



Tree Preservation Plan

Site:

The Train Station Pub
1177 Ellis Street
Kelowna, BC V1Y 1Z5

Prepared for:

Okanagan Commercial Realty Corp.
106-546 Leon Avenue
Kelowna, BC V1Y 6J6

Prepared by:

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ISA Tree Risk Assessment Qualified
ISA Certified Tree Worker Specialist



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Background

In December 2022, Okanagan Commercial Realty Corp (OCRC) contacted Bartlett Tree Experts (Bartlett or BTE) regarding the condition of a heritage tree and the measures required to protect the tree during a proposed redevelopment project. The proposed scope of work includes the following:

- Construction of a new building 'A' to the north of the existing Metro Liquor Train station building
- Construction of a new building 'B' at the northwest corner of the lot, west of the heritage tree
- Construction of a new building 'C' at the north side of the lot, east of the heritage tree
- Installation of 'wood patio deck of sleepers'
- Installation of an art wall to the north of the tree
- Installation of a 'meadow with concrete paver slab stepping stones' within the drip line of the tree
- Resurfacing of the existing parking lot

The City of Kelowna (City or COK) requires the contractor to consult with an arborist in order to carry out the necessary development. Arborist Representative Mike Parsons visited the site on February 01, 2023 to assess the tree. Associate Consulting Arborist Adela Parlesak prepared this report.

Purpose

The intended purpose of this report is to provide information on the condition of the tree, its suitability for retention and the measures required to protect any retained trees during the proposed construction project.

Limits of the Assignment

Information regarding the trees included in this report was obtained from:

- the physical inventory conducted by BTE
- an email from OCRC:
 - KTS DP DRAWING SET-LANDSCAPE SET.pdf

A visual inspection was performed of the single heritage tree identified as tree #1.

Data collected in the field included species, diameter at breast height (DBH measured at 1.4m), approximate height, canopy radius, and the overall tree condition. The Critical Root Zone (CRZ) radii was determined using the *Best Management Practices* and the Tree Protection Distance Table in Appendix IV.

The weather conditions were overcast with a light dusting of snow at the time of the assessment. This tree inventory was not a tree risk assessment. As such, no trees were assessed for risk in accordance with industry standards, nor are there any tree risk ratings or risk mitigation recommendations provided within this preservation plan.

All recommendations made in this report are based on our interpretation of the plans provided and our email communication with the client. **A review of the project and the management recommendations of the trees may need to be modified if the scope of work and/or project details are revised.**

Tree Protection and Management

A single heritage ginkgo (*Ginkgo biloba*) tree located at the north side of the property was included in this inventory. The tree is to be protected during the proposed construction project. Overall the tree is in good condition. There are some structural issues which can be addressed through pruning, such as removing stubs from previously failed limbs, and reducing end weight of over-extended branches.

The species has a relatively good tolerance to construction activities. The City of Kelowna establishes a critical root zone as diameter at breast height (DBH) divided by 166. This would be $660\text{mm} / 166 = 3.98\text{m}$. The *Best Management Practices* guidelines recommend a Tree Protection Zone (TPZ) multiplication factor of 8 for a mature tree, with high tolerance. This would work out to $66\text{cm} \times 8 = 528\text{cm}$ or 5.28m.

The minimum required protection distance is 3.98m, while the recommended protection distance is 5.28m from the centre of stem radially to minimize negative impacts which can be incurred during the proposed construction project.

Effects of construction on trees

Tree root systems are generally confined to the uppermost meter of the soil profile. Construction activities can cause profound changes to the area surrounding a tree's root system. Access traffic, storage of materials, grading, and trenching can result in soil compaction, crushing or severing of roots, injury to aboveground portions (trunk and branches), and drainage changes.

