Appendix 6: 2021 Annual Geotechnical Inspection Report

2021 Annual Geotechnical Inspection
Meliadine Gold Project, Rankin Inlet, Nunavut

PRESENTED TO
Agnico Eagle Mines Limited

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Tetra Tech Canada Inc.
14940 - 123 Avenue
Edmonton, AB T5V 1B4 CANADA
Tel 780.451.2121 Fax 780.454.5688

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EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (AEM) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2021 annual geotechnical inspection for the Meliadine Gold Mine, located approximately 25 km north of Rankin Inlet, in the Kivalliq Region of Nunavut. The Meliadine Gold Mine consists of underground development and open pits to extract gold ore.

The geotechnical inspection is pursuant to the requirements of the Type A Water Licence Permit No.2AM-MEL1631 (Nunavut Water Board 2016). Under Part I, Item 14 (page 21) and Schedule I, Item 1 (page 39) of the Water Licence, AEM is required to undertake an annual geotechnical inspection of its facilities between the months of July and September. The inspection is to be carried out by a geotechnical engineer, and to be in accordance with the Canadian Dam Association (CDA) Dam Safety Guidelines (CDA 2013), where applicable. The inspection occurred from August 23, 2021 to August 31, 2021 and was conducted by Bill Horne of Tetra Tech, a geotechnical engineer, holding professional registration in Nunavut. A summary of the findings was presented to AEM in a close out meeting on August 30, 2021.

The inspection included water collection ponds (CP), dikes (D-CP), saline water collection ponds, roads, landfills, landfarms, and other geotechnical structures. The following is a summary of the recommendations made based on the inspection.

CP1

CP1, Dike D-CP1, and Jetty1 are performing well. Some erosion has occurred on the upstream shell of Dike D-CP1. The erosion should be surveyed to determine if remedial measures are required.

CP3

CP3 and its associated infrastructure is performing adequately. Some settlement and slumping was observed on the CP3 road. This area should be clearly marked and traffic on the slump avoided. It should be monitored to determine if remediation is required.

CP4

CP4 and its associated infrastructure is performing adequately. Significant thaw settlement has occurred in the original ground above the pond rockfill slope protection; however, the slopes appear to be stable.

CP5

CP5 and Dike D-CP5 are performing adequately.

CP6

CP6 and its associated infrastructure is performing adequately. There is some settlement and erosion between WRSF3 and Pond CP6, but it is not impacting the performance of CP6. Run of mine cover was placed in this area prior to the inspection to provide thermal and erosion protection.

Saline Ponds

Saline Ponds 1, 3, and 4 are performing well. The settlement and cracking around Saline Ponds 1 and 4 should continue to be monitored.

Diversion Channels and Berms

The diversion channels and berms are performing well. It is recommended to continue to monitor the slumping and cracking adjacent to Channel 5 to determine if sediment from the area is blocking the channel. Cracking and subsidence in the native ground above Channels 3 and 4 should be monitored to determine if they are impacting the channels' performance. Channel 4 has two sections of riprap that has been eroded, exposing the geotextile on the upstream side that should be repaired. Berm 2 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored.

Tailings Storage Facility

The Tailings Storage Facility (TSF) appeared to be functioning well at the time of the inspection. Ground temperatures should continue to be monitored in the TSF and its foundation using the ground temperature cables presently installed. It is recommended that the tailings be tested to determine their unfrozen content curve below 0°C to determine how much of the tailings remain unfrozen. The TSF perimeter rockfill berm appears to be functioning well from a geotechnical perspective with no signs of distress. Some dusting from the TSF is evident in the adjacent WRSF1 area. Measures to reduce dusting should be implemented.

Site Roads

The site mine roads and culverts were generally well maintained and in good geotechnical condition at the time of the inspection. No specific recommendations for geotechnical improvements are provided.

Landfill

It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris. A program to separate burnable debris could reduce the landfill requirements.

The landfill is nearing its current design capacity.

WRSF1 and WRSF3

The initial lifts of till and waste rock had been placed in the WRSF1 and WRSF3 areas at the time of the inspection. The surface of the winter placed till in the WRSF1 has thawed over the summer and is wet and soft, as anticipated. The waste rock in WRSF3 appeared to be going in a well compacted manner. No specific recommendations for geotechnical improvements are provided.

All-weather Access Road

In general, the All-weather Access Road appeared to be in good geotechnical condition at the time of the inspection. It was reported by site personnel that the road performed well during the 2021 freshet, although several areas have ponded water near the crest elevation of the road. Additional culverts and raising sections of the road surface would reduce the risk of the road overtopping.

Itivia Bypass Road

The Itivia Bypass road was in good condition at the time of the site inspection. A low area of the road northwest of Culvert C10 flooded during the 2019 freshet. The area was raised in late 2019, but the road was overtopped again in the 2020 freshet. This section of road performed better during the 2021 freshet, but it is recommended that additional culverts or other measures be implemented to prevent this from occurring in the future. It is also understood that significant flows and some overflow occurred around km 2 in the portion of the road that was constructed as a cross slope fill. Drainage at this area should be improved, or the area maintained to direct the flow in the upslope ditch.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AEM	Agnico Eagle Mines Limited
ATV	All-terrain Vehicle
AWAR	All-weather Access Road
CDA	Canadian Dam Association
CP	Collection Pond
EWTP	Effluent Water Treatment Plant
GTC	Ground Temperature Cable
HPDE	High Density Polyethlyene
IDF	Inflow Design Flood
km	Kilometers
masl	Metres Above Sea Level
mbgs	Metres below ground surface
OMS	Operation Management and Surveillance
ppt	Parts Per Thousand
SP	Saline Pond
SWTP	Saline Water Treatment Plant
Tetra Tech	Tetra Tech Canada Inc.
TSF	Tailings Storage Facility
WRSF	Waste Rock Storage Facility

LIMITATIONS OF REPORT

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1.0 INTRODUCTION

Agnico Eagle Mines Limited (AEM) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2021 annual geotechnical inspection for the Meliadine Gold Mine, located approximately 25 km north of Rankin Inlet, in the Kivalliq Region of Nunavut. The Meliadine Gold Mine consists of underground development and open pits to extract gold ore.

The geotechnical inspection is pursuant to the requirements of the Type A Water Licence Permit No.2AM-MEL1631 (Nunavut Water Board 2016). Under Part I, Item 14 (Page 21) and Schedule I, Item 1 (Page 39) of the Water Licence, AEM is required to undertake an annual geotechnical inspection of its facilities between the months of July and September each year. The inspection is to be carried out by a geotechnical engineer, and to be in accordance with the Canadian Dam Association (CDA) Dam Safety Guidelines (CDA 2013), where applicable. The inspection occurred from August 24, 2021 to August 30, 2021 and was conducted by Bill Horne of Tetra Tech, a geotechnical engineer, holding professional registration in Nunavut. Ryan Okkema of Tetra Tech provided assistance during the inspection.

The following structures were inspected:

Main Site Including:

- Water collection ponds CP1, CP3, CP4, CP5, and CP6 and their associated dikes (D-CP1 and D-CP5), berms, channels, and jetties.
- Saline Pond 1 (SP1), Saline Pond 3 (SP3), and Saline Pond 4 (SP4).

Site Roads:

- Main site pad area roads, including culverts.
- Tiriganiaq Esker access road.
- Wesmeg access road, Wesmeg Borrow, and vent raise.
- Magazine storage access road.
- Main site water intake access road.
- Emulsion plant pad access road.
- CP4 access road.
- Tailings Storage Facility (TSF) area.

Pads:

- Main camp pad.
- Industrial pad.
- East ventilation raise pad.
- Cyanide storage pad.
- Effluent water treatment plant (EWTP) pad.

- Explosives (ANFO plant) pad and magazine storage.
- Emulsion plant pad.
- Crusher ramp and MSE walls.
- Paste plant ramp.
- Ore and waste rock storage areas.
- Landfarm.
- Operations landfills.
- Underground Portals No. 1 and No. 2.
- Industrial fuel storage and mine site fuel storage.

Exploration camp site including:

- Site pad and diffuser access road.
- Genset storage area.
- Freshwater intake.
- Access road.
- Fuel storage.

Waste Rock Storage Facilities WRSF1 and WRSF3

All-weather Access Road (AWAR)

Itivia Site:

- Fuel storage.
- Bypass road.

The facilities at the main mine site and exploration camp areas are shown in Figure 1.

The planned final layout of the main site, including water management structures is shown on Figure 2. It should be noted that some development for the project as shown in Figure 2, including WRSF2 and Channel 6 are not expected to be constructed as shown.

The P-Area temporary collection ponds P1, P2, and P3 have been decommissioned and are therefore, not included in the 2021 inspection.

The AWAR connecting Rankin Inlet to the Project provides one-way traffic access (with pull-outs to allow vehicles to pass). The Itivia bypass road provides a bypass around Rankin Inlet from the shipping and fuel storage area in Rankin Inlet.

Where applicable, the inspection was performed consistent with the principles set out by the CDA (2013). The inspection consisted of visually observing each of the facilities listed above; taking photographs to document the conditions at the time of the inspection, reviewing instrumentation data, inspection reports, and other relevant files and reports (listed in the reference section of this report); and communication with AEM on-site staff, Alexandre Boissonneault.

The inspection occurred when there was no snow or ice on the lakes or land, and when surface water flows were generally low. Peak surface water flows typically occur during the freshet (May and June). During the inspection, the weather was generally clear. Daily temperatures varied between 13°C and 23°C. Water levels were normal for this period of the year; however, surface flows were greater than usual due to large rains on August 22, 2021.

The site water management plan (AEM 2021) provides a summary of the water management infrastructure and the overall water management approach.

This report describes the geotechnical aspects of the areas inspected and presents general observations and recommendations. In addition, a description of the geophysical and permafrost conditions for the site is provided.

1.1 Scope Limitations

The scope of the inspection is limited to the observation of geotechnical aspects of each of the facilities listed above and review of the associated instrumentation data. The inspection did not include other assessments such as structural, mechanical, or environmental.

2.0 GENERAL SITE CONDITIONS

The Project is in the Kivalliq Region of Nunavut, near the northern border of the southern Arctic terrestrial eco-zone, and within the Arctic tundra climate region. It is located within the Churchill geological province, which forms part of the northern Canadian Shield.

The landscape is dominated by features characteristic of glaciated terrain and exposed bedrock. Primarily underlain by Precambrian granitic bedrock, the terrain consists of broadly rolling uplands and lowlands. The Project is located at an approximate elevation of 60 metres above sea level (masl) with a maximum topographic relief of 20 m. There are numerous small lakes, wetlands, and creeks, indicating poorly drained conditions. The upland areas are generally well drained. A series of low relief ridges composed of glacial deposits, oriented northwest—southeast control the regional surface drainage pattern. Periodic ice blockages at outlets of small lakes and wetlands occur during the freshet, these can temporarily increase the downstream flood peak discharges and affect the flood characteristics. High flows are observed during the freshet, while low flows and dry stream channels are typical in late summer.

Glacial moraine deposits are predominant, ranging in thickness from veneers (less than 2 m) to blankets (2 m to 5 m) to hummocky deposits (5 m to 15 m). Glaciofluvial deposits are also present, with the most prominent being a network of sinuous eskers. Lacustrine deposits occur in association with the numerous lakes. Near the coast of Hudson Bay, finer textured marine sediments cover the ground surface.

The Project is in a zone of continuous permafrost and has an annual average air temperature of -10.4°C, based on climate data from Rankin Inlet. Within the permafrost there are intervening taliks (areas of unfrozen ground) and thaw bulbs induced by lakes. The permafrost in the region is "cold" (i.e., has an average annual surface temperature and zero amplitude temperature of less than -4°C. The depth of permafrost and of the active layer varies based on the proximity to lakes, soil thickness, vegetation, climate conditions, and slope direction. Based on thermal studies and measurements of ground temperatures, the depth of permafrost is generally between 360 to 495 metres below ground surface (mbgs). The depth of the active layer ranges from about 1 mbgs in areas with shallow surficial soils, up to about 3 mbgs adjacent to the lakes (AEM 2014b). Typical permafrost ground temperatures at the depths of zero annual amplitude are in the range of -5.0°C to -7.5°C in areas away from lakes and streams and are generally reached at a depth of 15 mbgs to 35 mbgs. The geothermal gradient ranges from 0.012°C/m to 0.02°C/m (Golder 2014). The ground ice content in the region is expected to be between 0% and 10% (dry permafrost) based on the regional scale compilation data and the Canada Permafrost Map published by Natural Resources Canada (NRC 1993). However, areas of local higher ground ice content occur and are generally associated with low lying areas of poor drainage.

Taliks may occur where lake depths are greater than about 1 m to 2.3 m. The presence and extent of each talik is influenced by the geometry (size and shape) of the lake. As the depth and size of lakes increase, the extent of the talik increases. Formation of an open-talik, which penetrates through the permafrost, would be expected for lakes that exceed a critical depth and size. It is anticipated that open-taliks exists below Meliadine Lake, Lake B7, and Lake D7 based on their depth and geometry (Golder 2013).

The salinity of groundwater also influences the temperature at which the groundwater freezes. Testing has indicated that the salinity of the groundwater in the Project area generally increases with depth. Test results on two deep groundwater samples collected below the base of the permafrost as part of the baseline study indicated salinity level leads to a freezing point depression of about 3.2°C (AEM 2014a, Volume 7, Appendix 7.2-A).

3.0 WATER COLLECTION PONDS, DIKES, JETTIES, BERMS, AND CHANNELS

3.1 Introduction

This section presents a summary of the water collection ponds and associated dikes, berms, and channels constructed prior to the 2020 inspection, including:

- Collection Pond CP1 and its associated Dike (D-CP1) and Jetty 1,
- Collection Pond CP3 and its associated Berm CP3, Berm 2, and Channel 3,
- Collection Pond CP4 and its associated Berm CP4, Berm 4, and Channel 4,
- Collection Pond CP5 and its associated Dike D-CP5, Jetty 5, and Channel 5
- Collection Pond CP6 and its associated Berm CP6, and
- SP1, SP3, and SP4.

The following subsections provide a description of the structures, visual observations, a summary of geotechnical instrumentation (if any exists), followed by recommendations.

3.2 Pond CP1 and Dike D-CP1

3.2.1 Background

Dike D-CP1 was constructed across the outlets of former Lakes H6 and H17, which combine to form Pond CP1. Dike D-CP1 was constructed between October 2016 and July 2017. The location is shown in Figure 1. Site water around the industrial facility and various collection ponds is directed to Pond CP1. Water is retained in Pond CP1 prior to treatment and discharge to Meliadine Lake.

Dike D-CP1 is approximately 600 m long with a maximum height of 6.6 m (Tetra Tech 2017g). The CDA (2013) dam consequence classification for Dike D-CP1 is Significant (Tetra Tech 2016a). A downstream collection sump and two channels were constructed approximately 5 m downstream of the D-CP1 toe to collect surface run-off and any possible dike seepage for pump back to CP1. Selected as-built drawings are included in Appendix B.

A jetty is constructed into CP1 to pump water to the EWTP.

3.2.2 Visual Observations

The inspection involved walking along the crests and toes of the dike and examining the condition of the slopes of the dike for visual signs of deformation and instability, cracking, and uneven surfaces. A photographic record of the inspection, with annotations added where appropriate, is included in Appendix B.

At the time of the inspection of D-CP1, the following general observations were made:

- Overall, the dike appeared stable, with no significant geotechnical concerns identified.
- Minor cracking and small settlement were observed along portions of the upstream and downstream crest (e.g., Photos 6, and 7, Appendix B). The largest cracks were up to 3 cm wide. The cracking was less prevalent than observed in August 2019 or August 2020.
- Erosion has occurred on the upstream slope of the dike, as shown in Photos 1 and 3, Appendix B. The erosion has removed the finer fraction of the rockfill, leaving the larger particles. The erosion scarp is approximately 1.2 m high.
- Settlement and thaw subsidence has occurred in the downstream collection sump and channels as shown in Photos 10, 11, and 13, Appendix B.
- Settlement and subsidence has occurred between the downstream dike toe and the water collection channel (as shown in Photos 12, 13, and 14, Appendix B). Some of the settlement is in the disturbed original ground in the area, other settlement is in areas that were covered with fill for construction access. The settlement and subsidence does not appear to be impacting the dike's performance.
- No seepage was observed from the downstream toe.
- The water levels in the downstream collection channel pond and channels was relatively low (Photos 7, 12, and 13, Appendix B) at the time of the site visit. It is understood the sump was pumped out following freshet. Additional pumping was ongoing at the time of the site visit.
- Jetty 1 was in good condition except for erosion on the southeast corner of the slope. The erosion coincides with historic high water levels. The erosion is similar to that observed in 2020. The fines are being washed out leaving the coarse material. The erosion is under cutting the fill up to 0.3 m in the southeast corner and may result in a slump of the surface fill in the area. The pump house is well back from the area; however, the cables in the area should be pulled back from the slope crest.

AEM's engineering and environment team conduct weekly visual geotechnical inspections of the dike, pond, and channel. Monthly inspection reports include an assessment of ground temperatures, observations of cracking and settlement, pond elevation, pumping activities, and photographs. No seepage was observed by AEM's engineering and environmental team at Dike D-CP1 throughout the year. The observations made by AEM staff were consistent with the observations during the 2021 annual inspection.

3.2.3 Instrumentation and Monitoring

Horizontal and vertical ground temperature cables (GTCs) were installed in D-CP1 between March and July 2017, as shown in Appendix B. Five horizontal GTCs (HGTC-1 to 5) were installed in D-CP1 above the liner parallel to the key trench and five vertical GTCs (VGTC-1 to 5) installed upstream and downstream of the key trench.

The key trench temperatures are warmest in late fall (October and November) and coldest in late spring (May and June). Average key trench temperatures are summarized in Table 3-1.

Table 3-1: D-CP1 Ground Temperature Summary

Cable	Average June 5, 2019 (°C)	Average June 13, 2020 (°C)	Average June 1, 2021 (°C)	Difference June 2020 to June 2021 (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Difference Oct 2019 to Oct 2020 (C°)
HGTC-1	-8.4	-7.9	-8.2	-0.3	-4.5	-3.6	0.9
HGTC-2	-9.2	-8.0	-7.8	--0.2	-5.1	-4.8	0.3
HGTC-3	-8.6	-7.5	-7.6	-0.1	-5.6	-5.2	0.4
HGTC-4	-8.9	-8.1	-7.9	0.2	-6.0	-5.6	0.4
HGTC-5	-8.7	-8.2	-6.6	1.6	-3.4	-3.7	-0.3
VGTC-1	-7.2	-6.3	-5.8	0.5	-6.4	-5.4	1.0
VGTC-2	-6.2	-5.6	-5.1	0.5	-6.1	-5.5	0.6
VGTC-3	-7.3	-6.3	-6.2	0.1	-7.0	-6.0	1.0
VGTC-4	-6.6	-8.1	-5.8	2.3	-6.7	-6.3	0.4
VGTC-5	-10.3	-9.7	-9.7	0.0	-2.1	-2.1	0

The following observations were made regarding the instrumentation readings collected for D-CP1:

Overall, there has been a warming (average 0.5 C°) over the past year. This is the same as the average warming trend of 0.5 C° observed from 2019 to 2020. The temperatures within the key trench have remained below -2°C throughout the year.

GTC data was plotted against the Thermal Performance Evaluation Model of D-CP1. The model was created in the summer of 2020 and takes a section of the dike where VGTC-03, VGTC-04, and HGTC-04 are located. The actual temperature readings from these GTCs closely follow the predicted warming trend in the foundation. The plots illustrating actual versus modelled temperatures of D-CP1 are in Appendix B.

Bead 11 of HGTC-1 warmed to 1.7°C in October 2020. The temperature dropped to -1.6°C in November 2020, but still warmer than expected. It recovered the expected temperature range in December 2020. The temperature rise was investigated by AEM at the time of occurrence. There was no ponded water near the location and no sign of infiltration. No unexpected fluctuation has been observed in Bead 11 since then.

Six settlement survey monuments were installed over the liner crest in the central area of the dike as shown in Appendix B. Survey monitoring points M-1 to M-6 indicate a range of total vertical downward displacement between 23 mm and 63 mm since they were installed on September 19, 2017. Most of the movement was in the first year after construction. There is "noise" in the readings as the readings fluctuate slightly; it appears to be a systematic error that may be due to a benchmark issue. The dike operating water levels were based on a settlement of 120 mm; the measured settlement has been less than this to date.

A drone survey was carried out in the summer of 2021 to evaluate the deformation of the dike, as well as the erosion on the upstream slope. The results of the drone survey are shown in Appendix B, including a plan and cross sections that illustrate the difference in elevations between the original 2017 as-built survey and drone survey elevations. The difference in the cross sections show the biggest variations in the sharp edges of the dike (crest and slope breaks). This may be partially due to the sampling rate and modelling of the drone survey. The cross sections indicate that there is a sufficient cover of Run-of-Mine rockfill over top of the Esker Sand and Gravel. The horizontal width of the Run-of-Mine Rockfill is greater than 2 m.

3.2.4 Water Management

CP1 receives inputs from the surrounding area as well as water pumped from other areas of the site (CP3, CP4, CP5, CP6, and other sources). The design operating levels are specified in the Operation Management and Surveillance (OMS) manual (Agnico 2020) as listed in Table 3-2.

Table 3-2: Design Water Elevations for D-CP1 Operation

Situation	Maximum Operating Level (m)	Requirement
End of October each year	63.7	This level is required to provide sufficient storage for: ▪ 661,500 m^3 for the runoff water from an IDF event for the entire site (a total maximum catchment area of 3.675 km^2 during the design life of D-CP1); ▪ 38,800 m^3 for the treated sewage from late October to early June (8 months); and ▪ 31,000 m^3 for the treated water pumped from the SWTP to CP1 from late October to early June (8 months).
Before each spring freshet	64.1	This level is required to provide sufficient storage for: ▪ 661,500 m^3 for the runoff water from an IDF event for the entire site.
During non-IDF spring freshet or short-term after each spring freshet	66.2	This water elevation is to allow CP1 to have a storage capacity of 119,000 m^3 to store the runoff water from a 1/1,000 24-hour extreme rainfall event (77 mm precipitation) for the CP1 maximum catchment area of 1.545 km^2, without exceeding the design D-CP1 maximum water elevation of 66.6 m (under the IDF).
Short-term water elevation under the IDF	66.6	This is the design maximum water elevation for D-CP1 for a short period. The water elevation should be drawn down by pumping from CP1 to the EWTP and then discharging the treated water to Meliadine Lake.

The water level in CP1 was high over the 2019/2020 winter and drawn during and following the 2020 freshet. The water levels were within the normal operating range since the summer of 2020. The maximum water level in 2021 (up to August 16) was 65.1 m and was 64.6 m on August 16, 2021. The water level continues to be drawn down to achieve the water level requirement prior to freeze up.

3.2.5 Summary and Recommendations

CP1, Dike D-CP1, and Jetty 1 were generally performing well at the time of the inspection. The following recommendations are provided:

- The upstream slope of Dike D-CP1 experienced erosion in 2020 during a period of high-water levels. Surveys indicate there is 2 m of Run-of-Mine protecting the Esker Sand and Gravel in the upstream shell of the dike. The performance of the upstream slope should continue to be monitored.
- Consideration could be given to repairing the armour around the seepage collection sump. It is anticipated that the cracking and armour slump may worsen as additional thaw subsidence occurs around the sump.
- Consideration could also be given to placing additional rockfill on the former construction access road at the downstream toe of the dike. This would reduce thaw subsidence in the area and reduce the amount of snow cover at the dyke toe. This may result in less warming of the dyke foundation.

3.3 Pond CP3, Associated Channels, and Berms

3.3.1 Background

Collection Pond CP3 and its associated infrastructure; Berm CP3, Channel 3, and Berm 2, collects and temporarily stores runoff water from the dry stack TSF. CP3 was created by excavating a large depression approximately 11 m deep in overburden and bedrock. Berm CP3 downstream of Pond CP3, provides a thermal protection to maintain the underlying permafrost downstream of CP3. Channel 3 collects and diverts the runoff water from the TSF catchment areas. Berm 2 prevents non-contact water from flowing through the TSF into the Collection Pond CP3.

The design of the collection pond, channels, and berms is based on the following criteria and key considerations:

- CP3 was designed to store 3/7 of 1 in 100 wet precipitation year freshet (assume that freshet occurs in seven days and pumping from the facility begins three days after freshet begins).
- The maximum operating water elevation in CP3 under Inflow Design Flood (IDF) is set at Elevation 63.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- The downstream berm, Berm CP3, is designed to preserve permafrost in the original ground below the centre of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment (i.e., Lake B7).
- The water collected in CP3 will be actively pumped to former Lake H13, which flows into CP1 during the open water season. The intent is that CP3 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.
- Channel 3 was designed to pass the design inflow during an extreme intensity flow. A berm incorporated into the CP3 access road was designed along Channel 3 to provide sufficient freeboard and to prevent the water overflowing the channels under the design IDF or other unexpected extreme conditions.

CP3 and its associated infrastructure was constructed from August 2018 to January 2019. The as-built drawings for CP3 are included in Appendix C.

3.3.2 Visual Observations

The inspection involved walking along the crests of CP3, Berm 2, Channel 3, and Berm CP3 to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces.

At the time of inspection CP3 was filled with water to approximately Elevation 58.4 m. The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of waste rock. The bedrock slopes are blocky with some fractured rock. No obvious signs of instability were observed in the bedrock or overburden slopes. Portions of the slope were covered with sediment eroded from an area of disturbed ground east of CP3.

Berm CP3 was constructed of overburden till and rockfill obtained from the excavation of CP3. The till was partially frozen when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the thermal berm were in good condition at the time of the inspection. The crest of Berm CP3 is undulating due to settlement that occurred as shown in Photos 8 and 9, Appendix C. The settlement does not impact the berms function which is to insulate the original ground.

There are several areas of settlement at the top of the pond slopes where the rockfill cover has been placed. The settlement areas are not impacting the slope performance.

A temporary channel has been excavated from the north end of Phase 1 of the TSF to the CP3 pond. The channel is not armored and will require maintenance over time. The channel results in a concentrated flow point to CP3. To date the rockfill on the slope of CP3 is performing well, but the area should be monitored.

3.3.3 Instrumentation and Monitoring

Three GTCs (GTC-01, GTC-02, and GTC-03 Berm CP3) were installed in Berm CP3 to measure the active layer depth in the berm and subgrade ground temperatures. The ground temperatures are shown in Appendix C. The maximum active layer depth in 2020 varied from 2.1 m to 2.6 m. The ground temperature at Elevation 63.0 m ranged from -5.4°C to -6.8°C on November 30, 2020.

3.3.4 Water Management

Water was pumped out sporadically throughout the open water season through a dedicated pumping system. The water levels in Collection Pond CP3 between mid-August 2020 and late-August 2021 varied between Elevations 55.6 m and 60.9 m.

The level on August 16, 2021 was 58.4 m at the time of the inspection. At this level the depth of water in CP3 is approximately 6 m with a volume of approximately 14,500 m^3. The remaining capacity in the pond to the maximum operating level of 63.0 m is 30,300 m^3.

The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.383 km^2 which equates to 28,000 m^3 of water. It is understood that the pond will be pumped prior to freeze up.

3.3.5 Summary and Recommendations

Collection Pond CP3 and its associated infrastructure is performing adequately.

The operation of the pond is specified that it be completely drained prior to freeze up. The base of the pond is irregular making it difficult to completely drain. The minimum elevation of the pond is 54.0 m. It is recommended that a minimum drawdown level be specified as 55.0 m. This would leave approximately 1,000 m^3 in the pond at this elevation. The maximum water level in pond at freeze up is under review.

Pond CP3 and Berm CP3 are functioning as attended. The geotechnical performance should continue to be monitored. It is recommended that an OMS Manual be developed for the collection pond.

3.4 Collection Pond CP4, Associated Channels, and Berms

3.4.1 Background

Collection Pond CP4, and its associated infrastructure; Berm CP4, and Channel 4, collects and temporarily stores runoff water from the waste rock storage area (WRSF1). CP4 was created by excavating a large depression approximately 15 m deep in overburden and bedrock. Berm CP4 downstream of Collection Pond CP4, provides thermal protection to maintain the underlying permafrost downstream of CP4. Channel 4 collects and diverts the runoff water from the proposed WRSF1 catchment area.

The design of the collection pond, channels, and berm is based on the following criteria and key considerations:

- CP4 was designed to store 3/7 of 1 in 100 wet precipitation year freshet (assumes that freshet occurs in seven days and pumping from the pond occurs after day three). The excess freshet water will be pumped out to partially drained Lake H13 during freshet period.
- The maximum operating water elevation in Collection Pond CP4 under IDF is set at Elevation 63.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- The downstream berm, Berm CP4, is designed to preserve permafrost in the original ground below the centre of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment (i.e., Lake B7).
- The water collected in CP4 will be actively pumped to former Lake H13, which flows into CP1 during the open water season. The intent is that Collection Pond CP4 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.

CP4 and its associated infrastructure was constructed from October 2018 to May 2019. The as-built drawings for CP4 are included in Appendix D.

3.4.2 Visual Observations

The inspection involved walking along the crests of CP4, Channel 4, and the CP4 Berm to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces. Photographs of CP4 and the associated infrastructure are in Appendix D.

At the time of inspection CP4 was filled with water to approximately Elevation 55.1 m (measured August 16, 2021). The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of rockfill obtained from the pond excavation. No obvious signs of instability were observed in the bedrock or overburden slopes. Thaw settlement has occurred in the native ground above the overburden slope protection rockfill as shown in Photos 5, 6, 7, and 8, Appendix D. The settlement is up to 0.5 m deep. The settlement is similar to that observed in 2019.

Thaw settlement has also occurred between the CP4 Berm and the overburden protection rockfill as shown in Photos 9 and 10, Appendix D. It is visually estimated that the settlement is up to 1.0 m. The settlement is deeper than observed in 2019 and 2020.

Settlement was also observed in the till berm at the upstream slope of Berm CP4 as shown in Photo 12, Appendix D. Water was ponded in the settled area. The ponded area covers a length of approximately 30% of the length of the berm. There is evidence of the pond overflowing resulting in erosion at the crest of the slope as shown in Photo 11, Appendix D.

Berm CP4 was constructed of overburden till obtained from the excavation of CP4. The till was a combination of frozen and unfrozen material when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the berm were in good condition. The crest of the berm had minor cracks throughout the surface as shown in Photo 14, Appendix D. The cracks do not impact the berms function which is to insulate the original ground.

3.4.3 Instrumentation and Monitoring

Two GTCs (GTC-01, GTC-02 Berm CP4) were installed in Berm CP4 to measure the active layer depth in the berm and subgrade ground temperatures. The GTCs are shown in Appendix D. The maximum active layer depth in 2020 ranged from 2.0 m to 2.2 m. The thawed zone varied from 2.1 m to 2.4 m on August 21, 2021. The ground temperature at Elevation 63.0 m ranged from -5.5°C to -5.9°C on January 5, 2021.

3.4.4 Water Management

Water levels in Pond CP4 from mid November 2020 to mid August 2021 varied between Elevation 54.1 m and 58.6 m. The level on August 16, 2021 was 56.2 m at the time of the inspection resulting in a 3 m to 4 m depth of water in the pond. Water was pumped out sporadically throughout the open water season.

As of August 16, 2021, the remaining capacity (to the maximum operating level of 63.0 m) was 37,000 m^3. The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.441 km^2 which equates to 32,300 m^3 of water.

3.4.5 Summary and Recommendations

Collection Pond CP4, thaw settlement has occurred in the original ground above the pond rockfill slope protection, but the slopes appear to be stable. The thaw settlement is like that observed in previous years. The settlement and the impact on the pond should continue to be monitored to determine if any remedial action is required.

It is recommended that the depression in the upstream till berm be filled or graded to avoid ponding and the area covered with a minimum of 1.5 m Run-of-Mine. The area between CP4 and the upstream till should also be graded and covered with a minimum of 1.5 m of Run-of-Mine to reduce future thaw subsidence in the area.

The operation of the pond is specified that it be completely drained prior to freeze up. The base of the pond is irregular making it difficult to completely drain. The minimum elevation of the pond is 52 m. It is recommended that a minimum drawdown level be specified as 53.5 m. This would leave approximately 2,700 m^3 in the pond at this elevation. The maximum water level in pond at freeze up is under review.

It is recommended that an OMS Manual be developed for the pond and associated infrastructure.

3.5 Pond CP5 and Dike D-CP5

3.5.1 Background

Dike D-CP5 was constructed across the south portion of former Lake A54, to form CP5 from October 2016 to July 2017. The intent of D-CP5 is to create a contact water collection pond in the north portion of former Lake A54.

D-CP5 is approximately 300 m long with a maximum height of 3.3 m (Tetra Tech 2017f) and is located north of the Tiriganiaq 02 Open Pit as shown in Figure 1. The CDA (2013) dam consequence classification for D-CP5 is Significant (Tetra Tech 2016b). CP5 is used seasonally for temporary water storage with active pumping to CP1 to transfer the water out of CP5.

The access road to the Tiriganiaq 02 Open Pit has been constructed downstream of the dyke. The area between the dike and road has been graded with crushed rock covering the seepage collection pond that was located downstream of the dike.

3.5.2 Visual Observations

The inspection involved walking along the crests and toes of the dike and examining the condition of the slopes of the dike for visual signs of deformation and instability, cracking, and uneven surfaces. Water in CP5 at the time of the site visit precluded observing upstream toes of the dike. A photographic record of the inspection is included in Appendix E.

At the time of the inspection of D-CP5, the following general observations were made:

- Overall, the dike appeared stable, with no significant geotechnical concerns identified.
- Minor cracking was observed in a few locations on the upstream and downstream sides of the dike crest (e.g., Photo 4, Appendix E). The cracking appeared to be less than observed in previous years.
- There were no signs of seepage from the downstream toe.

Jetty 5 is the causeway for the pump back station for CP5. There is significant erosion below the southwest corner of the pump station. The erosion extends to the outside edge of the jetty. The erosion has resulted from an overflow from the pump well. Water is being discharged into the pump well to supplement the water intake.

AEM's engineering team conduct weekly visual geotechnical inspections of the dike. Monthly inspection reports included an assessment of ground temperatures, observations of cracking and settlement, pond elevation, pumping activities, and photographs. The observations made by AEM staff were consistent with the observations during the 2021 annual inspection. Cracks and locations of settlement were marked with spray paint in the field to monitor changes.

3.5.3 Instrumentation and Monitoring

Horizontal and vertical GTCs were installed in D-CP5 between March and July 2017. Plots of the thermistor data are provided in Appendix E. Two horizontal GTCs (HGTC-1 and HGTC-2) installed in D-CP5 above the liner parallel to the key trench and three vertical GTCs (VGTC-1 to 3) installed upstream and downstream of the key trench.

Key trench temperatures are warmest in late fall (October and November) and coldest in late spring (May and June). The average temperatures over the length of the portion of the cable in the key trench parallel to the dike axis are summarized Table 3-3 at specific dates.

Table 3-3: D-CP5 Ground Temperature Summary

Cable	Average June 4, 2019 (°C)	Average May 31, 2020 (°C)	Average May 31, 2021 (°C)	Difference May 2020 to May 2021 (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Difference Oct 2019 to Oct 2020 (C°)
HGTC-1	-7.8	-7.7	-7.0	0.7	-2.2	-2.3	-0.1
HGTC-2	-8.0	-8.0	-7.3	0.7	-2.9	-2.8	0.1
VGTC-01	-4.3	-4.7	-4.6	0.1	-3.6	-3.8	-0.2
VGTC-02	-4.6	-5.2	-5.0	0.2	-3.8	-3.9	-0.1
VGTC-03	-3.3	-3.5	-3.3	0.2	-3.3	-3.6	-0.3

The horizontal GTCs indicate a slight warming trend with an average of 0.7 C° in the base of the key trench from May 31, 2020 to May 31, 2021. The vertical GTCs indicate a slight warming trend average of 0.2 C° in the foundation of the dike from May 31, 2020 to May 31, 2021.

Three settlement survey monuments were installed over the liner crest in the dike. D-CP5 survey monitoring points indicate a settlement between 19 mm and 54 mm since installation. There is “noise” in the readings as the readings fluctuate slightly. The dike operating water levels were based on a settlement of 100 mm; the measured settlement has been less than this to date.

3.5.4 Water Management

CP5 receives inputs from the surrounding area. Water from CP5 is pumped to CP1 throughout the open water season. The design operating levels are specified in the OMS manual (Agnico 2020) as listed in Table 3-4.

Table 3-4: Design Water Elevations for D-CP5 Operation

Situation	Maximum Operating Level (m)	Requirement
Before and after each spring freshet	65.5	This water elevation was determined to allow CP5 to have a sufficient storage capacity to store the estimated maximum volume of 49,500 m^3 of the runoff water from an IDF event for a total maximum CP5 catchment area of 0.643 km^2 during the design life of D-CP5, which includes the catchment areas of the P1/P2/P3 and Portal No. 1 areas.
During mean spring freshet (assumed to store 3 of 7 days of spring freshet)	66.03	This water elevation was determined to store 3/7 of the runoff water from a mean spring freshet for the total maximum CP5 catchment area of 0.643 km^2.
Under the IDF	66.32	▪ This is the design maximum water elevation for D-CP5 for a short period. The water elevation should be drawn down to 64.8 m by pumping water to CP1 after each spring freshet or rainfall event; and ▪ This water elevation is also constrained by the risk of flooding Portal No. 1, the nearby ventilation shaft, and the saline water storage pond.

The water level in CP5 varied from 65.03 m to 65.8 m from April 2021 to mid-August 2021 which is within the operating levels of the pond. On August 16, 2021 water level was at Elevation 65.6 m. Water was being pumped from the facility at the time of the inspection to lower the water level in the pond.

3.5.5 Summary and Recommendations

Dike D-CP5 and the associated infrastructure is in good condition with the exception as noted. The following recommendations are provided regarding D-CP5:

- The GTCs and survey monitoring points should continue to be monitored following the schedule and procedures developed in the OMS Manual.
- The erosion in Jetty 5 should be repaired and pumphouse footing founded on a solid base.
- Consideration should be given to modifying the pumping arrangement to avoid a similar occurrence in the future.

3.6 Collection Pond CP6 and Associated Berm

3.6.1 Background

Collection Pond CP6, and its associated Berm CP6 collects and temporarily stores runoff water from the waste rock storage area (WRSF3). CP6 was created by excavating a large depression approximately 7 m to 11 m deep in overburden and bedrock. Berm CP6 downstream of Collection Pond CP6, provides thermal protection to maintain the underlying permafrost downstream of CP6.

The design of the collection pond, channels, and berm is based on the following criteria and key considerations:

- CP6 was designed to store 3/7 of 1 in 100 wet precipitation year freshet (assumes that freshet occurs in seven days and pumping from the pond occurs after day three). The excess freshet water will be pumped to CP1.
- The maximum operating water elevation in Collection Pond CP6 under IDF is set at Elevation 60.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- The downstream berm, Berm CP6, is designed to preserve permafrost in the original ground below the centre of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment.
- The water collected in CP6 will be actively pumped to CP1. The intent is that Collection Pond CP6 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.

CP6 and its associated infrastructure was constructed from March 2020 to April 2020. The as-built drawings for CP6 are included in Appendix F.

Significant erosion was observed in the former lakebed area between WRSF3 and CP6 in 2020. The erosion worsened following freshet in 2021. Approximately 2 m of Run-of-Mine was placed in the area to reduce the rate of erosion as shown in Photos 7 and 8, Appendix F.

3.6.2 Visual Observations

The inspection involved walking along the crests of CP6 and the CP6 Berm to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces. Photographs of CP6 and the associated infrastructure are in Appendix F. Observations are summarized below:

- At the time of inspection CP6 had water in it, below the top of the bedrock. The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of rockfill obtained from the pond excavation. No obvious signs of instability were observed in the bedrock or overburden slopes. A depression was observed in the Run-of-Mine cover in the southeast corner of the pond. It is speculated that the depression is due to continued erosion of the lakebed sediment in the former lakebed sediments.
- Berm CP6 was constructed of overburden till obtained from the excavation of CP6. The till was a combination of frozen and unfrozen material when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the berm were in relatively good condition. The crest of the berm had minor cracks throughout the surface. Typical cracks and settlement areas are shown in Photo 10, Appendix F. The cracks do not impact the berms function which is to insulate the original ground.
- A small pond is currently between the access road and CP6 as shown in Photo 5, Appendix F. The water in the pond likely feeds the inflow into the northwest corner of CP6 as shown in Photo 3, Appendix F.
- Localized settlement and subsidence areas were noted on the ramp from WRSF3 to the CP6 area. The settlement is up to 0.5 m deep, as shown in Photos 13 and 14, Appendix F.

3.6.3 Instrumentation and Monitoring

Three GTCs were installed in Berm CP6 to measure the active layer depth in the berm and subgrade ground temperatures. The GTCs are shown in Appendix F. The maximum active layer depth in 2020 was approximately 2.5 m. The ground temperature at Elevation 60.0 m ranged from -7.8°C to -8.0°C on July 1, 2021.

3.6.4 Water Management

Water levels in Pond CP6 from mid May 2021 to mid August 2021 varied between Elevation 53.1 m and 56.8 m. Water was pumped to CP1 in June and July. The water level was at approximately 55.1 m during the inspection. The water levels are below the maximum operating level of the pond (60.0 m), and just above the low point of the bedrock in the pond (56.1 m).

3.6.5 Summary and Recommendations

Generally, Collection Pond CP6 and Berm CP6 are performing well.

The newly placed Run-of-Mine cap between WRSF3 and CP6 is controlling erosion in the area. A small amount of subsurface erosion is persistent at the east side of the cover. It is not currently impacting the operation of the facility. The subsurface erosion could be reduced by covering the remaining portion of the former lakebed area with a granular filter layer with a minimum thickness of 0.5 m that redirects the flow away from the area of ongoing subsurface erosion. The granular filter should be covered with a minimum of 1.5 m of Run-of-Mine.

It is recommended that the localized settlement areas on the ramp between WRSF3 and CP6 be filled. The depressions are a safety hazard in their current state. They are currently marked with traffic cones.

It is recommended that the small ponded area adjacent Berm CP6 and the access road be filled to avoid ponding in the area.

It is recommended that an OMS Manual be developed for the pond and associated infrastructure.

4.0 SALINE PONDS

4.1 Saline Pond 1

SP1 which is located north of CP-5 was constructed during the third quarter of 2016 to manage underground saline water.

The saline pond was constructed by excavation within permafrost overburden and bedrock. A small berm approximately 1 m to 2 m high was constructed around the excavation with a till core and rockfill cover to promote permafrost development in the original ground below the berm and keep surface water from the surrounding area from draining into the pond. The pond is designed to maintain the maximum pond elevation under the IDF (1-in-100-year precipitation event) below original ground and below the level of CP5 to minimize the potential for seepage out of the saline pond.

The inspection involved walking along the crest of the saline pond perimeter berm, examining the condition of the berm for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs from the inspection are included in Appendix G.

At the time of the inspection of the saline pond, the following general observations were made:

- Overall, the pond and perimeter berm appeared stable.
- There was no observed seepage from the adjacent Ponds CP5 or DP3-A.
- There was water in the pond at the time of the site visit that was below the top of the bedrock excavation (Photo 1, Appendix G).
- The thermal berm appeared to be in good condition with minimal cracking.
- No significant seepage into the saline pond was observed during the inspection.
- The southwest corner of the pond crest had significant cracks up to 100 mm wide at the crest as shown in Photos 3 and 4, Appendix G. The slopes below the cracking may be deformed. The cracks could be due thaw subsidence or movement of the overburden slope.
- A large piece of rock has fallen into pond in the northeast corner. It is not impacting the pond performance.

The following recommendations are provided regarding the saline pond:

- In general, the pond is performing adequately. The slopes around the pond should continue to be monitored and remediated as required.

4.2 Saline Pond 3

SP3 was constructed during the 2018/2019 winter in the south portion of the P3 area. It is a High Density Polyethlyene (HPDE) Lined pond with a storage capacity of 5,000 m^3. It was constructed for the temporary storage of saline water from the underground.

The pond is surrounded by perimeter berms constructed with mine rockfill. A layer of bedding material was placed over the native ground and rockfill berms. A geomembrane liner was placed over the base of the perimeter berms.

The pond was filled to approximately 1.5 m below the top of the berm at the time of the inspection.

The inspection involved walking along the crest of the saline pond perimeter berm, examining the condition of the berm for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs from the inspection are included in Appendix G.

At the time of the inspection of the saline pond, the following general observations were made:

- The perimeter berms were in good condition with no significant signs of cracking or settlement.
- A small amount of erosion has occurred along the crest of the berms; but does not impact the performance of the pond.
- The HPDE liner above the water level appeared to be in good condition. It is understood a liner inspection was done in the summer 2021 by mine personnel with the pond drained. Two tears were noted in the liner on the crest of the pond. The tears were patched prior to pumping water into the pond.
- No seepage out of the pond was observed; however, the ground in the former P3 pond was covered with water making it difficult to assess seepage.

The following recommendations are provided regarding the saline pond:

- Overall, the pond appears to be performing adequately.
- The pond should continue to be monitored for signs of settlement etc.

4.3 Saline Pond 4

SP4 which is located within the Tiriganiaq 01 Open Pit was constructed during the first quarter of 2020 to manage underground saline water.

The pond was constructed by excavation within permafrost overburden and bedrock.

The inspection involved walking along the crest of the pond, examining the conditions for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs from the inspection are included in Appendix G.

At the time of the inspection, the following general observations were made:

- Overall, the pond rockfill covered overburden slopes and bedrock appeared stable, with no significant geotechnical concerns identified. (Photo 14, Appendix G). Subsidence in original ground at crest of slope, behind rockfill cover.
- A small rockfill area was noted adjacent to the ramp as shown in Photo 11, Appendix G. The toe of the rockfill area is currently within the pond. The area is marked with blue safety cones.
- There was water in the pond at the time of the site visit that was below the top of the bedrock excavation (Photos 10, 11, and 12, Appendix G).
- Some thaw subsidence was in the crest of the rock fill overburden cover as shown in Photo 13, Appendix G.

- Cracking and thaw subsidence areas were observed in the original ground above the rockfill covered overburden slopes (Photos 15, 16, 17, 18, and 19, Appendix G).
- No significant seepage into the saline pond was observed during the inspection.

SP4 is performing well. The settlement and cracking above the overburden slopes should be monitored.

5.0 DIVERSION CHANNELS AND BERMS

5.1 Background

Diversion Channels 1, 2, 3, 4, 5, 7, and 8, and associated Berms 1, 2, and 3 were inspected. The channels were constructed by excavating a trench, placing woven geotextile to line the excavation, and then placement of riprap (coarser rocks) over the fabric to line the channels. The berms were constructed by using a combination of esker material and till.

Channel 1 is designed to move water from former Pond H13 to CP1 and extends from Culvert 2 to Pond H9 along the north and east sides of Portal No. 2. Channel 1 is approximately 493 m long with a base width of approximately 3 m.

Channel 2 is located along the northern end of the main mine site industrial pad and is approximately 270 m long with a base width of 1 m. During construction and operation, contact water from the area will flow into Channel 2, which in turn eventually flows into CP1.

Channel 3 directs seepage and run-off water from the TSF into Pond CP3. Channel 3 is located along the southwestern boundary of the TSF. Channel 3 is approximately 620 m long with a designed base width of 1 m to 2 m.

Channel 4 directs seepage and run-off water from the WRSF1 into Pond CP4. It is located along the northwestern boundary of WRSF1. Channel 4 has a designed base width of 1 m to 2 m. Channel 4 Berm was constructed downstream of Channel 4 to raise the active layer downstream of the channel.

Channel 5 and Berm 3 are located west of CP5 and are designed to divert water from the Pond A12 catchment area into CP5 so that this water does not flow into the future Tiriganiaq 01 Open Pit. Channel 5 is the main water diversion structure; Berm 3 is only required to temporarily retain water under an extreme rainfall event when the water level in CP5 is temporarily high (Tetra Tech 2016d). Channel 5 is approximately 429 m long with a base width of approximately 3 m. Berm 3 is approximately 315 m long with a maximum height of about 2.8 m. Berm 3 consists of a till core, a foundation key trench backfilled with till, and a cover layer constructed out of 600 mm minus esker material.

Channel 7 is a water collection channel that collects flow from Culvert 11 and part of the runoff from the laydown area and directs the water to Channel 1.

Channel 8 is a water collection channel located on the west side of Portal No. 2 to collect part of the surface flow of WRSF3 and facilitates flow of site drainage through Culvert 2 and Channel 1.

Berm 1 is required to protect Portal No. 2 from flooding under extreme rainfall events when potential ponding in the area occurs.

Berm 2 was constructed in the fall of 2018 to reduce the amount of non-contact water entering the TSF and Collection Pond CP3 catchment areas. Berm 2 was predominately constructed of 50 mm minus screened esker material with a till zone of approximately 2 m wide.

5.2 Visual Observations

Channel 1

The inspection of Channel 1 involved walking along the channel from Culvert 2, around the crusher ramp. The water level in the eastern portion of the channel is controlled by the water level in Pond H9. Channel 1 is shown in Photos 1 through 6, Appendix H.

Cracking and settlement were observed along the edges of the channel. This was also reported in previous years but does not affect the channel performance.

Channel 2

Channel 2 was inspected by walking from the channel outlet culvert, towards the top of the channel behind the accommodations complex. As noted in previous years the slope of the channel base is not consistent and some pooling of water and deposition of sediment in lower areas. No geotechnical concerns associated with Channel 2 were identified. Channel 2 is shown Photos 7 through 11, Appendix H.

The water flow rate was relatively high at the time of the site visit. Channel 2 is intended to drain into a low wet area that drains through Culvert 13, which eventually drains south towards Channel 1 and CP1. It was noted that a portion of the Channel 2 drainage may be flowing towards Lake G2 which is in a different catchment area.

It is recommended that a small berm be constructed such that Channel 2 outflow is better directed to Culvert H13.

Channel 3

Channel 3 was constructed to divert runoff from the catchment area from the TSF towards Collection Pond CP3. The side slopes range from 3.5H:1.0V to 1.8H:1.0V with the base of the channel varying from 0.8 m to 3.3 m. Channel 3 is shown in Photos 12 to 20, Appendix H.

Little water was flowing in the channel at the time of the inspection; however, there were long stretches along the western portion of the channel where there is ponded water due to an uneven base of the channel. The channel subgrade has thawed and settled over time resulting in low areas within the channel. There is also subsidence along the channels where the channel riprap ties into the native subgrade.

The subsidence extends from the channel to the toe of the road downslope of the channel at approximately Station 0+230 as shown in Photos 16 and 17, Appendix H. Water pools against the road in this location and the downslope side of the channel no longer exists. It is recommended that the subsided area in this location be filled, and channel be reconstructed.

The road adjacent to the channel has some cracking and slumping on the side slopes due to thaw subsidence under the toe of the road. The settlement on the road slope and in the native ground is attributed to the thawing of permafrost due to ground disturbance. It is recommended that the cracks be graded and filled.

Channel 4

Channel 4 was constructed to divert runoff from the catchment area from WRSF1 into Pond CP4. The as-built side slopes range from 3.5H:1.0V to 1.8H:1.0V with the base of the channel varying from 0.8 m to 3.3 m wide. Channel 4 is shown in Photos 21 to 32, Appendix H. No water was flowing in the channel at the time of the inspection; however, there were localized areas of shallow ponded water due to an uneven base of the channel. It appears there has been some thaw subsidence in the base of the channel. There are also some subsidence areas where the channel ties into the native subgrade, east of the channel.

There are two areas where riprap has eroded, or slipped off the geotextile on the upstream side of the channel, leaving the areas with exposed geotextile as shown in Photos 28 and 29, Appendix H. These areas are at approximately Station 0+720. Each exposed area is approximately 3 m wide. There is evidence of water flow above the channel in the area with the original ground being eroded. It is likely that there was deep drifted snow, due to the configuration of WRSF1 upslope of the channel. The performance of the channel is not currently impacted; however, the riprap should be regraded and replaced to reduce the risk of further damage. The area between the channel and WRSF1 should also be covered with riprap.

Channel 5

Channel 5 was inspected by walking along its length. Channel 5 is shown in Photos 33 to 36, Appendix H. Overall Channel 5 appeared stable, with no significant geotechnical concerns identified along most of the channel. There was significant subsidence observed adjacent to a former pond at the north end of the channel, with slumping channel slopes. The slumping area is not restricting flow in the channel. Water was ponded within the portions of the channel.

Channel 7

Channel 7 was inspected by walking along its length. The channel is shown in Photos 37 to 39, Appendix H. There is ponded water in portions of the channel, due to some subsidence in the channel base. No significant geotechnical concerns were identified along the channel.

Channel 8

Channel 8 was inspected by walking along portions of its length. No significant geotechnical concerns were identified along the channel.

Berm 1

Berm 1 was inspected by walking along its length. A 350 mm diameter culvert has been placed in the channel for an access to the laydown area adjacent to Portal No. 1. No significant geotechnical concerns were identified along the Berm.

Berm 2

Berm 2 was constructed to reduce the amount of non-contact water entering the TSF and Collection Pond CP3 catchment areas as shown in Photos 41 to 44, Appendix H. Berm 2 was predominately constructed of 50 mm minus screened esker material with a till zone approximately 2 m wide. At the time of the inspection Berm 2 was retaining water in a low area along the berm. The water was up to approximately 0.6 m deep. Minor surface erosion was observed along the lower slope of the berm indicating that the water may have been 0.5 m higher sometime prior to the inspection. There was minimal water on the downslope side of the berm indicating that the berm is functioning as intended. Cracking was observed along the crest and slope of the berm, and minor erosion on the slope where water impounded.

Berm 3

Berm 3 adjacent to Channel 5 was inspected by walking along the crest and slopes and examining the condition of the berm for visual signs of deformation and instability, cracking, or uneven surfaces. A selection of photographs from the inspection are included in Appendix H (Photos 45 to 48). Minor cracking was observed in a location where there was a small amount of ponded water. Overall, Berm 3 appeared stable with no significant geotechnical concerns identified.

5.3 Summary and Recommendations

The following recommendations are provided regarding the diversion channels and berms:

- Continue to monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels' performance.
- Berms 2 and 3 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.
- Channel 2 outflow during high events should be directed to Channel 3 as opposed to Lake G2. A small Berm could be constructed across the low area to facilitate this.
- The Channel 3 area that has subsided to the adjacent road should be repaired.
- The Channel 4 riprap that has been displaced should be repaired.

6.0 TAILINGS STORAGE FACILITY

6.1 Background

A dry stack TSF is being used at the mine. Water is pressed out of the tailings in the process plant. The tailings are temporarily stored in the Tailings Dewatering Building next to the process plant known as the "Church"; where they are loaded in trucks and hauled to the TSF.

The tailings are dumped in the TSF, spread in 0.3 m lifts, and compacted.

The tailings are progressively reclaimed by placement of rockfill cover on the exterior slopes as the tailings stack rises.

Presently Cell 1 of the facility is in use, as per the tailings deposition plan.

6.2 Visual Observations

In general, the tailings appear to be well compacted. Trucks can easily traffic on the compacted tailings as shown in Appendix I. There is evidence of some softer tailings with compactor tire tracks in the tailings.

Most of the slope at the north end of the Cell 1 was recently regraded. Portions of the slope have erosion channels up to 150 mm deep. The eroded tailings have flowed to the channel at the toe of the slope towards CP3.

It is understood that dusting has been an issue from the TSF in the past year. A mitigation plan to reduce the dusting has been developed.

There is sediment at the toes of the west and south slopes of the facility. Sediment is also covering the rockfill cover near the toe of the slopes. The sediment could be tailings being transported to the area by wind, depositing the material on the snow covered rockfill slopes, and then washing down the slope in spring and summer.

6.3 Instrumentation and Monitoring

AEM's geotechnical engineer prepares weekly inspection reports and monthly analytical reports describing the tailings placement and design verification updates. The tailings have an optimum moisture content of 15.9% and are typically placed at a moisture content ranging from 12.1% to 22.2% with an average of 16.4%. The salinity of the tailings has ranged from 10 parts per thousand (ppt) to 30 ppt, with an average of 18 ppt. The salinity has been lower in 2021, ranging from 13 ppt to 19 ppt. It is understood that the salinity in recent months has been less due to the mill no longer drawing water from CP1. The salinity assumed during design was 15 ppt. Additional testing includes: ARD/ML sampling and testing, process water analysis including salinity testing, and quarterly off-site geotechnical verification (moisture-density testing and particle size).

