



District of West Vancouver

Development Permit No. 22-009

CURRENT OWNERS: RONALD BLAIR & JANE MARIE ORSER AND TONY & DINA
LOUISE SPAGNUOLO
of 4363 MORGAN CRESCENT

THIS DEVELOPMENT PERMIT APPLIES TO:

CIVIC ADDRESS: 4363 MORGAN CRESCENT

LEGAL DESCRIPTION: 003-532-526
(LOT A BLOCK 13 DISTRICT LOT 582 PLAN 10954)
(the "LANDS")

1.0 This Development Permit:

- (a) imposes requirements and conditions for the development of the Lands, which are designated by the Official Community Plan as a Development Permit Area to protect and enhance watercourses within the Existing Neighbourhoods, in accordance with the Guidelines NE13 specified in the Official Community Plan; and
- (b) is issued subject to the Owner's compliance with all of the Bylaws of the District applicable to the Lands, except as specifically varied or supplemented by this Permit.

2.0 The following requirements and conditions shall apply to the Lands:

- 2.1 Zoning Bylaw No. 4662, 2010, as amended, shall be varied to allow the variances as shown in **Schedule A**.
- 2.2 Existing structures to be removed and Riparian Planting Plan to be installed as per **Schedule B**.
- 2.3 Prior to any site clearing, rock removal, grubbing, stripping, shrub or tree removal, re-contouring or construction on the Lands, sediment and erosion control works shall be installed in accordance with **Schedule B** attached hereto and approved on-site by the Environmental Protection Officer.
- 2.4 The sediment and erosion control works shown on **Schedule B** shall be removed only upon written approval by the Environmental Protection Officer.
- 2.5 Section 512 of the Local Government Act must be satisfied prior to approval of the subdivision.

3.0 Prior to Building Permit application and as security for the due and proper completion of the measures to preserve, protect, restore or enhance the

environment set forth in Section 2 of this Development Permit (the "Environmental Protection Measures"), the Owner shall:

- (a) provide security in the amount of \$5000.00 to the District in the form of cash or an unconditional, irrevocable auto-renewing letter of credit issued by a Canadian chartered bank or credit union; and
- (b) maintain the security for a minimum of one year after completion of the Environmental Protection Measures, and not prior to the date on which the District Environmental Protection Officer authorizes in writing the release of the security.

4.0 Prior to final occupancy the applicant must submit documentation demonstrating that the "as-built" development complies with all requirements of this development permit. Any variations must be clearly identified with a rationale and explanation noting that planning staff review and approval may be needed for variations prior to final occupancy.

5.0 This Development Permit lapses if the work authorized herein is not commenced within 24 months of the date this permit is approved.

THE DIRECTOR OF PLANNING & DEVELOPMENT SERVICES APPROVED
THIS PERMIT ON March 9, 2023.



DIRECTOR OF PLANNING & DEVELOPMENT SERVICES

THE REQUIREMENTS AND CONDITIONS UPON WHICH THIS PERMIT IS ISSUED
ARE ACKNOWLEDGED AND AGREED TO BY THE CURRENT OWNER. IT IS
UNDERSTOOD:

- THAT OTHER PERMITS / APPROVALS MAY BE REQUIRED INCLUDING PERMITS / APPROVALS FOR BUILDING CONSTRUCTION, SOIL AND ROCK REMOVAL OR DEPOSIT, BOULEVARD WORKS, AND SUBDIVISION; AND
- THE DEVELOPMENT MUST ATTAIN REQUIREMENTS OF THE BC BUILDING CODE AND ANY VARIANCES TO THE ZONING BYLAW ARE THE RESPONSIBILITY OF THE OWNER AND MUST BE RECTIFIED AT THE BUILDING PERMIT STAGE.

FOR THE PURPOSES OF SECTION 5.0, THIS PERMIT IS APPROVED ON

March 9, 2023.

Schedules:

- A - Proposed Subdivision Plan dated October 21, 2022
- B - Riparian Planting Plan as per Figure 2 and Sediment and Erosion Control Measures as per Figure 4 in the EDP Report prepared by Sartori Environmental Inc. dated December 22, 2022

