

TREE MANAGEMENT REPORT FOR DEVELOPMENT APPLICATION PURPOSES

Issued for:	DP Application	ACL File:	21255
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Revision # 0	Date:		
Prepared for:	Greg Nielsen Eagle Bluff Properties 129 – 1305 Welsh Street North Vancouver, BC V7P 1B3	Prepared by:	Nick McMahon Senior Consulting Arborist
Project:	Proposed Development 6155 Eagleridge Place, West Vancouver		

BACKGROUND AND METHODOLOGY

The subject site is comprised of an existing single-family residential property with related dwelling and accessory buildings on a steep and rocky slope and is proposed to be redeveloped to accommodate new residential in-fill development. The municipal development application process requires that existing trees be considered for preservation within the development, and it is incumbent on the development to protect street trees and trees within the neighbouring properties. To that end, we have undertaken a site wide tree assessment and review of the project design. Our site investigation was performed on December 3, 2021.

Reference documents provided by the client includes the *Tree Location and Topographic Survey* and the current *Architectural Site Plan*. We also consider the local bylaws and policies that are applicable for this site.

A *Level 1 Limited Visual Assessment* of the site based on Tree Risk Assessor Qualification (TRAQ) methods was performed to provide initial context to our analysis. An assessment of existing trees within the study area was subsequently conducted on a tree by tree basis. We have tagged or assigned a unique ID, measured and visually assessed the trees to Level 2 TRAQ standards to collect data including but not limited to; species, size (trunk diameter, height and spread), the current condition (health and structure), the age class, the structural class, visual presence/absence of tree disease and their ecological or functional role of the trees in the landscape. Certain groves of trees and/or forested lands may have been quantitatively and qualitatively assessed in groups. Our site assessment also includes consideration of topography, history of past tree failures, the anticipated site, soil and drainage changes, as well as other relevant site factors. Considers our tree and site condition findings our analysis of their value and viability is completed by assigning priority rankings for retention consideration within the proposed development project based on three categories:

Priority 1 – denotes a tree (or trees) in good to excellent health and structural condition and considering the size, location and species, we have deemed the tree (or trees) as valuable candidate(s) for preservation with good long term prospects for retention if the project can reasonably accommodate the required protection measures.

Priority 2 – denotes a tree (or trees) in fair condition with correctable or minor defects, and having reasonable value for retention. Some such trees in grove or forest conditions would only be viable for preservation in conjunction with other adjacent trees as a “strength in numbers” strategy, but often are not viable for single or small grove retention.

Figure 1. Aerial Photo of the Subject Site





Low Priority – denotes a tree (or trees) in poor or worse condition with limited to nil retention viability due to significant pre-existing health or structural impairments. Rarely, some trees in this category may be viable for retention in passive use landscape zones and in conjunction with other retained trees if sufficient shelter is maintained and if the pre-existing defects can be reasonably treated or mitigated.

This report is not intended as a tree risk report, however the structural form as well as the presence and severity of defects were factors in our tree assessment. If potential risk trees are identified within the study area relative to the current targets we make every effort to bring those trees to the attention of the owner for consideration of further assessment and/or action.

TREE PRESERVATION ANALYSIS AND FINDINGS

Considering our tree condition findings, and after careful review of the supplied project design, we have used our experience and knowledge to anticipate the construction impacts. From this process we have developed a proposed tree retention and retention scheme including tree protection setbacks and measures. Refer to the appendices for additional details, tree location reference, and specifications.

The subject trees consist of mature age class native coniferous and deciduous species trees as well as mature ornamental species trees in the active land use related to the existing residence. The site is generally described as a steep slope falling to the west with trees growing amongst scree, talus and outcroppings of rock.

The proposed development includes the demolition of existing buildings and the construction of a new residential development with internal drive aisle, surface parking multiple buildings and related service connections and landscape finishing.

The proposed treatment of trees subject trees is as summarized by location as described below.

ON-SITE TREES:

Retain:

Preserve and protect On-Site trees as follows:

- **Proposed Retention of 25 On-Site Trees:**

Tree Tag ID's: 101, 106, 154, 155, 156, 157, 158, 159, 161, 171, 172, 175, 177, 178, 179, 196, 242, 243, 244, 245, 249, 292, 293, H01, and W01

- Protect these trees with measures as shown on the Tree Measurement Drawing (appendix C) and as described in the Tree Protection Specifications (appendix D).
- Tree retention viability may be impacted by site preparation works including partial clearing of vegetation, blasting, debris clearing and site grading etc. Trees specified for retention will be re-assessed by the project arborist at the time site clearing and leveling work is substantially complete to confirm or update tree retention specifications.
- The client and their contractor or subcontractors shall coordinate with this office for any contemplated access within tree protection zones for direction and recommendations by the project arborist to adhere with tree protection requirements.
- Standard Tree Protection measures as described in the Letter of Undertaking and shown on the Tree Management Drawing must be implemented by the owner, developer, or project arborist to support tree health during construction.
 - A watering program must be implemented during the growing season to supplement natural rainfall.
 - Depending upon site specific conditions and accessibility, the project arborist may prescribe installation of growing medium in the root zone to expand root growing areas to support tree health.
 - The project arborist will identify site specific areas suitable for placement of soil amendment (i.e., well composted bark mulch) in the root zone to enhance soil fertility, water availability and nutrient uptake to support tree health.
- The project arborist must be on-site during any grading or excavation directly adjacent to root protection zones to direct low impact methods, undertake root pruning and make recommendations in accordance with arboricultural best management practices.
- Coordination with the project arborist is required prior to adjusting, moving or removing tree protection barriers for any reason during construction and prior to commencing with landscape finishing works.



ARBORTECH

Remove:

Seek approval from the city to remove the following On-Site Trees due to unresolvable conflict with construction and/or due to pre-existing health or structural impairments. We have considered the current design, modern construction methodologies as well as the identified grading and required blasting areas for site preparation to inform our specifications as follows:

- **Proposed Removal of 144 On-Site Trees:**

Remove 113 Non-Protected Trees (<75 cm DBH and not meeting species criteria)

Remove 31 Protected Trees

- Pursuant to the District of West Vancouver Tree Bylaw No.4892, 2016, a quantity of 31 trees specified for removal meet the size and species criteria for Protected trees status.

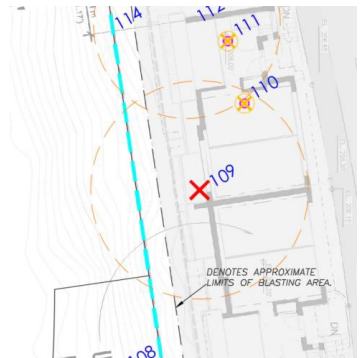
Tree Tag/ID 104, 105, 107, 109, 112, 115, 124, 125, 127, 129, 130, 134, 138, 139, 146, 147, 150, 169, 173, 198, 202, 210, 213, 219, 221, 222, 237, 276, 278, 279, 286, and 283B:

Of these protected status trees:

- a quantity of 25 trees are small \varnothing (<75 cm DBH) *Arbutus* species trees.
- Further discussion for protected status trees is as follows:

Tree Tag #/ID: 109

- This tree is in direct conflict with the new building foundation. We have assumed the building locations and alignment of the internal drive aisle are fixed for technical reasons and cannot be reasonably revised to accommodate tree protection measures.
- Excessive and destabilizing root loss will result from site preparation and grading.
- We have shown a preliminary tree protection setback of 7 m radius on the Tree Assessment Detail for context.
- Tree protection measures cannot be accommodated in the current design and we have specified this tree for removal accordingly.



Tree Tag #/ID: 112

- This tree is in direct conflict with the new building foundation. We have assumed the building locations and alignment of the internal drive aisle are fixed for technical reasons and cannot be reasonably revised to accommodate tree protection measures.
- Excessive and destabilizing root loss will result from site preparation and grading.
- We have shown a preliminary tree protection setback of 6 m radius on the Tree Assessment Detail for context.
- Tree protection measures cannot be accommodated in the current design, and we have specified this tree for removal accordingly.

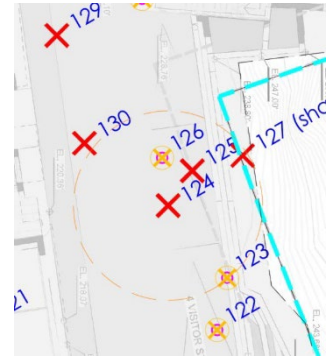




ARBORTECH

Tree Tag #/ID: 124

- This tree is in direct conflict with the internal drive aisle, site access and surface parking stalls. We have assumed the building locations and alignment of the internal drive aisle are fixed for technical reasons and cannot be reasonably revised to accommodate tree protection measures.
- Excessive and destabilizing root loss will result from site preparation and grading.
- We have shown a preliminary tree protection setback of 5 m radius on the Tree Assessment Detail for context.
- Tree protection measures cannot be accommodated in the current design, and we have specified this tree for removal accordingly.



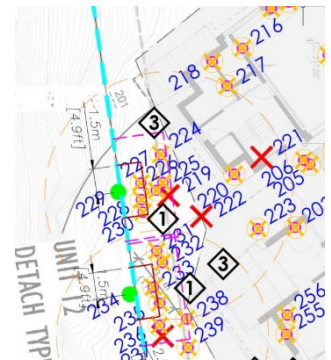
Tree Tag #/ID: 169

- The sum diameter of this multi-stem tree is greater than 75 cm.
- We have observed decay in the stem and scaffold branches as well as a history of branch failures throughout the crown.
- Internal decay in the stem is evidenced by the presence of a large fungal fruiting body on the stem.
- Considering the proximity of the proposed development, this tree is recommended to be removed concurrently with construction for risk mitigation.



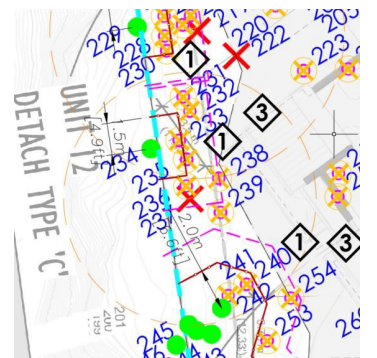
Tree Tag #/ID: 219

- Excessive and destabilizing impacts will result from blasting and re-grading of the site to prepare for construction. We have assumed the building locations and alignment of the internal drive aisle are fixed for technical reasons and cannot be reasonably revised to accommodate tree protection measures.
- We have shown a preliminary tree protection setback of 7 m radius on the Tree Assessment Detail for context.
- Tree protection measures cannot be accommodated in the current design, and we have specified this tree for removal accordingly.



Tree Tag #/ID: 237

- Excessive and destabilizing impacts will result from blasting and re-grading of the site to prepare for construction. We have assumed the building locations and alignment of the internal drive aisle are fixed for technical reasons and cannot be reasonably revised to accommodate tree protection measures.
- We have shown a preliminary tree protection setback of 6 m radius on the Tree Assessment Detail for context.
- Tree protection measures cannot be accommodated in the current design, and we have specified this tree for removal accordingly.





ARBORTECH

ON-SITE TREE NOTES:

Retention trees will require protection measures and treatments as specified herein and on the appendices. Any on-site tree specified for removal will require explicit consent and/or a valid permit from the city. If a proposed removal tree is deemed to be SHARED ownership then the client is required to obtain a letter from that co-owner consenting to its removal. If consent is not obtained then consultation from this office is required to determine next steps.

STREET TREES (District of West Vancouver (DWV) Owned):

Protect:

Preserve and protect municipal trees as follows:

Protect 7 DWV Trees, Tag/ID's: 119, 229, 234, 246, 247, 248, and 250

- Protect these trees with measures as shown on the Tree Measurement Drawing (appendix C) and as described in the Tree Protection Specifications (appendix D).
- The project arborist must be on-site during any grading or excavation directly adjacent to root protection zones to direct low impact methods, undertake root pruning and make recommendations in accordance with arboricultural best management practices.
- Coordination with the project arborist is required prior to adjusting, moving or removing tree protection barriers for any reason during construction and prior to commencing with landscape finishing works.

Remove:

Seek approval from the District of West Vancouver to remove Street Trees in the frontage due to unresolvable conflict with construction:

- **Proposed Removal of 1 DWV-owned Tree**

Tree Tag/ID 108:

Seek approval from the District of West Vancouver to remove this tree due to its pre-existing very poor condition. This tree is dead and recommended for removal concurrently with construction for risk mitigation within the subject site and adjacent publicly owned lands.

DWV TREE NOTES:

DWV trees specified for retention will require protection measures implemented as specified herein and on the appendices. Any municipal tree specified for removal will require explicit consent from the DWV. The municipality may require payment of compensation and/or planting of replacement tree(s). Work performed to DWV owned trees may be restricted to be undertaken by municipal crews or an approved contractor with credentials that meet DWV requirements. If any municipal trees proposed for removal are not approved by the DWV this office should be consulted to obtain tree protection measures and setback details for consideration in project design revisions.

