

# Memo

**To** Jennifer Range, Cyril Jenkins, Mathieu Gallant,  
Behzad Soltani (Agnico Eagle)

**From** Peter Luedke, PEng (SRK)  
John Kurylo, MSc, PEng (SRK)

**Client** Agnico Eagle Mines Limited

**Project** CAPR003566

**Date** February 10, 2026

**Subject** Hope Bay TIA - North Dam – Upstream Berm - Design Summary for Notice of Construction

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## 1 Introduction

SRK Consulting (Canada) Inc. was retained by Agnico Eagle Mines Limited (Agnico Eagle) to develop a detailed design for a structure to be constructed upstream of the North Dam, fully within the Tailings Impoundment Area (TIA) at the Hope Bay mine in Nunavut. This new structure has been named the North Dam Upstream Berm and is referred to by that name herein. Thermal monitoring data within the North Dam indicates that warming has occurred within the core due to high water periods in the reclaim pond of the TIA (up to 33.0 masl in 2023). Agnico Eagle has proactively implemented mitigation measures such as reducing the water level in the TIA and installing a hybrid cooling system on the thermosyphons. Based on these measures alone, the core temperatures have cooled with the upstream edge of the core returning to below the design temperature of -2°C. The design of the Upstream Berm will provide an additional long term passive mitigation, designed to reduce thermal effects of the Reclaim Pond water level. This memo summarizes the design of the Upstream Berm and supports the notice of construction submission for this structure.

Agnico Eagle personnel contributed to sections of the memorandum, specifically to include comments on site environmental and operational considerations, schedules and equipment availability.

## 2 Project Purpose

Agnico Eagle intends to construct the North Dam Upstream Berm at the Hope Bay mine to provide additional thermal protection to the North Dam from the seasonal fluctuation of water levels. The structure is located along the upstream slope of the North Dam. The Upstream Berm will be constructed in accordance with the Water License 2AM-DOH1335, Part A, Item 1. Specifically:

*The Licensee may conduct mining and associated activities at the Doris-Madrid Project, in the Kitikmeot Region of Nunavut at the following project extents, including:*

- *The construction of dams, a spillway, and shoreline erosion control needed for the operation of the Tailings Impoundment Area;*
- *The deposition of tailings into the Tailings Impoundment Area;*
- *The use of Waste Rock for construction;*
- *The construction of additional surface infrastructure.*

## 3 Design Summary

### 3.1 North Dam Upstream Berm Design Concept:

The North Dam Upstream Berm design is summarized as:

- A lower permeability structure installed along the upstream face of the North Dam, fully within the TIA to provide additional thermal protection of the North Dam frozen core and foundation.
- The lower permeability berm will displace the Reclaim Pond further upstream from the North Dam, to reduce and dampen the thermal effects of the fluctuating water level in the TIA on the dam core.
- The lower permeability berm will be constructed with compacted tailings backfilled between two rock fill berms.
  - Non-woven geotextile and geosynthetic clay liner (GCL) included to reduce permeability, to improve tailings retention and offset thermal boundary conditions from the dam core.
- Minimum crest elevation of 32.0 masl has been adopted to mitigate typical expected water levels within the TIA during Care and Maintenance. The crest elevation may be adjusted to accommodate changes in expected water level projections.
- The North Dam remains the primary containment structure of the north end of the TIA, high inflow events may exceed the Upstream Berm but will remain contained by the North Dam.
- The structure will primarily be constructed using waste rock and stockpiled tailings, in a similar manner to the Interim Dike, constructed in 2023 within the existing TIA.
- The berm crest elevation may be raised as needed to accommodate changes in expected water level projections or operational water levels.

### 3.2 Geotechnical Design

The Upstream Berm will be constructed upstream (immediately south) of the North Dam toe. The upstream slope of the Upstream Berm consists of an 8-meter-wide rock berm with an upstream slope of 2H:1V. Use of a wide rock berm will allow trafficability of heavy equipment on the rock fill create and allowance for the occurrence of settlement or relaxation of the upstream slope face without impacting the compacted tailings 'core' and allow for simplified maintenance if required. The 'core' is the unfrozen core of compacted tailings of the Upstream Berm, not be confused with the frozen core of the North Dam. The stability of the upstream berm does not rely on a frozen foundation and does not

negatively impact the stability of the North Dam due to the structures height and broad width and position relative to the North Dam toe.

