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# 1042/1044 RICHARDSON STREET—VICTORIA, BC

## CONSTRUCTION IMPACT ASSESSMENT & TREE MANAGEMENT PLAN

PREPARED FOR: 1248330 BC Ltd. c/o Bart Johnson
4044 Hollydene Place
Victoria, BC
38N 3Z7

PREPARED BY: Talmack Urban Forestry Consultants Ltd.
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ISA Certified # PN-7125A
Tree Risk Assessment Qualified
Tree Appraisal Qualified

DATE OF ISSUANCE: January 17, 2024

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# TABLES



# APPENDICES



# REVISION RECORD

| REVISION | DESCRIPTION | DATE (YYYY-MM-DD) | ISSUED BY |
|---|---|---|---|
| 0 | Construction Impact Assessment and Tree Management Plan | 2020-09-04 | RM |
| 1 | Construction Impact Assessment and Tree Management Plan (based on new designs) | 2021-01-22 | RM |
| 2 | Construction Impact Assessment and Tree Management Plan (revised designs) | 2022-05-13 | BB |
| 3 | Construction Impact Assessment and Tree Management Plan (based on new designs) | 2023-10-30 | RM |
| 4 | Construction Impact Assessment and Tree Management Plan (amended) | 2024-01-17 | RM |

# 1. INTRODUCTION

Talmack Urban Forestry Consultants Ltd. was engaged to complete a tree inventory, construction impact assessment and management plan for the trees at the following proposed project:

| | |
|---|---|
| **Site:** | 1042/1044 Richardson Street |
| **Municipality:** | City of Victoria |
| **Client Name:** | 1248330 BC Ltd. c/o Bart Johnson |
| **Dates of Site Visit(s):** | May 12/August 24, 2020; January 22, 2021; October 24, 2023; January 16, 2024 |
| **Site Conditions:** | Flat residential lot with no ongoing construction. |
| **Weather During Site Visit:** | Variable |

The purpose of this report is to address requirements of the City of Victoria arborist report terms of reference and Tree Preservation Bylaw No. 05-106. The construction impact assessment section of this report **(Section 8)** is based on plans reviewed to date, including building plans from Christine Lintott Architects Inc. (dated December 14, 2023), civil plans from McElhanney (dated November 7, 2023), landscape plans from LADR (dated December 14, 2023), preliminary shoring plan from Ryzuk Geotechnical (dated May 20, 2022), and the site survey from Powell & Associates (dated May 7, 2020).

# 2. TREE INVENTORY METHODOLOGY

Prior to our site visit we were provided surveyed tree locations by Powell & Associates. For the purposes of this report: the size, health, and structural condition of trees were documented. For ease of identification in the field, numerated metal tags are attached to the lower trunks of on-site trees. Trees located on neighbouring properties, the municipal frontage, or in areas where access was restricted, were not tagged. Each tree was visually examined on a limited visual assessment basis (level 1), in accordance with Tree Risk Assessment Qualification (TRAQ) methods (Dunster *et al.* 2017) and ISA Best Management Practices.

# 3. EXECUTIVE SUMMARY

Based on review of the plans and our understanding of the project scope, two (2) bylaw-protected on-site trees are located where they are likely to require removal due to construction impacts, as well as nine (9) non-protected on-site trees. All other trees located on neighbouring properties and municipal boulevards are located where they are possible for retention, provided mitigation recommendations identified in **Section 8** are followed.

# 4. TREE INVENTORY DEFINITIONS

**Tag:** Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on municipal or neighboring properties are not tagged.

**OS:** No tag due to inaccessibility or ownership by neighbour.

**DBH:** Diameter at breast height – diameter of trunk, measured in centimeters at 1.4m above ground level. For trees on a slope, it is taken at the average point between the high and low side of the slope.

* Measured over ivy

~ Approximate due to inaccessibility or on neighbouring property

**Dripline:** Indicates the radius of the crown spread measured in meters to the dripline of the longest limbs.

**Relative Tolerance Rating:** Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not take into account individual tree characteristics, such as health and vigour. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

**Critical Root Zone:** A calculated radial measurement in meters from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean).

**Health Condition:**

- Poor – significant signs of visible stress and/or decline that threaten the lo ng-term survival of the specimen
- Fair – signs of stress
- Good – no visible signs of significant stress and/or only minor aesthetic issues

**Structural Condition:**

- Poor – Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair – Structural concerns that are possible to mitigate through pruning
- Good – No visible or only minor structural flaws that require no to very little pruning

Suitability ratings are described as follows:

**Rating: Suitable.**

- A tree with no visible or minor health or structural defects, is tolerant to changes to the growing environment and is a possible candidate for retention provided that the critical root zone can be adequately protected.