OFF-SITE TREES ((privately owned):

Protect:

Preserve off-site trees within influencing distance of the project as follows:

12 Off-Site trees requiring protection, Tag/ID's: 151, 152, 181, 185, 194, 195, 211, 212, 284, 289, 290, 291

- Protect these trees with measures as shown on the Tree Measurement Drawing (appendix C) and as described in the Tree Protection Specifications (appendix D).
- The project arborist must be on-site during any grading or excavation directly adjacent to root protection zones to direct low impact methods, undertake root pruning and make recommendations in accordance with arboricultural best management practices.
- Coordination with the project arborist is required prior to adjusting, moving or removing tree protection barriers for any reason during construction and prior to commencing with landscape finishing works.
 - *Tree #s 211 and 212: The project arborist must review proposed alignment and design details of off-site trail connection through the root protection zone of off-site trees to assess impacts from construction to provide mitigation recommendations. Low impact methods and materials and/or trail re-alignment may be necessary to accept encroachment within the root protection zone to facilitate this work and achieve successful tree preservation.*



Remove:

Seek approval from the tree owner and City to remove Off-Site trees due to unresolvable conflicts with construction:

- **Proposed Removal of 7 Off-site Trees:**

Tag/ID 165, 166, 170, 180, 288: Seek approval from the neighbouring owner to remove these trees due to pre-existing very poor health and structural conditions. These trees may become high risk for failure with the introduction of human activity within striking range during construction and in context to the final land use.

Tag/ID 285, 287: Seek approval from the neighbouring owner to remove these trees due to excessive impacts to tree health and stability which are anticipated to result from site preparation works including rock blasting and grading works. Protection measures cannot be accommodated in the current design and these trees are specified for removal – subject to approval from the neighbouring owner.

NOTES:

Retention trees will require protection measures and treatments as specified herein and on the appendices. Any off-site tree specified for removal will require explicit consent from the tree owner and the DWV. The DWV may require payment of compensation and/or planting of replacement trees (design and specification by others). The municipality may also require a letter of authorization from the neighbour and/or a separate tree cutting permit application. If any off-site private trees are not approved by the tree owner and/or the DWV then this office should be consulted to obtain tree protection measures and setback details for consideration in project design revisions.

TREE RETENTION SUMMARY TABLES:

Table 1. Tree Retention/Removal by Ownership

Ownership:	Total:	Remove:	Retain:
<i>On-Site Trees</i>	169	144	25
<i>DWV Street Trees</i>	8	1	7
<i>Off-Site Private Trees</i>	19	7	12
TOTAL	196	152	44

Table 2. Tree Retention/Removal of On-Site Trees by Priority Ranking

Priority Ranking:	Total:	Remove:	Retain:
<i>1</i>	37	32	5
<i>2</i>	45	34	11
<i>Low</i>	87	78	9
TOTAL	169	144	25

TREE PROTECTION PRESCRIPTION

The reader is advised to review our Tree Management Drawing attached hereto. This drawing has two sheets, one sheet with the parkade design overlain and a second sheet with the ground floor of the townhouse design overlain.

For background, this firm has developed the highest professional standards and the most comprehensive arboricultural approach and methods for planning, designing and implementing tree protection measures relative to construction of all types and scopes proposed near trees. We have also pioneered innovative strategies to mitigate construction impacts through strategic design, deliberate use of certain construction methods and materials, as well as arboricultural means to achieve unprecedented successes for tree preservation throughout BC. Our innovations are being adapted within the professional standards in arboricultural consulting. I have applied some of those techniques and solutions in preparing my tree protection specifications for the two subject trees. The main components of my prescription are as follows:



- **Crown Protection Zone (CPZ):**
The protection of the crown is determined from the actual limits of the crown, or dripline. Buildings should be designed so that the structure itself and the construction equipment operations required to build it and maintain it will not encroach into that space. Space should also be provided to accommodate future growth of the crown. In some cases, pruning can be implemented for all of those purposes, but there are restrictions and limits on the scope of pruning that can be undertaken, and the tolerances for pruning will change from tree to tree relative to many factors that the arborist must consider.
- **Root Protection Zone (RPZ):**
Notwithstanding the crown protection zone limits, ground level or below ground disturbance may be tolerable to a differing setback. The proximity of ground based disturbance toward a tree is based on assorted factors. Best management practices afford discretion to be applied by the arborist to set the root protection setbacks which may differ on each side of a tree. When a setback is reduced on one side of a tree, it is standard practice to consider increasing the setbacks on other sides of the tree, where beneficial, as a compensatory measure for associated root loss. There must be strong and defensible rationale for making such adjustments, and there are limits on the proximity to a tree relative to maintaining its health and stability. If root loss (from excavation or other ground disturbance) is too close to a tree, then the tree could be destabilized and made high risk and/or mortally injured. These impacts must be avoided where possible, but when accepted there may be certain compensatory treatments required. In the case of any retained tree in close proximity to construction, measures to enhance the soil gas exchange, percolation and fertility that will also moderate soil temperature extremes and water loss, will be a component of their management. Construction related encroachments into these zones, whether temporary or permanent, are not supported. However, when absolutely necessary and unavoidable, we have some measures to accommodate certain types of encroachments, and we have a large tool box of solutions to accommodate. Minor soil disturbance related encroachments into the RPZ may be possible but such encroachments will require a detailed impact and mitigation analysis by the project arborist and may require detailed testing before confirming viability (i.e. root mapping).
- **Working Space Setback (WSS):**
Roots can extend many metres beyond the dripline of a tree. The area immediately surrounding a specified RPZ is usually (almost always) populated with tree roots. The WSS is a nominal setback beyond the RPZ to be implemented as a management zone where soil disturbance is supportable, but advance arborist review as well as on-site direction and supervision for any works that may cause soil disturbance are appropriate measures. Our default prescription for the WSS setback is 1.5m outside of the RPZ, but superseded where noted otherwise. This WSS is applicable to all aspects of the site preparation, construction and landscape finishing for the project.

Tree protection barriers and restrictions are specified in the Tree Management Drawing (Appendix C), Tree Protection Specifications (Appendix D) and Letter of Undertaking (Appendix E). On-site field services or supervision by the project arborist from this office are required as specified on those documents.

For the best chance of tree preservation success, and to avoid non-compliance issues with city bylaw enforcement, it is imperative that all contractors and trades working near trees are made aware of the restrictions and limitations of the tree protection measures before they proceed with their work. The project arborist should be integrated into the construction management component of the project. Strong lines of communication between the project arborist with the owner and/or general contractor are vital in order to keep the arborist apprised of progress on the site and to schedule attendance at specific times and project milestones.

RECOMMENDED STANDARDS FOR TREE REMOVAL AND PRUNING WORK

The methods of cutting, rigging and removal of trees should conform to ANSI A300 and ANSI Z133 standards and best management practices, as well as WorksafeBC regulations as applicable. All tree work (removals and pruning) should be undertaken by an ISA Certified Arborist qualified with TRAQ, and well experienced with spurless climbing as well as technical rigging in proximity to existing homes and landscapes. Where power lines are near, and a tree proposed for treatment is within the safety setback for those conductors, the power utility company must be consulted and a Certified Utility Arborist (CUA) is required to direct or undertake those tree treatment works in conformance with the utility safety protocols. In the case of commercial land clearing operations the felling/handling of removal trees is required to be in conformance with other applicable regulations. Recovery and transport of any timber from any site will require that the land owner obtain a Timber Mark from the local BC Forest office in advance of transportation from the site.

Removals of approved trees from within the municipal road frontage or any DWV property may need to be undertaken by the DWV crews or by a tree service company which is pre-qualified by the municipality to perform such work within their lands, and subject to CUA oversight as noted above.

Removals of approved trees from within adjacent private property will require the expertise of a qualified tree service contractor. Specific access arrangements from that neighbour will be required. We recommend that the stumps be left intact and the other tree removal debris be removed and disposed of, unless otherwise specified by the tree owner. If stumps are requested to be removed, stump grinding or extraction by machinery with root cutting and other tactics may be considered. The project arborist can provide additional advice in this regard on a tree by tree basis upon request.



TREE REPLACEMENT

Tree replacement requirements will be confirmed by the municipality in relation to their policies. Design and specifications for the replacement trees will be provided by the project landscape architect.

Certified by;		ISA Board Certified Master Arborist #PN-7136B
	Nick McMahon, Senior Consulting Arborist	ISA Qualified Tree Risk Assessor (TRAQ)
		PNWISA Certified Tree Risk Assessor #1763
		BC Certified Wildlife Dangerous Tree Assessor # P2519

APPENDICES;

- APPENDIX A – PHOTOS
- APPENDIX B – TREE INVENTORY LIST
- APPENDIX C – TREE MANAGEMENT DRAWING
- APPENDIX D – TREE PROTECTION ZONE SPECIFICATIONS
- APPENDIX E – ARBORISTS LETTER OF UNDERTAKING

Assumptions and Limiting Conditions:

This report was prepared for the client as addressed herein. Upon receipt of payment in full for our account, this report will become the property of the client. This report is intended for the exclusive use of our client in its entirety. Arbortech shall not accept any liability derived from partial, unintended, unauthorized or improper use of this report.

This report is restricted only to the subject trees as detailed herein, and no other trees were inspected or assessed.

The inner tissue of the trunk, stems, limbs and roots of trees are hidden within the tree and the majority of a tree root systems are hidden below ground. Our tree assessments are limited to relying upon visual inspection of the tree parts and, where applicable, utilizing basic non-destructive testing methods such as probing and sounding to identify potential structural defects. Trees utilize adaptive growth strategies in response to their growing site conditions to sustain their structural integrity and their health. Their response growth may compensate for structural impairments and may also effectively mask defects from visual detection. Where noted herein, we may have utilized advanced and minimally invasive testing to determine the severity of certain observed defects. Our defect analysis considers the mitigating effects of response growth relative to the common weather in the region in rating the probabilities related to potential tree failure. However, not all defects can be diagnosed through available non-destructive or minimally invasive methods, and extraordinary and extreme weather are unpredictable. During uncommon storm events any tree, healthy or not, has a risk of failure. For these reasons, we do not guarantee or warrant that an assessed tree is free of defect or that it will not fail.

The ownership of trees is determined based on the location of the trunk where it emerges from the ground relative to the property line. This determination may require the advice from a duly qualified professional surveyor. If a part of the trunk at ground level crosses over a property line, then it is deemed to be jointly owned by those property owners.

Third party information may have been relied upon in the formation of the opinion of the consultant and in the preparation of this report. We have verified that information to a reasonable extent of our capabilities to assume it to be reliable, however we do not warrant that third party information to be true and correct.

The use of maps, sketches and diagrams are intended only as a reference for the reader in understanding the findings of this report, and are not intended as a representation of fact. These shall not be used for the purposes of determining property lines, ownership or project layout.

Approvals from a municipality and/or regulatory agency may be required prior to carrying out treatments that may be recommended in this report. The owner or client is responsible to make application for, pay related fees and costs, and meet all requirements and conditions for the issuance of such permits, approvals or authorizations.

