COWICHAN VALLEY REGIONAL DISTRICT

DEVELOPMENT PERMIT

REGISTERED PROPERTY OWNER(S):

0782484 B.C. Ltd

CVRD FILE NO.: **29-D-16DP**

DATE ISSUED: **MONTH DAY, YEAR**

1. This Development Permit is issued and is subject to compliance with all of the bylaws of the Regional District applicable thereto, except as specifically or supplemented by this Permit.

2. This Development Permit applies to and only to those lands within the Regional District described below:
   Lot 2, Section 10, Range 2, and District Lot 690, Cowichan District Plan VIP70020 (PID: 024-681-814)

3. Authorization is hereby given for **the development of 38 site RV campground with service building**, subject to the following requirement(s):
   - **Prior to issuance of the development permit, the owner shall provide to the Cowichan Valley Regional District landscape security in the amount of $ 60,625.00.**
   - **Prior to issuance of the development permit, a restrictive covenant must be registered on the title of the subject property to limit the length of stay to not more than 120 days of each calendar year.**
   - **Prior to issuance of a building permit, the owner shall provide to the satisfaction of the CVRD detailed building and lighting design drawings demonstrating compliance with the Rural Character Development Permit Area guidelines for commercial development contained with sections RC.9 and RC.13 of the Cowichan Bay Official Community Plan Bylaw No. 3605.**
   - **Development shall occur in accordance with the attached Schedules.**
   - **All garbage collection and recycling facilities shall be screened and contained within a solid fenced and locked compound.**
   - **Landscaping shall be installed in accordance with Schedule C, to British Columbia Society of Landscape Architects (BCSLA) standards.**
   - **A registered BCSLA member shall confirm that all landscaping has been installed as per the Landscape Plans, as per Schedule C.**

4. The following Schedules are attached to and form a part of this permit:

SCHEDULE A – Location Map

SCHEDULE B – Site Plan, dated October 18, 2016, prepared by Islander Engineering

SCHEDULE C – Landscape Plan, dated April 30, 2018, prepared by Studio One Creative

SCHEDULE D – Rainwater Management Plan, dated May 21, 2013, prepared by Active Earth Engineering Ltd.

SCHEDULE E – Sediment and Erosion Control Plan, dated May 22, 2018 prepared by Islander Engineering

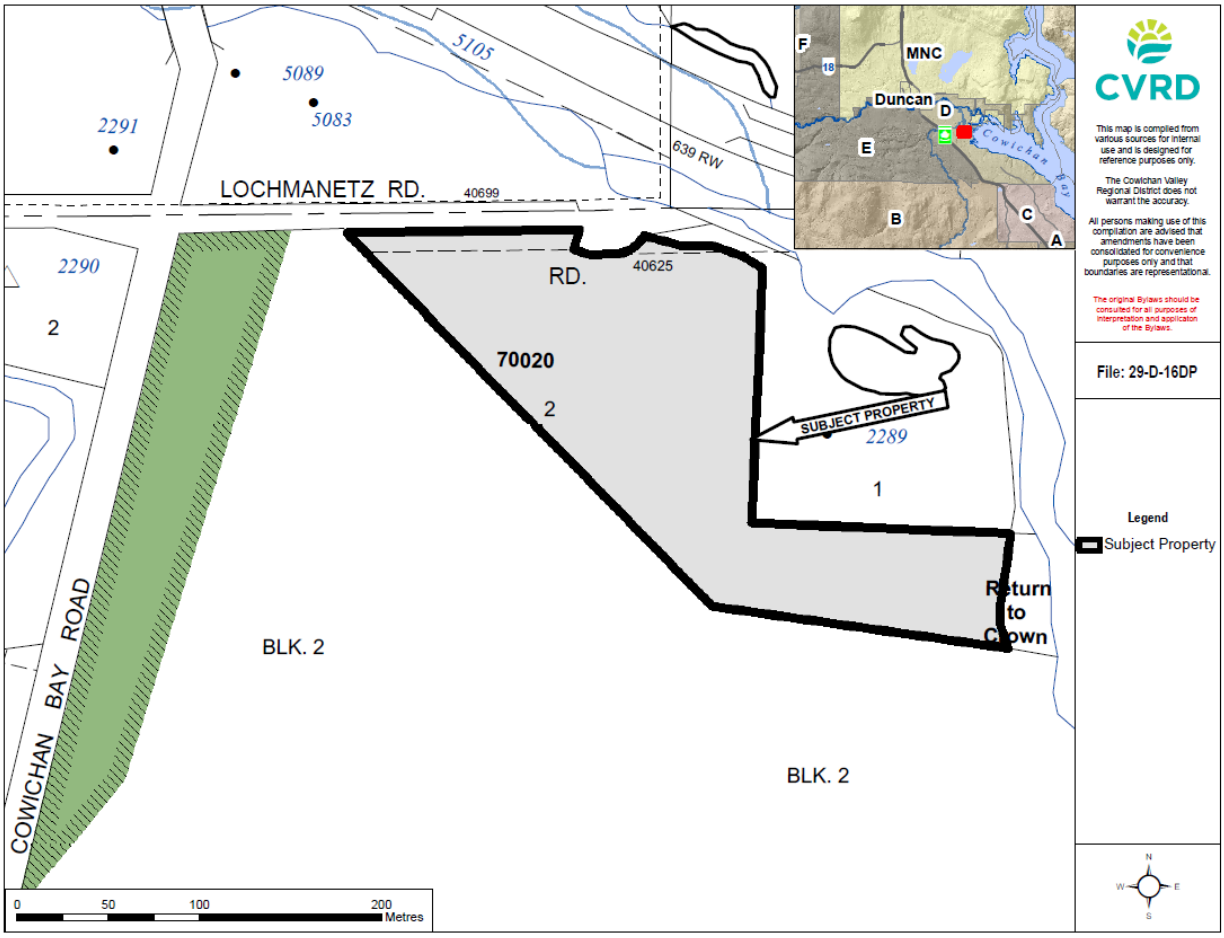
5. The land described herein shall be developed in substantial compliance with the terms and provisions of this Permit and any plans and specifications attached to this Permit shall form a part thereof.