**Rating: Conditional.**

- A tree with good health but is a species with a poor tolerance to changes to its growing environment or has a structural defect(s) that would require that certain measures be implemented, in order to consider it suitable for retention (ie. retain with other codominant tree(s), structural pruning, mulching, supplementary watering, etc.)

**Rating: Unsuitable.**

- A tree with poor health, a major structural defect (that cannot be mitigated using ANSI A300 standards), or a species with a poor tolerance to construction impacts, and unlikely to survive long term (in the context of the proposed land use changes).

**Retention Status:**

- Remove – Not possible to retain given proposed construction plans
- Retain – It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our recommended mitigation measures are followed
- Retain * - See report for more information regarding potential impacts

## TABLE 1. TREE INVENTORY

| Tag or ID# | Surveyed? (Yes/No) | Location (On, Off, Shared, City) | Bylaw protected? (Yes/No) | Name | | dbh (cm) | Critical root zone radius (m) | Crown spread diameter (m) | Relative tolerance | Condition | | Retention Suitability (onsite trees) | General field observations/remarks | Tree retention / location comments | Retention status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Common | Botanical | | | | | Health | Structural | | | | |
| **79** | Yes | On-site | **Yes** | Black locust | *Robinia pseudoacacia* | N/A | N/A | N/A | Good | N/A | N/A | N/A | | Removed as per permit #001966. | **X** |
| **80** | Yes | On-site | **No** | English holly | *Ilex aquifolium* | 16, 8 | 2 | 3 | Good | Good | Fair | Unsuitable | Asymmetric crown due to competition with #81 | Conflict with proposed underground parking ramp. | **X** |
| **81** | Yes | On-site | **No** | European hawthorn | *Crataegus monogyna* | 22 | 2 | 3 | Good | Good | Fair | Unsuitable | Conflicting with Holly #80 | Conflict with proposed underground parking ramp. | **X** |
| **82** | Yes | On-site | **No** | Plum | *Prunus spp.* | 16, 7 | 2.0 | 3 | Moderate | Fair | Fair | Unsuitable | | Conflict with proposed underground parking ramp. | **X** |
| **83** | Yes | On-site | **No** | English holly | *Ilex aquifolium* | 19,18 | 3 | 4 | Good | Fair | Fair | Unsuitable | One stem growing through fence | Conflict with proposed underground parking ramp. | **X** |
| **84** | Yes | On-site | **Yes** | English holly | *Ilex aquifolium* | 22,11, 10 | 3.5 | 4 | Good | Good | Fair | Unsuitable | | Conflict with proposed underground parking ramp. | **X** |
| **85** | Yes | On-site | **Yes** | Norway spruce | *Picea abies* | 34 | 4.1 | 5 | Moderate | Fair | Good | Unsuitable | Some lower crown dieback, roots cracking existing retaining wall. | Conflict with proposed services & paver path. | **X** |
| **86** | Yes | On-site | **No** | Plum | *Prunus spp.* | 14 | 1.7 | 4 | Moderate | Good | Fair | Unsuitable | Pruned from hydro lines | Conflict with proposed paver path. | **X** |
| **87** | No | On-site | **No** | Plum | *Prunus spp.* | 10 | 1.2 | 2 | Moderate | Good | Fair | Unsuitable | Suppressed | Conflict with proposed paver path. | **X** |
| **88** | Yes | On-site | **No** | Plum | *Prunus spp.* | 18, 17 | 3.4 | 4 | Moderate | Good | Fair | Unsuitable | | Conflict with proposed paver path. | **X** |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NT1** | No | Off-site | **Yes** | Japanese maple | *Acer palmatum* | 14,13,10,6 | 3.3 | 8 | Moderate | Good | Fair | N/A | Branches overhang fence 1m. Measured at 1.3m from existing fence near PL. | Possible impacts from underground parking. | **Retain*** |
| **NT4** | Yes | On-site | **No** | Plum | *Prunus spp.* | 5, 3 | 0.8 | 2 | Moderate | Fair | Poor | Unsuitable | Decay at base | | **X** |
| **NT5** | Yes | On-site | **No** | Plum | *Prunus spp.* | 7 | 0.8 | 2 | Moderate | Fair | Fair | Unsuitable | | | **X** |
| **NT6** | Yes | Municipal | **Municipal** | Paper birch | *Betula papyrifera* | 15 | 2 | 4 | Poor | Good | Fair | N/a | Hydro clearance pruning, codominant stems with included bark, surface root next to sidewalk. | Municipal tree (ID#: 15809), | **Retain** |
| **NT7** | Yes | Municipal | **Municipal** | Northern European hawthorn | *Craetagus oxyacantha* | 36 | 3.6 | 8 | Good | Good | Fair-good | N/A | | Municipal tree (ID#: 15810). | **Retain** |
| **NT8** | No | Off-site | **Yes** | Douglas-fir | *Pseudotsuga menziesii* | ~35 | 5.3 | 7 | Good | Fair | Fair | N/A | Surface roots; ~2.5m from PL (1.5m from fence). | Possible impacts from fence installation. | **Retain*** |
| **M1** | No | Municipal | **Municipal** | Crabapple | *Malus spp.* | 4 caliper | 0.5 | 1 | Moderate | Good | Good | N/A | | Recently planted. | **Retain** |