Four GTCs have been installed in the placed tailings. The measured ground temperatures are presented in Appendix I. The placed tailings are below 0°C below the active layer and recently placed tailings. A warmer zone (approximately -1.0°C) persists in the Cable GTC-03 location where a thick zone of tailings was placed in 2019. Foundation temperatures below the TSF range from -3°C to -5°C

Nuclear density tests on the in situ placed and compacted tailings indicate, for the most part, that the filter cake is achieving dry densities more than the maximum dry density from the Standard Proctor test. The placed tailings material shows very little signs of bleed water and are easily trafficable after placement and compaction.

6.4 Water Management

Water from the TSF is directed to CP3. Some runoff naturally drains to the pond, and other runoff is directed to CP3 via Channel 3. Berm 2, north of the facility was constructed to divert water away from the TSF and CP3.

6.5 Summary and Recommendations

The TSF appeared to be functioning well at the time of the inspection. The ground temperatures should continue to be monitored in the TSF and the foundation using the GTCs presently installed. It is recommended that the tailings be tested to determine their unfrozen content curve below 0°C to determine how much of the tailings remain unfrozen.

The TSF perimeter rockfill cover material appears to be functioning well from a geotechnical perspective with no signs of distress.

It is understood that there is a plan in place to reduce dusting from the TSF. This includes a deposition plan to limit the time that placed tailings is exposed prior to be covered by fresh tailings. Watering of the tailings will be used for tailings that cannot be covered for some time. The performance of these measures should continue to be monitored.

There is sediment along the toe of the south and west berms of the facility. The sediment could be fines from the waste rock cover or could be tailings transported to the area. Transport of tailings could be due to dusting, or possibly due to migration of fines from the dry stack into the perimeter rockfill. It is recommended that some investigation be done to characterize the sediment and the method of transport.

7.0 SITE ROADS

7.1 Background

The site has numerous roads, including haul roads, service roads, as well as roads to borrow areas and other facilities. The following is a list of roads inspected. Photographs of the site roads are included in Appendix J.

- TSF and landfill access road;
- Main site pad area roads;
- Main site water intake access road;
- Emulsion plant pad access road;
- Tiriganiaq Esker access road;
- Magazine storage area and access road;
- Wesmeg access road, Wesmeg esker area, and vent raise;
- CP3 access road; and
- CP4 access road.

7.2 Visual Observations

At the time of the site visit, the site roads were generally in good condition. Select photos of the roads are included in Appendix J. The roads appeared to generally be of adequate width with pull outs where required to allow vehicles to safely pass. The heights of the road fills were such that berms were not required. Many of the roads appeared to have been constructed using a combination of sand and gravel obtained from esker borrow areas, rockfill, and crushed aggregate.

The roads surface gets muddy when wet. The roads are graded on a regular basis.

Normal maintenance of the roads should be anticipated. No geotechnical concerns were identified during the inspection.

Permanent water management culverts are in place through road fills. Culverts observed were: Culverts 1, 2, 3, 4, 7, 8, 10, 11, 13, 15, 16,18, and 20. The culverts were generally in good condition with the exception of Culvert 18, through the TSF road, which has been crushed to half its original height.

7.3 Summary and Recommendations

The site mine roads and culverts were generally well maintained and in good geotechnical condition at the time of the inspection. No specific recommendations for geotechnical improvements are provided.

Culvert 18 through the TSF road should be repaired.

8.0 BORROW SOURCES

8.1 Background

Numerous borrow sources have been developed during the construction of the mine. Many of the borrow sources were reclaimed in 2019. The following borrow areas were observed:

- Meliadine North Esker;
- Meliadine Esker; and
- Wesmeg Esker.

Photographs of the borrow areas are in Appendix K.

8.2 Visual Observations

In general, the borrow areas were in good condition and had been reclaimed by grading to knock down various piles and ruts.

Additional material is being extracted out of the Meliadine Borrow Area.

A drainage channel is present through the reclaimed portion of the Meliadine Borrow Area. The channel is within the native sand. It is anticipated that the channel will naturally erode. Some remediation may be required to stabilize portions of the channel in future years but was performing adequately at the time of the inspection.

8.3 Summary and Recommendations

The borrow areas should be monitored for future erosion and thaw settlement; however, they appear to be performing well since they were reclaimed two years ago.

9.0 ORE STOCKPILES

9.1 Background

The ore and waste rock storage areas are located east of the crusher area. Photos of the ore stockpiles are included in Appendix L.

The pile heights should be constructed such that they are less than 2 m above the reach height of the loader removing material from the pile. The dig face should be carried out in a manner such that the slope angles are flatter than the angle of repose of the material (1.3H:1V to 1.4H:1V).

At the time of the site visit a Caterpillar 988K loader was being used in the ore and waste rock storage area. A Cat 988K loader has a reach of 5.5 m; therefore, the maximum pile heights that are being excavated from the face should be limited to 7.5 m. It is Meliadine policy that a maximum 7 m high bench face is to be used. A second bench can be constructed to a maximum total height of 12 m, with a 5 m offset from the first bench.

In general, most of the piles in the ore and waste rock storage area are less than 7 m. It is understood that one pile is 10.5 m, and there is a plan to lower this pile.

The piles appeared to be stable and well managed with no signs of instability.

No geotechnical concerns related to the stability of the stockpiles were identified.

10.0 OTHER MELIADINE FACILITIES

10.1 Crusher Ramp

The crusher ramp is an earth fill structure consisting of a ramp, turn around area, and loading area adjacent to the crusher. It was constructed in 2018. It was mainly constructed of Run-of-Mine rock with an MSE wall surrounding the crusher. The crusher pad is shown in Photos 1 through 7, Appendix L.

The area was visually inspected. The gabion wall appears to be performing well with no visual signs of distress. It is leaning in towards the fill materials as intended.

The fill slopes were relatively smooth with no obvious cracking, erosion, or signs of instability. There was also no cracking on the surface of the ramp, turn around area, or the loading area adjacent to the crusher.

It appears to be performing well from a geotechnical perspective.

10.2 Saline Water Treatment Plant

The Saline Water Treatment Plant (SWTP) was constructed to treat water from underground operations. It was constructed in an existing storage warehouse/shop that was extended on one end. The structure is a fabric building founded on a concrete slab.

The SWTP generates considerable heat, making the interior of the building warm. The concrete slab of both the original building and the extension has undergone a considerable amount of settlement. It is speculated the settlement is due to thawing of ice rich permafrost underneath the building. The settlement was reported to be up to 0.4 m in 2019.

The facility has not been used since March 2020, and there are no plans to operate in the future. Inside of the facility was not inspected in 2021. If the facility is operated again it is recommended that an assessment of the geotechnical and structural condition be carried out.

10.3 Landfill

The main landfill for the mine is located at the northeast corner of WRSF1. The landfill has perimeter berms constructed of esker material. The landfill is used for dry waste only. Kitchen and other burnable wastes are burned in the onsite incinerator. The landfill is shown in Photos 8 to 12, Appendix L.

The perimeter berms are performing well from a geotechnical perspective with no signs of instability. It is understood that the berms were raised approximately 0.6 m since 2020 to provide additional capacity in the landfill.

At the time of the site inspection the landfill debris was predominately uncovered. The landfill appeared to contain construction waste among other things. A significant amount of burnable waste (wood etc.) was present in the landfill. A portion of the burnable waste was removed from the landfill since 2020, resulting in additional capacity of the landfill.

It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris. A program to separate burnable debris could reduce the landfill requirements.

The landfill is nearing its current design capacity. It is understood a plan is being developed to construct a new landfill on site.

10.4 Emulsion Plant Pad

The emulsion plant is located at the north end of the mine. The plant was constructed on a pad constructed of esker material.

It is understood that the pad had some settlement after it was constructed but there were no reports of recent settlement issues. The north edge of the pad is experiencing erosion, with channels up to 0.4 m deep as shown in Photo 13, Appendix L. The erosion channels are similar to those observed in 2019 and 2020 and are not currently impacting the use of the pad.

It is recommended that the pad settlement and erosion continue to be monitored. Remedial action was not required at the time of the inspection.

The storage pad next to the emulsion pad is filled with shipping containers. The north end of the pad is slightly sloped resulting in shipping containers that are leaning as shown in Photo 14, Appendix L.

10.5 Landfarm

A lined landfarm was constructed south east of the process plant. Windrows of soil 1.0 m to 1.2 m have been placed in the landfarm as shown in Photos 15 to 19, Appendix L.

The landfarm berms appear to be in a stable condition with minor cracks on the berm crest. A small amount of geomembrane liner and geotextile was exposed on the perimeter of the berm. The exposed liner will not impact the landfarm performance.

The landfarm sump contained water at the time of the inspection. It is understood that this water is tested prior to pumping it out.

No significant geotechnical issues were noted at the time of the inspection.

10.6 Industrial Fuel Storage Tanks

The Industrial Fuel Storage Tanks are located east of the process plant as shown in Photos 20 to 25, Appendix L. Two tanks are in the facility. The facility is lined with a geomembrane liner for secondary containment.

The crest of the berm has several cracks up to 40 mm wide. A small amount of erosion has occurred on the tank pedestals; however, the erosion does not appear to generally extend under the tank bases. A grounding cable is exposed in the top of the berm. There was a small amount of water in the tank base. The cover fill over the geotextile is missing in a small area (<0.5 diameter).

The tankfarm is performing adequately from a geotechnical perspective. Its condition should continue to be monitored.

10.7 Other Facilities

The following other facilities were inspected during the site visit:

- New Cyanide Storage Pad, constructed in 2019;
- Emulsion Plant Storage;
- Freshwater Intake;
- Incinerator Pad;
- Mine Site Fuel Farm;
- Paste Plant Ramp;
- Industrial Pad; and
- Portal No. 1 and Portal No. 2.

No significant geotechnical issues were noted in these facilities.

11.0 EXPLORATION CAMP AND ACCESS ROAD

Portions of the exploration camp were being dismantled at the time of the annual geotechnical inspection. Some of the dorms had been removed out of the area; although other portions of the camp were still in use. Appendix M contains photographs taken during the inspection.

The landfarm at the exploration camp access road was also being dismantled with portions of liner no longer providing containment.

The access road to the exploration camp was in good condition. There are several depressions in the road down to the diffuser at the east end of exploration camp area.

There are diesel generators at the east end of the camp. They were not being used at the time of inspection. The generators, and associated fuel storage are in a lined secondary containment area. There was water in the base of the containment area indicating there is some containment in the area. There are numerous tears in the crest of the liner and top of the containment slope. It is recommended the liner be further evaluated if the area is to be used in the future.

12.0 ALL-WEATHER ACCESS ROAD AND ASSOCIATED WATER MANAGEMENT STRUCTURES

The AWAR construction activities began during the winter of 2012, and construction was completed by the end of October 2013 to connect the hamlet of Rankin Inlet to the Project. Appendix O contains photographs taken during the inspection. The road is approximately 23.8 km long, with three bridge crossings and culverts installed at a total of 19 locations. The road has two-way traffic and is approximately 6.5 m wide with pull outs approximately every 400 m ±50 m to facilitate vehicles passing.

The AWAR is used by AEM and provides unrestricted all-terrain vehicle (ATV) access for the public, if it is safe to do so. The AWAR is used to transport building materials, construction/mining equipment, fuel, reagents, supplies, workers, and contractors to the mine.

The road design is based on a general sub-base composed of rockfill or sand and gravel from esker sources and crushed granular surfacing with a combined minimum thickness of 500 mm. The road design varied based on the relative susceptibility to freeze and thaw induced settlement of the foundation soils. The thickness of the road fill material was generally increased, to a minimum of 1.3 m, in areas where potentially thaw-sensitive soils were identified. Along portions of the road where thaw-sensitive soils were identified, a geotextile material was incorporated into the road design to limit damage to the road should the foundation material thaw.

12.1 Observations and Recommendations

The road and culverts were generally observed to be in good condition, at the time of the inspection with the exceptions noted below. Most culverts were unobstructed with no signs of substantial damage to the culverts. All bridges and their embankments were in good geotechnical condition at the time of the inspection. A structural and/or mechanical assessment of the bridges was not conducted and is beyond the scope of this geotechnical inspection.

The locations and a photographic record of the inspected culverts and bridges is provided in Appendix O.

Table 13-1 lists the locations of water management structures: culverts and bridges that have been installed along the AWAR. The location of the culverts and bridges are listed, based on distance from the Healing Centre in Rankin Inlet, with the gate house at Meliadine being 29 km (the distances can be several metres off the distance marker distances on the road). Size and number of culverts is provided in Table 13-1, along with specific observations and photos at the time of the inspection, and any recommendations.

It is understood that AEM has implemented a watercourse crossing inspection and maintenance program, which includes:

- A regular inspection program to identify issues relating to watercourse crossings, such as structural integrity and hydraulic function;
- An event-based inspection program to track the impacts of larger storm events on watercourse crossings; and
- Observations to confirm water is flowing through the culverts and no sediment is being transported in the water to determine if any mitigation is required.

Road maintenance and snow management are carried out, as deemed necessary. Steaming of culverts, is included as a maintenance activity. AEM places additional crush on the AWAR annually and applies calcium chloride for dust control through the summer.

An inspection of the road was conducted along the AEM Water Management Supervisor, Devrey Bowen. Devrey related the water management performance during the past several freshets, and indicated where improvements could be made to the water management structures. It is understood that the road performed better in spring 2021 than previous years, with no major overflows. As in previous years a significant effort of steaming culverts and pumping was required to maintain the road during freshet.

In general, the road appeared to be in good geotechnical condition at the time of the inspection. Recommendations for improvements to the water management structures are presented in Table 13-1. There are numerous locations where there are no culverts or where the culverts are under sized.

Most of these locations will require a change in the road grade to accommodate culverts or larger culverts. The following is required to design the culvert locations:

- Road Profile (Centerline, Shoulder, and Ditches).
- Detailed topography upstream on downstream of identified locations.
- Assessment of local catchment areas and hydraulic requirements.

It is understood a culvert design report must be submitted to the regulators for water management structures.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
KM 5.5	1 x 600 mm CSP	Good condition – located in the community portion of the road. AEM SW local roads downstream of culvert result in some flow restrictions. Some flow at time of inspection.
KM 6.0	Char River Bridge	Good condition, stable embankments, and abutments are armoured.
KM 6.2	3 CSP culverts: 2 x 1,300 mm 1 x 700 mm	The culverts are vertically offset with the 700 mm culvert elevated above the 1,300 mm culverts. Some minor erosion observed between the culverts on the downstream side. All clear and in good condition. Small flow in the lower 1,300 mm culvert. Armouring appears to be adequate.
KM 7.0	3 CSP culverts: 2 x 1,000 mm 1 x 700 mm	The culverts are vertically offset with the 700 mm culvert elevated above the 1,000 mm culverts. The 700 mm culvert had a dent inside. Ponded water observed in the lower culvert. Small amount of water ponded upstream. No flow at time of inspection. Sandy soil around culverts, potential for erosion, but none noted during inspection.
KM 7.1	3 CSP culverts: 2 x 1,000 mm 1 x 700 mm	Vertically offset. 700 mm culvert is elevated. Water ponded in the lower two culverts downstream, minor deformation of culverts under the road, no substantial reduction of cross-sectional area. The culverts and riprap appear in good condition. No flow at time of inspection.
KM 7.4	3 CSP culverts: 1 x 900 mm 1 x 700 mm 1 x 1,000 mm	Vertically offset. 700 mm culvert is elevated. Damage to the inlet of the 900 mm culvert. Erosion potential due to finer grained soils around 700 mm culvert at the inlet and outlet, but no significant erosion noted. 1,000 mm clear, low flow/ponding water. AEM indicates culverts performed well during 2021 freshet. **Recommendation: Repair culvert damage.**
KM 8.0	Meliadine River Bridge	Right abutment, slopes upstream and downstream of bridge have exposed sand and gravel; no erosion noted.
KM 8.8	No Culvert	AEM SW indicates that water overflows the road. Low road profile in area. **Recommendation: Install culverts and raise the road to facilitate culverts.**
KM 9.1	2 x 1,000 mm CSP culverts	Minor deformation of both culverts under the road. No flow, water ponded below the inlets. Armoured, no obvious signs of erosion. The road has been raised since 2020 inspection.
KM 9.5	1 x 1,300 mm CSP culvert	Water ponded on upstream side of culvert/road with very low flow due to elevated inlet of CSP. Minimal flow during inspection. CSP in good condition.
KM 10.5	M-5 Bridge	Good condition, stable embankment, and abutments of the bridge. Exposed geotextile at base of downstream end of left abutment that could be due to erosion. Gabion damaged on downstream of left (north) abutment. Damaged gabion above water line. No obvious signs of erosion. **Recommendation: Replace or repair damaged gabion. Place additional riprap on exposed geotextile.**

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
KM 12.1	4 CSP culverts: 2 x 1,300 mm 1 x 900 mm 1 x 700 mm	Vertically offset. 700 mm and 900 mm culverts are elevated. Minor small dents and bending of haunches in 700 mm and one of the 1,300 mm culverts. Minor flow through the lowest of the 1,300 mm culverts. Minimal armour; however, no obvious erosion. Some crushing (oval shape) of culvert. Embankment slope is generally in good condition.
KM 12.6	No culverts	Area of poor drainage. In good condition, no signs of water flow at time of inspection.
KM 13.5	5 CSP culverts: 3 x 1,300 mm 2 x 900 mm	Vertically offset, 900 mm culverts are elevated above 1,300 mm culverts. Good condition, small flow, minor dents, and deflection in haunch, otherwise in good condition.
KM 14.7	Access road to B12 quarry, 500 mm HDPE corrugated culvert	No flow, small amount of water ponded against AWAR and quarry access road, below inlet of culvert. Minor dents observed in culvert. Small erosion at outlet. Culvert and embankments are generally in good condition.
KM 16.3	3 CSP culverts: 1 x 1,300 mm 1 x 700 mm 1 x 1,000 mm	Vertically offset, 1,300 mm culvert is the lowest, then the 1,000 mm culvert, and the 700 mm culvert is the highest. No flow in the 700 mm and 1,000 mm culverts, good condition. Small erosion visible at outlet. Outlets are all elevated increasing erosion potential. No signs of overflow, area armoured. AEM indicates culverts performed well during 2021 freshet.
KM 18.1	2 CSP culverts: 1 x 900 mm, 1 x 1,000 mm	Vertically offset culverts. The 900 mm culvert is elevated above 1,000 mm culvert. Lower culvert has some flow, minor dent on upstream end. Upper culvert is in good condition. Upper culvert is high on the embankment and has thin cover on the upstream side. Trench exists along upstream toe of road connecting the culverts at KM 18.1 to KM 18.15. Culvert appears to replace KM 18.15 culvert. No erosion noted, appears to be performing adequately.
KM 18.15	1 x 600 mm CSP culvert.	The culvert no longer appears to be useful as ponding is controlled by the KM 18.1 culvert.
KM 19	No culverts	Ponding on west side of road, reportedly the water ponds here year-round and can reach as high as halfway up the embankment. Water 1 m below road at time of the 2019 and 2020 Inspections. 2018 Inspection reports by AEM note straw logs were placed at KM 19, so there may have been some flow over the road in this area in 2018. No overflow reported in 2019. AEM SW reports overflow in 2020 freshet but no pumping was required during 2021 freshet.
KM 21.0 to 21.5	No culverts	Low ponded water on west side of road near KM 20.0 and KM 21.2. Water reportedly flowed over the road near KM 21.5 during the 2017 freshet. Straw logs were placed on east side of road embankment to control suspended solids in the flow in 2018. No reports of overflow in 2019. Inspection in 2019 had a “wash zone” of road embankment indicating likely high water in 2019. Pumping required in 2020.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
KM 21.7	2 x 160 mm steel pipes, used as culverts	Vertically offset steel pipes, clear, no flow. Water ponded upstream in 2018, erosion mark from higher water level evident in road embankment. Water reportedly flowed over the road at this location during freshet. AEM personnel reported that the road was excavated in 2018 to allow the water to drain. Capacity of pipes may be inadequate, or pipes could have been frozen (blocked) causing water to backup. Straw logs were observed on west side of road. No reports of overflow in 2019 or 2020. High water marks in 2021 does not indicate overflow but pumping was required.
KM 22.3	2 x 160 mm steel pipes, used as culverts	Ponded water observed in 2019; no armour around inlets. Culverts, vertically offset, clear, no flow. Inlets are elevated above ponded water at time of inspection. No indication of overflow. AEM SW reports overflow at the location in 2020 and no overflow in 2021 freshet.
KM 22.7 to 23.0	No culverts	Water ponded on the east side of the road. Distressed vegetation indication of some ponding. Required pumping to prevent the road from breaching in 2021.
KM 25.8	1 x 600 mm HDPE corrugated culvert	No flow, minor amount of gravel in base of culvert, some dents on upstream inlet to culvert. Sandy soil around inlet and outlet, no armor. Minor erosion on slope of road. 2018 inspection reports noted ponding of water at or over the road in this area during the freshet. The culvert inlet does not extend past the toe of the road embankment. **Recommendation: Clear culvert inlet of road fill material.** **Consider extending culvert to prevent road fill from entering culvert.**
KM 26.2	2 x 160 mm steel pipes, used as culverts	Vertically offset, lower pipe bent upward. Both pipes partially blocked with road fill. The inlets are elevated close to the road surface. Some sediment deposition downstream is evident. 2018 AEM inspection reports noted ponding of water at or over the road in this area during the freshet. No reports of overflow in 2019. Ponding and overflow were reported during 2021 freshet.
KM 26.5	3 x 700 mm CSP culverts	Equal elevation, minor sediment buildup, low flow, small dents, well armoured and covered with gravel. No signs of erosion.
KM 26.8	2 x 160 mm steel pipes, used as culverts	Vertically offset, no flow. Inlet of the lower culvert was completely covered by road fill. Some erosion evident at downstream ends. Evidence of ponding about 0.5 m below road crest. AEM reports no overflow during 2021 freshet. **Recommendation: Inlet of the lower culvert should be cleared and possibly extended**.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	**Water Management Structure Description**	**Conditions, Observations, and Recommendations (at time of inspection)**
KM 27.1	3 CSP culverts: 1 x 900 mm 1 x 700 mm 1 x 1,000 mm (southernmost)	Vertically offset, middle culvert (700 mm) elevated above adjacent culverts. Clear, minor flow in lowest culvert, some small dents in 900 mm and 1,000 mm culverts. All clear and in good condition.
KM 28.7	No culverts	Ponded water on east side of road. 2018 water flowed over the road at this location during freshet. No reports of water flowing over the road in 2019 or 2020. AEM reports pumping was required during 2021. **Recommendation: A culvert could be installed to reduce the risk of overflow**.
KM 29.6	1 x 500 mm HDPE corrugated culvert	The inlet has been covered by a rockfill pad along the road and was partially crushed by approximately 100 mm just beyond the inlet during 2020 inspection. Flow is still observed at the outlet. AEM SW indicates pumps required to keep water off the road at this location.

13.0 ITIVIA FUEL STORAGE SITE AND BYPASS ROAD

The Itivia bypass road is a 6.3 km gravel road that was constructed to divert traffic from the Itivia fuel storage and laydown area to the Project site around Rankin Inlet as shown in Appendix P. The Itivia fuel farm is used to store fuel for Meliadine Mine.

The road is designed to be 6.5 m wide for most of its length with pull outs to allow two-way traffic. Two sections are designed to be 8 m to allow two-way traffic without pullouts. The road was constructed in 2017 and 2018. The eastern portion of the road was constructed using blast rock from the Itivia Quarry, but most of the road was constructed using esker materials.

The road and culvert locations were observed. The culvert locations are referenced from the southeast corner of the Itivia fuel storage facility. The observations are summarized in Table 14-1. The culvert names are referenced from the construction drawings and the 2018 inspection. Some of the culverts now have the names attached to the culverts, and do not correlate to the previous names as noted in Table 14-1.

In general, the road was in good condition. Minimal signs of cracking or settlement were noted. Some sections of the road were high enough that they required safety berms, which were constructed using large boulders along the eastern section and with esker materials along the remainder of the road. Riprap was generally placed at the inlet and outlets of culverts, per the design. Table 14-1 presents a summary of the culvert inspections completed.

Based on discussions with AEM personal, it is understood that two areas had issues during the 2019 and 2020 freshets; the area northwest of Culvert C10 flooded, and the road at km 2 had significant flows in the upstream ditch running along the road, and across the road.

Culvert C10 handles the flow of the water from a small lake (Signet Lake) north of the road. In 2019 it appeared that most of the runoff ran along the road as opposed to flowing through the culverts. This is evidenced by the high-water mark on the shoulder of the road. The water ran to a low area of the road east of the culverts, and then across the road. This may have been partially because of icings around the culvert area in the spring. The road 200 m east of Culvert C10 was raised in 2019 to address this problem; however, the problem persisted in the spring of 2020. The AEM Surface Water Superintendent reported in 2020 that the water partially came from a discharge out of Signet Lake and the south east side. The problem could also have been partially caused by an ice/snow blockage in the C10 culverts. The culverts should be cleared prior to freshet. The issue could be rectified by placing culverts in the low area of the road east of Culvert C10. It is understood that the culverts were steamed in 2021, and the flow came through the C10 culverts as intended. Although the area functioned well in 2021, culverts in the low area of C10 would reduce future problems with this area.

The road along km 2.2 has been constructed as a cross slope fill. Water runs from the up-gradient slope into a ditch upslope of the road. The ditch is relatively shallow (0.5 m). The water spills out of the ditch and runs across the road and down the road slope. It is recommended that the area be rectified to control the freshet water. This could be a combination of a culvert and improving the performance of the ditch. The solution must consider the steep up-gradient slope, steep downstream erodible road fill, and shallow road fill at this location making installation of culvert difficult. The ditch should be cleared of snow and ice prior to the freshet.

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
0.35 km	C01	2 x 1,000 CSP culverts	No water flowing through culverts. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	N/A
0.6 km	C02	2 x 700 mm CSP culverts	No water flowing through culverts. Road constructed out of blast rock. Some riprap at the outlet of the lower culvert. Large boulders placed on south crest of road as safety berm.	N/A
0.8 km	C03	2 x 1,000 mm 1 x 700 mm	No water flowing through culverts. Minor erosion in tundra observed upstream of culverts. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	N/A
1.0 km	C04	2 x 1,000 mm	No flow in culverts. Minor amount of riprap upstream of culvert. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	N/A
1.2 km	C05	2 x 1,000 mm	No water flowing through culverts. Minor amount of rockfill in front of inlets could erode into the culverts. Road and safety berm on south crest of road constructed out of esker materials.	1
1.5 km	C06	2 x 800 mm	Culvert inlets installed above surrounding natural ground. Ponded water against toe upstream side of road north of the culvert inlets, a small berm has been constructed between the ponded water and the culvert inlet location. No water flowing through the culverts. Some rockfill in front of inlets could erode into the culverts. Road constructed out of esker materials.	N/A
1.6 km	C06-1 (marked C07 on sign)	1 x 800 mm	No water flow in culverts, road constructed out of esker materials, inlet and outlet covered with riprap.	N/A
1.8 km	C07a C07b (marked C08 on sign)	2 x 800 mm	Ponded water observed at the inlets around the culverts and against the toe of the road embankment. Small flow through the east culvert. Culvert inlets installed over rockfill base raised above surrounding natural ground. Road constructed out of esker materials.	2
1.9 km	C07b (marked C09 on sign)	2 x 1,000 mm	No water flowing through the culverts, inlets and outlets are clear. Road constructed out of esker materials. Safety berm constructed on south crest of road. Outlet discharges on coarse (cobbly) esker. Road crush has washed onto outlet culverts. Minor damage to inlet.	3
2.4 km	C09 (marked C10 on sign)	2 x 1,000 mm	No water flowing through culverts. Ponded water observed around the inlets and against the toe of the road embankment to the south. Road constructed out of esker material.	4

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
3.1 km	C10 (marked C11 on sign)	5 x 1,200 mm 1 x 1,000	Some damage to culvert inlets and deformation under road observed. Some water flow observed flowing into lowest culvert. Ponded water observed along the toe of the road embankment to the north of the culvert inlets. Culverts were steamed during freshet which prevented issues this year. Road constructed out of esker material. Road raised in fall 2019 north of culverts. Water raised to crest elevation of low area in the road to the northwest. Minor cracking in the road fill slopes on the south side of the road. Erosion booms placed on downstream slope of the road low point to the northwest. **Recommendation: The culverts should be cleared of snow and ice prior to and during freshet. Additional culverts could be installed in low road area to the northwest; alternatively, the low area in the road could be raised, but would result in a large flooded area.**	5
4.0 km	C11a (marked C12 on sign)	2 x 1,200 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow observed through both culverts. Shallow ponding of water over tundra upstream of the inlets and against the toe of the road embankment. Water mark visible along toe of road embankment, approximately 0.2 m above toe of road at culverts, higher along road to northeast. Road constructed out of esker material; minor erosion at toe of road.	N/A
4.3 km	C11b (marked C13 on sign)	2 x 1,000 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow through the north culvert. Small amount of water ponded over tundra on both sides of culverts. Road constructed out of esker material, performing adequately, no signs of erosion.	N/A
4.8 km	C11b-1	1 x 1,000 mm	Culvert is constructed over riprap and invert is raised above surrounding tundra. Small natural drainage path observed upstream and downstream of culvert. Water observed within drainage downstream of outlets. No flow in culvert. Road constructed out of esker material performing adequately.	N/A
4.9 km	C11c	2 x 1,200 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow through culverts. Shallow ponded water observed upstream and downstream of the culverts. Road constructed out of esker materials. Road fill performing adequately.	N/A

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
5.0 km	C12a	2 x 1,200 mm	Culverts are constructed over riprap and upstream inverts raised above surrounding tundra. Ponded water observed over tundra upstream and downstream of the culverts. No flow through culverts. Road constructed out of esker materials. Road slopes performing adequately.	7
5.1 km	C12b	2 x 1,000 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Water ponded upstream and downstream of the culverts and along the toe of the embankment. Road constructed out of esker materials. Riprap placed in local area of culvert. No signs of erosion on roadside slopes indicating previous higher water levels.	8
6.2 km	C13	2 x 800 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Relatively large pond of water upstream and downstream of the culverts; road constructed through natural pond. Road constructed out of esker materials.	9
6.3 km	C14	3 x 800 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Water ponded upstream and downstream of the culverts. No signs of subsidence due to ponded water. Road constructed out of esker materials.	10 & 11

The Itivia fuel farm consists of a 20,000,000 L and a 13,500,000 L fuel storage tanks as shown in Photos 15 through 21, Appendix P. The fuel is hauled to the mine site on an as needed basis. The tanks are contained within a geomembrane lined containment facility. The geomembrane liner is covered with a layer of geotextile and 20 mm crushed rock. The following observations were made during the inspection.

- Some small areas on the east berm had exposed geotextile on the crest of the berm; however, these will not affect the performance of the facility.
- There was some ponded water in a portion of the facility.
- There are a few pipe support bases that are sitting in the air.
- The width of the granular fill tank pedestal base beyond the tank is relatively narrow at the centre points, as the pedestals have been constructed with a square footprint.

In general, the facility appears to be in good condition from a geotechnical perspective. It is recommended that fill be placed under the unsupported pipe supports. Significant erosion of the granular fill pedestals was not observed, but it should be monitored. Water in the facility should be emptied as soon as practical to reduce the risk of erosion. Coarser rockfill could be placed adjacent to the narrow point of the pedestals to reduce the risk of erosion. It is recommended that the small amount of work in the facility be done by hand, to avoid the need for heavy equipment to work in area.

14.0 WASTE ROCK STORAGE FACILITIES

Waste rock storage facilities WRSF1 and WRSF3 are used to dispose of waste rock and overburden from the Tiriganiaq open pits and the underground operations. The waste rock and till are stored in separate areas of the facilities. The design drawings for WRSF1 and WRSF 3 and photos are included in Appendix Q and Appendix R, respectively. Observations of each facility are noted below.

14.1 WRSF1

Disposal in WRSF1 began in 2019; with most of the material being placed since December 2020. Benches 77, 82, 87, and 92 and a portion of the 94.5 m bench had been placed at the time of the 2021 inspection. As per the design, till is placed in the centre of the facility with a 40 m perimeter of waste rock around the till.

Most of the till was placed in the winter. The top lift of till was being placed at the time of the site inspection.

The till placed in WRSF1 is a combination of material placed prior to the summer of 2019, and that placed during the winter of 2019/2020. The winter placed till was wet; it is speculated that it contained some ice rich material and is thawing and consolidating over the summer.

The ground temperatures in the base of the WRSF1 facility is being monitored with vertical and horizontal GTCs. The cable locations are shown on the design drawings. The measured ground temperatures are presented in Appendix Q. Based on the measured ground temperatures the foundation of the waste rock pile is frozen back. Horizontal beads roughly 30 m to 70 m inside from the toe of the pile warmed to about -3.0°C in August 8, 2021.

At the time of the inspection the following was noted:

- Till was placed on the 92 m bench outside of the till design perimeter, encroaching into the waste rock portion of the dump. It is understood that it was planned to move the till to within the till design perimeter.
- There was settlement up to 0.6 m deep in the waste rock on the 77 m bench. The area of settlement was in the vicinity of the former till borrow source. It is speculated the settlement is due to the consolidation and settlement of the disturbed till area.
- Minor cracking was noted 4 m back from the crest of the slope on the 87 m bench.

In general, the material is being placed in the pile according to the WRSF1 design with the exceptions as noted. No significant geotechnical issues were observed. The performance of the facility should continue to be monitored on an ongoing basis as out lined in the OMS Manual.

14.2 WRSF3

Disposal in WRSF3 began in 2020. The pile was not being used for waste rock disposal during the time of the annual inspection. It was being used for temporary storage and sampling of low-grade ore. The till and waste rock placed in WRSF3 appeared to be well compacted due to dozer compaction.

The ground temperatures in the base of the WRSF3 facility is being monitored with vertical and horizontal GTCs. The cable locations are shown on the design drawings. The measured ground temperatures are presented in Appendix R. Based on the measured ground temperatures the foundation of the waste rock pile is frozen back. The temperatures within the foundation have warmed by 0.5°C to 1.0°C from late July 2020 to early August of 2021 but appears to be stabilizing over the past year.

In general, the material is being placed in the pile according to the WRSF3 design. No significant geotechnical issues were noted.

15.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

REGISTERED PROFESSIONAL ENGINEER
W.T. HORNE
LICENSEE
N.W.T.

March 17, 2022

Prepared by:
Ryan Okkema, E.I.T.
Geotechnical Engineer-In-Training | Arctic Group
Direct Line: 587.460.3442
Ryan.Okkema@tetratech.com

Reviewed by:
Bill Horne, M.Sc., P.Eng.
Director, Arctic Engineering
Direct Line: 587.460.3528
Bill.Horne@tetratech.com

REGISTERED PROFESSIONAL GEOSCIENTIST
F. NDOFOR AKONGNUI
NT/NU

March 17, 2022

PERMIT TO PRACTICE
TETRA TECH CANADA INC.

Signature ____________

Date March 17, 2022

PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

Reviewed by:
Fai Ndofor, M.Sc., P.Geo.
Manager, Edmonton Arctic Group
Direct Line: 587.460.3486
Fai.Ndofor@tetratech.com

/jf

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FIGURES

NO. DESSIN
DRAWING NO.

FORMAT ANSI B–11x17

LEGEND

- CATCHMENT BOUNDARY
- SERVICE ROAD
- HAUL ROAD
- WATERBODY
- WATER COLLECTION POND
- DRAINED POND AREA
- OPEN PIT
- OVERBURDEN
- WASTE ROCK
- ORE
- TAILINGS
- INDUSTRIAL SITE PAD
- CONTACT WATER FLOW DIRECTION

AGNICO EAGLE

TETRA TECH

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REV	DESCRIPTION	DATE	PAR BY
A	ISSUED FOR REVIEW	2019–06–03	WTH

REVISIONS

DESSINÉ PAR DRAWN BY	EL	DATE	2019–06–03
VÉRIFIÉ PAR CHECKED BY	WTH		2019–06–03
APPROUVÉ PAR APPROVED BY			
No. PROJET PROJECT NO.	6515		
DATE			

TITRE / TITLE
AGNICO EAGLE – MELIADINE GOLD PROJECT

FIGURE 1
GENERAL SITE LAYOUT

ÉCHELLE/SCALE 1:15000 | FICHIER FILE General Site Layout Plan .DWG

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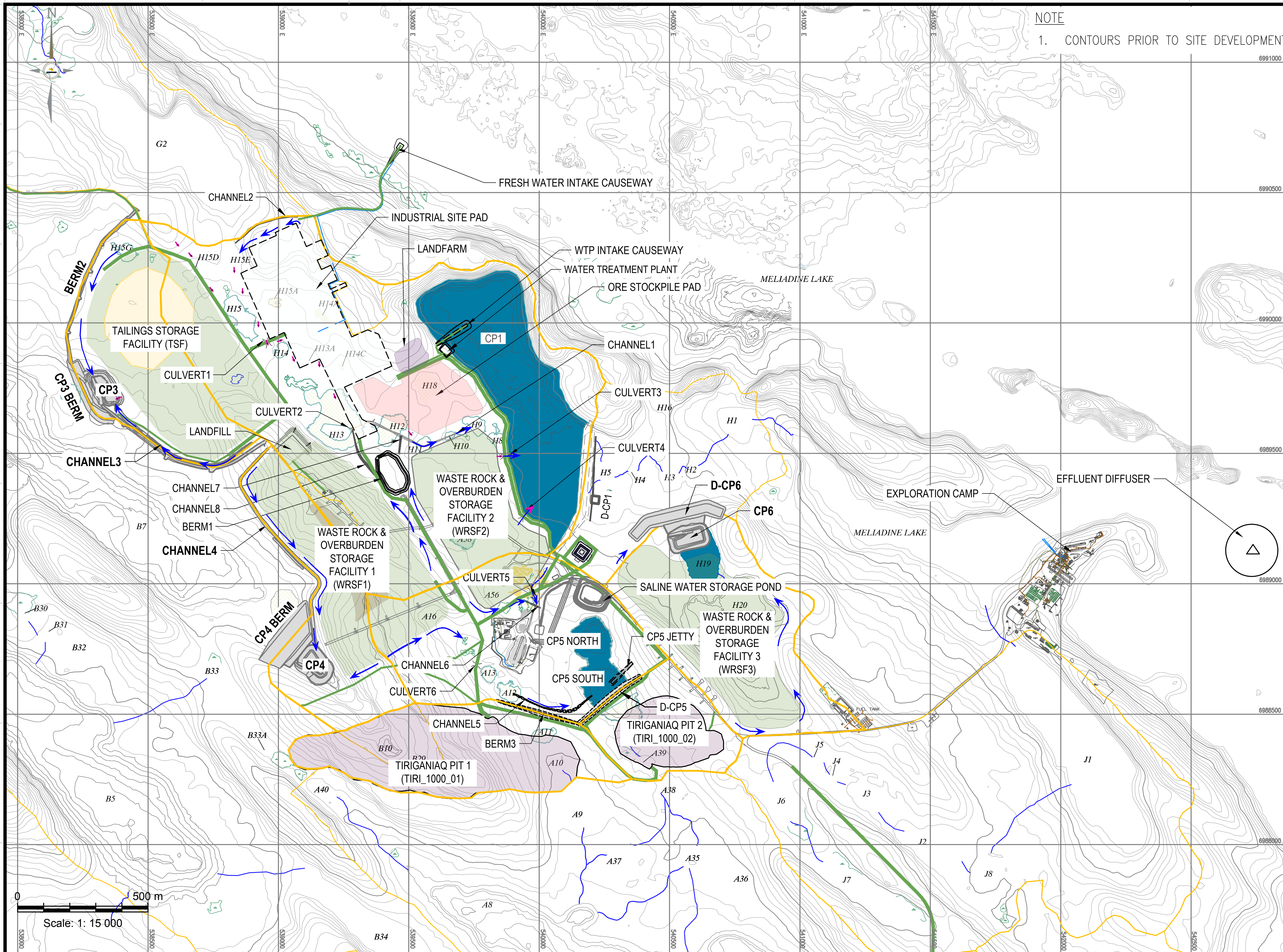

NOTE

1. CONTOURS PRIOR TO SITE DEVELOPMENT

LEGEND

- CATCHMENT BOUNDARY
- SERVICE ROAD
- HAUL ROAD
- WATERBODY
- WATER COLLECTION POND
- DRAINED POND AREA
- OPEN PIT
- OVERBURDEN
- WASTE ROCK
- ORE
- TAILINGS
- INDUSTRIAL SITE PAD
- CONTACT WATER FLOW DIRECTION

AGNICO EAGLE

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No. PROJET PROJECT NO.	6515		
DATE			

TITRE / TITLE
AGNICO EAGLE – MELIADINE GOLD PROJECT

FIGURE 2
LOCATION PLAN – YEAR 7

ÉCHELLE/ SCALE 1:15000 | FICHIER FILE General Site Layout Plan .DWG

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FORMAT ANSI B-11x17

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APPENDIX A

TETRA TECH'S LIMITATIONS ON USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOTECHNICAL

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The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

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During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

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This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, TETRA TECH has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

1.8 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. TETRA TECH does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

1.9 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

1.10 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. TETRA TECH does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

1.11 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

1.12 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

1.13 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

1.14 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

1.15 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

1.16 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

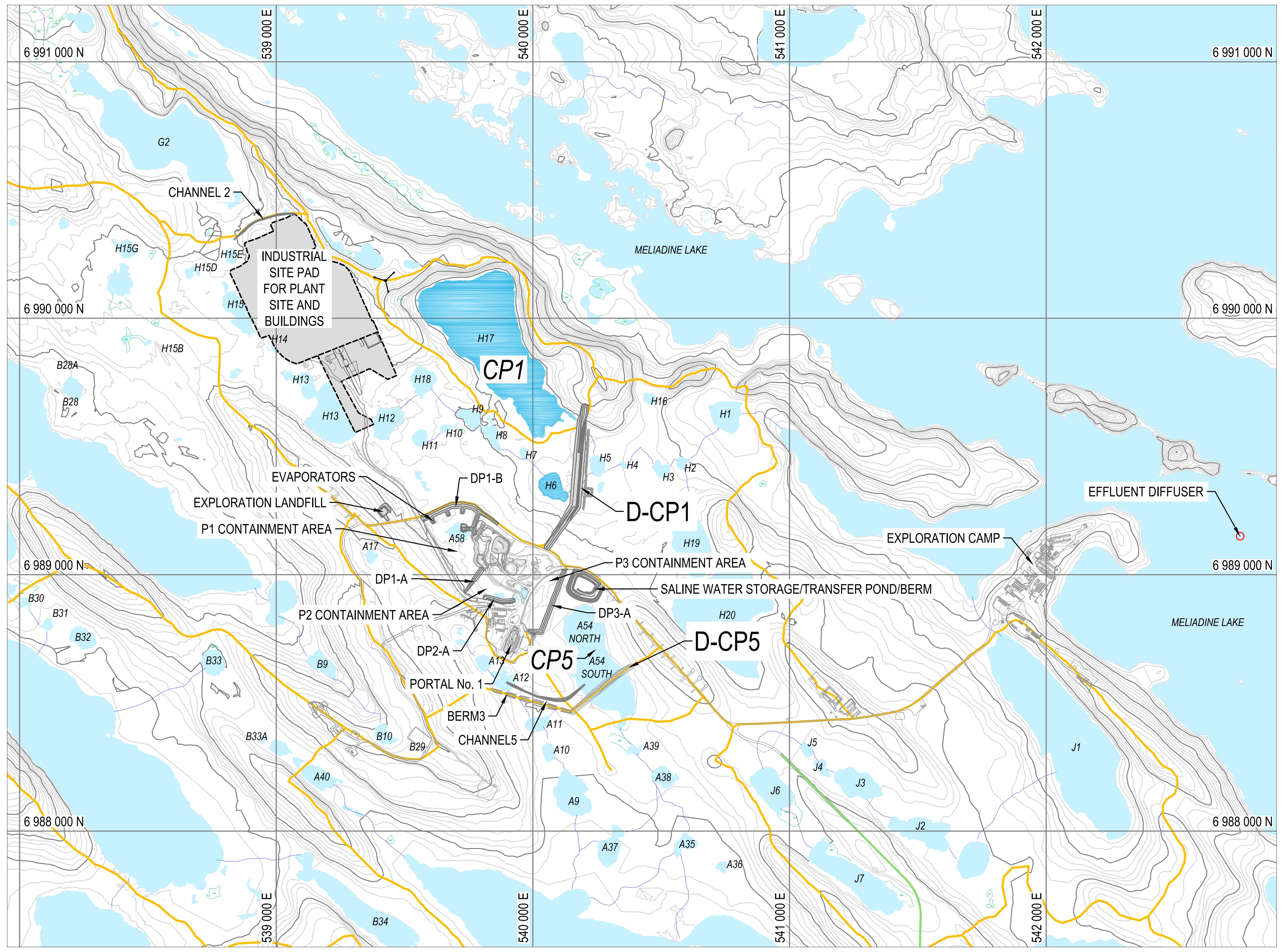
1.17 SAMPLES

TETRA TECH will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

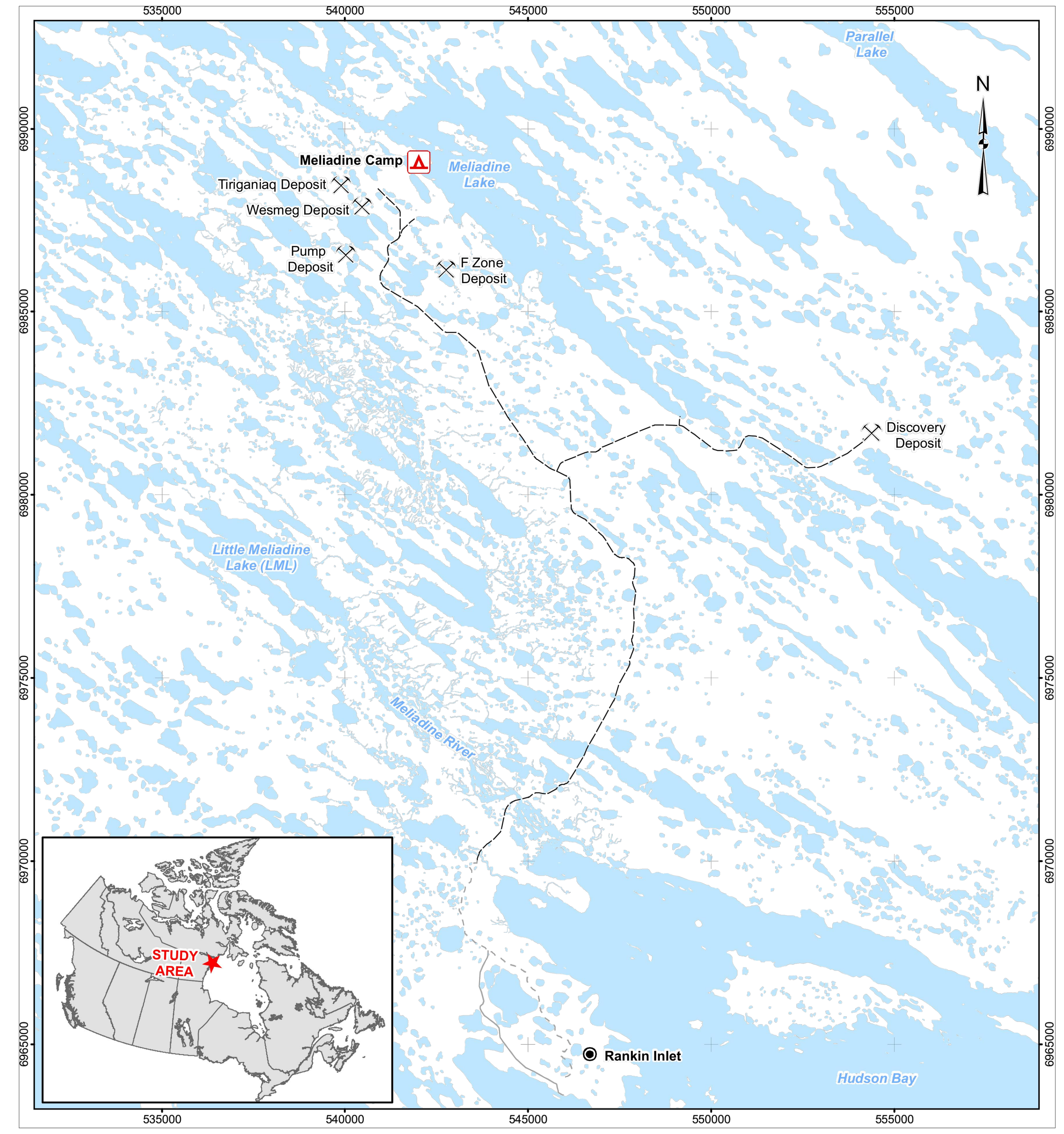
APPENDIX B

POND CP1 AND DIKE D-CP1

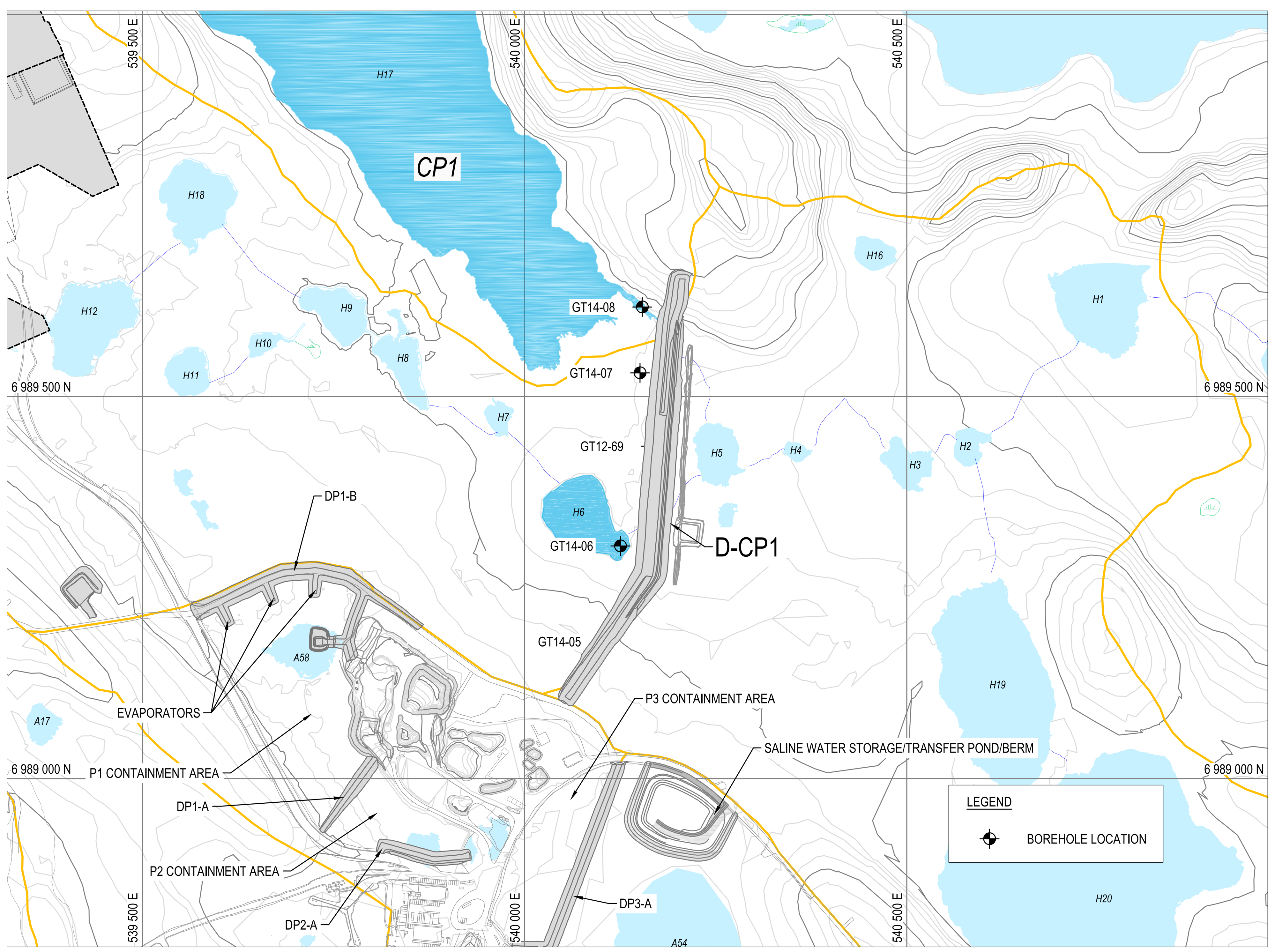
NO. DESSIN DRAWING NO. 65-685-230-204_R2



GENERAL SITE LOCATION
SCALE: 1:15,000



LOCATION MAP
SCALE: N.T.S.



