



KUDZ ZE KAYAH PROJECT

ROAD CONSTRUCTION PLAN

REV 05

June 2026

BMC MINERALS LTD.

This Management Plan has been developed to meet the appropriate subject objectives based on existing regulatory requirements, current or planned site activities, existing and expected site conditions, and designed outcomes at the time of writing. Operational processes/practices for achievement of licence terms and conditions may be updated from time to time as appropriate due to changes to relevant legislation and regulations, changes to site activities or conditions, differences from expected objective outcomes, or improvement of management practices. All rates, capacities, dimensions, weights, volumes and durations in text or figures are based on current feasibility level designs and are subject to change based on final design, licence conditions or site conditions encountered. Updates will be resubmitted to government authorities and/or stakeholders as required.

LIST OF REVISIONS

Issue Date	Revision Number	Description
August 27, 2020	Rev00	For Issue to Agencies
December 9, 2020	Rev 01	Updated with commitments and Final Screening Report Recommendations
July 18, 2022	Rev 02	Updated with BMC final due diligence review
April 5, 2024	Rev 03	Updated in response to IR#4 from EMR dated June 9, 2023
August 8, 2024	Rev 04	Updated in response to EMR information request dated May 24, 2024
June 1, 2026	Rev 05	Administrative updates in response to EMR completeness check

SUMMARY OF REVISIONS

Information Request/Intervention	Document	Section	Revision
Revision 03			
EMR Phase 4 IR It would help in the review if BMC replaced all general terms with more specific information. For example: i. Replace “reducing water velocity across the ground” with how BMC intends to do that. ii. Replace “speed limit” with specific speed limit. iii. Replace “dust suppressant” with specific suppressant such as water, calcium, or other. BMC to acknowledge the comment with revised wording in the next plan submission	Road Construction Plan	n/a	BMC has reviewed the plan and added more specific information where applicable.
EMR Phase 4 IR A concordance table is missing from the plan. BMC is to provide a concordance table that demonstrates how all applicable decision document terms and conditions and proponent commitments have been addressed. This concordance table should also indicate where revisions have been made based upon the information requests outlined in this table.	Road Construction Plan	n/a	The concordance table has been added.
EMR Phase 4 IR Section 1 – introduction Mention of the Tote Road upgrades. It is the understanding of Mineral Resources that 5 km of the Tote Road will fall within the QML. See comment on appendices for required submissions. Correct language to say that the Tote Road upgrades will impact the QML. BMC to include additional section in plan regarding Tote Road upgrades, etc., and include reference to associated and required analyses and reports appended to this plan.	Road Construction Plan	1	Clarification made that the portion of the upgrade of the Tote Road to an Access Road that falls within the boundary of the Quartz Mining Licence is included in the Road Construction Plan.
EMR Phase 4 IR Section 2.2 - Foundation Preparation The plan is missing reference to the Heritage Resources Protection plan or any procedures to follow when initially excavating for road construction.	Road Construction Plan	2	References to BMC’s Heritage Resource Protection Plan and the Chance Find Procedure have been added. Noted that site management and the environmental department will review previous heritage impact assessments for potential to impact any known heritage resources prior to commencing construction activities.

Information Request/Intervention	Document	Section	Revision
HRPP states "Prior to the start of construction, Site Management and the Environmental Department will review previous heritage impact assessment to ensure construction activities do not have the potential to affect any known heritage resource." BMC to acknowledge the comment with revised wording in the next plan submission.			
EMR Phase 4 IR Section 2.2 - Foundation Preparation The plan is missing details around frozen materials management. See General comments for Open Pit MDOP. BMC to include a section on frozen materials management within the next plan revision.	Road Construction Plan	2.2	Overview added to Section 2.2, with reference to the more detailed discussion on Frozen Materials management contained within the Open Pit Mine Development and Operations Plan.
EMR Phase 4 IR Section 3 - Road design and Specifications The plan is missing descriptions of any planned road maintenance activities. Snow clearing may require adjustment of berms etc, and should be noted in the plans. BMC to include a section on road maintenance within the next plan revision.	Road Construction Plan	3.4	A description of road maintenance activities has been added to the Plan.
EMR Phase 4 IR Section 3 - Road Design and Specifications The plan only includes 2 different road designs - haul roads and service roads, which seems like an oversimplification for all roads and trails planned for the site. BMC to confirm if they plan on having different classifications of service roads, or will they all be the same as the Tote road design? Will all haul roads be the same design? Will there be a separate trail design? Will there be any consideration of different in-situ material types for backslope grades etc.? Will there be any consideration of slope length and the addition of benches etc.?	Road Construction Plan	3.1 and 3.2	The definition of road types has been expanded to cover five different types of Site Roads together with the upgrade of the Tote Road to an Access Road. Road cut and fill slopes will consider subgrade materials as detailed in the plan and confirmed during road construction. Maximum slope lengths and bench intervals will be confirmed during road construction and account for geotechnical conditions encountered during construction. Added Section 3.2 for Access Road.
EMR Phase 4 IR Section 3 - Road Design and Specifications	Road Construction Plan	3.1.1 and 3.2.1	The list of design standards used in preparing road designs has been updated.

Information Request/Intervention	Document	Section	Revision
The plan only references YWS regulations as design standards for all roads. The plan should include references to all standards used during the designs including standards from other jurisdictions. BMC to include all design standards used for the road design within the next plan revision.			
EMR Phase 4 IR Section 3 - Road Design and Specifications The plan does not include any design criteria such as design vehicle, design speed, minimum radius, number of lanes, sight distances etc. BMC to include all design criteria used for the road design within the next plan revision.	Road Construction Plan	3.1.1 and 3.2.1	The road design criteria has been added to the Plan.
EMR Phase 4 IR Section 3 - Road Design and Specifications The plan is missing specifications for material types etc. BMC to include specifications for each material type intended to be used in road construction within the next plan revision.	Road Construction Plan	3.1.2 and 3.2.2	Information added on material specifications for road construction.
EMR Phase 4 IR Section 3 - Road Design and Specifications The plan is missing detail on signage types and locations on site. The revised designs should include a site signage plan that includes types and locations of signage on site.	Road Construction Plan	3.3	A Traffic Management section has been added to the plan that includes information on signage proposed for use on site.
EMR Phase 4 IR Section 3 - Road design and Specifications The plan is missing standard operating protocols such as details regarding specific radio calling procedures, right of way procedures. BMC to include a section on intended operating protocols within the next plan revision.	Road Construction Plan	3.3	A Traffic Management section has been added to the plan that includes information on radio use on site and right of way traffic management.
EMR Phase 4 IR Section 3.2 - Design basis More detailed rationale is required for the design and should directly reconcile with indicated guidance and standards used. Roadway structure, drainage requirements for expected site run-off, truck size on each road classification, turning radiuses, safety requirements such as runaway lanes, etc., should all be covered.	Road Construction Plan	3.1.1, 3.1.3, 3.2.1, and 3.2.3	Design criteria for roads have been included in the plan. Surface water management and roadway culverts are detailed in Sections 3.1.3 and 3.2.3.

Information Request/Intervention	Document	Section	Revision
Provide additional detail on the design basis for each road classification.			
EMR Phase 4 IR Section 3.3 – Construction The plan is missing any mention of best management practices for road construction such as lift thicknesses, compaction, process for dealing with high moisture content soils or silty soils. BMC to include a section on best management practices within the next plan revision.	Road Construction Plan	7 3.1.2 and 3.2.2	The plan did include Best Management Practices as required by the QML guidance document, however not under a heading of Best Management Practices. This has now been added. Construction management techniques have been described in more detail in Sections 3.1.2 and 3.2.2.
EMR Phase 4 IR Section 3.3 – Construction What does the closure of roadways and temporary trails look like? Will BMC leave them until the end of the mine life, or close them as they go? BMC to include a section within 3.3 that discusses the plan for road closure and de-activation, including temporary trails.	Road Construction Plan	3.7	A description of closure of Project roads has been added to the Plan.
EMR Phase 4 IR Section 3.3.1 -Bulk Earthworks Need more information on borrow sources used for road construction. Clarify which borrow pits are referenced and what authorization they fall within.	Road Construction Plan	4	Additional information has been included on the specifics of each proposed borrow source. Clarified that all proposed borrow sources will be authorized under the Quartz Mining Licence under application.
EMR Phase 4 IR Section 3.5 - Staging areas The plans for the construction laydown area are unclear, location, size, future use or reclamation, etc. Provide additional detail on the staging areas planned for road construction use.	Road Construction Plan	3.5	Additional description of the staging areas has been added to the plan.
EMR Phase 4 IR Section 4 - Borrow Sources The plan does not include enough detail on the borrow pits intended for use under the QML.	Road Construction Plan	4	Additional information has been included on the specifics of each proposed borrow source and the criteria to assess ARD/ML potential.

Information Request/Intervention	Document	Section	Revision
BMC to review YG Plan Requirement Guidance and include all required information in next plan submission.			
EMR Phase 4 IR Appendices The plan is missing appendices for geotechnical and geochemical evaluations completed for the site as required by the YG Plan Requirement Guideline. BMC to include any applicable geotechnical assessments or evaluations (such as those listed in section 6 of the plan) as appendices. Any engineered reports or assessments need to be stamped by a Yukon PEng.	Road Construction Plan	5, 6	Geotechnical and geochemical assessments for the Project have been detailed in the Site Characterization Plan, and a reference to this plan has been included in the Road Construction Plan.
Revision 04			
EMR IR: Update reference to the Workplace Health and Safety Regulations	Road Construction Plan	3.1.1	Reference has been updated.
EMR IR: Add procedures for the Access Road portion of the Road Construction Plan (km 18.88 to km 19.8)	Road Construction Plan	3.3.1	Additional procedures have been added.

Reference No.	Proponent Commitment / Mitigation	Where addressed
YESAB R166	In areas where the existing road traverses sections of undisturbed, shallow, ice-rich permafrost, the existing organic layer will be left intact. In permafrost, where proposed fill slopes extend beyond either side of the existing road prism, the portion of fill beyond the existing road edge will be constructed by filling over a geotextile separation layer. Once the geotextile is in position, fill is to be placed, compacted in lifts and brought up to the designed grade.	See Section 3.2.2 of the Road Construction Plan
YESAB R166	Care will be taken to minimize the amount of vegetative cover to be cleared, limiting the amount of soil exposed to reduce permafrost degradation and thaw along the roadway. This will also reduce the potential for soil erosion and sediment deposition in riparian and wetland ecosystems.	See Section 3.1 of the Road Construction Plan
RRDC Review of Draft Management Plan	BMC will engage with local Kaska to develop site signs in both English and Kaska for the perimeter of the Project.	See Section 3.3 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Road and exposed surfaces watering, as required	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Minimize land clearing activities (i.e. waste storage facilities will be cleared progressively through the Project construction and operations phase).	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Construction of the Access Road and site roads with low silt content material.	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Appropriate speed limits for all mobile equipment.	Section 3.3 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Impose speed limits for all vehicles.	Section 3.3 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Avoid engine idling	Section 7.5 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Use catalytic control systems on diesel engines.	Section 7.5 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Ensure vehicles and equipment are maintained according to manufacturers' guidelines.	Section 7.5 of Road Construction Plan
Project Proposal Chapter 11 (BMC, 2017a)	Minimize land clearing to the areas necessary for Project Footprint.	Section 2.1 of Road Construction Plan
Project Proposal Chapter 18 (BMC, 2017a)	Construction of new roads will be minimized (e.g., Tote Road will be upgraded to Access Road largely in the existing alignment).	Chapter 1 of Road Construction Plan

LIST OF ACRONYMS AND ABBREVIATIONS

AP	Acid Potential
ARD/ML	Acid Rock Drainage and Metal Leaching
BMC	BMC Minerals Ltd.
H	Horizontal
ha	Hectares
Kaska	Kaska First Nations
KZK	Kudz Ze Kayah
km	Kilometres
km/hr	Kilometres per hour
m	Metres
mm	Millimetres
m ³	Cubic metres
m ³ /s	Cubic metres per second
NP	Neutralization Potential
NP/AP	Neutralization Potential/Acid Potential
QML	Quartz Mining Licence
V	Vertical
wt.%	Weight percent

GLOSSARY

Acid Rock Drainage: Drainage with acidic pH from material having an insufficient capacity to neutralize acidic products of sulphide and elemental sulphur oxidation and dissolution products of acidic material.

Auxiliary Road: A road for light truck and light vehicle use to allow access to site facilities.

Bank Cubic Metre: (BCM) A measure of volume of one cubic metre for excavation and is the volume of the original rock in situ prior to blasting and excavation.

Closure Phase: Project phase that will last at minimum 3 years and occurs following Operations Phase once all mining and ore processing activities stop.

Construction Phase: Project phase that will last approximately 2 years and includes Project site preparation and clearing and establishment of Project infrastructure.

Mine Haul Road: A road designed for two-way haul truck traffic that connects the ABM open pit to the Process Plant and Waste Storage Facilities.

Kaska (i.e., Kaska First Nations): A transboundary Nation involving Kaska people from the Ross River Dena Council and Liard First Nation in southeastern Yukon, and Daylu Dena Council, Dease River First Nation, and Kwadacha Nation in northern British Columbia.

Metal Leaching: Extraction of soluble metals by solvents. Leaching can be natural or induced in a laboratory procedure.

Neutralization Potential: The total acid material is capable of neutralizing. Measurements of Neutralization Potential (NP) are used in acid base accounting calculations to estimate future drainage pH and the potential for acidic drainage pH.

Operations Phase: Project phase that will last approximately 10 years and includes ABM open pit and underground development, and ore processing.

Project Footprint: The area in which the Project Infrastructure will be located and is the area of direct disturbance from the Project activities.

Service Road: A road designed for two-way light truck and one way haul truck traffic to allow access to site facilities.

Tailings Haul Road: A road designed for two-way articulated truck traffic to transport tailings from the process plant to the Class A Waste Storage Facility.

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Appendix A: Table of Concordance

1 INTRODUCTION

BMC Minerals Ltd. (BMC) is the owner of the Kudz Ze Kayah (KZK) Project (the Project). Since acquiring the project in 2015, BMC has actively engaged in assessing historical work, optimizing design, resource drilling, economic assessment, baseline environmental studies, and First Nations and community engagement as well as the successful completion of the Executive Committee Screening by the Yukon Environmental and Social-Economic Assessment Board.

This Road Construction Plan describes the site preparation, design, material borrow sources, geochemical evaluation, geotechnical evaluation, and the sediment and erosion control measures for construction of roads for the Project.

The construction plan for the upgrade of the portion of the existing Tote Road to an Access Road from Robert Campbell Highway to the boundary of the Quartz Mining Licence (QML) under this application is not included in this Road Construction Plan, as it does not form part of the Quartz Mining Licence Application. That portion of the Access Road and associated Gatehouse will instead be permitted under a lease pursuant to the *Territorial Lands (Yukon) Act* (YG, 2014) and *Territorial Lands Regulations* (YG, 2003), the same as the same current Tote Road. The upgrade of the Tote Road to an Access Road within this Quartz Mining Licence application (km 18.88 to the camp) is included in this Road Construction Plan.

Construction of new roads will be minimized while maintaining the ability to effectively operate and manage the Project (for example, the Tote Road will be upgraded to an Access Road largely within the existing Tote Road alignment).

The Mine site general arrangement at the end of Operations, showing the full Project footprint, is shown in Figure 1-1.

1.1 PLAN REVIEW AND EXECUTION

BMC has had extensive engagement with Ross River Dena Council (RRDC) including community meetings in Ross River, Elders Oversight Committee Meetings, meetings with Chief and Council and engagement with RRDC's wholly owned environmental consultancy, Dena Cho Environmental and Remediation Inc. (Dena Cho). As part of this ongoing engagement, prior to this Plan being finalized Dean Cho conducted a detailed independent review of the draft plan. Issues raised during the Dena Cho review were addressed collaboratively through a number of workshops and where appropriate this plan was amended and additional commitments added.

BMC and Ross River Dena Council (in its role as lead community for the Kaska Nations, including Liard First Nation) are parties to an existing Socio-Economic Participation Agreement (SEPA) for the KZK Project. In 2019, BMC and RRDC (on behalf of all Kaska Nations) signed a Letter of Intent committing the parties to a modernization process for the existing SEPA. In March 2021, BMC tabled a proposed modernized SEPA with all Kaska leadership. The proposed SEPA includes provision for establishment of a Kaska/BMC Environmental Management Advisory Committee. Under the current

proposal before Kaska, this committee will be tasked with, among other things, reviewing and providing input into environmental management plans, receiving and reviewing reports on implementation of those plans, reviewing monitoring plans/results, reviewing incident reports, and reporting back to Kaska members.

2 SITE PREPARATION

In accordance with the Heritage Resource Protection Plan (BMC, 2026a), prior to the start of construction activities, Site Management and the Environmental Department will review previous heritage impact assessments to ensure construction activities do not have the potential to affect any known heritage resources. In the event of an unexpected discovery of either disturbed or intact archaeological materials, historic, paleontological, or human remains during development or other site activities, the Chance Find Procedure as detailed in the Heritage Resource Protection Plan shall be followed.

2.1 VEGETATION CLEARING AND GRUBBING

As detailed in the Wildlife Protection Plan (BMC, 2026b):

- Clearing of vegetation will be kept to a minimum and only include areas needed to safely construct and operate the Project;
- Clearing will be planned to minimize disturbance to bird nesting; and
- Nest surveys will be conducted as described below for any clearing during the nesting season (with involvement from Kaska First Nation representatives).

Land clearing will occur outside the migratory bird season (May 1 to August 15), as much as is practicable. If land clearing is to be conducted during this period, suitably qualified personnel will conduct a bird nest sweep that consists of a focused investigation of bird breeding behaviour and searching for nests. If active songbird, waterfowl and/or raptor nests are found in the areas to be cleared, they will be buffered as outlined in the Wildlife Protection Plan (BMC, 2026b). This is required for compliance with the *Migratory Birds Convention Act 1994* (Government of Canada, 1994), which prohibits the disturbance or destruction of migratory bird nests and eggs in Canada.

Following the implementation of the mitigation and management measures outlined above, any vegetation will be cleared along each respective road right-of-way using construction equipment.

In areas where the existing Tote Road traverses sections of undisturbed, shallow, ice-rich permafrost, the existing organic layer will be left intact. In permafrost where proposed fill slopes extend beyond either side of the existing road prism the portion of fill beyond the existing road edge will be constructed by filling over a geotextile separation layer. Care will be taken to minimize the amount of vegetative cover to be cleared, limiting the amount of soil exposed to reduce permafrost degradation and thaw along roadways. This will also reduce the potential for soil erosion and sediment deposition in riparian and wetland ecosystems.

2.2 FOUNDATION PREPARATION

Topsoil will be stripped and stored in strategically placed reclamation stockpiles throughout the Project site for reuse in reclamation. It is estimated approximately 120,000 m³ of topsoil will be

removed from approximately 41 hectares (ha) for the construction of the roadways. The planned locations of the stockpiles are shown in Figure 1-1.

Overburden along the planned road alignments is estimated to vary from 0.5 m to 10 m in thickness, with the presence of some ice lenses throughout, as described in the Site Characterization Plan (BMC, 2026c). It is anticipated that the majority of excavated overburden will be suitable fill material for road construction. Material deemed unsuitable for roadway construction will be removed and transported to the Overburden Stockpile for storage.

Care will be taken to segregate any frozen material removed during foundation preparation. These materials are unsuitable for immediate re-use but may be suitable for use in future reclamation works following thawing and draining of excess water. Frozen material will be transported to the Frozen Material Storage Area (within the footprint of the Overburden Stockpile) for management until thawed and drained. Management of frozen material and the Frozen Material Storage Area is described in greater detail in the Mine Development and Operations Plan (BMC, 2026d).

3 ROAD DESIGN AND SPECIFICATIONS

3.1 SITE ROADS

Five classifications of site roads will be constructed as part of the development and operation of the Project:

- Mine Haul Roads;
- Mine Service Roads;
- Auxiliary Roads;
- Tailings Haul Roads; and
- Temporary Construction Roads.

The locations of the various types of site roads are shown in Figure 3-1.

Road designs were completed to support the KZK Project Waste and Water Management Facilities Feasibility Design (KP, 2019). The currently planned location and extent of site roads for the Construction phase and for the Mine footprint at the end of Operations are shown in Figure 3-2 and Figure 3-3, respectively but may vary depending on final designs and site conditions encountered.

Mine Haul Roads will be used to haul ore and waste material from the ABM open pit to the Process Plant and the Class A, Class B, Class C, and Overburden Storage Facilities, and are designed to accommodate two way traffic of 140 tonne class off highway trucks (CAT785 or equivalent). The Mine Haul Roads include:

- Pit crest to ROM Pad: located to the west of Geona Creek between the ABM open pit and the Process Plant;
- Pit crest to Class A and Class B Haul Roads: located to the west of Geona Creek between the ABM open pit and Class A and Class B Storage Facilities; and
- Pit crest to Class C and Overburden Haul Roads: located east of Geona Creek between the ABM open pit and the Class C Storage Facility and Overburden Stockpile.

Mine Service Roads are smaller than Mine Haul Roads and are required to facilitate construction and to provide operational access to the Project facilities. Mine Service Roads include:

- Process Plant Access Road: constructed to provide access from the camp to the Process Plant;
- Geona Valley Road: constructed to provide access between the Process Plant Access Road, Lower and Upper Water Management Ponds, Mining Workshop, and ABM open pit;
 - Lower Water Management Pond Road: constructed to provide access around the perimeter of the Lower Water Management Pond;
- Upper Water Management Pond Road: constructed to provide access around the perimeter of the Upper Water Management Pond; and

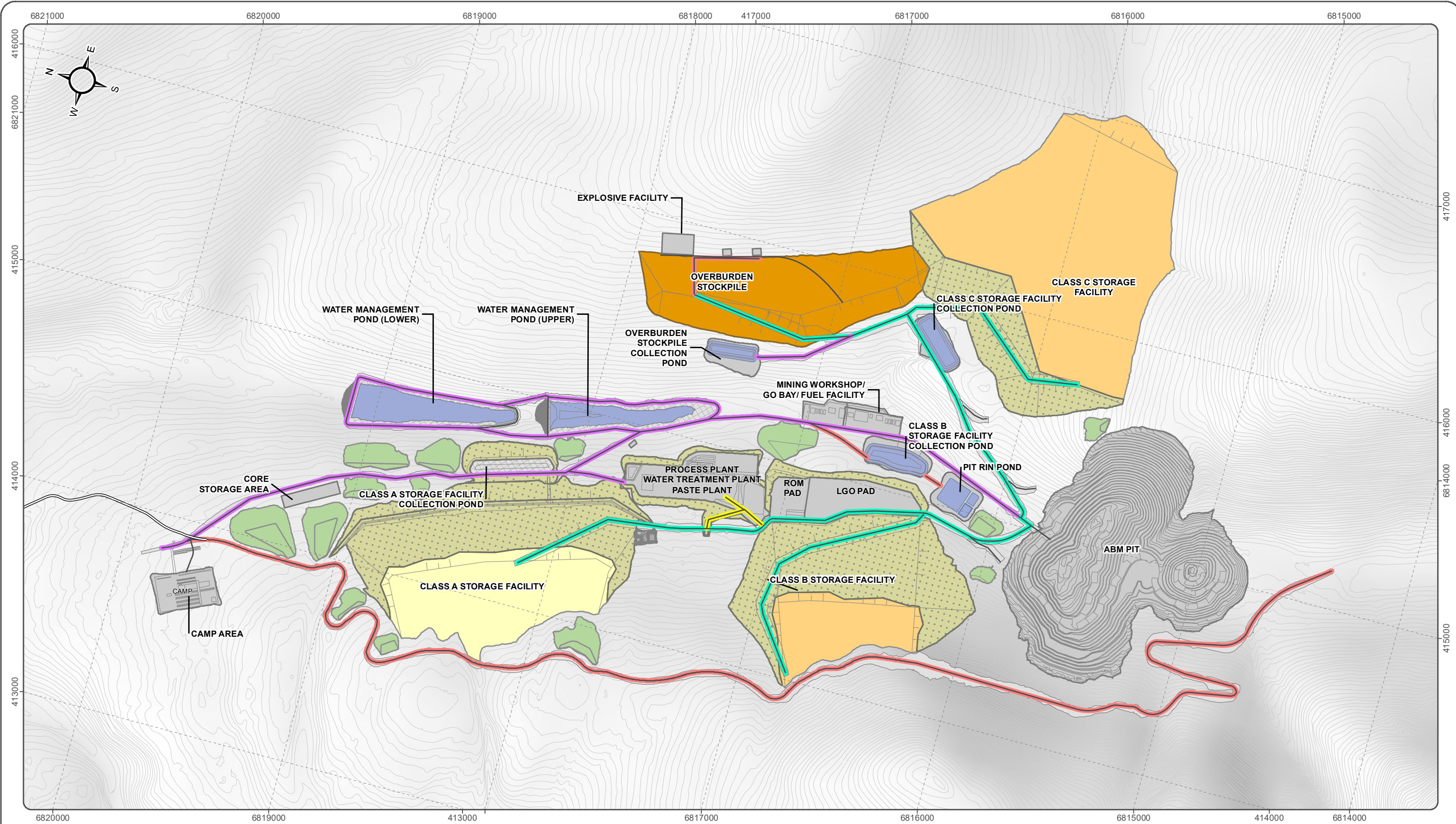
- Overburden Collection Pond Road: constructed for access to the Overburden Collection Pond.

Auxiliary Roads are for light truck and light vehicle use, and may be single lane or two way, depending on requirements of the specific road. Auxiliary Roads include:

- Upgraded Tote Road: the existing Tote Road will be upgraded (widened and with diversion ditches included) to provide improved access from the camp to the ABM open pit area during Construction and early Operations;
- Upper Diversion Road: constructed along the alignment of the upper diversion ditch used for water management; and
- Explosives Facilities Access Road.

The Tailings Haul Road allows for the transportation of filtered tailings from the Process Plant to the Class A Haul Road and allows for two way traffic of 45 tonne class articulated trucks (CAT745 or equivalent).

Temporary Construction Roads will be required to support construction activities and are not intended for sustained use throughout the life of the Project. The Temporary Construction Roads will be within the Project footprint and will only require vegetation clearing and grubbing to such an extent as to provide safe passage during the construction phase. These also include existing trails used at site, which will be upgraded by widening if required.



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- Class A Storage Facility
- Class B and C Storage Facility
- Overburden Stockpile
- Topsoil Stockpile
- Progressive Reclamation
- Liner

- Tote Road/Proposed Access Road
- Proposed Road

- Mine Service Road
- Mine Haul Road
- Auxilliary Road
- Tailings Haul Road



KUDZ ZE KAYAH PROJECT

FIGURE 3-1 SITE ROAD CLASSIFICATION

FEBRUARY 2024

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XREF FILE(S): V:\ORD-CONT-30m C-FAC-ALL C-ROAD-Y-F-I-V-TRAIL-Y-HYDRO-MILLITE-CPOND-ALL C-SITE-AREA-OPH-STIA-HYD-TRST-ORTH 2018 K2K IMAGE FILE(S): ORTHO 2018 K2K

- LEGEND:**
- STREAM/DRAINAGE/WATERBODY
 - PROPOSED ROAD
 - - - - - HISTORIC / EXISTING ROAD OR TRAIL
 - — — — — FOOTPRINT OF MINE FACILITIES

- NOTES:**
- COORDINATE GRID IS UTM NAD 83 9N.
 - TOPOGRAPHIC DETAIL PROVIDED OCTOBER, 2017.
 - CONTOUR INTERVAL IS 5 METRES.
 - ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
 - THIS DRAWING REPRESENTS THE FEATURE/STRUCTURE TO DESIGN-LEVEL ACCURACY, AND IS SUBJECT TO MODIFICATIONS DURING CONSTRUCTION IN ACCORDANCE WITH EITHER A) INFORMATION GAINED FROM GEOTECHNICAL INVESTIGATIONS, OR B) AS A RESULT OF MODIFICATIONS MADE TO OTHER STRUCTURES/FEATURES THAT ARE CONNECTED.

PLAN
SCALE A

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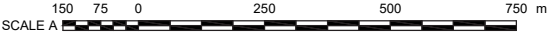
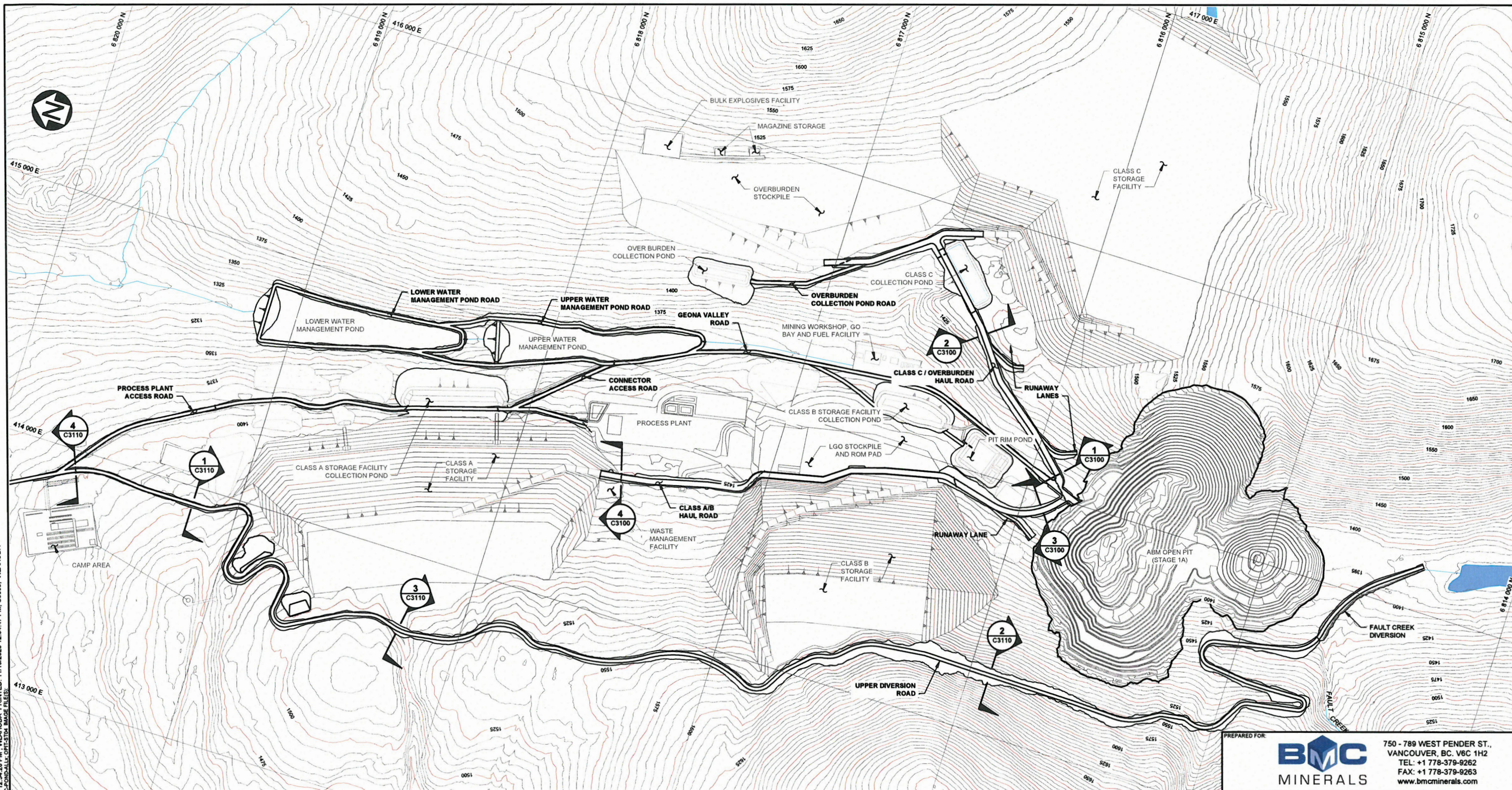


Figure Previously Issued as KP Drawing

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FIGURE 3-2 SITE ROADS CONSTRUCTION PHASE		
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VA101-640/11	C3000	A

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C3240	SERVICE ROADS - PROFILES - SHEET 2 OF 2
C3220	UPPER DIVERSION ROAD - PROFILE - SHEET 2 OF 2
C3210	UPPER DIVERSION ROAD - PROFILE - SHEET 1 OF 2
C3110	SERVICE ROADS - TYPICAL SECTIONS
C3100	HAUL ROADS - TYPICAL SECTIONS

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LEGEND:
— STREAM/DRAINAGE/WATERBODY
— PROPOSED ROAD

- NOTES:**
- COORDINATE GRID IS UTM NAD 83 9N.
 - TOPOGRAPHIC DETAIL PROVIDED OCTOBER, 2017.
 - CONTOUR INTERVAL IS 5 METRES.
 - ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
 - OPEN PIT OUTLINE PROVIDED BY BMC APRIL 26 2019.
 - THIS DRAWING REPRESENTS THE FEATURE/STRUCTURE TO DESIGN-LEVEL ACCURACY, AND IS SUBJECT TO MODIFICATIONS DURING CONSTRUCTION IN ACCORDANCE WITH EITHER A) INFORMATION GAINED FROM GEOTECHNICAL INVESTIGATIONS, OR B) AS A RESULT OF MODIFICATIONS MADE TO OTHER STRUCTURES/FEATURES THAT ARE CONNECTED.

PLAN
SCALE A

150 75 0 250 500 750 m
SCALE A

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**FIGURE 3-3
SITE ROADS
END OF OPERATIONS PHASE**

VA101-640/11

C3005

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3.1.1 Design Basis

The network of roads constructed throughout the Project site has been designed to allow haul trucks to transport material from the ABM open pit to the appropriate storage facility and for operational access to the various facilities throughout the Project. The preliminary designs are based on the estimated truck sizes and will be modified according to the final truck sizes once operational fleet selection is completed prior to Construction and Operations.

Design criteria for site roads are detailed in Table 3-1.

Table 3-1: Site Road Design Criteria

Design Element	Unit	Road Design Element				
		Mine Haul Road	Mine Service Road	Auxiliary Road	Tailings Haul Road	Temporary Construction Road
Design Speed	km/h	50	50	50	50	50
Maximum Grade	%	10%	10%	15%	15%	15%
Stopping Sight Distance	m	100	100	65	75	75
Minimum Inside Radius	m	50	50	50	45	45
Road Superelevation	%	4%	4%	4%	4%	4%
Design Vehicles	-	140 tonne class truck, 2 way	140 tonne class truck, 1 way; Light truck, 2 way	Light Truck	45 tonne class articulated truck, 2 way	45 tonne class articulated truck, 2 way
Travelling Road Width	m	26.5	15.1	6.0 (1 way) 10.5 (2 way)	13.4	13.4
Berm Height	m	2.45	2.45	0.8	1.6	1.6
Road Cross-fall	%	2%	2%	2%	2%	2%
Fill Slope	H:V	2H:1V				
Cut Slope	H:V	0.5H:1V (Bedrock) 2H:1V (Overburden)				

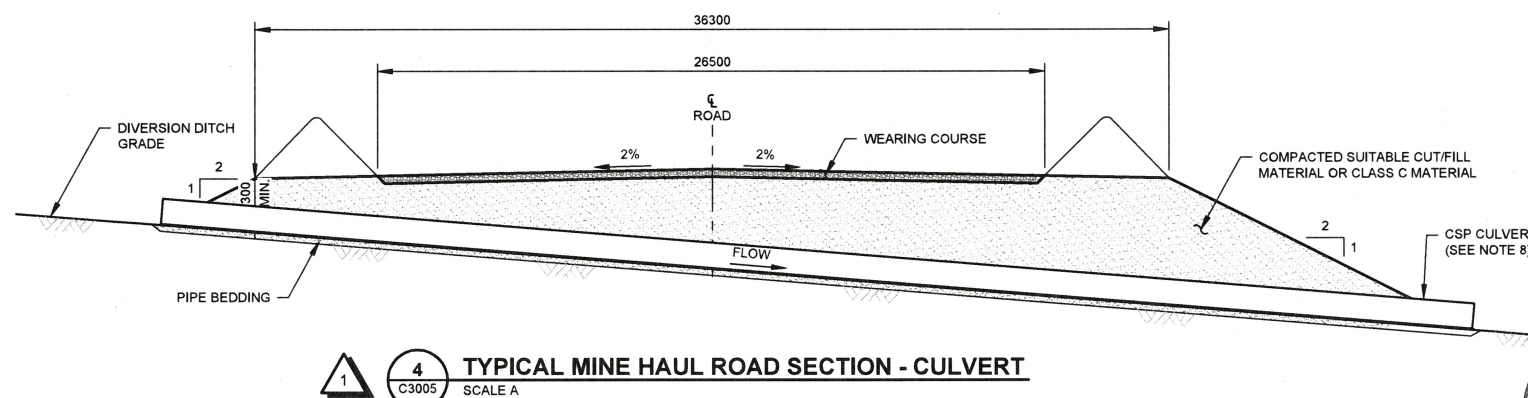
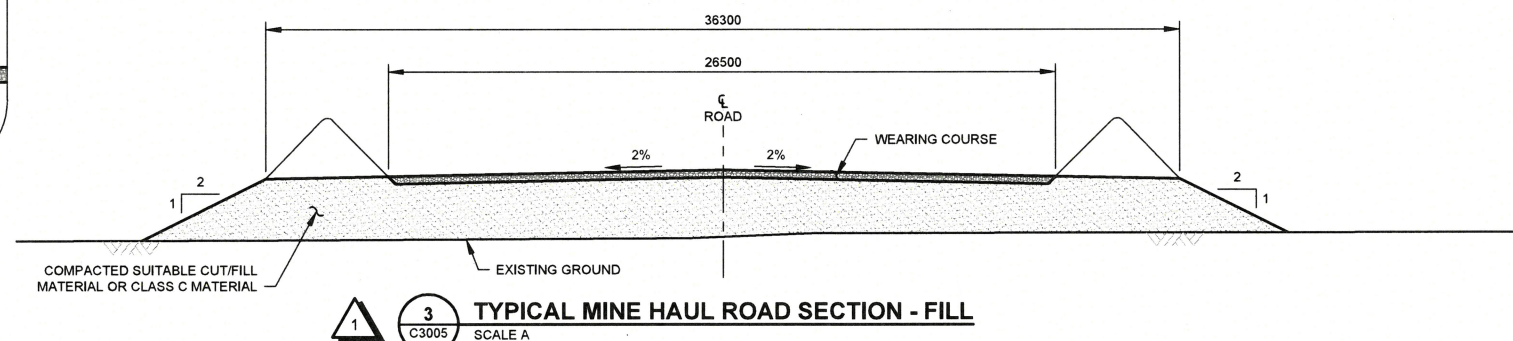
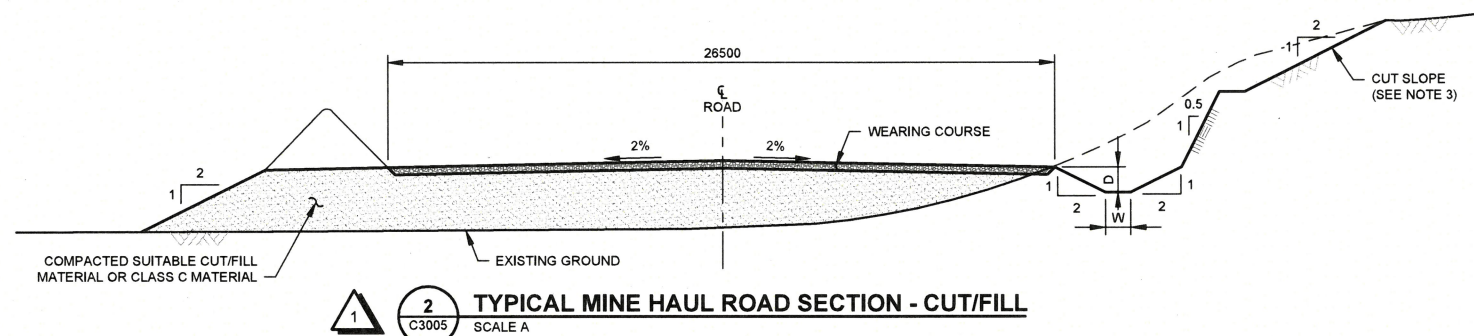
Runaway lanes have been included for Mine Haul Roads for sections of extended descents, as shown in Figure 3-3.

The following design standards have been used in preparing road designs:

- *Workplace Health and Safety Regulations* (Yukon Government, 2022);
- *Guidelines for Mine Haul Road Design* (Tannant and Regensburg, 2001);
- *Haul Road Inspection Handbook* (MSHA, 1999);

- BC Supplement to TAC Geometric Design Guide (BC MoTI, 2019); and
- A Policy on Geometric Design of Highways and Streets (AASHTO, 2018).

Cross-sections and profiles for the site roads are provided in Figure 3-4 to Figure 3-12. As noted in Figure 3-4 to Figure 3-7, road cut and fill slopes will be dependent on the subgrade materials. Rock will allow for a steeper cut / fill grade (1H:2V) compared to overburden (2H:1V). The slopes will be confirmed during road construction and adjusted based on slope heights and material conditions. Maximum slope length and bench intervals will also be confirmed during road construction and account for the site geotechnical conditions encountered during construction.



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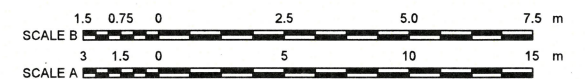
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0	13NOV'20	ISSUED FOR INFORMATION	MAP	NSD/SC	LJG	LJG
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2. UNLESS DIRECTED OTHERWISE BY A GEOTECHNICAL ENGINEER, CUT SLOPES SHALL BE 0.5H:1V IN BEDROCK AND 2H:1V IN OVERBURDEN.
3. CUT SLOPE AND BENCHING PARAMETERS TO BE CONFIRMED IN THE FIELD BASED ON LOCAL CONDITIONS AND CUT HEIGHT BY FIELD REPRESENTATIVE.
4. FILL SLOPES SHOWN AT 2H:1V, ACTUAL SLOPES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER BASED ON SITE CONDITIONS.
5. BERM HEIGHT ASSUMES LARGEST TIRE OPTION FOR DESIGN VEHICLE (36.00R51 TIRE). BERM HEIGHT TO BE AT LEAST $\frac{1}{4}$ TIRE HEIGHT.
6. BREAKS WITHIN THE SHOULDER BERM TO BE INCORPORATED TO ALLOW DRAINAGE AND SNOW CLEARANCE.
7. SHOULDER BERM TO BE LOCATED AND MAINTAINED ALONG THE EDGE OF THE ROAD WHEREVER A DROP-OFF GREATER THAN 3 METRES EXISTS, AS PER THE YUKON OCCUPATIONAL HEALTH AND SAFETY ACT, PART 15 - SURFACE AND UNDERGROUND MINES OR PROJECTS.
8. SIZE AND LOCATION OF CSP CULVERTS TO BE SPECIFIED.
9. COLLECTION DITCH WIDTH AND DEPTH WILL VARY BASED ON LOCATION.

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**FIGURE 3-4
HAUL ROADS
TYPICAL SECTIONS**

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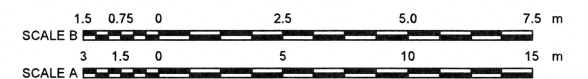
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 3. CUT SLOPE AND BENCHING PARAMETERS TO BE CONFIRMED IN THE FIELD BASED ON LOCAL CONDITIONS AND CUT HEIGHT BY FIELD REPRESENTATIVE.
 4. FILL SLOPES SHOWN AT 2H:1V, ACTUAL SLOPES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER BASED ON SITE CONDITIONS.
 5. BERM HEIGHT ASSUMES LARGEST TIRE OPTION FOR DESIGN VEHICLE (38.00R51 TIRE). BERM HEIGHT TO BE AT LEAST $\frac{1}{2}$ TIRE HEIGHT.
 6. BREAKS WITHIN THE SHOULDER BERM TO BE INCORPORATED TO ALLOW DRAINAGE AND SNOW CLEARANCE.
 7. SHOULDER BERM TO BE LOCATED AND MAINTAINED ALONG THE EDGE OF THE ROAD WHEREVER A DROP-OFF GREATER THAN 3 METRES EXISTS, AS PER THE YUKON OCCUPATIONAL HEALTH AND SAFETY ACT, PART 15 - SURFACE AND UNDERGROUND MINES OR PROJECTS.
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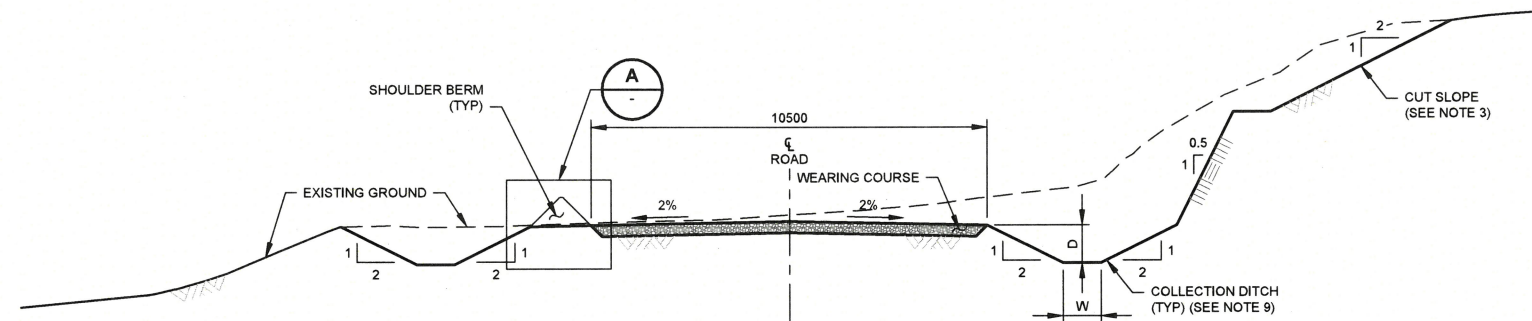
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FIGURE 3-5 SERVICE ROADS TYPICAL SECTIONS	
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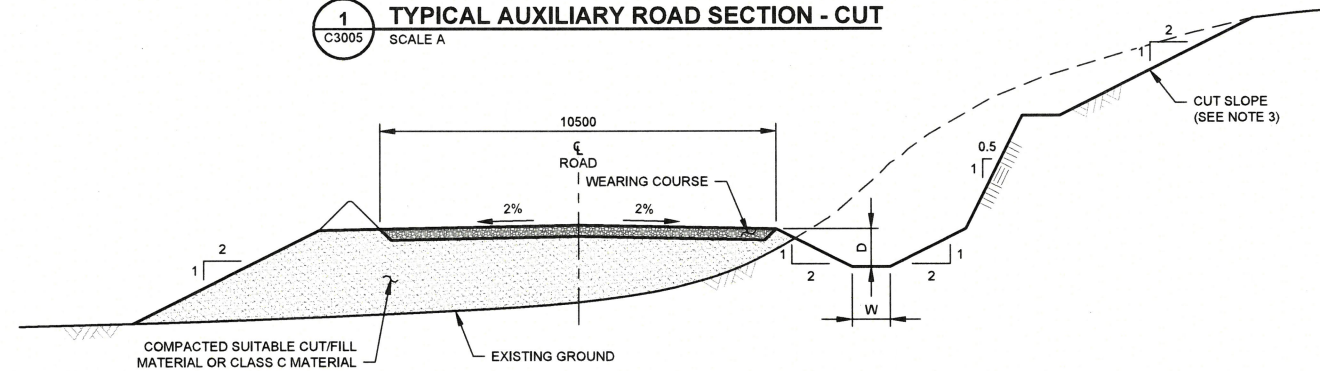
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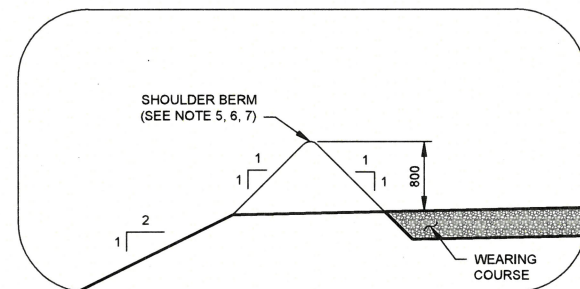
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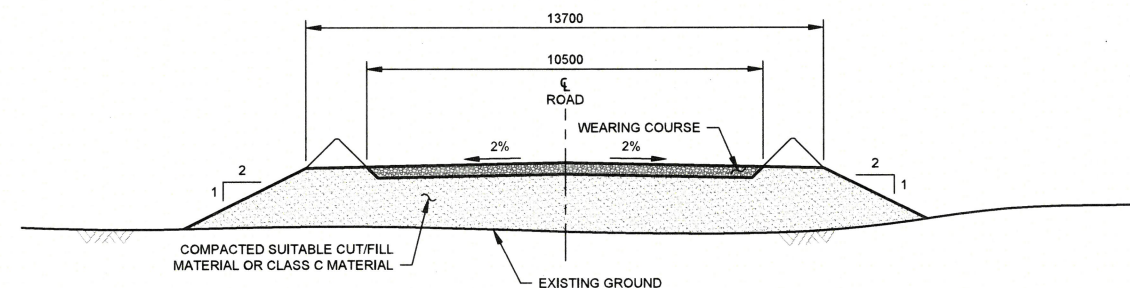
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C3005 SCALE A



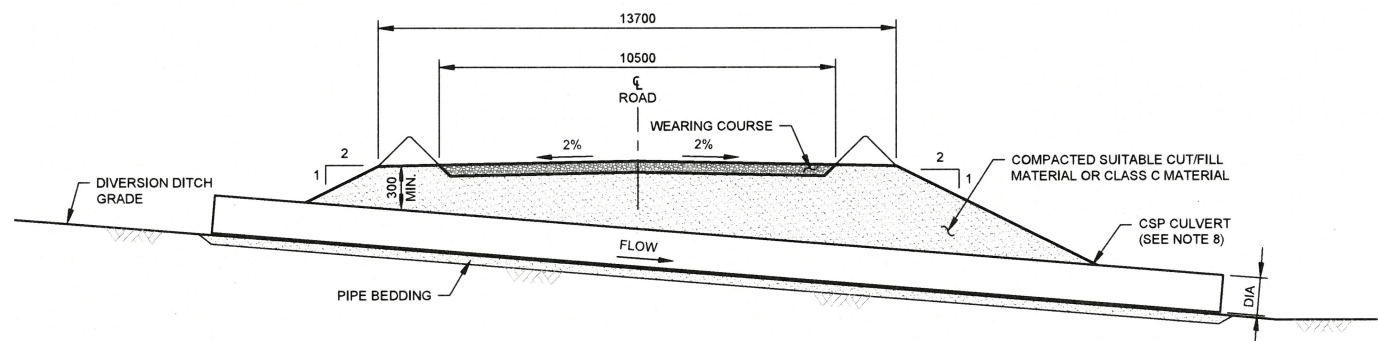
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C3005 SCALE A



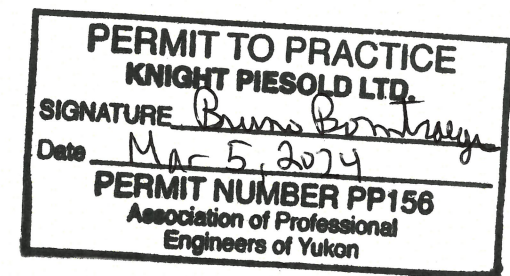
A TYPICAL DETAIL
SHOULDER BERM
SCALE B



3 TYPICAL AUXILIARY ROAD SECTION - FILL
C3005 SCALE A



4 TYPICAL AUXILIARY ROAD SECTION - CULVERT
C3005 SCALE A



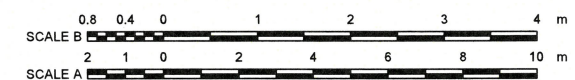
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- FILL SLOPES SHOWN AT 2H:1V, ACTUAL SLOPES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER BASED ON SITE CONDITIONS.
- BERM HEIGHT ASSUMES 1.01 m TIRE OPTION FOR LIGHT VEHICLE. CREST HEIGHT TO BE CONFIRMED BASED ON LARGEST TIRE OF EQUIPMENT OPERATION ON ROAD. BERM HEIGHT TO BE AT LEAST 1/4 TIRE HEIGHT.
- BREAKS WITHIN THE SHOULDER BERM TO BE INCORPORATED TO ALLOW DRAINAGE AND SNOW CLEARANCE.
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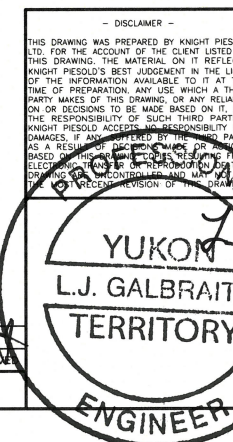
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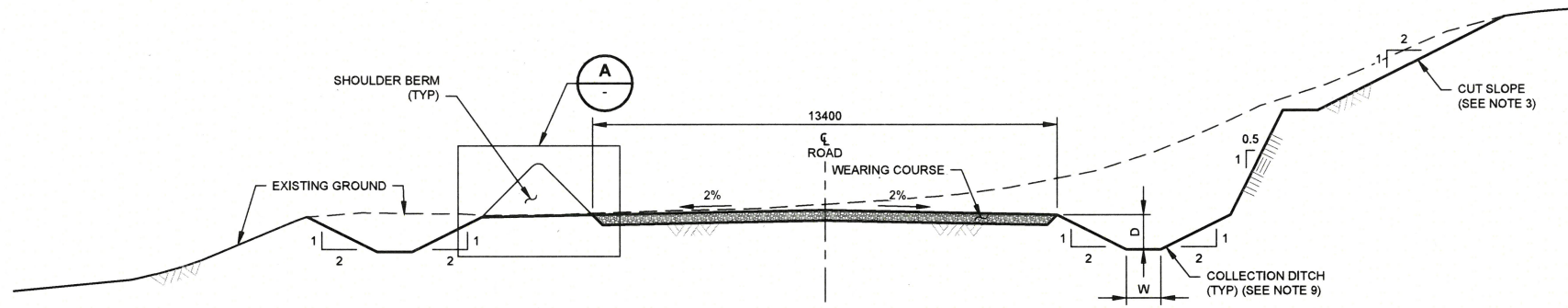
**FIGURE 3-6
AUXILIARY ROADS
TYPICAL SECTIONS**

VA101-640/11
C3120
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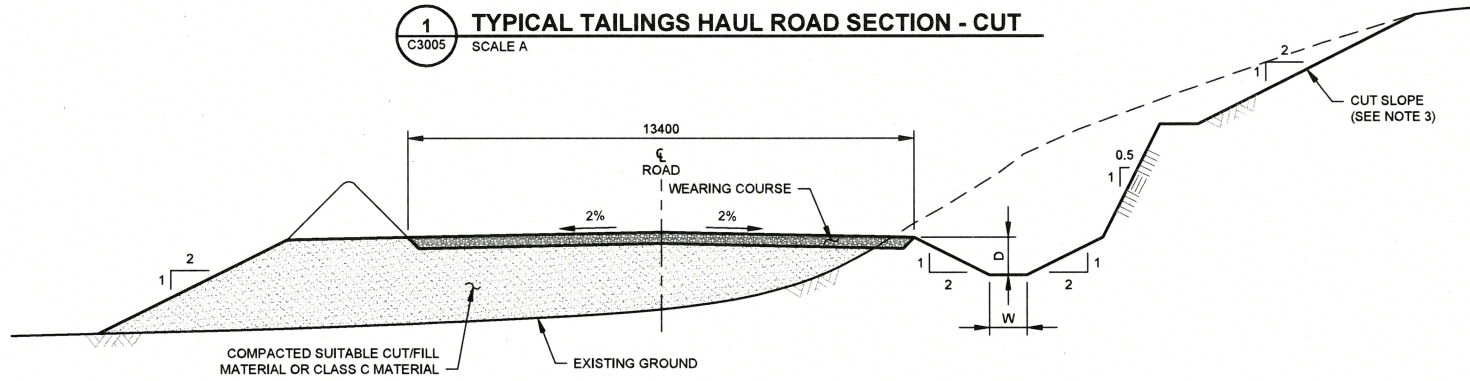


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												C3120		

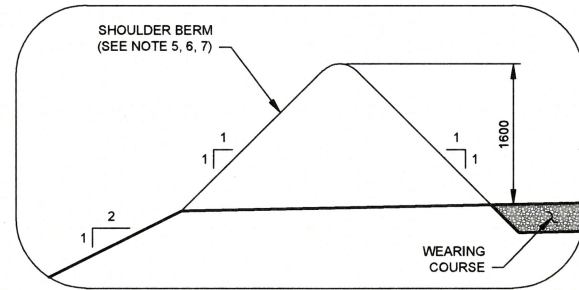
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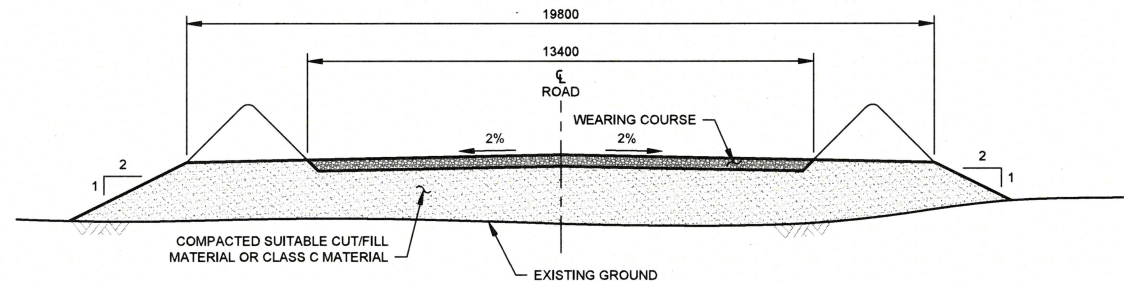
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C3005 SCALE A



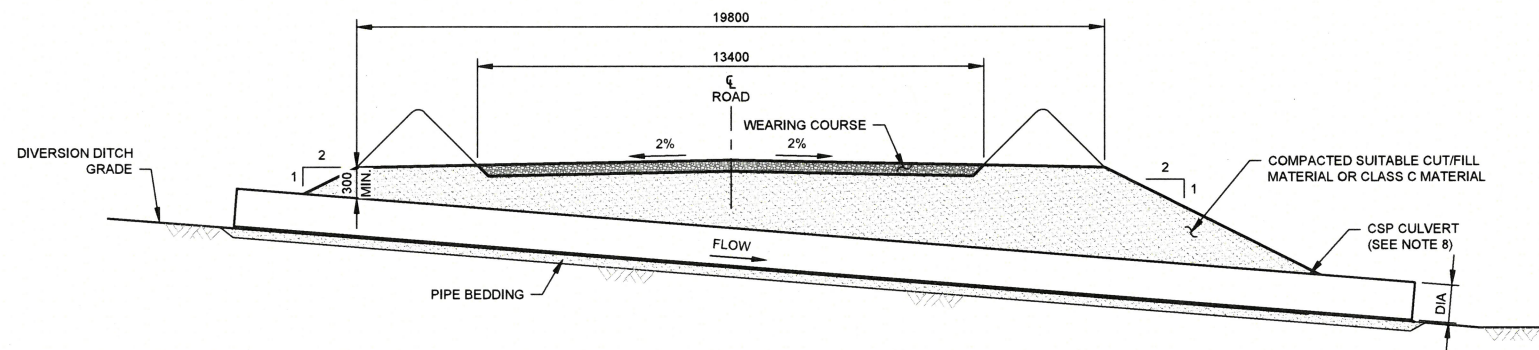
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C3005 SCALE A



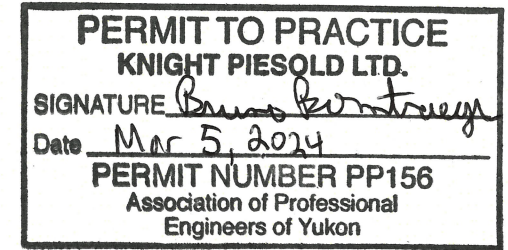
A TYPICAL DETAIL
SHOULDER BERM
SCALE B



3 TYPICAL TAILINGS HAUL ROAD SECTION - FILL
C3005 SCALE A



4 TYPICAL TAILINGS HAUL ROAD SECTION - CULVERT
C3005 SCALE A



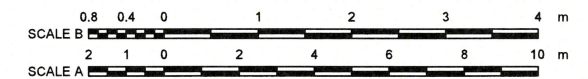
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- FILL SLOPES SHOWN AT 2H:1V, ACTUAL SLOPES TO BE CONFIRMED BY GEOTECHNICAL ENGINEER BASED ON SITE CONDITIONS.
- BERM HEIGHT ASSUMES 29.5R25 TIRE OPTION FOR CAT 745. BERM HEIGHT TO BE AT LEAST $\frac{1}{4}$ TIRE HEIGHT.
- BREAKS WITHIN THE SHOULDER BERM TO BE INCORPORATED TO ALLOW DRAINAGE AND SNOW CLEARANCE.
- SHOULDER BERM TO BE LOCATED AND MAINTAINED ALONG THE EDGE OF THE ROAD WHEREVER A DROP-OFF GREATER THAN 3 METRES EXISTS, AS PER THE YUKON OCCUPATIONAL HEALTH AND SAFETY ACT, PART 15 - SURFACE AND UNDERGROUND MINES OR PROJECTS.
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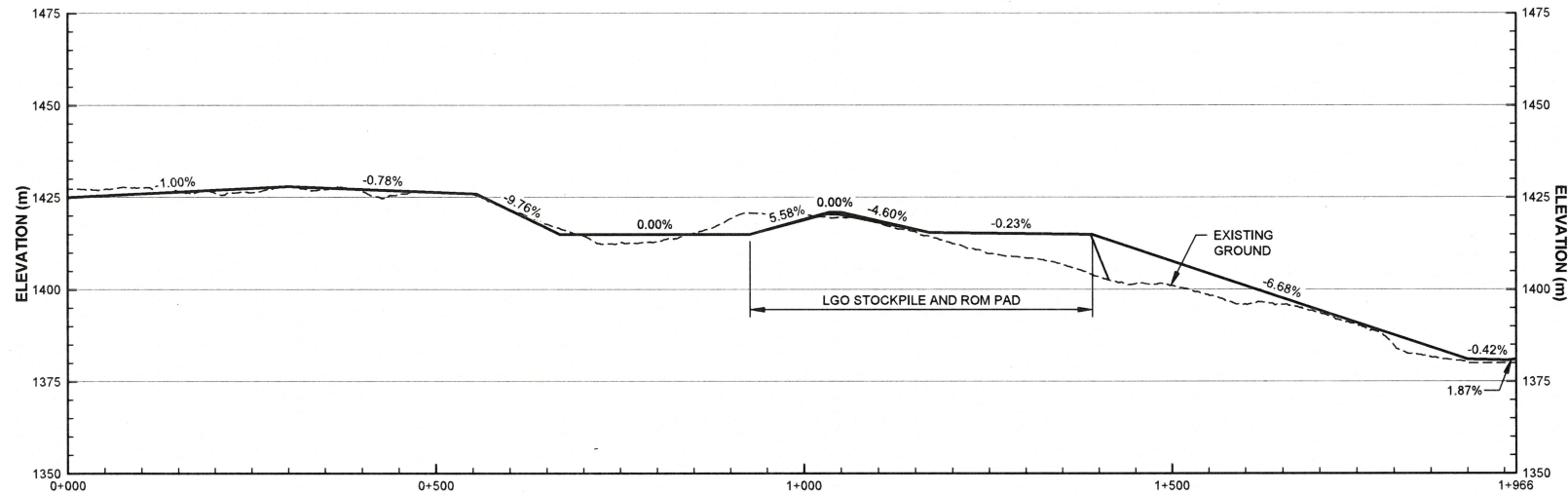
**FIGURE 3-7
TAILINGS HAUL ROADS
TYPICAL SECTIONS**

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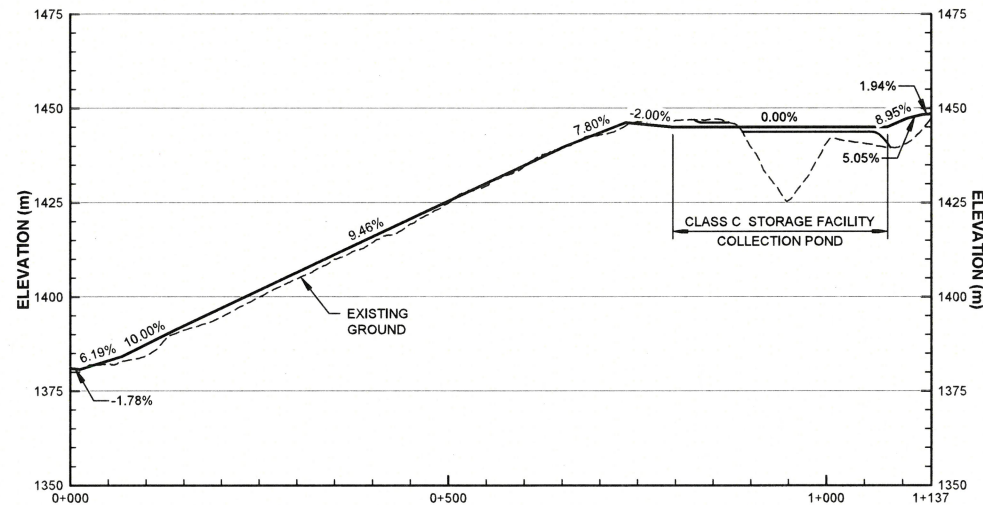


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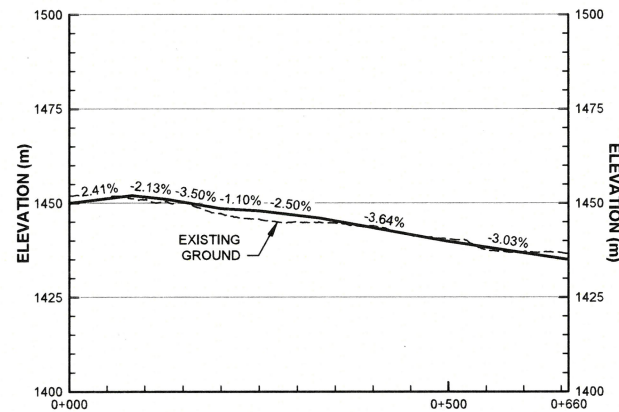
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PROFILE
CLASS A/B HAUL ROAD
HORIZ. SCALE A
VERT. SCALE B



PROFILE
CLASS C HAUL ROAD
HORIZ. SCALE A
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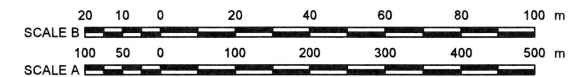
PROFILE
OVERBURDEN HAUL ROAD
HORIZ. SCALE A
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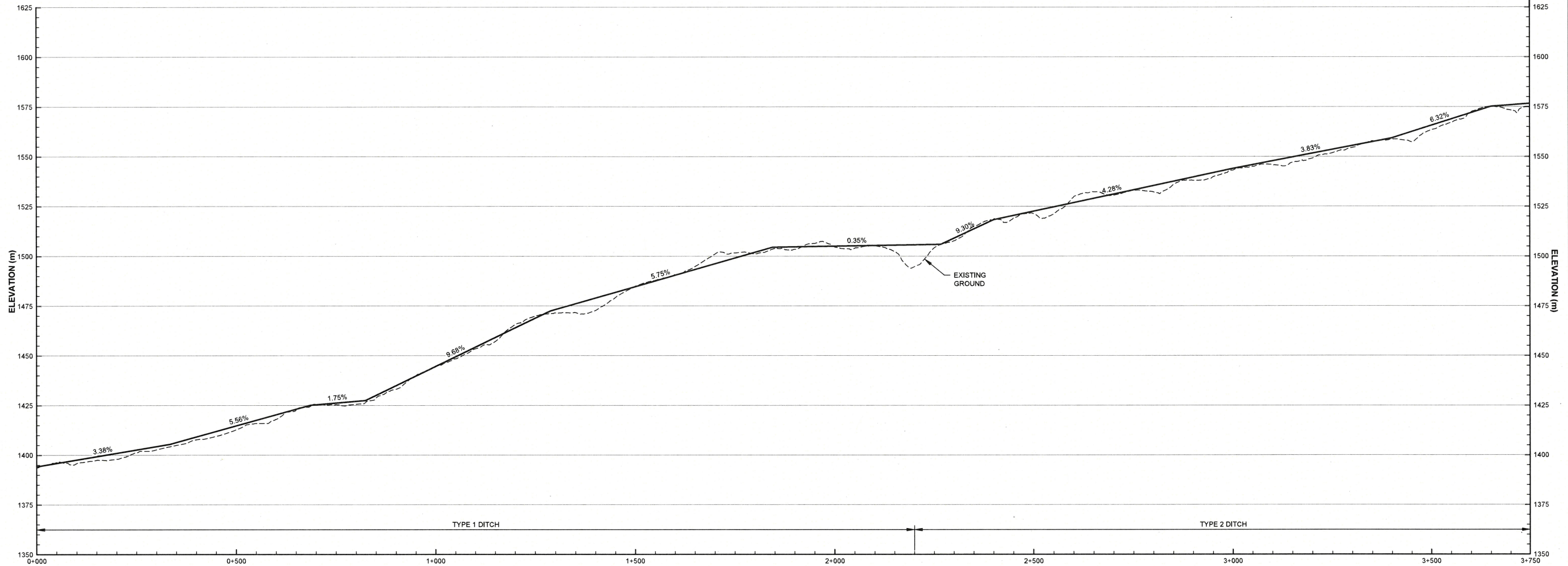
**FIGURE 3-8
HAUL ROADS
PROFILES**

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VA101-640/11 **C3200** 1

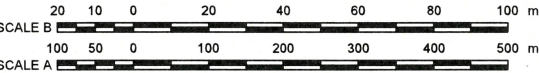
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PROFILE
UPPER DIVERSION ROAD
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FIGURE 3-9
UPPER DIVERSION ROAD
PROFILE
SHEET 1 OF 2

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Mach 9/24
ENGINEER

1

VA101-640/11

C3210

REVISION
1



HORIZ. SCALE A
VERT. SCALE B

Figure 1 shows two scale bars. The top scale bar, labeled 'SCALE B', has markings at 0, 20, 40, 60, 80, and 100 m. The bottom scale bar, labeled 'SCALE A', has markings at 0, 100, 200, 300, 400, and 500 m.

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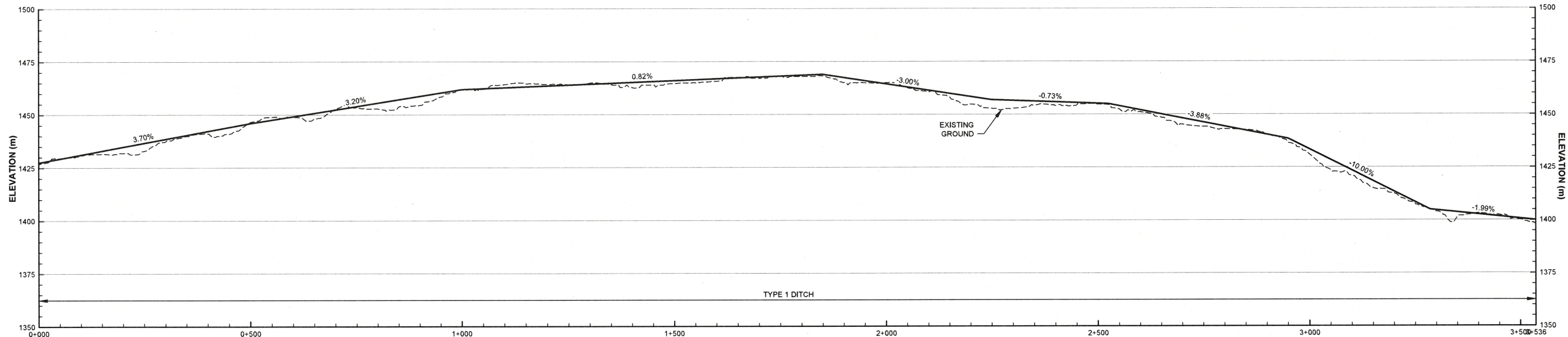
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**FIGURE 3-10
UPPER DIVERSION ROAD
PROFILE
SHEET 2 OF 2**

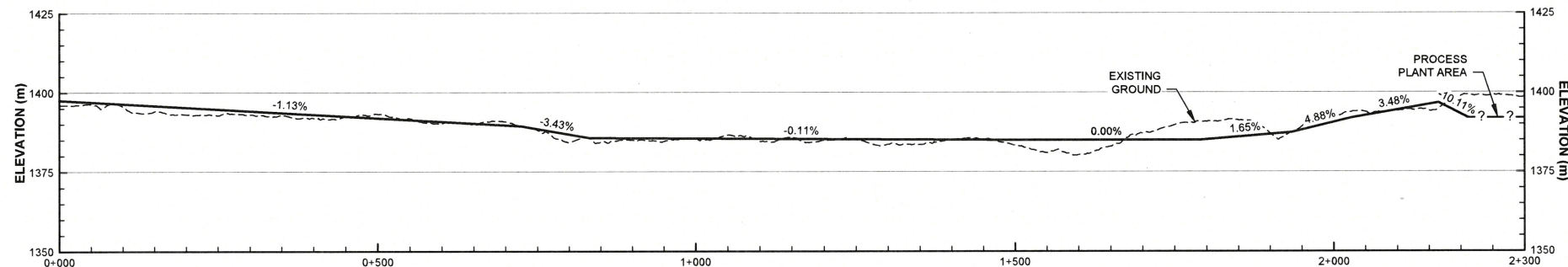
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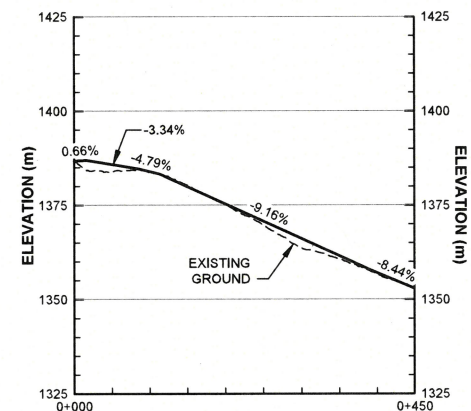
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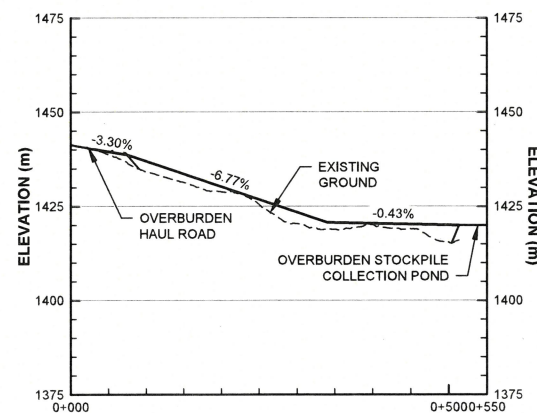
PROFILE
UPGRADED TOTE ROAD (CONSTRUCTION PHASE)
HORIZ. SCALE A
VERT. SCALE B



PROFILE
PROCESS PLANT ACCESS ROAD
HORIZ. SCALE A
VERT. SCALE B



PROFILE
CONNECTOR ACCESS ROAD
HORIZ. SCALE A
VERT. SCALE B



PROFILE
OVERBURDEN COLLECTION POND ROAD
HORIZ. SCALE A
VERT. SCALE B

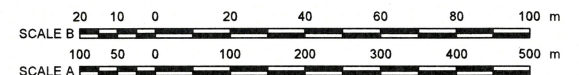
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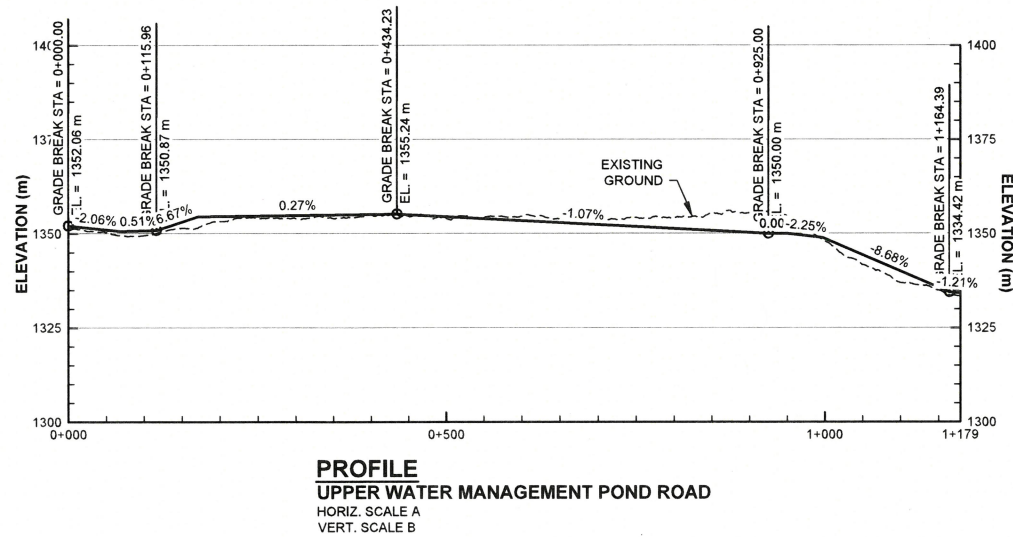
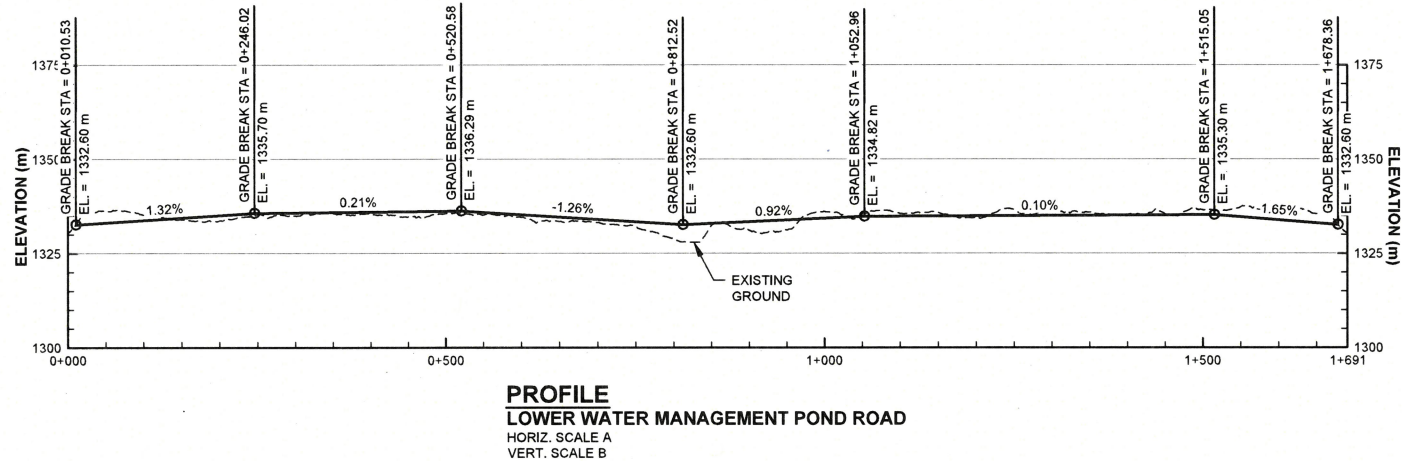
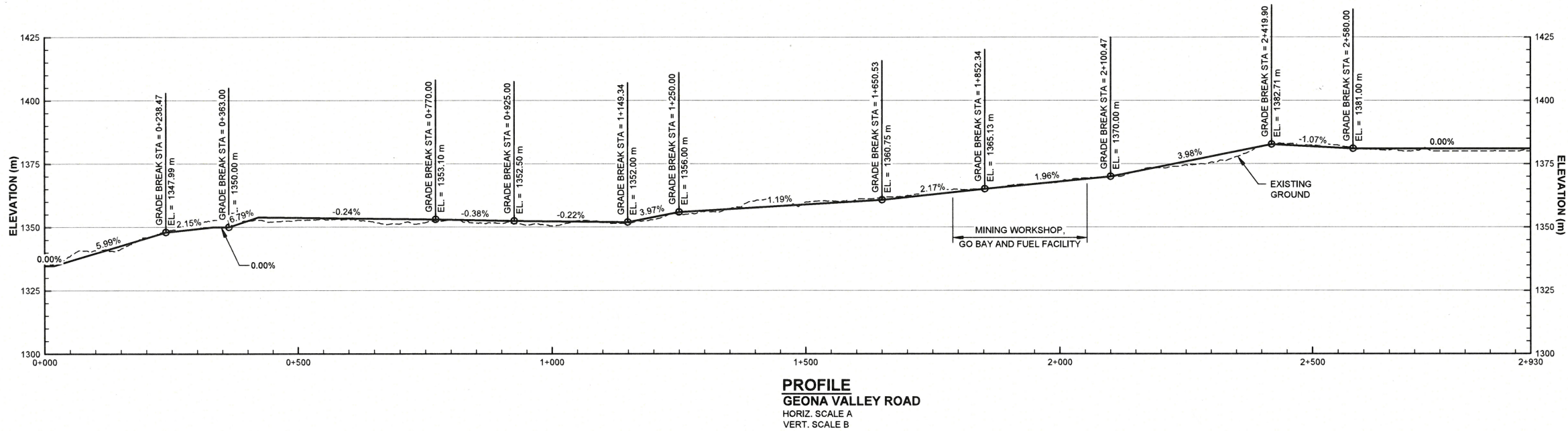
FIGURE 3-11
SITE ROADS
PROFILES
SHEET 1 OF 2

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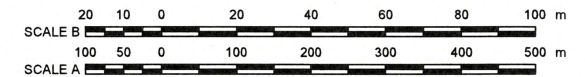


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FIGURE 3-12
SITE ROADS
PROFILES
SHEET 2 OF 2

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C3005	SITE ROADS - END OF OPERATIONS PHASE
C3000	SITE ROADS - CONSTRUCTION PHASE
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YUKON TERRITORY
L.J. GALBRAITH
March 7/24
ENGINEER

3.1.2 Construction

3.1.2.1 Bulk Earthworks

Road construction will utilize a combination of construction methods.

Mine Service Roads and Auxiliary Roads have been designed to utilize cut-to-fill construction methods to the extent possible. It is anticipated that the majority of the excavated material will be suitable for reuse as fill. Supplemental road fill required for the construction of roads will be sourced from borrow pits (Chapter 4), the ABM open pit pre-production development and/or Process Plant earthworks.

Mine Haul Roads have been designed to be primarily constructed as fill using material from the pre-production development of the ABM open pit. The stages of development are described in more detail in the Mine Development and Operations Management Plan (BMC, 2026d).

The Tailings Haul Road will be developed as part of the development of the Process Plant earthworks, and is planned to be largely developed with cut construction. Excavated material is expected to be suitable for use as fill to complete road construction, with surplus material placed as fill in the Process Plant pad (if suitable for fill) or placed in the Overburden Stockpile for storage until required for reclamation.

Select rockfill material from pre-production development of the open pit and / or Process Plant earthworks that is used for general fill for road construction purposes will be screened as required to meet material gradation requirements. General fill material will be hauled, placed, spread and dozer compacted to meet material specifications. Material specifications will be reviewed and updated during detailed design as required.

3.1.2.2 Road Surfacing Material

Well-graded, hard, durable, angular screened and crushed sand and gravel or rock will be used as road surfacing material. This material will be processed on site from local sand and gravel deposits and / or pre-production development of the open pit using a mobile crushing and screening plant. Sand and gravel deposits in the planned mine facilities will be utilized to the extent possible to minimize overall disturbance.

3.1.3 Schedule and Quantities

All Site Roads except for the Upper Diversion Road and the Upper Water Management Pond Road will be constructed prior to Operations. The Upper Diversion Road and Upper Water Management Pond Road will be constructed during Operations as site infrastructure expands and these roads are required.

The total length of the planned site roads for the construction period is approximately 17.8 km. The Upper Diversion Road and Upper Water Management Pond Road are planned to be an additional 8.1 km. A complete list of estimated construction quantities for the site roads is summarized below in

Table 3-2. Total cut volume for site road construction is estimated to be 1,005,400 m³ (bank volume) and fill volume is estimated to be 1,550,500 m³ (compacted volume). Taking a bulking factor of 30% into account for rock used for construction purposes, together with a volume reduction of 5% when compacted in the road bed, a bank volume of 1,252,300 m³ is required to meet road construction fill requirements, indicating that 246,900 m³ will be sourced from borrow pits for construction purposes.

Culverts will be utilized underneath the roads to route site water to the proper storage locations. Culverts have been sized to allow the safe passage of the inflow ditches 1-in-200 year 24-hr storm event. The planned location, capacity, diameter, length, and number of culverts required for road construction are summarized in Table 3-3.

Table 3-2: Estimated Road Material Quantities

Road Description	Road Surface Width (m)	Length (m)	Stripping Volume (m ³) ¹	Cut Volume (m ³) ¹	Fill Volume (m ³) ²	Wearing Coarse Volume (m ³) ²
Class A/B Haul Road	26.5	2,100	16,700	43,400	162,200	16,900
Class C Haul Road	26.5	1,200	9,600	42,800	182,800	9,700
Overburden Haul Road	26.5	700	5,600	27,400	203,600	5,700
Plant Site Access Road	15.1	2,400	10,900	33,000	39,100	11,100
Upgraded Tote Road (Km 19.7 to 24)	10.5	4,360	13,800	44,000	141,100	14,200
Connector Access Road (between Plant Site Access Road and Geona Valley Road)	15.1	450	2,100	1,400	9,500	2,100
Geona Valley Road	15.1	3,800	17,300	76,500	37,100	17,600
Lower Water Management Pond Road	15.1	1,700	7,700	41,400	92,800	7,900
Upper Water Management Pond Road	15.1	1,300	5,900	44,200	76,000	6,100
Overburden Collection Pond Road	15.1	600	2,800	4,600	36,900	2,800
Tailing Haul Road	13.4	530	2,100	52,800	20,100	2,200
Upper Diversion Road	10.5	6,800	21,500	593,900	549,300	22,100
TOTALS:		25,940	116,000	1,005,400	1,550,500	188,400
Construction Phase Total		17,840	88,600	367,300	925,200	90,200
Operations Phase Total		8,100	27,400	638,100	625,300	28,200

Notes:

1. Bank cubic metres.
2. Compacted cubic metres.

Table 3-3: Estimated Culverts by Road

Road Description	Road Stationing	Maximum Design Flow Capacity (m ³ /s)	Diameter (mm)	Estimated Crossing Length (m)	Quantity
Class A/B Haul Road	0+100	3.2	1,400	46	1
	0+600	1.5	900	46	1
	1+400	1.4	900	46	1
	1+900	4.8	1,200	46	2
Class C Haul Road	1+070	1.2	900	46	1
Overburden Haul Road	0+600	1.1	900	46	1
Plant Site Access Road	0+700	3.5	1,400	24	1
	1+450	3.5	1,400	24	1
	1+850	3.1	1,400	24	1
	2+300	3.1	1,400	24	1
Upgraded Tote Road (Km 19.7 to 24)	3+400	4.2	900	19	3
Connector Access Road (between Plant Site Access Road and Geona Valley Road)	0+450	1.5	900	24	1
Geona Valley Road	1+450	4.6	1,200	24	2
Upper Water Management Road	0+450	6.0	1,200	24	2
Overburden Collection Pond Road	0+513	1.1	900	24	1
Upper Diversion Road	0+140	6.6	1,400	19	2
	0+900	3.2	1,400	19	1
TOTALS:				676	23

3.2 ACCESS ROAD

Access to the Project is via the existing 24 km KZK Tote Road extending south from the Robert Campbell Highway at Finlayson Lake. This is a private road maintained by BMC (current lease number 105G07-0001). The Tote Road will be upgraded to an Access Road to support Project development and operations. Once the Quartz Mining Licence comes into effect, the first 18.88 km of the Tote Road (as measured from the Robert Campbell Highway) will remain under lease 105G07-0001, while from 18.88 km onwards will form part of the Quartz Mining Licence.

Within the Quartz Mining Licence area, the Tote Road will be upgraded to an Access Road from 18.88 km to the access to the camp (approximately 19.73 km). Roads to the south of this point are considered Site Roads as detailed in Section 3.1.

3.2.1 Design Basis

The upgraded Access Road is designed as a single lane road with pullouts supporting two-way, radio controlled traffic travelling 50 km/hr, with the design criteria detailed in Table 3-4. Details of the upgrades and associated design of the road are also included in BMC's Access Road Lease Amendment Application and BMC's Borrow Area Land Lease Application.

Table 3-4: Access Road Design Criteria

Parameter	Specification
Maximum Road Grade	8% (up to 10% on short pitches)
Tightest Vertical Curve	1% grade change over 12m (11m for crest curves)
Minimum Curve Length	50m
Minimum Stopping Distance	135m
Minimum Horizontal Curve Radius	80m
Minimum Cross Drain Culvert Diameter	500mm
Ditch Size	0.5m deep with 0.6m wide base
Road Width	5m
Pullout Size	Additional 4m width, 30m long with a 7.5m taper at each end

The following design standards have been used in preparing road designs:

- Geometric Design Guide for Canadian Roads (TAC, 2017);
- BC Supplement to TAC Geometric Design Guide (BC MoTI, 2019);
- Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide (YCM, 2010); and
- 2020 Standard Specifications for Highway Construction (BC MoTI, 2020).

Cut and fill slopes will vary by material type as detailed in Table 3-5.

Table 3-5: Access Road Cut and Fill Slopes by Material Type

Material Type	Cut Slope Angle	Fill Slope Angle	Cut Expansion Factor	Fill Expansion Factor	Comments
Organic "Soil"	400%	N/A	1	1	Organic rich layer not to be used for construction of the road prism.
Permafrost	50%	N/A	1	1	Ice rich permafrost soils. Avoid any disturbance. Permafrost soils are not to be used for construction of the road prism.
Silt	50%	50%	0.9	1	Silt leading deposits.
Sand and Gravel	60%	60%	1	1	Sand or gravel leading deposits.

Material Type	Cut Slope Angle	Fill Slope Angle	Cut Expansion Factor	Fill Expansion Factor	Comments
Weak Fractured Rock	120%	66.7%	1.11	1	Weak, heavily fractured bedrock.
Strong Fractured Rock	200%	66.7%	1.2	1	Medium strong to very strong bedrock.
Weathered Schist	60%	60%	1	1	Heavily weathered schist deposits. Easily ripped. Not to be used for surfacing.

The alignment of the Access Road within the QML is provided in Figure 3-13 and typical cross-sections for the upgrade of the Tote Road are provided in Figure 3-14 to Figure 3-18.



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Datum: NAD 83; Map Projection: UTM Zone 9N

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1:2,500 (when printed on 11 x17 inch paper)
0 25 50 75 100 Meters

○ Station Markers
= Proposed Access Road Center Line

30 m Proposed Right of Way
Map Extent

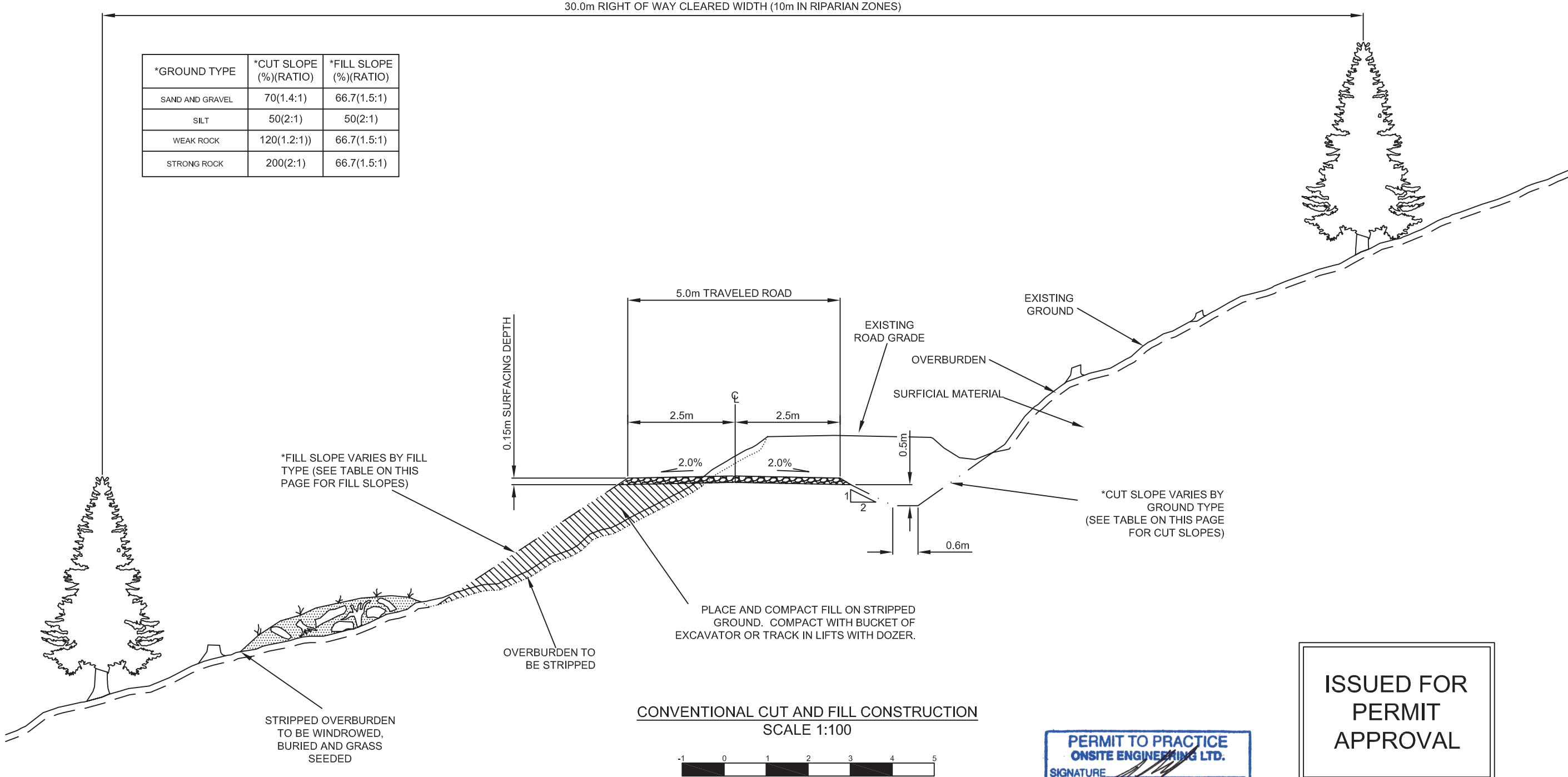


KUDZ ZE KAYAH PROJECT
FIGURE 3-13
ACCESS ROAD km 18.88 TO km 19.8

FEBRUARY 2024

D:\Project\AllProjects\Kudz_Ze_Kayah\Maps\01_Overview\03-SpecificTopics\Tote_Road\ROW\Tote_Rd_km18_to_19_20240223.mxd (Last edited by: amatlashevsk;2024-02-27\06:32 AM)

*GROUND TYPE	*CUT SLOPE (%)(RATIO)	*FILL SLOPE (%)(RATIO)
SAND AND GRAVEL	70(1.4:1)	66.7(1.5:1)
SILT	50(2:1)	50(2:1)
WEAK ROCK	120(1.2:1)	66.7(1.5:1)
STRONG ROCK	200(2:1)	66.7(1.5:1)



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PERMIT TO PRACTICE
ONSITE ENGINEERING LTD.
SIGNATURE _____
Date 2024-04-09
PERMIT NUMBER PP289
Association of Professional
Engineers of Yukon

PREPARED FOR:



PREPARED BY:
ONSITE
Engineering Ltd.
COASTAL OPERATIONS
1405 SPRUCE STREET
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PH.: 250-287-9174 FAX: 866-235-6943
EGBC PERMIT TO PRACTICE No: 1002678

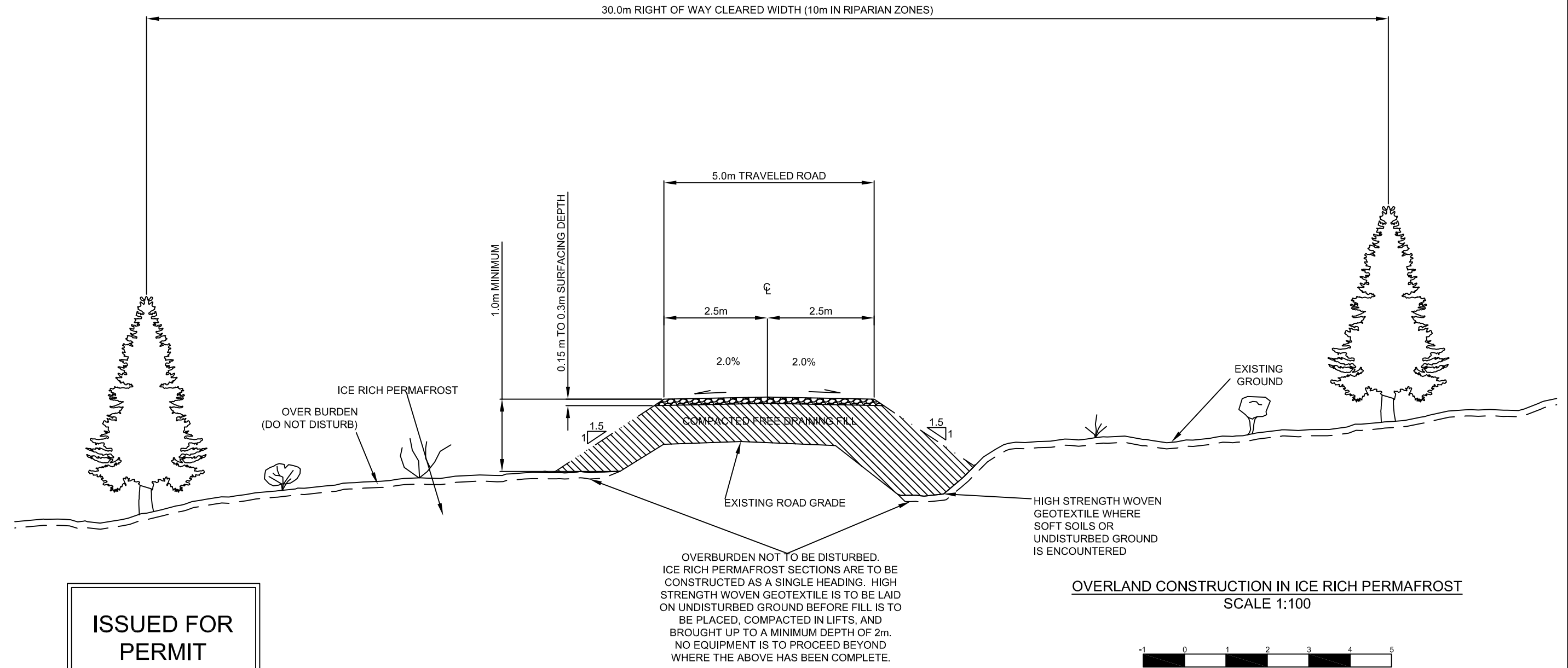
FIGURE 3-14
TYPICAL CROSS SECTION:
CONVENTIONAL CUT AND FILL CONSTRUCTION

DWG No: 1356-2-TYPROADXSECTIONS-002

SHEET: 1 OF 1

DESIGN BY: MATT DICKIE, EIT
DESIGN DATE: SEPTEMBER 30, 2016
REVIEWED BY: JEREMY ARAKI, P. ENG.
DRAWN BY: MATT DICKIE, EIT
SITE VISIT: ONSITE ENGINEERING LTD.
SITE VISIT DATES:
FILE NAME: TYPROADXSECTIONS.DWG
SCALE: AS NOTED
REVISION NUMBER: 1
REVISION DATE: APRIL 03, 2024
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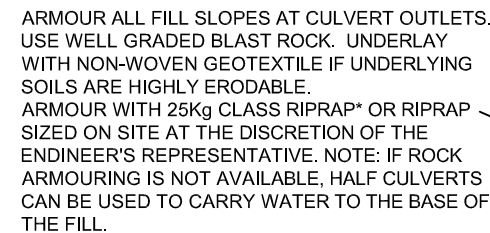
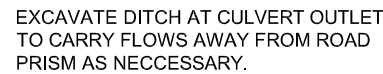
FIGURE 3 -15
TYPICAL CROSS SECTIONS:
OVERLAND CONSTRUCTION IN ICE RICH PERMAFROST

DWG No: 1356-2-TYPROADXSECTIONS-003

SHEET: 1 OF 1

DESIGN BY: MATT DICKIE, EIT
DESIGN DATE: SEPTEMBER 30, 2016
REVIEWED BY: JEREMY ARAKI, P. ENG.
DRAWN BY: MATT DICKIE, EIT
SITE VISIT: ONSITE ENGINEERING LTD.
SITE VISIT DATES:
FILE NAME: TYPROADXSECTIONS.DWG
SCALE: AS NOTED
REVISION NUMBER: 1
REVISION DATE: APRIL 03, 2024
ALL MEASUREMENTS IN m UNLESS OTHERWISE NOTED.

SEAL OF Y.T. P.ENG.



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****RIPRAP: CLEAN ANGULAR ROCK**

CLASS 10kg RIPRAP

ROCK GRADATION

PERCENT SMALLER THAN GIVEN

ROCK MASS kg(mm)	
15%	1(90)
50%	10(195)
85%	30(280)

NOMINAL THICKNESS OF RIPRAP

350mm

ALL ROCK TO BE PLACED TO

MAXIMIZE INTERLOCKING

BETWEEN PIECES.

*RIPRAP: CLEAN ANGULAR ROCK

CLASS 25kg RIPRAP
ROCK GRADATION
PERCENT SMALLER THAN GIVEN
ROCK MASS kg(mm)

15%	2.5(120)
50%	25(260)
85%	75(380)

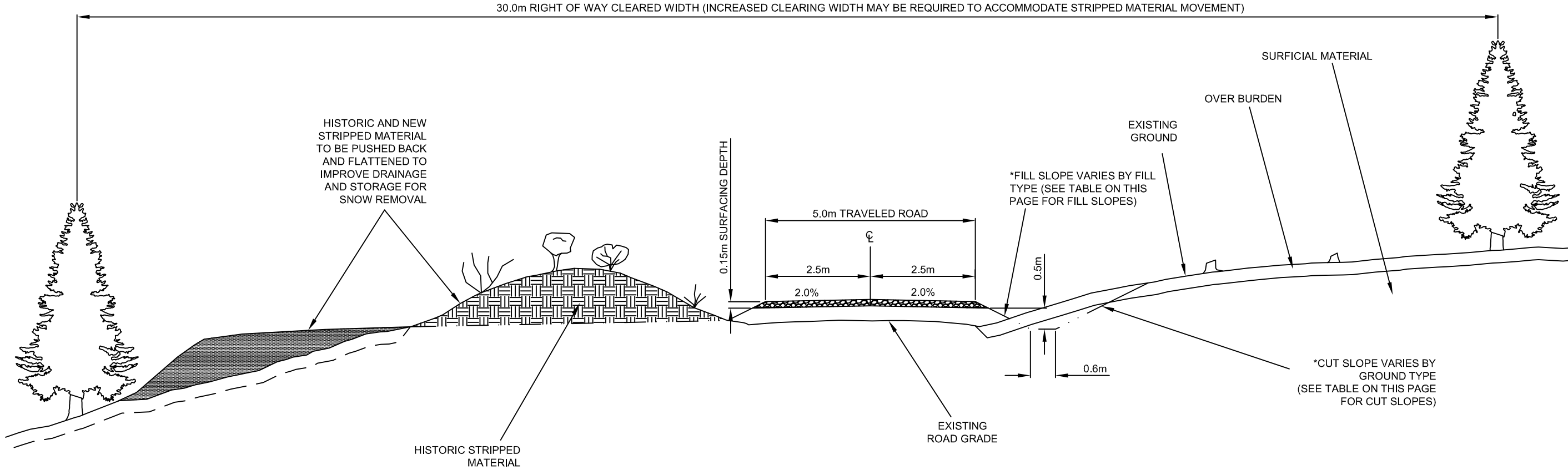
NOMINAL THICKNESS OF RIPRAP
450mm

ALL ROCK TO BE PLACED TO
MAXIMIZE INTERLOCKING
BETWEEN PIECES.



SEAL OF Y.T. P.ENG.

*GROUND TYPE	*CUT SLOPE (%)(RATIO)	*FILL SLOPE (%)(RATIO)
SAND AND GRAVEL	60 (1.67:1)	60 (1.67:1)
SILT	50(2:1)	50(2:1)
WEAK ROCK	120(1.2:1))	66.7(1.5:1)
STRONG ROCK	200(2:1)	66.7(1.5:1)
WEATHERED SCHIST	60 (1.67:1)	60 (1.67:1)



ROAD UPGRADES WITH HISTORIC WINDROW PRESENT
SCALE 1:100



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FIGURE 3-17
TYPICAL CROSS SECTION:
ROAD UPGRADES WITH HISTORIC WINDROW
PRESENT

DWG No: 1356-2-TYPROADXSECTIONS-005

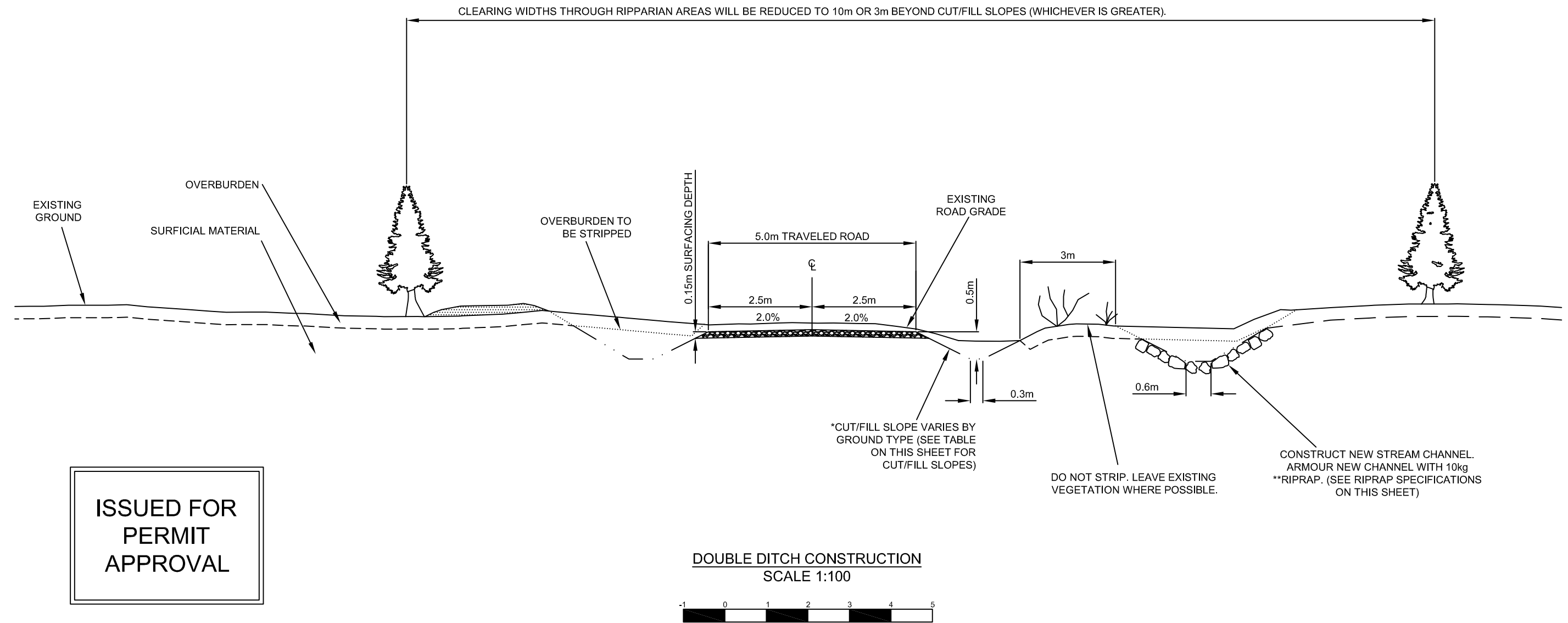
SHEET: 1 OF 1

DESIGN BY: MATT DICKIE, EIT
DESIGN DATE: SEPTEMBER 30, 2016
REVIEWED BY: JEREMY ARAKI, P. ENG.
DRAWN BY: MATT DICKIE, EIT
SITE VISIT: ONSITE ENGINEERING LTD.
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SEAL OF Y.T. P.ENG.

*GROUND TYPE	*CUT SLOPE (%)(RATIO)	*FILL SLOPE (%)(RATIO)
SAND AND GRAVEL	60 (1.67:1)	60 (1.67:1)
SILT	50(2:1)	50(2:1)
WEAK ROCK	120(1.2:1))	66.7(1.5:1)
STRONG ROCK	200(2:1)	66.7(1.5:1)
WEATHERED SCHIST	60 (1.67:1)	60 (1.67:1)

**RIPRAP: CLEAN ANGULAR ROCK	
CLASS 10kg RIPRAP	
ROCK GRADATION	
PERCENT SMALLER THAN GIVEN	
ROCK MASS kg(mm)	
15%	1(90)
50%	10(195)
85%	30(280)
NOMINAL THICKNESS OF RIPRAP	
350mm	
ALL ROCK TO BE PLACED TO	
MAXIMIZE INTERLOCKING	
BETWEEN PIECES.	



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FIGURE 3 -18
TYPICAL CROSS SECTION:
DOUBLE DITCH CONSTRUCTION

DWG No: 1356-2-TYPROADXSECTIONS-006

SHEET: 1 OF 1

DESIGN BY: MATT DICKIE, EIT
DESIGN DATE: SEPTEMBER 30, 2016
REVIEWED BY: JEREMY ARAKI, P. ENG.
DRAWN BY: MATT DICKIE, EIT
SITE VISIT: ONSITE ENGINEERING LTD.
SITE VISIT DATES:
FILE NAME: TYPROADXSECTIONS.DWG
SCALE: AS NOTED
REVISION NUMBER: 1
REVISION DATE: APRIL 03, 2024
ALL MEASUREMENTS IN m UNLESS OTHERWISE NOTED.

SEAL OF Y.T. P.ENG.

3.2.2 Construction

Construction of the road prism will require surficial material earthworks and ripping of rock where the road passes through near surface bedrock. The road subgrade will be tracked in lifts (nominally 30 cm but may be varied as required by the Site Engineer after consideration of moisture content and material gradation) and the subgrade surface will be compacted with a drum roller to meet design specifications. The subgrade will then be surfaced with 15 to 30 cm (as specified in the design) of designated surfacing material.

Unsuitable (high moisture content, organic content or fines content) soils will be excavated, hauled to a suitable spoil site (if required due to constraints at the site, otherwise to be windrowed on the low side of the road), and replaced with suitable materials. In some situations, wet and/or fine grained soils may be windrowed to dry or drain and reused when suitable. In cases where the depth of unsuitable or low bearing capacity soils exceeds reasonable depths for excavation, the subgrade may be improved with additives or mechanical stabilization with products such as geogrids or non-woven geotextiles.

With the exception of fractured face requirements, all material to be used for surfacing shall meet British Columbia Ministry of Transportation and Infrastructure specifications for 25mm Well Graded Base aggregate (BC MoTI (2020)). Following placement and grading, the surfacing layer will be compacted with a drum roller.

Wherever possible, conventional cut and fill construction techniques will be implemented to minimize material movement. In general, the cut portion of the road prism will be constructed first, generating suitable subgrade fill material for the remainder of the road prism, ideally generating zero surplus or excess material. The fill portion of the road will be placed on exposed soil and compacted until brought up to the designed subgrade elevation.

Overland construction (fill only embankment) over ice-rich permafrost sections will minimize disturbance to the existing vegetative cover. Once site preparation activities have occurred, high strength, woven geotextile will be laid over the existing vegetative cover on either side of the existing road prism. Once the geotextile is in position, fill will be placed, compacted in lifts and brought up to the designed grade.

In the situation where the active layer is unfrozen and the organic layer is already disturbed and it is not possible to fill over (depth and extent depending on the time of year and temperature) all attempts will be made to reduce the amount of unfrozen material that is removed and timing of excavation and replacement with an insulating layer will be minimized (i.e. excavate only small areas and cover them immediately). This would only likely be the case at the edges of the existing Tote Road where the areas have been previously disturbed.

3.2.3 Schedule and Quantities

The upgraded Access Road will be constructed prior to Operations to support development of the Project. The length of the Access Road that falls within the QML is 0.85 km. The upgrade of the

remainder of the Access Road is covered under BMC's Access Road Lease Amendment Application. One 500 mm diameter culvert (12 m long) is required for the portion of the Access Road that falls within the QML, at km 19.74.

The volumes of road materials required for the upgrade of the Access Road within the QML is detailed in Table 3-6.

Table 3-6: Estimated Access Road Material Quantities

Parameter	Volume (m ³)
Stripping Volume	3,635
Cut Volume (bank cubic metres)	2,994
Fill Volume (compacted cubic metres)	2,575
Wearing Course Volume	638

3.3 TRAFFIC MANAGEMENT

Traffic management across the Project will be facilitated through the use of signage, right of way procedures and radio calling procedures, and other requirements that BMC may determine is necessary from time to time. BMC will engage with local Kaska to develop site signs in both English and Kaska for the perimeter of the Project.

The general principle will be that loaded haul trucks will have the right of way on all surface Mine Haul Roads and in pit Haul Roads. Signage will reflect this principle to maintain continuous traffic flow on Haul Roads. Roads that intersect Mine Haul Roads will be sign posted with stop signs requiring traffic entering haul roads to stop and confirm that the haul road is clear before entering. Intersections will be at 90 degree angles to the Haul Road to maximise visibility along the Haul Road alignment.

Intersections of Mine Service Roads and Auxiliary Roads with each other may be signposted with stop signs or give way signs as required for the type of equipment that will be utilizing the roads in question.

Speed limit signs will be placed on roads as required to advise of specific road speed limits. In general, it is expected that the Project speed limit will be set at 30 km/hour, although BMC may elect to allow for speed limits up to 50 km/hour (the speed limit considered in the design criteria in Table 3-1) on certain roads that do not have heavy mining earthmoving equipment using them.

Light vehicle access to the open pit will be controlled and training and licensing protocols and procedures will be developed prior to the commencement of mining. Passing of heavy equipment on mine haul roads will generally not be allowed. However, procedures will be developed to allow for specific situations for passing (i.e. road maintenance).

The following standards, in order of highest to lowest priority, will apply to rights of way at any area not controlled by traffic signs:

- Emergency vehicles - when lights flashing;
- Trucks transporting dangerous goods:
 - Explosives transport vehicles;
 - Fuel trucks; and
 - Other dangerous goods trucks.
- Haul trucks;
- Bulk carriers (non dangerous goods);
- Heavy vehicles; and
- Light vehicles.

When two comparable trucks/vehicles meet, the blind side vehicle will have the right of way.

3.3.1 Radio Procedures

Radio procedures for both the Access Road and Mine Haul Roads will be established prior to commencement of construction. BMC will establish radio coverage along the entire Access Road and Mine Haul Roads. A dedicated frequency will be used on all company fleet radios and will be provided to contractors, suppliers, and bulk carriers for programming on their radios.

At the start of construction, BMC will require that Access Road and Haul Road users utilize the established radio calling protocol. Drivers will be required to announce their vehicle type, location, and direction of travel when they enter the Access Road control zone.

The Access Road will have high visibility km signage every established every kilometer.

All traffic on the Access Road will adhere to the following protocol.

- Up and Down is used to identify direction of travel
 - Up = Gatehouse to KZK Camp increasing km numbers.
 - Down = Camp to Gatehouse decreasing km numbers.
- Calling protocol
 - Project vehicles must identify themselves as to vehicle type (i.e. concentrate truck, fuel truck pick-up, grader).
 - Up vehicles must call out when leaving the Gatehouse then every even km after. (i.e. fuel truck 2 up).

- Down vehicles must call out when leaving Camp then every odd km after that (i.e. concentrate truck 17 down).
- All vehicles are required to call out when arriving at either the Gatehouse or Camp to let all other traffic know they are clear of the control zone.
- Must call situations include
 - When leaving or arriving at the Gatehouse or Camp.
 - At posted “must call” signs i.e. Finlayson Creek bridge.
 - When stopping on the Access Road or at a pullout for any reason and when re-entering the road after doing so. All pullouts will be designated with a number and appropriate identifying signage.
 - When encountering large wildlife on or adjacent to the road (i.e. caribou, moose, bear, wolf).
- Passing is only allowed when trucks are safely situated in a pullout. When passing road maintenance equipment driver must first make radio contact with the vehicle being passed and be given the OK to pass.
- Emergency vehicles have the right-of-way at all times. After emergency vehicles concentrate trucks, fuel trucks, re-supply trucks, and maintenance equipment have the right-of-way. Pick-ups and light duty trucks must yield using pullouts unless otherwise agreed through radio communication with the higher priority vehicle. When an emergency call is made, all non-emergency vehicles must pull over and stop until an all-clear call has been made.
- Convoy calling is allowed using the following protocol
 - The lead vehicle is responsible for calling on behalf of the convoy and must note number of vehicles and size in the convoy (i.e. 2 fuel trucks up at 2).
 - The vehicle joining the convoy to inform and receive confirmation from the lead vehicle.
 - A vehicle more than 1 km behind the lead vehicle is no longer considered part of the convoy and must call out their own location.

A similar protocol will be developed for the Haul Roads. Radio call in will also be required to access restricted areas, such as the ROM pad and waste rock and tailings storage facilities. Where passing is permitted, radio call in will be required for notification of passing of heavy equipment.

Additional traffic management for the Access Road is detailed in the Traffic Management Plan (BMC, 2026e).

3.4 MAINTENANCE

Road maintenance will be conducted on a regularly scheduled basis. Additional maintenance will be undertaken as road conditions require to ensure safety standards are maintained. Maintenance activities will include:

Summer/Fall

- Grading to ensure as smooth a running surface as possible;
- Culvert inspection and maintenance to ensure they are functioning as designed;
- Cleaning or pulling ditches as required;
- Re-surfacing as required using non acid generating or leaching material;
- Right-of-way brushing as required. All brushing will be done outside of the bird nesting window (June through August); and
- Repair/replacement of damaged signage.

Winter/Spring

- Snow removal from driving surface and pullouts;
- Maintenance of breaks in snow berms for animal access and egress;
- Steaming of culverts as necessary in advance of spring melt;
- Glacier control as required;
- Sanding or scarification of road surface on steep gradients as required; and
- Repair/replacement of damaged signage;

It is anticipated that the majority of road maintenance work will be completed using a grader in both summer and winter. The grader will be equipped with a wing in the winter months to assist in moving snow off the driving surface and out to the edges of the right-of-way. Snow clearing may require adjustment of berms and will be considered on an as required basis.

3.5 ACCESS, TIE-IN, AND STAGING AREAS

Access to the Project is via the existing 24 km KZK Tote Road extending south from the Robert Campbell Highway at Finlayson Lake. This is a private road maintained by BMC (current lease number 105G07-0001). The first 18.88 km of the current Tote Road and Gatehouse will be upgraded to an Access Road under a new/updated lease pursuant to the *Territorial Lands (Yukon) Act* and *Territorial Lands Regulations* (YG, 2003), while the remaining southernmost 5.12 km of the existing Tote Road will be permitted under the Quartz Mining Licence.

During construction of the Access Road, multiple, small staging areas will be used. Staging areas will advance with road headings using pullouts, depleted borrow sites, spoil sites, and suitable previously cleared areas within the road right of way. No additional clearing or road construction activities are proposed to create specific staging areas for upgrading of the Tote Road to an Access Road.

Staging areas will be used to store heavy equipment, materials, and tools. The materials stored at these sites will include culverts and geotextile. Equipment will include excavators, bulldozers, gravel trucks, blasting equipment, surfacing equipment, crane trucks, water trucks, drum compactors, and graders. For construction of Site Roads, the current core storage area, shown in Figure 1-1 will serve as the initial staging area until a construction laydown area is created within the footprint of the Class A Waste Storage Facility. The construction laydown area will eventually be built over by the Class A Waste Storage Facility through progressive expansion of the Class A Facility during Operations.

3.6 ACCESS CONTROL

All access to the Project will continue to be regulated and controlled by a staffed gate located near the intersection of the KZK Access Road and the Robert Campbell Highway near Finlayson Lake. The gate will be staffed 24 hours a day during Construction and Operations although access may be restricted to certain daily time periods. The road will be radio-controlled and restricted to authorized personnel for the duration of the Construction and Operations phases of the Project and through Closure. Private vehicles, not required for Site operations, will not be permitted on the KZK Access Road (unless authorized). A second access gate may be established near the camp site to control access to the Mine.

3.7 CLOSURE

All roads that will not be required for access post-closure (e.g. during monitoring activities) will be reclaimed, as detailed in the Reclamation and Closure Plan (BMC, 2026i). The site will be returned to a landscape that is comparable to surrounding areas for permanent closure at the end of the life of the mine. This will involve regrading of the road, recontouring the topography, scarifying disturbed areas, placement of any stockpiled stripping material and revegetation of the site. Soil replacement for these disturbances will be to the same depth that was originally salvaged from the disturbance site; the material will be sourced from adjacent windrows or soil stockpiles. Culverts will be removed and associated fill material will be contoured as appropriate to re-establish natural drainage patterns and stream flows.

During the operational phase of the project, as roads (including temporary roads) are no longer required for operation of the mine they will be decommissioned and reclaimed.

At the conclusion of the post closure monitoring phase (once the objectives and the performance criteria of the Reclamation and Closure Plan are achieved), the Access Road and any other roads required for monitoring will be decommissioned and reclaimed.

During community meetings and Elders Oversight Committee meetings some RRDC members requested that the Access Road not be reclaimed but left open for traditional land use purposes.

BMC's lease for the road requires that it be fully reclaimed; however, BMC made a commitment to participate in multi-party discussions (i.e. RRDC, Yukon Government, stakeholders) on this matter as the Project progresses.

4 BORROW SOURCES

Where possible, cut and fill designs have been utilized to provide the most cost-effective road construction materials. However, any material deficit will be offset using surplus material from the pre-production Open Pit development and/or bulk earthwork excavations required for other site infrastructure. Borrowed fill material will be excavated and hauled to the construction areas when required.

Prior to use as borrow material, confirmatory testing will be completed to verify that the borrow material has low acid rock drainage and metal leaching (ARD/ML) potential as defined by the following criteria:

- Neutralization Potential (NP) > 10kg/t CaCO₃;
- NP/Acid Potential (AP) ratio > 1.9; and
- Total sulphur < 2.9 wt.%

Additional detail on classification of the ARD/ML potential of rock for the Project is detailed in the Waste Rock and Overburden Management Plan (BMC, 2026j). Road surfacing material will be processed on site utilizing local borrow sources of sands and gravels. These sands and gravels are expected to be primarily sourced from pre-production Open Pit development. If excess material is required for processing, Onsite Engineering (Onsite) has identified multiple borrow sources, with the closest being located in the Class B Storage Facility footprint (Onsite Engineering Ltd., 2017). The locations of the identified potential borrow sources are shown in Figure 4-1, and are detailed in Table 4-1. All borrow sources fall within the Quartz Mining Licence application and will be authorized for use under this licence.

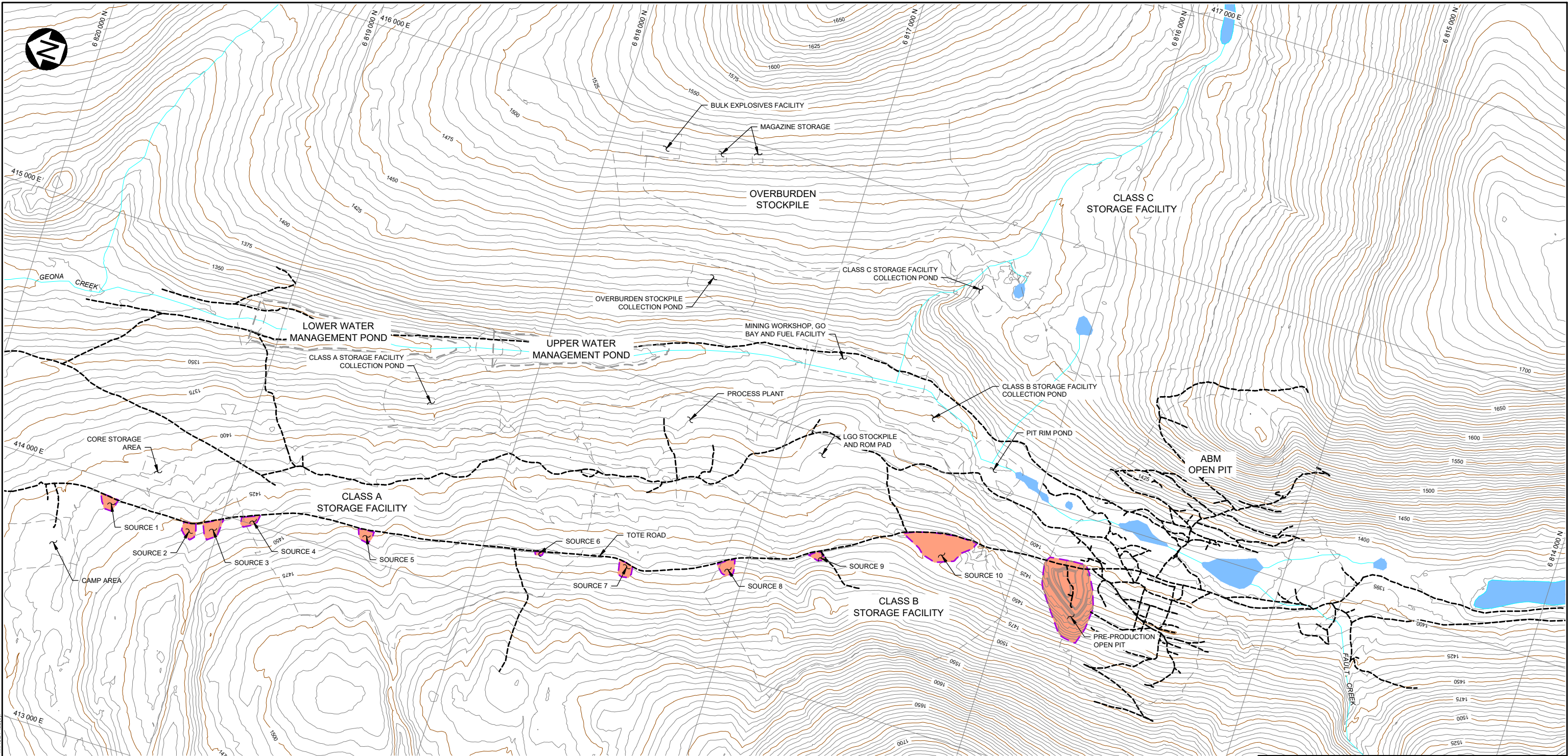
Table 4-1: Summary of Borrow Sources

Borrow Source (per Figure 4-1)	Area (Ha)	Type	Material Source
1	0.27	Quarry	Riprap
2	0.28	Quarry	Riprap
3	0.40	Quarry	Riprap
4	0.22	Quarry	Riprap
5	0.22	Quarry	Riprap
6	0.04	Quarry	Riprap
7	0.27	Quarry	Riprap
8	0.30	Quarry	Riprap
9	0.12	Quarry	Riprap
10	2.02	Pit	Surfacing / Subgrade
Pre-Production Open Pit	4.62	Pit	Surfacing / Subgrade

The borrow areas required for road construction material will be cleared and grubbed of any trees or shrubbery followed by the removal of topsoil. Once unsuitable material has been removed,

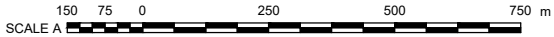
material will be excavated and hauled to the mobile crushing site where it will be processed and screened into the proper particle gradation. Quality control testing will occur to confirm material is in specification prior to use for construction.

SAVED: M:\10100640\11\A\A\A\DWG\SC1050.C1050.3182024.8:57:46 AM, RMICIELLAN PRINTED: 3/19/2024 3:32:48 PM, C1050, RMICIELLAN
REF FILES: V:\TRAIL\TOP\CONTENTS\CH\DWG\Geomatics\11\A\A\A\DWG\SC1050.C1050.3182024.8:57:46 AM, RMICIELLAN



- NOTES:**
- COORDINATE GRID IS UTM NAD 83 9N.
 - TOPOGRAPHIC DETAIL PROVIDED OCTOBER, 2017.
 - OPEN PIT OUTLINE PROVIDED BY BMC APRIL 26 2019.
 - CONTOUR INTERVAL IS 5 METRES.
 - ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

- LEGEND:**
- BORROW SOURCE
 - FACILITY OUTLINE
 - STREAM/DRAINAGE/WATERBODY
 - EXISTING ACCESS ROAD / TRAIL



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NOT FOR CONSTRUCTION**

D	19MAR'24	ISSUED FOR INFORMATION	JRG	RMM	LJG	LJG
C	18MAR'24	ISSUED FOR INFORMATION	JRG	RMM	LJG	LJG
B	08MAR'24	ISSUED FOR INFORMATION	JRG	RMM	LJG	LJG
A	26AUG'20	ISSUED FOR INFORMATION	MAP	NSD/SC	GLS	GLS
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
REFERENCE DRAWINGS				REVISIONS				

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PREPARED BY:

Knight Piesold
CONSULTING

BMC MINERALS LTD.

KUDZE KAYAH PROJECT

FIGURE 4-1
IDENTIFIED POTENTIAL
BORROW SOURCES

PIA NO.
VA101-640/11

DRAWING NO.
C1050

REVISION
D

5 GEOCHEMICAL EVALUATION

Ensero Solutions (previously Alexco Environmental Group Inc.) was retained by BMC to perform an assessment of the ARD/ML potential of material expected to be produced during the development and operation of the Project. The results from static and kinetic geochemical testing on waste rock, tailings, mineralized rock, and overburden (completed October 2022), is presented in Acid Rock Drainage and Metal Leaching Characteristics of Materials for Kudz Ze Kayah Project (Ensero Solutions, 2023), and is described in the Site Characterization Plan (BMC, 2026c). Class C waste rock and overburden material are considered acceptable as construction materials based on the results of geochemical characterization work conducted to-date. The Waste Rock and Overburden Management Plan (BMC, 2026j) outlines the waste rock classification and operational identification and segregation protocol.

6 GEOTECHNICAL TESTING

Numerous site investigation programs, extending from the mid 1990's to present-day, have examined the subsurface conditions throughout the Project site and are described in the Site Characterization Plan (BMC, 2026c). The investigations have been specifically focused on characterizing the subsurface conditions at the planned locations of site infrastructure. The data collected during these investigations have been used to characterize geotechnical conditions across the Project site, supporting infrastructure design, including roads.

Site investigations include the following programs. The Site Characterization Plan (BMC, 2026c) should be referred to for more detailed information.

- 1995 Feasibility Level Geotechnical and Hydrogeological Site Investigation – ABM Deposit (Golder, 1996a): included 75 geotechnical drillholes and 78 test pits for the previously planned mine, waste storage areas, tailings, and Process Plant locations; the site investigation program also included piezometer installations, temperature measurements, and laboratory testing of overburden samples;
- 1996 Geotechnical Site Investigations for the ABM Deposit (Golder, 1996b): included 49 test pits and laboratory testing of overburden samples;
- 2015 Monitoring Well Installation Program (Tetra Tech, 2016): included installation of 11 monitoring wells, hydraulic conductivity testing using a packer system, and pumping tests;
- Geotechnical Site Investigation Data Report (Knight Piésold Ltd, 2015) and 2016 Geotechnical Site Investigation Data Report (Knight Piésold Ltd, 2016): included logging of overburden and bedrock conditions in 53 test pits and 22 geotechnical drillholes, downhole packer hydraulic conductivity testing, installation of standpipe piezometers, monitoring wells and vibrating wire piezometers to monitor groundwater conditions, and installation of thermistors to monitor ground temperatures; and
- 2017 Geotechnical Site Investigation Data Report (Knight Piésold Ltd, 2018): included excavation and logging of 14 test pits, drilling and logging of 18 geotechnical drillholes, Standard Penetration Testing of surficial materials, geotechnical logging of recovered soil and rock materials, in-situ packer hydraulic conductivity testing, installation of seven multi-node thermistor cables, six nested vibrating wire piezometers, seven standpipe piezometers, laboratory index testing of select test pits and Standard Penetration Testing of overburden samples, laboratory testing of select rock core samples for Unconfined Compressive Strength and elastic moduli parameters.

The location of all site investigation drillholes and test pits completed at the Project site are shown in Figure 6-1 and Figure 6-2 respectively.

7 BEST MANAGEMENT PRACTICES

7.1 SEDIMENT AND EROSION CONTROL

Sediment and erosion control measures will be necessary to limit the affect on the surrounding environment and water sources due to stripping and excavating activities related to the construction of the roads. Construction activities that will require sediment and erosion control include:

- Vegetation clearing and topsoil stripping;
- Stockpiling of topsoil and other material not suitable for construction; and
- Construction of roads.

The potential hazards from these activities include:

- Increased surface erosion from disturbed areas;
- Increased sediment load to downstream receiving environments; and
- Siltation or erosion of downstream watercourses or waterbodies.

Sediment mobilization and erosion will be minimized by:

- Installing sediment controls in accordance with the Sediment and Erosion Control Plan (BMC, 2026k);
- Limiting the disturbance to the minimum practicable extent;
- Working in the dry to the extent possible;
- Reducing water velocity across the ground (for example through the use of check dams, silt fences and straw wattles as detailed in the Sediment and Erosion Control Management Plan (BMC, 2026k), particularly on exposed surfaces and in the areas where water concentrates;
- Progressively rehabilitating disturbed land and constructing drainage controls to improve the stability of rehabilitated land;
- Ripping of rehabilitation areas to promote infiltration;
- Protecting natural drainages and watercourses by constructing appropriate sediment control devices such as collection and diversion ditches, sediment traps and sediment basins;
- Restricting access to rehabilitated areas; and
- Constructing surface drainage controls to intercept surface runoff.

7.2 SITE ISOLATION

Site isolation, or “*working in the dry*”, can greatly reduce the amount of sediment produced during the road construction, particularly when installing culverts. The following techniques can be employed to effectively isolate the work area:

- Diverting streamflow using pipes, flumes, or erosion-proofed diversion ditches. When diversion ditches are constructed in erodible soils, they should incorporate sediment traps and geotextiles to minimize sediment loss;
- Diverting streamflow using a bypass pumping system; or
- Using coffer dams to isolate the work area from the streamflow.

Mitigation measures that will be employed to protect environmentally sensitive habitats during construction are provided in the Sediment and Erosion Control Plan (BMC, 2026k) and Wildlife Protection Plan (BMC, 2026b). Furthermore, in accordance with the Sediment and Erosion Control Plan (BMC, 2026k), on site monitoring will be conducted during construction activities, such as creek diversions, to evaluate for potential effects resulting from construction activities.

7.3 CULVERT INSTALLATION AND INSTREAM WORKS

Instream works that have a risk of depositing sediment into fish streams or tributaries will be scheduled to occur during the least risk window (Government of Canada, 2014), between June 15 and April 15, unless one of the following conditions can be met:

- If the stream channel is dry (no flow) or frozen to the bottom at the worksite and the in-stream activity will not adversely affect fish habitat;
- If such works do not adversely affect the stream channel (including stream banks), fish habitat or fish passage; or
- Work is in a non-fish bearing stream and measures will be taken to prevent the delivery of sediments into downstream fish habitat or the stream is not fish-bearing and discontinuous with no connection to downstream fish habitat.

A complete summary of culvert installation protocols is described in Section 4.16 of the Sediment and Erosion Control Plan (BMC, 2026k).

Clearing and grubbing adjacent to watercourses will be carried out with brush mowers or chainsaws to minimize environmental damage to the extent possible. In riparian areas, trees within 10 m of the ordinary high-water mark will be close cut and the stumps will be left in place to ensure bank stability is maintained.

7.4 DUST CONTROL

Dust control measures will be implemented on a case-by-case basis for worker health and safety and to minimize environmental effects. Mitigation measures to be implemented will include the following:

- Minimize disturbances and manage all land clearings;
- Construct Service and Haul Roads with low silt content material;
- Enforce speed limits for all mobile mine equipment; and

- Apply a dust suppressant using appropriate equipment to heavily used roads during drier summer months. Water is expected to be the primary dust suppressant used on site. Should areas of the site be identified as being of particular concern with regards to dust management that the application of water is not sufficiently addressing, specialized dust suppression compounds may be used on site, following site specific trials to assess that there are no unintended environmental effects from their use.

Additional details regarding dust control and the Adaptive Management Initiatives for air quality are described in Section 3.11 (Air Quality) of the Adaptive Management Plan (BMC 2026l).

7.5 AIR QUALITY

Air quality control measures related to vehicle use will be implemented to ensure worker health and safety and to minimize environmental effects. Mitigation measures to be implemented will include the following:

- Avoid engine idling;
- Use catalytic control systems on diesel engines; and
- Ensure vehicles and equipment are maintained according to manufacturers' guidelines.

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APPENDIX A: TABLE OF CONCORDANCE

Reference No.	Proponent Commitment / Mitigation	Where addressed
YESAB R166	In areas where the existing road traverses sections of undisturbed, shallow, ice-rich permafrost, the existing organic layer will be left intact. In permafrost, where proposed fill slopes extend beyond either side of the existing road prism, the portion of fill beyond the existing road edge will be constructed by filling over a geotextile separation layer. Once the geotextile is in position, fill is to be placed, compacted in lifts and brought up to the designed grade.	See Section 3.2.2 of the Road Construction Plan
YESAB R166	Care will be taken to minimize the amount of vegetative cover to be cleared, limiting the amount of soil exposed to reduce permafrost degradation and thaw along the roadway. This will also reduce the potential for soil erosion and sediment deposition in riparian and wetland ecosystems.	See Section 3.1 of the Road Construction Plan
RRDC Review of Draft Management Plan	BMC will engage with local Kaska to develop site signs in both English and Kaska for the perimeter of the Project.	See Section 3.3 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Road and exposed surfaces watering, as required	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Minimize land clearing activities (i.e. waste storage facilities will be cleared progressively through the Project construction and operations phase).	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Construction of the Access Road and site roads with low silt content material.	Section 7.4 of Road Construction Plan
Project Proposal Chapter 6 (BMC, 2017a)	Appropriate speed limits for all mobile equipment.	Section 3.3 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Impose speed limits for all vehicles.	Section 3.3 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Avoid engine idling	Section 7.5 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Use catalytic control systems on diesel engines.	Section 7.5 of Road Construction Plan
Project Proposal Chapter 7 (BMC, 2017a)	Ensure vehicles and equipment are maintained according to manufacturers' guidelines.	Section 7.5 of Road Construction Plan
Project Proposal Chapter 11 (BMC, 2017a)	Minimize land clearing to the areas necessary for Project Footprint.	Section 2.1 of Road Construction Plan
Project Proposal Chapter 18 (BMC, 2017a)	Construction of new roads will be minimized (e.g., Tote Road will be upgraded to Access Road largely in the existing alignment).	Chapter 1 of Road Construction Plan