APPENDIX A: TREE PHOTOS

Photo #1, Tree #104 and #105 (front and back)



Photo #2, Tree #106 to #108



Photo #3, Tree #109 to #113



Photo #4, Tree #115



Photo #5, Tree #127



Photo #6, Tree #134



Photo #7, Tree #139



Photo #8, Tree #147



Photo #9, Tree #150



Photo #10, Tree #151



Photo #11, Tree #152 to #159



Photo #12, Tree #165 and #166

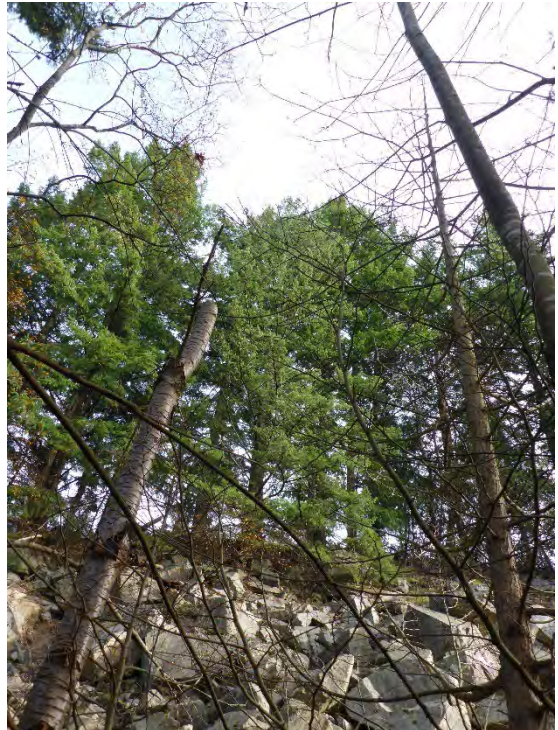


Photo #13, Tree #169



Photo #14, Tree #173



Photo #15, Tree #179 and #180



Photo #16, Tree #187



Photo #17, Tree #211 and #212



Photo #18, Tree #210 and #213



Photo #19, Tree #213



Photo #20, Tree #219



Photo #21, Tree #221



Photo #22, Tree #222

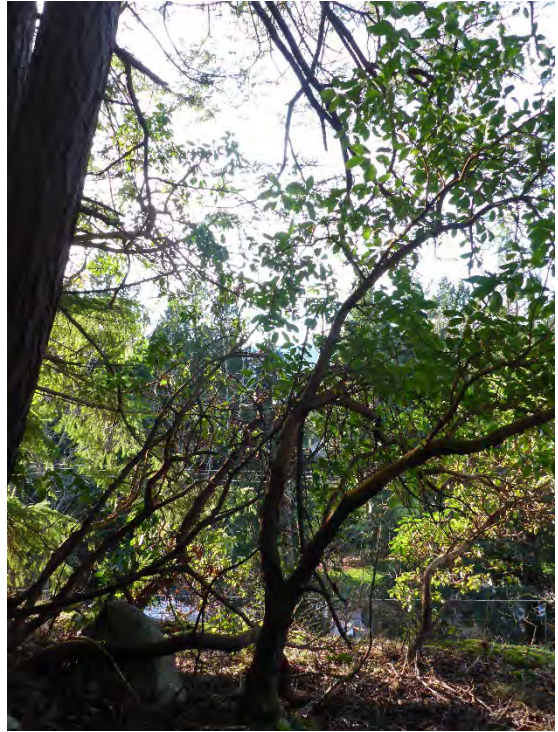


Photo #23, Tree #237



Photo #24, Tree #237

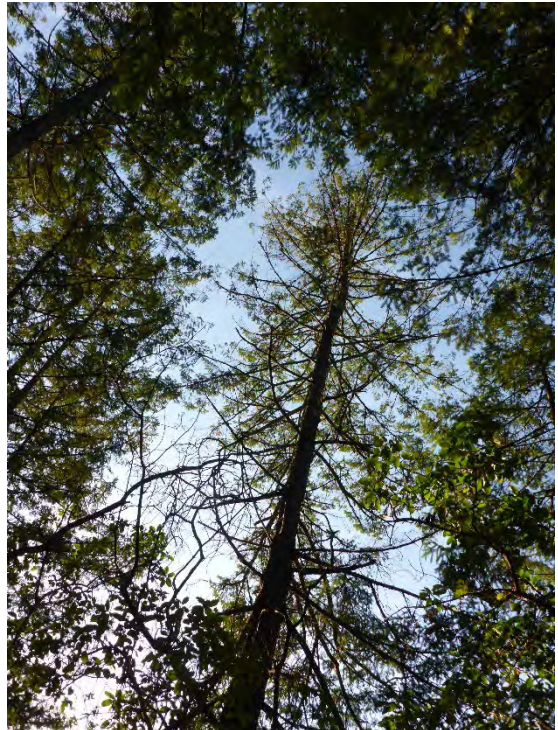


Photo #25, Tree #250



Photo #26, Tree #251 and #252



Photo #27, Tree #257 to #260

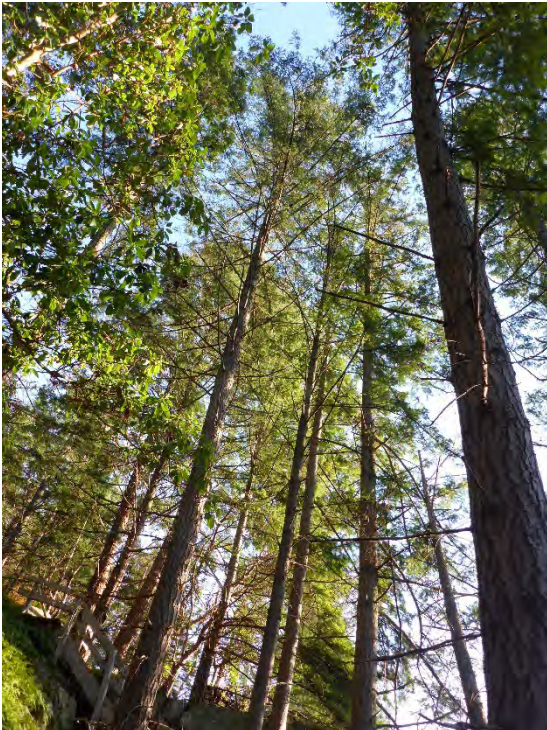


Photo #28, Tree #278

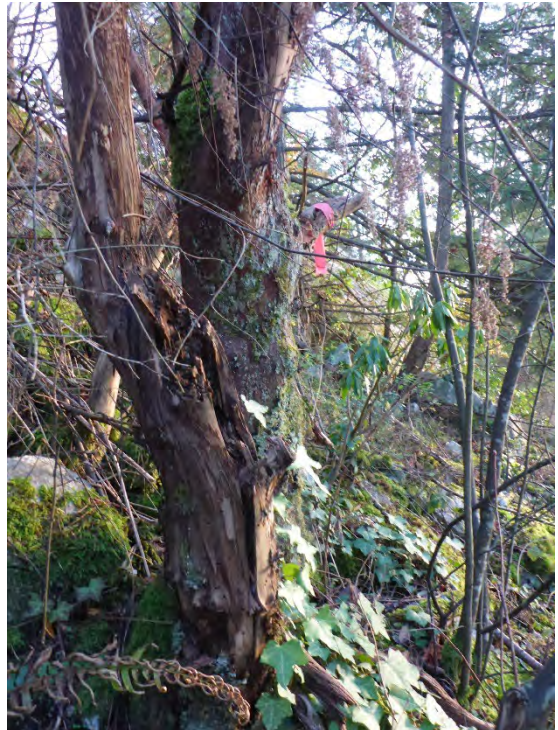


Photo #29, Tree #285 and #286 (front and back)



Photo #30, Tree #285, #288 and #289

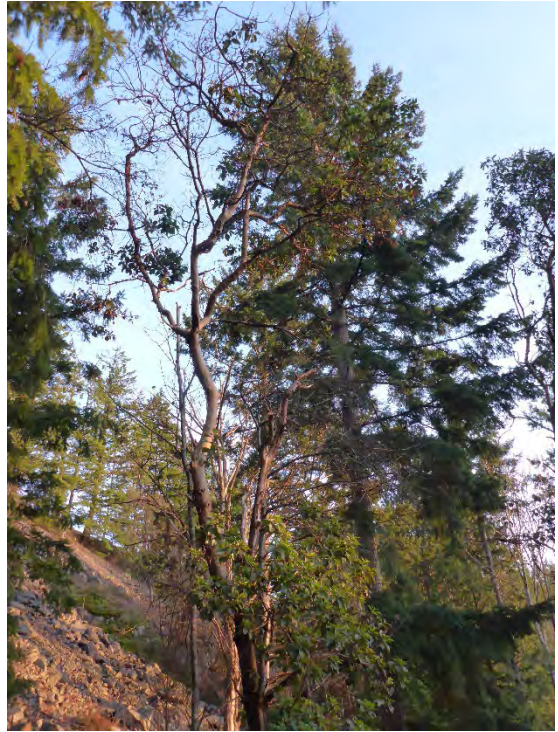


Photo #31, Tree #288



Photo #32, Tree #290 to #293



Photo #33, Tree #291



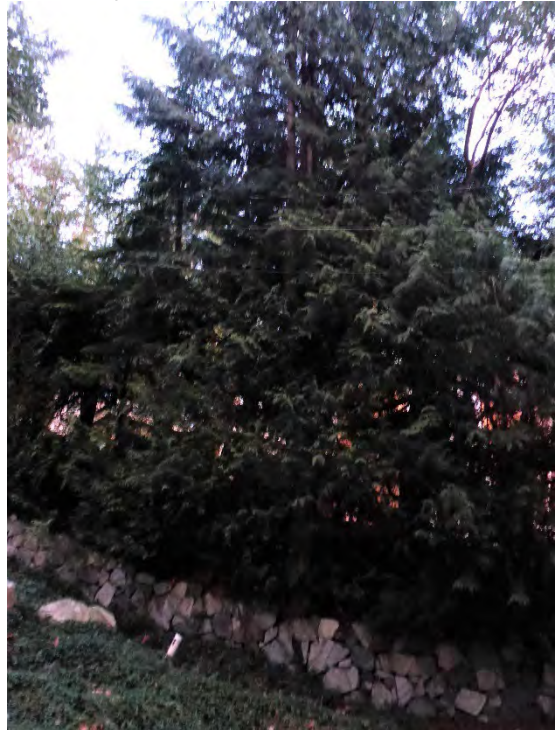
Photo #34, Tree #290 to #293 and H01



Photo #35, Tree #291 to #293



Photo #36, Tree #W01





APPENDIX B: TREE INVENTORY LIST: (all dimensions are metric)

Tag/ID denotes the arborist tag # or serial ID number as referenced in report and drawing documentation.

Survey denotes whether tree is shown on the tree and topographic survey provided by client (Y/N). If we are relying on survey tag #'s we include it for reference.

Loc denotes location as from survey; **ON** (on site), **SHARED** (straddling PL), **OFF** (off site private), **CITY** (road frontage or other), **ESA** (environmentally sensitive area), **PARK** (city park - existing or proposed)

Dbh denotes the trunk diameter in cm at 1.4 m above grade or to arboricultural standards (i.e. below scaffold union). The dbh may be estimated or derived from survey data.

Multiple stems; attached above the root crown used trunk area method for equivalent single stem dbh; attached below the root crown references the largest stem.

Ht denotes the height of the tree in metres as measured or estimated by the assessor.

Spr denotes the spread RADIUS of the branches and foliage (dripline) in metres as measured or estimated by the assessor.

LCR denotes the live crown ratio based on percent of live crown observed in relation to a tree of normal form and with a full crown.

Class denotes the structural class of a tree. **Landscape Trees;** considers exposure: **O** denotes open, **G** denotes Grove, **E** denotes Edge

Forest Stand Trees; considers relative dominance, LCR and HT:DIA Ratio, and other factors (see below):

U denotes Understory (i.e. differs in species from primary canopy or an emerging tree with reasonable form)

S denotes Suppressed (i.e. declining tree of primary canopy species, spindly taper, very low LCR (<30%) and usually not structurally viable along new forest edges)

I denotes Intermediate (i.e. poor trunk taper and low LCR (10 to 30%), dependent on stand level retention zones subject to windthrow analysis findings)

C denotes Codominant (i.e. moderate trunk taper and LCR (30 to 50%), potentially viable in stand level retention zones subject to windthrow analysis findings)

D denotes Dominant (i.e. stand anchoring, good trunk taper, moderate to full LCR (>50%), important to stand/grove retention subject to windthrow analysis findings)

SE denotes Stand Edge (i.e. stand buffering trees of significance along pre-existing windfirm boundaries with fuller but sometimes asymmetric crown form)

Priority denotes preservation ranking for consideration in tree retention planning considering multiple factors including; condition, value rating, age, species, etc.

Priority rankings; **1, 2** and **L (Low)**. **NOTE;** if prefix **S** is included, it denotes stand tree suitable for retention only with special measures and in grove/stand form.

Individual trees within forest stands are generally deemed Nil priority for selective retention except when sufficiently large stands are protected.

Assessment Findings includes; our summary of overt defects, noteworthy growing condition factors, preservation and protection considerations and treatment rationale.

Action denotes proposed treatment in context to the project design; **RETAIN, REMOVE or PROTECT.** Removal of Shared and Off-Site trees **require owner consent.**

CPZ and RPZ; arborist setbacks for Crown and Root protection (measured from centre of trunk). A **WSS** (working space setback) is additional to the RPZ (see drawing). All 3 form the Tree Protection Zone (TPZ).