## 5. SITE INFORMATION & PROJECT UNDERSTANDING

The development site consists of one residential lot (1042/1044 Richardson Street), in Victoria, B.C. It is our understanding that the proposal is to demolish the existing structures and construct a new multi-storey residential complex, complete with underground parking.

Below is a general observation of the tree resource, as it appeared at the time of our site visit:

## 6. FIELD OBSERVATIONS

The on and off-site tree resource consists of a mixture of primarily non-native tree species growing in ground generally around the perimeter of the subject property (see **Figure 1**):

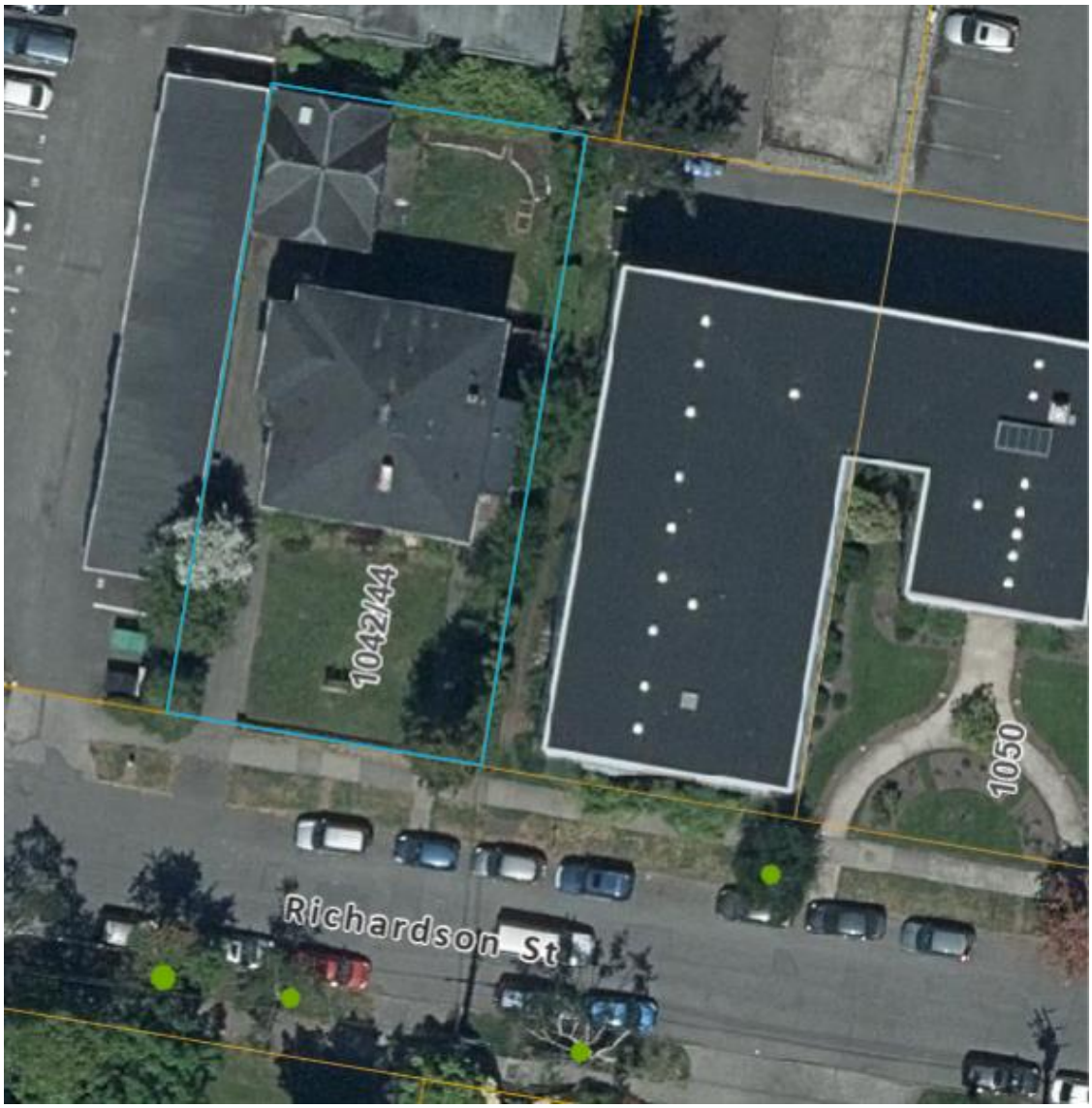


**Figure 1:** *Site context air photo (2023): The approximate boundary of the subject site is outlined in blue.*

# 7. TREE RISK ASSESSMENT

During our October 24 (2023) site visit and in conjunction with the tree inventory updated same day, trees were assessed for risk on a limited visual assessment basis (level 1) and in the context of the existing land uses. The time frame used for the purpose of our assessment is one (1) year (from the date of the tree inventory). Unless otherwise noted herein, we did not conduct a detailed (level 2) or advanced (level 3) risk assessment, such as resistograph testing, increment core sampling, aerial examinations, or subsurface root/root collar examinations.

### Existing Land Uses

We did not observe any trees that were deemed to be moderate, high, or extreme risk (in the context of the existing land uses) that would require hazard abatement to eliminate present and/or future risks (within a 1-year timeframe). Targets considered during this TRAQ assessment include: occupants of vehicles travelling or parked on Richardson Street (frequent use), pedestrians travelling along existing sidewalks (frequent use), hydro lines (constant use), occupants of the existing dwellings (constant use) or yards (occasional use) on-site and neighbour's.

# 8. CONSTRUCTION IMPACT ASSESSMENT

## 8.1. RETENTION AND REMOVAL OF MUNICIPAL TREES

The following municipal trees (indicated by ID#) are located where they are possible for retention provided that their critical root zones are adequately protected during construction. The project arborist must be on site to supervise any excavation or fill placement required within the critical root zones (shown on the tree management plan in ***Appendix A***):