D-CP1 SITE LOCATION
SCALE: 1:5,000

D-CP1 CONSTRUCTION DRAWING INDEX

DRAWING NUMBER	REV.	DRAWING TITLE
65-685-230-204	2	D-CP1 AS-BUILT GENERAL LOCATION PLAN
65-685-230-205	2	D-CP1 AS-BUILT KEY TRENCH AND DIKE LAYOUT PLAN
65-685-230-206	2	D-CP1 AS-BUILT PROFILES
65-685-230-207	2	D-CP1 AS-BUILT THERMAL COVER LAYOUT PLAN AND PROFILES
65-685-230-208	2	D-CP1 AS-BUILT TYPICAL SECTIONS AND QUANTITIES
65-685-230-209-001	2	D-CP1 AS-BUILT SECTIONS STATION 0+025 TO 0+200
65-685-230-209-002	2	D-CP1 AS-BUILT SECTIONS STATION 0+225 TO 0+400
65-685-230-209-003	2	D-CP1 AS-BUILT SECTIONS STATION 0+425 TO 0+575
65-685-230-210	2	D-CP1 AS-BUILT DOWNSTREAM WATER COLLECTION CHANNEL AND SUMP LAYOUT PLAN AND PROFILES
65-685-230-211	2	D-CP1 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES
65-685-230-212	2	D-CP1 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS
65-685-230-213	2	D-CP1 AS-BUILT DOWNSTREAM WATER COLLECTION CHANNEL AND SUMP PROFILES AND INSTRUMENTATION DETAILS

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-10-19	ISSUED FOR RECORD	WTH	NG	
1	2016-09-26	ISSUED FOR CONSTRUCTION	GZ	KJ	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER W.T. HORNE LICENSEE N.W.T.
REGISTERED PROFESSIONAL ENGINEER G. ZHANG LICENSEE NWT/NU

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP1 AS-BUILT
GENERAL LOCATION PLAN

DESSINÉ PAR DRAWN BY	EL	DATE	2017-10-06
VÉRIFIÉ PAR CHECKED BY	WTH		2017-10-06
APPROUVÉ PAR APPROVED BY	NG		2017-10-06
ÉCHELLE SCALE	AS SHOWN	DATE	2017-10-06

NO. DESSIN DRAWING NO. 65-685-230-204

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1 / 12

FORMAT ARCHD

AE-CART-ARCH D

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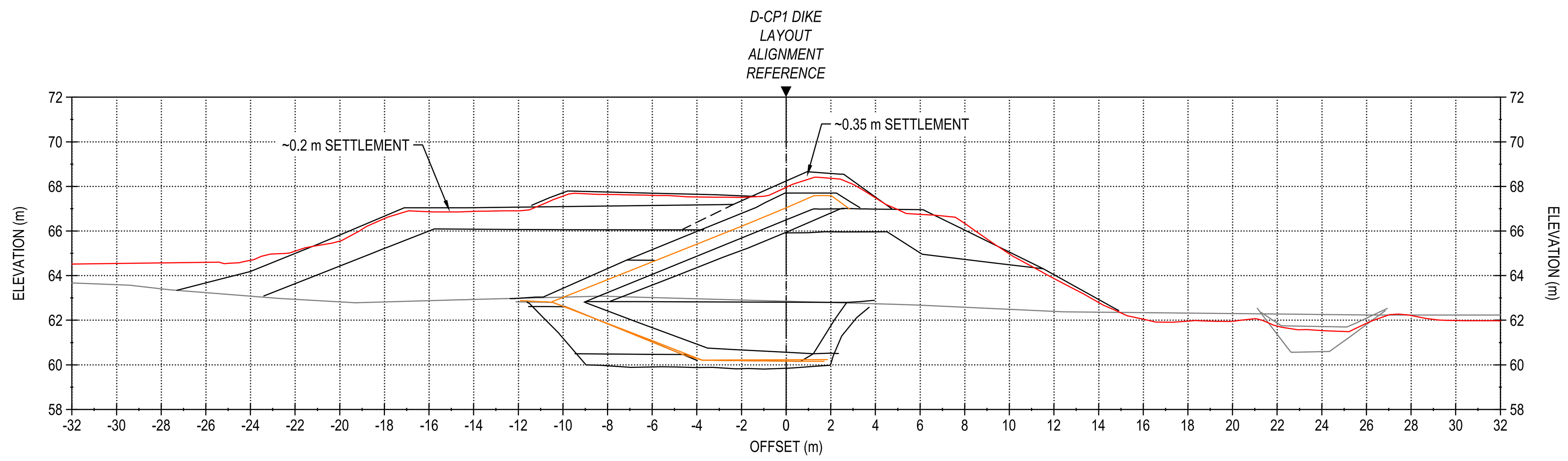

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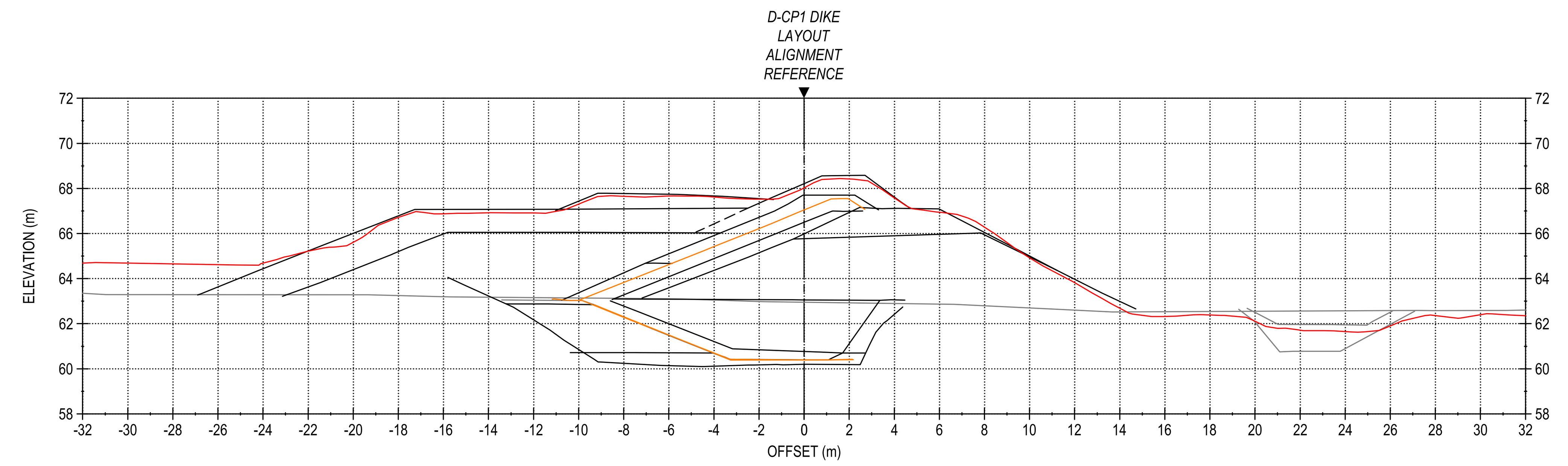

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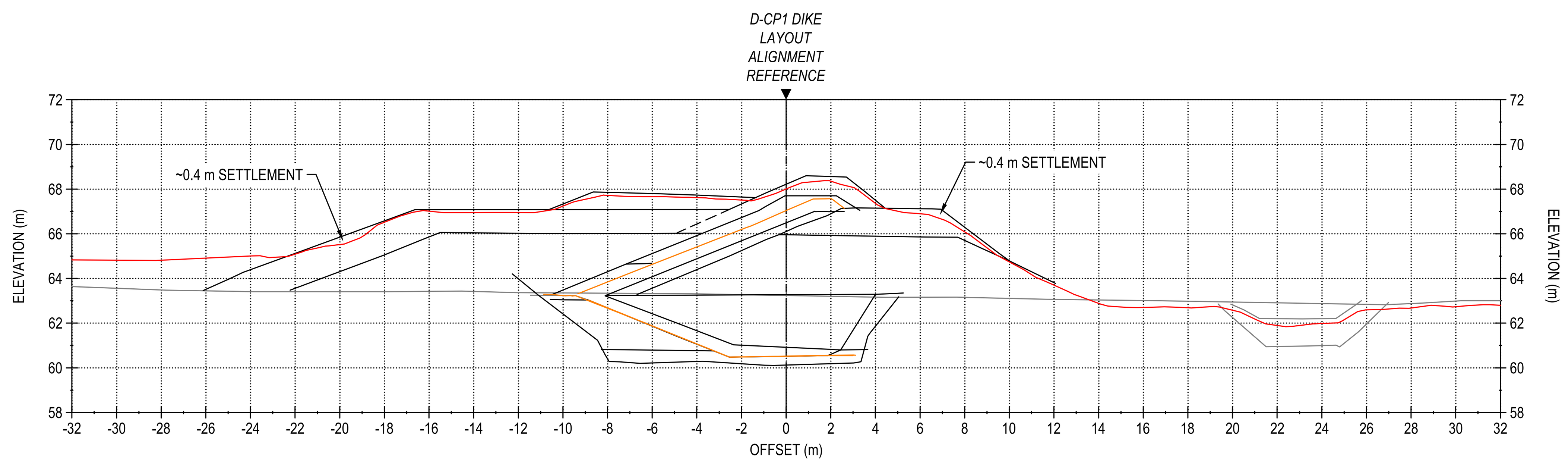

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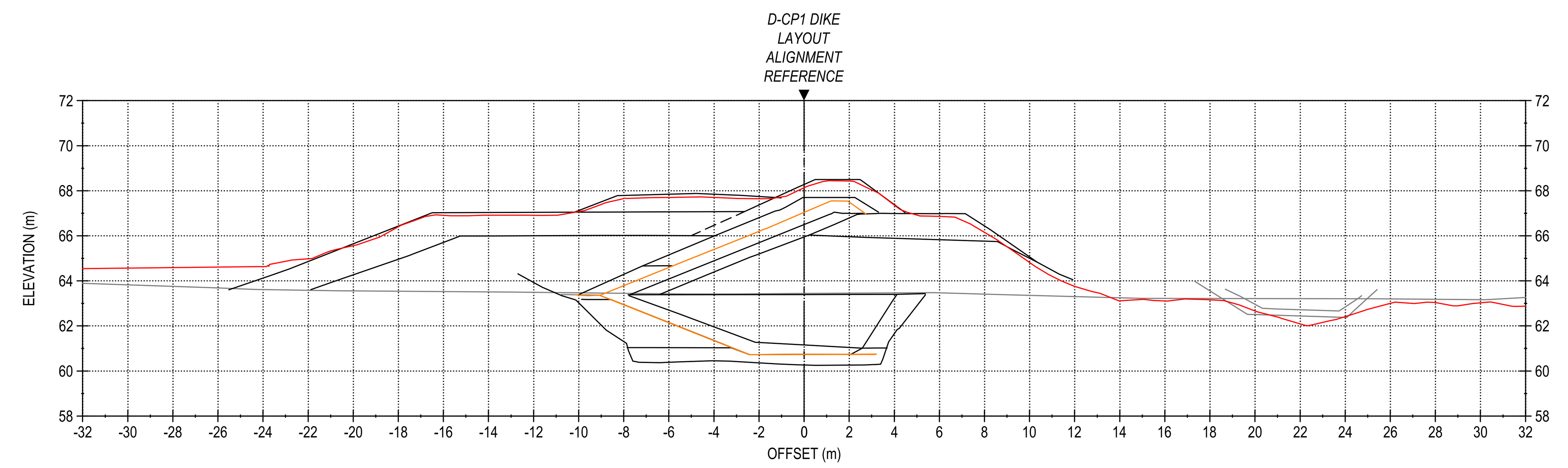

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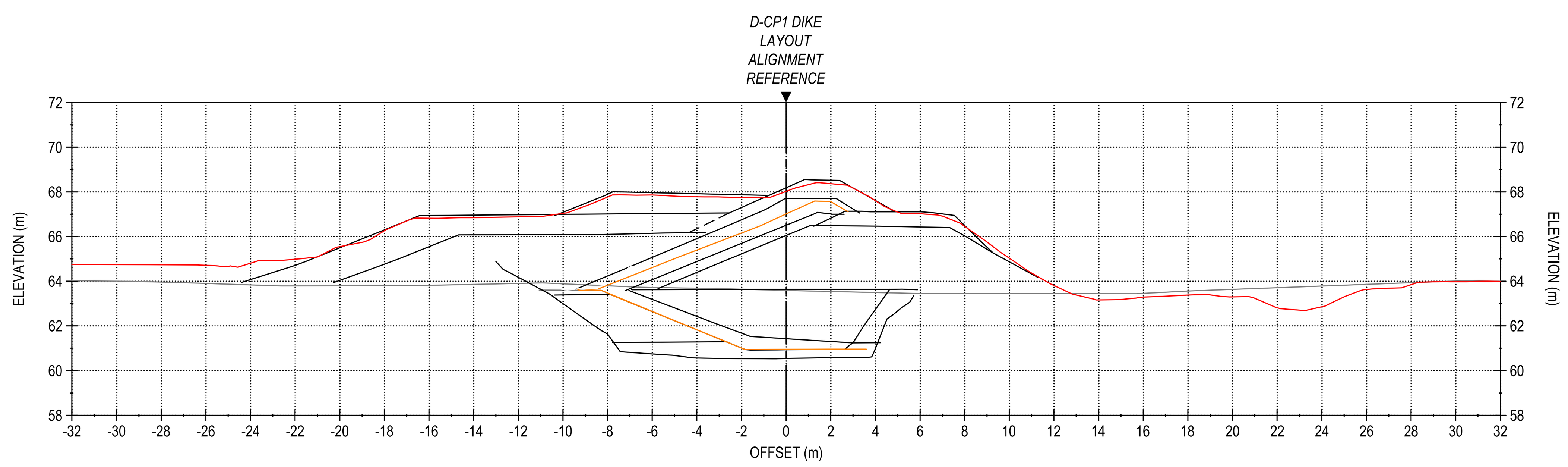

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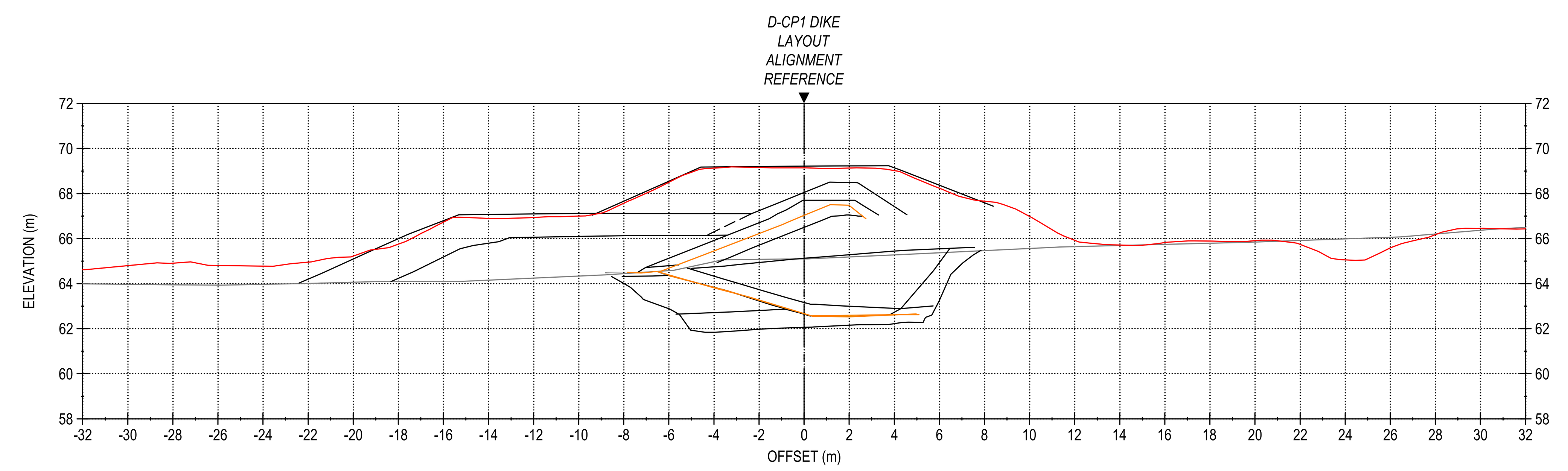

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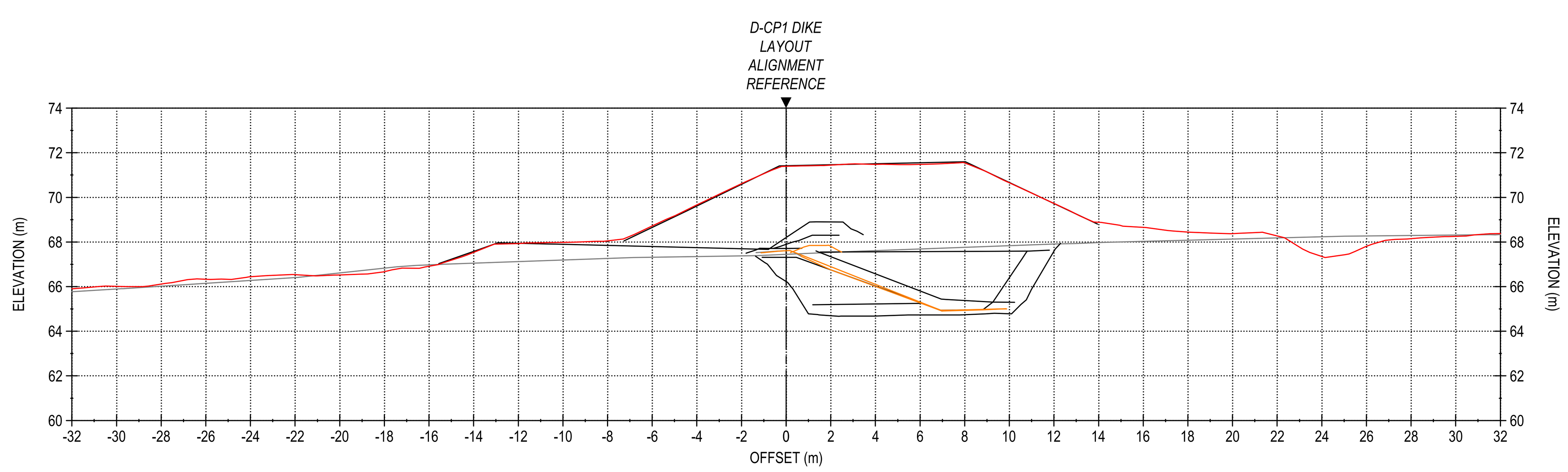
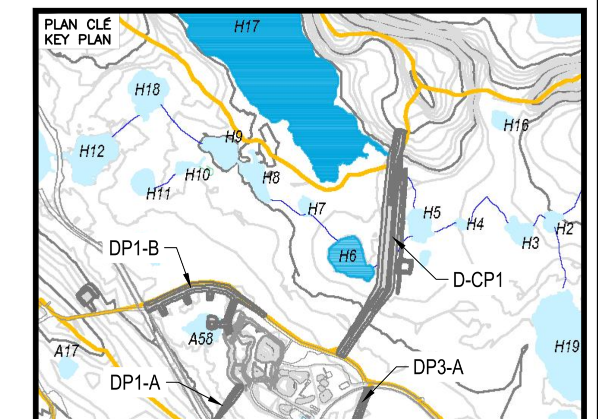


STATION 1+575

PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

LEGEND

- (A) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE UPSTREAM AND FOR THERMAL COVER
- (A1) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE DOWNSTREAM
- (B) TRANSITION ROCKFILL (150 mm MINUS)
- (B1) TRANSITION ROCKFILL (150 mm MINUS)
- (C) GRANULAR FILL OR ESKER SAND (20 mm MINUS)
- (F) BENTONITE-AUGMENTED MATERIAL (MIXTURE OF BENTONITE AND TYPE C MATERIAL)
- (H) ESKER SAND AND GRAVEL (75 mm MINUS)
- (K) NEARLY-SATURATED BACKFILL (20 mm MINUS)
- DASHED LINES REFER TO NO AS-BUILT DATA BUT ESTIMATED BASED ON FIELD VISUAL OBSERVATION
- (BR) BEDROCK

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-10-19	ISSUED FOR RECORD	WTH	NG	
1	2016-09-26	ISSUED FOR CONSTRUCTION	GZ	KJ	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP1 AS-BUILT SECTIONS
STATION 1+425 TO 1+575

DESSINÉ PAR / DRAWN BY	EL	DATE 2017-10-06
VÉRIFIÉ PAR / CHECKED BY	WTH	2017-10-06
APPROUVÉ PAR / APPROVED BY	NG	2017-10-06
ÉCHELLE / SCALE	1:200	DATE 2017-10-06

NO. DESSIN / DRAWING NO. 65-685-230-209-003

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	8 / 12

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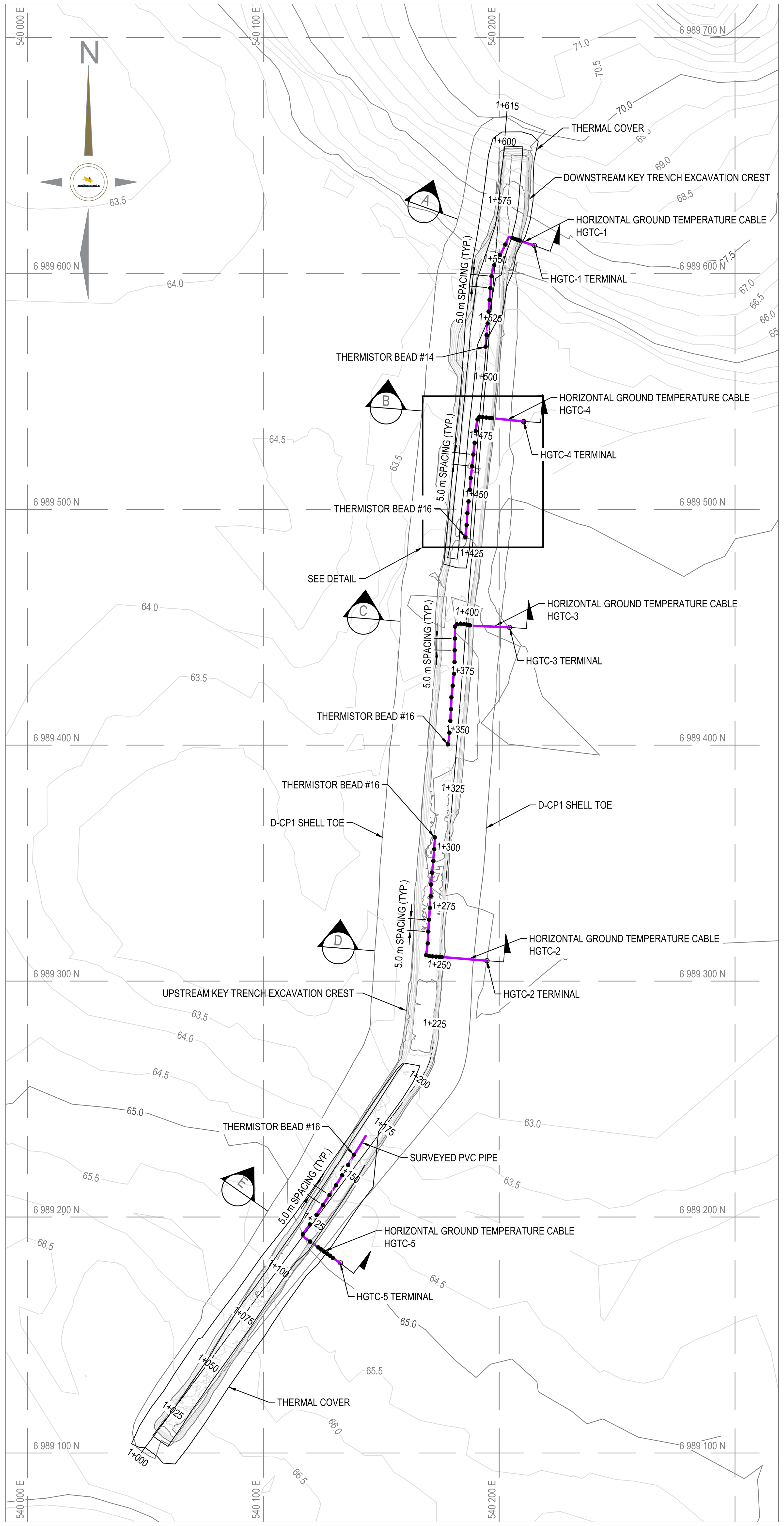
NO. DESSIN / DRAWING NO. 65-685-230-211_R2

FORMAT ARCHD



D-CP1 AS-BUILT HORIZONTAL GROUND TEMPERATURE CABLE LAYOUT
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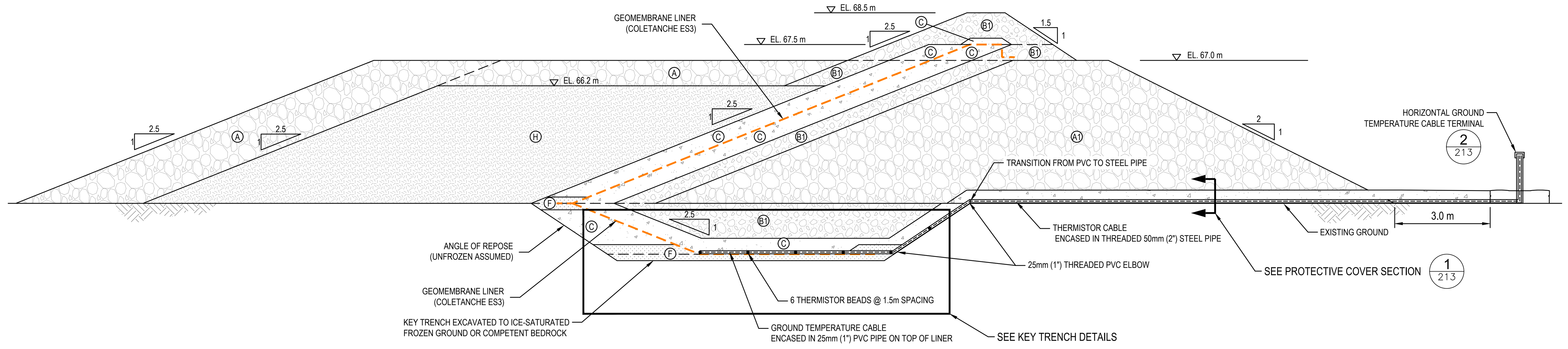

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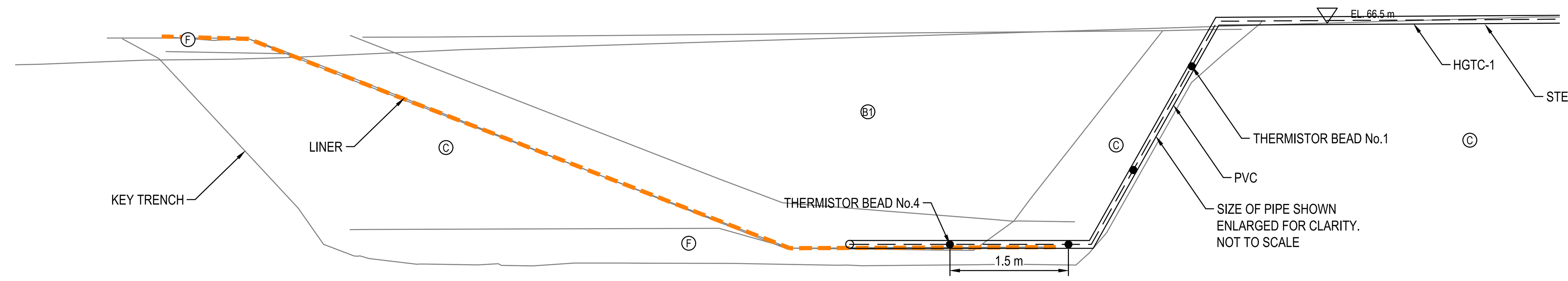

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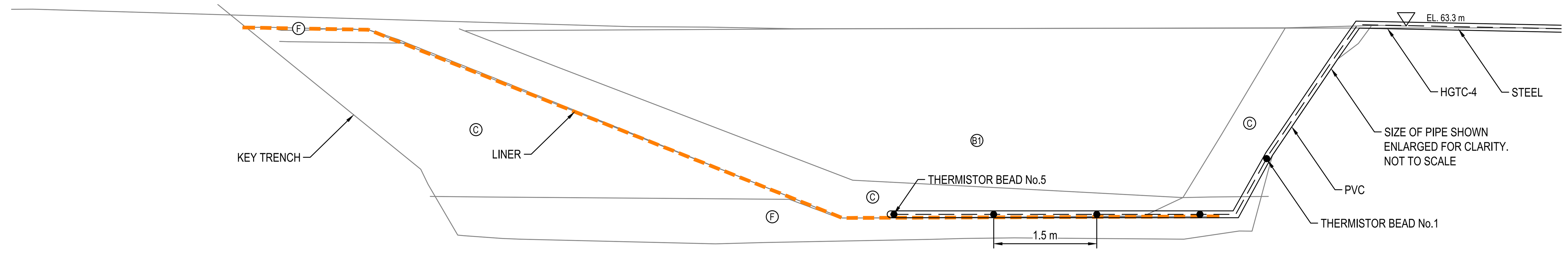

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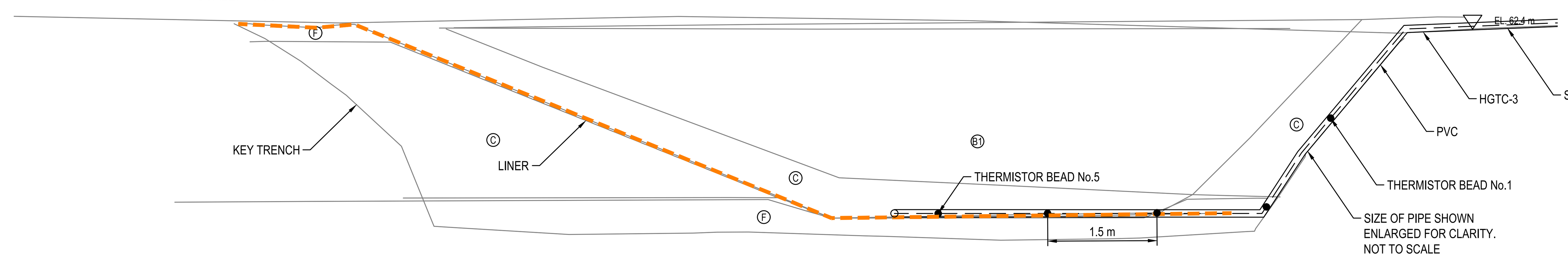

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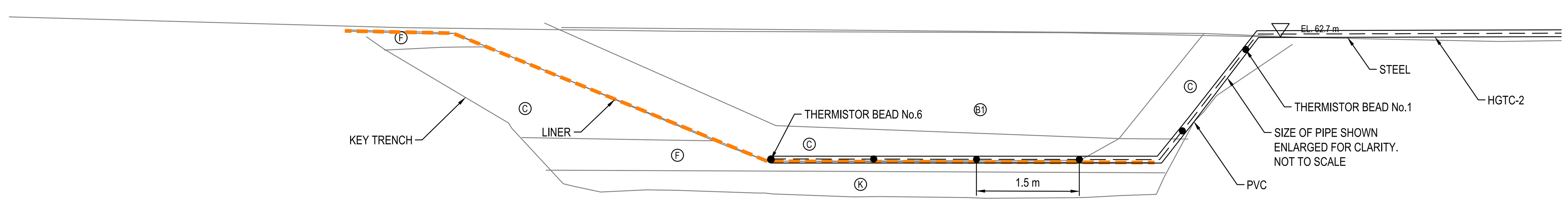

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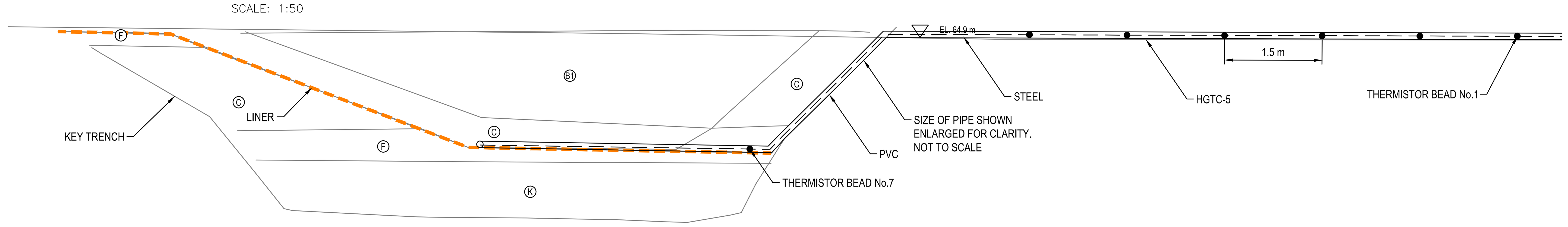

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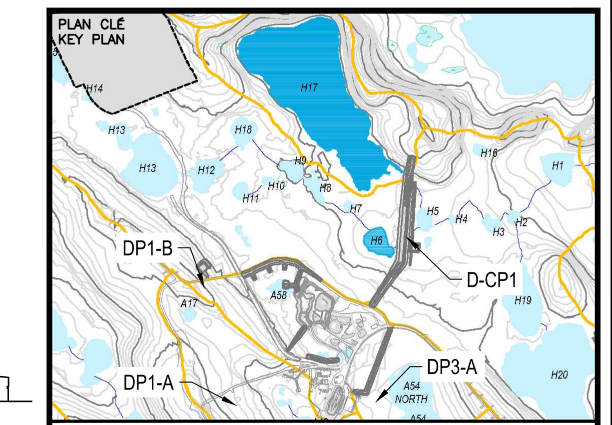
PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

LEGEND

- (A) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE UPSTREAM AND FOR THERMAL COVER
- (A1) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE DOWNSTREAM
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- (F) BENTONITE-AUGMENTED MATERIAL (MIXTURE OF BENTONITE AND TYPE C MATERIAL)
- (H) ESKER SAND AND GRAVEL (75 mm MINUS)
- (K) NEARLY-SATURATED BACKFILL (20 mm MINUS)

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-10-19	ISSUED FOR RECORD	WTH	NG	
1	2016-09-26	ISSUED FOR CONSTRUCTION	GZ	KJ	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

W.T. HORNE LICENSEE N.W.T.
G. ZHANG LICENSEE NWT/NU

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP1 AS-BUILT
INSTRUMENTATION PLAN AND DETAILS
FOR GROUND TEMPERATURE CABLES

		DATE
DESSINÉ PAR / DRAWN BY	DRG	2017-10-06
VÉRIFIÉ PAR / CHECKED BY	GZ	2017-10-06
APPROUVÉ PAR / APPROVED BY	KJ	2017-10-06
ÉCHELLE / SCALE	AS SHOWN	2017-10-06

NO. DESSIN / DRAWING NO. 65-685-230-211

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	10 / 12

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FILE NO. 65-685-230-211_R2.dwg

NO. DESSIN / DRAWING NO. 65-685-230-212_R2

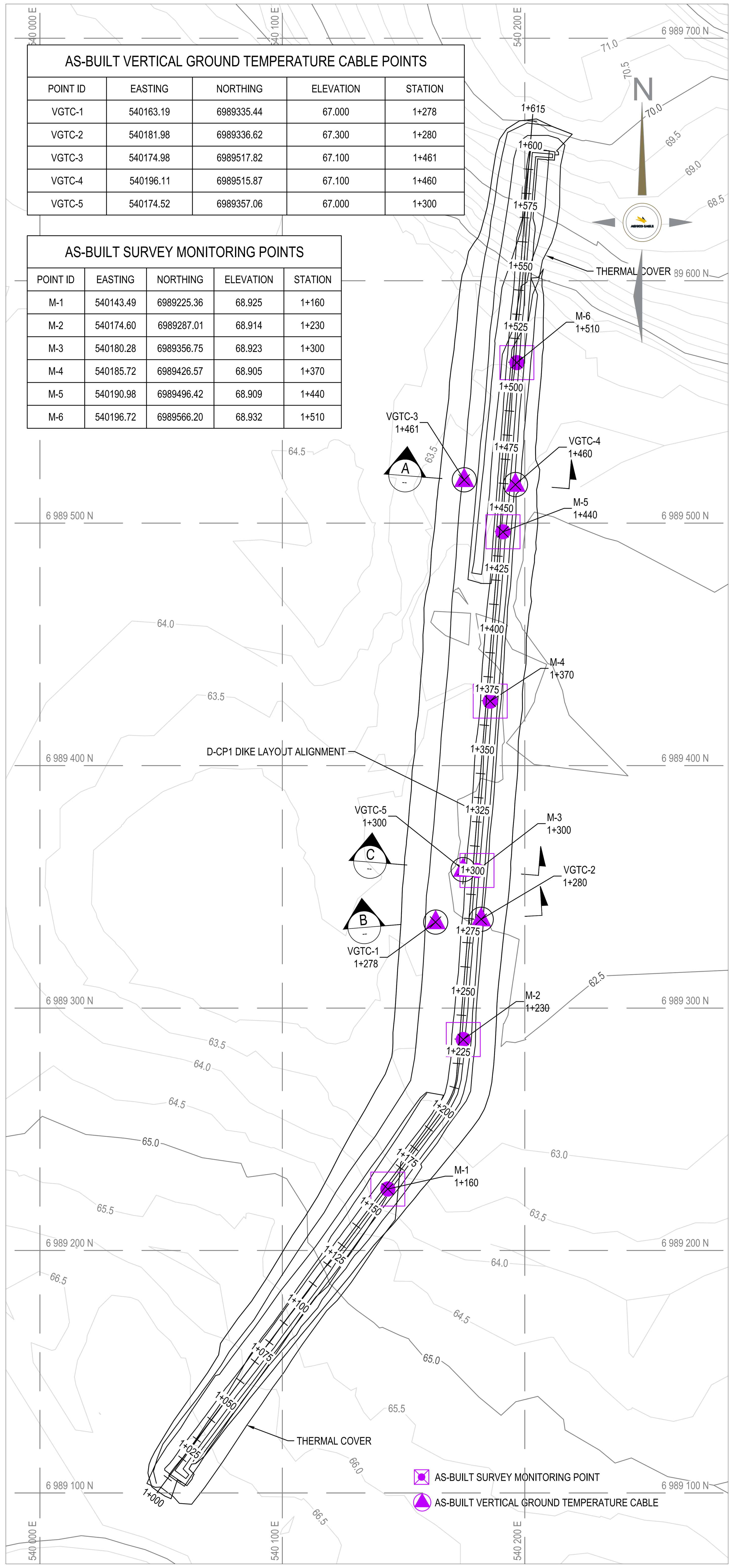
FORMAT ARCHD

AS-BUILT VERTICAL GROUND TEMPERATURE CABLE POINTS

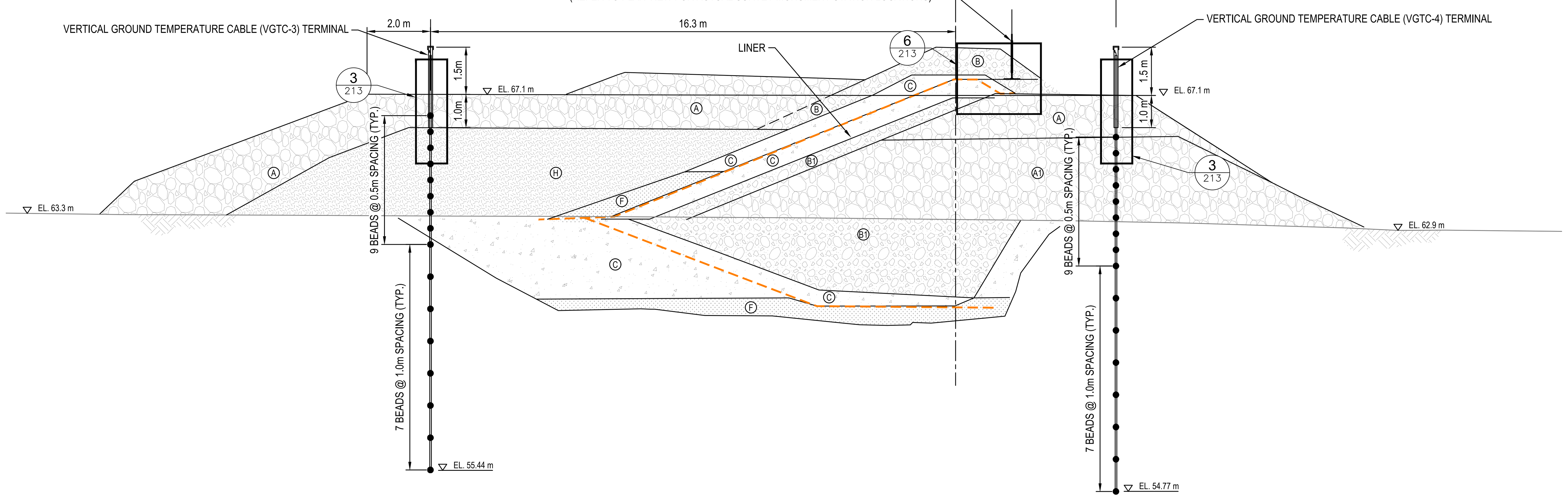
POINT ID	EASTING	NORTHING	ELEVATION	STATION
VGTC-1	540163.19	6989335.44	67.000	1+278
VGTC-2	540181.98	6989336.62	67.300	1+280
VGTC-3	540174.98	6989517.82	67.100	1+461
VGTC-4	540196.11	6989515.87	67.100	1+460
VGTC-5	540174.52	6989357.06	67.000	1+300

AS-BUILT SURVEY MONITORING POINTS

POINT ID	EASTING	NORTHING	ELEVATION	STATION
M-1	540143.49	6989225.36	68.925	1+160
M-2	540174.60	6989287.01	68.914	1+230
M-3	540180.28	6989356.75	68.923	1+300
M-4	540185.72	6989426.57	68.905	1+370
M-5	540190.98	6989496.42	68.909	1+440
M-6	540196.72	6989566.20	68.932	1+510



D-CP1 AS-BUILT SURVEY MONUMENT AND VERTICAL GROUND TEMPERATURE CABLE LAYOUT
SCALE: 1:1250



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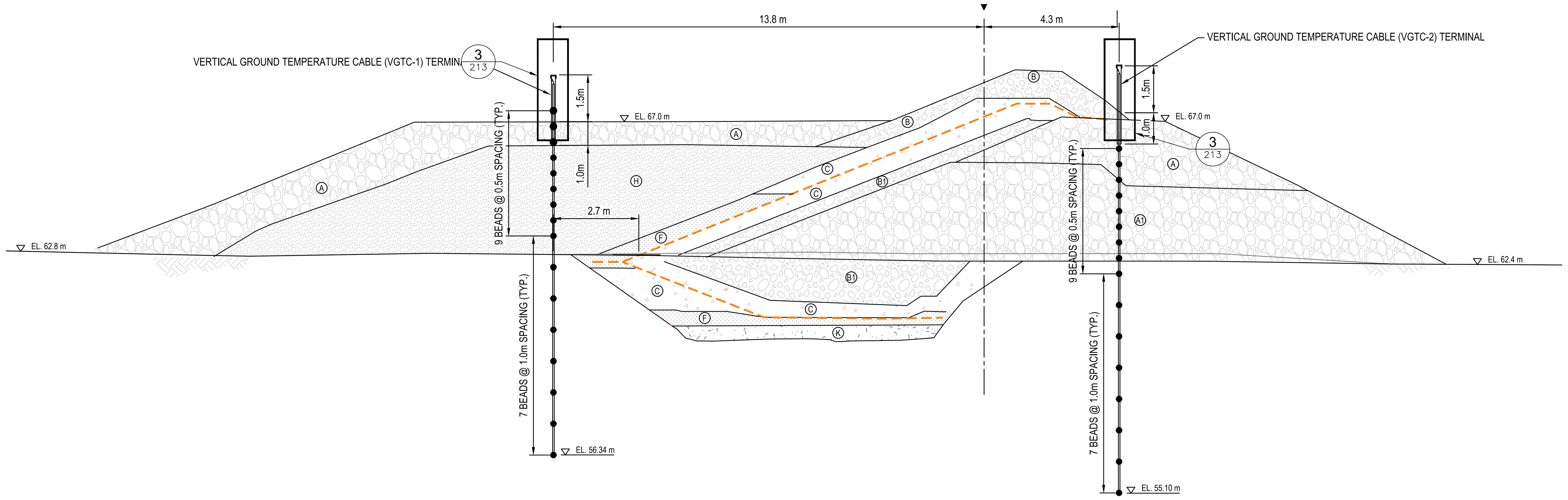

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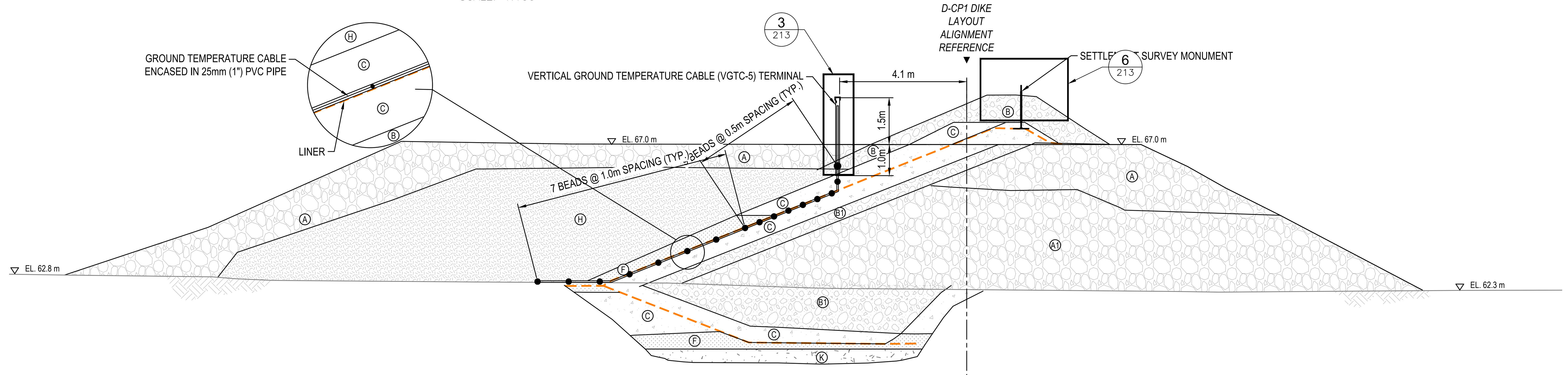

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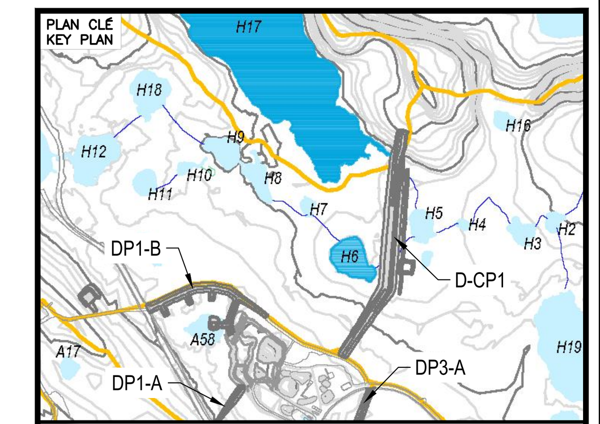
SCALE: 1:100

PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

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PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature [signature]
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT / AS BUILT
AGNICO EAGLE DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

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AGNICO EAGLE

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B	2016–08–11	ISSUED FOR REVIEW	GZ	KJ	
A	2016–08–05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER – W.T. HORNE – LICENSEE – N.W.T. – Oct 19 2017
REGISTERED PROFESSIONAL ENGINEER – G. ZHANG – LICENSEE – NWT/NU – Oct. 19 2017

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D–CP1 AS–BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS

DESSINÉ PAR / DRAWN BY	DRG	DATE 2017–10–06
VERIFIÉ PAR / CHECKED BY	GZ	2017–10–06
APPROUVÉ PAR / APPROVED BY	GZ	2017–10–06
ÉCHELLE / SCALE	AS SHOWN	DATE 2017–10–06
NO. DESSIN / DRAWING NO.	65–685–230–212	
NO. PROJET / PROJECT NO. 6515	REVISION 2	FEUILLE / SHT 11/12

AE-CART-ARCH D

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\As-Built D-CP1\65-685-230-212_R2.dwg-2017-10-19 12:16:15

FILE NO. 65–685–230–212_R2.dwg

Photo 1: Dike D-CP1 - Upstream face—some wave erosion evident

Photo 2: Dike D-CP1—Downstream face, looking south

Photo 3: Dike D-CP1 - Upstream face—some wave erosion evident, scarp approximately 1 m high. Erosion also evident on lower portion of slope. Slope is self armouring with larger particles in ROM fill.

Photo 4: Dike D-CP1 - Crest. Upstream on right, downstream on left.

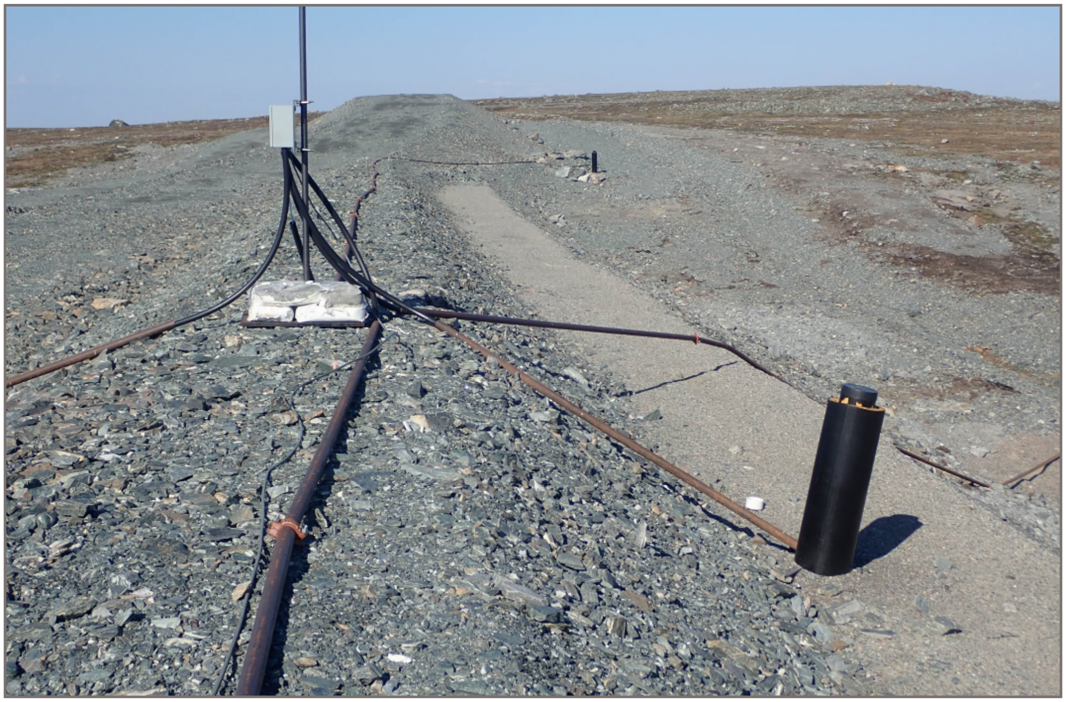


Photo 5: Dike D-CP1 - Crest—Center and downstream. GTC housing and datalogger.

Photo 6: Dike D-CP1 - Downstream crest, minor cracking.

Photo 7: Dike D-CP1 - Downstream crest and former construction road downstream of dyke.

Photo 8: Dike D-CP1 - Upstream crest. Good conditions, west end of dyke.

Photo 9: Dike D-CP1 - Downstream dyke crest, minor cracking, similar to previous years.

Photo 10: Dike D-CP1 - Seepage collection pond downstream of dyke. Fill deformed in south-east corner of pond, exposing top layer of tundra. Cracks between the fill and geo-textile on west side of pond adjacent to C-CP1.

Photo 11: Dike D-CP1 - Water collection pond, southeast corner, deformed fill slope.

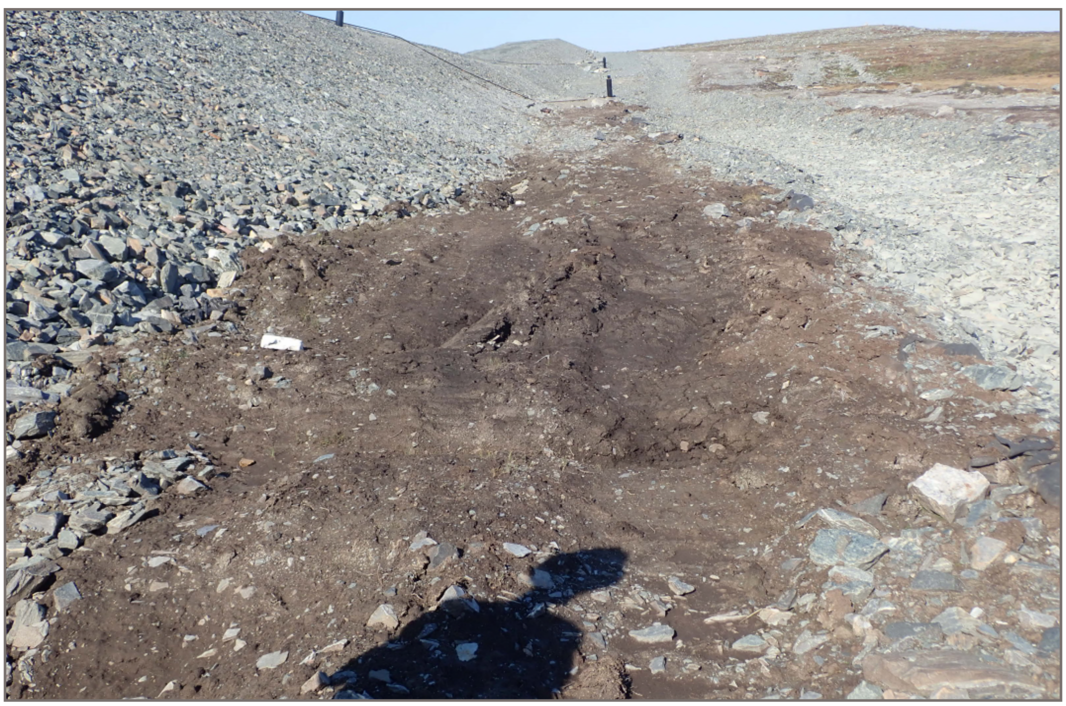


Photo 12: Dike D-CP1 - ground between the Dike toe and water collection channel, settlement and subsidence. Similar to 2020.

Photo 13: Dike D-CP1 - Seepage collection channel. Subsidence in ground between channel and downstream toe.

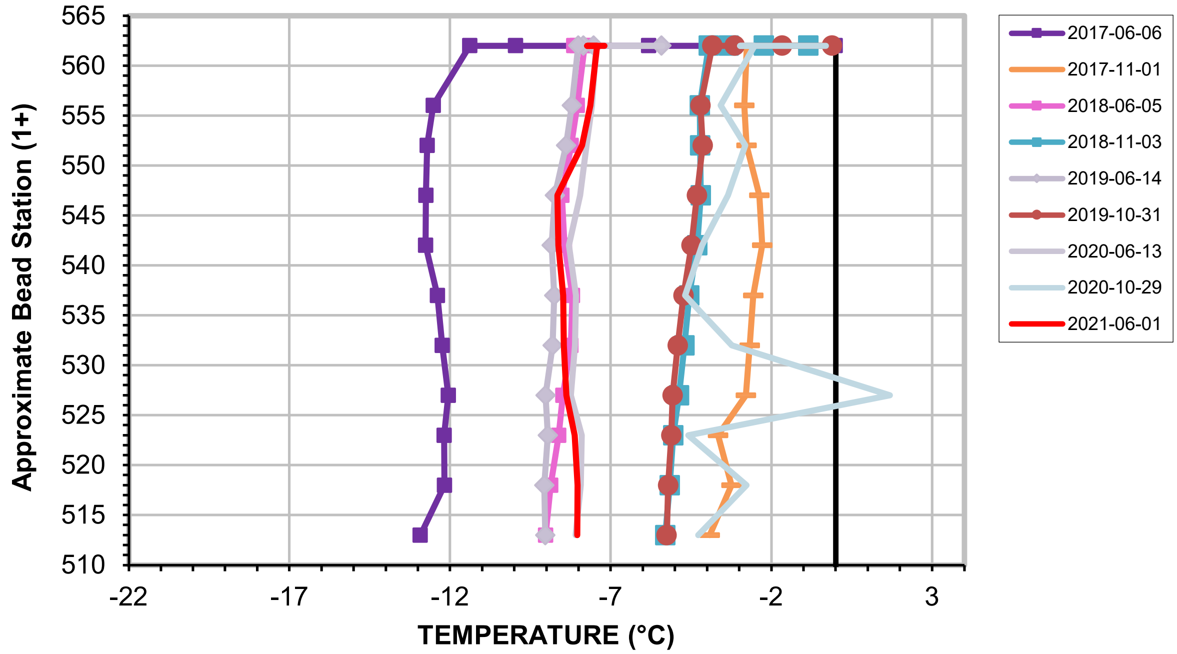
Photo 14: Dike D-CP1 - North end of disturbed ground between dyke toe and seepage collection channel.

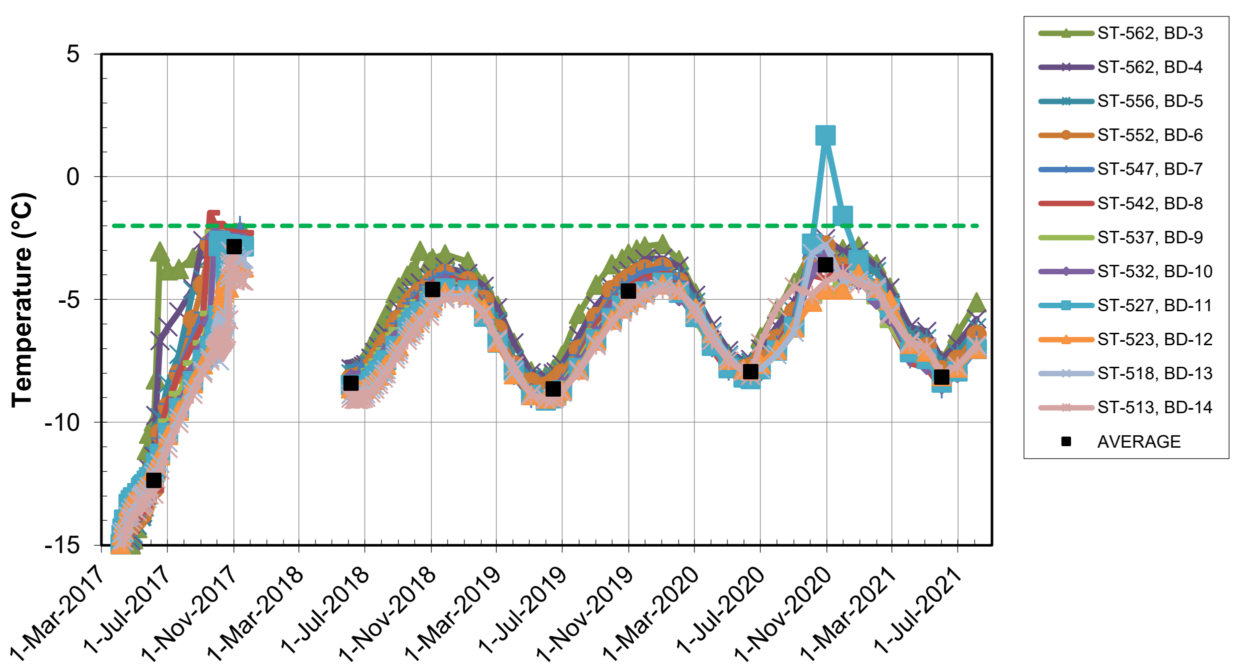
Photo 15: Dike D-CP1 - Subsidence and cracking at water collection pond downstream of the dike.

