



DEVELOPMENT PERMIT NO. DP000986

**DEAN EARL MONTEREY
DONNA MARIE MONTEREY**
Name of Owner(s) of Land (Permittee)

3644 DIX ROAD
Civic Address

1. This development permit is issued subject to compliance with all of the bylaws of the municipality applicable thereto, except as specifically varied or supplemented by this permit.
2. This development permit applies to and only to those lands within the municipality described below, and any and all building structures and other developments thereon:

Legal Description:

LOT 1, DISTRICT LOT 31, WELLINGTON DISTRICT, PLAN 39845

PID No. 000-332-356

3. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit and any plans and specifications hereto which shall form a part thereof.

Schedule A Location Plan
Schedule B Environmental Report
Schedule C Development Permit Conditions

- a) If the applicant does not substantially commence the development permitted by this permit within two years of the date of this permit, the permit shall lapse.

4. This permit is not a building permit nor does it constitute approval of any signage. Separate applications must be made for a building permit and sign permit.

REVIEWED AND APPROVED ON

2016- MAY -18

Date

[Signature]

D. Lindsay
Director

Community Development

Pursuant to Section 154 (1)(b) of the Community Charter

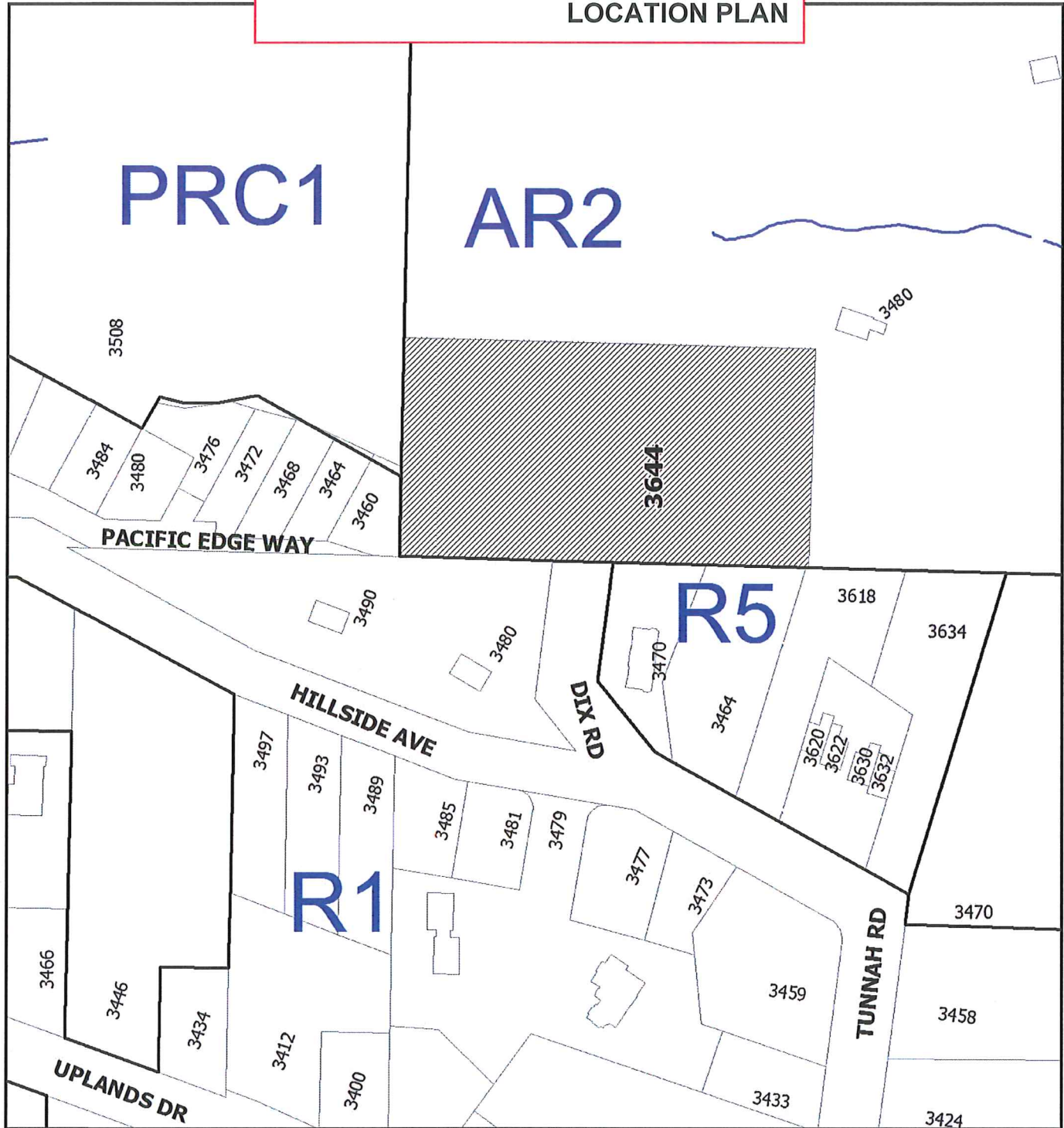
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Development Permit DP000986
3644 Dix Road