### Retain and protect 3 municipal trees

- NT6, NT7, M1

### 8.1.1. ADDITIONAL MITIGATION MEASURES FOR MUNICIPAL TREES

**Paper Birch *(Betula papyrifera)* NT6** is located on the municipal boulevard (municipal ID# 15809) across the street from the subject property:

- A new utility pole and hydro services are proposed outside the CRZ/drip line. We do not anticipate significant impacts to the roots or the canopy. To ensure this tree is isolated from construction impacts, protective barrier fencing shall be erected and maintained 2.0m from the base of the tree (to the curb and sidewalk edges).

## 8.2. RETENTION AND REMOVAL OF ON-SITE TREES

The following bylaw-protected on-site trees (indicated by tag#) are located where they are likely to be severely impacted by the proposed construction and are proposed for removal:

### Remove 2 bylaw-protected on-site trees

- #84 & 85

The following non-protected on-site trees (indicated by tag# and ID#) are located where they are likely to be severely impacted by the proposed construction and are proposed for removal:

### Remove 9 non-protected on-site trees

- #80-83, 86-88, NT4, NT5

## 8.2.1. ADDITIONAL MITIGATION MEASURES FOR ON-SITE TREES (DEMOLITION PHASE)

If on-site bylaw-protected trees are to be preserved during the demolition phase, barrier fencing shall be erected and maintained as shown on the tree management plan in ***Appendix A*** and we recommend the following impact mitigations:

- The existing driveway should be left in place until the end of the demolition phase, to act as primary site access and root armour for **English Holly *(Ilex aquifolium)* #84.** Once demolition nears completion, removal of the existing concrete within the CRZ of this tree shall be completed with the supervision of the project arborist, as large roots may be encountered during extraction.
- To minimize impacts to **Norway Spruce *(Picea abies)* #85**, we recommend the existing retaining wall (sections within the CRZ) and stairway are left in place until the building permit phase.