Photo 16: Dike D-CP1 - Horizontal Ground Temperature Cable HGTV5 extension connection point in low area. Ponds and freezes throughout winter months causing reading errors.

Photo 17: Dike D-CP1 Jetty 1 - Erosion at south east corner of Jetty 1

Photo 18: Dike D-CP1 Jetty 1—Erosion at southeast corner—under cutting top portion of fill.



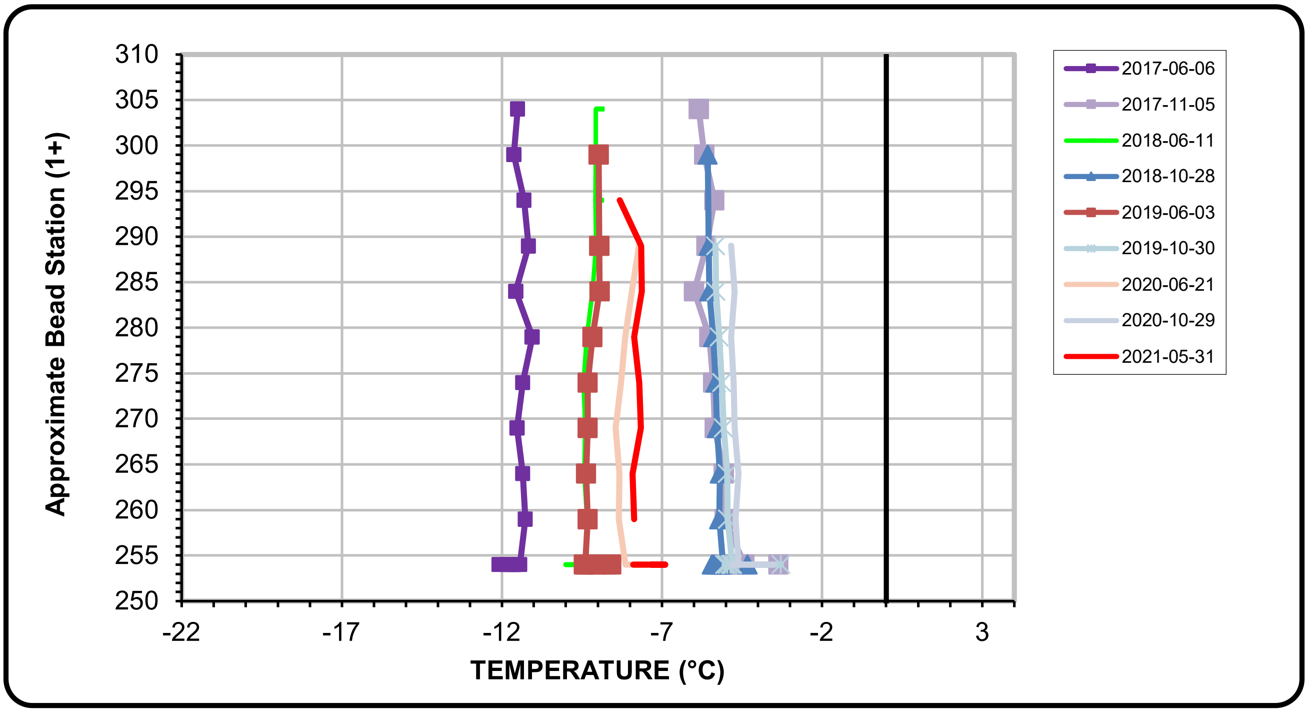


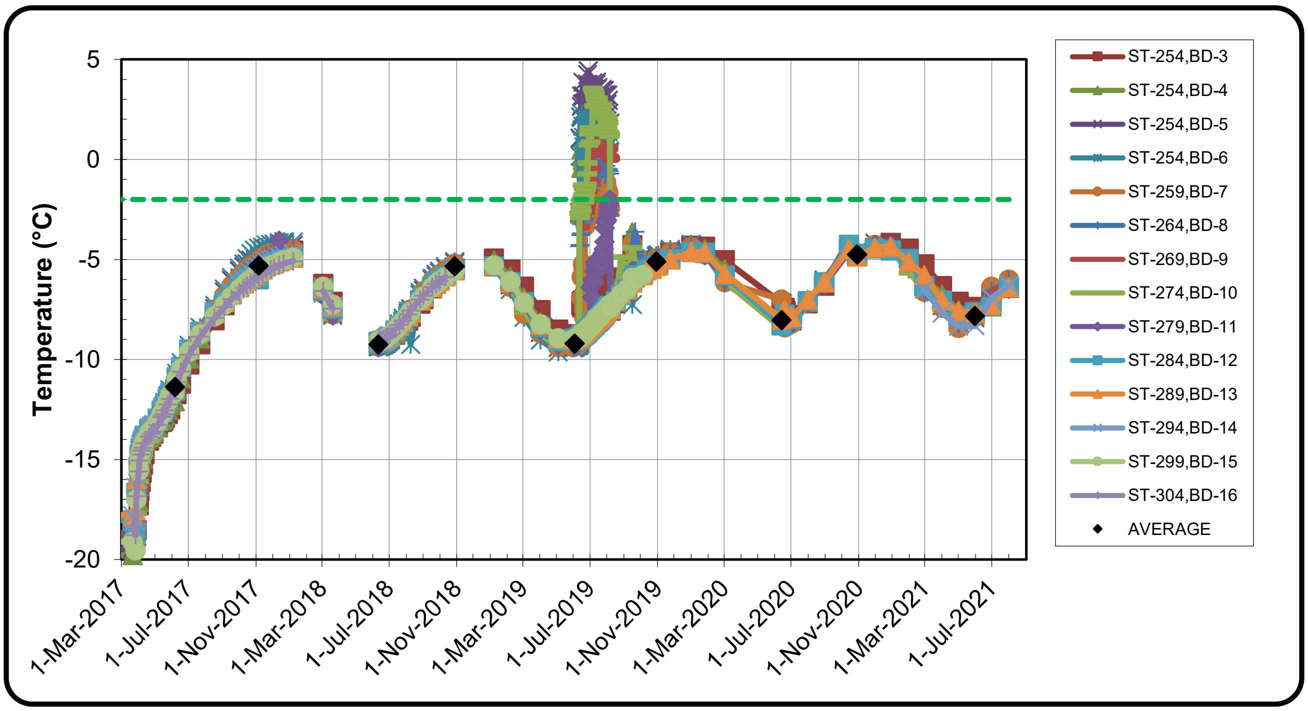
Serial No.: 2595
Date Installed: March 24, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-01
Dike D-CP1

TETRA TECH

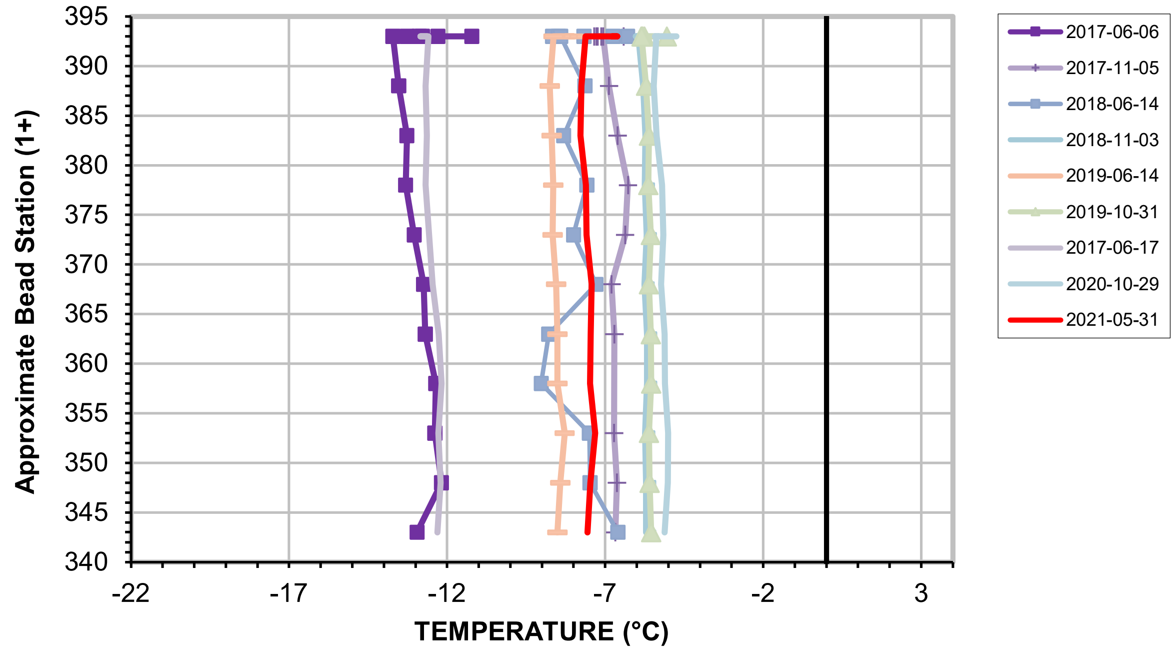


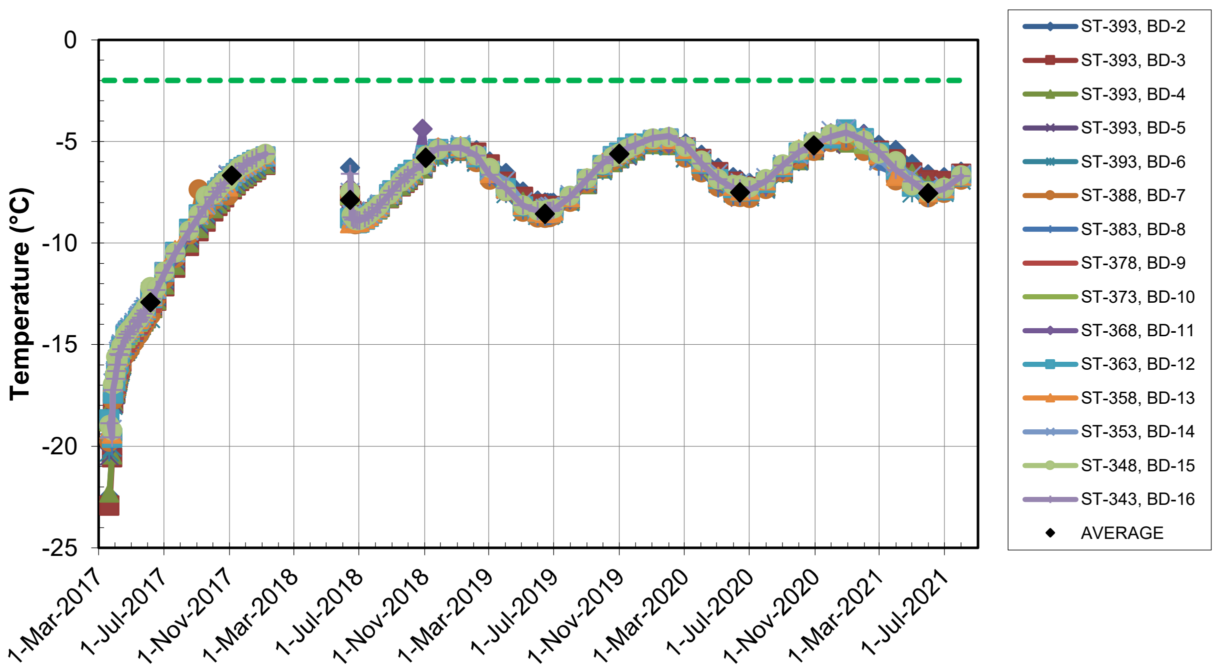


Serial No.: 2596
Date Installed: March 3, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-02
Dike D-CP1



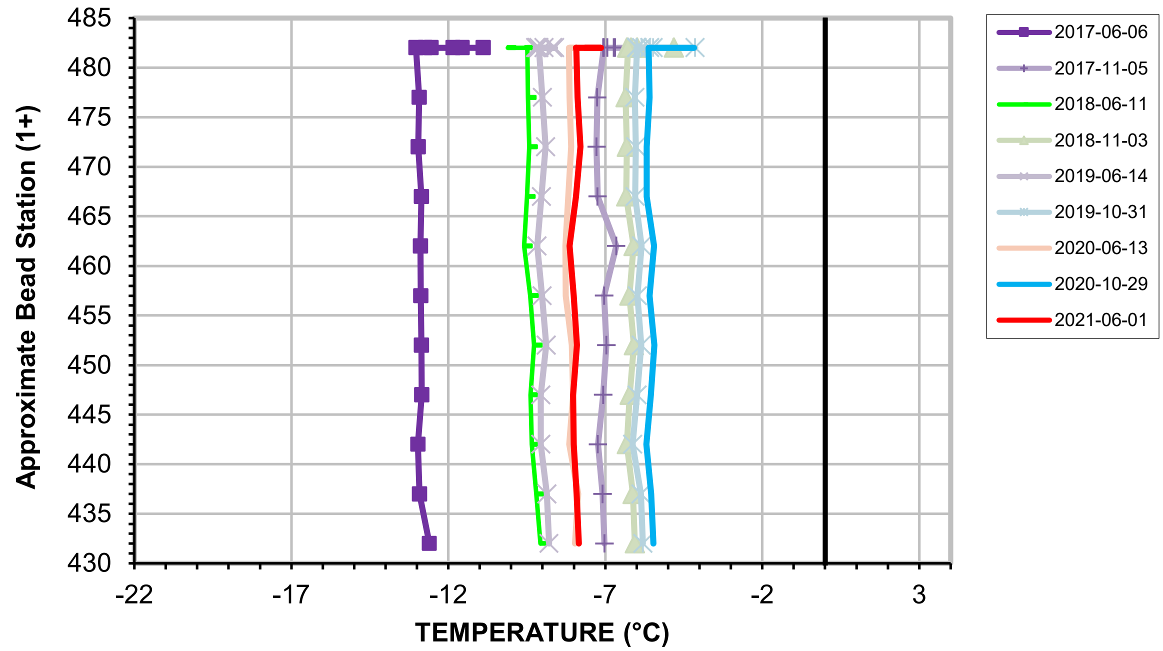


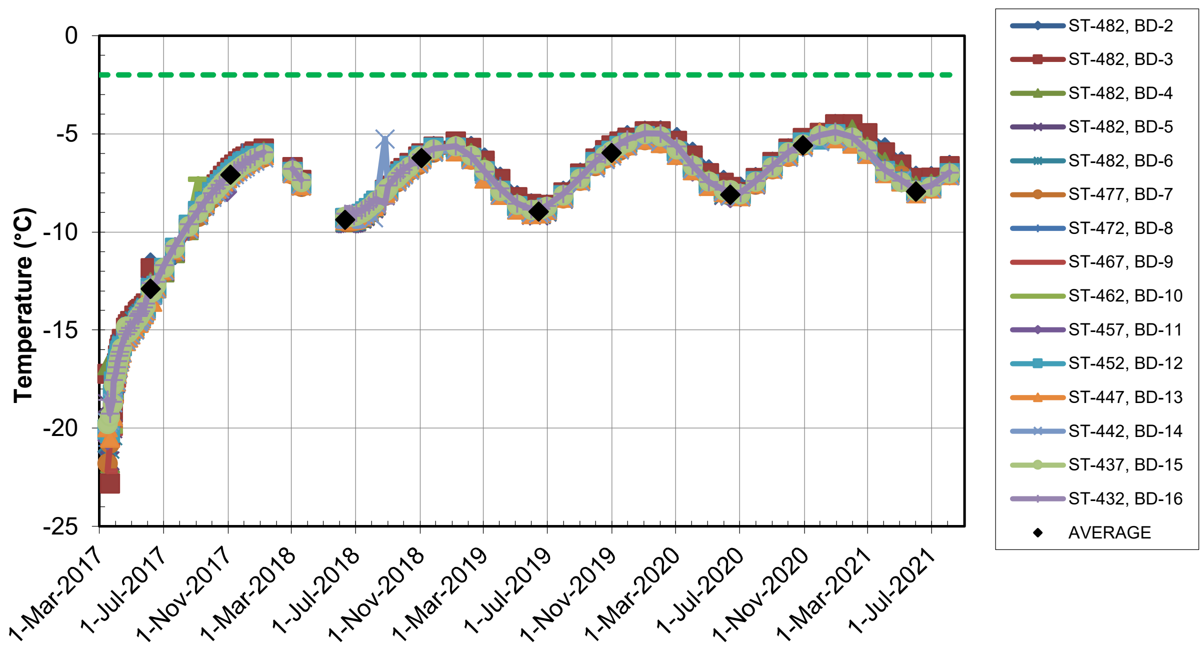
Serial No.: 2597
Date Installed: March 14, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-03
Dike D-CP1

TETRA TECH



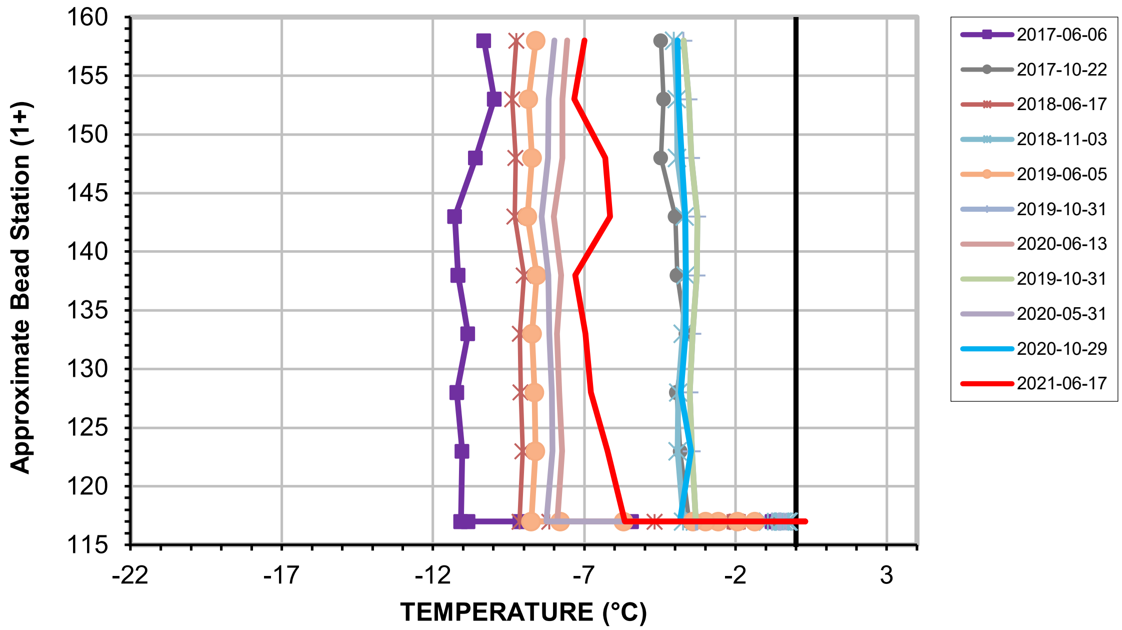


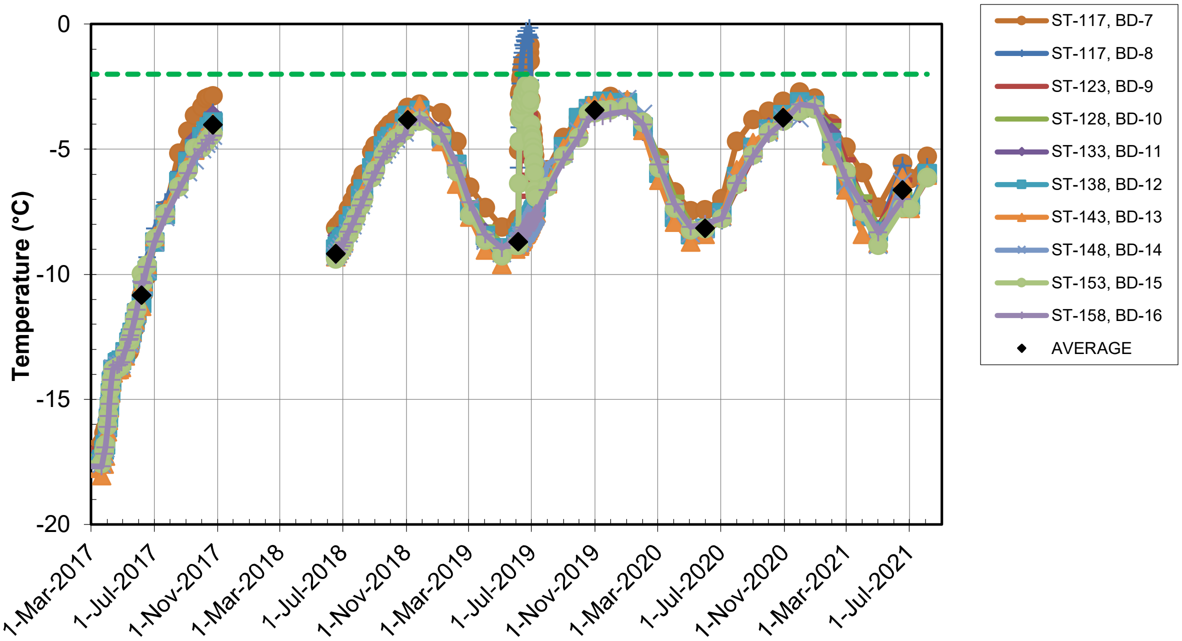
Serial No.: 2598
Date Installed: March 16, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-04
Dike D-CP1

TETRA TECH



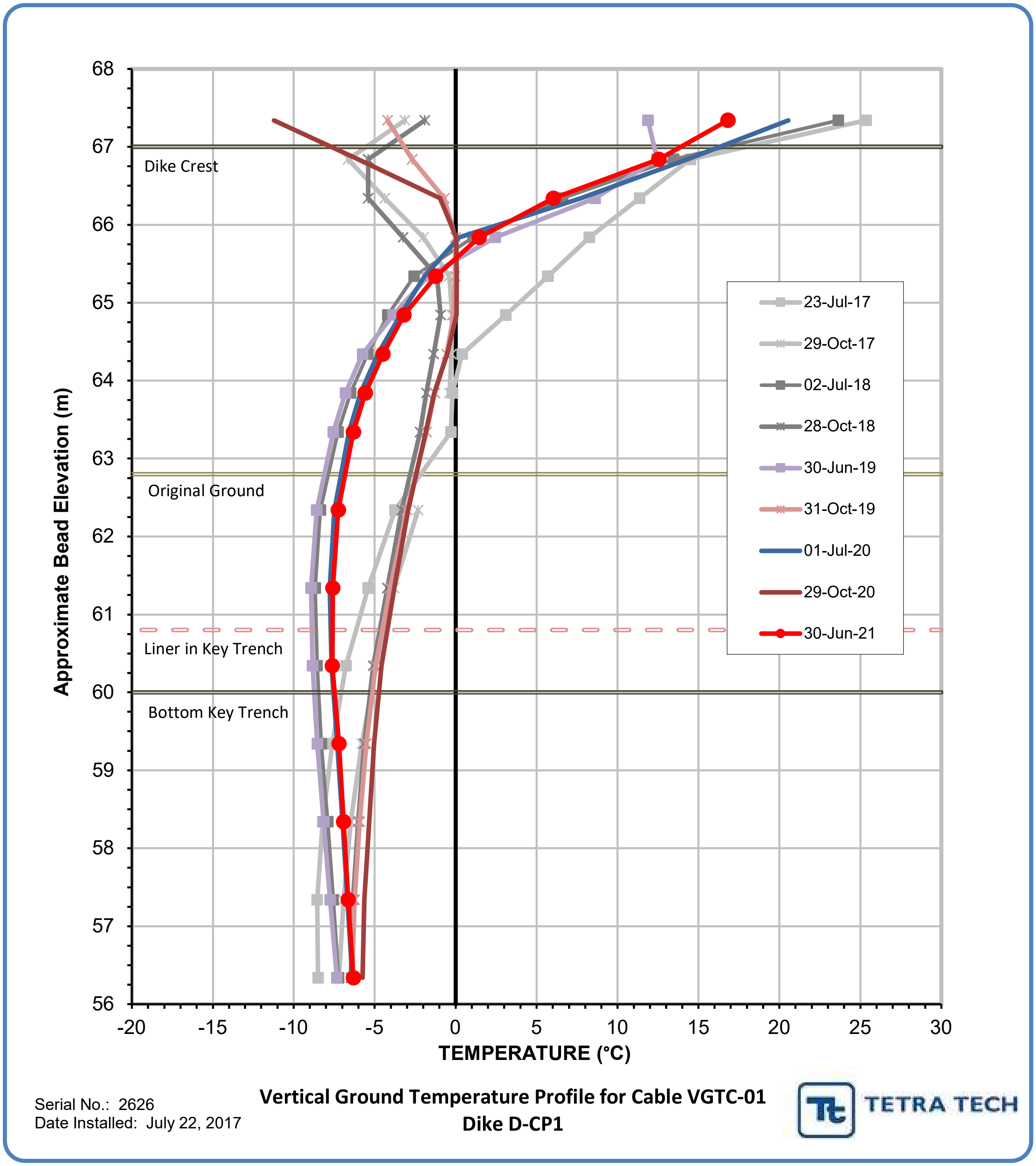


Serial No.: 2599
Date Installed: March 2, 2017

EBA File No: E14103230.01-023

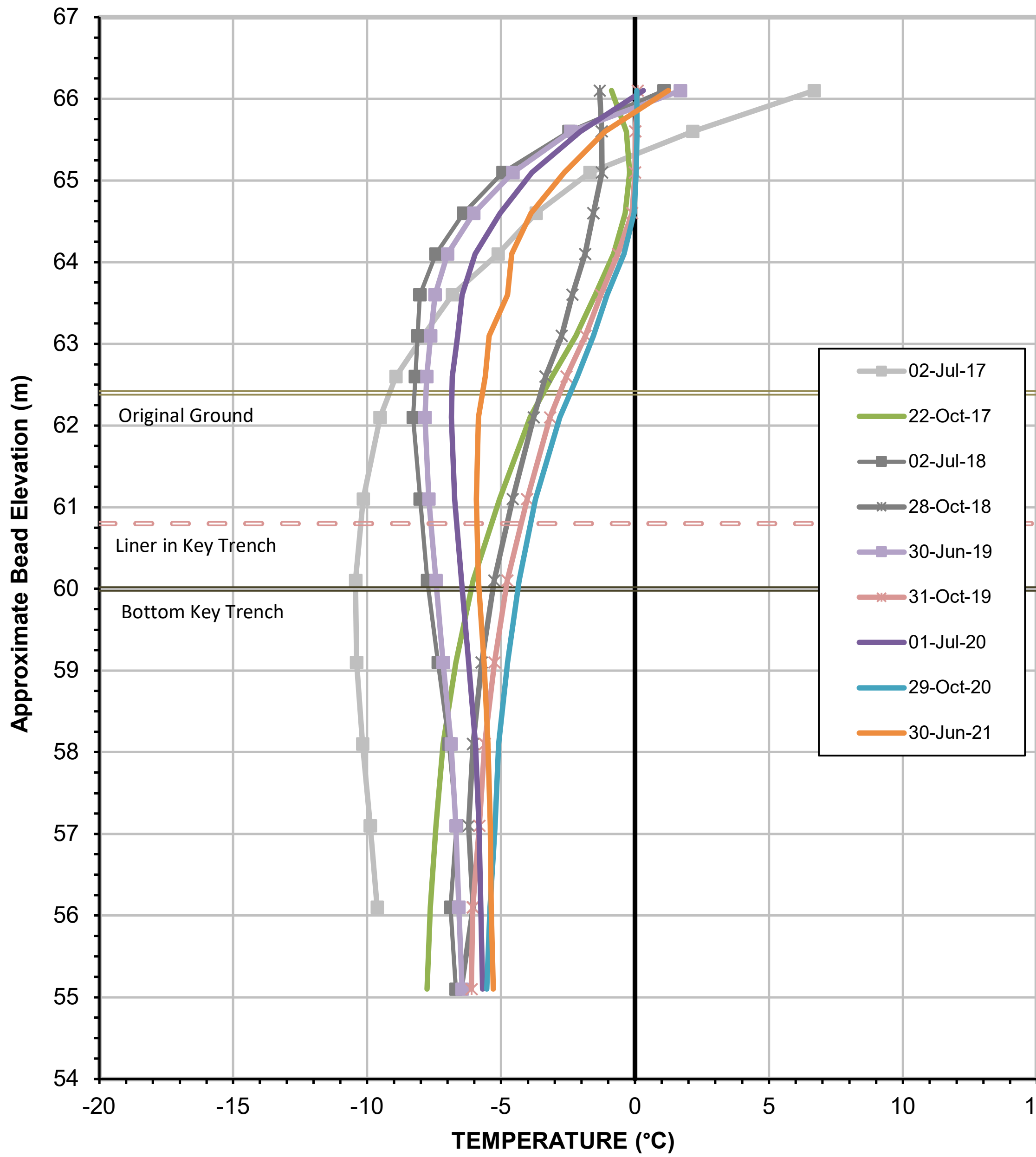
Horizontal Ground Temperature Profile for Cable HGTC-05
Dike D-CP1

TETRA TECH



Average Annual Temperature at Various Elevations

Location	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.0	-6.8	-6.0
Liner Base Elevation	-6.8	-7.5	-6.1

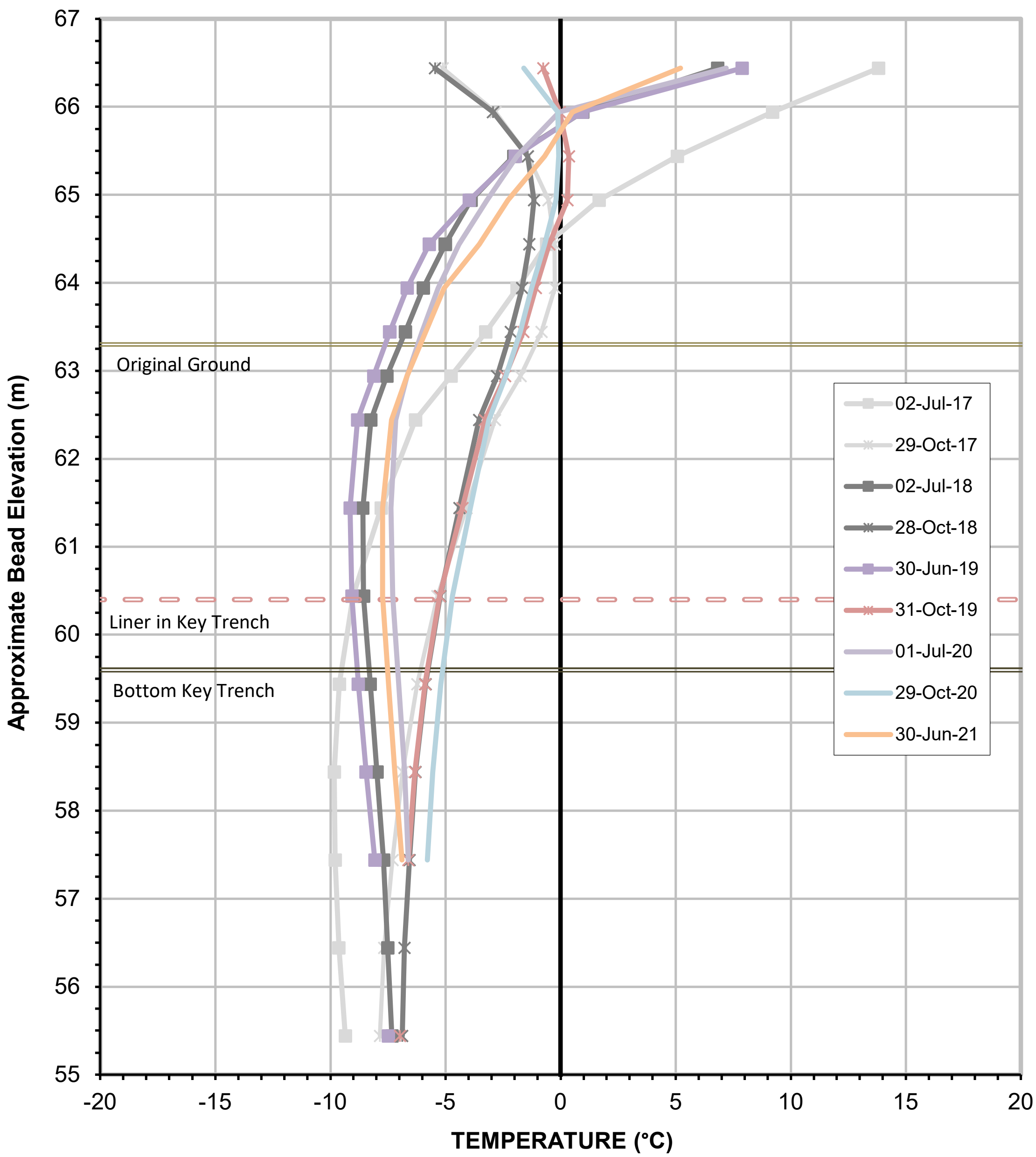


Vertical Ground Temperature Profile for Cable VGTC-02
Dike D-CP1

Serial No.: 2627
Date Installed: June 16, 2017

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-6.9	-6.2	-5.6
Liner Base Elevation	-6.9	-6.3	-5.3



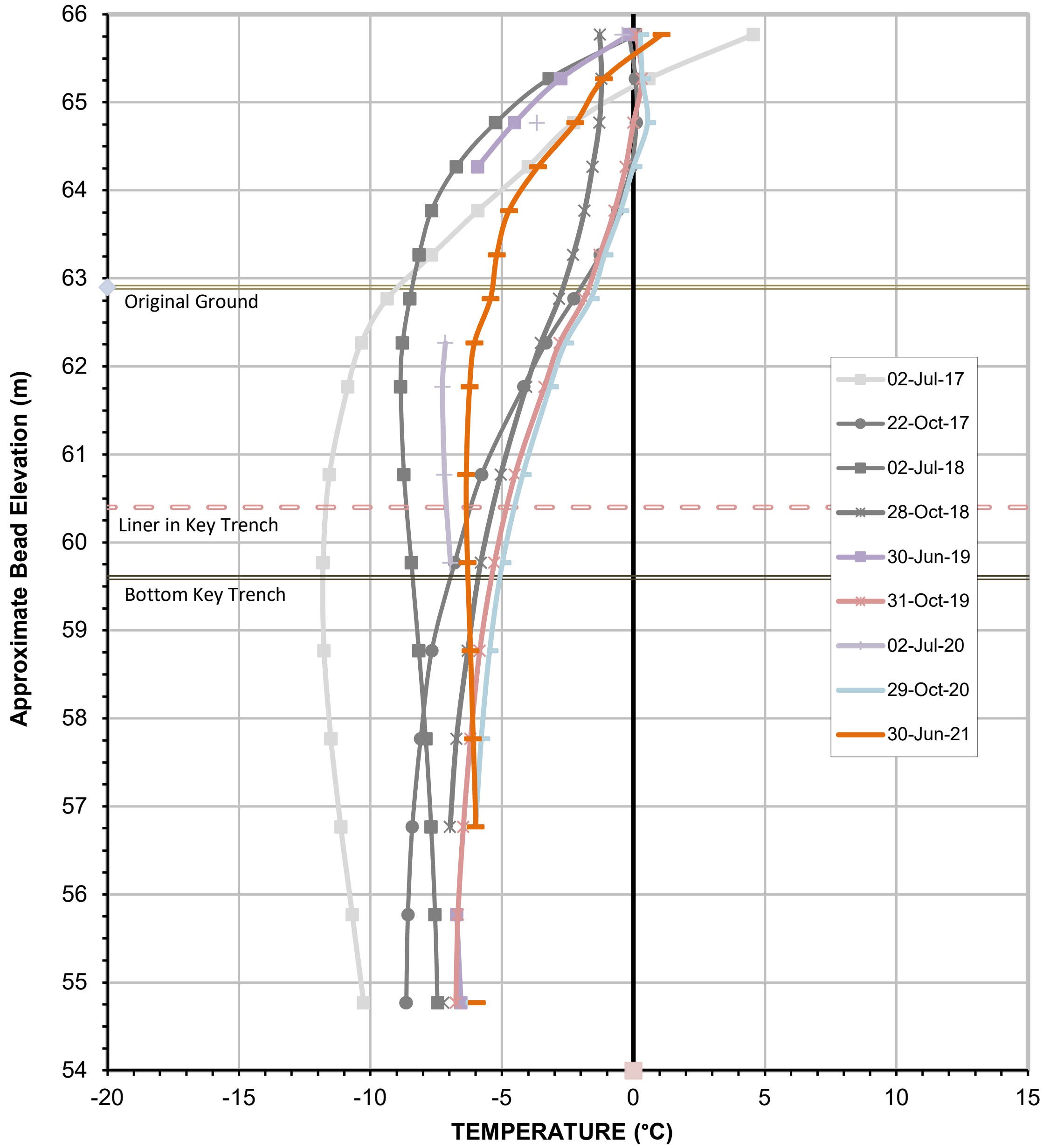
Vertical Ground Temperature Profile for Cable VGTC-03
Dike D-CP1

Serial No.: 2628
Date Installed: June 15, 2017

TETRA TECH

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.2	-7.0	-6.3
Liner Base Elevation	-6.9	-7.2	-5.9



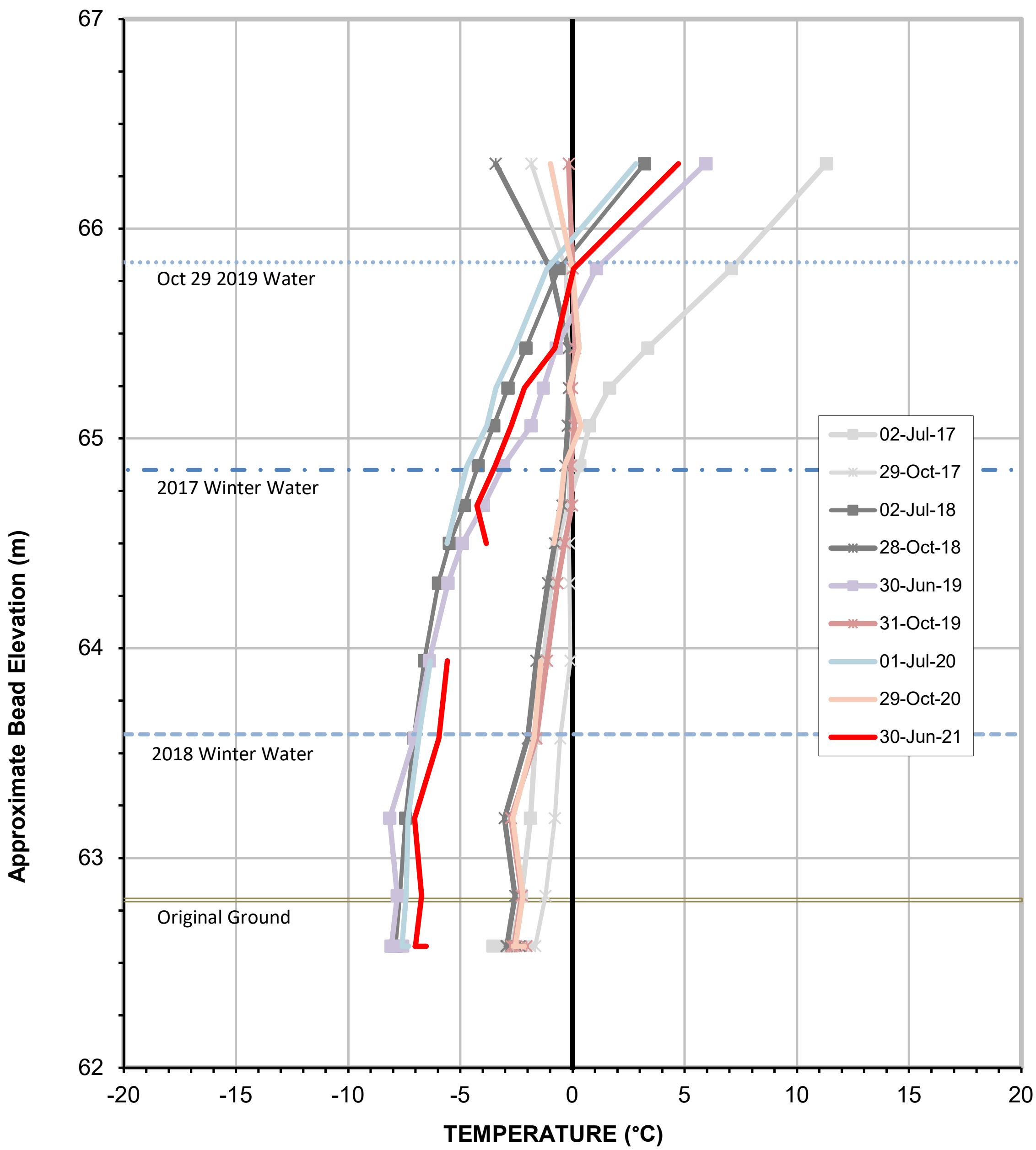
Serial No.: 2629
Date Installed: June 15, 2017

Vertical Ground Temperature Profile for Cable VGTC-04
Dike D-CP1

TETRA TECH

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.3	-6.7	-6.4
Liner Base Elevation	-7.0	-6.3	-5.7



Serial No.: 2630
Date Installed: May 16, 2017

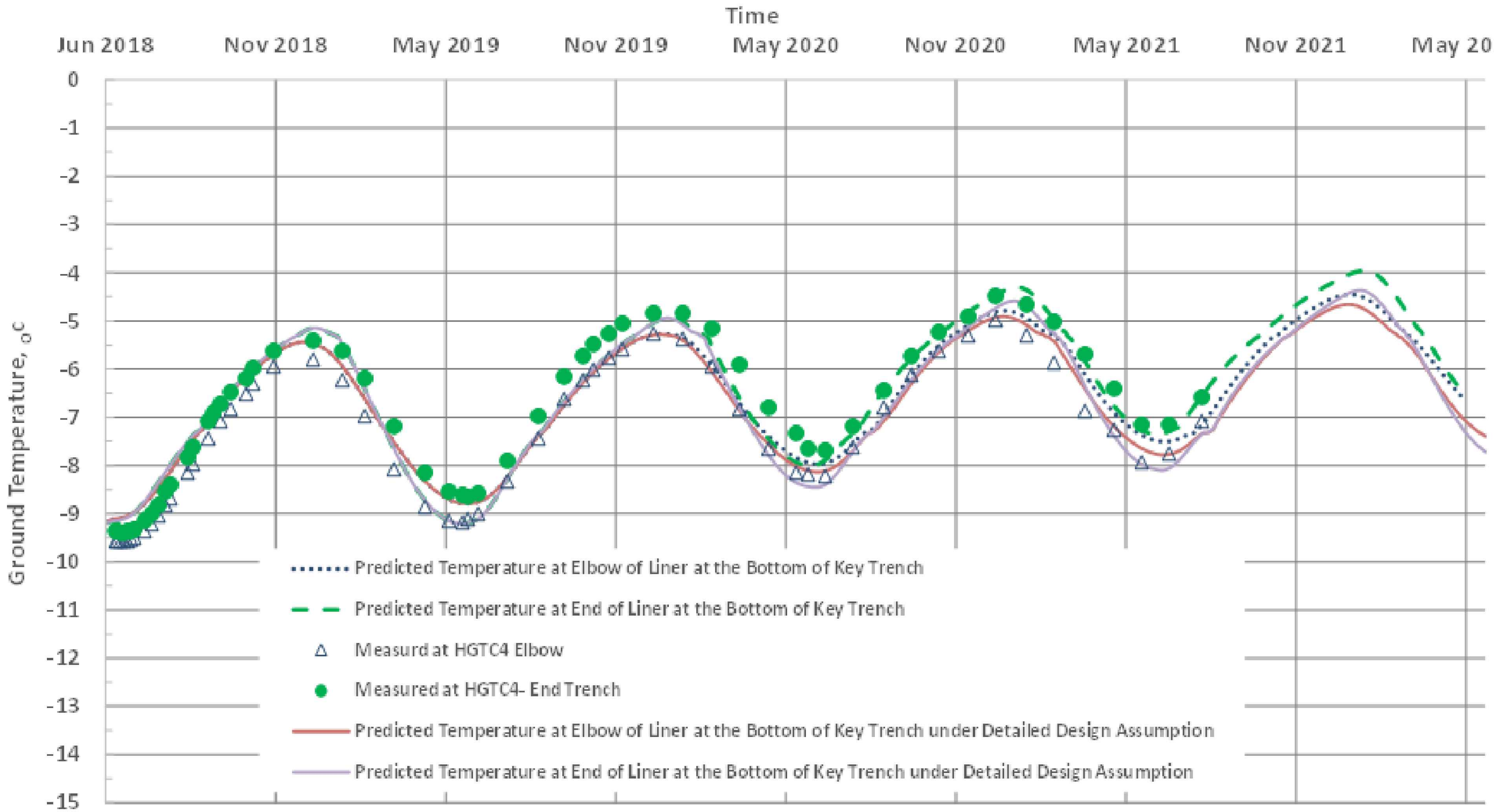
Vertical Ground Temperature Profile for Cable VGTC-05
Dike D-CP1

TETRA TECH

Average Annual Temperature at Bottom of Cable

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Temperature (°C)	-5.7	-7.0	-5.5

D:\Annual Inspection 2021\GTC Data 2021\D-CP1 GTC Plots.dwg [FIGURE 1] September 02, 2021 - 3:30:11 pm (BY: OKKEMA, RYAN)



NOTES

STATUS
ISSUED FOR USE

CLIENT
AGNICO EAGLE

TETRA TECH

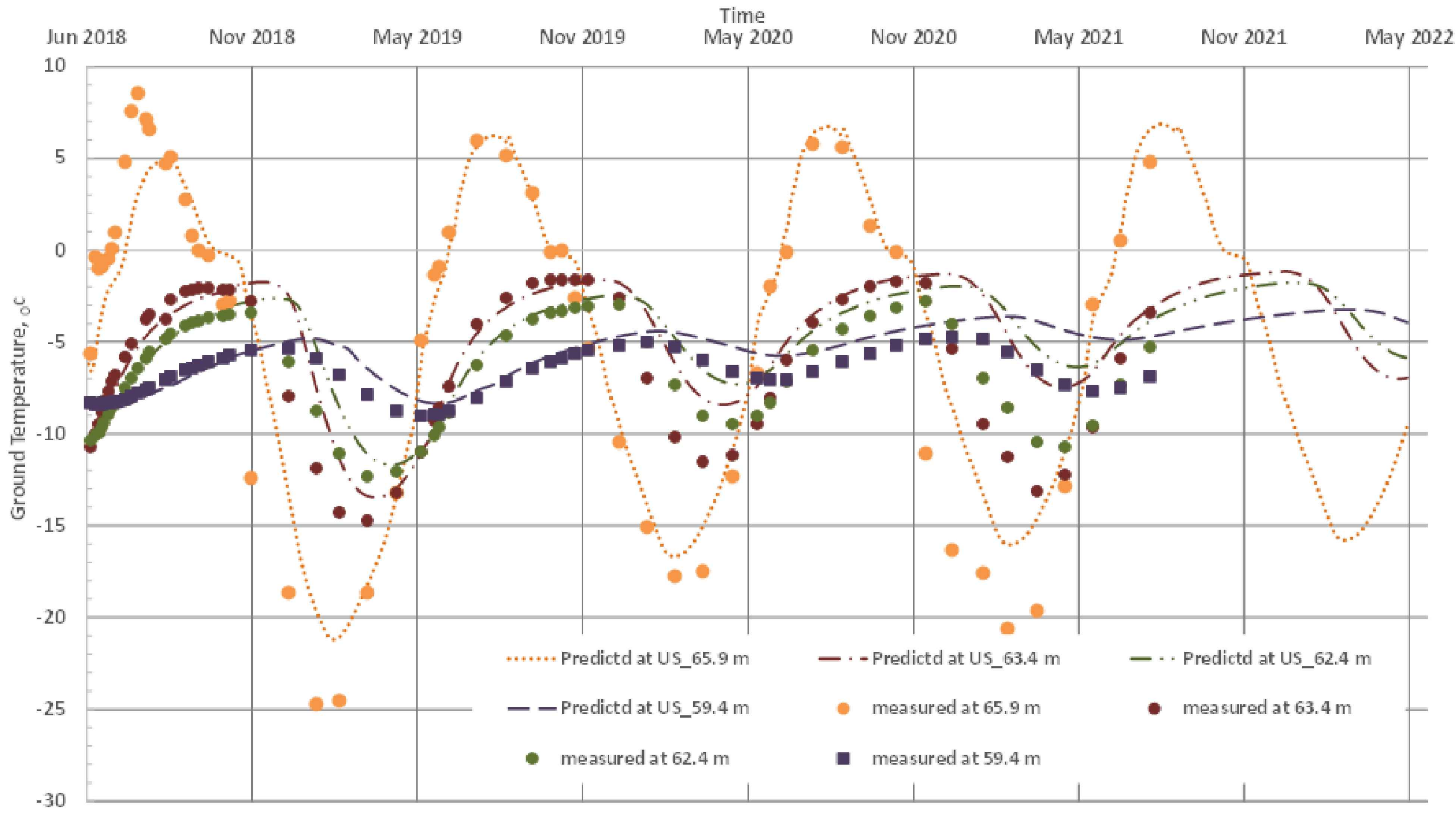
ANNUAL GEOTECHNICAL INSPECTION 2021
MELIANDINE PROJECT, NU

D-CP1 Predicted and Actual Temperature with Time at the Elbow and End of the Liner at the Bottom of Key Trench for Thermal Update and Detailed Design Condition

PROJECT NO.	DWN	CKD	REV
EARC03140-26	RO	WTH	0

OFFICE	DATE
EDM	September 2021

Figure 1



NOTES

STATUS
ISSUED FOR USE

CLIENT
AGNICO EAGLE

TETRA TECH

ANNUAL GEOTECHNICAL INSPECTION 2021
MELIANDINE PROJECT, NU

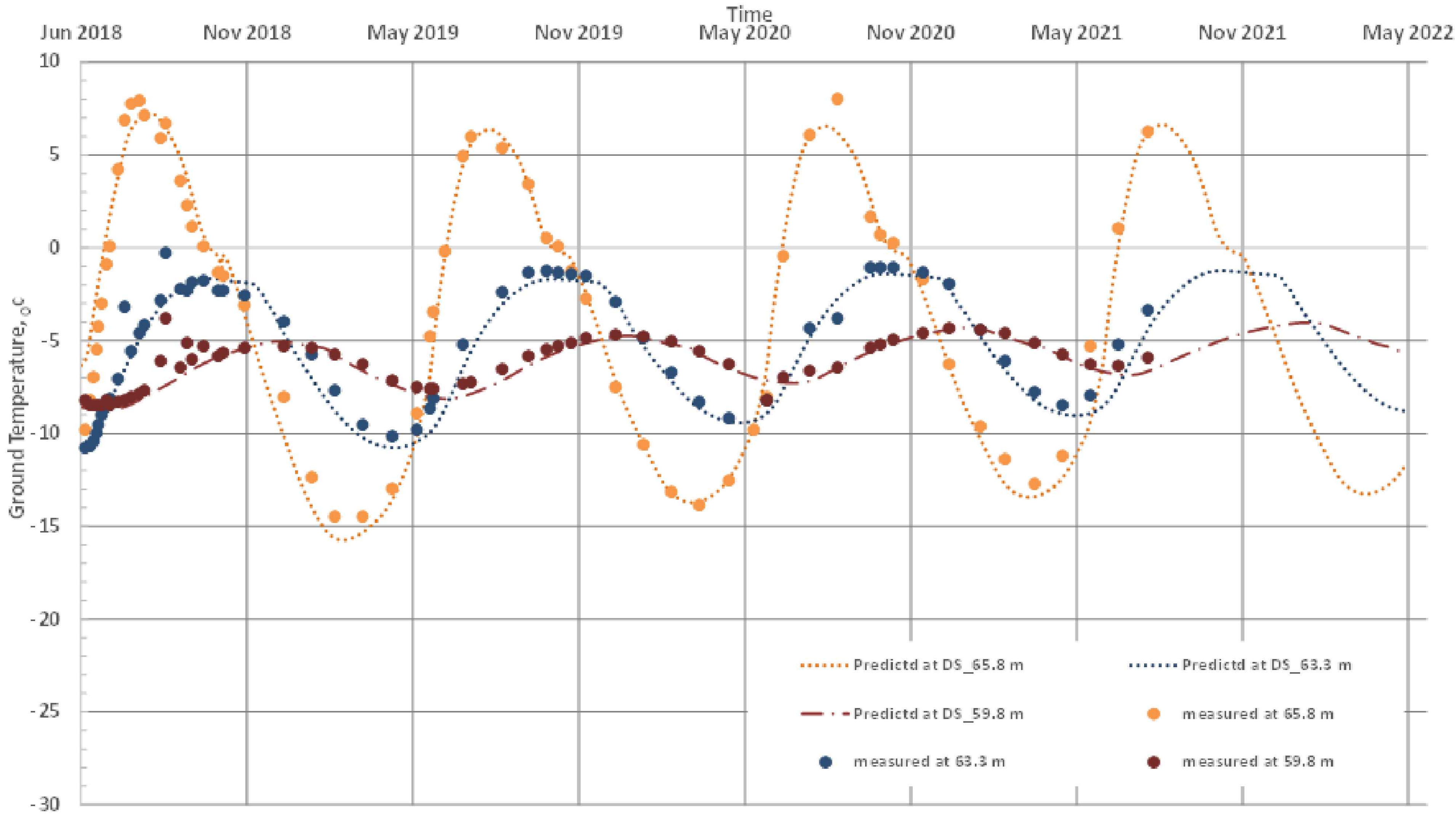
D-CP1 Temperature Comparison at VGTC3 (Upstream Side)

PROJECT NO.	DWN	CKD	REV
EARC03140-26	RO	WTH	0

OFFICE	DATE
EDM	September 2021

Figure 2

D:\Annual Inspection 2021\GTC Data 2021\D-CP1 GTC Plots.dwg [FIGURE 3] September 02, 2021 - 3:31:16 pm (BY: OKKEMA, RYAN)



NOTES

STATUS
ISSUED FOR USE

CLIENT
AGNICO EAGLE

TETRA TECH

ANNUAL GEOTECHNICAL INSPECTION 2021
MELIANDINE PROJECT, NU

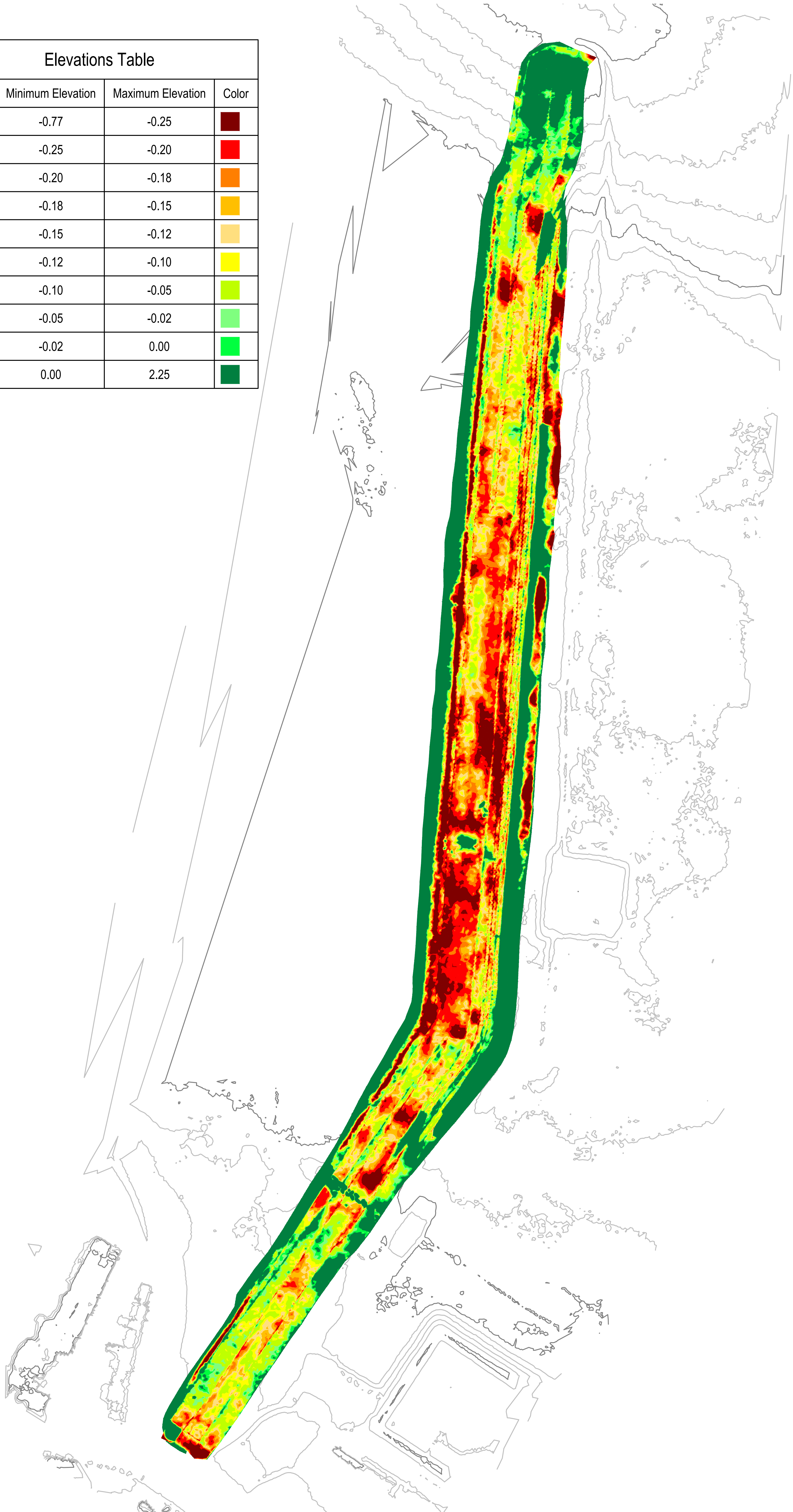
D-CP1 Temperature Comparison at VGTC4
(Downstream Side)

