



City of Richmond

Report to Development Permit Panel

To: Development Permit Panel

Date: September 25, 2019

From: Wayne Craig
Director of Development

File: DP 18-820689

Re: Application by Integrated Construction for an Environmentally Sensitive Areas
Development Permit at 1600 Savage Road

Staff Recommendation

That an Environmentally Sensitive Area (ESA) Development Permit be issued at 1600 Savage Road in order to allow construction of a warehouse building on a site partially designated as an ESA.

Wayne Craig
Director of Development

WC:je
Att. 6

Staff Report

Origin

Integrated Construction has applied to the City of Richmond for an Environmentally Sensitive Area (ESA) Development Permit to construct a 2,918 m² (31,415 ft²) warehouse building at 1600 Savage Road (Attachment 1). As the construction would impact an ESA, a Development Permit is required prior to Building Permit approval.

The site is currently developed as a paved parking lot. No rezoning is needed as the proposed use is consistent with the 'Light Industrial (IL)' zone.

Development Information

Please refer to the attached Development Application Data Sheet (Attachment 2) for a comparison of the proposed development data with the relevant Bylaw requirements.

Background

Development surrounding the subject site is as follows:

- to the north across River Road, City-owned land zoned Light Industrial (IL) and designated as Environmentally Sensitive Area (ESA);
- to the east, an industrial building on a lot zoned 'Light Industrial (IL)' and partially designated as ESA;
- to the south, an industrial building with outdoor storage on a lot zoned 'Light Industrial (IL)'; and
- to the west across Savage, an industrial building on a lot zoned 'Light Industrial (IL)'.

Staff Comments

The proposed scheme attached to this report has satisfactorily addressed the significant Environmentally Sensitive Area (ESA) issues and other staff comments identified as part of the review of the subject Development Permit application (DP Plans 1, 2, 3, 4.a, 4.b and 5). In addition, it complies with the intent of the applicable sections of the Official Community Plan and is generally in compliance with the Light Industrial (IL) zone. No variances are being sought through this ESA Development Permit application.

Advisory Design Panel

As the scope of this Development Permit does not involve any building design components, the application has not been reviewed by the Advisory Design Panel.

Analysis

Site Planning

1600 Savage Road is a 5,257 m² (1.3 acre) parcel zoned Light Industrial (IL) and designated Industrial in the Official Community Plan. An Environmentally Sensitive Area (ESA)

designation is present on portions of the property and requires that a Development Permit be issued prior to construction. There are two distinct ESA on site: the northern ESA (approximately 788 m²/8,482 ft²), which is predominantly 'Upland Forest' with a small sliver of 'Shoreline' ESA along the northern property line; and a central, disconnected ESA (approximately 198 m²/2,131 ft²) that is entirely classified as 'Upland Forest' (Attachment 3).

The applicant proposes to remove the Upland Forest ESA at the centre of the site to enable development of a warehouse with associated office space, loading and surface parking. The proposed two storey warehouse is 2,918 m² (31,415 ft²) and 11.1 m (36.5 ft) in height. The proposal includes four loading bays: two located on either side of the front elevation in order to serve separate operational requirements of the business. Two vehicle driveways are proposed from Savage Road to facilitate loading from each of the loading areas; one at the southern corner of the site (currently existing) and a second access to the north near River Road.

To compensate for removing the central ESA area, the applicant proposes to establish two new ESA areas on-site (DP Plan 1):

- 305 m² (3,283 ft²) of new ESA contiguous with the existing northern portion of Upland ESA; and
- 109 m² (1,173 ft²) of new, discontinuous ESA along the western property boundary adjacent Savage Road.

Net gain in total ESA over the site would be 216 m² (2,325 ft²). Additional compensation measures proposed include the removal of invasive species and replanting of native species within the existing ESA to be retained and within the new ESA to be established.

ESA Environmental Inventory

The City of Richmond identifies the Environmentally Sensitive Area (ESA) on this site as predominantly 'Upland Forest' with a small sliver of 'Shoreline' ESA along the northern property line. The northern portion of Upland Forest ESA is contiguous with ESA designated on the neighbouring parcel to the east (totalling approximately 1,900 m²/20,451 ft²). Both are contiguous with the Shoreline and Intertidal ESAs associated with the Fraser River to the north, which form a 'hub' in the Ecological Network Management Strategy.

An environmental inventory and assessment report was submitted by Aquaterra Environmental Ltd. (July, 2019). The environmental inventory, completed in the winter of 2018 and spring of 2019, found the site to be primarily disturbed and generally flat with no defining geological or topographical features. No watercourses were found on site, although a dry ditch was observed immediately north of the site within the City road dedication, and a Riparian Management Area (RMA) protected watercourse was observed to the west across Savage Road. The Fraser River is located less than 50 m north of the site.

Within the small portion of on-site Shoreline ESA, vegetation was found to consist of riparian vegetation, including: mature black cottonwood, red alder, red-osier dogwood and paper birch trees.

The areas classified as Upland Forest, both the northern and the central ESA areas, were found to be degraded habitat with established invasive species throughout. The northern ESA, which is proposed to be protected, consists of non-native Norway maple, as well as native Western red cedar, black cottonwood, lodgepole pine, Western red pine and red alder, with an understory impacted by invasive species and dominated by Himalayan blackberry. Invasive species cover was found to be approximately 60%. The trees were found to be generally intact and providing cover and habitat for terrestrial species such as birds and small mammals.

The central ESA, which is proposed to be removed, consists of 15 conifer trees, including lodgepole pine, Western red cedar and Western red pine. The understory consists of large cleared areas with invasive Himalayan blackberry and cherry laurel. Invasive species cover was found to be approximately 50%. The central ESA was found to have little habitat value as a result of its small size and isolation from other habitat areas, marginal understory cover and anthropogenic disturbance from being situated within a parking lot.

Limited bird activity was observed during the field assessments; direct observations were limited to Northwestern crow, with one inactive crow's nest observed within a row of off-site trees to the west. One bald eagle site was observed approximately 300 m east of the site along the Fraser River. According to Aquaterra, site redevelopment is not anticipated to impact bald eagles or their nesting success.

No mammals, amphibians, reptiles or invertebrates were directly observed.

Tree Inventory

The applicant has submitted a Certified Arborist's report which identifies on-site and off-site tree species, assesses tree structure and condition, and provides recommendations for tree retention and removal relative to the proposed development. The report assesses 54 bylaw-sized trees on the subject property, 4 trees on the neighbouring property, and 5 trees on City property. (Attachment 4).

Tree Removal

30 on-site trees are proposed to be removed, including 15 trees from the central ESA area and 15 trees located on-site but outside the ESA. The City's Tree Preservation Coordinator has reviewed the arborist report and has the following comments:

- 1 tree (tag# 704), a 48 cm Norway maple, exhibits a significant crack in the main trunk and is now a high hazard. This tree should be removed as soon as possible.
- 4 trees (tag# 728, 729, 730 and 731), all Norway maples ranging from 20 – 25 cm, are in poor condition (sparse canopy) and conflict with the proposed development. Remove and replace.
- 15 trees (tag# 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724 and 725) located in the central ESA are in good condition but conflict with the proposed development. Remove and replace.
 - 6 are lodgepole pines ranging from 30 – 60 cm (#711, 719, 720, 721, 724 and 725);

- 8 are Western redcedars, ranging from 40 – 50 cm (#712, 713, 714, 715, 716, 717, 722 and 723); and
 - 1 is a 25 cm Western red pine (#718).
- 10 trees (tag# 701, 702, 703, 705, 706, 707, 708, 709, 726 and 727), all Norway maples in good condition, ranging from 30 – 48 cm, conflict with the proposed development. Design alternatives were assessed to protect tree tag #701, 702, 703, 705, 706, 707, 708, and 709, however, insufficient area is available to accommodate trees as well as the required parking and drive aisle. The applicant has committed to replacing trees closer to the western property line. Tree tag #726 and 727 conflict with the proposed building footprint.
- Replacement trees should be provided at a 2:1 ratio as per the OCP.
- If required replacement trees cannot be accommodated on-site, a cash-in-lieu contribution in the amount of \$500/tree to the City's Tree Compensation Fund for off-site planting is required.

Tree Retention

24 on-site trees and 4 off-site trees are proposed to be retained and protected on site. The City's Tree Preservation Coordinator has reviewed the arborist report and has the following comments:

- 2 trees (tag # 710 and 737), are located on-site but outside the ESA. Tree tag #737 is a significant tree in good condition. These are to be retained and protected.
- 22 trees (tag # 738, 739, 740, 741, 742, 743, 744, 745, 746, 749, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, and 763) located in the northern ESA are in good condition. These are to be retained and protected.
- 4 trees (tag # 747, 748, 450, and 751) located on the neighbouring site are to be retained and protected.
- Retained trees should be protected as per City of Richmond Tree Protection Information Bulletin Tree-03.

City Trees

5 trees (tag # 732, 733, 734, 735, 736) located on City property were assessed by Parks Arboriculture staff.

- 4 trees (tag # 732, 733, 734 and 736) are to be retained.
- 1 tree (tag # 735) is a 10 cm caliper tree that has been pruned for hydro lines and conflicts with development. Compensation of \$650 is required to remove the tree for the City to plant two new trees at or near the development site.

Tree Protection

The applicant is to submit a tree management plan showing the trees to be retained and the measures taken to protect them during development stage (Attachment 4). To ensure that the

trees identified for retention are protected at the development stage, the applicant is required to complete the following items:

- Prior to approval of the Development Permit, the applicant is required to submit a tree security of \$10,000 for the four City trees to be protected.
- Prior to issuance of the Development Permit, the applicant is to register legal agreements on title to ensure protection and retention of the modified ESA, including protection of trees be retained on-site (tag # 710, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 749, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, and 763) and submit landscape security for the restoration works
- Prior to issuance of the Development Permit, the applicant is to submit to the City a contract with a Certified Arborist for the supervision of all works conducted within or in close proximity to tree protection zones. The contract must include the scope of work required, the number of proposed monitoring inspections at specified stages of construction, any special measures required to ensure tree protection, and a provision for the arborist to submit a post-construction impact assessment to the City for review.
- Prior to any works on the subject site, the applicant is to ensure installation of tree protection fencing around all trees to be retained. Tree protection fencing must be installed to City standard in accordance with the City's Tree Protection Information Bulletin Tree-03 prior to any works being conducted on-site, and remain in place until construction and landscaping on-site is completed.