## 8.3. RETENTION AND REMOVAL OF OFF-SITE TREES

The following bylaw-protected off-site trees are located where they are possible for retention provided that their critical root zones are adequately protected during construction. The project arborist must be on site to supervise any excavation or fill placement required within the critical root zones (shown on the tree management plan in ***Appendix A***):

### Retain and protect 2 bylaw-protected off-site trees

- NT1, NT8

## 8.3.1. ADDITIONAL MITIGATION MEASURES FOR OFF-SITE TREES

**Japanese Maple *(Acer palmatum)* NT1** (31cm DBH according to multi-stem calculation) is located on the north neighbouring property at 1035 McClure St. and is rooted approximately 1.8m north of the boundary with the subject property:

- Underground parking is proposed within the CRZ, which could require an extensive excavation (at least 3m deep, according to the elevation plan). To retain this tree, excavation must be limited to the property line and alternative slope stabilizing techniques should be utilized to minimize the use of cut-slopes and over-excavation. The project arborist shall supervise all excavations within the CRZ.

  It should be noted that this tree's location has not been verified by a professional surveyor. However, during a previous site visit, we measured the tree's location at 1.3m north of the existing fence, which is 0.5m north of the property line (according to the site survey). From review of the preliminary shoring/cut-slope plan, all roots encountered are likely to require pruning at the property boundary, which will result in a disturbance of less than 20% of the CRZ. We do not anticipate significant impacts to the health or stability of this tree based on the required root pruning.

- The landscape plan indicates a 1.5m height “solid-panel wood perimeter fence” along the subject property boundary. The project arborist should be contacted to review the location of the footings therein. If large roots from NT1 are encountered, the footings should be shifted to preserve them. The tree may also require clearance pruning to construct the fence, which should be directed by the project arborist or completed by another ISA Certified Arborist to ANSI A300 standards. If branches 10cm diameter or greater require removal, permits must be secured from City of Victoria Parks.
- This tree should be isolated from demolition by erecting protective barrier fencing 3.5m from the root collar on the east, south and west sides of the tree (see tree management plan in ***Appendix A***). The fencing should be re-aligned along the north property line at building permit phase.

**Douglas-fir *(Pseudotsuga menziesii)* NT8** (~35cm DBH) is located on the neighbouring property at 1045 McClure Street and is rooted approximately 1.7m from the existing fence near the east boundary of the subject property. According to the site survey, this fence is located 1m east of the property line:

- The preliminary shoring plan indicates a cut-slope extending as near as 2.5m from the northeast corner of the subject property, which is within the outer edge of this tree’s CRZ. It is also likely that root growth from NT8 has been restricted in this area by the presence (historically) of a large black locust tree removed in 2021 (#79 as per our inventory). As a result, we do not anticipate significant impacts to NT8 (based on the preliminary excavation plan), though if cut-slopes are modified to encroach further within the CRZ, the project arborist should be notified.

  Based on the existing site conditions, it appears that the trunk of #79 was severed just above natural grade (epicormic response growth has ensued). To minimize impacts to NT8—if possible, we recommend the stump remnants of #79 are ground below existing grade. If the stump must be removed, extraction shall be completed under the direction of the project arborist.
- The landscape plan indicates a 1.5m height “solid-panel wood perimeter fence” along the subject property boundary. Based on site conditions, the tree’s large surface roots appear to curve north, away from the proposed fence. The project arborist should be contacted to review the location of the footings therein. If large roots from NT8 are encountered, the footings should be shifted to preserve them.
- This tree should be isolated from demolition/construction by erecting and maintaining protective barrier fencing to the extents of the CRZ (see tree management plan in ***Appendix A***) and adjoin to protection barriers for NT1.

## 8.4. TREE IMPACT SUMMARY TABLE

Pursuant to City of Victoria Tree Preservation Bylaw No. 05-106, the tree replacement calculations are as follows:

| | A | B | C | D | |
|---|---|---|---|---|---|
| **Tree Status** | **Total # of Protected Trees** | **# Of Trees to be REMOVED** | **# Of NEW or REPLACEMENT Trees to be Planted*** | **# Of EXISTING non-protected Trees Counted as Replacements** | **NET CHANGE (A-B+C+D)** |
| On-site Trees | 2 | 2 | 4 | 0 | +2 |
| Private Offsite Trees | 2 | 0 | N/A | N/A | 0 |
| Municipal Trees | 3 | 0 | N/A | N/A | 0 |
| **Total** | **10** | **5** | **8** | **0** | **+2** |

**Figure 2:** *Based on bylaw criteria, protected trees removed shall be replaced at a 2:1 ratio—four (4) replacement trees are required on-site as compensation for removals of protected trees. An additional two (2) replacement trees are required as compensation for the previous removal of tree #79 (as per permit #001966). The landscape plans show a total of five (5) replacement trees proposed on-site. Based on current development plans (dated December 14, 2023) a columnar tree cannot be accommodated on the site in the front yard, and there is no acceptable space elsewhere on site for the sixth replacement tree.* ***Compensation for the one (1) outstanding replacement trees shall be made cash-in-lieu.***

## 9. IMPACT MITIGATION

**Tree Protection Barrier:** Areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing (see ***Appendix A*** for municipal barrier specifications). Where possible, fencing should be erected at the perimeter of the critical root zone. The barrier fencing to be erected must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

**Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any severed or severely damaged roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. In particular, the following activities should be completed under the direction of the project arborist:

- All excavations and/or addition of fill within the CRZs of trees to be retained.

