



TALMACK
URBAN FORESTRY
— Consultants Limited —

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6
Ph: (250) 479-8733
Fax: (250) 479-7050
Email: tmtreehelp@gmail.com



1360 LYALL STREET—ESQUIMALT, BC

CONSTRUCTION IMPACT ASSESSMENT & TREE MANAGEMENT PLAN

Prepared For: Dan Hagel
2165 Windsor Road
Victoria, BC
V8S 3C4

Prepared By: Talmack Urban Forestry Consultants Ltd.
Robert McRae
ISA Certified # PN-7125A
TRAQ – Qualified

Date of Issuance: August 3, 2022



Jobsite Property: 1360 Lyall Street—Esquimalt, BC

Date of Site Visit(s): February 16, 2022

Site Conditions: Flat residential lot with no ongoing construction.

SUMMARY

- The proposal includes demolition of the existing building(s) followed by construction of a multi-unit dwelling.
- Four (4) trees were inventoried on the subject property (all of which are bylaw protected), as well as two (2) located on the neighbouring property at 1364 Lyall Street (bylaw protected according to estimated multi-stem DBH calculation).
- Two (2) bylaw-protected trees (#992 & 993) are recommended for removal due to impacts from the proposed construction.
 - Four (4) replacement trees are required as compensation for the removal of two trees of 45-60cm DBH. According to the landscape plan, nine (9) trees are proposed for planting—this exceeds the requirement for replacement trees.

SCOPE OF ASSIGNMENT

- Inventory the existing trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line.
- Review the proposal to renovate the existing garage as well as construction of an addition to the south end of this structure.
- Comment on how construction activity may impact existing trees.
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts.

METHODOLOGY

- We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet.

- Each tree was identified using a numeric metal tag attached to its lower trunk.
- Information such as tree species, DBH (1.4m, ~ indicates estimate), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory.
- The conclusions reached were based on the information provided within the attached site survey from Powell & Associates (dated October 3, 2014), Landscape Plan from LADR (dated April 19, 2022), as well as Architectural Plans from MJM Inc. (dated February 22, 2022).
- A Tree Management Plan was created using the site plans provided.

LIMITATIONS

- No exploratory excavations have been conducted and thus the conclusions reached are based solely on critical root zone calculations, observations of site conditions, and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.
- Servicing plans were not provided for this assessment. We have assumed from review of limited GIS information that existing sanitary sewer and water services are connected via the Lyall St. frontage, with storm drain likely connected via the laneway to the east of the property. Any excavations within the CRZs of protected trees to be retained should be supervised by the project arborist.

TREES TO BE REMOVED (PROPOSED)

- **Contorted Willow (*Salix matsudana* ‘Tortuosa’) #993 (49cm calculated multi-stem DBH)** is located within the proposed parking lot and is recommended for removal.
- **European Mountain Ash (*Sorbus aucuparia*) #992 (58cm calculated multi-stem DBH)** is located where it is likely to be severely impacted by construction of the new building and is recommended for removal.
 - Four (4) replacement trees are required as compensation for the removal of two trees of 45-60cm DBH. According to the landscape plan, nine (9) trees are proposed for planting—this exceeds the requirement for replacement trees.

POTENTIAL IMPACTS TO TREES AND MITIGATION MEASURES

HARD SURFACES

- Paver pathways and patios are proposed within the CRZs of on-site protected trees **Eastern Red Cedar (*Juniperus virginiana*) #996 (52cm calculated multi-stem DBH)** and **Thread-leaf False Cypress (*Chamaecyparis pisifera*) NT#1 (30cm multi-stem DBH)**.

- We recommend the project arborist be on-site to supervise excavations required for hard surface installation within the CRZs of these trees.
- If large roots are encountered, we may recommend the patios and pathways be installed over the root systems of the trees, if it is possible to adjust the surrounding grades compatibly (see TMP for Hard Surfaces Above Tree Roots diagram).

MITIGATION MEASURES (FOR REFERENCE)

ARBORIST SUPERVISION

- All excavation occurring within the critical root zones of protected trees should be completed under the direction or supervision of the project arborist. This includes (but is not limited to) the following activities within CRZs:
 - All excavations within the CRZs of #994-996 & NT1.

