

Preliminary Arborist Report

To be submitted with Tree Plan

Project:

2 Lot Subdivision
Development Permit Application
15695 Thrift Avenue
White Rock V4B 2M3

Submitted to:

Bikram Gill
#207 13049 76 Avenue
Surrey BC V3W 2V7

Submitted by:

Urban Grove Tree Care
and Consulting Ltd



Contact Information:

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Insurance and Licences provided for reference:

WorkSafe BC #200739388
Commercial General Liability Policy: Intact #5A1042772- 5 Million
Professional Liability Policy #SWG02226376- 5 Million
White Rock Business Licence #11815

Date: February 14, 2023

1.0 Introduction

Urban Grove Tree Care and Consulting was retained by Bikram Gill to prepare an arborist report and tree plan for a 2-lot subdivision development project at 15695 Thrift Avenue in White Rock. An existing home and rear shed are located on the site. A proposed Subdivision Plan, legal survey (Jan. 23, 2023) and Key Plan (Feb. 13, 2023) were provided to prepare the arborist report and tree plan. Lesley Gifford visited the site February 13, 2023, to review the site and collect an inventory of trees on and off the site. The weather on the day of the site visit was clear and sunny. Trees bordering the west property boundary were inventoried January 9, 2023, to complete a tree risk assessment for the neighbouring property owner (Gary Purewal). The following attached aerial photograph and Key plan show the lot, existing city services and proposed services on the lot.

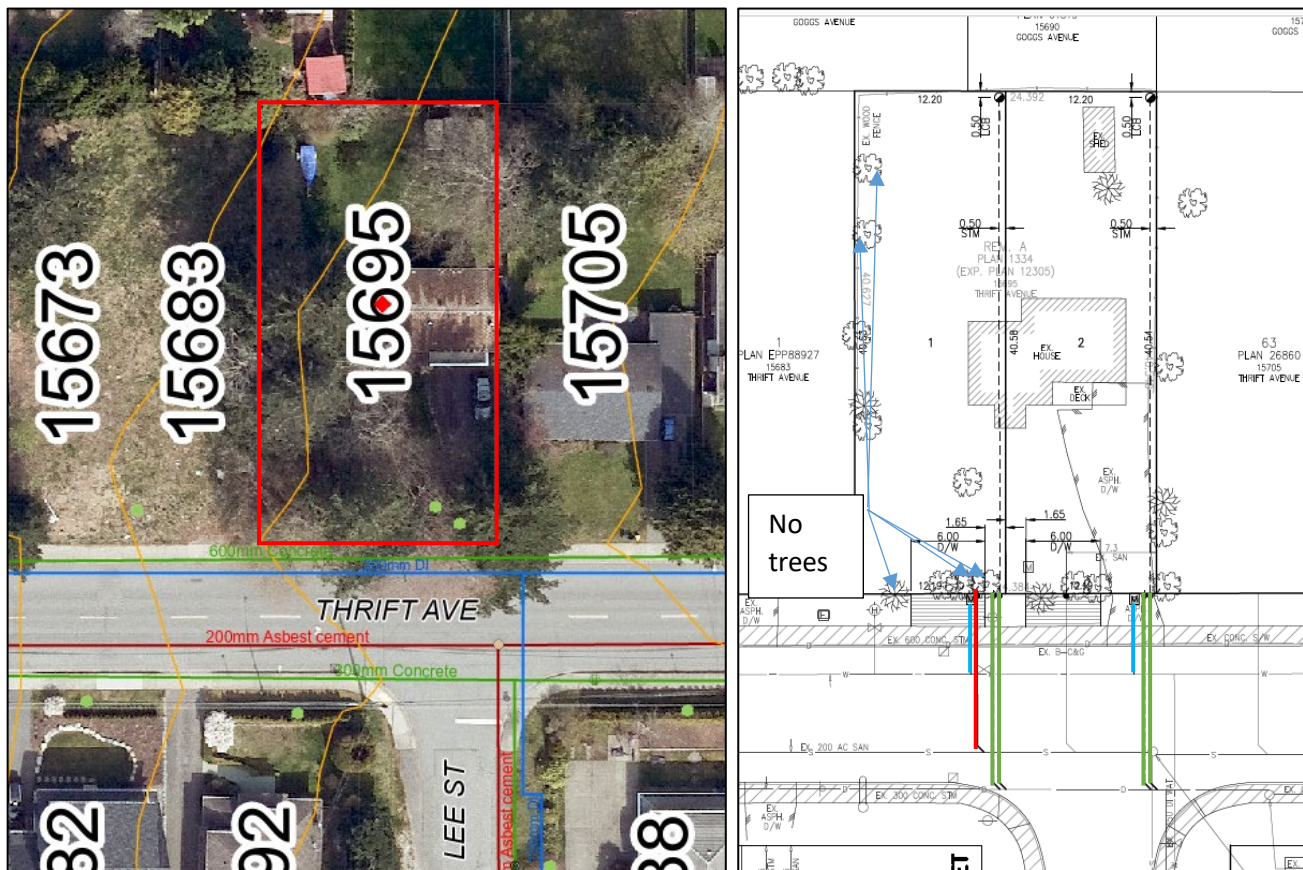


Figure 2 (left). Aerial photograph taken from White Rock’s Online Mapping System of the subject property (red polygon) with the main water (blue), storm drainage (green), and sanitary (red) services located.

Figure 3 (right). Snapshot of Key plan with subdivided lots 1 & 2, proposed driveways and proposed services (only) from Thrift Avenue: storm (green), sanitary (red) and water (blue). Ex. sanitary and water noted on plan but not highlighted. Blue arrows denote no tree, survey requires updating.

1.2 Purpose & Use of Report

The methods, findings, and recommendations presented within this report conform to the International Society of Arboriculture (ISA) and WorkSafe BC industry standards and best management practices. The purpose of this report is to provide the city with pertinent information regarding tree management on the site to support the development application. This report complies with White Rock’s Tree Protection Bylaw No. 2407, 2021 to secure subdivision, development, and tree management permits as required.

- Photographs of the site and trees are included within Appendix 1.
- An inventory of trees is included within Appendix 2.
- Tree summary totals are included within Table 1. Page 7.
- Requirements for Tree Protection Zone (TPZ) barriers are detailed in Appendix 3.
- Trees listed in the Inventory (Appendix 2) correspond with tree numbers on the attached tree plan.