6. Subject to the terms of this Permit, if the holder of this Permit does not substantially start any construction within 2 years of its issuance, this Permit will lapse.

AUTHORIZED BY RESOLUTION NO. **[#############]** PASSED BY THE BOARD OF THE COWICHAN VALLEY REGIONAL DISTRICT THE **##TH** DAY OF **MONTH**, **YEAR**.

This Permit is <u>not</u> a Building Permit or subdivision approval. Where applicable, no occupancy certificate or final subdivision approval shall be issued until all items of this Development Permit have been complied with to the satisfaction of the Land Use Services Department.

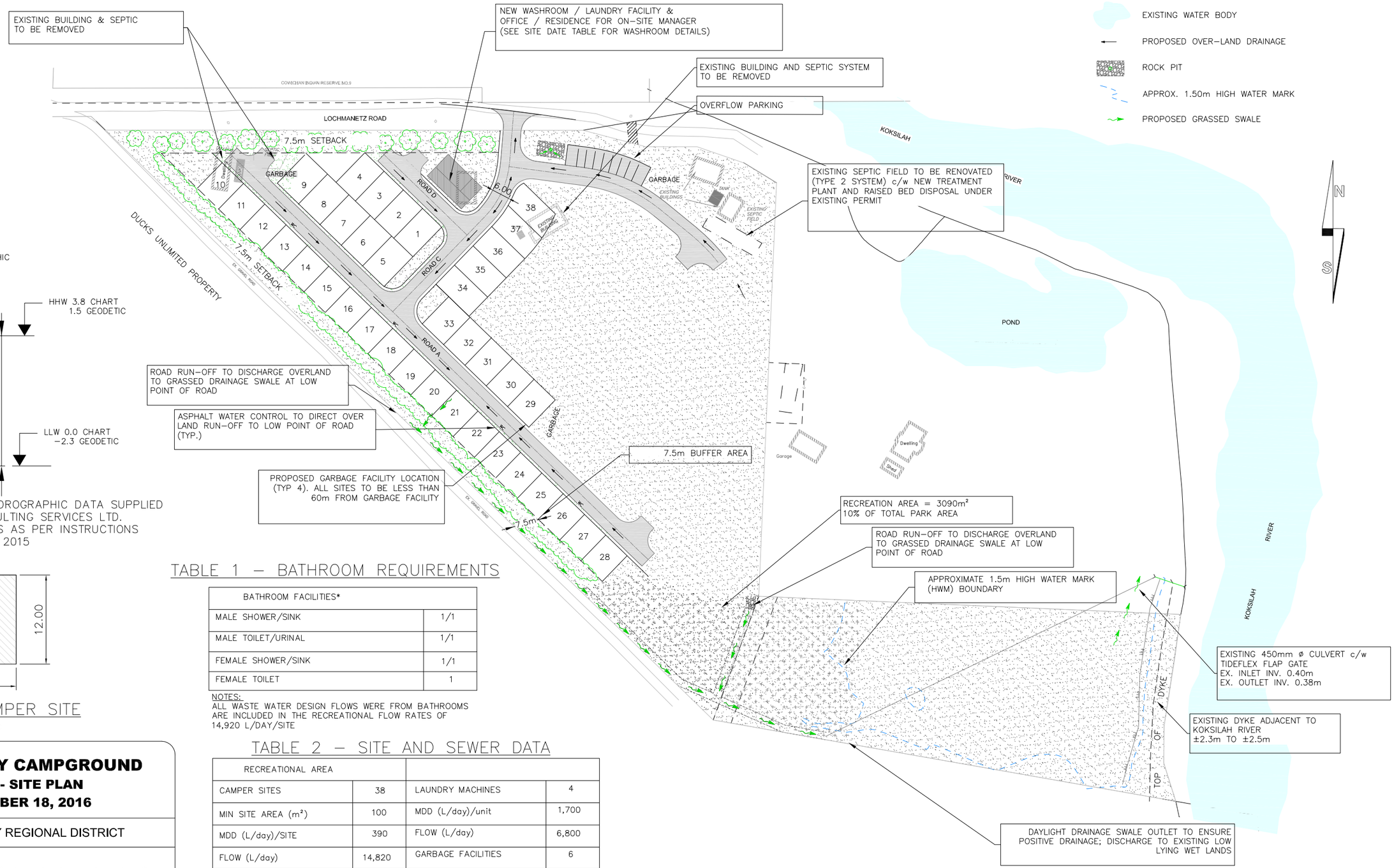
LOCATION PLAN



Schedule B

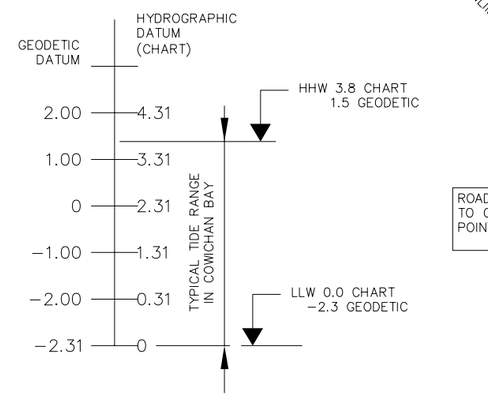
LEGEND

- EXISTING WATER BODY
- PROPOSED OVER-LAND DRAINAGE
- ROCK PIT
- APPROX. 1.50m HIGH WATER MARK
- PROPOSED GRASSED SWALE

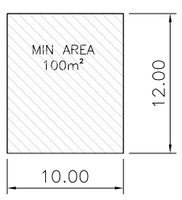


PLAN– PROPOSED SITE LAYOUT

SCALE 1:1250



* ALL SURVEY AND HYDROGRAPHIC DATA SUPPLIED BY MCELHANNEY CONSULTING SERVICES LTD.
* INDIVIDUAL HOMESITES AS PER INSTRUCTIONS FROM OWNER, NOV 30, 2015



TYPICAL CAMPER SITE

SCALE 1:500

TABLE 1 – BATHROOM REQUIREMENTS

BATHROOM FACILITIES*	
MALE SHOWER/SINK	1/1
MALE TOILET/URINAL	1/1
FEMALE SHOWER/SINK	1/1
FEMALE TOILET	1

NOTES:
ALL WASTE WATER DESIGN FLOWS WERE FROM BATHROOMS ARE INCLUDED IN THE RECREATIONAL FLOW RATES OF 14,920 L/DAY/SITE

TABLE 2 – SITE AND SEWER DATA

RECREATIONAL AREA			
CAMPER SITES	38	LAUNDRY MACHINES	4
MIN SITE AREA (m²)	100	MDD (L/day)/unit	1,700
MDD (L/day)/SITE	390	FLOW (L/day)	6,800
FLOW (L/day)	14,820	GARBAGE FACILITIES	6
TOTAL FLOW (incl laundry) (L/day) = 21,620			
MAX TOTAL FLOW (VIHA) = 22,700 (L/day)			

NOTES:
ALL WASTE WATER DESIGN FLOWS WERE FROM THE ENVIRONMENTAL PROTECTION ACT: SEWAGE DISPOSAL SYSTEM REGULATIONS

COWICHAN BAY CAMPGROUND
FIGURE 1 - SITE PLAN
REV: OCTOBER 18, 2016

COWICHAN VALLEY REGIONAL DISTRICT

ISLANDER ENGINEERING