### 3.2.1 Low Permeability Tailings Core

The Upstream Berm low permeability element consists of a compacted tailings core and GCL liner on the downstream side of the core. The core will have a minimum crest elevation of 32.0 masl and be keyed into the foundation overburden to reduce potential bypass of water through the interface below the compacted tailings, and to lengthen the pathway for water flow in the upstream rock fill shell. The tailings will be retained by rock berms on both sides with rock bedding layers and non-woven geotextile filters.

### 3.3 Instrumentation

The Upstream Berm will be instrumented with five Ground Temperature Cables (GTCs) and at least eight settlement monitoring points. All instrumentation will be installed following construction in the locations indicated in Attachment 1.

## 4 Construction Materials

The North Dam Upstream Berm will be constructed within the TIA. For this work, waste rock and tailings are expected to be the primary construction materials however, these materials typically found on site are suitable for construction and meet the technical specifications (SRK 2022). All quarry rock (ROQ) construction materials (as required) shall be inspected and tested as per the established quarry rock management and testing plans on site.

**Table 4-1: Material Take Off**

Material	Quantity <sup>(1)</sup>	Unit	Notes
Waste Rock (or ROQ)	6,400	m <sup>3</sup>	Rock berm
Compacted Tailings	6,300	m <sup>3</sup>	
Bedding	420	m <sup>3</sup>	
Transition	440	m <sup>3</sup>	
Key Trench Excavation	300	m <sup>3</sup>	
Geosynthetic Clay Liner (GCL)	1,550	m <sup>2</sup>	
Non-woven Geotextile	2,800	m <sup>2</sup>	
Bentonite (granular or powder)	0.3	m <sup>3</sup>	
Vertical Ground Temperature Cables	5	ea	18 – 21 meters deep
Settlement Monitoring Points	8	ea	

Source: <https://srk.sharepoint.com/:x/s/FS208/EbBWaE7VgnFEuo8lAJd-zRQBCG14YpEKt3dmX3WGmkXXag?e=GRxwwk>

Notes:

<sup>1</sup> All quantities provided are neat line design volumes and do not include any considerations for bulking factors, overlap, waste or contingency.

## 5 Construction Considerations

The proposed construction of the North Dam Upstream Berm will include the following key construction considerations:

- Construction will be in accordance with the Hope Bay Earthworks and Geotechnical Engineering Technical Specifications (SRK 2022), to be updated prior to, or during construction as required by changes in the field.
- Construction is expected to occur during the winter of 2026, while the water level is low and the footprint can be cleared of ice and water prior to construction.
- Rockfill and tailings placement must be completed during the winter to at least 1.0 meter above the expected water level for that year.
- Ground temperature cables will be installed following completion of berm construction and will require installation of protective casing and data logger monuments.
- Care must be taken to avoid damage of existing North Dam monitoring infrastructure during construction. No modification to the North Dam are permitted without approval by the design engineer.
- Construction traffic shall be maintained within the ultimate construction footprint of the proposed works or along designated access routes, so as to minimize disturbance to the tundra. Further, site will need to take extra care to define equipment travel and traffic routes to ensure existing instrumentation on the North Dam is not damaged.
- The existing boat launch into the TIA Reclaim Pond (contact water) will be moved and re-established on the southwest side of the structure, as part of the construction.
- All surface runoff for the duration of construction will be managed according to water license 2AM-DOH1335 Part D, Item 9.

## 6 Quality Control and Quality Assurance

Quality Control (QC) and Quality Assurance (QA) shall be conducted in accordance with the Technical Specifications. Important considerations are listed below:

- Ensure all approvals are in place prior to commencing construction. Agnico Eagle Environment and Permitting team to be consulted for approval.
- A representative of the design engineer (in this case SRK) should be on site to monitor construction and ensure the design is adhered to or approve field design changes. Depending on construction schedule and Agnico Eagle's capacity on site to provide internal construction QC,

SRK may reduce the monitoring to select inspection(s) of the project at critical stages or once complete.

- Complete surveys of the area are required at key stages including:
  - The existing ground where materials are expected to be placed, with an adequate buffer to ensure that any overbuilt areas are covered.
  - Each interface / surface of material placement prior to a change in material type.
  - For any GCL placed a survey of the panel layout and overlaps should be completed; and
  - The final as-built condition including earthworks and liner placement.
- Quarry and construction rock monitoring program and the quarry management plan should be followed.
- A set of construction record drawings shall be produced, accompanied by a summary memorandum following the completion of construction.
- A monitoring plan would be developed based on the installed instrumentation.