Cutting of roots reduces a tree's ability to supply itself with water and nutrients necessary to produce the sugars and carbohydrates necessary for sustaining life. Compaction of the soil reduces air pockets in the soil and makes it more difficult for roots to grow through it. It also slows or even prevents drainage of irrigation or storm water, which can result in excessively wet conditions, leading to root rot. Breakage and injury to a tree's trunk and

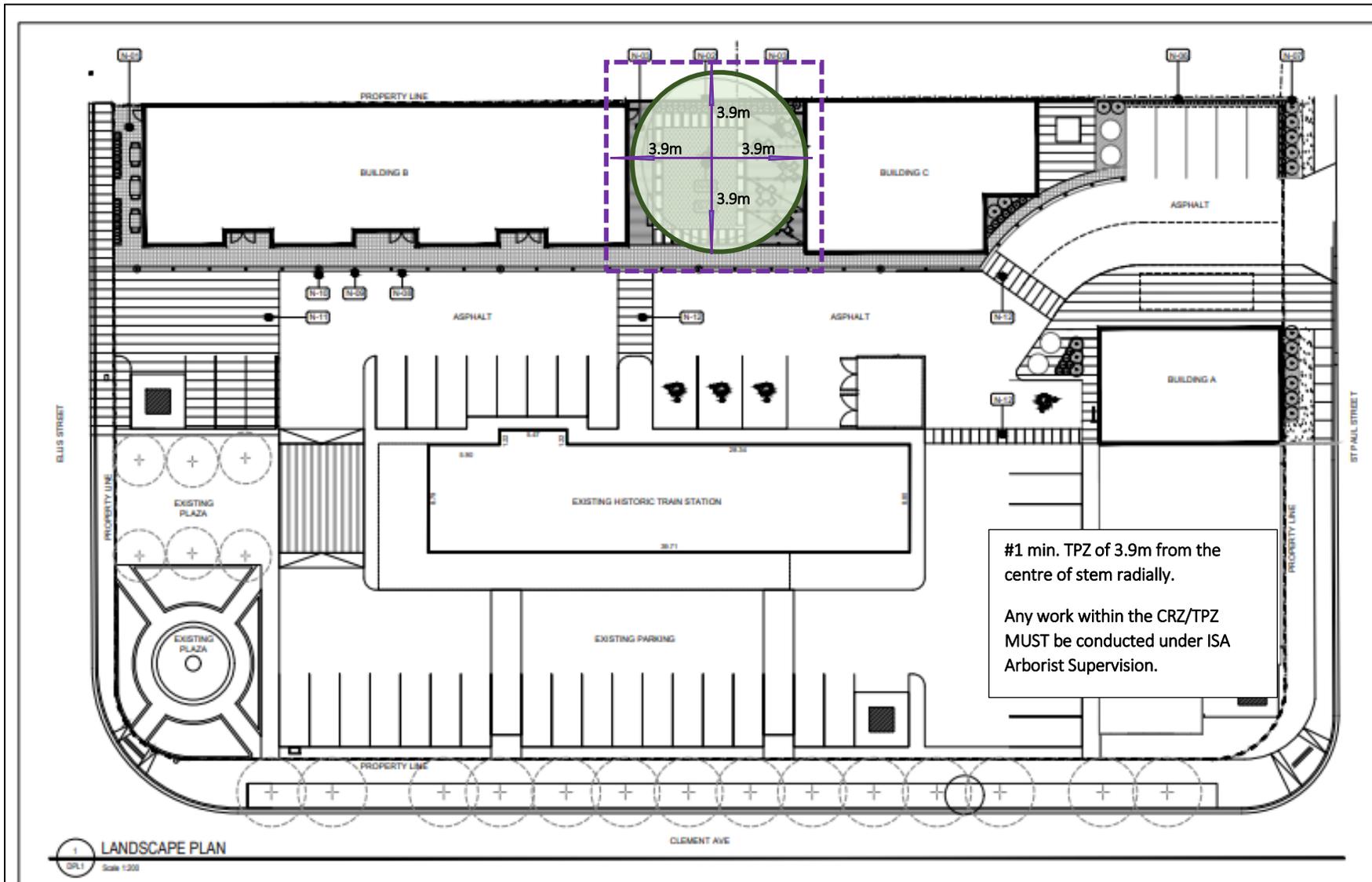
branches reduce its aesthetic value, but more importantly, can leave entry points for pests and diseases.

The issues above often do not appear immediately after the area surrounding a tree has been disturbed. It can be years after the project has been completed that stress signs become apparent. Reduced growth, changes in color or leaf size, branch dieback, or even tree death can follow large disturbances.

