SouthShore Forest Consultants

Arborist Report

For

1514 & 1520 Foul Bay Road
City of Victoria, B.C.

Residential Development Project

November 18 2022 – Revision #89

Prepared for:
Norm Foster Properties
Suite 160 – 1834C Oak Bay Avenue
Victoria BC, V8R 0A4

Prepared by:

SouthShore Forest Consultants

SouthShore Forest Consultants
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Insurance/ Seafirst Brentwood (CFC Underwriting – 5 Million Dollar Liability- Policy PSG03515712)
Incorporation # BC1069996 Ltd.

RE: Arborist Assessment & Tree Protection Plan (TPP)

Background/Scope of Work

SouthShore Forest Consultants was contacted by Norm Foster Properties, a private residential building contractor in regards to a proposed development located at 1514 & 1520 Foul Bay Road in the City of Victoria. Wayne had explained that the site required an Arborist Report and Tree Protection Plan (TPP) prior to demolition. Under the current proposal the entire site must be cleared requiring complete tree removal. Six (6) trees within the site are classified as "Protected Trees" under the current City of Victoria Tree Preservation Bylaw NO. 05-106. Tree Removal Permits will be required along with an approved Tree Protection Plan (TPP) prior to site demolition**. Bylaw Protected Trees identified for removal are: #431, #432, #435, #434 & Stump #433 – tree has since failed and stump remains. Mmbu Sept, 9/22**

Wayne has requested that SouthShore Forest Consultants provide a Basic Visual Tree Assessment (BVTA) and Tree Preservation Plan (TPP) for the site located at 1514/1520 Foul Bay Road in the City of Victoria.

SouthShore Forest Consultants agreed to accept the Arborist Services and provide the findings in an Arborist Report form. The report will include a Tree Inventory, Tree Site Map and Photos.

Methodology

On Friday June 5, 2020 the property was entered and assessed by SouthShore Forest Consultants. Michael Butcher, Consulting Arborist and Joel Creese, Certified Arborist provided the inspection and visual tree assessment for the site. The weather that day was mild and clear. A slight wind was detected and the temperature averaged 14 +/- degrees Celsius. Dry weather conditions prevailed that morning.

The property was assessed from grade. No form of diagnostic tools or invasive techniques were used during the assessment. A "Basic Visual Tree Assessment" (BVTA) was performed while on site. All tree measurements were made with the use of a standard metal forestry tape and Clinometer (height measurements). Measurements and observations were recorded with the intent to provide a static representation of the area. A "Tree Inventory" is provided

within the report and will be referred to as Appendix "B". Photographs of the site were taken during the assessment and these are included as Appendix "A" of this report.

During the assessment we observed, assessed and inventoried at total of **twelve (12)** trees positioned with in development impact zone. Trees have been tagged with metal tree tags. Tag Series #400 was utilized for this site. Tag Numbers range from #430 to #437. Four (4) trees are identified with as "NT" in the Tree Inventory Appendix "B". Two trees are positioned on private property to the north of the site, these two trees are identified as NT1 & NT2 in Appendix "B" tree Inventory. NT4 Sycamore Maple is positioned off site & could be impacted by excavation activity when the drain installation occurs.

Observations/Discussion

During our site assessment we observed two (2) well-established residential lots with existing structures, landscape and living articles. Our observations each site appeared to be normal and fairly representative of the area. Each site was observed to lack any significant or outstanding trees. We observed; sycamore maples (*Acer pseudoplantanus*), apple species (*Malus sp*.), purple leaf plum (*Prunus cerasifera*) laurel species (*Laurel sp*.) and lilac species (*Syringa sp*.) For the most part our observations indicate that most of the trees were in fair to poor condition, with multiple stems, poor structure and branch die-back. Combined with position in the landscape a number of trees were observed to be growing into fencing and competing with hardscape features.

Our observations indicate that none of the trees on site will be preserved under the current proposal. Our observations indicate that tree condition and species combined with soil disturbances on site will create a moderate to high impact within tree Protected Root Zones (PRZ).

We observed two trees (NT1 & NT2) which are positioned on the north side of lot 1520. Each of the two trees are positioned on private property and must be protected during the demolition and building phases of the project. Our observations indicate that neither tree is protected under the City of Victoria's Tree Preservation Bylaw. The proposed development, grading and foundation construction may affect each of the private trees Protected Root Zone (PRZ).