2.0 Testing & Analysis

2.1 Tree Inventory

Trees greater than 20cm in diameter were inventoried and numerically tagged as required by White Rock’s Tree Protection Bylaw 2407 (2021). Tree attributes were recorded including species, diameter, height and percent live crown. Condition of each of the trees was noted based on individual structure and health. Tag numbers within Table 2 correspond to numbers on the attached Tree Plan. Refer to Table 1 for a summary of treatments and to Table 2 for individual tree data.

2.2 Tree Risk Assessment (TRA)

Using WorkSafe BC and ISA Standards for tree risk assessing a level two TRA was conducted for trees within striking distance of the project area. Trees were assessed with respect to target, site factors, health, load factors, defects, and conditions (tree parts) affecting the likelihood of failure. Risk was categorized for each part through a likelihood matrix and a risk rating matrix (Figure 1) to determine the overall risk rating. Tree risk ratings of are recorded in the Health column within Table 2. Offsite trees are not included in the risk assessment.

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Figure 1. Tree Risk Assessment Matrices

3.0 Observations

3.1 Trees & Site

The trees on and off the lot are predominantly mature native coniferous species with a few mature ornamental and native deciduous species. The inventoried trees include Red oak (*Quercus rubra*), Cherry (*Prunus ssp.*), Red alder (*Alnus rubra*), Purple leaved plum (*Prunus cerasifera ssp.*), Douglas fir (*Pseudotsuga menziesii*), Western red cedar (*Thuja plicata*), and Cypress (*Chamaecyparis ssp.*).

The site is sloped gradually from the northwest to the southeast with a meter of grade change noticed primarily northwest of the existing house and in the northwest corner of the lot.

4.0 Review of Trees and Proposed Design

Current legal survey, Subdivision and Key Plans require updating to reflect recent tree removal on the lot. The following arborist review identifies required revisions to help locate proposed features into areas having less conflict with retained protected trees.

4.1 Survey

The legal survey/ Subdivision Plan requires updating because 3 trees shown on the south, and 2 and 1/2 trees on the west property boundary of Lot A are no longer there. The Key Plan requires the updated survey so the proposed elements can be accurately placed outside of surveyed canopies (driplines).

4.2 Driveways

Proposed driveways on both lots currently conflict with existing protected trees. The current Key Plan locates driveways 1.65m off the east property boundary for Lot 1 and 1.65m off the west property boundary for Lot #2. Lot 1's driveway would be better placed off the west property line where a city tree does not exist and Lot 2's driveway is more suitable off the east where the driveway already exists.

4.3 Utilities

Proposed and existing utilities on both lots currently conflict with existing protected trees. Utilities shall be routed outside of TPZ's of retained trees where possible. If trees, within the middle of lots, require removal for building footprint conflicts then drainage can be shifted to the west instead of the east to avoid the TPZ of retained trees. A common trench for services on the west side of each lot is preferred which requires additional review by the project team to finalize. Restricted areas for trenching area may require upgrades of existing service locations (San) in place if unavailable space for new lines. **All city owned or private utility caps or upgrades require hydro vacuum excavation under arborist monitoring as the entire south property boundary is a TPZ.**

4.4 Building footprint

Proposed building envelopes A and B conflict with existing protected trees on both lots. Development plans on the neighbouring property to the west also affects tree retention on the subject site. The majority of trees on the lot are mature with corresponding large protection areas. If only 1 aspect or portion of a tree's TPZ conflicts with plans retention is likely, but if development is on each side, retention is less likely due to loss of structural roots which support and stabilize trees. Tree species, health and structure, and changes to site hydrology also affect retention capability.

On the west side of Lot A/ 1, Douglas-firs tag #517 and #515, and Red oak tag #901 appear to conflict with building envelopes (foundations) on and off the site. In addition, #517 and #901 pose high risk to development.

Lot B/ 2, Alder tag #518 poses a risk to site safety with two decay cavities and a crack on the main stem half way up the trunk. All remaining offsite trees along the east side of the lot have minor conflicts with

the building envelope requiring arborist monitoring of foundation excavations to perform root pruning and a follow up impact assessment report for submission to the city.

5.0 Tree Management

A total of 9 privately owned trees were inventoried/ tagged on the site and 5 were inventoried but not tagged off the site. Tree trees are shared with neighbouring properties: Douglas-firs tag #523/ 7642 and #524/ 4327 are shared with the city and Douglas-fir tag #517 is shared with the owner at the west of the site.

A signed letter of understanding (LOU) from the owner of the neighbouring property(ies) is required if trees are located on the property line or entirely on the neighbouring property. The letter will acknowledge that work is to be done but the shared or neighbouring trees in question are to be retained, and/or grant permission to remove and replace a neighbouring or shared tree. Signed LOU's are required to obtain permits.

5.1 Tree Retention

Currently, 4 (tag #519, 520, 523/ 7642, 524) onsite trees, and all offsite trees (#1-5) have the potential to be retained and protected with TPZ barriers.

5.2 Tree Protection Zone Barriers

Retained trees require root, trunk, and crown protection from equipment and materials during construction by creation of a tree protection zone (TPZ) equal to or larger than 6x the diameter of the trunk. TPZ barriers are installed at distances noted within the tree inventory (Appendix 2) and the attached Tree Plan.

TPZ barriers are installed to municipal specifications prior to construction to maintain no disturbance zones. There is no excavation, grade change, utility works or materials storage within the TPZ unless authorized by the project arborist. All weather signage indicating the protection area shall be attached to each barrier. Refer to Appendix 3 for TPZ Barrier Construction Details.

Completed TPZ barriers require an inspection report from the project arborist to the city confirming the required barriers have been located and constructed properly. Only when reporting is approved and securities have been received will TMP's and building permits (BP) be released.

5.3 Coordinated Site Development Plan (CSDP)

Protected, retained trees require arborist monitoring at specific stages of construction including shed demolition, driveway demolition and new construction, utility upgrades, and foundation excavations. All arborist monitored works must be clearly identified in the CSDP, with low impact construction methods, and clearly stated timing of when the project arborist is required to be on-site to supervise work.

5.3 Tree Removals, Tree Management Permit (TMP) and Timber Mark

Five trees currently require removal and replacement including:

- 2 unsuitable for retention in the context of the development (tag #525, 901),
- 1 in conflict with on and offsite building envelopes/ house foundations (tag #515), and

- 2 posing a high risk to the sites (tag #517, 518).
 - Douglas fir # 517 is nearly dead requiring removal.
 - Alder #518 was noted to have two decay cavities and a crack below the lowest cavity. Alders are poor at compartmentalizing decay and due to the size of the crown and trunk and the proximity of future homes this tree poses a high risk to the new development.

