



Talbot Mackenzie & Associates

Consulting Arborists

**349-351 Kipling St. and  
1400 Fairfield Rd., Victoria**  
Construction Impact Assessment &  
Tree Preservation Plan

Prepared For: Paul Cosgrave  
78 Logan Ave  
Victoria, BC  
V9A 1H3

Prepared By: Talbot, Mackenzie & Associates  
Noah Borges  
ISA Certified #PN-8409A  
TRAQ – Qualified

Date of Issuance: July 29, 2019  
*Updated: October 18, 2019*

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## Talbot Mackenzie & Associates

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Jobsite Property: 349-351 Kipling St. and 1400 Fairfield Rd., Victoria, BC

Date of Site Visits: March 7 and July 26, 2019

Site Conditions: Residential lots. No ongoing construction activity.

**Summary:** Fourteen trees will have to be removed as a result of the proposed development, including two bylaw protected trees on the subject property (Big Leaf Maple #912 and Western Red Cedar #915) and four municipal trees (Cherry NT1 and NT2, Ash NT4, and Maple NT5). The applicant has indicated that the City of Victoria will remove municipal Red Maple NT5 at the applicant's expense, heel it at their nursery, and replant it elsewhere if it recovers well enough.

Roots from municipal trees NT7-9 may be encountered during construction of the proposed 6-unit building, landscape features, and driveway off Thurlow Road, though we do not anticipate the health of any will be significantly impacted. We recommend any construction activity that occurs within the critical root zones of these trees be supervised by the project arborist, and any roots encountered be pruned back to sound tissue at the edge of excavation.

### **Scope of Assignment:**

- Inventory the existing bylaw protected 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 demolish two existing houses and construct two new multi-unit buildings (6 and 2 units) and new driveways off Kipling Street and Thurlow Road
- 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 by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged.
- Information such as tree species, DBH (1.4m), 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 plan from Sebastien Garon Architecture and Design (dated October 16, 2019) and landscape plans from Biophilia Design Collective (dated October 8, 2019).

**Limitations:**

- No exploratory excavations have been conducted and thus the conclusions reached are based solely on critical root zone calculations 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.

**Summary of Tree Resource:** 19 trees were included in the inventory, including two bylaw protected trees on the subject property. Several trees have been recently planted on the Kipling St boulevard.

**Trees to be Removed:**

- All ten trees on the subject property will have to be removed: **#695, 799, 800, 898, 903, and 912-916.** Big Leaf Maple #912 and Western Red Cedar #915 are the only two bylaw protected trees.
- **Municipal Cherry NT1 (48cm DBH, ID: 16970):** Based on discussions with the applicant, it is our understanding that a new sidewalk will be constructed on Fairfield Rd in the location of this tree. It should be noted that there is a large wound at the base of this tree and dieback in its crown. In our opinion, it would be reasonable to remove and replace this tree even if it weren't within the new sidewalk footprint.
- **Municipal Plum NT2 (28cm DBH, ID: 16623):** This tree is located on the Kipling St boulevard. It is in fair/poor health condition – it has a basal injury and cavity with decay at the site of an old pruning wound. There is also some dieback in its crown. In our opinion, it would be a reasonable option to remove and replace it with a young, well-structured tree.
- **Municipal Ash NT4 (3cm DBH):** This tree is growing between the sidewalk and fence near the Kipling St property boundary – it is likely under the ownership of the municipality. In our opinion, it is in an unsuitable location for long-term retention.
- **Municipal Red Maple NT5 (8cm DBH, ID: 34935):** This tree is located in the envelope of the proposed driveway off Kipling St. It was recently planted and is in good health. In our opinion, there is a reasonable chance it can be transplanted successfully. Victoria Parks has indicated that they will remove the tree at the applicant's expense, heel it at their nursery, and replant it elsewhere if it recovers well enough.

**Potential Impacts on Trees to be Retained and Mitigation Measures**

- **Municipal Red Maple NT7 (47cm DBH, ID: 16620):** This tree is approximately 3.5m from the property line, where we anticipate excavation will occur for construction of the proposed 6-unit building. Large roots (3cm or greater) may be encountered at this distance, but we do not anticipate the health of the tree will be impacted. We recommend the project arborist prune back any roots encountered to sound tissue at the edge of excavation. Minor clearance pruning may be required.

The project arborist should also supervise removal of the existing driveway north of this tree to 349 and 351 Kipling St, as roots may be encountered underneath. If this driveway is removed early in the construction phase, the barrier fencing around this tree should be extended to the edge of its CRZ. The attached plans indicate sod will be installed in this area, which will increase surface permeability.

- **Municipal Red Maple NT8 (49cm DBH, ID: 16618):** Depending on the depth of excavation required for the bike parking area, paving stones, or “community node” proposed to be constructed at the northwest corner of the property, roots from this tree may be encountered. These features are located as near as 3.5m away. We do not anticipate the health of the tree will be significantly impacted but recommend the project arborist be on site to supervise the excavations, as they will be constructed within this tree’s CRZ. If any large roots are encountered, we recommend they be retained and these features constructed over them. The project arborist should prune back any non-critical roots encountered to sound tissue at the edge of excavation.
- **Municipal Cherry NT9 (30cm DBH, ID: 16656):** The proposed driveway off Thurlow Rd is approximately 3m from this tree, near the edge of its CRZ. Based on our experience excavating around Cherry trees, there is a chance that large roots will be encountered at this distance. We recommend the project arborist supervise the excavation. If large roots are encountered, we recommend the driveway be constructed overtop this tree’s root system. Excavation should not occur more than 30cm outside the driveway footprint.
- **Service Connections:** The attached servicing plan shows storm and sewer connections will be made underneath the driveway off Thurlow Rd. All excavation should occur outside the CRZ of Cherry NT9. An underground water connection will be installed off Kipling Street, outside the CRZ of all trees to be retained.

The existing storm and sewer connections will be capped. We recommend they be capped as far from the base of trees to be retained as possible to avoid impacting roots. If excavation is required within the CRZs of trees NT3 or NT7, we recommend the project arborist be on site to supervise and alternative excavation methods will likely be required (e.g. hydro-vac, air-spade, or hand-digging).

- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. In particular, the following activities should be completed under the direction of the project arborist:



- Any excavation within the CRZs of municipal trees NT7-9 for construction of the new 6-unit building, landscape features, or driveway off Thurlow Road
- Any excavation for the abandoning of existing underground within the CRZs of trees to be retained.
- **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. Exposed roots should be kept moist until the area is backfilled, especially if excavation occurs 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 keeping the area moist 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 of the following methods:
  - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
  - Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
  - Placing two layers of 19mm plywood.
  - Placing steel plates.
- **Demolition of the existing buildings:** The demolition of the existing 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.

- **Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.
- **Blasting:** Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.
- **Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see “Minimizing Soil Compaction” section).
- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.
- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
  - Locating the barrier fencing
  - Reviewing the report with the project foreman or site supervisor
  - Locating work zones, where required
  - Supervising any excavation within the critical root zones of trees to be retained
  - Reviewing and advising of any pruning requirements for machine clearances
- **Review and Site Meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

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

Thank you,



Noah Borges  
ISA Certified #PN- 8409A  
TRAQ – Qualified

Talbot Mackenzie & Associates  
ISA Certified Consulting Arborists

Encl. 1-page tree resource spreadsheet, 1-page site survey, 1-page site plan, 5-page landscape plans, 1-page site servicing plan, 1-page barrier fencing specifications, 2-page tree resource spreadsheet methodology and 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.