PRUNING ROOTS

- Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and aid in root regeneration. Ideally, the area surrounding exposed roots should be watered; this is particularly important if excavation occurs or the roots are exposed during a period of drought. This can be accomplished in a number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and watering the area periodically throughout the construction process.

BARRIER FENCING

- The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

MINIMIZING SOIL COMPACTION

- In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one or a combination of the following methods (depending on the size of machinery and the frequency of use):
 - Placing a layer of geogrid (such as Combigrid 30/30) over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top or a layer of hog fuel or coarse wood chips at least 30 cm in depth and maintaining it in good condition until construction is complete.
 - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
 - Placing two layers of 19mm plywood.
 - Placing steel plates

DEMOLITION OF THE EXISTING BUILDING

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

PAVED SURFACES ABOVE TREE ROOTS

- If the new paved surfaces within the CRZs of retained trees require excavation down to bearing soil and significant roots are encountered in this area, this could impact the health or stability of the retained trees. If tree retention is desired, the following recommendations should be followed.

The objective of “no-dig” construction techniques is to avoid root loss and to instead raise the paved surface and/or its base material above the root systems of trees. This may result in the finished grade of the paved surface being raised above existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account (e.g. the resulting slope, grades of surrounding patios, etc.). Contractors should be informed that soils which are high in organic content will likely be left intact below the paved area.

Within the CRZs, the project arborist should supervise any excavation associated with constructing these hard surfaces, including the removal of the existing paving or turf. If significant roots are encountered, excavation should be stopped.

Depending on the amount of the critical root zone covered by the paved surface, the condition of the sub-grade and the number of roots observed, it may be recommended that the paved surface be made permeable and that a geogrid material (such as CombiGrid 30/30 or similar) be used. The function of the geogrid is to reduce compaction and to disperse weight over soils high in organics and roots. The base material for the paving should be placed above this geogrid and should be clear washed gravels (3/4" clear) in order to inhibit future root growth and potential damage to paving as well as to ensure a well-draining aeration layer. An additional layer of filter cloth or geotextile fabric may be recommended to separate coarse and fine layers (if a finer material is required directly underneath the paving).

To allow water to drain into the root systems below, the project arborist may recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems. If the paved surface is a driveway, it may be possible to construct a "ribbon driveway" with an unpaved area between the two strips of paving.

Ultimately, a geotechnical engineer may be consulted and in consultation with the project arborist, may specify their own materials and methods that are specific to the site's grading, soil conditions and requirements, while also avoiding root loss, reducing compaction to the sub-grade and ensuring the most long-term aeration and permeability.

MULCHING

- Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces (not dyed) and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

BLASTING

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

SCAFFOLDING

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

LANDSCAPING AND IRRIGATION SYSTEMS

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

ARBORIST ROLE

- It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
 - Locating the barrier fencing
 - Reviewing the report with the project foreman or site supervisor
 - Locating work zones, where required
 - Supervising any excavation within the critical root zones of trees to be retained
 - Reviewing and advising of any pruning requirements for machine clearances

REVIEW AND SITE MEETING

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

Talmack Urban Forestry Consultants Ltd.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions.

Thank you,



Robert McRae
ISA Certified # PN-7125A
TRAQ – Qualified
Robbie@Talmack.ca

Talmack Urban Forestry Consultants Ltd.
ISA Certified Consulting Arborists
tmtreehelp@gmail.com

Attached:

- 1-page tree resource spreadsheet
- 1-page Tree Management Plan
- 1-page site survey
- 2-page landscape plans
- 9-page architectural plans
- 2-page tree inventory definitions

Disclosure Statement

The tree inventory attached to the Tree Preservation Plan can be characterized as a limited visual assessment from the ground and should not be interpreted as a “risk assessment” of the trees included.

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

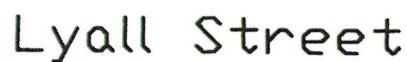
Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Legal - Parcel A (DD 167239-I) of Lots 20, 21, 22 & 23,
Surburban Lot 36, Esquimalt District, Plan 1473
Parcel Identifier: 007-394-268

Tree diameters are in centimetres.

Site Area = 692 m²



File: 11,893 Site (19)
POWELL & ASSOCIATES
BC Land Surveyors
250-2950 Douglas Street
Victoria, BC V8T 4N4
phone (250) 382-8855

TREE INVENTORY DEFINITIONS

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

NT: No tag due to inaccessibility or ownership by neighbour.