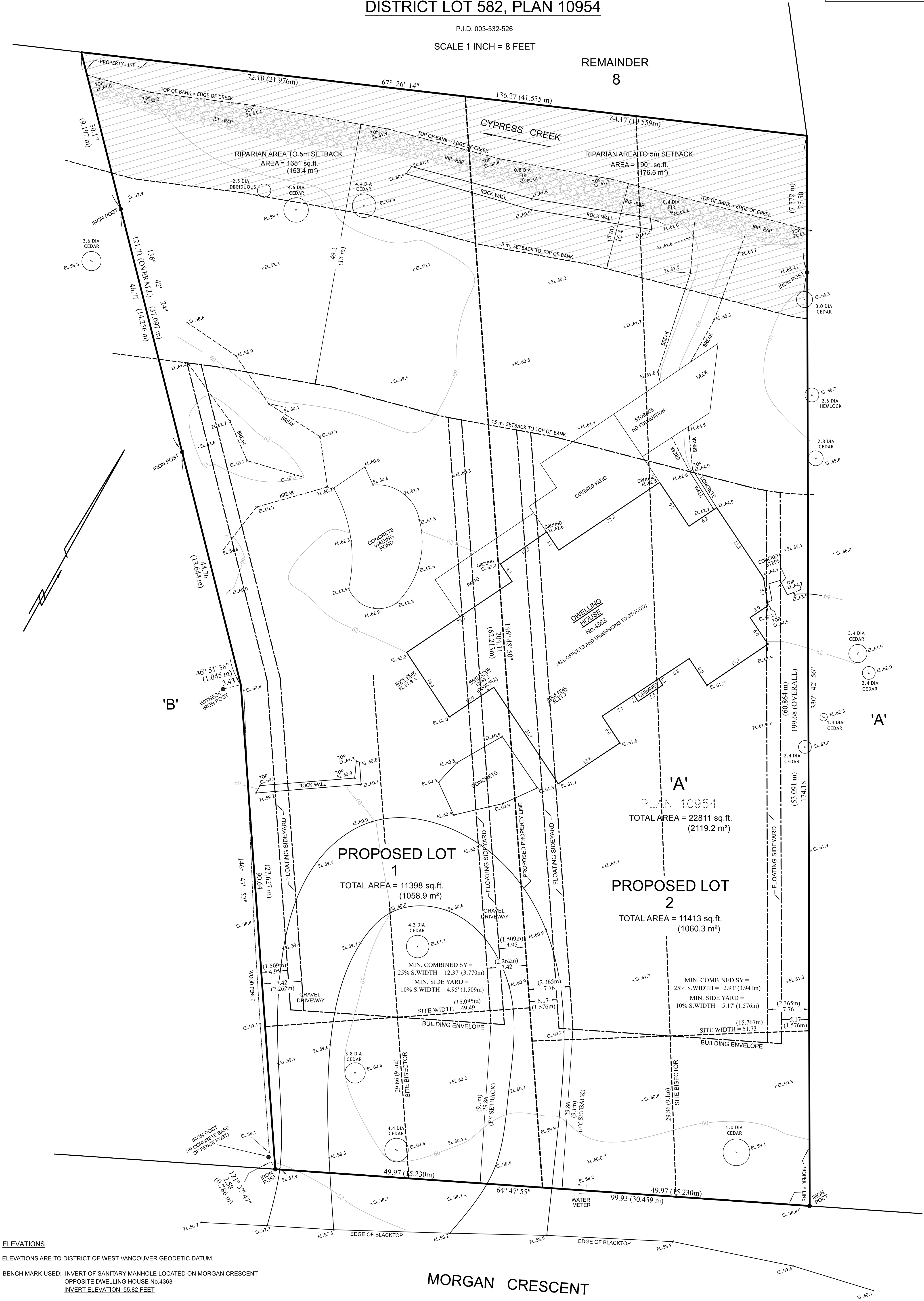
TOPOGRAPHIC SURVEY PLAN OF LOT 'A', BLOCK 13,
DISTRICT LOT 582, PLAN 10954

SCHEDULE A

P.I.D. 003-532-526

SCALE 1 INCH = 8 FEET

REMAINDER
8



ELEVATIONS

ELEVATIONS ARE TO DISTRICT OF WEST VANCOUVER GEODETIC DATUM.

BENCH MARK USED: INVERT OF SANITARY MANHOLE LOCATED ON MORGAN CRESCENT
OPPOSITE DWELLING HOUSE No.4363
INVERT ELEVATION 55.82 FEET

BENCH MARK SET: TOP OF ARROW HEAD NUT ON FIRE HYDRANT LOCATED ON MORGAN
CRESCENT OPPOSITE DWELLING HOUSE No.4363
ELEVATION 59.24 FEET

REVISIONS

REVISED PROPERTY LINES AND ADDED POSTING JUNE 8, 2016. FB: 2565 p.21 - 23
REINSPECTED AND ADDED COVERED PATIO AND STORAGE APRIL 9, 2021. FB: 2604 p.143
REINSPECTED AND ADDED PROPOSED SUBDIVISION JUNE 29, 2022. FB: 2774 p.68
ADDED RIPARIAN AREA TO 5m SETBACK FROM TOP OF BANK (HATCHED AREA) JULY 13, 2022.
ADDED CONCRETE POND JULY 15, 2022. FB: 2774 p.69

CERTIFIED CORRECT THIS 14TH DAY OF MARCH, 2016

BUILDING ENVELOPE INFORMATION
ADDED THIS 21ST DAY OF OCTOBER, 2022.

MORGAN CRESCENT

BENCH MARK
TOP OF ARROW HEAD NUT
ON FIRE HYDRANT
ELEVATION 59.24 FEET

THIS DOCUMENT IS NOT VALID UNLESS
ORIGINALLY SIGNED AND SEALED

THIS PLAN IS THE COPYRIGHT PROPERTY
OF HOBBS, WINTER & MacDONALD.
UNAUTHORIZED USE OR REPRODUCTION
IS STRICTLY PROHIBITED

HOBBS, WINTER & MacDONALD,
B.C. LAND SURVEYORS,
113-828 HARBOURSIDE DRIVE,
NORTH VANCOUVER, B.C. V7P 3R9,
TEL 604-986-1371 FAX 604-986-5204
EMAIL: admin@hwm surveys.com

No.4363 MORGAN CRESCENT
FB.2565 p.3-15 M 3244-10-G' WV

Environmental Development Permit Application

December 22, 2022

Stephanie Louie
Environmental Protection Officer
District of West Vancouver
750 – 17th St.
West Vancouver, B.C.
V7V 3T3

Re: Proposed Subdivision (two lots) at 4363 Morgan Crescent, West Vancouver

INTRODUCTION

Sartori Environmental Inc. (SEI) has been retained by the owners of 4363 Morgan Crescent, West Vancouver (the Subject Property) to assess the environmental implications of subdividing a single family residential property situated within the environmental setbacks of Cypress Creek. This report and attached drawings form part of the District of West Vancouver's (DWV) Environmental Development Permit (EDP) application, which is required for development within 15 m of a watercourse according to DWV *Watercourse Protection (2015)* guidelines. The DWV *Watercourse Protection (2015)* guidelines restrict development between 0 m and 5 m, and 5 m and 15 m from Top of Bank (ToB) of a watercourse; herein called the 5-m and 15-m Setbacks, respectively.

EXISTING CONDITIONS

Subject Property

SEI visited the Subject Property on December 5, 2022. The Subject Property is 2,118 m² in size and currently contains one single-family dwelling, with attached patio and storage shed (no foundation), and periphery structures including a concrete water feature, rock walls, and a wooden platform. The dwelling is located near the center of the property and is connected to Morgan Crescent to the south via gravel driveway. Bordering the property to the east, west, and north are other single family residence and to the south is a school. Cypress Creek is located along the north property line, overlapping the Subject Property, and flowing in a general southwest direction. Located within the 15-m Setback of Cypress Creek is the patio and storage shed, attached to the dwelling, and within the 5-m Setback are three rock walls and a wooden platform. As the wooden platform and two of the smaller rock walls are not surveyed, SEI estimates their footprint and position in **Figure 1**.

Aquatic/Instream Conditions

Cypress Creek (Watershed Code: 900-073500) flows as an open channel near the Subject Property, passing through only one culvert under Marine Drive before its confluence with Burrard Inlet, approximately 500 m downstream of the Subject Property. This section of Cypress Creek is characterized by boulder, cobble and gravel substrate, with an average bankfull width of approximately 10 m and an approximate channel gradient of 3%. Large woody debris is deposited in a large bunch on the edge of the property along the bank. Cypress Creek has been channelized in this area evidenced by the straight nature of the Top of Bank, which consists of a line of large boulders transitioning into flat lawn surface. Cypress Creek has a total stream length of 9.0 km, a stream order of three, and a stream magnitude of six. A review of the Fish Inventory Data Queries and Habitat Wizard databases¹ for Cypress Creek was conducted and confirms fish presence, the results of which are in Table 1 below.