Utility Corridor

During our assessment we observed a structural development map which indicated the proposed position of structures and building setbacks. Our observations indicate that the utility corridor will have no impact to protected trees and/or private vegetation. The driveway alignment will center the proposed structures within the driveway cut at Foul Bay Road. **A large maple (NT4) positioned across the street may sustain root impacts during servicing upgrades. This will be determined during proposed excavation events schedule for the site.**

Tree Dynamics

Bylaw Protected Trees & Site Impacts

- Five (5) trees are protected under the current City of Victoria Tree Protection Bylaw.
- **Each of the Bylaw protected trees are proposed for removal. Bylaw Protected trees must be preserved and protected during the Development Permit stage of the project.**
- **During the Building Permit Stage five (5) Bylaw Protected trees identified for removal will require a removal permit from the City of Victoria Parks Department.**
- Development activity including excavation and grading will significantly impact each of the five (5) bylaw protected trees.
- Trees NT1 & NT2 are positioned on private property. Each will be retained and Tree Protection Fencing (TPF) will be required to off set root and soil impacts.
- Bylaw Protected Trees are to be retained and protected during the Demolition Permit phase of the project.

Tree Protection Plan (TPP)

North Property Line – NT1 & NT2

- Provide tree protection at a minimum distance of two metres from the north property line. Please refer to Appendix "B" photo #8 – Tree site Map. Install TPF as per City of Victoria specifications and provide Project Arborist Inspection prior to the Demolition Permit application. Project Arborist will verify TPF location and construction.
- Provide Tree Protection for five (5) Bylaw Protected trees during the DP stage.

Excavation Activity and Grading

- Provide Project Arborist to observe and assess excavation and grading activities within the PRZ of trees identified for retention (NT1 & NT2). Utilize a small rubber tracked excavator, (2-3 tonne) and/or hand digging/hydro-vac.

All of the TPF must be erected and installed in the proper locations. SSFC provided marking paint on grade to identify approximate protection fencing locations. SSFC staff must provide inspection and verification of fencing detail for District approval.

Each tree protection zone must be vacated of all construction materials and/or equipment. At no time can the fence be taken down unless the Project Arborist is contacted and approval is given. In such cases the Project Arborist must assess and assist fence removal and combined impacts which are require for construction completion. Michael Butcher 250.893.9056 – 72 hours notice required.

Landing/Storage Area

- Materials storage will be confined to the proposed driveway approach and alignment of the site.

Compaction Reduction

- Utilize "hog-fuel" / wood mulch in and around the outside of tree protection area for trees NT1 & NT2. This will reduce the impacts to the trees Critical Root Zone (CRZ).

Root Assessment and Observation

- Provide Project Arborist for excavation observation and assessment when working within the Protected Root Zones of any protected tree (NT1 & NT2) & utility upgrades positioned within the PRZ of NT4 maple positioned across from the site.

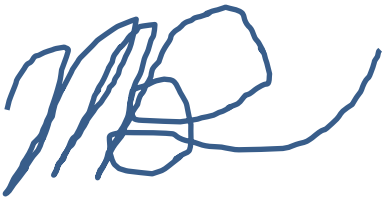
Tree Pruning – Elevation

- Ensure that any pruning is performed to meet Tree Care Industry Standards. The ANSI A300 pruning guidelines shall be utilized for all tree and shrub pruning.

Although the site has been assessed, trees in the landscape are dynamic and changes could occur. This report is a static representation of the site during our assessment.

Recommendations – Tree Remediation

- Provide tree protection fencing for private trees NT1 & NT2 & five (5) Bylaw Protected Trees during the Demolition stage of the Project. Provide tree removal permitting during the BP stage of the project.
- Provide a signage on the TPF to indicate an environmental protection area.
- Provide hog fuel/ wood chips along the outside of the TPF at NT1 & NT2, (1 metre width & 20 cm in depth over the existing grade).
- Provide Project Arborist for all excavation and soil grading activity within the PRZ of retained trees.
- Provide a pervious paving material for the driveway construction - Interlocking pavers and/or pervious concrete.
- Utilize the center driveway alignment as a staging and materials storage area.