Tree Replacement

The applicant wishes to remove 30 on-site trees (tag #701, 702, 703, 704, 705, 706, 707, 708, 709, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730 and 731). The 2:1 replacement ratio would require a total of 60 replacement trees. The applicant has proposed to plant 26 trees in the proposed development. The required replacement trees are to be of the following minimum sizes, based on the size of the trees being removed as per Tree Protection Bylaw No. 8057.

Table 1: Tree Replacement Calculation

No. of Replacement Trees	Minimum Caliper of Deciduous Replacement Tree	Minimum Height of Coniferous Replacement Tree
2	8 cm	4 m
14	9 cm	5 m
8	10 cm	5.5 m
2	11 cm	6 m

To satisfy the 2:1 replacement ratio established in the OCP, the applicant will contribute a total of \$17,000 to the City's Tree Compensation Fund for the remaining thirty-four trees that cannot

be accommodated on the subject property after redevelopment. An additional \$650 is required in compensation for one City tree to be removed.

As part of the Development Permit application, the applicant must provide a Landscape Plan prepared by a registered Landscape Architect, which must include the agreed upon replacement trees. The City will collect a Landscape Security prior to issuance of the Development Permit based on the cost estimate for the works, including a 10% contingency, provided by the Landscape Architect.

Proposed Environmentally Sensitive Area Compensation

To compensate for removal of 198 m² of ESA, the applicant proposes to add 414 m² (4,456 ft²) of new ESA, and complete landscape restoration and enhancement as follows (DP Plans 1, 2, 3, 4.a, 4.b and 5):

- removal of Himalayan blackberry and other invasive plant species within the existing northern ESA to be protected (approximately 788 m² /8,482 ft² of the site) and within the new ESA to be created, Attachment 5;
- expansion of the northern ESA by 305 m² (93,283 ft²) and enhancing both the new and existing ESA at the north of the site (totalling 1,093 m²/11,765 ft²). Proposed plant species include:
 - 4 large western redcedar trees (5.0 - 5.5 m in height);
 - 10 large Douglas fir trees (5.5 - 6.0 m in height);
 - 345 native shrubs including 54 salal, 67 Oregon grape, 47 baldhip rose, 55 oceanspray, 58 salmonberry, 64 common snowberry plants; and
 - 1059 perennial plants, including 120 vanilla leaf, 160 pacific bleeding heart, 214 sword fern, 284 small flowered alumroot, 80 large leaved lupine, and 201 pink fawn lily.

Plant density is proposed to be 1.3 plants/m² in addition to the existing trees to be retained.

- designation, enhancement and protection of 109 m² (1,173 ft²) of non-contiguous ESA with native plant species, including:
 - 6 large western redcedar trees (5.0 m in height);
 - 5 large Douglas fir trees (5.0 m in height);
 - 87 native shrubs including 42 salal, 35 Oregon grape, 4 baldhip rose, 2 salmonberry, 4 common snowberry plants.

Plant density is proposed to be 0.9 plants/m².

Table 2: Balance Sheet

ESA Area	ESA Existing	ESA Loss	ESA Gain	FINAL ESA
Northern ESA	788 m ² (8482 ft ²)	0	305 m ² (3,283 ft ²)	1,093 m ² (11,765ft ²)
Central ESA	198 m ² (2,135 ft ²)	198 m ² (2,135 ft ²)	0	0
New ESA along Savage Road	0	0	109 m ² (1,177 ft ²)	109 m ² (1,177 ft ²)
TOTAL	986 m² (10,613 ft²)	198 m² (2,135 ft²)	414 m² (4,456 ft²)	1,202 m² (12,938 ft²)

The proposal represents a net gain of 216 m² (2,325 ft²) in habitat area (ratio of 2:1), with a net gain in function by augmenting the upland forest with a new densely planted, natural area to be protected as ESA. Enhancement will support utilization by a variety of terrestrial species, including small and medium-sized mammals, birds and invertebrates. Improvements are anticipated to improve foraging potential, cover, nesting, and direct and indirect utilization by wildlife as a home range for resident and migratory species.

To ensure that the proposed enhancements have the best chance of survival and that invasive species are controlled, monitoring and annual reporting by a Qualified Environmental Professional will occur for three years following completion of the landscape restoration plan.

Development Permit Considerations include bonding for the landscape restoration costs and success monitoring, installation of temporary tree and ESA protective fencing, and the registration of legal agreements to ensure protection and retention of the modified ESA (Attachment 6).

An existing covenant (BP 245419), associated with a previously issued Development Permit (DP 99-170971) and registered over the existing, northern ESA for the protection of the native vegetation, is to be discharged as a condition of this Development Permit. The new legal agreement, noted above, will reflect updated conditions, including the proposed modified ESA boundary and enhancements.

Engineering Comments

A Servicing Agreement will not be required for this development. Utility connections and frontage improvements will be addressed through a Work Order at the time of Building Permit, including completing new water and stormwater connections. At the time of future installation of any private utilities, all above-ground utility boxes (transformers, kiosk, etc) required to service the development will be situated within the development site. Utility alignments and connections must be approved by Engineering.

Registration of a new 13 m Statutory Right of Way for access, construction and maintenance of future road, dike and utility works is a consideration of the Development Permit. The dyke SRW will overlap with the ESA protective covenant. The covenant will prohibit any excavation or construction within the SRW and provide the City with unrestricted vehicular and man access to all areas of the SRW. Any future impacts to ESA as a result of the ultimate dyke cross section will be addressed at that time.

An existing flood plain covenant (BP 245434), associated with a previously issued Development Permit (DP 99-170971), is to be discharged as a condition of this Development Permit. A new flood protection covenant agreement reflecting current City standards is a condition of this Development Permit.

Financial Impact

The application results in an insignificant Operational Budget Impact (OBI) for off-site City infrastructure (such as road works, waterworks, storm sewers, sanitary sewers, street lights, street trees and traffic signals).

Conclusion

The applicant proposes to remove a total of 198m² (2,325 ft²) from the Environmentally Sensitive Area (ESA) to allow development of a warehouse and associated parking, loading and office. Compensation is proposed through a combination of additional ESA designation on-site, planting of 414 m² of newly established ESA area with native trees, shrubs and plants, and invasive species management and replanting of 788 m² (8,482 ft²) of existing ESA. The total net gain in area would be 216 m² (2,325 ft²) with a total of 1,202 m² (12,938 ft²) of enhanced ESA (new and existing).

As the proposed landscape restoration plan would result in a net gain in ESA area and function, staff recommend that the Development Permit be endorsed, and issuance by Council be recommended.



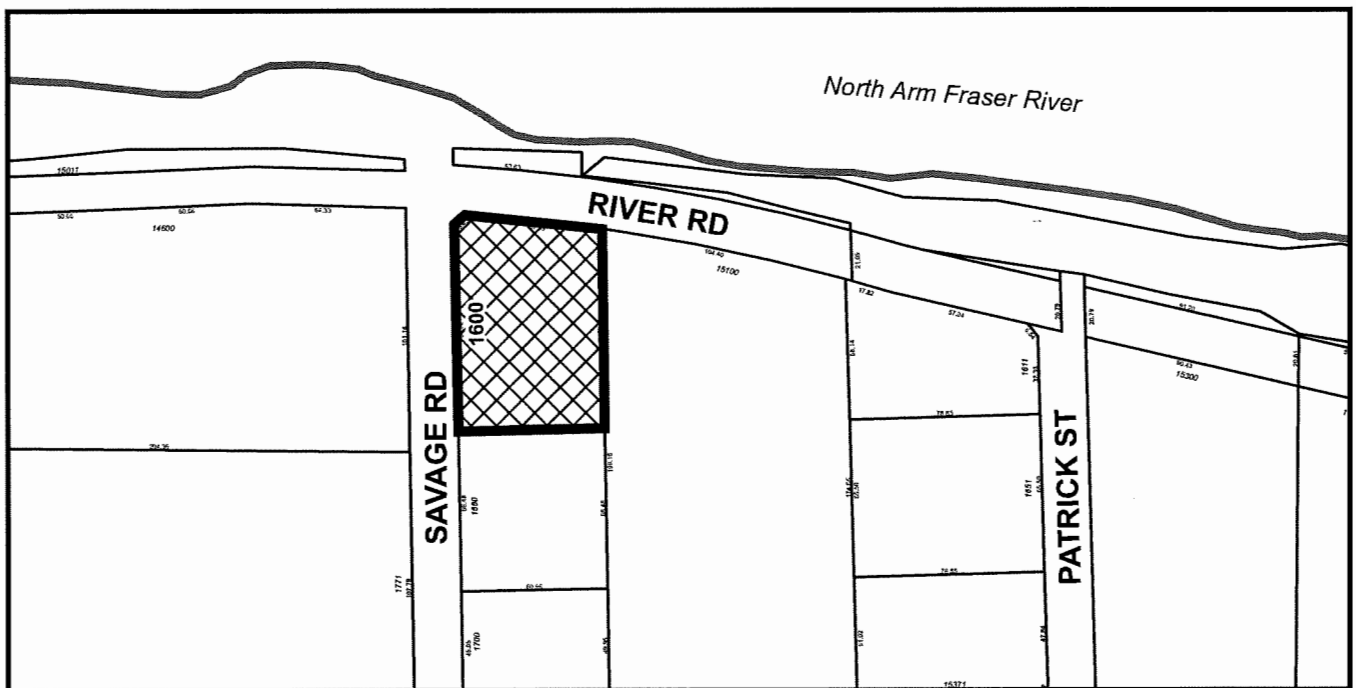
Jeanette Elmore
Planner 2

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Attachments:

- Attachment 1: Location Map
- Attachment 2: Data Sheet
- Attachment 3: ESA Context Plan
- Attachment 4: Tree Management Plan
- Attachment 5: Location of Invasive Plant Species
- Attachment 6: Development Permit Considerations

The map shows the North Arm Fraser River at the top. A street grid includes Savage Rd, Patrick St, River Rd, Knox Way, and No. 7 Rd. A site is highlighted with a cross-hatch pattern and labeled 'SITE' with an arrow. Other areas are labeled 'IL' and 'ZB'.