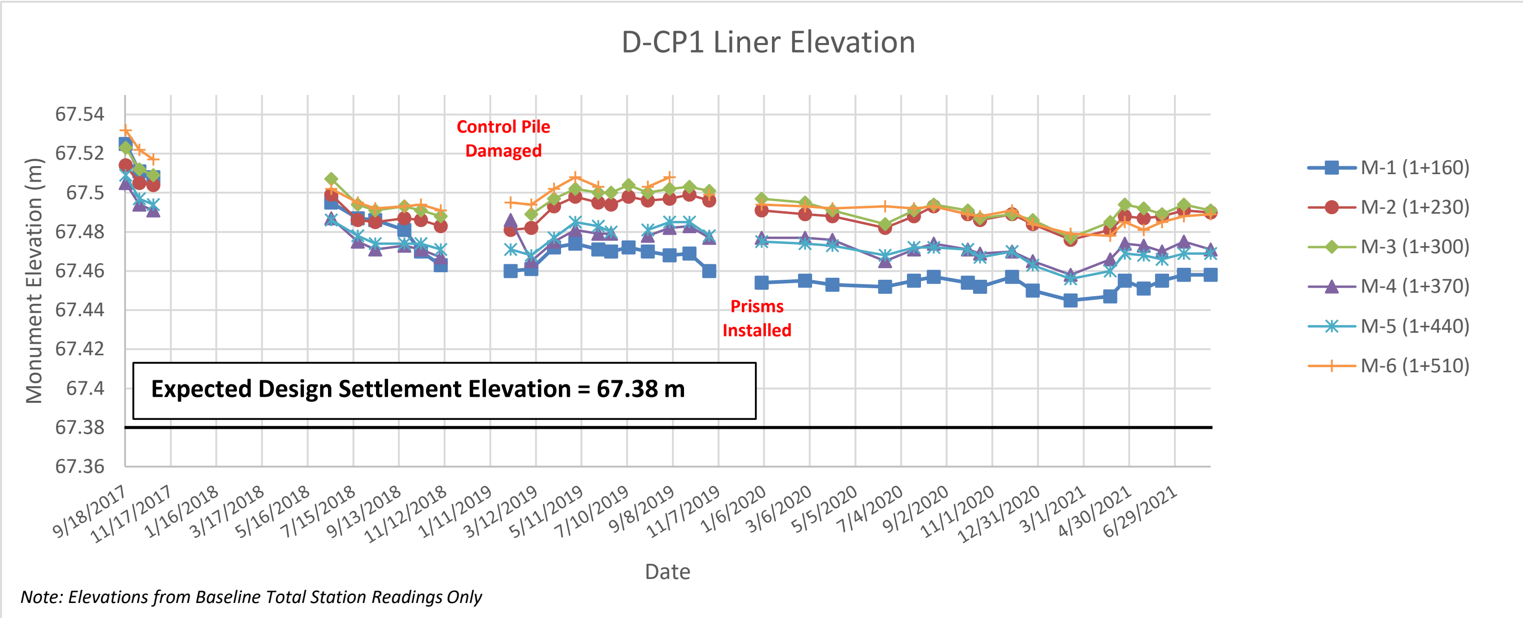
PROJECT NO.	DWN	CKD	REV
EARC03140-26	RO	WTH	0

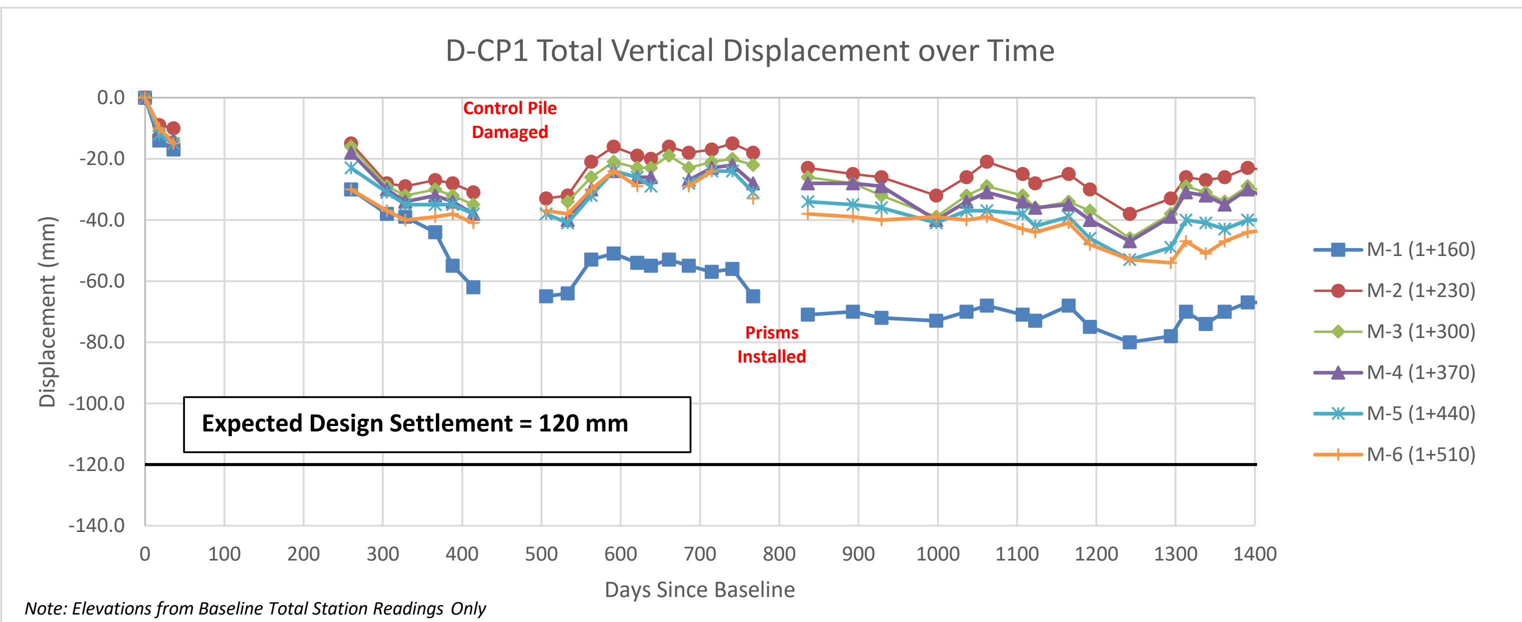
OFFICE	DATE
EDM	September 2021

Figure 3

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-0.77	-0.25	
2	-0.25	-0.20	
3	-0.20	-0.18	
4	-0.18	-0.15	
5	-0.15	-0.12	
6	-0.12	-0.10	
7	-0.10	-0.05	
8	-0.05	-0.02	
9	-0.02	0.00	
10	0.00	2.25	




D-CP1 Liner Elevation
Control Pile Damaged
Prisms Installed
Expected Design Settlement Elevation = 67.38 m
Monument Elevation (m)
67.54
67.52
67.5
67.48
67.46
67.44
67.42
67.4
67.38
67.36
9/18/2017
11/17/2017
1/16/2018
3/17/2018
5/16/2018
7/15/2018
9/13/2018
11/12/2018
1/11/2019
3/12/2019
5/11/2019
7/10/2019
9/8/2019
11/7/2019
1/6/2020
3/6/2020
5/5/2020
7/4/2020
9/2/2020
11/1/2020
12/31/2020
3/1/2021
4/30/2021
6/29/2021
Date
M-1 (1+160)
M-2 (1+230)
M-3 (1+300)
M-4 (1+370)
M-5 (1+440)
M-6 (1+510)
Note: Elevations from Baseline Total Station Readings Only

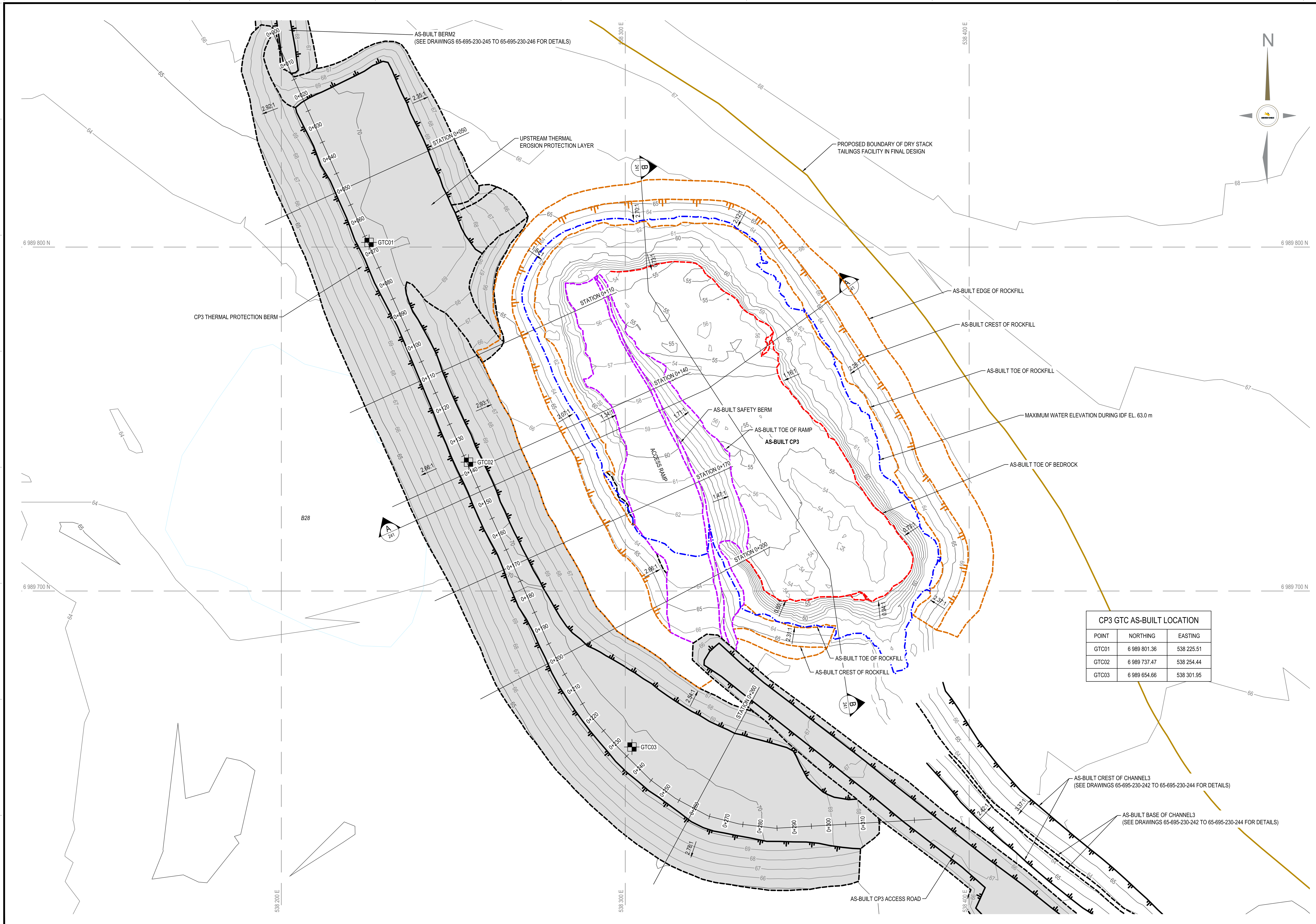

D-CP1 Total Vertical Displacement over Time
Control Pile Damaged
Prisms Installed
Expected Design Settlement = 120 mm
Displacement (mm)
0.0
-20.0
-40.0
-60.0
-80.0
-100.0
-120.0
-140.0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Days Since Baseline
M-1 (1+160)
M-2 (1+230)
M-3 (1+300)
M-4 (1+370)
M-5 (1+440)
M-6 (1+510)
Note: Elevations from Baseline Total Station Readings Only

APPENDIX C

POND CP3, CHANNELS, AND BERMS

NO. DESSIN DRAWING NO. 65-695-230-238

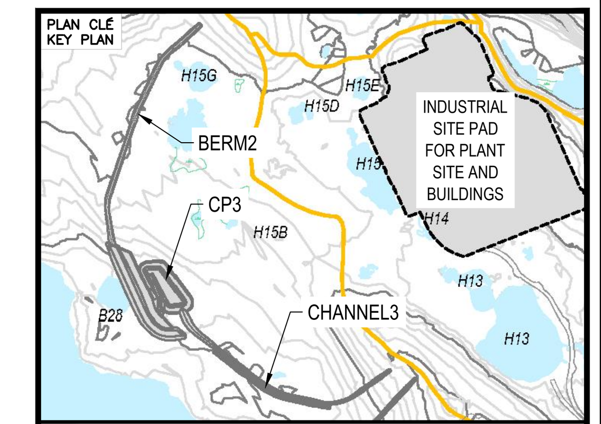
FORMAT ARCHD



CP3 GTC AS-BUILT LOCATION

POINT	NORTHING	EASTING
GTC01	6 989 801.36	538 225.51
GTC02	6 989 737.47	538 254.44
GTC03	6 989 654.66	538 301.95

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2019.
3. POND DESIGN CAPACITY IS BASED ON STORING 3 OUT OF 7 FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).

TEL QUE CONSTRUIT
AS BUILT
DATE : 2019-09-27

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2019-09-27	RECORD DRAWINGS	EL	WTH	
0	2018-06-21	ISSUED FOR CONSTRUCTION	HX	WTH	
A	2018-05-29	ISSUED FOR REVIEW	HX	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER W.T. HORNE LICENSEE N.W.T. Sept 27, 2019

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Sept. 27, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

CP3 AND CP3 THERMAL PROTECTION BERM LAYOUT PLAN

DESSINÉ PAR DRAWN BY	EL	DATE 2019-06-12
VERIFIÉ PAR CHECKED BY	HX	2019-06-12
APPROUVÉ PAR APPROVED BY	WTH	2019-06-12
ÉCHELLE SCALE 1:500	DATE 2019-06-12	
NO. DESSIN DRAWING NO.	65-695-230-238	
NO. PROJET PROJECT NO. 6515	REVISION 1	FEUILLE / SHT 1 / 13

AE-CART-ARCH D

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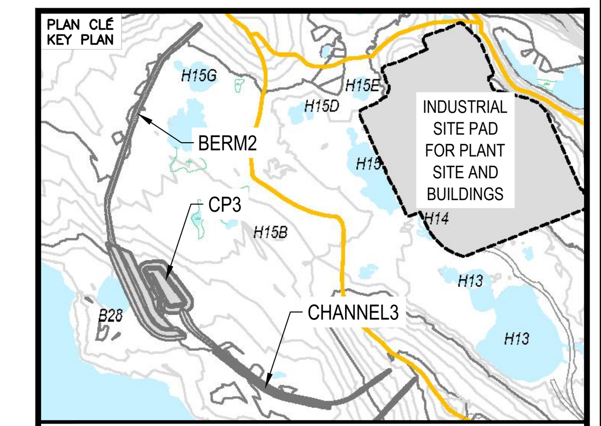
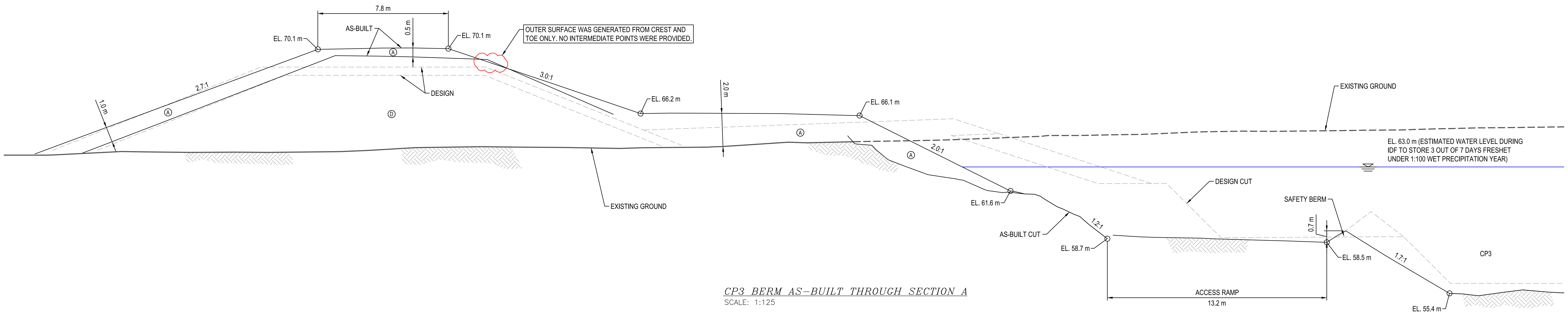
FILE NO. 65-695-230-238.dwg

NO. DESSIN / DRAWING NO. 65–695–230–239

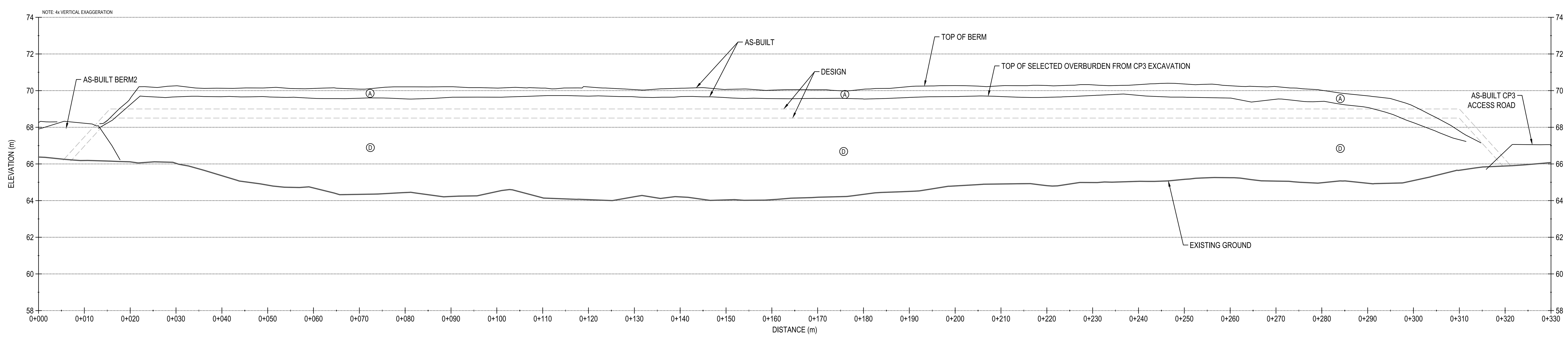
FORMAT ARCHD



PLAN CLÉ / KEY PLAN



CP3 BERM AS–BUILT THROUGH SECTION A
SCALE: 1:125



CP3 – BERM PROFILE
SCALE: H–1:500 V–1:125

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2019.
3. POND DESIGN CAPACITY IS BASED ON STORING 3 OUT OF 7 FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).

LEGEND

Ⓐ CLEAN ROCKFILL FROM EXCAVATION (600 mm MINUS)
Ⓓ OVERBURDEN FROM EXCAVATION (300 mm MINUS)

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2019–09–27

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
–	–
–	–
–	–
–	–
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2019–09–27	RECORD DRAWINGS	EL	WTH	
0	2018–06–21	ISSUED FOR CONSTRUCTION	HX	WTH	
A	2018–05–29	ISSUED FOR REVIEW	HX	WTH	

REVISIONS

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

W. T. HORNE
LICENSEE

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

CP3 TYPICAL SECTION AND
CP3 THERMAL PROTECTION BERM PROFILE

DESSINÉ PAR / DRAWN BY	EL	DATE	2019–06–12
VÉRIFIÉ PAR / CHECKED BY	HX		2019–06–12
APPROUVÉ PAR / APPROVED BY	WTH		2019–06–12
ÉCHELLE / SCALE	AS SHOWN	DATE	2019–06–12

NO. DESSIN / DRAWING NO. 65–695–230–239

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	1	2 / 13

AE–CART–ARCH D

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FILE NO. 65–695–230–239.dwg

Photo 1: Pond CP3 - Looking southwest, bedrock overburden contact, access ramp into pond.

Photo 2: Pond CP3—Looking northeast, water running into CP3 along north side.

Photo 3: Pond CP3 - Looking east, CP3 berm and rockfill covered overburden in foreground. Settlement along the overburden between CP3 and berm.

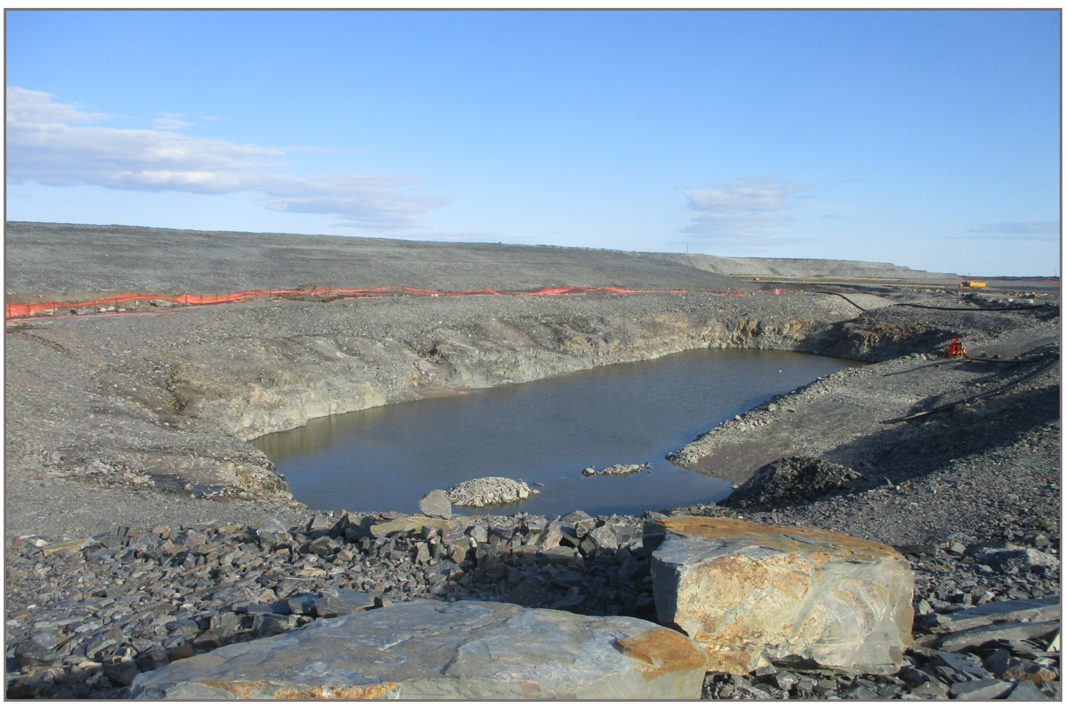


Photo 4: Pond CP3 - Looking south, water level within bedrock.

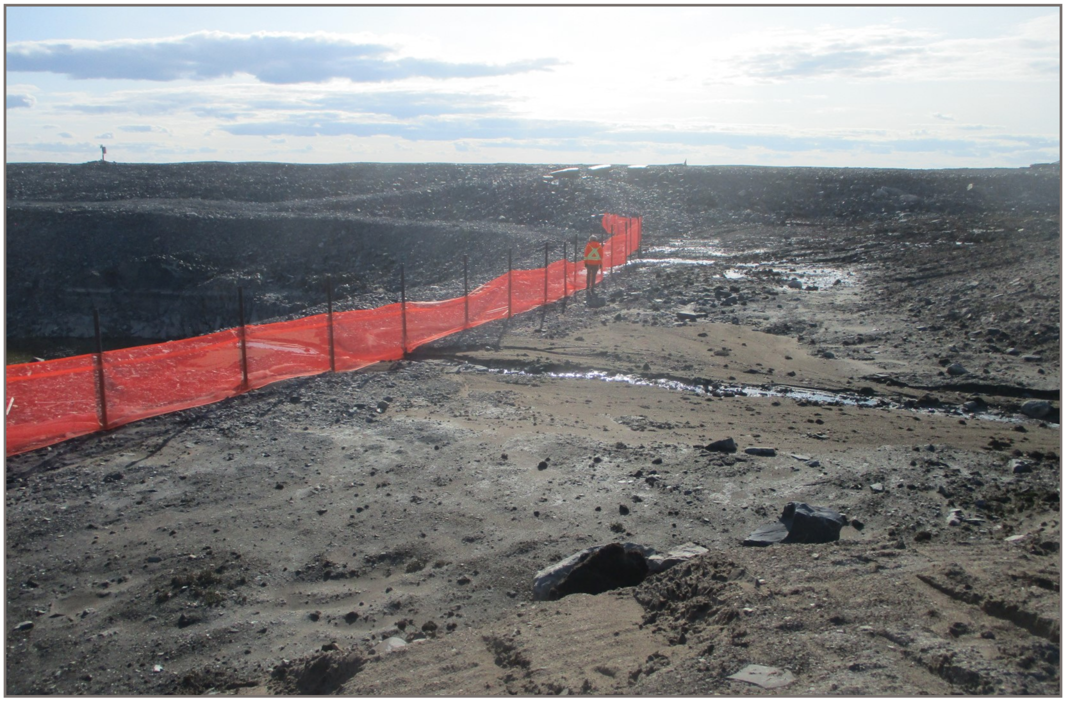


Photo 5: Pond CP3 - Runoff/erosion channels into pond from north end of TSF drainage, located on north side of pond.

Photo 6: Pond CP3 - Improved runoff channel into pond from north end off TSF drainage , located on east side of pond.

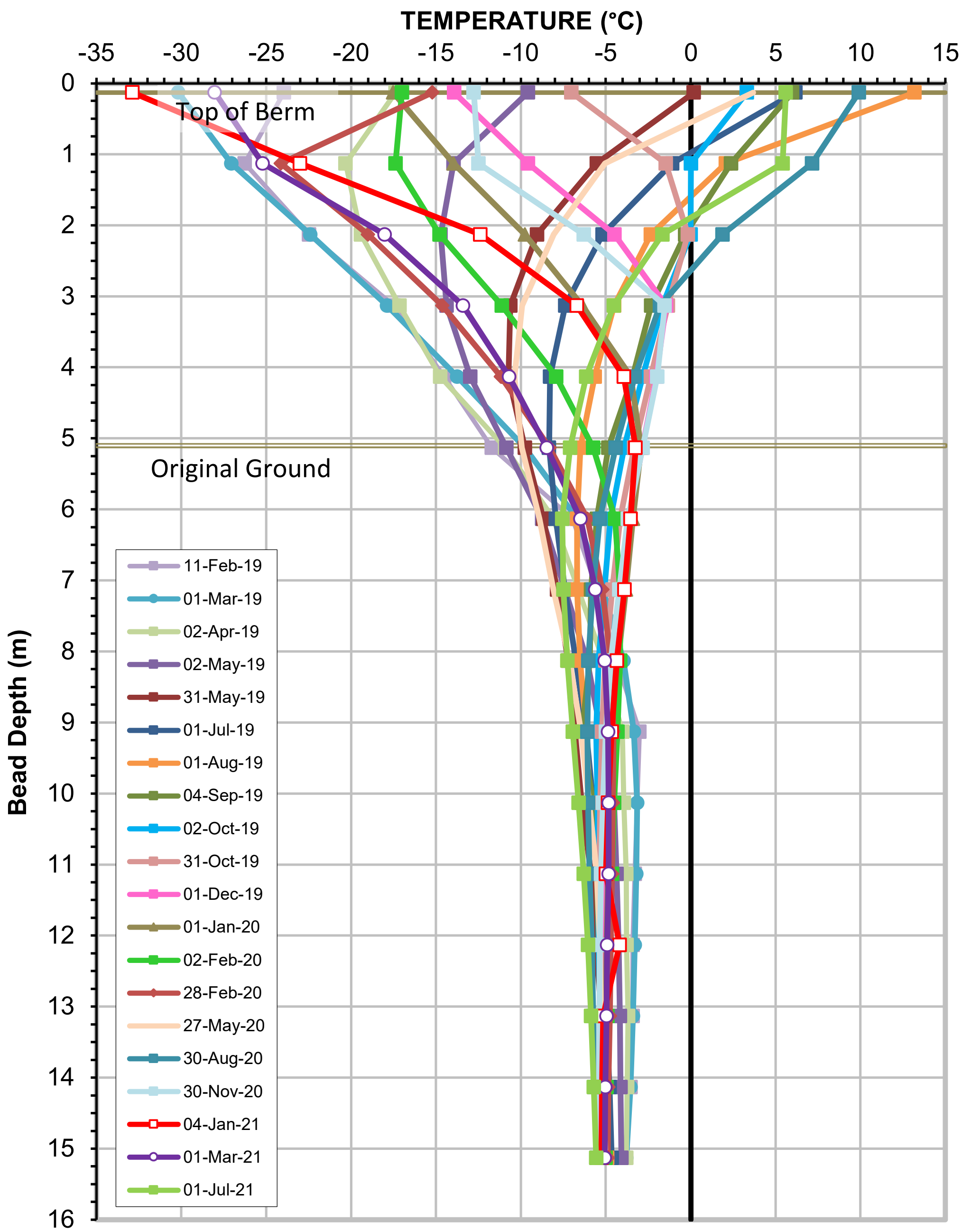
Photo 7: Berm CP3 - GTC instrumentation loggers installed on berm.

Photo 8: Berm CP3 - Looking south, surface of berm.. Settlement and subsidence.

Photo 9: Berm CP3 - Berm crest, looking south. Undulations in crest 0.3 to 0.5 m.

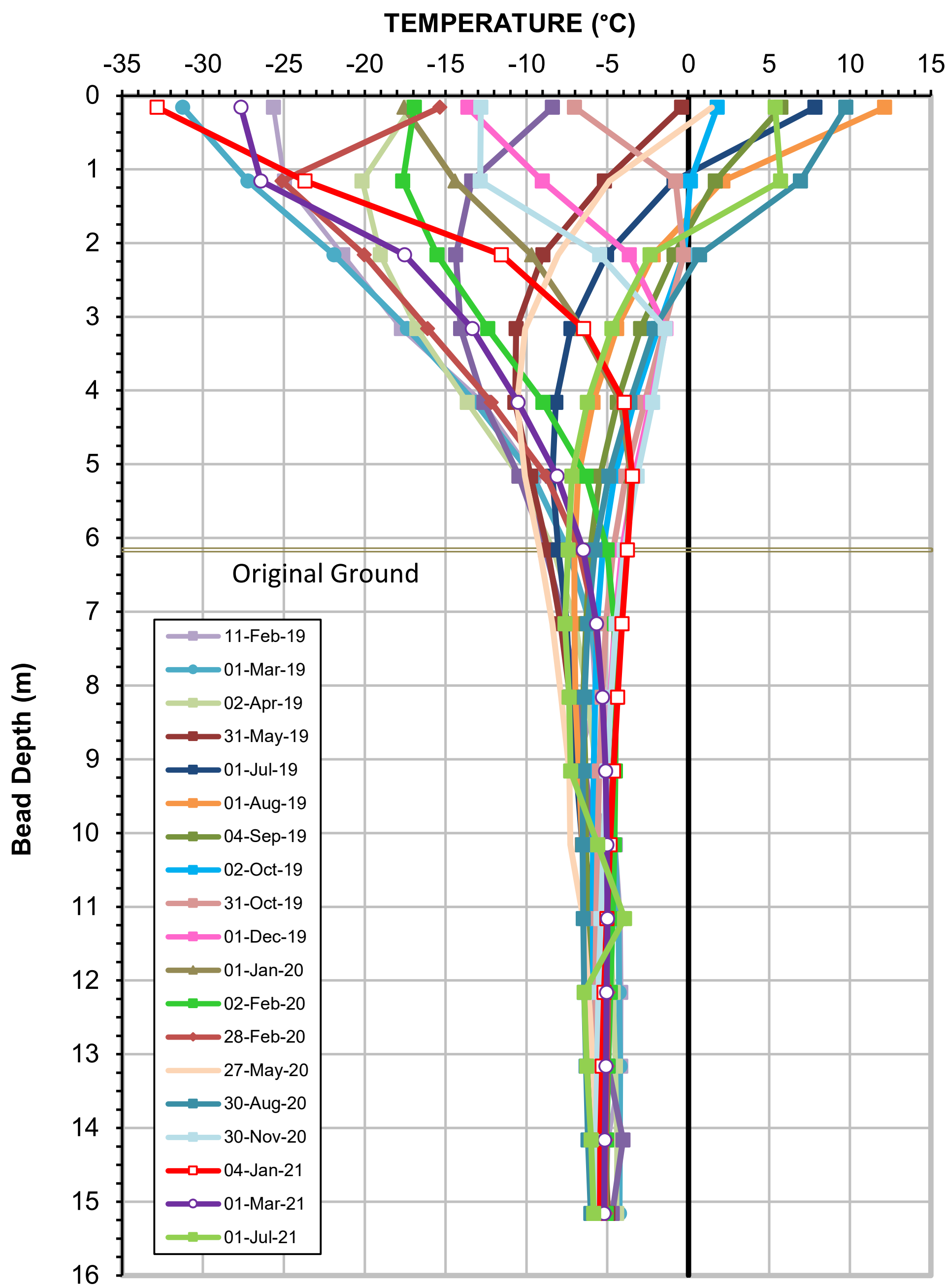
Photo 10: Pond CP3 - Looking north, settlement and erosion at overburden crest.

Photo 11: Pond CP3 - Looking south, crest and rockfill slope.



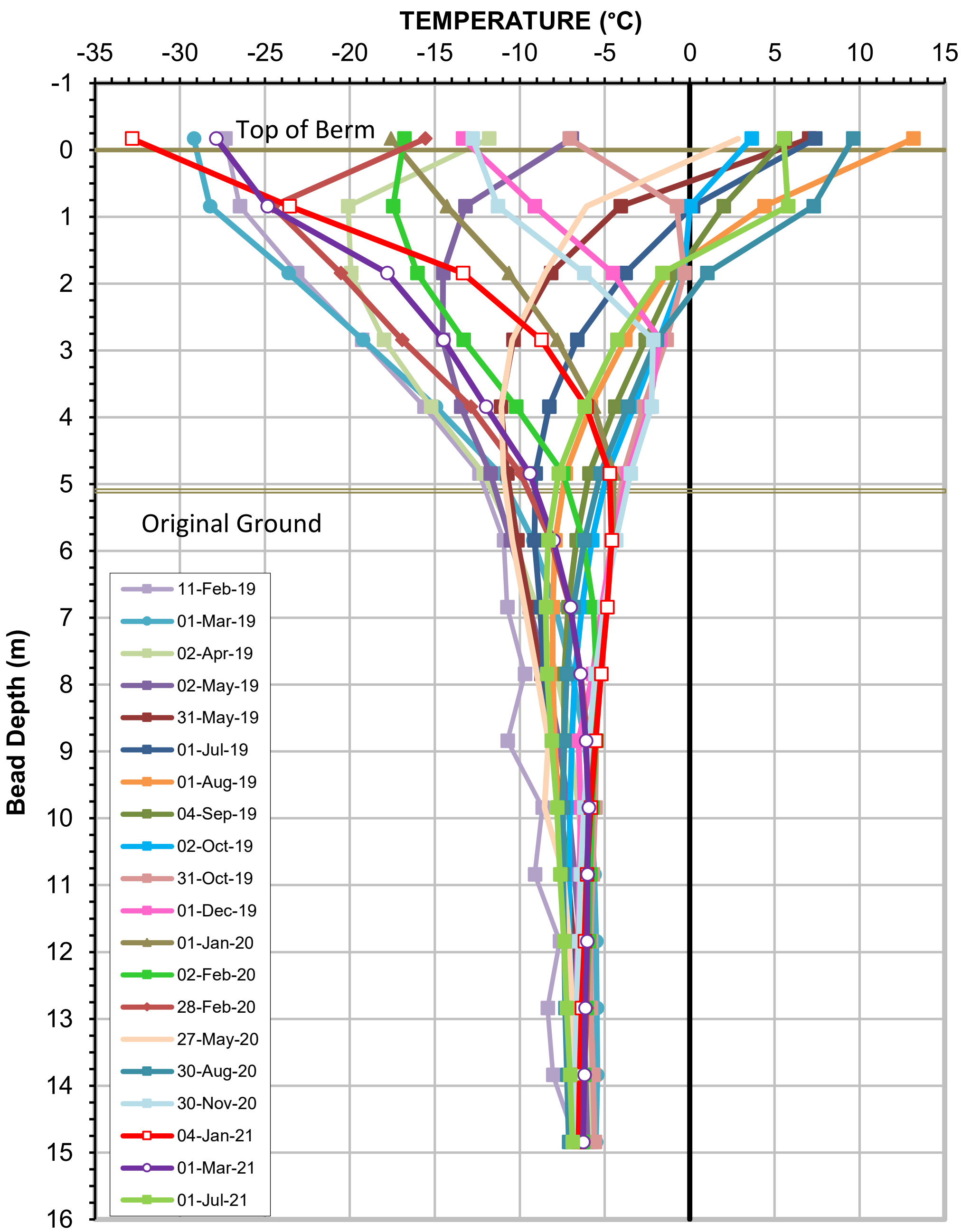
Ground Temperature Profile for Cable GTC-01
Berm CP3

Serial No.: 2644
Date Installed: February 11, 2019



Ground Temperature Profile for Cable GTC-02
Berm CP3

Serial No.: 2645
Date Installed: February 11, 2019



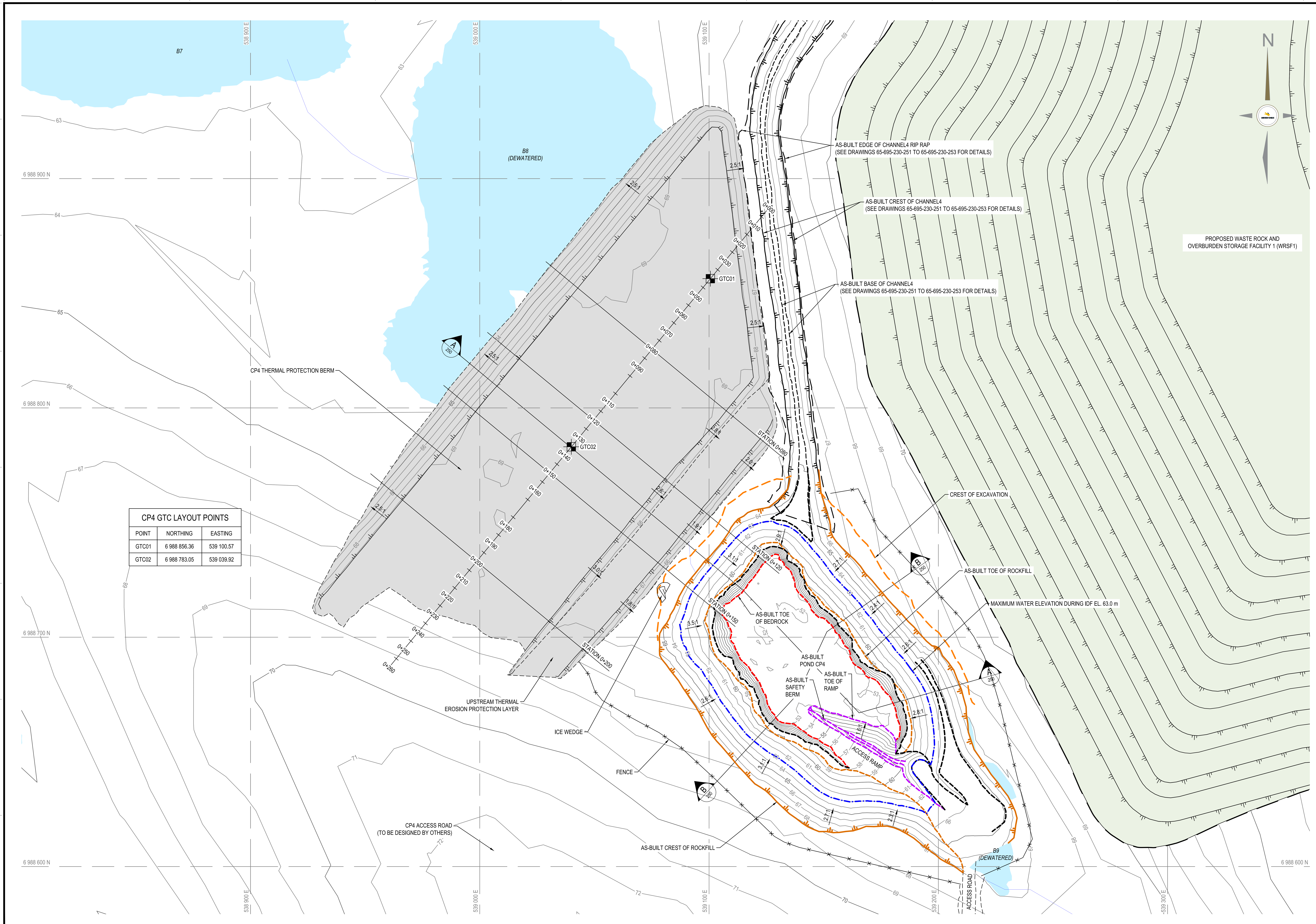
Ground Temperature Profile for Cable GTC-03
Berm CP3

Serial No.: 2644
Date Installed: February 11, 2019

APPENDIX D

POND CP4, CHANNELS, AND BERMS

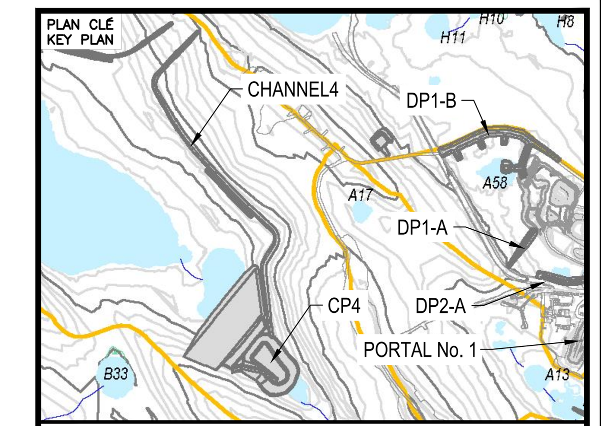
NO. DESSIN DRAWING NO. 65-695-230-247



CP4 GTC LAYOUT POINTS

POINT	NORTHING	EASTING
GTC01	6 988 856.36	539 100.57
GTC02	6 988 783.05	539 039.92

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2019.
3. POND DESIGN CAPACITY IS BASED ON STORING 3 OUT OF 7 FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2019-12-04

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–

AGNICO EAGLE

REVISIONS

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
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0	2018-06-21	ISSUED FOR CONSTRUCTION	HX	WTH	
A	2018-05-29	ISSUED FOR REVIEW	HX	WTH	

W.T. HORNE — LICENSEE — NWT/NU

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date February 4, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AS-BUILT REPORT FOR CHANNEL4, POND CP4, AND BERM CP4

CP4 AND CP4 THERMAL PROTECTION BERM LAYOUT PLAN

DESSINÉ PAR DRAWN BY	EL	DATE	2019-07-31
VÉRIFIÉ PAR CHECKED BY	HX		2019-07-31
APPROUVÉ PAR APPROVED BY	WTH		2019-07-31
ÉCHELLE SCALE	1:750	DATE	2019-07-31

NO. DESSIN DRAWING NO. 65-695-230-247

NO. PROJET PROJECT NO. 6515 — REVISION 1 — FEUILLE / SHT 1 / 9

FORMAT ARCHD

AE-CART-ARCH D

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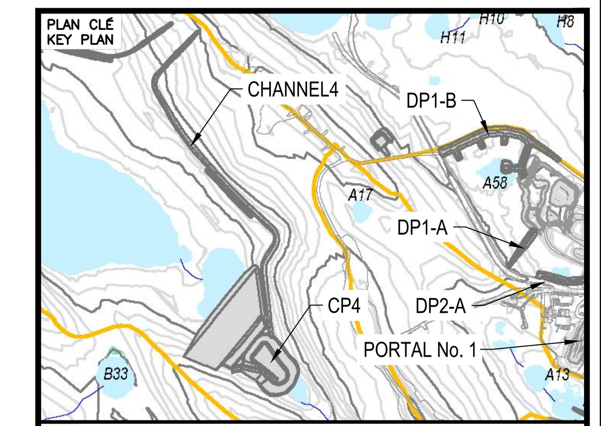
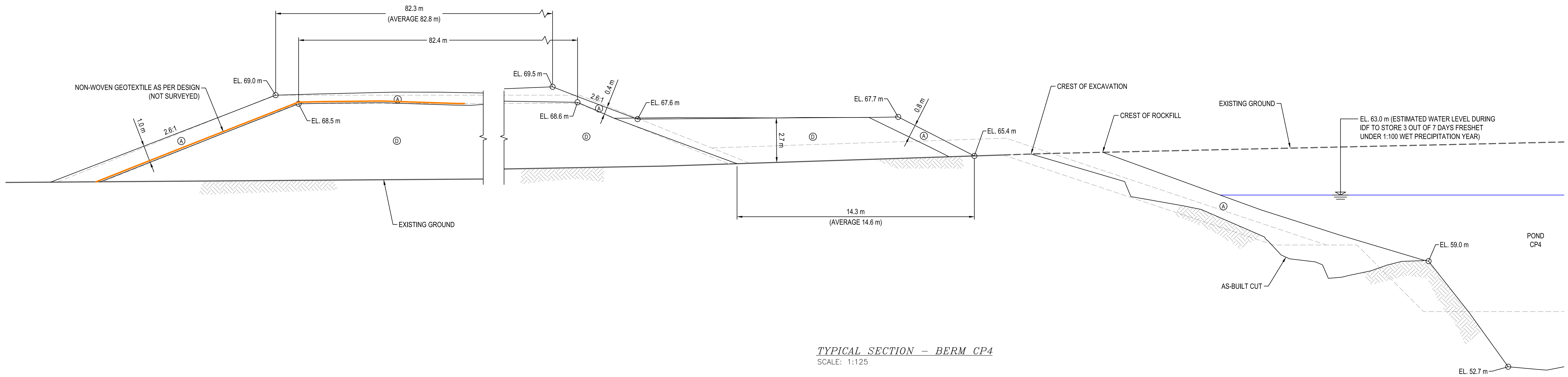
FILE NO. 65-695-230-247.dwg

NO. DESSIN / DRAWING NO. 65-695-230-248

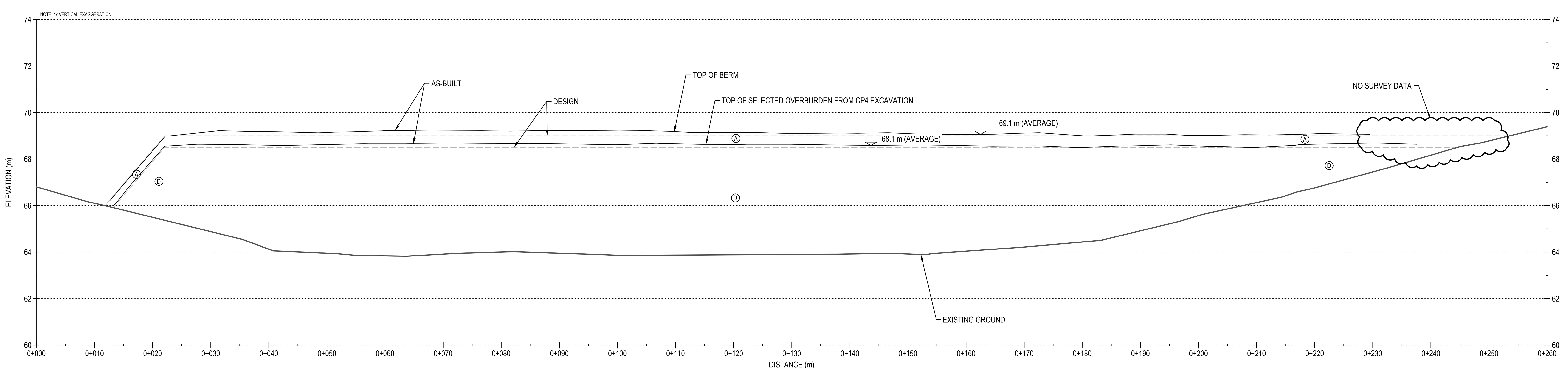
FORMAT ARCHD





TYPICAL SECTION – BERM CP4

SCALE: 1:125



BERM CP4 – PROFILE

SCALE: H–1:400 V–1:100

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
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3. POND DESIGN CAPACITY IS BASED ON STORING 3 OUT OF 7 FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).

LEGEND

Ⓐ CLEAN ROCKFILL FROM EXCAVATION (600 mm MINUS)

Ⓓ OVERBURDEN FROM EXCAVATION (300 mm MINUS)

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2019-12-04

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2019-12-04	RECORD DRAWINGS	EL	WTH	
0	2018-06-21	ISSUED FOR CONSTRUCTION	HX	WTH	
A	2018-05-29	ISSUED FOR REVIEW	HX	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER W.T. HORNE LICENSEE NT/NU

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date December 4, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE

AS-BUILT REPORT FOR CHANNEL4, POND CP4, AND BERM CP4

CP4 TYPICAL SECTION AND CP4 THERMAL PROTECTION BERM PROFILE

DESSINÉ PAR / DRAWN BY	EL	DATE	2019-07-31
VERIFIÉ PAR / CHECKED BY	HX		2019-07-31
APPROUVÉ PAR / APPROVED BY	WTH		2019-07-31
ÉCHELLE / SCALE	AS SHOWN	DATE	2019-07-31

NO. DESSIN / DRAWING NO. 65-695-230-248

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	1	2 / 9

AE-CART-ARCH D

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FILE NO. 65-695-230-248.dwg

Photo 1: Pond CP4 - Looking west, Berm CP4 in the background.

Photo 2: Pond CP4—West end of pond, Berm CP4 on right above pond. Original ground between the Berm CP4 and rockfill covered slope shown.

Photo 3: Pond CP4 - Looking north at the ramp into the pond.

Photo 4: Pond CP4 - North slope—rockfill covered slope, no obvious signs of distress.

Photo 5: Pond CP4 - Settlement and cracking above north slope.

Photo 6: Pond CP4 - Small subsidence above north slope close to original ground contact.

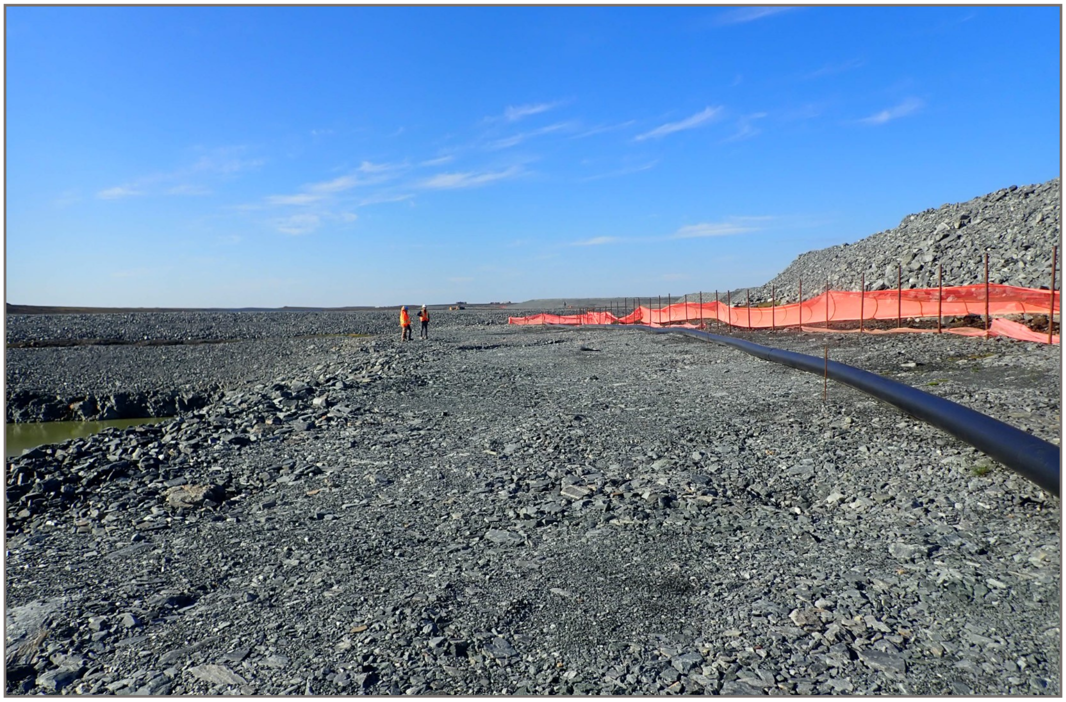


Photo 7: Pond CP4 - Ground above rockfill covered overburden slope. Settlement and subsidence in the area.

Photo 8: Pond CP4 - North slope, settlement in area between rockfill covered slope on original ground.

Photo 9: Pond CP4 - Settlement and subsidence between Berm CP4 and west pond slope.

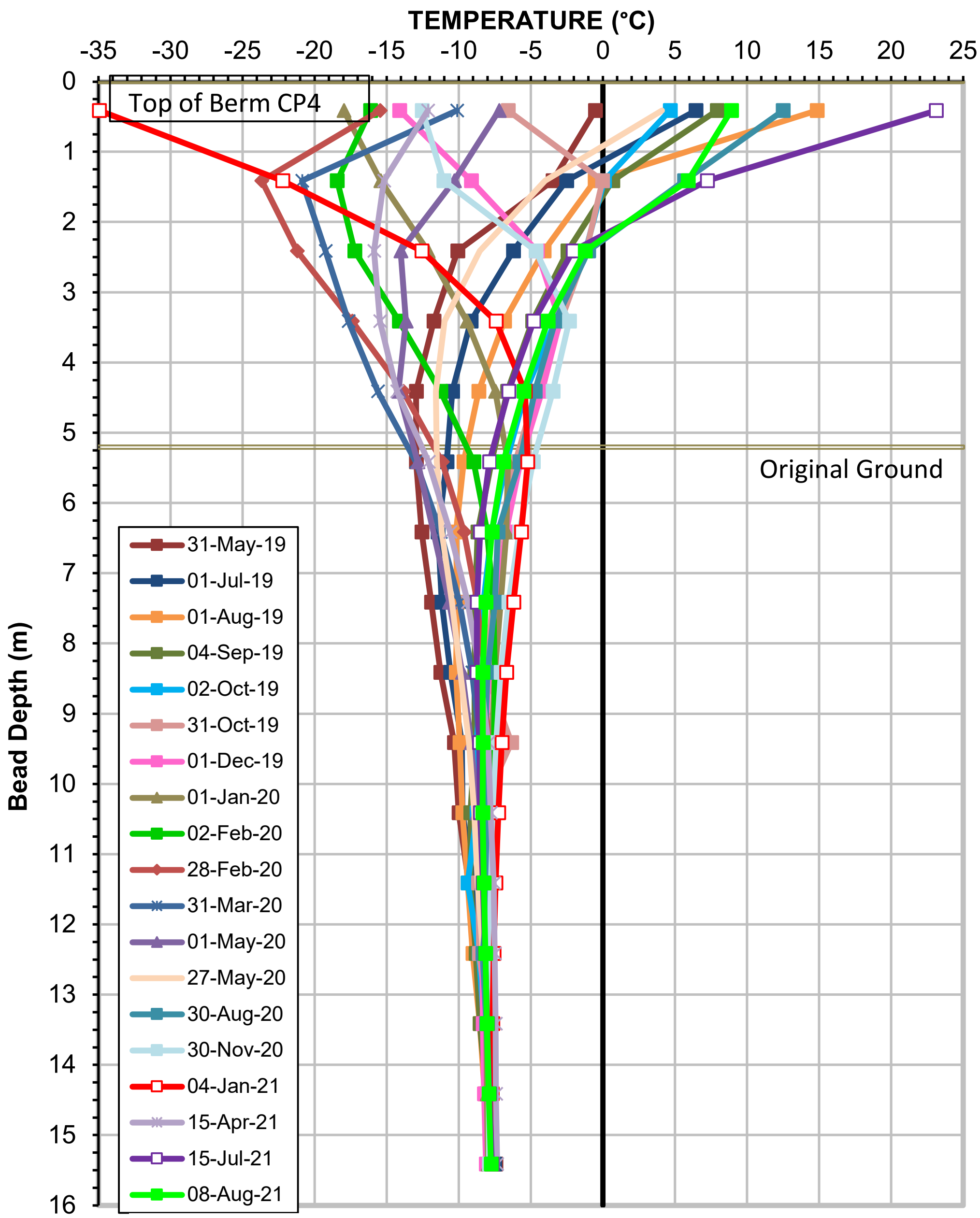
Photo 10: Berm CP4 - Upstream slope, thermal cover and original ground above Pond CP4

Photo 11: Berm CP4 - Settlement on surface of berm.

