



REQUEST FOR DECISION

OCP and Zoning Amendment Application
Tyax Real Estate – Tyax Lodge

Meeting date: January 13, 2016

File No. 3360.20.89

To: SLRD Board of Directors

Owner: Tyax Real Estate Ltd.

Applicant/Agent: Murdoch & Company Ltd.

Location: Tyaughton Lake, Electoral Area A

Legal description: DL 4931, Except PLAN B3568, B5258, 35969, and KAP6763, LLD, PID 002-306-441

OCP Designation:	Zoning:	ALR	DP Area:
Commercial	C4, RR2, R3	Status:	Wildfire Protection
Residential		No	RAR
Special Planning Area			

RECOMMENDATION:

THAT staff proceed with the preparation of OCP and Zoning amendment bylaws with respect to the Tyax Real Estate Ltd. rezoning application regarding a building for staff quarters/helicopter operations.

KEY ISSUES/CONCEPTS:

The SLRD received an application for a rezoning and OCP amendment regarding the Tyax Lodge property noted above. A portion of that lot (Site A) as shown in the maps in Appendix 1 is where the main lodge and proposed facilities are located. The amendment application requests a zoning amendment to allow a facility that would jointly house staff accommodation and helicopter operations uses. A dormitory style building is proposed for the main Tyax Lodge property along with office and storage uses related to the helicopter operations at Site A.

The dormitory building (Site A) is proposed to be two storeys with office, storage, and accessory uses related to the helicopter operations located on the lower floor, and staff accommodation predominantly on the upper floor. There would be two beds, out of ten in total, which would be located on the lower floor.

Staff have not drafted any bylaw amendments for this application. It is being brought to the Board for review to determine if there is support for proceeding with OCP and zoning amendments that will facilitate increased staff accommodation options at Tyax Lodge.

RELEVANT POLICIES:

Upper Bridge River OCP Bylaw No. 608, 1996
Electoral Area A Zoning Bylaw No. 670, 1999

BACKGROUND:

Tyax Real Estate originally applied to rezone the main lodge property (now subject to this application) and another property down the street (Lot 5, DL 4931, Plan KAP67637, LLD) for staff accommodation purposes in spring 2014. That application was brought forward to both the EAD and the Board. As the application proceeded, it was amended to apply to one parcel only – Lot 5, located to the west and south of the main lodge site. The OCP and Zoning amendment bylaws associated with Lot 5 were adopted in July 2014. The heli-operations and staff accommodation building proposed in this application is the same as what was included in their original application.

The Tyax Lodge representatives have indicated that there is a lack of affordable, available and appropriate staff accommodation in the area. As with their original application, the intent of the property owners is to address capacity issues at the lodge and increase the effectiveness and efficiency of the overall operation by providing staff accommodation and support facilities separate from the lodge. This would free up existing space in the lodge for guests that is currently occupied for employee housing and storage for heli-ski activities. The proposal would create a ~420 m² (4,518 sq.ft.) building to permanently house helicopter operations uses with staff accommodation, as well as storage of materials and supplies related to heli-ski activities, guiding and first aid equipment.

During the previous application and rezoning process, a number of concerns were raised by the Tyaughton Lake community regarding:

- Noise issues (note that this was mostly with respect to another employee housing building that was approved under the first rezoning application process)
- Emergency services issues - police and fire response, and wildfire hazards
- Potential for employee housing becoming additional commercial lodging in the future
- Expansion of commercial uses on the lodge property
- Floatplane use on the lake

ANALYSIS

Description:

The lodge property (Site A) is quite large (29.87 ha) and extends eastward along the lake and away from the water as seen in both Appendix 1 and 2.

Official Community Plan Issues

To undertake this change in zoning, an amendment to the Upper Bridge River Official Community Plan (OCP) Bylaw No. 608, 1996 will be required. The subject property is currently split as to OCP designations between Residential, Commercial, and Special Planning Area. The land use designation for the property would be amended to a single commercial designation for the lodge portion of the site. The avalanche exclusion zone could be zoned appropriately to restrict land uses and not permit any buildings or structures. The remainder of the lot would then be given a Parks and Open Space-type designation in order to prevent further development on or adjacent to the avalanche exclusion area.

Development Permit guidelines

The Upper Bridge River OCP would be amended in order to extend the existing Development Permit Area (DPA) for Form & Character to guide the architectural and landscape aspects of the site. Wildfire Development Permits will be required for construction on the subject property.

Geotechnical Issues

Site A

There is an exclusion zone on Site A identified in a 2011 geotechnical report by McClung (see attached Appendix 3) that prohibits buildings and uses in that exclusion area. That report assessed the snow avalanche risk for the fan of a large avalanche path that runs into Tyaughton Lake near Tyax Lodge. There was a 1984 event that ran into the lake, and the risks are high enough that there should be no occupied structures built on the fan.

The hazard is considered a wintertime only issue. The access to the proposed staff dormitory and helicopter site from the lodge is through this exclusion area. SLRD staff will consider whether a restrictive covenant will be required to address the snow avalanche hazards or to formalize the exclusion area within the zoning directly. A geotechnical assessment report was requested as part of the previous rezoning application, and one was completed in February 2014 (see attached Appendix 4). That 2014 exp report included the main lodge property (Site A) including the campground use (28 existing campsites), and the currently approved staff accommodation lot (Site B). This report indicates that the proposed buildings and accesses are safe for the uses intended on the main lodge property and outlines a number of conditions for the existing campground use and any proposed expansion. According to the report, the campground use should be restricted to a period of time from June to October, depending on a favourable snow avalanche assessment from qualified Tyax staff.

Zoning Issues

Site A

Site A is part of the large parcel that is currently split zoned into three portions under SLRD Zoning Bylaw No. 670, 1999. Given the exclusion zone that covers a large portion of DL 4931 (Site A is part of this lot) east of the lodge, and the concerns regarding access to and from that section, the SLRD proposes that only limited uses be allowed in the portion of the site that is to the east of the exclusion zone. The zoning would still allow the current and proposed uses for the lodge area west of the exclusion zone.

The new zoning would create a commercial zone for the lodge area west of the exclusion zone. This new commercial zone would incorporate some of the existing uses on the property, as well as the proposed staff dormitory and office, storage, and maintenance building uses related to helicopter operations. A parks and open space zone would cover the eastern portion of DL 4931 from the exclusion zone east.

There is an existing campground with 28 campsites that is predominantly located within the exclusion zone on DL 4931 (note that the exp report, attached as Appendix 4, refers to a proposed campground expansion – this is no longer being proposed by the applicant). Campground use is an existing permitted use in the C4 zone that covers a portion of the lodge property. The campground is a summertime use, and would continue and be regulated as such by way of the zoning bylaw or restrictive covenant.

Existing uses in the current zoning (C4, R3, RR2 zones)

- Commercial lodging
- Pension
- Restaurant
- Marina
- Boat sale and rental
- Indoor and outdoor recreational facility
- Neighbourhood pub
- Retail store
- Single family dwelling
- Temporary tourist accommodation
- Bed & breakfast
- Agriculture
- Forestry practices
- Kennel
- Campground
- Open land recreation – golf courses and motocross tracks
- Garden nursery
- Secondary suite
- Home business / Home industry

Proposed uses for the new Commercial zone would include:

- Commercial lodging
- Employee housing, associated with employment at the Tyax Resort at Tyaughton Lake

- Office & storage ancillary to accommodation, lodging and helicopter uses
- Helicopter landing and staging
- Fuel storage (separate from the housing)
- Restaurant/pub ancillary to commercial lodging
- Single family dwelling
- Bed & Breakfast/Pension
- Campground with a maximum of 28 campsites, subject to conditions
- Indoor/Outdoor Recreation
- Floatplane dock and small personal watercraft dock
- Accessory uses

Indoor/Outdoor Recreation would be limited to: tennis and volleyball courts, and stables for horses, to reflect existing uses.

Possible proposed uses for the new Parks and Open Space zone would include:

- Parks, Limited Use
- Open Space, Limited Use (to be determined, in association with proposed zoning)

Parks, Limited Use would be defined as: any premise specifically for passive or active recreation including, walkways, trails, environmentally sensitive areas, forest reserve, wildlife sanctuary, greenbelts, conservation areas, buffers, nature interpretation areas, and similar land uses. It does not include any buildings or structures.

Open Space, Limited Use would be defined as: that portion of a lot not occupied by parking areas, which may or may not be accessible by vehicle, and may only be suitable for limited recreational use. Open Space, Limited Use shall be free of any buildings or structures.

The proposed accommodation building for Site A will be limited in floor area to the following:

- Total Gross Floor Area (GFA) – 419.74 m² / 4,518.04 ft².

The site coverage of that building is proposed to be 0.074%. The current zoning allows for 33% coverage.

OPTIONS:

Option 1 (PREFERRED OPTION)

Direct SLRD Staff to draft OCP and zoning amendment bylaws.

Option 2

Refer the application back to staff for more information, or revision.

Option 3

Reject the application.

ATTACHMENTS:

Appendix 1: Tyax cover letter

Appendix 2: Tyax maps and drawings

Appendix 3: 2011 McClung Geotechnical Report

Appendix 4: 2014 exp Geotechnical Hazard Report

Prepared by: I. Holl, Planner

Reviewed by: K. Needham, Director of Planning and Development

Approved by: L. Flynn, Chief Administrative Officer

MURDOCH COMPANY

November 13, 2015

Att: Ian Holl
Rezoning for Site A- Operations Building
Squamish-Lillooet Regional District
1350 Aster Street
Pemberton, BC

Re: Tyax, Site A Rezoning

Ian,

An updated set of rezoning documents have been attached to more accurately reflect the proposed works on the affect site at Tyax.

As per our original Rezoning Application dated April 11, 2014 Tyax Real Estate wish to amend zoning around the Tyax Wilderness Lodge to facilitate the upgrade and operations of their lodging activities. At present the Lodge is operating at capacity but not in an optimal fashion and the amendments to the current zoning would permit a greater level of effectiveness and efficiency. The net result would be a greater boost to the operational capacity and improved value to the local economy.

The proposed rezoning site where the existing lodge is located, currently zoned C4 for Resort Commercial Use and RR2 (rural resource) is to be amended to permit the creation of a building to permanently house Operations and some accessory staff housing (to move forward at a later date). There is also a proposed extension to the existing campground.

Tyax Wilderness Resort and Spa has operated and run a Heli-ski business for many years and the particular site selected for the combined operations and staff housing building is located on a flat area. The area is on the former location of the old tennis courts in an area outside the identified hazard area path. The operations building is intended to complement the current uses by providing a more specific support facility for helicopter operations, storage of materials and supplies related to the heli-ski activities, guide equipment and first aid room.

The upper floor of the building is for staff housing and intended to fulfil auxliary housing needs for lodge and heli-ski operations. The dorm style housing is designed to provide private sleeping rooms (no kitchens) for staff only and designed so that employees could be attracted by the private rooms that are often a challenge to find in the hospitality sector. Shared bathrooms and common areas are provided for common gathering and socializing away from Lodge guests and management.

The form and character of the proposed building will reflect a similar architectural character as the existing Lodge. The close proximity to the existing main lodge and its presence relative to the pattern of activities suggests that the buildings compliment each other and contribute the Wilderness Resort and Spa as a collection of "like styled" buildings that portray a uniform aesthetic, with a similar palette of materials, finishes and details.

The SLRD had provided initial commentary on the rezoning package on October 22, 2013. Below is a summary of questions the SLRD has along with clarification :

a/ Please indicate whether the intention is to keep the dormitory building solely for employees through the year, or would there be times that it might be rented out to the public:

There is no intention to rent out the dormitory bed units to the public. The operations building is used specifically for day-to-day operations of the lodge.

b/ Clarify the intended long term use of area's east of the exclusion zone :

The intended use is for a campground run in the summer months only and are not affected by the winter season. A digital copy of the geotechnical hazard area is provided in the revised application.

c/ Clarify floor area calculations :

The revised application provides more precise gross floor area of the proposed operations building along with it's main floor footprint.

d/ Wildfire Development Permits will be required for the site:

We understand this requirement and plan to design to a similar extent as the Staff Accommodation site.

Additionally we would like to confirm the following status and strategies related to site servicing, due to the increase in use:

1/ electrical

– an electrical upgrade was performed in 2012/13 which provided more than adequate power for existing and new buildings along with the campground upgrade. Electrical to the two new sites will come from either the Main Kiosk or Lakeside Kiosk.