485-C GARBALLY RD, VICTORIA BC, V8T 2J9
www.islanderengineering.com

Schedule C

LEGEND

HARDSCAPE FINISHES:

- PP1 — Paved Asphalt internal road
- PP2 — Crushed gravel for individual site surfacing

SOFTSCAPE:

- Lawn
- Rough grass
- Proposed hedgerow planting

MISCELLANEOUS:

- Wooden privacy screening approx. 1800mm height
- Large rock boulders approx 4' x5' dia.
- Concrete or mortared rock retaining/upstand walls; Heights vary.

NOTES:

1) All building layout information and setback dimensions supplied by Active Earth Engineering.
2) All survey information supplied by Active Earth Engineering.
3) This drawing must not be scaled. The General Contractor shall verify all dimensions, datums and levels prior to commencement of work.
4) All errors and omissions must be reported immediately to the Designer.
5) This drawing is the exclusive property of the Designer and can be reproduced only with the permission of the designer, in which case the reproduction must bear the designers name.

RECOMMENDED PLANT LIST

BOTANICAL NAME	COMMON NAME	SIZE /REMARKS
TREES		
3 Acer rubrum Crimson Sentry	Crimson Sentry Maple	4cm. cal. /B&B
3 Acer rubrum Crimson King	Crimson King Maple	6cm. cal. /B&B
5 Fagus sylvatica Dawyckii Gold	Dawyckii Gold Beech	5cm.cal. /B&B
5 Liquidambar styraciflua	American Sweetgum	7cm. cal. /B&B
7 Picea omorika Bruns	Serbian Spruce	3.0M ht /B&B
Hegdgerow planting:		
Acer circinatum	Vine Maple	2.0M ht.
Cornus sericea	Red Twig Dogwood	#5 Pot
Dicentra formosa	Western Bleeding Heart	#1 Pot
Echinacea purpurea	Purple Echinacea	#1 Pot
Mahonia aquifolium	Oregon Grape	#5 Pot
Physocarpus catitatus	Pacific Ninebark	#5 Pot
Polystichum munitum	Western Sword Fern	#3 Pot
Ribes sanguineum	Flowering Currant	#5 Pot
Rosa nutkana	Nootka Rose	#3 Pot
Salix sp, [sm]	Small Willow Species	#5 Pot
Smilacina racemosa	Solomon's Seal	#1 Pot
Symphoricarpos albus	Snowberry	#2 Pot
Vaccinium ovatum	Evergreen huckleberry	#5 Pot

NOTES:

"THIS PLAN IS NOT FOR CONSTRUCTION

1) Anything that is unclear should be clarified with Project Landscape Consultant.
2) All work to be completed to current BCSLA/BCNTA standards and MMCD Platinum Edition Specifications.
3) Landscape Contractor to arrange a pre-construction meeting with Landscape Consultant prior to start of work.
4) Plant material, installation and maintenance to conform to BCSLA/ BCLNA standard (current edition) and MMCD Platinum Edition Specifications. All plant material to be purchased from commercial nurseries in British Columbia [where available]. All planting areas and finished grading to slope away from building. All growing medium to comply to BCLSA/ BCLNA standard designation "1P - Level-1 Well Groomed Areas".
5) See Legend for all hardsurface finishes. All hardsurface finishes to be installed in accordance to BCLSA/ BCLNA standards [latest edition] and MMCD Platinum Edition Specifications and shall slope away from the buildings. Design of street lighting and hardscape retaining walls (if any) by others. Refer to architectural and engineering plans for additional information relating to sidewalks, stairs, driveways, buildings and patios. Grading design by others. Inspection of these features are to be by architectural and engineering consultants.
6) See Architecturals or Engineer's drawings for any [potential] curbs or retaining wall design. All Main Floor building elevations hardsurface grading [road and driveways] to be confirmed by building Engineer or Architect. Finish, height and slope of curbs or concrete retaining walls to be determined by others.
7) Refer to engineering plans which take precedence over these plans. If there are any questions regarding discepancies, contact the landscape Architect/designer immediately.
8) Any fencing to be built as shown on plan; portions of fencing in-between sideyards are optional, and may be built with an additional 2"x6" trellis top. Max height for the side yard shall be 1.8M including trellis top portion (if any). Not to exceed allowable by the CVRD. All fencing to be treated with two coats of semi-transparent stain (to match building colour). Fencing to be built as necessary to meet project requirements.
9) Contractor to confirm locations and elevations of all existing services and utilities prior to commencing construction.
10). Irrigation for all new trees to be undertaken by the property owner. Hand watering, or installation of a temporary system to service the trees to be provided for a period of two years.

SKL.01
30.APRIL.2018
1:500
LATEST REVISION: 15.MAY.2018

COWICHAN BAY CAMPSITE
CONCEPTUAL LANDSCAPE PLAN

STUDIO ONE CREATIVE
250.881.0706 - 4539 Viewmont Avenue, Victoria, BC

CALID SERVICES LTD
250.388.6919 - 2750 Quadra St, Victoria, BC

:: CAMPGROUND DEVELOPMET :: COWICHAN VALLEY REGIONAL DISTRICT :: SKL.01 :: landscape layout ::

Schedule 6 – Rainwater Management Plan

ATTACHMENT G (8 pages)

Active Earth Engineering Ltd

COWICHAN BAY CAMPGROUND

Rainwater Management Plan

Prepared For: MGM Holdings Ltd.
PO Box 282
Malahat, BC V0R 2LO

Prepared By: Active Earth Engineering Ltd.
#105 – 4343 Tyndall Avenue
Victoria, BC V8N 3R9

Date: May 21st, 2013

Project: 455 (05)

Re: Redevelopment of existing 39 unit RV Park

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION & EXISTING SITE CONDITIONS

This report comments on the stormwater strategy for the proposed redevelopment of the campsite in Cowichan Bay, BC. Historically, the site had space for 44 seasonal campers, however, currently there are only approximately 8 full time residents. The Owner is proposing to upgrade the existing sewage collection, treatment and disposal system from a Class "D" (septic tank) system with an aging pipe network to a Class "B" system with new PVC sewer pipe. In addition, the Owner is proposing to remove the existing well, wellhead and pneumatic pressure system and construct a new water facility. The existing campground has been operating for many years under a VIHA sewage permit, and a private domestic water system that is groundwater fed. The historical drainage patterns indicate that during the rare occurrence of a high tide combined with heavy rainfall, the Site has flooded in certain low lying reaches. However, one of these flooding events occurred when a log jam existed under the bridge connecting Lochmanetz to Western Terminal Road (see Figure 1 "Stormwater Plan"). Since this jam has been cleared, we understand that no flooding has occurred on-site.

The site is generally flat with a modest slope from the northwestern corner down to the southeast corner. The site is bounded by the Koksilah River to the east, Lochmanetz Road to the north, and by the existing gravel road to the south. This man-made dyke system protects the site from Cowichan Bay tidal fluctuation. No soils investigations have been completed to date, however, when preliminary site grading was completed, the top soils were removed from within the road areas before placement of fabric and blasted rock. The native soils as mapped by BC Environment "Soils of Vancouver Island" are a Crofthill fluvial, which is a silty clay loam that is very poorly drained. Typically these areas have free water remaining at or within 30cm of the surface most of the year.

The majority of the proposed access roads now consist of shot rock fill that the Owner recently placed. A geotextile fabric was placed on competent subgrade prior to the rock filling. To meet final design grades, an additional 275mm of base gravels and pavement will be placed on the roads during the site servicing phase.

There are no upland drainage systems that discharge to the subject property.

1.1 Sediment and Erosion Control

During construction, sediment and erosion control procedures will be implemented and routinely monitored. Sediment traps will be in place to intercept site drainage during the construction period. Silt fences and /or drainage swales will be used to control any untreated site run-off from discharging to neighboring properties or to the estuary. Once the land is rezoned, and Development Permits are in place, AEE will prepare a detailed Sediment and Erosion Control Plan which will be implemented at time of construction.

2.0 DESIGN CRITERIA

The CVRD Subdivision By-law No. 1215 governs the design and construction of stormwater and drainage components for the project. In this regard, we have prepared this drainage report to assist in assuring the safe, healthful redevelopment of this campsite.

2.1 Storm Drains

There are no proposed storm drains for this re-development. The site is rural in nature and the Owner intends to create open channels and grassed bio-swales to increase treatment and improve ease of maintenance.