Reference Bylaw: WEST VANCOUVER INTERIM TREE BYLAW NO. 4892, 2016

Minimum Bylaw Protected Tree Size: 10 cm DBH

Bylaw Minimum Tree Protection Setback: Dripline or as Specified by the Environmental Protection Officer

Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
101	1	ON	Y	Y	Saucer magnolia (Magnolia soulangeana)	24.1				SE	S-1	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (18+16cm\varnothing) at 1.4m above grade for protection setback calculation purposes. Crown biased to the south due to shading. 	RETAIN		
102	1	ON	Y	Y	Ash (Fraxinus sp.)	48				SE	S-1	Y	RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
103	1	ON	Y	Y	Deodar cedar (<i>Cedrus deodara</i>)	64				SE	S-2	Y	<ul style="list-style-type: none"> • Crown biased to the west. • Historic leader loss at ~10m with weakly attached replacement leaders. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
104	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	34	9	5.5	50	0	1	N	<ul style="list-style-type: none"> • Growing on a west facing slope. • Crown biased to the south and west. • Flush cut wounds. • Crown raise pruned to ~1.5m height. • Exposed root crown. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
105	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	33	10	4.0	55	0	1	N	<ul style="list-style-type: none"> • Growing on a rock with exposed buttresses. • Leaning and crown biased to the northwest. • Codominant stems at ~1.6m above grade. • ~15-20% dieback observed on the southern crown. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
106	1	ON	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	33	28	3.0	30	C	S-2	Y	<ul style="list-style-type: none"> • Poor taper and low LCR due to adjacent trees. • Sweep to northwest from 0 to 5m. 	RETAIN	3.0	
107	1	ON	N	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	50	25	8.0 W, N, S 2.5 E	40	C	S-2	Y	<ul style="list-style-type: none"> • Historic branch breakage. • Dead and decaying branches on the south side of the crown. • Sweep to the west from 0 to 1.5m. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
108	1	CITY	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	33	26	3.0		C	S-LOW	Y	<ul style="list-style-type: none"> • Fully dead RATIONALE: <ul style="list-style-type: none"> • SEEK PARKS DEPARTMENT APPROVAL TO REMOVE THIS TREE DUE TO ITS PRE-EXISTING VERY POOR CONDITION AND RISK MITIGATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
109	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	87	33	6.0 S 3.5 N 4.0 W, E	40	SE	S-1	Y	<ul style="list-style-type: none"> Structurally dependent on #110. Crown biased to the south due to shading. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
110	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	73	33			C	S-2	Y	<ul style="list-style-type: none"> Crook at ~10m height (suspect historic leader loss). RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
111	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	62	33			C	S-2	Y	<ul style="list-style-type: none"> Crown biased to the northeast. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
112	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	77	33	5.5 W, N 2.5 E,S	35	C	S-2	Y	<ul style="list-style-type: none"> Crown biased to the west and north due to shading. Severe sweep to the southwest from 0 to 3m above grade. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
113	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	71				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
114	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	13.6				S	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (11+8cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Codominant stems at ~0.7m above grade. Crown biased to the west due to shading. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
115	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	20	9	2.0	10	S	S-LOW	Y	<ul style="list-style-type: none"> The crown is declining: ~70% foliage loss with dead twigs and fine branches. Leaning to the north. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
116	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	15				S	S-LOW	Y	<ul style="list-style-type: none"> Fully dead. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
117	1	ON	Y	N	Pacific madrone (<i>Arbutus menziesii</i>)	8				S	S-LOW	Y	<ul style="list-style-type: none"> Leaning to the south. ~15% dieback. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
118	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	38				C	S-2	Y	<ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
119	1	CITY	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	27	17	3.5	40	O	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (27,21cmø) at 1.4m above grade for protection setback calculation purposes. ~40% foliage loss. 	PROTECT	3.5	
120	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	48.4				O	1	N	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (30+38cmø) at 1.4m above grade for protection setback calculation purposes. Codominant stems at ~0.6m above grade. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
121	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	14				S	S-LOW	Y	<ul style="list-style-type: none"> Snag. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
122	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	21				SE	S-1	Y	<ul style="list-style-type: none"> Growing on bedrock. Crown biased to the south due to shading. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
123	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	28				SE	S-1	Y	<ul style="list-style-type: none"> Growing on bedrock. Sweep to the southwest from 0 to 8m above grade. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
124	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	62.2	26	7	70	C	S-2	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (44+44cmØ) at 1.4m above grade for protection setback calculation purposes. Codominant stems at ~1m with bark inclusion. Stem is slightly bulging at ~2m height. Crown biased to the southwest due to shading. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
125	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	20	13	2.8	20	S	S-LOW	Y	<ul style="list-style-type: none"> Sweep to the west from 0 to 2m. Dead and decaying branches and stubs throughout the tree. Shaded by overstory conifers, resulting in a low LCR. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
126	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	24				I	S-LOW	Y	<ul style="list-style-type: none"> Snag with severe decay. RATIONALE: <ul style="list-style-type: none"> CONDITION DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
127	1	SHARED PRIVATE	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	20.5	17	4.0	30	SE	S-2	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (15+14cmØ) at 1.4m above grade for protection setback calculation purposes. Codominant stems at ~0.6m with a wide bifurcation. Crown biased and leaning to the northeast. Dead branches and twigs. 20-25% foliage loss. RATIONALE: <ul style="list-style-type: none"> CONDITION DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
128	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	60				C	S-1	Y	RATIONALE: <ul style="list-style-type: none"> CONDITION DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
129	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	28	17	5.0	10	I	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (28,28cmø) at 1.4m above grade for protection setback calculation purposes. Southern stem is fully dead. Northern stem is 70% dead. Codominant stems attached at the root crown. RATIONALE: <ul style="list-style-type: none"> CONDITION DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
130	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	31	16	4.0	35	I	S-LOW	Y	<ul style="list-style-type: none"> Leaning and crown biased to the west. 40-50% dead. Historic branch failure. RATIONALE: <ul style="list-style-type: none"> CONDITION DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, PARKING STALLS AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
131	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	26				SE	S-LOW	Y	<ul style="list-style-type: none"> Snag. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
132	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	37				C	S-2	Y	<ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
133	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	37				I	S-LOW	Y	<ul style="list-style-type: none"> Snag. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
134	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	28	14	3.0	30	SE	S-2	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (27,28cmø) at 1.4m above grade for protection setback calculation purposes. Codominant stems attached at the root crown. Frost crack from 0 to 0.7m on the west side of the stem. Branch collar decay. Dead branches and twigs. Historic leader and branch failure. Severe dieback (~60-70% foliage loss). RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
135	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	16				SE	S-1	Y	RATIONALE: • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
136	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				O	LOW	N	RATIONALE: • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
137	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				SE	S-2	Y	RATIONALE: • Stem decay. • Leaning to the west. • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
138	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17	14	3.7	15	O	LOW	N	RATIONALE: • DBH is representative of the largest of measured stems (17,17cmø) at 1.4m above grade for protection setback calculation purposes. • Codominant stems at the root crown. • Northern stem is fully dead. • Southern stem is 70-80% dead. • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
139	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	27	16	3.0		O	LOW	N	RATIONALE: • Snag. • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
140	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	8				O	LOW	N	RATIONALE: • DBH is representative of the largest of measured stems (8,5cmø) at 1.4m above grade for protection setback calculation purposes. • Severe stem decay. • DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		
141	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	31.2				G	LOW	N	RATIONALE: • DBH of a single stem equivalent is calculated based on the area of measured stems (20+24cmø) at 1.4m above grade for protection setback calculation purposes. • Codominant stems at 1m with bark inclusion. • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, AND IMPACTS FROM BLASTING FOR SITE PREPARATION.	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
142	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	48				D	S-1	Y	<ul style="list-style-type: none"> ~5% dieback. Crown biased to the south. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
143	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	38				D	S-1	Y	<ul style="list-style-type: none"> Exposed root crown and buttresses. Crown biased to the southwest. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE, AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
144	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				O	LOW	N	<ul style="list-style-type: none"> Snag RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
145	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	14				G	2	N	<ul style="list-style-type: none"> Structurally dependent on #146. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
146	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	22	8	5.5	25	G	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (13,15,22cmØ) at 1.4m above grade for protection setback calculation purposes. Structurally dependent stems. Crowns merged with #145. Dead branches and twigs. ~40-50% dead. Decaying stubs. Historic branch failure. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
147	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	33	18	4.5	10	O	LOW	N	<ul style="list-style-type: none"> 80% dead. Stem decay. Historic branch failure. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
148	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				O	LOW	N	<ul style="list-style-type: none"> 90% dead. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
149	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	13				O	LOW	N	<ul style="list-style-type: none"> 80% dead. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
150	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	61.2	20	5.5 E,S,N 10.5 W	70	G	1	N	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (39+44+17cmØ) at 1.4m above grade for protection setback calculation purposes. Crown biased to the west due to shading and large scaffold. Codominant stems at ~1m with bark inclusion and slight rib formation. Branch collar decay. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
151	1	OFF	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	40	33	5.0	70	G	1	N	<ul style="list-style-type: none"> Western crown is suppressed by adjacent tree #152. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	5.0	
152	1	OFF	N	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	38	20	9.0 N,W 4.0 E,S	80	G	LOW	N	<ul style="list-style-type: none"> Crown biased to the west. Leader bending to the west from ~5m up. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	9.0 N,W 4.0 E,S	
153	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	23				G	LOW	N	<ul style="list-style-type: none"> Upper 60% is dead. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
154	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	13				S	S-LOW	Y	<ul style="list-style-type: none"> Suppressed by adjacent trees. 	RETAIN		
155	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	16				G	2	N	<ul style="list-style-type: none"> Crown biased to the west due to shading. 	RETAIN		
156	1	ON	Y	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	40				G	2	N	<ul style="list-style-type: none"> Codominant stems at 2m with bark inclusion. Crown biased to the south and east due to shading. 	RETAIN		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
157	1	ON	Y	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	14				G	2	N	• Crown suppressed on the west side.	RETAIN		
158	1	ON	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	17				G	LOW	N	• DBH is representative of the largest of measured stems (13,17,16cmø) at 1.4m above grade for protection setback calculation purposes.	RETAIN		
159	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	30				G	2	N		RETAIN		
160	1	ON	Y	Y	Red alder (<i>Alnus rubra</i>)	28				G	LOW	N	• Severely decaying snag. RATIONALE: • CONDITION	REMOVE		
161	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	61				G	LOW	N	• Crook at ~3m height.	RETAIN		
162	1	ON	Y	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	25				G	LOW	N	• Missing 50% of its roots on the north side due to hole on the ground immediately adjacent to the root crown. • Prone to failure (uprooting). RATIONALE: • CONDITION; • RISK MITIGATION.	REMOVE		
163	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	20				G	2	N	RATIONALE: • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		
164	1	ON	Y	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	11				G	LOW	N	RATIONALE: • EXCESSIVE IMPACTS WILL RESULT REMOVAL OF ADJACENT TREES. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		
165	1	OFF	Y	Y	Western redcedar (<i>Thuja plicata</i>)	16	15			G	LOW	N	• Snag RATIONALE: • CONDITION; • RISK MITIGATION	REMOVE		
166	1	OFF	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	18	16			G	LOW	N	• Snag RATIONALE: • CONDITION; • RISK MITIGATION	REMOVE		
167	1	ON	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	16				G	LOW	N	RATIONALE: • EXCESSIVE IMPACTS WILL RESULT REMOVAL OF ADJACENT TREES. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
168	1	ON	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	24				G	LOW	N	<ul style="list-style-type: none"> Trunk girdled by boulder. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS WILL RESULT REMOVAL OF ADJACENT TREES. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
169	1	SHARED PRIVATE	Y	Y	Willow (<i>Salix sp.</i>)	20	18	8.0	35	G	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (20,15,14,14,12,12cmø) at 1.4m above grade for protection setback calculation purposes. Scaffold and stem decay. Historic branch failure. Fungal fruiting bodies observed on the stem. RATIONALE: <ul style="list-style-type: none"> CONDITION; 	REMOVE		
170	1	OFF	Y	Y	Willow (<i>Salix sp.</i>)	20	9	6.0	15	G	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (14,14,15,20cmø) at 1.4m above grade for protection setback calculation purposes. Severe stem decay. ~80% dead. RATIONALE: <ul style="list-style-type: none"> CONDITION; RISK MITIGATION 	REMOVE		
171	1	SHARED PRIVATE	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	37	30	6.5	70	G	2	N	<ul style="list-style-type: none"> No significant observable defects. 	RETAIN	6.5	
172	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	27	16	6.0	70	G	2	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (27,10cmø) at 1.4m above grade for protection setback calculation purposes. Crown biased to the west due to shading. 	RETAIN	6.0	
173	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	34				G	LOW	N	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (30+16cmø) at 1.4m above grade for protection setback calculation purposes. Bifurcation at 1m height. Overall: 70% dead; stem contact with adjacent cedar #175 which could be supporting this tree. A boulder girdles the southern ~50% of the root crown. Stem injury. Smaller stem is dead and decaying. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		

Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
174	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	14				G	LOW	N	<ul style="list-style-type: none"> 80% dead. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
175	1	SHARED PRIVATE	Y	Y	Western redcedar (<i>Thuja plicata</i>)	17				G	2	N	<ul style="list-style-type: none"> Suppressed on the west side. 	RETAIN		
176	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				G	LOW	N	<ul style="list-style-type: none"> 70% dieback. Severe lean to the west. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
177	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	16				G	2	N	<ul style="list-style-type: none"> Severe lean to the west. 	RETAIN		
178	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				G	LOW	N	<ul style="list-style-type: none"> Severe lean to the west. Suppressed. 50% dieback. 	RETAIN		
179	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	80	35	6 N 10 E 8 W	70	G	1	N	<ul style="list-style-type: none"> Slight resinosis on the lower stem. Crown biased to the east due to shading. 	RETAIN	6 N 10 E 8 W	5.5
180	1	OFF	N	Y	Bitter cherry (<i>Prunus emarginata</i>)	19	12	2.5 W,N,S 6.0E	50	O	LOW	N	<ul style="list-style-type: none"> Historic leader and branch failure. RATIONALE: <ul style="list-style-type: none"> SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE. EXCESSIVE IMPACTS WILL RESULT FROM BLASTING AND GRADING FOR SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
181	1	OFF	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	15	12	3.0	65	G	1	N	<ul style="list-style-type: none"> Leaning and crown biased to the southeast. 	PROTECT	3.0	
182	1	ON	Y	Y	Willow (<i>Salix sp.</i>)	14				G	LOW	N	<ul style="list-style-type: none"> Decaying branches and stems. Historic branch failure. RATIONALE: <ul style="list-style-type: none"> CONDITION; DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
183	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	42				G	1	N	<ul style="list-style-type: none"> EXCESSIVE ROOT LOSS WILL RESULT FROM SITE PREPARATION AND BLASTING FOR THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
184	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	40				G	2	N	<ul style="list-style-type: none"> • Crook at 15m height (indicating possible historic leader failure) • Branch failure. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS WILL RESULT FROM REMOVAL OF ADJACENT TREES FOR SITE PREPARATION. 	REMOVE		
185	1	OFF	Y	Y	Red alder (<i>Alnus rubra</i>)	28	21	1.5	70	G	LOW	N	<ul style="list-style-type: none"> • Crown biased to the east. • Leaning to the south. RATIONALE: <ul style="list-style-type: none"> • BEYOND INFLUENCING DISTANCE FROM CONSTRUCTION AND PROTECTION MEASURES WITHIN THE SUBJECT SITE ARE NOT REQUIRED FOR THIS TREE. 	PROTECT	1.5	
186	1	ON	Y	Y	Red alder (<i>Alnus rubra</i>)	20				G	LOW	N	<ul style="list-style-type: none"> • Snag. • Leaning and supported by #184. RATIONALE: <ul style="list-style-type: none"> • CONDITION 	REMOVE		
187	1	SHARED PRIVATE	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	25	18	4.5	50	G	LOW	N	<ul style="list-style-type: none"> • DBH is representative of the largest of measured stems (25,24cmØ) at 1.4m above grade for protection setback calculation purposes. • Dead branches and twigs. • Codominant stems at the root crown. • Historic fine branch and twig failure. • Appears dead. RATIONALE: <ul style="list-style-type: none"> • SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE DUE TO ITS PRE-EXISTING CONDITION. 	REMOVE		
188	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	50				D	S-1	Y	<ul style="list-style-type: none"> • Structurally dependent on #192. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
189	1	ON	Y	Y	Bitter cherry (<i>Prunus emarginata</i>)	21				S	S-LOW	Y	<ul style="list-style-type: none"> • Snag RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
190	1	ON	Y	N	Pacific madrone (<i>Arbutus menziesii</i>)	8				S	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the west. • Suppressed by overstory conifers. RATIONALE: <ul style="list-style-type: none"> • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
191	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	14				S	S-LOW	Y	<ul style="list-style-type: none"> Leaning to the south. Suppressed by overstory conifers. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
192	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	48				D	S-1	Y	<ul style="list-style-type: none"> Structurally dependent on #188. Slight crook at ~2m height. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
193	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				S	S-LOW	Y	<ul style="list-style-type: none"> ~15% dieback. Leaning to the west at ~90 deg. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE PROPOSED BUILDING FOUNDATION AND IMPACTS FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
194	1	OFF	Y	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	21	20	7.0	20	C	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (21,18,12,12cmØ) at 1.4m above grade for protection setback calculation purposes. 2 smaller stems are dead. Multiple branches and twigs have failed. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	7.0	
195	1	OFF	Y	N	Pacific madrone (<i>Arbutus menziesii</i>)	7				S	S-LOW	Y	<ul style="list-style-type: none"> Suppressed by overstory trees. 	PROTECT		
196	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	20				C	S-2	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (20,15cmØ) at 1.4m above grade for protection setback calculation purposes. 	RETAIN		
197	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	41				C	S-2	Y	<ul style="list-style-type: none"> Crown biased to the west. Sweep to west from 0 to 2m RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS WILL RESULT REMOVAL OF ADJACENT TREES. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
198	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	26	22	5.5	70	SE	S-1	Y	<ul style="list-style-type: none"> Crown biased to the west. Sweep to west from 0 to 3m. Few dead and decaying stubs. ~10% dieback. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
199	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	44				C	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
200	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	37				C	S-2	Y	RATIONALE: • Scar at 10m. • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
201	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	39				C	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION.	REMOVE		
202	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	23	22	3.0	20	S	S-LOW	Y	RATIONALE: • Shaded by overstory conifers. • Sweep to the southeast from 0 to 4m. • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
203	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	40				C	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
204	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	11				S	S-LOW	Y	RATIONALE: • Extensive stem decay. • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION.	REMOVE		
205	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				S	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION.	REMOVE		
206	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	18				S	S-LOW	Y	RATIONALE: • 40% dieback. • Suppressed by adjacent taller conifers. • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION.	REMOVE		
207	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	39				C	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
208	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	39				C	S-2	Y	RATIONALE: • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		
209	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	28				S	S-LOW	Y	RATIONALE: • Low LCR, suppressed. • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION.	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
210	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17	15	4.0	30	S	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (17,16cmØ) at 1.4m above grade for protection setback calculation purposes. 1 stem is dead, the other is dying back (~20% foliage loss). RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
211	1	OFF	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	33	35	5.5	70	SE	S-1	Y	<ul style="list-style-type: none"> Structurally dependent on #212. Crown biased to the southwest. MITIGATION: <ul style="list-style-type: none"> Trail should be aligned outside of the root protection zone and/or use low impact methods and materials for installation. 	PROTECT	5.5	
212	1	OFF	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	60	35	6.0	45	C	S-2	Y	<ul style="list-style-type: none"> Structurally dependent on #211. Lower LCR Crown biased to the west. MITIGATION: <ul style="list-style-type: none"> Trail should be aligned outside of the root protection zone and/or use low impact methods and materials for installation. 	PROTECT	6.0	
213	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	32	20	2.5	10	I	S-LOW	Y	<ul style="list-style-type: none"> Uprooted; failed to the south. Supported by a ~18cm dbh snag. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
214	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	20				SE	S-LOW	Y	<ul style="list-style-type: none"> 7m tall snag. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
215	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	27				SE	S-1	Y	<ul style="list-style-type: none"> Crown biased to the northwest. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
216	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				S	S-LOW	Y	<ul style="list-style-type: none"> Dieback ~40%. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (Botanical)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
217	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	27				S	S-LOW	Y	<ul style="list-style-type: none"> Suppressed by adjacent taller conifers. Sparse foliage. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
218	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	13				SE	S-2	Y	<ul style="list-style-type: none"> Crown decline; 50% dieback. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
219	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	102	35	7.5 N,S 3 E,S	65	SE	S-2	Y	<ul style="list-style-type: none"> Codominant stems at ~1.8m above grade with bark inclusion and elephant ears indicating weak and possibly cracking union. Codominant stems are north-south oriented. Asymmetrical crown biased to the northwest due to shading. Sweep to the north from 0 to 8m. Northern stem: crook at ~17m indicating possible historic leader failure. Sparse foliage (20-25% loss). RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
220	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	39				SE	S-1	Y	<ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
221	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	17	17	6.0	30	S	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (17,12cmØ) at 1.4m above grade for protection setback calculation purposes. Codominant stems at the root crown. Crook at ~1m. Crown decline (both stems); 30-40% foliage loss from the top down. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
222	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	20.5	10	5.0	50	S	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (14+15cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Codominant stems at ~1.3m height. ~10% dieback. Dead twigs. Sweep to the west from 0 to 3m. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
223	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	18				I	S-2	Y	RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
224	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	16				SE	S-1	Y	RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
225	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				S	S-LOW	Y	<ul style="list-style-type: none"> Crown decline. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
226	1	ON	Y	N	Pacific madrone (<i>Arbutus menziesii</i>)	7				S	S-LOW	Y	<ul style="list-style-type: none"> Dying RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
227	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	12				SE	S-LOW	Y	<ul style="list-style-type: none"> Dying RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
228	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				S	S-LOW	Y	<ul style="list-style-type: none"> Dying RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
229	1	CITY	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	7	3	1.0	30	SE	S-1	Y	<ul style="list-style-type: none"> Horizontal growth. ~10% dieback. 	PROTECT	1.0	
230	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	22				SE	S-1	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (22,15cmØ) at 1.4m above grade for protection setback calculation purposes. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
231	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	20				SE	S-1	Y	<ul style="list-style-type: none"> Asymmetrical crown biased to the west. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
232	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				SE	S-1	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
233	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				SE	S-1	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
234	1	CITY	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	6				SE	S-1	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. 	PROTECT		
235	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				S	S-LOW	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (Botanical)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
236	1	ON	Y	N	Pacific madrone (Arbutus menziesii)	8				S	S-LOW	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
237	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	79	35	6.5 W 2 E	25	SE	LOW	Y	<ul style="list-style-type: none"> Historic leader failure with a weakly attached replacement leader at 20m height. Sweep (0 to 11m above grade) and crown biased to the west. Phaeolus sp. fruiting bodies observed on the southwest side of the root crown. Flush cut wounds with decay on the northeast side from 0 to 2m. The crown is very thin: ~60-70% foliage loss. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
238	1	ON		Y	Pacific madrone (Arbutus menziesii)	10					LOW		RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
239	1	ON	Y	N	Pacific madrone (Arbutus menziesii)	8				S	S-LOW	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
240	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	16				I	S-LOW	Y	<ul style="list-style-type: none"> Broken top RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
241	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	16				I	S-LOW	Y	<ul style="list-style-type: none"> Dying. RATIONALE: <ul style="list-style-type: none"> CONDITION 	REMOVE		
242	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	18	14	8.0	20	S	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (18,12cmø) at 1.4m above grade for protection setback calculation purposes. Leaning and crown biased to the west (at ~45 degree angle). Upper crown dieback (~10-15% foliage loss). 	RETAIN	8.0	
243	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	15				S	S-LOW	Y	<ul style="list-style-type: none"> Crown decline. Suppressed. 	RETAIN		
244	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	13				S	S-LOW	Y		RETAIN		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (Botanical)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
245	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	12				S	S-LOW	Y	• Leader failure.	RETAIN		
246	1	CITY	Y	Y	Douglas-fir (Pseudotsuga menziesii)	17	18	6.0	70	SE	S-1	Y	• Asymmetrical crown biased to the west.	PROTECT	6.0	
247	1	CITY	Y	Y	Douglas-fir (Pseudotsuga menziesii)	12	10	1.0	10	SE	S-2	Y	• Low LCR; suppressed by adjacent off-site firs #246 and #248.	PROTECT	1.0	
248	1	CITY	Y	Y	Douglas-fir (Pseudotsuga menziesii)	42	26	7.0	70	SE	S-1	Y	• Asymmetrical crown biased to the west.	PROTECT	7.0	
249	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	42				SE	S-1	Y	• Crown biased to the west.	RETAIN		
250	1	CITY	Y	Y	Pacific madrone (Arbutus menziesii)	18.7	10	6.5	20	SE	S-2	Y	• DBH of a single stem equivalent is calculated based on the area of measured stems (18+5cmØ) at 1.4m above grade for protection setback calculation purposes. • Upper 2/3 of crown is dead. • Leaning to the northwest. RATIONALE: • GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	6.5	
251	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	18				O	2	N	RATIONALE: • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		
252	1	ON	Y	Y	Western redcedar (Thuja plicata)	28				O	LOW	N	• 70% dead from the top down RATIONALE: • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		
253	1	ON	Y	Y	Pacific madrone (Arbutus menziesii)	10				S	S-LOW	Y	• Crown decline (~20-30% foliage loss) RATIONALE: • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		
254	1	ON	Y	Y	Douglas-fir (Pseudotsuga menziesii)	45				C	S-2	Y	RATIONALE: • EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN.	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
255	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	17				I	S-LOW	Y	<ul style="list-style-type: none"> • Broken top. • Severe lean. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
256	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	32				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
257	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	19				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
258	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	40				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
259	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	25				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
260	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	36				C	S-2	Y	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
261	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				G	1	N	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
262	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	39				G	1	N	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
263	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	31				G	1	N	RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
264	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				G	LOW	N	<ul style="list-style-type: none"> • Snag RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
265	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	43				G	LOW	N	<ul style="list-style-type: none"> • Stem decay. • Sweep west 0 - 17m. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
266	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	50				G	1	N	<ul style="list-style-type: none"> • Crown biased to the southwest. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
267	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	55				G	1	N	<ul style="list-style-type: none"> • Crown biased to the southwest. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
268	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	18				G	LOW	N	<ul style="list-style-type: none"> • Snag RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
269	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	15				S	S-LOW	Y	<ul style="list-style-type: none"> • Upper crown dieback (~50%). RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
270	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	13				S	S-LOW	Y	<ul style="list-style-type: none"> • Upper crown dieback (~50-60%). RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
271	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	26				S	S-LOW	Y	<ul style="list-style-type: none"> • Snag RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
272	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	18				S	S-LOW	Y	<ul style="list-style-type: none"> • 70% dead. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
273	1	ON	Y	Y	Western hemlock (<i>Tsuga heterophylla</i>)	18				I	S-LOW	Y	<ul style="list-style-type: none"> • Broken top. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
274	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17				I	S-2	Y	<ul style="list-style-type: none"> • Shaded by adjacent trees. • Crown decline (~20% foliage loss) RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
275	1	ON	Y	Y	Western redcedar (<i>Thuja plicata</i>)	17				I	S-LOW	Y	<ul style="list-style-type: none"> • Snag. RATIONALE: <ul style="list-style-type: none"> • DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
276	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	17	7	6.0	20	0	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (13, 17cmø) at 1.4m above grade for protection setback calculation purposes. Stem decay. Dead and decaying scaffolds. Crown decline. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
277	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	11				0	LOW	N	<ul style="list-style-type: none"> Snag RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE INTERNAL DRIVE AISLE AND BLASTING FOR SITE PREPARATION. 	REMOVE		
278	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	21	12	3.5	25	0	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (21,11cmø) at 1.4m above grade for protection setback calculation purposes. 11cm DBH stem is dead. 2 dead and decaying scaffolds. Low LCR and crown decline. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
279	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	26	16			G	LOW	N	<ul style="list-style-type: none"> Snag with a hollow butt. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
280	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	18				G	1	N	RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
281	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	47				G	1	N	<ul style="list-style-type: none"> Severe resinosis on the east side of the stem. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
282	1	ON	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	33				G	1	N	RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
283A	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	10				S	S-LOW	Y	<ul style="list-style-type: none"> Shaded by overstory conifers. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
283B	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	20					LOW		<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (15,20cmØ) at 1.4m above grade for protection setback calculation purposes. RATIONALE: <ul style="list-style-type: none"> DIRECT CONFLICT WITH THE NEW BUILDING FOUNDATION. 	REMOVE		
284	1	OFF	Y	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	51	35	6.5	80	0	1	N	<ul style="list-style-type: none"> No significant defects observed. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	6.5	
285	1	OFF	N	Y	Pacific madrone (<i>Arbutus menziesii</i>)	25	17	3.5	20	0	LOW	N	<ul style="list-style-type: none"> Significant crook at ~1m height. Crown decline (~60% foliage loss). RATIONALE: <ul style="list-style-type: none"> SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE DUE TO EXCESSIVE IMPACTS WHICH WILL RESULT FROM BLASTING FOR SITE PREPARATION. 	REMOVE		
286	1	ON	Y	Y	Pacific madrone (<i>Arbutus menziesii</i>)	34	21	6.0	55	G	1	N	<ul style="list-style-type: none"> Historic scaffold removal on the west side with decay at the branch collar. Crook at ~3m height. Crown biased and leaning to the west due to shading. Structurally dependent on #287. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
287	1	OFF	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	57	35	5.5	80	G	1	N	<ul style="list-style-type: none"> No significant defects observed. RATIONALE: <ul style="list-style-type: none"> EXCESSIVE IMPACTS ARE EXPECTED TO RESULT FROM ROCK BLASTING FOR GRADING AND SITE PREPARATION. PROTECTION MEASURES CANNOT BE ACCOMMODATED IN THE CURRENT DESIGN. 	REMOVE		
288	1	OFF	N	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	54	22	6.5	10	0	LOW	N	<ul style="list-style-type: none"> Snag with extensive decay throughout the tree.. Historic scaffold failure. This tree may be high risk. RATIONALE: <ul style="list-style-type: none"> SEEK APPROVAL FROM THE NEIGHBOURING OWNER TO REMOVE THIS TREE DUE TO ITS PRE-EXISTING CONDITION AND RISK MITIGATION. 	REMOVE		
289	1	OFF	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	51	33	6.5	70	0	1	N	<ul style="list-style-type: none"> No significant defects observed. Growing in thin soil over rocks. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	6.5	