**1400 Fairfield Rd and 349 Kipling St  
Tree Resource Spreadsheet**

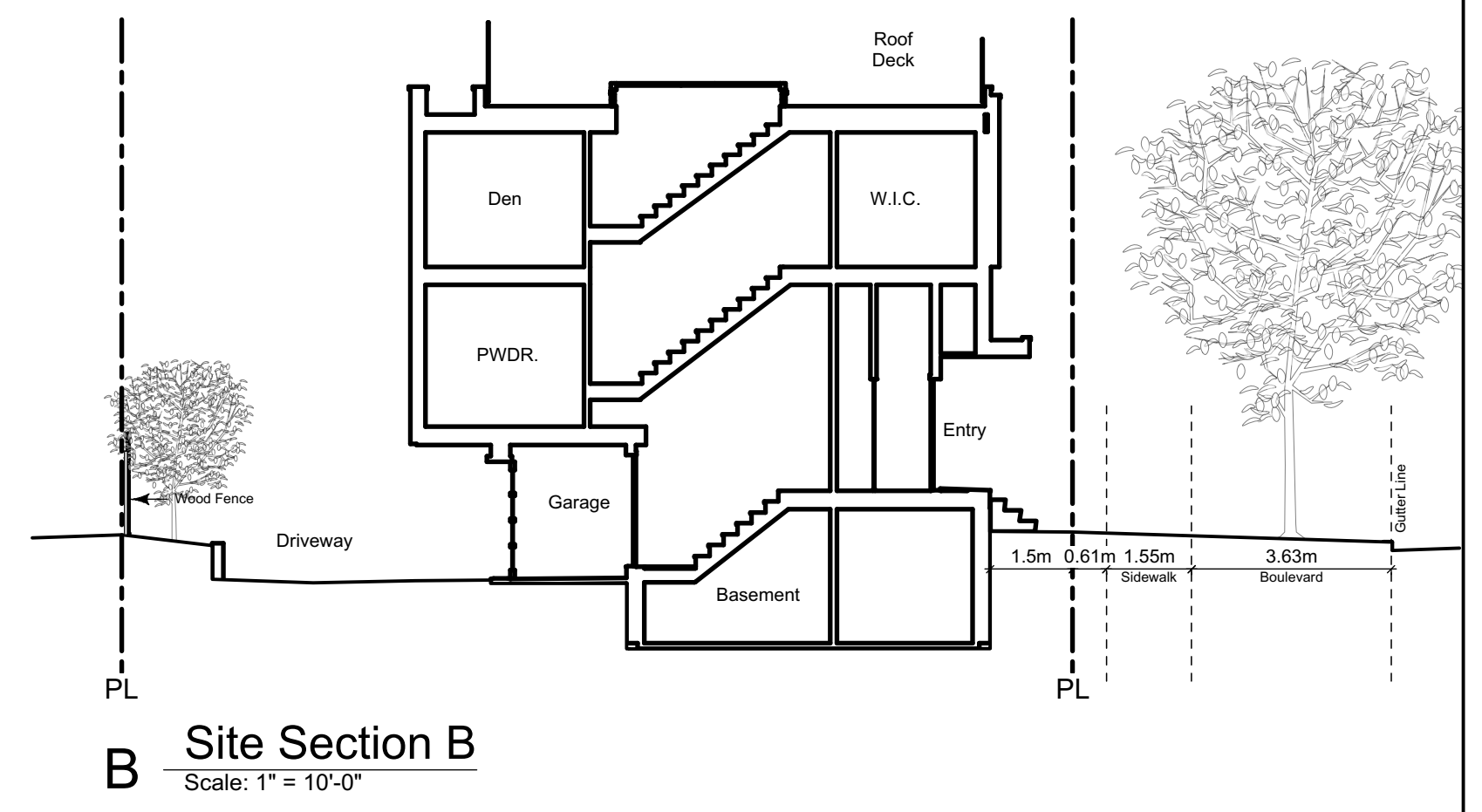
Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	By-Law Protected	Retention Status
695	Apple	<i>Malus spp.</i>	20, 12	4	3.5	Moderate	Fair	Fair/poor	12cm stem resting on shed, decay on limbs	N	X
799	Monkey Puzzle	<i>Araucaria araucana</i>	31	5	4.5	Poor	Good	Good		N	X
800	Colorado Blue Spruce	<i>Picea pungens</i>	~25	5	4.0	Poor	Good	Good	Leaning	N	X
898	Western Red Cedar	<i>Thuja plicata</i>	42	5	6.5	Poor	Fair	Fair	Raised, asymmetric crown	N	X
903	Western Red Cedar	<i>Thuja plicata</i>	42	4	6.5	Poor	Fair	Fair	Raised crown	N	X
912	Big Leaf Maple	<i>Acer macrophyllum</i>	46, 24	12	7.0	Moderate	Fair	Fair	<i>Ganoderma</i> fruiting bodies at base, deadwood, asymmetric crown	Y	X
913	Western Red Cedar	<i>Thuja plicata</i>	37, 26	5	8.0	Poor	Fair	Fair/poor	Raised crown, narrow codominant union at base	N	X
914	Western Red Cedar	<i>Thuja plicata</i>	33	4	5.0	Poor	Fair	Fair	Raised crown	N	X
915	Western Red Cedar	<i>Thuja plicata</i>	51, 51	10	12.0	Poor	Fair	Fair/poor	Raised, asymmetric crown, narrow codominant union at base	Y	X
916	Ash	<i>Fraxinus spp.</i>	55	14	6.5	Moderate	Good	Good	Next to stump of removed tree, epicormic growth	N	X
NT1	Japanese Flowering Cherry	<i>Prunus serrulata</i>	48	8	6.0	Moderate	Fair	Fair/poor	Municipal (ID: 16970), basal wound	N (Municipal)	X
NT2	Cherry Plum	<i>Prunus subhirtella</i>	28	3	3.5	Moderate	Fair	Fair/poor	Municipal (ID: 16623), basal wound and cavity at pruning wound	N (Municipal)	X
NT3	Ginkgo	<i>Ginkgo biloba</i>	7	2	0.5	Good	Good	Good	Municipal (ID: 16967)	N (Municipal)	Retain
NT4	Ash	<i>Fraxinus spp.</i>	3	1	0.5	Moderate	Good	Good	Municipal, growing between sidewalk and fence	N (Municipal)	X
NT5	Red Maple	<i>Acer rubrum</i>	8	2	1.0	Moderate	Good	Good	Municipal (ID: 34935)	N (Municipal)	X
NT6	Scarlet Oak	<i>Quercus coccinea</i>	4	2	0.5	Moderate	Good	Good	Municipal (ID: 16622)	N (Municipal)	Retain
NT7	Red Maple	<i>Acer rubrum</i>	47	10	5.5	Moderate	Good	Good	Municipal (ID: 16620)	N (Municipal)	Retain
NT8	Red Maple	<i>Acer rubrum</i>	49	10	6.0	Moderate	Good	Good	Municipal (ID: 16618)	N (Municipal)	Retain
NT9	Japanese Flowering Cherry	<i>Prunus serrulata</i>	30	5	3.5	Moderate	Good	Good	Municipal (ID: 16656)	N (Municipal)	Retain



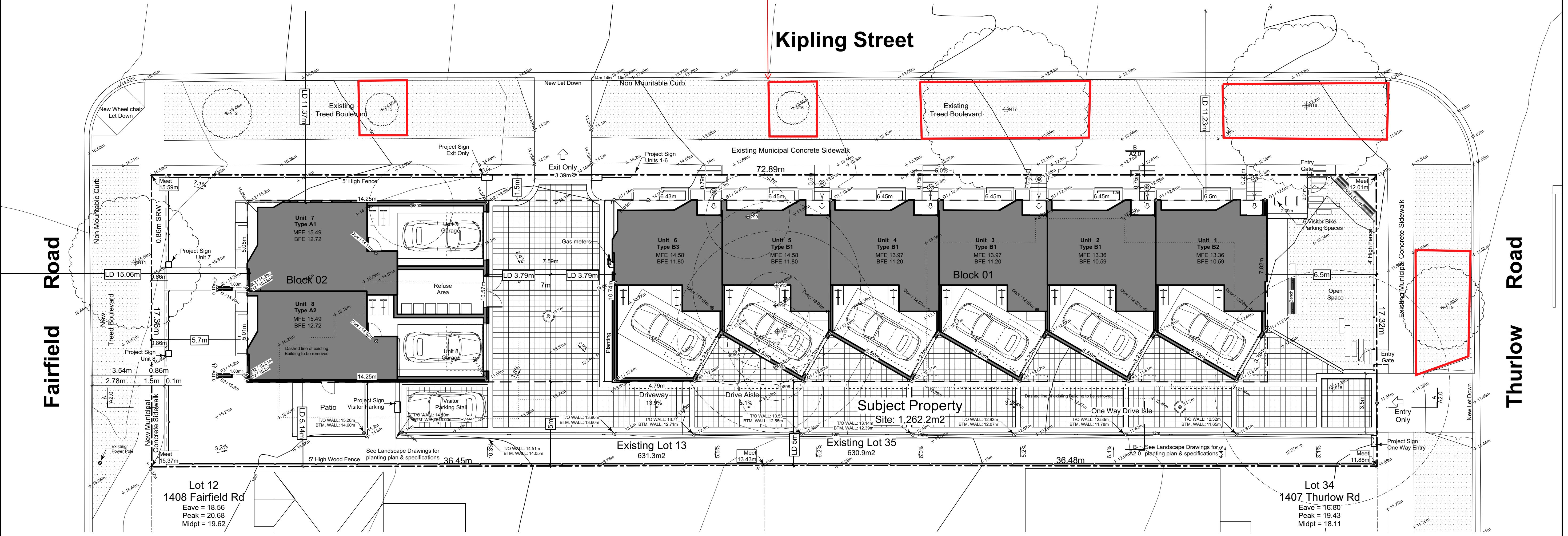
**Tree Schedule**

See Arborist Report Prepared by Talbot Mackenzie & Associates

Tag	Name	Action	DBH (cm)	Spread (m)
695	Apple	Remove	4.0	3.5
799	Monkey Puzzle	Remove	31.0	5.0
800	Blue Spruce	Remove	25.0	5.0
898	Western Red Cedar	Remove	42.0	5.0
903	Western Red Cedar	Remove	42.0	4.0
912	Big Leaf Maple	Remove	46.0	12.0
913	Western Red Cedar	Remove	37.0	5.0
914	Western Red Cedar	Remove	33.0	4.0
915	Western Red Cedar	Remove	51.0	10.0
916	Ash	Remove	55.0	14.0
NT1	Japanese Cherry	Retain	48.0	8.0
NT2	Cherry Plum	Remove	28.0	3.0
NT3	Ginkgo	Retain	7.0	2.0
NT4	Ash	Remove	3.0	1.0
NT5	Red Maple	Remove	8.0	2.0
NT6	Scarlet Oak	Retain	4.0	2.0
NT7	Red Maple	Retain	47.0	10.0
NT8	Red Maple	Retain	49.0	10.0
NT9	Japanese Cherry	Retain	30.0	5.0



Tree Protection Fencing  
(Talbot Mackenzie & Associates)



**1 Site Plan**  
Scale: 1" = 10'-0"



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REPORT INCONSISTENCIES AND OMISSIONS TO THE ARCHITECT FOR CLARIFICATION BEFORE COMMENCING WITH THE WORK.