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

* Measured over ivy

~ Approximate due to inaccessibility or on neighbouring property

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

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

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

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

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

Health Condition:

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

Structural Condition:

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

Suitability ratings are described as follows:

Rating: Suitable.

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

Rating: Conditional.

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

Rating: Unsuitable.

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

Tag #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Crown spread (m)	Critical root zone radius (m)	Condition		Relative tolerance	Retention Suitability (on- site trees)	General field observations/remarks	Tree retention/location comments	Retention status
				Common	Botanical				Health	Structural					
992	No	On-site	Yes	European Mountain Ash	<i>Sorbus aucuparia</i>	2x13, 24, 8	5	7	Fair	Poor	Moderate	Conditional	Topped.	Impacts from building footprint; poor structure.	X
993	No	On-site	Yes	Contorted Willow	<i>Salix matsudana</i> 'Tortuosa'	23,26	7	5.9	Good	Poor	Moderate	Conditional	Narrow main stem union with bark included.	Within parking footprint.	X
994	No	Off-site, possibly shared	Yes	European Mountain Ash	<i>Sorbus aucuparia</i>	15,10,10	4	4.2	Good	Fair	Moderate	Suitable	Multiple stems, narrow stem unions.	Potential impacts from paver pathway.	Retain*
995	No	Off-site	Yes	English yew	<i>Taxis baccata</i>	26, 11	8	4.4	Good	Fair	Moderate	Suitable	Narrow main stem union.	Potential impacts from paver pathway.	Retain*
996	No	On-site	Yes	Eastern Red Cedar	<i>Juniperus virginiana</i>	2x12, 4x7	5	5.2	Good	Fair	Good	Suitable		Potential impacts from paver pathway/patios.	Retain*
NT1	No	On-site	Yes	Thread-leaf False Cypress	<i>Chamaecyparis pisifera</i>	20,10	5	3	Fair	Fair	Good	Suitable	Topped historically.	Potential impacts from paver pathway/patios.	Retain*

Project arborist to supervise demolition activity within the CRZ of #995 and hard surface installation within the CRZs of all trees to be retained. If large roots are encountered, we may recommend the surfaces be installed above the root systems (see diagram). Barrier fencing orientation shown at demolition phase. The barriers may be relocated to facilitate hard surface construction, provided the project arborist receives prior notification.



ARBORIST SUPERVISION

All excavation occurring within the critical root zones of protected trees should be completed under the direction or supervision of the project arborist. This includes (but is not limited to) the following activities within CRZs:

All excavations within the CRZs of #994-996 and NT#1.

PRUNING ROOTS

Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and aid in root regeneration. Ideally, the area surrounding exposed roots should be watered; this is particularly important if excavation occurs or the roots are exposed during a period of drought. This can be accomplished in a number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and watering the area periodically throughout the construction process.

BARRIER FENCING

The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

MINIMIZING SOIL COMPACTION

In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one or a combination of the following methods (depending on the size of machinery and the frequency of use):

- Placing a layer of geogrid (such as Combigrid 30/30) over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top or a layer of hog fuel or coarse wood chips at least 30 cm in depth and maintaining it in good condition until construction is complete.
- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing two layers of 19mm plywood.
- Placing steel plates

DEMOLITION OF THE EXISTING BUILDING

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

PAVED SURFACES ABOVE TREE ROOTS

If the new paved surfaces within the CRZs of retained trees require excavation down to bearing soil and significant roots are encountered in this area, this could impact the health or stability of the retained trees. If tree retention is desired, the following recommendations should be followed.

The objective of "no-dig" construction techniques is to avoid root loss and to instead raise the paved surface and/or its base material above the root systems of trees. This may result in the finished grade of the paved surface being raised above existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account (e.g. the resulting slope, grades of surrounding patios, etc.). Contractors should be informed that soils which are high in organic content will likely be left intact below the paved area.

Within the CRZs, the project arborist should supervise any excavation associated with constructing these hard surfaces, including the removal of the existing paving or turf. If significant roots are encountered, excavation should be stopped.

Depending on the amount of the critical root zone covered by the paved surface, the condition of the sub-grade and the amount of roots observed, it may be recommended that the paved surface be made permeable and that a geogrid material (such as CombiGrid 30/30 or similar) be used. The function of the geogrid is to reduce compaction and to disperse weight over soils high in organics and roots. The base material for the paving should be placed above this geogrid and should be clear washed gravels (3/4" clear) in order to inhibit future root growth and potential damage to paving as well as to ensure a well-draining aeration layer. An additional layer of filter cloth or geotextile fabric may be recommended to separate coarse and fine layers (if a finer material is required directly underneath the paving).