2.2 Storm water Best Management Practices

There are a variety of stormwater best management practices (BMP's) that are in use and widely accepted by many approving agencies. By following and implementing various parts of the five practice areas listed below, projects are able to attenuate and treat storm water runoff:

- Pollution Prevention
- Source Controls (reduce runoff pollutants)
- On-site Controls (lot-level)
- Conveyance
- End-of-Pipe Controls

2.3 Flood and Tide Protection

All habitable (permanent) structures are to be designed so that the underside of the floor system is a minimum 600mm above the 200 year peak instantaneous flood elevation. However, the proposed sites will not contain any permanent structures, except for the mechanical rooms and hydro/power vaults. To ensure that flooding is not a potential concern at this site, the Owners have raised the existing grade by well over 0.5m.
According to local tide tables, the high water mark (HWM) is 1.5m geodetic, with tidal fluctuation from -2.3 to 1.5m geodetic. For a graphical illustration of the tides levels refer to Figure 1 "Stormwater Plan"

3.0 DESIGN FLOWS AND CONTROL

Land type classifications for the pre and post development conditions have been summarized in the following table below. Post development conditions have been broken into impervious and non-impervious land types in order to approximate a composite run-off coefficient.

Pre-Development

Type	R Value	Area (*ha*)
Gravel Roads	0.80	0.549 (*ha*)
Grassed Areas	0.17	1.649 (*ha*)
Total	0.33	2.198 (ha)

Post Development

Type	R Value	Area (*ha*)
RV sites (Gravel)	0.80	0.727 (*ha*)
Grassed Areas	0.17	0.974 (*ha*)
Road	0.95	0.446 (*ha*)
Pool/Mech. Bldg	0.90	*0.051 (ha)*
Total	0.55	*2.198 (ha)*

Pre and post development flows have been calculated through the use of the rational method, which was selected due to the small catchment area. By inputting the drainage area, time of concentration, runoff coefficients, and rainfall intensity as per the District of North Cowichan IDF data, pre and post development flow rates for the 10 year storm have been calculated and summarized below:

Pre-development

$$Q = RAIN \qquad t_c = 0.794 \text{ hours (Lag Method)}$$

$$L = 370m \;\; h = 1.20m \;\; S = .0032m/m$$

$$Q = (0.33) \cdot (2.198\ ha) \cdot (18\ mm/hr) \cdot (0.00278)$$

$$Q = 0.036\ m^3/s$$

Post Development

$$Q = RAIN \qquad t_c = 0.459 \text{ hours}$$

$$Q = (0.55) \cdot (2.198\ ha) \cdot (24\ mm/hr) \cdot (0.00278)$$

$$Q = 0.081\ m^3/s$$

As noted, there is a total increase in flow of 0.045 (m^3/s) between pre and post development levels.

The CVRD stormwater bylaw does not specify a requirement for storage. Storm water management guidelines implemented in neighbouring municipalities, such as the District of Saanich, require an obligation to store run-off in relation to the area of impervious surface created post development. Following these guidelines, the developer at this site would be required to detain approximately ±200 m^3 per hectare of impervious surface, which is this case would equate to approximately ±100 m^3.

Storage will be satisfied through the use of available void storage capacity within the blasted rock placed within the central areas of the property. By removing the existing soils with low permeability and replacing with approximately ±600mm blasted rock fill, there will be an increase in detention and storage that would satisfy the above requirements. Additional storage will be created through the use of a local rock pit positioned to the north, near the entrance to the development. The storage capacity of both the blasted rock fill and the local rock pit has been summarized below:

Type	Storage
Local Rock Pit	±10.5 m^3
Blasted Rock Fill	±1490.0 m^3

Discharge from the entire site will be controlled through the wetland and existing 450mm Ø diameter culvert located within the dyke adjacent to the Koksilah River. The existing capacity of this culvert is shown below:

Mannings Equation:

$$Q = \frac{A \cdot S^{1/2} \cdot R^{2/3} \cdot}{n}$$

$$Q = \frac{(0.159\ m^2) \cdot (0.0020\ m/m)^{1/2} \cdot (0.1125\ m)^{2/3}}{.013}$$

$$Q = 0.127\ m^3/s$$

The existing 450mm Ø CSP culvert is sufficiently sized to handle the anticipated post development, 10 year flow rate.

3.1 TREATMENT

A majority of over-land run-off from the proposed development will be treated through use of grassed bio-swales, positioned along the depressional low points of Road A. These bio-swales flow to the south/southeast eventually discharging to the existing wetland located adjacent to the Kokisilah River. Run-off will gain additional treatment through this low-lying wetland before discharging through the existing dyke, into the Kokisilah River, and eventually flowing into Cowichan Bay. The treatment of the remaining run-off will be obtained through the surface of the rock pit located near the entrance, within the northern portion of the development. The open-grate rim on the lawn basin located within the rock pit will be set proud, allowing for depressional storage and adequate treatment before entering the rock pit and infiltrating to the surrounding soils.

3.2 "200 YEAR" FLOOD ROUTE

The 200 year flood route follows the same overland drainage route as the road run-off, entering grassed bio-swales located along the localized low points of Road A. The flood route is then directed towards the existing low lying wet land where there is significant depressional storage available. The post development, 200 year storm has been calculated and summarized below:

200 Year Storm (Post Development)

$$Q = RAIN \qquad t_c = 0.459 \text{ hours}$$

$$Q = (0.55) \cdot (2.198\ ha) \cdot (38\ mm/hr) \cdot (0.00278)$$

$$Q = 0.128\ m^3/s$$

The available storage capacity in the blasted rock, local rock pit, and existing low lying wet land area will allow for significant detention of any anticipated run-off. With this consideration, the existing 450Ø CSP culvert has been deemed sufficient to handle any additional flows generated from the site post development.