Issued 2019-06-19  
2019-09-16

Issued for DP  
Revised & Re-issued for DP

Project Name:  
**Fairfield-Kipling Development**

Civic: 1400 Fairfield Rd & 349 Kipling St

Legal:

PID:

Project No: 19.015

Drawn By: SG/JM

Plot Date: Oct 3, 2019

Scale: 1:120

Sheet No:

Site Plan

A2.0

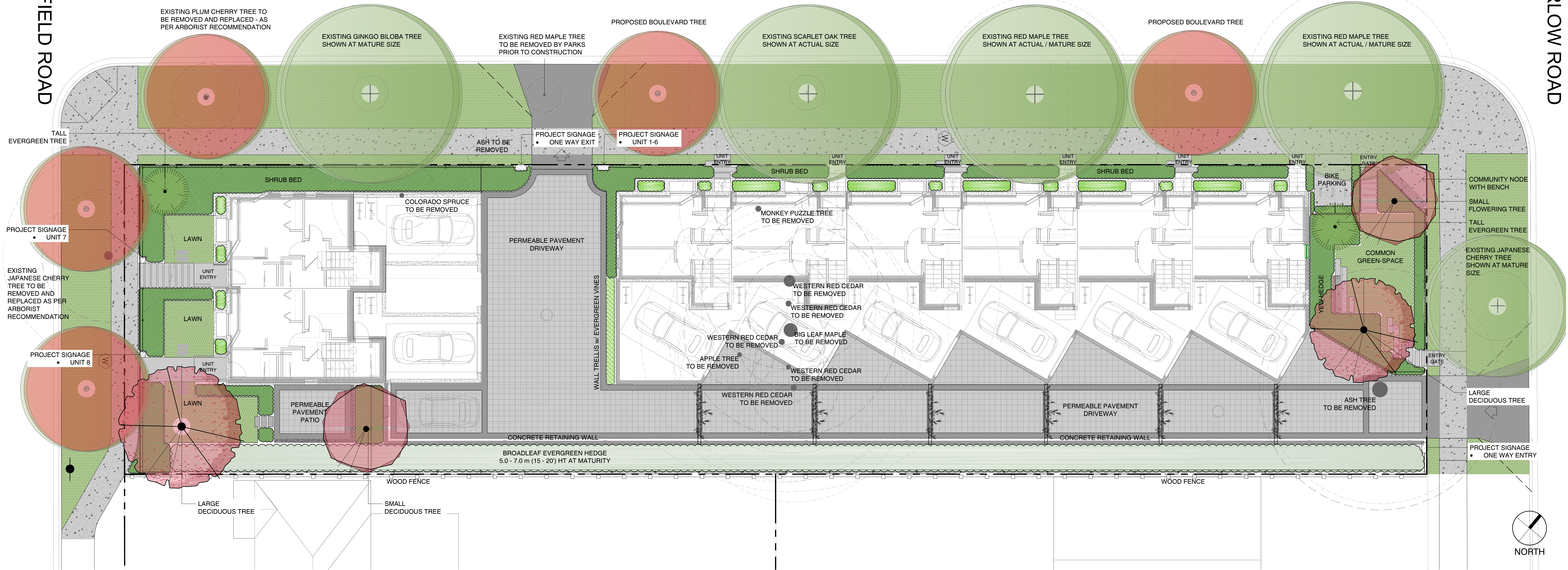
FOR DEVELOPMENT APPLICATION ONLY



FAIRFIELD ROAD

KIPLING STREET

THURLOW ROAD



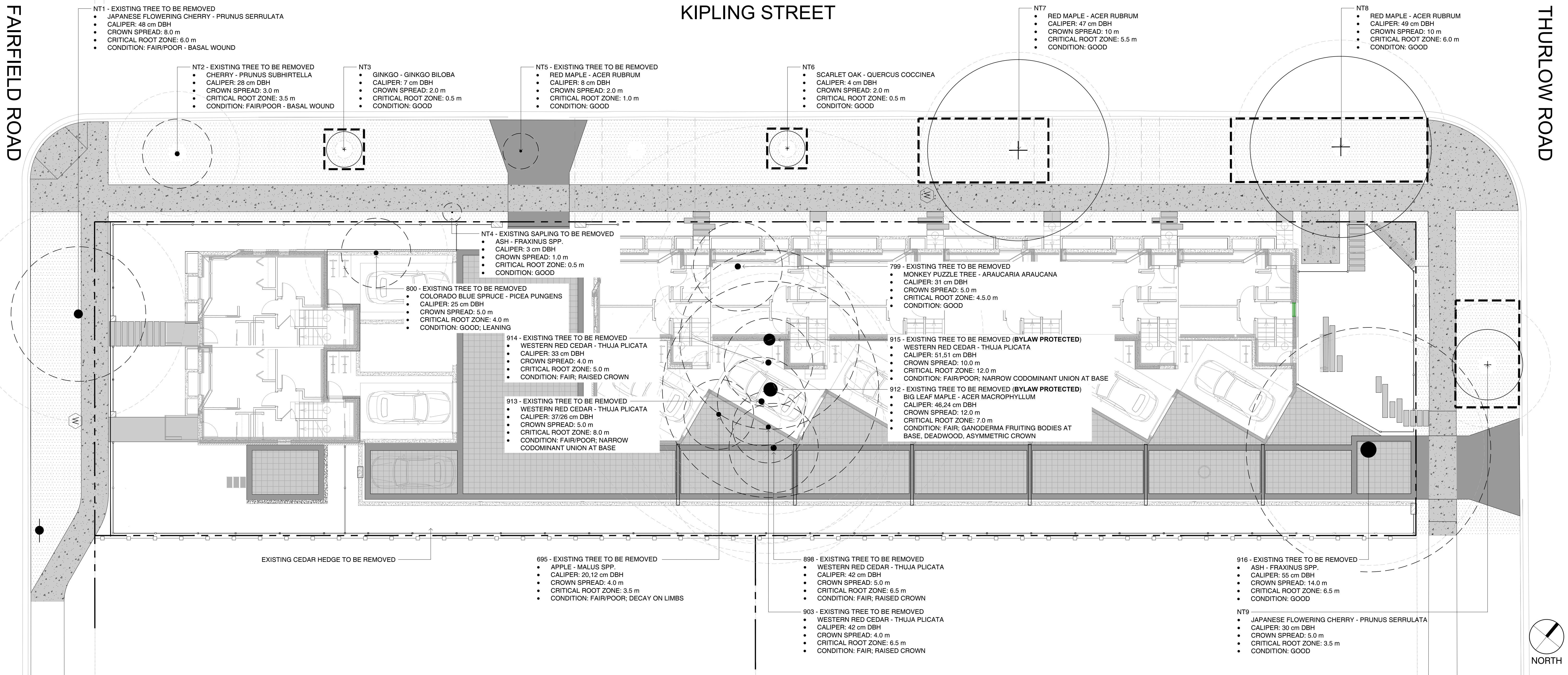
LEGEND

<ul style="list-style-type: none"> <li>MUNICIPAL CONCRETE SIDEWALK</li> <li>CONCRETE DRIVEWAY APRON</li> <li>DRIVEWAY PATIO             <ul style="list-style-type: none"> <li>PERMEABLE INTERLOCKING CONCRETE PAVER</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>CONCRETE SIDEWALK             <ul style="list-style-type: none"> <li>MEDIUM SANDBLAST OR LIGHT BROOM FINISH</li> <li>SAWCUT CONCRETE CRACK CONTROL JOINTS</li> </ul> </li> <li>PATH             <ul style="list-style-type: none"> <li>CONCRETE PAVERS</li> <li>ABBOTSFORD PAVING SYSTEM</li> </ul> </li> <li>SOD</li> <li>DRIVEWAY ARBOR             <ul style="list-style-type: none"> <li>POWDERCOATED STEEL</li> <li>EVERGREEN JASMINE VINE</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>SHRUB PLANTING BED FOUNDATION             <ul style="list-style-type: none"> <li>ORNAMENTAL GRASSES</li> <li>PINK RHODODENDRON</li> <li>MEXICAN ORANGE</li> <li>GREEN LAVENDER COTTON</li> </ul> </li> <li>SHRUB PLANTING PLANTER             <ul style="list-style-type: none"> <li>IRISH MOSS</li> <li>DAISY BUSH</li> </ul> </li> <li>SHRUB PLANTING HEDGE             <ul style="list-style-type: none"> <li>PORTUGAL LAUREL</li> </ul> </li> <li>CABLE WALL TRELLIS             <ul style="list-style-type: none"> <li>2.0 m HT (20')</li> <li>EVERGREEN VINES</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>EXISTING WOOD FENCE             <ul style="list-style-type: none"> <li>1.83 m HT</li> <li>ON ADJACENT PROPERTY</li> </ul> </li> <li>PROPOSED WOOD FENCE             <ul style="list-style-type: none"> <li>SEE FENCING PLAN</li> </ul> </li> <li>METAL FENCE AND GATE             <ul style="list-style-type: none"> <li>SEE FENCING PLAN</li> </ul> </li> <li>EXISTING TREE TO BE REMOVED             <ul style="list-style-type: none"> <li>SHOWN AT EXISTING SPREAD</li> </ul> </li> <li>PROPERTY LINE</li> </ul>	<ul style="list-style-type: none"> <li>EXISTING LARGE BOULEVARD TREE             <ul style="list-style-type: none"> <li>MAPLE, OAK, PINK O</li> <li>DIY: 4</li> </ul> </li> <li>EXISTING SMALL BOULEVARD TREE             <ul style="list-style-type: none"> <li>CHERRY</li> <li>DIY: 1</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>PROPOSED BOULEVARD TREE             <ul style="list-style-type: none"> <li>SPECIES TO BE COORDINATED WITH PARKS AT BUILDING PERMIT</li> <li>LARGE DIY: 5</li> </ul> </li> <li>PROPOSED DECIDUOUS SITE TREE             <ul style="list-style-type: none"> <li>SAMALL DIY: 2</li> <li>LARGE DIY: 2</li> </ul> </li> <li>PROPOSED CONIFEROUS SITE TREE             <ul style="list-style-type: none"> <li>LARGE DIY: 2</li> </ul> </li> </ul>	<p><b>TREE AND SHRUB QUANTITIES</b></p> <ul style="list-style-type: none"> <li>EXISTING TREES 10             <ul style="list-style-type: none"> <li>LARGE DECIDUOUS SPECIES: 8</li> <li>LARGE CONIFEROUS SPECIES: 1</li> <li>SMALL DECIDUOUS SPECIES: 4</li> </ul> </li> <li>EXISTING TREES TO BE REMOVED 14             <ul style="list-style-type: none"> <li>LARGE DECIDUOUS SPECIES: 3</li> <li>LARGE CONIFEROUS SPECIES: 2</li> <li>SMALL DECIDUOUS SPECIES: 4</li> </ul> </li> <li>EXISTING TREES TO BE RETAINED 5             <ul style="list-style-type: none"> <li>LARGE DECIDUOUS SPECIES: 4</li> <li>SMALL DECIDUOUS SPECIES: 1</li> </ul> </li> <li>PROPOSED TREES 11             <ul style="list-style-type: none"> <li>LARGE DECIDUOUS SPECIES: 1</li> <li>LARGE CONIFEROUS SPECIES: 2</li> <li>SMALL DECIDUOUS SPECIES: 2</li> </ul> </li> <li>TOTAL NUMBER OF TREES 10             <ul style="list-style-type: none"> <li>LARGE DECIDUOUS SPECIES: 11</li> <li>LARGE CONIFEROUS SPECIES: 2</li> <li>SMALL DECIDUOUS SPECIES: 3</li> </ul> </li> <li>TOTAL NUMBER OF PROJECT SHRUBS, VINES AND COVERINGS 482</li> </ul>
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NOTES