To allow water to drain into the root systems below, the project arborist may recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems. If the paved surface is a driveway, it may be possible to construct a "ribbon driveway" with an unpaved area between the two strips of paving.

Ultimately, a geotechnical engineer may be consulted and in consultation with the project arborist, may specify their own materials and methods that are specific to the site's grading, soil conditions and requirements, while also avoiding root loss, reducing compaction to the sub-grade and ensuring the most long-term aeration and permeability.

MULCHING

Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces (not dyed) and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

BLASTING

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

SCAFFOLDING

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

LANDSCAPING AND IRRIGATION SYSTEMS

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

ARBORIST ROLE

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

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

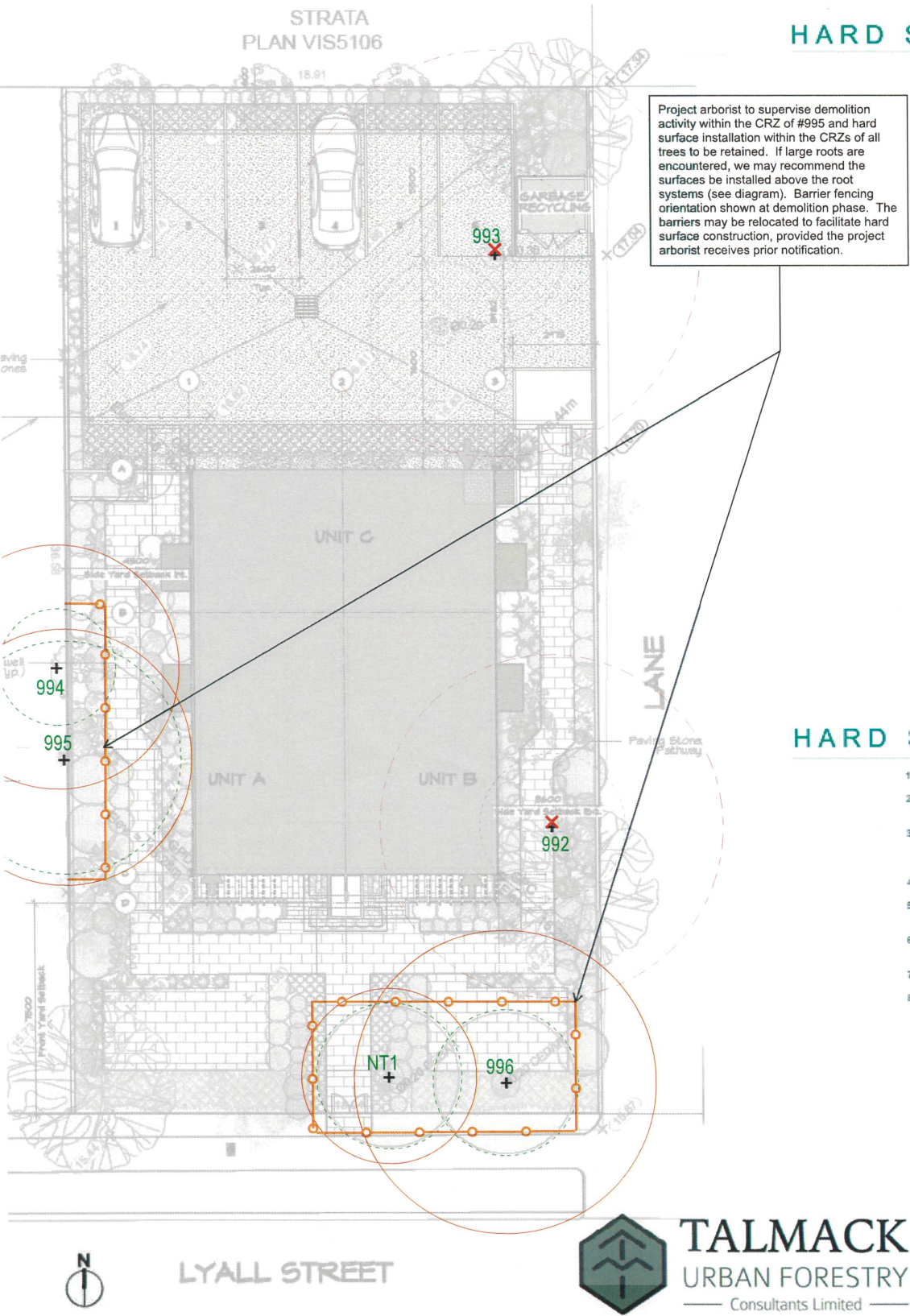
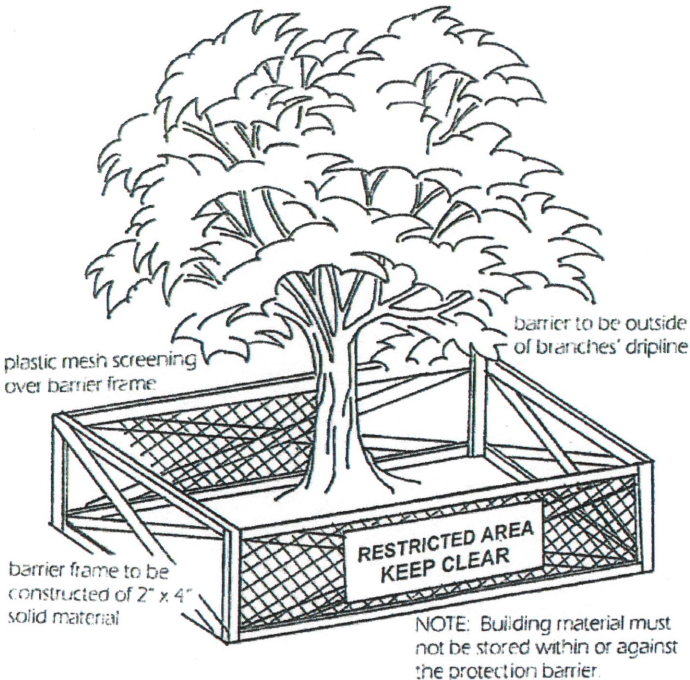
REVIEW AND SITE MEETING