Schedule A

LOCATION PLAN



DEVELOPMENT PERMIT NO. DP000986

LOCATION PLAN

Civic: 3644 Dix Road
Lot 1, District Lot 31, Wellington District,
Plan 39845

 **Subject
Property**

ENVIRONMENTAL REPORT



March 19, 2015

Dean & Donna Monterey
3644 Dix Road,
Nanaimo BC

Via Email: dean.monterey@hotmail.com

**RE: 3644 DIX ROAD
VEGETATION MANAGEMENT PLAN**

1.0 INTRODUCTION

Aquaparian Environmental Consulting Ltd. (Aquaparian) was retained by Dean Monterey to provide environmental services in association with a Development Permit with Variance Application for landscaping at 3644 Dix Road in Nanaimo BC. The subject parcel is located on the south bank of Cottle Creek and fronts onto a wetland within the Cottle Creek watershed. The main channel and wetland lake of Cottle Creek are located approximately 1 km downstream of the subject parcel.

The subject parcel has been in the same family for approximately 75 years and is currently developed with two single family residences. The property is at the end of Dix Road which extends approximately 80m from Hillside Road. Ditches adjacent to Dix Road convey stormwater from Hillside Road into the subject property. Google earth images show the back yard fronting the wetland had previously been a grass lawn. The property lies within the Development Permit Area for Cottle Creek.

Stormwater from a new development under construction on the west boundary has recently been directed onto the subject parcel causing the back yard to become saturated. A contractor was retained to bring in fill to elevate the saturated back yard area and install plantings. Blast rock was used to construct two tiers of low retaining wall fronting the wetland edge. Two rows have been partially installed with a narrow bench (1m) in between creating a terraced edge. The toe of the rock follows along the natural contours of the wetland boundary. Approximately 75% of the length of retaining walls has been installed and sediment and erosion controls are in place. Work was stopped by the City of Nanaimo until a Development Permit with Variance can be submitted for review and approval.

The subject parcel contains a City of Nanaimo's Watercourse Development Permit Area which identifies a 15m setback from the natural boundary of the wetland. As per the City procedure for requesting a DP with Variance, a Riparian Areas Regulation Assessment was completed to

determine the variance request. The RAR resulted in a 30m Streamside Protection and Enhancement Area (SPEA) which encompasses the existing house and developed yard. Because the yard and house have been in existence for decades, Aquaparian is recommending restoring a portion of the DPA to a naturally vegetated state to compensate for the placement of fill and rock. The result will be an improvement over the existing impacted and previous disturbance conditions.