- SMALL TREE UNDER 8.0 m (25') HT
- LARGE TREE UP TO 15.0 m (50') HT





LEGEND

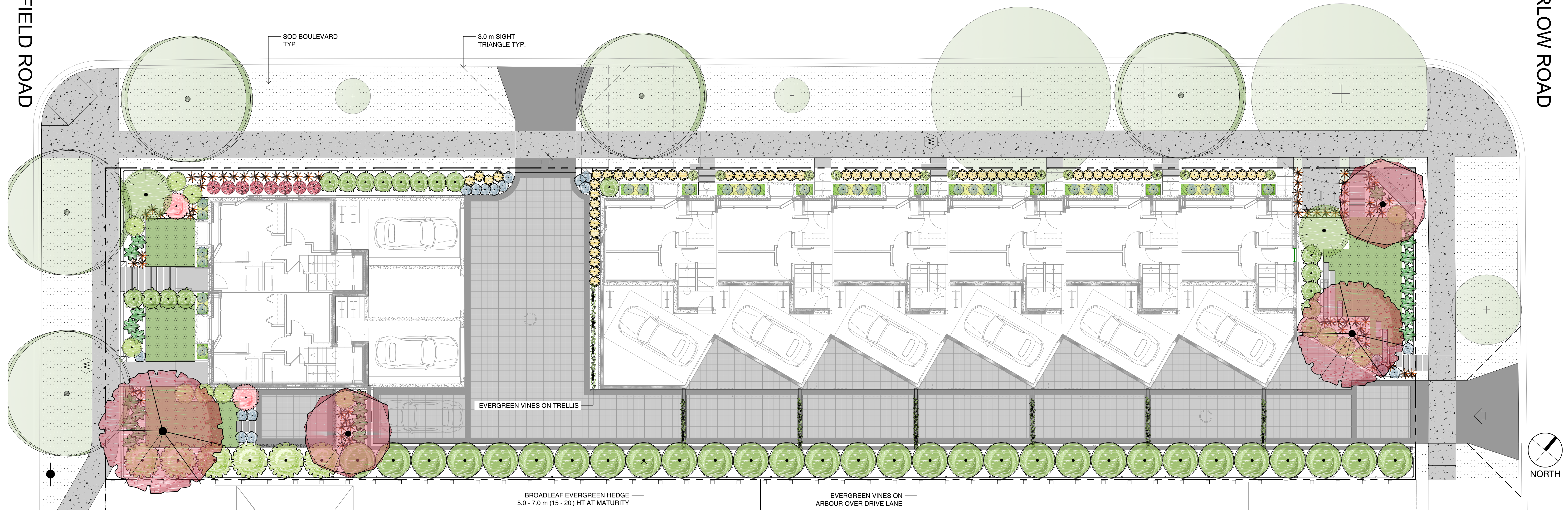
- CONCRETE SIDEWALK
- SOD BOULEVARD
- PROPERTY LINE
- TREE PROTECTION FENCING
  - TO OUTSIDE OF DRIPLINE WHERE POSSIBLE (AS SHOWN)
  - TO BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION
  - TO CITY OF VICTORIA STANDARD
- EXISTING TREE TO BE RETAINED SHOWN AT EXISTING SPREAD
- EXISTING TREE TO BE REMOVED SHOWN AT EXISTING SPREAD
- CRITICAL ROOT ZONE SHOWN AT EXISTING SPREAD

TREE QUANTITIES

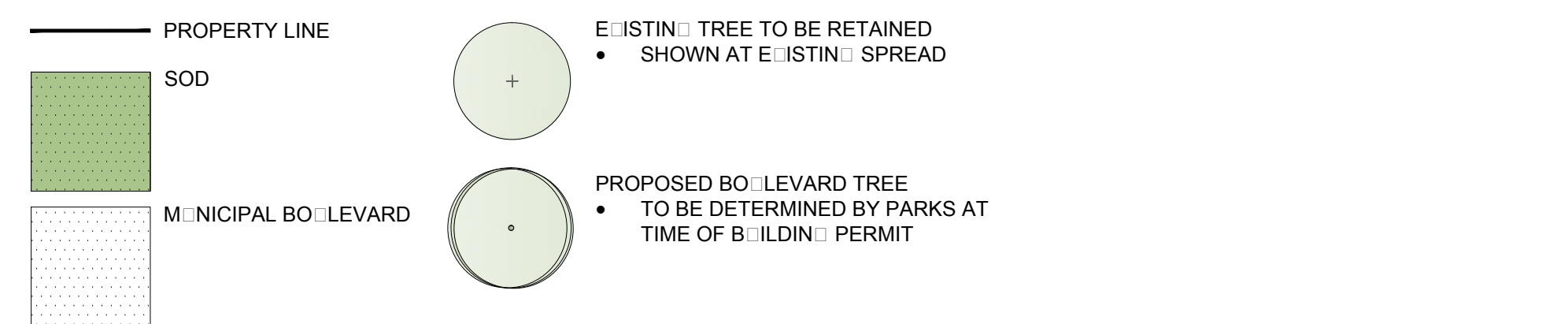
- EXISTING TREES 11
  - LARGE DECIDUOUS SPECIES: 8
  - LARGE CONIFEROUS SPECIES: 1
  - SMALL DECIDUOUS SPECIES: 4
- EXISTING TREES TO BE REMOVED 14
  - LARGE DECIDUOUS SPECIES: 3
  - LARGE CONIFEROUS SPECIES: 1
  - SMALL DECIDUOUS SPECIES: 4
- EXISTING TREES TO BE RETAINED 5
  - LARGE DECIDUOUS SPECIES: 4
  - SMALL DECIDUOUS SPECIES: 1
- PROPOSED TREES 11
  - LARGE DECIDUOUS SPECIES: 1
  - LARGE CONIFEROUS SPECIES: 2
  - SMALL DECIDUOUS SPECIES: 2
- TOTAL NUMBER OF TREES 11
  - LARGE DECIDUOUS SPECIES: 11
  - LARGE CONIFEROUS SPECIES: 2
  - SMALL DECIDUOUS SPECIES: 3

- NOTES:
- ARBORIST REPORT RECOMMENDS REMOVAL AND REPLACEMENT OF NT1 AND NT2 DUE TO POOR CONDITION, AND NT4 DUE TO ITS UNSUITABLE LOCATION FOR LONG TERM RETENTION
  - SMALL TREE UNDER 8.0m 25' HT. LARGE TREE OVER 15.0m 50' HT





LEGEND



PLANT SCHEDULE - TREES

TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL	REMARKS
	1	CERCIDIPHYLLUM JAPONICUM / KATSURA TREE	B@B	60 MM	LARGE TREE
	2	CHAMAECYPARIS NOOTKATENSIS 'PENDULA' / WEEPING NOOTKA FALSE CYPRESS	70 MM		LARGE TREE
	1	LIQUIDAMBAR STYRACIFLUA 'AURORA' / AURORA SWEET GUM	B@B	60 MM	LARGE TREE
	2	STYRAX JAPONICUS / JAPANESE SNOWBELL	B@B	50 MM	SMALL TREE