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Joel Creese
Certified Arborist
Certified TRAQ

ATTACHMENTS

- Appendix A – Tree Inventory
- Appendix B – Site Photos

Arborist Disclosure Statement:

Arborist are tree specialists who use their education, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risks.
Arborist cannot detect every condition that could possibly lead to structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below the ground.
Arborist cannot guarantee that the tree will be healthy and safe under all circumstances, or for a specific period of time. Trees are dynamic specimens, not static. Changes in conditions including the environment are unknown.
Remedial treatments cannot be guaranteed.
Trees can be managed, but they cannot be controlled. The only way to eliminate all risk is to eliminate all trees.

Tree Assessment Condition Rating

Good - A tree specimen which is exempt defects, branch dieback, moderate insect and fungal identification. This tree has evenly distributed branching, trunk development and flare. The root zone is undisturbed, leaf, bud and flower production and elongation are normal for its distribution.

Fair - A tree specimen which has minor defects, branch dieback, previous limb failure, identification of cavities and insect, or fungal identification. This tree has multiple (2-3) primary stem attachments; previous utility pruning, callus growth and poor wound wood development. Minor root girdling, soil heave and identifiable mechanical damage to the root flare or root zone.

Poor- A tree specimen where 30-40% of the canopy is identifiably dead, large dead primary branching, limited leaf production, bud development and stem elongation. Limb loss or failure, and heavy storm damage leading to uneven weight distribution. Large pockets of decay, multiple cavities, heavy insect and fungal infection. Root crown damage or mechanical severing of roots. Root plate shifting, heavy lean and movement of soil.

Dead- Tree has been observed to be dead with no leaf, foliar and bud development. No stump sprouts and root suckers are present.

Excavation Process and Recommendation for Tree Root Zones

1. Provide and schedule Project Arborist to assess site prior to construction.
2. Inventory and identify trees and hazards which could complicate excavation process.
3. Utilize hand tools and cutting equipment when large tree roots are anticipated.
4. Provide small rubberized track excavation equipment which will reduce soil compaction.
5. Excavator operator must be well informed about dig site and goal to complete project.
6. Use shallow excavation sweeps across the site to establish a depth which roots can be easily identified. (3cm to 5cm in depth of soil for each sweep across the soil face)
7. Roots greater than 6cm in diameter should be preserved and inspected by the Project Arborist. The project arborist will determine if roots should be pruned or cut.
8. All roots greater than 6cm in diameter should be identified and documented for project records.
9. Photos are highly recommended for documentation purposes.

Assessment of the site may expose further tree issues or conditions. If this occurs the project arborist will contact City of Victoria Parks Staff for further recommendations.

Tree Protection Plan – General Notes

i. **Provide a detailed sign specifying that tree protection measures are in place and will be followed during the project. Fines will be posted for malicious acts and can be placed on individuals who disregard the tree protection plan and its guidelines. Signs will be placed at each entrance of the project detailing what is expected when working in potentially high impact tree protection zones.**

ii. **Provide tree protection fencing for all trees identified with protection requirement in this report. This fencing shall be four (4ft) feet in height and made of orange plastic. If required, header and footer boards will be used to secure the protective fencing. Use the City of Victoria tree protection specifications.**

iii. **Tree protection and root protection signs will be placed on the fencing. No entry will be allowed, unless specified by the project arborist and in their presents while on site.**

iv. **Restrict vehicle traffic to designated access routes and travel lanes to avoid soil compaction and vegetation disturbances.**

v. **Make all necessary precautions to prevent the storage of material, equipment, stockpiling of aggregate or excavated soils within tree protection areas. No dumping of fuels, oils or washing of concrete fluids will be allowed in tree protection zones.**

vi. **Provide an onsite arborist when a risk of root damage, root cutting or limb removal is required within the tree protection zone.**

vii. **Avoid alterations to existing hydrological patterns to minimize vegetation impacts to the site.**

viii. **The use of a project arborist is required to provide layout of tree protection zones. The project arborist(s) will provide pre-construction information to all parties involved with the project. The arborist must be notified 72hrs prior to construction activities in sensitive areas. The project arborist should be used to provide root and branch pruning when diameters are greater than 6cm.**

ix. **At no time will tree protection zones be removed from the project unless approved by the project arborist.**

Appendix “A” – Site Photos

Photo #1 – Tree Protection – Municipal Boulevard

In this photo you can see an example of an acceptable tree protection fencing barrier. The Municipal Boulevard must be protected to reduce soil and root compaction. The TPF fence shall have a posted sign reading “Tree Protection Area – No Admittance”.

