

DATE: June 28, 2017

FILE: 3060-20/DP 12C 17

TO: Chair and Directors
Electoral Areas Services Committee

FROM: Russell Dyson
Chief Administrative Officer

RE: Development Permit Application – 8010 Forbidden Plateau Road (Lyle)
Puntledge - Black Creek (Electoral Area C)
Lot 1, Block 249, Comox District, Plan 19128

Purpose

To consider a Commercial Development Permit (DP) to enable the development of a campground, tourist accommodation, accessory residential dwelling and an accessory building.

Policy Analysis

Sections 488(1) and 490 of the *Local Government Act* (RSBC, 2015, c. 1) (LGA) allow a local government to designate development permit areas (DPAs) and establish guidelines within the Official Community Plan (OCP) for numerous purposes, including the establishment of objectives for the form and character of commercial and industrial development. Section 491(7) specifies that a DP relating to commercial form and character may include requirements respecting the character of the development, including landscaping, and the siting, form, exterior design and finish of buildings and other structures

Pursuant to Bylaw No. 337, being the “Rural Comox Valley Official Community Plan Bylaw No. 337, 2014,” development on a Tourist Commercial zoned parcel requires a DP prior to the commencement of construction, addition to or alteration of a building or other structure.

Executive Summary

An application for a commercial DP (Appendix A) has been received relating to the development of the 2 hectare lot located on Forbidden Plateau Road. The property owner intends to operate a campground there and build a cabin (e.g. tourist accommodation), an accessory residential dwelling, and an accessory building. The DP guidelines review form and character, screening, landscaping, and rainwater management, among other items. The applicant has submitted a site plan, building design drawings, and a drainage plan to achieve the DP guidelines. Staff recommends issuance of the DP with adherence to those items as conditions of the permit.

Recommendation from the Chief Administrative Officer:

THAT the Board approve the Development Permit DP 12C 17 on the property described as Lot 1, Block 249, Comox District, Plan 19128 (8010 Forbidden Plateau Road) for the development of a campground, tourist accommodation unit (i.e. cabin), accessory residential dwelling and accessory building on Forbidden Plateau;

AND FURTHER THAT the Corporate Legislative Officer be authorized to execute the permit.

Respectfully:

R. Dyson

Russell Dyson
Chief Administrative Officer

Background/Current Situation

The subject property is a 2 hectare lot located at a bend on the Forbidden Plateau Road, just below Wood Mountain Ski Park (Figures 1 and 2). The applicant purchased the property earlier this year with the intention of building a house in which to reside while operating an on-site campground and guest cabin.

The subject property was cleared last year and the new owner is currently cleaning the leftover debris and preparing the land for development. The proposal is divided into three phases. First, to develop a campground consisting of eight stalls suitable for a recreational vehicle or tent camping on the lower south side of the property with a single detached dwelling on the higher north side of the property. The second phase is to develop an accessory building for storage. The third phase is to construct an office/store building for the campground, and a tourist accommodation cabin in the final phase (Figure 3).

Official Community Plan

The subject property is designated Rural Settlement Area in the OCP. This designation allows for existing commercial uses that are compatible with the surrounding area. Section 85 of the OCP contains guidelines that establish objectives for the form and character of commercial development.

Form and Character

The guidelines direct that all buildings and structures should be architecturally coordinated and shall give consideration to the relationship between buildings and open areas, circulation systems, visual impact and design compatibility with surrounding development. The applicant submitted design drawings of the proposed buildings (Figures 4 and 5). They feature steeply sloped roofs consistent with development at such a high elevation and earth tone colours consistent with the natural landscape. The internal looped road provides a simple entrance and exit and its access to a parking area and to the campsites allows for manoeuvring and turning around. The property's frontage (Figure 6) at a bend on the switchback road allows the exit to have sightlines of traffic coming up and down the mountain. Signage oriented towards vehicles coming up the mountain will facilitate recognition and entrance into the destination. As stated in the applicant's description (Appendix B), he intends to use an old, painted saw blade, 0.7 metres in diameter, as a sign posted at the entrance.

Rainwater Management

The guidelines require the submission of a Rainwater Management Plan that strives to protect water quality and maintain post-development peak flows to those of pre-development flow patterns and volumes. The applicant submitted a Drainage Plan prepared by Neil Penner, E.I. T. and Chris Durupt, P. Eng., of McElhanney Consulting Services Ltd. The report recognizes the present condition of the lot as being recently cleared and also with an internal road of natural sand and gravel and a concrete slab from a previous development remaining. The drainage plan recommends re-establishing native vegetation beyond the developed area, using permeable hard surfaces in lieu of paving, using multiple disconnected roof leaders that avoid concentrated runoff. The drainage plan specifically recommends not using a sub-surface infiltration structure due to the steepness of the site (approximately 10 per cent grade) and the shallow depth of the overburden.

Screening and Landscaping

In keeping with the recommendation of the drainage plan and the applicant's objective to keep the site as natural as possible, the applicant will restore native vegetation to the site with Douglas fir and cedar trees (Figure 3). These plantings will also help define open spaces, camp sites, and the roadway. As illustrated in the Site Plan (Figure 3) and stated in the application description (Appendix B) a 3 metre treed buffer will remain in place with the neighbouring residentially zoned property to the south (Figure 7). According to the application description, the garbage and recycling area will be enclosed – the guidelines recommend a solid walled enclosure not less than 2 metres in height.

Zoning

The property is zoned Tourist Commercial Two [Rural] (TC-2) which allows for campgrounds, tourist accommodations, and recreation facilities as principal uses. Residential use of the single detached dwelling is permitted as an accessory use to those permitted principal uses. The zone includes several conditions of use, including that each camping space shall have a minimum area of not less than 110 square metres and be setback at least 3 metres from the internal road. The proposed development is consistent with the zoning regulations.

Options

The board could approve or deny the DP. The board could deny the application only if the board is of the opinion that the proposal is not consistent with DPA guidelines. Given the above discussion, planning staff recommends approval of the DP.

Financial Factors

Applicable fees have been collected for this application under the Bylaw No. 328, being the “Comox Valley Regional District Planning Procedures and Fees Bylaw No. 328, 2014.”

Legal Factors

This report and the recommendations contained herein are in compliance with the LGA and Comox Valley Regional District bylaws. DPs are permitted in certain circumstances under Sections 488, 489 and 491(7) of the LGA.

Regional Growth Strategy Implications

The Comox Valley Regional Growth Strategy (RGS) designates the subject property within Rural Settlement Areas. The intent of this designation is to support rural character and function. The proposed campground with a cabin and a single detached dwelling is consistent with MG Policy 2A-4(d), as the proposed development is in keeping with the rural scale, and the subject property is not in drinking watersheds and not adjacent to the Inland Highway. The proposal also creates employment and business opportunities and is therefore aligned with the local economic development objectives of the RGS.

Intergovernmental Factors

There are no intergovernmental factors.

Interdepartmental Involvement

This application was circulated to other departments. No concerns were identified.

Citizen/Public Relations

The Advisory Planning Commission for Electoral Area C will review the application at their meeting on June 28, 2017. The minutes from the meeting will be forwarded to the Electoral Areas Services Committee.

Prepared by:

J. MacLean

Jodi MacLean, MCIP, RPP
Rural Planner

Concurrence:

A. Mullaly

Alana Mullaly, M.Pl, MCIP, RPP
Manager of Planning Services

Concurrence:

A. MacDonald

Ann MacDonald, MCIP, RPP
General Manager of
Planning and Development
Services Branch

Attachments: Appendix A – “Development Permit DP 12C 17”
Appendix B – “Description of Forbidden Plateau Mountain Resort”

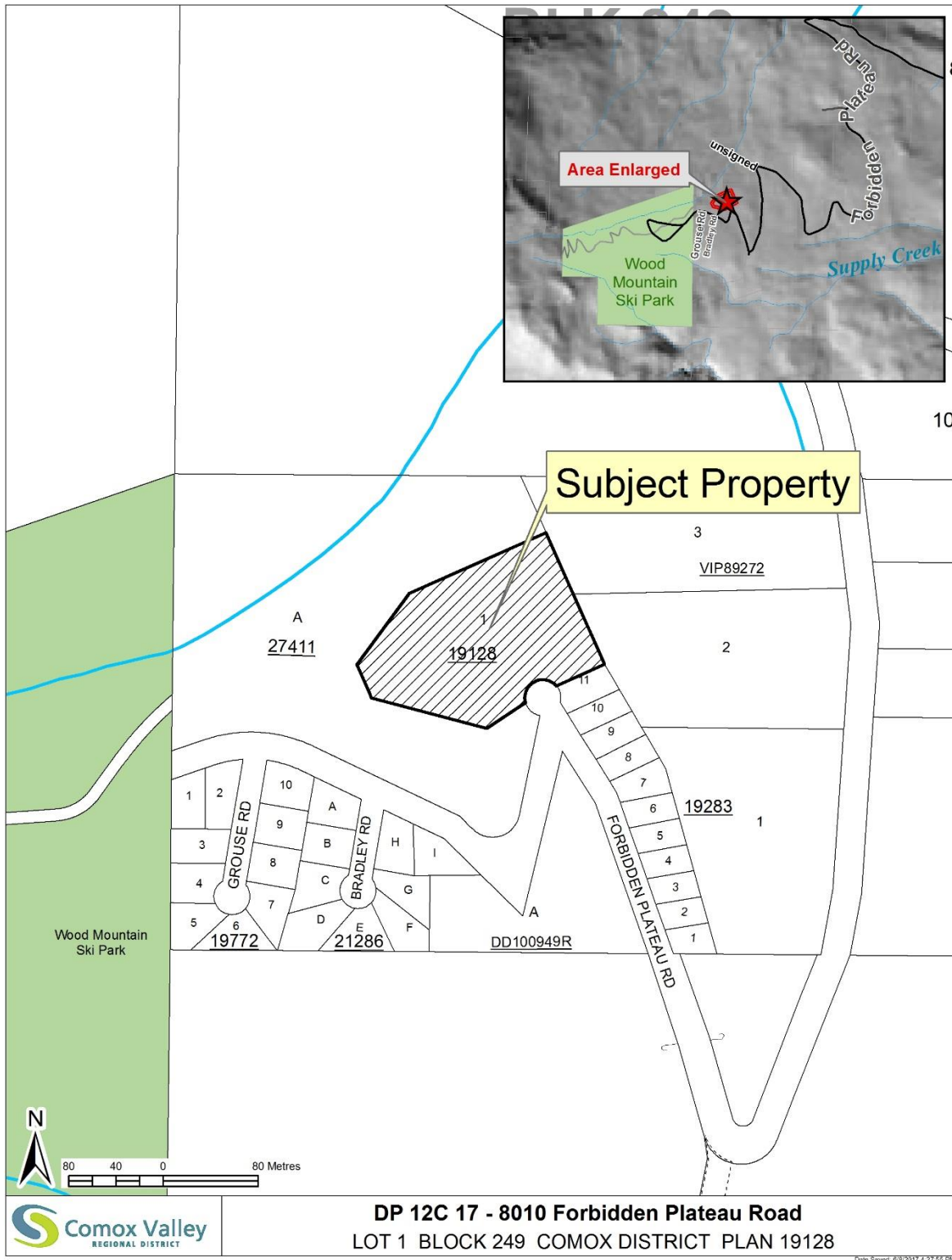


Figure 1: Subject Property

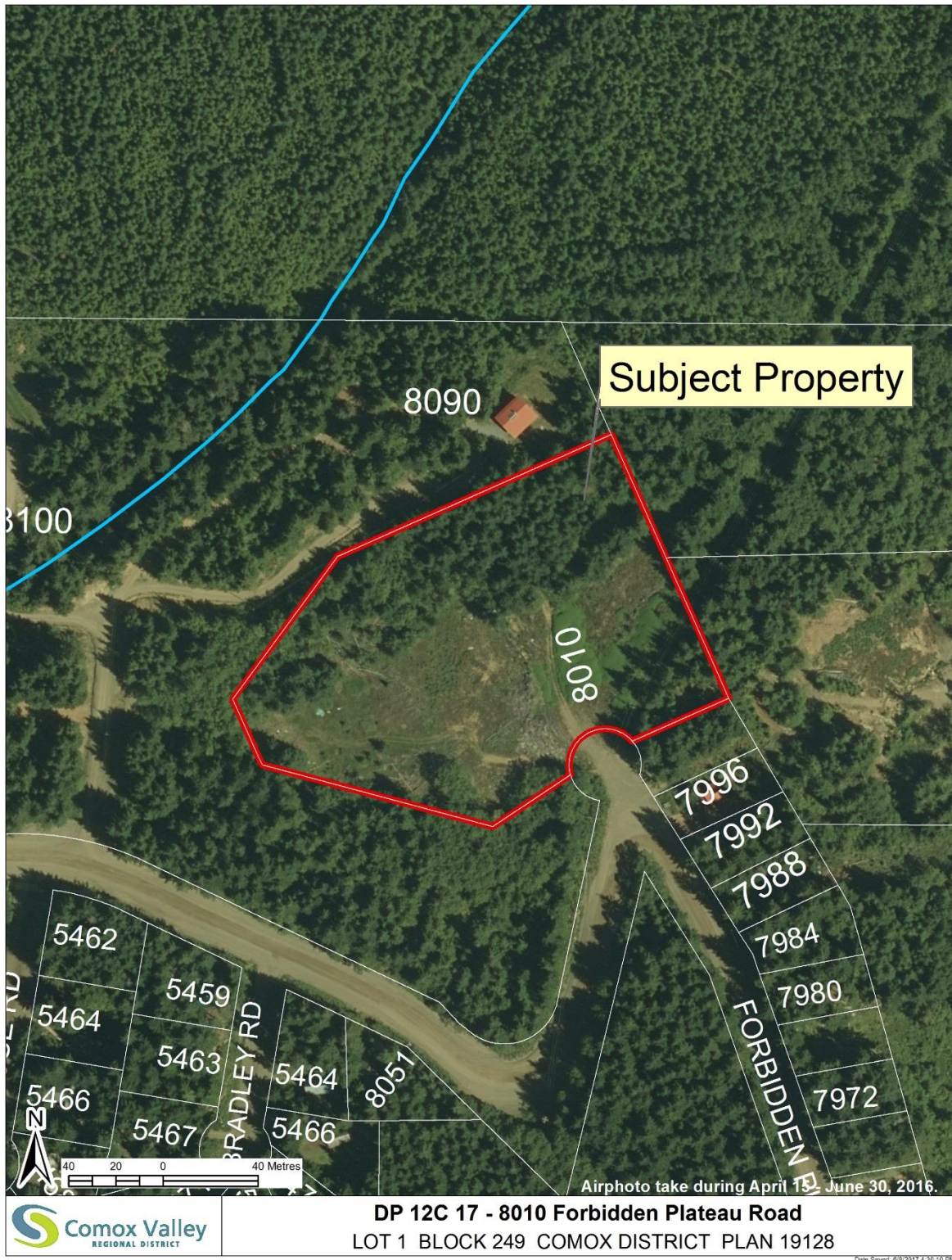


Figure 2: Air Photo 2016



Figure 3: Site Plan, as Submitted by Applicant

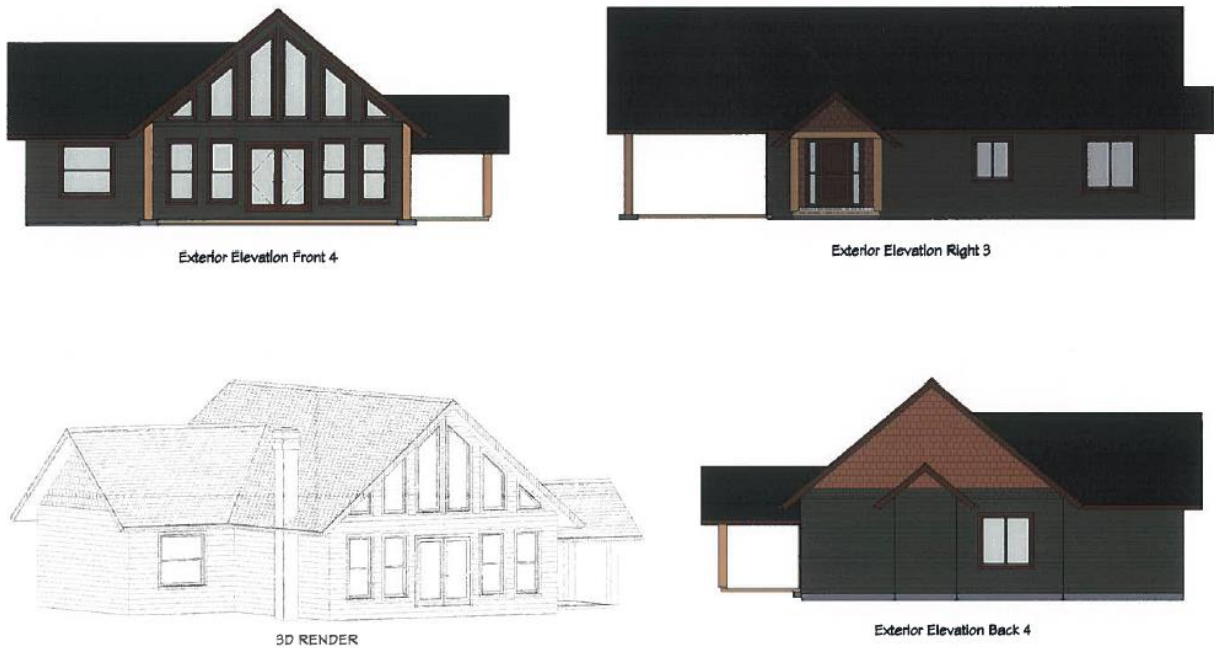


Figure 4: Elevation Drawings of Proposed Dwelling Unit



Figure 5: Elevation Drawings of Tourist Accommodation Cabin and Accessory Building



Figure 6: Entrance of Subject Property

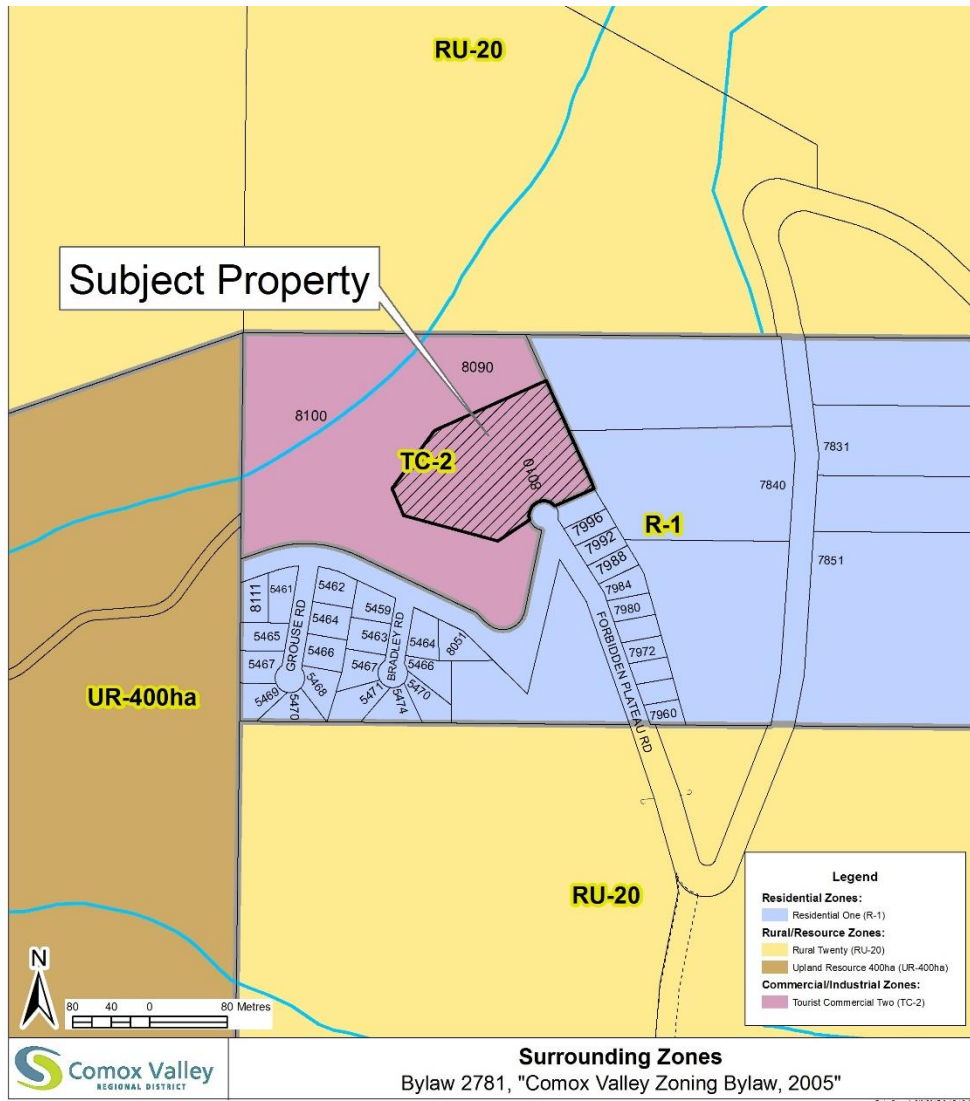


Figure 7: Zoning

DP 12C 17

TO: William Mackenzie Lyle

OF: 8010 Forbidden Plateau Road, Courtenay BC, V9J 1L2

1. This Development Permit (DP 12C 17) is issued subject to compliance with all of the bylaws of the Comox Valley Regional District applicable thereto, except as specifically varied or supplemented by this permit for the **purposes of developing tourist accommodations, a campground, an accessory house and accessory building.**

2. This development permit applies to, and only to, those lands within the Comox Valley Regional District described below:

Legal description: Lot 1, Block 249, Comox District, Plan 19128

Parcel identifier (PID): 003-685-411 **Folio:** 771 04965.000

Civic address: 8010 Forbidden Plateau Road

3. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit:

Construction and Development Activities:

- i. THAT the proposed tourist accommodation, house and accessory building is constructed and externally finished in accordance to the submitted Architectural Drawings on the subject property hereto attached and identified on Schedule A;
- ii. THAT all development is in accordance with the Drainage Plan hereto attached as Schedule B.

Landscaping:

- iii. THAT the proposed landscaping for the property is completed and maintained in accordance to the submitted Landscape Plan and listed plantings hereto attached as Schedule C;
- iv. THAT the applicant is required to maintain all landscaping as part of regular yard maintenance to keep the property in a neat and tidy appearance.

Signage and Lighting:

- vi. THAT all buildings, structures, signage or landscaping be un-illuminated or softly lit in compliance with current zoning and/or zoning provisions and be consistent with the Comox Valley Regional District's 'DarkSky' policies hereto attached as Schedule D;
- vii. THAT no lighting be installed along any property lines adjacent to residential developments;
- viii. THAT one freestanding sign is permitted for each street frontage of the business, within a landscaped area only and on the same parcel as the development. The height of any sign, including support structures, shall not exceed 1.8 metres (5.9 feet) and the area of any one face shall not exceed 3.0 square metres (32.3 feet). A freestanding

sign may be illuminated;

- ix. THAT one facia sign is permitted for each exterior wall of a building with an area no greater than 6.0 square metres (64.6 square feet), with a maximum area of all facia signs not exceeding 56.0 square metres (602.8 square feet). The facia signs may be illuminated and should be integrated into the design of the building. Facia signs may not extend above the top wall of the structure and billboard and rooftop signs are not permitted;
- x. THAT no signs nor any external building surfaces shall be equipped with flashing, oscillating or moving lights or beacons.

Other:

- xi. THAT no parking is permitted within 1.5 metres (4.9 feet) of any lot line;
- 4. This Development Permit is issued following the receipt of an appropriate site declaration from the property owner.
- 5. This Development Permit (DP 12C 17) shall lapse if construction is not substantially commenced within two (2) years of the Comox Valley Regional District board’s resolution regarding issuance of the development permit (see below). Lapsed permits cannot be renewed; however, a new application for a second development permit can be applied for in order to complete the remainder of the work.
- 6. This permit is **NOT** a Building Permit.

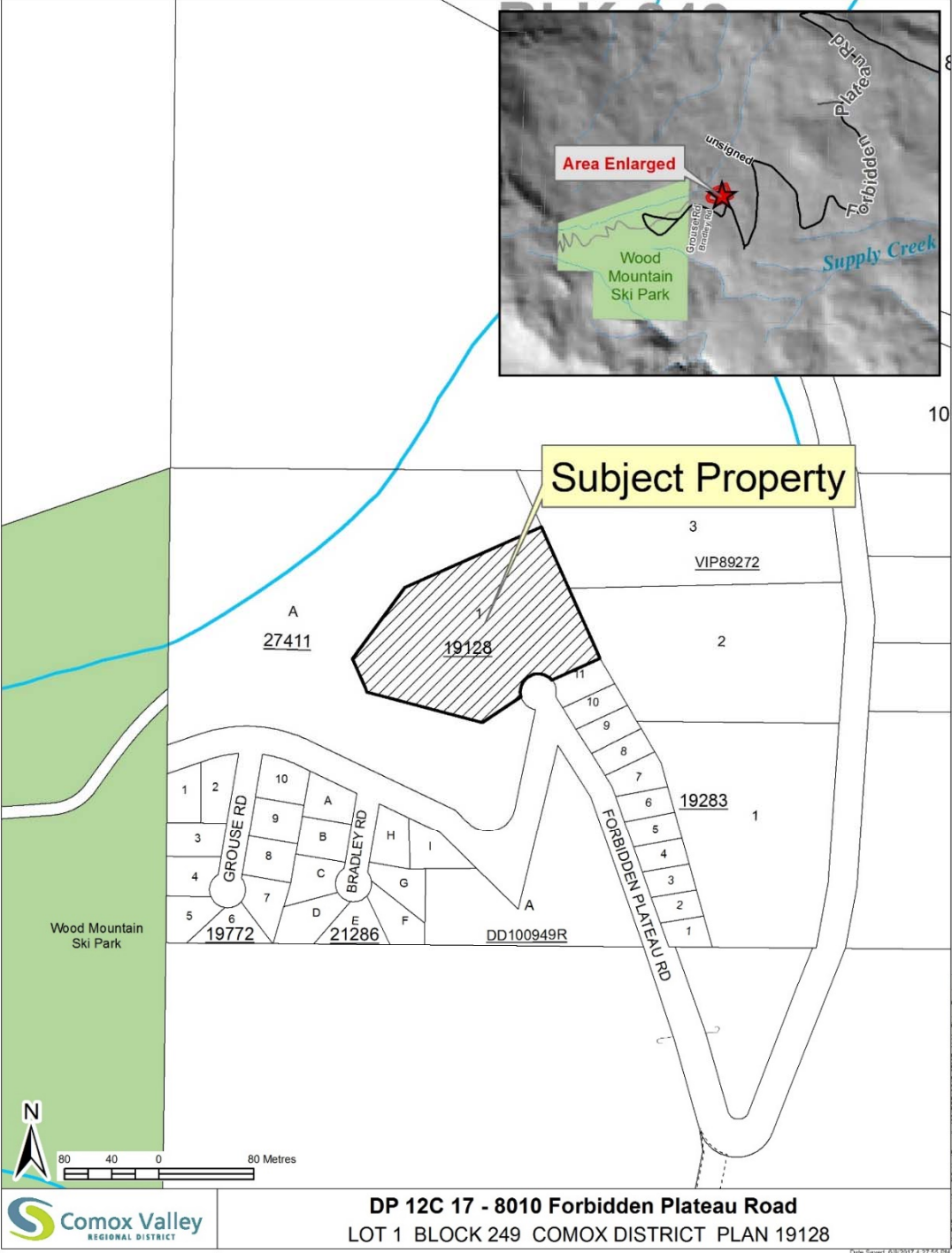
CERTIFIED as the **DEVELOPMENT PERMIT** issued by resolution of the board of the Comox Valley Regional District on _____.

 James Warren
 Corporate Legislative Officer

Certified on _____

- Attachments: Schedule A – “Subject Property Map and Architectural Drawings”
 Schedule B – “Drainage Plan dated May 31, 2017 by McElhanney Consulting Services Ltd.”
 Schedule C – “Landscape Plan”
 Schedule D – “CVRD DarkSky Policy”

Schedule A Subject Property Map



DP 12C 17 - 8010 Forbidden Plateau Road
LOT 1 BLOCK 249 COMOX DISTRICT PLAN 19128





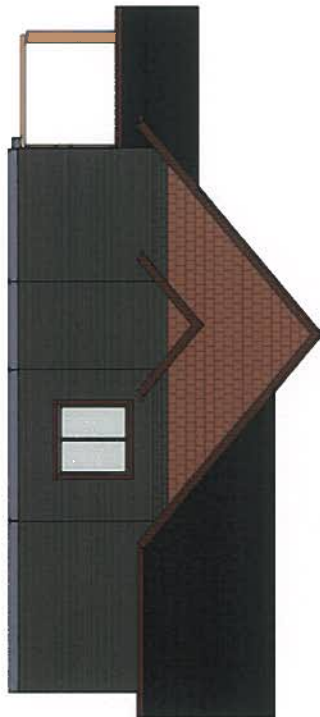
Exterior Elevation Front 4



Exterior Elevation Right 3



Exterior Elevation Left 3



Exterior Elevation Back 4

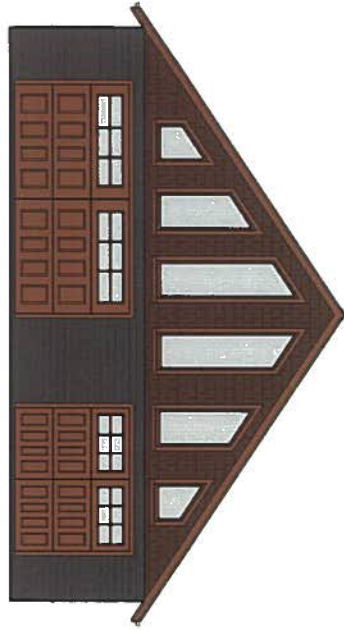
Exterior Color Renderings of 1st Phase Development Permit Construction

- 1) Hardi plank wood grain timberbark siding
- 2) Cedar shingle gable details
- 3) Full Dimension 12" x 12" Timber Framing Details

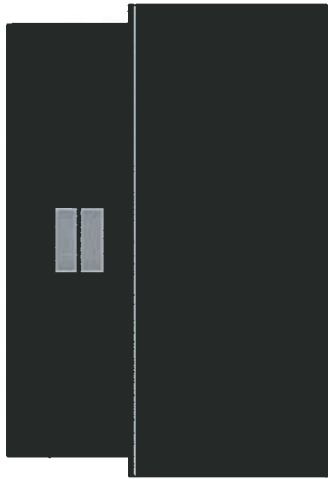
80 10 Forbidden Plateau Road
Owner - Mack Lyle

DRAWINGS PROVIDED BY:
Dragonfly Homes LTD

DATE: 3/21/2017
SCALE: 1/4" = 1 ft
SHEET: P-1



Exterior Elevation Front



Exterior Elevation Right



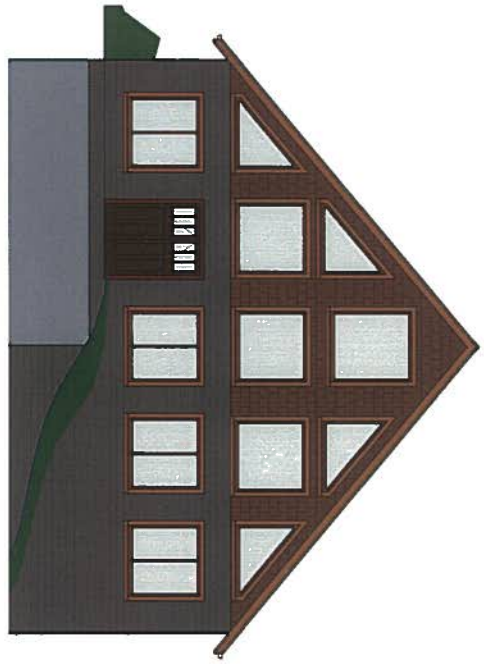
Exterior Elevation Left



Exterior Elevation Back

Exterior Color Renderings of Phase 2 Development Permit

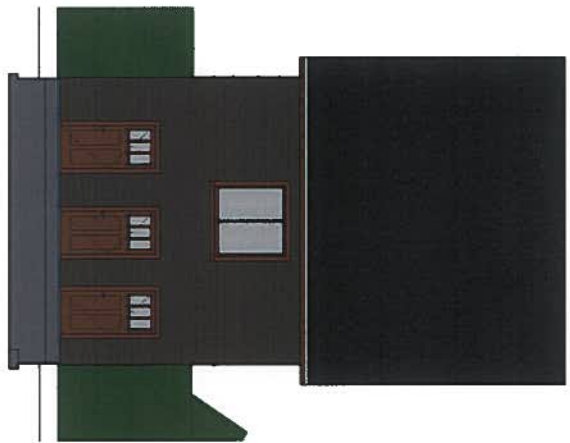
- 1) Hardi Plank wood grain Timberbark Siding
- 2) Cedar shingle gable details



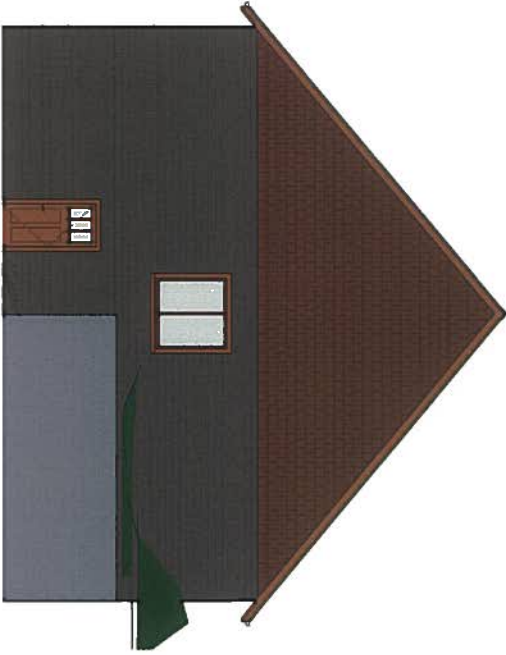
Exterior Elevation Front



Exterior Elevation Left



Exterior Elevation Right



Exterior Elevation Back

Exterior Color Renderings of phase 3 Development Permit Construction

- 1) Hard plank wood grain timberbark siding
- 2) Cedar shingle gable details
- 3) utilizing existing heritage lodge site

NO.	DATE	BY	DESCRIPTION

PAGE TITLE

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DATE:
3/25/2017

SCALE:

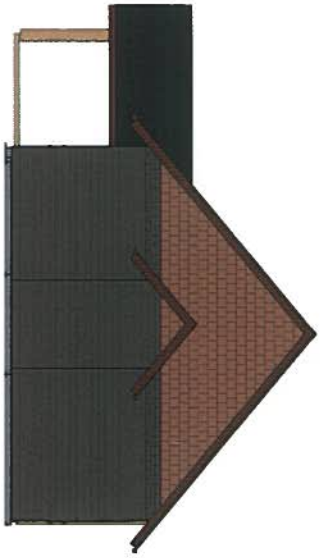
SHEET:
P.1



Exterior Elevation Front



Exterior Elevation Left 3



Exterior Elevation Back 4



Exterior Elevation Right 3

Exterior Color Renderings of 4th Phase Development Permit Construction

- 1) Hardi plank wood grain Timberbark siding
- 2) Cedar shingle gable details
- 3) Full Dimension 12" x 12" Timber framing details

DRAWINGS PROVIDED BY:
Dragonfly Homes

8010 Forbidden Plateau road

DATE:
3/22/2017

SCALE:
1/4" = 1'-0"

SHEET:
P-1



D R A I N A G E P L A N

	8010 Forbidden Plateau Drainage Plan
Date:	May 31, 2017
Our Reference:	2211-47107/ T2016

To: Mr. William Mackenzie Lyle
Prepared By: Neil Penner, E.I.T.
Reviewed By: Chris Durupt, P.Eng.

1 INTRODUCTION

This Drainage Plan has been prepared on behalf of the owner of Lot 1, Block 249, Comox District, Plan VIP19128 (8010 Forbidden Plateau Road) in support of a development permit application. Employing the principles identified in the British Columbia Stormwater Planning Guidebook (BCSWPG), and the requirements of the Comox Valley Regional District's (CVRD) Bylaw 337, "*Rural Comox Valley Official Community Plan, 2014*", this Drainage Plan sets a baseline for existing runoff, and outlines stormwater management and sediment and erosion control targets for the proposed development.

2 SITE DESCRIPTION

The subject property, at the legal description noted above, is located on Forbidden Plateau Road, 1 km east of the base of the abandoned Wood Mountain Ski Park. The subject property is zoned Tourist Commercial Two (TC-2). The neighbouring property surrounding the north, northwest and southwest sides of the lot is also zoned TC-2, is mostly forest covered, and contains a residential building. The neighbouring properties to the east and southeast are zoned Residential One (R-1) and are mostly forest covered with some lots containing residential buildings.

The subject property is 2.023 ha in size, with the land generally sloping from west to east. See **Appendix A – Existing Site Plan** for subject property location. Note that the site has been cleared (by the previous owner) since the date of the airphoto in the existing site plan.

2.1 MCSL SITE VISIT

A site visit was conducted by MCSL staff in May, 2017. The site was found to be mostly cleared with patches of existing trees, slash piles, c-can storage containers and a trailer on site. The site also contains roads consisting of exposed natural sand and gravel. The site slopes west to east with an approximate slope of 10%. An existing concrete slab (approximately 120 m² in size) and retaining wall are located near the centre of the lot, adjacent to a benched area in the centre of the property. There is a drainage course that meanders near the southern boundary of the lot. A 900 diameter culvert conveys the drainage course under the existing gravel turnaround at the south end of the property. It is not known if

the culvert is on the subject property or within the municipal road right-of-way. **Figures 1 through 6** below and **Appendix A** provide detail into the existing site.



Figure 1 - Existing Site Looking West



Figure 2 - Existing Benched Area Looking North



May 31, 2017/ 2211-47107 T2016
Drainage Plan for Lot 1, Block 249, CD, Plan VIP19128



Figure 3 - Existing Site Looking East



Figure 4 - Existing Concrete Pad



Figure 5 - Western Portion of the Existing Site



Figure 6 - Eastern Portion of Existing Site

Site soils appear to be silty sand with some gravels, cobbles and organics, as confirmed by MCSL staff via means of test holes hand dug on site during MCSL's site visit. The depth of overburden is estimated between 0.5-1.0 metres. The soils were found to have a moderate to low permeability on the west uphill side of the lot where the soil contains less gravels and cobbles than the eastern downhill portion of the lot. The permeability of soils on the eastern side of the property is low. Several areas of localized ponding were noticed on site, as well as water breakout along the bottom of bank at the west side of the bench in between the slash piles, as show in **Figure 7** below. MCSL witnessed the breakout water travelling eastward downhill.



Figure 7 - Water Breakout In Between Slash Piles

3 PROPOSED DEVELOPMENT

The owner of the property is proposing to build four buildings and a campground on the property by means of a phased development approach. **Appendix B**, attached, provides the **Proposed Site Plan** for the development.

The first phase of development consists of a single-family residence approximately 205 m² (assuming 0.6m roof overhangs for all buildings in all phases). The second phase of development consists of an approximately 139 m² storage garage. Phase three consists of a 98 m² store/office, 30 m² recycling area and the campground. Phase four consists of an approximately 164 m² cabin. The owner is proposing the use of gravel for on-site roads and parking spaces (by the store and for campground spaces) on site, with approximately 1,880 m² of existing road and approximately 1,800 m² of proposed road.

The owner is also proposing to re-forest the area by means of planting trees around the property as shown in the **Proposed Site Plan** in **Appendix B**.



4 EXISTING RUNOFF AND PERFORMANCE TARGETS

A hydraulic model was developed using SWMM software, enabling analysis of existing and post-development site response to a variety of design rainfall events. Simulations were completed for the 24-hour SCS Type 1A distribution MAR (Mean Annual Rainfall), 2, and 5 Year rainfall events. Design rainfall events were derived from Environment Canada's Comox A rain gauge (1021830). Model input parameters, based on existing site parameters, are summarized in **Table 1** below. The results of the modeled existing site response are summarized in **Table 2**.

Table 1: Existing Site-Specific Storm Water Management Parameters

Parameter	Existing
Area (ha)	2.023
Width (m)	112
Slope (%)	10
% Impervious	27.1
N Imperv	0.01
N Perv	0.20
Dstore Imperv mm	2
Dstore Perv mm	5
Zero % imperv	25
Curve number	69

Table 2: Existing Runoff Quantities

24 Hour Rainfall Distribution	Total Precipitation	Existing Runoff	
		Peak Rate (l/s)	Total Volume (m ³)
MAR	48mm	14.0	374
2-Year SCS	62mm	23.1	564
5-Year SCS	72mm	29.4	707

The existing site model includes the 120 m² of impervious concrete pad area as well as 0.188 ha of gravel roads.

Permanent design features for ground infiltration and retention of run-off from the impervious roof surface, based on the principles of low impact development, have been designed to limit post-development runoff to at or near the existing runoff quantities outlined in **Table 2** above. Details of the permanent design features are outlined in **Section 5** below.

Sub-surface infiltration facilities are not recommended for the subject property, due to the steepness of the site and adjacent downhill property to the east, the relatively shallow depth of overburden, and the



observed on site groundwater breakout. If installed on this site, sub-surface infiltration facilities may increase nuisance groundwater breakout on the lower east section of the subject property and the downstream adjacent property.

5 DESIGN ELEMENTS

The recommended Best Management Practices (BMP) to be implemented for this project have been developed to reduce post-development peak runoff rates, and provide qualitative treatment of runoff. The following BMPs are proposed for the site:

- Grade the finished area around all buildings to provide positive drainage away from the buildings.
- Retain/re-establish native vegetation beyond the developed area.
- Place 300 mm of amended topsoil in any new landscaped (pervious) areas.
- Limit new impervious areas to the single-family dwelling, the storage garage, the store/ office, the recycling area and the cabin.
- Re-use or remove the existing concrete pad to limit the increase in impervious area.
- Use permeable hard surfaces such as gravel, pervious pavers, Core Gravel™ or Grass Crete® for any additional hard or paved surfaces.
- Re-forest those areas of the property not required to be cleared for the proposed development.
- Direct runoff from impervious surfaces to landscaping and permeable areas.
- Use multiple disconnected roof leaders with splash pads to distribute roof runoff and avoid concentrated runoff.

6 QUALITY

Runoff from the impermeable roof surfaces is not expected to contain significant levels of contaminants. Distributed sheet flow and surface infiltration to ground through landscaping and permeable surfaces will serve to further improve/polish runoff. The above noted BMPs and the construction sediment and erosion control measures provided in **Section 8** are also expected to limit runoff turbidity to acceptable levels.

7 POST-DEVELOPMENT RUNOFF

The post-developed site was modeled using SWMM software. Simulations were completed for the 24-hour SCS Type 1A distribution MAR (Mean Annual Rainfall), 2, and 5 Year rainfall events. Model input parameters derived are summarized in **Table 3** below.


Table 3: Site-Specific Storm Water Management Parameters

Parameter	Existing	Post-Development w/ LID
Area (ha)	2.023	2.023
Width (m)	112	112
Slope (%)	10	10
% Impervious	27.1	31.5
N Imperv	0.01	0.01
N Perv	0.20	0.20
Dstore Imperv mm	2	2
Dstore Perv mm	5	6
Zero imperv	25	25
Curve number	69	67

The post-development model assumes the following:

- Full buildout of all phases and campground
- 0.180 ha of additional gravel roads and parking areas
- The 0.012 ha concrete pad will be removed and replaced with the proposed store/ office
- Re-forestation and landscaping of portions of the site.

Table 4 below compares existing and post-development simulated runoff for the site. The analysis shows that the use of BMPs as proposed herein will limit the increase in runoff peak rates to within 7% of pre-development levels and the total volume increases will be within 3% of pre-development rates up to and including the 5-year rainfall event. This is further demonstrated in **Figures 8** through **10**.

Table 4: Post-Development Runoff Quantities

24 Hour Distribution	Total Precip.	Existing Runoff		Post-Development Runoff		Change in Post-Dev. Peak Rate		Change in Post-Dev. Total Volume	
		Peak Rate (l/s)	Total Volume (m ³)	Peak Rate (l/s)	Total Volume (m ³)	(l/s)	(%)	(m ³)	(%)
MAR	48mm	14.0	374	14.9	382	0.9	6.4	8	2.1
2-Year SCS	62mm	23.1	564	24.5	572	1.4	6.1	8	1.4
5-Year SCS	72mm	29.4	707	30.8	715	1.4	4.8	8	1.1



May 31, 2017/ 2211-47107 T2016
 Drainage Plan for Lot 1, Block 249, CD, Plan VIP19128

Figure 8 – BMP Performance: MAR Event

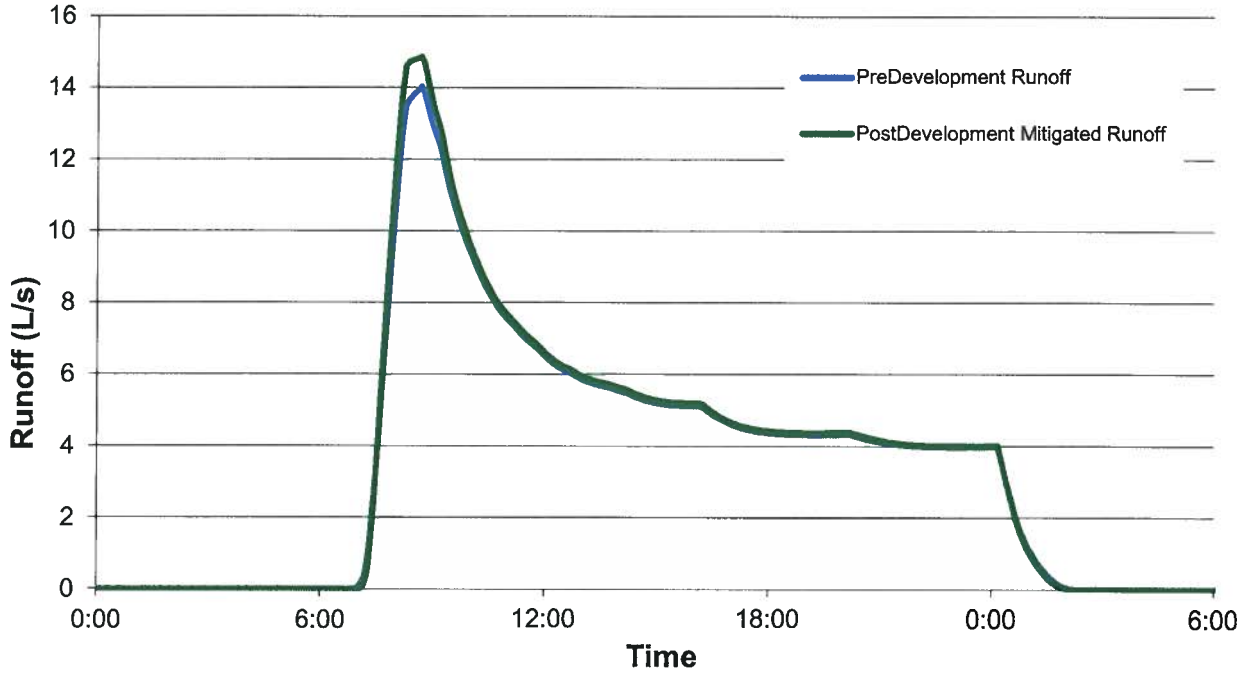


Figure 9 – BMP Performance: 2-Year SCS Event

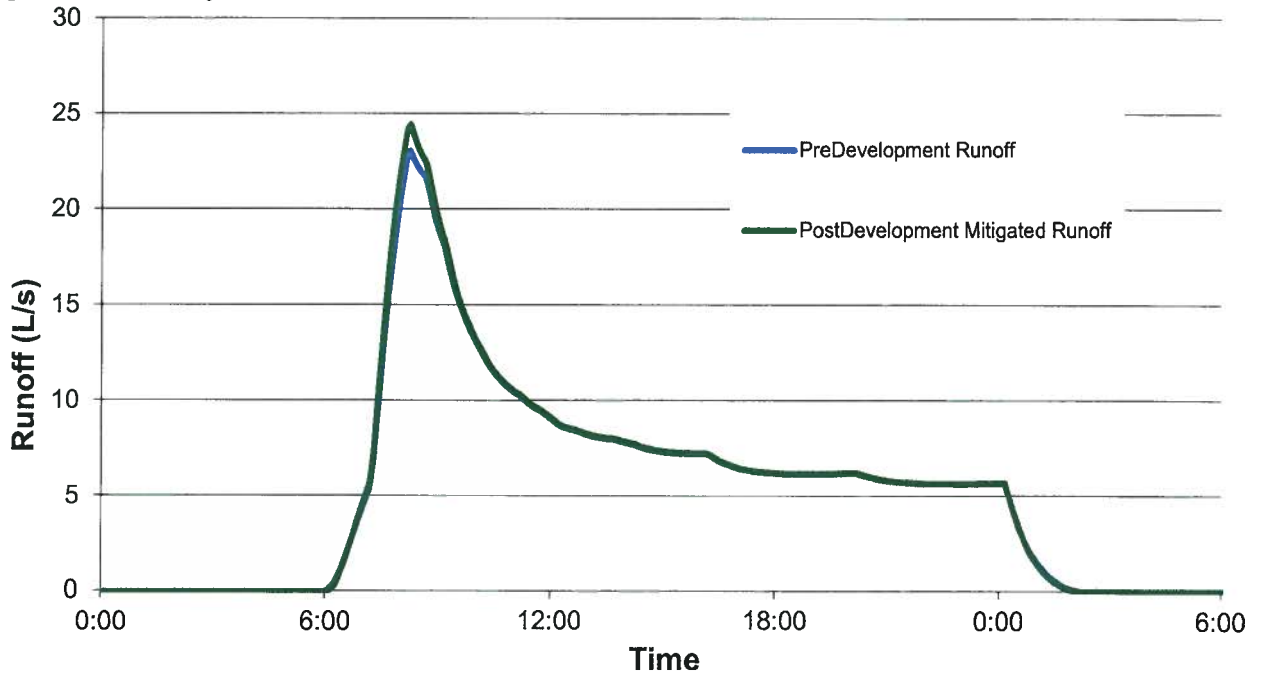
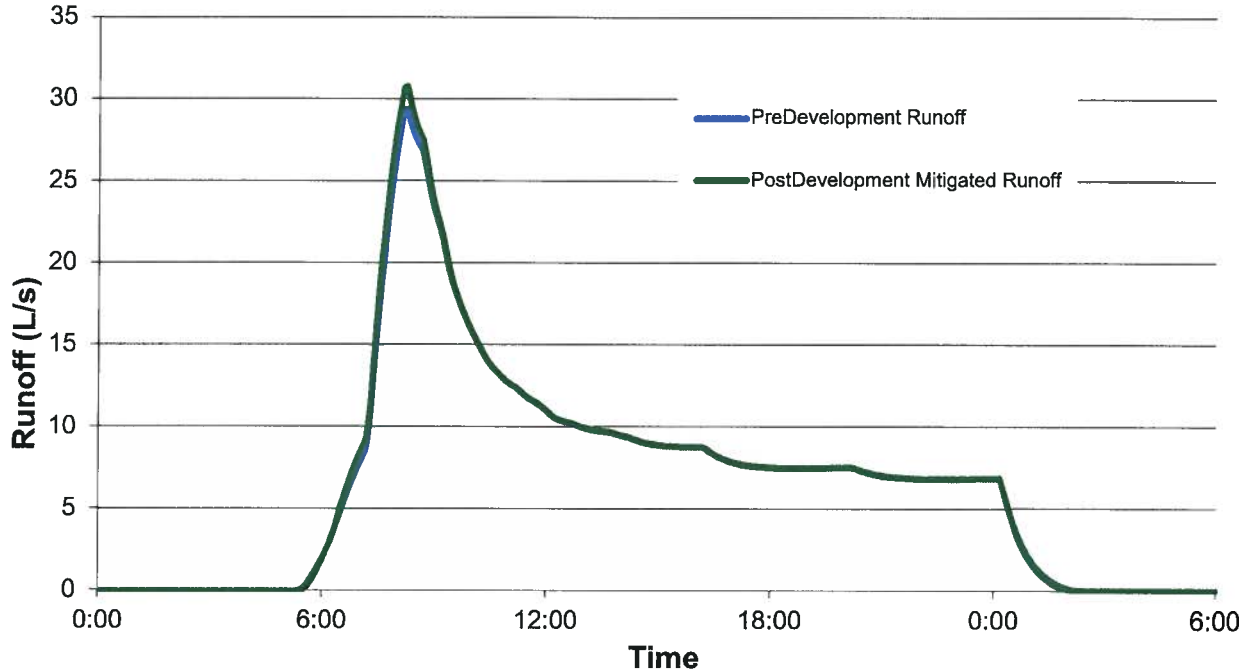




Figure 10 – BMP Performance: 5-Year SCS Event



8 SEDIMENT AND EROSION CONTROL

Prior to, or in conjunction with, any civil construction, land clearing, grading or earthworks, sediment and erosion control measures should be implemented to ensure the works will be undertaken in such a manner that will preclude conveyance and discharge of fine silts and clay particles into the receiving environment. Earthworks should be scheduled for the drier summer months, which will reduce the chance of rain and erosion. As rain is always a possibility, a sediment and erosion control plan should be in place prior to any ground disturbance.

As a minimum, sediment and erosion control measures should be implemented based on the requirements of the provincial document entitled "*Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia*", and in compliance with the WLAP's (former MoELP's) "*Environmental Best Management Practices for Urban and Rural Land Development in British Columbia*", June 2004.

During civil construction, a containment system should be employed. The containment system should utilize perimeter silt fencing and cut-off ditches with check dams, which should be installed per *Develop with Care 2014* Guidelines. In general, the following guidelines should be used:

- A containment system should be employed which will eliminate the conveyance and discharge of fine silts and clay particles into the receiving environment.
- Civil construction activity to be curtailed or postponed completely during periods of wetter weather.



May 31, 2017/ 2211-47107 T2016
 Drainage Plan for Lot 1, Block 249, CD, Plan VIP19128

- Stripping of existing organic topsoil should be undertaken during periods of dry weather only.
- No accumulations of sediment/mud should be tracked onto the municipal road.
- In the event of heavy precipitation, the contractor should ensure a cessation of all civil works on the site.
- Disturbed areas should be re-vegetated as soon as practical.

9 CONCLUSION

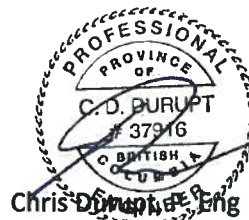
Modeling shows that the proper installation of the proposed BMP's for the subject property will limit the increase in runoff peak rates to within 7% of pre-development levels and that total volume increases will be within 3% of pre-development rates up to and including the 5-year rainfall event.

Yours truly,

MCELHANNEY CONSULTING SERVICES LTD.

Reviewed by:

Neil Penner, E.I.T.
 Civil Engineer
 npenner@mcelhanney.com



Chris Durupt, Eng
 Project Engineer
 cdurupt@mcelhanney.com

/njg

REVISION HISTORY

Date	Status	Revision	Author
May 31, 2017	Final	0	NP
May 25, 2017	Draft	original	NP

LIMITATION

This report has been prepared for the exclusive use of Mr. William Mackenzie Lyle. The material in it reflects the best judgement of the Consultant in light of the information available to the Consultant at the time of preparation. As such, McElhanney, its employees, sub-consultants and agents will not be liable for any losses or other consequences resulting from the use or reliance on the report by any third party.

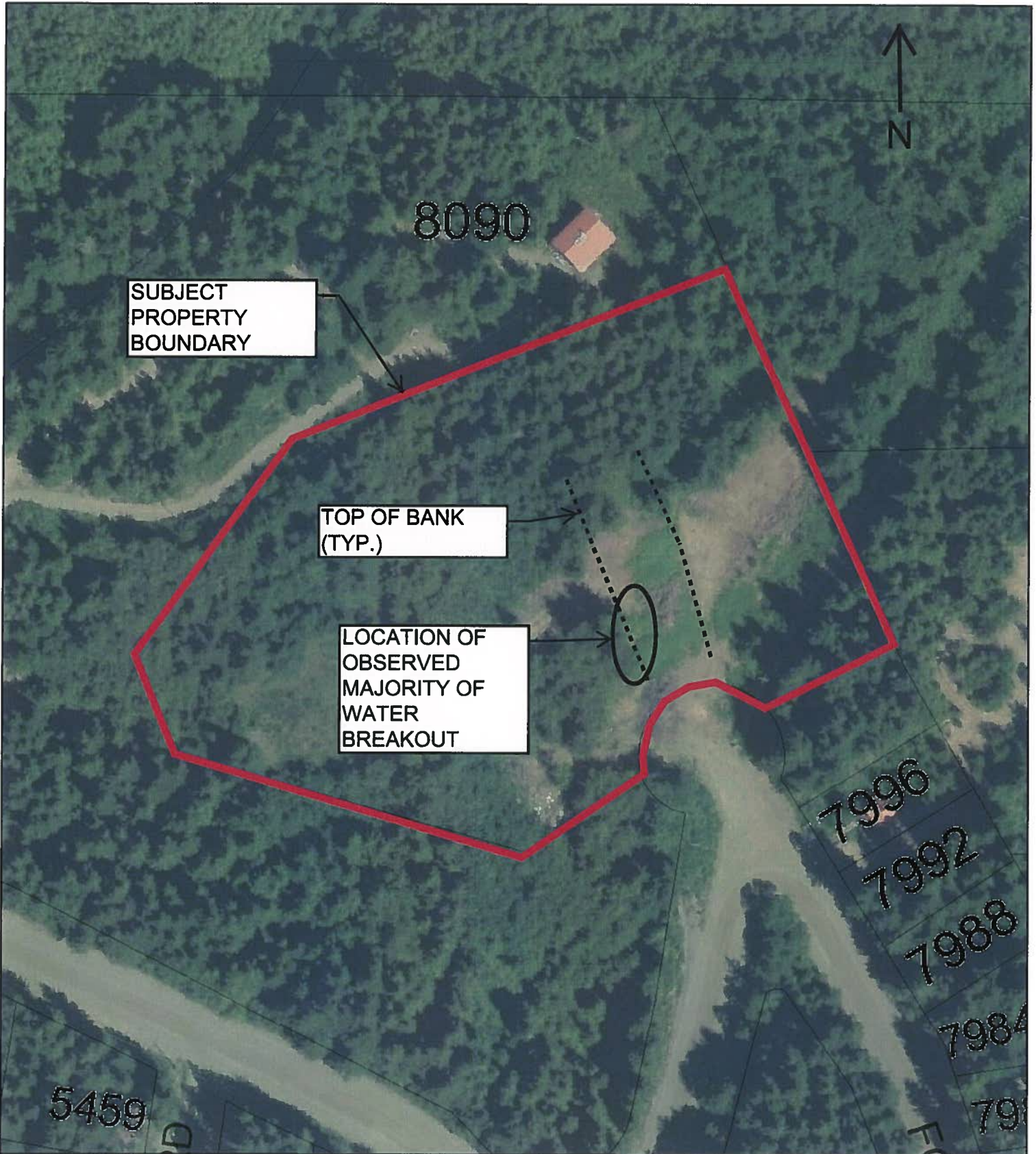


May 31, 2017/ 2211-47107 T2016
Drainage Plan for Lot 1, Block 249, CD, Plan VIP19128

APPENDIX A

EXISTING SITE PLAN

Existing Site Plan - Source CVRD iMap



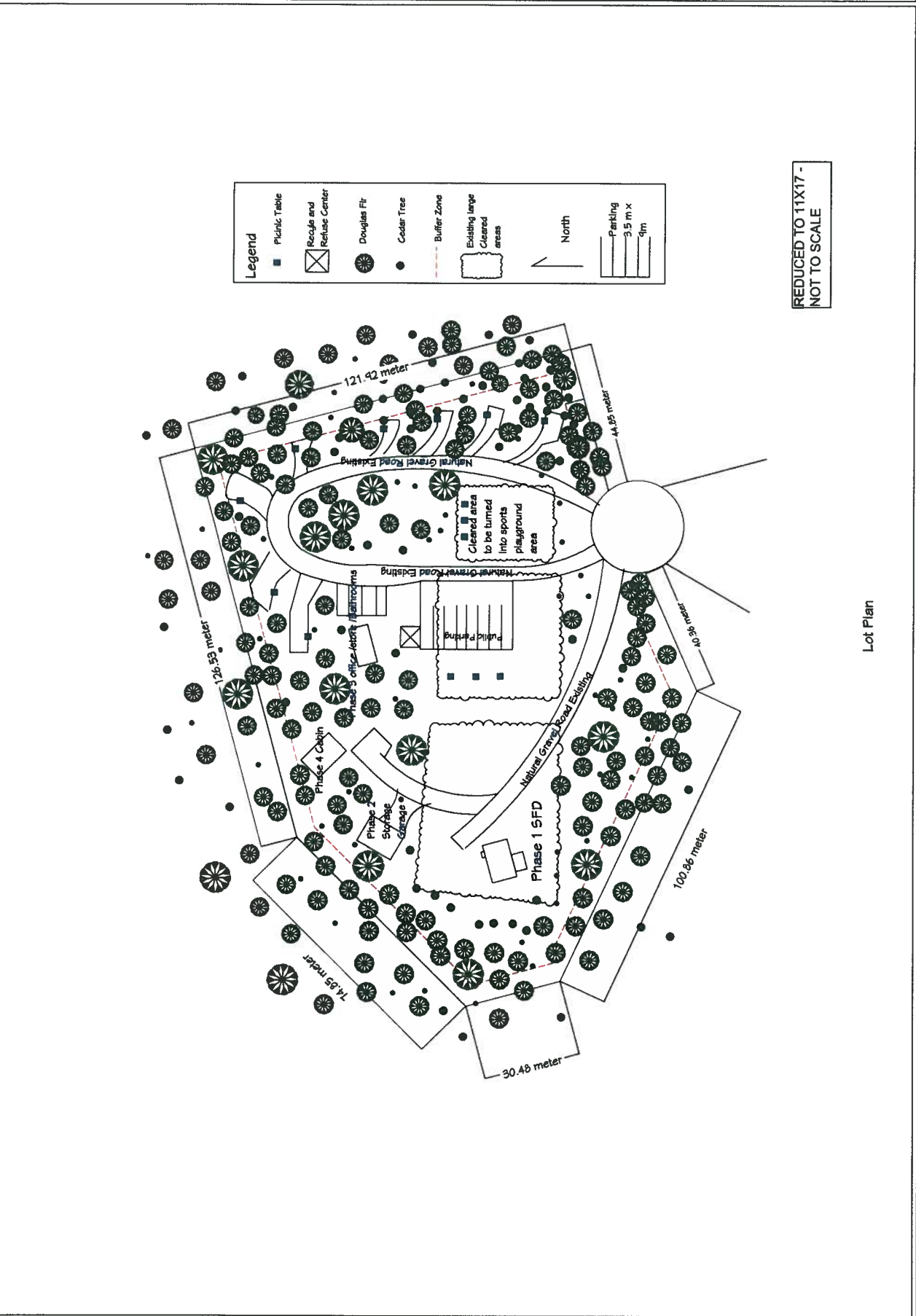


May 31, 2017/ 2211-47107 T2016
Drainage Plan for Lot 1, Block 249, CD, Plan VIP19128

APPENDIX B

PROPOSED SITE PLAN

		8010 Forbalden Plateau Road	Dragonfly Homes	DATE: 4/6/2017	SCALE: 2mm=1 meter	P-1
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Legend

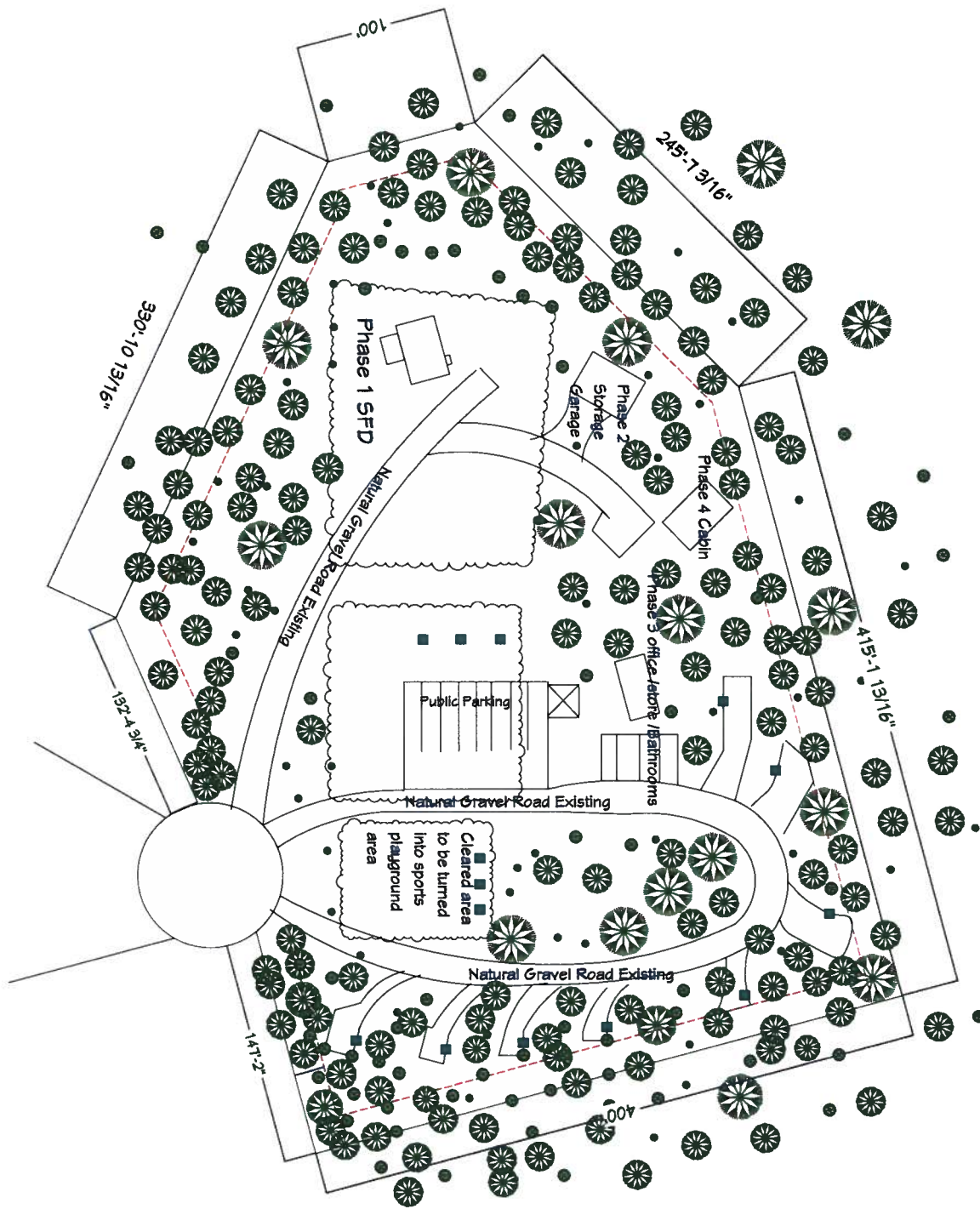
- Picnic Table
- ⊠ Recycle and Refuse Center
- Douglas Fir
- Cedar Tree
- - - Buffer Zone
- ▭ Existing large cleared areas

North

Parking
 3.5 m x
 9m

REDUCED TO 11X17 - NOT TO SCALE

Lot Plan



	North
	Existing large cleared areas
	Buffer Zone
	Cedar Tree
	Douglas Fir
	Recycle and Refuse Center
	Picnic Table
	Parking 12' Min x 30'

Subject: DarkSky	
Category: Community Planning Services	Policy Reference: 3010-00

Purpose

1. To include a set of guidelines to be considered regarding exterior lighting for commercial, industrial, and multi-family residential unit development. These regulations include an interpretation section to define the various terms, standardize how light systems are designed, constructed and installed, and to reduce glare, light trespass and obtrusive light while conserving energy and resources. Safety, security and productivity shall be maintained and encouraged while reducing the degradation of the nighttime visual environment.

