



Development Permit Application

Referral Form – RDCK File DP2312G

Date: March 15, 2024

You are requested to comment on the attached DEVELOPMENT PERMIT for potential effect on your agency's interests. We would appreciate your response WITHIN 30 DAYS (PRIOR TO APRIL 15, 2024). If no response is received within that time, it will be assumed that your agency's interests are unaffected.

LEGAL DESCRIPTION & GENERAL LOCATION:

4626 Highway 6, Hall Siding, Electoral Area 'G'
LOT 1 DISTRICT LOT 1241 KOOTENAY DISTRICT PLAN EPP121813
PID: 031-873-529

PRESENT USE AND PURPOSE OF PERMIT REQUESTED:

The subject property is located in Electoral Area 'G' in Hall Siding along Highway 6, just west of Whitewater Ski Hill Road. The property is vacant and has been improved with a new driveway and a drilled well.

The purpose of this Development Permit application is to authorize the development of a resort commercial/event space use that will consist of 8 self contained rental cabins and a communal building with a café/restaurant use. The development will be serviced with on-site wastewater (septic) system and a drilled well. Although none of the proposed buildings are within the watercourse development permit area associated with a wetland feature, it is anticipated that there be a small amount of site preparation (e.g. grading and possible operation of machinery) as well as construction of part of a gravel walking path within the 15 metre development permit area.

This Development Permit application is associated with RDCK File No. Z2304G, a proposed land use bylaw amendment application to rezone the property from Tourist Commercial (C2) to Rumbling Creek Tourist Commercial (C3) in order to authorize a higher density of sleeping units and uses than what would be permitted on a property with on-site servicing in the standard C2 zone. Z2304G and the associated amending Bylaw No. 2943, 2024 was presented to the Board of Directors at the February 15th Board meeting. The Board resolved to complete 1st and 2nd reading of the draft amending bylaw and directed staff to provide notice that the public hearing is being waived in accordance with Sections 466 and 467 of the Local Government Act.

AREA OF PROPERTY AFFECTED	ALR STATUS	ZONING	OCP
1.0 Ha (2.47 Ac)	N/A	Tourist Commercial (C2)	Tourist Commercial (TC)

APPLICANT:

Rumbling Creek Resort

OTHER INFORMATION: ADVISORY PLANNING COMMISSION PLEASE NOTE:

If your Advisory Planning Commission plans to hold a meeting to discuss this Development Permit application, please note that the applicants must be provided with an opportunity to attend such meeting, in accordance with Section 461, subsection (8) of the *Local Government Act*, which reads as follows:

"If the commission is considering an amendment to a plan or bylaw, or the issue of a permit, the applicant for the amendment or permit is entitled to attend meetings of the commission and be heard."

Please fill out the Response Summary on the back of this form. If your agency's interests are 'Unaffected' no further information is necessary. In all other cases, we would appreciate receiving additional information to substantiate your position and, if necessary, outline any conditions related to your position. Please note any legislation or official government policy which would affect our consideration of this permit.

**ZACHARI GIACOMAZZO, PLANNER
REGIONAL DISTRICT OF CENTRAL KOOTENAY**

- MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
- HABITAT BRANCH (Environment)
- FRONTCOUNTER BC (MFLNRORD)
- AGRICULTURAL LAND COMMISSION
- REGIONAL AGROLOGIST
- ENERGY & MINES
- MUNICIPAL AFFAIRS & HOUSING
- INTERIOR HEALTH, HBE TEAM
- KOOTENAY LAKES PARTNERSHIP (FORESHORE DEVELOPMENT PERMITS)
- SCHOOL DISTRICT NO.
- WATER SYSTEM OR IRRIGATION DISTRICT
- UTILITIES (FORTIS, BC HYDRO, NELSON HYDRO, COLUMBIA POWER)

REGIONAL DISTRICT OF CENTRAL KOOTENAY

DIRECTORS FOR:

- A B C D E F G H I J
- K

ALTERNATIVE DIRECTORS FOR:

- A B C D E F G H I J
- K

- AREA 'G' APHC
- RDCK FIRE SERVICES
- RDCK EMERGENCY SERVICES
- RDCK BUILDING SERVICES
- RDCK UTILITY SERVICES
- RDCK RESOURCE RECOVERY
- RDCK REGIONAL PARKS

INSERT COMMENTS ON REVERSE . . .

The personal information on this form is being collected pursuant to *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015* for the purpose of determining whether the application will affect the interests of other agencies or adjacent property owners. The collection, use and disclosure of personal information are subject to the provisions of FIPPA. Any submissions made are considered a public record for the purposes of this application. Only personal contact information will be removed. If you have any questions about the collection of your personal information, contact the Regional District Privacy Officer at 250.352.6665 (toll free 1.800.268.7325), info@rdck.bc.ca, or RDCK Privacy Officer, Box 590, 202 Lakeside Drive, Nelson, BC V1L 5R4.

RESPONSE SUMMARY
FILE: DP2312G APPLICANT: RUMBLING CREEK RESORT

Name:

Date:

Agency:

Title:

RETURN TO: ZACHARI GIACOMAZZO, PLANNER
DEVELOPMENT AND COMMUNITY SUSTAINABILITY SERVICES
REGIONAL DISTRICT OF CENTRAL KOOTENAY
BOX 590, 202 LAKESIDE DRIVE
NELSON, BC V1L 5R4
Ph. 250-352-8190
Email: plandept@rdck.bc.ca

RDCK Map






Esri Community Maps
Contributors, Esri Canada,
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GeoTechnologies, Inc.



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Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Legend

-  Electoral Areas
-  RDCK Streets
-  Cadastre

Map Scale:

1:18,056

Date: June 14, 2023



The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.

RDCK Map







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Legend

-  Electoral Areas
-  RDCK Streets
-  Cadastre
-  Address Points

Map Scale:

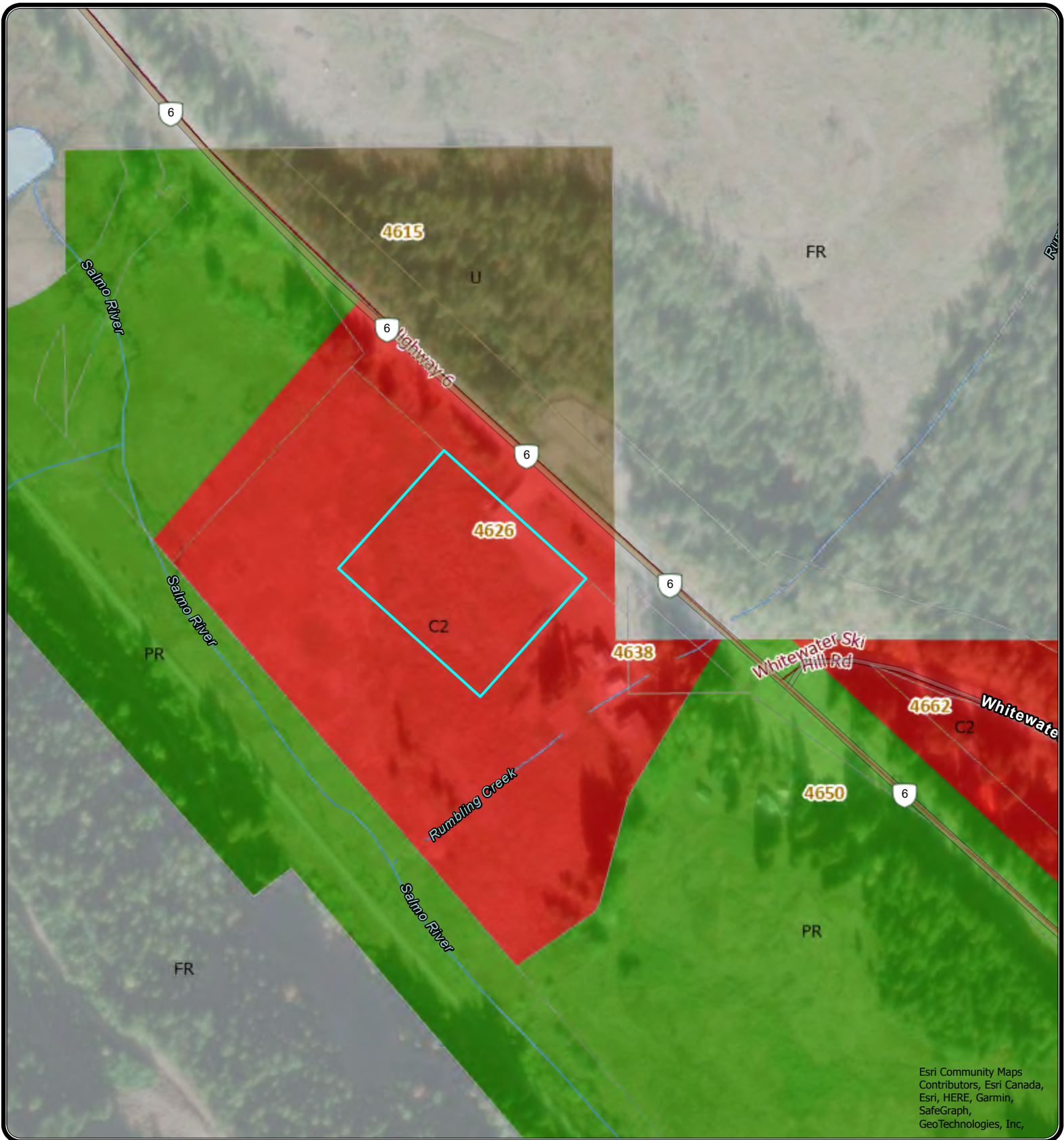
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Date: June 14, 2023



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RDCK Map



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Zoning Class

- Commercial
- Forest Resource/
Reserve
- Parks and Recreation
- Public Utility

Legend

- Lakes and Rivers
- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre
- Address Points

Map Scale:

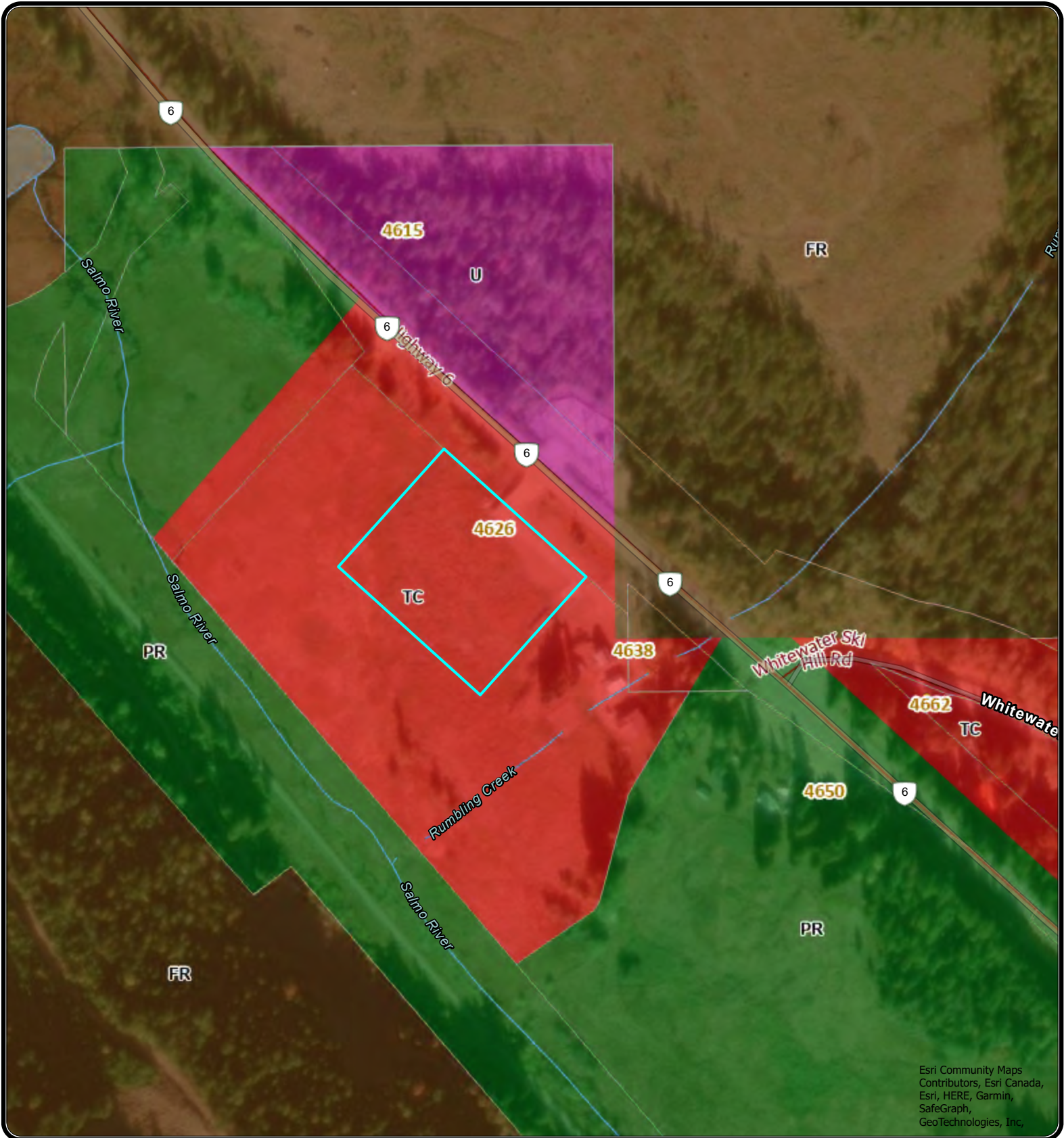
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RDCK Map












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Legend

- | | | | |
|---|-------------------------------------|---|------------------------|
|  | Commercial |  | Lakes and Rivers |
|  | Forest Reserve |  | Streams and Shorelines |
|  | Parks and Recreation |  | Electoral Areas |
|  | Utility, Railway and Transportation |  | RDCK Streets |
| | |  | Cadastre |
| | |  | Address Points |

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16.0 WATERCOURSE DEVELOPMENT PERMIT (WDP) AREA

Purpose

The WDP area is designated under Section 488 (1)(a) of the *Local Government Act* for the protection of the natural environment, its ecosystems and biological diversity.

Objectives

Riparian areas are highly valuable ecosystems providing ecological services that communities freely gain from a healthy functioning natural environment. These areas act as natural filtration systems for both surface water and groundwater while providing protection against flooding and erosion. Riparian areas provide movement corridors for many species, particularly in fragmented landscapes. Riparian areas function as essential habitats particularly for species at risk and are highly effective in moderating stream temperatures which is critical for fish and other wildlife.

The objectives of this Development Permit Area designation are:

1. To protect local watercourses, lakes and wetlands and their adjacent riparian areas from adverse impacts of land use.
2. To restore degraded watercourses and their riparian areas within the Plan area.
3. To protect the quality of local drinking water supplies.
4. To protect the biological diversity and habitat values of riparian and aquatic ecosystems and the species dependent on them.