The proposed remediation includes planting a riparian buffer with native tree and shrub species which will extend from the edge of the wetland to 3m beyond the top of the second retaining wall. The total planting area is approximately 6m wide and extends roughly 60m along the wetland edge. The remediation area is divided into three zones which will be planted with native riparian trees and shrubs; a wet soil zone below the lower retaining wall 1m wide, the 1m wide bench between the two retaining walls, and a 3m band beyond the top of the second retaining wall. The remaining 1m width comprises the two boulder retaining walls. The remainder of the disturbed area will be re-seeded with grass. Upon completion, a riparian area of 300m² (360m² including the retaining wall rocks) will be planted with native trees and shrubs where previously there had been lawn.

As required by the City of Nanaimo watercourse setback variance procedure, riparian restoration is needed to meet the "no net loss" of riparian habitat in the DPA. The following plan has been designed to meet that requirement – a portion of the impacted area will be replaced with native trees and shrubs.

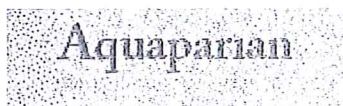
2.0 RESTORATION CALCULATION

Table 1 identifies the area to be restored to meet the "no net loss" policy for the Development Permit with Variance application.

Table 1. Estimated Riparian Restoration Requirement:

Existing DPA Area Description	Area Estimate m ²
Total DPA area within the parcel (~90m x 15m)	~1350m ²
Approximate lawn area in DPA impacted by landscaping (~60mx15m)	~900m ²
Remaining area in DPA that was not impacted	~450m ²
Area of impact to be re-seeded with grass	~540m ²
Area to be restored with shrubs and trees (6mx60m) (includes rock retaining wall areas)	~360m ²

Net benefit over pre-impact conditions is 360m² of native trees and shrubs that was previously lawn.

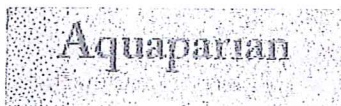


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3.0 PLANTING PLAN

Deducting the areas taken up by rock retaining walls, the planting area is approximately 300m².
Aquaparian recommends the following species to be planted:

PLANTING AREA	COMMON NAME	SPECIES	SPACING	SIZE	QUANTITY
A) Wet Soil Zone 60m²:					
	Hardhack	<i>Spirea douglasii ssp. Douglasii</i>	1/2m ²	1 Gal	20
	Salmonberry	<i>Rubus spectabilis</i>	1/2m ²	1 Gal	20
	Scouler's willow	<i>Salix scouleriana</i>	1/5m ²	1 Gal	10 (or 30 whips)
	Red-osier dogwood	<i>Cornus stolonifera</i>	1/5m ²	1 Gal	10 (or 30 whips)
Sub-total:					60
B) Middle Bench 60m²:					
	Salmonberry	<i>Rubus spectabilis</i>	1/2m ²	1 Gal	50
	Red elderberry	<i>Sambucus racemosa ssp. Pubens</i>	1/5m ²		5
	Red Alder	<i>Alnus rubra</i>	1/5m ²	1 Gal	5
Sub-total					60
C) Top of Bench 180m²:					
	Dull oregon grape	<i>Mahonia nervosa</i>	2m ²	1 Gal	30
	Snowberry	<i>Symphoricarpos albus</i>	1/2m ²	1 Gal	50
	Indian plum	<i>Oemleria cerasiformis</i>	1/2m ²	1 Gal	30
	Salal	<i>Gaultheria shallon</i>	2m ²	1 Gal	30
	Nootka rose	<i>Rosa nutkana</i>	2m ²	1 Gal	30
	Mock orange	<i>Philadelphus lewisii</i>	5m ²	1 Gal	2
	Red flowering currant	<i>Ribes sanguineum</i>	5m ²	1 Gal	3
	Western redcedar	<i>Thuja plicata</i>	10m ²	1 Gal	5
Sub-total:					180
Total Plants					300



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- The southern edge of the proposed remediation area facing the residence can be planted with the nootka rose and snowberry interspersed with a few Mock orange and Red-flowering current to increase visual appeal.
- The straw that is currently spread over the ground above the second retaining wall should remain during and after plantings to prevent erosion. The silt fences should remain during and after plantings until vegetation is established and no further threat of sedimentation continues.
- Overall shrub density should be $1/m^2$ and plant placement should mimic a natural growth pattern i.e. clusters of same species.
- Install the plants in the early fall or spring with a handful of bone meal in each hole. Water as necessary through the first two dry seasons until the plants are well established.
- Plants are to be maintained for two years with replanting as necessary with the end goal of allowing the plants to grow and in-fill the new riparian area.
- If more than 10% of the plants die off in a given area within the first two years, they are to be replaced;
- Removal of invasive species is likely to require annual maintenance as adjacent areas contain invasives including Reed canary grass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus discolor*).