Table 1: BC Ministry of Environment *Fish Inventory Data Queries* database results of recorded species observations in Cypress Creek (information retrieved on 14-Dec-2022).

Common Name	Scientific Name	Observation Date
Cutthroat Trout	<i>Oncorhynchus clarkii</i>	Jul 30, 2015
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	Jul 30, 2015
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Jul 30, 2015
Coho Salmon	<i>Oncorhynchus kisutch</i>	Jul 30, 2015
Coastrange Sculpin	<i>Cottus aleuticus</i>	Jul 30, 2015
Prickly Sculpin	<i>Cottus asper</i>	Jul 30, 2015

A review of DWV Westmap was conducted in the area near the Subject Property and does not identify any other sensitive environmental features.

Riparian Conditions

Riparian vegetation above the Top of Bank mostly contains lawn, with sporadic native shrubs and native trees, and a few non-native and/or invasive plants. Below the Top of Bank and near the east property line, SEI identified sword fern (*Polystichum munitum*), deer fern (*Struthiopteris spicant*) and salmonberry (*Rubus spectabilis*). Native trees within the 15-m Setback include western redcedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), red alder (*Alnus rubra*) and bigleaf maple (*Acer macrophyllum*). Invasive species present include English ivy (*Hedera helix*), mainly growing along trees, and cherry laurel (*Prunus laurocerasus*) along the west property line.

¹ <http://maps.gov.bc.ca/ess/hm/habwiz/> (accessed: December 14, 2022)

PROPOSED DEVELOPMENT

This report contemplates a proposed subdivision of the Subject Property into two lots. The conceptual layout for the subdivision is provided in **Figure 1**. The layout splits the Subject Property approximately in half, east and west, providing access for both lots off Morgan Crescent. Building envelopes proposed for each lot have a northern limit of the 15-m Setback. As part of this application, demolition of the existing dwelling and periphery structures are proposed. The only structure proposed to remain is the surveyed rock wall, adjacent to the Top of Bank, as its demolition may impact the stability of the Top of Bank. The rock wall does not interfere with riparian processes (i.e. hydrologic).

A Riparian Restoration Plan (**Figure 2**) and Invasive Species Management Plan (**Figure 3**) are outlined for future construction, however, implementation is not proposed until the construction of the new dwellings is taking place.

No trees within the 15-m Setback are proposed for removal as part of this EDP. Future construction taking place within the building envelope should be able to be completed without impacting trees within the 15-m Setback (assuming proper mitigation measures) as there is only minor overlap of the building envelope with any critical root zones (CRZ; assuming a 6x DBH zone around trees). Tree #10 as identified by the Arborist Report (Talus, December 19, 2022) would have a 5 m radius CRZ and is located 3.5 m from the building envelope of the eastern lot. This is the only tree with an overlapping CRZ of the building envelope within the 15-m Setback. This report does not contemplate the possible removal of trees outside the 15-m Setback.

HABITAT BALANCE

Habitat gains and impacts between Cypress Creek and the 15-m Setback resulting from proposed demolition were calculated using AutoCAD and are presented in Table 2 below and in Figure 1: Habitat Balance & Site Plan.

Table 2: Habitat Balance calculation.

Habitat Impacts:	
ToB → 15-m Setback:	
Building envelopes entirely outside the setbacks	0 m ²
Habitat Gains:	
ToB → 5-m Setback:	
Wooden platform removal	+ 19 m ²
5-m → 15-m Setback:	
Patio and storage shed removal	+ 22 m ²
Net Habitat Gain:	+ 41 m²



RIPARIAN RESTORATION

Riparian restoration is prescribed within the 5-m Setback of both new lots, beginning from the large boulders and rocks of the Top of Bank and rock wall and extending to the 5-m Setback as outlined in **Figure 2**. Suitable native riparian plant species will be planted for a minimum total Riparian Restoration Area of 120 m². A total of three conifers and twelve deciduous trees are proposed to be planted within this area, with the rest of the area to be densely planted with shrubs. The replanted vegetative buffer will help increase delineation of the riparian area, help prevent encroachment, provide additional habitat for local flora and fauna, and provide higher quality food and nutrients to downstream reaches.

Invasive species identified within the Invasive Species Management Areas (see **Figure 3**), including English ivy and cherry laurel are proposed to be removed and disposed of according to best management practices prior to riparian planting. Material import and export activities to and from the Subject Property will implement invasive species best management practices to prevent the spread and proliferation of invasive species. Invasive species must be controlled and managed to ensure success of the Riparian Restoration Plan.

Additionally, all area between the 5-m Setback and 15-m Setback is identified as Riparian Landscape Area and should be maintained as vegetated area. During the construction phase of the new lots, a landscape plan should be prepared and approved of by the District for all area within the 15-m Setback. Any non-native vegetation and hard surfaces proposed within the Riparian Landscape Area is subject to approval by the District. SEI recommends that each lot may have up to 20 m² of hard surface in the Riparian Landscape Area, which would maintain an overall positive net habitat balance and SEI recommends that new hard surfaces should remain at least 10 m away from Top of Bank (existing structures to be removed are located at 2 m and 7.5 m at their closest point). Both recommendations are subject to the approval of the District.

CONSTRUCTION ENVIRONMENTAL MITIGATION MEASURES

Tree Protection

As per DWV Tree Bylaw No. 4892, 2016, tree protection fencing, and signage must be installed as specified below and maintained to prevent damage to trees or their root systems during construction activities. Fencing should be constructed around any trees that are to be retained, and if practicable located beyond the Critical Root Zones (CRZs) of trees. CRZs, or Protection Zones as per Schedule A – Tree Protection Specifications of DWV's Tree Bylaw, indicates a minimum fence distance from the tree of six times DBH.

As access to the dwelling for demolition is likely to cross CRZs, alterations from required tree protection measures must be completed under the direction of a certified Arborist, and tree protection measures should be inspected and approved prior to the commencement of development works. No ground disturbance (e.g. excavation, backfilling, compaction, etc.) or changes in grade from existing in the CRZs should occur unless previously assessed by a certified Arborist.



General Environmental Mitigation Measures

An Erosion and Sediment Control (ESC) Plan has been prepared and attached as **Figure 4**. An appropriately qualified ESC Supervisor must be engaged prior to demolition to monitor compliance with the approved ESC Plan and the DWV Watercourse Protection Bylaw 4364, 2005. As a DWV requirement, ESC inspections are required, as per the following schedule:

- Biweekly inspections 1 June – 30 September (dry season);
- Weekly inspections 1 October – 31 May (wet season); and
- As required during or immediately following precipitation events exceeding 20 mm within 24 hours.

