CONSTRUCTION ACTIVITIES.
 - THE CONTRACTOR SHALL ONLY TUNNEL OR BORE WITHIN THE CRZ, INSTEAD OF CREATING A TRENCH.
 - ANY ROOTS THAT ARE EXPOSED BY CONSTRUCTION ACTIVITIES MUST BE COVERED WITH NATIVE TOPSOIL IMMEDIATELY, TO ENSURE THAT THE ROOTS DO NOT DRY OUT OR HAVE ANY FURTHER DAMAGE OCCUR TO THEM.
 - IN ALL THOSE INSTANCES WHERE ROOT PRUNING IS REQUIRED, THE SERVICE OF A CERTIFIED ARBORIST OR QUALIFIED TREE WORKER UNDER THE SUPERVISION OF A CERTIFIED ARBORIST SHALL BE RETAINED. IN ADDITION, ALL REMEDIAL WORKS MUST BE CONDUCTED BY A CERTIFIED CARE PROFESSIONAL TO ENSURE PROPER CARE IS ADMINISTERED IN ORDER TO ENABLE THE CONTINUED HEALTH OF THE TREES.
- GRADING WORK
 - WHERE RE-GRADING IS REQUIRED WITHIN THE CRZ, IT SHOULD BE PERFORMED BY HAND UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.



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Legend

- Notes
- DRAFT PLAN PREPARED BY STANTEC GEOMATICS LTD. DATED JANUARY 29, 2021.
 - TOPOGRAPHIC SURVEY PREPARED BY STANTEC GEOMATICS LTD. DATED JANUARY 29, 2021.

1	ISSUED FOR REVIEW	CTL	ILL	2021.05.31
Revision				
File Name:	160401614-LB	CTL	ILL	2021.05.18
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Permit-Seal

Client/Project
OTTAWA COMMUNITY HOUSING CORPORATION
GLADSTONE VILLAGE
933 GLADSTONE AVENUE
OTTAWA, ON

Title
TREE PRESERVATION NOTES AND DETAILS

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TREE CONSERVATION REPORT

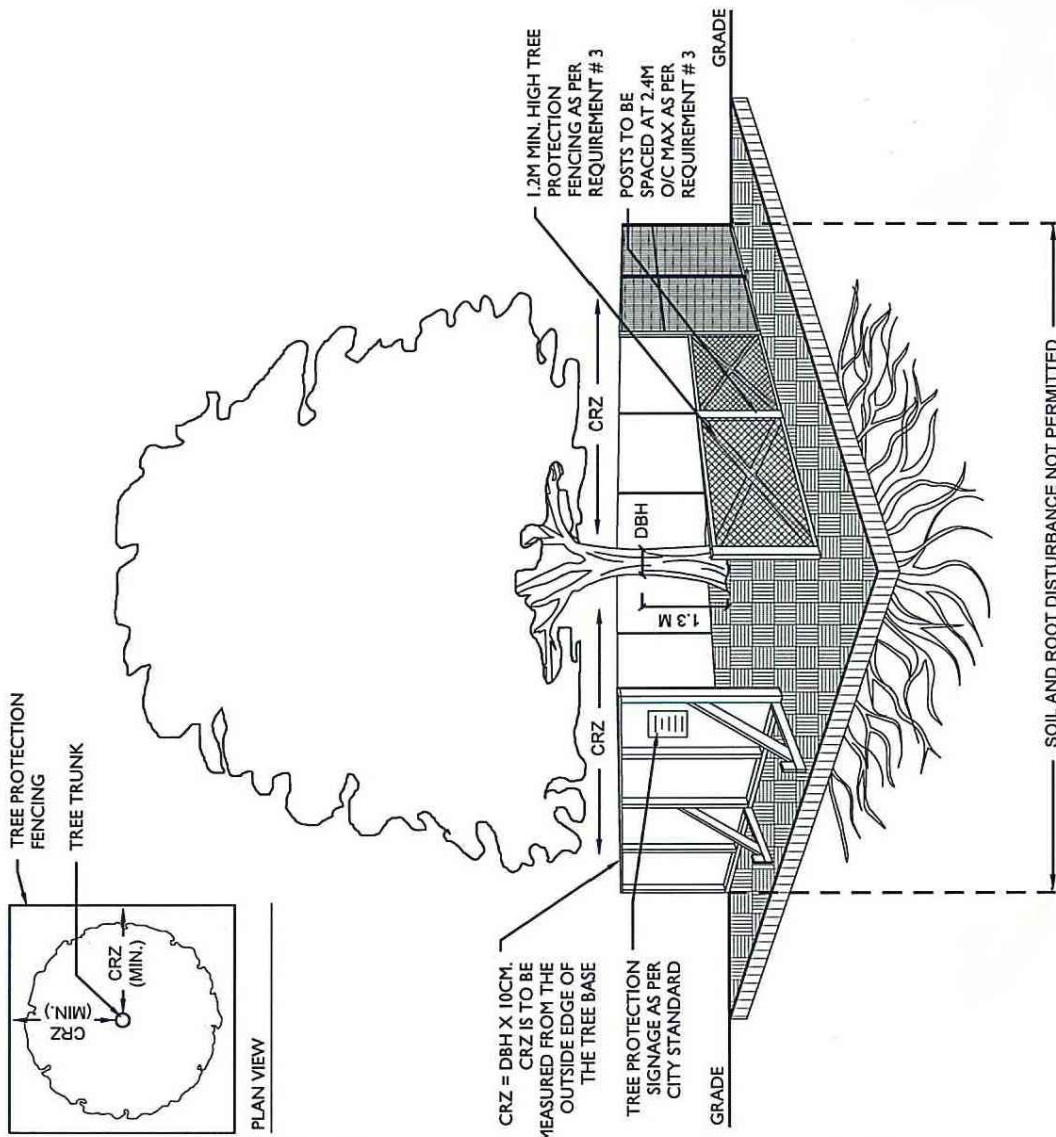
Appendix C – Tree Protection Fence

Appendix C – TREE PROTECTION FENCE



- 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.
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 - 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 DISCLOSURE REPORT, ETC). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
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ACCESSIBLE FORMATS AND COMMUNICATION SUPPORTS ARE AVAILABLE, UPON REQUEST