Area

5. The Watercourse Development Permit Area (WDPA) includes all lands designated as such on Schedule A.4 and includes the following:
 - a. All areas within 30.0 metres of the high water mark of the Pend O'Reille River, Salmo River, Erie Lake, Rosebud Creek and Rosebud Lake.
 - b. All areas within 30.0 metres of the high water mark of Erie Creek, Hall Creek, Kelly Creek, Quartz Creek and Ymir Creek.
 - c. All areas within 15.0 metres of the high water mark of any other watercourse designated on Schedule A.4, including the natural boundary of a lake and wetland.

Where the boundaries of the WDPA will be verified and determined on the ground at the time of application.

Where the following definitions apply:

HIGH WATER MARK means the visible high water mark of a watercourse where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the watercourse a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.

LAKE means any area of year round open water covering a minimum of 1.0 hectares (2.47 acres) of area and possessing a maximum depth of at least 2.0 metres. Smaller and shallower areas of open water may be considered to meet the criteria of a wetland.

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) means an applied scientist or technologist who is registered and in good standing with an appropriate B.C. professional organization constituted under an Act. A qualified environmental professional could be a professional biologist, agrologist, forester, geoscientist, engineer or technologist.

STREAMSIDE PROTECTION AND ENHANCEMENT AREA (SPEA) means an area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both the riparian area vegetation and the adjacent upland vegetation that exerts an influence on the stream, the width of which is determined by assessment by a Qualified Environmental Practitioner (QEP).

WATERCOURSE means any natural or man made depression with well-defined banks and a bed 0.6 metres (2.0 feet) or more below the surrounding land serving to give direction to a current of water at least six months of the year or having a drainage area of two square kilometres (0.8 square miles) or more upstream of the point of consideration.

WETLAND means any areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Applicability

6. A Development Permit is required except where specified under the exemptions section for development or land alteration within the WDP Area. Where not exempt, development requiring a Development Permit includes any of the following associated with or resulting from residential, commercial, industrial or ancillary activities:
 - a. land within the area must not be subdivided;
 - b. construction of, addition to, or alteration of a building or other structure must not be started; and
 - c. land within the area designated must not be altered.

Exemptions

The WDP area does not apply to the following:

7. The subdivision of land, where the proposed subdivision of land does not fall within the WDPA, or where a newly proposed lot is greater than 1 ha (2.47 acres) in site area.
8. Addition to or alteration of farm buildings.
9. Farm operations as defined in the *Farm Practices Protection (Right to Farm) Act* and farm uses as defined in the *Agricultural Land Reserve Use, Subdivision, and Procedure Regulation* where a minimum 3 meters from the natural boundary of a watercourse is maintained in native vegetation or agro-forestry crops.
10. Construction or alteration of a building or structure on an existing foundation or footprint; provided that the existing foundation or footprint is not extended within the WDP Area.
11. Construction of water works authorized under the *Water Sustainability Act* or *Fisheries Act*.
12. Construction of access authorized under the *Water Sustainability Act* or *Fisheries Act*.

13. Construction of a small accessory building *not more than* ten (10) square metres, if all of the following apply:
 - a. the building is intended as an accessory use and not used for occupancy or habitation;
 - b. the building is not located in an identified Streamside Protection and Enhancement Area (SPEA) where these boundaries have been delineated; and
 - c. where the removal of native trees or vegetation is minimized to the extent possible.
14. Land alterations involving emergency measures to prevent or reduce immediate threats to life or property including:
 - a. emergency flood or protection works conducted under direction of local or provincial government;
 - b. the removal of trees that have been examined by a qualified arborist and certified to pose an immediate threat to life or property;
 - c. the removal of trees, shrubs or landscaping that has been deemed necessary for the purposes of wildfire mitigation measures as identified through a professional wildfire risk assessment, where such trees, shrubs or landscaping is replaced or compensated for elsewhere within the WDPA;
 - d. clearing of an obstruction from a bridge, culvert or an obstruction to drainage flow; and
 - e. repairs to bridges and safety fences carried out in accordance with the *Water Sustainability Act* or *Fisheries Act*.
15. Land alterations a minimum distance of 5.0 metres of the high water mark of any watercourse designated on Schedule A.4, including the natural boundary of a lake and wetland involving gardening and yard maintenance activities, including: mowing, pruning, planting and minor soil disturbance that does not alter the general contours of the land and does not involve the cosmetic application of artificial fertilizers, pesticides or herbicides.
16. Land alteration activities to restore and enhance the natural features, functions and condition of riparian areas in accordance with provincial best management practices.

Guidelines

Development shall be in accordance with the following guidelines:

17. Development shall be in accordance with the recommendations of an assessment report prepared by a Qualified Environmental Practitioner (QEP) in accordance with the Provincial Riparian Areas Regulation Assessment Methods at the expense of the applicant and as required as Development Approval Information supporting an application under Section 491 of the *Local Government Act*.
18. No development activities should take place within any Streamside Protection and Enhancement Area (SPEA) identified by the QEP. The applicant will be required to follow any measures identified by the QEP for protecting the SPEA over the long term and these measures should be included as conditions of the Development Permit.

19. Where a QEP report describes an area within the WDPA as suitable for development the development permit should only allow the development to occur in compliance with the measures described in the report.
20. Monitoring and regular reporting by a QEP or other professional at the applicant's expense may be required during the construction and development phases as specified in the Development Permit.
21. A QEP report should identify any invasive species and areas subject to prior degradation and should provide recommendations as to potential restoration or mitigation options.
22. Construction methods and timing must minimize environmental impacts. Clearing of land, grading, and other activities that expose soil should be completed during the dry months of the year usually between June and September. Timing of construction should follow the recommended timing windows for species based on provincially accepted best management practices.
23. The Regional District may impose permit conditions based on the Assessment Report including the following:
 - a. Require specified natural features or areas to be preserved, protected, restored or enhanced in accordance with the permit.
 - b. Require natural water courses to be dedicated.
 - c. Require works to be constructed to preserve, protect, restore or enhance natural watercourses or other specified natural features.
 - d. Require protection measures including that vegetation or trees be planted or retained in order to preserve, protect, restore or enhance fish habitat or riparian areas, control drainage, or control erosion.

Development Approval Guidelines

24. The Board may consider variances to the subdivision or siting regulations of this Bylaw or other bylaws where the variance may result in enhanced protection of a SPEA in compliance with the recommendations of an assessment report.

Restoration Guidelines

Where development has occurred in violation of the WDPA, the following guidelines shall apply:

25. A QEP must be retained at the expense of the applicant for the purpose of preparing a report outlining how to mitigate the damage incurred by any clearing and site development activities and how to restore the area to its undisturbed condition.
26. Buildings and structures constructed in violation of this WDPA may be subject to removal at the applicant's expense in order to restore the integrity of the riparian area.



4626 Highway 6

Riparian Assessment V1.1



Prepared for:

Regional District of Central Kootenay

202 Lakeside Drive

Nelson, BC, V1L 5R4

March 2, 2024

Prepared by:
Masse Environmental Consultants
812 Vernon Street
Nelson, BC, V1L 4G4

Project Number 2023-1031

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1 INTRODUCTION

Masse Environmental Consultants Ltd. was retained by Jason Newton and Joel Bot, Rumbling Creek Resort Development, to conduct a riparian assessment to accompany an application for a Watercourse Development Permit (WDP) at 4626 Highway 6 (PID 031-873-529, LOT 1 PLAN EPP121813 DISTRICT LOT 1241 KOOTENAY LAND DISTRICT). The Owner proposes to develop the property. The proposed development is located within the wetland riparian area, triggering a Watercourse Development Permit (WDP).

An initial site visit was completed on May 10, 2023, by Sylvie Masse R.P.Bio., and Chanel Gagnon, B.Sc., B.I.T, and a follow up site visit was completed on June 8, 2023, by Chanel Gagnon, B.Sc., B.I.T, and Lisa Pavelich P.Ag. The riparian assessment evaluates the existing conditions of the riparian area of the wetland, identifies habitat values, assesses potential environmental impacts, and recommends measures to mitigate or compensate for the alteration of the riparian area to maintain environmental values. It is based on the following regulatory framework and best management practices documents:

- RDCK Electoral Area 'G' Rural Official Community Plan Bylaw No. 2452, 2018
- British Columbia *Riparian Areas Regulation*
- British Columbia *Water Sustainability Act*
- British Columbia *Wildlife Act*
- Federal *Fisheries Act*
- Federal *Migratory Birds Convention Act*
- Requirements and Best Management Practices for Making Changes In and About A Stream in British Columbia
- Develop with Care. Environmental Guidelines for Urban and Rural Land Development in British Columbia
- General BMPs and Standard Project Considerations (Ministry of Environment)
- On the Living Edge: Your Handbook for Waterfront Living
- British Columbia Firesmart Homeowners Manual
- Riparian Factsheet No. 6 – Riparian Plant Acquisition and Planting
- A Homeowner's Guide to Stormwater Management

This report has been prepared by Chanel Gagnon, B.Sc., B.I.T., and reviewed by Sylvie Masse R.P.Bio.

I, Sylvie Masse, hereby certify that:

- a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the Fish Protection Act;
- b) I am qualified to carry out this part of the assessment of the development proposal made by the developer;
- c) I have carried out my assessment of the development proposal, and my assessment is set out in this Assessment Report; and
- d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

2 PROJECT OVERVIEW

2.1 Site Location

The subject property is located ~12 km southeast of Nelson, BC, just north of Whitewater Ski Hill Road and next to the Apex cross country skiing area (see Appendix 1 for Location Map). The property is ~2.47 acres (~1 ha) in size and is bordered by private properties on all sides, except for the northeast side that is bordered by Highway 6.

The project area is within the Interior Cedar-Hemlock dry warm variant 1 (ICHdw1) biogeoclimatic subzone, which occurs at valley bottom elevations around most of Kootenay Lake (MacKillop and Ehman 2016). The ICHdw1 subzone is characterized by moist, warm springs, hot and dry summers and mild, dry winters with moderately shallow snowpack. Winter rain-on-snow events are frequent and snow-free areas are common, particularly on warm-aspect sites. The ICHdw1 is a highly productive biogeoclimatic unit. Common species include interior Douglas fir (*Pseudotsuga menziesii*), western redcedar (*Thuja plicata*), western larch (*Larix occidentalis*), lodgepole pine (*Pinus contorta*), paper birch (*Betula papyrifera*), ponderosa pine (*Pinus ponderosa*), black huckleberry (*Gaylussacia baccata*), falsebox (*Paxistima myrsinites*), prince's pine (*Chimaphila umbellate*), queen's cup (*Clintonia uniflora*), twinflower (*Linnaea borealis*), and pipecleaner moss (*Robust rhytidiopsis*) (MacKillop and Ehman 2016).

2.2 Existing Site Conditions

The property is generally flat and gently sloping towards the Salmo River (southwest aspect), with an elevation ranging between 930 m – 935 m. The property is situated in the valley bottom between the Bonnington and Nelson Mountain Ranges, next to an extensive wetland complex to the west. Nearby watercourses include the Salmo River to the west of the wetland and Rumbling Creek to the southeast of the neighbouring property. The property has been disturbed by historical land clearing activities for

agricultural and human use, as evidenced by the presence of various exotic plants, mainly reed canary grass (*Phalaris arundinacea*), and the absence of tree and shrub cover (Photo 1). The property has been influenced by Rumbling Creek which has created an alluvial fan where material from the stream has deposited over time and has created an elevated bench next to the wetland. This bench was likely used for agricultural purposes and constitutes the disturbed area (~1.9 acres or 77% of the total property). Native vegetation is present on the boundary of the wetland and the toe of the disturbed bench.

2.2.1 Watercourses

Three watercourses are within or near the property, including a wetland complex, the Salmo River and Rumbling Creek. In addition to the defined watercourses, there is extensive seepage throughout the northwest portion of the property. This was evident during the May 10th site visit. The water is conveyed through a highway culvert northeast of the property. The water originates from Rumbling Creek and the east highway ditch. The surface runoff is not a defined stream channel since it does not have a well-defined bank and stream bed and flows less than six months of the year. Therefore, it does not meet the definition of a watercourse under the watercourse development permit (RDCK 2013). However, it meets the definition of a stream under the *Water Sustainability Act* (WSA). Refer to Section 4.1.2. for more detail.

“Watercourse” means any natural or man-made depression with well-defined banks and a bed 0.6 metres (2.0 feet) or more below the surrounding land serving to give direction to a current of water at least six months of the year and/or having a drainage area of two square kilometers (0.8 square miles) or more upstream of the point of consideration (RDCK 2013).”

"stream" under WSA means

- (a) a natural watercourse, including a natural glacier course, or a natural body of water, whether or not the stream channel of the stream has been modified, or
- (b) a natural source of water supply,

including, without limitation, a lake, pond, river, creek, spring, ravine, gulch, wetland or glacier, whether or not usually containing water, including ice, but does not include an aquifer.

2.2.1.1 Wetland Complex

The property is at the headwaters of the Salmo River watershed, which originates from the wetland complex present to the northwest (Photo 2). The wetland is the only defined watercourse that transects the subject property. The wetland complex is broadly classified as swamp (Ws) at the northwestern extent, shallow open water (Ww) and marsh (Wm).

During the site visit, the visible high-water mark (HWM) of the wetland was determined based on the changes in vegetation structure, loss of obligate hydrophytes and absence of wetland soil characteristics and the definition of natural boundary. The natural boundary was flagged in the field and is shown on the SPEA map (Appendix 3). This natural boundary will be used as the HWM from which the streamside protection area setbacks will be determined as per the Riparian Area Protection Regulation (RAPR).

“**Natural Boundary**” means the visible high water mark of any lake, river, stream or other body of water is where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself (MOE 2016).”



Photo 1. Aerial view of the property, looking northeast (May 10, 2023).



Photo 2. Aerial view of the property and Salmo River headwaters (May 10, 2023).

2.2.1.2 Salmo River

The Salmo River is a tributary of the Pend d’Oreille River and flows in a north to south direction from its headwaters within the wetland complex, north of the property. The Salmo River is a 6th order stream with a mainstem length of ~61 km. The Salmo River supports several fish species including species of regional significance such as Bull Trout (*Salvelinus confluentus*; BC Blue-listed, SARA Special Concern), Kokanee (*Oncorhynchus nerka*), Rainbow Trout (*Oncorhynchus mykiss*) and Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisii*; BC Blue-listed, SARA Special Concern).

2.2.1.3 Rumbling Creek

Rumbling Creek is a 1st order stream that flows from the western margin of the Nelson Range and drains into the Salmo River, ~50 m south of the property boundary, and has a mainstem length of ~3 km. Rumbling Creek has a cascade pool morphology with substrate consisting predominantly of boulder and

cobble with pockets of fines. The bankfull channel width at the highway crossing is ~3 m, with a gradient of ~7 %. No fisheries information was available for this stream and fish presence, or absence has not been confirmed (FISS 2023).