NOTE: SMALL TREE = UNDER 8.0 m HT, LARGE TREE = UP TO 15.0 m HT

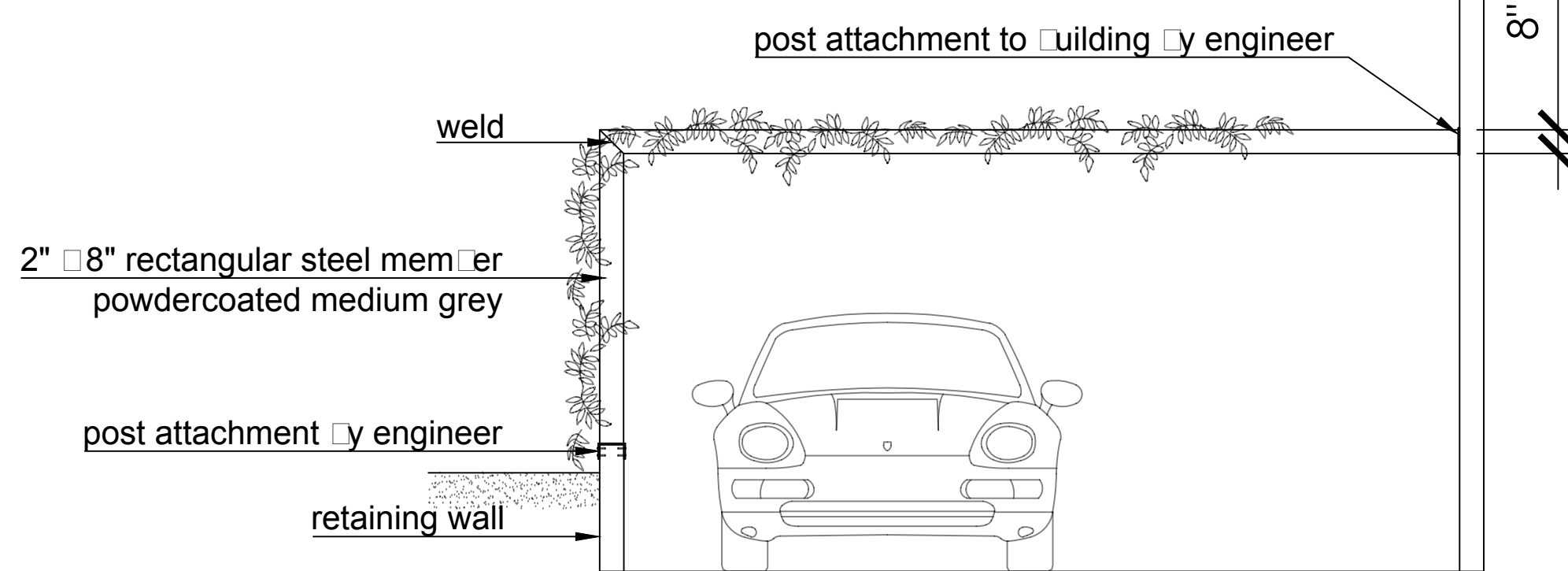
PLANT SCHEDULE - GROUND COVER

GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	REMARKS
	174	SAGINA SUBULATA / IRISH MOSS	PLUG	300mm	

NOTES:  
1. PLANTS IN PLANT LISTS ARE SPECIFIED ACCORDING TO THE CANADIAN NURSERY STOCK AND SECTION 12, CONTAINER GROWN PLANTS FROM THE BC LANDSCAPE STANDARD, CURRENT EDITION.  
2. ALL LANDSCAPE AREAS TO BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM DESIGNED TO IABC STANDARDS

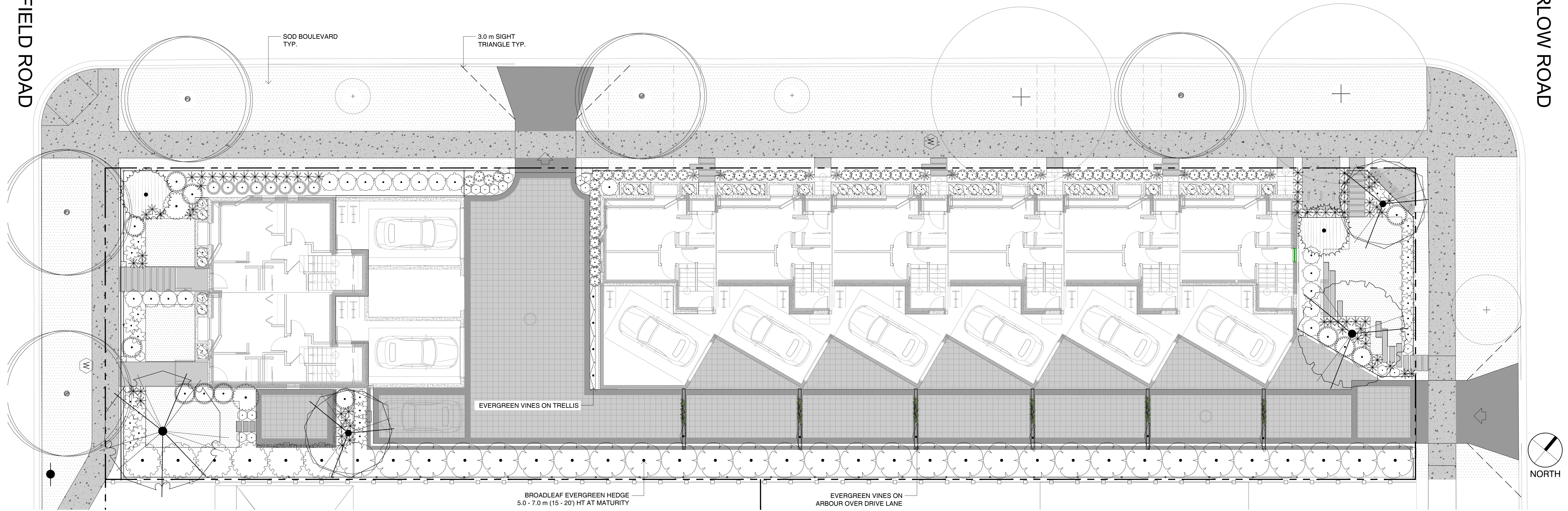
PLANT SCHEDULE

SHRUBS	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
	30	BRACHYGLOTTIS GREYI / DAISY BUSH	#2 CONT	0.60m
	71	CAREX TESTACEA / CAREX	#1 CONT	0.60m
	6	CHOISYA TERNATA / MEXICAN ORANGE	#3 CONT	2m
	10	JASMINUM POLYANTHUM / PINK JASMINE TRELLIS	#1 CONT	1.50m
	18	LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' / MUNSTEAD ENGLISH LAVENDER	#2 CONT	0.60m
	8	MISCANTHUS SINENSIS 'GRAZIELLA' / GRAZIELLA MAIDEN GRASS	#1 CONT	0.80m
	12	MISCANTHUS SINENSIS 'MORNING LIGHT' / EULALIA GRASS	#2 CONT	1.20m
	11	NASSELLA TENUISSIMA / TEXAS NEEDLE GRASS	#1 CONT	0.60m
	30	PRUNUS LUSITANICA / PORTUGAL LAUREL	#5 CONT	2m
	2	RHODODENDRON X 'CHRISTMAS CHEER' / CHRISTMAS CHEER RHODODENDRON	#5 CONT	1.50m
	64	SANTOLINA VIRENS / GREEN LAVENDER COTTON	#1 CONT	0.60m
	23	SARCOCOCCA CONFUSA / SWEETBOX	#1 CONT	0.90m
	18	TAXUS X MEDIA 'HICKSII' / HICKS YEW	#3 CONT	1m

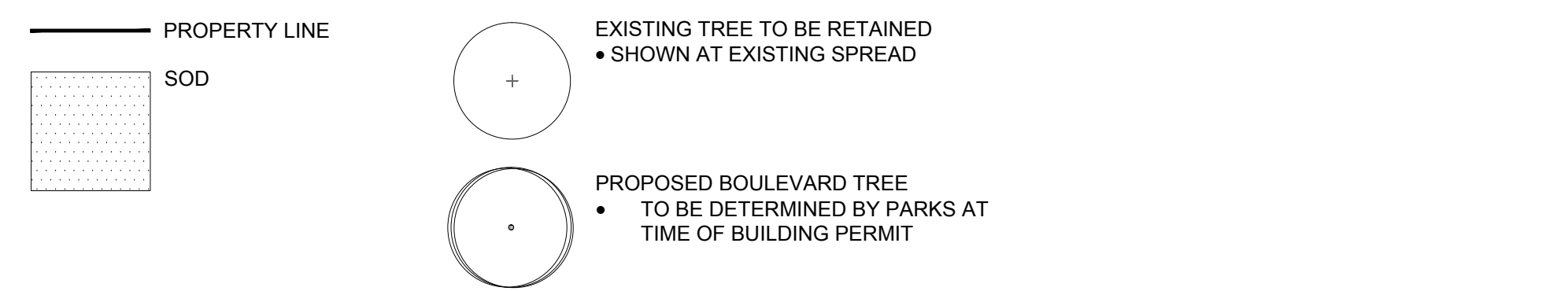


ELEVATION - DRIVE AISLE ARBOUR: NTS





LE<sup>END</sup>



PLANT SCHEDULE - TREES

TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL	REMARKS
	1	CERCIDIPHYLLUM JAPONICUM / KATSURA TREE	B@B	60 MM	LARGE TREE
	2	CHAMAECYPARIS NOOTKATENSIS 'PENDULA' / WEEPING NOOTKA FALSE CYPRESS	70 MM		LARGE TREE
	1	LIQUIDAMBAR STYRACIFLUA 'AURORA' / AURORA SWEET GUM	B@B	60 MM	LARGE TREE
	2	STYRAX JAPONICUS / JAPANESE SNOWBELL	B@B	50 MM	SMALL TREE