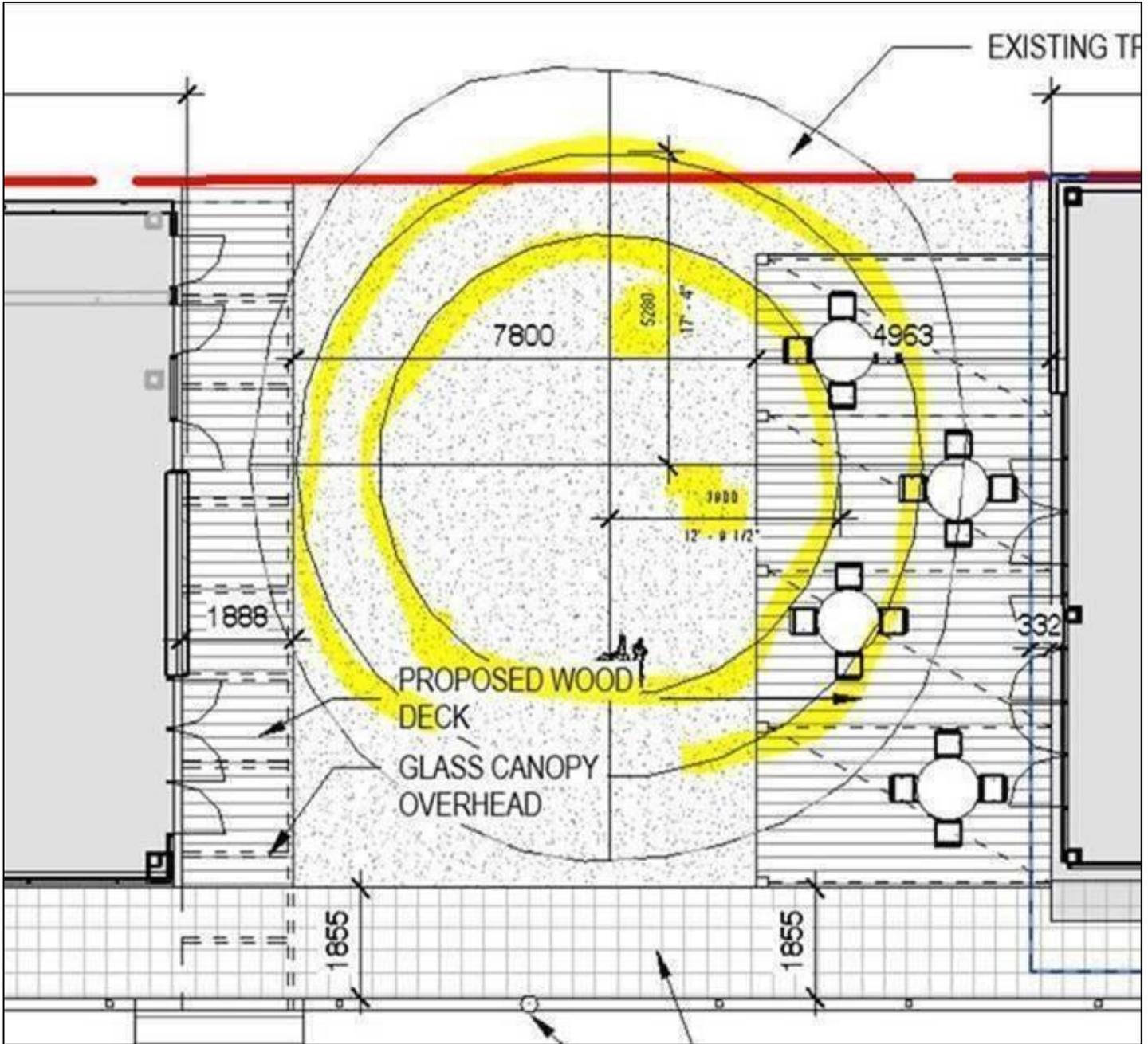
Recommendations

1. Implement a preconstruction soil care regimen to optimize soil condition and help mitigate negative impacts.
2. Prune to reduce end weight of over-extended branches as necessary to avoid breakage
3. Any clearance pruning required to accommodate the new development, and/or during construction shall be conducted by an ISA Certified Arborist (or equivalent) not construction personnel.
4. Coordinate the pruning schedule to take place within a month of the project start date. This will ensure enough clearance is provided prior to tree canopy regrowth.
5. Establish the tree protection fence prior to the start of any construction activities.
6. Any disturbance within the CRZ/TPZ/TPF including but not limited to demolition, construction, grading, trenching, and/or landscaping is to be conducted under ISA Certified Arborist (or equivalent) to monitor the impacts within the critical root zone, and potential root damage.
7. Maintain all scopes of work and construction activities, including landscaping outside of the established critical root zone/ tree protection zone.
8. Implement a post construction soil care such as a root invigoration program to help decompact soil, supplement nutrients, and improve soil porosity to promote root growth.