2/ Water and water treatment

– Current operations have a Well and Water Treatment plan installed in fall of 2014. Our civil consultant (CREUS) has confirmed the water system is adequately sized for the upgrade.

3/ Waste Water

There is an existing lift station located below (south) of the proposed Operations building. Waste water will flow to the lift station and will then be pumped uphill away from the lake to a waste water treatment plant. CREUS confirmed the existing waste water treatment plant is adequately sized for the new additional building use.

A water and sewer flow rate meter will be required to monitor flows once the Operations building has Occupancy.

The zoning amendments are part of a larger goal of making the Tyax Wilderness Resort and Spa a premier adventure destination within the region. In order to do so the Resort requires a high level of support from staff and management and that requires a strong foundation of quality housing stock to attract and retain the right people who know how to deliver the quality service expected of similar operations around the province. It also means providing professional services and key necessities so that the activities can be carried out and executed in a professional manner with all appropriate first aid equipment and support equipment readily stocked and prepped for use, if required.

We believe we have addressed items specified in your preliminary review. Should there be any items that are still unclear please call or email so that we may resolve.

We look forward to your support

Respectfully



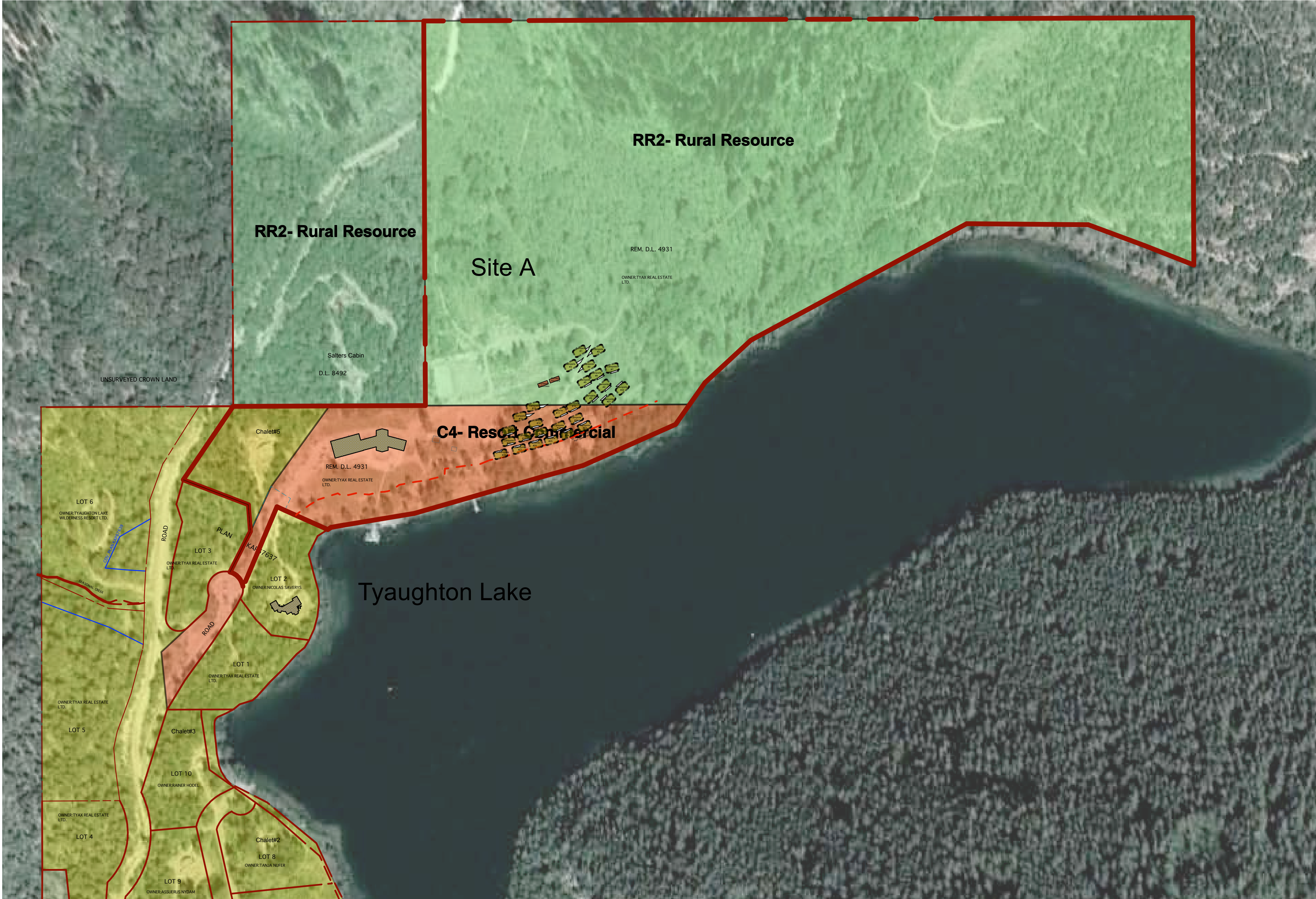
Brent Murdoch MAIBC, BCSLA
Murdoch + Company Ltd.

CC. Dean Skalski, Jon Johnson, Kate Cleland, Ian Holl, Kim Needham.

#106-4319 Main St. Whistler, BC
P.O. Box 1394, Whistler BC. V0N 1B0
tel: 604. 905-6992

Rezoning Application: Tyax Wilderness Resort and Spa

#1-Tyaughton Lake Road, Gold Bridge, BC, V0K 1P0



SITE A

ZONING & DEVELOPMENT STATS.

LEGAL DESCRIPTION: D.L. 4931, LILOOET DISTRICT, EXCEPT PLANS B3568, B5258 AND KAP 67637
CIVIC: #1-TYAUGHTON LAKE ROAD, GOLD BRIDGE, BC, V0K 1D0

ZONE: C4 Resort Commercial

USE:		PROPOSED	PERMITTED / REQUIRED / EXISTING
Principle Uses		a) Commercial Lodging, b) Pension, c) Campground, d) Restaurant e) Marina, f) Boat Sale and Rental x.1) Multi Unit Housing, x.2) Helipoint Facilities and assesoray uses	a) Single Family Dwelling
Secondary Uses		g) Dwelling Unit, h) Indoor/Outdoor Recreation, i) Marine Gasoline sales j) Neighborhood Pub, k) Retail Store, l) Assesoray building and assesoray use	b) Bed and Breakfast, c) Home business d) Accessory building and Use
SITE			
SITE AREA:		29.62 HA	0.8 HA MIN. PARCEL AREA
FRONTAGE:		Existing Frontage 22 m	Existing Frontage 22 m MIN. FRONTAGE
SITE COVERAGE:			33 % MAX SITE COVERAGE
AREA (FOOTPRINT)		PROPOSED OPERATIONS 244.0 m2 EXISTING LODGE 1132 m2 CHALET #5 100 m2 MAINTENANCE BUILDING 10 m2 TOTAL 1486 m2	TOTAL 1486 m2 PARCEL AREA 296,200.0 m2 SITE COVERAGE: 0.5 %
SET BACKS:		(FRONT) NORTH SETBACK 7.5 m EAST SETBACK 4.5 m SOUTH SETBACK 4.5 m WEST SETBACK 4.5 m	7.5 m MIN. 4.5 m MIN. 4.5 m MIN. 4.5 m MIN.
DENSITY:		Max 30 camp sites/ha Total all site	Max 30 camp sites/ha Total all site
HEIGHT:		PRINCIPAL BUILDINGS 13 m AUXILIARY BUILDINGS 9 m	11 m 4 m
PARKING STALLS:		PARKING SPACES 85 SERVICE STAFF: 0 LOADING: 1	2 Extg 0 Extg 0 Extg



Existing Zoning with Ownership

0100200 m

N

Z-1

13th Nov 2015

MURDOCH COMPANY

ARCHITECTURE + PLANNING LTD.
#106-4319 MAIN ST
WHISTLER BC V0N 1B0
TEL: (604) 905-6992
murdoch @ telus.net & office.murdoch@telus.net

Site A

REM. D.L. 4931

OWNER:TYAUGHTON LAKE
WILDERNESS RESORT LTD.

OWNER:TYAX REAL ESTATE
LTD.

UNSURVEYED CROWN LAND

Salters Cabin

D.L. 8492

New Operations
Building
+ access

Existing Septic
Field

Existing
Parking
24 spaces

Existing Campsites

Existing
Parking
6 spaces

Existing Lodge

Existing Road
Access

REM. D.L. 4931

OWNER:TYAX REAL ESTATE
LTD.

Existing
Parking
65 spaces

Chalet#5

LOT 6

LOT 6

OWNER:TYAUGHTON LAKE
WILDERNESS RESORT LTD.

OWNER:TYAX REAL ESTATE
LTD.

LOT 3
PLAN
PLAN

LOT 2

LOT 2
OWNER:NICOLAS SAVERYS

Spirit Bear

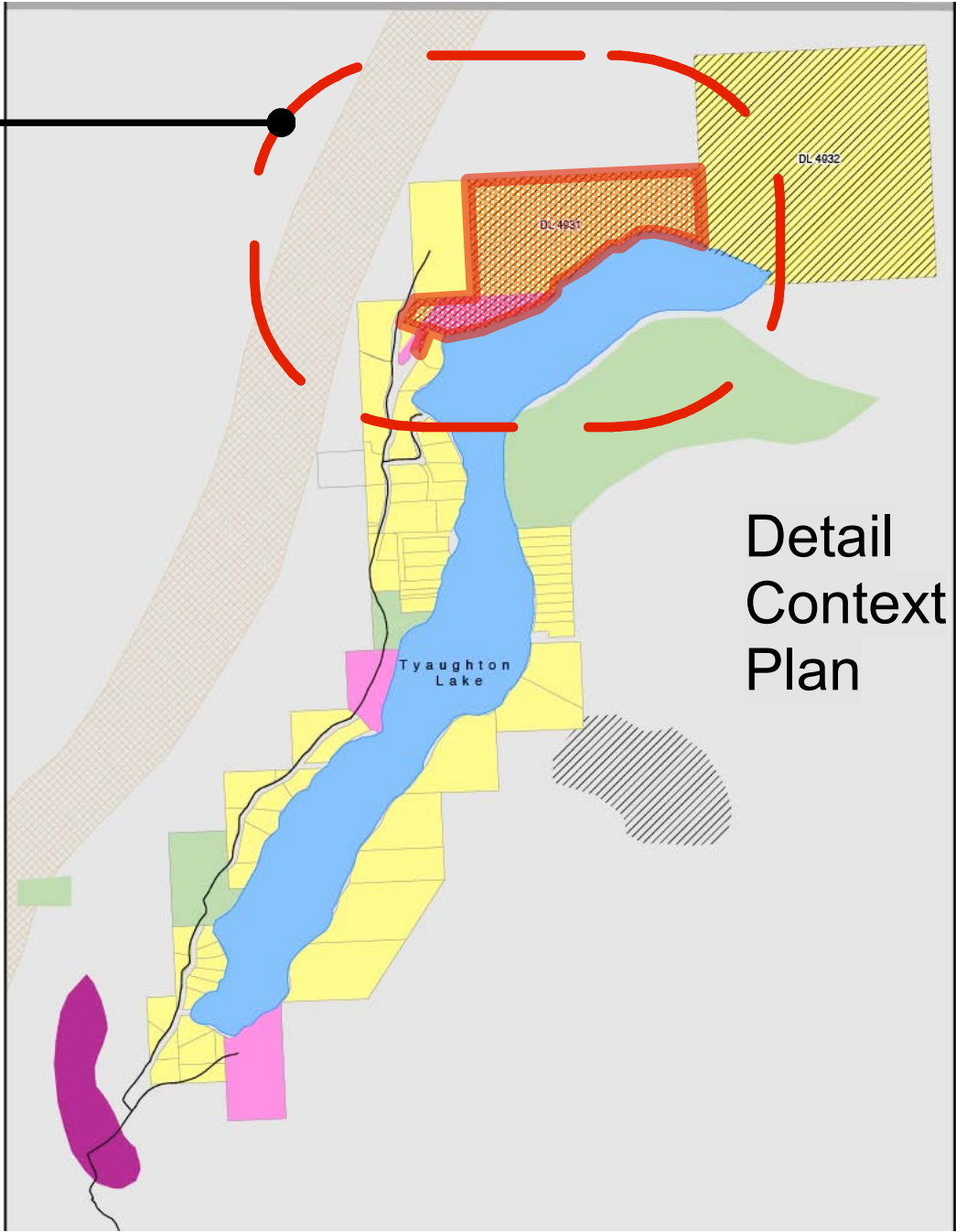
Tyaughton Lake

LOT 1
OWNER:TYAX REAL ESTATE
LTD.

