

Appendix 18

Design Brief: Doris North Project Expanded Ore Storage
Pad (T; SRK, August 2011)



Memo

To:	Chris Hanks, Christine Kowbel	Date:	August 4, 2011
Company:	Hope Bay Mining Limited	From:	John Kurylo, Iozsef Miskolczi, Maritz Rykaart
Copy to:	Lea-Marie Bowes-Lyon	Project #:	1CH008.049
Subject:	Design Brief: Doris North Project Expanded Ore Storage Pad (Pad T)		

1 Introduction

Hope Bay Mining Limited (HBML), a wholly owned subsidiary of Newmont Mining Company (NMC) is currently in the process of constructing their Doris North Project (Project) in the Kitikmeot region of Nunavut, Canada.

Due to the increased mine life of the Doris North Project, there is a need to increase the ore storage space at the mine site. The proposed new ore storage pad, referred from herein as Pad T would be constructed immediately north of the existing ore storage pad (Pad Q), which is located near the Doris North Camp. Due to the terrain configuration, Pad T will be constructed as a tiered structure. Depending on the requirements for ore storage at any stage of the Project, Pad T may be used for additional ore storage, for additional waste rock storage, as general surface infrastructure pads, or any combination thereof.

Pad T will be graded such that run-off from the pad will drain towards the existing Pollution Control Pond (PCP). Since the existing site water management plan already accounts for run-off from this part of the catchment draining to the PCP, no additional water management structures are required.

This memo provides complete details of the pad design, and should be read in conjunction with the attached set of detailed engineering drawings (Attachment A).

2 Design Concept

Existing ore and waste rock pads for the Doris North Project has been designed on the basis that immediately overlying the tundra there will be a 1m thick layer of geochemically acceptable material, upon which the ore and/or waste rock can be stockpiled. Pad T has been designed using the same basis; however, given the topography in the area, and to ensure maximum functional use of the area, the pad has been tiered. Three tiers are proposed at elevation 57.0m, 60.5m, and 62.5m. To facilitate maximum functionality of the pads, each tier will have a minimum width of 25m, and the maximum thickness of any tier is limited as far as practicable to less than ~8m. The tiers are connected via a series of access ramps, each with a maximum gradient of less than 10%.

The Doris North Project, including the proposed Pad T is constructed on KIA land, and HBML has secured a Commercial Lease for the property, including the proposed expansion.

3 Expansion Alternatives

HBML considered a number of alternative ore storage pad locations. These included:

- Store ore on existing Pads F and/or G: Pad F and G are tiered pads immediately south of the portal and Pad Q, which are currently being used as general laydown area as well as for select mine infrastructure. These pads are designed to drain towards the PCP and can readily be used for additional ore storage. They are however currently designated as future

waste rock storage areas. Furthermore, these pads are down-gradient of the portal and the ore feed bin, which means that re-handling of the ore would require an uphill haul. For these reasons this alternative has been eliminated from further consideration.

- Store ore on a new pad south of the float plane access road: A new ore storage pad can be constructed immediately south of the float plane access road opposite the PCP and the Sedimentation Pond. Key disadvantages of this alternative includes: (1) the area is poorly drained and as a result has poor foundation conditions, (2) the proximity of this area to the helicopter base implies that the height of ore storage would be restricted to ensure unhindered aircraft approach angles, (3) a long uphill haul back to the ore feed bin is required, (4) hauling ore to the feed bin will require crossing the primary site access road, and (5) an additional PCP will have to be constructed downstream of the pad. This site has therefore been eliminated from further evaluation.
- Store ore on a new pad east of the Tail Lake Access Road: Ore can be stored on a new pad between Doris Lake and the Tail Lake Access Road. This alternative was not pursued for the following reasons: (1) an additional PCP will be required downstream of the pad, (2) the location will require a long uphill haul back to the ore feed bin, and (3) hauling ore to the feed bin will require crossing the Tail Lake Access Road.
- Store ore on a new pad immediately north of existing Pad Q: This pad, which was selected as the preferred alternative, is the closest to the portal, and will require a downhill haul to the ore feed bin and will not require additional water management structures to be constructed. A disadvantage of this location is the steep topography which requires construction of a tiered pad to make it functional. This implies greater construction material quantities, and greater volume of geochemically acceptable rock would have to be sourced.