A multi-stemmed (3) Cherry #523/ 4327 requires removal of 1 high risk stem on the north (#523) with retention of the 2 remaining south stems (#4327). Cherry risk abatement is considered pruning and the tree is 'retained' in the tree summary below (Table 1).

A TMP shall be applied for and obtained prior to cutting trees. Refer to the City of White Rock's link for the TMP application form: [Tree Management Permit Application \(PDF\)](#) and submit completed forms with DP / BP application package.

A timber mark is required to be obtained from the Ministry of Forests, Lands, and Resource Operations prior to the moving of logs from the site. All pertinent information and applications can be found at: <https://www.for.gov.bc.ca/hth/private-timber-marks.htm>

5.4 Birds, Nests & the Migratory Act

The [Federal Migratory Bird Convention Act](#) and the [Provincial Wildlife Act](#) protect the active nests and eggs of birds. Nests are generally active between March 1 and August 31. If trees require removal within these dates and the city requests a bird nesting survey, it is required to be completed by a qualified environmental professional (QEP). Decay cavities within Alder #518 (proposed for removal) may be the result of Pileated woodpeckers.

Pileated woodpecker nests are protected under Schedule 1 of the Migratory Bird Regulations as of August 2022. Additional regulations are now in place to protect, manage, or remove their nests in trees. If there are nesting cavities in a tree, it must be retained for 36 months (3 years) upon discovery, regardless of the trees condition/risks. To remove the tree earlier than the 3-year waiting period, the property owner must hire a Registered Professional Biologist (RP Bio) to survey the nest. If the RP Bio has evidence the nesting cavities are no longer active, they can submit a notification to the [Abandoned Nest Registry](#). If/when the notification is confirmed, the property/tree owner may apply for a Nest Destruction Permit with the help of an RP Bio. The applicant however must be the owner.

The permit application must be sent to:

Regional Canadian Wildlife Services office
scfpacpermitscwspacpermits@ec.gc.ca
Tel: 250-327-4101

If a permit is approved, the tree with nesting cavities can be removed within a year following issuance. If there is another removal date specified on the permit, the tree can only be removed before the specified date. For more information, visit [Birds protected under the Migratory Birds Convention Act](#).

5.5 Tree Protection and Replacement Securities

A Type 3 TCP is required to remove 5 trees and 23 trees are required to be planted as replacements pending City approval.

A \$34,500.00 replacement tree security is collected prior to permits being released. Tree replacement securities are refunded 50% post approved building final and tree planting, and the remaining 50% are refunded if tree(s) survive and are established 1 year post planting. If no trees are planted on the site, the securities are retained as Cash in lieu for planting elsewhere in the City of White Rock.

Retained tree securities total \$33,000.00 for onsite trees and \$23,500.00 for offsite trees. Tree cutting permit(s), replacement tree requirements, securities, and bonding shall be approved and finalized by the City of White Rock.

Tree Protection and Replacement Securities		
Tree Protection securities:		
Size of Tree Retained	Securities	
DBH ≤ 50cm	\$3,000.00 per retained tree	
DBH of 51-65cm	\$4,500.00 per retained tree	
DBH > 65cm	\$10,000 per retained tree	
Tree Replacement securities:		
Size of Tree Removed*	Replacement Ratio	Securities / Cash-in-lieu (\$1,500 per replacement tree)
≤ 50cm DBH	2:1	\$3,000
51-65cm DBH	3:1	\$4,500
66-75cm DBH	4:1	\$6,000
76-85cm DBH	5:1	\$7,500
>85cm DBH	6:1	\$9,000

*Lower value trees as defined in the Tree Protection Bylaw, 2021, No. 2407 will have a 2:1 replacement ratio, regardless of size (DBH).

Figure 4. Snapshot of types of tree securities taken from Guide to the Tree Protection Bylaw 2407 on the White Rock’s website.

The following table summarizes the current treatment of protected trees for the project. Tree removal and retention numbers are only preliminary. Additional review by the city and team, with revisions to the design, will require updates to summarized tree retention, removal, and replacement.

Table 1. Summary of Tree Preservation Tree Summary by Species, Treatment and Site.

Tree Species	Total #	Retain	Remove	Replace tree ratio	TOTAL replacement trees
Red alder	1	0	1	6	6
Red oak	1	0	1	3	3
Cherry	1	1	0	0	0
Douglas-fir	6	3	3	1@6, 1@5, 1@3	14
TOTALS	9	4	5	3	23
Cypress (offsite)	1	1	0	0	0
Plum (offsite)	1	1	0	0	0
Douglas fir (offsite)	1	1	0	0	0
Western Red Cedar	2	2	0	0	0
TOTALS	5	5	0	0	0

Refer to the following City of White Rock’s links for additional tree protection information.

[Trees on private property | White Rock, BC \(whiterockcity.ca\)](https://www.whiterockcity.ca/Tree-Protection-Bylaw-2407)

[Guide-to-the-Tree-Protection-Bylaw-2407-PDF \(whiterockcity.ca\)](#)

6.0 Closing Summary

Prescribed treatments for trees within the project area are intended to support the permit application process and provide tree management recommendations to the design team and contractors. Ongoing consultation between the team and monitoring of work activities on the site is required to mitigate impacts and ensure a safe work site through all phases of construction. Every effort of the team to adhere to the recommendations in this report and to ensure trees are protected and monitored through all phases of construction is critical. Damages to trees above or below ground are irreversible so preventing disturbances within TPZ's is critical to their long-term survival.

7.0 Limitations

This arboriculture assessment report is based on site observations on the dates noted. Best efforts have been made to ensure that the opinions expressed are a reasonable and accurate representation of the condition of the trees reviewed. All trees or groups of trees have the potential to fail. No guarantees are offered or implied by Urban Grove Tree Care & Consulting Ltd or its employees that the trees are safe given all conditions. The assessment is limited to visual examination without excavation, probing, coring or climbing, unless specified and does not include an examination of the root system of the trees.

The findings and opinions within this report are representative of the conditions found on the day of the review and of my analysis of the photos taken and tree material gathered during the site inventory. This assessment does not estimate the cost to perform the work prescribed. Retained trees should be reviewed on a regular basis especially following tree clearing, soil / grade disturbances, and extreme weather events.

Please contact the undersigned if you have any questions or concerns regarding this assessment.

The following staff performed the site visit and prepared the report:

Lesley Gifford, B App.Sc.
ISA Certified Arborist PN-5432-A
ISA Tree Risk Assessor - TRAQ
Wildlife Dangerous Tree Assessor



Appendix 1 – Photographs



Photo 1. View northeast of row of mixed onsite and city /shared trees (left to right: #519, 520, 523/7642, 525, 524/4327) around the lot's south property boundary.