Appendix I – Site Plans



Proposed scope of work area, approximate tree location, and TPF layout (not to scale)



TPZ layout to scale.

Appendix II – Tree Details

Tree ID	Species	DBH ¹ cm	Height m	Canopy Radius m	Condition Class ²	Relative Tolerance	Observations/ Comments	CRZ/ TPF ³ m	Recommendations
1	Gingko (<i>Gingko biloba</i>)	66	13.3	4	Good	Good- Moderate	Co-dominant stems with an included bark union Wounds from previously failed limbs	3.9	Retain and Protect Prune-clearance Extend the TPF to 5.28m to increase the protection zone. Have an ISA Certified Arborist supervise all work within the CRZ/TPF

¹ DBH- Diameter at Breast Height measured at 1.4m above ground.

² Condition Class:

Dead

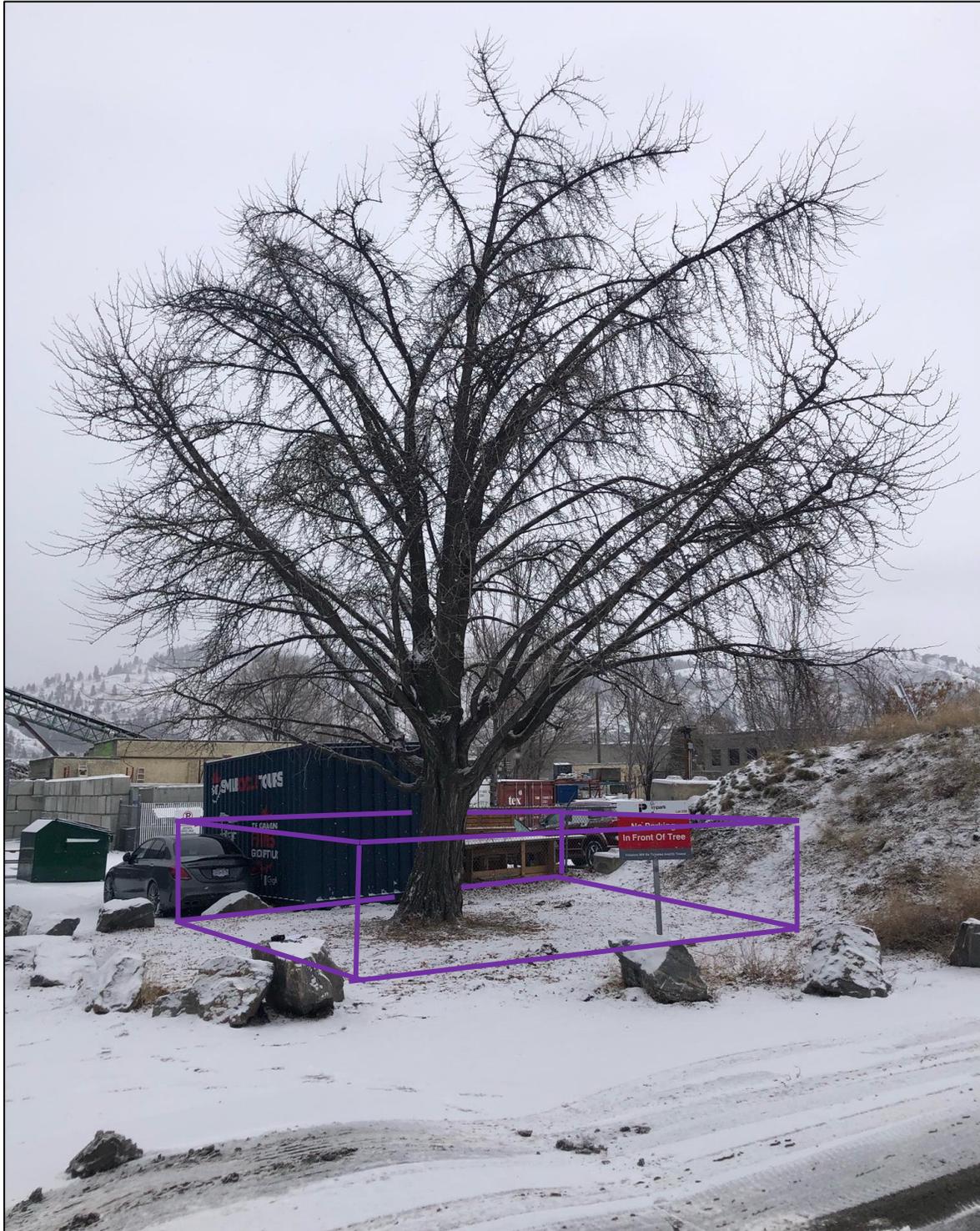
Poor- Most of the canopy displays dieback and undesirable leaf colour, inappropriate leaf size or inadequate new growth.