DP 18-820689

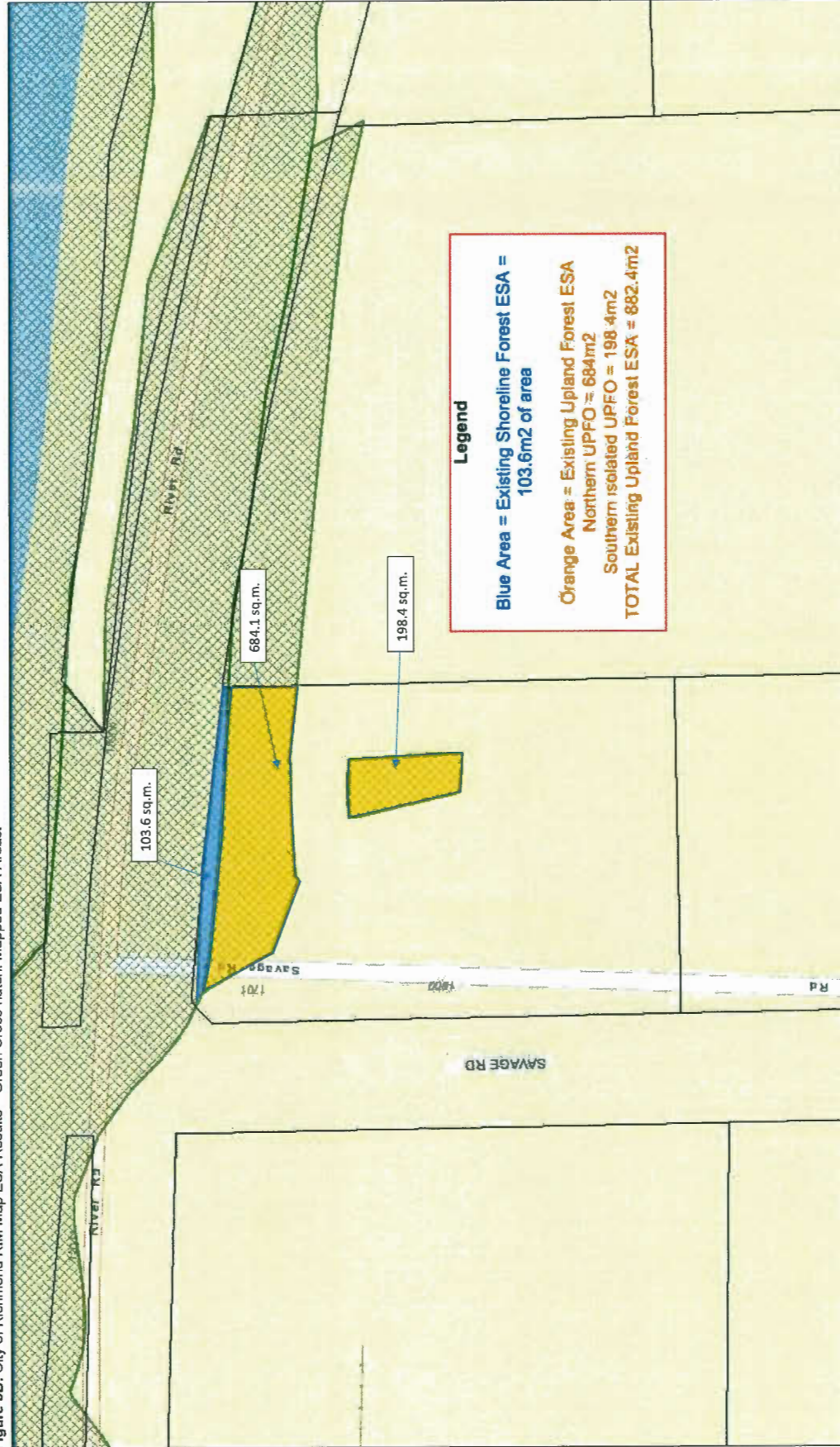
Note: Dimensions are in METRES

**DP 18-820689****Attachment 2**Address: 1600 Savage RoadApplicant: Integrated ConstructionOwner: 10647462 Canada Ltd.Planning Area(s): BridgeportFloor Area: Gross: 2,918m²Net: 2,918 m²

	Existing	Proposed
Site Area:	5,257 m ²	5,257 m ²
Land Uses:	Surface parking lot	Warehouse
OCP Designation:	Industrial	No change
Zoning:	Light Industrial (IL)	No change

	Bylaw Requirement	Proposed	Variance
Floor Area Ratio:	Max. 1.0	0.55	none permitted
Lot Coverage:	Max. 60%	42%	none
Setback – Front Yard:	Min. 3.0 m	Min. 3.0 m	none
Setback – Exterior Side Yard:	Min. 3.0 m	Min. 3.0 m	none
Setback – Interior Side Yard:	No minimum	0.3 m	none
Setback – Rear Yard:	No minimum	0.32 m	none
Height (m):	Max. 12.0 m	Max. 11.12	none
Off-Street Parking Spaces:	Min. 30	30	none
Off-Street Parking Spaces (accessible):	Min. 1	1	none
Total Off-Street Parking Spaces:	Min. 31	31	none
Loading Spaces:	Min: 1 large/1 Medium	2 Large/2 medium	none
Bicycle Parking Spaces:	Class 1: 8 spaces Class 2: 8 spaces	Class 1: 8 spaces Class 2: 8 spaces	none

Figure 5B: City of Richmond RIM Map ESA Results – Green Cross-hatch: Mapped ESA Areas.





- LEGEND**
- EXISTING TREE
 - PROPOSED FOR REMOVAL
 - EXISTING TREE TO BE RETAINED
 - TREE PROTECTION FENCE
 - 19 TREE TAGNO.

- 1. SHADOWN. REQUIRED FOR PLANT
- 2. SHADOWN. REQUIRED FOR PLANT
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Assessment Date Feb. 07, 2018
 Project Name: [REDACTED]
 U.S.A. # ON-0889A



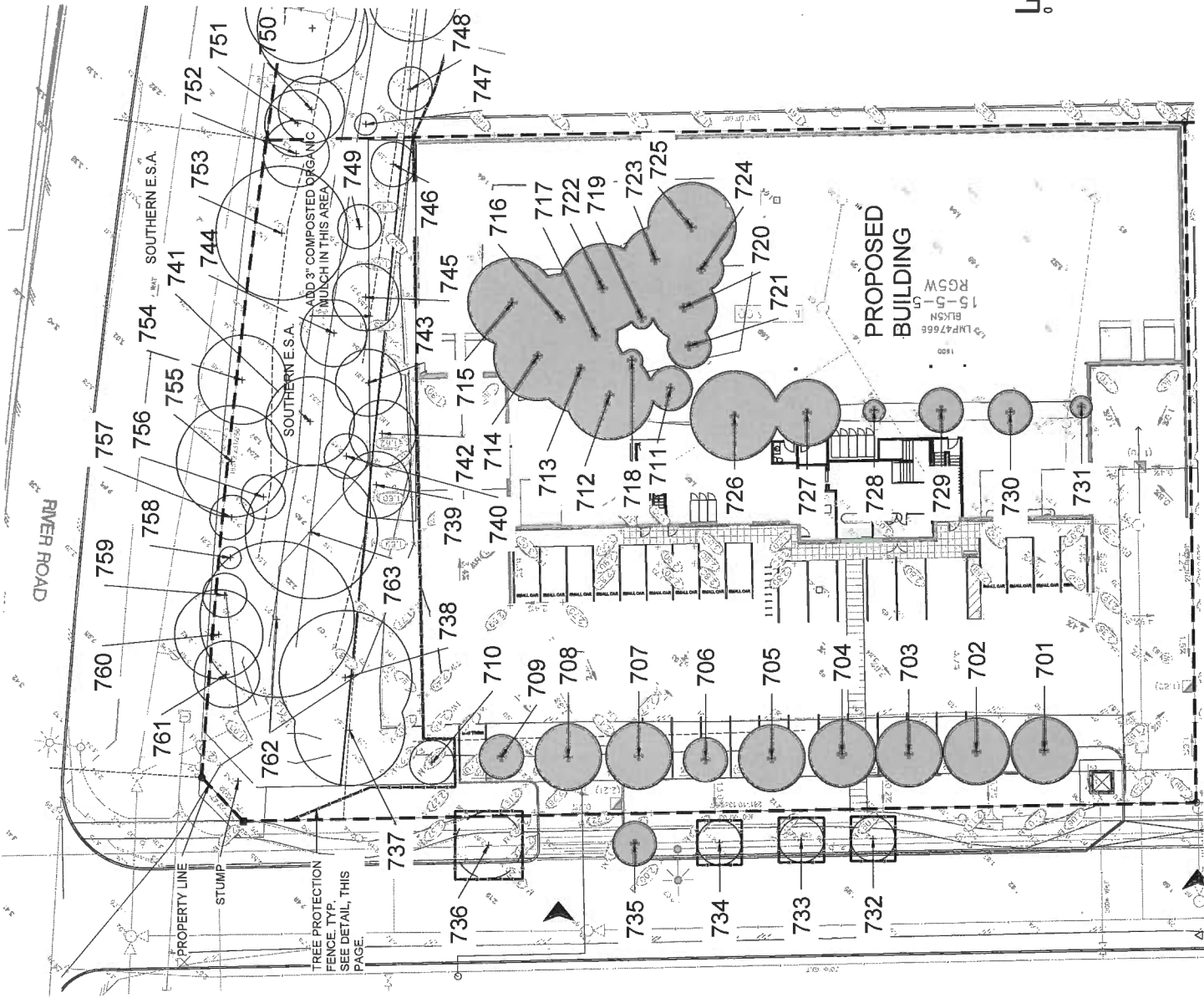
SAVE ROAD SPEC

PROJECT ADDRESS
 1500 E. ROAD,
 RICHMOND, U.C.

DRAWING TITLE
 TREE MANAGEMENT
 PLAN

SCALE	1"=20' AT JUNE 1, 2018
DATE	07/07/2018
PROJECT	0889A
PROJECT NO.	0889A
PROJECT NAME	0889A

T1



TREE PROTECTION
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TABLE 1. TREE INVENTORY - SAVAGE ROAD PROPERTY

*The tree health and structural condition ratings are as follows and are based on factors that could include one or a combination of:

Poor Condition – Severe Canopy dieback, significant lean, decayed, missing leader, significant disease or parasitic plant presence

Fair Condition – Moderate Canopy dieback and/or lean, limb defects, multiple stems, moderate foliage damage from stress, moderate damage from disease or parasite.