Photo 2. View north of the trees around the west property boundary (middle, front to rear: #515, 901, 517, rear, left: offsite 5, rear-right: #518 & offsite 4).



Photo 3. View east of Alder #518 in rear yard (foreground) with offsite Douglas-fir 4 (background).



Photo 4. Closeup of two decay cavities (Pileated?) at 11m and 13m on the trunk of Alder #518. The lower cavity has a crack below the cavity.



Photo 5. View east of codominant stemmed Douglas fir #519 in southwest corner of site.



Photo 6. View east of previously topped Douglas fir #520, east of 519, in southwest corner of site.



Photo 7. View east of City Cherry 7642/523 shared with property owner. It has 3 included stems from base. The northern stem (523) is leaning to the site.



Photo 8. Close-up view of base of Cherry #523/7642 with northern stem (left) noted splitting from the southern stems. North stem assessed to be a high risk, only it requires pruning/removal.



Photo 9. View west of trees along south property line of trees #519, 520 (rear, left), Cherry #523/7642 (leaning stem), Douglas-firs #525 & #524/4327 (foreground, left-rear to front), Douglas - fir # 515, Red oak #901, Douglas-fir #517 (rear, right-left to right).



Photo 10. View north from driveway of topped Douglas fir tag #525, Douglas-fir #524/4327, and Offsite Cedar 1 (right to left). Clearance pruning required for demolition / trucks.



Photo 11. View east into crown of shared tree with city tag #4327 and survey tag #524.



Photo 12. View northwest of offsite Cedar #1 (left) and offsite Plum #2 (far right, right of Rhodo).



Photo 13. View south from neighbours lot of offsite Cedar #3 with crown extending to subject house. Tree requires clearance pruning on site by ISA certified arborist.



Photo 14. Closeup view of offsite Cedar 3 topped with multiple tops weakly attached to a cracked dead top.



Photo 15. View north from neighbours property of offsite Douglas-fir #4 (right) and Alder Tag #518 (left).



Photo 16. View south from northwest corner of lot of trees along west (right) and south boundaries (rear).

Appendix 2

Table 2. Tree Inventory / TRA for 15695 Thrift Ave. White Rock

Tag or Tree #	Location (On, Off, City, shared)	Common Name	DBH (CM)	HGT (M)	LCR %	Health/ Condition	Comments	Recommended Treatments	TPZ (M)
1	Offsite	Western Red Cedar	46	13	90	Good. Single stem, asymmetrical crown, minor deadwood,	Ex. Driveway and Pr. utilities at west side of tree conflict with TPZ on Lot B/ 2. Tree has potential to be retained with arborist monitored activities & hydro vacuum exc. w/ in TPZ. Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Retain & protect with revised TPZ barriers on site. Arborist monitor works in TPZ (pruning, driveway, hydro vacuum exc. for utilities).	2.8
2	Offsite	Purple-leaved Plum	29	4	50	Fair. Codominant stems at base, multiple tops, deadwood.	Slight conflict with building envelope, driveway, and utilities. Tree has potential to be retained with arborist monitored activities & hydro vacuum exc. w/ in TPZ.	Retain & protect with revised TPZ barriers on site. Arborist monitor works in TPZ (driveway, hydro vacuum exc. for utilities).	1.7
3	Offsite	Western Red Cedar	45	9	50	Poor. Single stem, topped at 5m, multiple tops, weakly attached above cracked trunk. 2.5m dripline onto site.	Slight conflict with building envelope and utilities. Tree has potential to be retained with arborist monitored activities & hydro vacuum exc. w/ in TPZ. Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Retain & protect with revised TPZ barriers on site. ISA cert. arborist to prune for clearance. Arborist monitor works in TPZ (pruning, foundation, hydro vacuum exc. for utilities).	2.7
4	Offsite	Douglas-fir	96	30	90	Good. Single stem, well buttressed, no defects. 7m dripline onto site.	Conflicts with building envelope and utilities. Tree has potential to be retained with arborist monitored activities & hydro vacuum exc. w/ in TPZ.	Retain & protect with revised TPZ barriers on site. Arborist monitor works in TPZ (foundation, hydro vacuum exc. for utilities).	5.8
5	Offsite	Cypress	60	16	60	Good. Single stem, multiple tops, failed branch hanging. 1.5m to 3.25m dripline onto site.	No conflict with building envelope, but a slight conflict with drainage. Dripline extends onto Lot A/ 1. Tree has potential to be retained with arborist monitored excavations (drainage) in TPZ.	Retain & protect with TPZ barriers on site. Arborist monitor works in TPZ (drainage).	3.6

Tag or Tree #	Location (On, Off, City, shared)	Common Name	DBH (CM)	HGT (M)	LCR %	Health/ Condition	Comments	Recommended Treatments	TPZ (M)
515	Onsite	Douglas-fir	85	26	40	Fair. Moderate Risk. Previously topped at 9m, codominant tops not included, recently topped at 18m, deadwood in top, sap flow at base of trunk, beetle injury suspected.	-In conflict with Lot A/ 1's and neighbour's building envelope. If removal permitted drainage and other utilities to be placed on west PL. If tree is to be retained, arborist monitored activities in TPZ and utilities move to east PL. 5:1 replacement ratio. \$7000 security. Obtain Type 3 TCP prior to removing.	Remove at base outside of nesting season w/ all req. permits. 5 replacement trees required \$7500 security.	5.1
517	Onsite/ offsite (shared)	Douglas-fir	125	29	10	Poor. High Risk. Previously topped at 2/3m, multiple tops formed but eastern 2 stems recently cut/removed exposing west stem to new loads, dead top.	Not suitable for retention tree is nearly dead and a high risk. In conflict with Lot A subdivision building envelope. 6:1 replacement ratio. \$9000 security. Obtain Type 3 TCP prior to removing.	Remove at base outside of nesting season. 6 replacement trees required \$9000 security.	7.5
518	Onsite	Red Alder	94	17	90	Fair. High Risk. Single stem, epicormics within 3m of base have become large branches with long reach, deadwood, hanger, decay cavities at 11m (w/crack) and 13m on trunk, likely nests (Pileated?).	Not suitable for retention tree as a high-risk tree. In conflict shed demo & Lot B's subdivision building envelope. 6:1 replacement ratio. \$9000 security. Obtain Type 3 TCP prior to removing. QEP/ RP Bio assessment & permit?	Remove at base outside of nesting season w/ abandoned nest permit? 6 replacement trees required. \$9000 security.	5.6
519	Onsite	Douglas-fir	72	25	80	Fair. Low Risk. Topped in past at 5m, codominant stems (35-45cm each) formed, not included, deadwood, low canopy on south. New exposure on west from City tree removal (Alder).	Tree has potential to be retained with arborist monitored activities in TPZ (pruning, driveway, utilities). Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Retain & protect with TPZ barriers. Arborist monitor works in TPZ (pruning, driveway, utilities).	4.3
520	Onsite	Douglas-fir	50	20	80	Fair. Mod. Risk. Topped in past at 5m, codominant stems formed but only 1 stem remains, deadwood, low canopy on south. New exposure on east from 2 conifer tree removals.	Tree has potential to be retained with arborist monitored activities in TPZ (pruning, driveway or utilities). Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Retain & protect with TPZ barriers. Arborist monitor works in TPZ (pruning, driveway, utilities).	3.0