## 7 Environmental and Monitoring Considerations

All construction is expected to occur within the TIA, however construction should follow site best practices as required, which may include:

- Best practices for construction and erosion control measures will be implemented, and license requirements for construction will be adhered to.
- For the first year, periodic inspections will be completed prior to and during freshet and following any notable rain events. Some initial maintenance should be expected during or post the first freshet after construction.
- All surface runoff for the duration of construction, which is reporting outside of the TIA, will be sampled according to Water License 2AM-DOH1335 Part D, Item 9.

## 8 Construction Equipment

At this time, the planned construction equipment list is expected to include, but may not be limited to:

- CAT 740/745 haul trucks
- CAT D6 or D8 Dozer to place road materials
- CAT 345/350 Excavator to assist with construction of the structure
- CAT 988 Loader to load quarried construction materials at the source

## 9 Construction Timeline

Key construction milestones are listed below:

- Construction is planned to occur in Q1 and early Q2 2026
  - Rock berm construction would ideally be completed during the winter to ensure the key trench and tailings placement start in cold temperatures and without substantial water to manage.

## Closure

If you have any questions or concerns regarding the design summary or notice of construction, please contact SRK.

Regards,  
SRK Consulting (Canada) Inc.

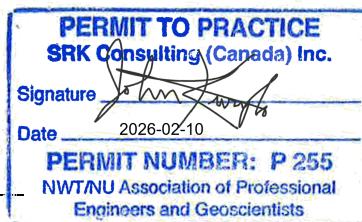
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Senior Consultant

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John Kurylo, MSc, PEng  
Principal Consultant

### Attachments:

Attachment 1      Drawings

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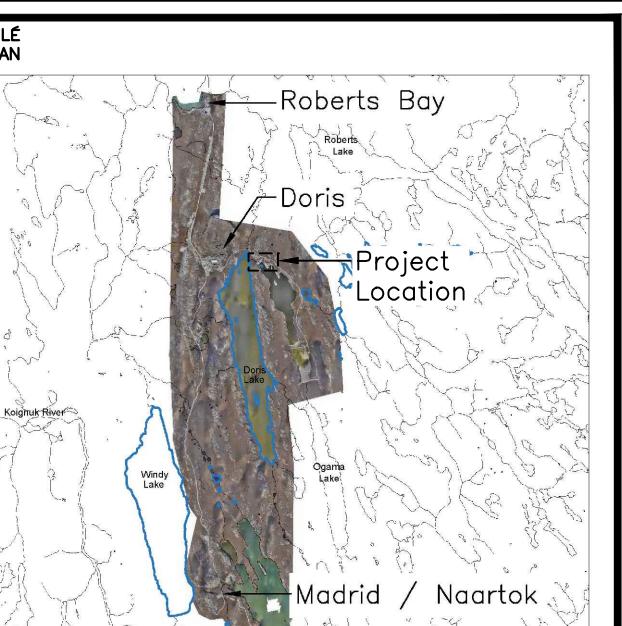
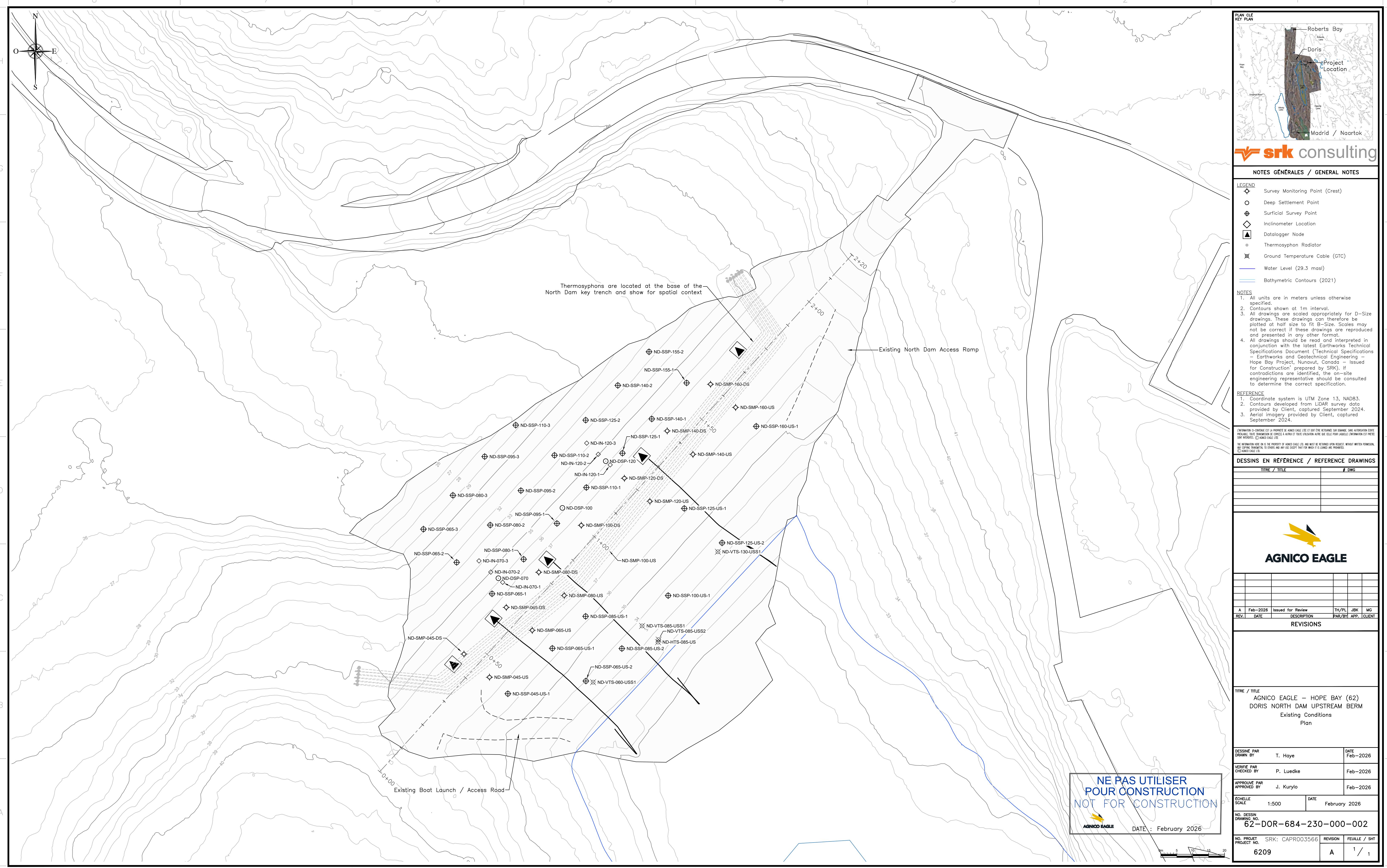
## References