It is the responsibility of the owner and/or developer to contact their ESC Supervisor prior to commencing ground disturbance activities. It is recommended that a pre-construction meeting be held to ensure that contractors are aware of the ESC requirements.

The following general environmental mitigation measures shall be implemented during demolition and construction:

- stockpiles of excavated material will be consolidated, bucket-packed, and covered with polyethylene sheeting ("poly") to minimize erosion;
- machinery access and truck loading will be limited to the rock/gravel or paved access only (existing driveway);
- street cleaning will be conducted if any sediment is tracked out on to paved surfaces;
- catch basin protection (e.g., filter socks) will be installed on adjacent catch basins and maintained regularly;
- all imported material will be clean and/or free of contamination;
- a spill kit will be kept on site throughout the duration of the works;
- equipment containing petroleum products will be inspected daily to identify any leaks and wearing parts before they fail;
- leaking equipment or wearing parts will be repaired/replaced before continuing service;
- refuelling of equipment and storage of petroleum products will occur as far away from catch basins and watercourses, as practical; and
- perimeter control along the bank of Cypress Creek should be installed as per Figure 4



CONCLUSIONS

In the opinion of SEI, the proposed subdivision of the Subject Property addresses the following DWV *Watercourse Protection* (2015) guidelines, as follows:

- *Locate development on portions of the site that are least environmentally sensitive*

The proposed subdivision commits building envelopes to not encroach the 15-m Setback.

- *Avoid net loss of riparian habitat within 15 m of the top of the watercourse bank or edge of the wetland*

The habitat balance for the proposed subdivision demonstrates a balance of 41 m². Future landscape plans should not be approved if they incorporate more than 20 m² of hard surfaces within the 15-m Setback.

- *Within 15 m of the top of the watercourse bank or edge of wetland, locate new buildings, structures and impervious/semi-impervious surfaces at least as far from the watercourse or wetland as any existing development*

Subdivision allows for all new structures to be located outside of the 15-m Setback.

- *Keep free of new buildings, structures, and impervious/semi-impervious surfaces the area within 5 m of the top of the watercourse bank or edge of the wetland*

No structures will be located within the 5-m Setback aside from an existing rock wall.

- *Enhance, and where feasible, restore watercourses in already developed areas to improve watercourse quality from uplands to inlets*

The implementation of the Riparian Planting Plan and Invasive Species Management Plan will serve to increase the buffering capacity between the Subject Property and Cypress Creek, provide additional habitat for local flora and fauna suited to native riparian conditions, and provide higher quality food and nutrients to downstream reaches.

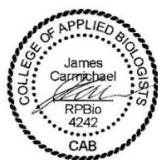
Please contact the undersigned if you require any additional information or clarification of the above.

ENDORSEMENT

Sartori Environmental Inc.

Authored and Endorsed by:

The undersigned certifies the work described herein fulfills standards acceptable of a Professional Biologist.



[Digital Copy, Original Signed]

James Carmichael, RPBio



Attachments:

- **Figure 1: Habitat Balance (2022-12-22; Rev00)**
- **Figure 2: Riparian Restoration Plan (2022-12-22; Rev00)**
- **Figure 3: Invasive Species Management & Riparian Planting Details (2022-12-22; Rev00)**
- **Figure 4: Erosion and Sediment Control Plan (2022-12-22; Rev00)**



PHOTOGRAPHIC DOCUMENTATION



Photo 1. South view of dwelling from Top of Bank; wooden platform in foreground.

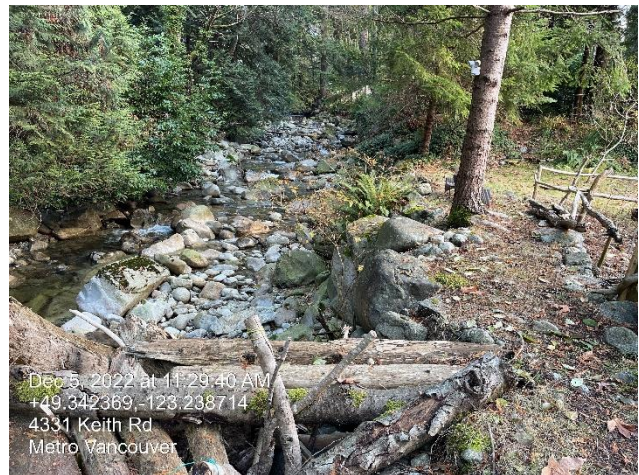


Photo 2. East view of Cypress Creek; retained rock wall pictured right.



Photo 3. West view along Top of bank; rock wall pictured bottom left corner running toward top right.



Photo 4. South view of wooden platform and rock wall in foreground.