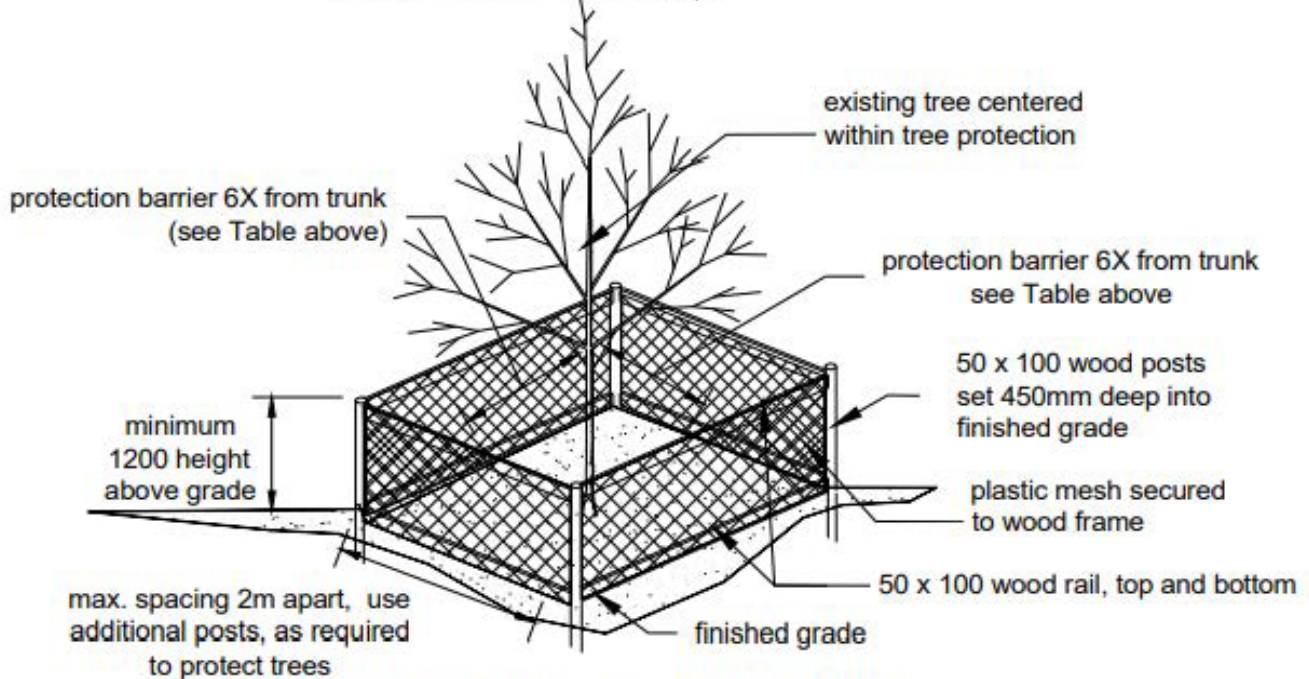
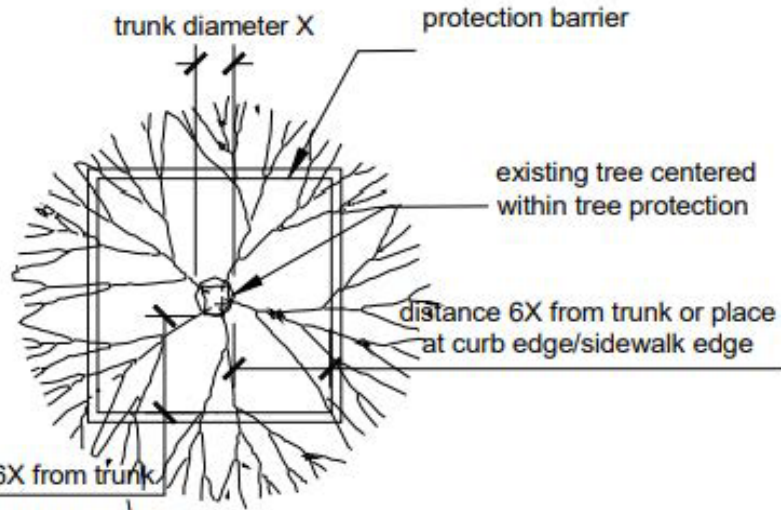
Tag or Tree #	Location (On, Off, City, shared)	Common Name	DBH (CM)	HGT (M)	LCR %	Health/ Condition	Comments	Recommended Treatments	TPZ (M)
523/ 7642	Onsite/ City (shared)	Cherry	135 (2 retain stems 99cm)	17	70	Fair. 1-36cm stem on north: High risk, 2 stems 40,59 cm on south: Low risk. 3 Stems from base, north stem included with split and lean towards site, multiple tops, two included, deadwood, exposed, damaged and girdling roots.	2 south stems have potential to be retained with arborist monitored activities (San) in TPZ. North stem in conflict with Lot B subdivision building envelope and a high risk, not suitable for retention, removal recommended. Only 1 of 3 stems, no replacement or security required. Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Remove north stem at base. Revised barriers from 8.1m to 5.9m. Retain & protect 2 south stems with TPZ barriers. Arborist monitor works in TPZ (pruning, utilities).	5.9
524/ 4327	Onsite/ City (shared)	Douglas-fir	109	29	90	Fair. Mod Risk. Codominant stems at 2m with included bark, multiple tops (5) 2 included, deadwood, low branching, overextended branches, roots heaving driveway. 10m dripline on north.	Ex. Driveway and Pr. utilities at east side of tree conflict with TPZ on Lot B (2). Tree has potential to be retained with arborist monitored activities in TPZ. Tree requires clearance pruning by ISA cert. arborist prior to demolition.	Retain & protect with revised TPZ barriers on site. Arborist monitor works in TPZ (pruning, driveway, utilities).	6.5
525	Onsite	Douglas-fir	53	5	10	Poor. Low Risk. Prev. topped at 5m, 4 live branches remain with low live crown %.	Tree could be retained with arborist monitored activities in TPZ but has <20% live crown and not suitable for long term retention. Removal would open area for utility upgrades. 3:1 replacement ratio. \$4500 security. Obtain Type 3 TCP prior to removing.	Remove at base outside of nesting season. 3 replacement trees required \$4500 security.	3.2
901	Onsite	Red Oak	56	18	75	Fair. Low risk, but Mod Risk for neighbouring development. 10 deg. lean to west (phototropic), w/ corrected top, codom stem at east recently removed.	Not suitable for retention with lean towards work site and codominant stem removal. In conflict with subject and offsite development plans. 3:1 replacement ratio & \$4500 security. Obtain Type 3 TCP prior to removing.	Remove at base. 3 replacement trees required \$4500 security.	3.4

Appendix 3 – Tree Protection Barriers

Specifications for Tree Protection Barriers

TABLE: PROTECTION BARRIER DISTANCE

TRUNK DIAMETER (CM)	MINIMUM PROTECTION DISTANCE (M FROM TRUNK)
X	6X
20	1.2
25	1.5
30	1.8
35	2.1
40	2.4
45	2.7
50	3.0
55	3.3
60	3.6
75	4.5
90	5.0
100	6.0



NOTES

Install tree protection barrier before construction begins and keep in place until landscape installation is complete.

Storage of building materials & litter within or against protection barrier is prohibited. Developer/Owner responsible for maintenance within Tree Protection Barrier.

Damaged trees will be replaced at Developer/Owner's cost.

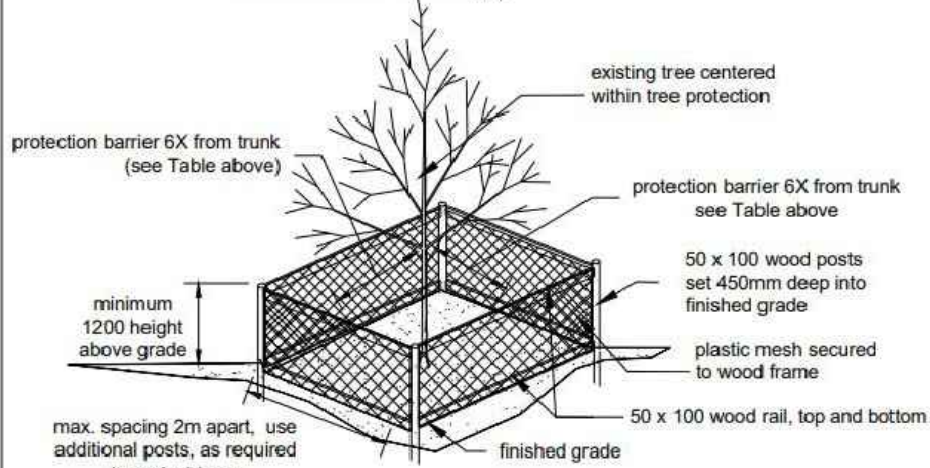
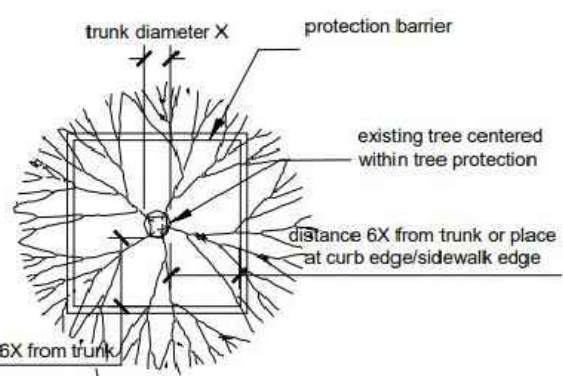
Maintain existing grades at protection barrier for all protected retained and existing trees.

Regrading outside of protection barrier should not adversely compromise protected retained and existing trees.

Specifications for Tree Protection Barriers

TABLE: PROTECTION BARRIER DISTANCE

TRUNK DIAMETER (CM)	MINIMUM PROTECTION DISTANCE (M FROM TRUNK)
20	1.2
25	1.5
30	1.8
35	2.1
40	2.4
45	2.7
50	3.0
55	3.3
60	3.6
75	4.5
90	5.0
100	6.0



- NOTES**
- Install tree protection barrier before construction begins and keep in place until landscape installation is complete.
 - Storage of building materials & filler within or against protection barrier is prohibited. Developer/Owner responsible for maintenance within Tree Protection Barrier.
 - Damaged trees will be replaced at Developer/Owner's cost.
 - Maintain existing grades at protection barrier for all protected retained and existing trees.
 - Regrading outside of protection barrier should not adversely compromise protected retained and existing trees.

TREE MANAGEMENT NOTES:

THE FOLLOWING RETAINED TREES SHALL BE PROTECTED WITH TREE PROTECTION ZONE (TPZ) BARRIERS INSTALLED PER CITY SPECIFICATIONS AT DISTANCES NOTED ON THE TREE PLAN:

- OFFSITE 1,2,3,4,5
- ONSITE #519, 520, 524/ 4327
- CITY TAG #7642.

NO GRADE CHANGES, STORAGE OF MATERIALS, ENTRY OR WORK WITHIN TPZ'S WITHOUT PRIOR APPROVAL AND THE PROJECT ARBORIST PRESENT.