SRK Consulting (Canada) Inc., (2022). Technical Specifications Earthworks and Geotechnical Engineering Hope Bay Project, Nunavut Canada – Revision I – Issue for Construction, CAPR00181, September 2022.

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**Attachment 1      Drawings**





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NOTES GÉNÉRALES / GENERAL NOTES

LEGEND	Survey Monitoring Point (Crest) Deep Settlement Point Surficial Survey Point Inclinometer Location Datalogger Node Thermosyphon Radiator Ground Temperature Cable (GTC) Water Level (29.3 msl) Bathymetric Contours (2021)
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**NOTES**

1. All units are in meters unless otherwise specified.
2. Contours shown at 1m interval.
3. All drawings are scaled appropriately for D-Size drawings. These drawings can therefore be scaled down for smaller sizes. Scales may not be correct if these drawings are reproduced and presented in any other format.
4. All drawings should be read and interpreted in conjunction with the most Earthworks Technical Specification Document Technical Specifications for Earthworks and Geotechnical Engineering for the Hope Bay Project, Nunavut, Canada, issued for Construction' prepared by SRK. If contradictions are identified, the on-site engineering representative should be consulted to determine the correct specification.

**REFERENCE**

1. Coordinate system is UTM Zone 13, NAD83.
2. Contours developed from LiDAR survey data provided by Client, captured September 2024.
3. Aerial imagery provided by Client, captured September 2024.