Photo #2 – 1514 Foul Bay Rd - Maples

In this photo you can see the maple trees positioned directly along the front of the lot property line. In each case the maples will be impacted severely and retention makes no sense due to infrastructure and long-term sustainability.

Photo # 3 – Rear Yard 1520 Foul Bay Rd

In this photo you can see apple #433 & plum #434 positioned in the rear yard. In either case the trees must be removed to accommodate the current proposal. Each tree is declining in health making tree removal a logical choice.

Photo # 4 – Trees, Laurel NT1 & Maple NT2

In this photo you can see the location of trees positioned along the north property line at 1520 Foul Bay Road. Each of the two (2) trees, (NT1 & NT2) are not within the project site and must be protected during the entire term of the project.

Photo #5 – Rear Yard 1520 Foul Bay Road

In this photo you can see that there are no protected trees positioned in rear yard of 1520 foul Bay Road.

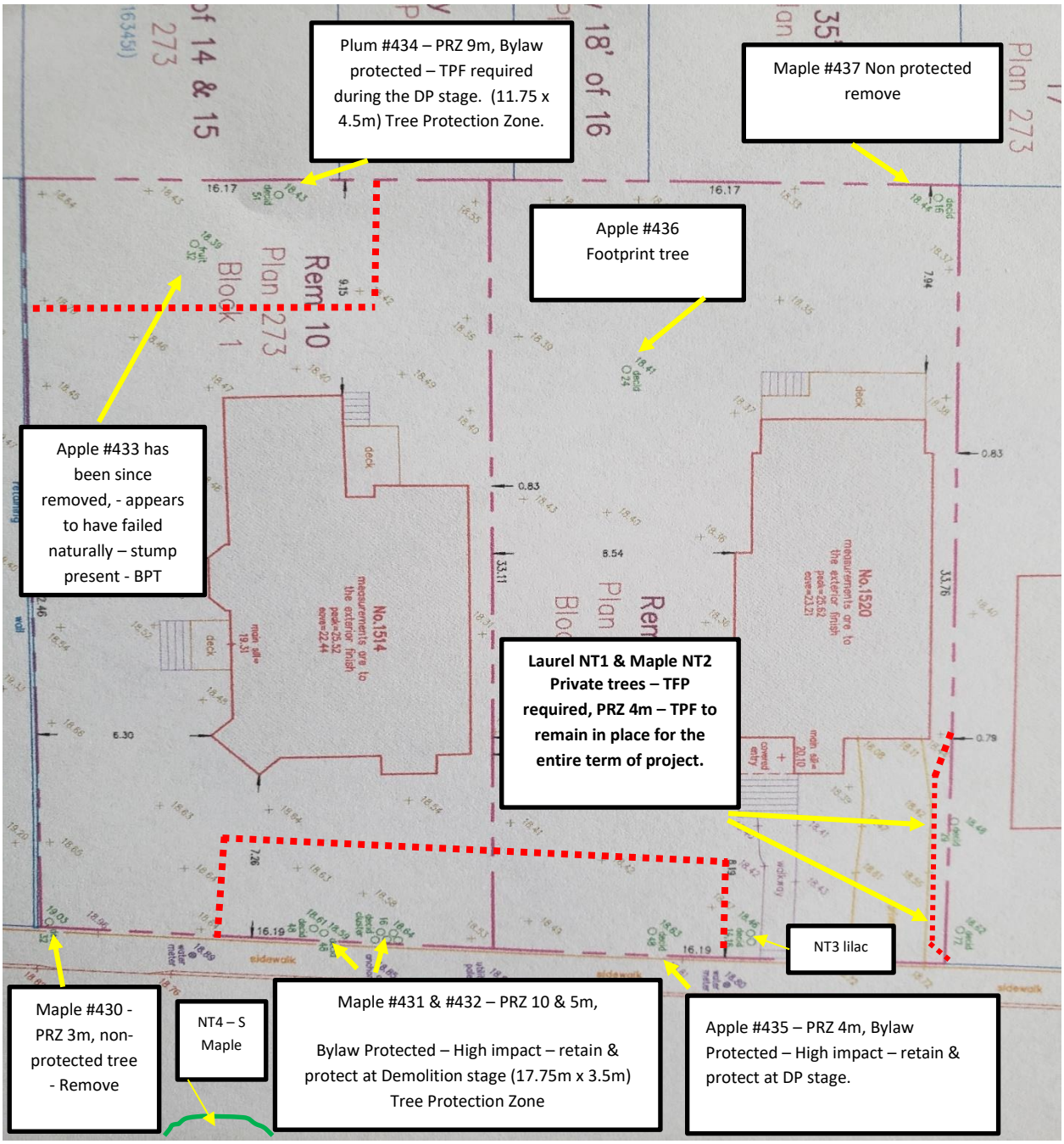
Photo #6 – Front Fence-Line at 1514 Foul Bay Road