Fair- Parts of the canopy display undesirable leaf colour, inappropriate leaf size, or inadequate new growth.

Good- Tree health and condition are acceptable.

³ CRZ/TPZ-critical root zone/tree protection zone-tree protection fence distance from the centre of the stem, measurements are based on the *Best Management Practices* and *ANSI A300 Part 5* standards for managing trees during constructions, calculated at 6 to 18 times the DBH relative to species tolerance to construction and maturity.

Appendix III – Photographs



Tree #1 heritage ginkgo to be protected. Approximate layout of the TPF (not to scale), min. 3.9m (5.28m recommended) from the centre of stem radially.



Canopy view, showing stubs from previously failed limbs

Appendix IV – City of Kelowna Tree Protection Bylaw

Bylaw No. 8041

Schedule A SCHEDULE A Tree Protection Zone Installation Standards

PURPOSE

Tree Protection Zones involve barriers placed around trees for the prevention of damage to tree trunks, branches, and roots by any construction activities/operations.

REQUIREMENTS

1. Barriers are to be installed prior to any demolition, excavation, or construction on site.
2. Barriers must remain upright and in place throughout the entire construction process.
3. No incursions inside or against the Tree Protection Zone are to occur, including, but not limited to: garbage/debris storage, material or equipment storage, porta-potties, soil piling, fill or grade changes, surface treatments or excavations of any kind, equipment fueling or chemical mixing, etc.

SPECIFICATIONS FOR CONSTRUCTION

- Barriers should be a maximum of 1.2 m (~4') in height.
- At minimum, 2"x 4" construction lumber to be used for vertical posts, top and bottom rails and cross bracing (in an "X"); round, un-treated vertical posts may be used with a minimum diameter of 9 cm.
- Spacing between vertical posts to be no further apart than 3.7 m (12') on center.
- Structure must be sturdy with vertical posts driven firmly into the ground. • Barrier must be continuous mesh screening (e.g. orange snow fencing).
- The distance of the barrier from the tree trunk must be determined by a qualified person (arborist) based on the drip line and tree diameter, using table below:

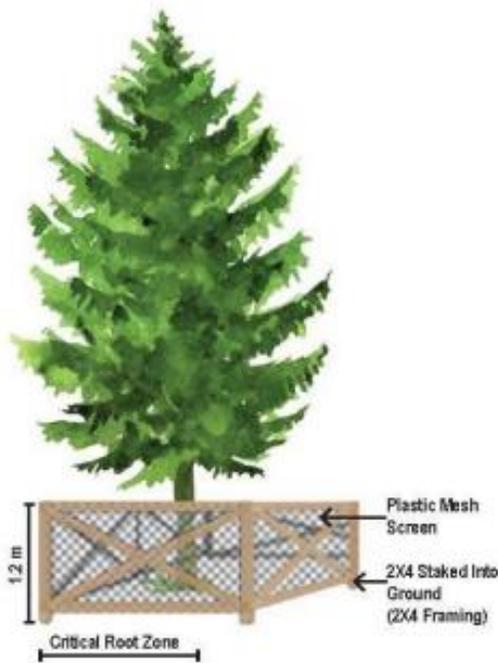
Trunk Diameter (DBH measured in mm or inches)	Critical Root Zone (minimum distance of fence from trunk)
200 mm / 7.9"	1.2 m
250 mm / 9.8"	1.5 m
300 mm / 11.8"	1.8m
350 mm / 13.8"	2.1m
400 mm / 15.7"	2.4m
450 mm / 17.7"	2.7m
500 mm / 19.7"	3.0m
550 mm / 21.7"	3.3m
600 mm / 23.6"	3.6m
750 mm / 29.5"	4.5m
900 mm / 35.4"	5.4m
1000 mm / 39.4"	6.0m
Minimum Critical Root Zone Calculation: divide DBH (mm) by 166 Example: 800 mm divided by 166 = 4.8 m minimum distance from trunk	

Consolidated Bylaw No. 8041 – Page 11.