Photo 12: Berm CP4 - Pooling water on thermal berm.

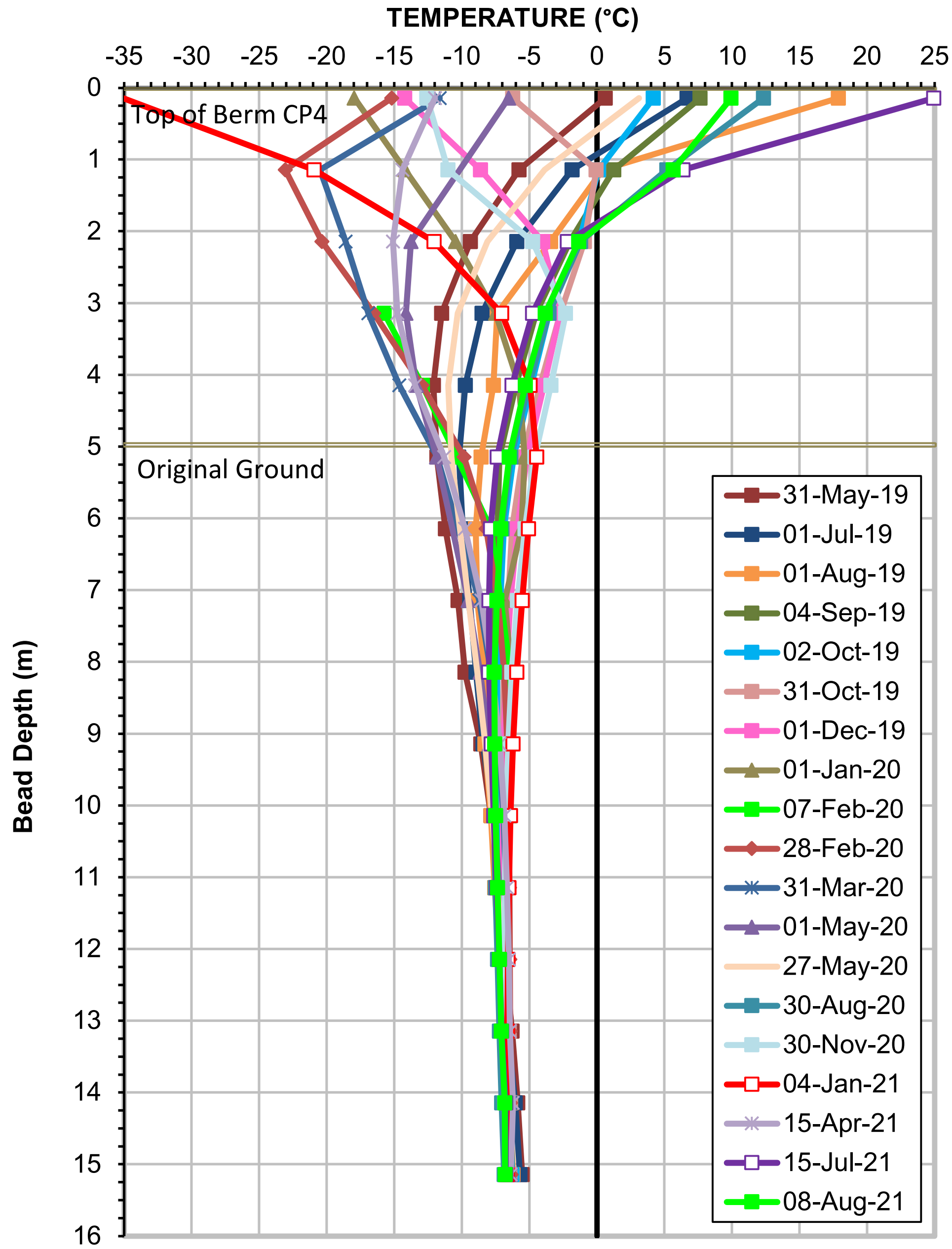
Photo 13: Berm CP4 - Undulating settlement up to 0.3 m throughout surface of berm.

Photo 14: Berm CP4 - Downstream embankment of CP4 berm against lake B8.



Ground Temperature Profile for Cable GTC-01
Berm CP4

Serial No.: 2685
Date Installed: May 18, 2019



Ground Temperature Profile for Cable GTC-02
Berm CP4

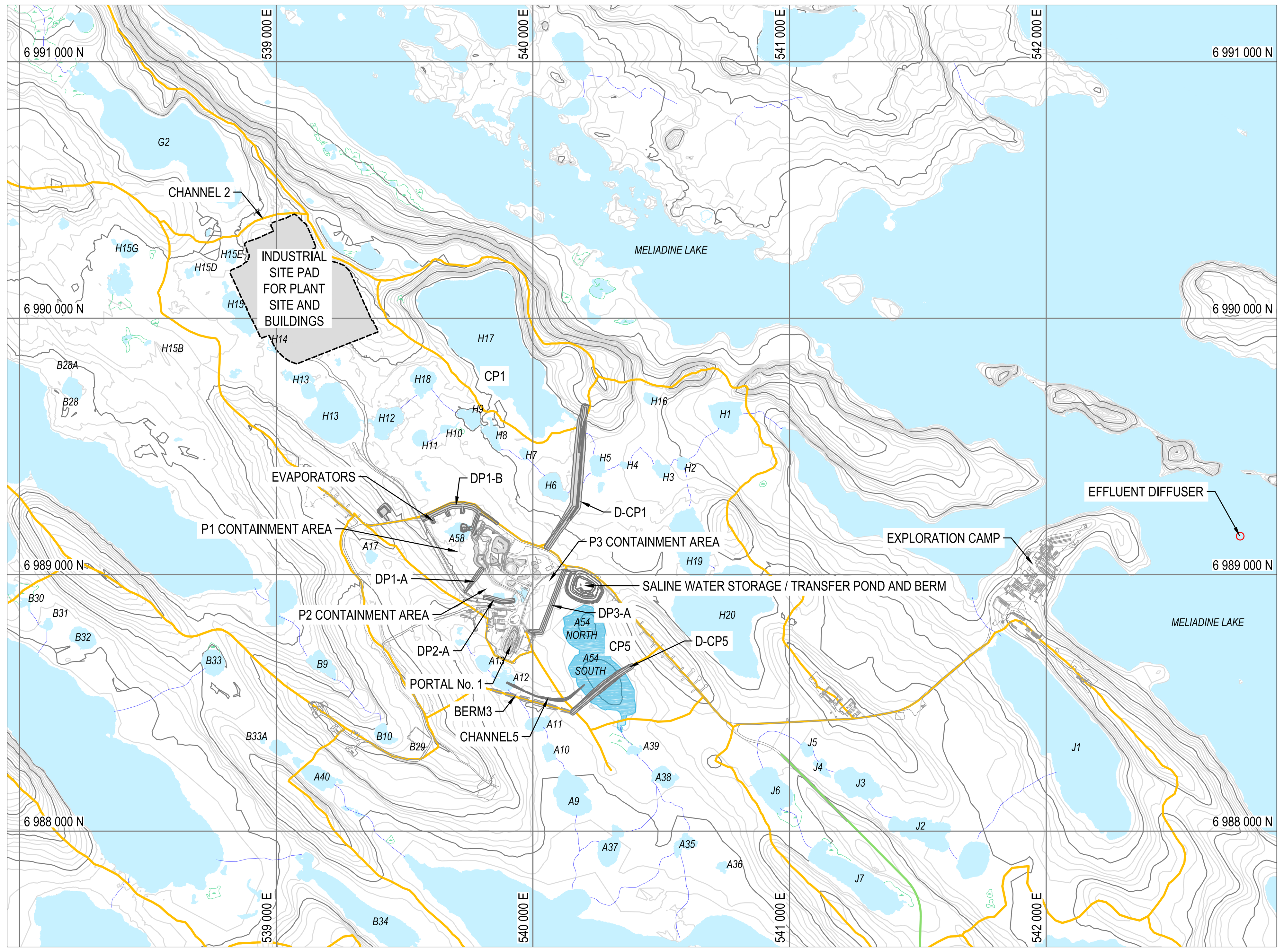
Serial No.: 2686
Date Installed: May 18, 2019

APPENDIX E

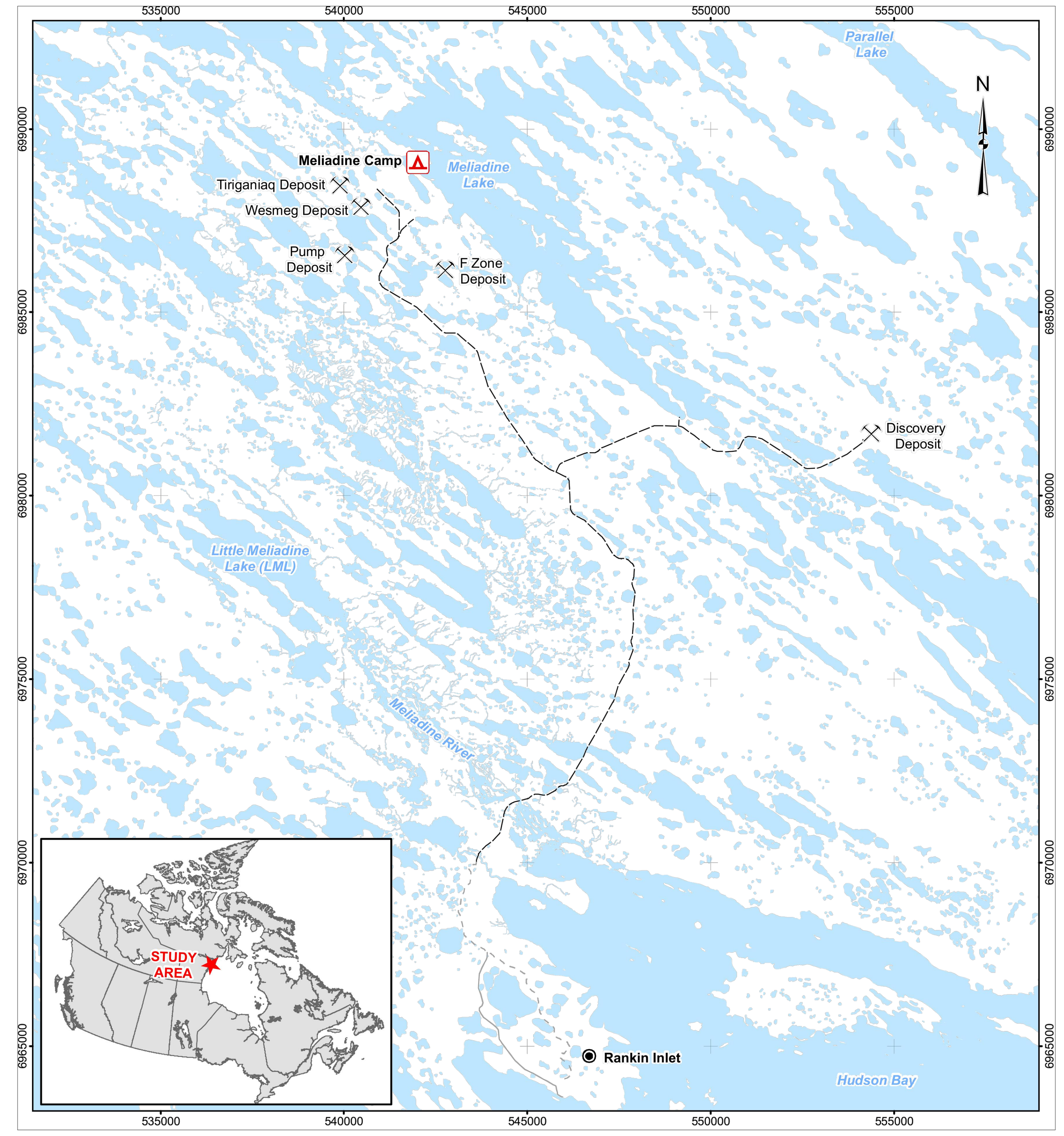
POND CP5 AND D-CP5

NO. DESSIN / DRAWING NO. 65-685-230-214_R1

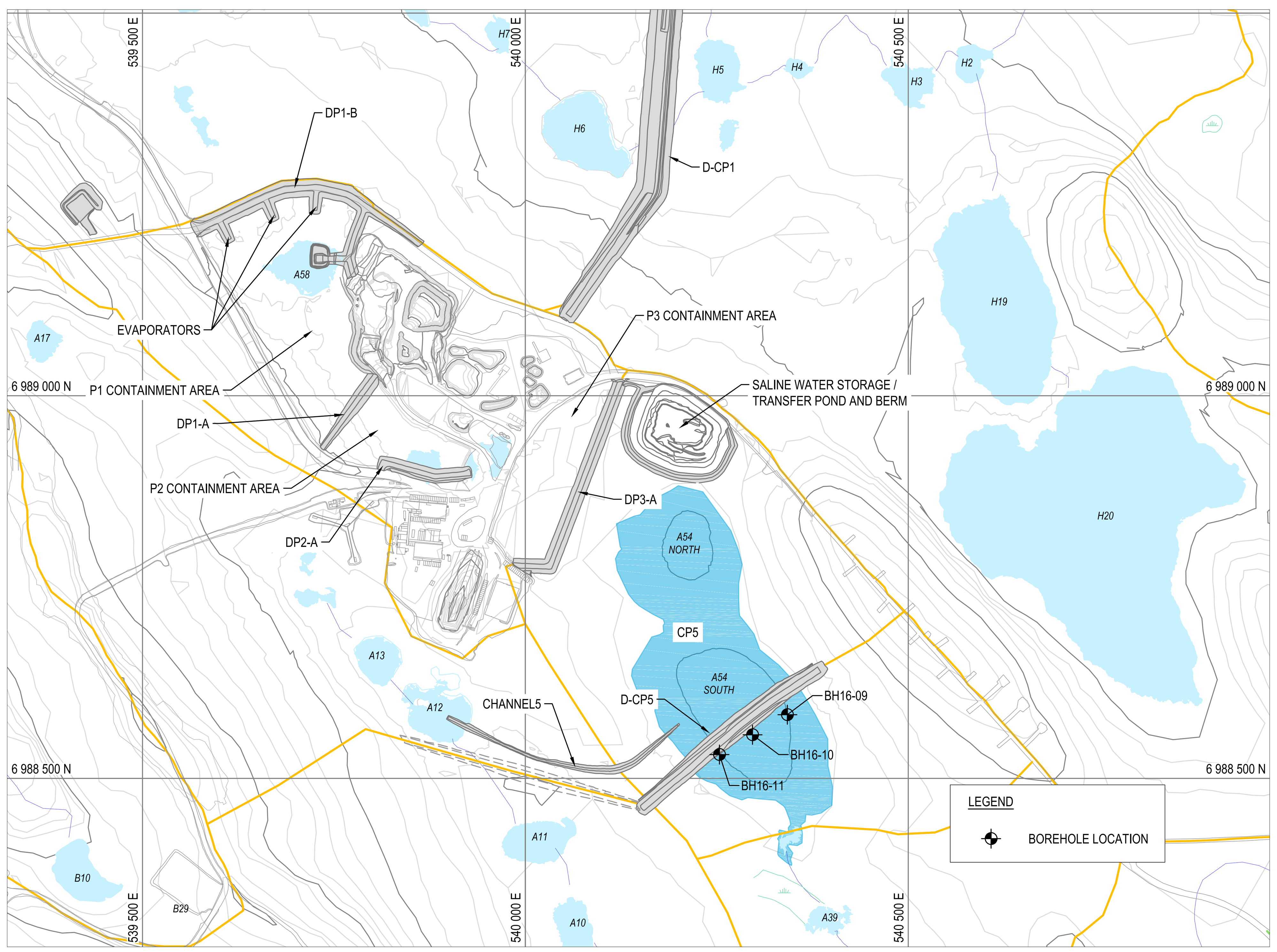
FORMAT ARCHD



GENERAL SITE LOCATION
SCALE: 1:15,000



LOCATION MAP
SCALE: N.T.S.



D-CP5 SITE LOCATION
SCALE: 1:5,000

D-CP5 AS-BUILT DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE
65-685-230-214	D-CP5 AS-BUILT GENERAL LOCATION PLAN
65-685-230-215	D-CP5 AS-BUILT KEY TRENCH AND DIKE LAYOUT PLAN
65-685-230-216	D-CP5 AS-BUILT PROFILES
65-685-230-217	D-CP5 AS-BUILT THERMAL COVER LAYOUT PLAN AND PROFILES
65-685-230-218	D-CP5 AS-BUILT TYPICAL SECTIONS AND QUANTITIES
65-685-230-219-001	D-CP5 AS-BUILT SECTIONS STATION 0+030 TO 0+170
65-685-230-219-002	D-CP5 AS-BUILT SECTIONS STATION 0+180 TO 0+310
65-685-230-220	D-CP5 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES
65-685-230-221	D-CP5 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

- LAKE A54 WAS PARTIALLY DEWATERED PRIOR TO D-CP5 CONSTRUCTION

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2017-10-19	ISSUED FOR RECORD	WTH	NG	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
A	2016-08-10	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER W.T. HORNE LICENSEE N.W.T.
PROFESSIONAL ENGINEER G. ZHANG LICENSEE NWT/NU

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP5 AS-BUILT
GENERAL LOCATION PLAN

DESSINÉ PAR / DRAWN BY	EL	DATE 2016-08-15
VERIFIÉ PAR / CHECKED BY	GZ	2016-08-15
APPROUVÉ PAR / APPROVED BY	GZ	2016-08-15
ÉCHELLE / SCALE	AS SHOWN	DATE 2016-08-15

NO. DESSIN / DRAWING NO. 65-685-230-214

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	1	1 / 9

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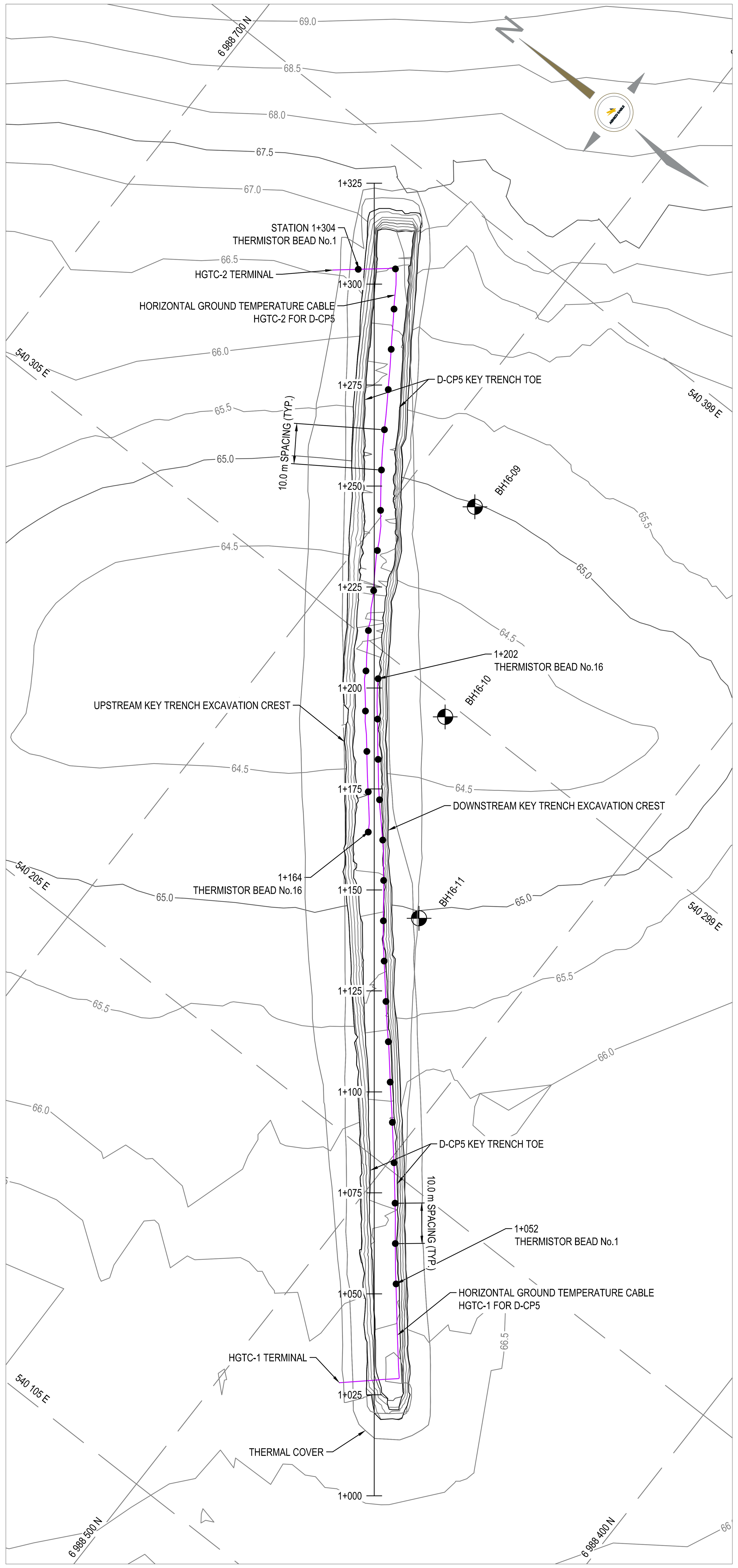
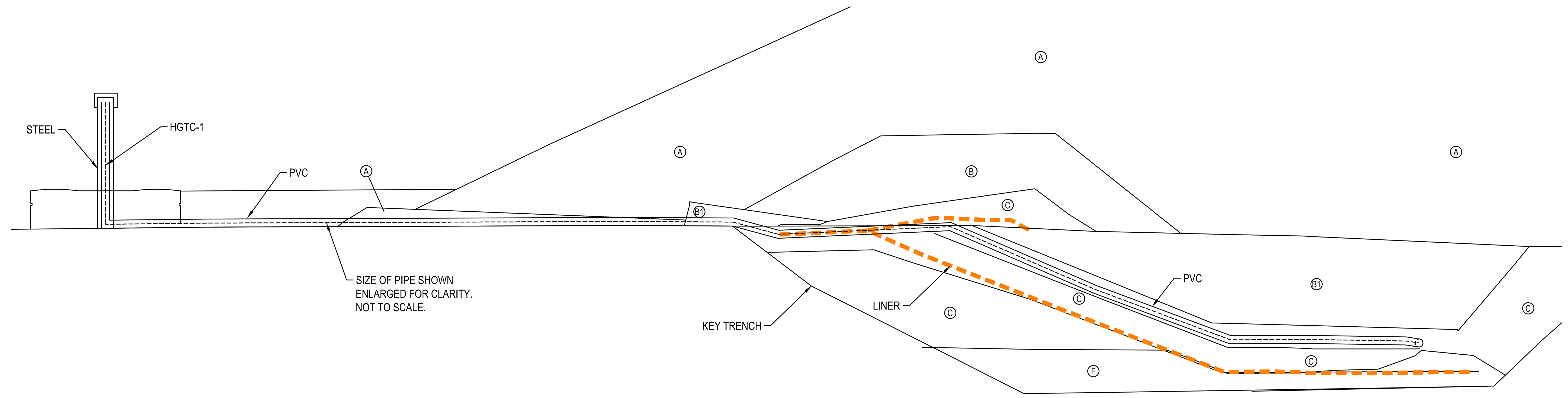
NO. DESSIN DRAWING NO. 65-685-230-220_R1

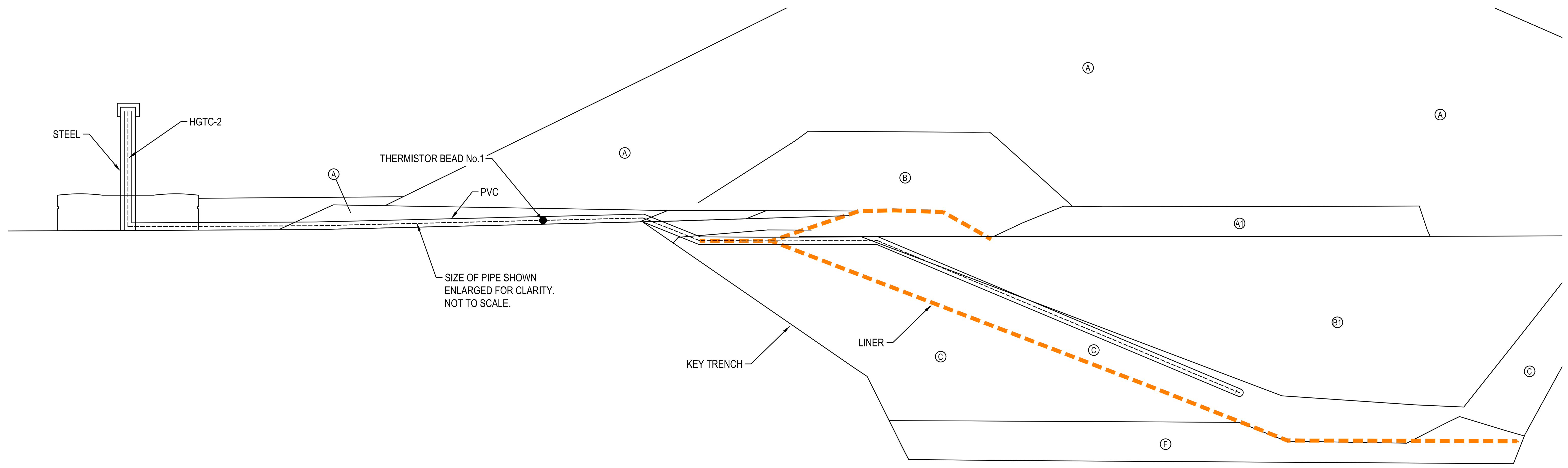
FORMAT ARCHD



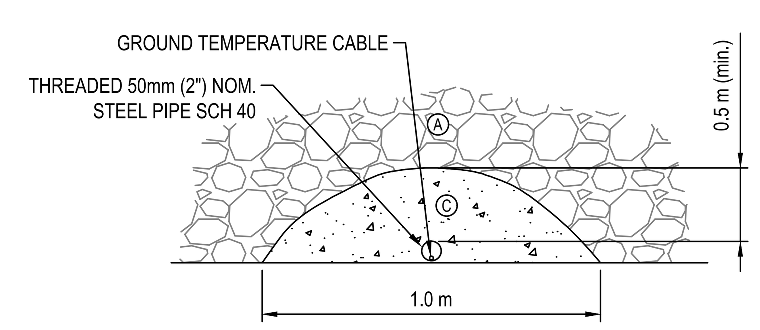
D-CP5 AS-BUILT HORIZONTAL GROUND TEMPERATURE CABLE LAYOUT
SCALE: 1:750



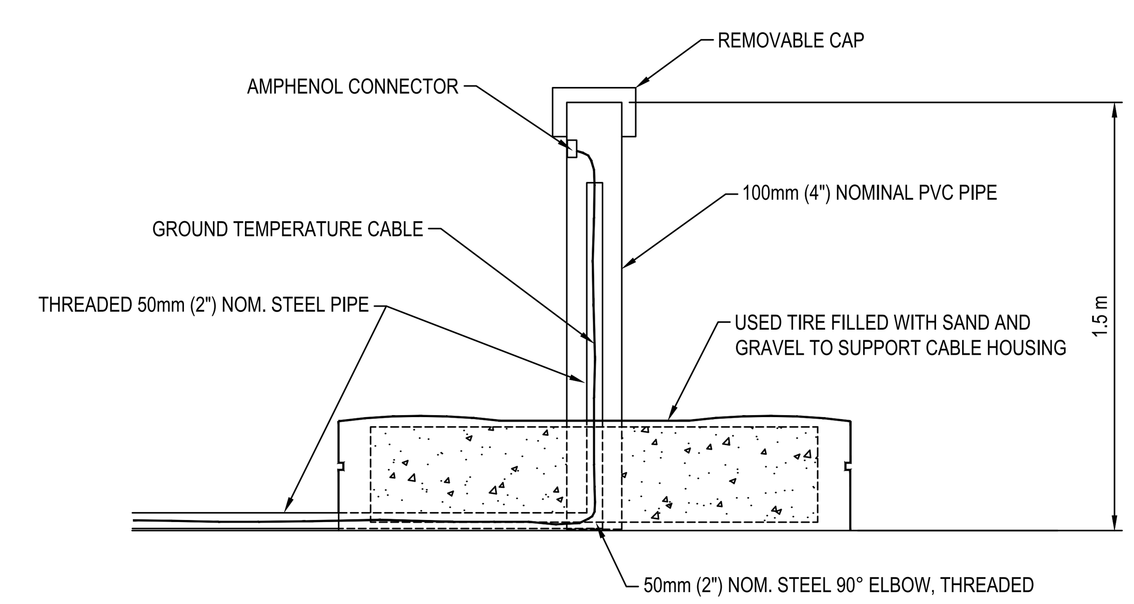
D-CP5 AS-BUILT HORIZONTAL GROUND TEMPERATURE CABLE – SOUTH TERMINAL SECTION THROUGH STATION 1+028
SCALE: 1:100



D-CP5 AS-BUILT HORIZONTAL GROUND TEMPERATURE CABLE – NORTH TERMINAL SECTION THROUGH STATION 1+304
SCALE: 1:100

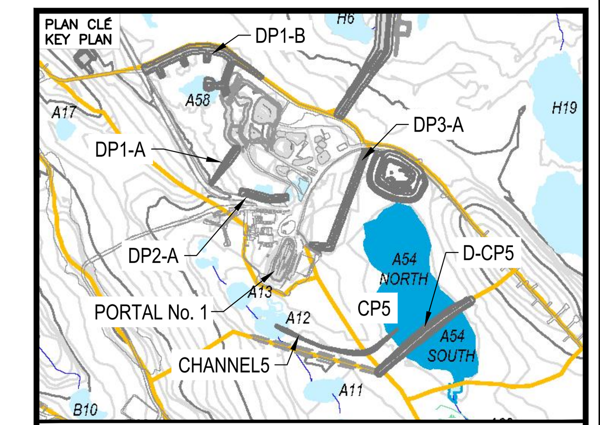


TEMPERATURE CABLE – PROTECTIVE COVER SECTION
SCALE: NTS



TEMPERATURE CABLE – TERMINAL SUPPORT DETAIL
SCALE: NTS

PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2017-10-19	ISSUED FOR RECORD	WTH	NG	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
A	2016-08-10	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

W.T. HORNE LICENSEE N.W.T.
G. ZHANG LICENSEE NWT/NU

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP5 AS-BUILT
INSTRUMENTATION PLAN AND DETAILS
FOR GROUND TEMPERATURE CABLES

DESSINÉ PAR / DRAWN BY	DRG	DATE	2016-08-08
VÉRIFIÉ PAR / CHECKED BY	GZ		2016-08-15
APPROUVÉ PAR / APPROVED BY	KJ		2016-08-15
ÉCHELLE / SCALE	AS SHOWN	DATE	2016-08-08

NO. DESSIN / DRAWING NO. 65-685-230-220

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	1	8 / 9

AE-CART-ARCH D

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FILE NO. 65-685-230-220_R1.dwg

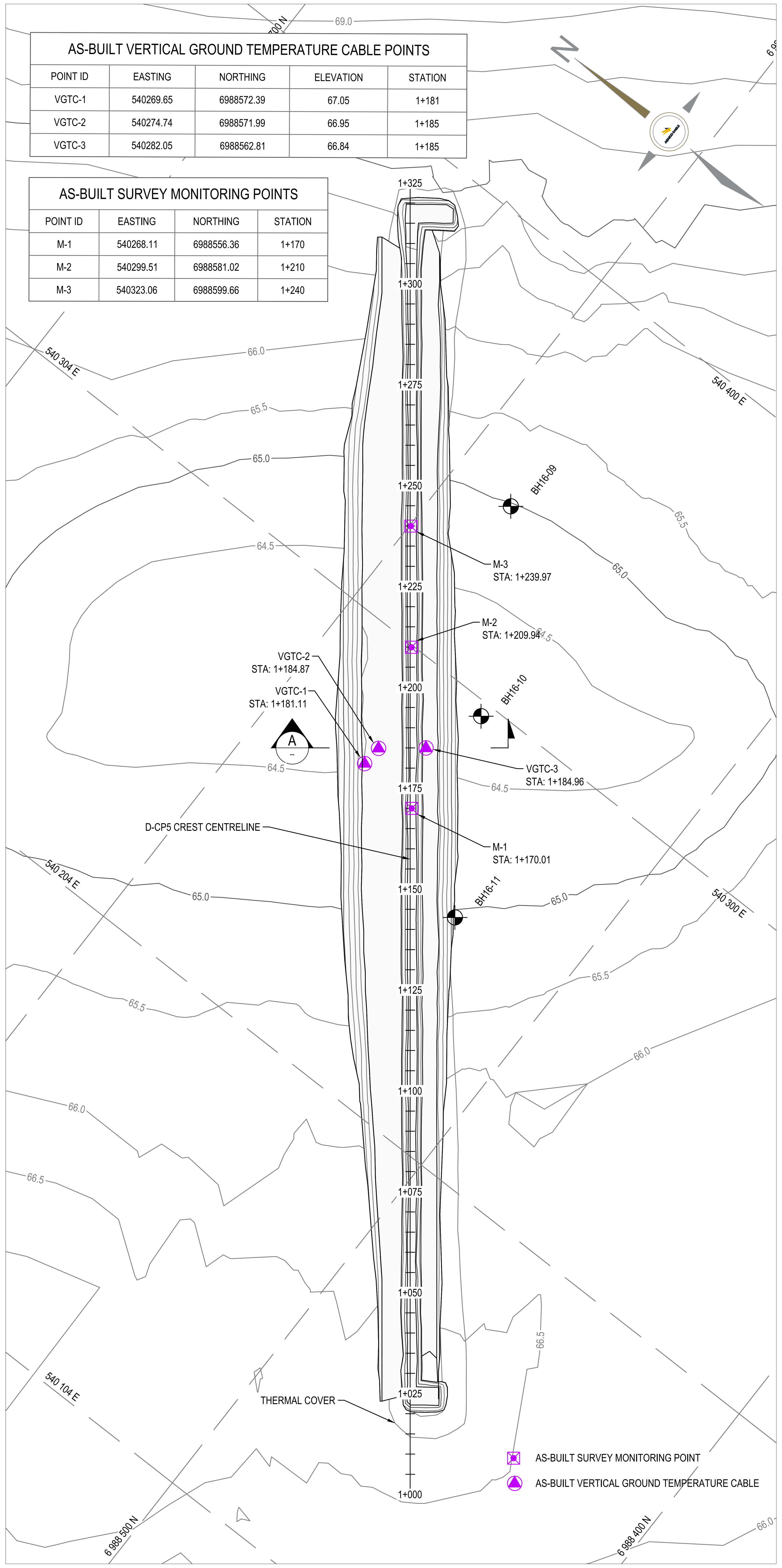
NO. DESSIN DRAWING NO. 65-685-230-221_R1

AS-BUILT VERTICAL GROUND TEMPERATURE CABLE POINTS

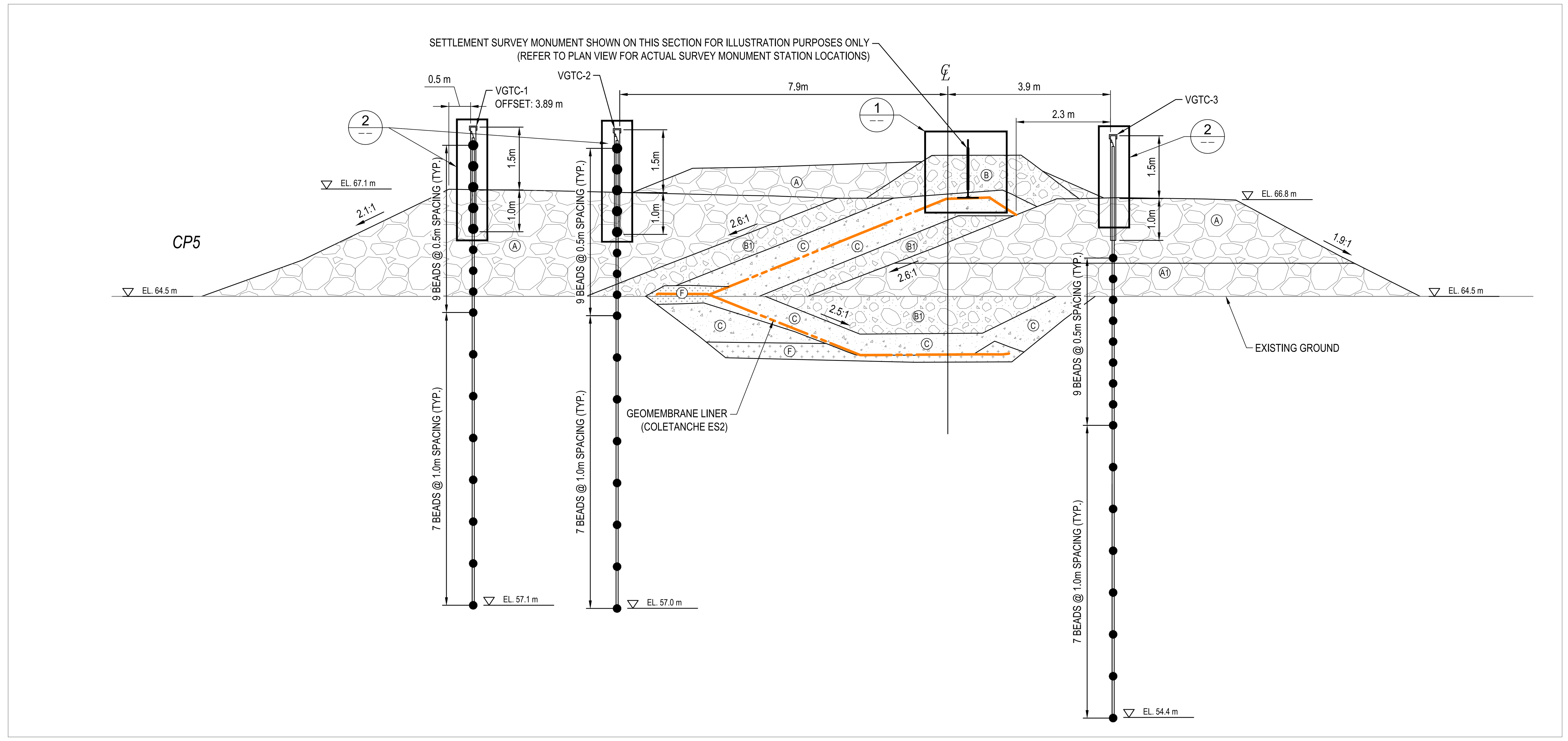
POINT ID	EASTING	NORTHING	ELEVATION	STATION
VGTC-1	540269.65	6988572.39	67.05	1+181
VGTC-2	540274.74	6988571.99	66.95	1+185
VGTC-3	540282.05	6988562.81	66.84	1+185

AS-BUILT SURVEY MONITORING POINTS

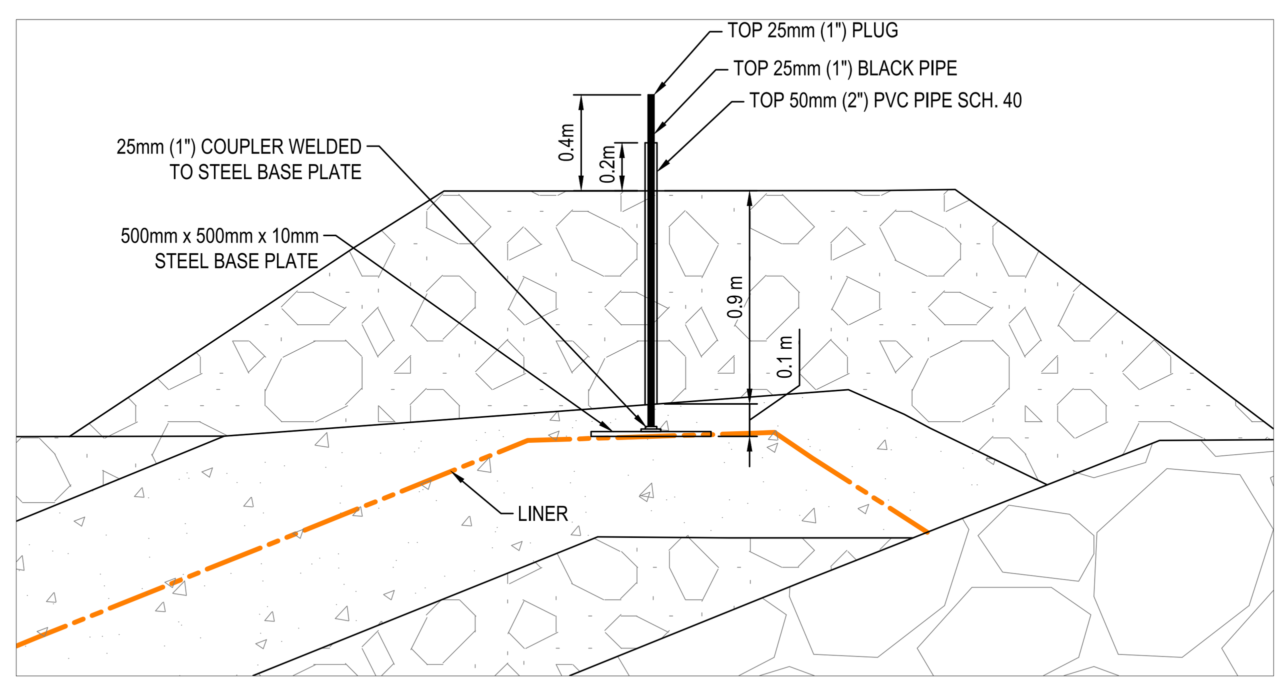
POINT ID	EASTING	NORTHING	STATION
M-1	540268.11	6988556.36	1+170
M-2	540299.51	6988581.02	1+210
M-3	540323.06	6988599.66	1+240



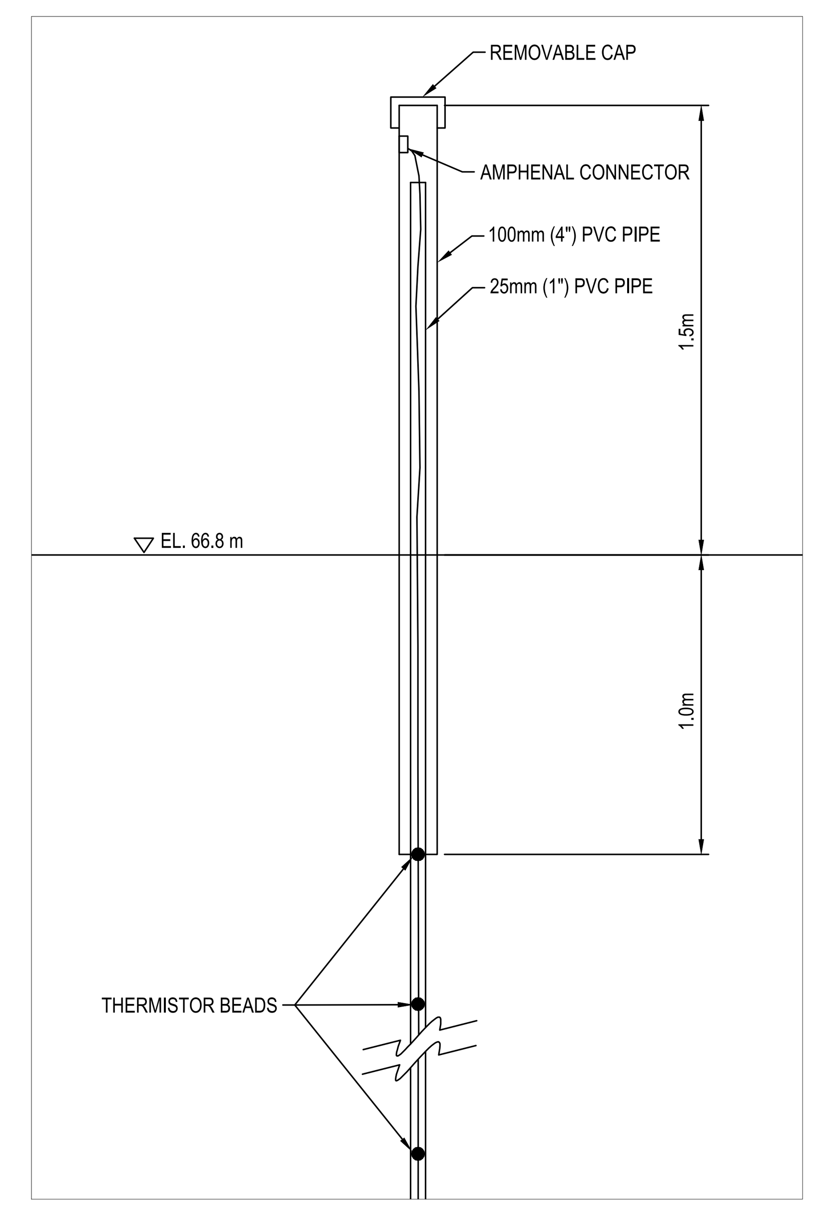
D-CP5 AS-BUILT SURVEY MONUMENT AND VERTICAL GROUND TEMPERATURE CABLE LAYOUT
SCALE: 1:750



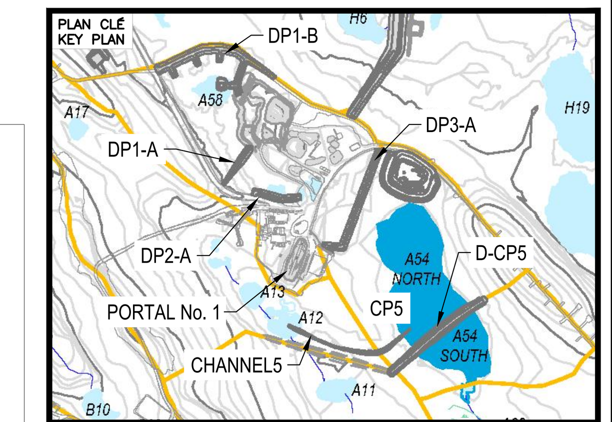
D-CP5 AS-BUILT SECTION A - VERTICAL GROUND TEMPERATURE CABLE - STATION 1+185
SCALE: 1:75



D-CP1 TYPICAL SETTLEMENT SURVEY MONUMENT DETAIL
SCALE: 1:25



D-CP1 TYPICAL VERTICAL GROUND TEMPERATURE CABLE TERMINAL DETAIL
SCALE: 1:20



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Oct 19, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE : 2017-10-19

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2017-10-19	ISSUED FOR RECORD	WTH	NG	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
A	2016-08-10	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

W.T. HORNE LICENSEE N.W.T.
G. ZHANG LICENSEE NWT/NU

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP5 AS-BUILT - INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS

DESSINÉ PAR DRAWN BY	DRG	DATE	2016-08-08
VÉRIFIÉ PAR CHECKED BY	GZ		2016-08-15
APPROUVÉ PAR APPROVED BY	KJ		2016-08-15
ÉCHELLE SCALE	AS SHOWN	DATE	2016-08-08

NO. DESSIN DRAWING NO. 65-685-230-221

NO. PROJET PROJECT NO. 6515 | REVISION 1 | FEUILLE / SHT 9 / 9

AE-CART-ARCH D
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FILE NO. 65-685-230-221_R1.dwg

Photo 1: D-CP5 Dike - looking towards the north, upstream.

Photo 2: D-CP5 Dike - looking towards the south, upstream.

Photo 3: D-CP5 Dike - looking towards the north, centerline downstream. Survey hub in foreground.

Photo 4: D-CP5 Dike - looking towards the north, centerline and downstream.

Photo 5: D-CP5 Dike - upstream, data logger, and GTC housings. Minor crack marked in green.

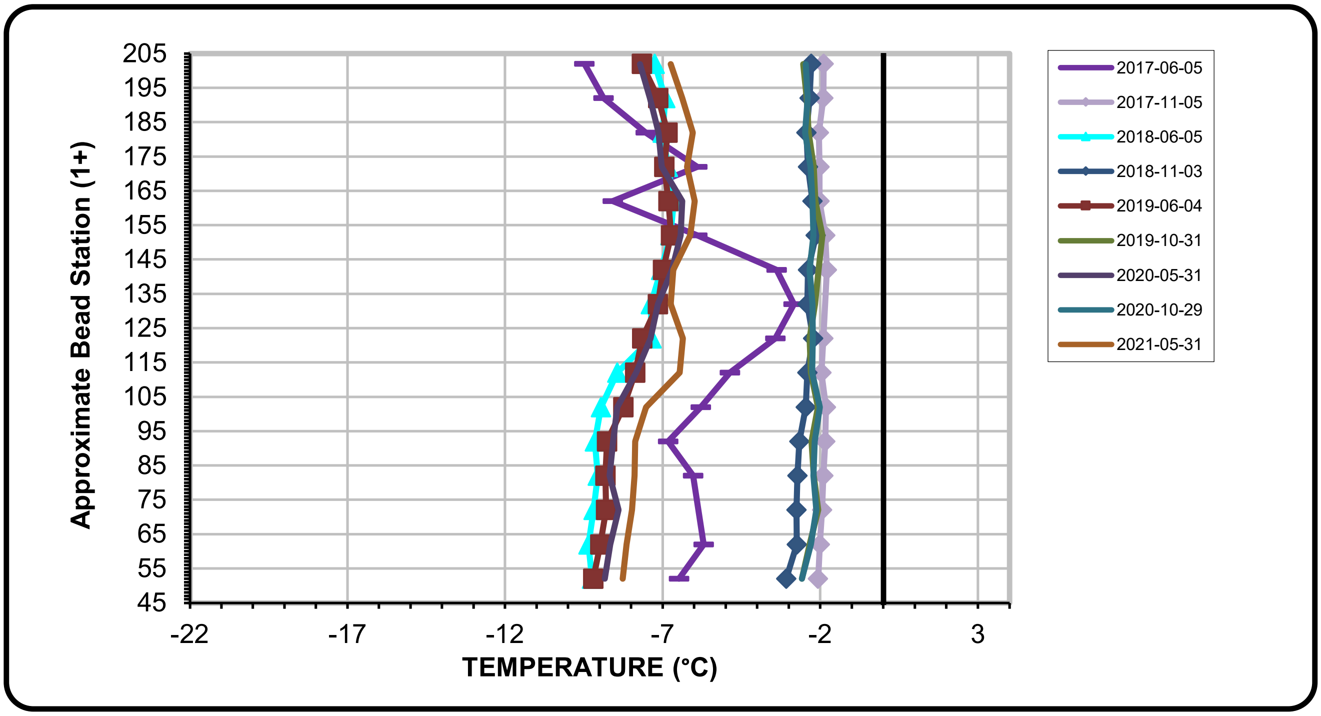
Photo 6: D-CP5 Dike - upstream, and former construction access road upstream of dyke, looking south.

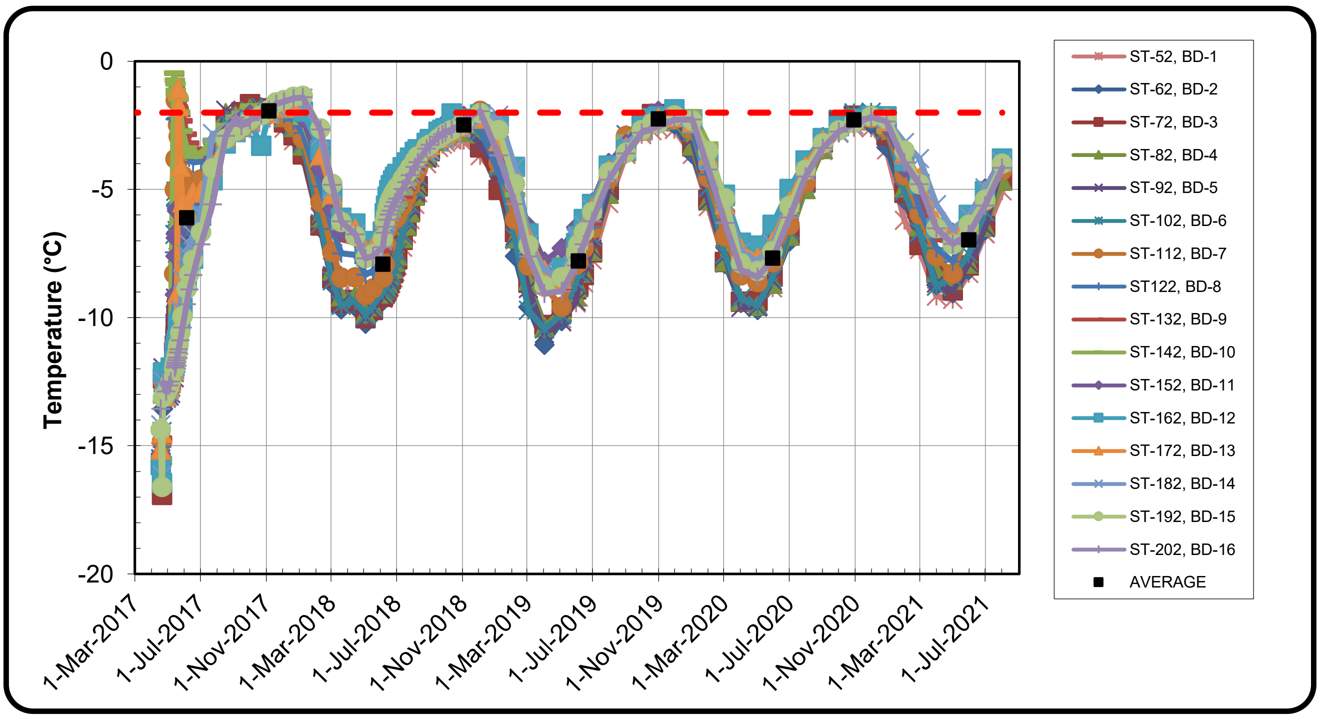
Photo 7: D-CP5 upstream crest, looking north.

Photo 8: CP5 Jetty 5—Diesel Pumping into Jetty 5 pump well.