In this photo you can see how the maple tree #431 & #432 are pushed up against the fence overhanging the Municipal Right-of-Way. The sidewalk replacement, driveway cuts and utility corridors will severely impact the CRZ of each tree.

Photo #7 - Proposed Building Footprint & Tree Positioning

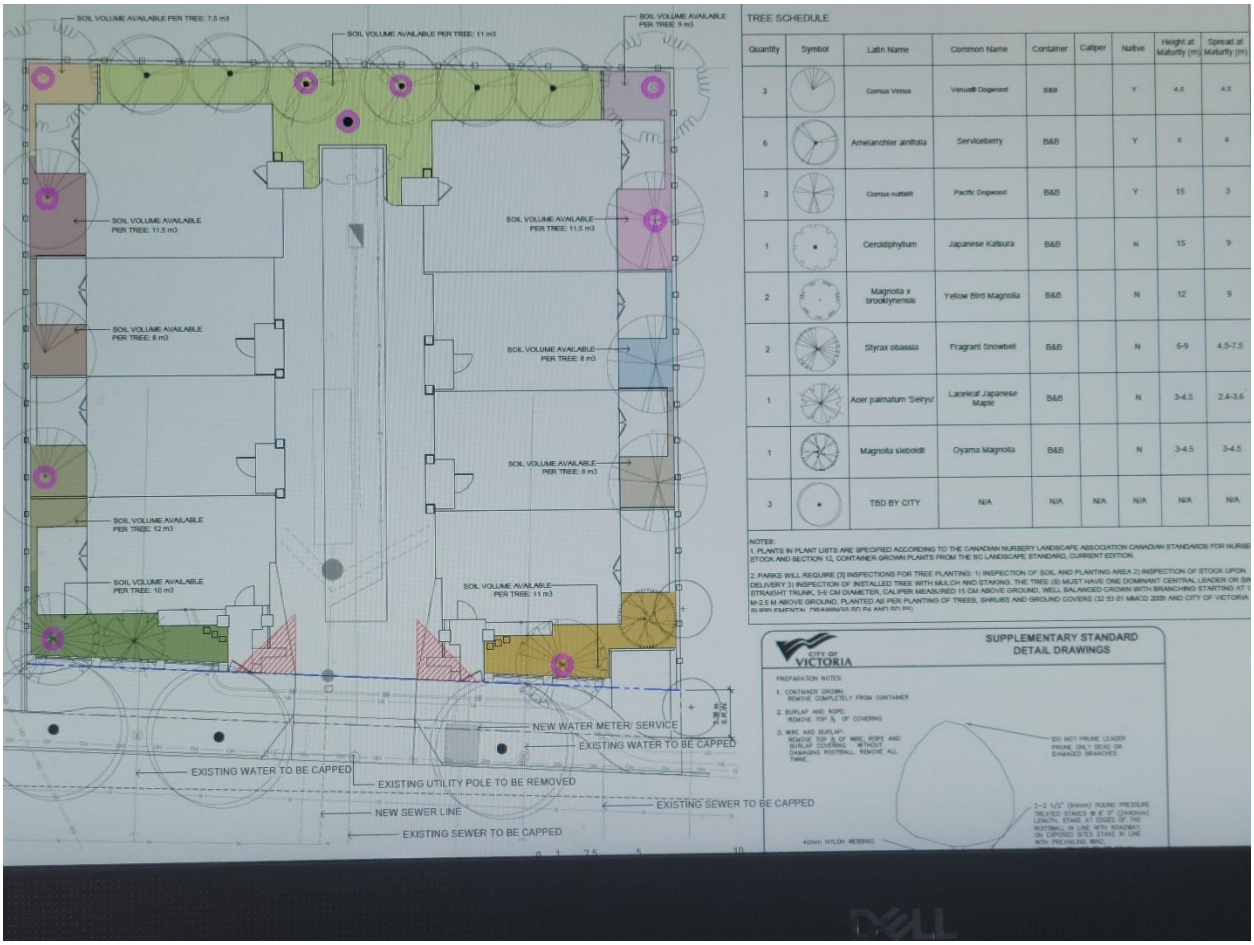
The current proposal will require the removal of all trees positioned within the site. In this case the two (2) neighbouring trees NT1 & NT2 will be protected during the entire demolition event.

