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# RECLAMATION AND CLOSURE PLAN

**Bamberton Quarry**  
**Permit Q-8-24**  
**Malahat, BC**

PREPARED FOR

Coast Mountain Resources (2020) Ltd.  
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## 1 INTRODUCTION

Coast Mountain Resources (2020) Ltd. (CMR) has retained Active Earth Engineering Ltd. (Active Earth) to prepare a Reclamation and Closure Plan (RCP) in relation to the quarry and aggregate production operation at the Bamberton Quarry, located on the Malahat on Vancouver Island (the "Site"). The quarry operates under an existing Ministry of Energy, Mines and Low Carbon Innovation (EMLI) Permit Q-8-45.

Note that this report provides general information on the reclamation and closure plan for the Bamberton Mine at this current time. The information within is based on discussions with CMR and the Malahat Investment Corporation and may be subject to change. The overarching objectives for reclamation are discussed in Section 4.3 and will serve as the guiding values for reclamation and closure of the Site.

## 2 PURPOSE AND OBJECTIVES

### 2.1 Existing Disturbance and Outstanding Reclamation Liabilities

The 2016 mine permit boundary covers 39.2 hectares of which approximately 11 hectares are disturbed from past quarry activities. Existing disturbance is limited to the areas that are within the existing permit boundary and being used or affected by industrial purposes.

Potential liabilities include accidental environmental impacts (fuel/oil spills, erosion of topsoil/overburden, and contamination to subsurface). A capped sub surface contaminated soil cell, also referred to as Soil Storage Facility (SSF), is located with the 2016 mine permit boundary. Note that this area into included in the proposed 2022 mine boundary. This is also considered a potential environmental liability should the cell be compromised and emit contaminants to the subsurface.

### 2.2 Proposed Activity

The 2022 proposed mine permit amendment consists of revising the size and shape of the current mine permit footprint slightly to 39.5 hectares as shown in Figure 3. The proposed mining area consists of approximately 26.8 ha divided into two main mining areas:

- Upper Quarry - 14.7 hectares
- Lower Quarry - 11.9 hectares

The remainder of the mine permit area, 12.7 hectares, may be used as future mining reserves.

The quarry is anticipated to have life of 48 years.

No additional infrastructure requirements will be required for the expansion of the Site.

Environmental considerations for the mine include:

- The potential for sediment laden waters to enter waterbodies.
- The potential for machinery oil and fuel spills.
- The potential for fuel tanks to leak and spill.
- The potential for contaminants from explosives to enter the groundwater/surface water.
- The potential for ML/ARD

No new environmental liabilities are being introduced with the mine expansion. The *Environmental Management Plan*<sup>1</sup> discusses in detail the mitigation and monitoring measures in place to reduce and eliminate any potential adverse impacts at the Site. ML/ARD has been assessed and is considered to present a low-risk to the environment. Regardless of the level of risk, the aforementioned potential issues must be routinely mitigated and monitored during the life of the mine.

### 3 BASELINE CHARACTERIZATION

Production of lime and mining has occurred in the Bamberton area since the late 1800s. The village of Bamberton was erected to house employees of a cement company in 1912. From 1912 to 1980 the Site has been industrially used for cement operations.

In 1852, the Saanich First Nations' communities signed the Douglas Treaties selling their land to the Colony of Vancouver Island. Prior to this, Bamberton was primarily inhabited by local First Nations and was undeveloped and forested with first or second to third growth mixed woodland Douglas Fir, Western Red Cedar, Western Hemlock, and Arbutus typical of the region.

#### 3.1 Current Land Uses and Present Conditions of the Land

The Bamberton properties consist of 525 hectares which are situated within the Cowichan Valley Regional District on lands that included part of a cement plant that operated from 1912 to 1980. Recently, several of these properties surrounding and including the mine permit area were acquired by Malahat Investment Corporation (MICO) which is owned by the Malahat Nation except for one southern lot (DL 183) which was acquired by the Province of BC in the same transaction. The Trans-Canada Highway is located to the west and the Saanich Inlet to the east. Crown land and private land holdings can be found adjacent to the property boundary to the north, west and south.

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<sup>1</sup> Active Earth Engineering Ltd. (January 2023). Environmental Management Plan Bamberton Quarry Permit Q-8-24 Malahat, BC

The existing mine permit area covers 39.2 hectares of which 11 hectares are disturbed from past quarry activities.

### 3.2 Biophysical Conditions

#### 3.2.1 Climate

Climate normal for the period of 1981 to 2010 were obtained from the Saanichton CDA Station, located approximately 8.7 km to the east from the Site. Average temperatures and precipitation are summarized in the table below.

**TABLE A – CLIMATE NORMALS (1981 – 2010) FOR SAANICHTON CDA STATION**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>Daily Average Temperature (°C)</b>	4.8	5.3	7.1	9.3	12.2	14.9	17.0	17.1	14.6	10.3	6.6	4.5	<b>10.3</b>
<b>Rainfall (mm)</b>	136.9	85.4	77.4	51.5	41.5	34.7	20.5	26.5	29.6	92.6	155.0	134.7	<b>886.3</b>
<b>Snowfall (cm)</b>	8.1	4.1	1.9	0	0	0	0	0	0	0.4	0.8	6.7	<b>22.0</b>
<b>Total Precipitation (mm)</b>	217.9	126.4	96.4	51.5	41.5	34.7	20.5	26.5	29.6	96.6	163.0	201.7	<b>1,106.3</b>

The area receives approximately 886.3 mm of rainfall and 22 cm of snowfall annually. The wettest months are December and January, with average monthly rainfall amounts ranging from 20.5 mm (July) to 217.9 mm (January). The maximum monthly precipitation is 217.9 mm in January, of which 63% falls as rain.

#### 3.2.2 Soil and Geology

The majority of the site is covered by a thin cover (<5m) of colluvial deposited soils described as gravelly loam and sand.

Most of the bedrock consists of metamorphic bedrock of Jurassic age and older with the oldest dated bedrock being the Wark Gneiss of Lower Paleozoic age.

Two large fault lines cut through the metamorphic bedrock and are located to the north (Shawnigan Fault) and to the south (Malahat Fault) of the Site. The fault lines do not intercept the Site.

The Geological map of Victoria (map 1553a) shows that the bedrock at the Site falls within three groups:

**J<sub>B</sub> – Jurassic – Bonanza group** – Basaltic to rhyolitic tuff, breccia, flows, minor argillite, greywacke

**P<sub>G</sub> – Lower Devonian and older – Saltspring Intrusions** – metagranodiorite, metaquartz porphyry, quartz sericite schist

**P<sub>w</sub> – Lower Paleozoic – Wark Gneiss** – massive and gneissic metadiorite, metagabbro, amphibolite

### 3.2.3 *Physiography and Surface Drainage Features*

The site is relatively steep, sloping down from the Malahat Highway (west) at approximately 200m elevation towards the Saanich inlet (east). Existing surface drainage includes Bamber Creek, excluded from the Mine permit area, as well as two ephemeral streams in the current operating quarry area and an ephemeral stream in the future Lower Quarry.

In addition to the surface water features above, surface water typically infiltrates into the overburden and into the underlying low-permeability bedrock.

### 3.2.4 *Vegetation, Wildlife, Aquatic Resources*

The Site is within Coastal Douglas-Fir (CDF) biogeoclimatic zone and is primarily covered by second to third growth forests and shrubs typical of the CDF zone. Primary stand composition variable depending on moisture and soil nutrients, past disturbance, and treatment history but typically includes Douglas Fir, Western redcedar, Western Hemlock, arbutus, and big leaf Maple. Common understory plants include the following:

- Salal
- Oregon Grape
- Nootka Rose
- Snowberry
- Ocean Spray
- Sword Fern
- Salmonberry
- Osoberry
- Red Elderberry

Wildlife resources are typical of the Southern Vancouver Island region and CDF zone.

Aquatic resources include the Saanich Inlet situated downgradient of the Site, as well as, Bamber Creek to the South of the site and a unnamed ephemeral creek in the central portion of the site.

### 3.2.5 *Water Quality*

Baseline water quality is relatively unimpacted anthropogenically from historical and current land use and is used locally for drinking water by up-gradient and cross-gradient users. Potential

sources of contamination are from the highway located up-gradient of the quarry from road salting and oil/fuel leaks and spills and from the quarry operations (oil/fuel leaks/spills and nitrate and nitrite from explosives). Water quality is detailed in the *Hydrogeological Assessment*<sup>2</sup> report by Active Earth.

### 3.2.6 Groundwater

A search of the IMapBC interface indicates that the Site is situated above Aquifer #208.

**Aquifer #208 – Malahat Ridge** – The aquifer is located along the east and southeast slopes of Malahat Ridge. The aquifer is bound along the east by Saanich Inlet. The western portion of the aquifer follows the watershed boundaries for Shawnigan Creek and Goldstream River. The aquifer description based on the 2019 Mapping Report indicates that the aquifer consists of fractured crystalline (igneous intrusive or metamorphic, meta-sedimentary, meta-volcanic, volcanic) rock.

The Malahat Ridge Aquifer is classified as moderately vulnerable. The median depth to water table is moderately deep at 12.19 m. Aquifer productivity and aquifer classification (confined or unconfined) is not documented. Reported well yields indicate a median well yield of 0.38 L/s indicating the aquifer has low productivity. A total of 289 wells have been correlated to the aquifer, with a median well depth of 92.96 m.

Recharge to the Aquifer is predominantly from direct infiltration of precipitation where the Aquifer is exposed at surface or from lateral groundwater movement from the upland areas.

### 3.2.7 Metal Leaching/Acid Rock Drainage

Based on the ARD evaluations detailed in the *Hydrogeological Assessment* report by Active Earth, it has been determined that the ARD potential at Bamberton Quarry is considered low. Monitoring is to occur by a QEP on a routine basis as well as when a new or suspect rock type is encountered.

## 4 RECLAMATION PLAN

### 4.1 End Land Use

The end land use for the properties has been identified as mixed commercial and industrial meeting the applicable zoning for the lots. Extraction and reclamation plans are being designed with the intent of accommodating and facilitating future development. Residual highwalls will be properly scaled and have appropriate catch benches installed and maintained. The final high-wall reclamation will include the planting of native tree species along the catch benches where feasible. Quarry wall benches will have a drainage pathway along the back wall to reduce erosion.

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<sup>2</sup> Active Earth Engineering Ltd. (January 2023). Bamberton Quarry – Hydrogeological Assessment Version 3.0

Final ground base-level elevations will be graded towards (1 to 3% grade) catchment ponds or drainage ditches located at the edge of the final quarry floors. A buffer zone for drainage, rock fall hazards, and for habitat will be constructed along the based of the quarry walls. Backfilling of pits or pit slopes will include previously stockpiled overburden, approved imported clean fill materials, in accordance with the Contaminated Sites Regulation (CSR), and growing medium that are free of inappropriate debris, wood or toxic substances to support the reclamation program. Backfilling will be partially structural for development areas (quarry floors) and for reverting lands to a natural state (buffer areas and catch benches).

Water courses and structures will be developed to be compatible with future land uses. Where possible, drainages will be restored to their original condition. If not, drainages will be diverted into new watercourses in a manner that will promote self-sustainment without the need for maintenance. The objective is that the productivity of these watercourses will be equal or greater than conditions that existed prior to mining.

Progressive reclamation is part of the overall plan where the Upper Quarry will be substantially reclaimed before major work commences on the Lower Quarry area. Reclaimed slopes will be graded to reflect the natural topography of the surrounding terrain.

Environmentally sensitive areas, including Bamber Creek, will not be disturbed.

## 4.2 Land Capability

Generally speaking, the capability of the land will change in use from being predominantly a second to third growth forest area prior to development to a commercial and industrial area per the applicable zoning. This change in use will happen almost solely on the flat final quarry ground floors where MICO sees development potential and opportunity. A significant portion will be reverted into a natural state including the pit walls and 10m buffers on the quarry floors, as well as any other strategic areas deemed best suited for reclamation into a reverted natural state.

## 4.3 Reclamation objectives

The Reclamation plan has three end land use objectives.

- To provide economic benefits to surrounding communities, First Nations, and MICO through development of suitable areas into commercial and industrial space in accordance with the CVRD bylaws, while protecting the environment and mitigating impacts to wildlife habitat.
- To return landform structure, heterogeneity, and stability in the Site to conditions similar to those existing pre disturbance outside of the areas for development.
- To re-establish productive land use that allows for wildlife habitat in key sensitive areas and areas not suitable for development.

#### 4.4 Progressive Reclamation Planning

Progressive reclamation will be carried out where practical during the operations. Progressive reclamation reduces the effects on the environment from disturbed areas, contributes to the achievement of a sustainable reclamation sooner, and provides an opportunity to test reclamation strategies. Progressive reclamation will occur once a disturbed area is no longer required for operational purposes. The first stage of progressive reclamation will likely occur in the Upper Quarry in an area that is deemed complete, and once the operations have moved to another area in the quarry. In addition, road right of way that is no longer in use will also be considered for progressive reclamation through out the duration of the quarry.

#### 4.5 Reclamation Prescriptions

Specific strategies for stabilizing and reclaiming the site is described in this section.

##### 4.5.1 *Infrastructure removal*

At time of closure, all existing site infrastructure will be decommissioned and removed.

##### 4.5.2 *Buildings and Equipment*

Plant site buildings and equipment no longer required at closure include the crusher and conveyors. The administration office and the Site water management and treatment systems will be retained until no longer needed. All of the removable assets, which include everything except the buildings, will be removed from Site if no longer needed. Following removal of the assets, most buildings will be either dismantled for re-use at another site or cut into pieces and sold or recycled as steel scrap. Non-salvageable construction materials (e.g., sheet metal, concrete, insulation, or roofing material) will be disposed of to an approved landfill.

##### 4.5.3 *Upper and Lower Quarry Floors*

Upper and Lower Quarry floors will likely be reclaimed into commercial and industrial use in accordance with CVRD bylaws and MICO's land use requirements at the time.

Buffers with drainage ditches will be placed where the pit walls meet the pit floor to provide room for drainages ditches, vegetation and habitat, and to mitigate risk from rock falls.

##### 4.5.4 *Soil Salvage and Management and Land Forming*

Topsoil and overburden will be placed strategically in areas being reverted to a natural state as well as in areas being developed as commercial and industrial use where topsoil may be needed. Specifically topsoil and overburden will be required on the pit wall benches to support revegetation of shrubs and trees, filling in any low-lying areas to support reclamation, and grading the pit floor. There remains approximately 40,000m<sup>3</sup> of overburden to be salvaged and re-used.

Land forming will be minimal as the quarry floors and walls will not change substantially in form once quarrying is complete. Rather, soils will be placed strategically to promote re-vegetation and the development of the site. It's expected that most horizontal surfaces will be filled with 0-2m of topsoil and overburden.

Temporary topsoil and overburden stockpiles will be stabilized on level ground contoured with drainage and seeded with appropriate grass and will be routinely monitored for erosion and the appearance of noxious weeds. All excavated surface materials will be stored in suitable locations and protected from erosion.

Soil movement and placement should occur in periods of relatively dry weather.

An agrologist will be consulted prior to reclamation to determine optimal soil types for each area.

#### 4.5.5 *Revegetation*

Revegetation will occur along the benches on quarry walls and along the buffer zones around the development areas. In addition, re-vegetation will occur in the development areas where feasible and as required by applicable bylaws.

Revegetation along the benches of the quarry walls will take into consideration the growing medium type, thickness, and potential for erosion. Local and native tree and shrub species will be selected that have the best likelihood to succeed in these conditions.

The buffer at the bottom edge of the quarry walls will include a drainage ditch with a mix of local species of shrubs and trees. Consideration will be given to native and local species of shrubs that are in close proximity to the drainage ditch and that have root systems that can reduce erosion and withstand longer periods of saturation. In addition, other local and native species of shrubs and trees will be placed on the upper banks where saturated root conditions are unlikely.

Vegetation and planting should occur in spring.

An agrologist will be consulted prior to recommendation to determine optimal species of trees and shrubs for each area.

#### 4.5.6 *Water Management*

Sediment ponds will be decommissioned through pumping and treating of sediment laden water such that it can be discharged into the ground in accordance with applicable regulations. Any excess sediment will be re-used where applicable.

Drainage ditches will be removed or diverted as required to facilitate the reclamation objectives. Drainage ditches will be placed along the quarry wall benches and along the bottom of the quarry wall to reduce erosion.

Note that water management infrastructure may stay in place to mitigate erosion and impacts from sediment laden water entering nearby waterbodies. This infrastructure will be removed and/or revised based on the future development requirements once the site is stabilized either naturally or with new infrastructure.

Ephemeral streams will be routed to flow down the quarry walls and benches in their approximate original locations. Once at the final bench they will enter a drainage ditch system that leads to a culvert, running under the development area, and ultimately discharging in the near shore in its original creek location before entering the Saanich Inlet.

#### 4.5.7 Well Decommissioning

Quarry groundwater monitoring wells will be decommissioned once quarry closure monitoring is complete and no more groundwater monitoring is required.

## 4.6 Schedule

A detailed reclamation schedule will be developed once reclamation begins in the Upper Quarry, and will be updated in successive iterations of this Plan. Conceptually, reclamation will begin as soon as possible after mine start-up, as much as mine development and operations allow. CMR recognizes that most Site areas may not be able to be reclaimed until closure, but it is in the stakeholders' best interest to conduct as much progressive reclamation as possible prior to closure. For example, reclamation may begin soon after mining begins in areas that were disturbed during construction but are no longer needed, such as old forestry roads, or internal haul roads that are superseded by others.

Early reclamation also will be more cost-effective since CMR can use the available work force and equipment at the mine during operations rather than using contractors during closure. Suitable surfaces for progressive reclamation work and research trials will be identified during operations. Early reclamation work will provide valuable experience in identifying suitable treatment techniques for different areas after operations cease. Vegetation planting will generally be occurring in the spring and soil movement in periods of relatively dry weather.

## 4.7 Monitoring

Reclamation monitoring will occur routinely during reclamation and post closure as summarized below:

- Groundwater quality monitoring will occur twice annually and may progressively decrease if conditions appear to be stable or improving as determined by a QEP. The duration of groundwater monitoring is contingent on meeting performance objectives and subject to permit and regulatory requirements.

- Surface water quality monitoring will occur routinely during reclamation and then to progressively decrease once reclamation is complete. The duration of surface water monitoring is contingent on meeting performance objectives and subject to permit and regulatory requirements.
- Erosion and sediment control monitoring will occur routinely during reclamation and will continue until reclamation is complete and the site no longer poses erosion risks above what occurs regionally on similar undeveloped land.
- Vegetation and placement of soils (overburden and growing medium) monitoring - This will occur routinely during reclamation and annually post reclamation until the desired vegetation is well established as to prevent the spread of invasive plants.

In general, monitoring will continue until applicable regulations and a QEP have deemed the site reclaimed, stable, and with a low-risk of impacting the environment

#### 4.8 Evaluation Reclamation Success

Reclamation success will be determined by the following benchmark targets:

- Quarry wall benches are reclaimed to a point where soil and native vegetation are stable and will persist and drainage is un-hindered;
- All equipment and structures no longer in use are removed from Site;
- Any areas unused for re-development are revegetated with native species and are stable and self-sustaining;

If reclamation targets are not being achieved the following contingency plan will be implemented to ensure benchmark targets are achieved:

- Increase sediment and erosion control for areas where topsoil retention is below benchmark;
- Hydroseed topsoil retention areas to increase topsoil retention;
- Increase planting of native plant and shrub species;
- Increase planting of native trees within reforested areas (e.g. 1000 stems/ha);
- Invasive species removal to increase ground cover of native species;
- Increase watering of newly seeded/planted vegetation;

An agrologist will be consulted for assessing any vegetation issues and developing specific plans.

#### 4.9 Reclamation reporting

Annual reclamation reports will be prepared by a QEP summarizing the progress of reclamation and evaluating whether reclamation prescriptions are resulting in the end land use objectives laid out in the Reclamation and Closure Plan

Annual reporting will cease once the Site has been reclaimed and has achieved the end land use objectives.

## 5 ADAPTIVE MANAGEMENT

Adaptive Management will occur during the full duration of the monitoring period and will determine if further mitigation or reclamation activities need to be amended or improvements needed. Adaptive management review will be undertaken by the QEP. The reclamation program will be continually assessed routinely during reclamation monitoring to determine if reclamation targets are being achieved.

## 6 LIMITATIONS

The use of this report by anyone is subject to the following conditions and limitations:

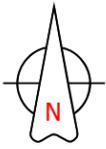
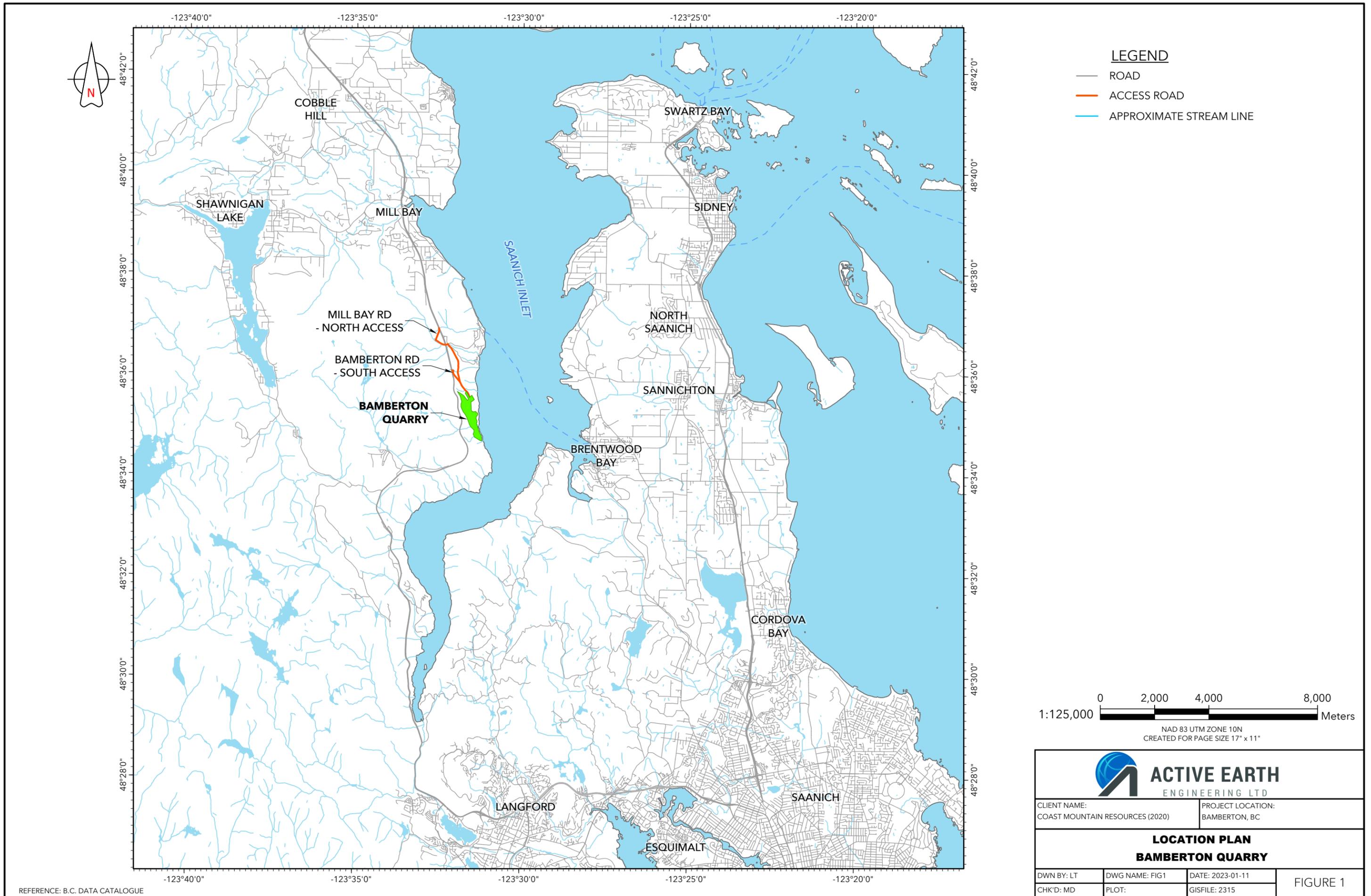
1. This report has been prepared at the request of the client and for the specific use referred to herein. The client may rely on this report. It is not reasonable for any other party to rely on the contents of this report without first obtaining written authorization from the client and Active Earth Engineering Ltd.
2. Liability is expressly denied to any person other than the parties indicated above and those who obtain written consent. Accordingly, Active Earth Engineering Ltd. does not accept responsibility for any damage suffered by any such person as a result of decisions made or actions based on this report. Diligence by all intended users is assumed.
3. This report is believed to provide a reasonable representation of the general environmental condition at the Site; the environmental risks presented by the Project; and, appropriate mitigation measures to be implemented by the Operator. The conclusions and recommendations made in this report reflect Active Earth's best judgment in light of the information available at the time of reporting. Should additional information become available or Site conditions change, the conclusions and recommendations of this report may be subject to change.
4. Active Earth Engineering Ltd. has agreed to conduct various assessments and prepare this report as requested by the client named in the report for the use specified by the client, which is stated in the report. The client has agreed that the performance of this work and the report format are appropriate for the intended use.
5. Written consent from Active Earth Engineering Ltd. must be obtained before any part of the report can be used for any purpose by anyone other than the client and other intended users identified in the report. Liability to any other party or for any other use is expressly denied regardless of who pays Active Earth Engineering Ltd.'s fee. Written consent and approval of Active Earth Engineering Ltd. must also be obtained before the report (or any part of it) can be altered or conveyed to other parties or the public through prospectus, offering memoranda, advertising, public relations, news, sales or other media.



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# FIGURES



**LEGEND**

- ROAD
- ACCESS ROAD
- APPROXIMATE STREAM LINE



NAD 83 UTM ZONE 10N  
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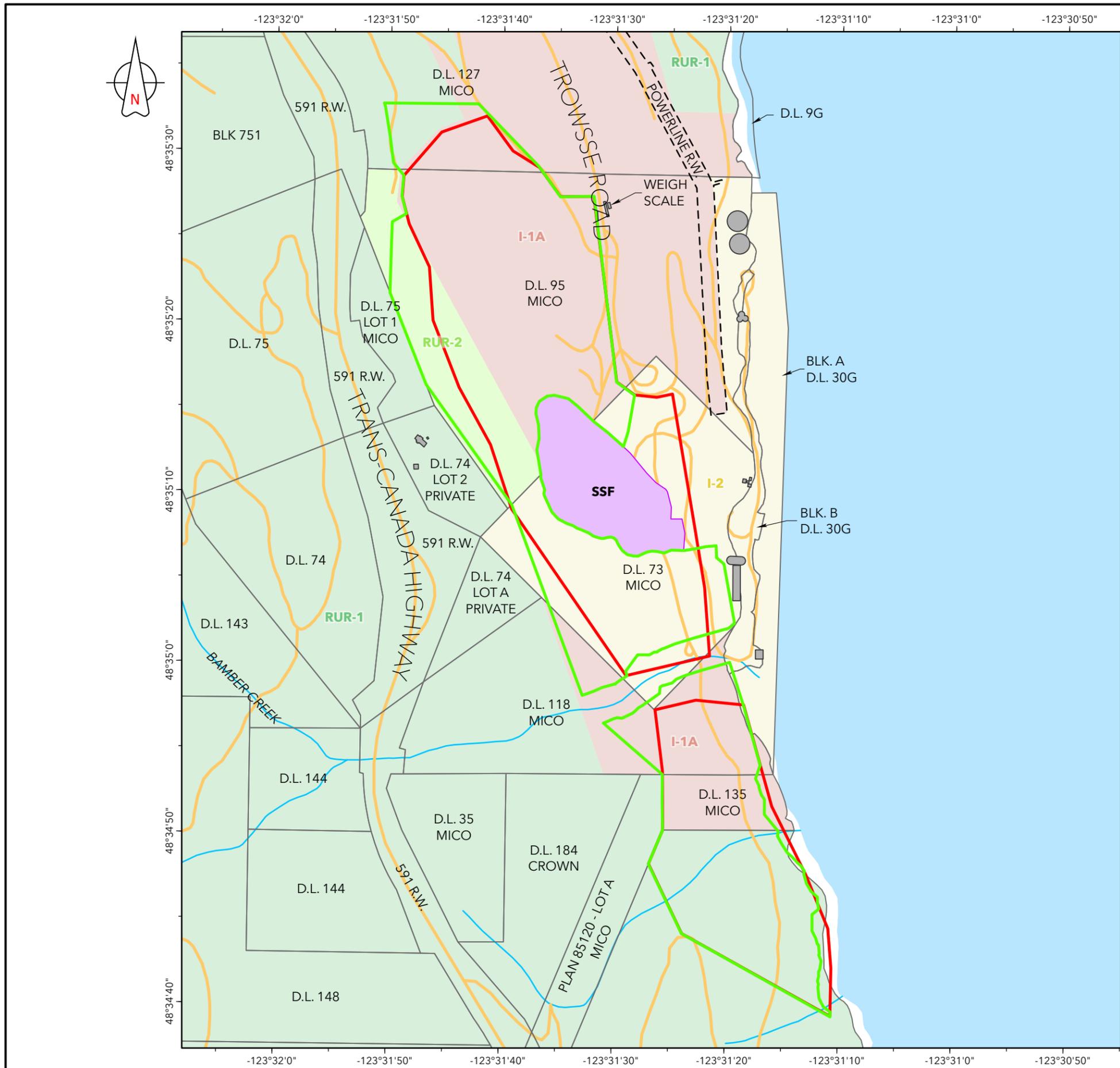


CLIENT NAME: COAST MOUNTAIN RESOURCES (2020)	PROJECT LOCATION: BAMBERTON, BC
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**LOCATION PLAN  
BAMBERTON QUARRY**

DWN BY: LT	DWG NAME: FIG1	DATE: 2023-01-11	FIGURE 1
CHK'D: MD	PLOT:	GISFILE: 2315	

REFERENCE: B.C. DATA CATALOGUE

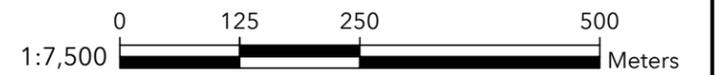


**LEGEND**

- LEGAL LOT LINE
- 2022 PROPOSED PERMIT BOUNDARY
- 2016 MINE PERMIT BOUNDARY
- APPROXIMATE STREAM LINE
- ROAD
- APPROXIMATE BUILDING BOUNDARY

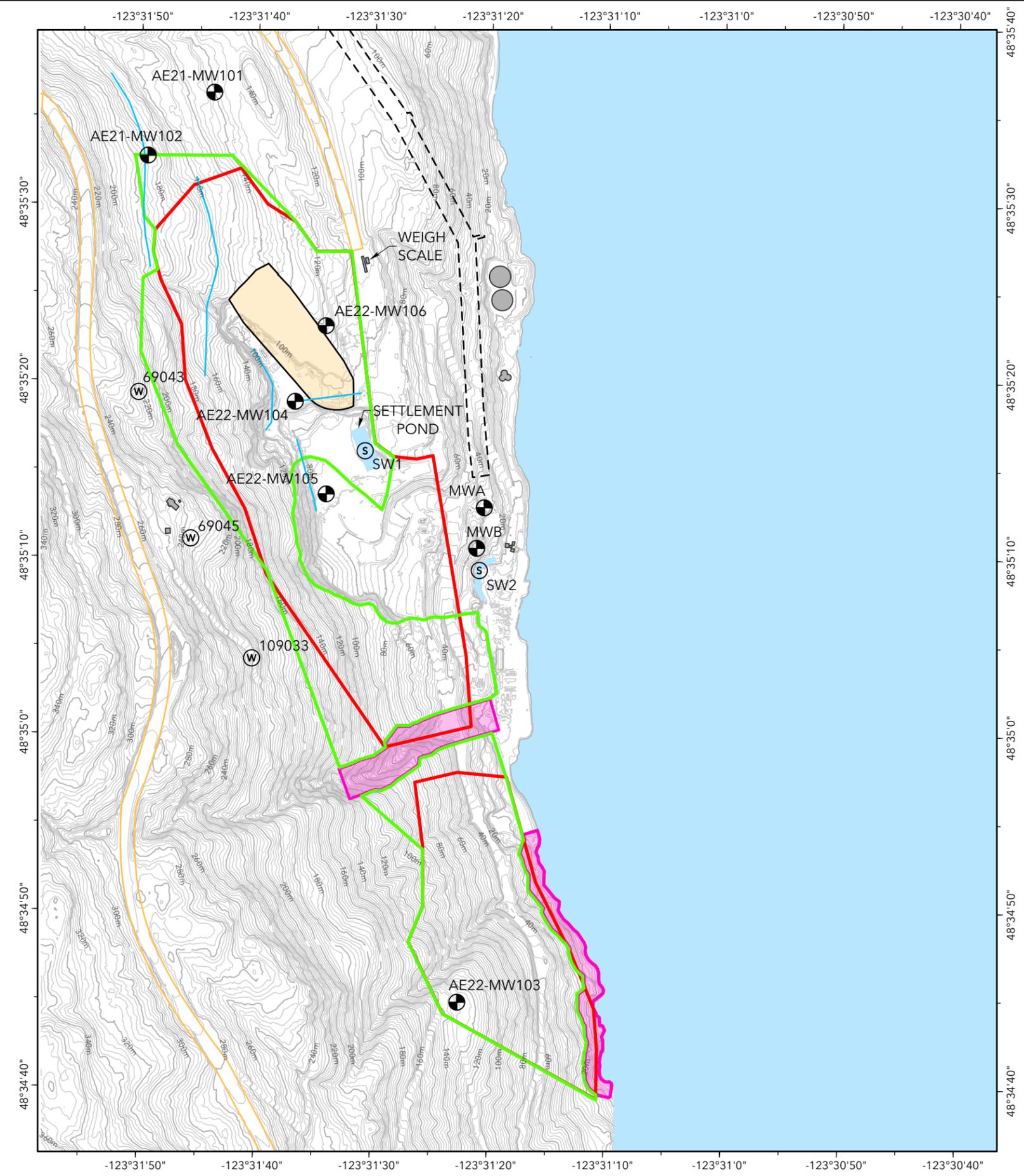
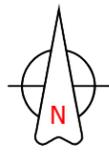
**ZONING**

- BAMBERTON LIGHT INDUSTRIAL 1A
- HEAVY INDUSTRIAL 2
- RURAL RESOURCE 1
- RURAL RESOURCE 2

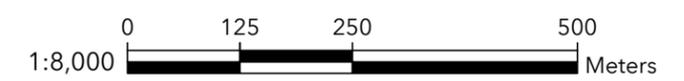


 <b>ACTIVE EARTH</b> ENGINEERING LTD			
CLIENT NAME: COAST MOUNTAIN RESOURCES (2020)	PROJECT LOCATION: BAMBERTON, BC		
<b>LAND TITLE PLAN</b> <b>BAMBERTON QUARRY</b>			
DWN BY: LT	DWG NAME: FIG2	DATE: 2023-03-27	FIGURE 2
CHK'D: MD	PLOT:	GISFILE: 2315	

REFERENCE: B.C. DATA CATALOGUE, COWICHAN VALLEY REGIONAL DISTRICT GIS DOWNLOADS



- LEGEND**
- MONITORING WELL
  - SURFACE WATER SAMPLE
  - WATER WELL
  - CONTOUR (2m)
  - DRAINAGE DITCH
  - RIGHT OF WAY
  - 2016 MINE PERMIT BOUNDARY
  - 2022 PROPOSED PERMIT BOUNDARY
  - 30m BUFFER ZONE FROM BAMBER CREEK / SAANICH INLET
  - ROAD
  - APPROXIMATE BUILDING BOUNDARY
  - EXISTING DISTURBANCE



NAD 83 UTM ZONE 10N  
CREATED FOR PAGE SIZE 17" x 11"

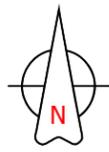
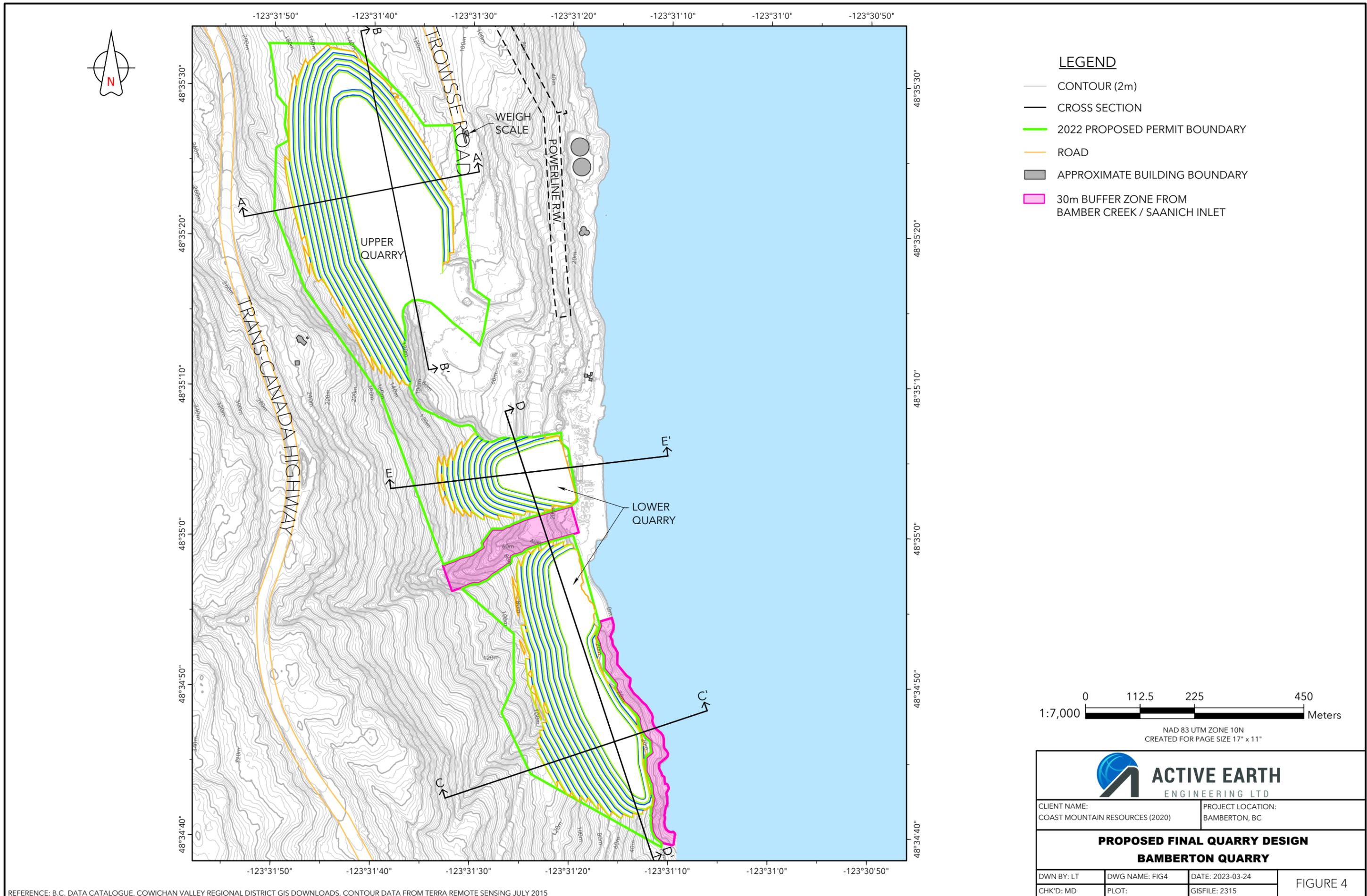


CLIENT NAME: COAST MOUNTAIN RESOURCES (2020)	PROJECT LOCATION: BAMBERTON, BC
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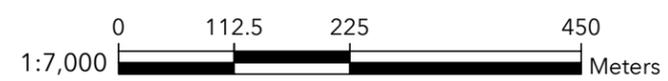
**EXISTING SURFACE PLAN  
BAMBERTON QUARRY**

DWN BY: LT	DWG NAME: FIG3	DATE: 2023-03-24	FIGURE 3
CHK'D: MD	PLOT:	GISFILE: 2315	

REFERENCE: B.C. DATA CATALOGUE, COWICHAN VALLEY REGIONAL DISTRICT GIS DOWNLOADS, CONTOUR DATA FROM TERRA REMOTE SENSING JULY 2015



- LEGEND**
- CONTOUR (2m)
  - CROSS SECTION
  - 2022 PROPOSED PERMIT BOUNDARY
  - ROAD
  - APPROXIMATE BUILDING BOUNDARY
  - 30m BUFFER ZONE FROM BAMBER CREEK / SAANICH INLET

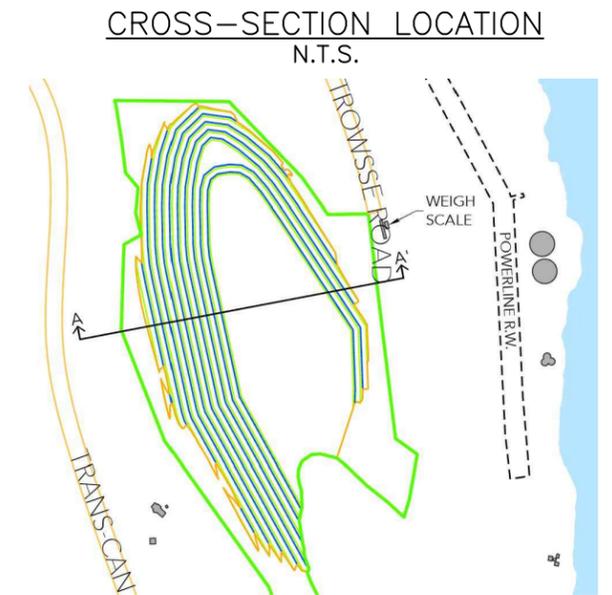
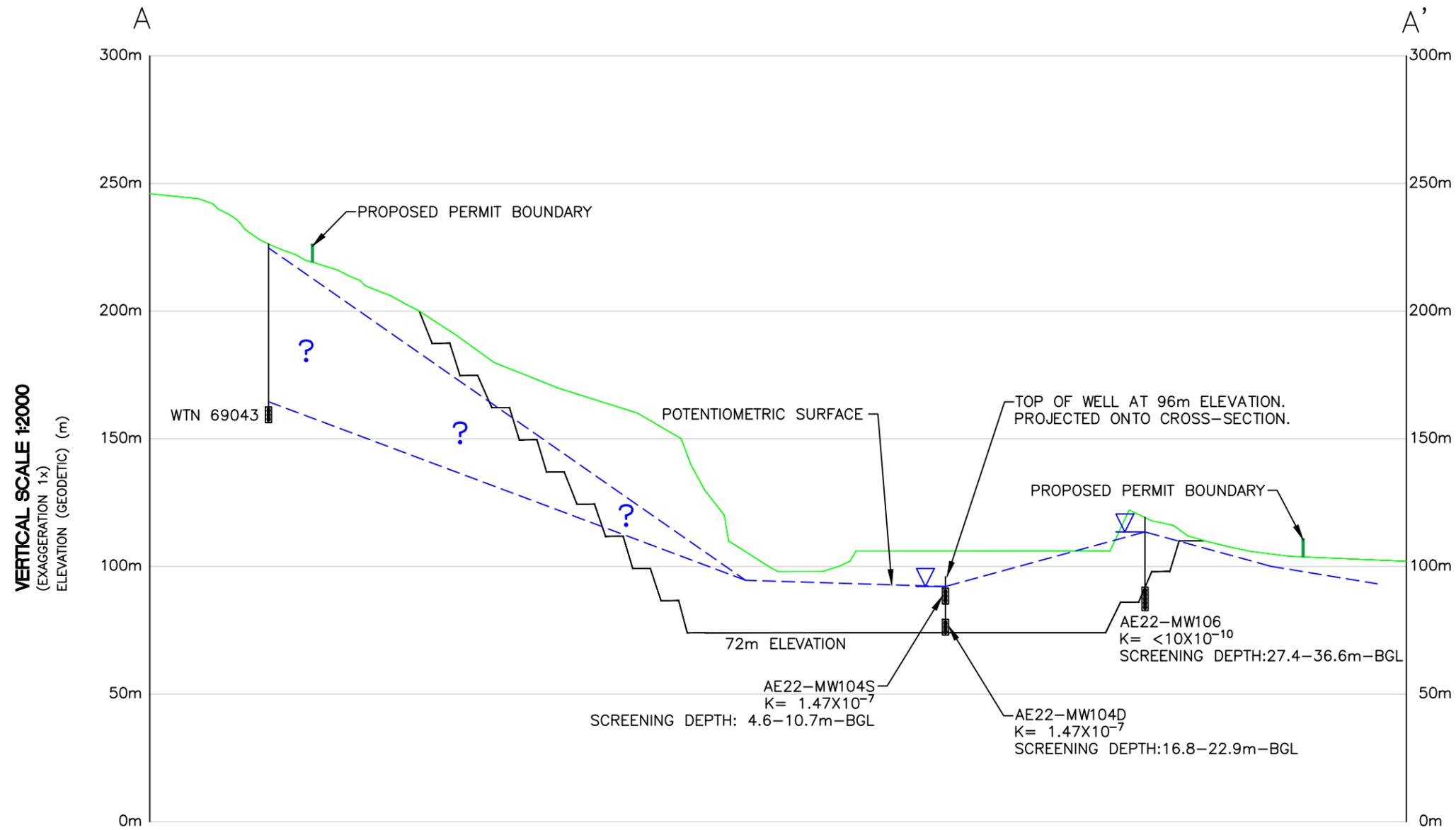


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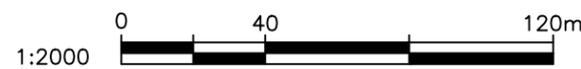
CLIENT NAME: COAST MOUNTAIN RESOURCES (2020)		PROJECT LOCATION: BAMBERTON, BC	
<b>PROPOSED FINAL QUARRY DESIGN</b> <b>BAMBERTON QUARRY</b>			
DWN BY: LT	DWG NAME: FIG4	DATE: 2023-03-24	FIGURE 4
CHK'D: MD	PLOT:	GISFILE: 2315	

REFERENCE: B.C. DATA CATALOGUE, COWICHAN VALLEY REGIONAL DISTRICT GIS DOWNLOADS, CONTOUR DATA FROM TERRA REMOTE SENSING JULY 2015



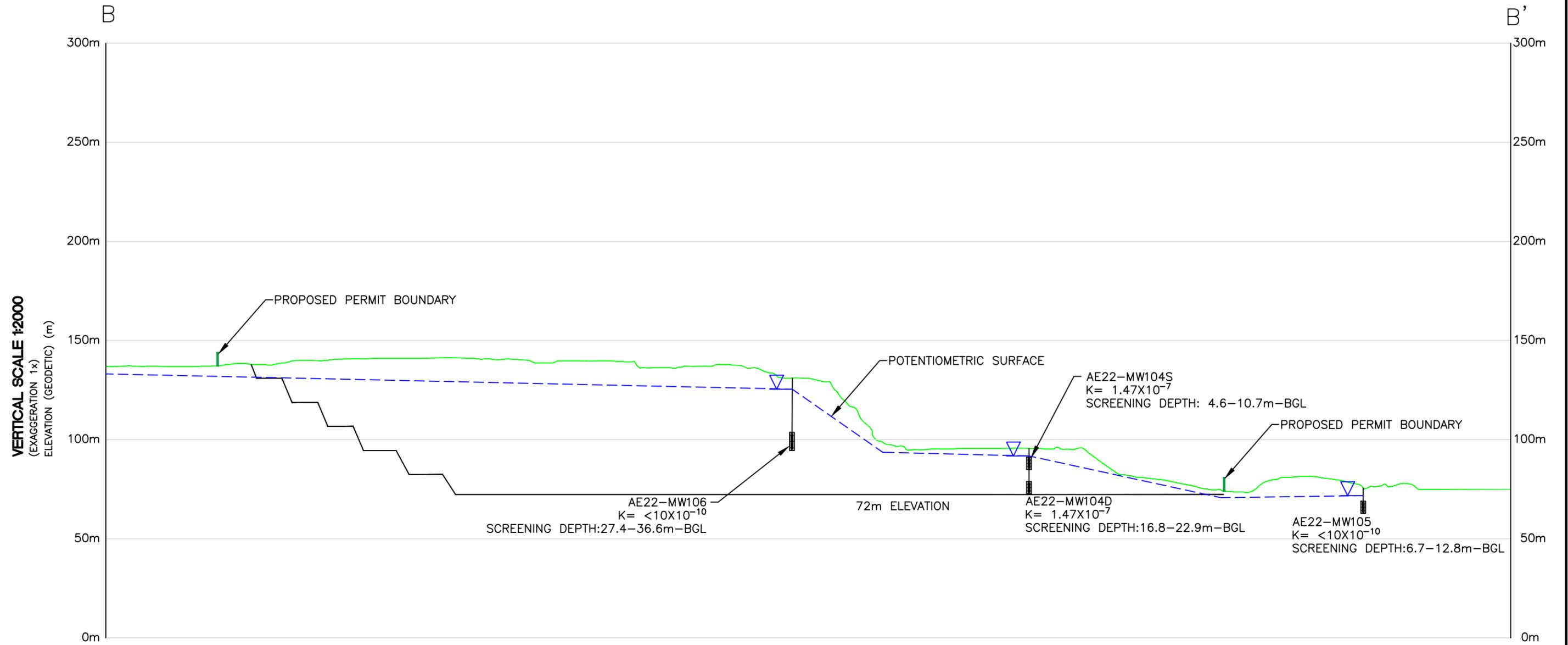
**LEGEND**

- APPROXIMATE CURRENT EXISTING GROUND SURFACE
- APPROXIMATE PROPOSED FINAL QUARRY GROUND SURFACE
- ▽ GROUNDWATER ELEVATION
- K HYDRAULIC CONDUCTIVITY (m/s)



 <b>ACTIVE EARTH</b> ENGINEERING LTD		
CLIENT NAME: COAST MOUNTAIN RESOURCES (2020) LTD.	PROJECT LOCATION: BAMBERTON, BC	
<b>PROPOSED FINAL QUARRY DESIGN CROSS SECTION A-A' BAMBERTON QUARRY</b>		
DWN BY: WS	DWG NAME: -5a	DATE: 2023-03-24
CHK'D: MD	PLOT:	CADFILE: 2315 J23

FIGURE 5a

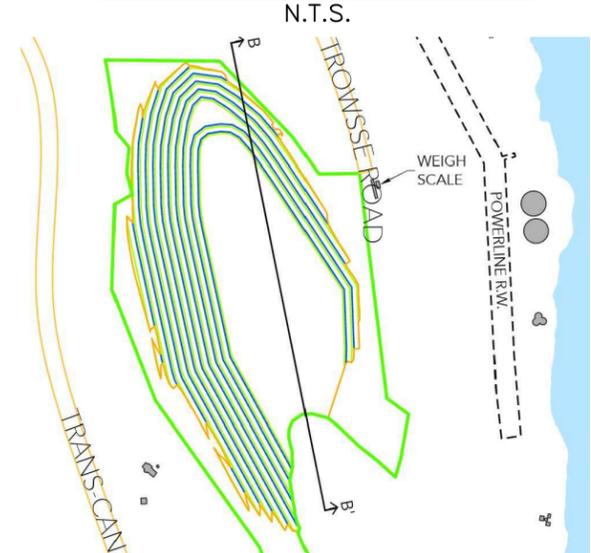


**LEGEND**

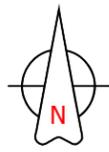
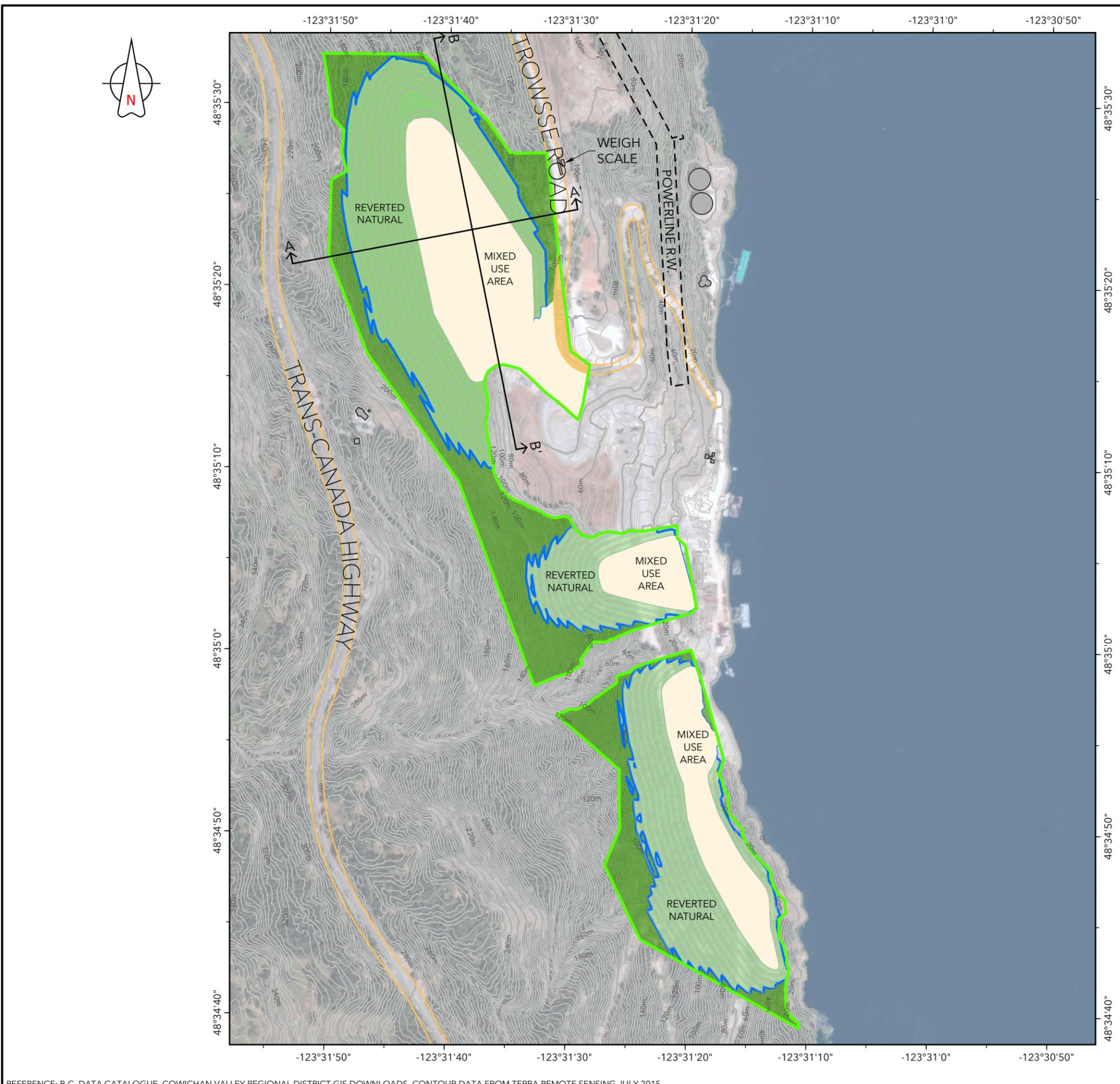
- APPROXIMATE CURRENT EXISTING GROUND SURFACE
- APPROXIMATE PROPOSED FINAL QUARRY GROUND SURFACE
- ▽ GROUNDWATER ELEVATION
- K HYDRAULIC CONDUCTIVITY (m/s)



**CROSS-SECTION LOCATION**



CLIENT NAME: COAST MOUNTAIN RESOURCES (2020) LTD.	PROJECT LOCATION: BAMBERTON, BC
<b>PROPOSED FINAL QUARRY DESIGN CROSS SECTION B-B' BAMBERTON QUARRY</b>	
DWN BY: WS	DWG NAME: -5b
CHK'D: MD	PLOT:
DATE: 2023-03-24	CADFILE: 2315 J23
FIGURE 5b	



- LEGEND**
- CONTOUR (2m)
  - CROSS SECTION
  - ROAD
  - 2022 PROPOSED PERMIT BOUNDARY
  - FORMERLY DISTURBED MINING AREA
  - MIXED USE AREA - COMMERCIAL / INDUSTRIAL AND / OR RESIDENTIAL
  - REVERTED NATURAL AREA
  - FUTURE RESERVES
  - APPROXIMATE BUILDING BOUNDARY



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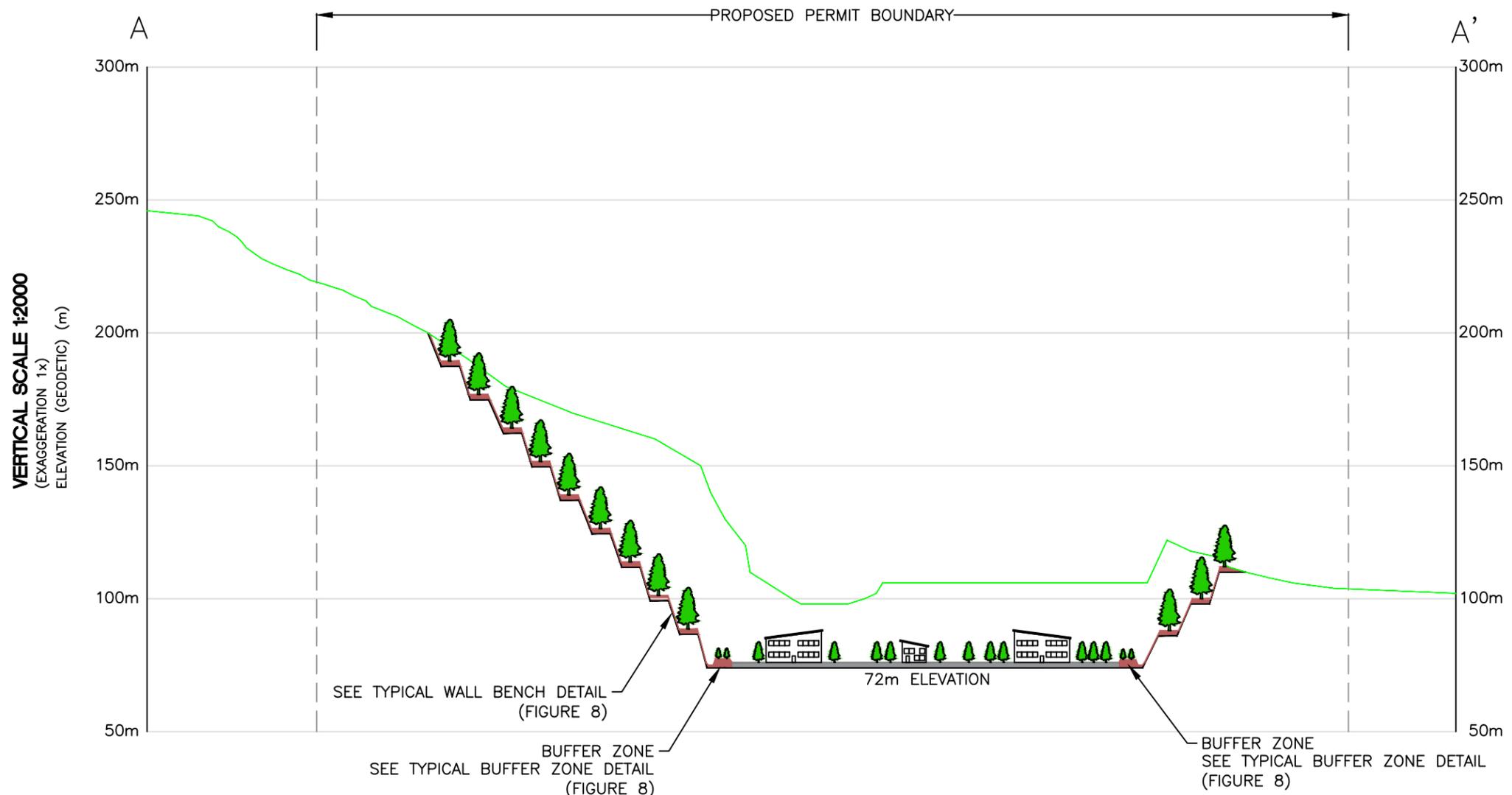
CLIENT NAME: COAST MOUNTAIN RESOURCES (2020)	PROJECT LOCATION: BAMBERTON, BC
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**RECLAMATION PLAN  
BAMBERTON QUARRY**

DWN BY: LT	DWG NAME: FIG6	DATE: 2023-03-28
CHK'D: MD	PLOT:	GISFILE: 2315

FIGURE 6

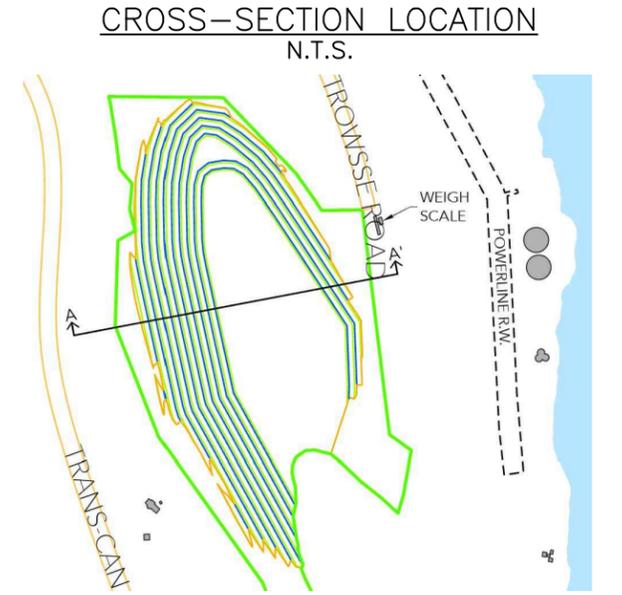
REFERENCE: B.C. DATA CATALOGUE, COWICHAN VALLEY REGIONAL DISTRICT GIS DOWNLOADS, CONTOUR DATA FROM TERRA REMOTE SENSING JULY 2015



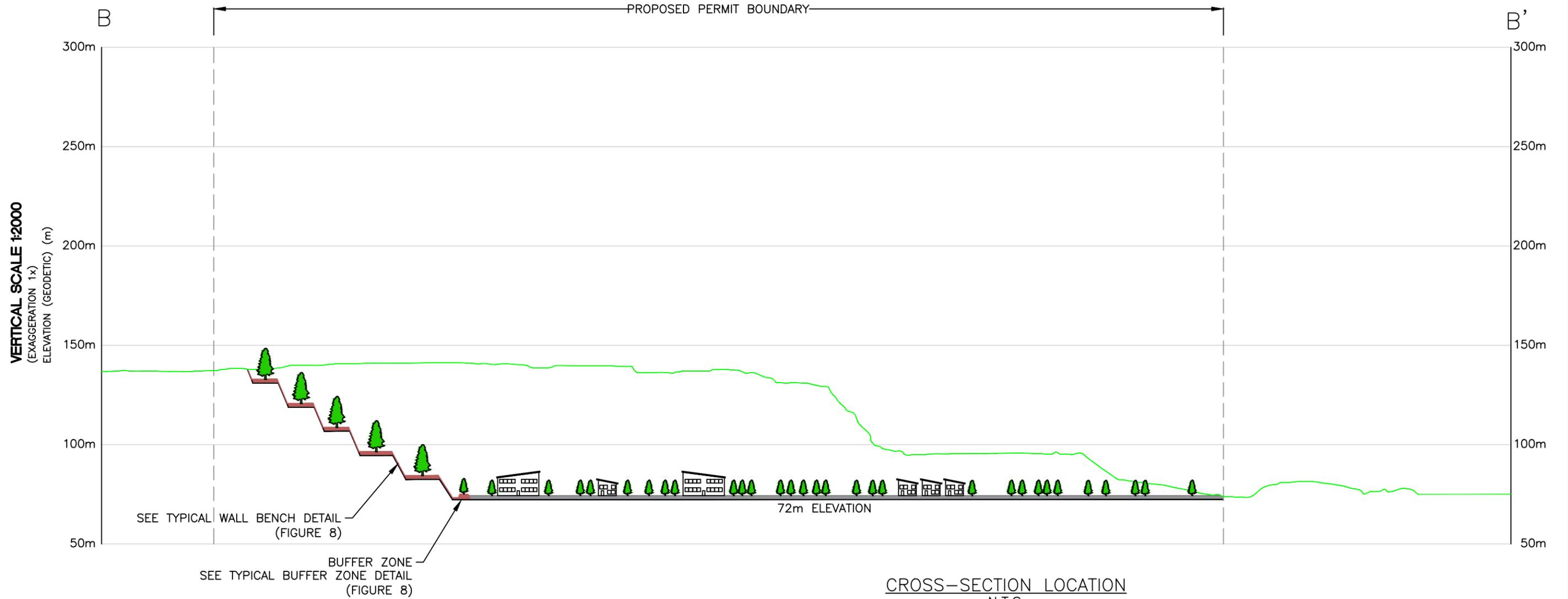
**NOTE:**  
BUILDINGS SHOWN FOR VISUAL PURPOSES ONLY.  
LAND USE TO BE DETERMINED.

**LEGEND**

- APPROXIMATE CURRENT EXISTING GROUND SURFACE
- APPROXIMATE PROPOSED FINAL QUARRY GROUND SURFACE



CLIENT NAME: COAST MOUNTAIN RESOURCES (2020) LTD.	PROJECT LOCATION: BAMBERTON, BC
<b>PROPOSED RECLAMATION CROSS SECTION A-A' BAMBERTON QUARRY</b>	
DWN BY: WS	DWG NAME: -7a
CHK'D: MD	PLOT:
DATE: 2023-03-24	CADFILE: 2315 J23
FIGURE 7a	



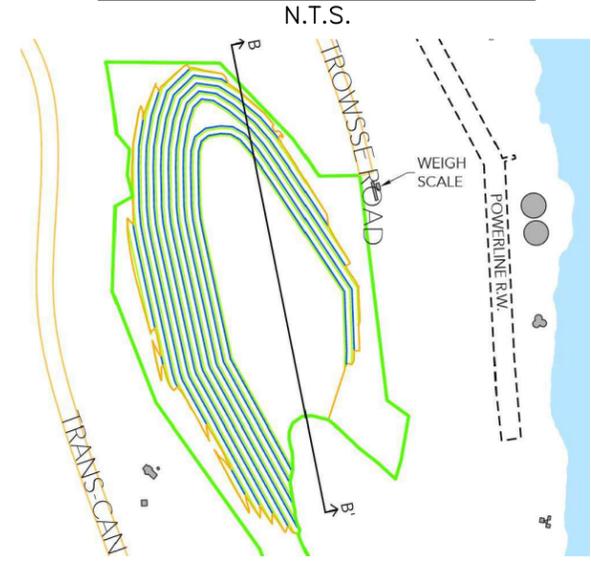
**NOTE:**  
BUILDINGS SHOWN FOR VISUAL PURPOSES ONLY.  
LAND USE TO BE DETERMINED.

**LEGEND**

- APPROXIMATE CURRENT EXISTING GROUND SURFACE
- APPROXIMATE PROPOSED FINAL QUARRY GROUND SURFACE



**CROSS-SECTION LOCATION**



<b>ACTIVE EARTH</b> ENGINEERING LTD		
CLIENT NAME: COAST MOUNTAIN RESOURCES (2020) LTD.	PROJECT LOCATION: BAMBERTON, BC	
<b>PROPOSED RECLAMATION CROSS SECTION B-B'</b> <b>BAMBERTON QUARRY</b>		
DWN BY: WS	DWG NAME: -7b	DATE: 2023-03-24
CHK'D: MD	PLOT:	CADFILE: 2315 J23
		FIGURE 7b