2.2.2 Existing Development

The property has historically experienced site disturbances from past settlements and land clearing/agriculture activities (Photo 3). There is currently no building infrastructure on the property. The vegetation appears to be largely recovering from past disturbances through a legacy of a mix of agronomic grasses, including reed canary grass, and exotic species remain on the disturbed bench, with some scattered native sedges and shrubs (Photo 4). Areas of native vegetation exist within the wetland on the northwest corner of the property. Access to the property is from Highway 6 (Photo 5). There are steep embankments (>60% slope) leading up to the property driveway that was constructed on imported fill to the height of the highway (Photo 6).



Photo 3. Photo taken from east corner, looking west (June 8, 2023).



Photo 4. Photo taken from southeast property boundary, looking northwest (June 8, 2023).



Photo 5. Access road to property, looking northwest (May 10, 2023).



Photo 6. Access road embankment, looking west (May 10, 2023).

2.3 Services

There are currently no services on the property. A septic field is proposed at the southeast corner of the property. A well is proposed along the northwest property line ~37 m west from the north corner property boundary pin (refer to Appendix 2).

2.4 Proposed Development

The proposed development is for a commercial tourism development, called Rumbling Creek Cabins, which is in the conceptual planning and design stage (Appendix 2).

- Gravel parking lot (~800 m²);
- Main hall building with raised social deck (~360 m²);
- Four 1-bedroom (~70 m²) and four 2-bedroom (~100 m²) cabins;
- Crushed gravel pathways (area unknown);
- Septic field (~1000 m²);
- Sauna and cold plunge with deck (~65 m²);
- Landscaping (area unknown; refer to Appendix 2 for planting plan).

3 REGULATORY OVERVIEW

To determine whether the 15 m WDP setback from the HWM of the wetland aligns with the Riparian Area Protection Regulation (RAPR) criteria, a detailed assessment of the subject property was conducted to calculate the Streamside Protection and Enhancement Area (SPEA) setbacks. Results for the Zones of Sensitivity (ZOS) and SPEA are presented in Table 1 and Appendix 3.

As per the RAPR, the large woody debris (LWD) and litter ZOS were plotted 15 m inland from the HWM of the wetland with the shade ZOS plotted 0 - 11 m from the HWM. The SPEA setback is determined based on the ZOS with the greatest width. Therefore, within the subject property the SPEA from the HWM of the wetland is 15 m.

The BC Riparian Areas Protection Regulation (BC 2015) defines “High Water Mark” and “Stream” as follows:

“**High Water Mark**” means the visible high water mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.”

Table 1. Results of detailed RAPR assessment for the wetland.

Feature Type	SPVT ¹	Zones of Sensitivity			SPEA ³
		LWD ²	Litter fall	Shade	
Wetland	TR	15 m	15 m	0 - 11 m	15 m

¹ SPVT: site potential vegetation type (TR-tree)

² LWD- large woody debris

³ SPEA- streamside protection and enhancement area

4 ENVIRONMENTAL RESOURCES

4.1 Aquatic Resources

4.1.1 Wetland

The headwaters of the Salmo River originate from an important wetland complex totaling ~9.3 ha (Photo 7), which is a sensitive ecosystem with regional significance as an important wildlife corridor. The Salmo River becomes a defined channel ~600 m north of the property. Wetlands are water-saturated for much of the year, with vegetation adapted to live in resultant water-logged and low oxygen soils (Mackenzie and Moran 2004). The vegetation community and site conditions on the property are in transition due to hydrologic changes caused by historical land clearing and water diversion of the melt water from Highway 6 into a ditch at the northwest and southwest property boundary (Photo 8, Photo 9).



Photo 7. Aerial view of the property and wetland complex, looking south (Photo credit Jason Newton, fall 2021).



Photo 8. View of the disturbed area transitioning into the wetland, looking northwest (June 8, 2023).



Photo 9. View of the natural boundary between the disturbed bench and the wetland, looking southwest (June 8, 2023).

4.1.2 Surface Water

Water is conveyed onto the property from a 600 mm culvert under Highway 6 (Photo 10, Photo 11) and originates from the highway ditch and a diversion ditch that appeared to have been constructed to divert water from Rumbling Creek to the property, possibly for historic irrigation purposes (Photo 12). The water source on the property is likely a combination of rainwater, snow melt and water from Rumbling Creek, which flows from the south end of the FortisBC substation and likely goes subsurface (Photo 13). The water from the culvert flows along the northwestern property boundary and eventually runs into the wetland and connects to a channelized ditch (Photo 12, Photo 13). The channelized ditch begins at the northwest corner of the property and flows south through the wetlands towards Nelson Nordic Ski Club (Photo 16). Seepage areas were also noted throughout the northwestern half of the property (Photo 17; Appendix 3), where saturated soils were present due to the high water table at ~15 - 20 cm depth (Photo 18).



Photo 10. Location of highway culvert and north corner of the property (May 10, 2023).



Photo 11. Water flow from culvert underneath highway 6 (May 10, 2023).



Photo 12. Ditch on the north side of Highway 6, supplying water to the property (May 10, 2023).



Photo 13. Start of side channel from Rumbling Creek (June 8, 2023).



Photo 14. Surface water flow on northwest property boundary, from highway culvert (May 10, 2023).



Photo 15. Surface water flowing west towards the wetland, along the northwest property boundary (May 10, 2023).



Photo 16. Channelized ditch west of property (May 10, 2023).



Photo 17. Surface water on the northwest half of the property (May 10, 2023).



Photo 18. Water table located in the 15 m setback (June 8, 2023).

4.2 Vegetation

The property has very little tree and shrub cover and is almost primarily low cover grasses, sedges, and herbaceous plants (Photo 21 – 24). The plant community on the disturbed bench is dominated by primarily non-native species, including canary reed grass, starry broomsedge (*Carex pachystachya*; native), Canada thistle (*Cirsium arvense*), stinging needle (*Urtica dioica ssp. dioica*), vetch (*Vicia sp.*), timothy grass (*Phleum pratense*), common tansy (*Tanacetum vulgare*), common burdock (*Arctium minus*), mullein (*Verbascum thapsus*), yarrow (*Achillea millefolium*; native), scouring rush (*Equisetum hyemale*; native), with a few black hawthorn (*Crataegus douglasii*; native) and thimbleberry (*Rubus parviflorus*; native) shrubs. The toe of the disturbed bench transitions to the wetland margins, which contains a variety of native species including arrowleaf senecio (*Senecio triangularis*), white bog orchid (*Platanthera dilatate*), Canada goldenrod (*Solidago canadensis*), large-leaved avens (*Geum macrophyllum*), swamp horsetail (*Equisetum fluviatile*), kentucky bluegrass (*Poa pratensis*), Columbian monkshood (*Aconitum columbianum*), false lily

of the valley (*Maianthemum stellatum*) before transitioning into a water sedge (*Carex aquatilis*) dominated wetland plant community. Table 2 provides a list of riparian vegetation species encountered on the property.



Photo 19. View of low cover vegetation and tree cover along the margins of the highway, looking northeast (June 8, 2023).



Photo 20. View of elevated bench transitioning to wetland, looking northwest (June 8, 2023).



Photo 21. View of upper property, looking northwest (June 8, 2023).



Photo 22. View of broomsedge (*Carex pachystachya*), which is one of the dominate species in the disturbed area (June 8, 2023).

Table 2. Plant species encountered on the property.

Common Name	Scientific Name	Common Name	Scientific Name
Trees		white Bog orchid	<i>Platanthera dilatata</i>
black hawthorn	<i>Crataegus douglasii</i>	wild strawberry	<i>Fragaria virginiana</i>
Shrubs		yarrow	<i>Achillea millefolium</i>
common snowberry	<i>Symphoricarpos albus</i>	Non-native and Invasives	
thimbleberry	<i>Rubus parviflorus</i>	burdock	<i>Arctium lappa</i>
Herbaceous		Canada thistle	<i>Cirsium arvense</i>

Common Name	Scientific Name	Common Name	Scientific Name
arrowleaf senecio	<i>Senecio triangularis</i>	canary reed grass	<i>Phalaris arundinacea</i>
Canada goldenrod	<i>Solidago canadensis</i>	common dandelion	<i>Taraxacum officinale</i>
Columbian Monkshood	<i>Aconitum columbianum</i>	common tansy	<i>Tanacetum vulgare</i>
false lily of the valley	<i>Maianthemum stellatum</i>	hawkweed spp.	<i>Hieracium spp.</i>
large-leaved avens	<i>Geum macrophyllum</i>	knawweed	<i>Centaurea spp.</i>
kentucky bluegrass	<i>Poa pratensis</i>	meadow buttercup	<i>Ranunculus acris</i>
Oregon grape	<i>Mahonia aquilifolium</i>	mullein	<i>Verbascum thapsus</i>
scouring rush	<i>Equisetum hyemale</i>	stinging nettle	<i>Urtica dioica ssp. Dioica</i>
small-flowered bulrush	<i>Scirpus microcarpus</i>	smooth brome	<i>Bromus inermis</i>
starry broomsedge	<i>Carex pachystachya</i>	timothy grass	<i>Phleum pratense</i>
swamp horsetail	<i>Equisetum fluviatile</i>	vetch	<i>Vicia sp.</i>
water sedge	<i>Carex aquatilis</i>		

4.3 Wildlife

4.3.1 Mammals

The unique wetland ecosystem complex provides a valuable wildlife corridor where good forage opportunities exist for many species. Large mammals that are known to use the area include grizzly bear (*Ursus arctos*), American black bear (*Ursus americanus*), deer (*Odocoileus spp.*), bobcat (*Lynx rufus*), cougar (*Puma concolor*), coyote (*Canis latrans*), elk (*Cervus elaphus*), moose (*Alces alces*), as well as a variety of small mammals including, snowshoe hare (*Lepus americanus*), Columbian ground squirrels (*Urociellus columbianus*), mice, voles and bats. Columbian ground squirrels were observed on the property during both site visits, with several burrows throughout the elevated disturbed bench.

Grizzly bear (*Urus arctos*, BC Blue-listed, SARA Schedule 1-Special Concern) is a wide-ranging species that frequent the area, mainly in the spring. The wetland complex serves as a natural-movement corridor that enables grizzly bears to access other, more remote areas and low elevation forests and wetlands provide important spring forage. The area is within the South Selkirk Grizzly Bear Population Unit (ID:445), which is currently assessed as ‘high’ conservation concern with a 2018 population density of 14.3 bears/1000 km² (Mowat et al. 2019).

4.3.2 Reptiles and Amphibians

Reptiles and amphibians found nearby include western skink (*Plestiodon skiltonianus*; BC Blue-listed; SARA Special Concern), western toad (*Anaxyrus boreas*; SARA Special Concern), northern rubber boa (*Charina bottae*; SARA Special Concern), pacific treefrog (*Pseudacris regilla*), garter snakes (*Thamnophis sp.*), Columbia spotted frog (*Rana luteiventris*, iMapBC 2023). Garter snakes are often found in wetlands and

riparian areas and have a high potential to occur. The wetland provides suitable habitat for several amphibians, including Columbia spotted frog, pacific treefrog and western toad.

4.3.3 Birds

Several bird species were observed during the site visit including American Pipits (*Anthus rubescens*), Bald Eagle (*Haliaeetus leucocephalus*), Cedar Waxwing (*Bombycilla cedrorum*), Lincoln Sparrow (*Melospiza lincolnii*), Pine Siskins (*Spinus pinus*), Red-winged Blackbird (*Agelaius phoeniceus*), Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow (*Melospiza melodia*), Violet-Green Swallows (*Tachycineta thalassina*), Warbling Vireo (*Vireo gilvus*), Wilson’s snipe (*Gallinago delicata*) and Yellow Warbler (*Setophaga petechia*).

4.4 Species at Risk

The BC Conservation Data Center (CDC) occurrence data and critical habitat for Federally listed species at risk were queried within iMap BC (BC 2023), using a 10 km buffer around the center point of the subject property. The query results are presented in Table 3. Four species at risk were identified within this buffer. In addition to these four species, grizzly bear, western skink and northern rubber boa have been confirmed in the area. Potential occurrence on the property was assessed as likely, possible, unlikely, or unknown, according to known species habitat affinities and the habitat profile of the property and in proximity to mapped occurrences.

Table 3. Species at risk with potential occurrence based on iMap BC 10 km radius query.

Common Name (Scientific Name)	Likelihood of Occurrence on Subject Property	Comment	BC Conservation Status ¹	COSEWIC ² / SARA ²
Banded Tigersnail (<i>Anguispira kochi</i>)	Possible	CDC occurrence mapped ~ 3.5 km northwest of the subject property, at the north end of Cottonwood Lake. Occurs in moist deciduous/coniferous forests, near shores of lakes and streams (Shape ID: 121786, Occurrence ID: 15126).	Blue	NAR
Caribou (Southern Mountain Population) (<i>Rangifer tarandus pop.1</i>)	Unlikely	Critical habitat is mapped within the subject property (Critical Habitat ID: 21281, COSEWIC species ID: 638). Caribou are highly unlikely to be present given the small population and extensive habitat fragmentation.	Red	E
Grizzly Bear (<i>Urus arctos</i>)	Confirmed	Frequently observed roaming this area.	Blue	SC
Western Toad (<i>Anaxyrus boreas</i>)	Possible	Incidental observation by Fiona Lau ~850 m NE of the site within riparian area of Harrop Creek.	Yellow	SC
Whitebark pine (<i>Pinus albicaulis</i>)	Unlikely	CDC occurrence is mapped within ~5.5 km west of the subject property	Blue	E

Common Name (Scientific Name)	Likelihood of Occurrence on Subject Property	Comment	BC Conservation Status ¹	COSEWIC ² / SARA ²
		(Critical habitat ID: 140404, COSEWIC species ID: 1086). Habitat is subalpine and timberline zones, so it is not expected at the subject site.		

¹Red = Species that is at risk of being lost (extirpated, endangered, or threatened) within British Columbia. Blue = Species considered to be of special concern within British Columbia. ²(E)Endangered = Facing imminent extirpation or extinction. (T)Threatened = Likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction. (SC)Special concern = May become a threatened or an endangered species because of a combination of biological characteristics and identified threats. Information sources: British Columbia Conservation Data Centre, and personal sightings.

5 ARCHAEOLOGICAL RESOURCES

The subject property is part of the traditional territory of the Sinixt, Okanagan and Ktunaxa First Nations and archaeological evidence is documented at multiple sites around this area. A review of archaeological resources on this property is outside the scope of this report. However, Archaeological Chance Find Procedures are provided in Appendix 4 for guidance on which protocols to follow in the event of a chance archaeological find, to ensure that archaeological sites are documented and protected as required for compliance with the BC Heritage Conservation Act.