NOTE: SMALL TREE = UNDER 8.0 m HT, LARGE TREE = UP TO 15.0 m HT

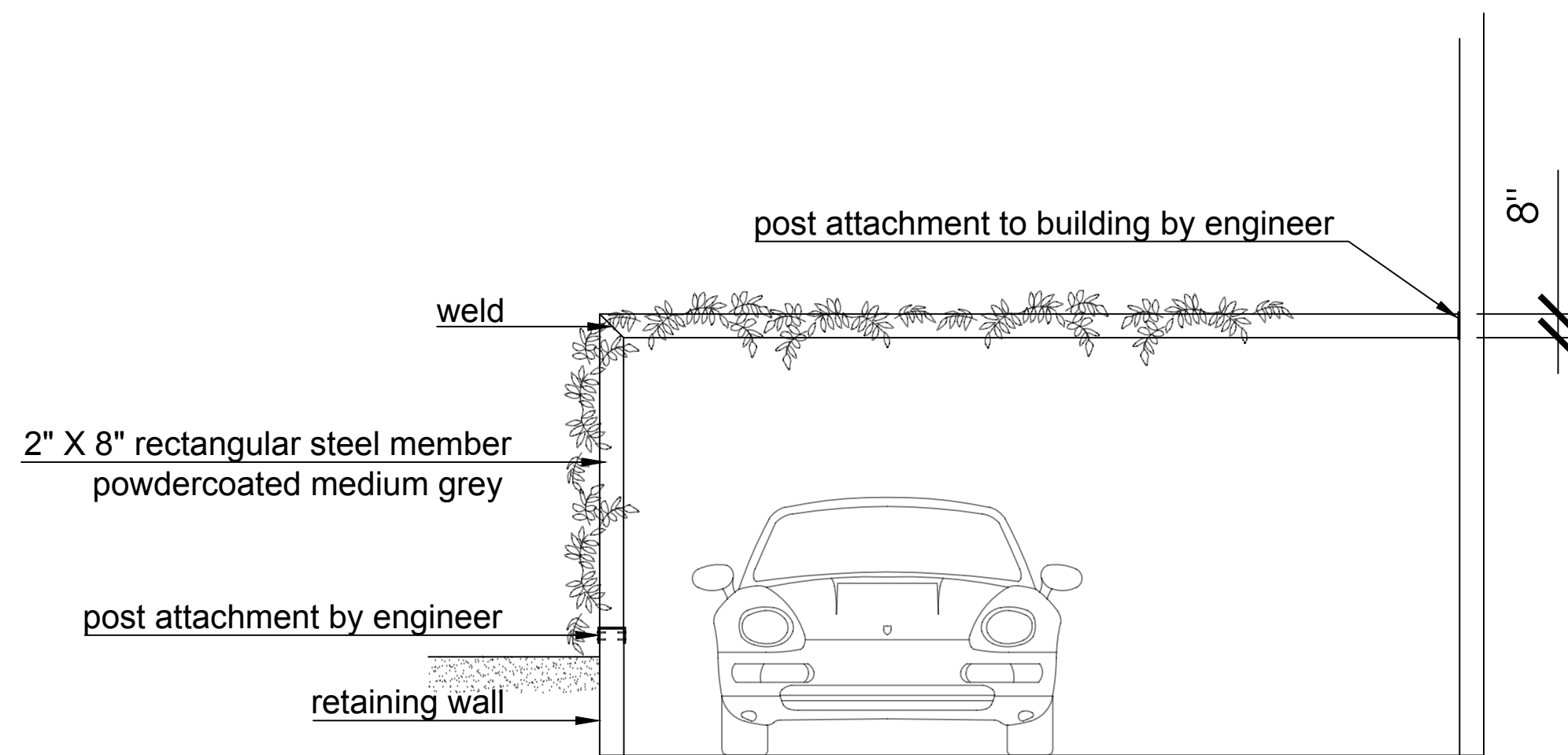
PLANT SCHEDULE - GROUNDCOVER

GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	REMARKS
	174	SAGINA SUBULATA / IRISH MOSS	PLUG	300mm	

NOTES:  
 1. PLANTS IN PLANT LISTS ARE SPECIFIED ACCORDING TO THE CANADIAN NURSERY LANDSCAPE ASSOCIATION CANADIAN STANDARDS FOR NURSERY STOCK AND SECTION 12, CONTAINER GROWN PLANTS FROM THE BC LANDSCAPE STANDARD, CURRENT EDITION.  
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SHRUBS	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
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	71	CAREX TESTACEA / CAREX	#1 CONT	0.60m
	6	CHOISYA TERNATA / MEXICAN ORANGE	#3 CONT	2m
	10	JASMINUM POLYANTHUM / PINK JASMINE TRELLIS	#1 CONT	1.50m
	18	LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' / MUNSTEAD ENGLISH LAVENDER	#2 CONT	0.60m
	8	MISCANTHUS SINENSIS 'GRAZIELLA' / GRAZIELLA MAIDEN GRASS	#1 CONT	0.80m
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	30	PRUNUS LUSITANICA / PORTUGAL LAUREL	#5 CONT	2m
	2	RHODODENDRON X 'CHRISTMAS CHEER' / CHRISTMAS CHEER RHODODENDRON	#5 CONT	1.50m
	64	SANTOLINA VIRENS / GREEN LAVENDER COTTON	#1 CONT	0.60m
	23	SARCOCOCCA CONFUSA / SWEETBOX	#1 CONT	0.90m
	18	TAXUS X MEDIA 'HICKSII' / HICKS YEW	#3 CONT	1m