Tag/ID	# of Trees	Loc	Survey	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Priority	Stand Y/N	Assessment Findings:	ACTION	CPZ (m)	RPZ (m)
290	1	OFF	N	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	28	27	5.5	40	G	1	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (26,28,26,16cmØ) at 1.4m above grade for protection setback calculation purposes. 4 structurally dependent stems attached at the root crown; limb-tied. Possible root restriction due to ~0.8m tall stone retaining wall to the northwest. Crown raise pruned to ~18m. RATIONALE: <ul style="list-style-type: none"> GROWING BEYOND INFLUENCING DISTANCE FROM THE SUBJECT SITE. PROTECTION MEASURES ARE NOT REQUIRED WITHIN THE SITE FOR THIS TREE.	PROTECT	5.5	
291	1	OFF	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	72	37	4.5	30	G	1	N	<ul style="list-style-type: none"> ~20 of the root crown's circumference is girdled by a buttress on the northwest side. Crown raise pruned to ~23m. Root restricted on the northwest side by ~0.4m tall retaining wall. Structurally dependent on #292. 	PROTECT	4.5	
292	1	SHARED PRIVATE	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	51	27	5.0	50	G	1	N	<ul style="list-style-type: none"> Crown raise pruned to ~10m. Root restricted on the northwest side by ~0.4m tall retaining wall. Structurally dependent on #291. 	RETAIN	5.0	
293	1	SHARED PRIVATE	N	Y	Douglas-fir (<i>Pseudotsuga menziesii</i>)	31	10	2.5	50	G	1	N	<ul style="list-style-type: none"> Root restricted on the northwest side by ~0.4m tall retaining wall. Suppressed by and tructurally dependent on #292. Asymmetrical crown biased to the south due to shading. 	RETAIN	2.5	

UPPER

LEVELS

HIGHWAY

HIGHWAY REFERENCE PLAN 5615

HIGHWAY PLAN 12/126

PLAN 10031

PLAN 18047

PLAN

LMP52813

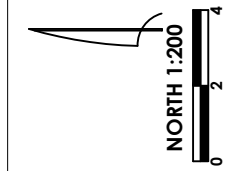
BLOCKS

F AND G

EAGLERIDGE

MARINE

DRIVE



TREE ASSESSMENT DETAIL - TOPOGRAPHIC BASE PLAN
HEALTH AND STRUCTURE CONDITION OF EXISTING TREES - FOR INFORMATION ONLY

LEGEND-TREE ASSESSMENT:

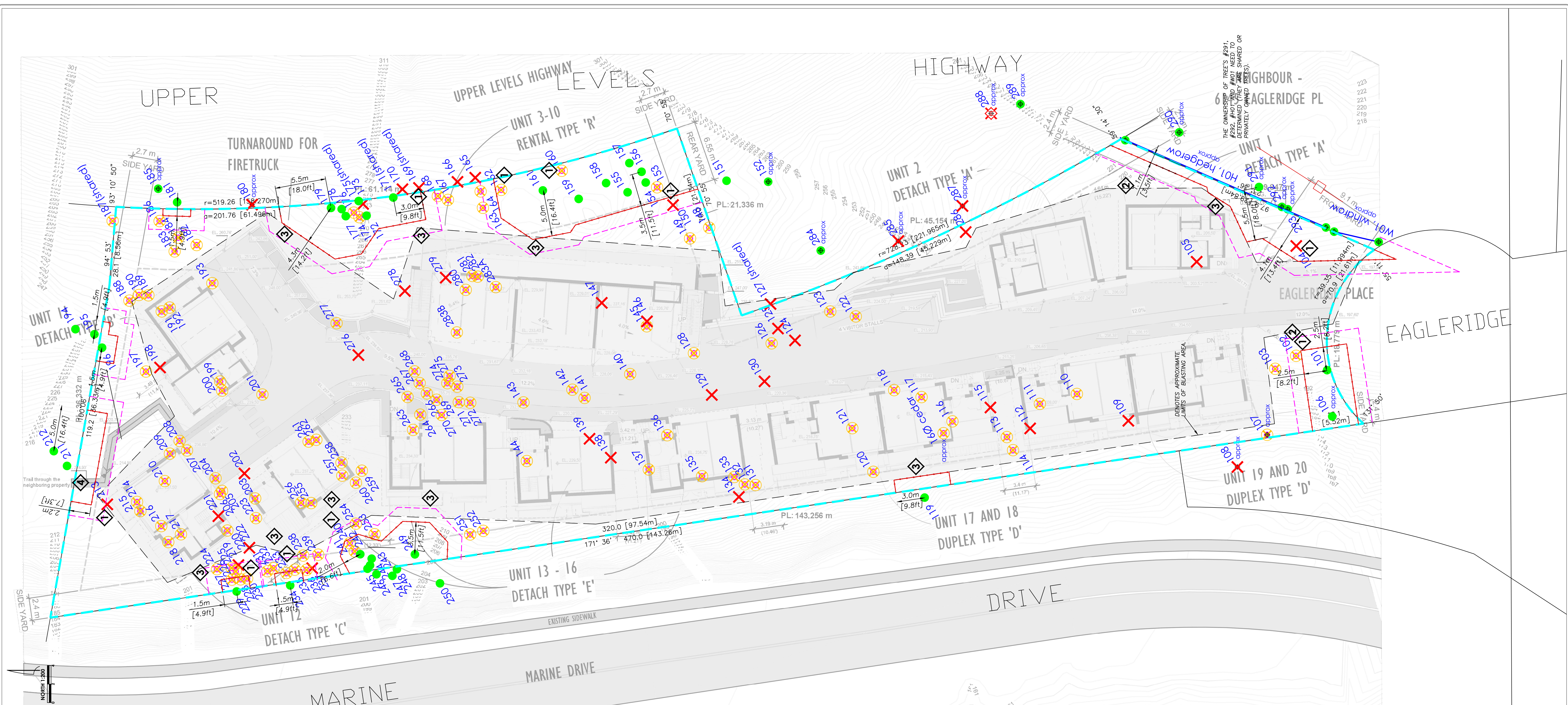
- # denotes TAG NUMBER or ID REFERENCE
- XXX denotes SURVEY TAG NUMBER or ID REFERENCE
- approx denotes APPROXIMATE LOCATION for an unsurveyed tree (if contemplated for retention then the tree must be accurately surveyed before design is finalized)
- 1 denotes PRIORITY 1 tree - fully suitable for preservation (if design can accommodate it)
- 2 denotes PRIORITY 2 tree - candidate for preservation, (subject to design and treatment feasibility)
- X denotes PRIORITY LOW tree - not recommended for preservation (exceptions to retain may be feasible subject to project details)
- N denotes NON-PROTECTED STATUS TREE (as per DNV Bylaw No. 4892, 2016 (consult municipality to determine if it is a bylaw-protected replacement tree))
- OFF-SITE denotes OFF-SITE tree within influencing distance of construction (neighbour and city consultation may be required to finalize treatment)
- O denotes PRELIMINARY TREE ROOT PROTECTION SETBACK (for planning and design consideration)



APPENDIX C: TREE MANAGEMENT DRAWING SHEET 1 OF 2

ARBORTECH CONSULTING
 SUITE 145 - 12051 HORSESHOE WAY, RICHMOND, BC V7A 4V4 604 275 3484

PROJECT:	PROPOSED TOWNHOUSE DEVELOPMENT
ADDRESS:	6155 EAGLERIDGE PL WEST VANCOUVER BC
CLIENT:	GD NIELSEN HOMES
CITY REF:	ACL FILE: 21255
PLOT SIZE:	22'x34' REV #: 0 DATE: MAR 17, 2022



TREE RETENTION AND PROTECTION DETAIL - PROJECT DESIGN BASE PRESCRIPTION FOR EXISTING TREES RELATED TO THE PROPOSED DEVELOPMENT

LEGEND-TREE RETENTION:	LEGEND-TREE PROTECTION:
<p>LEGEND-TREE RETENTION:</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed or modified (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p>	<p>LEGEND-TREE PROTECTION:</p> <p>XXXX: Tree to be removed or modified (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p> <p>XXXX: Tree to be removed (see site plan for further details)</p> <p>XXXX: Tree to be retained (see site plan for further details)</p>

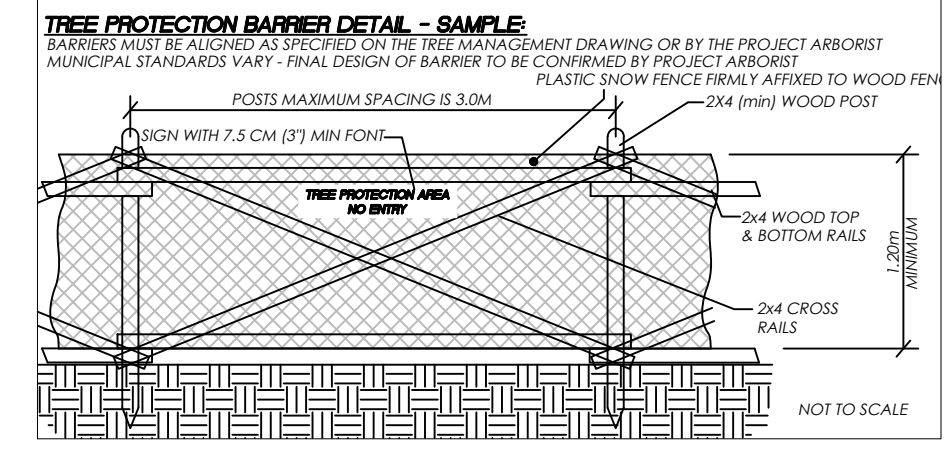
TREE PROTECTION STANDARD MEASURES:

The Client is required to consult the project arborist to review and approve, as well as to attend and direct and/or supervise certain works from time to time during the project, such as but not limited to the following:

- Tree Protection Barrier Installation and Contractor Mobilization:**
 - Tree Protection Barrier (TPZ) are constructed of a CPZ, RPZ and WSS as detailed below and with locations and positions as depicted hereon and in the arborist report.
 - Tree locations noted as APPROXIMATE should be surveyed accurately before building design and/or construction.
 - All tree protection setbacks are dimensions from the center of tree trunk and/or from the base of tree as indicated.
 - The project arborist should be consulted prior to barrier installation to provide advice on tree protection setbacks and provide sign-off when they are completed.
 - Barriers should be installed in a manner that does not impede access to the tree.
 - Temporary erosion barriers, for demolition or site preparation phases may require adjustment to the final barrier alignment when the construction work is complete.
- Access within TPZ:**
 - Whenever worker or equipment access into a tree protection zone (TPZ) is contemplated or desired for any reason, we have cost effective methods that may be feasible in order to enable access while minimizing tree, root and soil impacts and remaining compliant with city bylaws or conditions of project approval.
 - Any Ground Work or Aerial Work within TPZ:
 - Whenever any stripping (overburden removal or scraping), regrading (cuts or fills), trenching, excavation or other ground disturbance work occurs within or adjacent to a TPZ, including the root protection zone (RPZ) and the working space setback (WSS) as well as when crane or equipment usage is directly adjacent to a CPZ.
 - Pruning:
 - Certain retained trees may require pruning however all pruning is conditional to limitations on scope and method as prescribed by the project arborist. Pruning might be required to mitigate one or more of the following: restoration of form, aesthetics, mitigation of defects, building clearance, sight lines, crown raising clearance for vehicles or pedestrians and/or construction access. All tree pruning work to be carried under the direction of the project arborist from this office and by an ISA Certified Arborist employed by a qualified tree service firm working in accordance with applicable ANSI standards (A300 and Z153), and meeting the city, contractor and/or developer/owner insurance and licensing requirements.
 - Low Impact Tree or Stump Removal:
 - For any tree removal or stump removal from within a RPZ or WSS options such as stump grinding and/or digging and cutting roots will be required, as directed by the Project Arborist to suit the specific site conditions.
 - Landscape Finishing:
 - All landscaping activities must be reviewed by this office in advance of commencing and on-site direction and guidance from the project arborist planned accordingly, such as but not limited to:
 - Preparation works and construction of landscape finishing works including but not limited to: sidewalks, paths, patios, decks, retaining walls, fencing, irrigation, conduit, benches, patio covers, soil placement, grass or turf installation, planting or other landscape items.
 - Turf within TPZ is discouraged, however if desired we may support it as long as a suitable mulch zone setback is implemented around the base of the tree.
 - Certain landscape features may be excluded or will require specific materials and methods to be utilized that meet tree root protection compliance requirements.
 - Note that the planting of any plants, shrubs or hedges within the TPZ is restricted to small pot sizes (i.e. #1 or #2 depending on species) and using "pocket planting" standards. Planting holes are minimized in size, dug into existing grade to avoid damage to woody roots, and backfilled with minimal addition of growing medium.

TREE PROTECTION SPECIAL MEASURES:

- The following items within a TPZ require PA direction, treatment or supervision/monitoring. See the Tree Management Drawing for additional references to locations where special measures are required.
- Tree Removal or Land Clearing Operations:**
 - The tree removals, land clearing and/or stump removals within or in close proximity to a TPZ require on-site supervision and direction to ensure that the contractor implements low impacts methods for those operations, and to ensure retained trees are protected adequately.
 - TREE # 101, 291, and H01 - Demolition:**
 - The removal of existing structures and hard landscape features within or in close proximity to a TPZ require on-site supervision and direction to ensure that the contractor implements low impacts methods for those operations, and to ensure retained trees are protected adequately.
 - Root Pruning for Site Excavation:**
 - The PA must be on site concurrently with the excavation adjacent to the tree protection zone to identify tree roots, provide root protection measures and/or undertake root pruning treatments as necessary.
 - TREE # 211 and 212 - Preparation for pedestrian access trail:**
 - The project arborist must be on site prior to commencing with and during preparation for installation of the proposed trail in the root protection zone of off-site trees. Encroachment may be acceptable - subject to low impact methods and materials to mitigate root loss. If low impact methods cannot be accommodated, the project arborist will suggest alternative trail alignment to mitigate root loss.



DRAWING USE AND COORDINATION:

- This drawing relies on information and drawings supplied by the client or their consultant. Refer to original drawings from the consultants (e.g. surveyor, engineer, architect or other design professional) for accurate locations and dimensions of site features.
- All tree protection measures specified herein should be included and coordinated with the design for the project, including but not limited to: architectural, landscape, civil and geo-technical. It is the responsibility of each design professional to understand and review the tree protection measures and determine any conflicts. If conflicts are identified, the design professional and/or the client should bring those to the attention of the project arborist from this office to review and resolve.
- Retaining and concrete for site preparation, land clearing, civil works and/or construction should include specifications for tree protection measures to be implemented on per this drawing and any reference documents.
- It is the responsibility of the owner or their agent to obtain all necessary approvals for the tree retention and removal scheme presented herein. Any changes that the municipality requires should be brought to the attention of the project arborist from this office to review and resolve.
- Some existing trees may not be shown on this drawing (e.g. understorey or below exempt trees, or grouped trees). It is the responsibility of the contractor to confirm that all necessary municipal approvals are in place, and to determine the full scope of tree removal work.
- Only the trees shown to be retained and protected are to remain on site, unless otherwise directed by the owner.
- Trees and shrubs to be removed from within the tree protection zone (including CPZ, RPZ and WSS) are to be removed as directed and with on-site supervision from an arborist from this office.
- Stump grinding may be required for the removal of trees within the tree protection zone, the direction of on-site supervision from this office.
- Certain tree removals (possibly of retained trees or power lines) may require assistance from a suitably qualified professional, such as but not limited to:
 - ISA Certified Arborist (tree removal, rigging, pruning and other tree service work) working to ANSI A300 and ANSI T133 Standards and Best Management Practices.
 - Certified Utility Arborist (tree removal, cutting and other tree service work) working to ANSI A300 and ANSI T133 Standards and Best Management Practices and following BC Hyva policies and procedures.



APPENDIX D: TREE PROTECTION SPECIFICATIONS

1. REFERENCE DOCUMENTS AND CONTACT INFORMATION:

The following should be read in conjunction with the rest of the reference documents in the most current version of the *Tree Management Report and Drawing Package or Construction Impacts Assessment* prepared by this office. A component of the reference documents may include a Letter of Undertaking/Assurance (LOU) to meet city requirements for arborist supervision during all phases of construction, in which case there is mandatory requirements for the owner/developer or the contractor to comply with tree protection measures and specifications. For clarifications and coordination regarding tree protection, please contact this office, acting as Project Arborist (PA) for this site:

ARBORTECH (a division of ACL Group) PHONE: 604 275 3484 EMAIL: trees@aclgroup.ca

The IFC project drawings must be provided to the An arborist will be assigned by our office to; review and respond, schedule a pre-construction meeting, and/or coordinate the necessary direction and supervision relative to the planned site activities.

2. TREE PROTECTION PROTOCOLS FOR DESIGN, CONTRACT MANAGEMENT AND CONSTRUCTION MANAGEMENT:

All project consultants must remain updated with the current tree protection specifications as they may be revised from time to time. If project consultant drawings and designs are revised they should be forwarded to this office for review by the PA. Tendering, IFC drawings (architectural, civil, landscape, mechanical, geo-technical, etc.) and construction work plans for all phases of construction (i.e. enabling works, general access/egress, site office, hoarding installation, demolition, ESC, site clearing, civil infrastructure, excavation and shoring, materials delivery, crane operations, construction access, landscape finishing, etc.) should be planned and implemented in accordance with the tree protection specifications herein and as per the reference documents. Any areas or trees that are not identified in these documents and/or where potential conflicts with the TPZ's are identified by the Client will require additional review by the PA in advance of proceeding with those works.

3. TREE LOCATIONS:

Tree locations and other data presented on the tree management drawing (see Appendix C of the reference document) are derived from the project topographical survey. The locations of trees not shown on the survey may be approximated by the project arborist. It is also possible that the centre of the tree trunk at ground level may deviate from the location shown on the survey. We recommend that the locations of any trees specified for retention be re-checked by the surveyor to before final design, and to provide an updated survey to the PA (if revised).

4. TREE PROTECTION ZONE DEFINITIONS:

Tree protection zone (TPZ) setbacks are dimensioned on our drawings and documents relative to the centre of the tree trunk at ground level and/or relative to the physical extents of the crown, and the TPZ for each retained or protected tree is comprised of three main components:

- **Crown Protection Zone (CPZ):** the CPZ is aligned at the furthest extent (horizontal reach) of branches and foliage (tree crown) projected to the ground below (dripline). This zone is restricted to aerial encroachments that may not be accepted by the PA. Buildings should be setback from the CPZ sufficiently to accommodate; working space to construct the building, installation of the exterior finishing, undertake future maintenance, and to accommodate future growth of the crown as the tree matures. Any encroachments into the CPZ for building elements or for the access or operation of vehicles, machinery, cranes or lifts etc., will require an impact and mitigation assessment by the PA.
- **Root Protection Zone (RPZ):** the RPZ is a setback prescribed by the PA representing the closest proximities of soil and/or tree root disturbance toward a tree that is deemed manageable and tolerable based on site and tree factors, and conditional to mitigation measures and compensatory treatment as specified by the PA. Minor encroachments may be possible but such encroachments would require a detailed analysis by the PA before they would be allowed. In some cases, the city may not permit such encroachments.
- **Working Space Setback (WSS):** the WSS represents a zone outside of the RPZ or CPZ setbacks (whichever is greater) specified by the PA where soil and root disturbances may occur conditional to; the direction or on-site supervision by the PA, implementation of mitigation measures and/or undertaking certain best management practices and treatments (i.e. root pruning or load distribution).
- **City Specified Tree Protection or Management Requirements:** certain cities may require additional measures or arborist supervision requirements which may apply to areas outside of the above noted TPZ setback zones. Please refer to the *Tree Management Drawing* for further details.

5. TREE PROTECTION BARRIERS:

Barriers (fences) should be erected around protected trees at the RPZ setbacks specified by this office. The PA should direct the installation of the temporary tree protection barriers to troubleshoot the site conditions and direct/approve of any field adjustments that may be necessary. The PA will provide a sign off report (as required by city where applicable) once the barrier installation is complete to our specifications. Note that, where the CPZ has a greater setback from the tree, the barrier should be aligned at that setback where possible, however; if PA approved construction activities are proposed in the area between the RPZ and the CPZ then the contractor should be prepared to realign the barrier when and as directed by the PA. Certain tree barriers may require a survey in advance to enable accurate barrier installation (i.e. if aligned with a property line, a future proposed design element). Signs stating "TREE PROTECTION ZONE - NO ENTRY" must be placed on the tree protection fence at a suitable frequency and as directed by the PA (the PA will install signs during the barrier inspection). The contractor, sub-contractors and trades should be made aware of the tree protection zone restrictions (see below). The barriers must be maintained at those alignments in good condition, and may not be removed or realigned for any reason (including access for workers and especially for landscaping phase), unless prior approval from the PA is first obtained.

6. TREE TREATMENT, ENHANCEMENT AND SPECIAL MEASURES:

Prior to or during the course of construction, the owner/developer and their contractors are responsible to enable or ensure completion of enhancement or remedial tree treatments, and proactive tree protection measures for retained trees as specified by the PA, such as:

- Pruning for risk mitigation, crown restoration, form, building or overhead clearance, and/or sight lines,
- Pre-treatments such as root mapping, vertical aeration, advance root pruning and other treatments,
- Installation of soil amender (i.e. mulch) within the **RPZ** to mitigate soil desiccation and to improve soil fertility,
- Interim supplemental watering to compensate for soil hydrology changes,



- Low impact removal of plants or stumps located within a **TPZ** (i.e. stump grinding or cutting with PA supervision),
- Windfiring of new forest edges created by clearing of the development lands, including; re-assessment, tree removals, pruning, modification to wildlife tree, or other treatments as specified by the PA, and
- Installation of interim soil protection and load distribution measures where applicable.