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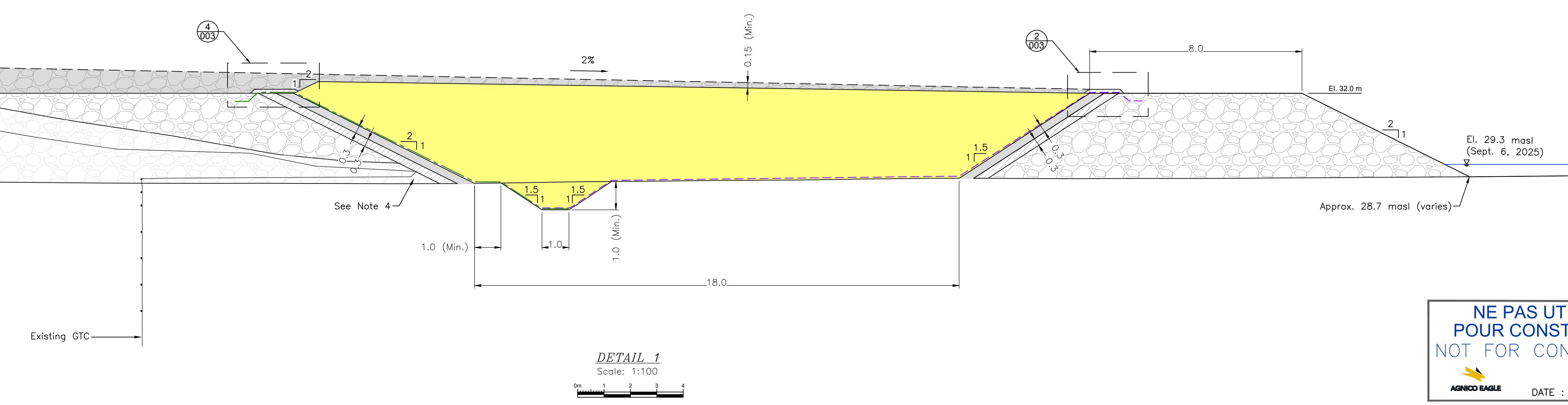
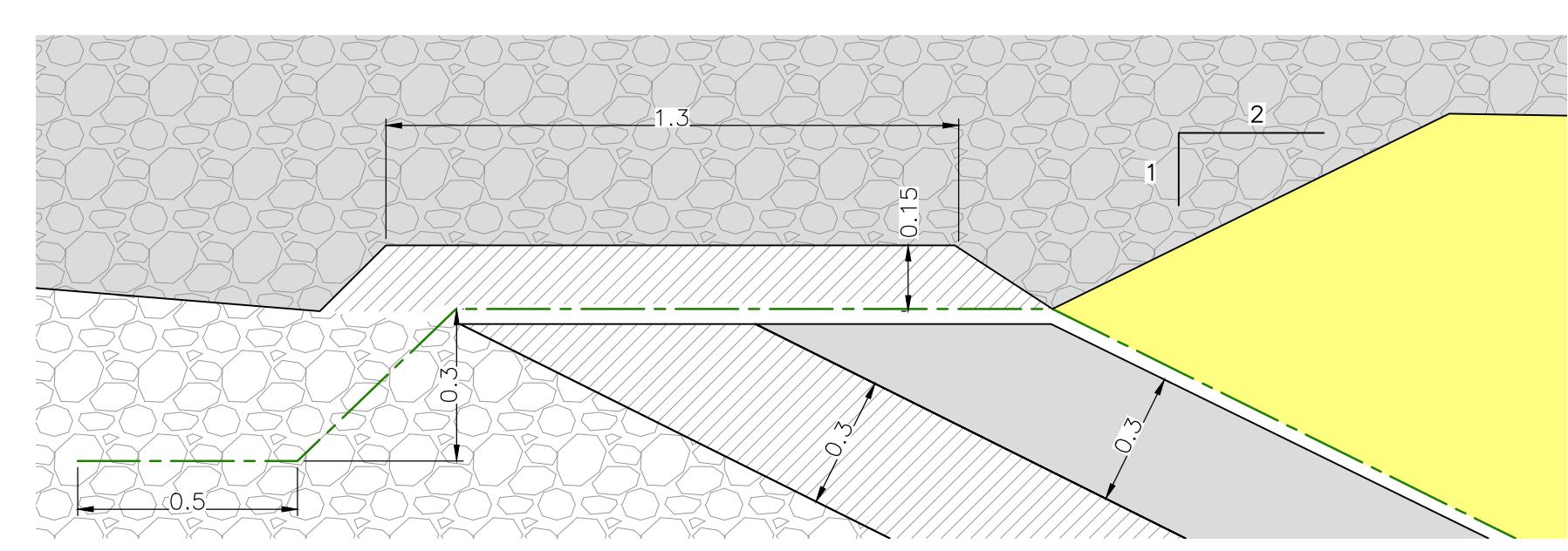