The above report and recommendations for the "Cowichan Bay Campground" have been prepared by,

ACTIVE EARTH ENGINEERING LTD.

Corey B. Brown, Grad Tech
Design Technologist

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. J. ACHTEM

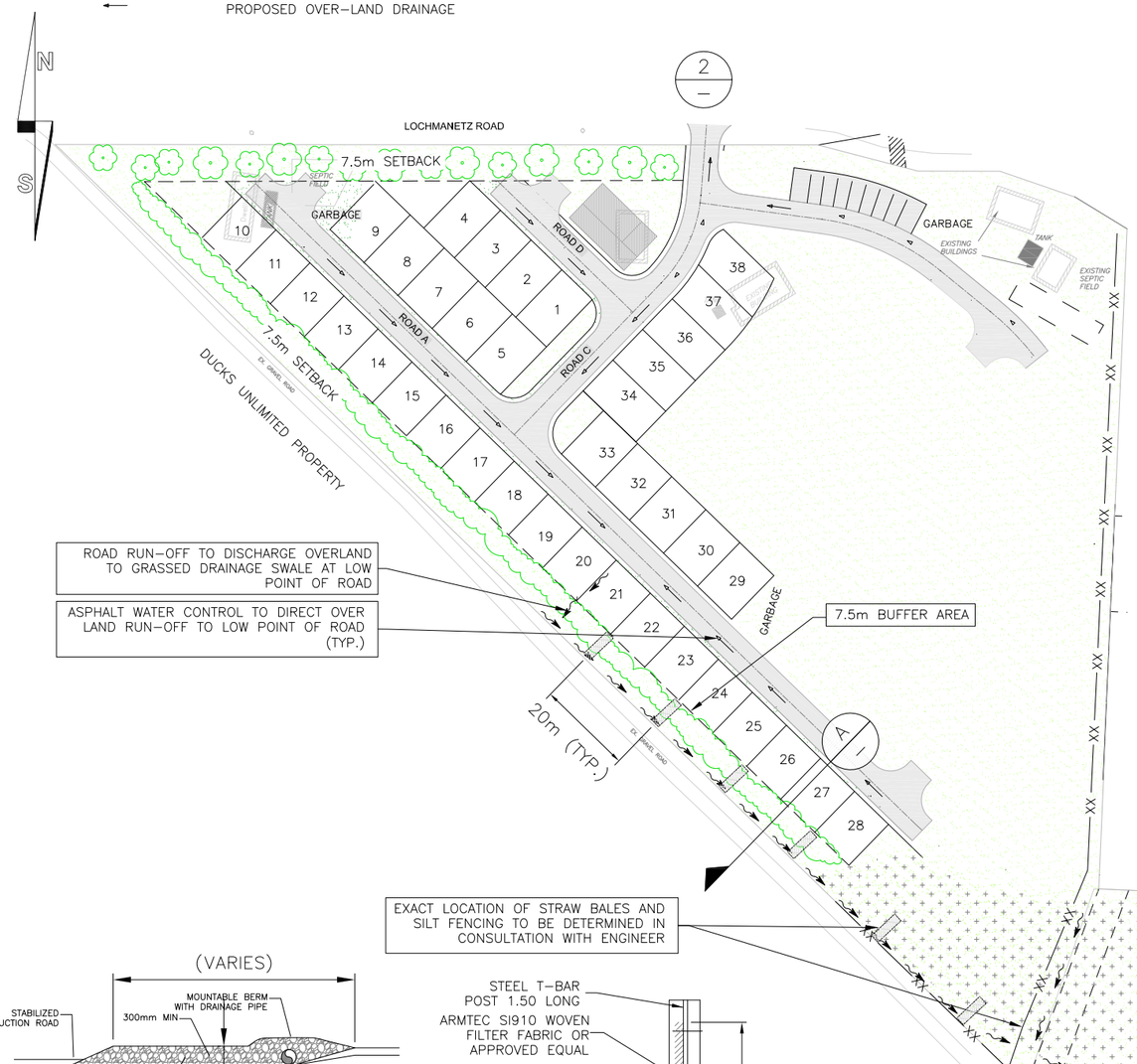
24 JUNE 2013

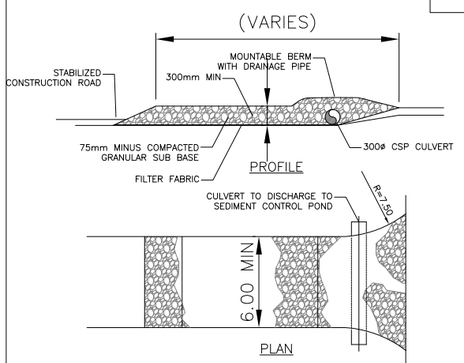
Michael J. Achtem, P.Eng
Review Engineer, Principal

Schedule E

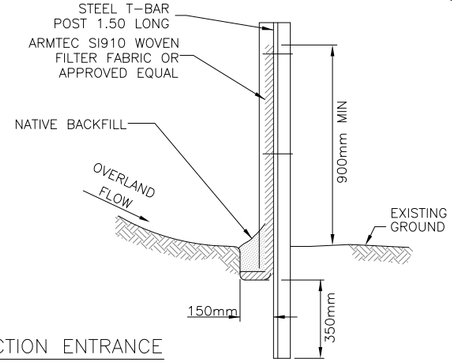
LEGEND

- XX — SILT FENCING (1/–)
- STRAW BALES (TEMPORARY EROSION CONTROL)
- PROPOSED GRASSED SWALE
- PROPOSED OVER-LAND DRAINAGE