WORKS IN CONFLICT WITH TPZ'S OF MOST RETAINED TREES REQUIRE ARBORIST MONITORING, IMPACT MITIGATION, AND FOLLOW UP REPORTING AS DETAILED IN A COORDINATED SITE DEVELOPMENT PLAN (CSDP) DURING THE FOLLOWING ACTIVITIES:

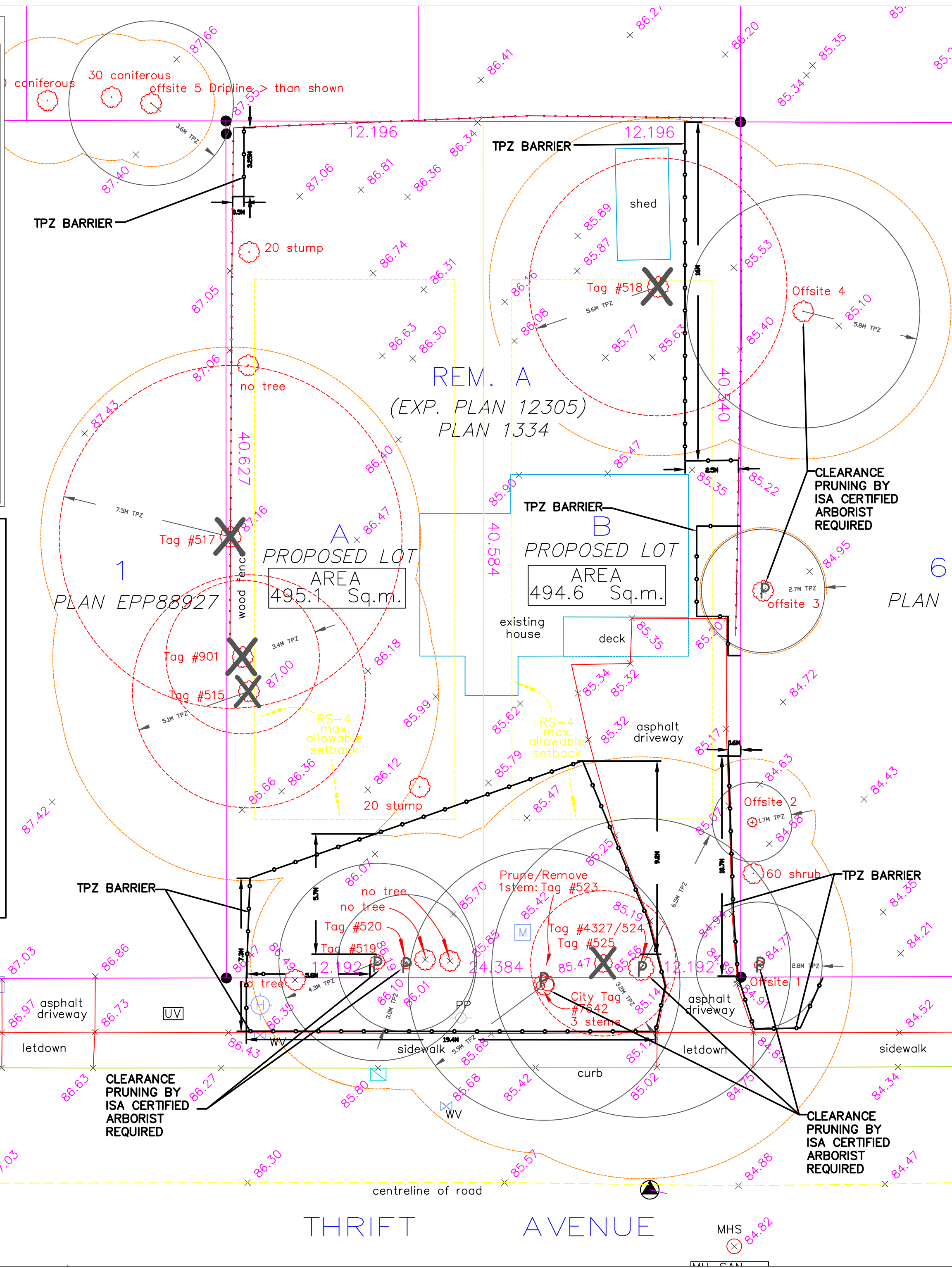
- CLEARING/ STUMP REMOVAL,
- SHED AND DRIVEWAY DEMOLITION,
- UTILITY UPGRADES,
- NEW DRIVEWAYS,
- FOUNDATION EXCAVATIONS (LOT 2),
- PRUNING.

A TREE MANAGEMENT PERMIT (TMP) MUST BE OBTAINED PRIOR TO REMOVING TREES. TREE REMOVAL SHALL NOT TAKE PLACE WITHIN THE BIRD NESTING WINDOW BETWEEN MARCH 1 AND AUGUST 31 UNLESS A SURVEY BY A QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) IS COMPLETED. ADDITIONAL PERMITTING MAY BE REQUIRED IF PILEATED WOODPECKER NESTS ARE PRESENT.

TREES PROPOSED FOR REMOVAL INCLUDE:

- TAG #515, 517, 518, 525, 901.

TREES PROPOSED FOR REMOVAL REQUIRE REPLACEMENT. ALL TREE REPLACEMENTS SHALL CONFORM TO ISA AND CURRENT CLNA STANDARDS AND CITY OF WHITE ROCK TREE PROTECTION BYLAW 2407 AND GUIDELINES FOR SIZE, TYPE, QUALITY, LOCATION AND PLANTING.



PREPARED BY:
URBAN GROVE TREE CARE AND CONSULTING LTD

15720 RUSSELL AVENUE
WHITE ROCK BC
V4B 2S1

LESLEY@URBANGROVE.CA

PREPARED FOR:

BIKRAM GILL
#207 13049 76 AVENUE
SURREY BC V3W 2V7

PROJECT:

2 LOT SUBDIVISION APPLICATION
15695 THRIFT AVENUE
WHITE ROCK BC V4B 2M3

TITLE:

PRELIMINARY TREE PROTECTION & REMOVAL PLAN
(LEGAL SURVEY & PROPOSED 2 LOT SUBDIVISION PLAN BY: FINNY PHILIP MKKPWB & ELEVATE LAND SURVEYING LTD JAN.23, 2023)

SCALE: SCALED TO FIT



ALL DISTANCES ARE IN METRES

LEGEND:

- SURVEYED TREE & DRIPLINE
- TREE PROTECTION ZONE (TPZ)
- ✗ TREE TO BE REMOVED
- Ⓟ TREE TO BE PRUNED
- TREE PROTECTION BARRIER

Tag ### TAG OR TREE NO. (NO TAG)

DATE: FEBRUARY 14, 2023
REVISED:

MH-SAN
RIM= 87.73
W.INV=85.94
E.INV=85.74


MHS
84.82


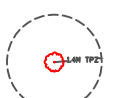



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PREPARED FOR:
 BIKRAM GILL
 #207 13049 76 AVENUE
 SURREY BC V3W 2V7

PROJECT:
 2 LOT SUBDIVISION APPLICATION
 15695 THRIFT AVENUE
 WHITE ROCK BC V4B 2M3

TITLE: PRELIMINARY
 TREE REPLACEMENT PLAN
 (KEY PLAN BY: HUB ENGINEERING INC
 FEB 21, 2023, LEGAL SURVEY &
 PROPOSED 2 LOT SUBDIVISION BY:
 FINNY PHILIP ELEVATE LAND SURVEY-
 ING LTD JAN. 23, 2023)