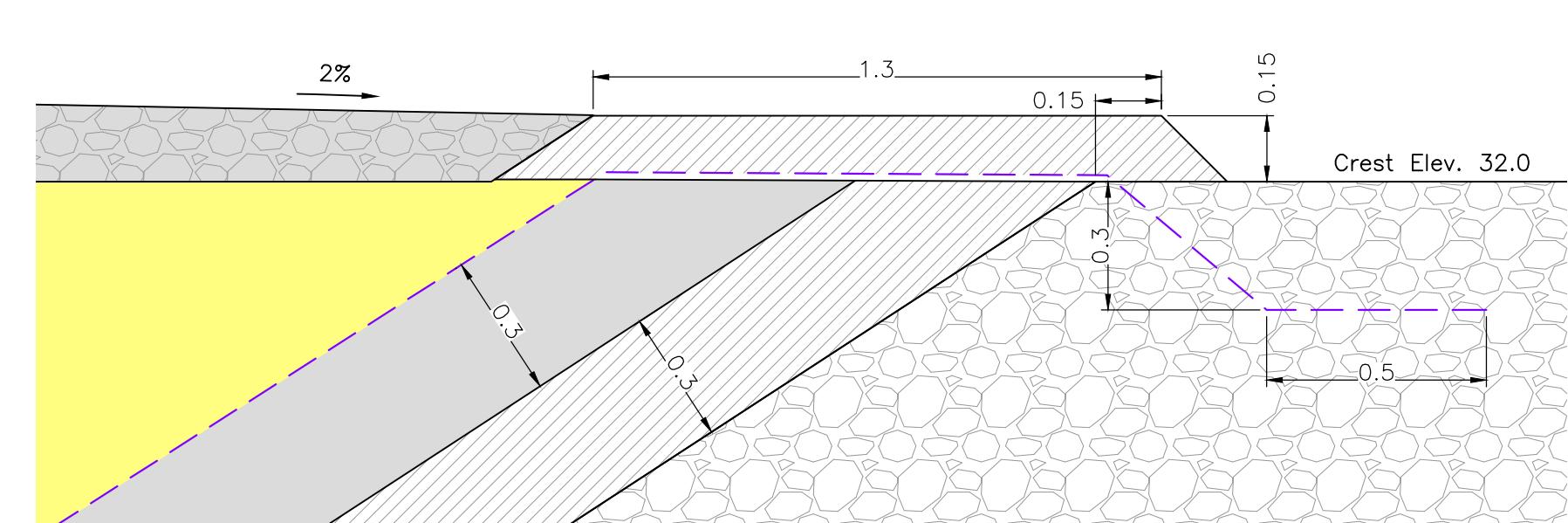
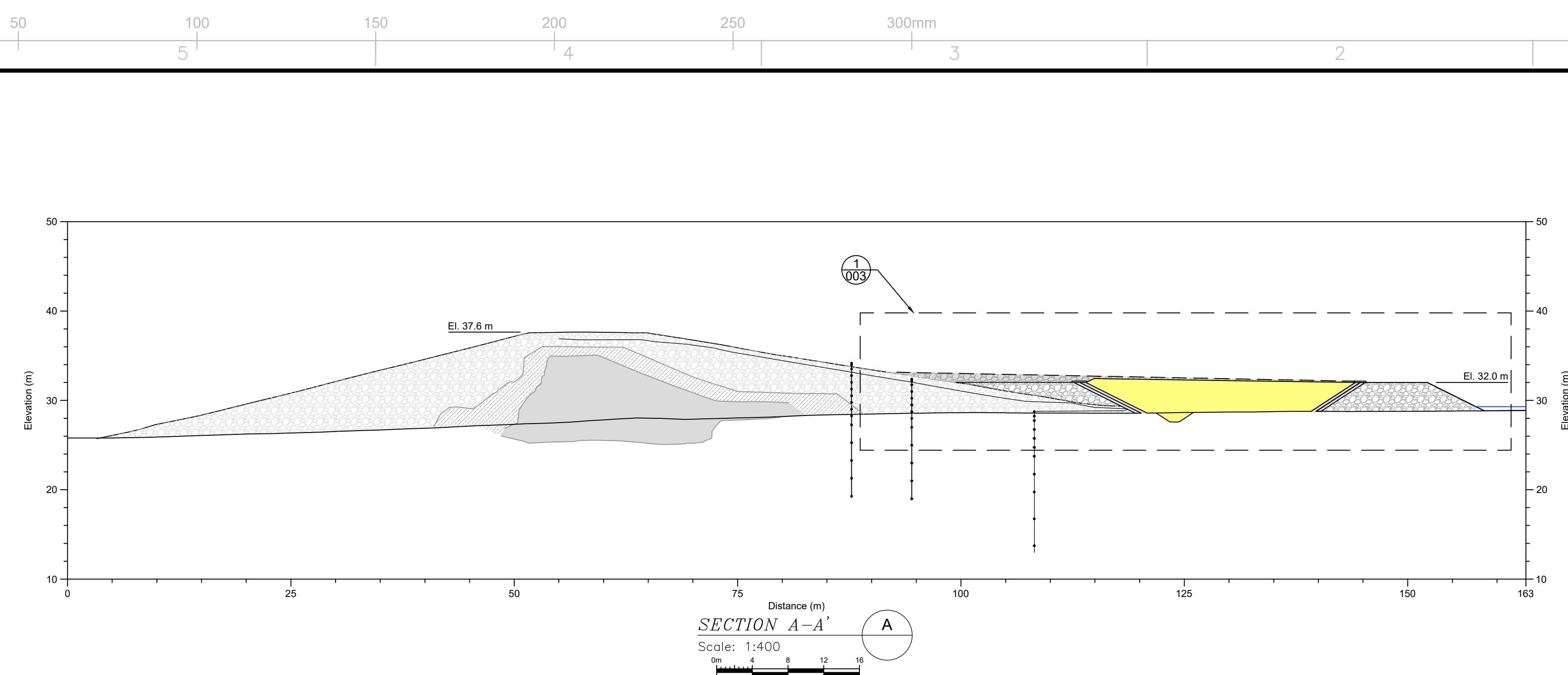
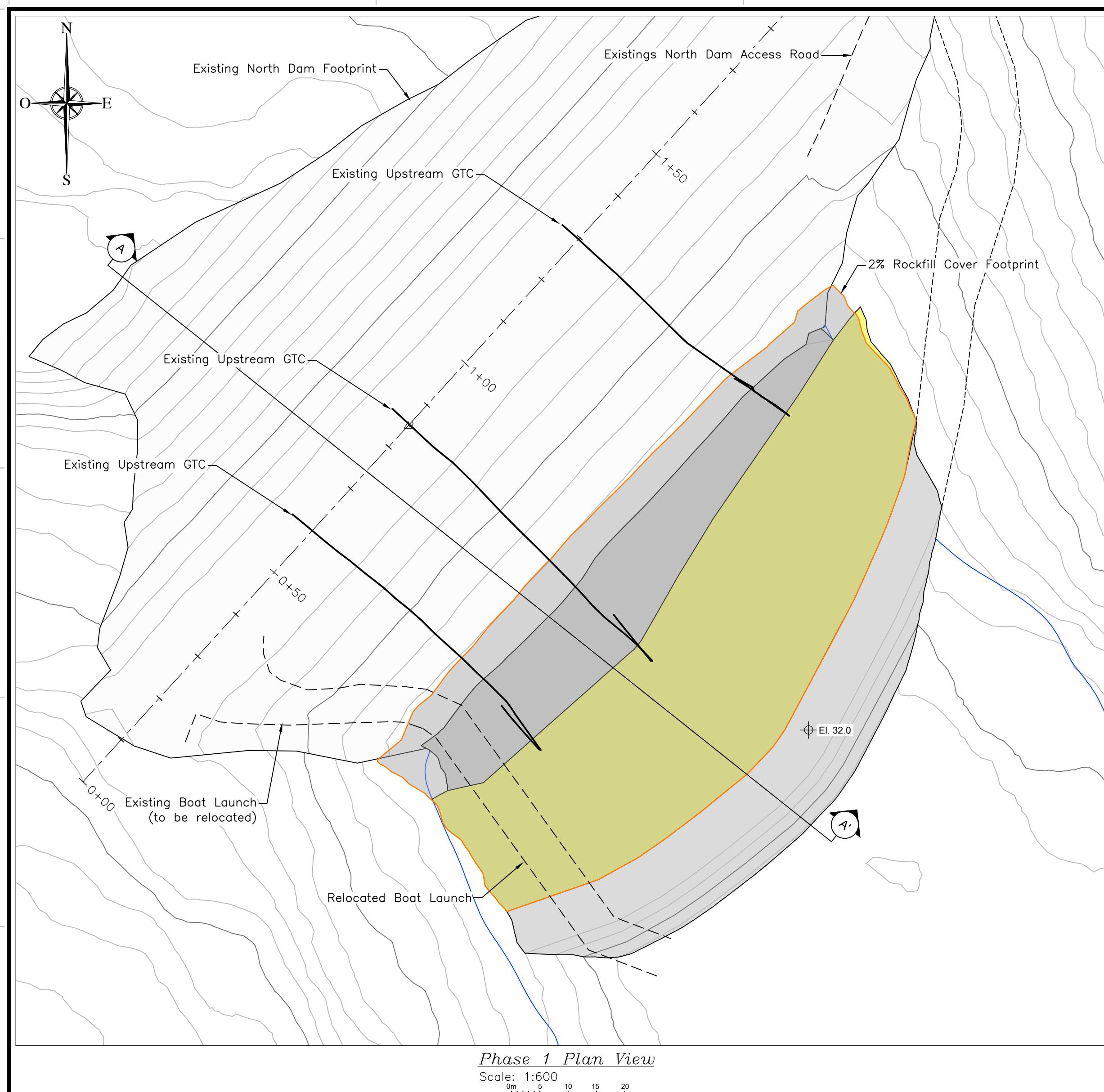
REVISIONS	