4 System Design

4.1 Design Criteria

The design criteria for the rock fill pad are as follows:

- Width of pad tier shall be a minimum of 25m.
- Ramp grades shall not exceed 10%.
- Ramps shall have a minimum width of 8m and turning radius of 12m.
- Each tier shall be constructed with a general drainage gradient of 0.5%.
- A minimum 0.85m thick Run-of-Quarry (ROQ) fill base overlain by a 0.15m surfacing material shall be constructed.
- Maximum pad side slope gradient shall be 1.5H:1V where fill thickness is less than 2m and 2H:1V where fill thickness exceeds 2m.
- The upstream North portion of the berm will incorporate a GCL clay liner to ensure runoff is adequately diverted.

4.2 Survey Data

The design of Pad T is based on 2010 as-built information received from Nuna Logistics and a topographic contour set provided by HBML, based on 2007 aerial photography. Contour intervals shown are typically 0.5m.

4.3 Foundation Conditions

Comprehensive geotechnical investigations have been carried out at the Doris North Site (SRK 2009). This information confirms that the area lies within the zone of continuous permafrost, with the permafrost being up to 550m deep. Permafrost temperatures at the surface are about -8°C and the active layer is generally less than 1m thick. Laboratory and in-situ tests on disturbed and undisturbed samples indicate that the overburden soils are predominantly comprised of marine silts and clays, and the pore-water in these soils have high salinity, depressing the freezing point to -2°C.

The ice-rich overburden soils are typically between 5 and 20m deep, before encountering competent bedrock, predominantly basalt. Bedrock is frequently exposed, rising columnar 5 to 100m above the surrounding landscape.

Thermal modeling was completed to determine how much fill would be required over the tundra to ensure the permafrost would be preserved for the infrastructure construction (SRK 2006). In the case of Pad T, the minimum fill thickness would be 1m; however due to the tiered nature of the pads actual fill thickness will in most cases far exceed this value.

5 Construction Methodology

Pad T will be constructed using conventional load-haul-dump-place techniques. Geochemically benign rock (either ROQ or waste rock) will be used. The waste rock would originate from the Doris North portal and quarried rock from any of the approved rock quarries forming part of the Doris North Project.

Complete material quantities for constructing Pad T are presented on the attached drawing DN-DMC-T1, Rev. A.

Regards,

SRK Consulting (Canada) Inc.

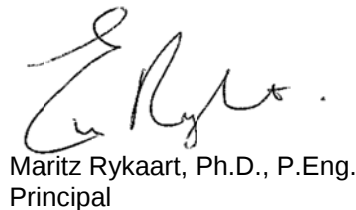


John Kurylo, E.I.T.
Staff Consultant



Iozsef Miskolczi, E.I.T.
Staff Consultant

Reviewed By:



Maritz Rykaart, Ph.D., P.Eng.
Principal

6 References

SRK Consulting (Canada) Inc., 2009. Hope Bay Gold Project: Stage 2 Overburden Characterization Report, Prepared for Hope Bay Mining Limited, Project Number: 1CH008.002, September, 2009.

SRK Consulting (Canada) Inc., 2006. Doris North Project – Thermal modeling to support design thickness for granular pads. Technical Memorandum, Prepared for Miramar Hope Bay Limited, Project Number: 1CM014.008, August 20, 2006.

Attachment A

Engineering Drawings for the Doris North Camp Area – Pad T

Engineering Drawings for the Doris North Camp Area - Pad T, Doris North Project, Nunavut, Canada Water License Amendment

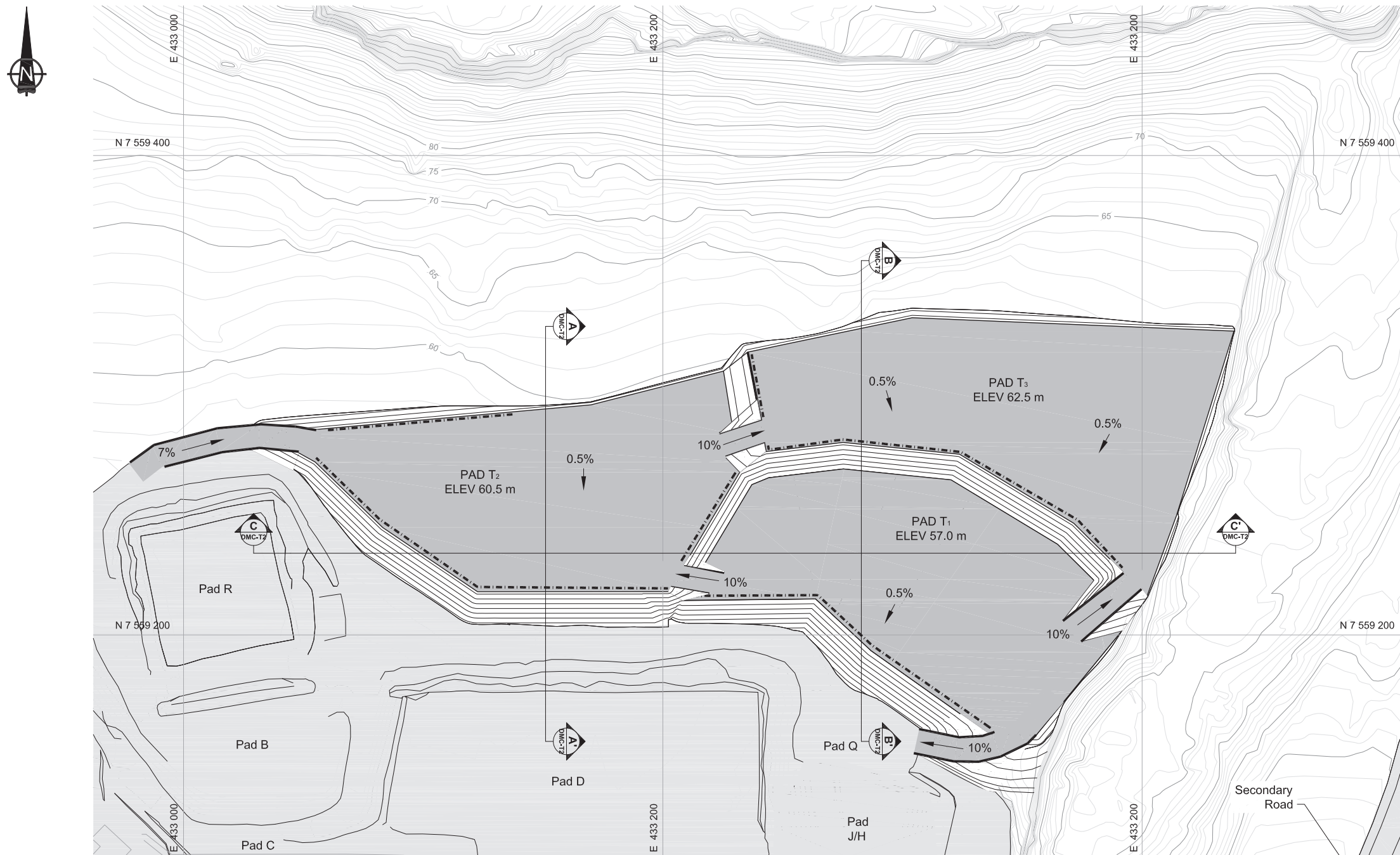
ACTIVE DRAWING STATUS

SRK DWG NUMBER	DRAWING TITLE	REV.	DATE	STATUS
DN-DMC-T0	Engineering Drawings for the Doris North Camp Area - Pad T	A	Jun. 14, 2011	Issued for Discussion
DN-DMC-T1	Pad T - General Arrangement	A	Jun. 14, 2011	Issued for Discussion
DN-DMC-T2	Pad T - Sections & Details	A	Jun. 14, 2011	Issued for Discussion

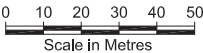
HOPE BAY MINING LTD.



PROJECT NO: 1CH008.049
ISSUED FOR DISCUSSION
Revision A
June 14, 2011
DN-DMC-T0

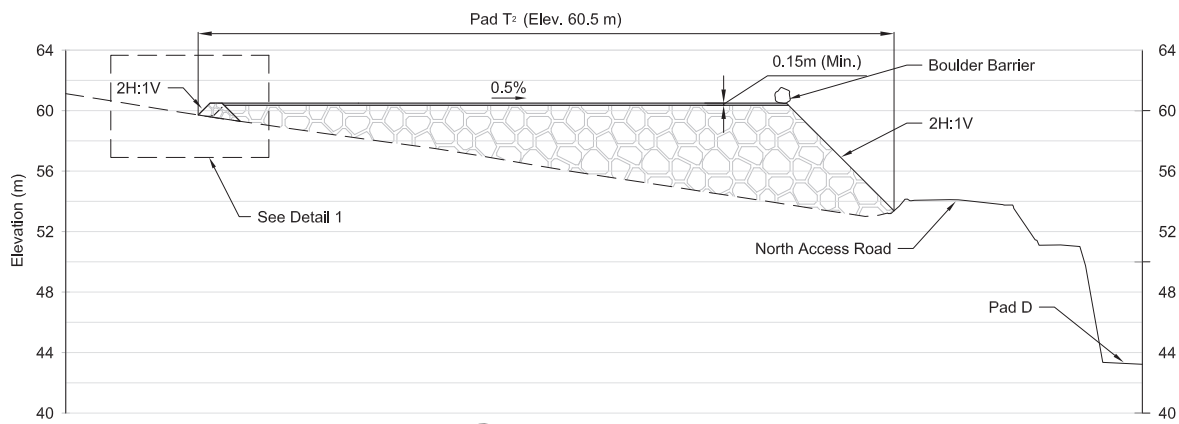


LEGEND

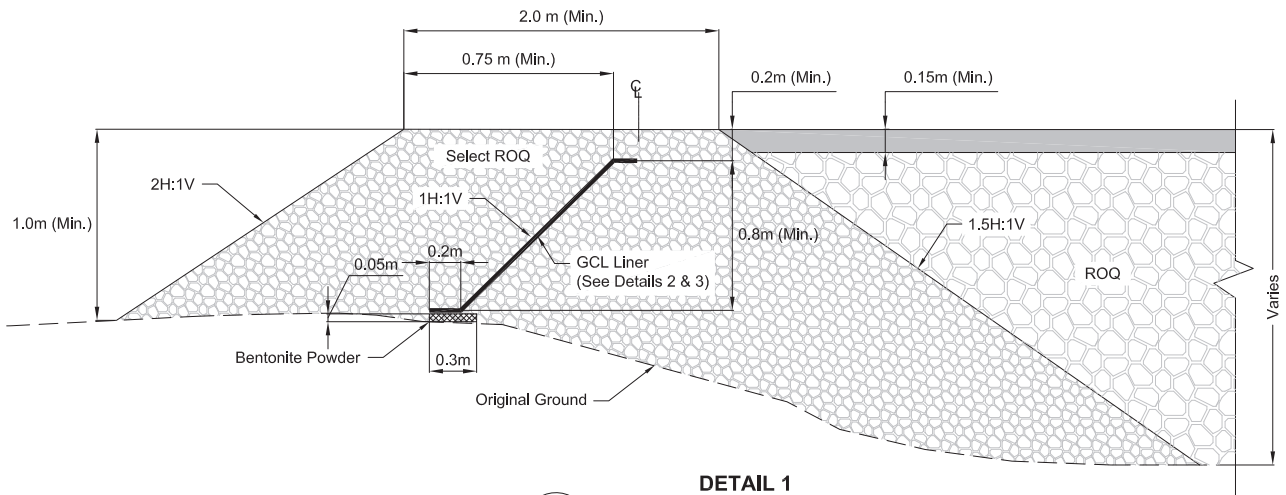


Materials List and Quantities

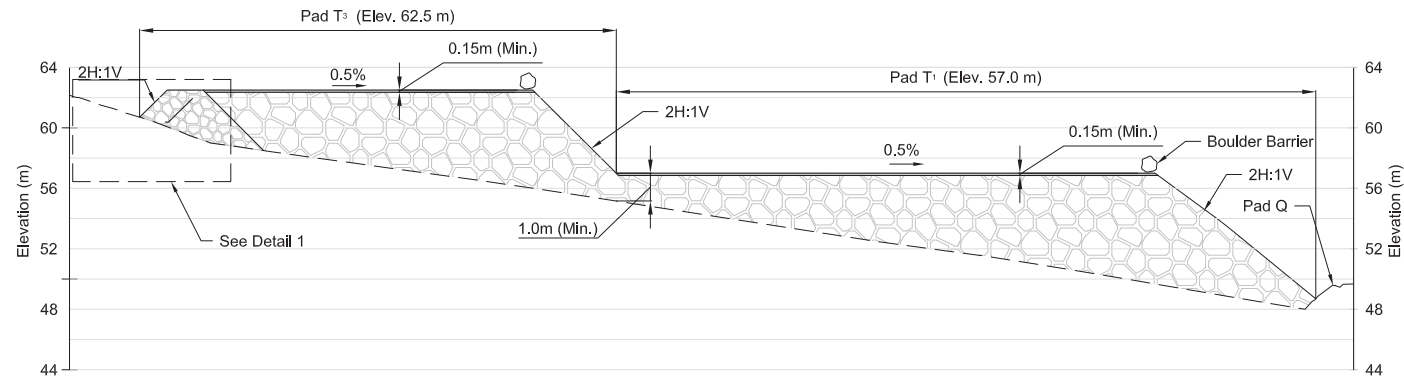
[illegible]



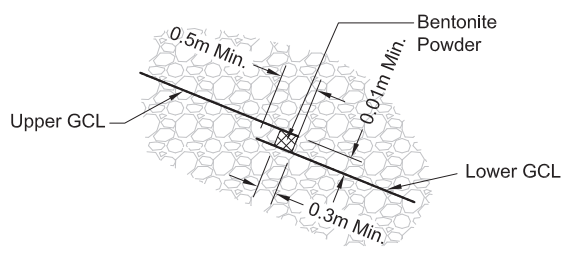
A SECTION A - A'
DN-DMC-T1



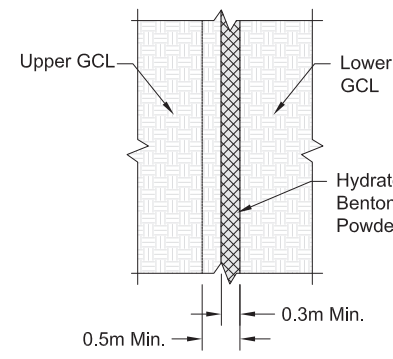
1 UPSTREAM DIVERSION BERM
DN-DMC-T1 NOT TO SCALE



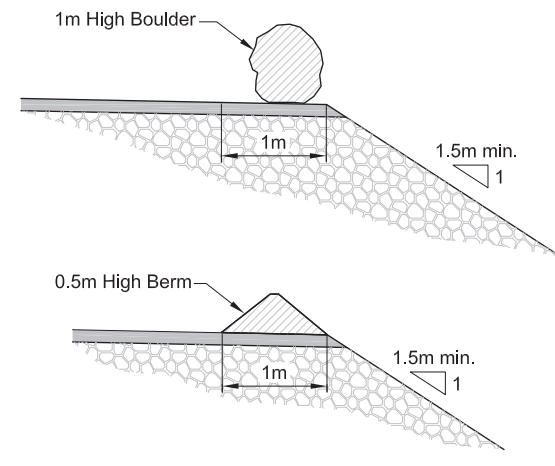
B SECTION B - B'
DN-DMC-T1



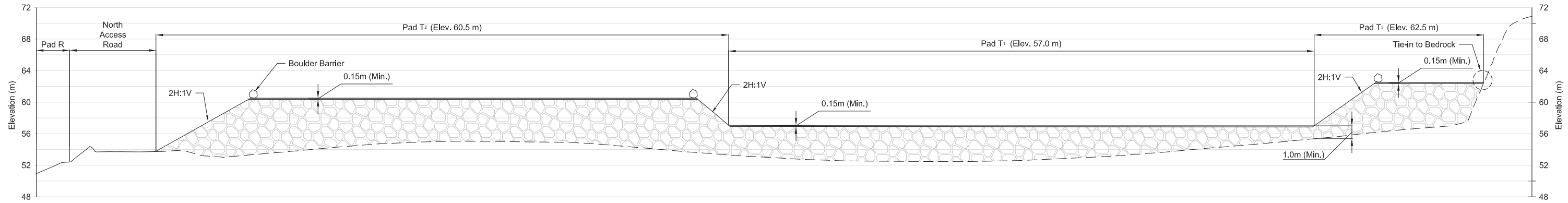
2 TYPICAL GCL OVERLAP - SECTION
NOT TO SCALE



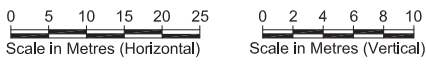
3 TYPICAL GCL OVERLAP - PERPENDICULAR VIEW
NOT TO SCALE



4 TYPICAL BERM BARRIER OPTIONS
NOT TO SCALE



A SECTION C - C'
DN-DMC-T1



2X VERTICAL EXAGGERATION

																		Doris North																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
										DESIGN: JBK				DRAWN: BFM				REVIEWED: LW				PAD T - Sections & Details																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
										CHECKED: JBK				APPROVED: EMR				DATE: JUNE 14, 2011																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
																		HOPE BAY MINING LTD.				DRAWING NO. DN-DMC-T2				SHEET 3 OF 3		REVISION NO. A																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
DRAWING NO.										DRAWING TITLE										DRAWING NO.										DRAWING TITLE										A				ISSUED FOR DISCUSSION				JBK		EMR		14JUN11		PROFESSIONAL ENGINEERS STAMP				FILE NAME: DN-DMC-00_T1_T2.dwg				SRK JOB NO.: 1CH008,049																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
																																								NO.		DESCRIPTION		CHK'D		APP'D		DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															