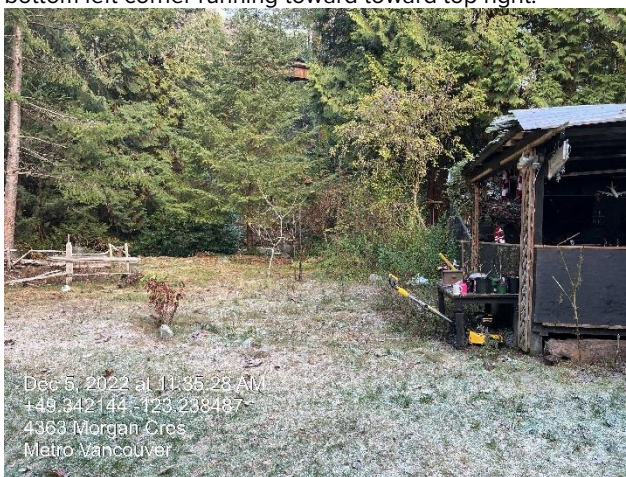
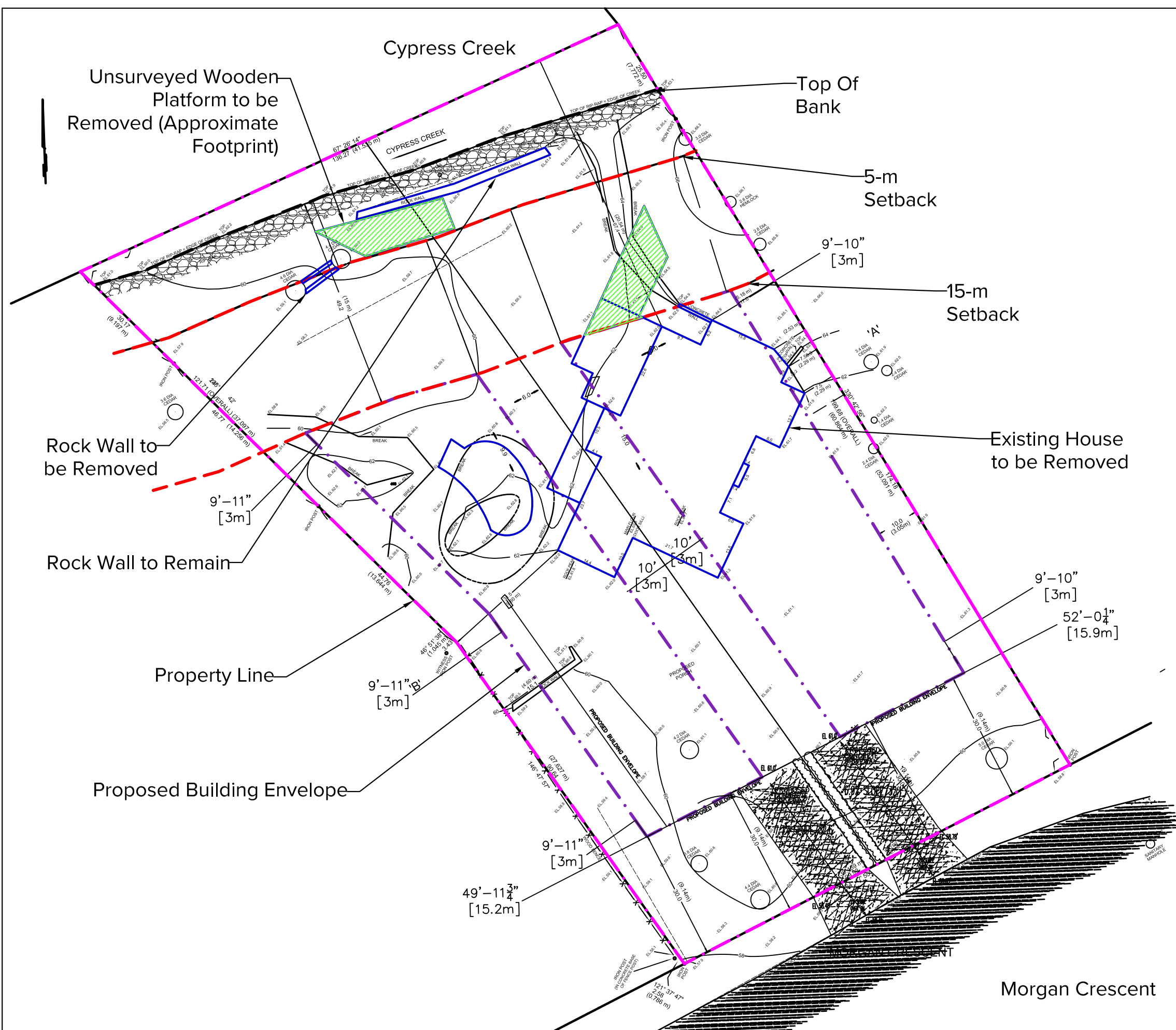


Photo 5. North view of back yard with patio pictured.

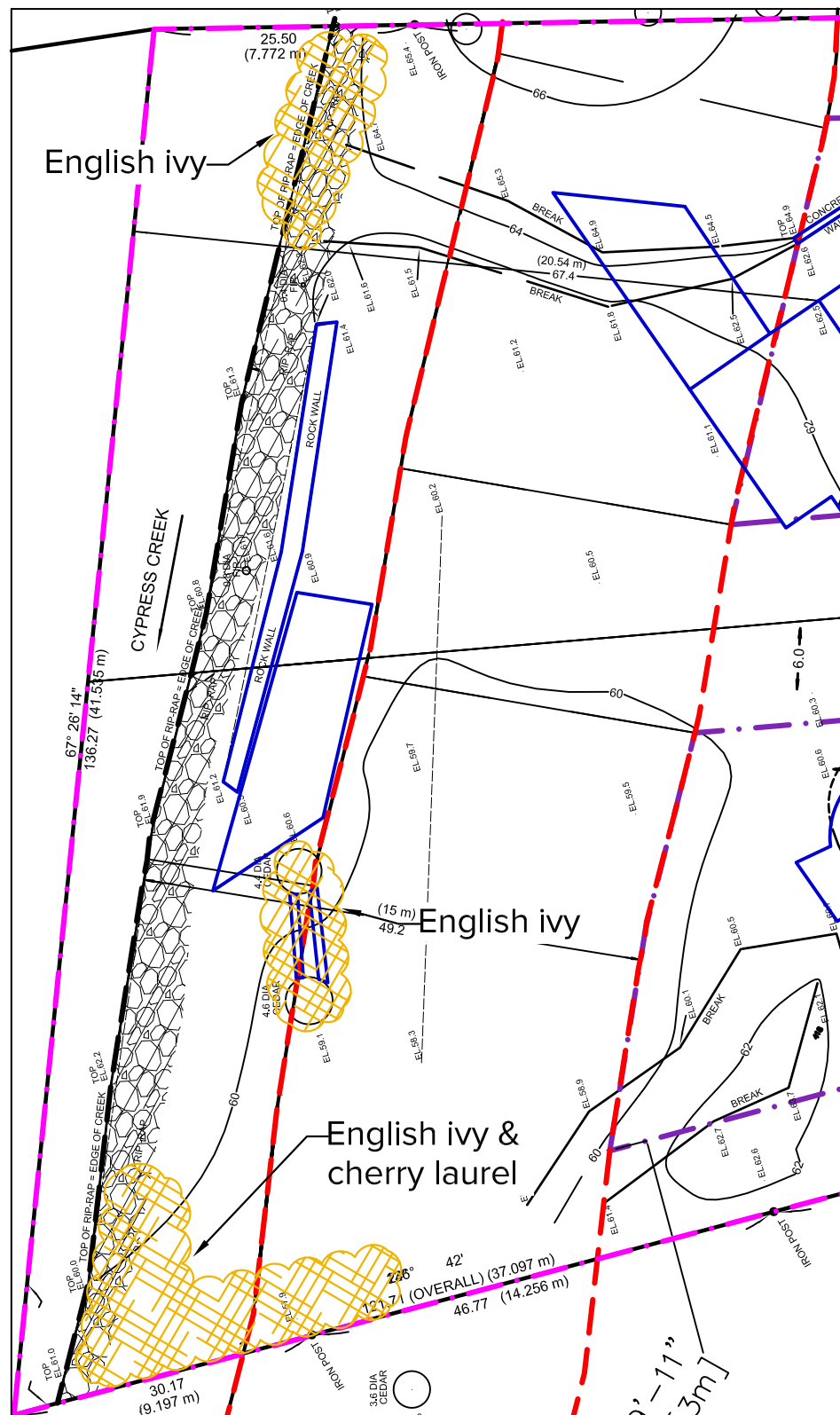


Photo 6. Unsurveyed rock walls between cedars pictured left; wooden platform area pictured on right.



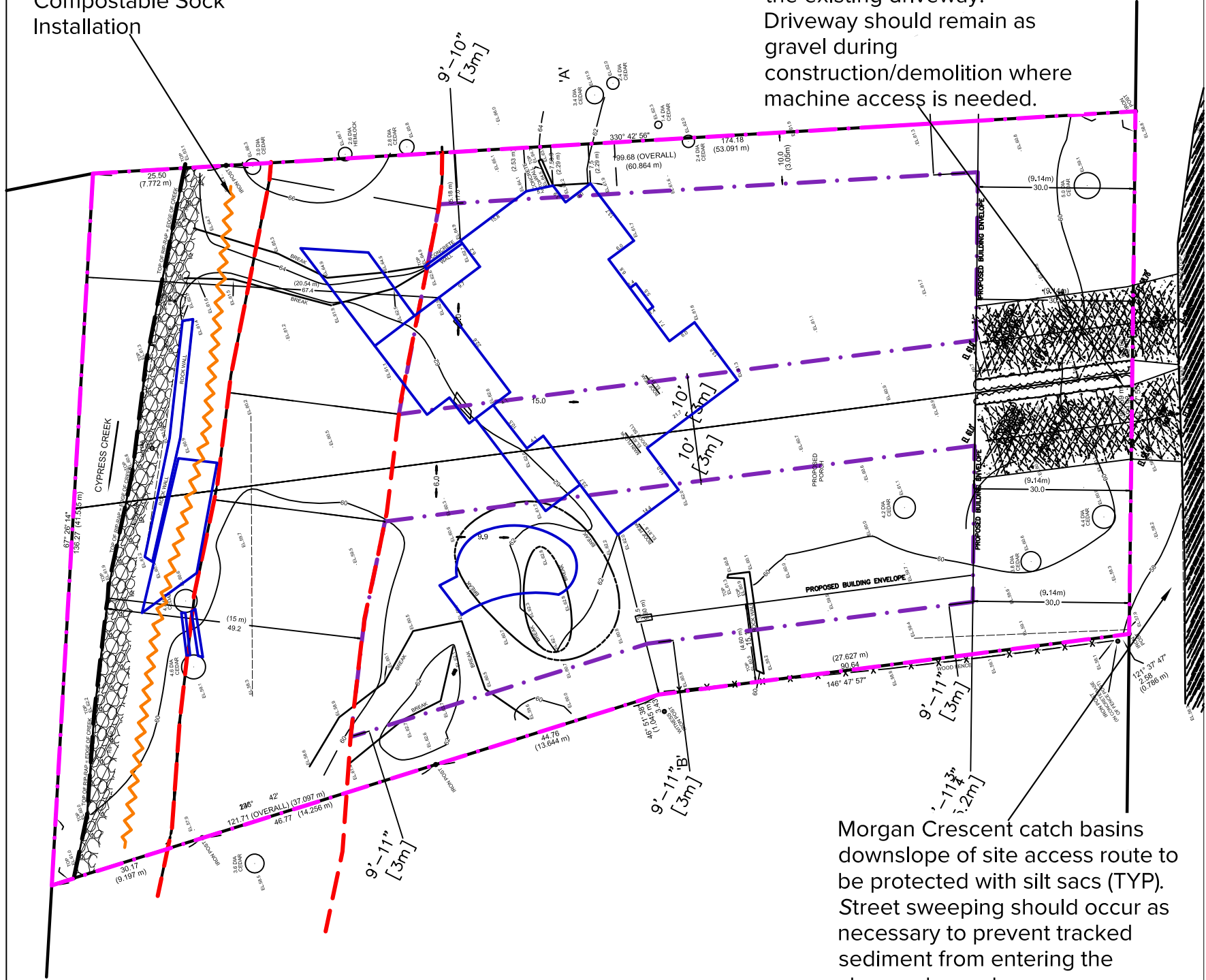
Habitat Balance Within 15 m Top of Bank		
<i>Habitat Gains:</i>		
0 → 5-m Setback:		
Removal of existing wooden platform		+ 19 m ²
<i>Habitat Gains:</i>		
5 → 15-m Setback:		
Removal of existing dwelling		+ 22 m ²
Net Habitat Gain		+ 41 m ²

- Property Line
- Proposed Bulding Envelopes
- Existing Structures
- Top of Bank (ToB)
- DWV Setbacks
- Habitat Gains
- Habitat Impacts



Silt Fence or Compostable Sock Installation

Access/egress route will be the existing driveway. Driveway should remain as gravel during construction/demolition where machine access is needed.



Morgan Crescent catch basins downslope of site access route to be protected with silt sacs (TYP). Street sweeping should occur as necessary to prevent tracked sediment from entering the stormwater system.

EEROSION & SEDIMENT CONTROL NOTES

1. THIS EROSION & SEDIMENT CONTROL (ESC) PLAN HAS BEEN PREPARED FOR **4363 MORGAN CRESCENT, WEST VANCOUVER**.
2. UNDER THIS ESC PLAN, IT IS THE RESPONSIBILITY OF THE OWNER, CONTRACTOR OR DEVELOPER TO ENSURE THAT ALL OF THE EROSION AND SEDIMENT CONTROL FACILITIES DESCRIBED UNDER THIS ESC PLAN ARE CONSTRUCTED, IMPLEMENTED, INSTALLED AND MAINTAINED FOR THE DURATION OF DEMOLITION, AND UNTIL REMOVAL/DECOMMISSIONING IS RECOMMENDED BY THE ESC SUPERVISOR (SEE ESC MONITORING SECTION BELOW).
3. THE CONSTRUCTION CONTRACTOR, AND ALL OTHER SUB-CONTRACTORS OR PERSONS INVOLVED WITH SITE DEMOLITION SHALL COMPLY WITH FEDERAL, PROVINCIAL AND MUNICIPAL LEGISLATION AND REGULATIONS PERTAINING TO THE PROTECTION OF FISH AND AQUATIC HABITAT AND EROSION AND SEDIMENT CONTROL, AND THE DISTRICT OF WEST VANCOUVER'S WATERCOURSE PROTECTION BYLAW NO. 4364, 2005 SCHEDULE A.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ANY SUB-CONTRACTORS TO ENSURE THAT WATER DISCHARGING FROM THE SITE SHALL NOT EXCEED THE WATER QUALITY STANDARD OF 75 MG/L FOR TOTAL SUSPENDED SOLIDS (TSS) FOLLOWING A SIGNIFICANT RAINFALL EVENT AND 25 MG/L DURING NORMAL WEATHER CONDITIONS. A SIGNIFICANT RAINFALL EVENT IS DEFINED AS A PRECIPITATION EVENT THAT MEETS OR EXCEEDS THE INTENSITY OF **20 MM OF TOTAL RAINFALL OVER A 24 HOUR PERIOD**.
5. DEPENDENT ON SITE CONDITIONS, WEATHER CONDITIONS, OR UNFORESEEN OBSTACLES DURING CONSTRUCTION ACTIVITIES, THE ESC MONITOR OR PROJECT MANAGER, AT THEIR DISCRETION, MAY RECOMMEND THAT ESC FACILITIES AND MITIGATION MEASURES BE ADDED TO THE SITE, OR RECOMMENDED ESC FACILITIES BE MODIFIED AS REQUIRED TO COMPLY WITH BYLAW NO. 4364. THE CONTRACTOR SHALL COMPLY WITH THE DIRECTIONS OF THE ESC MONITOR AND THE PROJECT MANAGER, AND SHALL ENSURE THAT ESC FACILITIES ARE CONSTRUCTED, IMPROVED, REPAIRED AND MAINTAINED AS A PRIORITY AHEAD OF ALL OTHER SITE CONSTRUCTION ACTIVITIES.
6. ADDITIONAL ESC RESOURCES ARE AVAILABLE IN SECTION 3.7.3 EROSION AND SEDIMENT CONTROL WITHIN DEVELOP WITH CARE (2014), SECTION 3 - SITE DEVELOPMENT AND MANAGEMENT (<http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/DWC-Section-3.pdf>).

EARTHWORKS & DEMOLITION

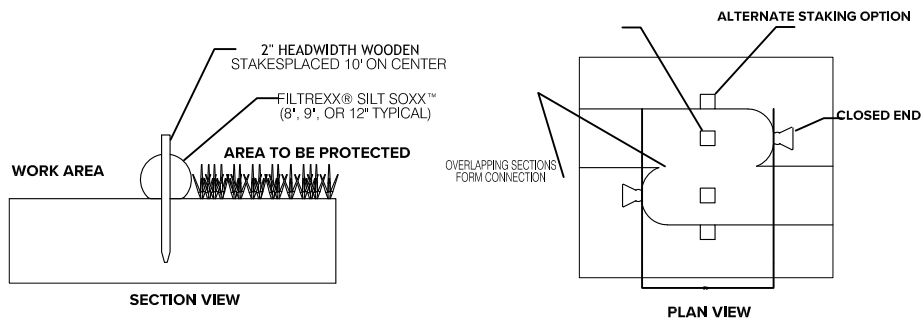
7. REFER TO THE ADJACENT SITE PLAN AND ATTACHED DETAILS FOR RECOMMENDED SITE-SPECIFIC ESC MEASURES. ALTERATIONS TO THE PLAN SHOULD BE IN CONSULTATION WITH THE APPROVED ESC SUPERVISOR.
8. COMPOSTABLE SOCKS SHOULD BE PLACED ON THE WEST PERIMETER OF THE PROPERTY TO MINIMIZE OFF SITE MIGRATION OF RUNOFF.
9. GROUND DISTURBANCE WORKS (I.E. USE OF AN EXCAVATOR) ARE TO BE CONDUCTED DURING FAVORABLE WEATHER TO MINIMIZE EROSION AND GENERATION OF SEDIMENT-LADEN DRAINAGE.
10. TRUCK AND VEHICLE ACCESS TO THE WORKS AREA IS TO BE CONFINED TO DRIVEWAY ACCESS FROM MORGAN CRESCENT TO PREVENT SEDIMENT TRACKING TO PUBLIC ROADS. THE EXISTING DRIVEWAY SHOULD REMAIN AS GRAVEL FOR THE DURATION OF DEMOLITION.
11. THE CONSTRUCTION CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING SEDIMENT FREE PUBLIC ROADS ADJACENT TO THE SITE THROUGH PERIODIC SWEEPING AND SCRAPING, AS REQUIRED.
12. ALL CATCH BASINS ADJACENT TO ACTIVE WORKS AND CONSTRUCTION ACCESS ROUTES ARE TO BE PROTECTED, AS REQUIRED, WITH CATCH BASIN PROTECTION DEVICES IF SEDIMENT DEPOSITION IS OBSERVED (DETAIL SHOWN).
13. NO SITE DRAINAGE IS TO FLOW DIRECTLY TO THE MUNICIPAL STORM SYSTEM OR CYPRESS CREEK, WITHOUT PRIOR TREATMENT (E.G. SEDIMENT CONTROL POND), AS NEEDED.
14. EXPOSED CUT AND/OR FILL SLOPES ARE TO BE COVERED WITH DENSE APPLICATION STRAW, COMPOSTABLE MATTING, STAKED-IN POLYETHYLENE SHEETING, OR EQUIVALENT TO PREVENT EROSION DURING POOR WEATHER.
15. STOCKPILES OF ERODABLE MATERIALS (E.G. EXCAVATION SPOIL, CLAYS, PIT RUN, TOPSOIL, ETC.) WILL BE COVERED WITH STAKED-IN POLYETHYLENE SHEETING OR EQUIVALENT WHEN NOT IN USE AND ALWAYS PRIOR TO AND DURING FORECASTED PRECIPITATION. NON-ERODABLE MATERIALS WILL BE STOCKPILED ON PAVED SURFACES.