Photo #8 – Site Survey & Tree Positioning



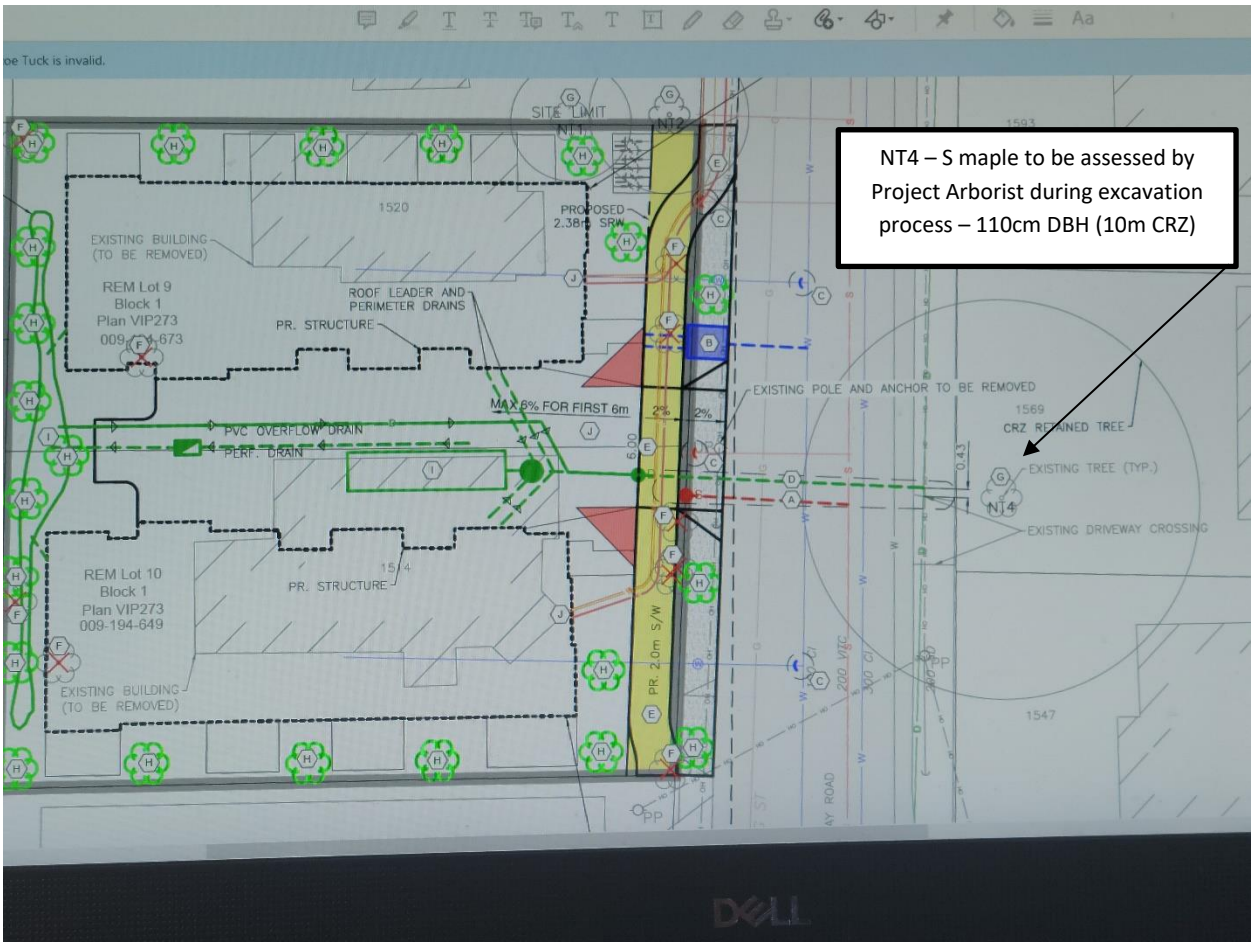
The Red hatched lines indicate the positioning of the Tree Protection Fencing (TPF) required for this site. The TPF will be conditioned to be in placed prior to the issuance of the Demolition Permit. The TPF must be remain in place until the BP is issued.