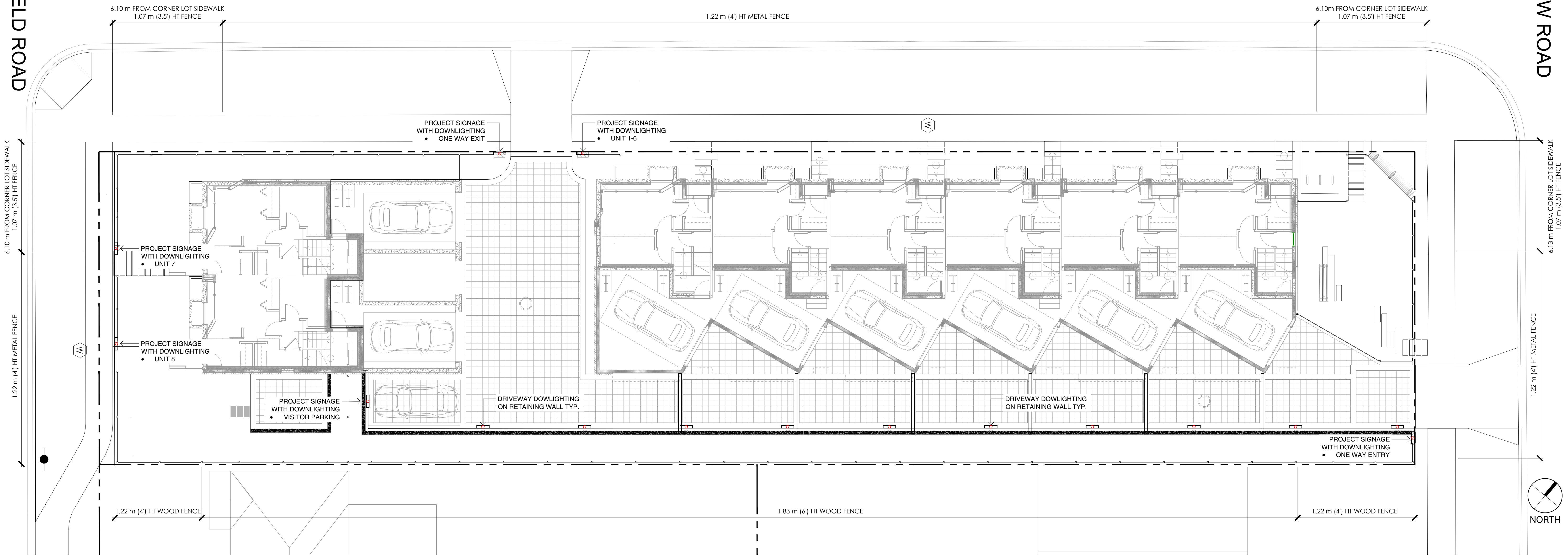
ELEVATION - DRIVE AISLE ARBOUR: NTS



KIPLING STREET

FAIRFIELD ROAD

THULOW ROAD



FENCING CHARACTER IMAGE

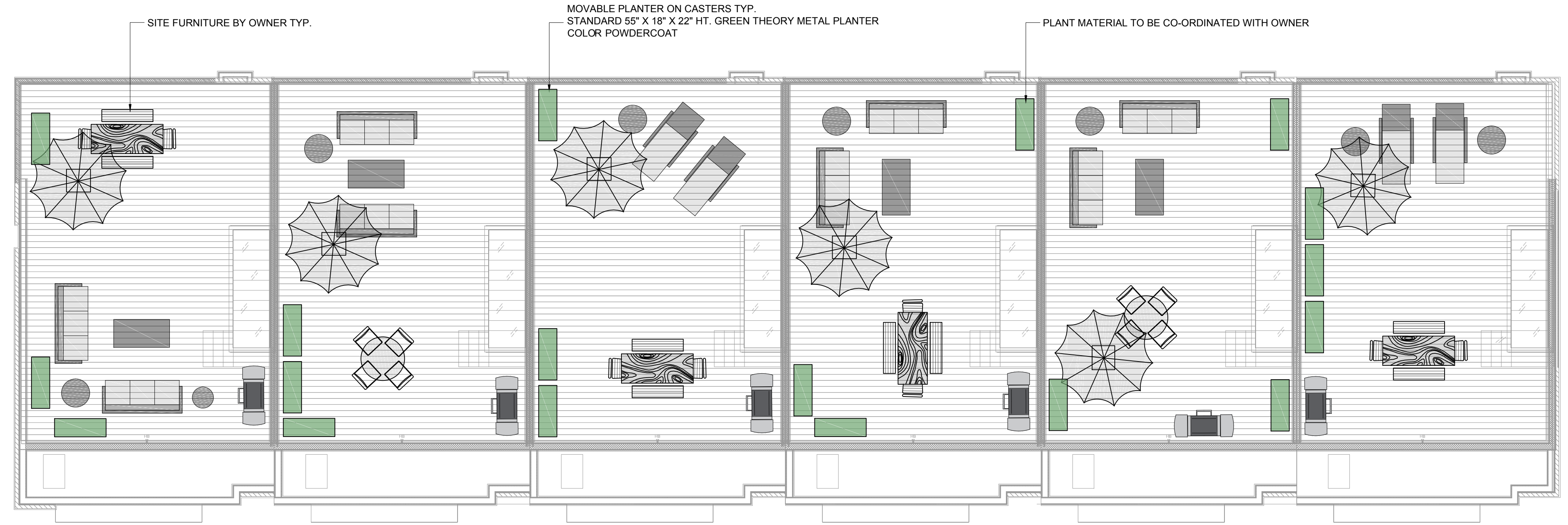
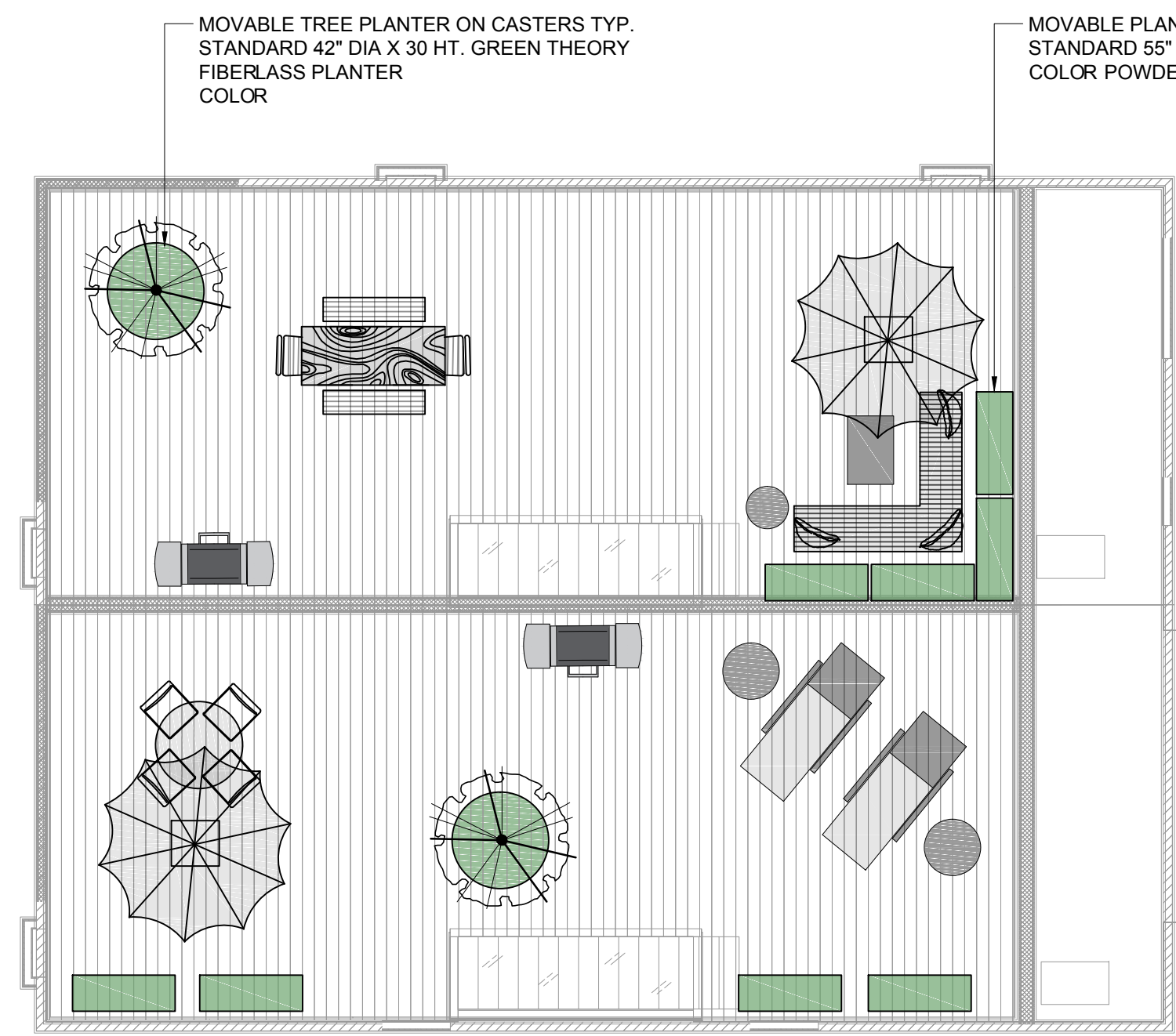


DOWNLIGHTING CHARACTER IMAGES



TRELLIS CHARACTER IMAGE AND DETAIL





ROOFTOP TREES IN PLANTERS

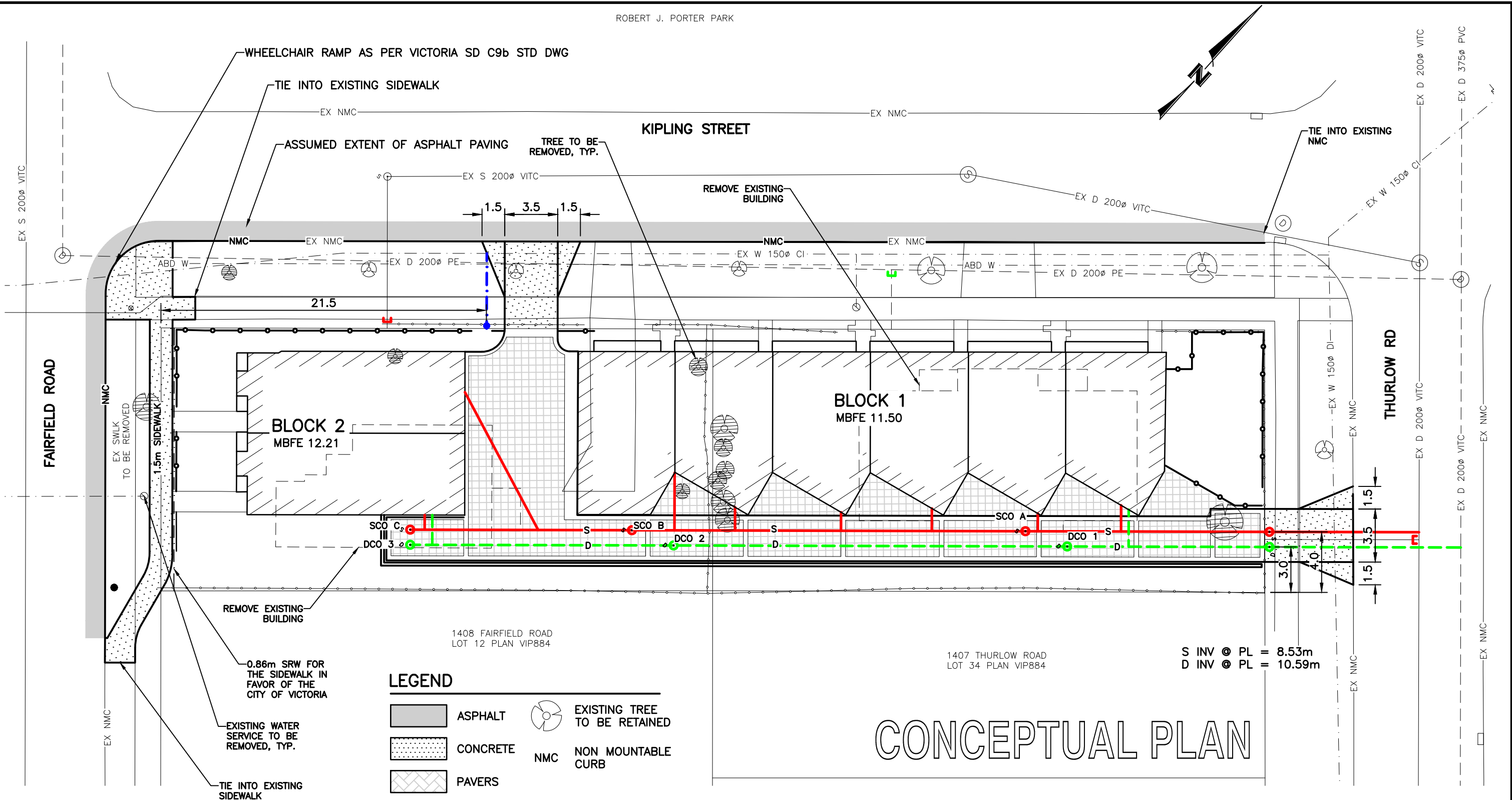


RECTANGULAR PLANTERS



WESTBROOK CONSULTING LTD - 2019-10-08 03:51PM H:\PROJECTS\3455\_349\_351\_Kipling St\04C Drawings\Figures\191008 - PDF Conceptual Sketch\Figure 1 - Conceptual Servicing Plan.dwg