Scope

2. The scope of this policy includes the various electoral area official community plans that have a form and character development permit area for commercial, industrial or multi-unit family residential development.

Guiding Principle

3. To guide commercial, industrial and multi-family residential development to have exterior lighting that does not negatively impact the quality of life for adjacent neighbours nor create any light pollution.

Interpretation

4. The following are definitions relating to this DarkSky policy:
 - a) **Abandonment:** The relinquishment of a property, or the cessation of a use or activity by the owner or tenant for a period of six months, excluding temporary or short term interruptions for the purpose of remodeling, maintaining, or otherwise improving or rearranging a facility. A use shall be deemed abandoned when such use is suspended as evidenced by the cessation of activities or conditions that constitute the principle use of the property.
 - b) **Development project:** Any multi-family residential, commercial, industrial or mixed use subdivision plan or development plan which is submitted to the regional district for approval.
 - c) **Direct illumination:** Illumination resulting from light emitted directly from a lamp or luminaire, not light diffused through translucent signs or reflected/bounced from other surfaces such as the ground or building faces.
 - d) **Filtered light:** Light from a light source that is covered by a glass, acrylic or other cover that restricts the amount of non-visible radiation (infrared, ultraviolet) emitted by the light fixture.
 - e) **Fully shielded fixture:** An outdoor light fixture shielded in such a manner that all light emitted by the fixture, either directly from the lamp or indirectly from the fixture, is projected below the horizontal as certified by the manufacturer.

- f) Glare: Harsh, uncomfortable bright light emitting from a luminaire causing reduced vision or momentary blindness when shining into one's cone of vision.
- g) Installed lighting: Attached, or fixed in place, whether or not connected to a power source.
- h) Light trespass: Exterior light fixtures shining light beyond one's property line.
- i) Multi-unit family residential: properties zoned and utilized for multi-unit family residential use.
- j) Outdoor light fixture: Outdoor electricity powered illuminating devices, outdoor lighting or reflective surfaces, lamps and similar devices, either permanently installed or portable, which are used for illumination or advertisement. Such devices shall include, but are not limited to, search, spot and flood lights for: buildings and structures; recreational areas; parking lot lighting; landscaping and architectural lighting; billboards and other signs (advertising or other); street lighting; product display area lighting.
- k) Outdoor recreation facility: A facility used and equipped for the conduct of sports, leisure and/or entertainment.
- l) Partially shielded light fixture: An outdoor light fixture shielded in such a manner that more than zero but less than ten percent of the light emitted directly from the lamp or indirectly from the fixture is projected at angles above the horizontal, as certified by the manufacturer.
- m) Sign: Any object, device, display, structure, or part thereof, which is used to advertise, identify, display, direct or attract attention to any object, service, event or location by any means including words, letters, figures, design, symbols, fixtures, colours, illumination or projected image.
- n) Sign, indirectly lit: Any sign facing that reflects light from a source intentionally directed upon it.
- o) Sign, internally lit: Any sign that has the source of light entirely enclosed within the sign and not directly visible to the eye.
- p) Temporary lighting: Lighting which does not conform to the provisions of the DarkSky policy and will not be used for more than one thirty day period within a calendar year may be permitted, subject to approval from the regional district, with a possible one, thirty day extension. Temporary lighting is intended for uses that by their nature are limited in duration; example: holiday decorations, civic events or construction projects.
- q) Up light: Any light from a luminaire that shines above the horizontal plane causing illumination of the sky.

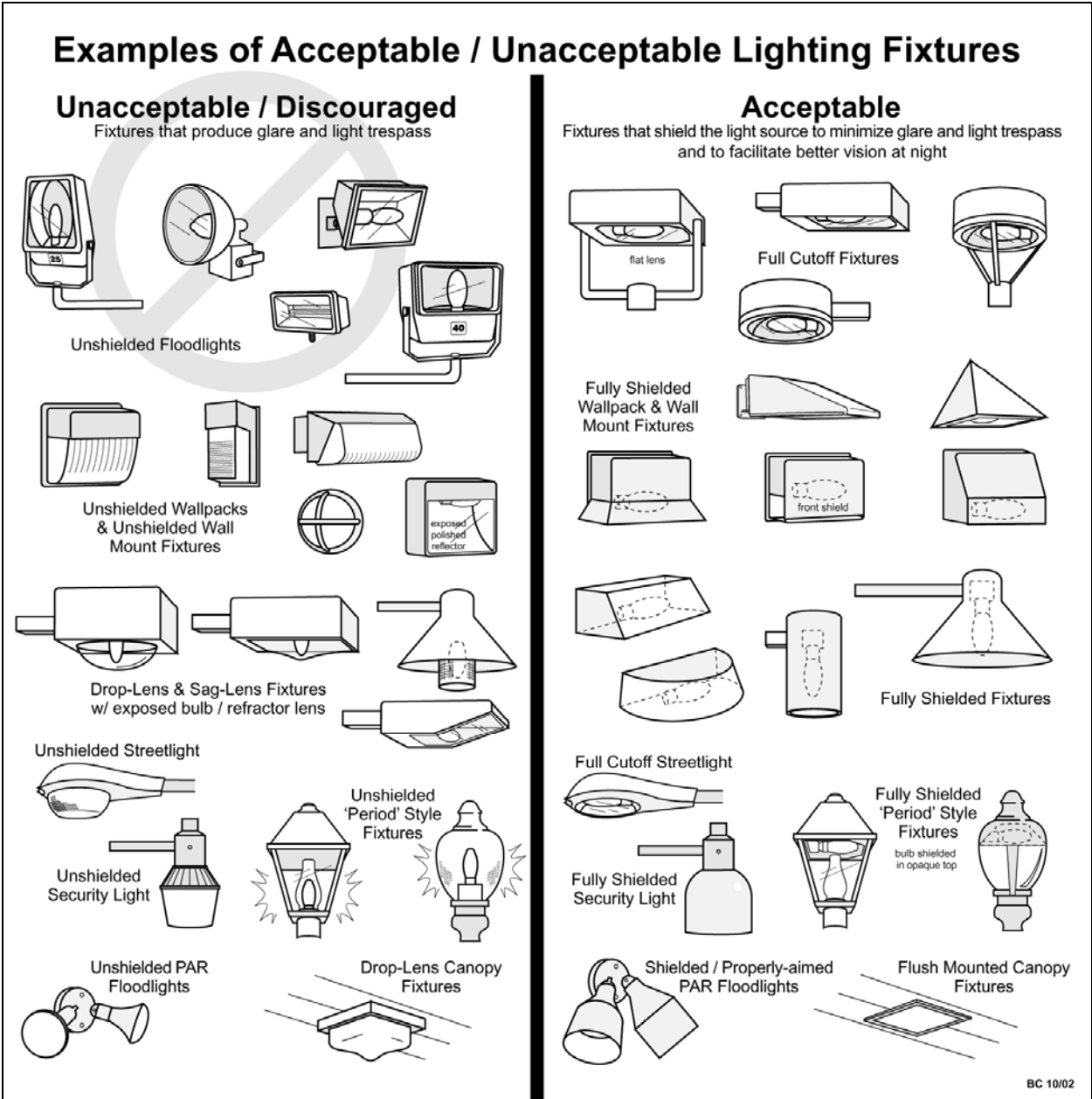


Figure One: Sample of light fixtures that are discouraged and recommended as part of the DarkSky policy.

Policy Statements

- 5. Shielding of outdoor light fixtures
 - a) All outdoor lighting fixtures shall be shielded to minimize up-light. Mounted incandescent type fixtures shall be shielded. Lighting is encouraged to be activated by motion sensors versus being on all the time.
 - b) Outdoor floodlighting shall be shielded in such a manner that the lighting system will not produce light trespass.

- 6. Limiting trespassing of light beyond property lines
 - a) All light fixtures shall be located, aimed and or shielded so as no direct light trespasses beyond the property line on which the light is mounted.

- 7. Non-conforming light fixtures
 - a) In addition to other exemptions provided in the regional district DarkSky policy, an outdoor lighting fixture not meeting these provisions shall be allowed if the fixture is extinguished by an automatic shutoff device between sundown and sunrise.
 - b) No outdoor recreational facility, whether public or private, shall be illuminated after sundown except when the facility is in use. Outdoor lighting is encouraged to be on only when the field is in use, such as by a user pass activation system.
 - c) The use of searchlight, laser light, or any similar high intensity light for outdoor advertising or entertainment, except in emergencies by police and fire personnel is prohibited. Temporary exemption to this may be granted if approved by the General Manager of Community Planning Services.

- 8. Effective Date
 - a) The development permit must conform to the DarkSky policy that exists at the time of application. When existing lighting fixtures are considered inoperable, all replacements are subject to all the provisions of the DarkSky policy. The light will be considered inoperable when the housing of the fixture requires replacement or when the lens, lamp, and ballast need to be replaced.

- 9. New Construction
 - a) All exterior lighting installed shall be approved by the International DarkSky Association (IDA) and must be installed correctly.

- 10. Exemptions
 - a) The following are exempt from the requirements of the DarkSky policy:
 - i. Single-family development (less than or equal to three dwelling units on one property and zoned residential). Note: the regional district does encourage single-family development to seriously consider the installation of IDA approved lighting.
 - ii. Outdoor lighting fixtures existing and legally installed prior to the implementation of the DarkSky policy.
 - iii. Outdoor advertising signs of the type constructed of translucent materials and wholly illuminated from within do not require shielding. Dark backgrounds with lighter coloured lettering or symbols are preferred to minimize detrimental effects.
 - iv. Navigational and general life safety lighting systems required at airports and other transportation installations.

Approval History

Policy adopted:	December 13, 2007
Policy amended:	