ESC MONITORING PROGRAM

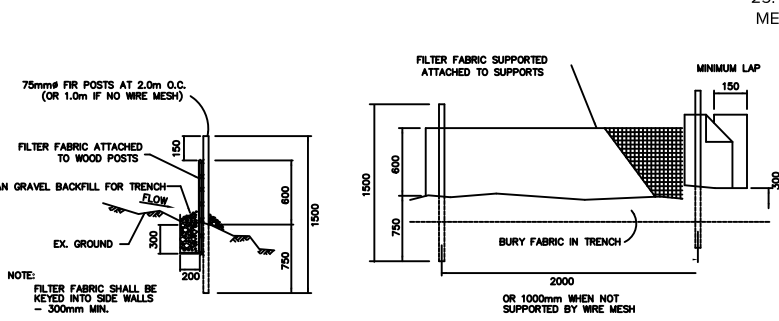
16. AN ESC SUPERVISOR WILL BE CONFIRMED PRIOR TO ISSUANCE OF THE ESC PERMIT THROUGH A CONFIRMATION OF COMMITMENT BY ESC SUPERVISOR. THE ESC MONITOR WILL IMPLEMENT THE FOLLOWING MONITORING SCHEDULE:
 - a. JUNE 1 UNTIL SEPTEMBER 30 - BIWEEKLY OR AS REQUIRED IF PRECIPITATION EXCEEDS 20MM IN 24HRS.
 - b. OCTOBER 1 UNTIL MAY 31 - WEEKLY OR AS REQUIRED IF PRECIPITATION EXCEEDS 20MM IN 24 HRS.
17. THE OWNER/DEVELOPER IS REQUIRED TO CONTACT THE CONFIRMED ESC SUPERVISOR BY EMAIL AT MINIMUM 72 HRS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO SET-UP A SITE KICK-OFF MEETING TO ENSURE AN UNDERSTANDING OF ESC PLAN REQUIREMENTS.
18. THE ESC MONITORING WILL CONTINUE UNTIL ALL SITE SURFACES ARE AT FINAL GRADE, STRUCTURES ARE DEMOLISHED/CONSTRUCTED, AND DISTURBED SURFACES ARE VEGETATED OR TO SUCH A TIME THAT THE ESC SUPERVISOR DETERMINES THAT FURTHER MONITORING IS NO LONGER REQUIRED AS CONSTRUCTION PROGRESS HAS REACHED FINAL STAGES AND THE RISK TO THE SURROUNDING ENVIRONMENT IS NEGLIGIBLE. THE ESC SUPERVISOR WILL PROVIDE THE DISTRICT OF WEST VANCOUVER'S ENVIRONMENTAL STAFF WITH CONFIRMATION VIA EMAIL THAT THE MONITORING PROGRAM HAS CEASED.
19. THE ESC SUPERVISOR WILL INSPECT AND MONITOR THE SITE TO ENSURE SEDIMENT AND SEDIMENT-LADEN WATER DOES NOT REACH THE MUNICIPAL DRAINAGE SYSTEM OR CYPRESS CREEK AND THAT THE ESC PLAN IS BEING IMPLEMENTED AS DESIGNED AND OPERATING EFFECTIVELY. IF ANY REPAIR OR MAINTENANCE OF ESC MATERIALS IS RECOMMENDED, THE CONTRACTOR IS RESPONSIBLE FOR COMPLETION OF THE MAINTENANCE/REPAIR IN A TIMELY MANNER.
20. AT THE DISCRETION OF THE ESC SUPERVISOR, TURBIDITY SAMPLING, MAY BE CONDUCTED DURING EACH SITE VISIT. IF ELEVATED TURBIDITY IS OBSERVED, A TSS WATER SAMPLE MAY BE COLLECTED AND SUBMITTED TO THE LABORATORY FOR ANALYSIS. LABORATORY ANALYSIS WILL BE MADE AVAILABLE UPON REQUEST.

TREE PROTECTION

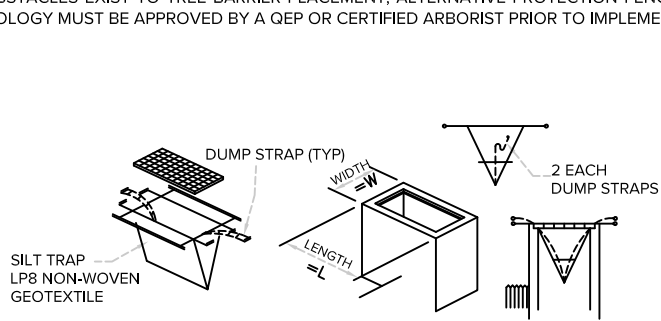
21. NATIVE TREES TO BE RETAINED THROUGH DEVELOPMENT SHOULD BE ADEQUATELY PROTECTED DURING CONSTRUCTION PHASES TO SATISFY REQUIREMENTS OF DISTRICT OF WEST VANCOUVER TREE BYLAW, NO. 4892, 2016. TREES MUST BE PROTECTED DURING ACTIVITIES (I.E., EXCAVATION, DEMOLITION, ETC.) THAT HAVE THE POTENTIAL TO IMPACT THE ABOVE GROUND OR ROOT STRUCTURE OF THE TREE. THE CRITICAL ROOT ZONE (CRZ) OF ANY TREE MAY EXTEND BEYOND THE VISUAL DRIP LINE, THEREFORE, TREE PROTECTION BARRIERS MUST BE INSTALLED IN ACCORDANCE WITH THE DISTRICT OF WEST VANCOUVER TREE BYLAW, NO. 4892, 2016.
22. PRIOR TO GROUND DISTURBANCE WORKS WITHIN A CRZ, INCLUDING EXCAVATOR MOVEMENT, AN ARBORIST SHOULD BE ENGAGED TO RECOMMEND PROPER MITIGATION OR AVOIDANCE MEASURES TO PREVENT DAMAGE TO CRITICAL ROOTS.
23. WORK REQUIRED WITHIN THE CRZ OF A TREE SHOULD BE COMPLETED BY HAND WHERE POSSIBLE, AND UNDER THE DIRECTION OF A CERTIFIED ARBORIST OR APPROPRIATELY QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP).
24. TREE PROTECTION FENCING SPECIFICATIONS MUST BE IN ACCORDANCE WITH DWV TREE PROTECTION SPECIFICATION (<https://westvancouver.ca/sites/default/files/dwv/assets/home-building-property/permits-and-licences/construction/TreeProtection.pdf>)
25. IF OBSTACLES EXIST TO TREE BARRIER PLACEMENT, ALTERNATIVE PROTECTION FENCING ALIGNMENT AND PLACEMENT, OR ALTERNATIVES TO PROTECTION METHODOLOGY MUST BE APPROVED BY A QEP OR CERTIFIED ARBORIST PRIOR TO IMPLEMENTATION.



Compostable Sock Installation



Silt Fencing Installation



Catch Basin Silt Sacs



4363 Morgan Crescent
DWV Environmental Development
Permit Figures

Figure 4: Erosion and Sediment Control Plan

DATE 2022-12-21 DRAWN BY J.C. SCALE 1:300

REV
00