6 IMPACT ASSESSMENT

The proposed cabin development will increase human presence in the area. The intensity of use (i.e., activity within the wetland) and the risk of human-wildlife conflicts has potential to increase. In order to mitigate these potential impacts, no development within the SPEA is recommended.

7 MEASURES TO PROTECT THE INTEGRITY OF THE SPEA

This section provides measures to protect the integrity of the SPEA as described in RAPR, as well as recommended best management practices.

7.1 Danger Trees

There are no trees within the property.

7.2 Windthrow

There are no trees within the property.

7.3 Slope Stability

No slope stability hazard indicators were observed during the site visit. Further assessment of geotechnical hazard is beyond the scope of this report, and any such assessment should be led by a P.Geo, or P.Eng.

7.4 Protection of Trees and Vegetation in the SPEA

There are no trees within the SPEA. Native vegetation within the SPEA should be maintained to preserve the natural functioning of the wetland.

- No landscaping within the SPEA.

7.5 Encroachment

Further encroachment within the SPEA of the wetland must be avoided to maintain the natural environment, its ecosystems (aquatic and riparian), and biological diversity. Any future development (i.e., recreation trails, landscaping, manicured lawn, amenities, and/or construction of any additional structures) proposed within the SPEA will require a RAPR assessment conducted by a QEP and an RDCK Watercourse Development Permit.

7.6 Sediment and Erosion Control

Erosion and sediment control measures shall be implemented during the construction site preparation and building development phases to reduce the risk of sediment input into the wetland.

At a minimum, these measures should include:

- Limit the disturbance of native vegetation to the extent possible and ensure disturbed/exposed soils are revegetated with vegetation as soon as possible.
- Control storm water surface runoff and direct it away from disturbed/exposed soils.
- Safely stockpile any erodible materials in a manner that eliminates the possibility of erosion and sediment transport. This may require covering the stockpiles with tarps or with a vegetative cover.
- The toe of the slope for the parking lot should be armoured to reduce erosion.

During construction, install mitigation measures such as ditching, sediment fences, detention/settling ponds, check dams, etc. as necessary to manage turbid wastewater generated by heavy rain events. Turbid wastewater will not be permitted to leave the construction site.

7.7 Stormwater Management

The proposed development will result in an increase in the total impervious area of the property. Storm water runoff from the property cannot increase peak flow of the wetland. The following mitigation measures will help decrease stormwater impacts:

- Promote the installation of permeable surfaces that permit rainwater infiltration into the ground to moderate the flow of overland storm water.
- Design roof rainwater collection systems that direct rainwater into suitable landscape features which can absorb and utilize runoff.
- Integrate groundwater recharge by using vegetated swales, infiltration basins and absorbent vegetation.
- Stormwater discharges must adhere to the *Water Sustainability Act* or any other application legislation.
- An application under the *Water sustainability Act* will need to be retained to divert the stream that flows through the property at the northwest corner.

7.8 Floodplain Concerns

There were no floodplain concerns observed on the subject property.

7.9 Protection of Wildlife Habitat

Wetland complexes allow wildlife to travel between habitat “islands” by providing migration corridors between upland areas and water, as well as along riparian corridors. They also help circulate nutrients between terrestrial and aquatic ecosystems. Wildlife concerns on the property include the population of Columbian ground squirrels and bears. The proposed development will result in an increase in human pressure in the area. Ongoing visitors have the potential to increase the intensity of use which can result in disturbance through creation of new trails, soil erosion and compaction, introduction and spread of invasive plants and disturbance and displacement of wildlife. The following mitigation measures are recommended:

- Implement Columbian ground squirrels’ best management practices.
- Apply for wildlife permit and secure licensed trapper for removal of Columbian ground squirrels (Schedule B Species).
- Avoid development within the SPEA or sensitive ecosystems identified in this assessment.
- Install signage at the northwest and southwest property lines to restrict access into the wetland complex.

- Collared bear data has shown the area from Cottonwood Lake to Hall Siding, particularly the areas of Apex and Camp Busk, are heavily used by grizzly bears in the spring (RDCK 2022). This is a sensitive time where bears use this area because of its high valued forage habitat. In most cases the bears move on to higher elevations by the middle of June. Restricting access to the wetland will help decrease the risk of human wildlife conflicts and ensure public safety and benefit the local bear population from over exposure.

7.10 Invasive Plant Management

Construction activities can potentially increase prevalence of invasive plant species which can out-compete native riparian vegetation, causing damage to habitat and ecosystem function. The following mitigation measures are recommended to reduce the establishment and proliferation of invasive plant species on site:

- All equipment should be thoroughly washed and inspected before entering the project site to prevent the import of new invasive plant seeds and root fragments.
- The amount of soil disturbance should be minimized.
- Invasive plants shall be removed and disposed of at a licensed landfill facility.

8 CONCLUSION

Overall, the proposed development is outside the SPEA. Impacts to the SPEA will be minimal as long as there is no proposed development within the SPEA and best management practices recommended herein are adhered to.

9 CLOSURE

This report has been prepared by a Qualified Environmental Professional (QEP) who has not acted for, or as an agent(s) of the RDCK and was at the expense of the property owner.

I, Sylvie Masse, certify that I am qualified to carry out this assessment; and that the assessment methods under the Regulation have been followed; and that, in my professional opinion:

- (i) if the development is implemented as proposed, or
- (ii) if the streamside protection and enhancement areas identified in the report are protected from the development, and
- (iii) if the developer implements the measures identified in the report to protect the integrity of those areas from the effects of the development,

then there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area.

If you have any comments or questions, please do not hesitate to contact the undersigned.

Sincerely,



Chanel Gagnon, B.Sc., B.I.T.

chanel@masseenvironmental.com



Sylve Masse, MSc, RPBio

Masse Environmental Consultants

10 REFERENCES

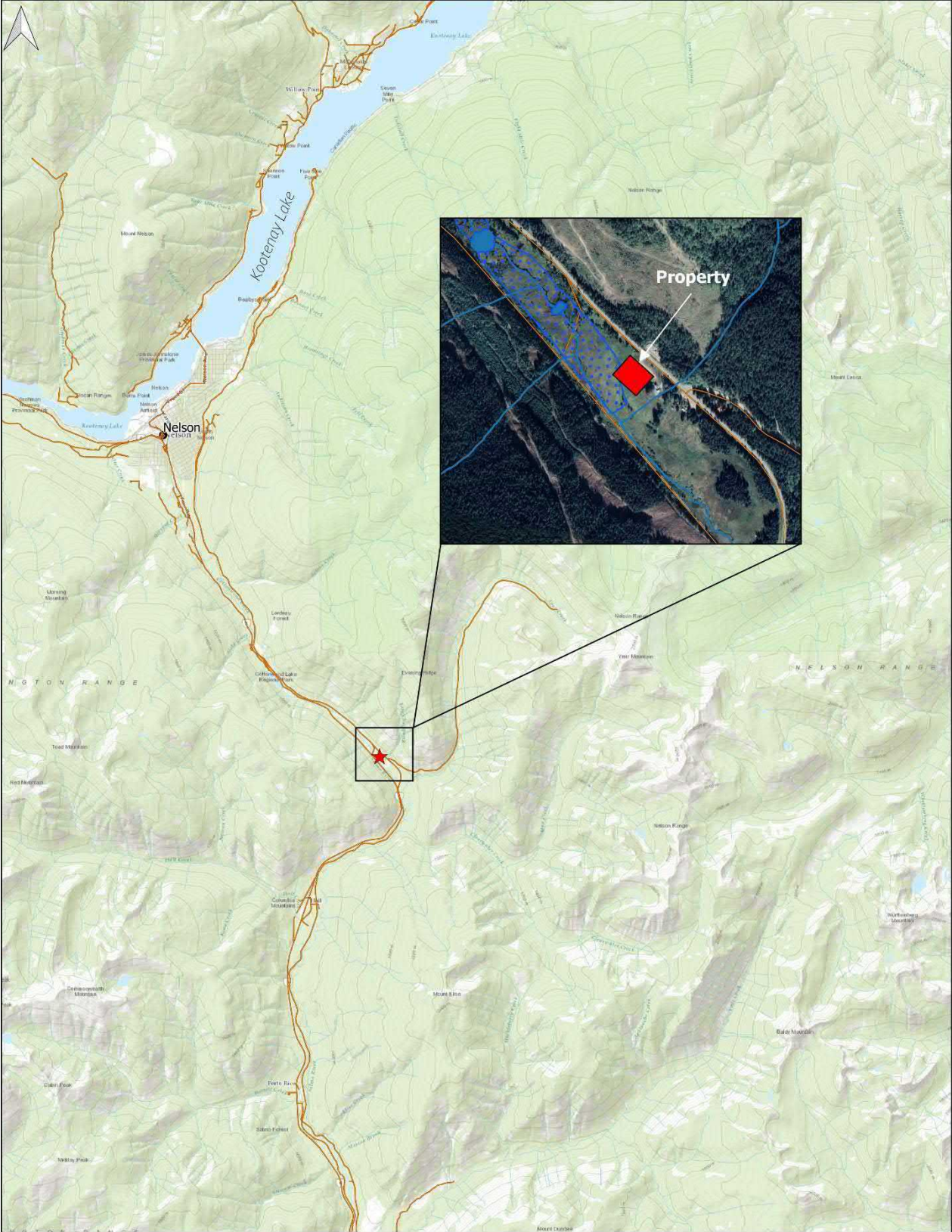
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APPENDIX 1. SITE LOCATION MAP



APPENDIX 2. CONCEPTUAL DESIGN PLANS AND SPEA SETBACK

RUMBLING CREEK CABINS

Issued For RZ/DP Application

Legal Address: LOT 1 DL 1241 KD PLAN EPP121813

RUMBLING CREEK RESORT LTD. // CLIENT

Jason Newton
jason@hugoreid.com
236-999-9727

ARCHITECT BUSINESS NAME // ARCHITECT

Jerry Liu
jerry@bla-design.com
778-318-9958

LOCI LANDSCAPE ARCHITECTURE + URBAN DESIGN // LANDSCAPE ARCHITECT

Mike Enns, BCSLA CSLA // Principal
mike@locidesign.ca
604.763.2886

Michael Banks // Project Coordinator
mbanks@locidesign.ca
403.614.4290

LANDSCAPE DRAWING INDEX PERMIT

Sheet No.	Sheet Name
L0.0	COVER SHEET
L1.0	LANDSCAPE ILLUSTRATIVE PLAN
L2.0	MATERIALS PLAN
L3.0	PRELIMINARY GRADING PLAN
L3.1	STORMWATER MANAGEMENT STRATEGY
L4.0	TREE PLANTING PLAN
L4.1	SHRUB PLANTING PLAN
L5.0	PLANT LIST + IMAGES
L6.0	PRECEDENT IMAGES

GENERAL NOTES

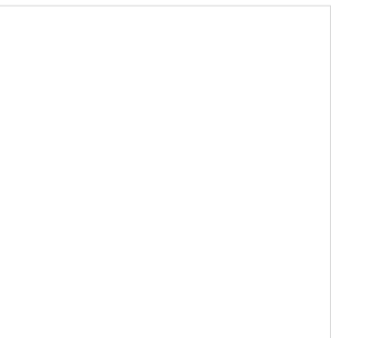
1. ALL PLANTING SHALL BE IN ACCORDANCE WITH BC LANDSCAPE STANDARD, LATEST EDITION.
2. ALL PLANTING AREAS TO RECEIVE AUTOMATIC DRIP IRRIGATION, WITH TIME CLOCK AND RAIN SENSOR
3. ALL LANDSCAPE ARCHITECTURAL DRAWINGS IN THIS PACKAGE SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANT DRAWINGS, DETAILS, SPECIFICATIONS, AND ANY OTHER CORRESPONDENCE THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
4. IF A DISCREPANCY OCCURS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS OR ANY OTHER DOCUMENT ASSOCIATED WITH THE PROJECT, THE CONFLICT SHALL BE REPORTED IN WRITING TO THE LANDSCAPE ARCHITECT TO OBTAIN CLARIFICATION AND APPROVAL BEFORE PROCEEDING WITH WORKS.
5. ALL EXISTING INFORMATION IS BASED ON AVAILABLE RECORDS AND SHALL NOT BE CONSTRUED TO BE COMPLETE OR ACCURATE.
6. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE TRUE EXISTING CONDITIONS. ANY UNCLEAR ISSUES SHALL BE CLARIFIED WITH THE CONSULTANT TEAM. NO CLAIM SHALL BE ALLOWED FOR EXTRAS WHICH MAY ARISE THROUGH NEGLIGENCE OF THIS ADVICE.
7. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION, AND ELEVATION OF ALL UTILITIES AND CONCEALED STRUCTURES, AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT OR PERSON(S) OF ITS INTENTION TO CARRY OUT ITS OPERATIONS.
8. LAYOUT OF PAVING, WALLS, SITE FURNITURE, SOIL, PLANTING, AND ALL OTHER LANDSCAPE MATERIALS IS TO BE STAKED OUT AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
9. ALL DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED. VERIFY ALL ELEVATIONS WITH FIELD CONDITIONS. REPORT ANY DISCREPANCIES TO CONSULTANT TEAM FOR REVIEW AND RESPONSE.
10. ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
11. PROTECT ALL EXISTING STRUCTURES
12. ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.
13. FINAL PLANT SPACING, QUANTITY AND TREE PLACEMENT HAS BEEN REVIEWED TO THE SATISFACTION OF GENERAL MANAGER OF ENGINEERING SERVICES.
14. LOCI LANDSCAPE ARCHITECTURE + URBAN DESIGN DOES NOT GUARANTEE THE EXISTENCE, LOCATION, AND ELEVATION OF UTILITIES OR CONCEALED STRUCTURES AT THE PROJECT SITE.

loci

LANDSCAPE ARCHITECTURE + URBAN
DESIGN
1738 KINGSWAY, VANCOUVER, BC V5N 2S3
www.locidesign.ca // 604.694.0053

ALL RIGHTS RESERVED.
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AND URBAN DESIGN. USE OR REPRODUCTION
PROHIBITED WITH PRIOR WRITTEN CONSENT.

Project Stamp



Issue

No.	Description	Date
A	Issued for Preliminary Landscape Concepts	23-03-16
B	Issued for Concept Update	23-03-28
C	Issued for RZ/DP	23-08-31

Project Info

23055

Rumbling Creek Cabins

Nelson, BC

Project Team

Client
Rumbling Creek Resort Ltd.

Architect
BLA Design Group

Landscape Architect
LOCI Landscape Architecture + Urban Design

Drawn By DS | **Checked By** ME

COVER SHEET

L0.0

Rev. A revision

LANDSCAPE DESIGN RATIONALE

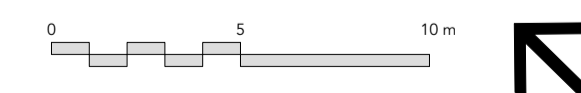
THE LANDSCAPE DESIGN FOR RUMBLING CREEK TAKES INTO ACCOUNT THE NUMEROUS FEATURES OF THIS SLOPED SITE, MAXIMIZING VIEWS TO THE WEST WHILE BALANCING A PLEASANT EXPERIENCE NAVIGATING THE SITE AND VARIOUS AMENITIES. NATURALIZED PLANTING SCREENS THE BUILDINGS FROM THE SURROUNDING CONTEXT AND PROVIDES PRIVACY TO THE CABINS AND EVENT SPACES. DECK AREAS FOR SOCIALIZING AND GATHERING ARE COMPLEMENTED BY FLEXIBLE MOWED LAWNS THAT CAN BE USED FOR GAMES AND RECREATION. CLUSTERS OF TREES AND SHRUBS PUNCTUATE THE MEADOW AND WILDFLOWER LANDSCAPE THROUGHOUT THE SITE. THE SECONDARY LAWN SPACE AMONGST THE CABINS PROVIDES A FAMILY RELAXATION AREA WITH PICNIC TABLES FOR GATHERING.

KEY LEGEND

- A** ARRIVAL COURT + PARKING
- 1** RETAIL PARKING
- 2** FRONT ENTRY FEATURE PAVERS + BENCH SEATING + CAFE TABLES
- 3** GRAVEL PARKING LOT
- 4** GARBAGE ENCLOSURE
- B** SOCIAL DECK (RAISED)
- 5** RAISED DECK WITH MOVEABLE FURNITURE
- 6** SEAT STEPS/INFORMAL SEATING
- 7** ACCESS DRIVE WITH CONCRETE RETAINING WALL
- C** OVERLOOK LAWN + SAUNA / COLD PLUNGE
- 8** MOWED LAWN WITH EXPANSIVE VIEWS
- 9** FLAGSTONE LANDING
- 10** NATURALIZED BUFFER PLANTING SCREENING PARKING LOT + GRADE TRANSITION
- 11** SAUNA + COLD PLUNGE WITH DECK BUILT INTO SLOPE
- D** MULT-USE LAWN / SEPTIC FIELD
- 12** MOWED LAWN / FOR GAMES / RECREATION
- 13** PATH TO ROAD
- 14** PARALLEL PARKING
- E** CENTRAL COMMON AREA
- 15** GRAVEL PATH 5' WIDE
- 16** PICNIC TABLES + SEATING BOULDERS
- 17** MEADOW GRASSES + WILD FLOWERS + NATURALIZED PLANTING
- F** NNSC SEASONAL CROSS COUNTRY SKI TRAIL



1 LANDSCAPE ILLUSTRATIVE PLAN
Scale: 1:200

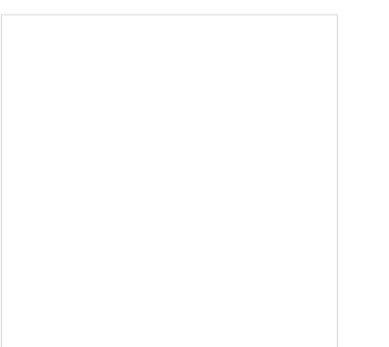


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Project Stamp



Issue

No.	Description	Date
A	Issued for Preliminary Landscape Concepts	23-03-16
B	Issued for Concept Update	23-03-28
C	Issued for RZ/DP	23-08-31

Project Info

23055

Rumbling Creek Cabins

Nelson, BC

Project Team

Client
Rumbling Creek Resort Ltd.

Architect
BLA Design Group
Landscape Architect
LOCI Landscape Architecture + Urban Design

Drawn By: DS | Checked By: ME

LANDSCAPE ILLUSTRATIVE PLAN

L1.0

Rev. A revision

GENERAL LAYOUT + MATERIALS NOTES:

1. ALL DIMENSIONS ARE METRIC UNLESS OTHERWISE NOTED. VERIFY ALL DIMENSIONS WITH FIELD CONDITIONS. REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT FOR REVIEW AND RESPONSE.
2. ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
3. UNLESS OTHERWISE NOTED, PROVIDE A MINIMUM 2% SLOPE ON ALL HARD AND SOFT LANDSCAPE AREAS TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS OR TO DRAINAGE STRUCTURES. MAXIMUM 3:1 SLOPE IN SOFT LANDSCAPE AREAS.
4. THE LAYOUT OF ALL HARDSCAPE ITEMS, SITE FURNISHINGS, BOULDERS, LANDSCAPE LIGHTING, PLANTING BEDS AND OTHER MATERIALS IS TO BE STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.

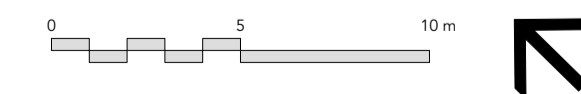
MATERIALS LEGEND

SYMBOL	KEY	DESCRIPTION
	P1	PAVING TYPE 1: GRAVEL PARKING LOT Compacted 3/4" Minus Road Mulch
	P2	PAVING TYPE 2: MAIN HALL ENTRY PAVING Precast Concrete Unit Pavers By Barkman Size: 900 X 450 X 100 mm - Colour: Ash
	P3	PAVING TYPE 3: GRAVEL PATHWAYS 3/8" Minus Limestone Rock Dust
	P4	PAVING TYPE 4: STONE SLAB PAVING Basalt Stone Slabs - Size Varies
	P5	PAVING TYPE 5: FIREPIT PAVING Storm Mountain Select Flagstone 1'-2" By Northwest Landscape Supply
	P6	PAVING TYPE 6: ACCESS ROAD PAVING By Others
	P7	PAVING TYPE 7: RAIN SPLASH STRIP Locally Sourced 3" Rock Mulch
	D1	WOOD DECKING Thermally Modified Ash By Scotty Wood
	S1	MOVEABLE BANQUET TABLES + BENCH Product TBD, by Owner
	S2	MOVEABLE CAFE TABLES + CHAIRS Product TBD, by Owner
	S3	ENTRY PLAZA BENCH Heavy Timber Bench, 4.7m Length
	B1	GARBAGE ENCLOSURE By Others
	B2	NORDIC SAUNA By Others
	B3	COLD PLUNGE TUB by Others
	W1	BOULDER / BOULDER WALLS Locally Sourced Granite Size: 300 - 400 mm
	W2	CONCRETE RETAINING WALL CIP Concrete Wall with Guardrail (1070mm Ht.) To be Coordinated with Structural and Geotechnical Engineer
	W3	GUARDRAIL Guardrail Material TBD 42" Height
	L1	NATURALIZED PLANTING Assorted Deciduous and Coniferous Trees, Shrubs, Grasses, Perennials, and Boulder Clusters
	L2	LAWN HYDROSEED MIX - REGULARLY MOWED Native Grass Species
	L3	PERENNIAL HYDROSEED MIX - MOWED ONCE PER YEAR Colourful Native Perennials + Grass Species

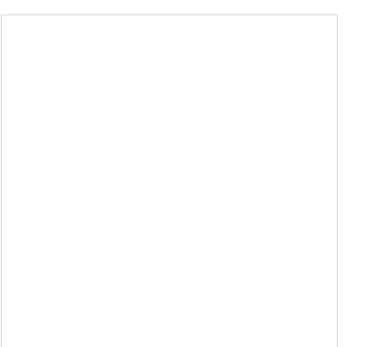


1 MATERIALS PLAN
Scale: 1:200

EXISTING RECREATION TRAIL TO BE MAINTAINED AND PROTECTED



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Drawn By: DS | Checked By: ME

MATERIALS PLAN

L2.0

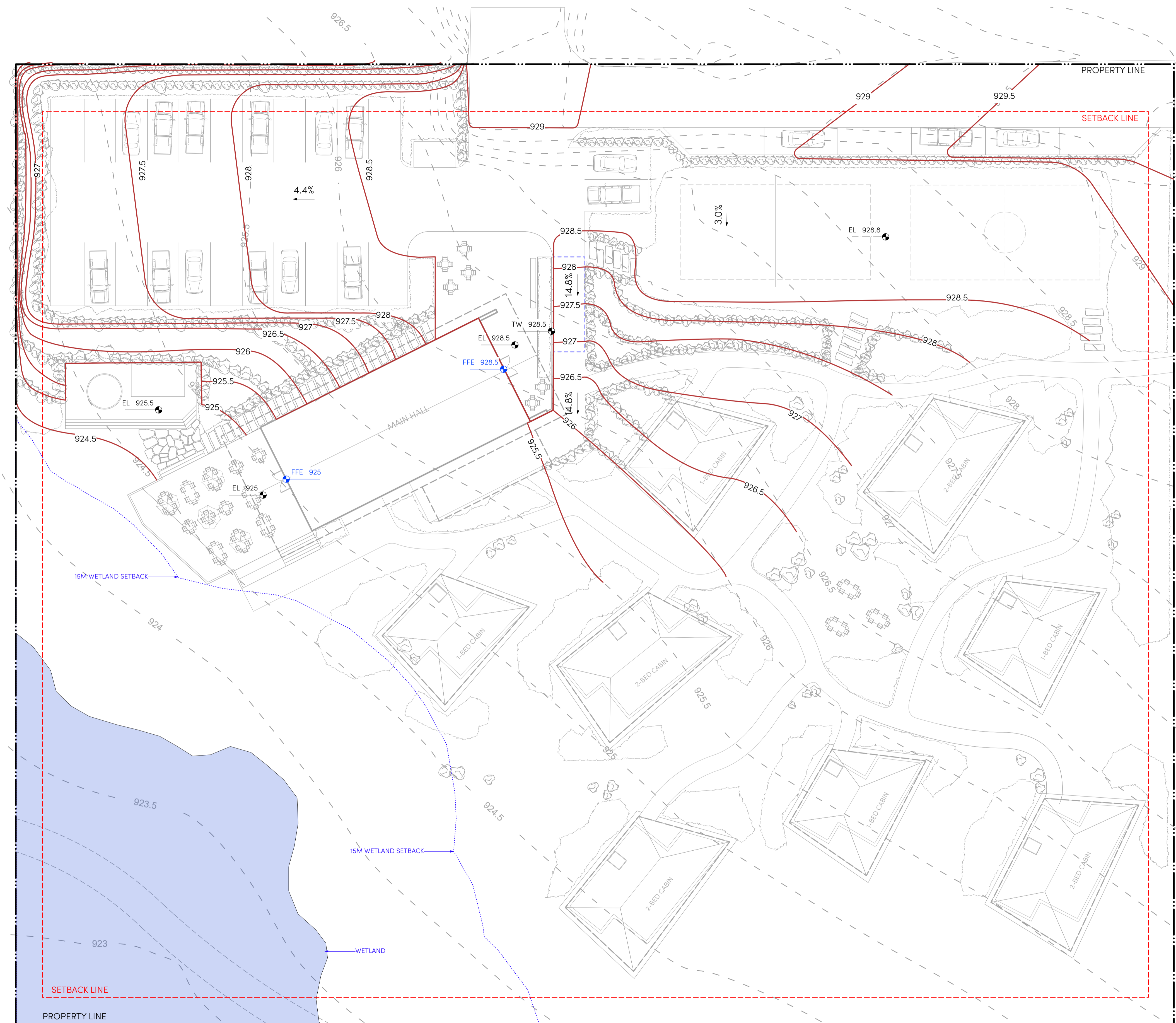
Rev. A revision

GENERAL GRADING NOTES:

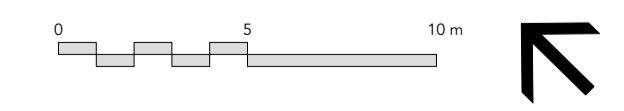
1. ALL UTILITIES TO BE STAKED OUT BY CONTRACTOR AND PROTECTED FOR DURATION OF CONSTRUCTION PERIOD.
2. UNLESS OTHERWISE NOTED, PROVIDE A MINIMUM 2% SLOPE ON ALL HARD AND SOFT LANDSCAPE AREAS TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS OR TO DRAINAGE STRUCTURES. MAXIMUM 3:1 SLOPE IN SOFT LANDSCAPE AREAS.
3. THE LAYOUT OF ALL PROPOSED HARDSCAPE ITEMS, SITE FURNITURE, LIGHTING, PLANTING BEDS AND OTHER MATERIALS IS TO BE STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
4. ALL SUBSTITUTIONS OF SPECIFIED MATERIALS TO BE APPROVED BY LANDSCAPE ARCHITECT.
5. REFER TO CIVIL FOR EXCAVATION DEPTHS, BACKFILL, AND BASE MATERIAL FOR ALL LANDSCAPE ITEMS SHOWN ON PLAN.
6. SLOPE SHALL MATCH EXISTING GRADE ALONG ALL PROPERTY LINES.
7. REFER TO CIVIL ENGINEER'S PRECISE GRADING PLANS FOR SITE GRADING PLANS FOR SITE GRADING, DRAINAGE, AND UTILITY LOCATIONS. IF ACTUAL SITE CONDITIONS VARY FROM WHAT IS SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT FOR DIRECTION AS TO HOW TO PROCEED.
8. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
9. ALL PROPOSED GRADES ARE TO MEET AND BLEND IN WITH EXISTING GRADING AT PROJECT LIMITS, GRADING LIMITS, AND EXISTING SIDEWALK. PRECISE ELEVATIONS INDICATED ON PLANS TO BE VERIFIED IN FIELD TO AS-BUILT CONDITION.
10. THE DEBRIS CREATED BY LANDSCAPE GRADING OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF LEGALLY OFF SITE.
11. FINAL GRADING SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION OF PLANTING.

GRADING LEGEND

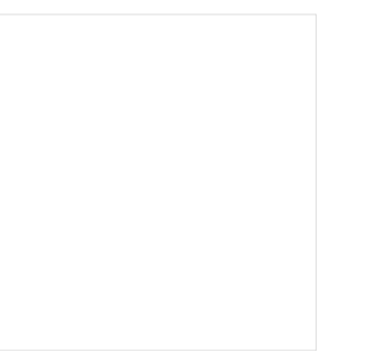
SYMBOL	DESCRIPTION
FFE 0.00	PROPOSED BUILDING FINISHED FLOOR ELEVATION
EL 0.00	PROPOSED ELEVATION
TW 0.00	TOP OF WALL ELEVATION
2%	SLOPE AND DIRECTION
928.5	PROPOSED CONTOUR
---	EXISTING CONTOUR



1 PRELIMINARY GRADING PLAN
Scale: 1:200



Project Stamp



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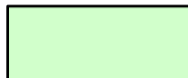


Drawn By: DS | Checked By: ME

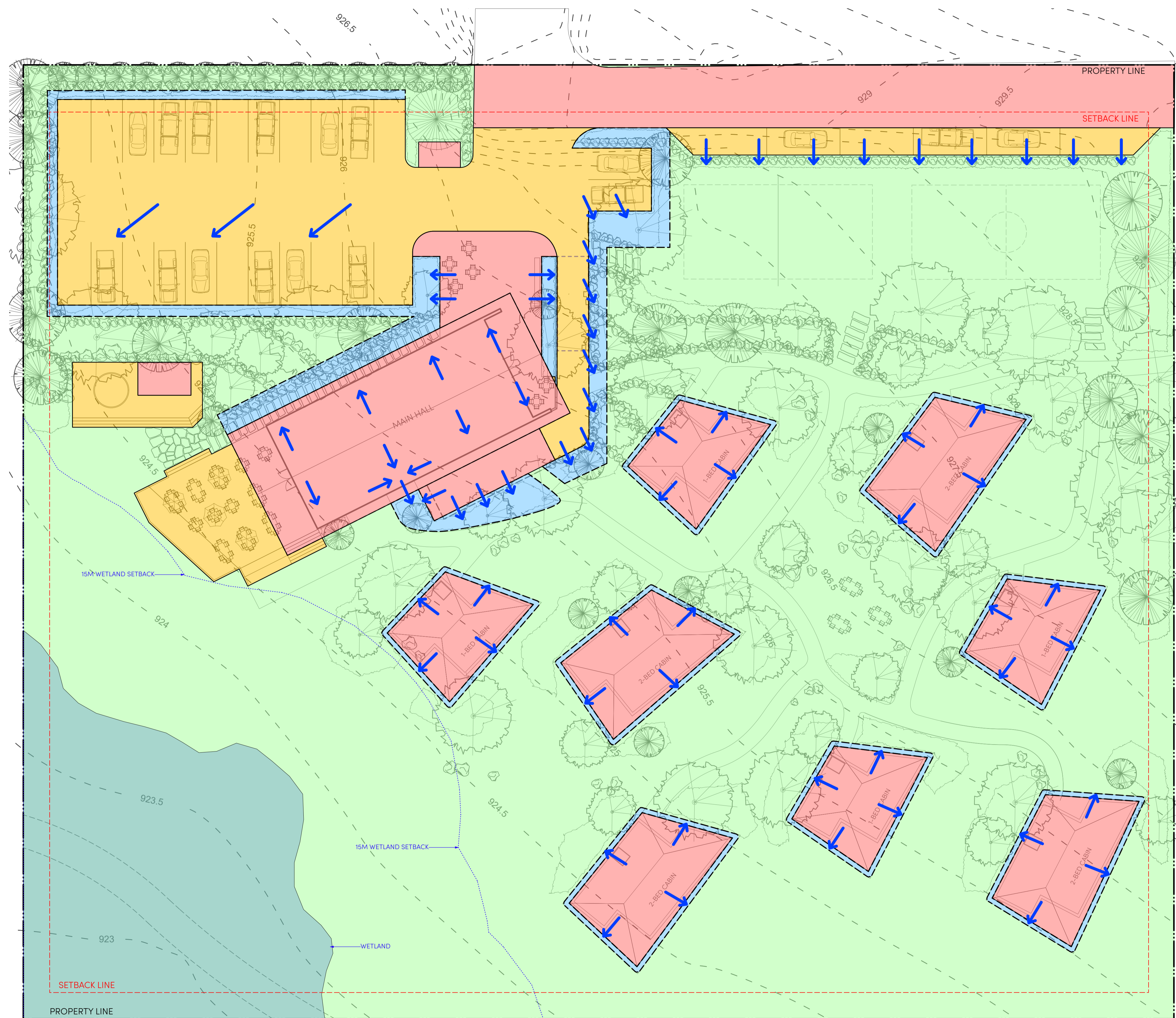
PRELIMINARY GRADING PLAN

L3.0

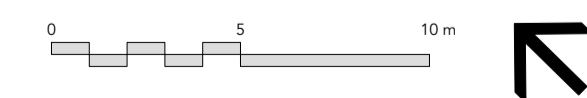
Rev. A revision

STORMWATER STRATEGY LEGEND

SYMBOL	DESCRIPTION
	IMPERMEABLE SURFACE (ROOF, PAVING)
	SEMI-PERMEABLE SURFACE (PARKING LOT, WOODEN DECKS)
	PERMEABLE SURFACE (PLANTED AREAS, DECKING, PATHWAYS)
	SURFACE RUN-OFF COLLECTION + ABSORPTION AREA
	SURFACE FLOW DIRECTION



1 STORMWATER MANAGEMENT STRATEGY
Scale: 1:200

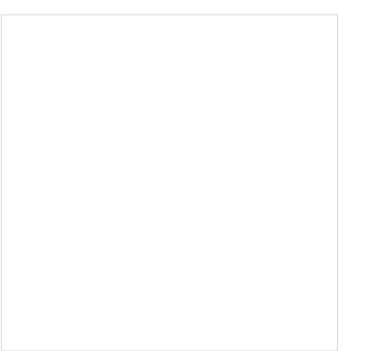


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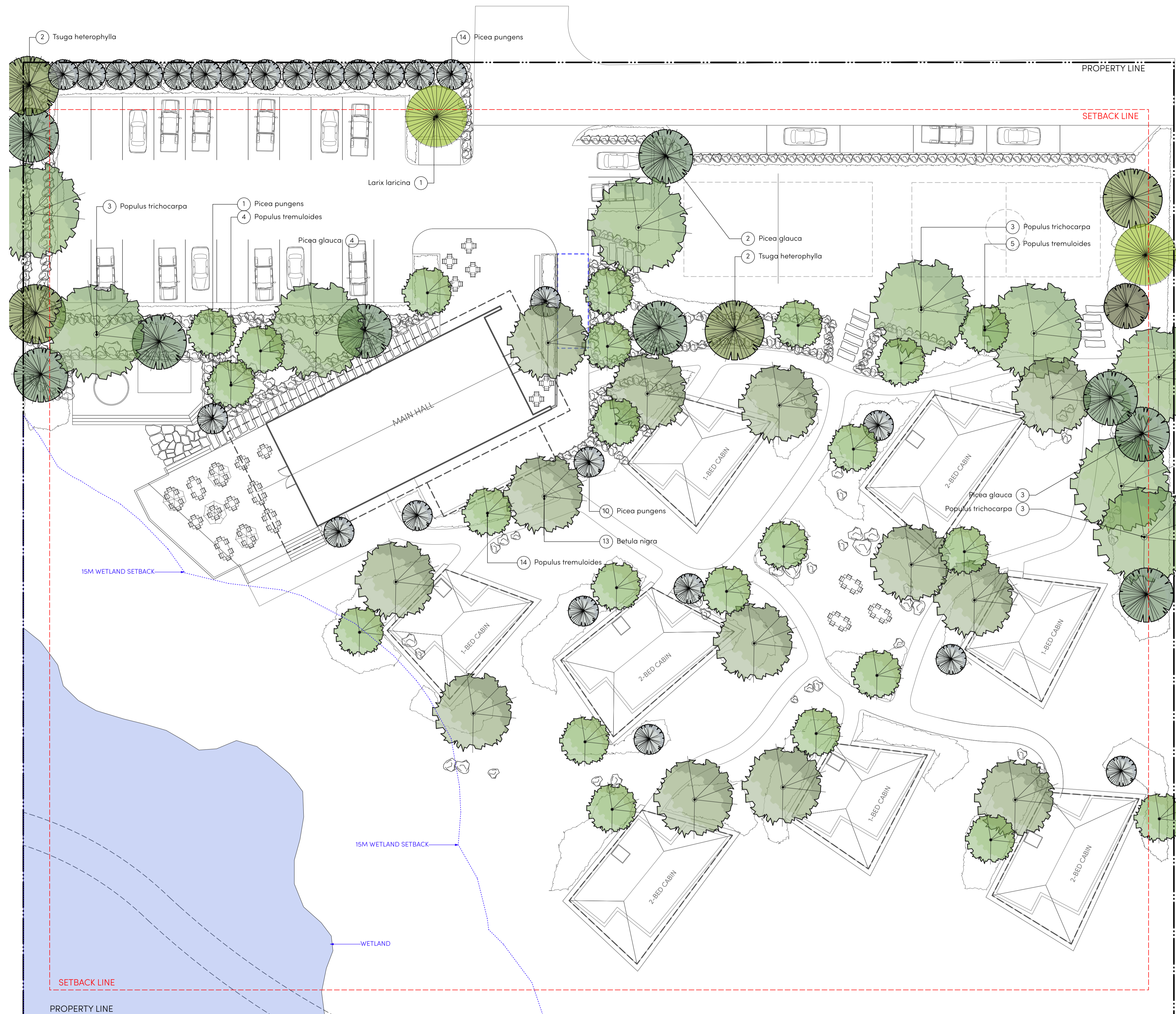
STORMWATER MANAGEMENT STRATEGY

L3.1

Rev. A revision

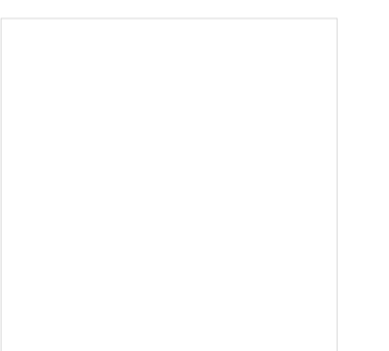
GENERAL PLANTING NOTES:

1. ALL PLANTING SHALL BE IN ACCORDANCE WITH BC LANDSCAPE STANDARD, LATEST EDITION
2. ALL TREE AND SHRUB AREAS TO BE MULCHED WITH 50MM (2") OF MEDIUM FINE MULCH, LESS THAN 50MM (2") DIAMETER.
3. ROOTZONE TO REST ON TAMPED PLANTING SOIL
4. SHRUBS: PREPARE PLANTING HOLES AS SPECIFIED. PLANT AT THE SAME GRADE AS NURSERY. WATER AND FERTILIZE AS SPECIFIED. ENSURE POSITIVE DRAINAGE THROUGHOUT PLANTING BED
5. TREE: PREPARE PLANTING HOLES AS SPECIFIED INSTALL TOP OF ROOTZONE 6" ABOVE FINISHED GRADE OF GROWING MEDIUM. WATER AND FERTILIZE AS SPECIFIED BY NURSERY.
6. FINAL SOFTSCAPE AND GRADING LAYOUTS AS WELL AS LOCATION SPACING TO BE APPROVED BY LANDSCAPE ARCHITECTS IN THE FIELD PRIOR TO INSTALLATION
7. IN CASE OF A DISCREPANCY BETWEEN PLANT INFORMATION ON THE LIST AND ON THE PLAN, THE LATTER SHALL PREVAIL
8. ALL PLANT MATERIAL TO BE MANUALLY WATERED FROM START OF INSTALLATION THROUGH THE END OF THE WARRANTY PERIOD
9. FINAL PLANT SPACING, QUANTITY AND TREE PLACEMENT TO BE REVIEWED TO THE SATISFACTION OF GENERAL MANAGER OF ENGINEERING SERVICES
10. ALL PLANTING BEDS TO RECEIVE AUTOMATIC DRIP IRRIGATION AND/OR WATERED DURING THE ESTABLISHMENT PERIOD
11. THE DESIGN, INSTALLATION AND MAINTENANCE OF ANY LANDSCAPING AREA OR SCREEN SHOULD BE IN CONFORMITY WITH THE CURRENT SPECIFICATIONS OF THE BRITISH COLUMBIA LANDSCAPE STANDARD PREPARED BY THE B.C. SOCIETY OF LANDSCAPE ARCHITECTS AND THE B.C. NURSERY TRADES ASSOCIATION. THESE STANDARDS DO NOT APPLY WHERE ENDEMIC, NATIVE PLANTINGS ARE USED FOR LANDSCAPING.



1 TREE PLANTING PLAN
Scale: 1:200

Project Stamp



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LOCI Landscape Architecture + Urban Design

Drawn By: DS | Checked By: ME

TREE PLANTING PLAN

L4.0

Rev. A revision

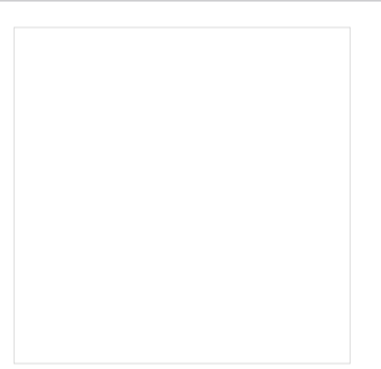
GENERAL PLANTING NOTES:

1. ALL PLANTING SHALL BE IN ACCORDANCE WITH BC LANDSCAPE STANDARD, LATEST EDITION
2. ALL TREE AND SHRUB AREAS TO BE MULCHED WITH 50MM (2") OF MEDIUM FINE MULCH, LESS THAN 50MM (2") DIAMETER.
3. ROOTZONE TO REST ON TAMPED PLANTING SOIL
4. SHRUBS: PREPARE PLANTING HOLES AS SPECIFIED. PLANT AT THE SAME GRADE AS NURSERY. WATER AND FERTILIZE AS SPECIFIED. ENSURE POSITIVE DRAINAGE THROUGHOUT PLANTING BED
5. TREE: PREPARE PLANTING HOLES AS SPECIFIED INSTALL TOP OF ROOTZONE 6" ABOVE FINISHED GRADE OF GROWING MEDIUM. WATER AND FERTILIZE AS SPECIFIED BY NURSERY.
6. FINAL SOFTSCAPE AND GRADING LAYOUTS AS WELL AS LOCATION SPACING TO BE APPROVED BY LANDSCAPE ARCHITECTS IN THE FIELD PRIOR TO INSTALLATION
7. IN CASE OF A DISCREPANCY BETWEEN PLANT INFORMATION ON THE LIST AND ON THE PLAN, THE LATTER SHALL PREVAIL
8. ALL PLANT MATERIAL TO BE MANUALLY WATERED FROM START OF INSTALLATION THROUGH THE END OF THE WARRANTY PERIOD
9. FINAL PLANT SPACING, QUANTITY AND TREE PLACEMENT TO BE REVIEWED TO THE SATISFACTION OF GENERAL MANAGER OF ENGINEERING SERVICES
10. ALL PLANTING BEDS TO RECEIVE AUTOMATIC DRIP IRRIGATION AND/OR WATERED DURING THE ESTABLISHMENT PERIOD
11. THE DESIGN, INSTALLATION AND MAINTENANCE OF ANY LANDSCAPING AREA OR SCREEN SHOULD BE IN CONFORMITY WITH THE CURRENT SPECIFICATIONS OF THE BRITISH COLUMBIA LANDSCAPE STANDARD PREPARED BY THE B.C. SOCIETY OF LANDSCAPE ARCHITECTS AND THE B.C. NURSERY TRADES ASSOCIATION. THESE STANDARDS DO NOT APPLY WHERE ENDEMIC, NATIVE PLANTINGS ARE USED FOR LANDSCAPING.



1 SHRUB PLANTING PLAN
Scale: 1:200

Project Stamp



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Nelson, BC

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Drawn By	Checked By
DS	ME

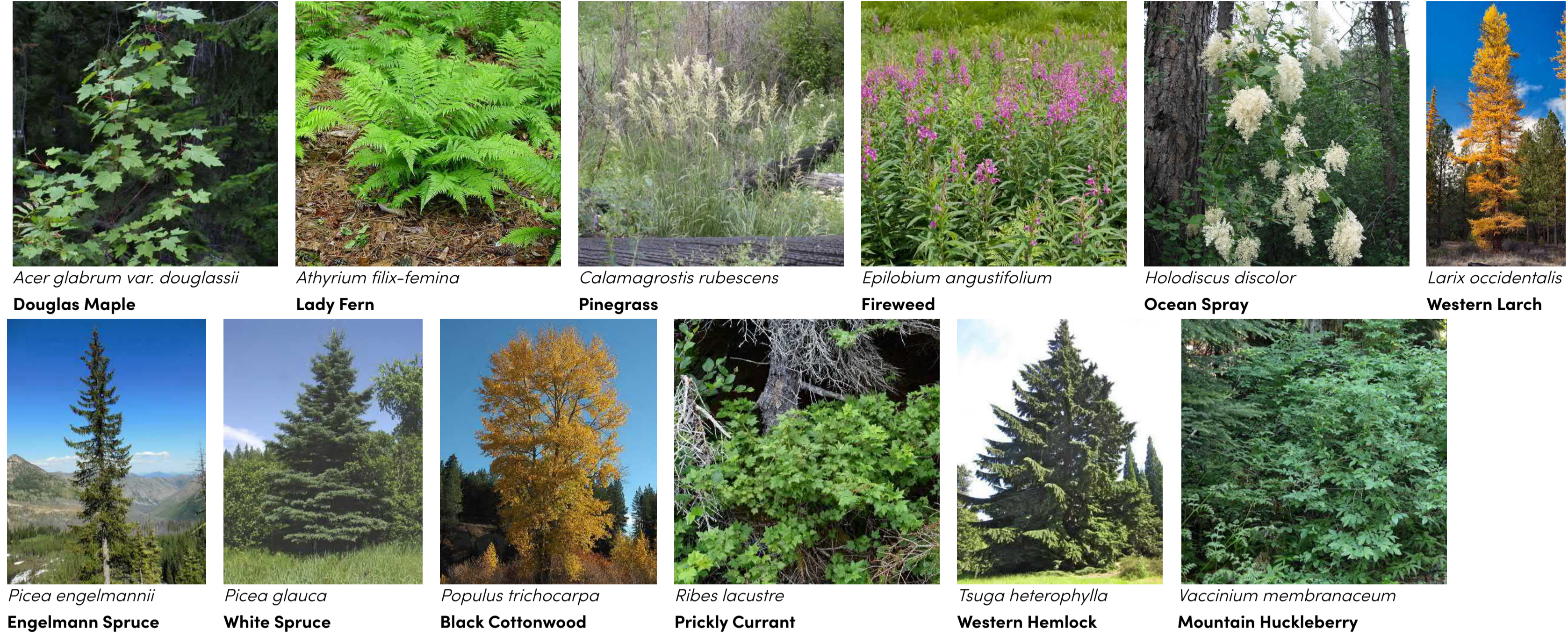
PLANT LIST

Symbol	Quantity	Botanical Name	Common Name	Scheduled Size	Spacing	Notes
DECIDUOUS TREES:						
		<i>Betula nigra</i>	River Birch	7cm cal.	As Shown	B&B
		<i>Populus tremuloides</i>	Trembling Aspen	7cm cal.	As Shown	B&B
		<i>Populus trichocarpa</i>	Black Cottonwood	7cm cal.	As Shown	B&B
CONIFERS:						
		<i>Larix laricina</i>	American Larch	3.5m ht.	As Shown	B&B
		<i>Picea engelmannii</i>	Engelman's Spruce	3.5m ht.	As Shown	B&B
		<i>Picea glauca</i>	White Spruce	3.5m ht.	As Shown	B&B
		<i>Picea pungens</i>	Colorado Blue Spruce	3.5m ht.	As Shown	B&B
		<i>Tsuga heterophylla</i>	Western Hemlock	4m ht.	As Shown	B&B
SHRUBS:						
		<i>Amelanchier alnifolia</i>	Saskatoon Berry	#3 Pot	0.8 m o.c.	
		<i>Holodiscus discolor</i>	Ocean Spray	#3 Pot	0.9 m o.c.	
		<i>Rosa gymnocarpa</i>	Baldhip Rose	#3 Pot	0.6 m o.c.	
		<i>Rubus parviflorus</i>	Thimbleberry	#2 Pot	0.6 m o.c.	
		<i>Spiraea betulifolia</i>	Birch Leaf Spirea	#2 Pot	0.6 m o.c.	
		<i>Viburnum edule</i>	Highbush Cranberry	#3 Pot	0.6 m o.c.	
PERENNIALS, GRASSES, GROUND COVER:						
		<i>Achillea millefolium</i>	Yarrow	#1 Pot	0.3 o.c.	
		<i>Calamagrostis canadensis</i>	Bluejoint	#2 pot	0.5 o.c.	
		<i>Calamagrostis rubescens</i>	Pine grass	#2 pot	0.6 o.c.	
		<i>Epilobium angustifolium</i>	Fireweed	#1 Pot	0.6 o.c.	
		<i>Lupinus polyphyllus</i>	Big Leaf Lupine	#1 Pot	0.6 o.c.	

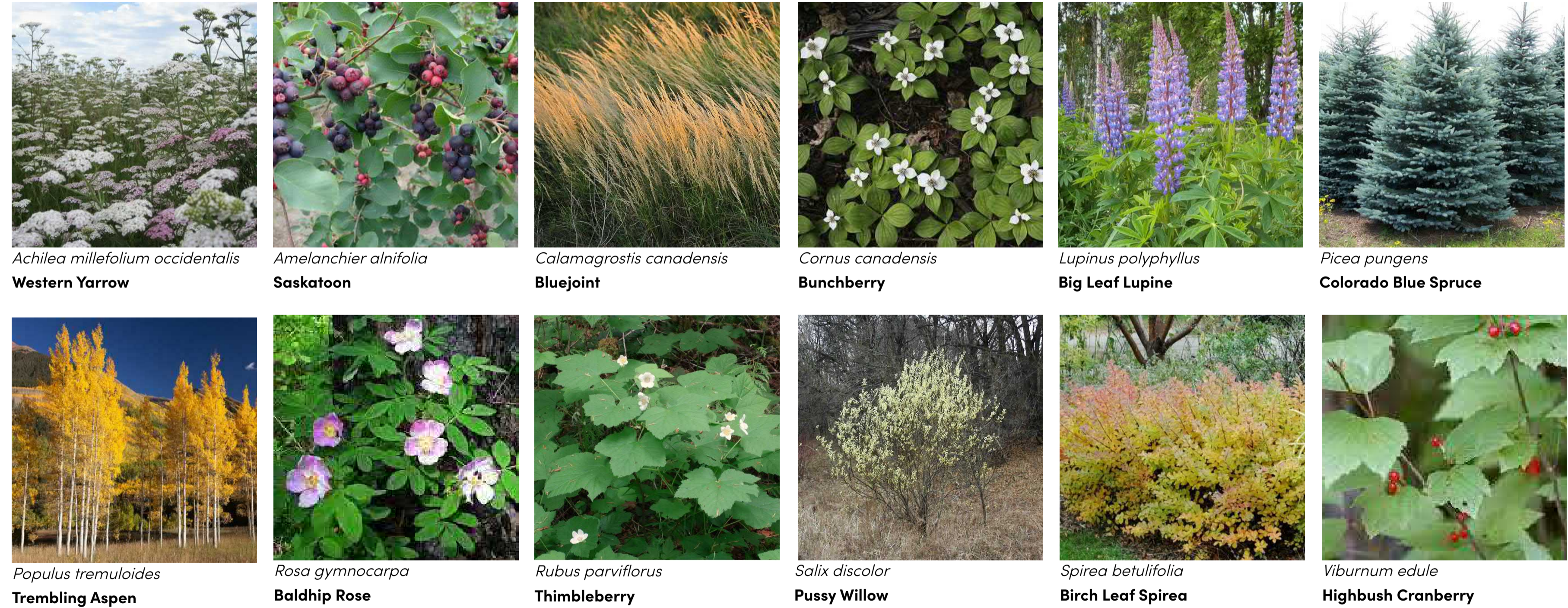
Native Species listed can be found at Nupqu Native Plant Nursery

PLANT IMAGES

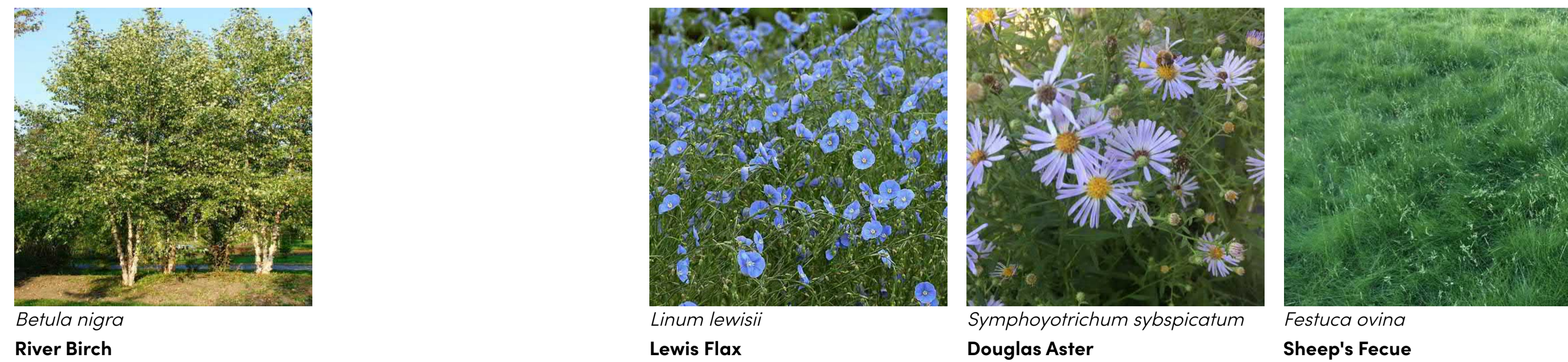
SCREENING TREES AND SHRUBS



NATURALIZED TREE AND SHRUB CLUSTERS



HYDROSEED MEADOW MIX

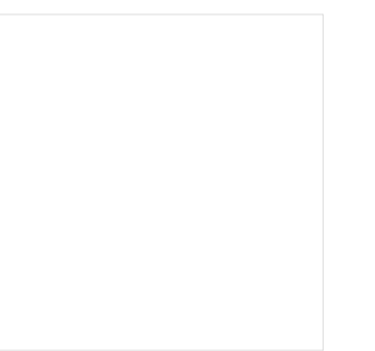


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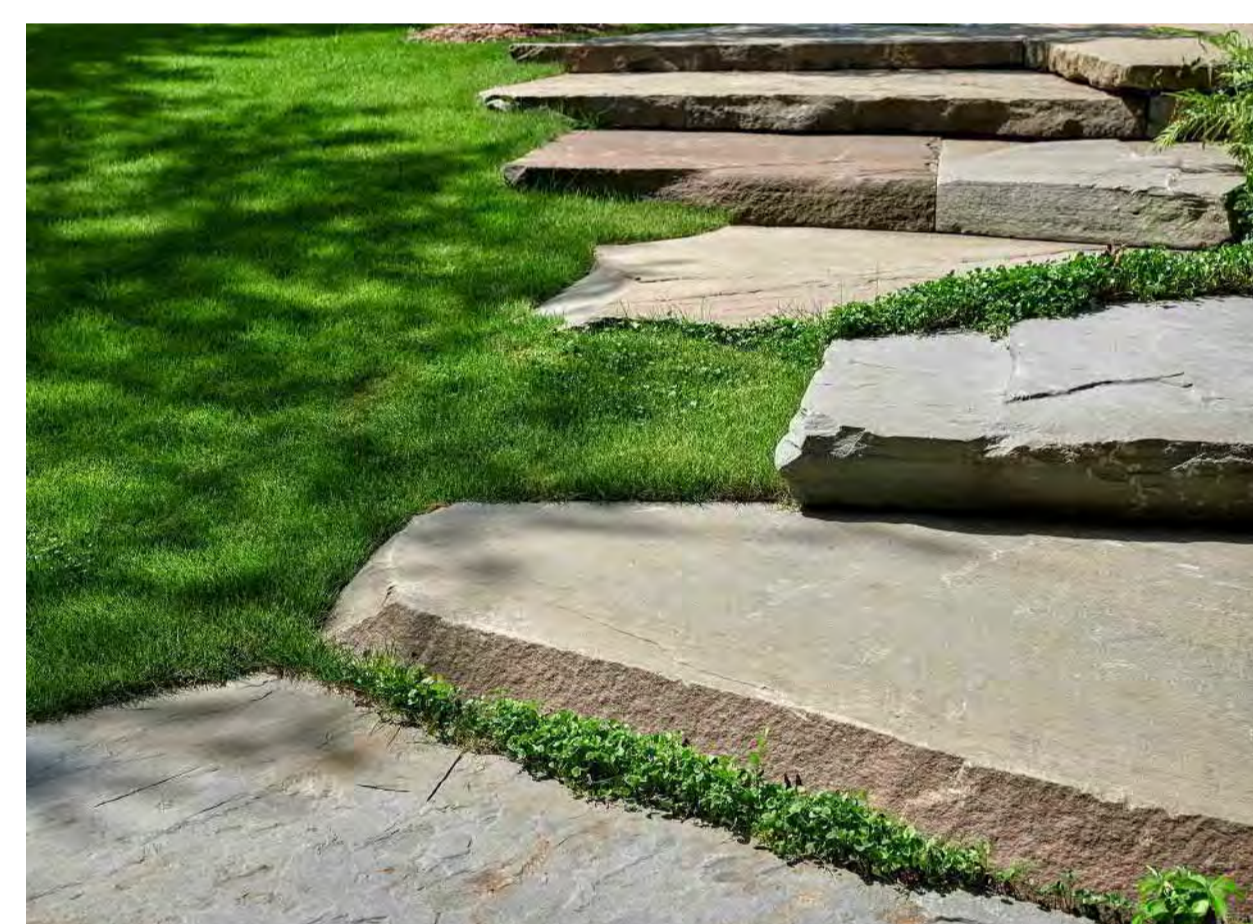
Client
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 Architect
 BLA Design Group
 Landscape Architect
 LOCI Landscape Architecture + Urban Design