DETAIL 2 — STABILIZED CONSTRUCTION ENTRANCE
NTS



DETAIL 1 — SILT FENCING
NTS

1. WOVEN FILTER FABRIC TO BE SECURED TO T-BAR AT TOP AND MIDPOINT WITH NYLON ZIP TIES.
2. FABRIC ROLL TO ROLL CONNECTIONS TO BE AS PER MANUFACTURER'S SPECIFICATIONS.
3. TOP TENSION WIRE TO BE 3mm GALVANIZED WIRE SECURED TO POSTS. FABRIC TO BE SECURED TO TENSION WIRE AT MIDPOINT.
4. T-BAR POSTS TO BE SPACED NOT MORE THAN 2.40 APART, CENTRE TO CENTRE.
5. DRILL HOLES FOR POSTS IN AREAS WHERE ROCK IS ENCOUNTERED, MINIMUM 0.50 DEEP.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE EROSION AND SEDIMENT CONTROL PLAN IS AN ENDURING PROCESS. DETAILS SHOWN ON THESE PLANS ARE FOR EARTHWORKS AND GENERAL GUIDANCE ONLY. AS CONSTRUCTION PROCEEDS VARIOUS EROSION AND SEDIMENT CONTROL TECHNIQUES WILL BE REQUIRED OF THE CONTRACTOR TO AVOID THE TRANSPORT OF SEDIMENTS. EROSION AND SEDIMENT WORKS SHOULD BE INSTALLED WHERE POTENTIAL PROBLEMS CAN BE PREDICTED OR ARE LIKELY TO HAPPEN, RATHER THAN WAITING FOR AN EROSION AND SEDIMENT PROBLEM THEN TRYING TO RESPOND.
2. EQUIPMENT AND WORKMANSHIP IS TO BE OF BEST QUALITY. THE ENGINEER RESERVES THE RIGHT TO DISMISS ANY EQUIPMENT FROM THE SITE WHICH IS UNSUITABLE (I.E. HYDRAULIC LEAKS ETC.)
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES FOR KEEPING SILT AND/OR OTHER DELETERIOUS MATERIAL FROM LEAVING THE SITE. TO ENSURE ADEQUATE CONTROL, EROSION AND SEDIMENT WORKS SHOULD BE INSTALLED WHERE POTENTIAL PROBLEMS CAN BE PREDICTED OR ARE LIKELY TO HAPPEN.
4. THE BEST WAY TO KEEP SEDIMENT OUT OF WATER IS TO AVOID IT BEING SUSPENDED IN THE FIRST PLACE. THE ONLY FEASIBLE WAY TO REMOVE SEDIMENT FROM WATER IS TO SLOW THE VELOCITY OF MOVING WATER AND ALLOW THE SEDIMENTS TO DROP OUT OF SUSPENSION. EROSION AND SEDIMENT WORKS ARE TO BE A PREVENTATIVE MEASURE TO AVOID SUSPENDED SEDIMENTS IN WATER.
5. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REMOVED WITHIN 30 DAYS OF FINAL SITE STABILIZATION BEING ACHIEVED OR AFTER THE TEMPORARY BEST MANAGEMENT PRACTICE (BMP) IS NO LONGER NEEDED.
6. TRAPPED SEDIMENT SHOULD BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHOULD BE PERMANENTLY STABILIZED.
7. THE ENGINEER OR QEP WILL PERFORM ROUTINE OBSERVATIONS AND MAKE RECOMMENDATIONS FOR EROSION AND SEDIMENT CONTROL METHODS.
8. EROSION AND SEDIMENT CONTROL FEATURES TO BE INSPECTED AT LEAST WEEKLY AND IMMEDIATELY FOLLOWING RUNOFF-PRODUCING EVENTS. CONTRACTOR TO KEEP A RECORD ONSITE FOR REVIEW OF MAINTENANCE WORK PERFORMED ON EROSION AND SEDIMENT CONTROL RECORDS ARE TO INCLUDE DATE MAINTENANCE PERFORMED.
9. EXCAVATION WORK SHOULD BE TIMED TO OCCUR DURING THE SUMMER MONTHS (MAY TO SEPTEMBER) WHEN PRECIPITATION IS AT A MINIMUM.
10. CONTRACTOR TO INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCED EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN EFFECTIVENESS OF THE EROSION CONTROL FEATURES SHALL BE MADE IMMEDIATELY.
11. EROSION AND SEDIMENT CONTROL REQUIREMENTS FOR THIS PROJECT WILL BE AS OUTLINED IN THE LATEST ADDITION OF THE FISHERIES AND OCEANS CANADA AND MINISTRY OF ENVIRONMENT "DEVELOP WITH CARE: ENVIRONMENTAL GUIDELINES FOR URBAN AND RURAL DEVELOPMENT IN BRITISH COLUMBIA". IT IS INCUMBENT ON THE CONTRACTOR TO ACQUIRE THESE GUIDELINES AND FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS THEREIN.
12. SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON THESE DRAWINGS ARE THE MINIMUM REQUIRED. THE LOCATION AND EXTENT OF SEDIMENT CONTROL WORKS ARE TO BE REVIEWED REGULARLY WITH THE ENGINEER/QEP OR ENVIRONMENTAL MONITOR.
13. ONLY THOSE AREAS NECESSARY TO CONSTRUCT THE WORKS CONTAINED IN THE ENGINEERING DRAWINGS ARE TO BE DISTURBED.
14. RETAIN EXISTING VEGETATION AND GROUND COVER WHERE POSSIBLE.
15. RESTRICT VEHICLE AND MACHINE ACCESS TO THOSE AREAS NECESSARY TO CONSTRUCT THE WORKS.