Good condition – Healthy vigorous growth, no or minor visible defects or damage

TREE OR TAG #	BOTANICAL NAME	COMMON NAME	DBH (cm)	CANOPY RAD. (m)	STEMS	CONDITION*	COMMENTS	RECOMMENDATION
701	Acer platanoides	Norway Maple	39	3	1	Good-Fair	Pruned	Remove for Development
702	Acer platanoides	Norway Maple	34	3	1	Good	Pruned, slight lean	Remove for Development
703	Acer platanoides	Norway Maple	48	3	1	Good	Pruned, slight lean	Remove for Development
704	Acer platanoides	Norway Maple	48	3	1	Poor	Crack in trunk, pruned	Remove for Cond'n/Development
705	Acer platanoides	Norway Maple	38	3	1	Fair	Pruned, dieback	Remove for Development
706	Acer platanoides	Norway Maple	35	2	1	Fair	Pruned, dieback	Remove for Development
707	Acer platanoides	Norway Maple	49	3	1	Fair	Pruned, dieback, has birds nest	Remove for Development
708	Acer platanoides	Norway Maple	44	3	1	Fair	Pruned, dieback, corrected lean, broken branches	Remove for Development
709	Acer platanoides	Norway Maple	37	2	1	Fair	Pruned, dieback on one side, uncorrected lean	Remove for Development
710	Acer platanoides	Norway Maple	3@ 25, 1@ 15	2	4	Fair	Pruned, dieback, growing into tree wire and rebar	Retain and Protect
711	Pinus contorta	Lodgepole Pine	40	2	1	Good-Fair	Shaded dieback one side	Remove for Development
712	Thuja plicata	Western Red Cedar	45	4	1	Good		Remove for Development
713	Thuja plicata	Western Red Cedar	45	4	1	Good		Remove for Development
714	Thuja plicata	Western Red Cedar	50	4	1	Good	Minor shaded dieback	Remove for Development
715	Thuja plicata	Western Red Cedar	50	4	1	Good		Remove for Development
716	Thuja plicata	Western Red Cedar	45	4	1	Good	Shaded dieback	Remove for Development
717	Thuja plicata	Western Red Cedar	40	2	1	Good		Remove for Development
718	Pinus resinosa	Western Red Pine	25	1	1	Poor	Shaded dieback	Remove for Development
719	Pinus contorta	Lodgepole Pine	35	1	1	Poor	Shaded dieback, corrected lean	Remove for Cond'n/Development
720	Pinus contorta	Lodgepole Pine	45	3	1	Fair-Poor	Shaded dieback	Remove for Cond'n/Development
721	Pinus contorta	Lodgepole Pine	30	2	1	Poor	Leader missing, dieback, leaning	Remove for Development
722	Thuja plicata	Western Red Cedar	52	4	1	Good	Shaded dieback	Remove for Development
723	Thuja plicata	Western Red Cedar	40	3	1	Poor	Some canopy dieback, fruiting bodies, holes in trunk indicate insect infestation, likely internal decay	Remove for Cond'n/Development
724	Pinus contorta	Lodgepole Pine	60	2	1	Fair	Shaded dieback, one stem removed, corrected lean	Remove for Development
725	Pinus contorta	Lodgepole Pine	55	4	1	Good-Fair	Shade dieback, corrected lean	Remove for Development
726	Acer platanoides	Norway Maple	40	4	1	Good	Pruned	Remove for Development
727	Acer platanoides	Norway Maple	30	3	1	Fair	Pruned, Dieback	Remove for Development
728	Acer platanoides	Norway Maple	25	1	1	Fair	Pruned	Remove for Development
729	Acer platanoides	Norway Maple	25	2	1	Fair	Dieback, Leaning	Remove for Development
730	Acer platanoides	Norway Maple	25	2	1	Poor	Missing leader, broken limbs, dieback, large trunk cavity	Remove for Cond'n/Development
731	Acer platanoides	Norway Maple	20	1	1	Poor	Broken limbs, dieback, heavily pruned	Remove for Cond'n/Development
732	Acer freemanii	Freeman's Maple	10	2	1	Good-Fair	Leaders all pruned due to hydro lines	Retain and Protect
733	Acer freemanii	Freeman's Maple	10	2	1	Good-Fair	Leaders all pruned due to hydro lines	Retain and Protect
734	Acer freemanii	Freeman's Maple	10	2	1	Good-Fair	Leaders all pruned due to hydro lines	Retain and Protect
735	Acer freemanii	Freeman's Maple	10	2	1	Good-Fair	Leaders all pruned due to hydro lines	Remove for Development
736	Acer freemanii	Freeman's Maple	17	3	1	Good-Fair	Leaders all pruned due to hydro lines	Retain and Protect
737	Acer species	Maple	40	5	1	Good	Pruned on one side	Retain and Protect
738	Acer platanoides	Norway Maple	45	6	1	Good		Retain and Protect
739	Pseudotsuga menziesii	Douglas fir	50	3	1	Good	Shaded dieback	Retain and Protect
740	Pseudotsuga menziesii	Douglas fir	45	2	1	Fair-Poor	Significant dieback	Retain and Protect
741	Pseudotsuga menziesii	Douglas fir	30	4	1	Fair	Shaded dieback, slight lean	Retain and Protect
742	Pseudotsuga menziesii	Douglas fir	45	3	1	Good	Shaded dieback on one side	Retain and Protect

TREE OR TAG #	BOTANICAL NAME	COMMON NAME	CANOPY		STEMS	CONDITION*	COMMENTS	RECOMMENDATION
			DBH (cm)	RAD. (m)				
743	<i>Pseudotsuga menziesii</i>	Douglas fir	50	3	1	Good-Fair	Shaded dieback on one side	Retain and Protect
744	<i>Pseudotsuga menziesii</i>	Douglas fir	60	3	1	Good-Fair	Dieback, one sided growth	Retain and Protect
745	<i>Pseudotsuga menziesii</i>	Douglas fir	60	3	1	Good-Fair	Dieback, one sided growth	Retain and Protect
746	<i>Populus trichocarpa</i>	Black Cottonwood	75	2	1	Fair	Ivy on trunk	Retain and Protect
747	<i>Populus trichocarpa</i>	Black Cottonwood	70	1	1	Poor	Ivy on trunk	Retain and Protect
748	<i>Pseudotsuga menziesii</i>	Douglas fir	70	2	1	Good-Fair	Ivy on trunk, some dieback	Retain and Protect
749	<i>Populus trichocarpa</i>	Black Cottonwood	75	2	1	Fair	Shaded dieback	Retain and Protect
750	<i>Alnus rubra</i>	Red Alder	50	3	1	Good-Fair	Ivy on trunk	Retain and Protect
751	<i>Alnus rubra</i>	Red Alder	1 Broken, 1@ 45, 1@ 40	3	3	Good-Fair	Shaded dieback, ivy on trunk	Retain and Protect
752	<i>Alnus rubra</i>	Red Alder	1@ 10, 1@ 15, 1@ 20, 1@ 35	3	4	Good-Fair	Shaded dieback, ivy on trunk	Retain and Protect
753	<i>Alnus rubra</i>	Red Alder	60	6	1	Good		Retain and Protect
754	<i>Acer macrophyllum</i>	Big Leaf Maple	45	4	1	Good	Dieback	Retain and Protect
755	<i>Acer macrophyllum</i>	Big Leaf Maple	70	5	1	Good-Fair	Dieback	Retain and Protect
756	<i>Alnus rubra</i>	Red Alder	20.5	2	1	Good		Retain and Protect
757	<i>Alnus rubra</i>	Red Alder	22	2	1	Poor	Missing leader	Retain and Protect
758	<i>Alnus rubra</i>	Red Alder	20.5	1	1	Good-Fair	Dieback	Retain and Protect
759	<i>Alnus rubra</i>	Red Alder	1@ 22, 1@ 15	2	2	Good-Fair	Corrected lean	Retain and Protect
760	<i>Alnus rubra</i>	Red Alder	41	4	1	Good	Shaded dieback	Retain and Protect
761	<i>Populus trichocarpa</i>	Black Cottonwood	22	2	1	Good		Retain and Protect
762	<i>Acer platanoides</i>	Norway Maple	55	7	1	Good		Retain and Protect
763	<i>Acer platanoides</i>	Norway Maple	50	6	1	Good-Fair	Shaded Dieback, Pruned	Retain and Protect

Figure 9: 1600 Savage Road - May 2019 Invasive Plant Mapping



5/28/2019, 9:54:33 AM

- Street Names
- Air Parcels
 - Strata
 - Parcels (black line)
 - City Hall
 - Fire Stations
- Police Stations
-
- Ambulance Stations
-

1:500

0 30 60 120 ft

0 5 10 20 m

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

AquaTerra Environmental Ltd.
© 2018 City of Richmond, BC



Development Permit Considerations

Development Applications Department
6911 No. 3 Road, Richmond, BC V6Y 2C1

Address: 1600 Savage Road

File No.: DP 18-820689

Prior to approval of the Development Permit, the developer is required to complete the following:

1. Receipt of a Letter of Credit for landscaping and tree retention security in the amount of \$36,247.20 based on the cost estimate provided in the Environmental Impact Assessment (Aquaterra Environmental, July 30, 2019) including 10% contingency.
2. City acceptance of the developer's offer to voluntarily contribute \$17,650 to the City's Tree Compensation Fund for the planting of replacement trees within the City.
3. Submission of a Contract entered into between the applicant and a Certified Arborist for supervision of any on-site works conducted within the tree protection zone of the trees to be retained. The Contract should include the scope of work to be undertaken, including: the proposed number of site monitoring inspections, and a provision for the Arborist to submit a post-construction assessment report to the City for review.
4. Submission of a Tree Survival Security to the City in the amount of \$10,000 for the four City trees to be retained.
5. Installation of appropriate tree protection fencing around all trees to be retained as part of the development prior to any construction activities, including building demolition, occurring on-site.
6. Installation of appropriate Environmentally Sensitive Area (ESA) protection fencing and silt control fencing at the boundary of the ESA as proposed by the Development Permit, per the ESA Changes Plan L2.2 (August 22, 2019) prior to any construction activities, including building demolition, occurring on-site.
7. Submission of a Contract entered into between the applicant and a Qualified Environmental Professional to monitor and provide annual reporting to the City on the ESA for three years following City approval of substantial completion.
8. The granting of a 13 m wide statutory right-of-way along the northern property line for the purpose of access, construction, and maintenance of future road, dike, and utility works by the City. The SRW shall prohibit any excavation or construction within the SRW and provide the City with unrestricted vehicular and man access to all sections of the SRW.
9. Registration of a flood plain covenant on title identifying a minimum habitable elevation of 3.0 m GSC.
10. Registration of a legal agreement on title to identify the modified ESA and to ensure that landscaping is retained and planted as identified within the Environmental Impact Assessment (Aquaterra Environmental, July 30, 2019) and will not be abandoned or removed.
11. Registration of a legal agreement on title to allow City access to the property in case the works identified within the Environmental Impact Assessment (Aquaterra Environmental, July 30, 2019) are not completed, maintained or monitored as proposed.
12. Discharge of Covenant BP245419.
13. Discharge of Covenant BP245434.

Prior to Building Permit Issuance, the developer must complete the following requirements:

1. Submission of a Construction Parking and Traffic Management Plan to the Transportation Department. Management Plan shall include location for parking for services, deliveries, workers, loading, application for any lane closures, and proper construction traffic controls as per Traffic Control Manual for works on Roadways (by Ministry of Transportation) and MMCD Traffic Regulation Section 01570.
2. Incorporation of accessibility measures in Building Permit (BP) plans as determined via the Rezoning and/or Development Permit processes.
3. Complete works to be done at the developer's sole cost via City Work Order:
 - *Water Works:*

Initial: _____

- a) Using the OCP Model, there is 424 L/s of water available at a 20 psi residual at the Savage Road frontage. Based on your proposed development, your site requires a minimum fire flow of 250 L/s.
- b) The Developer is required to:
 - i) Submit Fire Underwriter Survey (FUS) or International Organization for Standardization (ISO) fire flow calculations to confirm development has adequate fire flow for onsite fire protection. Calculations must be signed and sealed by a Professional Engineer and be based on Building Permit Stage building designs.
 - ii) Provide a right-of-way for the water meter. Minimum right-of-way dimensions to be the size of the meter box (from the City of Richmond supplementary specifications) + any appurtenances (for example, the bypass on W2o-SD) + 0.5 m on all sides. Exact right-of-way dimensions to be finalized during the building permit process.
 - iii) Install a water meter on the existing water service connection. Water meter to be located onsite in a right-of-way.

• *Storm Sewer Works:*

- a) The Developer is required to:
 - i) Confirm the capacity and condition (via video inspection) of the existing storm connection near the south property line. If the existing storm connection is adequate to serve the proposed development, at the City's digression, the existing connection may be retained to serve the proposed development. A new inspection chamber will be required. If the existing storm connection is not adequate to serve the proposed development, the existing connection shall be capped and a new storm connection complete with inspection chamber shall be installed by the City at the developer's cost.

• *Sanitary Sewer Works*

- a) The Developer is required to:
 - i) Confirm the capacity and condition (via video inspection) of the existing sanitary connection at the south property line. If the existing connection is adequate to serve the proposed development, at the City's digression, the existing connection may be retained to serve the proposed development. If the existing connection is not adequate to serve the proposed development, the existing connection shall be replaced by the City at the developer's cost.
- b) At Developer's cost, the City is to:
 - i) Replace the sanitary inspection chamber at the south property line with a 1050 mm manhole.

• *Frontage Works*

- a) The Developer is required to:
 - i) Coordinate with BC Hydro, Telus and other private communication service providers:
 - (1) To pre-duct for future hydro, telephone and cable utilities on all road frontages.
 - (2) Before relocating/modifying any of the existing power poles and/or guy wires within the property frontages.
 - (3) To underground overhead service lines.
 - (4) To locate/relocate all above ground utility cabinets and kiosks required to service the proposed development, and all above ground utility cabinets and kiosks located along the development's frontages, within the developments site (see list below for examples). A functional plan showing conceptual locations for such infrastructure shall be included in the development design review process. Please coordinate with the respective private utility companies and the project's lighting and traffic signal consultants to confirm the requirements (e.g., statutory right-of-way dimensions) and the locations for the aboveground structures. If a private utility company does not require an aboveground structure, that company shall confirm this via a letter to be submitted to the City. The following are examples of statutory right-of-ways that shall be shown on the architectural plans/functional plan:
 - BC Hydro PMT – 4.0 x 5.0 m
 - BC Hydro LPT – 3.5 x 3.5 m
 - Street light kiosk – 1.5 x 1.5 m
 - Traffic signal kiosk – 2.0 x 1.5 m
 - Traffic signal UPS – 1.0 x 1.0 m

- Shaw cable kiosk – 1.0 x 1.0 m
 - Telus FDH cabinet – 1.1 x 1.0 m
4. If applicable, payment of latecomer agreement charges associated with eligible latecomer works.
 5. Obtain a Building Permit (BP) for any construction hoarding. If construction hoarding is required to temporarily occupy a public street, the air space above a public street, or any part thereof, additional City approvals and associated fees may be required as part of the Building Permit. For additional information, contact the Building Approvals Department at 604-276-4285.

Note:

- * This requires a separate application.
- Where the Director of Development deems appropriate, the preceding agreements are to be drawn not only as personal covenants of the property owner but also as covenants pursuant to Section 219 of the Land Title Act.
All agreements to be registered in the Land Title Office shall have priority over all such liens, charges and encumbrances as is considered advisable by the Director of Development. All agreements to be registered in the Land Title Office shall, unless the Director of Development determines otherwise, be fully registered in the Land Title Office prior to enactment of the appropriate bylaw.
The preceding agreements shall provide security to the City including indemnities, warranties, equitable/rent charges, letters of credit and withholding permits, as deemed necessary or advisable by the Director of Development. All agreements shall be in a form and content satisfactory to the Director of Development.
- Additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering may be required including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.
- Applicants for all City Permits are required to comply at all times with the conditions of the Provincial *Wildlife Act* and Federal *Migratory Birds Convention Act*, which contains prohibitions on the removal or disturbance of both birds and their nests. Issuance of Municipal permits does not give an individual authority to contravene these legislations. The City of Richmond recommends that where significant trees or vegetation exists on site, the services of a Qualified Environmental Professional (QEP) be secured to perform a survey and ensure that development activities are in compliance with all relevant legislation.

Signed

Date



City of Richmond

Development Permit

No. DP 18-820689

To the Holder: Braden Smith
Property Address: 1600 Savage Road
Address: 4610 Marine Drive
Burnaby, BC V5J 3G2

1. This Development Permit is issued subject to compliance with all of the Bylaws of the City applicable thereto, except as specifically varied or supplemented by this Permit.
2. This Development Permit applies to and only to those lands shown cross-hatched on the attached Schedule "A" and any and all buildings, structures and other development thereon.
3. Subject to Section 692 of the Local Government Act, R.S.B.C.: buildings and structures; off-street parking and loading facilities; roads and parking areas; and landscaping and screening shall be constructed generally in accordance with Plans #1, 2, 3, 4.a., 4.b, and 5, attached hereto.
4. Sanitary sewers, water, drainage, highways, street lighting, underground wiring, and sidewalks, shall be provided as required.
5. As a condition of the issuance of this Permit, the City is holding the security in the amount of \$36,247.20 to ensure that development is carried out in accordance with the terms and conditions of this Permit. Should any interest be earned upon the security, it shall accrue to the Holder if the security is returned. The condition of the posting of the security is that should the Holder fail to carry out the development hereby authorized, according to the terms and conditions of this Permit within the time provided, the City may use the security to carry out the work by its servants, agents or contractors, and any surplus shall be paid over to the Holder. Should the Holder carry out the development permitted by this permit within the time set out herein, the security shall be returned to the Holder. The City may retain the security for up to one year after inspection of the completed landscaping in order to ensure that plant material has survived.
6. If the Holder does not commence the construction permitted by this Permit within 24 months of the date of this Permit, this Permit shall lapse and the security shall be returned in full.

Development Permit

No. DP 18-820689

To the Holder: Braden Smith
Property Address: 1600 Savage Road
Address: 4610 Marine Drive
Burnaby, BC V5J 3G2

7. The land described herein shall be developed generally in accordance with the terms and conditions and provisions of this Permit and any plans and specifications attached to this Permit which shall form a part hereof.

This Permit is not a Building Permit.

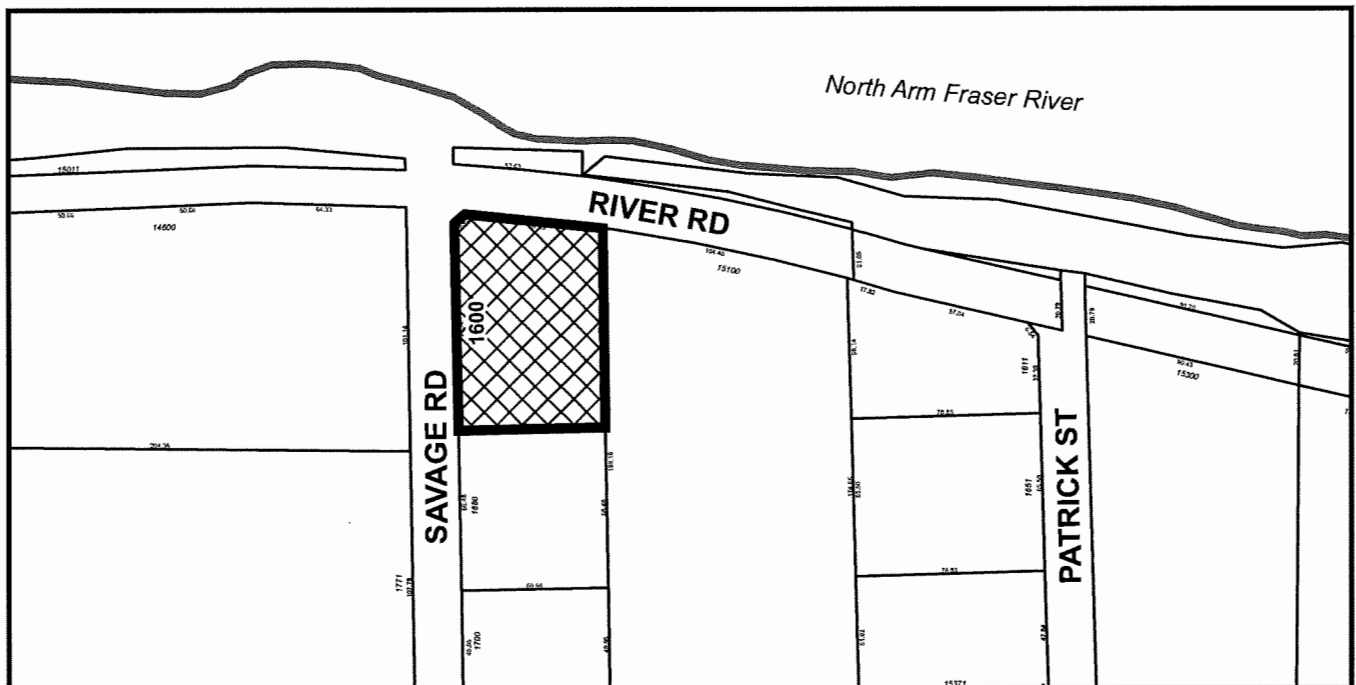
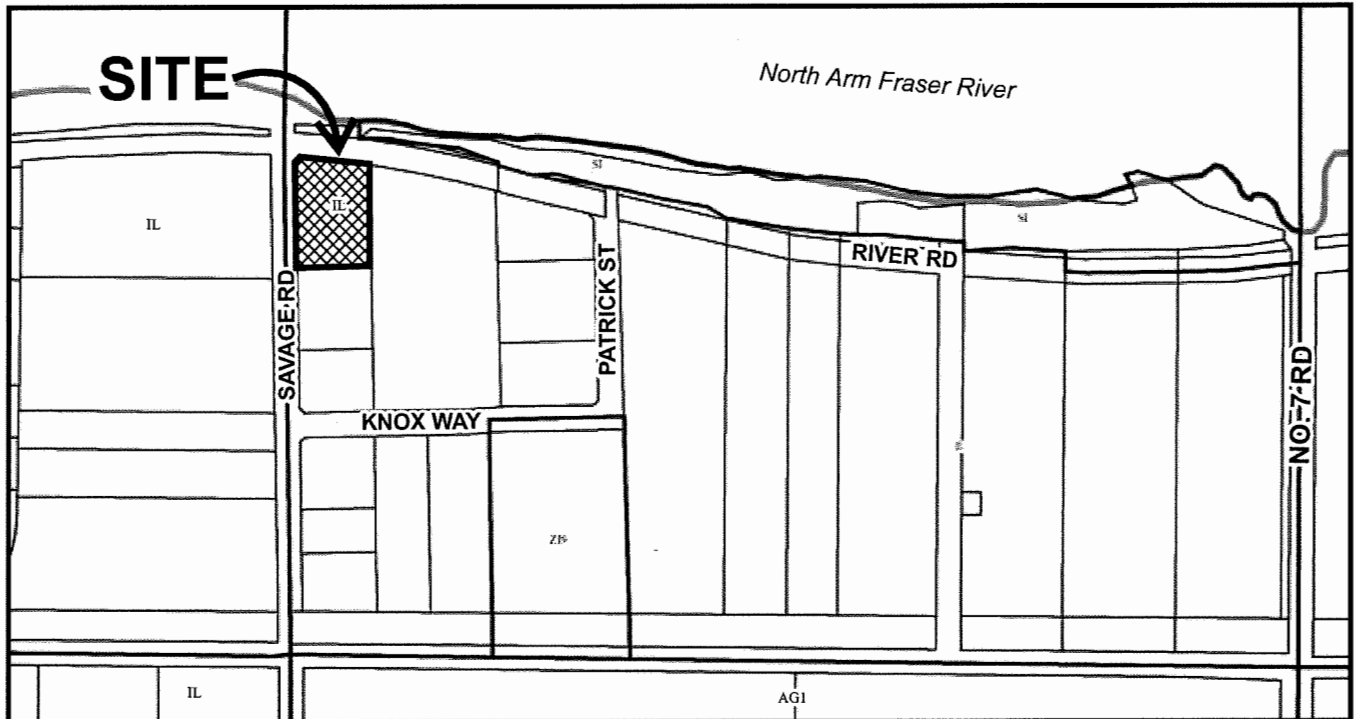
AUTHORIZING RESOLUTION NO. ISSUED BY THE COUNCIL THE DAY
OF , .

DELIVERED THIS DAY OF , .

MAYOR



City of
Richmond



DP 18-820689
SCHEDULE "A"

Original Date: 05/22/18

Revision Date: 05/23/18

Note: Dimensions are in METRES

[illegible]

LEGEND:

- ENVIRONMENTAL SENSITIVE AREA (E.S.A.) - existing
- E.S.A. TO BE REMOVED - existing
- PROPOSING NEW E.S.A.
- GREEN BELT
- PROPOSING REVIVAL OF EXISTING E.S.A.

TOTAL EXISTING E.S.A. 10.6

198.34 SQ.M (2,135 SQ. FT.)

109 SQ.M (1177 SQ. FT.)

SEE CIVIL

PROVIDE TREE PROTECT FENCE REFER TO LANDSCAPE DRAWINGS.

SPLIT RAIL FENCE REFER TO LANDSCAPE DRAWING

SPLIT RAIL FENCE REFER TO LANDSCAPE DRAWING

PROVIDE TREE PROTECT FENCE REFER TO LANDSCAPE DRAWINGS.

RED LINE DENOTES 0.50 m (1.50') SETBACK TO BE KEPT FREE OF ANY FENCES, POSTS, TREES OR ULS STRUCTURES.

DENOTES SETBACK LINE TYP.

DENOTES EXISTING PROPERTY LINE TYP. U.N.O.

27° 00' 00"

180° 00' 00"

27° 16' 32.56"

DP 18-820689

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KD Planning
A KPMG LLP

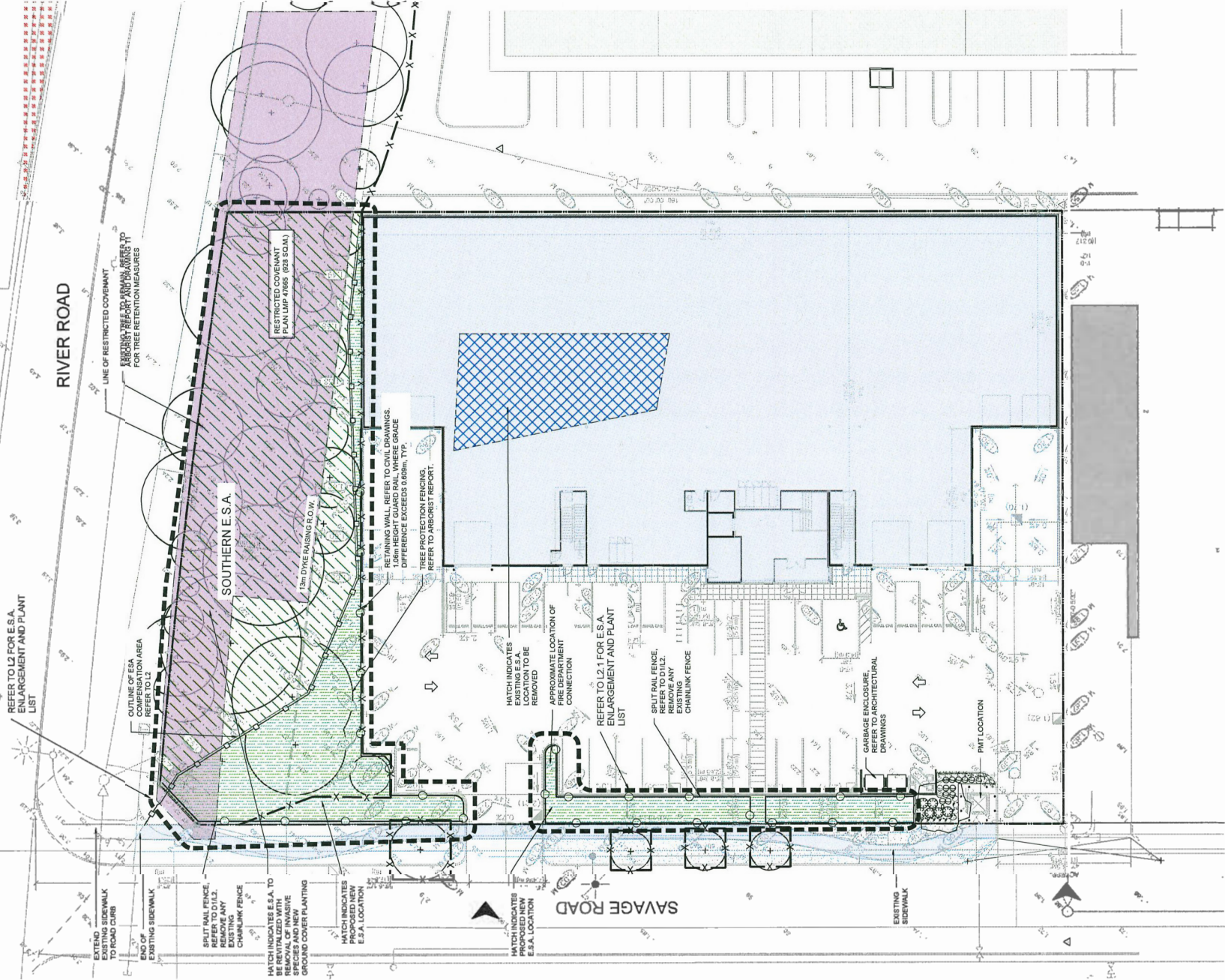
NO.	DATE: (day)	DESCRIPTION:
13	22/06/2010	ISSUED FOR REGISTRATION
12	12/07/2010	ISSUED FOR REP
11	14/09/2010	ISSUED FOR REP
10	17/10/2010	ISSUED FOR REP
9	04/02/2011	ISSUED FOR REVIEW
8	15/03/2011	ISSUED FOR PRICING
7	08/02/2010	ISSUED FOR PRICING REVIEW
6	26/11/2010	ISSUED FOR RP
5	20/11/2010	ISSUED FOR REVIEW
4	16/11/2010	ISSUED FOR REVIEW
3	09/11/2010	ISSUED FOR REVIEW
2	25/04/2010	ISSUED FOR RP
1	06/04/2010	ISSUED FOR REVIEW

PROJECT ADDRESS:
1600 SAVAGE ROAD
RICHMOND, BC

SCALE:	NTS
DRAWN:	RM
CHECKED:	ST
PROJECT NO:	180006-L
DRAWING NO:	

Plan 2

PLANT LIST ON-SITE NON E.S.A.				
SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CONDITION
DECIDUOUS TREES				
	1	Morus (ald)	Royal Ornamental Crab Apple	W.B.
SHRUBS				
	5	Nandina domestica 'Fire Power'	Fire Power Nandina	#2 Pul
	15	Viburnum dentatum	David's Viburnum	#3 Pul
PERENNIALS, GROUND COVERS, AND GRASSES				
	11	Festuca glauca	Blue Fescue	#1 Pul
	10	Rudbeckia hirta 'Goldener'	Black-Eyed Susan	#1 Pul



LEGEND
TURF GRASS
CONCRETE SIDEWALK PAVING
EXISTING TREE TO REMAIN
EXISTING TREE TO BE REMOVED
SPLIT RAIL FENCE
TREE PROTECTION FENCING
SILT FENCING

15	25/09/2019	ISSUED FOR REVISION
14	25/09/2019	ISSUED FOR TENDER REVIEW
13	22/08/2019	ISSUED FOR REVISION
12	12/07/2019	ISSUED FOR RE-OP
11	14/06/2019	ISSUED FOR RE-OP
10	17/04/2019	ISSUED FOR RE-OP
9	08/04/2019	ISSUED FOR REVIEW
8	15/03/2019	ISSUED FOR PRICING
7	08/03/2019	ISSUED FOR PRICING REVIEW
6	25/12/2018	ISSUED FOR BP
5	20/12/2018	ISSUED FOR REVIEW
4	19/11/2018	ISSUED FOR REVIEW
3	09/11/2018	ISSUED FOR REVIEW
2	25/04/2018	ISSUED FOR OP
1	05/04/2018	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION
ISSUES & REVISIONS		

SEAL:
B.C.S.L.A. #565



PROJECT NAME:
OPEN WINDOWS

PROJECT ADDRESS:
1600 SAVAGE ROAD
RICHMOND, BC

DRAWING TITLE:
LANDSCAPE PLAN,
NOTES, AND DETAILS

SCALE	1:200
DRAWN	RM
CHECKED	ST
PROJECT NO.	180856-L
DRAWING NO.	L1

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PLANTING NOTES

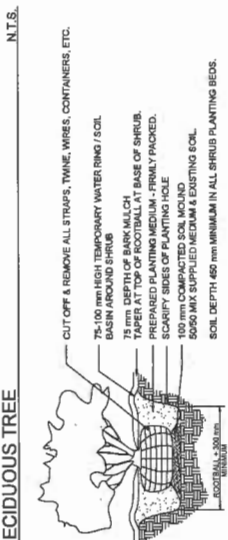
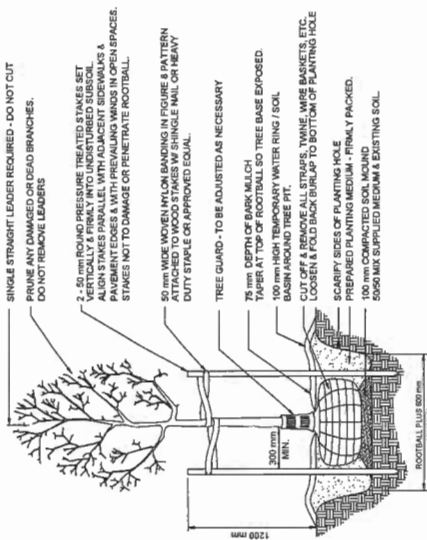
- PLANTS SHALL BE INSTALLED AS DIRECTED BY THE DRAWING, NOTES AND DETAILS.
- PLANT MATERIAL SUBSTITUTIONS WILL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL.
- ALL PLANT MATERIAL SHALL BE THOROUGHLY WATERED AND SOAKED AT THE TIME OF PLANTING.
- TREE PROTECTION:** PER THE MUNICIPAL DETAIL IF REQUIRED.
- ALL LANDSCAPE MATERIAL IS TO COMPLY WITH THE CANADIAN LANDSCAPE STANDARD.
- SOIL ANALYSIS FOR PROPOSED GROWING MEDIUM IS TO BE PROVIDED TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- PLANT MATERIALS SPECIFIED FOR THIS PROJECT WILL CONFORM TO THE CANADIAN LANDSCAPE STANDARD AND MUNICIPAL LANDSCAPE STANDARD FOR SIZE, VARIETY AND CONDITION AS INDICATED ON THE PLANT LIST SHOWN ON THIS DRAWING. ANY PLANT DISPLAYING POOR GROWTH HABITS, INJURY OR DISEASE WILL BE REJECTED. ANY PLANT THAT IS REJECTED WILL BE REMOVED FROM THE SITE AND REPLACED WITH A PLANT OF ACCEPTABLE QUALITY AT NO ADDITIONAL COST TO THE OWNER.
- REMOVE DEAD OR DAMAGED BRANCHES. ALL BRANCHING SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICES AND INTERNATIONAL SOCIETY ARBORISTS (I.S.A.) SPECIFICATIONS WITH APPROPRIATE TIMING FOR EACH SPECIES.
- PROVIDE A ONE YEAR WARRANTY FOR THE PLANT MATERIAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION DURING THE WARRANTY PERIOD UNLESS OTHERWISE AGREED UPON IN WRITING. THE WARRANTY SHALL BE VOID IF THE CONTRACTOR DOES NOT MAINTAIN THE PLANTS DURING THE WARRANTY PERIOD. THE WARRANTY PERIOD AT THE CONTRACTOR'S OWN EXPENSE. MAINTENANCE INCLUDES BUT IS NOT LIMITED TO:
 - 8.1. Regular schedule of watering of the plants as required and/or as directed by the Project Manager during construction and the warranty period shall result in the work being undertaken by others. The cost of this work shall be deducted from the total Contract Price or backlogged and additional installation of match.
 - 8.2. Maintenance and additional installation of match.
 - 8.3. Weed removal.
 - 8.4. Disease control.

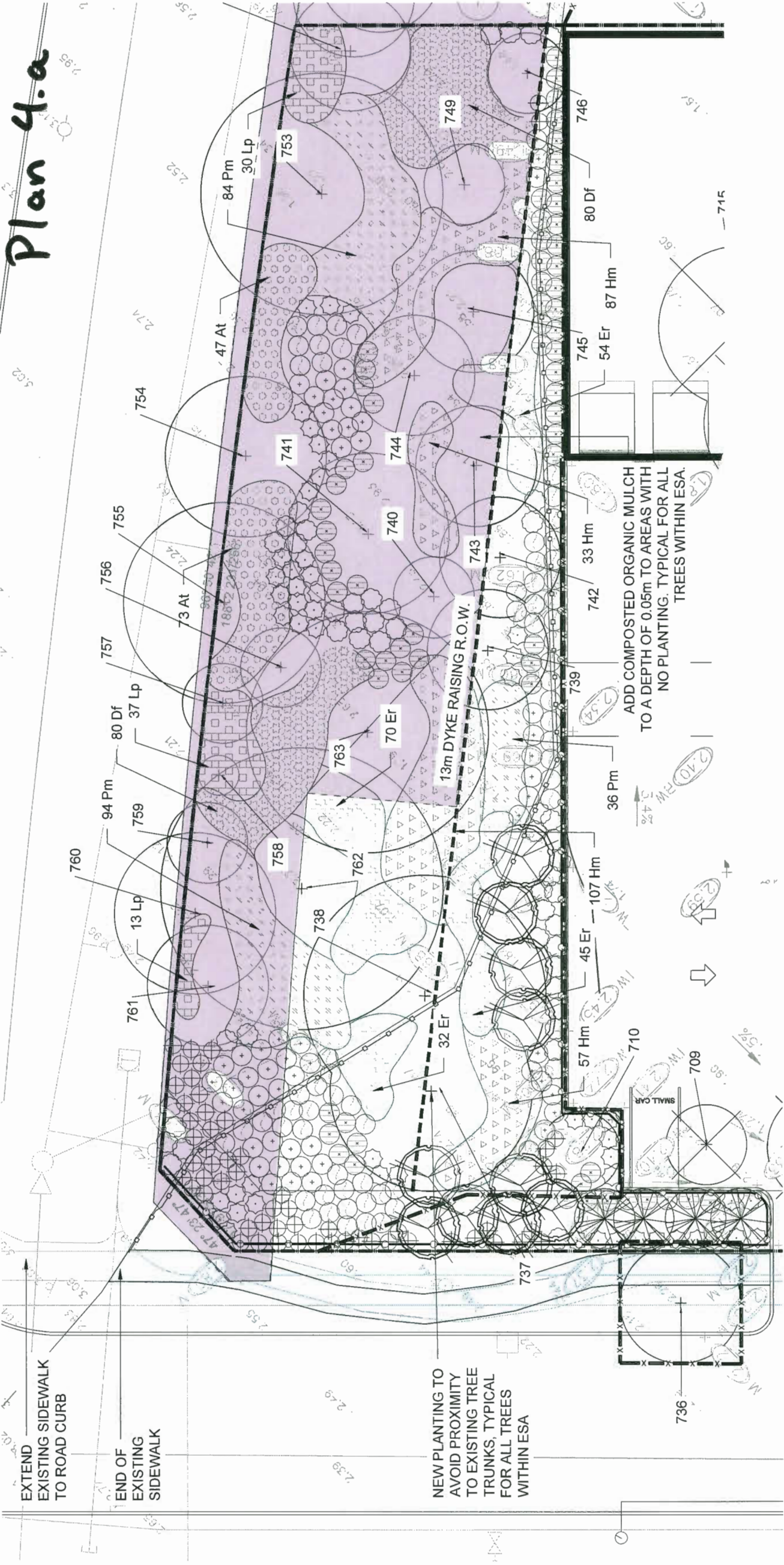
GENERAL NOTES

















- EXAMINE SITE AND CONFIRM EXISTING SITE CONDITIONS BEFORE BIDDING.
- CONFIRM ALL MEASUREMENTS ON SITE. DO NOT SCALE DRAWINGS.
- CONFIRM EXISTING AND PROPOSED GRADES PRIOR TO BEGINNING CONSTRUCTION WORKS.
- CONFIRM MUNICIPAL REQUIREMENTS FOR BUILDING PERMITS, SETBACKS, BUILDING CODE WORKS, AND OTHER BY-LAW REQUIREMENTS. OBTAIN REQUIRED PERMITS PRIOR TO BEGINNING CONSTRUCTION WORKS.
- OBTAIN UTILITY AND SERVICES LOCATES PRIOR TO BEGINNING CONSTRUCTION WORKS.
- PROTECT FROM DAMAGE ALL EXISTING STRUCTURES, TREES, SURFACES, SITE FURNISHINGS, UNDERGROUND SERVICES AND OTHER EXISTING ELEMENTS THAT EITHER REMAIN ON SITE, ARE PART OF THE SITE ACCESS OR ARE ADJACENT TO THE SITE. PERFORM REPAIR AND MAKE GOOD WORKS FOR ANY DAMAGE THAT IS CAUSED BY THE CONTRACTOR'S WORK AT THE CONTRACTOR'S OWN EXPENSE.
- UNLESS OTHERWISE SPECIFIED, CONTRACTOR SHALL GUARANTEE ALL WORKS AND MATERIALS FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM THE DATE OF COMPLETION OF THE WORKS. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS THAT ARE IN POOR CONDITION WITHIN TWO WEEKS OF INSPECTION OR NOTIFICATION.
- THE CONTRACTOR SHALL MAINTAIN THE SITE IN GOOD WORKING ORDER WITH A CLEAN AND ORDERED APPEARANCE DURING THE PERIOD OF WORKS. PEST TRAIL, PUBLIC AND ROAD AREAS ARE TO BE SWEEP AT THE END OF EACH DAY AND KEPT FREE OF DEBRIS. LANDSCAPE DEBRIS IS TO BE DISPOSED OFF SITE AT LEGAL AND APPROVED LOCATIONS.

SEP 23 2019

DP 18-820689





PLANT LIST NORTHERN E.S.A.						
SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION
CONIFEROUS TREES						
	2	Tuja plicata	Western Red Cedar	5m ht. or 9cm Cal.	2m	W.B. or Pot
	2	Tuja plicata	Western Red Cedar	5.5m ht. or 10cm Cal.	2m	W.B. or Pot
	6	Pseudotsuga menziesii	Douglas Fir	5.5m ht. or 10cm Cal.	2m	W.B. or Pot
	4	Pseudotsuga menziesii	Douglas Fir	6m ht. or 11cm Cal.	2m	W.B. or Pot
SHRUBS						
	54	Gaultheria shallon	Salal	30cm ht.	1m	#2 Pot
	67	Mahonia nervosa	Dull Oregon-Grape	40cm ht.	1m	#2 Pot
	47	Rosa gymnocarpa	Baldhip Rose	50cm ht.	1m	#3 Pot
	55	Holdsopus discolor	Oceanspray	50cm ht.	1m	#3 Pot
	58	Rubus spectabilis	Salmonberry	40cm ht.	1m	#2 Pot
	64	Symphoricarpos albus	Common Snowberry	40cm ht.	1m	#2 Pot
PERENNIALS						
	120	Achlys triphylla	Vanilla Leaf	1 Gallon		Potted
	160	Dicentra formosa	Pacific Bleeding Heart	1 Gallon		Potted
	214	Polystichum munitum	Sword Fern	1 Gallon		Potted
	284	Heuchera micrantha	Small-Flowered Alumroot	1 Gallon		Potted
	60	Lupinus polyphylus	Large Leaved Lupine	1 Gallon		Potted
	201	Erythronium revolutum	Pink Fawn Lily	1 Gallon		Potted

NEW TREE PLANTING NOTES IN E.S.A.

NEW TREE PLANTING IS PROPOSED IN THE ENVIRONMENTALLY SENSITIVE AREA (E.S.A.) SHOWN ON THIS PLAN BY AQUATERRA ENVIRONMENTAL LTD. IN THEIR REPORT DATED APRIL 6, 2018.

25 NEW TREES ARE PROPOSED IN THE E.S.A. COMPENSATION AREA ON THE SOUTH SIDE OF THE ROAD. THESE TREES WERE REMOVED IN THE E.S.A. TREES TO BE REMOVED WITHIN THE E.S.A. ARE TO BE REPLACED WITHIN THE E.S.A. WITHIN THE SAME SPECIES AND SIZE CLASS AS THE TREES REMOVED. TREES TO BE REPLACED WITHIN THE E.S.A. ARE TO BE REPLACED WITHIN THE SAME SPECIES AND SIZE CLASS AS THE TREES REMOVED. TREES TO BE REPLACED WITHIN THE E.S.A. ARE TO BE REPLACED WITHIN THE SAME SPECIES AND SIZE CLASS AS THE TREES REMOVED.

1. NEW TREES ARE TO BE OFFSET FROM BUILDING A MINIMUM OF 4m, FROM PROPERTY LINE 1.5m, NOT PLANTED IN A HEALTHY STATE.

2. TREE LOCATIONS, NUMBERS AND SPECIES ARE TO BE AS PER THE PLANT LIST ON L1.

3. NEW TREE PLANTING LOCATIONS ARE TO BE MARKED ON SITE BY THE ANNOTATOR PRIOR TO PLANTING TO FORM-FIT THEM AROUND EXISTING TREES AND VEGETATION.

4. NEW TREES ARE TO BE CARED FOR WITH REGULAR WATERING UNTIL THEY ARE ESTABLISHED AND GROWING IN A HEALTHY STATE.

5. NEW TREES ARE TO BE PLANTED USING OUR TREE PLANTING DETAIL WITH CHANGES AS FOLLOWS: STAKES ARE NOT REQUIRED AND PROTECTIVE GUARDS ARE TO BE ADDED.

6. 75cm OF COMPOSTED ORGANIC MULCH IS TO BE ADDED WITHIN THE TREE CANOPY AREAS WHERE THE ROOTS WILL BE AFFECTED BY BUILDING FOOTING AND PAVING WORKS ADJACENT TO THE E.S.A.

E.S.A. HABITAT MANAGEMENT:

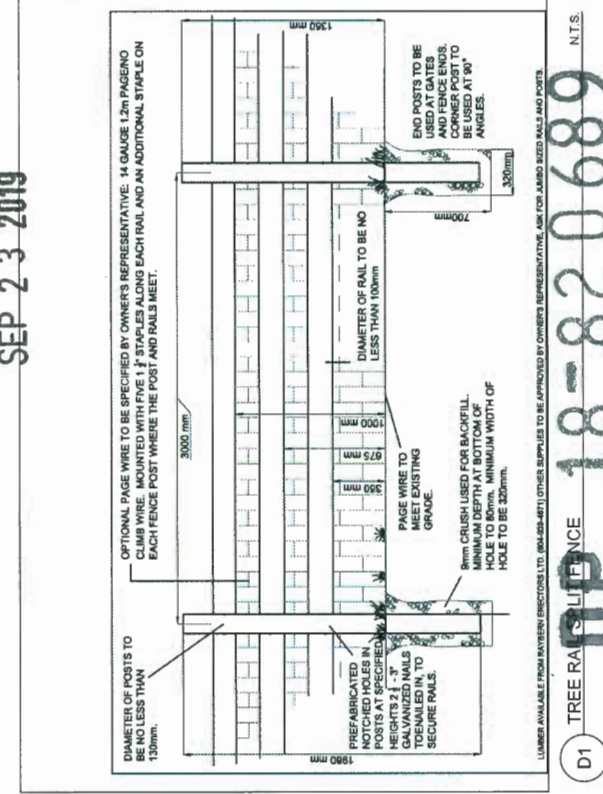
HABITAT MANAGEMENT IS PROPOSED IN THE E.S.A. BY AQUATERRA ENVIRONMENTAL LTD. IN THEIR REPORT DATED APRIL 6, 2018.

1. HABITAT MANAGEMENT IS TO BE UNDERTAKEN THROUGH THE REMOVAL AND DISPOSAL OF INVASIVE SPECIES DURING PROJECT CONSTRUCTION. THE METHODS ARE TO BE UNDERTAKEN IN CONSULTATION WITH THE INVASIVE PLANT COUNCIL OF BC AND/OR THE FRASER VALLEY INVASIVE PLANT COUNCIL. SPECIFICALLY, THE INVASIVE SPECIES RHIZANTHUS BLACKBERRY WAS FOUND WITHIN THE E.S.A. AREAS.

2. THE HEALTH OF THE NEW TREES PLANTING WITHIN THE E.S.A. ARE TO BE MONITORED ANNUALLY FOR SURVIVAL. WE RECOMMEND THE MONITORING TO BE UNDERTAKEN FOR A PERIOD OF 3 YEARS. TREES THAT HAVE NOT SURVIVED ARE TO BE REPLACED AND THEN MONITORED FOR THREE YEARS FOLLOWING ESTABLISHMENT AND GROWING IN A HEALTHY STATE.

3. DO NOT REMOVE OR ALTER VEGETATION DURING THE TYPICAL SENSITIVE PERIOD BEGINNING BETWEEN MARCH 15 AND AUGUST 15. CHECK THE CANADIAN WILDLIFE SERVICE WEBSITE FOR UPDATES BEFORE BEGINNING WORKS.

4. FOR TREE CLEARING WITHIN THE JOB SITE, A QUALIFIED ENVIRONMENTAL PROFESSIONAL SHOULD ASSESS THE SITE PRIOR TO BEGINNING ANY TREE CLEARING WORKS WITHIN THE SENSITIVE PERIOD. TO ENSURE THAT THE SITE IS NOT AFFECTED BY BUILDING FOOTING AND PAVING WORKS ADJACENT TO THE E.S.A. AND TO ESTABLISH BUFFER ZONES FOR ACTIVE NESTS AND SPECIALLY RARE TREES.



Krahn
GROUP OF COMPANIES

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KOPanning
LTD.

LEGEND

- TURF GRASS
- CONCRETE SIDEWALK PAVING
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- SPLIT RAIL FENCE
- TREE PROTECTION FENCING
- SILT FENCING

ISSUES & REVISIONS

NO.	DATE (BY)	DESCRIPTION
1	05/04/2018	ISSUED FOR REVIEW
2	25/04/2018	ISSUED FOR DP
3	09/10/2018	ISSUED FOR REVIEW
4	19/11/2018	ISSUED FOR REVIEW
5	20/11/2018	ISSUED FOR REVIEW
6	28/11/2018	ISSUED FOR REVIEW
7	08/03/2019	ISSUED FOR PRICING REVIEW
8	08/04/2019	ISSUED FOR PRICING REVIEW
9	17/04/2019	ISSUED FOR RE-OP
10	17/04/2019	ISSUED FOR RE-OP
11	14/06/2019	ISSUED FOR RE-OP
12	12/07/2019	ISSUED FOR RE-OP
13	23/09/2019	ISSUED FOR RE-OP

SEAL

B.C.S.L.A. #565

PROJECT NAME

OPEN WINDOWS

PROJECT ADDRESS

1600 SAVAGE ROAD
RICHMOND, BC

DRAWING TITLE

E.S.A. PLANTING
PLAN

SCALE

1:100

DRAWN

PM

CHECKED

ST

PROJECT NO.

180654

DRAWING NO.

L2