Note that any PA authorized tree pruning will require on-site direction from the PA and must be completed by a tree service firm employing ISA Certified Arborists and working to ANSI A300 and ANSI Z133 Standards. Pruning to reduce the height of retained trees (topping or heading) and pruning to excessively raise the crown of a tree CANNOT be undertaken. See the tree management drawing for additional details.

7. RESTRICTIONS WITHIN TREE PROTECTION ZONES:

Trees that are specified to be retained must be protected from incurring any damage during all phases of the project. Access or construction related work within the TPZ requires advance approval and on-site direction/supervision by the PA. General restrictions within the TPZ are as follows. Except as may be permitted by the PA, and conditional to specific measures that may be feasible, there shall be:

- No soil disturbance of any scope or to any depth, including but not limited to; over-excavation for working space to construct a design element, cuts or fills for grade transitions, trenches for services, bulk excavation, removal of vegetation, etc.,
- No passage or operation of machinery, trucks, vehicles or equipment, including small track machines, skid steers, lifts, etc.,
- No storage of soil, spoil, gravel, construction supplies, materials, waste, etc.,
- No waste or washing of concrete, stucco, drywall, paint, or other potentially harmful materials,
- No placement of temporary structures or services,
- No affixing lights, signs, cables or any other device to retained trees,
- No pruning or cutting of any part of a retained tree,
- No landscape finishing, except certain planned landscape works that have prior approval conditional to supervision by the PA.

8. DEMOLITION OR PRE-CONSTRUCTION OPERATIONS:

Municipalities vary in whether they will approve general development related tree removals at the demolition phase. In some cases pre-existing risk trees or trees that will be made high risk from unavoidable demolition impacts may require an early tree permit. Certain sections of a TPZ may require low impact methods of demolition and/or enhancement or restoration treatment to be undertaken immediately after the demolition of a structure has been completed. Tree protection barriers may also need to be realigned after those works. Accordingly, a letter of undertaking (**LOU**) confirming supervision may be required by, or may be on file with, the municipality. The owner/developer and the demolition contractor will need to coordinate with the PA to review, plan and direct those works accordingly.

9. TREE REMOVAL/CLEARING OPERATIONS:

A pre-clearing meeting with the PA is strongly recommended to mark/identify retained trees, identify low impact removal trees, review the work plan, and to ensure contractor compliance with the tree protection measures specified. A copy of the tree permit must be provided to the PA for our review and reference. Neighbour approvals, additional municipal permits and/or authorizations from regulatory bodies may also be required and are the responsibility of the owner/developer or their designate. Certain trees requiring removal may not be shown or referenced on the drawing or documents prepared by this office (i.e. undersize or non-bylaw trees or untagged trees assessed in groups in our documentation). There are often removal trees (identified or unidentified on our drawings) that require felling, extraction and stump removal from within TPZ's using low impact methods. The contractor and/or the land clearing subcontractor should verify the tree removal and clearing scope based on their own site investigation and liaise with this office for clarifications where appropriate. For the removal of any trees that are located in proximity of overhead BC Hydro conductors the contractor is required to coordinate and comply with measures specified by a Certified Utility Arborist (CUA).

10. CONSTRUCTION OPERATIONS:

A letter of undertaking (**LOU**) for arborist supervision may be on file with the municipality. The contractor (project manager/site superintendent) and the owner/developer are encouraged to schedule a pre-construction meeting with the PA to; review IFC drawings, establish communication and procedural protocols, review responsibilities for tree protection measures at specific milestones of the project and identify and resolve any anticipated tree protection related constructability challenges. While we strive to be as comprehensive as possible in our tree protection planning, it is acknowledged that certain unpredictable construction conflicts with a TPZ may arise. However, any proposed encroachment into a TPZ and/or changes to the tree retention scheme are subject to approval in advance by the PA and the municipality. Special measures required for tree protection compliance related to construction work in the **CPZ** or within an **RPZ** may be required in order to accommodate PA accepted and managed encroachments into a **TPZ**, such as but not limited to:

- Root mapping by the PA.
- Installing armour or suspended structures over the soil within the **RPZ** to accommodate temporary worker or equipment passage.
- Low impact trenching using air-vac or hydro-vac, with arborist supervision, to accommodate underground services or utilities. This option is restricted as to viability by; proximity to a tree, scope, depth, shoring needs, tree species, site/soil conditions and other factors.

11. LANDSCAPING OPERATIONS:

A pre-landscape meeting between the landscape contractor and the PA is required to review their work scope in advance of the removal of the tree barriers. The operation of equipment of any size or type, the placement of growing medium, all grading and site preparation for permitted hard landscape features within a TPZ (i.e. sidewalks and patios), site preparation for retaining walls and footings, excavation for fences, signs and other landscape features, digging of planting holes for new plants and trees, the digging of trenches for irrigation, drainage and lighting infrastructure, and the placement of soft landscape finishing, are all activities that have high potential for causing damage to trees, roots or soil. Advance coordination between the landscape contractor and our office prior to landscape operations commencing, as well as concurrent with certain activities, are requirements in order to avoid tree protection non-compliance and bylaw issues.



APPENDIX E: LETTER OF UNDERTAKING/ASSURANCE (LOU)
PROOF OF CONTRACT FOR ARBORIST SUPERVISION AND DIRECTION DURING CONSTRUCTION

Date of Issuance: **March 17, 2022** City Ref: _____ ACL File: **21255**
 Developer/Owner: **Greg Nielsen – GD Nielsen Homes**
 Project: **Proposed Residential Development**
 Site Address: **6155 Eagleridge Place, West Vancouver**
 Reference Documents: **Tree Management Report and Drawing Package** prepared by this office
 (contact this office for the most recent version)

Pursuant to city bylaws and/or policies; a duly executed copy of this Letter of Undertaking/Letter of Assurance (**LOU**) serves as confirmation that Arbortech, a division of ACL Group Enterprises Ltd (the “Consultant”), is retained under contract to the **Developer/Owner or their Designated Contractor** (collectively, the “Client”) as **Project Arborist** (the “PA”) to provide arboricultural consulting and field services for the duration of the construction phase at the above noted project. The PA intends to assist the Client in remaining compliant with the tree protection requirements specified herein and within the reference documents as well as within the related city bylaws, policies and/or city conditions of project approval.

AGREEMENT TO TERMS:

By signing below, the owner/developer and contractor agree to;

- ensure that the project consultants and relevant staff at their respective firms as well as all subcontractors and trades, will be apprised of this agreement,
- adhere with the restrictions and measures related to **Tree Protection** for the project as detailed on the reference documents and herein (see standard measures and special measures below),
- furnish this office with IFC drawings and notify the PA of any potential tree protection conflicts with construction related to the work of all contractors, sub-contractors and trades, in advance of those occurring,
- ensure that the PA is contacted with a minimum of **3 business days advance notice** to arrange proactive attendance by the PA at required times,
- comply with PA directed and supervised work in conformance with PA specified arboricultural standards and best management practices and using low impact materials and methods as directed,
- facilitate any remedial work or treatments that may be prescribed or required by the PA or the city,
- pay all costs associated with compliance measures as well as any non-compliance penalties and remediation treatments required thereof, and
- remunerate the Consultant for hourly charges, including portal to portal travel, at our current rates and net 30 upon invoicing;

	<i>Owner/Developer:</i>	<i>Contractor:</i>	<i>Project Arborist:</i>
Authorized Signature:	To be provided prior to final municipal approval.	To be provided prior to final municipal approval.	To be provided prior to final municipal approval.
Date Signed:			
Name:			
Company:			Arbortech, a division of ACL Group
Cell Phone:			
Email:			



TREE PROTECTION STANDARD MEASURES:

As a general protocol relative to this LOU the Client is required to; maintain compliance with the Tree Protection Specifications (see Appendix D in the reference document), keep the PA updated with city approvals and scheduling, as well as consult with the PA to review or attend the site at the following project milestones and/or prior to and during certain work activities on the site as follows:

A. Barrier Installation:

To direct and inspect the tree protection barrier Installation and provide barrier sign-off report.

B. Pre-Treatment of Trees:

To undertake or direct tree treatments (i.e. pruning, enhancements to the growing site and special measures) to prepare the trees and assist them in sustaining and adapting to the rigours of construction.

C. Pre-Construction:

To attend a pre-construction meeting, assist in implementing contractor mobilization to the site and to direct/supervise pre-construction works in and around TPZ's, such as but not limited to:

- site access and egress,
- service and utility decommissioning,
- civil enabling works,
- demolition of building or hardscapes,
- ESC installation,
- invasive plant treatments or management,
- site clearing and tree removal (low impact removal of vegetation and stumps within TPZ),
- preloading or site grading, and
- installation of site hoarding, site office and temporary power.

D. Construction Phase:

To attend and assist with specific activities within or in close proximity of a TPZ to direct or undertake low impact methods and materials, to perform root pruning and to direct tree and root protection, concurrent with the following:

- site grading (cuts or fills),
- excavations,
- trenching or overhead work for services and utility installation,
- forming and concrete placing,
- scaffolding, craning or manlift operation,
- framing and building envelope finishing,
- all landscape works (see below), and
- at certain times as identified in the Special Measures section (see below).

E. Regular Inspections and On-Call:

To attend on a regular monthly schedule or at an interval determined by the PA relative to the construction progress and timing of certain works and to be available from time to time to review design details that the Client deems may present conflicts with a TPZ and/or to assist in resolving project constructability challenges.

F. Access within TPZ:

To review and direct worker or equipment access into a tree protection zone (TPZ) whenever contemplated or desired for any reason, and only when absolutely necessary. The PA has a toolbox of various solution for cost effective methods to enable certain types and scopes of access within a TPZ while minimizing the impacts to the tree.

G. PRIOR TO REMOVING BARRIERS – Landscape Finishing:

To review landscape drawings and subcontractor work plan including TPZ related limitations on methods and materials in advance of commencing those works and to provide on-site direction and guidance for the associated preparation works and construction of PA approved hard and soft landscape elements as follows:

- sidewalks/paths,
- patios/decks/benches,
- retaining walls,
- fencing,
- irrigation/electrical conduit
- soil placement/planting and grass or turf installation.

Note that certain landscape features may be excluded, may require an arboricultural aeration system, or will be limited to specific materials and methods that meet tree and root protection requirements. Planting of any plants, shrubs or hedges within a TPZ is restricted to small pot sizes such as “4 inch” and “#1”, but these may vary depending on tree species and proximity to the tree. The “pocket planting” standards will apply via minimizing planting hole size, digging into existing grade where that work will avoid damage to woody roots, and backfilled with minimal addition of growing medium.

H. In-Progress Documentation:

To provide site review reports at certain milestones and issued to; the owner/developer, the general contractor and the prime consultant, as well as any other parties the Client wishes to include, throughout the construction phase.

Note that if non-compliance is observed, the PA is required by the city to report the non-compliance to them in the form of an impact and mitigation assessment which may require investigative work by the PA.



I. Post Construction Sign-Off:

To attend at the completion of the construction and landscape works to inspect and prepare a city required sign-off report confirming that tree protection was compliant for the duration of the project and that all tree protection measures were implemented as specified. This sign-off will assist the Client in applying for the release of city held tree protection bonds or securities (if applicable).

Note that if the project failed to notify the PA of certain work that required our supervision or direction, then the work was not compliant and our report will be prepared accordingly. In some cases of non-compliance, the city may require the removal of hard or soft landscape features in order to determine impacts to trees, soil or roots. If the impacts imperil the health or structural condition of a tree the city may withhold or defer reimbursement of bonds or securities, or take other action.

TREE PROTECTION SPECIAL MEASURES:

The following items within a TPZ require PA direction, treatment or supervision/monitoring. See the Tree Management Drawing for additional references to locations where special measures are required.

1. Tree Removal or Land Clearing Operations:

The tree removals, land clearing and/or stump removals within or in close proximity to a TPZ require on-site supervision and direction to ensure that the contractor implements low impacts methods for those operations, and to ensure retained trees are protected adequately.

2. TREE # 101, 291, and H01 – Demolition:

The removal of existing structures and hard landscape features within or in close proximity to a TPZ require on-site supervision and direction to ensure that the contractor implements low impacts methods for those operations, and to ensure retained trees are protected adequately.

3. Root Pruning for Site Excavation:

The PA must be on site concurrently with the excavation adjacent to the tree protection zone to identify tree roots, provide root protection measures and/or undertake root pruning treatments as necessary.

4. TREE # 211 and 212 – Preparation for pedestrian access trail:

The project arborist must be on site prior to commencing with and during preparation for installation of the proposed trail in the root protection zone of off-site trees. Encroachment may be acceptable – subject to low impact methods and materials to mitigate root loss. If low impact methods cannot be accommodated, the project arborist will suggest alternative trail alignment to mitigate root loss.