Photo #9 – Proposed Landscape Tree & Replacement Tree Positioning



The pink circles indicates where the tree replacement plantings are proposed for the site. Please see Landscape Documents.

Photo #10 – Proposed Site Servicing Map – NT4 Off-Site Sycamore Maple



The Project Arborist shall monitor and assess the excavation requirements within the Critical Root Zone (CRZ) of the off-site maple NT4. Our assessment of tree NT4 indicates a potential for root obstruction and/or exposure during the drain installation.

Tree Inventory – Appendix "B" – Figure #1

Tree#	Tree Species	Ownership Onsite - O/S Offsite - OF/S Muni - M	DBH (cm)	Height (M)	CRZ 1:9 (M)	Tree Condition G, F, P	Impact L, M, H	Retain	Remove	Bylaw Protected
430	S maple	O/S	27	9	**3**	F/F	M/H		X	no
431	S maple	O/S	95	12	**10**	F/P	H		X	yes
432	S maple	O/S	50	12	**5**	F/P	H		X	yes
433	Apple	O/S	N/A	4	**4**	P/P	H		Stump	yes
434	PL plum	O/S	85	8	**9**	F/P-P	H		X	yes
435	Apple	O/S	53	8	**5**	F/P-P	H		X	yes
NT3	Lilac	O/S	25	3	**3**	P/P	H		X	no
NT1	Laurel	OF/S	39	5	**4**	F/P	M	X		yes
NT2	S maple	OF/S	29	10	**3**	F/F-P	M	X		no
436	Apple	O/S	22	5	**2**	Dead	H		X	no
437	S maple	O/S	17	7	**2**	F/P	M		X	no
N/T4	S maple	OF/S	110	22	**10**	F-F/P	L	X		yes

Terms & Meanings

DBH – Diameter Breast Height, tree stem measured at approximately 1.4m above grade.

PRZ – Protected Root Zone, (10cm of trunk diameter = to 1.8m of protection distance) - out from the tree stem.

Tree Condition - (G, F, P), G = Good, F = Fair, P = Poor (Condition is a combination of health + structure).

Impact - (l, M, H), expected development interaction required within tree root, branch and stem zones.

Bylaw Protected - in the City of Victoria all tree species greater that 30cm in diameter are protected.

CRZ – Critical Root Zone, a zone below grade which usually contains the large structural roots formations.

N/T4 – Sycamore Maple (*Acer pseudoplantanus*) is positioned across the street at 1569 Foul Bay Road behind a locked gate. Potential impacts to this tree have been assessed to be minimal or insignificant when proposed utility services may be upgraded in the road. Project Arborist to be on site to direct and monitor the drain excavation requirements within the PRZ of off-site maple NT4

PRZ is calculated at a ratio of 1:18 in the City of Victoria – 50cm DBH tree would have a 8cm PRZ
CRZ is calculated at a ratio of 1:9 in the City of Victoria – 50cm DBH tree would have a 4m CRZ
PRZ & CRZ are rounded up to the nearest 0.5 metre.