EROSION AND SEDIMENT CONTROL BEST MANAGEMENT MEASURES:

1. LIMIT CLEARING ACTIVITIES TO AREAS SCHEDULED FOR IMMEDIATE CONSTRUCTION. AREAS CLEARED AND NOT SCHEDULED FOR CONSTRUCTION TO BE PROTECTED FROM WIND AND RAIN BY IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL MEASURES SUCH AS STRAW BALE COVERING OR ALTERNATIVE.
2. STABILIZED CONSTRUCTION ENTRANCE TO BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ACCESS TO SITE
3. CONCRETE WASH AREA TO BE LOCATED ON SITE AND ALL CONCRETE WASHING SHALL OCCUR AT DESIGNATED AREAS TO BE DETERMINED BY THE ENGINEER.
4. SILT FENCING TO BE AT LOCATIONS SHOWN ON PLAN. WHERE POSSIBLE FENCING SHALL BE ERECTED ALONG EXISTING GROUND CONTOURS. SILT FENCING TO BE INSTALLED PROPERLY, KEYED INTO SLOPE SO THAT HEIGHT OF FENCE IS MIN. 0.90m. SILT FENCING TO BE INSPECTED FOR PROPER INSTALLATION AND COMPACTION BY PULLING UP ON THE FABRIC WHILE KICKING AT THE TOE OF THE FABRIC – IF THE FENCE COMES OUT OF THE GROUND, INSTALLATION AS A SEDIMENT CONTROL FENCE WILL BE REJECTED. REMOVAL OF SEDIMENT SHALL OCCUR WHEN THE SEDIMENT BUILD-UP IS NO GREATER THAN ($\frac{1}{3}$) THE HEIGHT OF THE FENCE.

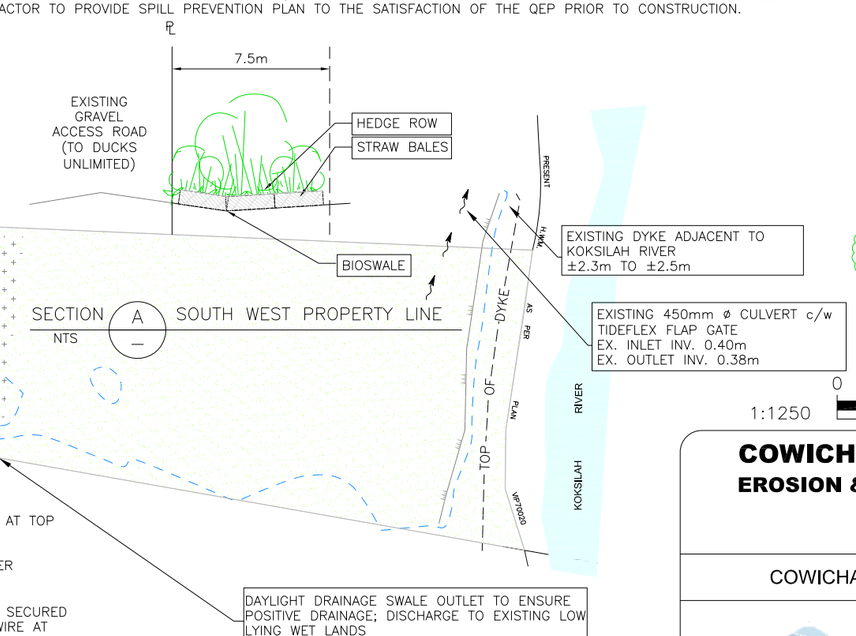
OFFSITE CONTROLS:

1. FILTER FABRIC TO BE INSTALLED ON ROADWAY CATCH BASINS ADJACENT TO WORK SITE
2. ALL SOILS TO BE REMOVED FROM SITE WHERE REASONABLE.
3. ADJACENT ROADWAYS AFFECTED BY CONSTRUCTION PRACTICES AREA TO BE SWEPT DAILY TO REMOVE DIRT/DUST. DO NOT SWEEP DIRT/MUD INTO CATCHBASINS OR WATER COURSES.

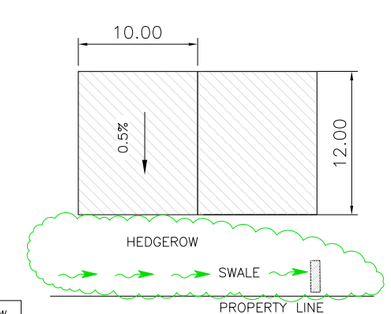
SPILL PREVENTION:

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIAL PRODUCTS THAT WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.

1. ORIGINAL LABELS AND MATERIAL SAFETY DATA INFORMATION WILL BE RETAINED.
2. IF SURPLUS PRODUCTS MUST BE DISPOSED OF, MANUFACTURES' OR LOCAL AND PROVINCIAL RECOMMENDED METHODS FOR PROPER DISPOSAL SHALL BE FOLLOWED.
3. CONTRACTOR TO PROVIDE SPILL PREVENTION PLAN TO THE SATISFACTION OF THE QEP PRIOR TO CONSTRUCTION.



PLAN – EROSION & SEDIMENT CONTROL
SCALE 1:1250



TYPICAL CAMPER SITE GRADING

1:1250 — 0 25 75m

COWICHAN BAY CAMPGROUND
EROSION & SEDIMENT CONTROL PLAN
REV: MAY 22 2018

COWICHAN VALLEY REGIONAL DISTRICT

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