SCALE: SCALED TO FIT

 ALL DISTANCES ARE IN METRES

LEGEND:
 SURVEYED TREE & DRIPLINE
 RETAINED TREE & TREE PROTECTION ZONE (TPZ)
 TREE TO BE REMOVED
 TREE TO BE PRUNED
 Tag ### TAG OR TREE NO. (NO TAG)
 REPLACEMENT TREE (MIN 6CM CAL OR 3M HEIGHT)

DATE: MARCH 3, 2023
 REVISED:

TREE PLANTING LEGEND

BOTANICAL NAME	COMMON NAME	SIZE	TYPE	#TREE	SYMBOL
GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY MAIDENHAIR	6CM	B&B	1	
CERCIS CANDENSIS 'FOREST PANSY'	EASTERN REDBUD	6CM	B&B	2	
PARROTIA PERSICA 'INGES RUBY VASE'	INGES RUBY VASE PERSIAN IRONWOOD	6CM	B&B	2	
STYRAX 'EMERALD PAGODA'	FRAGRANT SNOWBELL	6CM	B&B	2	

ADDITIONAL NOTES AND REQUIREMENTS

ALL REPLACEMENT TREE PLANTING SHALL BE DONE IN ACCORDANCE WITH:

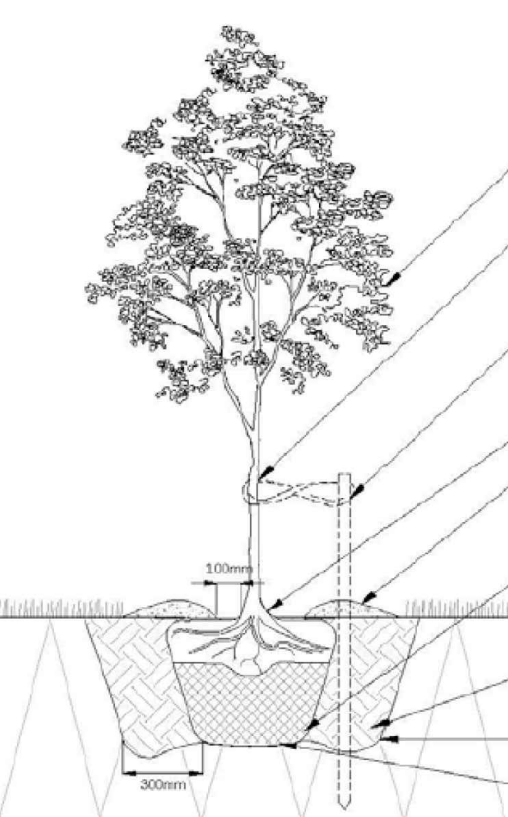
- CANADIAN LANDSCAPE STANDARDS (CLSA 1ST EDITION);
- INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) STANDARDS AND BEST MANAGEMENT PRACTICES; AND
- CITY OF WHITE ROCK TREE PROTECTION BYLAW, 2021 NO.2407.

REPLACEMENT TREES MUST SATISFY THE FOLLOWING MINIMUM SITING REQUIREMENTS AND SHALL BE LOCATED:

- 3M FROM ANY PROTECTED OR REPLACEMENT TREE;
- 3 M FROM ANY HYDRO, SERVICE LINE BUILDING FOUNDATION, POOL OR OUTBUILDING; AND
- 1M FROM ANY PROPERTY LINE, DRIVEWAY UNDERGROUND UTILITY, OR RETAINING WALL.

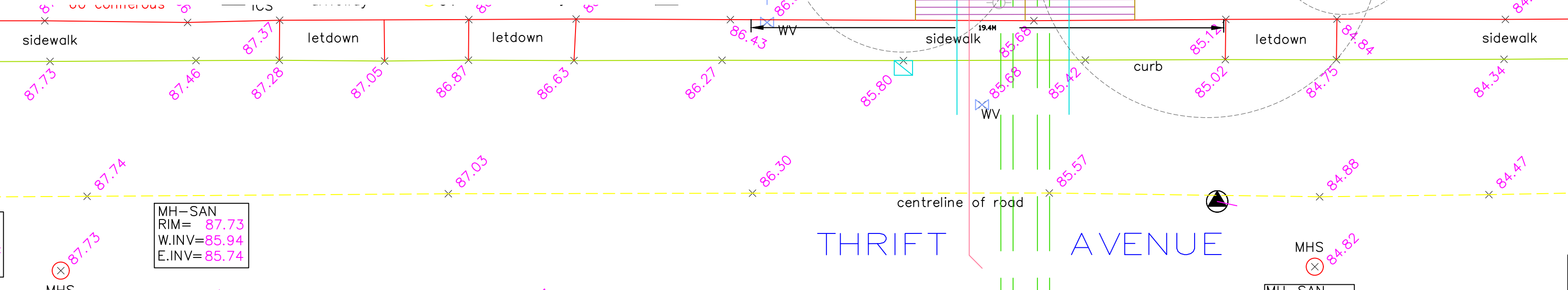
TREE SUBSTITUTIONS ARE PERMITTED WITH PROJECT ARBORIST APPROVAL

Tree Planting Standard:



- Tree: prune to remove damaged branches, do not remove leader
- Tree tie: 50mm wide fabric belt in figure 8 pattern at 1/3 of tree height, attached to tree stake with shingle nails. Secure tree firmly but not rigidly, within 25 mm of top of stake.
- Tree stake (if required): position as close to tree as possible without penetrating root ball. Approx 1/2 height of tree. Drive stake into undisturbed soil 150mm deeper than roots
- Root flare: position at existing grade
- Mulch: Mulch around tree no deeper than 100mm. Create 100mm deep basin around tree to encourage water retention. Keep mulch min 100mm back from trunk.
- Rootball: ensure burlap and twine are bio-degradable. Remove burlap from upper 1/3 of rootball
- Backfill: native soil or soil mix in 150mm lifts and tramp to prevent air pockets
- Planting hole min depth of rootball plus 300mm each side
- Place rootball on undisturbed or compacted soil to prevent settling of tree

Notes:
 1. Protect tree from damage during transportation.
 2. Tree staking may only be required in windy locations
 3. If weed whacker tree guards are installed, ensure they are monitored and adjusted regularly.



MH-SAN
 RIM= 87.73
 W.INV=85.94
 E.INV= 85.74