4.0 PLANT SOURCES

Streamside Native Plants

7455 Island Highway West

Bowser, British Columbia V0R 1G0

Phone/Fax: 250-757-9999

Toll Free: 877-570-3138

http://members.shaw.ca/nativeplants/streamside_home.html

E-mail: Richard@streamsidenativeplants.com

The nursery is located at 7455 Island Highway West (Highway 19A) Bowser B.C.

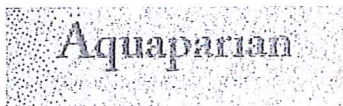
Nanaimo & Area Land Trust

3145 Frost Road, Cassidy BC

The Natural Abundance Native Plant Nursery

Open 10 am - 4 pm Wednesdays & 11 am - 3 pm Saturdays

250-714-1990 or 250-668-7670.



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5.0 BUDGET ESTIMATE

Based on the on-line price list on the Streamside Native Plants website and past experience, Aquaparian has provided the following cost estimate for purposes of a Bond calculation that the City of Nanaimo will require to ensure the restoration is carried out and successful over two years following installation. The majority of the bond will be released upon completion of planting with the remainder released following the maintenance period. Exact costs may vary from the estimate based on the chosen source of plants, materials and labour cost.

Item	Cost Estimate
Plants -- 300 and 10% contingency for die-off	\$2000
Bone meal, delivery cost, other materials/tools	\$150
Labour 20hrs @ \$20/hr	\$400
Total	\$ 2550

6.0 CLOSURE

This Vegetation Management Plan has been based on a site visit of the property, past project experience and in accordance with generally accepted biological practices. No other warranty is made, either expressed or implied.

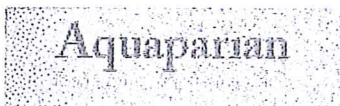
Aquaparian trusts this meets your requirements to meet the City of Nanaimo's "no net loss" policy for Development Permits with a watercourse setback variance. If you require further information please contact the undersigned.

Sincerely,

AQUAPARIAN ENVIRONMENTAL CONSULTING LTD.