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

HARD SURFACE ABOVE TREE ROOTS NOTES

- Maintain as large a setback between the fill encroachment and the root collar of the tree as possible.
- Review any canopy clearance pruning requirements to accommodate vehicle or pedestrian clearances (Pruning to be performed to ANSI A300 standards).
- Excavate the new footprint of the driveway or sidewalk under the supervision of the project arborist. Excavation will be limited to the removal of the existing sod layer. Excavation around root structures must be performed by hand, airspade, or hydroexcavation.
- Install a two-dimensional (such as Combigrid 30/30) or Three-dimensional geogrid reinforcement.
- Install a 150mm depth layer of clear crushed gravel (no fines) using 20mm and/or 75mm diameter material or approved equivalent. *Note - the depth may be less than 150mm in some situations (dependant on grading constraints).
- Install medium weight geotextile fabric (such as Nilox 4535 or similar) over the clear crushed gravel layer to prevent fine particles of sand from infiltrating this layer.
- The bedding or base layer and new driveway or sidewalk surface can be installed directly on top of the felted filter fabric.
- Fill slopes - where possible install loose stacked boulders to reduce the footprint of the fill slopes that encroach within the critical root zone. Fill slope materials must be permeable to air and water. Do not pile fill material directly against the trunk of a tree.

BARRIER FENCING DETAIL



TALMACK
URBAN FORESTRY
— Consultants Limited —

TREE MANAGEMENT PLAN

1360 Lyall Street
Esquimalt, BC

DATE: August 3, 2022
PREPARED FOR: Dan Hagel
SCALE: 1:200 @ 11 x 17
PREPARED BY: Robert McRae (PN-7125A)

TALMACK URBAN FORESTRY CONSULTANTS LTD.
CONSULTING ARBORISTS
BOX 48153 | VICTORIA, BC | V8Z 7H2
TEL: 250.479.8733
EMAIL: tmtreehelp@gmail.com
www.treehelp.ca

LEGEND

- Existing tree with tag or ID number
- Crown spread diameter (m)
- Tree protection fencing
- Critical root zone radius (m)

- Tree to be removed (proposed)
- Un-surveyed tree (estimated loc'n)
- Non-protected tree (undersized)