**Methods to Avoid Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.

- Placing two layers of 19mm plywood.
- Placing steel plates.

**Demolition of the Existing Buildings:** The demolition of the existing houses, driveways, and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

**Paved Surfaces Above Tree Roots:** If the new paved surfaces within the CRZ of tree to be retained require excavation down to bearing soil and roots are encountered in this area, this could impact their health and structural stability. If tree retention is desired, a raised and permeable paved surface should be constructed in the areas within the critical root zone of the trees. The “paved surfaces above root systems” diagram and specifications is attached.

The objective is to avoid root loss and to instead raise the paved surface and its base layer above the roots. This may result in the grade of the paved surface being raised above the existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area.

To allow water to drain into the root systems below, we also recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems.

**Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.

**Blasting:** Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

**Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see “Minimizing Soil Compaction” section).

**Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.

**Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:

- Locating the barrier fencing
- Reviewing the report with the project foreman or site supervisor
- Locating work zones, where required
- Supervising any excavation within the critical root zones of trees to be retained
- Reviewing and advising of any pruning requirements for machine clearances

**Review and site meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

## 10. DISCLOSURE STATEMENT

This arboricultural field review report was prepared by Talmack Urban Forestry Consultants Ltd. for the exclusive use of the Client and may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client without the prior written consent of Talmack Urban Forestry Consultants Ltd. Any unauthorized use of this report, or any part hereof, by a third party, or any reliance on or decisions to be made based on it, are at the sole risk of such third parties. Talmack Urban Forestry Consultants Ltd accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, in whole or in part.

Arborists are professionals who examine trees and use their training, knowledge, and experience to recommend techniques and procedures that will improve a tree's health and structure or to mitigate associated risks. Trees are living organisms whose health and structure change and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. The arborist's review is limited to a visual examination of tree health and structural condition, without excavation, probing, resistance drilling, increment coring, or aerial examination. There are inherent limitations to this type of investigation, including, without limitation, that some tree conditions will inadvertently go undetected. The arborist's review followed the standard of care expected of arborists undertaking similar work in British Columbia under similar conditions. No warranties, either express or implied, are made as to the services provided and included in this report.

The findings and opinions expressed in this report are based on the conditions that were observed on the noted date of the field review only. The Client recognizes that passage of time, natural occurrences, and direct or indirect human intervention at or near the trees may substantially alter discovered conditions and that Talmack Urban Forestry Consultants Ltd. cannot report on, or accurately predict, events that may change the condition of trees after the described investigation was completed.

It is not possible for an Arborist to identify every flaw or condition that could result in failure nor can he/she guarantee that the tree will remain healthy and free of risk. The only way to eliminate tree risk entirely is to remove the entire tree. All trees retained should be monitored on a regular basis. Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Immediately following land clearing, grade changes or severe weather events, all trees retained should be reviewed for any evidence of soil heaving, cracking, lifting or other indicators of root plate instability. If new information is discovered in the future during such events or other activities, Talmack Urban Forestry Consultants Ltd. should be

requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein.

## 11. IN CLOSING

We trust that this report meets your needs. Should there be any questions regarding the information within this report, please do not hesitate to contact the undersigned.

Yours truly,

Talmack Urban Forestry Consultants Ltd.

Prepared by:

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Tree Risk Assessment Qualified
Tree Appraisal Qualified
Robbie@Talmack.ca

## 12. REFERENCES

Dunster, J.A., E.T. Smiley, N. Matheny, and S. Lily. 2017. Tree Risk Assessment Manual, International Society of Arboriculture (ISA).