Chalet#3



Subject
Property



Detail
Context
Plan

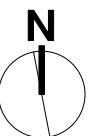
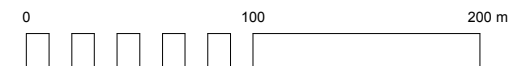
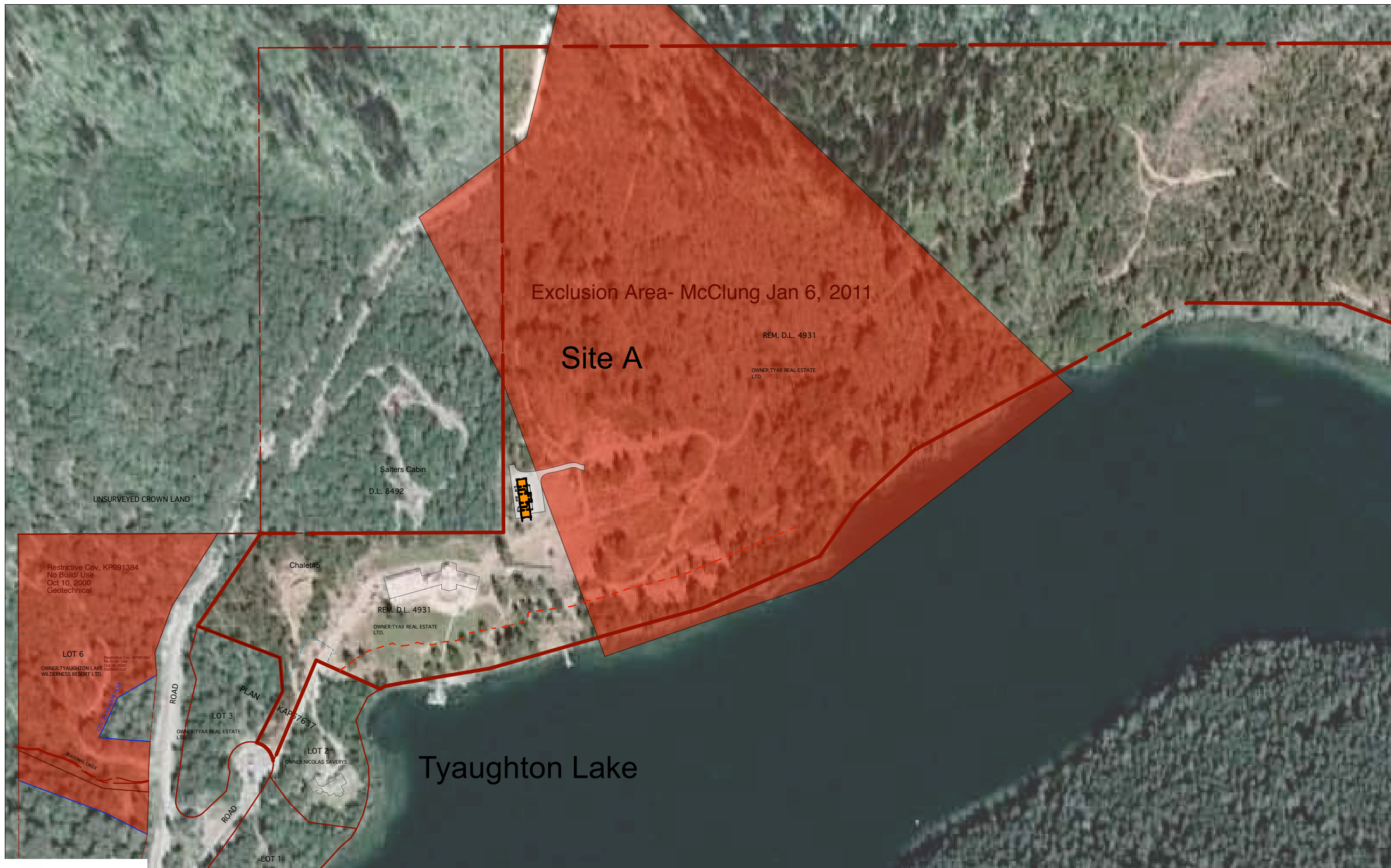
Context Plan 1:1000 scale

Z-2

13th Nov 2015

MURDOCH COMPANY

ARCHITECTURE + PLANNING LTD.
#106-4319 MAIN ST
WHISTLER BC V0N 1B0
TEL: (604) 905-6992
murdoch @ telus.net & office.murdoch@telus.net