Photo 9: CP5 Jetty 5 - Footing Erosion

Photo 10: CP5 Jetty 5 - Footing Erosion—Southwest Corner



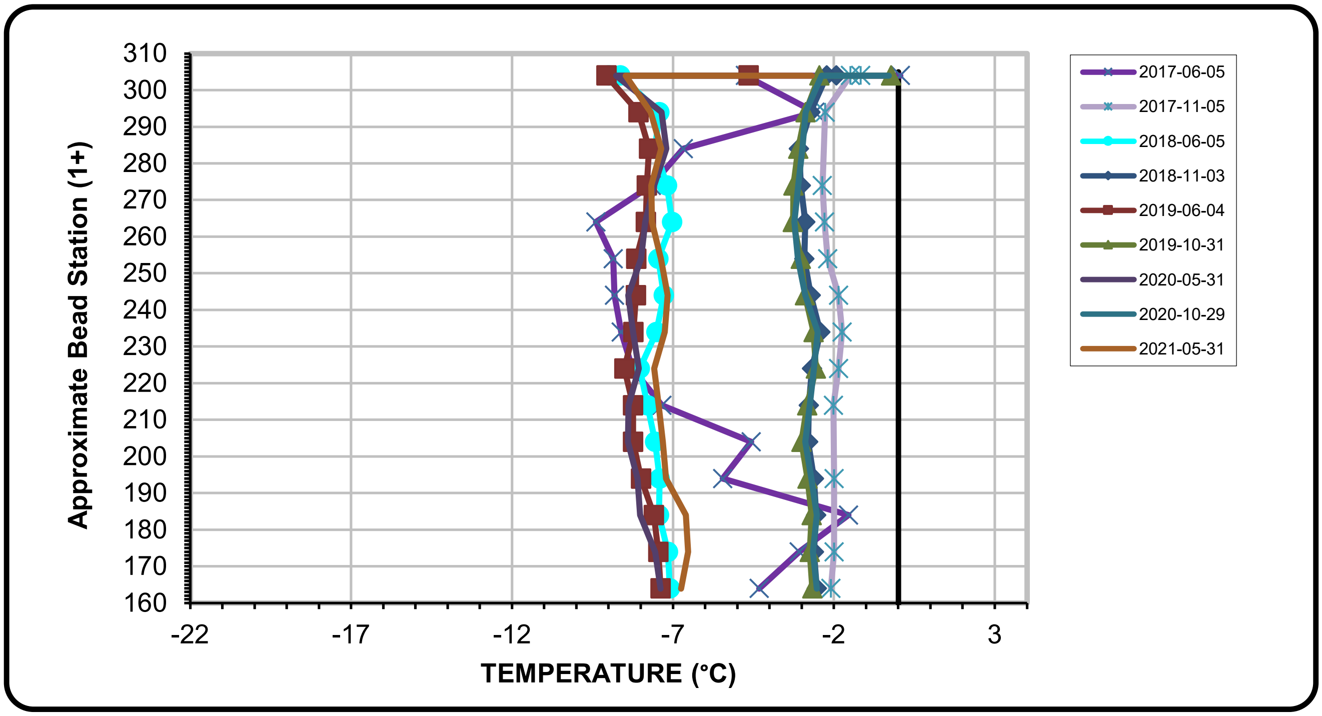


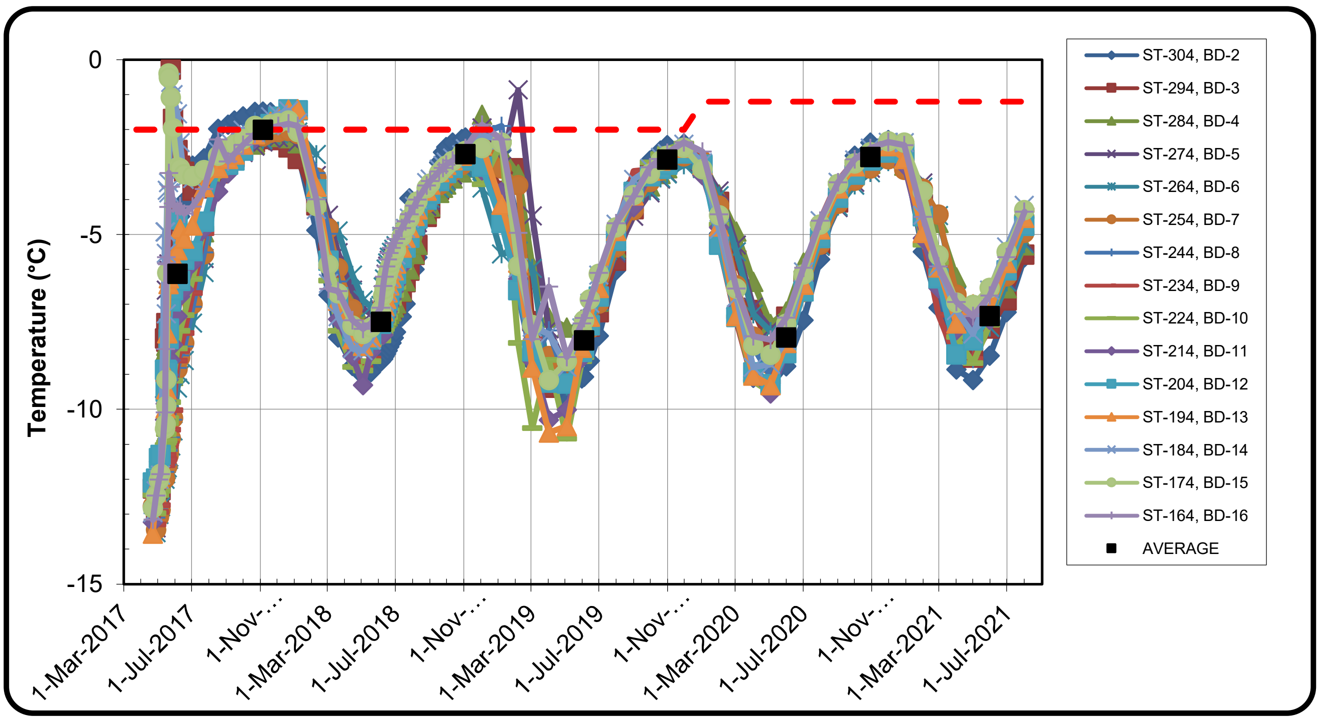
Serial No.: 2600
Date Installed: April 15, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable #1 (HGTC-01)
Dike D-CP5

TETRA TECH



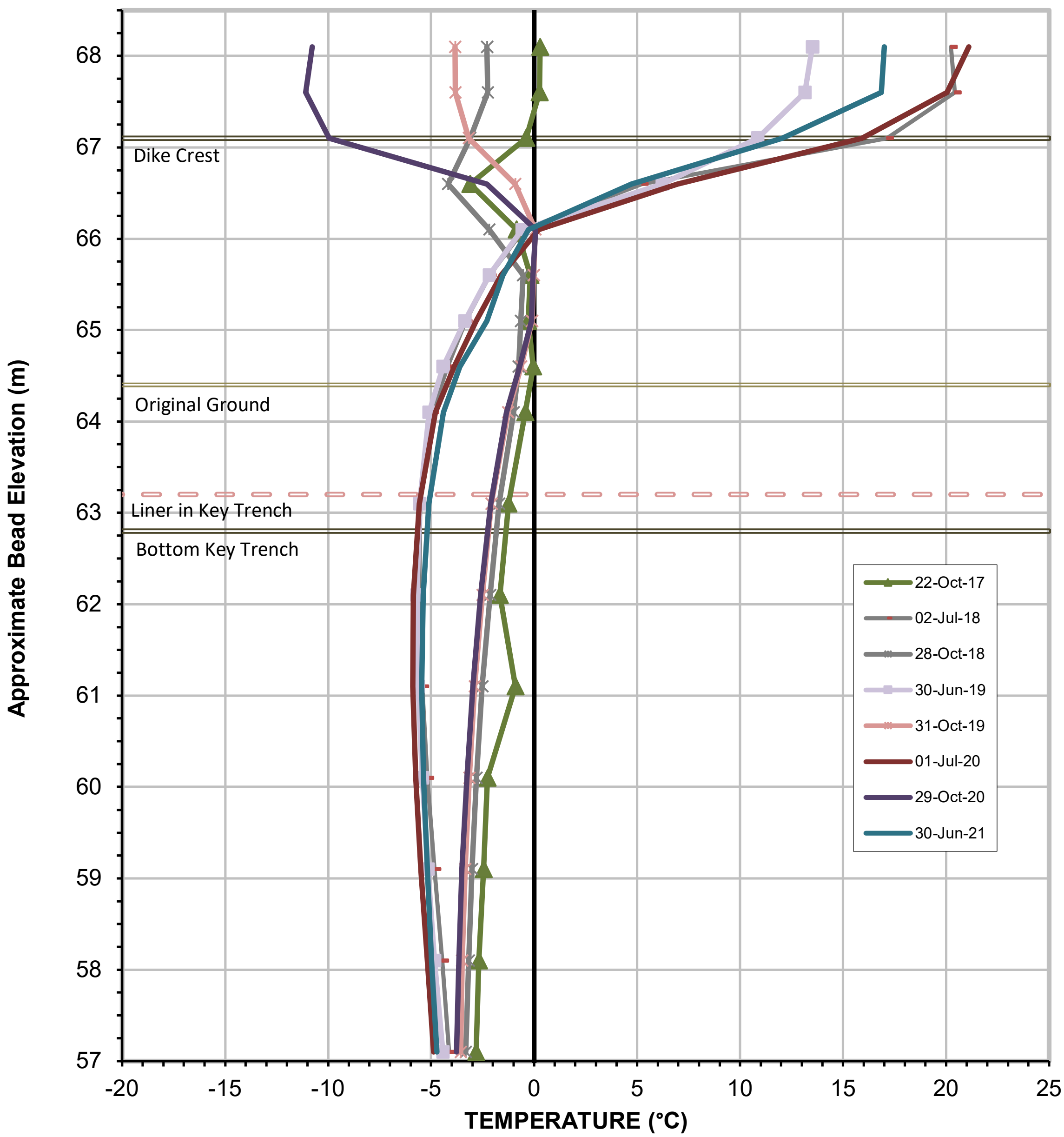


Serial No.: 2601
Date Installed: April 20, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable #2 (HGTC-02)
Dike D-CP5

TETRA TECH



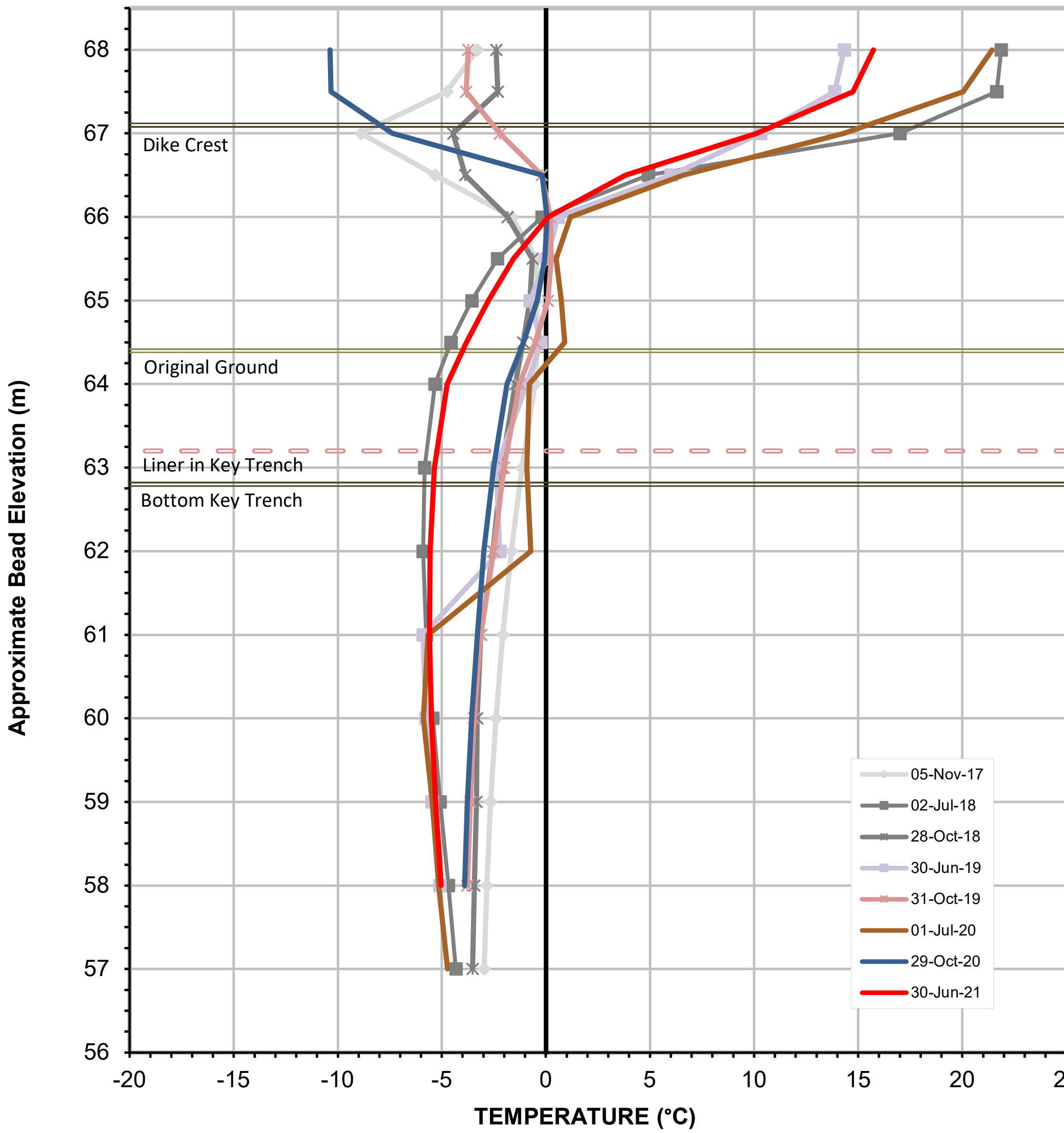
Vertical Ground Temperature Profile for Cable VGTC-01
Dike D-CP5

Serial No.: 2631
Date Installed: July 24, 2017

TETRA TECH

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-3.4	-3.6	-3.9
Liner Base Elevation	-4.2	-4.2	-4.6



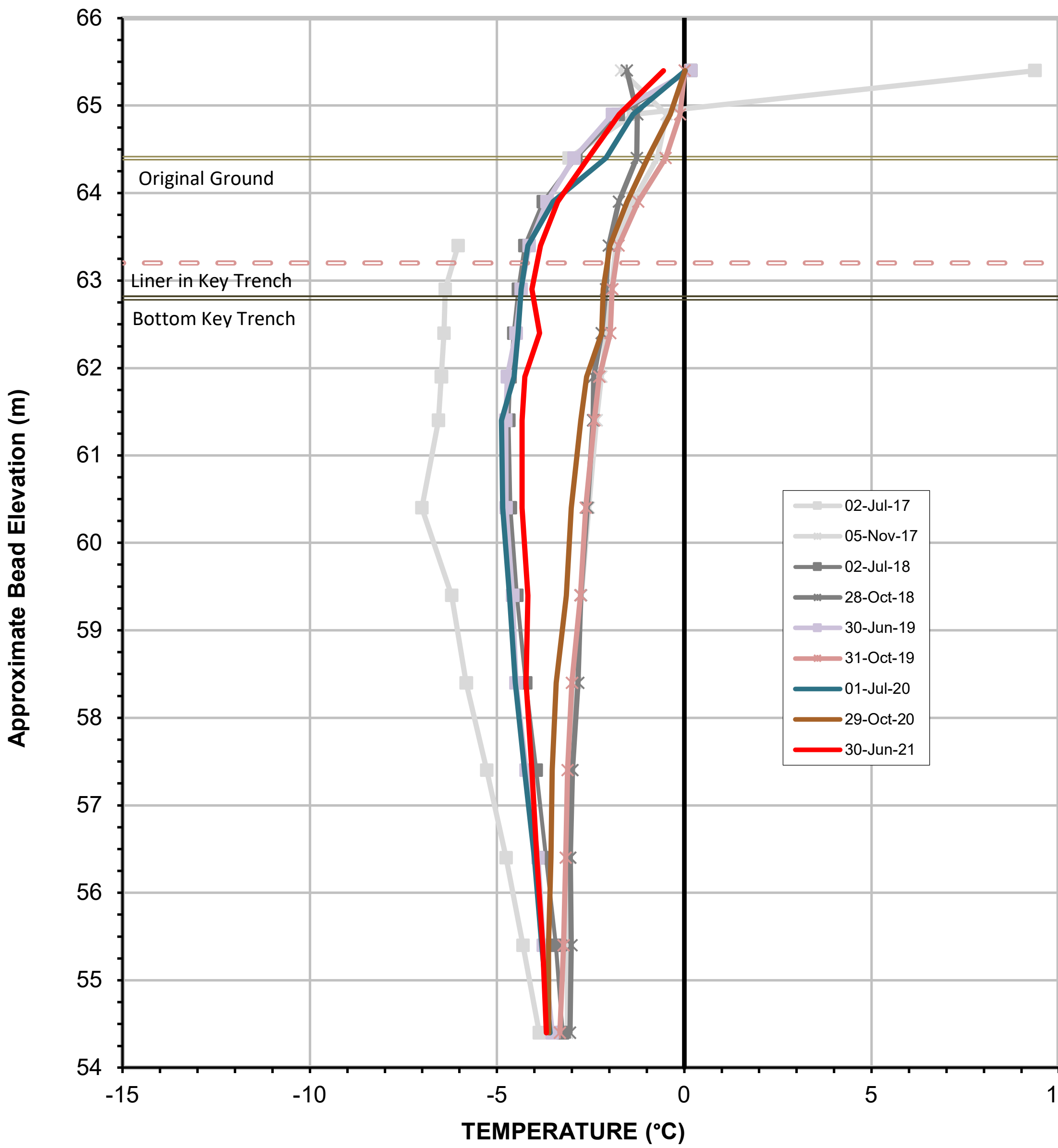
Serial No.: 2632
Date Installed: July 24, 2017

Vertical Ground Temperature Profile for Cable VGTC-02
Dike D-CP5

TETRA TECH

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-3.9	-4.1	-4.2
Liner Base Elevation	-4.7	-3.5	-4.3



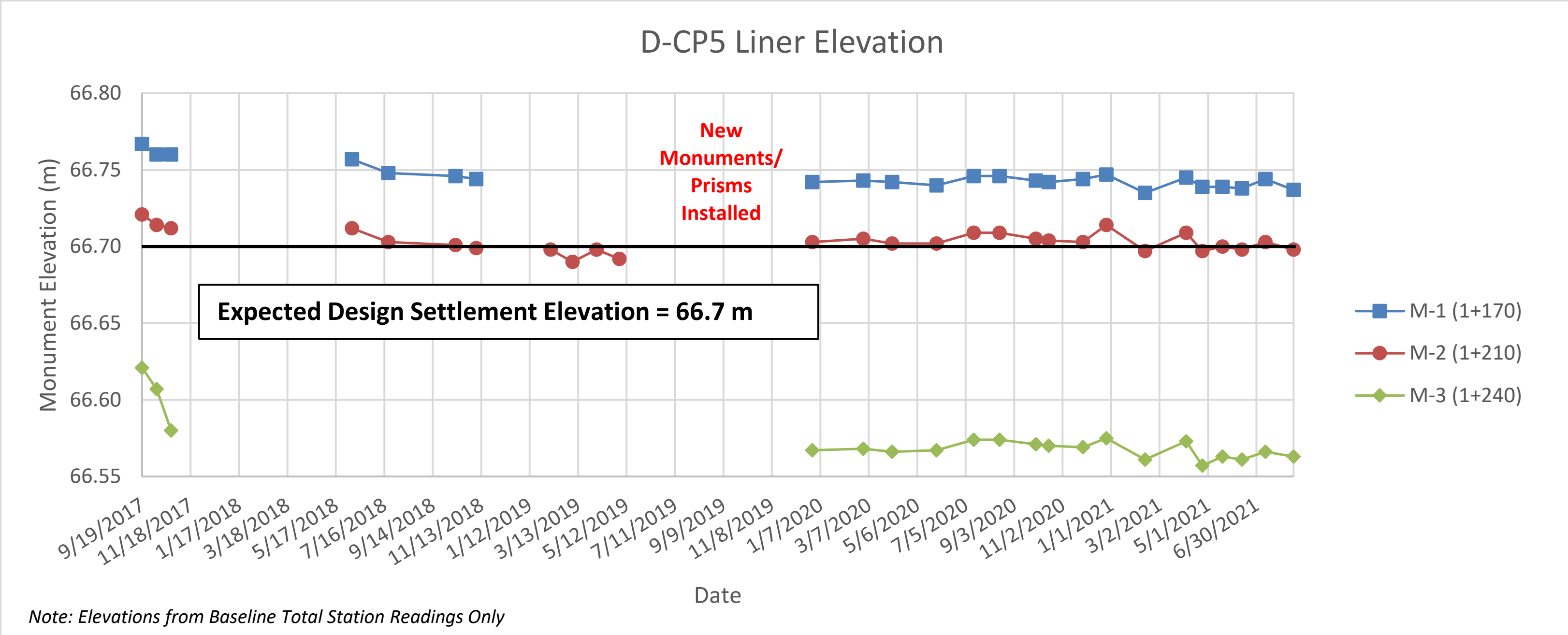
Vertical Ground Temperature Profile for Cable VGTC-03
Dike D-CP5

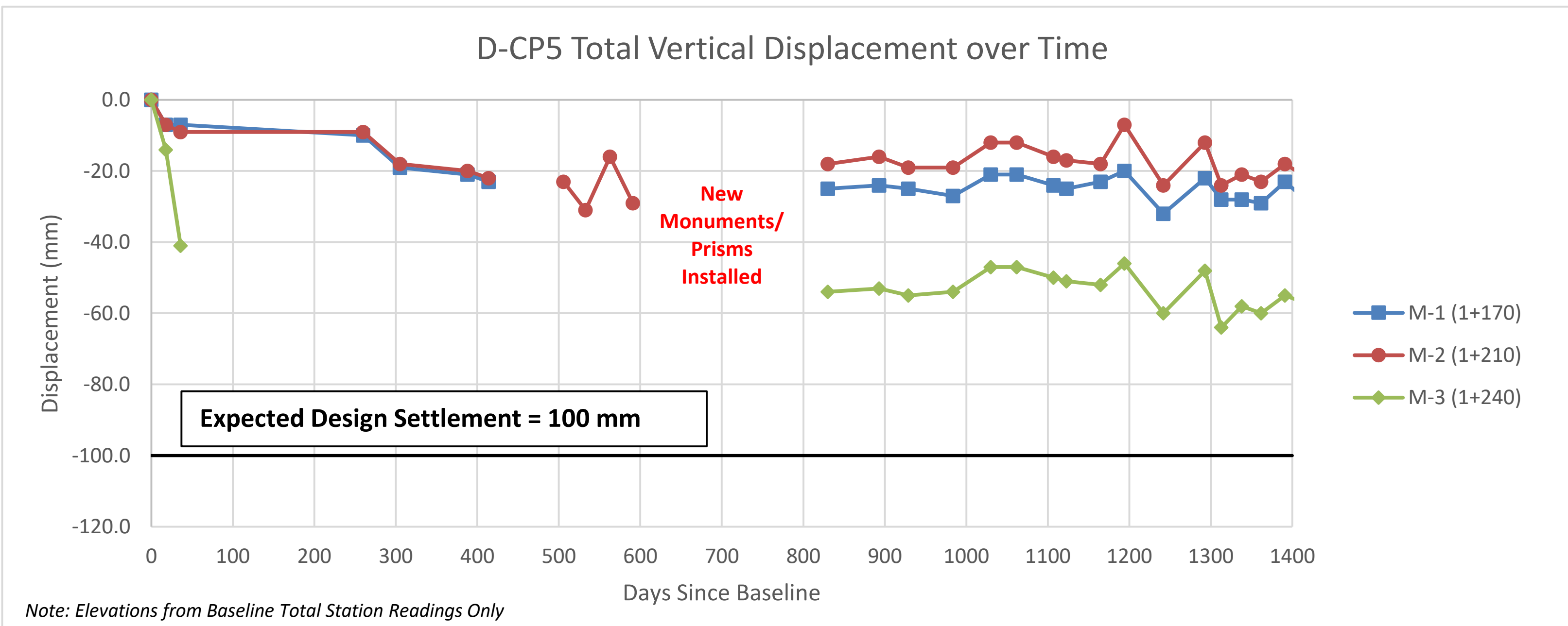
Serial No.: 2633
Date Installed: June 15, 2017

TETRA TECH

Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-3.1	-3.2	-3.3
Liner Base Elevation	-3.9	-3.8	-3.4


D-CP5 Liner Elevation
66.80
66.75
66.70
66.65
66.60
66.55
Monument Elevation (m)
New
Monuments/
Prisms
Installed
Expected Design Settlement Elevation = 66.7 m
9/19/2017
11/18/2017
1/17/2018
3/18/2018
5/17/2018
7/16/2018
9/14/2018
11/13/2018
1/12/2019
3/13/2019
5/12/2019
7/11/2019
9/9/2019
11/8/2019
1/7/2020
3/7/2020
5/6/2020
7/5/2020
9/3/2020
11/2/2020
1/1/2021
3/2/2021
5/1/2021
6/30/2021
Date
M-1 (1+170)
M-2 (1+210)
M-3 (1+240)
Note: Elevations from Baseline Total Station Readings Only

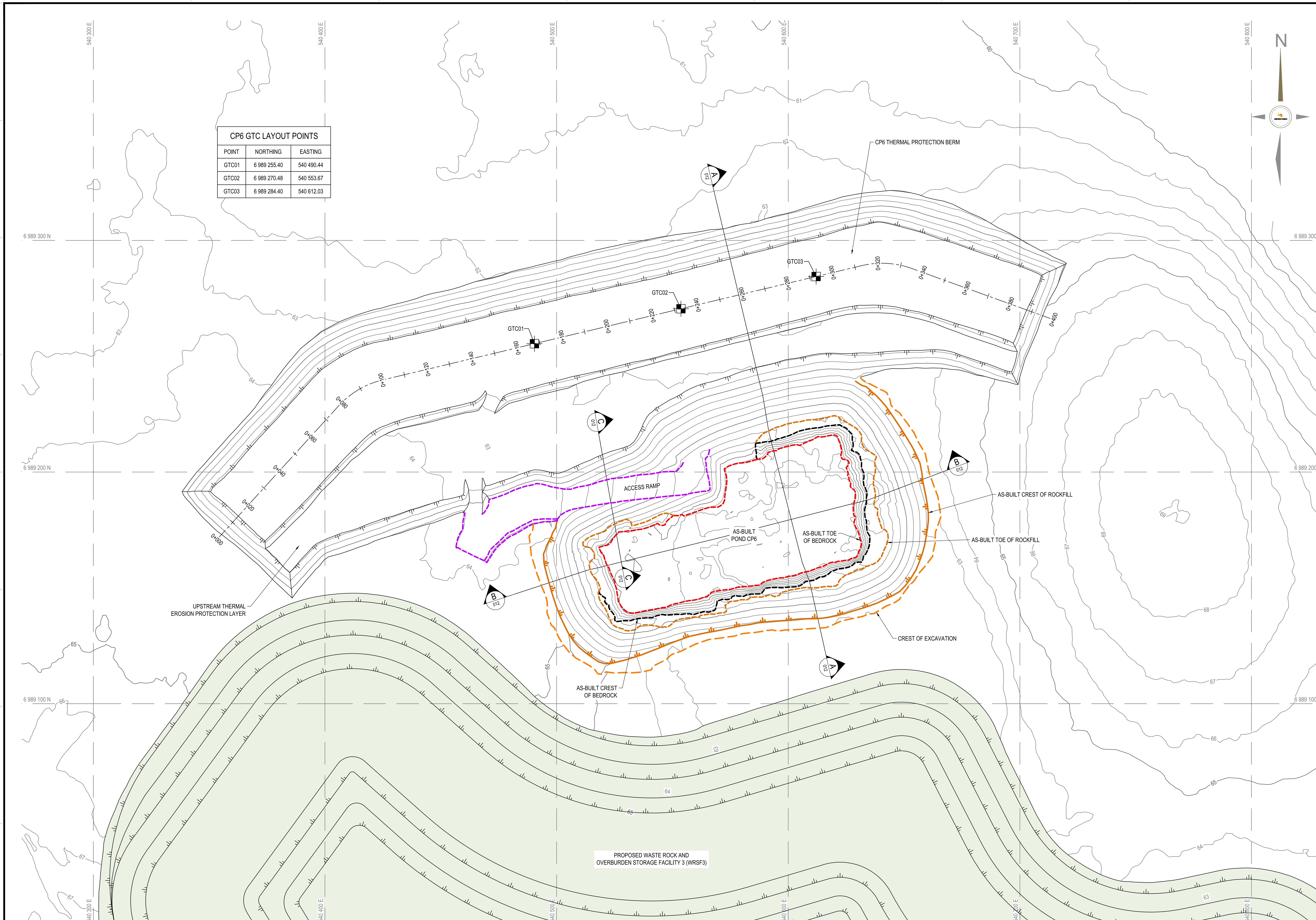

D-CP5 Total Vertical Displacement over Time
0.0
-20.0
-40.0
-60.0
-80.0
-100.0
-120.0
Displacement (mm)
New
Monuments/
Prisms
Installed
Expected Design Settlement = 100 mm
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Days Since Baseline
M-1 (1+170)
M-2 (1+210)
M-3 (1+240)
Note: Elevations from Baseline Total Station Readings Only

APPENDIX F

POND CP6 AND BERM

NO. DESSIN DRAWING NO. 65-695-230-009

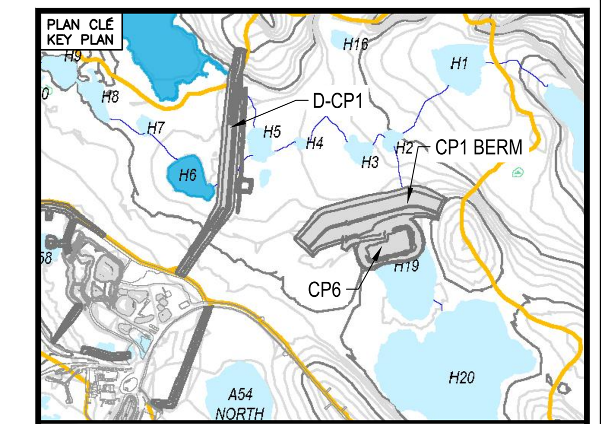
FORMAT ARCHD



CP6 GTC LAYOUT POINTS

POINT	NORTHING	EASTING
GTC01	6 989 255.40	540 490.44
GTC02	6 989 270.48	540 553.67
GTC03	6 989 284.40	540 612.03

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE MARCH 2020
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2020.
3. POND DESIGN CAPACITY IS BASED ON STORING 3/7 OF FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 60.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2020).
6. THE SINGLE-LANE RAMP HAS A MINIMUM ROAD WIDTH OF 7.0 m (FOR VOLVO A40F OR CAT 745 HAUL TRUCKS OR SMALLER EQUIPMENT).

TEL QUE CONSTRUIT
AS BUILT
DATE : 2020-07-31

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
–	–
–	–
–	–
–	–
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2020-07-31	RECORD DRAWINGS	EL	WTH	
0	2020-01-22	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-01-17	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

TITRE / TITLE

AS-BUILT REPORT FOR
POND CP6 AND BERM CP6

CP6 AND CP6 THERMAL PROTECTION BERM
LAYOUT PLAN

DESSINÉ PAR DRAWN BY	EL	DATE 2020-07-31
VERIFIÉ PAR CHECKED BY	FN	2020-07-31
APPROUVÉ PAR APPROVED BY	WTH	2020-07-31
ÉCHELLE SCALE	1:750	DATE 2020-07-31

NO. DESSIN DRAWING NO. 65-695-230-009

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6526	1	1 / 4

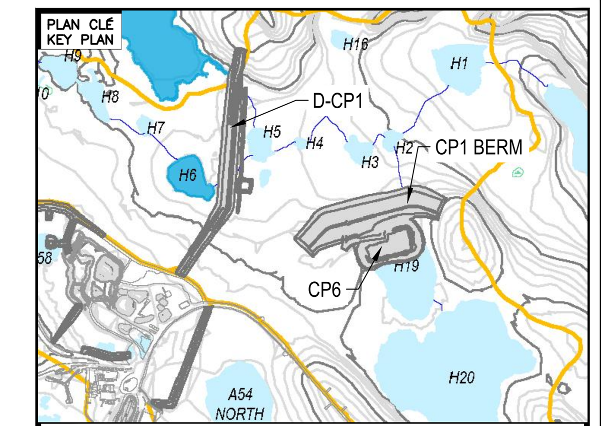
AE-CART-ARCH D

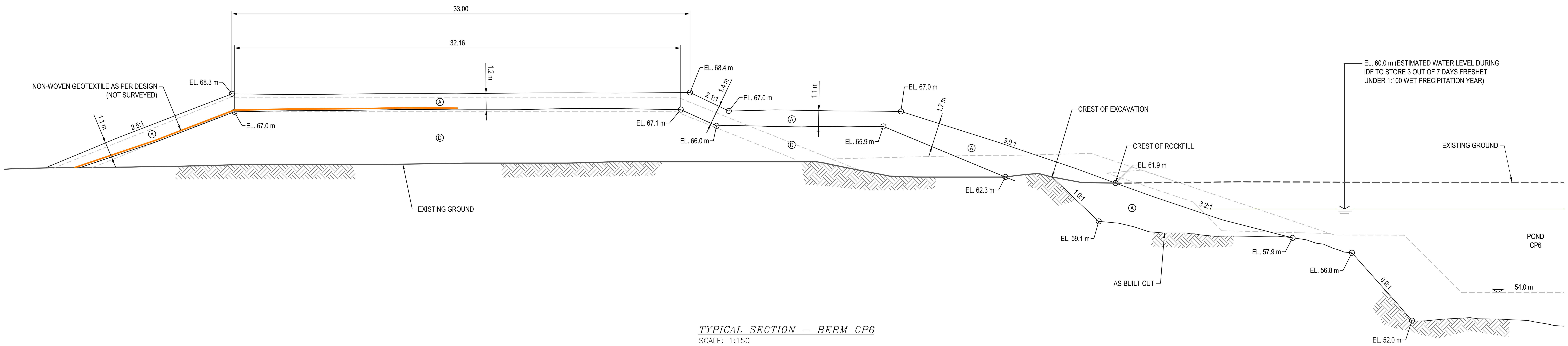
Q:\Edmonton\Engineering\E141\Projects_MELIADINE\CP6 As-Built\65-695-230-009.dwg-2013-02-19 14:03:29

FILE NO. 65-695-230-009.dwg

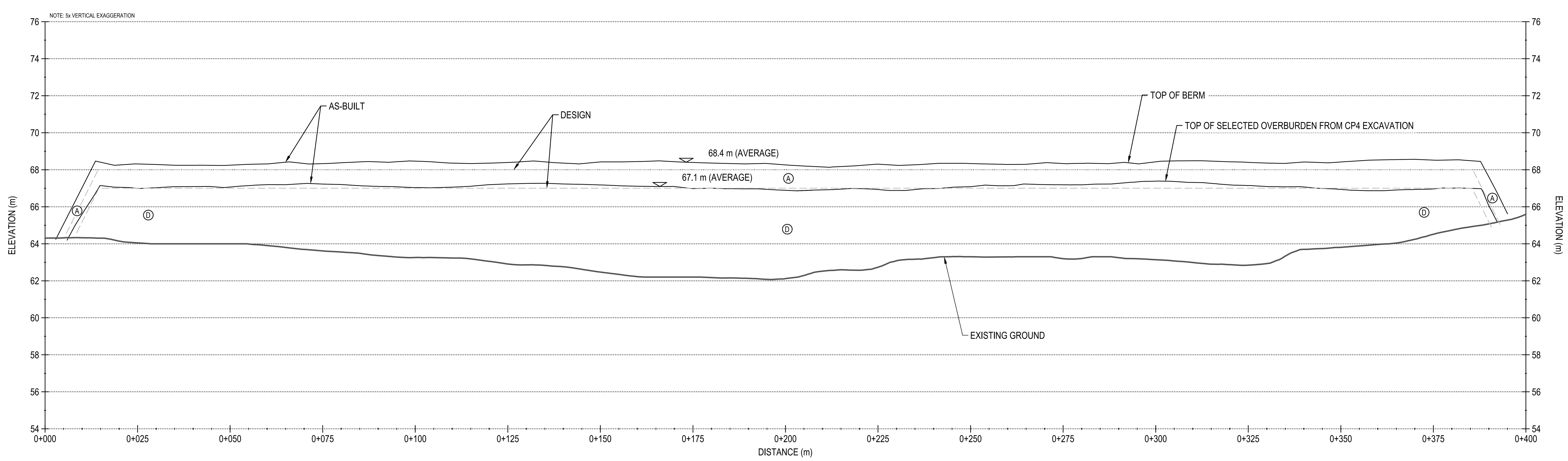
NO. DESSIN / DRAWING NO. 65-695-230-010

FORMAT ARCHD





TYPICAL SECTION – BERM CP6
SCALE: 1:150



BERM CP6 – PROFILE
SCALE: H–1:750 V–1:150

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE MARCH 2020
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2020.
3. POND DESIGN CAPACITY IS BASED ON STORING 3/7 OF FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 60.0 m UNDER THE DESIGN IDF CONDITION.
5. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2020).

LEGEND

Ⓐ CLEAN ROCKFILL FROM EXCAVATION (600 mm MINUS)
Ⓓ OVERBURDEN FROM EXCAVATION (300 mm MINUS)

TEL QUE CONSTRUIT / AS BUILT
AGNICO EAGLE
DATE : 2020-07-31

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
–	–
–	–
–	–
–	–
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2020-07-31	RECORD DRAWINGS	EL	WTH	
0	2020-01-22	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-01-17	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

TITRE / TITLE
AS-BUILT REPORT FOR POND CP6 AND BERM CP6

CP6 TYPICAL SECTION AND CP6 THERMAL PROTECTION BERM PROFILE

DESSINÉ PAR / DRAWN BY	EL	DATE 2020-07-31
VÉRIFIÉ PAR / CHECKED BY	FN	2020-07-31
APPROUVÉ PAR / APPROVED BY	WTH	2020-07-31
ÉCHELLE / SCALE	AS SHOWN	DATE 2020-07-31

NO. DESSIN / DRAWING NO. 65-695-230-010

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6526	1	2 / 4

AE-CART-ARCH D

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\CP6 As-Built\65-695-230-010.dwg-2013-02-19 14:03:29

FILE NO. 65-695-230-010.dwg

Photo 1: Pond CP6 - Looking east —Berm CP6, CP6.

Photo 2: Pond CP6—Looking southwest, ramp into pond. Boulders along ramp. WRSF3

Photo 3: Pond CP6 - Exposed bedrock lower portion of pond, water inflow northwest corner.

Photo 4: Pond CP6—South side of pond, WRSF3 above pond, water inflow on bedrock surface in southeast corner of pond, deformed ROM, may be indication of subsurface flow.

Photo 5: Pond CP6 - Ponded water adjacent to Berm CP6 and access road

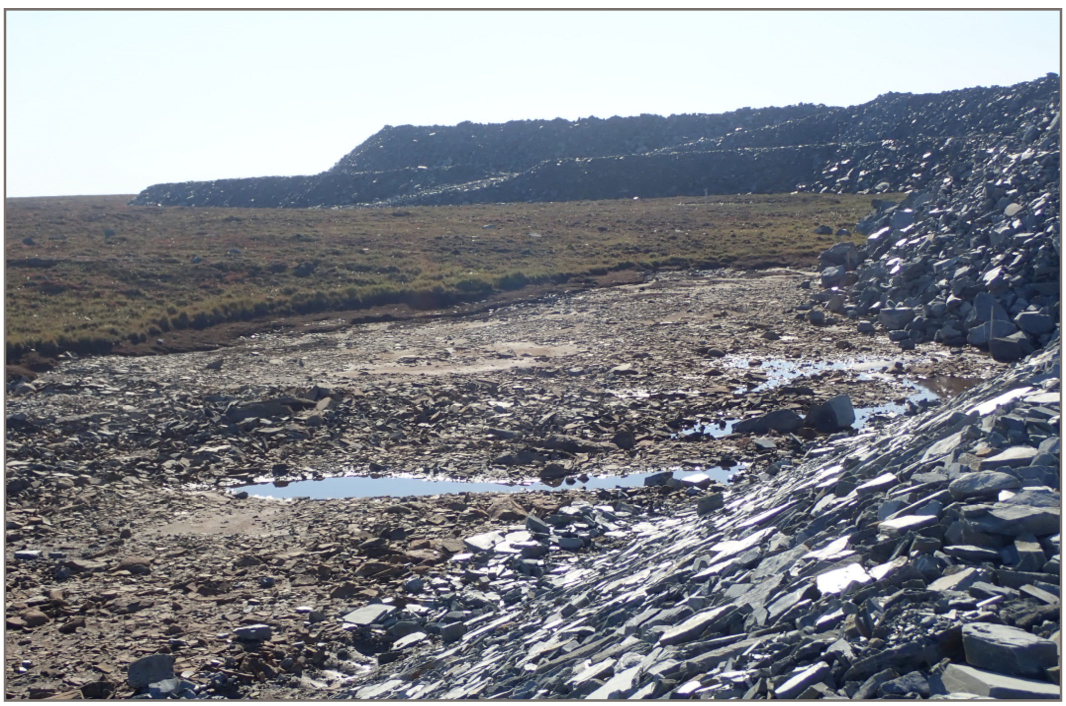


Photo 6: Pond CP6 - Remaining lakebed above CP6. WRSF3 in back ground. Inside corners of WRSF3 reported to be large snow catch areas.

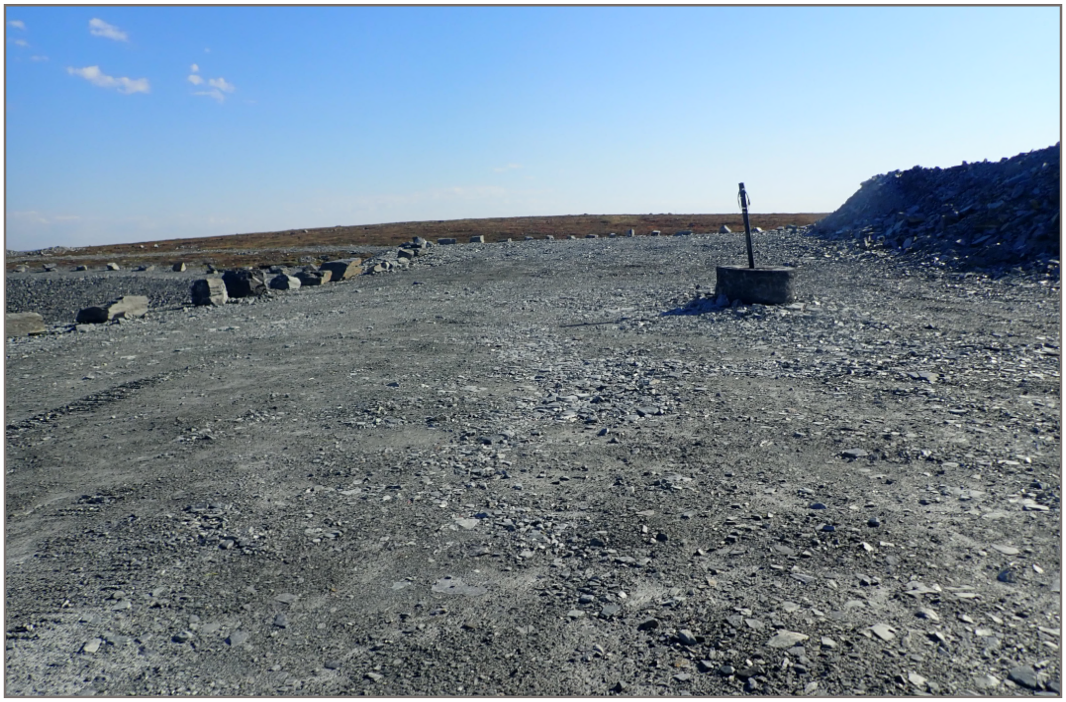


Photo 7: Pond CP6 - Ground between WRSF3 and CP6—filled with ROM June 2021. ROM placed to reduce erosion in former lakebed sediments.

Photo 8: Pond CP6 - Ground between WRSF3 and CP6—filled with ROM June 2021. ROM placed to reduce erosion in former lakebed sediments.

Photo 9: Pond CP6 - Berm CP6 crest. Minimal settlement.

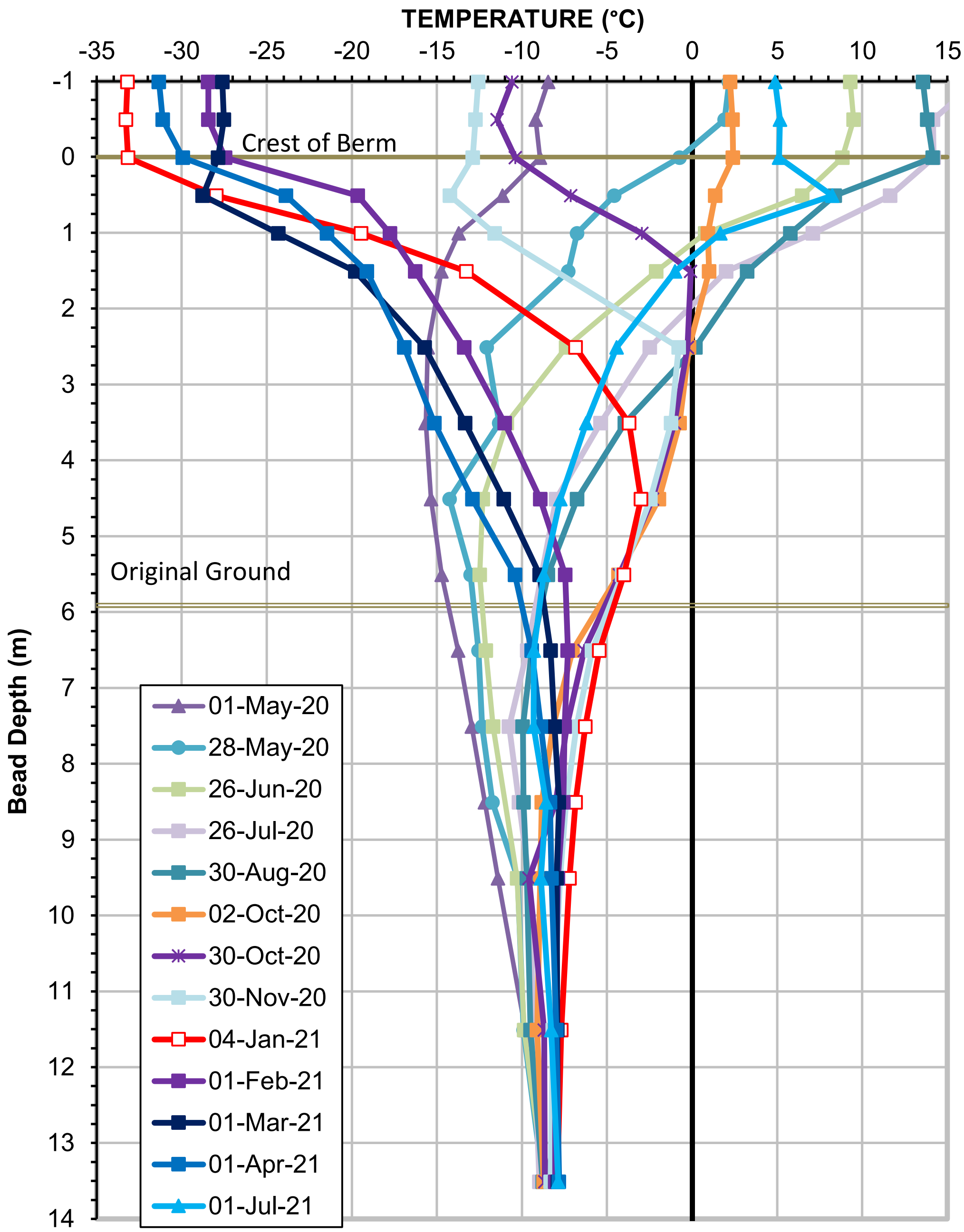
Photo 10: Pond CP6 - Berm CP6—Minor Cracking along downstream crest.

Photo 11: Pond CP6 - Berm CP6—upstream slope

Photo 12: Pond CP6 - Berm CP6 Crest and downstream slope.

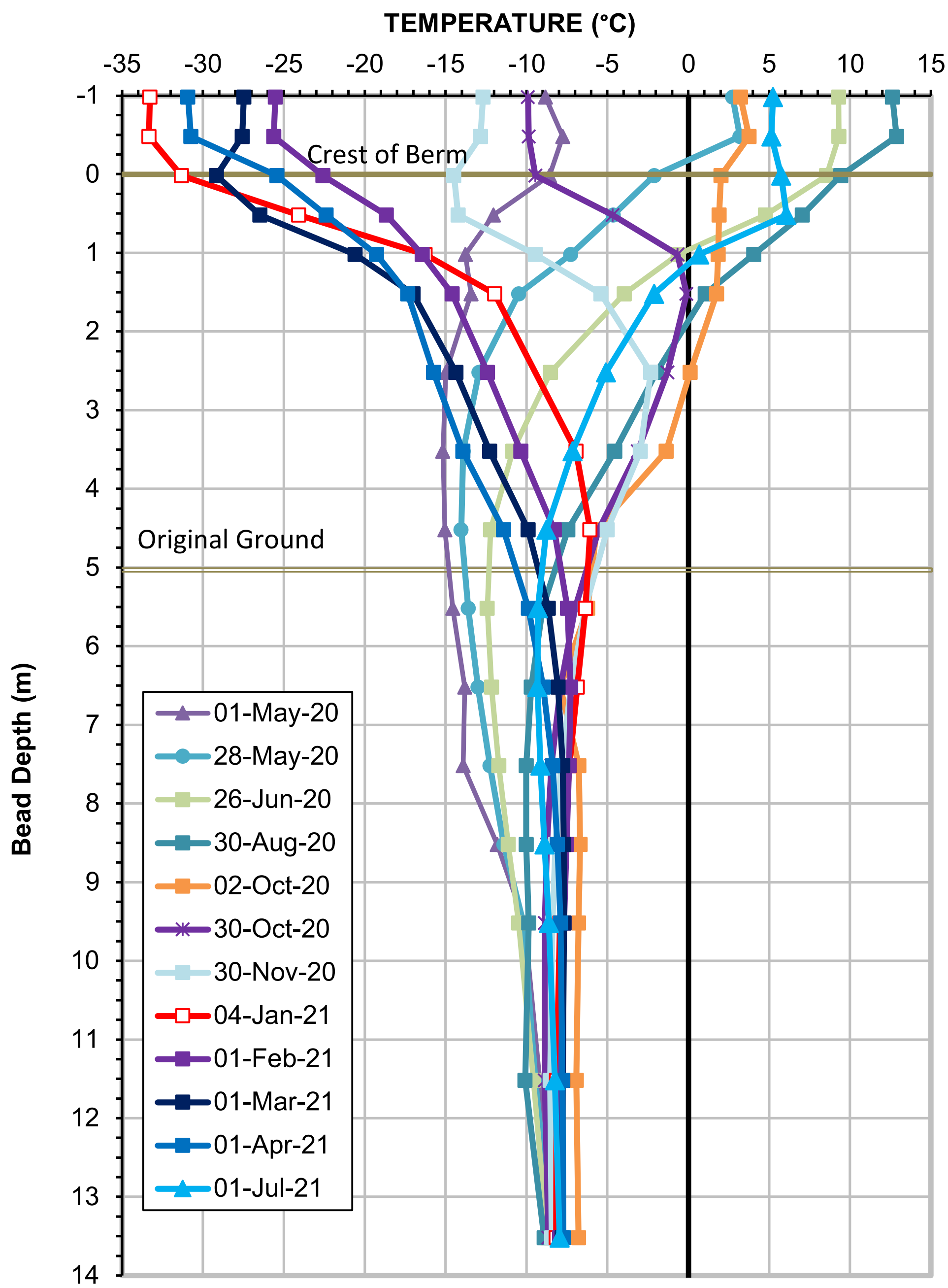
Photo 13: Pond CP6 - Settlement—on ramp from WRSF3 to CP6 area.

Photo 14: Pond CP6 - Settlement—on ramp from WRSF3 to CP6 area.



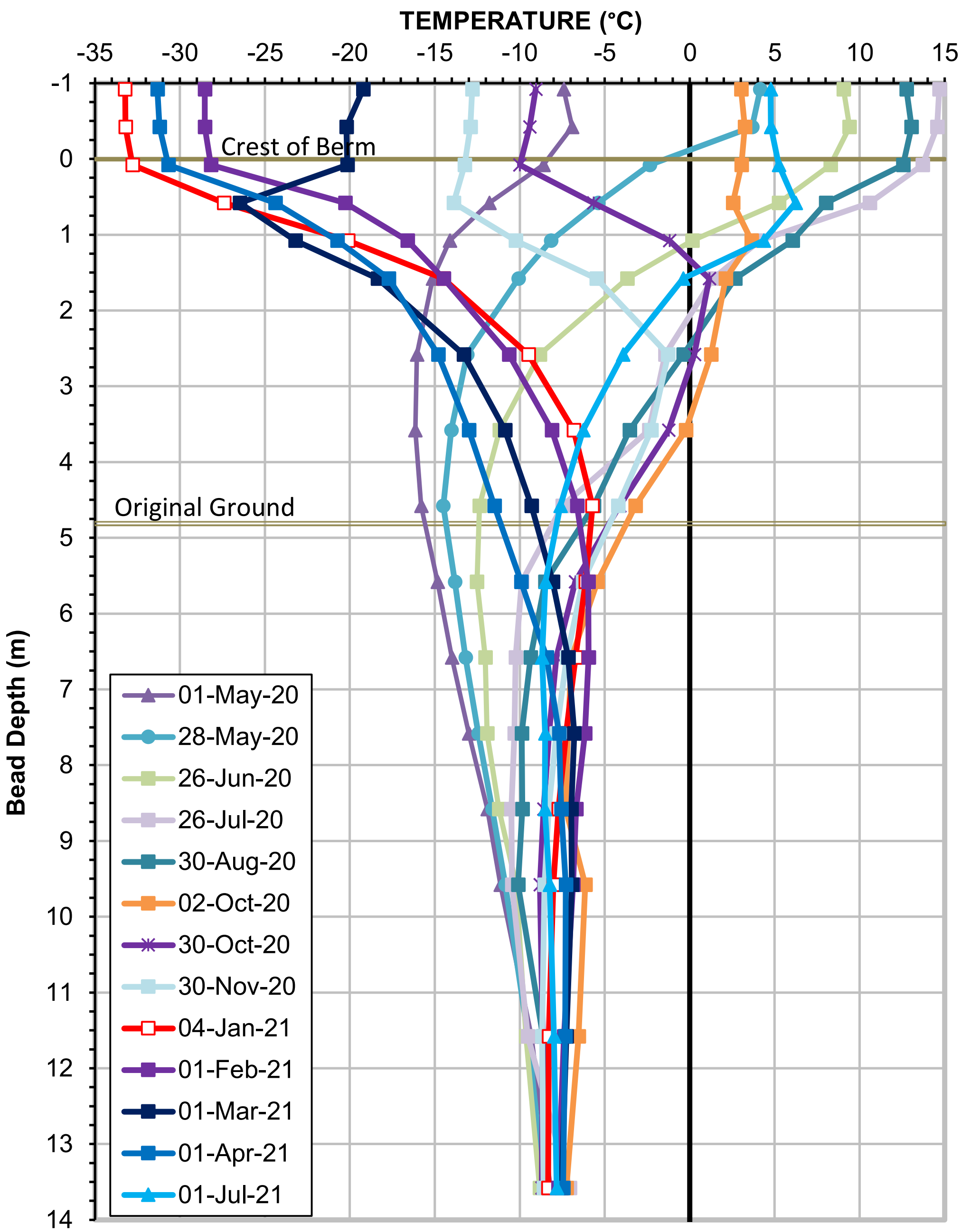
Ground Temperature Profile for Cable GTC-01
Berm CP6

Serial No.: 2728
Date Installed: April 23, 2020



Ground Temperature Profile for Cable GTC-02
Berm CP6

Serial No.: 2729
Date Installed: April 23, 2020



Ground Temperature Profile for Cable GTC-03
Berm CP6

Serial No.: 2730
Date Installed: April 23, 2020

APPENDIX G

SALINE PONDS

Photo 1: SP1 Saline Pond - looking towards the west. Pond in bedrock, ROM covered over-burden slopes

Photo 2: SP1 Saline Pond - Thermal Berm around the pond.

Photo 3: SP1 Saline Pond - Deformation and cracking in top of overburden protected slope, southwest corner of pond.

Photo 4: SP1 Saline Pond - Deformation and cracking in top of overburden protected slope, southwest corner of pond.

Photo 5: SP1 Saline Pond - looking north.

Photo 6: SP3 Saline Pond - looking west, north berm

Photo 7: SP3 Saline Pond - looking west—south berm

Photo 8: SP3 Saline Pond - west berm.

Photo 9: SP3 Saline Pond - discharge into pond.