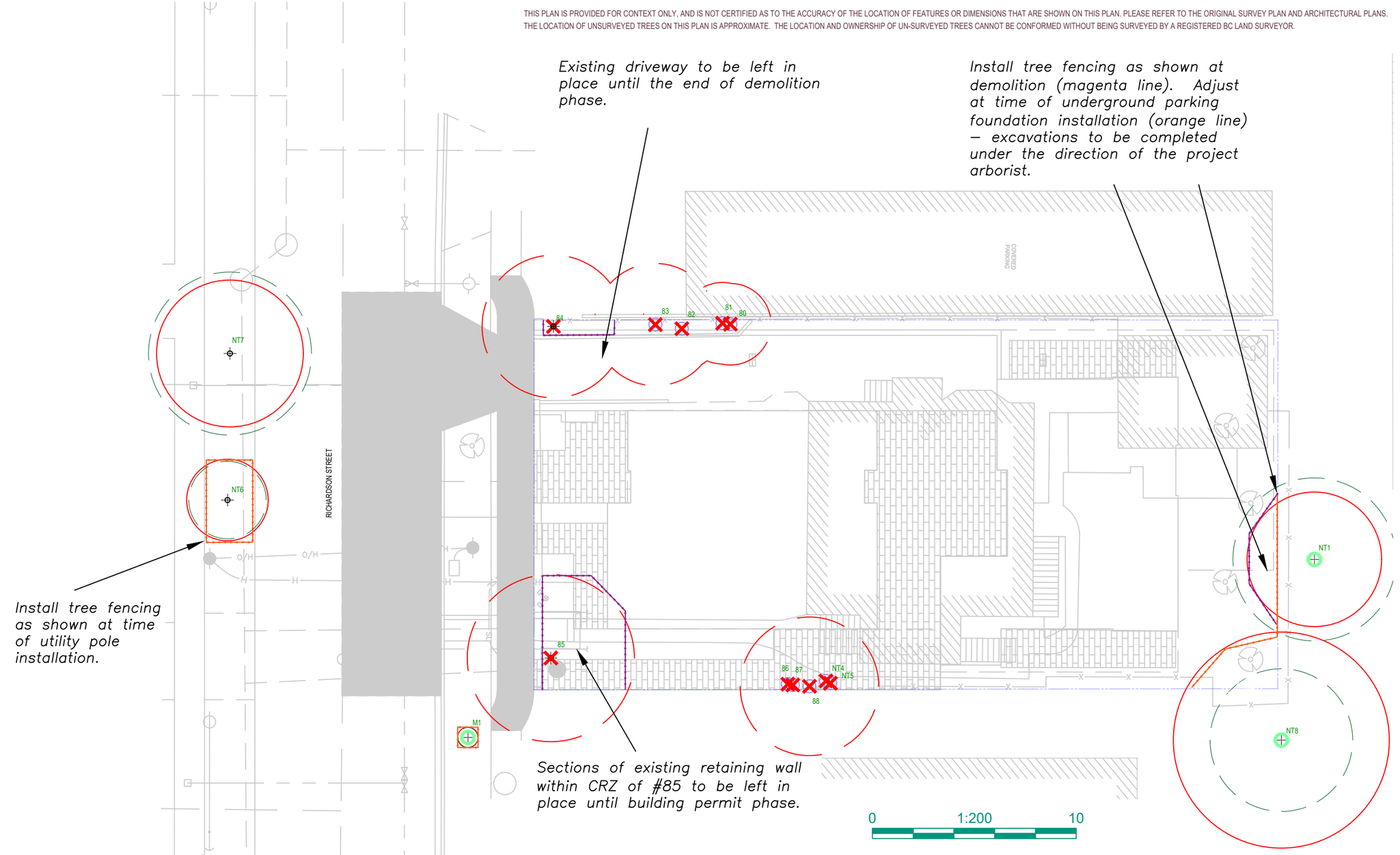
The City of Victoria Tree Preservation Bylaw No. 05-106.

## 13. COMPANY INFORMATION

General Liability: Intact Insurance, Policy No. 5V2147122 : $5,000,000

# APPENDIX A – TREE MANAGEMENT PLAN

THIS PLAN IS PROVIDED FOR CONTEXT ONLY, AND IS NOT CERTIFIED AS TO THE ACCURACY OF THE LOCATION OF FEATURES OR DIMENSIONS THAT ARE SHOWN ON THIS PLAN. PLEASE REFER TO THE ORIGINAL SURVEY PLAN AND ARCHITECTURAL PLANS. THE LOCATION OF UNSURVEYED TREES ON THIS PLAN IS APPROXIMATE. THE LOCATION AND OWNERSHIP OF UN-SURVEYED TREES CANNOT BE CONFORMED WITHOUT BEING SURVEYED BY A REGISTERED BC LAND SURVEYOR.