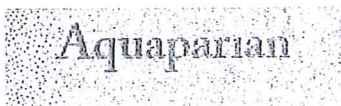
Sarah Bonar, B.Sc., R.P.Bio.
Principal

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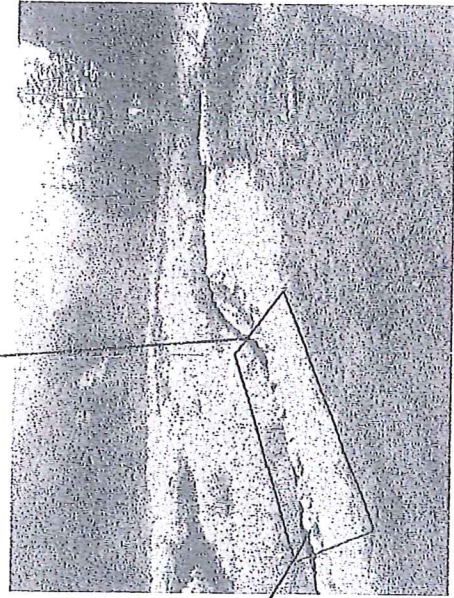
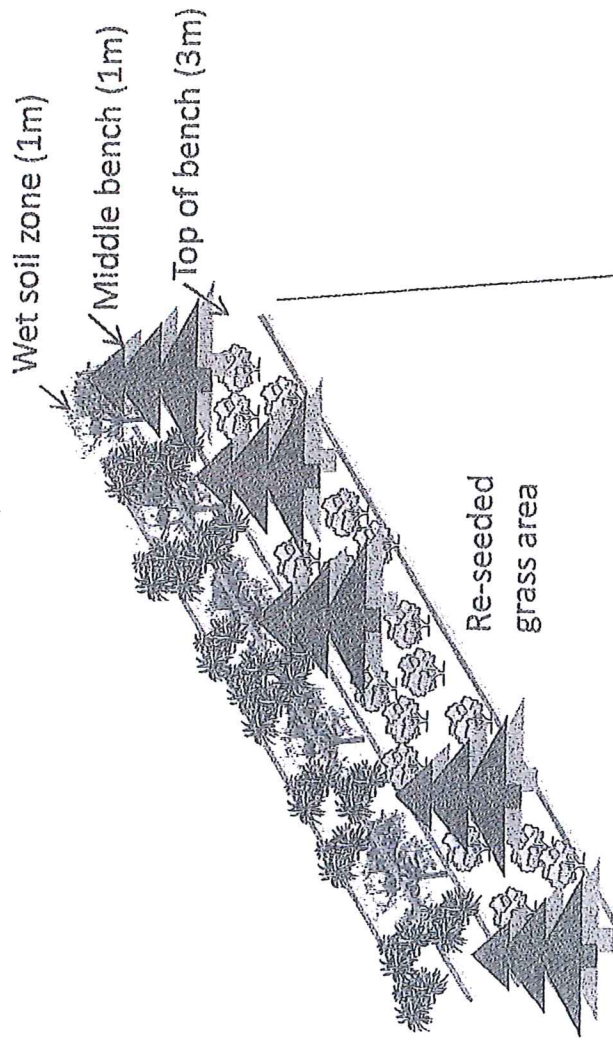
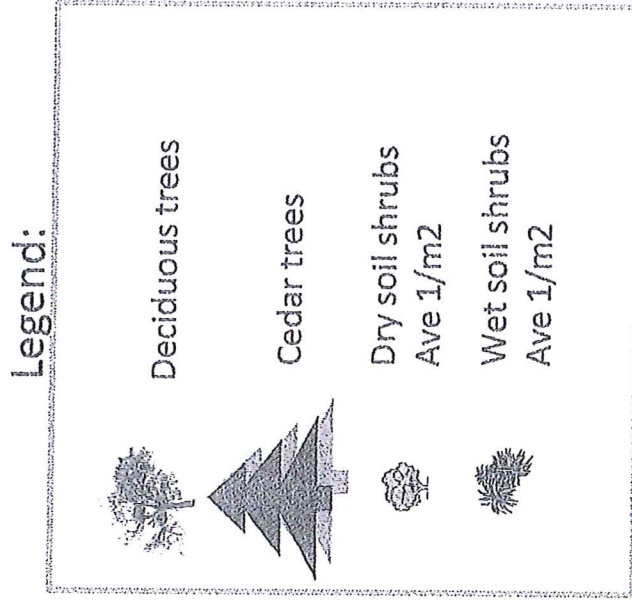
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FIGURE 1
PLANTING PLAN



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SAMPLE PLANTING PLAN



Development Permit DP000986
3644 Dix Road

Schedule C

DEVELOPMENT PERMIT CONDITIONS

DEVELOPMENT PERMIT CONDITIONS

DP000986 - 3644 Dix Road

1. The vegetation management plan prepared by Aquaparian (Schedule B) must be followed and installed within one year of the issuance of the development permit.
2. All proposed plant species must be native to Coastal BC and of healthy nursery stock.
3. A landscape bond is required for 100% of the landscape estimate provided by the Qualified Environmental Professional in Schedule B.
4. A certified letter of completion of the installation of the vegetation management plan from the Qualified Environmental Professional is required before the 75% of the landscape bond will be released.
5. A 3 year maintenance period is required. After 3 years, upon receipt of a certified letter of completion from the Qualified Environmental Professional and satisfactory final inspection of the installed re-vegetation area, the remainder of the landscape bond will be released.