Drawn By DS | Checked By ME

PLANT LIST + IMAGES

L5.0

Rev. A revision

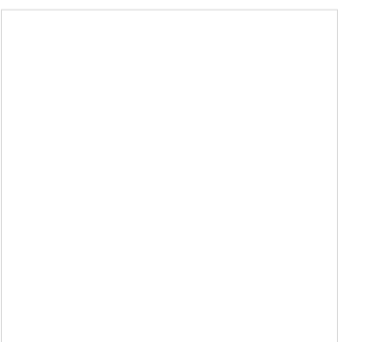


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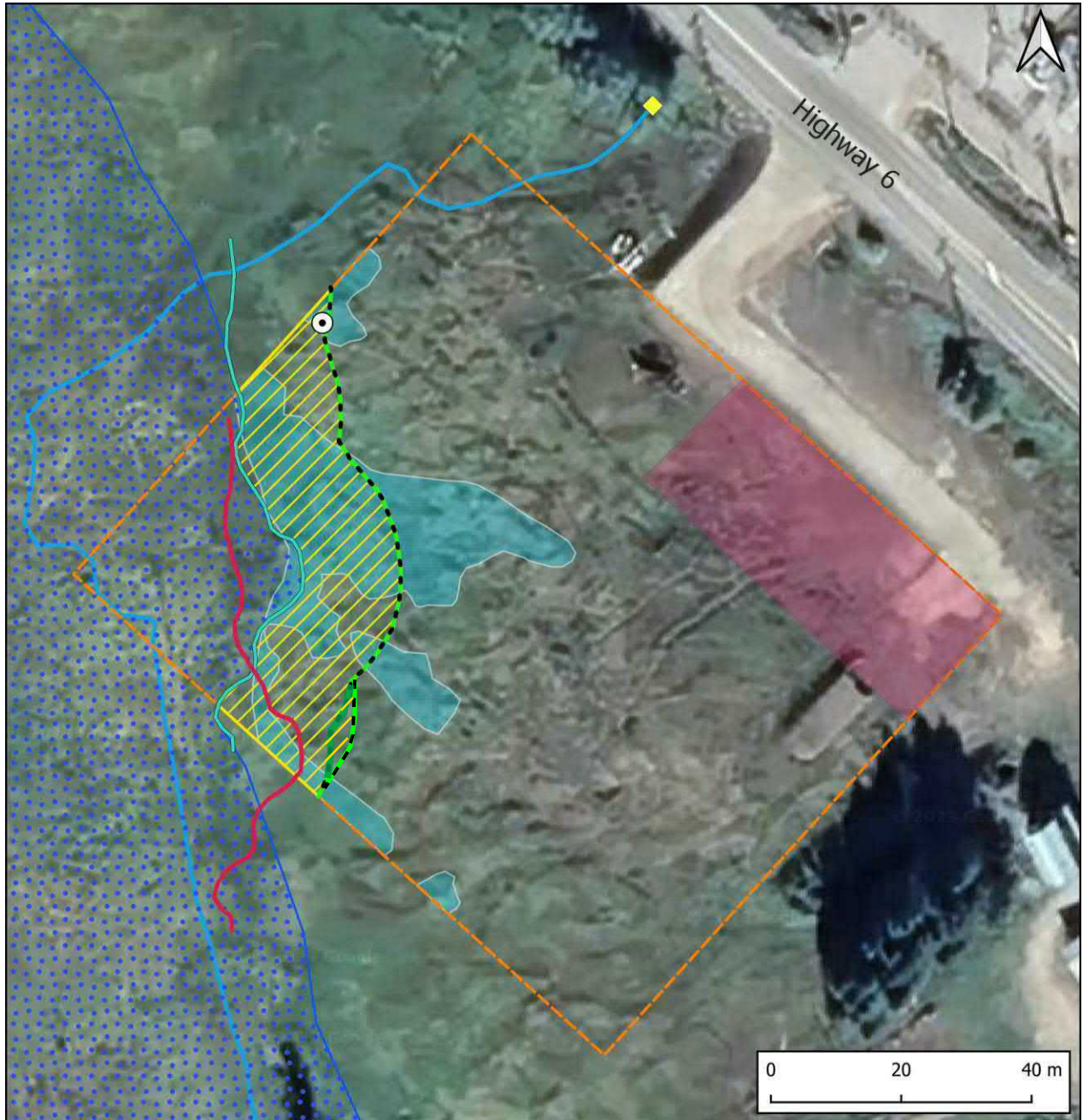
Drawn By DS | Checked By ME

PRECEDENT IMAGES

L6.0

Rev. A revision

APPENDIX 3. SPEA SETBACKS



Riparian Assessment | SPEA Setbacks

- | | |
|--|---|
|  Property Boundary
(PID 031-873-529) |  Wetland Boundary |
|  Channel | Wetland Setbacks |
|  Seepage Area/Surface Water |  Litterfall ZOS (15 m) |
|  Freshwater Atlas Wetland |  Large Woody Debris ZOS (15 m) |
|  Culvert |  Shade ZOS (0 - 11 m) |
|  Proposed Septic Field |  SPEA Area (15 m setback) |



Map Date: 2023-08-08
 Projection: NAD83 UTM Zone 11
 Map Scale: 1: 1000
 Orthoimage Date: May 10, 2023

APPENDIX 4. ARCHAEOLOGICAL CHANCE FIND PROCEDURE

Chance Find Procedures for Archaeological Material

This document provides information on how a developer and/or their contractor(s) can manage for potential archaeological material discoveries while undertaking construction and/or maintenance activities. This document can provide assistance to in-field contractors in the identification of archaeological remains and the procedures to follow if a discovery is made. The discovery of human remains initiates a different course of action and is outlined separately.

Under the provincial *Heritage Conservation Act (HCA)*, archaeological sites that pre-date 1846 are automatically protected whether on public or private land. Protected sites may not be damaged, altered or moved in any way without a Section 12 or 14 Permit as issued through the *HCA*. It is illegal to collect or remove any heritage object from an archaeological site unless authorized to do so under permit.

1. Activities occurring outside of known Archaeological Sites:

When archaeological material is encountered outside of known archaeological site areas work in the vicinity must stop immediately no matter what type of material or feature has been identified. Alteration to an archaeological site can only occur under a Section 12 (Site Alteration Permit) or Section 14 (Heritage Inspection Permit) *Heritage Conservation Act* permit. Such permit applications should be prepared by a professional archaeologist.

If archaeological material is discovered during the course of construction activities:

1.1 Stop Work: Halt all work in the area of the discovery and safely secure the area. Contact the project manager or site foreman.

1.2 Contact an Archaeologist: An archaeologist should be contacted as soon as possible. For a list of qualified archaeologists in the area, the proponent is directed to the BC Association of Professional Consulting Archaeologists website: www.bcapa.ca. The proponent may also wish to contact the Ktunaxa Nation Council's Archaeology Technician Nathalie Allard for direction (1-250-426-9549; nallard@ktunaxa.org).

1.3 Archaeologist provides guidance: The archaeologist will direct the proponent on the next courses of action, which will include notifying the Archaeology

Branch and First Nations with interest in the area.

2. Activities Occurring within Known Archaeological Site Boundaries:

Land altering activity within a previously recorded archaeological site must be conducted under a Section 12 HCA Site Alteration Permit (SAP), in some cases with an onsite archaeological monitor. It is common for additional archaeological material and features to be encountered during activities occurring within previously recorded archaeological sites. Minor finds (lithic flakes, diffuse charcoal or fire altered rock) may not require work to stop, however significant finds require a level of assessment by a professional archaeologist, and it is up to the onsite project manager to determine the level of significance based on criteria presented below.

2.1 Significant Cultural Finds that Require a Professional Archaeologist (described in detail in Section 4)

- Intact archaeological features, which can include but are not limited to hearths, cultural depressions (e.g. cache pits, house depressions) and rock alignments or forms (e.g. tipi rings, cairns, blinds)
- Significant archaeological materials, which include but are not limited to, the presence of formed lithic tools (e.g. projectile point, microblade core, scraper), a dense concentration of lithic waste flakes, or artistic items
- Human Remains (described in detail in Section 3)

2.2 Archaeological Site Management Options

- 2.2.1 **Site Avoidance:** If the boundaries of a site have been delineated, redesign the proposed development to avoid impacting the site. Avoidance is normally the fastest and most cost effective option for managing archaeological sites. Site avoidance could also be achieved through minimizing ground disturbance by looking for alternative constructive methods.
- 2.2.2 **Mitigation:** If it is not feasible to avoid the site through project redesign, it is necessary to conduct systematic data collection and analysis within the site prior to its loss. This could include surface collection and/or excavation. This work can be time-consuming and therefore expensive to conduct.
- 2.2.3 **Protection:** It may be possible to protect all or portions of the site which will be impacted through installation of barriers during the development period and possibly for a longer period of time. Methods for barrier construction could include fencing around site boundaries or applying

geotextile to the ground surface and capping it with fill. The exact method used would be site-specific.

3. Chance Find Procedures for Identified Human Remains

Procedures in the event of the discovery of human remains during construction are covered in depth by an Archaeology Branch Policy Statement, found on their website at www.for.gov.bc.ca/archaeology, and are summarized below.

- 3.1 Stop all construction activities immediately in the area of found or suspected human remains and contact the RCMP and/or Office of the Coroner.
- 3.2 The coroner must determine whether the remains are of contemporary forensic concern or archaeological/aboriginal.
- 3.3 If the remains are found to be of aboriginal ancestry then the next step involves the relevant First Nations collaboratively determining the appropriate treatment of those remains.

The key to respectfully dealing with ancient aboriginal remains is to involve the appropriate First Nations as early as possible in the process. However this must be done in a manner that does not interfere with the coroner's office ability to conduct their business in the manner that they see fit.

4. Site Identification Guide

The following are characteristics typical to site types found within the Ktunaxa Traditional Territory.

4.1 Artifact Scatters

Lithic (stone) scatters from the production and maintenance of stone tools are the most common type of archaeological site found in the region. Other materials that may be represented in artifact scatters are Fire Broken Rock (FBR), bone, antler and tooth.

Lithics: What to look for

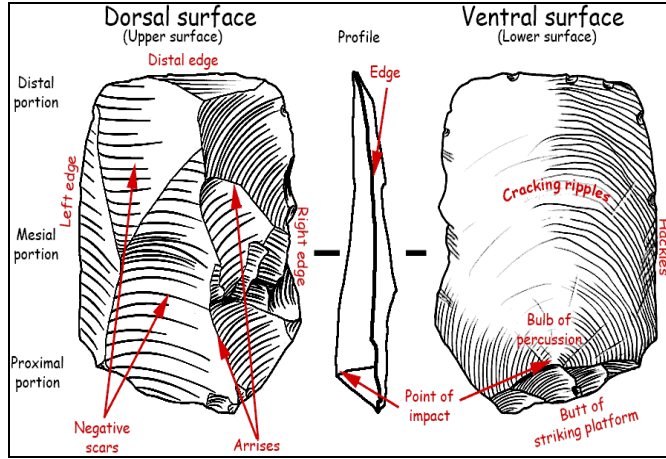


Image 1: Basic flake morphology



Image 2: Examples of lithic flakes

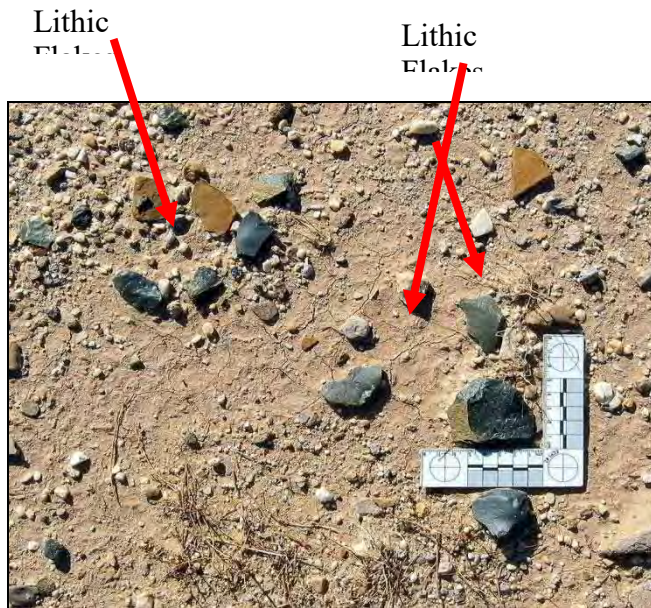


Image 3: Example of lithic scatter found on ground surface



Image 4: Example of formed lithic artifacts

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Image 5: Ground stone artifacts

Bone, Tooth and Antler Artifacts: What to Look For

- Obvious shaping
- Incising
- Unnatural holes



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Image 6: Bone and Antler artifacts

4.2 Fire Broken Rock and Hearths

Fire-broken rock (FBR) results from the use of fire during cooking, heating and processing activities. FBR is often associated with other features including hearths and cultural depressions, but can also be thinly scattered in concentrations away from the features with which they were first associated.

When looking for FBR, note concentrations of roughly fractured rock from rapid heating and cooling, rock showing signs of burning or oxidation and/or reddening or blackening of surrounding matrix.



Image 7: Example of FBR; note the zig/zag pattern of breakage common to FBR. A hearth feature is evidence of a fire pit or other fireplace feature of any period. Hearths were used for cooking, heating, and processing of some stone, wood, faunal, and floral resources and may be either lined with a wide range of materials like stone or left unlined. Occasionally site formation processes (e.g., farming or excavation) deform or disperse hearth features, making them difficult to identify without careful study.

Hearths: What to look for

- FBR
- reddening or blackening of the associated soil/sediment
- charcoal
- layering of FBR and charcoal, and
- depressions in the earth associated with FBR, reddened or blackened matrix and charcoal.

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Image 8: Example of a hearth uncovered along the wall of an excavation unit

4.3 Cultural Depressions

Any depression seen on the ground surface that appears to have been excavated by man can be a cultural depression and have archaeological significance. These “pits” were dug for a variety of reasons such as for food storage, cooking or as a base for a dwelling.

They can range in size from 1m across to 7-10m across, and are usually found associated with other artifacts such as FBR and lithic scatters.

To identify a cultural depression, look for:

- Subtle to deep scours on the ground surface that are circular to rectilinear in shape
- A raised rim along the edge of a depression
- Depressions associated with artifacts and FBR
- Depressions associated with fire reddening and blackening of the matrix

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Image 9: Example of a large cultural depression in a natural setting

4.6 Rock Alignments

There are several types of rock alignments that occur within the culture area, which include tipi rings, medicine wheels, cairns and blinds. When attempting to identify rock alignments, look for a group of rocks that look purposefully placed as in a circle, pile or line; isolated groups of rock that do not seem to belong to that landscape; and/or rocks which form a pattern.



Image 10: Example of a Cairn or piling of rocks



Image 11: Example of a tipi ring in a natural setting

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