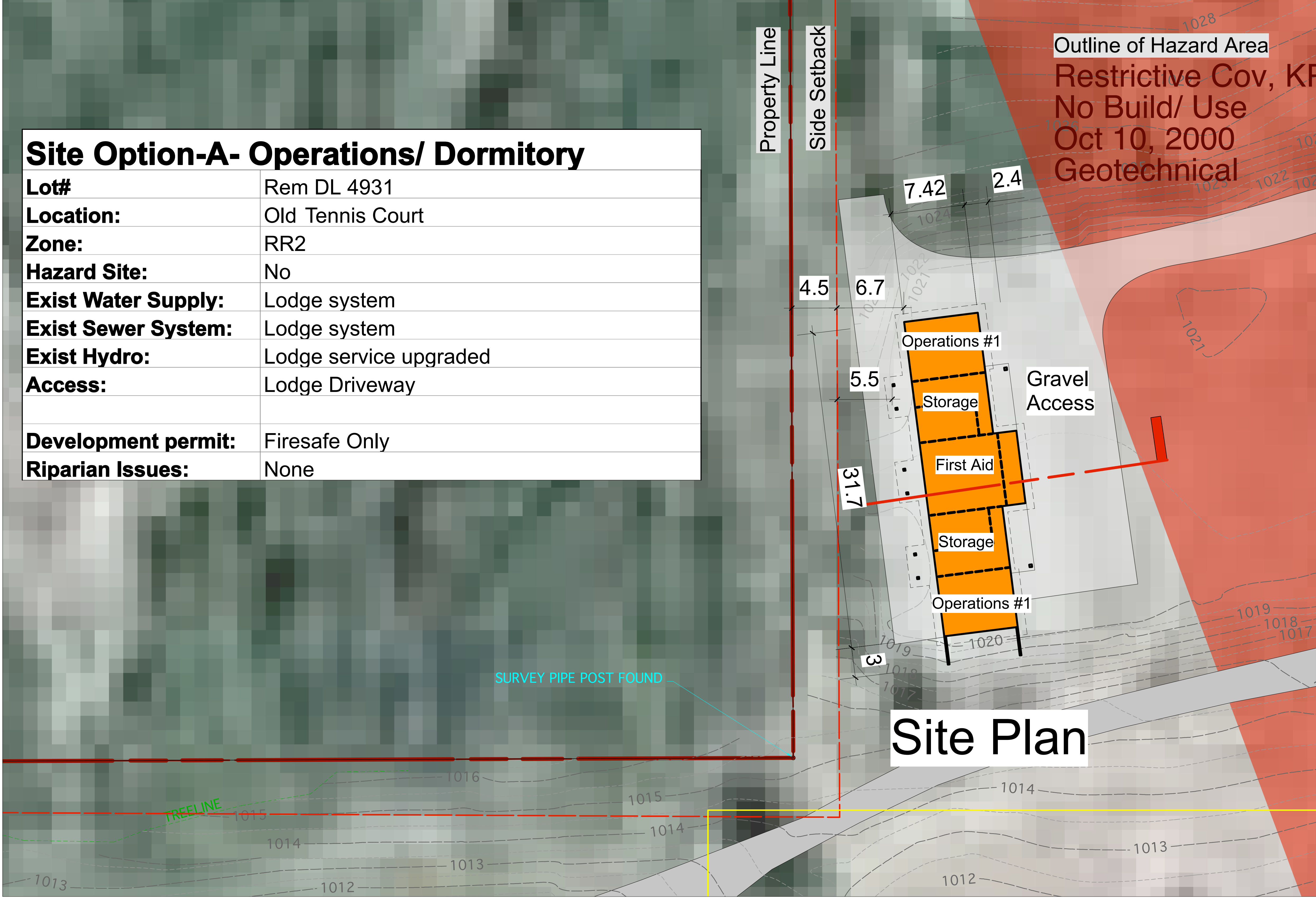


Natural Hazards Zone

Z-3 13th Nov 2015

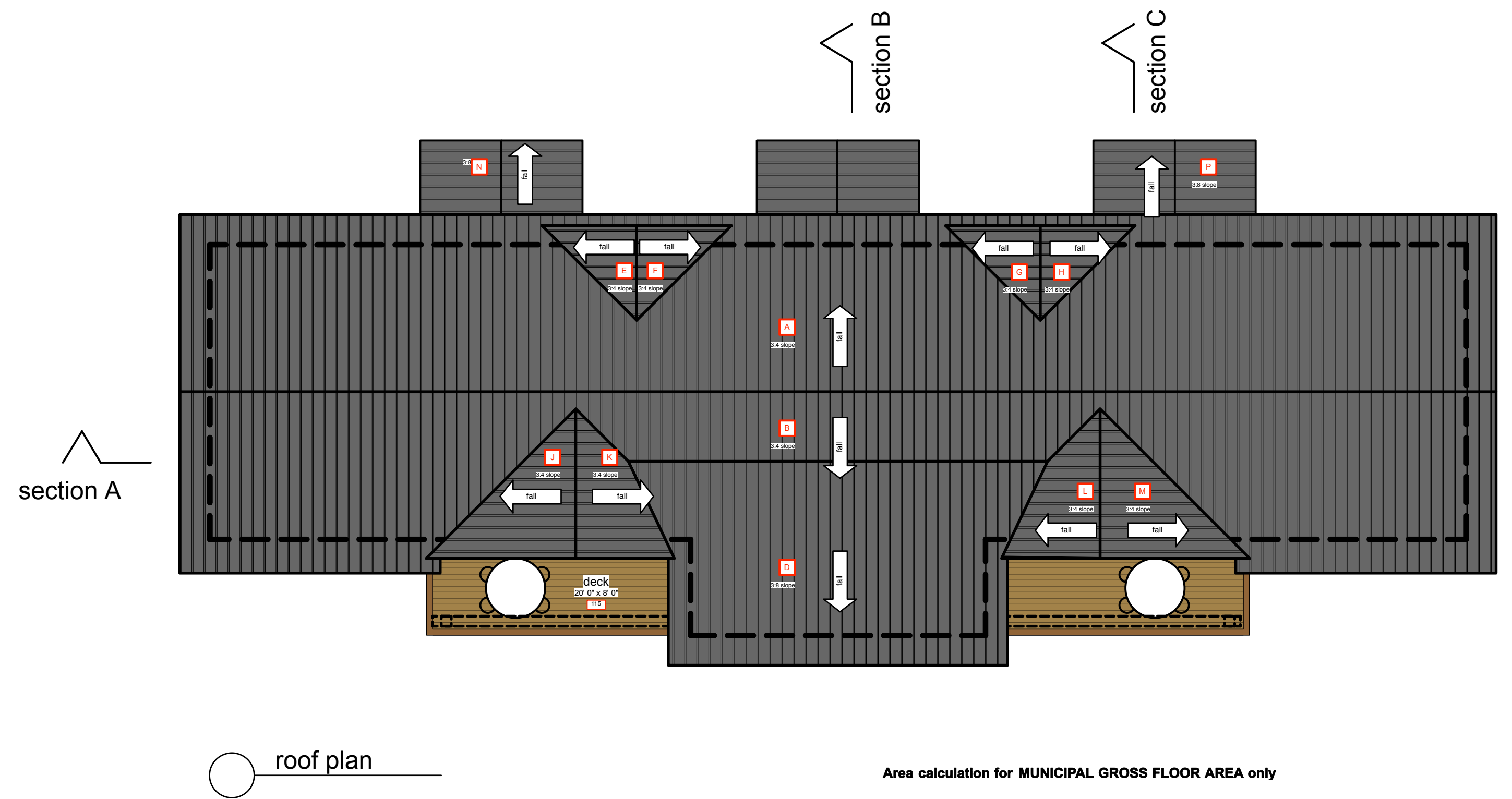
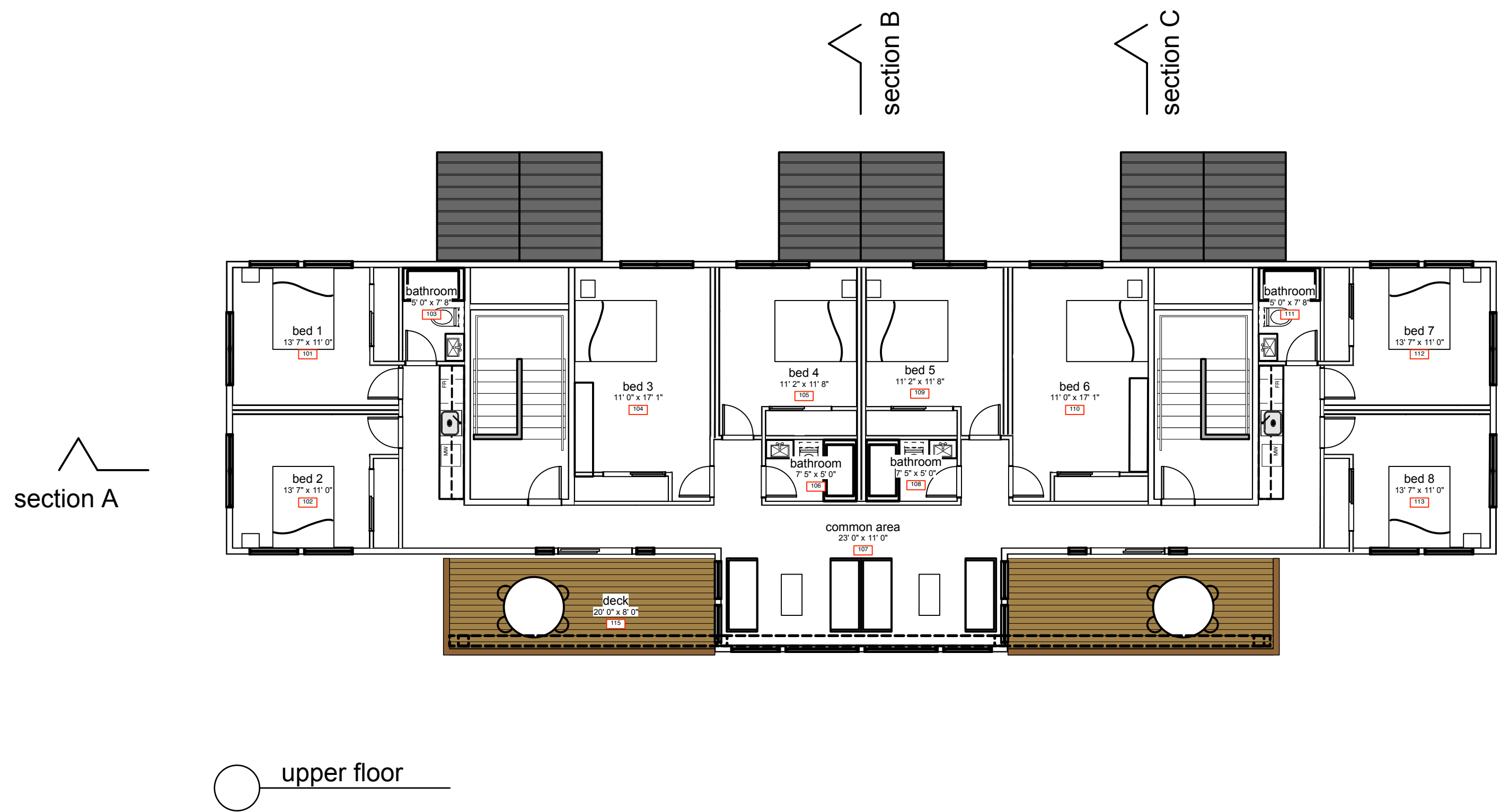
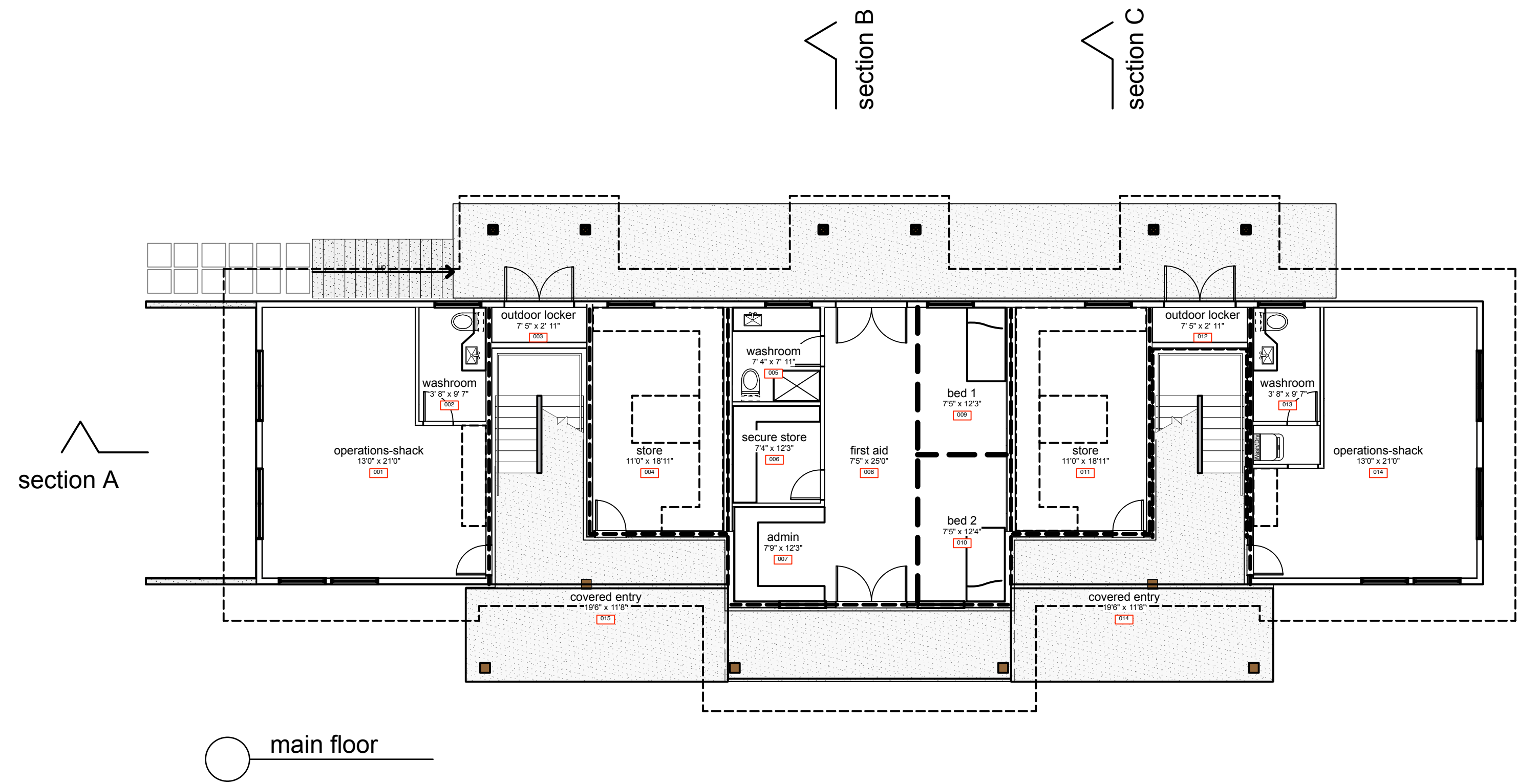
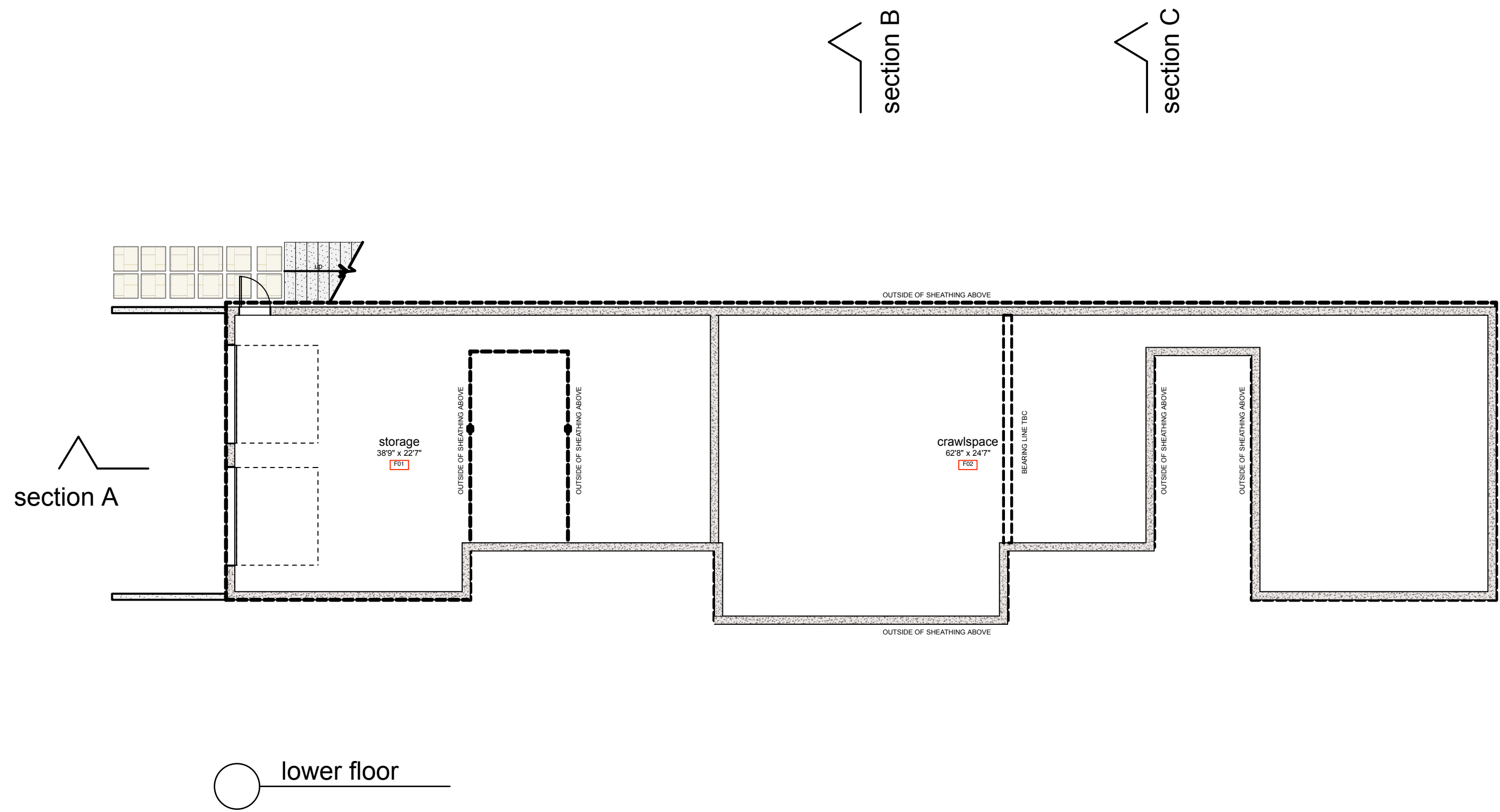
MURDOCH COMPANY

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WHISTLER BC V8N1B0
TEL: (604) 905-6992
murdoch@telus.net & office.murdoch@telus.net



Site Option-A- Operations/ Dormitory	
Lot#	Rem DL 4931
Location:	Old Tennis Court
Zone:	RR2
Hazard Site:	No
Exist Water Supply:	Lodge system
Exist Sewer System:	Lodge system
Exist Hydro:	Lodge service upgraded
Access:	Lodge Driveway
Development permit:	Firesafe Only
Riparian Issues:	None





Area calculation for MUNICIPAL GROSS FLOOR AREA only

	square feet	square meters	excluded
Lower Floor	873	81.104	
Main Floor	2128	197.698	
Upper Floor	2390	222.038	

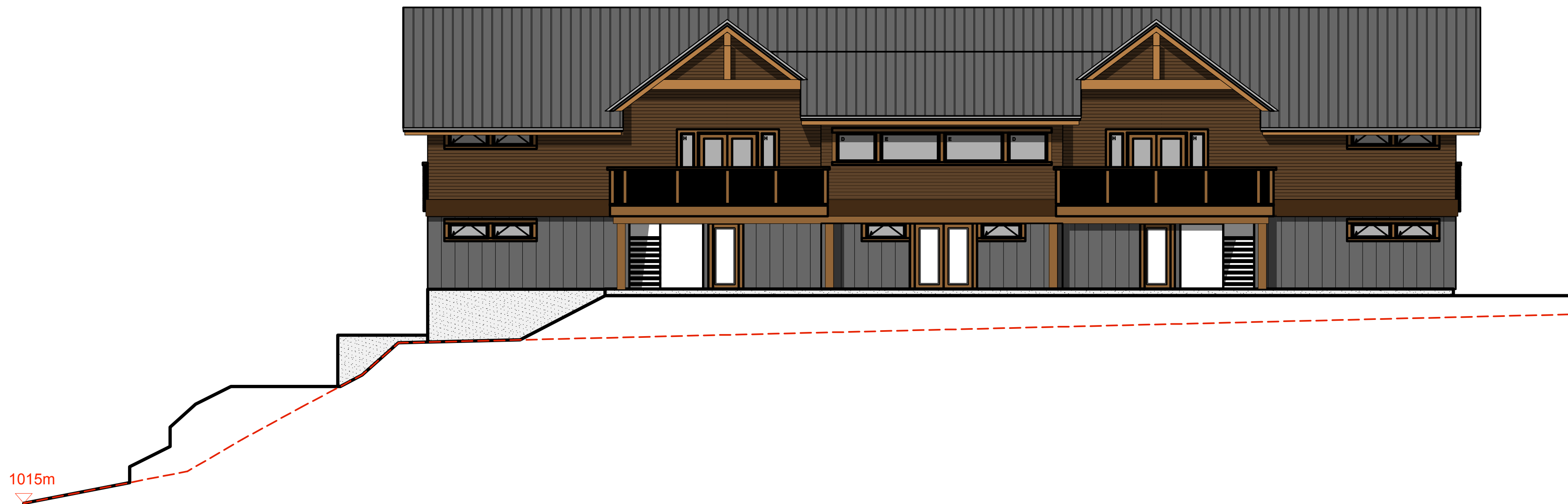
TOTAL GFA: 4518 419.736

Building Area at Main Floor 2350
square meters = 218.322

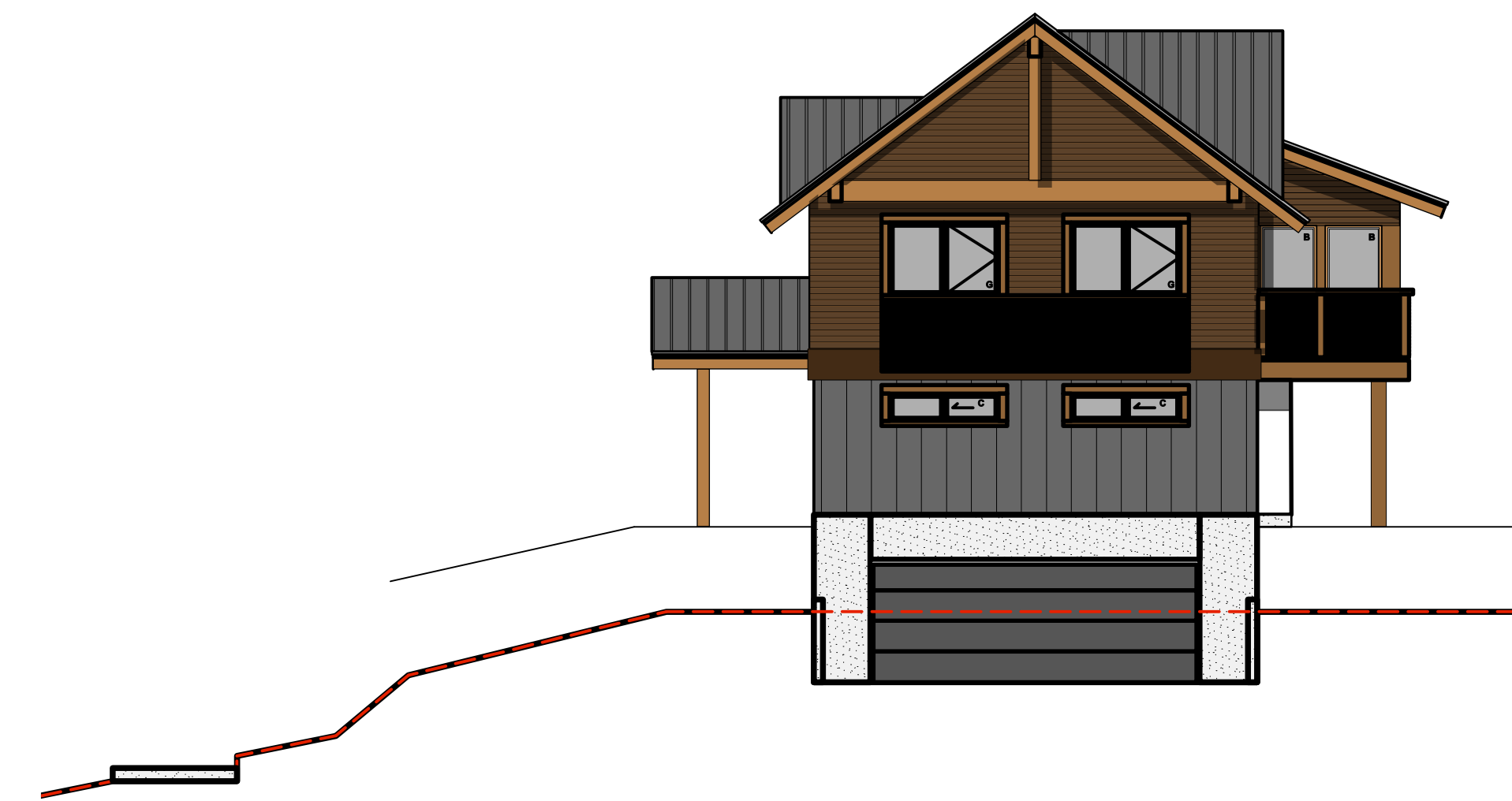
Site Coverage 0.074 %
MAX allowed 33%



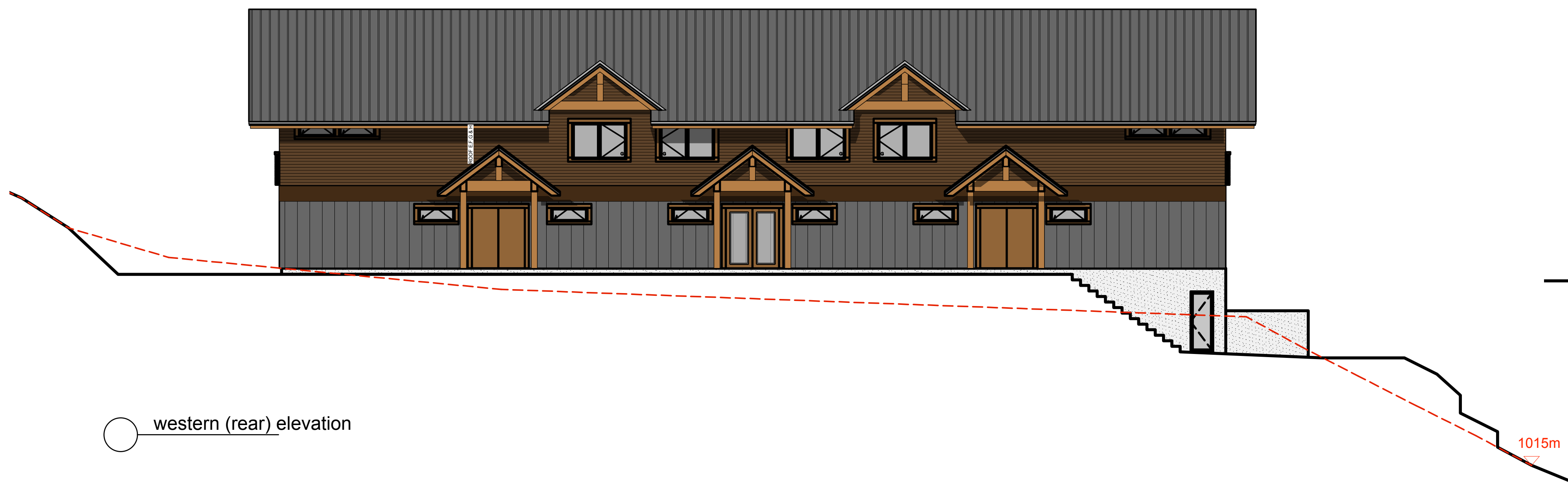
Floor Plans 1:100 scale



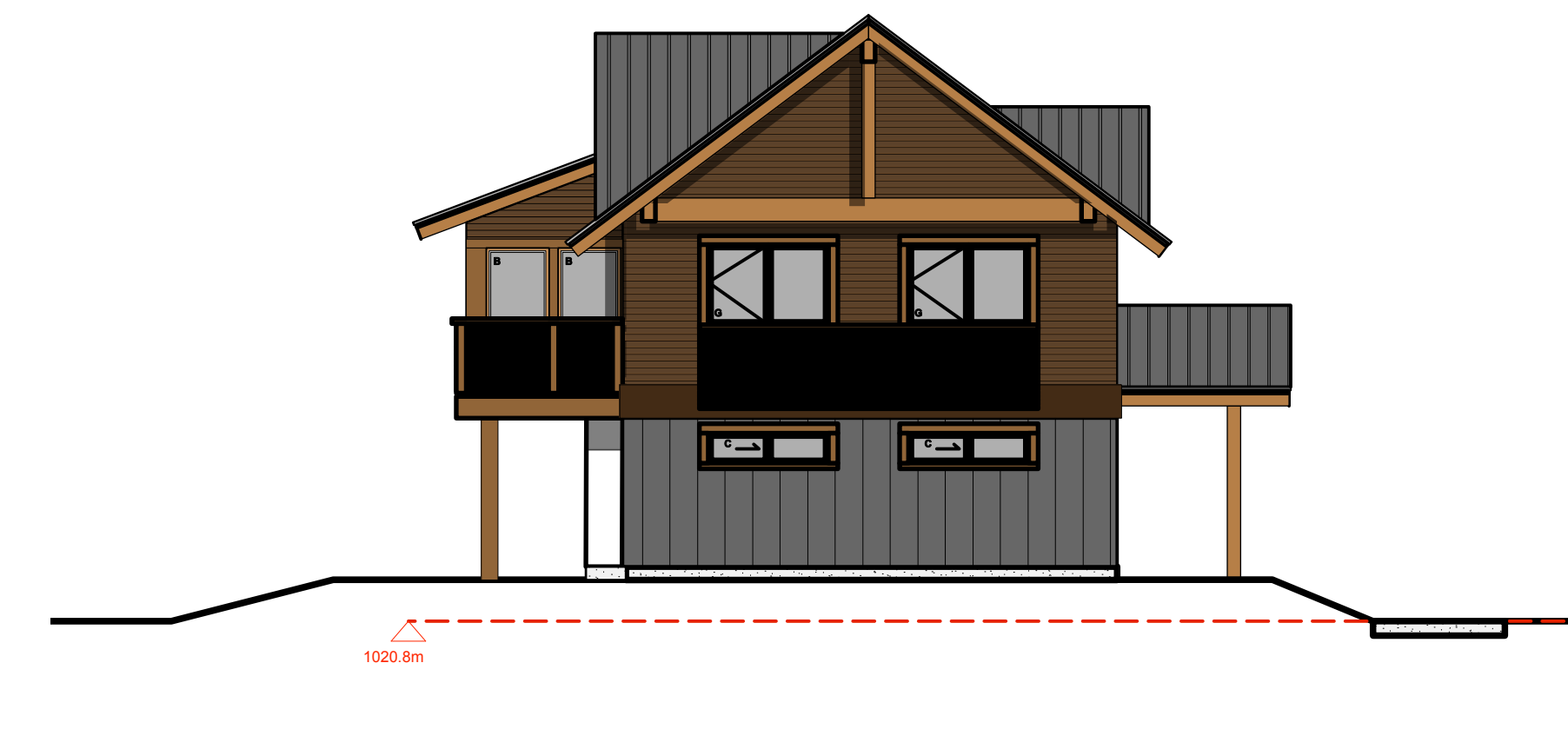
○ eastern (front) elevation



○ southern (side) elevation



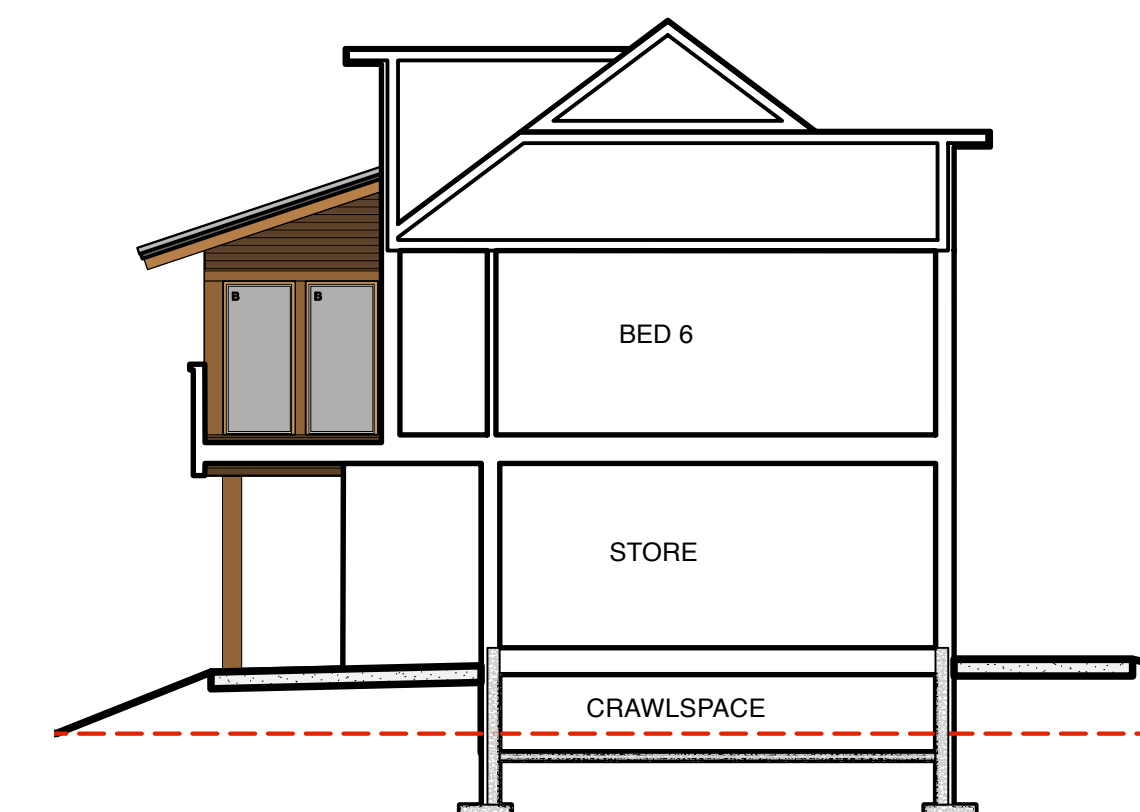
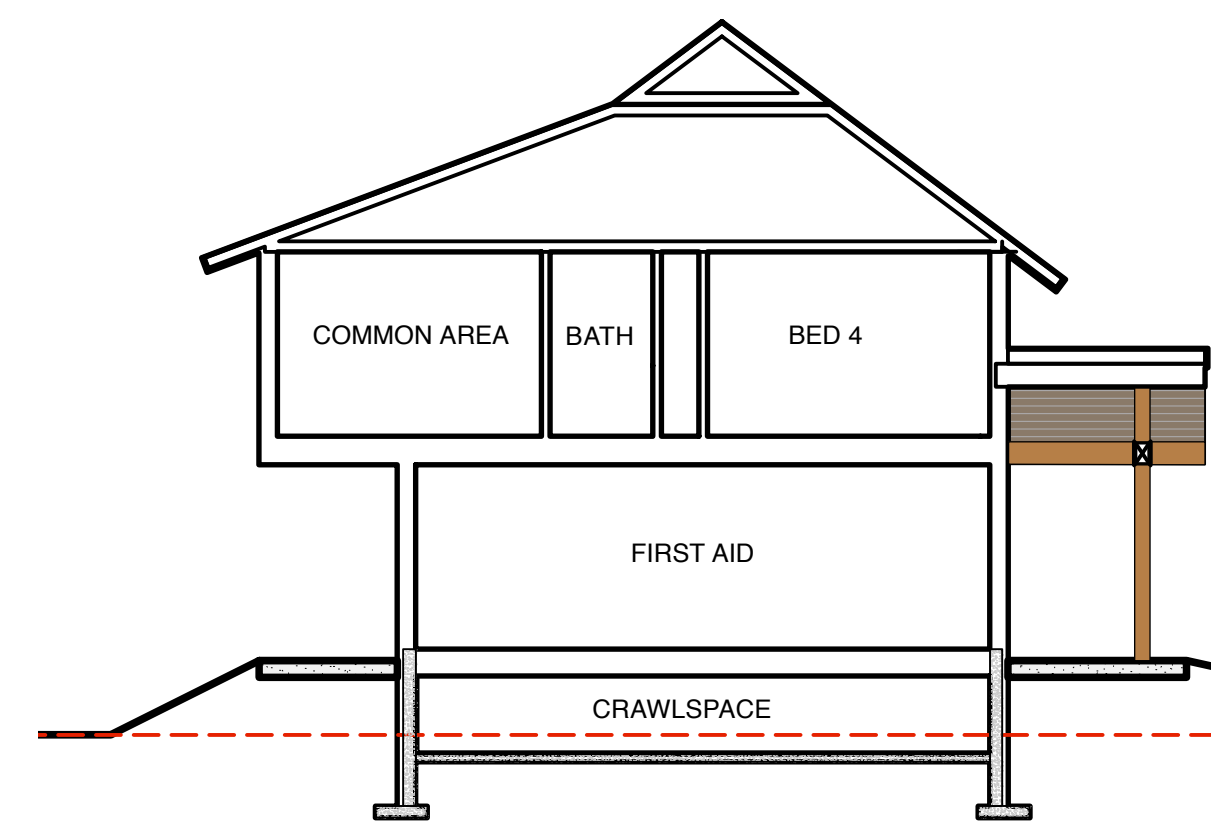
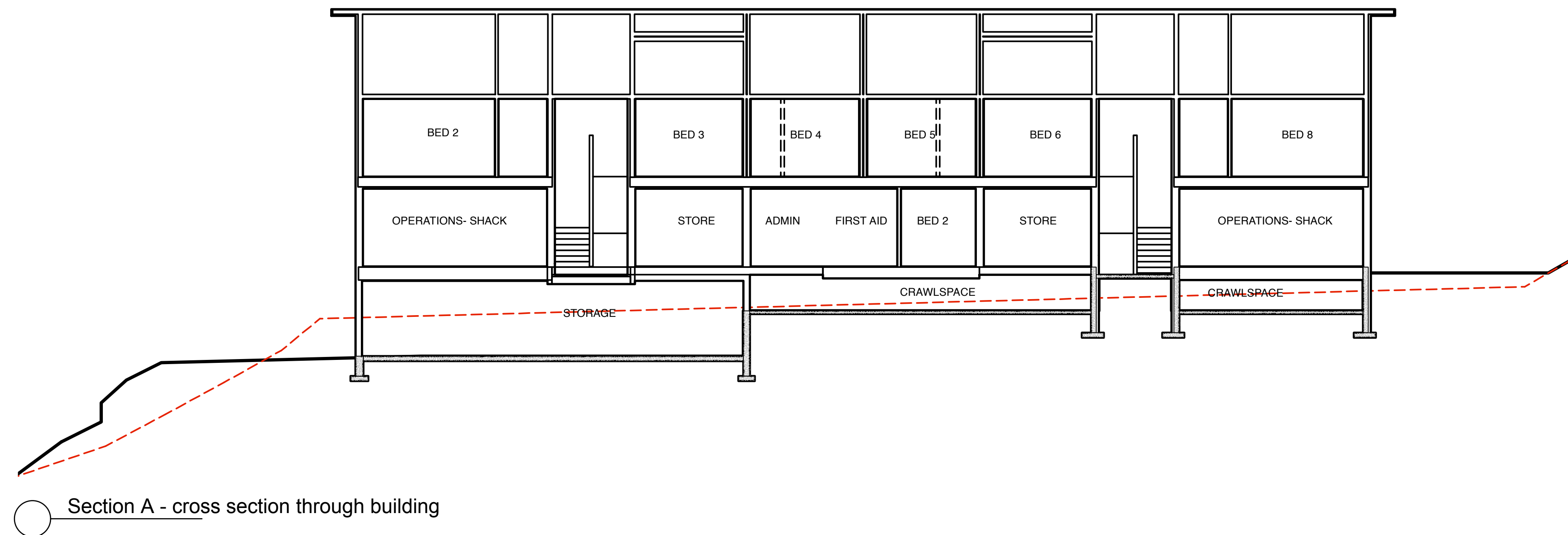
○ western (rear) elevation



○ northern (side) elevation



Elevations 1:100 scale



D&E MCCLUNG ENTERPRISES LTD.

Zoning Assessment for Tyax Lodge Vicinity

January 6, 2011

David McClung

6/1/2011

Avalanche zoning assessment : Tyaughton Lake vicinity of Tyax Lodge

David McClung, Ph.D., P.Geo. , P.Eng.

D&E McClung Enterprises Ltd.

4450 West 12th Avenue

Vancouver, B.C. V6R 2R2

Tel: 604-822-9157

e-mail: mcclung@geog.ubc.ca

Prepared in association with: P. K. Read Engineering

Summary:

This report contains an assessment of snow avalanche risk for the fan of a large avalanche path which runs into Tyaughton Lake near Tyax Lodge. The purpose is to help select a safe area for selection of a building to house lodge staff.

The assessment included a field visit on September 2, analysis of the terrain and calculations of return period as a function of down slope position on the fan. Data from avalanche occurrences reaching the fan were used in the assessment as well as local knowledge from personnel at Tyax Lodge. The analysis and the information from the field visit essentially agreed: the maximum return period for large avalanches reaching the lake is estimated as between about 150 – 200 years. According to recommended risk guidelines for Canada (CAA, 2002), the estimated maximum return period for placement of an occupied structure is 300 years. Therefore, it is recommended that occupied structures should not be placed on the fan.

Site description:

The fan is at the bottom of a major avalanche path which has a vertical drop of about 950 m. The start zone has a slope angle of about 38 degrees which is optimal for avalanche initiation. The start zone itself is a large bowl which is optimal for collecting snow with an aspect in the southeast direction. The average angle on the fan is about 14 degrees which is steep enough to keep large avalanches running. The track is confined essentially from the bottom of the start zone to the top of the fan which is at about 1165 m with vertical drop to the lake of about 160 m from the top of the fan. The width of the fan is roughly 300 m at the important area which was first considered for the building site.

Information from the path relayed by Phill Read suggests that 2 avalanches have reached or crossed the road (elevations about 1075 – 1100 m) with a third large avalanche running all the way to the lake in 1984. This gives a rough return period for avalanches to the road of about 10 years.

Analysis and recommendation:

The analysis to determine the return period was performed by assuming that extreme avalanche runouts follow a Gumbel distribution by the method outlined by McClung (2000). The method contains the assumption that avalanche arrivals are Poisson distributed with arrival rate known at some point (the road in this case) combined with avalanche runout following a Gumbel distribution with distribution constants calculated from Canadian data. It is well established that avalanche runout follows a Gumbel distribution from world wide data sets.

The result of the calculation for the site in question gave maximum return period for avalanches into the lake of about 150 – 200 years. The 1984 event which ran into the lake suggests that these estimates may be too high. Thus, it is not at all likely that positions on the fan would have return periods greater than or equal to 300 years as suggested for Canadian standards for a White Zone which implies building permission without restriction. It is recommended that alternate sites be considered outside of the fan.

It is not advisable to build on the fan through use of protective engineering structures such as berms or deflectors to reduce the risk. Such works are not 100% effective and they do not offer enough protection for people outside a building if an avalanche overruns the site. The proposed staff quarters imply people outside moving to and from the lodge at various times including during the night. According to the risk guidelines (CAA, 2002), a forecasting and evacuation plan would also have to be in place even if an effective berm was placed to protect the structure. The avalanche in 1984 reached the lake but it is unknown how far it would have run had the runout been on land.

Figures 1 and 2 show, the area where building is not recommended based on 1. the site visit; 2. the analysis and 3. local information about the avalanche occurrences including information from Cliff Umpleby: the manager at Tyax.

Figure 1: Place markers on the fan. Position 1 is the top of the fan. Positions 2-5 surround the area recommended for exclusion from building (above)

Figure 2: Polygon marking recommended exclusion area (below).





References:

Canadian Avalanche Association (2002). Guidelines for Snow Avalanche Risk Determination and Mapping in Canada, 23 pp.

McClung, D.M. (2000). Extreme avalanche runout in space and time, Can. Geotech. J. 37: 161 - 170.

David M. McClung, Ph.D., P.Eng., P.Geo.

January 6, 2011



February 6, 2014

Reference No. VAN-00215638-01

Tyax Real Estate
1 Tyaughton Lake Road
Gold Bridge, BC V0K 1P0

Email: kate@tlheliskiing.com

Attention: Kate Cleland

**Re: Tyax Wilderness Resort and Spa Site A, Site B and Campground
Geotechnical Hazard Assessment**

Dear Ms. Cleland:

1.0 INTRODUCTION

As requested, **exp** Services Inc. (**exp**) has completed a geotechnical hazard assessment for proposed development of areas within the Tyax Resort and Spa, Gold Bridge, BC. (Our assessment was completed in general compliance with our proposal dated December 19, 2013, accepted by Tyax Real Estate on December 20, 2013. The purpose of our assessment was to develop a characterization of existing potential naturally occurring geologic hazards, such as slope instabilities, rockfall, snow avalanches, debris flows and debris floods, and their potential influence areas within or adjacent to proposed development areas. This report summarizes our interpretation of identified geologic hazards and provides a qualitative assessment of the potential hazards affecting the subject areas.

Our assessment is generally consistent with the Association of Professional Engineers and Geoscientists of BC (APEGBC) "Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC" revised May 2008. This assessment includes Appendix D: Landslide Assessment Assurance Statement from the above mentioned document. This report also includes recommendations for mitigative measures to reduce the annual probability of occurrence, where deemed appropriate, and the anticipated effectiveness of such mitigative measures.

A guideline for hazard acceptability from the Squamish Lillooet Regional District (SLRD) had not been provided prior to this assessment. In the absence of such a hazard acceptability guidelines we have compared our findings for naturally occurring geologic hazards, with the exception of snow avalanches, with guidelines provided by the Ministry of Transportation and Infrastructure (MOTI) for development approval. The stated MOTI guidelines are:

- A probability of occurrence of 1 in 475 years (10% probability in 50 years) for damaging events;
- 1 in 10,000 years for life-threatening events.

For snow avalanche we have compared our findings with those presented in the Canadian Avalanche Association "Guidelines for Snow Avalanche Risk Determination and Mapping in Canada (2002)". These guidelines indicate an estimated return period of greater than 300 years should exist for placement of an occupied structure.

It should be noted that the above guidelines may differ from those of the SLRD and the qualitative probabilities provided in this report should be compared to the hazard acceptability guidelines used by the approving authority reviewing the application for development approval.

Two separate sites were reviewed for this assessment, Site A for a proposed heli-operations facility and Site B for a proposed staff housing building. A campground is proposed for an area east of the existing resort. A map identifying the general site location is shown on the attached Key Plan (Figure 1) and the proposed development locations are shown on the attached Location Plan (Figure 2).

Attached to this report are a key plan, site plan, test pit logs and Appendix D: Landslide Assessment Assurance Statement.

2.0 SOURCES OF INFORMATION

Information used during our assessment of the subject property includes the following items:

- Topographic information of proposed development sites provided by Murdoch + Company Architecture + Planning;
- Topographic plan of development sites and surrounding area obtained from Google Earth;
- A summary of a Geotechnical Hazard Assessment by Golder Associates dated August, 1984;
- Zoning Assessment for Tyax Lodge Vicinity by D&E McClung Enterprises Ltd dated January 6, 2011;
- Development plans for site A, Site B and future campground expansion provided by Murdoch + Company Architecture + Planning;
- **Exp** report titled "Tyax Wilderness Resort and Spa, Gold Bridge, BC, Geotechnical Assessment for Staff Housing and Operations Building" dated November 29, 2013;
- A visual reconnaissance of existing site conditions within and adjacent to the proposed development sites to obtain site specific information related to the characterization of existing naturally occurring geologic hazards which have influenced the property in the past. The reconnaissance comprised walking the sites and adjacent areas and a helicopter reconnaissance of areas above the subject sites;
- A review of aerial photographs dating from 1945 to 2004.

3.0 SITE DESCRIPTION

The subject sites are within the Tyax Resort and Spa properties located on north side of Tyaughton Lake, east of Tyaughton Lake Road, Gold Bridge, BC (see attached Key Plan (Figure 1)). Access to the resort is via Tyaughton Lake Road off of Carpenter Lake Road.

The resort site generally consists of southeast facing slopes, which are gently to moderately inclined, with increasing steepness north of the subject sites. Cut slopes up to about 6m height along the north side of Tyaughton Lake Road have exposed gravelly sand with some silt and trace to some cobbles (colluvium). A thin layer of volcanic ash was noted to overly the gravelly sand in most areas along the cut slopes. A brief description of each proposed development site is provided below.

3.1 Site A

Site A is located about 75m northeast of the main resort building, below Tyaughton Lake Road, adjacent to the existing heli-pad. The site was accessed by a gravel road that runs along the south and east of the heli-pad. The area is bounded by undeveloped land to the north and east, a rough gravel road to the west and the above mentioned access road the south. The subject site has been leveled by cutting into the upslope area (north) and filling the downslope area, retaining the soils with wood cribbed retaining walls. The area below the subject site consists of a gently inclined slope to the edge of Tyaughton Lake. The area upslope (west) of the subject site consists of moderately inclined slopes (about 3H: 1V), with localized slopes as steep as 2H: 1V, transitioning to steeper bedrock controlled slopes to the top of a mountain ridge. Northeast of the subject site is a large southeast facing bowl which leads to a gently inclined slope immediately east of the subject site.

An unnamed seasonal creek was located immediately south of Site B. The creek crossed Tyaughton Lake Road via a culvert located near the intersection of the access road and Tyaughton Lake Road. Upstream of the culvert the creek ravine widened to about 20m with a depth of about 5m. No significant debris (logs, soil deposits, etc.) were noted with the creek ravine. Vegetation within the ravine generally consisted of grasses, alders and occasional evergreens.

Test pits excavated within the proposed location for staff housing exposed similar material as that observed in the cut slopes along Tyaughton Lake Road, up to about 2.1m thick, underlain by very dense silty sand with some gravel (angular). It should be noted that the volcanic ash layer was also encountered in the upper portion of the test pit TP13-03.

Vegetation upslope of the subject site generally consisted of evergreen trees with trunk diameters up to about 0.7m diameter. These evergreen trees were noted to be generally straight; however, some trees exhibited minor curvature of their trunks. Northeast of the site (the fan area below the bowl) vegetation generally consisted of alder trees with trunk diameters of about 0.1m.

3.2 Site B

Site B is located on the western side of Tyaughton Lake, about 200m north of the entrance to Tyax Resort. Access to the site is via a rough, steep gravel access road along the west side of the site which intersects Tyaughton Lake Road.

An unnamed creek is located south of the access road and travels under Tyaughton Lake Road via a culvert. The creek is incised into the subgrade about 2.5m with a width of about 5m near the road. The creek gully widens upslope up to about 20m with a depth of about 5m. Slope inclination in the area of the subject site is generally gently inclined with steep cut slopes for Tyaughton Lake Road downslope. The proposed location for development was located below a relatively flat lying area with side slopes down to the creek on the south side and gentle northeast facing slopes to the north.

Further upslope of the subject site the slope has an inclination of about 3H: 1V, steepening with increasing elevation. Approximately 500m northwest of the subject site the slope transitions to a bedrock controlled slope with an inclination of about 1H: 1V. The crest of the mountain ridge above Site B has an elevation of about 1800m geodetic.

Vegetation within the subject site generally consisted of widely spaced evergreen trees with trunk diameters up to about 1m. Several small copses of alder trees were noted above and adjacent to the subject site.

3.3 Campground

The proposed campground expansion is located in the southeast portion of the resort property, immediately east of the existing camping area. The area consists of a gently inclined slope terminating at the shoreline of Tyaughton Lake. The subject site is located on the lower portions of the fan below the bowl described in Section 3.1.

A small watercourse was noted within the subject area incised about 0.5m and 1m wide.

Vegetation within and upslope of the subject site generally consisted of alder trees.

4.0 DISCUSSION AND RECOMMENDATIONS

As discussed above, subsurface conditions within the subject areas generally consisted of colluvium overlying very dense silty sand with some gravel and cobbles and /or bedrock. A thin (about 150mm) layer of ash was noted to be overlying the colluvium in most road cuts and in test pit TP13-03. Groundwater was not encountered in test pits to about 2.4m depth and no seepage was noted on the slopes during site reconnaissance.

4.1 Global Slope Stability

No significant indications of slope instabilities (large scarps, undulating ground surface, etc.) were noted during site reconnaissance or on reviewed aerial photographs. The presence of the volcanic ash layer near surface throughout the majority of the study area indicates that there has not been deposition of materials in the recent past. Based on these observations and our characterization of subsurface conditions, as described above, we are of the opinion that geologic hazard related to deep seated slope instabilities is very low.

4.2 Debris Flows/ Debris Floods

Debris flows and/or debris flows resulting from heavy precipitation or rapid snow melt in the area of the unnamed seasonal creek are considered to have a low to very low probability due to the significant width and anticipated low flows. It is possible the culvert at Tyaughton Lake Road could become plugged and the water could backup and flow over the road; however, such a circumstance would only influence the lowest portions of Lot 6. Structures should not be located within the unnamed creek gully or within 30m of the creek centre.

4.3 Snow Avalanche

The influence area of snow avalanches is frequently identified by vegetation, where the avalanches result in areas of small deciduous trees growing in areas where evergreen trees do not have sufficient time to establish themselves before the avalanche destroys the trees.

Based on observations during site reconnaissance and the assessment completed by D&E McClung Enterprises Ltd. there is a moderate to high probability of a snow avalanche influencing the area shown on the Site Plan (Figure 2). Some smaller areas of possible avalanche activity were noted within the subject properties.

However, this probability would be significantly reduced during times of the year when snow pack is low or non-existent. Based on provided plans the campground extension would be located within the area designated by the D&E McClung Enterprises report as being subjected to potential snow avalanches with a return period of between 150-200 years. Provided the proposed campground extension is occupied only during times of the year when snow pack is insufficient for propagation of a snow avalanche the hazard presented by snow avalanche would be reduced to very low. We also understand that Tyax Resort currently has qualified personnel providing guidance with respect to avalanche potential within the avalanche area identified in the D&E McClung Enterprises report. It is recommended that the proposed campground extension restrict occupancy to a period of time from June to October, dependent on a favourable assessment from qualified Tyax staff.

Areas considered to have a moderate to high probability of being influenced by avalanche activity are shown on the Location Plan (Figure 2). This probability is considered to decrease to a very low probability during low snow pack.

4.4 Rockfall

During site reconnaissance no significant indications of previous rockfall, such as the presence of loose boulders on surface, was noted. However, a narrow linear feature originating from the east end of the mountain ridge and terminating at the lake in aerial photographs dating back to 1947 was noted and may be the result of a large boulder releasing and moving downslope into the lake. Helicopter reconnaissance of the source of the possible rockfall observed a small natural swale terminating at a small fan deposit on the slope below. The swale and fan deposit are likely the result of snow melt. No further evidence of the lineation was observed below the fan deposit and no significant loose boulders were noted in the source area or in the swale from the helicopter reconnaissance or during ground reconnaissance of the fan area and below. The approximate location of the lineation is shown on attached Photo 17.

Based on our review of the source area of the possible rockfall and downslope areas, we are of the opinion that the geologic hazard related to rockfall is low to very low.

5.0 CLOSURE

The above noted and attached information presents our understanding of the proposed developments, interpretations of existing site conditions and opinions as to the existence of naturally occurring geologic hazards and their potential influence areas within or adjacent to the subject areas. It should be noted that there is an inherent level of uncertainty associated with the prediction of long term geologic hazard occurrences. This uncertainty combined with lack of comprehensive historical records within and adjacent to the proposed development areas significantly limits our ability to complete a quantitative assessment of specifically identified naturally occurring geologic hazard events. Therefore, we have provided a qualitative assessment of probability of occurrence based on our experience and interpretations of existing site conditions. Sine understanding of terminology and associated ranges of annual probability of occurrence related to this approach is provided in a reference by the Resource Inventory Committee, Government of British Columbia, Slope Task Force (1996) and is shown in Table A below.

TABLE A
Relative terms and Ranges of Probability of Hazard Occurrence
 (Resource Inventory Committee, 1996)

Relative Term of Probability	Range of Annual Probability of Occurrence	Comments
Very High	$>1/20$	Indicates the hazard is imminent and well within the lifetime of a person or typical structure. Event occurring with a rerun period of $1/20$ or less generally have clear and fresh signs of disturbance.
High	$1/100$ to $1/20$	Indicates that the hazard can happen within the lifetime of person or typical structure. Events are clearly identifiable from deposits and vegetation but may not appear fresh.
Moderate	$1/500$ to $1/100$	Indicates that the hazard within a given lifetime is not likely, but possible. Signs of previous events, such as vegetation damage, may not be easily noted.
Low	$1/2500$ to $1/500$	Indicates that hazard is of uncertain significance.
Very Low	$<1/2500$	

Based on our review of information referenced in this report, we are of the opinion that the areas highlighted in orange and blue on the attached Site Plan (Figure 2), have a moderate to high

probability of being influenced by a naturally occurring geologic hazard (snow avalanche or flood). Site A and Site B are located outside the areas deemed to have very low probability of being influenced by naturally occurring geologic hazards. The proposed campground is also located within an area with a very low probability of being influenced by a naturally occurring geologic hazard, with the exception of snow avalanche where the probability of occurrence is considered to have a return period less than 150 years. However, by restricting use of the campground to times of the year when snow avalanches are rare would decrease the hazard to very low. Provided the stated conditions are implemented the campground extension is considered safe for the use intended, that being the use of the area for temporary residential stays with no permanent buildings.

Site A and Site B shown on the Site Plan (Figure 2) are considered to be safe for the intended use that being the construction of buildings with residential portions provided conditions regarding snow avalanche (time of year use and no permanent structures) are implemented. The term "safe for intended purpose" specifically refers to global naturally occurring geologic hazards and does not address local geotechnical or foundation issues.

In the event that building envelopes are to be located outside the areas identified as Site A and Site B on the site plan, additional mitigative measures may be required to reduce the potential hazard presented to buildings to levels acceptable to the approving authority. It should be noted that such mitigative measures may be impractical or economically unviable. No buildings should be constructed within the proposed campground area due to the snow avalanche hazard and practical limits to mitigative measures.

This report was prepared for the exclusive use of our client, Tyax Real Estate, and their designated consultants or agents, and may not be used by other parties without the written consent of **exp** Services Inc. The attached "Interpretation & Use of Study and Report" forms an integral part of this report and must be included with any copies of this report.

Sincerely,

exp Services Inc.

Evan Sykes, P.Eng.
Senior Engineer



Reviewed by:

Ben Weiss, P.Eng.
Senior Engineer

Enclosure: Interpretation & Use of Study and Report
Appendix D: Landslide Assessment Assurance Statement
Key Plan (Figure 1)
Site Plan – Proposed Development Areas (Figure 2)
Test Pit Logs (TP-1 through TP-4)
Photographs

cc: Brent Murdoch, Murdock + Company Architecture + Planning Ltd., e: Murdoch@telus.net

ES/es

exp LE 2014 01 18 Geotechnical Hazard Study Tyax Resort



INTERPRETATION & USE OF STUDY AND REPORT

1. STANDARD OF CARE

This study and Report have been prepared in accordance with generally accepted engineering consulting practices in this area. No other warranty, expressed or implied, is made. Engineering studies and reports do not include environmental consulting unless specifically stated in the engineering report.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report which is of a summary nature and is not intended to stand alone without reference to the instructions given to us by the Client, communications between us and the Client, and to any other reports, writings, proposals or documents prepared by us for the Client relative to the specific site described herein, all of which constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. WE CANNOT BE RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF THE REPORT

The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose that were described to us by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the document are only valid to the extent that there has been no material alteration to or variation from any of the said descriptions provided to us unless we are specifically requested by the Client to review and revise the Report in light of such alteration or variation.

4. USE OF THE REPORT

The information and opinions expressed in the Report, or any document forming the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT OUR WRITTEN CONSENT. WE WILL CONSENT TO ANY REASONABLE REQUEST BY THE CLIENT TO APPROVE THE USE OF THIS REPORT BY OTHER PARTIES AS "APPROVED USERS". The contents of the Report remain our copyright property and we authorize only the Client and Approved Users to make copies of the Report only in such quantities as are reasonably necessary for the use of the Report by those parties. The Client and Approved Users may not give, lend, sell or otherwise make the Report, or any portion thereof, available to any party without our written permission. Any use which a third party makes of the Report, or any portion of the Report, are the sole responsibility of such third parties. We accept no responsibility for damages suffered by any third party resulting from unauthorised use of the Report.

5. INTERPRETATION OF THE REPORT

- a. Nature and Exactness of Descriptions: Classification and identification of soils, rocks, geological units, contaminant materials, building envelopment assessments, and engineering estimates have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature and even comprehensive sampling and testing programs, implemented with the appropriate equipment by experienced personnel, may fail to locate some conditions. All investigations, or building envelope descriptions, utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarising such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and all persons making use of such documents or records should be aware of, and accept, this risk. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. Where special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b. Reliance on Provided information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to us. We have relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, we cannot accept responsibility for any deficiency, misstatement or inaccuracy contained in the report as a result of misstatements, omissions, misrepresentations or fraudulent acts of persons providing information.
- c. To avoid misunderstandings, **exp Services Inc. (exp)** should be retained to work with the other design professionals to explain relevant engineering findings and to review their plans, drawings, and specifications relative to engineering issues pertaining to consulting services provided by **exp**. Further, **exp** should be retained to provide field reviews during the construction, consistent with building codes guidelines and generally accepted practices. Where applicable, the field services recommended for the project are the minimum necessary to ascertain that the Contractor's work is being carried out in general conformity with **exp's** recommendations. Any reduction from the level of services normally recommended will result in **exp** providing qualified opinions regarding adequacy of the work.

6.0 ALTERNATE REPORT FORMAT

When **exp** submits both electronic file and hard copies of reports, drawings and other documents and deliverables (**exp's** instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by **exp** shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancy, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by **exp** shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of **exp's** instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except **exp**. The Client warrants that **exp's** instruments of professional service will be used only and exactly as submitted by **exp**.

The Client recognizes and agrees that electronic files submitted by **exp** have been prepared and submitted using specific software and hardware systems. **Exp** makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

APPENDIX D: LANDSLIDE ASSESSMENT ASSURANCE STATEMENT

Note: This Statement is to be read and completed in conjunction with the "APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia", March 2006/Revised September 2008 ("APEGBC Guidelines") and the "2006 BC Building Code (BCBC 2006)" and is to be provided for *landslide assessments* (not floods or flood controls) for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: February 4, 2014

Squamish-Lillooet Regional District
Box 219, 1350 Aster St, Pemberton, BC
Jurisdiction and address VON 2L0

With reference to (check one):

- ☐ Land Title Act (Section 86) – Subdivision Approval
- ☐ Local Government Act (Sections 919.1 and 920) – Development Permit
- ☒ Community Charter (Section 56) – Building Permit
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Variance
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Exemption
- ☐ British Columbia Building Code 2006 sentences 4.1.8.16 (8) and 9.4 4.4.(2) (Refer to BC Building and Safety Policy Branch Information Bulletin B10-01 issued January 18, 2010)

For the Property:

Lot 5, District Lot 4931, Lillooet District, Plan KAP 67637 (site A & Campground)
Legal description and civic address of the Property

Lot 6, District Lot 4931, Lillooet District, Plan KAP 67637 (site B)

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer or Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached *landslide assessment* report on the Property in accordance with the *APEGBC Guidelines*. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- ☒ 1. Collected and reviewed appropriate background information
- ☒ 2. Reviewed the proposed *residential development* on the Property
- ☒ 3. Conducted field work on and, if required, beyond the Property
- ☒ 4. Reported on the results of the field work on and, if required, beyond the Property
- ☒ 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *landslide hazard analysis* or *landslide risk analysis* I have:
 - ☒ 6.1 reviewed and characterized, if appropriate, any *landslide* that may affect the Property
 - ☒ 6.2 estimated the *landslide hazard*
 - ☒ 6.3 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
 - ☒ 6.4 estimated the potential *consequences* to those *elements at risk*
- 7. Where the *Approving Authority* has adopted a *level of landslide safety* I have:
 - ☐ 7.1 compared the *level of landslide safety* adopted by the *Approving Authority* with the findings of my investigation
 - ☐ 7.2 made a finding on the *level of landslide safety* on the Property based on the comparison
 - ☐ 7.3 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- 8. Where the *Approving Authority* has **not** adopted a *level of landslide safety* I have:

- ☒ 8.1 described the method of *landslide hazard analysis* or *landslide risk analysis* used
- ☒ 8.2 referred to an appropriate and identified provincial, national or international guideline for *level of landslide safety*
- ☒ 8.3 compared this guideline with the findings of my investigation
- ☒ 8.4 made a finding on the *level of landslide safety* on the Property based on the comparison
- ☒ 8.5 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- ☒ 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

- ☐ the findings from the investigation and the adopted *level of landslide safety* (item 7.2 above)
- ☒ the appropriate and identified provincial, national or international guideline for *level of landslide safety* (item 8.4 above)

I hereby give my assurance that, based on the conditions^[1] contained in the attached *landslide assessment* report,

Check one

- ☐ for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended"

Check one

- ☐ with one or more recommended registered covenants.
- ☐ without any registered covenant.

- ☐ for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

- ☒ for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended"

Check one

- ☐ with one or more recommended registered covenants.
- ☐ without any registered covenant.

- ☐ for flood plain bylaw variance, as required by the "Flood Hazard Area Land Use Management Guidelines" associated with the Local Government Act (Section 910), "the development may occur safely".

- ☐ for flood plain bylaw exemption, as required by the Local Government Act (Section 910), "the land may be used safely for the use intended".

Evan Sykes, P.Eng.
Name (print)

February 4, 2014
Date

[Signature]
Signature

^[1] When seismic slope stability assessments are involved, *level of landslide safety* is considered to be a "life safety" criteria as described in the National Building Code of Canada (NBCC 2005), Commentary on Design for Seismic Effects in the User's Guide, Structural Commentaries, Part 4 of Division B. This states:

"The primary objective of seismic design is to provide an acceptable level of safety for building occupants and the general public as the building responds to strong ground motion; in other words, to minimize loss of life. This implies that, although there will likely be extensive structural and non-structural damage, during the DGM (design ground motion), there is a reasonable degree of confidence that the building will not collapse nor will its attachments break off and fall on people near the building. This performance level is termed 'extensive damage' because, although the structure may be heavily damaged and may have lost a substantial amount of its initial strength and stiffness, it retains some margin of resistance against collapse".

275-3001 Wayburne Dr
Address

BURNABY, BC, V5G 4W3

604-874-1245
Telephone



(Affix Professional seal here)

If the *Qualified Professional* is a member of a firm, complete the following.

I am a member of the firm exp Services Inc
and I sign this letter on behalf of the firm. (Print name of firm)