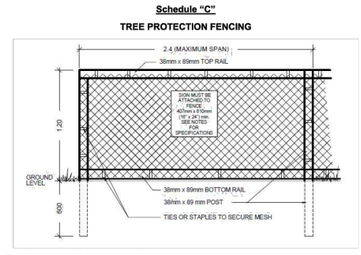



## LEGEND

- Existing tree with tag or ID #
- Tree protection fencing
- Dripline radius (m)
- Critical root zone radius (m)
- Barrier fencing at demo phase
- Tree proposed for removal
- Non-bylaw onsite tree
- Unsurveyed tree
- Site boundary

N

## TREE PROTECTION FENCING




**Tree Protection Fencing Specifications:**

1. The fence will be constructed using 38 x 89 mm (2" x 4") wood frame:
   - Top, Bottom and Posts.*
   - Use orange snow fencing mesh and secure to the wood frame with "zip" ties or galvanized staples.
2. Attach a sign with minimum size of 407 mm x 610 mm (16" X 24") with the following wording:
   a) **DO NOT ENTER**- Tree Protection Zone (For retained trees) or;
   b) **DO NOT ENTER**- Future Tree Planting Zone (For tree planting sites)

This sign must be affixed on every fence face or at least every 10 linear metres.

*In rocky areas, metal posts (t-bar or rebar) drilled into rock will be accepted.

DATE: November 2019
SCALE: N.T.S

## TREE PROTECTION NOTES

Tree protection barrier: The areas, surrounding the trees to be retained, should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zone. The barrier fencing to be erected must be a minimum of 1200mm in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

Arborist supervision: All excavation occurring within the critical root zones of protected trees must be completed under the supervision of the project arborist. Any severed or severely damaged roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound.

Demolition: The demolition of the existing houses, driveways, and any services that must be removed or abandoned must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

Methods to avoid soil compation: In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

Mulching: Mulching can be an important proactive step in maintaining the health or trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

Pruning: We recommend that any pruning of bylaw-protected trees be performed to ANSI A300 standards and Best Management Practices.

Paved surfaces above tree roots: Where paved areas cannot avoid encroachment within critical root zones of trees to be retained, construction techniques, such as floating permeable paving, may be required. The "paved surfaces above tree roots" detail above offers a compromise to full depth excavation (which could impact the health or structural stability of the tree). The objective is to avoid root loss and to instead raise the paved surface above the existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area. To allow water to drain into the root systems below, we also recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilitzed by Grasspave, Gravelpave, Grasscrete and open-grid systems.

Blasting and rock removal:Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibrations and overall impact to the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

Scaffolding:This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see "Minimizing Soil Compaction" section).

Landscaping and irrigation systems: The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technical consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on the tree health and can lead to root and trunk decay.

Arborists role: It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:

- Locating the barrier fencing.
- Reviewing the report with the project foreman or site supervisor.
- Locating work zones and machine access corridors where required.
- Supervising excavation for any areas within the critical root zones of trees to be retained including any proposed retaining wall footings and review any proposed fill areas near trees to be retained.

# Tree Management Plan

1042-1044 Richardson Street
Victoria, BC

DATE: January 17, 2024
PREPARED FOR: 1248330 BC Ltd. c/o Bart Johnson
SCALE: 1 : 200 @ 11" X 17"
DRAWN BY: RM
REVISION: 4
REFERENCE DWG: 2024-01-19 20-083-DESIGN

TALMACK URBAN FORESTRY Consultants Limited

## APPENDIX B - SITE PHOTOGRAPHS

**Photographs 1-3:** *Existing site conditions (October 2023) within the CRZs of bylaw-protected on-site trees #84* **(above, arrow)** *and 85* **(below)**. *Note existing driveway to be left in place until the end of the demolition phase (near #84) and retaining wall/stairs to be left in place until the BP phase (within the CRZ of #85).*

**Photograph 4:** *Existing site conditions (October 2023) within the CRZ of off-site bylaw-protected tree NT1, proposed for retention.*

**Photographs 5-7:** *Existing site conditions (October 2023) within the CRZ of off-site bylaw-protected tree NT8, proposed for retention. Note large surface root bends north* **(upper right, left side of frame)** *and stump of #79* **(below)** *within the CRZ.*

**Photograph 8:** *Existing site conditions (January 2024) on boulevard; note existing property line between 1042/1044 Richardson Street and 1050 Richardson Street, approximately 2.4m from newly planted crabapple M1.*

**Photograph 8:** *Existing site conditions (January 2024) on boulevard across from 1042/1044 Richardson Street and 1050 Richardson Street; existing municipal trees NT6* **(red arrow)** *& NT7* **(yellow arrow).**