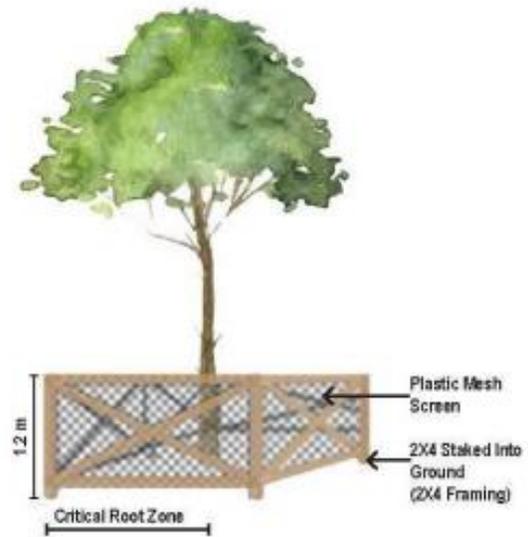
- Visible signage must be posted advising that encroachment inside the protected area is forbidden. Signage to be posted on at least two sides (weather-proof, 11"x17" minimum size). Sign must read:

NO ENTRY
Tree Protection Zone
If barrier has fallen over report immediately for repair
Phone: (xxx) xxx-xxxx

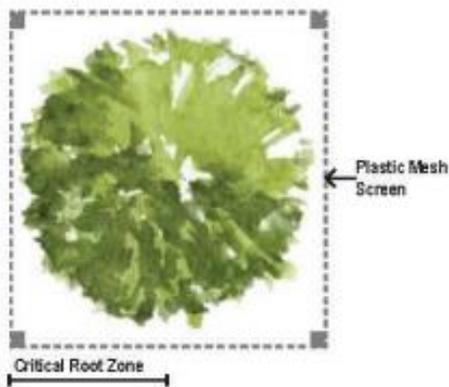
Figure 1 – Standard Tree Protection Zone Barrier Examples



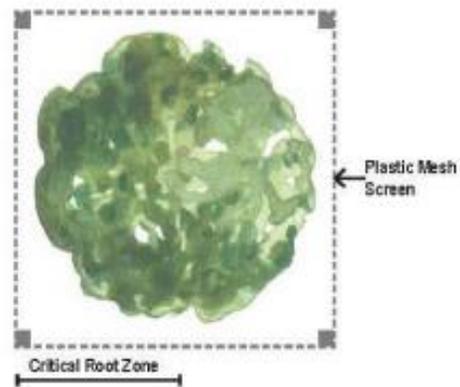
Elevation View



Elevation View



Plan View



Plan View

Appendix V - Assumptions and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is evaluated as though free and clear, under responsible ownership and competent management.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Loss or alteration of any part of this report invalidates the entire report.

Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the persons to whom it is addressed, without the prior expressed written or verbal consent of the consultant.

This report, or any copy thereof, shall not be conveyed, in whole or in part, by anyone, including the client, to the public via any media type or outlet, without the prior expressed consent of the consultant specifically as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualification.

This report and values expressed herein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Illustrations, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

Information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plans or property in question may not arise in the future.

Appendix VI - Certificate of Performance

I, Adela Parlesak, certify that:

I have no current or prospective interest in the trees on the property, and have no personal interest or bias with respect to the parties involved;

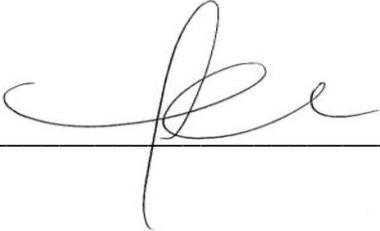
The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts;

My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices;

No one provided significant professional assistance to me, except as indicated within this report;

My compensation is not contingent upon the reporting of a predetermined conclusion that factors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am an International Society of Arboriculture Board Certified Master Arborist # PN-8202BT, and am tree risk assessment qualified. I am a member in good standing of the International Society of Arboriculture. I have been involved in the field of Arboriculture in a fulltime capacity for a period of nine years.

Signed:  _____ Date: February 24, 2023