ROBERT J. PORTER PARK



**LEGEND**

- ASPHALT
- CONCRETE
- PAVERS
- EXISTING TREE TO BE RETAINED
- NMC NON MOUNTABLE CURB

CONCEPTUAL PLAN

LEGEND	
WATER — W —	MANHOLE ⊙
SEWER — S —	CLEANOUT ⊙
DRAIN — D —	CATCHBASIN □
GAS — G —	HYDRANT ⊕
SIDEWALK — S/W —	VALVE ⊠
EDGE PAVE. —	METER ⊖
BUSHLINE —	
LIGHT STANDARD —	
POWER POLE —	
ANCHOR —	
ROAD SIGN —	

DESIGNED	IK
DRAWN	IY
CHECKED	
DATE	191008
B.M.	
ELEV.	
SCALE	Horz. 1:200
	Vert.

**WESTBROOK  
Consulting Ltd.**

#115 - 866 Goldstream Ave., Victoria, BC V9B 0J3  
Telephone: 250-391-8592 Facsimile: 250-391-8593

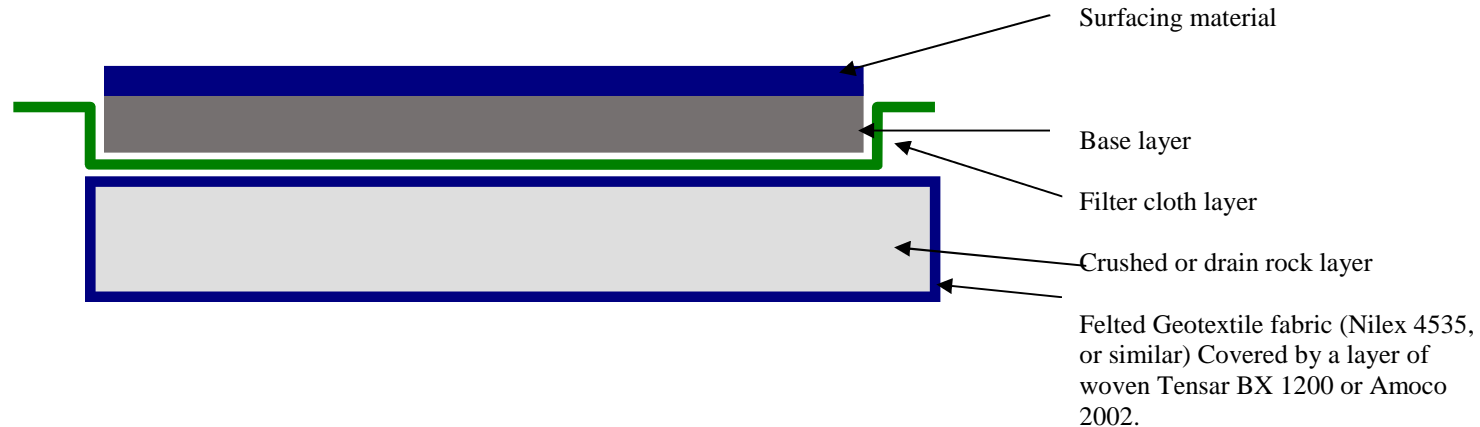
PROJECT	1400 FAIRFIELD ROAD P COSGRAVE CONSTRUCTION	
	CONCEPTUAL SERVICING PLAN	

WESTBROOK PROJECT No.	
3455	
GOVERNING AUTHORITY FILE No.	
SHEET	REV.
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WESTBROOK DRAWING No.	
FIGURE 1	

# Talbot Mackenzie & Associates

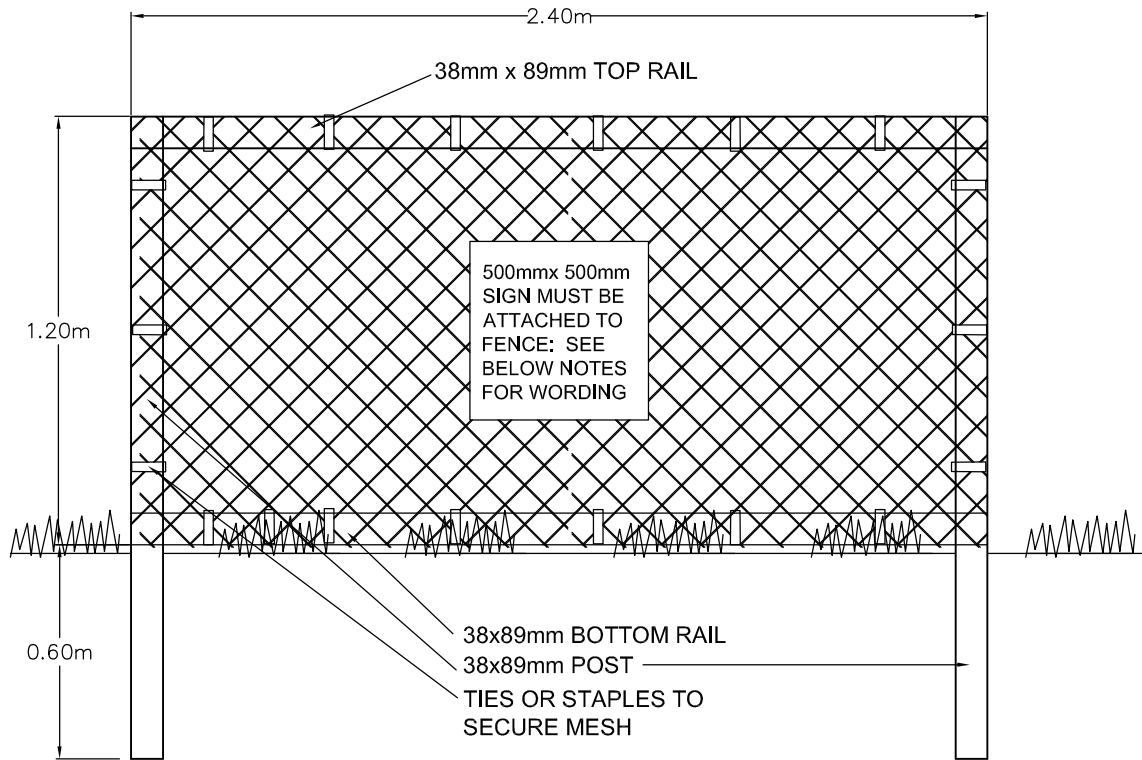
Consulting Arborists

## Diagram – Site Specific Driveway, Parking and Walkway



### **Specifications for Paved Surfaces Above Tree Roots (Driveway, Parking and Walkway Areas)**

1. Excavation for construction of the driveway/parking/walkway areas must remove only the top layer of sod and not result in root loss
2. A layer of medium weight felted Geotextile fabric (Nilex 4535, or similar) is to be installed over the entire area of the critical root zone that is to be covered by the paved surface. Cover this Geotextile fabric with a layer of woven Amoco 2002 or Tensar BX 1200. Each piece of fabric must overlap the adjoining piece by approximately 30-cm.
3. A 10cm layer of torpedo rock or 20-mm clean crushed drain rock, is to be used to cover the Geotextile fabric (depth dependent on desired finished grade).
4. A layer of felted filter fabric is to be installed over the crushed rock layer to prevent fine particles of sand and soil from infiltrating this layer.
5. The bedding or base layer and permeable surfacing can be installed directly on top of the Geotextile fabric.
6. Two-dimensional (such as CombiGrid 30/30 or similar) or three-dimensional geo-grid reinforcements can be installed in combination with, or instead of, the geotextile fabric specified in the attached diagram.
7. Ultimately, a geotechnical engineer should be consulted and in consultation with the project arborist may specify their own materials and methods that are specific to the site's soil conditions and requirements, while also avoiding root loss and reducing compaction to the sub-grade.



**TREE PROTECTION FENCING**

1. FENCE WILL BE CONSTRUCTED USING 38 mm X 89mm WOOD FRAME: TOP, BOTTOM AND POSTS \* USE ORANGE SNOW-FENCING MESH AND SECURE THE WOOD FRAME WITH "ZIP" TIES OR GALVANIZED STAPLES.
  2. ATTACH A 500mm X 500mm SIGN WITH THE FOLLOWING WORDING: WARNING- TREE PROTECTION AREA. THIS SIGN MUST BE AFFIXED ON EVERY FENCE OR AT LEAST EVERY 10 LINEAR METERS.
- \* IN ROCKY AREAS, METAL POSTS (T-BAR OR REBAR) DRILLED INTO ROCK WILL BE ACCEPTED



## Talbot Mackenzie & Associates

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Email: tmtreehelp@gmail.com

### Tree Resource Spreadsheet Methodology and 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 municipality or 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

**Crown Spread:** Indicates the diameter 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

**Retention Status:**

- X - Not possible to retain given proposed construction plans
- Retain - It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our **recommended mitigation measures are followed**
- Retain \* - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns