APPLICATION TO TRANSPORT CANADA UNDER THE NAVIGABLE WATERS PROTECTION ACT

CONSTRUCTION OF A BRIDGE ACROSS DORIS LAKE OUTFLOW CREEK

Doris North Project
Nunavut

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1.0 Subject of this Application

Through this application Miramar Hope Bay Limited (MHBL) is applying for authorization from Transport Canada under the Navigable Waters Protection Act for the construction of a clear span bridge across the outflow stream from Doris Lake to allow road access to the tailings containment area (TCA) for the Doris North Project. The proposed construction of this bridge was a component of the environmental assessment for the Doris North Gold Mine Project conducted by the Nunavut Impact Review Board leading to the issue of a Project Certificate in September of 2006. This proposed construction was also a component of an environmental screening of the Doris North Project conducted by Indian and Northern Affairs Canada under the Canadian Environmental Assessment Act leading to a screening decision in October of 2006. MHBL has separately applied for a water license from the Nunavut Water Board which includes this clear span bridge crossing.

2.0 Project Introduction

Miramar Hope Bay Ltd. (MHBL) intends to develop the Doris North Project for the purpose of extracting gold for sale on global markets. The Doris North Project is located on the mainland in the West Kitikmeot region of Nunavut approximately 125 km southwest of Cambridge Bay and 75 km northeast of Umingmaktok (see Figure 1). The Project is located on Inuit Owned Lands at 68 deg. 09 min. N x 106 deg. 40 min. W, 5 km south of Roberts Bay, an extension of Melville Sound which connects with Bathurst Inlet about 80 km west of the Project.

MHBL is proposing to construct, operate and reclaim a small underground gold mine (average throughput of 720 Tonnes per day) that will have a two year life. According to current mine reserves the mine will produce approximately 311,000 ounces of gold from 460,000 tonnes of ore. Processing of the ore will occur on site with the gold being shipped off site by air in the form of dore bullion bars to a commercial refiner. The project will be self-sufficient and will have a footprint of approximately 54 hectares.

The site is remote and there are no permanent or winter roads that link it to any neighbouring communities or facilities. Currently, there is no infrastructure development on the site, with the exception of an exploration camp on the east shore of Windy Lake, located approximately 10 km southwest of the project site.

The primary access route to the property for fuel, equipment and supplies will be via the Arctic Ocean (sealift from Hay River using tugs and barges). The proposed mill site is located approximately five kilometers from Roberts Bay. This area is accessible by ships and barges for a short ice-free shipping season. A jetty will be constructed in Roberts Bay as a landing facility for the barges. Equipment will be offloaded and stored in a lay down area close to the shore. Annual fuel supply will be trucked from the barges to a 7.5 million liter capacity tank farm constructed at the plant site. The layout of the proposed facilities is presented in Figure 2.

A 4.8 km all-weather road will link the Roberts Bay jetty site with the mill and camp location (plant site), allowing year-round haulage of supplies from the sealift landing site laydown area. The mill, crushing plant, fuel storage tank farm, camp, offices, workshops, power generation plant, sewage treatment plant and all other operational mine infrastructure will be located in a central location adjacent to the underground mine adit. An all-weather airstrip, suitable for small aircraft will be constructed along the alignment of the main road between the plant site and Roberts Bay. During summer months the site will also be serviced by float planes and for that purpose a floating dock will be constructed at the north end of Doris Lake. This dock will be linked to the mill site with an all-weather road. During winter months an airstrip capable of handling larger aircraft will be constructed on the ice on Doris Lake and the site serviced from this airstrip

Figure 1: Location Map

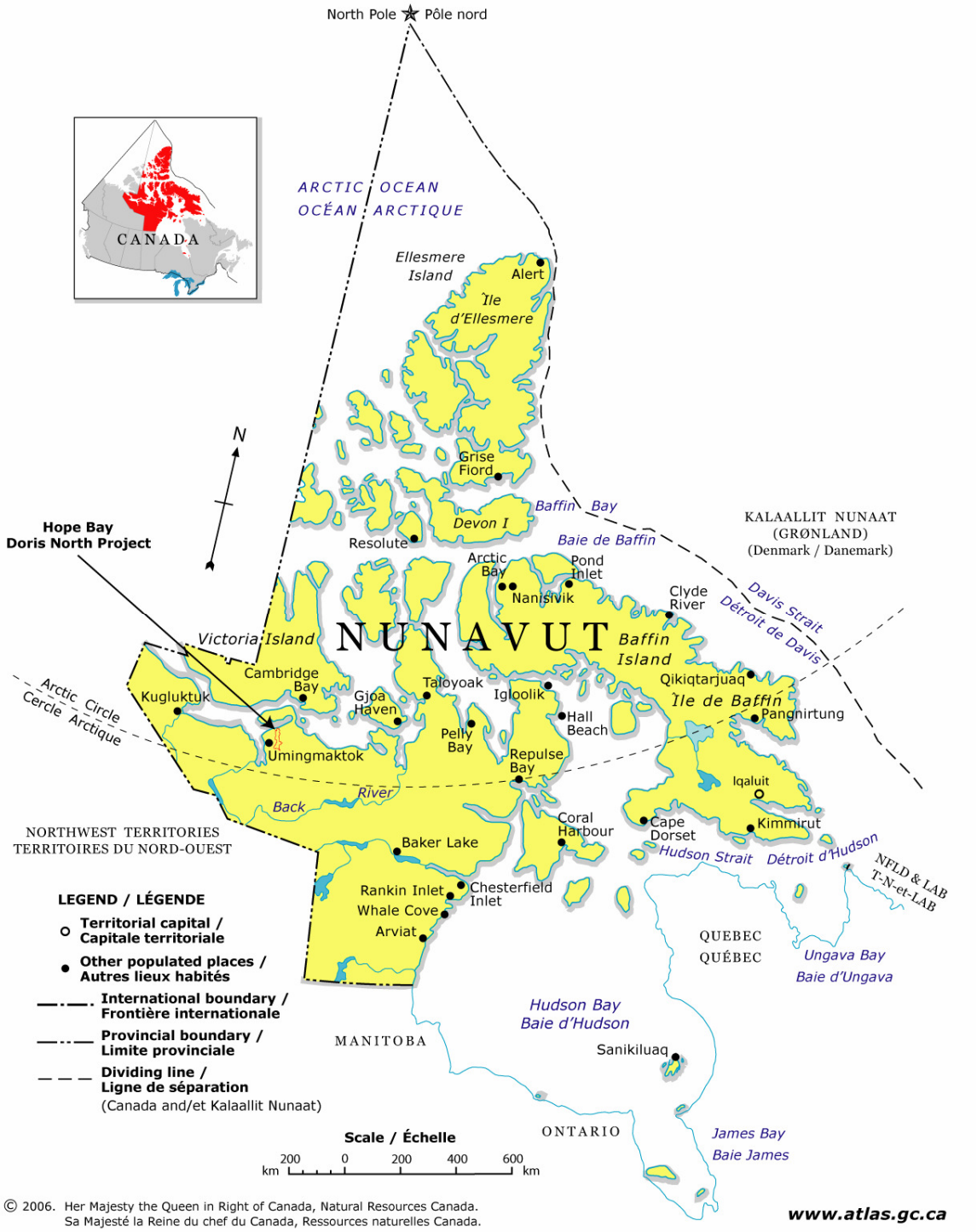
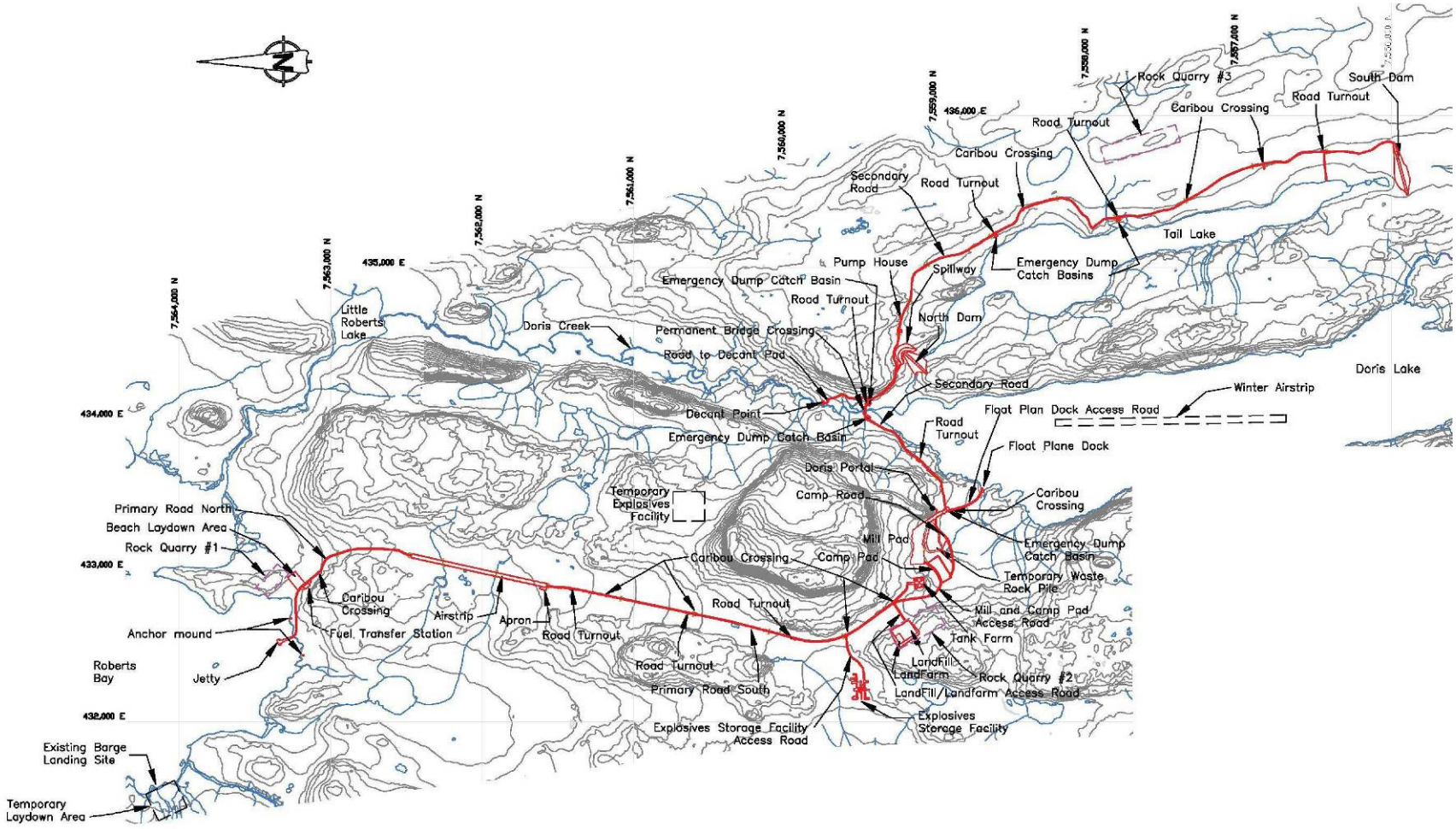


Figure 2: Overall Site Infrastructure Layout – Doris North Project



Flotation tailings and treated barren bleed solution produced during the milling process will be deposited in Tail Lake about five kilometers from the proposed mill location. Tailings deposition will be sub-aqueous, requiring the construction of two water retaining structures: the North and South dams. The tailings will be contained in Tail Lake by constructing a low permeability frozen core dam across the outlet of Tail Lake to the north and by a similar second dam constructed across a topographic low point at the south end of the lake. An all-weather service road will be constructed along the east side of Tail Lake all the way to its southern end. The tailings pipeline will follow the roadway, and emergency tailings dump ponds will be constructed at strategic locations.

A barren bleed solution from the concentrate leach circuit will be treated in a water treatment plant within the mill to destroy residual cyanide and precipitate heavy metals. This treated solution will then be mixed with flotation tailings and discharged into Tail Lake. The water quality eventually discharged from Tail Lake will meet discharge standards established under the Metal Mining Effluent Regulation. A discharge strategy has been developed to release water from Tail Lake on an annual basis during open water periods. This water will be pumped to Doris Creek at a point immediately upstream of a 4.3 m high waterfall where the Tail Lake water will mix with the outflow from Tail Lake. Under the discharge strategy it is predicted that water quality within Doris Creek downstream of the waterfall will meet Federal water quality guidelines (Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life – Canadian Council of the Ministers of Environment (CCME)) for the protection of freshwater aquatic life (fish and benthic invertebrates).

3.0 Project Schedule

MHBL is currently scheduling the initial mobilization of construction equipment to the Doris North site across the sea ice from Cambridge Bay in April 2007. A limited program of pre-development construction commenced in the second quarter of 2007 which includes: a) opening up the construction quarry site at Roberts Bay (Quarry 1); b) constructing the beach laydown area at Roberts Bay and the road to the jetty site, c) construction of the all weather road between Roberts Bay and the Doris North site with construction starting from Quarry 1 and 2 and stopping ~30 m back from the first ephemeral stream crossing (at the north end of the airstrip – Figure 2.1); d) construction of a containment berm to accommodate two 75,000 liter Envirotanks to provide fuel storage for this pre-development work, erection of a temporary equipment maintenance shop (tent structure), two “Weather-haven” tents for emergency shelter and a bermed pad for the powder magazines currently located at the exploration barge offloading site on the west side of Roberts Bay; and e) construction of the Roberts Bay jetty in the summer of 2007 (pending approval).

Additional construction material and supplies will be shipped to Roberts Bay in the summer sealift in 2007 to be offloaded in August and moved to the mill site early in the winter of 2007/2008. This will include the permanent accommodation camp and fuel storage tank farm. The remaining milling equipment and operating supplies would arrive on the 2008 sealift. The mill and camp pads, remaining access roads, the airstrip and the tailings containment dams and access roads will be constructed over the 2007-2008 winter (early 2008).

Mine development will start in the 3rd quarter of 2007 with the collaring of the portal. Production mining (ore) would commence in the 3rd quarter 2008 and continue through the end of 2010. Milling will start approximately one month after production mining starts (4th quarter 2008) and continue through to the end of 2010.

The pre-fabricated clear-span bridge to cross Doris Creek is to be shipped to the Doris North Project site in the summer sealift of 2007 and would be installed in early 2008 under winter conditions.

4.0 Bridge and Bridge Abutments

The Doris North mine site is approximately 4.5 km inland from the Arctic coastline at the south end of Roberts Bay. As part of the Doris North Project, mill tailings will be deposited into Tail Lake, necessitating the construction of a 5.9 km long by 5.0 m wide all-weather service road between the mill and the south end of Tail Lake (see Figure 2). This tailings containment area access will start at the mill and pass the portal on the south before following a northeasterly direction towards the northern end of Doris Lake. At this location a clear span bridge will be constructed across Doris Creek. Doris Creek is at least 7 m wide in the area where this secondary road is to cross the creek (under normal flow conditions). Since Doris Creek is a fish bearing water body, and is potentially defined as a navigable waterway, MHBL proposed that this Creek be crossed using a pre-fabricated clear span bridge.

Additional information on the bridge can be found in the following attached supporting documents. The following sections provide a summary of this material:

- Appendix A: *Design of the Surface Infrastructure Components, Doris North Project, Nunavut, Canada*, prepared for MHBL by SRK Consultants Ltd., dated April 2007 – Sections 3.2.3, 4.5, 5.8 and 6.11; Appendix F: Technical Memorandum on bridge design calculations; Appendix G: Hydrotechnical Assessment of Proposed Doris Creek Bridge.

- Appendix B: *Technical Specifications for Tailings Containment Area and Surface Infrastructure Components*, prepared for MHBL by SRK Consultants Ltd., dated April 2007 – Section 10.2.15.

4.1 Design of the Bridge and Bridge Abutments

The pre-fabricated modular steel bridge will be supported by two rock fill abutments such that the minimum bridge deck height above Doris Creek will be 2.1 m. This is not a design requirement per se, but is the net effect of designing abutments that would ensure that the permafrost integrity is maintained. The stream bank-full width (i.e. the ordinary high water mark) of Doris Creek at the crossing location is 15 m. This is therefore the minimum distance that the abutment toes can be apart. Appendix A provides complete details about the hydrotechnical assessment of the proposed Doris Creek Bridge.

The bridge design vehicle is a fully loaded CAT-740 haul truck. The bridge will have a 75 tonne capacity and measure 7.3 m wide by 32 m long. A firm specializing in the design and manufacture of steel modular bridges was subcontracted to provide SRK with a suitable bridge design.

The bridge will rest on two pre-cast concrete sills, and will be anchored at the ends by two pre-cast concrete wing walls. These concrete members are also designed by the specialist firm. The concrete members will be founded on the rock fill abutments. In order to accommodate the bridge deck, the abutments will be 10m wide, and the minimum fill thickness of the abutments beneath the concrete sills will be 2.5 m, to ensure the active layer remain within the fill material. Details pertaining to the abutment design are provided in Appendix A. The approach ramps leading up to the bridge deck will have a maximum slope of 5H:1V and due to the height of the abutment, there will be guard rails along the entire ramp length. Figures 3 and 4 are detailed design drawings for this creek crossing.

Tailings will be pumped as a slurry with a solids content of ~36% solids by weight from the mill to Tail Lake via a 127 mm insulated pipeline. Return (Reclaim) water will be pumped from Tail Lake to the mill through a heat traced and insulated 100 mm diameter HDPE line. Both tailings and return water pipelines will follow the alignment of the tailings service road. The tailings and reclaim water pipelines will be placed on the shoulder of the road, taking up at least 1.5 m of the roadway space. The pipelines will be placed on the outside edge of the roadway, i.e., closest to the Tail Lake shoreline. This will minimize the number of pipe crossings required.

Both of these pipelines will cross Doris Creek inside a 400 mm diameter sealed steel culvert which will carry the pipelines out of the Doris Creek crossing valley to prevent spillage entering the creek in the event of an accident or malfunction. This steel culvert will cross the clear-span bridge along its north side as shown in Figure 3. The pipe will be separated from the roadway by a guardrail. Once outside the crossing valley the road way has been graded to drain into a number of emergency dump catch basins sited along the access road to Tail Lake at the low points to capture pipe spillage in the event of an accidental break.

Figure 3: SRK Drawing S-12a - Bridge Crossing Plan and Typical Cross Section

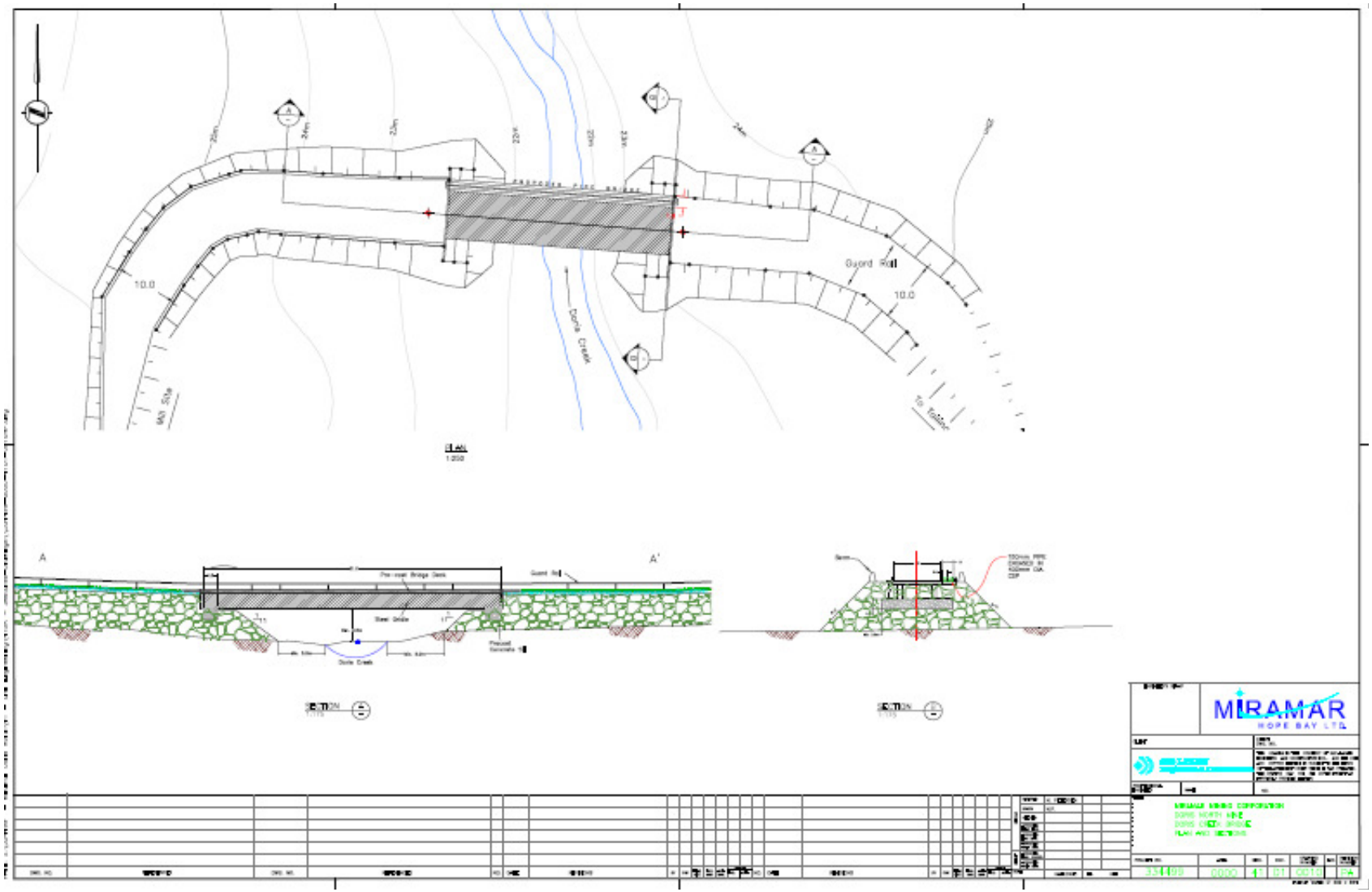
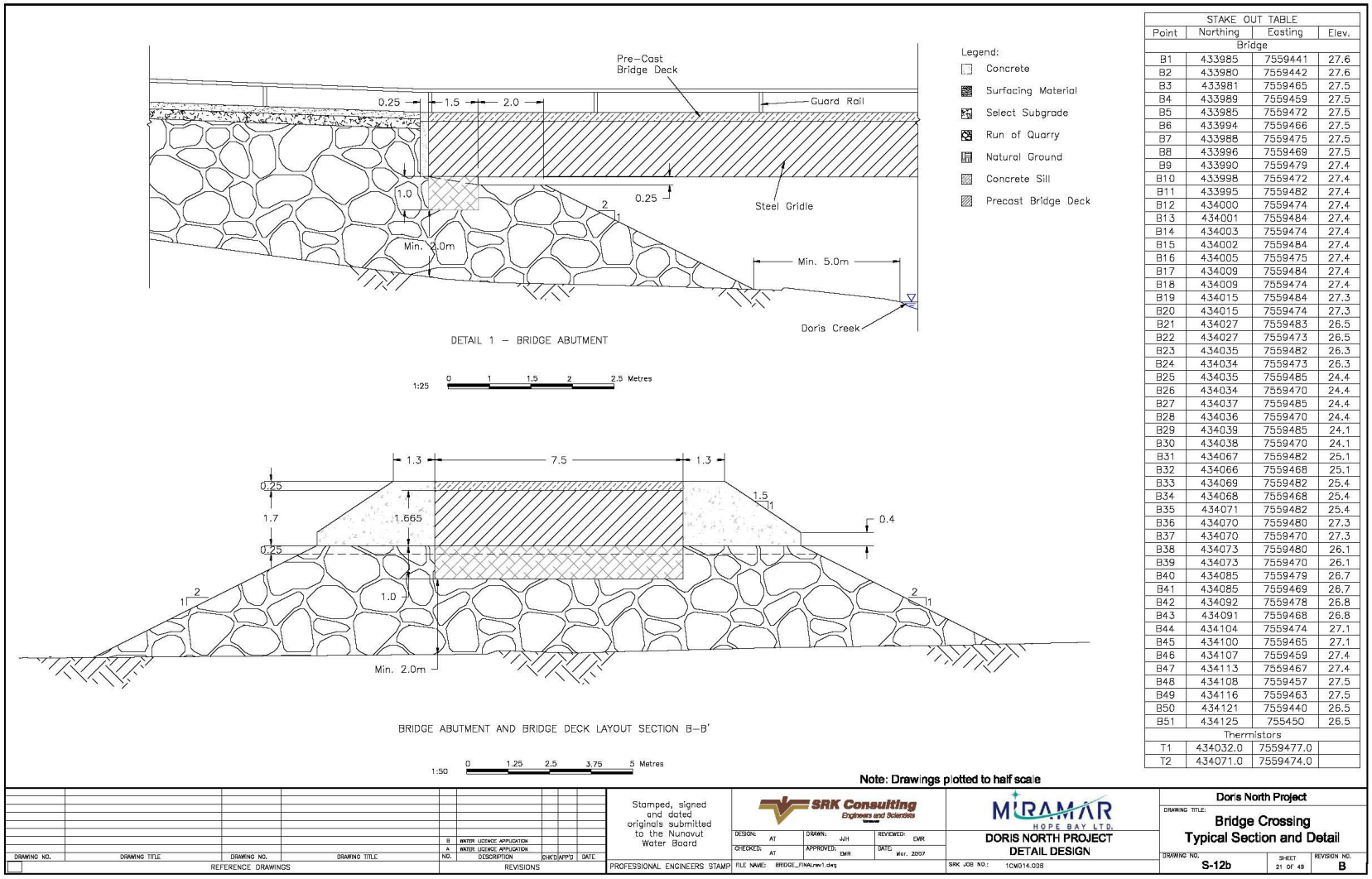


Figure 4: SRK Drawing S-12b – Bridge Crossing Typical Section and Detail



STAKE OUT TABLE			
Point	Northing	Easting	Elev.
Bridge			
B1	433985	7559441	27.6
B2	433980	7559442	27.6
B3	433981	7559465	27.5
B4	433989	7559459	27.5
B5	433985	7559472	27.5
B6	433994	7559466	27.5
B7	433988	7559475	27.5
B8	433996	7559469	27.5
B9	433990	7559479	27.4
B10	433998	7559472	27.4
B11	433995	7559482	27.4
B12	434000	7559474	27.4
B13	434001	7559484	27.4
B14	434003	7559474	27.4
B15	434002	7559484	27.4
B16	434005	7559475	27.4
B17	434009	7559484	27.4
B18	434009	7559474	27.4
B19	434015	7559484	27.3
B20	434015	7559474	27.3
B21	434027	7559483	26.5
B22	434027	7559473	26.5
B23	434035	7559482	26.3
B24	434034	7559473	26.3
B25	434035	7559485	24.4
B26	434034	7559470	24.4
B27	434037	7559485	24.4
B28	434036	7559470	24.4
B29	434039	7559485	24.1
B30	434038	7559470	24.1
B31	434067	7559482	25.1
B32	434066	7559468	25.1
B33	434069	7559482	25.4
B34	434068	7559468	25.4
B35	434071	7559482	25.4
B36	434070	7559480	27.3
B37	434070	7559470	27.3
B38	434073	7559480	26.1
B39	434073	7559470	26.1
B40	434085	7559479	26.7
B41	434085	7559469	26.7
B42	434092	7559478	26.8
B43	434091	7559468	26.8
B44	434104	7559474	27.1
B45	434100	7559465	27.1
B46	434107	7559459	27.4
B47	434113	7559467	27.4
B48	434108	7559457	27.5
B49	434116	7559463	27.5
B50	434121	7559440	26.5
B51	434125	755450	26.5
Therrnistors			
T1	434032.0	7559477.0	
T2	434071.0	7559474.0	

4.2 Bridge and Bridge Abutment Construction

The planned components for the construction of the Doris Outflow creek bridge crossing are as follows:

- The abutments will be constructed using the same techniques as that used for the roads; however, the fill thickness is substantially greater, requiring more run-of-quarry material.
- Once the abutments have reached the elevation of the underside of the bridge deck system, the pre-cast concrete sills and retaining walls for the bridge will be put in place.
- The bridge will be assembled away from the crossing and lowered in place onto the sills using a crane. The Contractor will not have construction equipment in the stream bed, unless they are working on a dedicated ice bridge.
- The remainder of the abutment fill will be placed up to the road deck elevation, taking care to use hand-compacting techniques adjacent to the retaining walls.

4.3 Operation and Maintenance Procedures

The bridge abutments will be rock fill structures that will require the same operational and maintenance procedures for roads as listed in the following sections. Generally operation of the project roads does not require any special consideration outside of what would normally be considered applicable from a safety perspective. All roads and the bridge are for the sole use of MHBL; however, MHBL acknowledges that the roads may be used by visitors from the local communities if and when they pass through the area (i.e. by snow machine or dog sled or on foot).

4.3.1 Operation

Operation of the bridge will be accordance with the following procedures:

- MHBL will take all necessary precautions to post appropriate warning signs along the roads to advise road users of any potential hazards along the way. Strict enforcement of the speed limit is also recommended.
- If necessary, MHBL may apply water to the road surfaces in the summer months as a dust suppression agent. The water will be drawn directly from Doris Lake, and will be deployed by a tanker truck. No chemical dust suppressants will be used.
- Winter snow clearing will be done using a snow cat, or some other suitable equipment. The snow will be pushed off the side of the road, always towards the downstream side where practical. Care will be taken not to block culverts or instrument clusters.

- Generally no winter de-icing agents will be used. If ice makes the roads impassable, friction methods will be used such as application of pea-gravel as opposed to application of salt.
- Many of the roads share space with pipelines. MHBL will take all necessary precautions to ensure that road users are aware of where the pipelines are at all times.

4.3.2 Maintenance

Maintenance will be an ongoing task, and will consist of the following components:

- During the summer months, the road and turnout surfaces, as well as the caribou crossings must be regularly visually inspected for signs of settlement, potholes, ruts or any standing water. Should any of these signs be detected, maintenance should be carried out using a conventional road grader using standard road grading procedures for gravel topped roads. The grader must first roughen up the surface, re-shape the crown and remove any ruts and/or potholes. Periodically new topping gravel may have to be placed on the surface to fill in voids such as potholes or undue settlement, or to re-shape the road crown. MHBL will prepare stockpiles of surfacing material expressly for this purpose during the initial construction phase.
- Winter road maintenance entails predominantly snow removal. Snow removal will be done with due care to avoid removal of any road surfacing material with the snow. Stockpiling of snow will be done in such a fashion that no large ponds will be created during the spring melt. The caribou crossings do not have to be cleared of snow; however, snow removed from the roads will not be stockpiled on the caribou crossings.
- During all maintenance activity, MHBL will have to take special precautions to ensure that the pipelines sharing some of the road alignments are not damaged.

Additional maintenance aspects of the bridge include:

- Annually, the bridge and safety guard rails along the approach to the bridge must be thoroughly inspected for wear, damage and corrosion. All deficiencies must be replaced or repaired as necessary as soon as practical. If in the opinion of the inspector there is a safety concern, the bridge will be decommissioned until the repairs have been carried out.

5.0 Bridge and Bridge Abutment Design Specifications

1. The bridge will be a pre-manufactured steel modular.

2. There must be 2.1 m of clearance between the average creek level and the bottom of the bridge.

3. The Contractor is to take extra caution during construction to ensure that the stream is not impacted, especially as a result of constructing the winter ice-bridge.

4. The abutment construction must be during winter to ensure frozen ground conditions below the foundation. The abutment shall be constructed as shown on the drawings.

5. The abutment shall be minimum 5 m away from the edge of the creek.

6. A pre-cast concrete retaining wall for the bridge shall be installed at appropriate lines and levels, and according to manufacturer's specifications prior to completion of the abutment backfill.

7. A pre-cast concrete sill for the bridge shall be placed in front of the retaining wall at appropriate lines and levels according to the drawings and manufacturer's recommendations.

8. The abutment shall be ramped to a minimum 5H: 1V up to the bridge deck level.

9. W-beam flex guardrails affixed to 0.6 m tall galvanized posts will be installed on the bridge as well as along a 120 m section of both sides of the bridge abutments.

6.0 Final Reclamation of the Bridge and Abutments

The Doris Creek Bridge will be required for post-closure maintenance and monitoring at the Tail Lake TCA and will be decommissioned and reclaimed at the end of the closure and reclamation period as follows:

- The clear span bridge will be removed, disassembled and the demolition debris disposed of in the on-site non-hazardous solid waste disposal site. The bridge footings will be removed and the fill on the stream banks graded and armoured at the road crossing to prevent precipitation runoff eroding away the exposed bank.