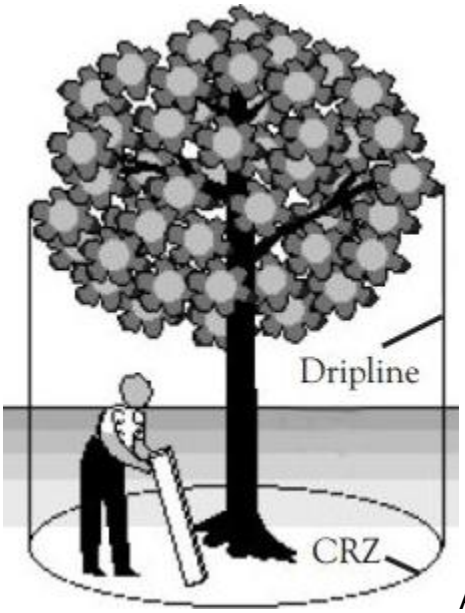
Addendum 1 Sept 6 2022 – Tree Protections Zones – CRZ & PRZ

CRITICAL ROOT ZONE PROTECTION

A critical step in retaining healthy trees is the protection of tree roots from disturbance. Each tree has a critical root zone (CRZ) that varies by species and site conditions. The International Society of Arboriculture defines CRZ as an area equal to a 1-foot radius from the base of the tree's trunk for each 1 inch of the tree's diameter at 4.5 feet above grade (referred to as diameter at breast height).

CRITICAL ROOT ZONE RADIUS DISTANCES CALCULATED BY TREE DIAMETER AT BREAST HEIGHT

Tree diameter	Critical root zone radius	Total protection zone diameter, including trunk
2 inches	2 feet	4+ feet
6 inches	6 feet	13.5 feet
20 inches	20 feet	42 feet
46 inches	46 feet	96 feet



Another common rule of thumb is to use a tree's drip line to estimate the CRZ (see figure). Evaluate both of these and choose whichever provides the larger CRZ.

Under certain circumstances, disturbing or cutting roots in a CRZ may be unavoidable. In such cases, the work should be done only under the on-site supervision of an ISA Certified Arborist.

Cutting or disturbing a large percentage of a tree's roots increases the likelihood of the tree's failure or death. Never cut tree roots that are more than four inches wide; roots

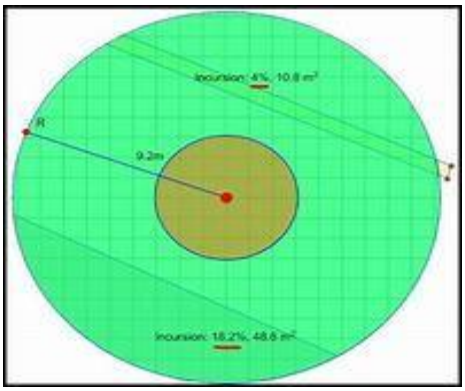
that large are usually structural. Cutting them can destroy the stability of the tree, causing it to fall over!

If you must cut tree roots, do so cleanly with sharp tools. Never tear with a backhoe or other dull instrument. A clean cut encourages good wound closure and confines the spread of decay. If damage is severe, consider removing the tree because its stability may have been compromised.

Reference – ISA PNW Chapter

- The TPZ or RPA is a designated area around a tree that is protected when nearby works are being undertaken to preserve the soil and tree. The area is usually calculated by multiplying the DBH (trunk diameter at a given height) by 12, e.g. if the DBH is 50cm then the TPZ will usually be 6m radius measured from the centre of the trunk. 1:12

Reference – SafeProof for Arborists



“protected root zone” (a) means the area of land surrounding the trunk of a protected tree that contains the bulk of the critical root system of the tree, as defined on a plan prepared by an arborist, that the Director approves, or (b) where a plan within the meaning of subsection (a) of this definition has not been prepared and approved, means the area of land surrounding the trunk of a protected tree contained within a circle having a radius which is calculated by multiplying the DBH of the tree by 18.

Reference – City of Victoria, Tree Protection Bylaw #21-035

Tree Diameters – As per CoV Request

- **Tree diameters were reverified on Aug 24th 2022. Tree #430, NT3 & NT2 are all under the 30cm diameter threshold and therefore are not bylaw protected. Mmbu, September 6, 2022.**