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DORIS NORTH DAM UPSTREAM BERM	
Existing Conditions	
Plan	

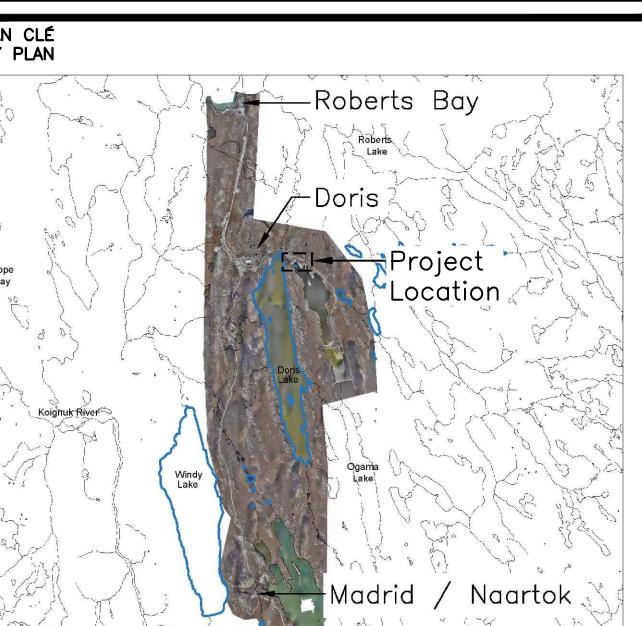
DESSINÉ PAR	T. Haye	DATE	Feb-2026
VERIFIÉ PAR	P. Luedke	DATE	Feb-2026
APPROUVE PAR	J. Kurylo	DATE	Feb-2026

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NOTES GÉNÉRALES / GENERAL NOTES

LEGEND

- Proposed GTC
- GCL
- Non-woven Geotextile
- Bedding Material
- Cover Material
- Rockfill Material
- Tailings Backfill Material
- Transition Material

NOTES

- All units are in meters unless otherwise specified.
- Contours shown at 1m interval.
- drawings are scaled appropriately for D-Size drawings. These drawings are therefore best plotted at half size to fit B-Size. Scales may not be correct if these drawings are reproduced and presented in any other format.
- No excavation or removal of rock fill is permitted. This is to avoid damage to the existing upstream North Dam temperature cables. The key trench alignment may require field modification, adjustments to actual field conditions should be done in consultation with the Design Engineer.
- All drawings should be read and interpreted in conjunction with the latest Earthworks Technical Specifications Document ("Technical Specifications for Earthworks and Geotechnical Engineering - Hope Bay Project, Nunavut, Canada, issued for Construction" prepared by SRK). If contradictions are identified, the on-site engineering representative should be consulted to determine the correct specification.
- Notes or specifications on any of the drawings apply to all current drawings in this drawing set.

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REVISIONS

TITRE / TITLE  
ANGÉO EAGLE – HOPE BAY (62)  
DORIS NORTH DAM UPSTREAM BERM  
Upstream Berm Phase 1  
Plan and Sections

DESSINÉ PAR T. Haye DATE Feb-2026  
VERIFIÉ PAR P. Luedke DATE Feb-2026

APPROUVE PAR J. Kurylo DATE Feb-2026  
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