Photo 10: SP4—Looking east. Overburden covered slopes.

Photo 11: SP4 Saline Pond - looking west—unstable rock area adjacent to ramp.

Photo 12: SP4 Saline Pond - looking west. Ramp into pond.

Photo 13: SP4 Saline Pond - Thaw subsidence in crest of rockfill cover.

Photo 14: SP4—Rockfill covered overburden slope.

Photo 15: SP4 Saline Pond—Subsidence in original ground at crest of slope, behind rockfill cover.

Photo 16: SP4 Saline Pond - Subsidence in original ground at crest of slope, behind rockfill cover.

Photo 17: SP4 Saline Pond —Settlement in rockfill crest covering overburden slope.

Photo 18: SP4 Saline Pond—Cracking in disturbed overburden above rockfill covered slope.

Photo 19: SP4 Saline Pond —Settlement in behind rockfill cover.

Photo 20: SP4 Saline Pond—Rockfill cover, no significant deformation. Bedrock below slope.

APPENDIX H

DIVERSION CHANNELS AND BERMS

Photo 1: Channel 1—Upper reach, crusher ramp embankment in foreground, looking south-west.

Photo 2: Channel 1—Culvert under the crusher ramp, Berm 1 on the right.

Photo 3: Channel 1—Downstream of crusher ramp, crest subsidence and erosion into channel.

Photo 4: Channel 1—Lower reach to Lake H9, adjacent to ore stockpiles on left.

Photo 5: Channel 1—Subsidence of channel base and slopes.

Photo 6: Channel 1—Rip settlement and cracking along crest of overburden.

Photo 7: Channel 2—Upper reach, site camp to the right, looking east.

Photo 8: Channel 2—In good condition.

Photo 9: Channel 2—Some settlement in base of channel allowing water to pool.

Photo 10: Channel 2—Lower reach, water pooling around discharge.

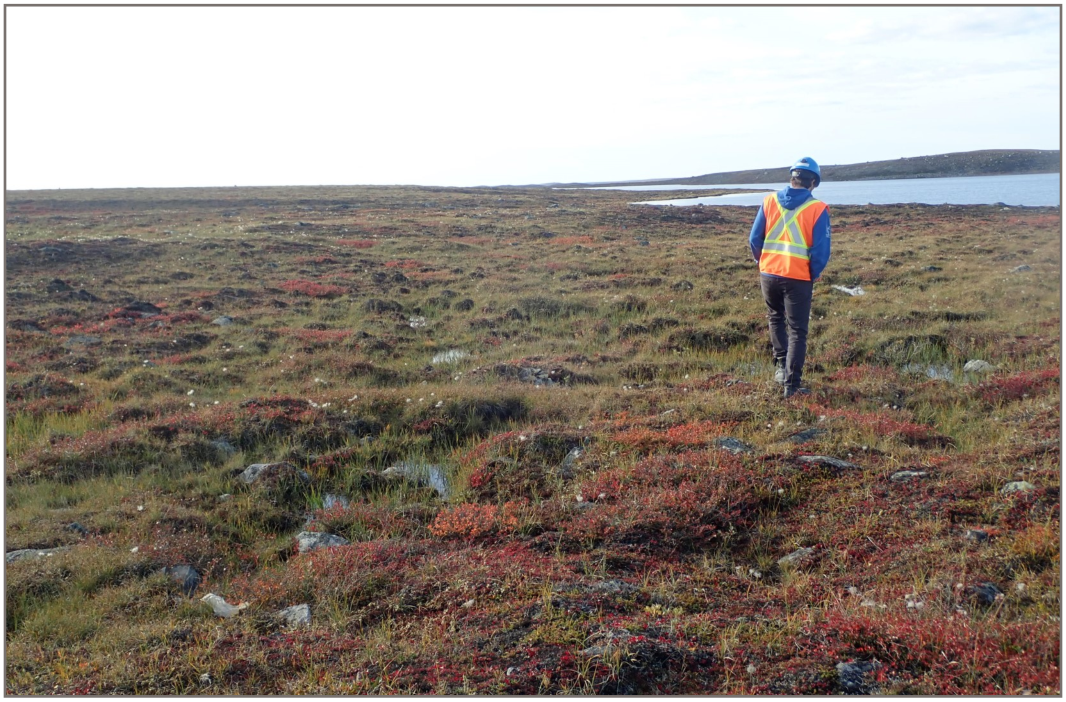


Photo 11: Channel 2—Discharge water potentially able to flow towards Lake G2 due to wet conditions, looking north.

Photo 12: Channel 3—Discharge into CP3.

Photo 13: Channel 3—Lower reach, TSF adjacent on left of photo.

Photo 14: Channel 3—Undulating settlement along base of channel causing ponding.

Photo 15: Channel 3—Cracking along road side slopes adjacent to channel.

Photo 16: Channel 3—Significant subsidence across channel alignment and subsequent cracking along road side slope, looking northwest.

Photo 17: Channel 3—Same location as Photo 16, looking southeast.

Photo 18: Channel 3—Thermal degradation of ground upstream of Channel 3.

Photo 19: Channel 3—Upper reach, looking east.

Photo 20: Channel 3—Cracking along road side berm.

Photo 21: Channel 4 - Upper reach, below landfill.

Photo 22: Channel 4—TSF in background, looking northwest.

Photo 23: Channel 4 - Settlement in base of channel resulting in minor ponding.

Photo 24: Channel 4 - Minor subsidence between original ground and channel rip rap.

Photo 25: Channel 4 - Subsidence in upstream slope (east slope) of channel.

Photo 26: Channel 4 - Subsidence between overburden and rip rap.

Photo 27: Channel 4 - Low point along upstream of channel crest with preferential flow paths into channel.

Photo 28: Channel 4 - Rip rap slope failures at areas of surface flow into channel.

Photo 29: Channel 4—Rip rap slope failures at areas of surface flow into channel.

Photo 30: Channel 4—Point of rip rap slope failure, looking west.

Photo 31: Channel 4—Surface flow path from toe of WRSF1 towards channel.

Photo 32: Channel 4—Lower reach, adjacent to WRSF1.

Photo 33: Channel 5—Upper reach, south of Portal2, significant subsidence and cracking along slopes with rip rap settled below water level in channel.

Photo 34: Channel 5—Water level in channel controlled by CP5, pooling in low area against Berm3, looking east. Berm 5 on the right of the photo.

Photo 35: Channel 5—Pooling against Berm3, looking northwest.

Photo 36: Channel 5—Lower reach, outlet into CP5, looking northeast.

Photo 37: Channel 7—Upper reach, minor subsidence and pooling at bottom of channel, looking north.

Photo 38: Channel 7—Lower reach, in good condition.

Photo 39: Channel 7—Outlet into Channel 1, ore stockpile in background.

Photo 40: Channel 8—East of WRSF1.

Photo 41: Berm 2— Esker and till berm upslope of TSF

Photo 42: Berm 2—Cracking on upstream slope.

Photo 43: Berrm 2—Cracking on slope.

Photo 44: Berm 2—Cracking on upstream slope.

Photo 45: Berm 3—Crest

Photo 46: Berm 3 Crest, Channel 3 on the left.

Photo 47: Berm 3, Channel 5 and CP5 on the left. Upstream slope of berm.

Photo 48: Berm 3—Channel 5 inlet to CP5.

APPENDIX I

TAILINGS STORAGE FACILITY

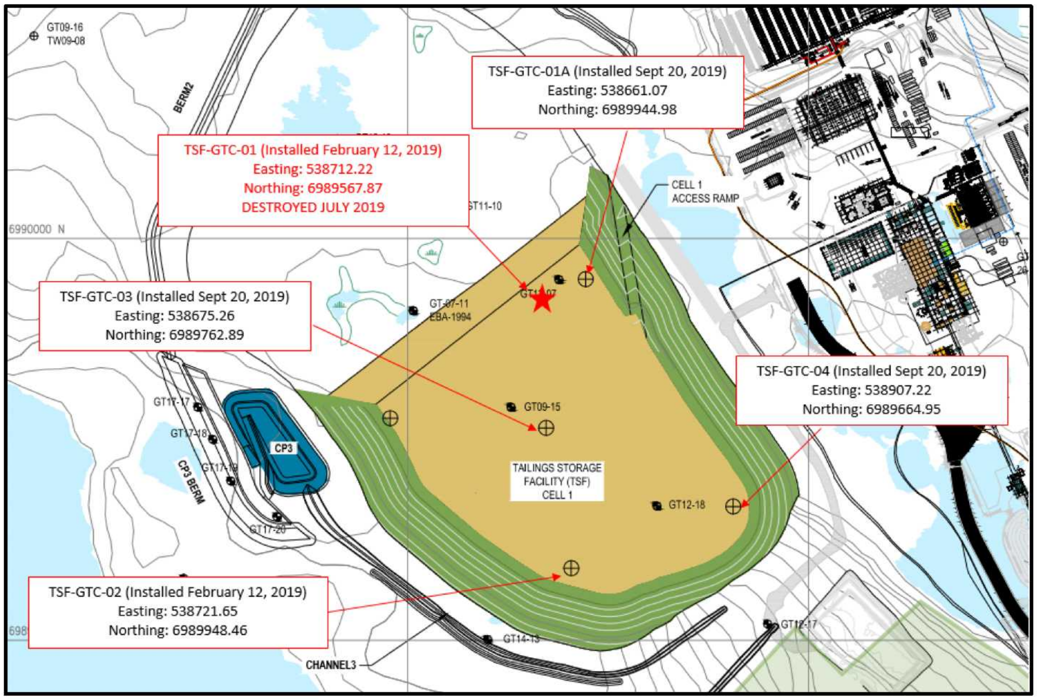

TSF-GTC-01A (Installed Sept 20, 2019)
Easting: 538661.07
Northing: 6989944.98
TSF-GTC-01 (Installed February 12, 2019)
Easting: 538712.22
Northing: 6989567.87
DESTROYED JULY 2019
TSF-GTC-03 (Installed Sept 20, 2019)
Easting: 538675.26
Northing: 6989762.89
TSF-GTC-04 (Installed Sept 20, 2019)
Easting: 538907.22
Northing: 6989664.95
TSF-GTC-02 (Installed February 12, 2019)
Easting: 538721.65
Northing: 6989948.46
TAILINGS STORAGE FACILITY (TSF) CELL 1
CELL 1 ACCESS RAMP
CP3
CP3 BERM
BERM2
CHANNEL3
6990000 N
GT09-16
TW09-08
GT09-15
GT12-18
GT11-10
GT-07-11
EBA-1994
GT17-17
GT17-18
GT17-20
GT14-13
GT12-17

Photo 1: TSF - North side of Cell 1

Photo 2: TSF—North side of Cell 1—Rockfill slope covering west side of TSF

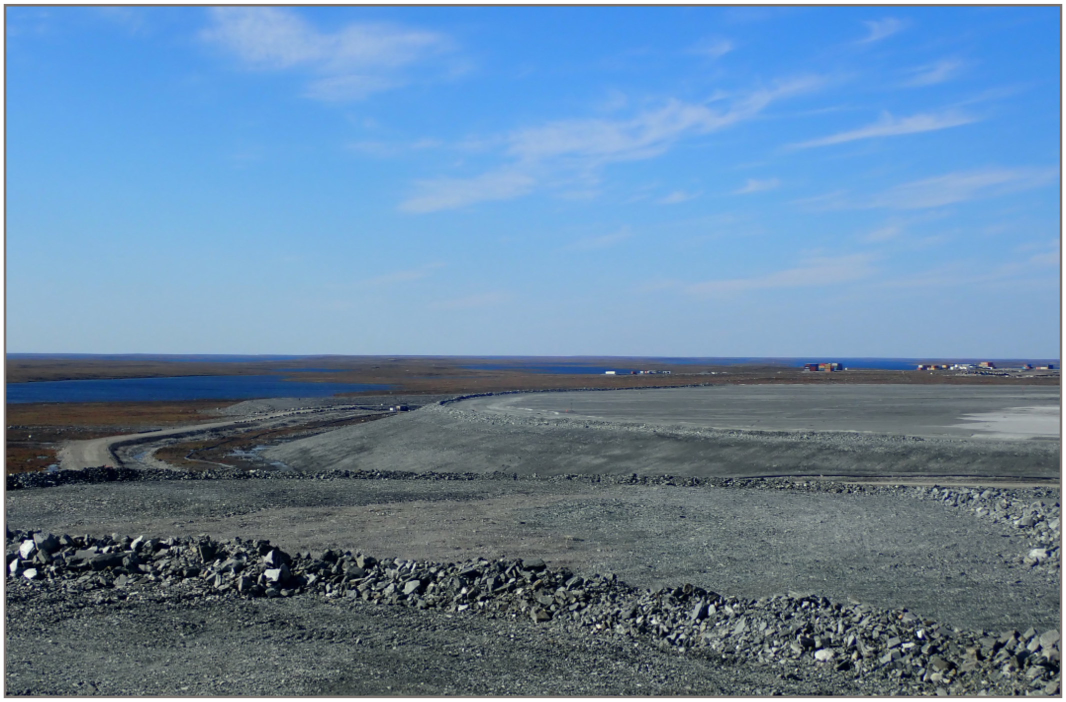


Photo 3: TSF - South slope, Channel 3 on left of photo.

Photo 4: TSF - Placing tailings. White precipitate on some previously placed tailings.

Photo 5: TSF - Spreading tailings.

Photo 6: TSF - Compacting tailings.

Photo 7: TSF - Slope between Cell 1 and future Cell 2.

Photo 8: TSF - Placed tailings.

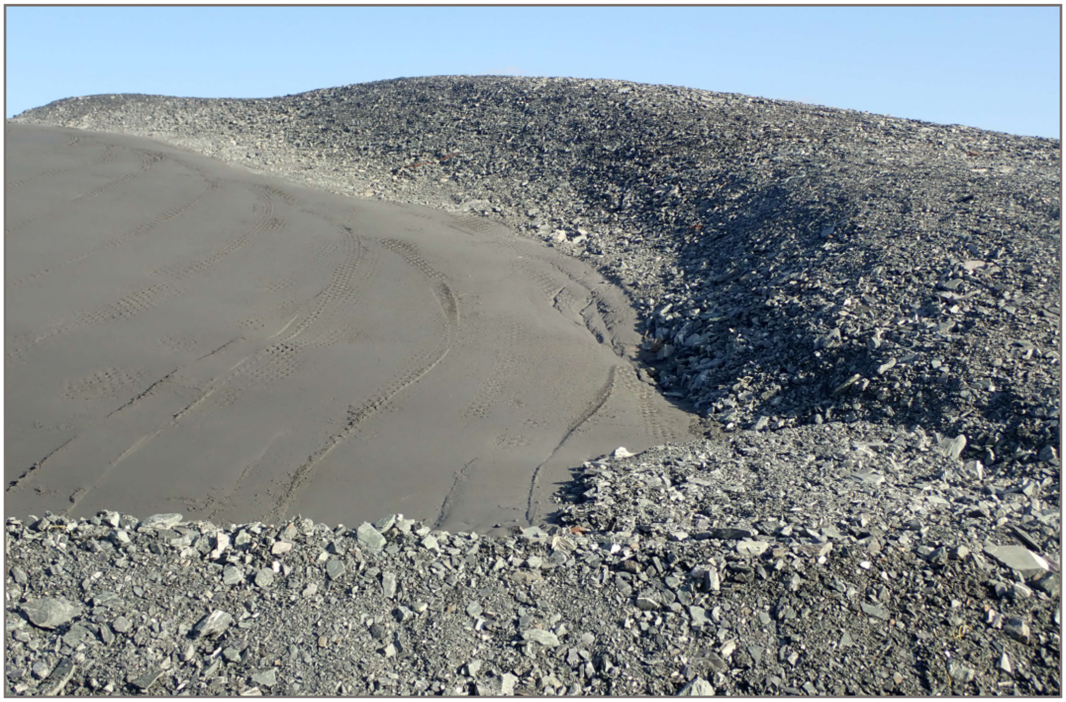


Photo 9: TSF - contact between rockfill cover and tailings at the northwest corner of Cell 1.

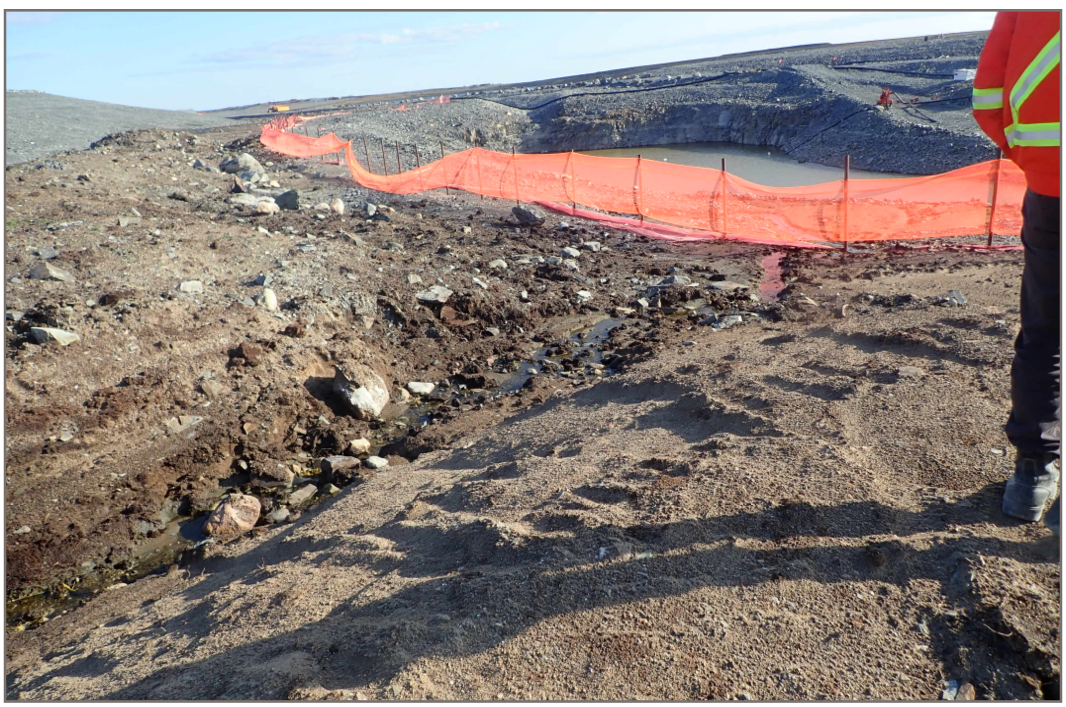


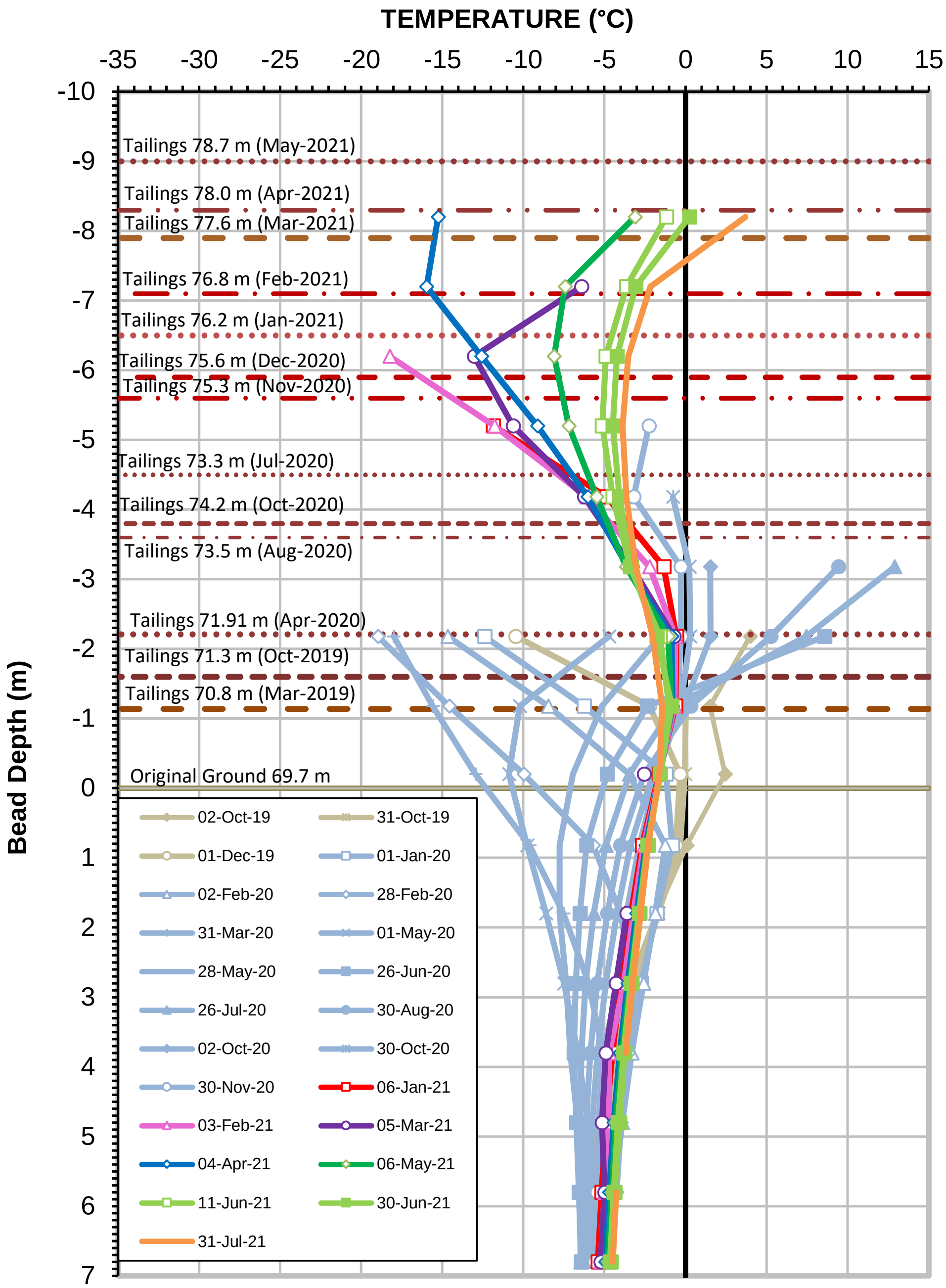
Photo 10: TSF - Drainage from Cell 1 directed to CP3

Photo 11: TSF - Channel at north edge of Cell 1.

Photo 12: TSF - West slope of TSF. Sediment at toe of TSF slope.

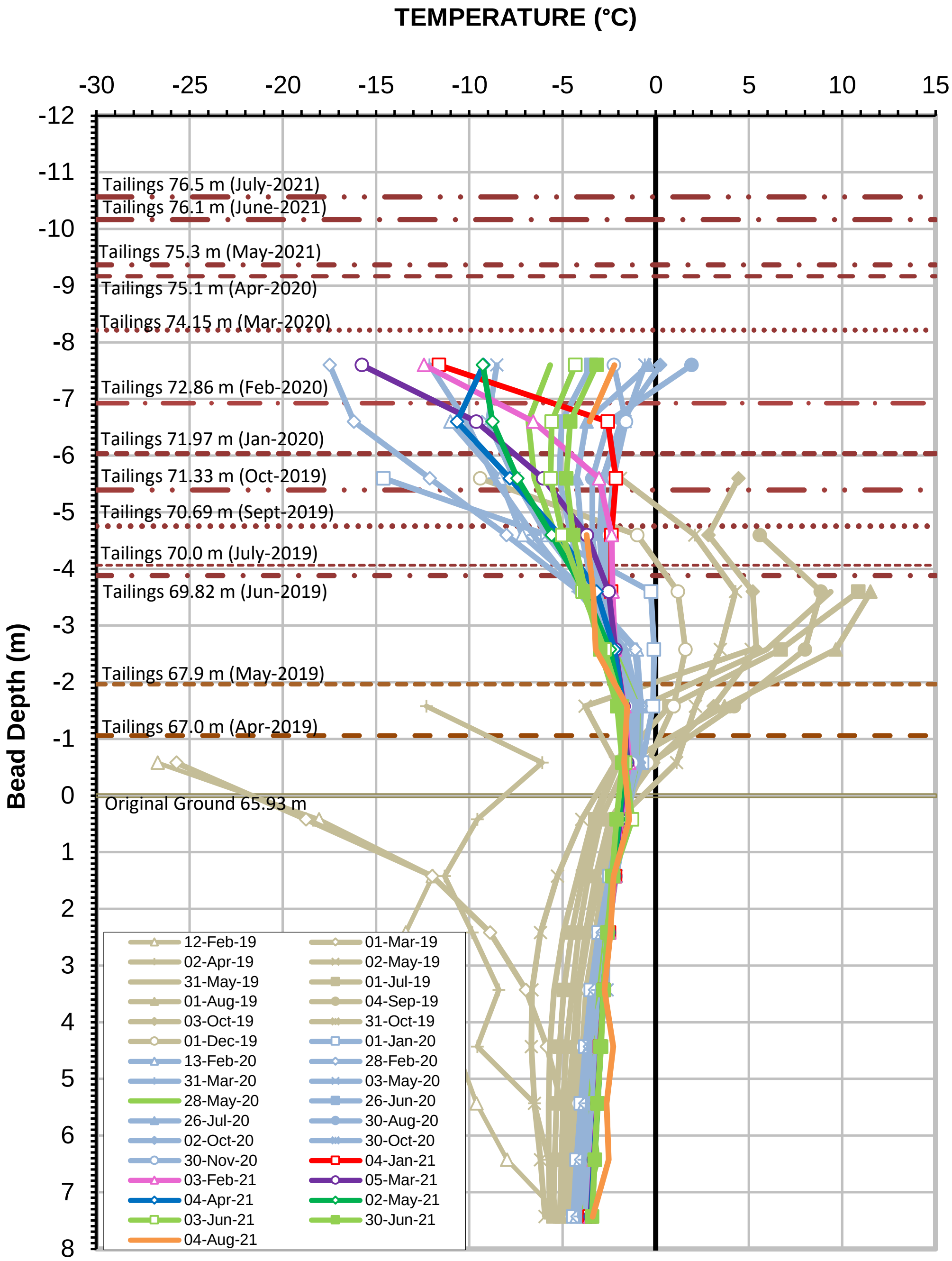
Photo 13: TSF - West slope. Sediment at toe of slope.

Photo 14: TSF - Sediment at toe of slope.



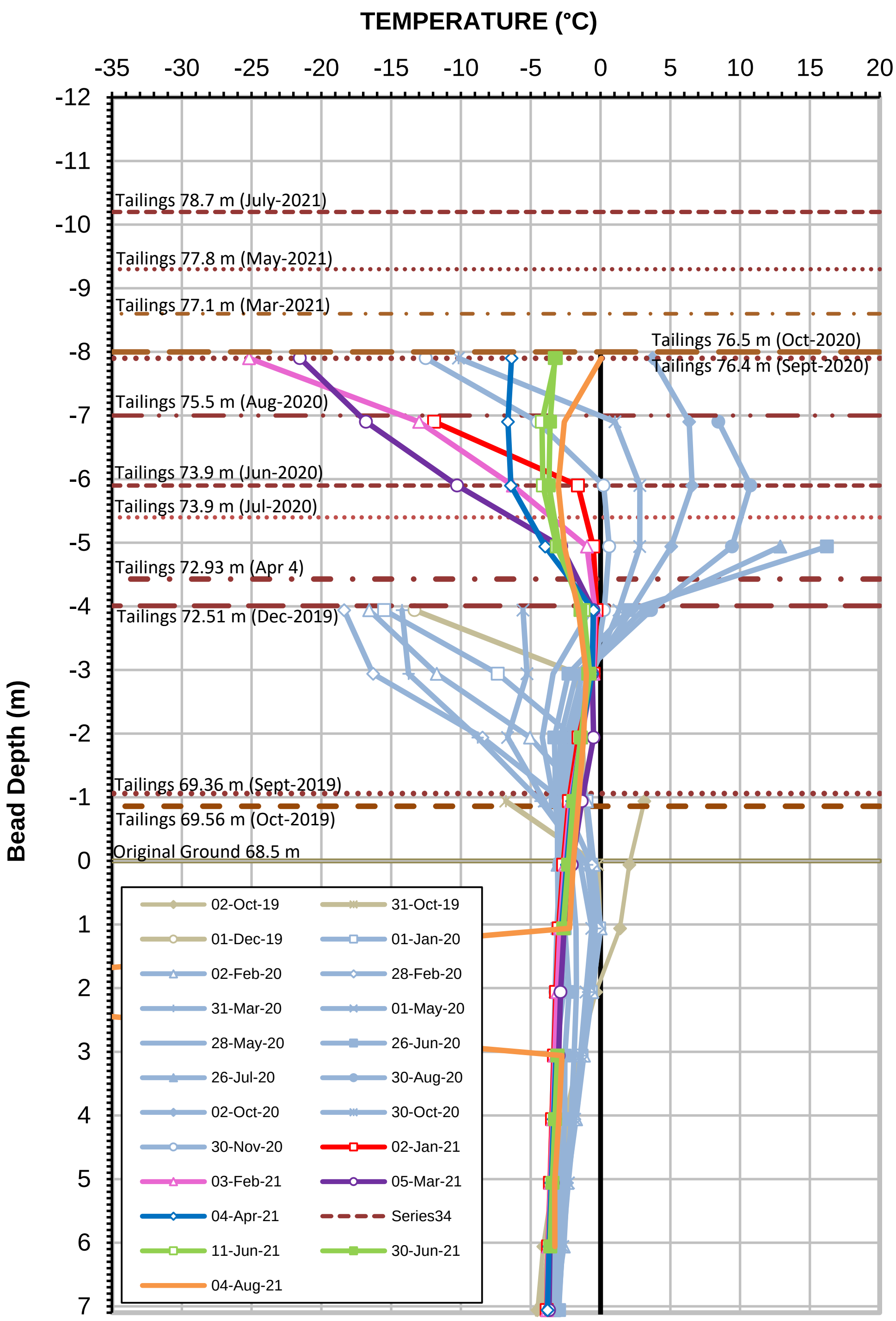
Ground Temperature Profile for Cable GTC-01A
Tailings Storage Facility

Serial No.: 2698
Date Installed: September 20, 2019



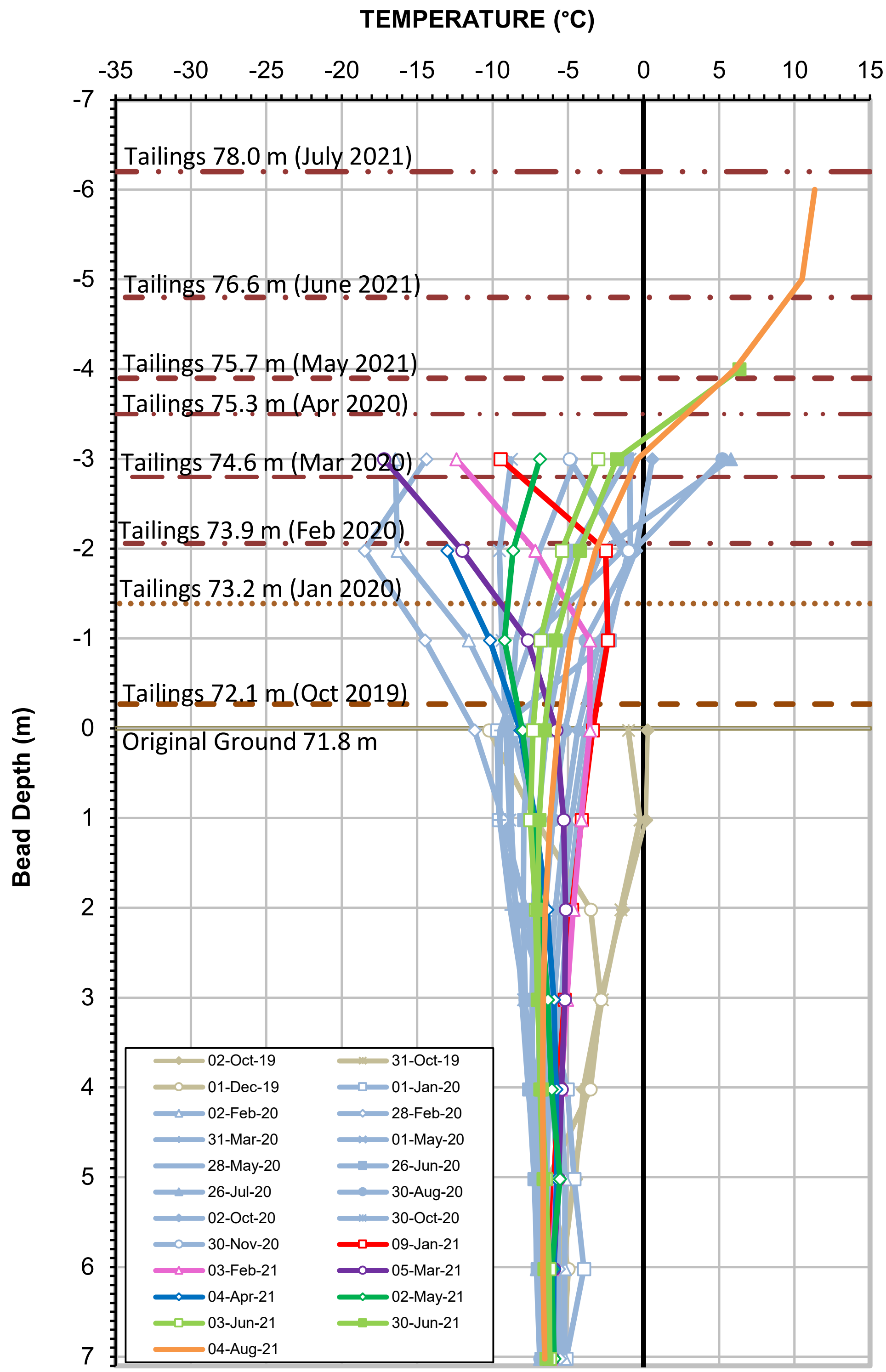
Ground Temperature Profile for Cable GTC-02
Tailings Storage Facility

Serial No.: 2687
Date Installed: February 12, 2019



Ground Temperature Profile for Cable GTC-03
Tailings Storage Facility

Serial No.: 2699
Date Installed: September 20, 2019



Ground Temperature Profile for Cable GTC-04
Tailings Storage Facility

Serial No.: 2697
Date Installed: September 20, 2019

APPENDIX J

SITE ROADS

Photo 1: Site Roads—Road to Wesmeg Borrow.

Photo 2: Site Roads—Road adjacent to SP1, looking northwest.

Photo 3: Freshwater Intake Road.

Photo 4: Site Roads—CP5 Jetty Road.

Photo 5: Site Roads—WRSF1 haul road, looking north.

Photo 6: Site Roads—WRSF1 haul road, looking south.

Photo 7: Site Roads—Haul road between Tiri1 and Tiri2 pits.

Photo 8: Site Roads—Meliadine Lake Diffuser access.

Photo 9: Site Roads—Culvert #18 Inlet.

Photo 10: Site Roads—Culvert #18 Outlet. Lower pipe crushed.

APPENDIX K

BORROW SOURCES

Photo 1: North Esker—Looking north.

Photo 2: North Esker—Looking south.

Photo 3: Meliadine Esker—Stockpiled coarse material.

Photo 4: Meliadine Esker—Stockpiled fine material.

Photo 5: Meliadine Esker—Water management channel through esker deposit.

Photo 6: Meliadine Esker—Reclaimed area from esker excavation.

Photo 7: Wesmeg Esker—Looking southeast.

Photo 8: Wesmeg Esker—Access, looking norhtwest.

APPENDIX L

ORE STOCKPILES

Photo 1: Ore Stockpile Area—Viewed from crusher ramp.

Photo 2: Ore Stockpile Area—Viewed from crusher ramp.

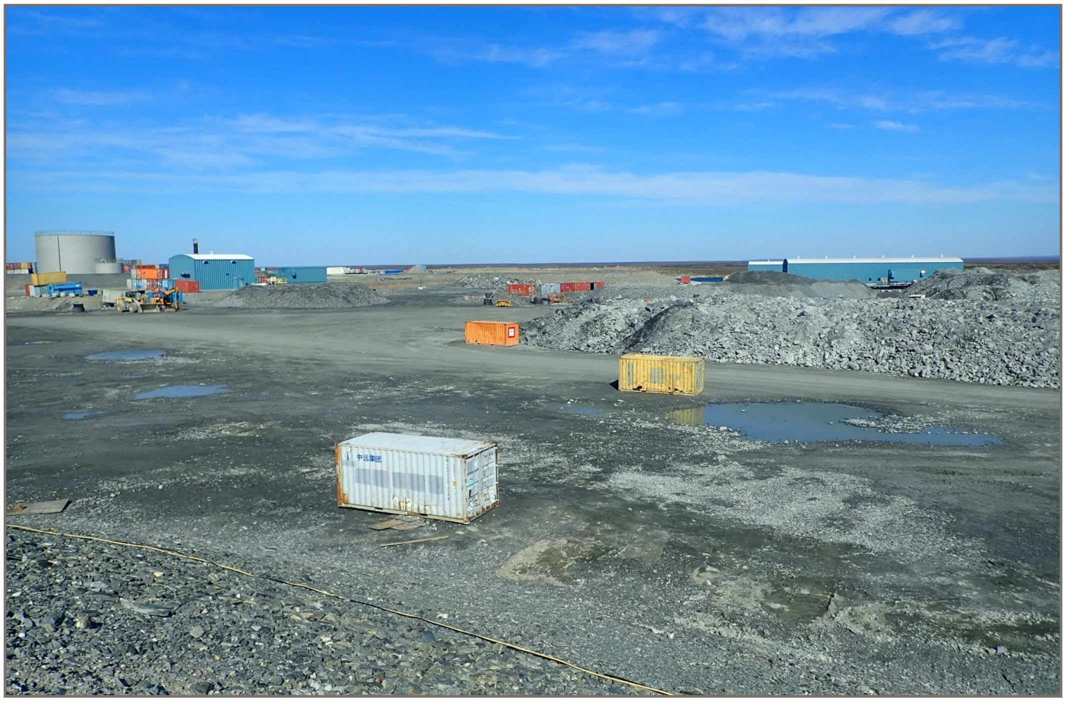


Photo 3: Ore Stockpile Area—Viewed from crusher ramp.

Photo 4: Ore Stockpile—Loader

Photo 5: Ore Stockpile.

Photo 6: Ore Stockpile.

APPENDIX M

EXPLORATION CAMP

Photo 1: Exploration Camp

Photo 2: Exploration Camp Fuel Storage

Photo 3: Exploration Camp Fuel Storage

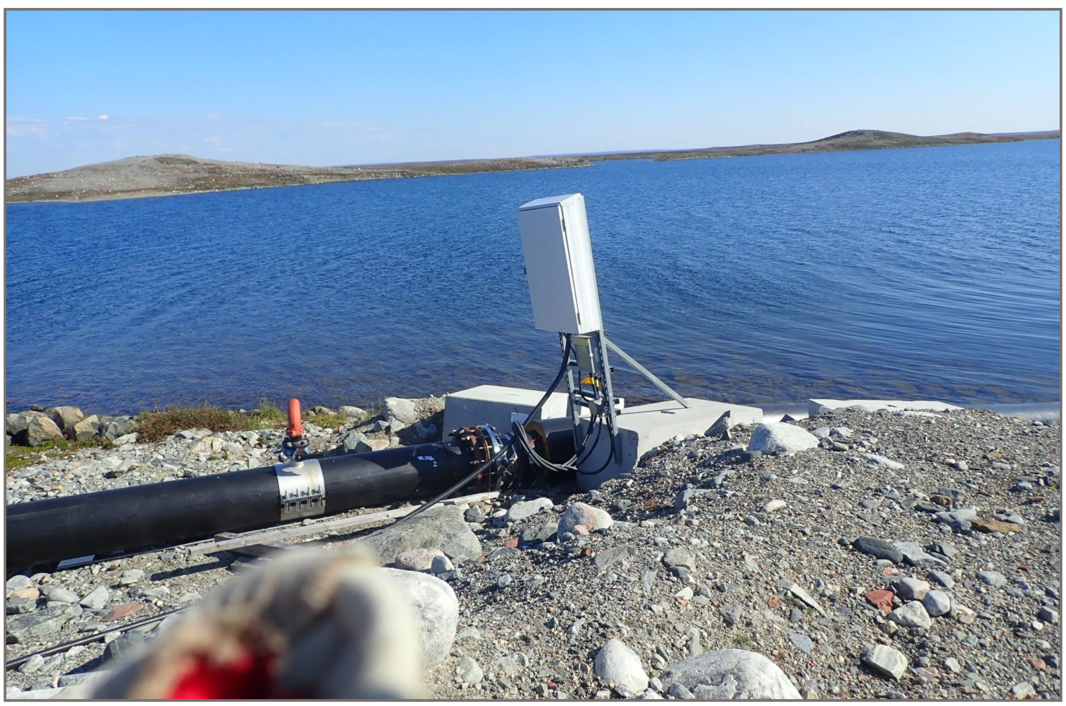


Photo 4: Exploration Camp—Diffuser line

Photo 5: Exploration Camp—Road to diffuser access.

Photo 6: Exploration Camp—Freshwater Intake.

APPENDIX N

OTHER MELIADINE FACILITIES

Photo 1: Crusher Pad– West Slope

Photo 2: Crusher Pad —South slope

Photo 3: Crusher Pad—MSE Wall on the northwest corner.

Photo 4: Crusher Pad—MSE Wall on the east corner.

Photo 5: Crusher Pad—MSE wall, north east side. Slight bulge to gabion baskets

Photo 6: Crusher Pad—MSE wall, north east side. Slight inward slope to wall.

Photo 7: Crusher Pad—Ramp

Photo 8: Landfill- WRSF1 Landfill

Photo 9: Landfill– WRSF1 Landfill—Ponded water.

Photo 10: Landfill– WRSF3 Landfill—Sorting debris, removing wood waste

Photo 11: Landfill- Landfill- WRSF3 Landfill—East berm—some revegetation.

Photo 12: Landfill- WRSF3 Landfill—East berm—some revegetation.

Photo 13: Emulsion Plant—north side of pad, erosion in pad slope.

Photo 14: Emulsion Plant—Storage Area—slope on north edge of pad, slight lean to shipping containers.

Photo 15: Landfarm– Windrows of contaminated soil. Water collection pond.

Photo 16: Landfarm ponded water at south end of facility.

Photo 17: Landfarm—South Berm

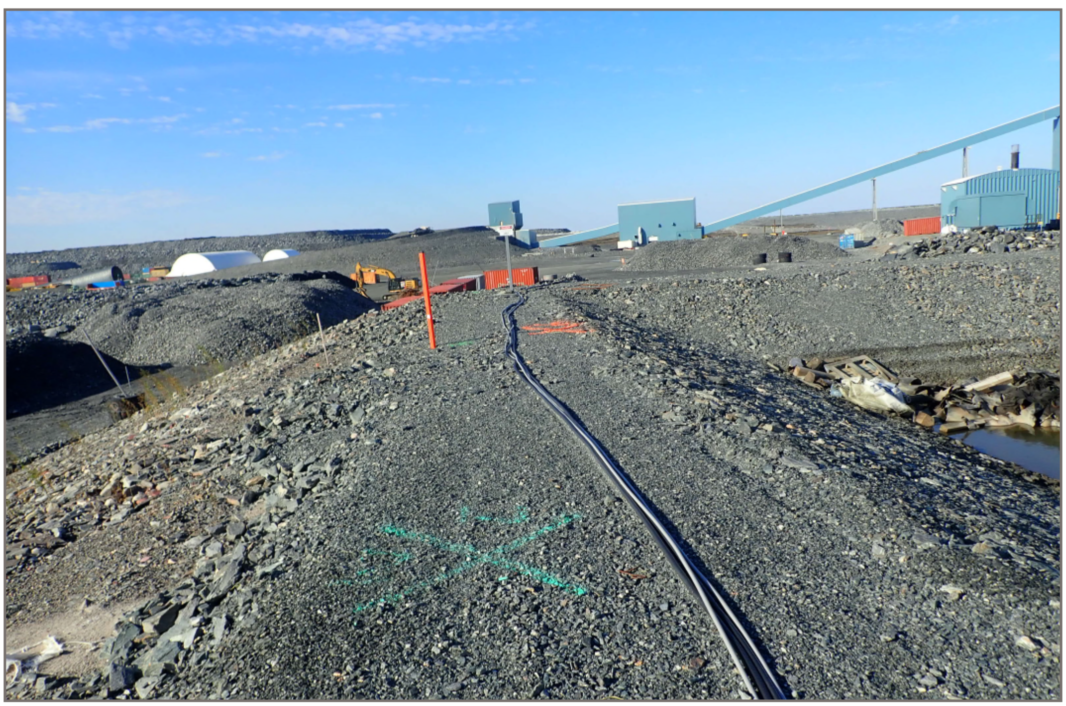


Photo 18: Landfarm South Berm.

Photo 19: Landfarm—exposed liner on crest of east berm.

Photo 20: Industrial Fuel Storage Tanks.

Photo 21: Industrial Fuel Storage Tanks. Ponded water in tankfarm.

Photo 22: Industrial Fuel Storage Tanks. Cracking on top of berm. Small amount of settlement on crest pipes.

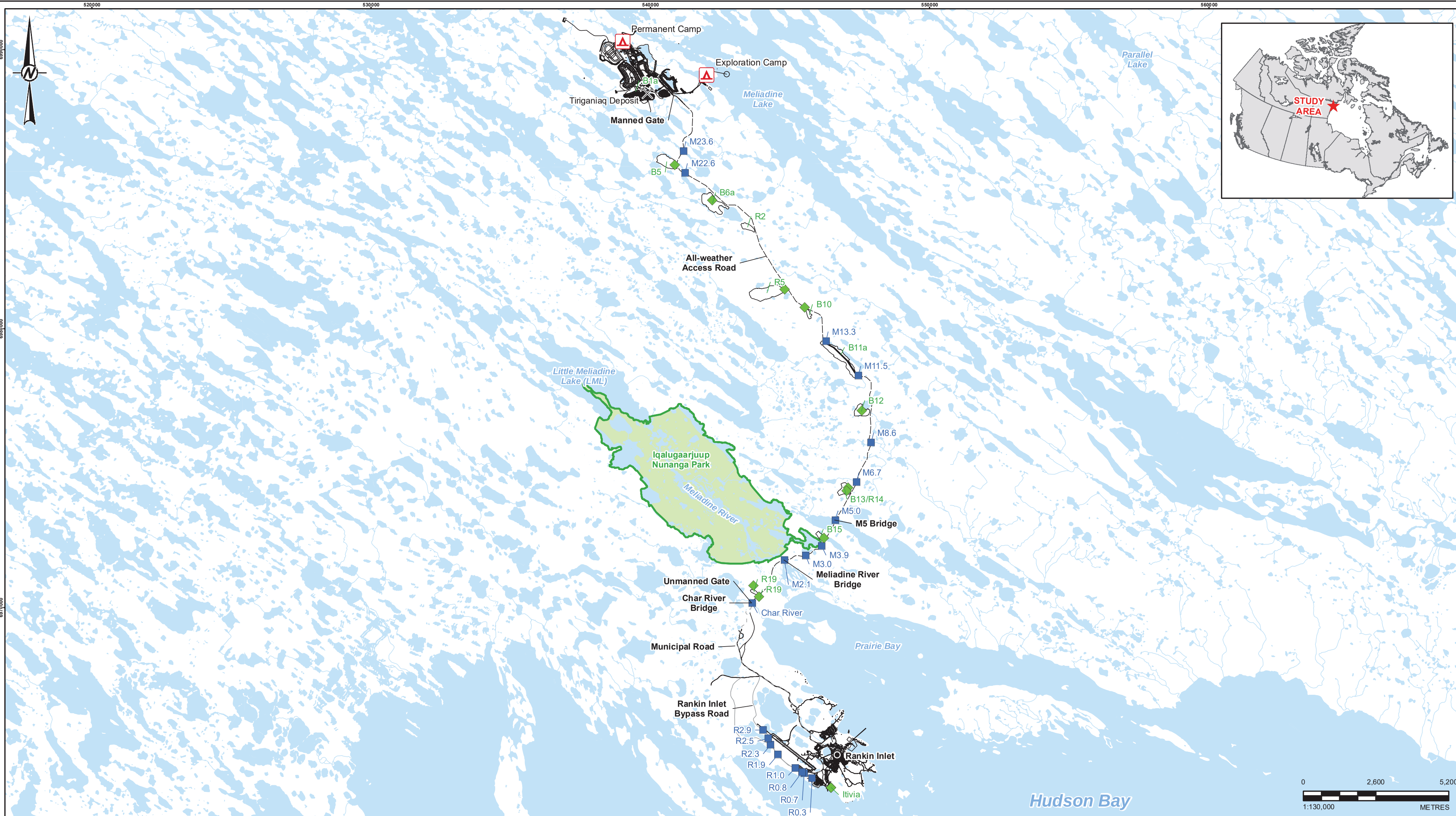
Photo 23: Industrial Fuel Storage Tanks. Small amount of erosion on tank pedestals.

Photo 24: Industrial Fuel Storage Tanks. Small amount of erosion on tank pedestals. Fill generally still under tanks.

Photo 25: Industrial Fuel Storage Tanks. Exposed grounding cable.

APPENDIX O

ALL-WEATHER ACCESS ROAD (AWAR)



LEGEND

- CAMP
- PROPOSED MINE SITE
- QUARRY/BORROW PIT LOCATION
- WATERCOURSE CROSSING
- ALL-WEATHER ACCESS ROAD (AWAR)
- ROAD - NEW
- ROAD - EXISTING
- WATERCOURSE
- WATERBODY
- TERRITORIAL PARK

REFERENCE(S)
1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT
AGNICO EAGLE MINES LTD.

PROJECT
MELIADINE GOLD PROJECT

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-14
DESIGNED	FE
PREPARED	CDB
REVIEWED	FE
APPROVED	ACI

TITLE
MELIADINE ALL WEATHER ACCESS ROAD WITH QUARRIES AND WATERCOURSE CROSSINGS

PROJECT NO.	CONTROL	REV.	FIGURE
18105719	3000/002	0	5

Photo 1: Culvert km 5.5

Photo 2: Char River Bridge

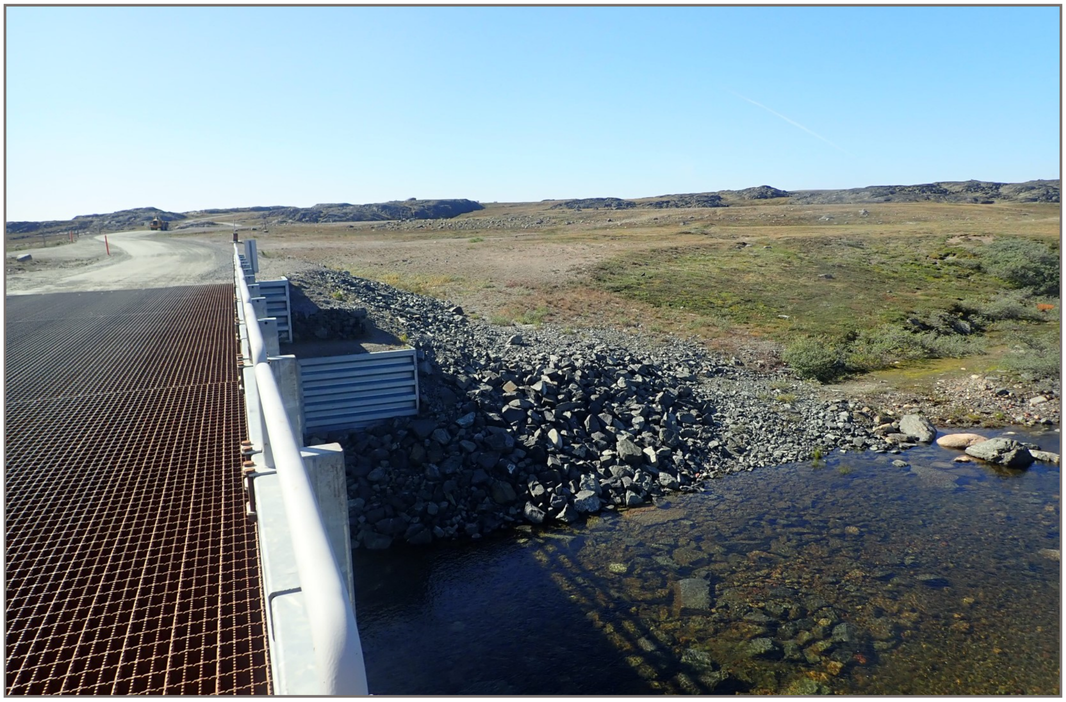


Photo 3: Char River Bridge—North abutment

Photo 4: Char River Bridge—South Abutment

Photo 5: Culvert km 6.2

Photo 6: Culvert km 7.0

Photo 7: Culvert km 7.1

Photo 8: Culvert km 7.4—Damage to culvert inlet

Photo 9: Meliadine River Bridge north abutment

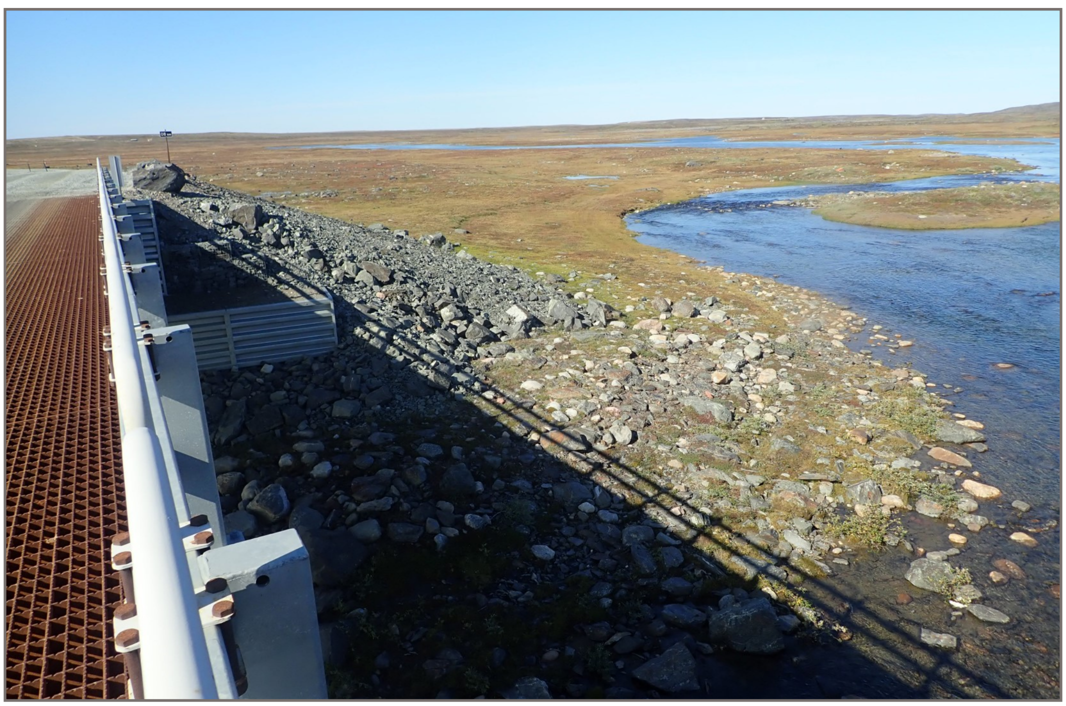


Photo 10: Meliadine River Bridge South Abutment

Photo 11: Meliadine River Bridge north abutment

Photo 12: Meliadine River Bridge—Shoreline downstream of bridge—erodible sand and gravel deposit.

Photo 13: Meliadine River Bridge

Photo 14: Meliadine River

Photo 15: Culvert km 9.1

Photo 16: Culvert km 9.5

Photo 17: M-5 Bridge

Photo 18: M-5 Bridge—South Abutment.

Photo 19: M-5 Bridge—Gabion North Abutment

Photo 20: M-5 Bridge—Geotextile exposed at north abutment .

Photo 21: Culvert km 12.1

Photo 22: Culvert km 13.5

Photo 23: Culvert km 13.5

Photo 24: Culvert km 16.3

Photo 25: Culvert km 18.1

Photo 26: Culvert km 21.7

Photo 27: Culvert km 22.3

Photo 28: Culvert km 25.8

Photo 29: Culvert km 26.2

Photo 30: Culvert km 26.5

Photo 31: Culvert km 26.8

Photo 32: Culvert km 27.1

Photo 33: No culvert km 28.7

Photo 34: Culvert km 29.6

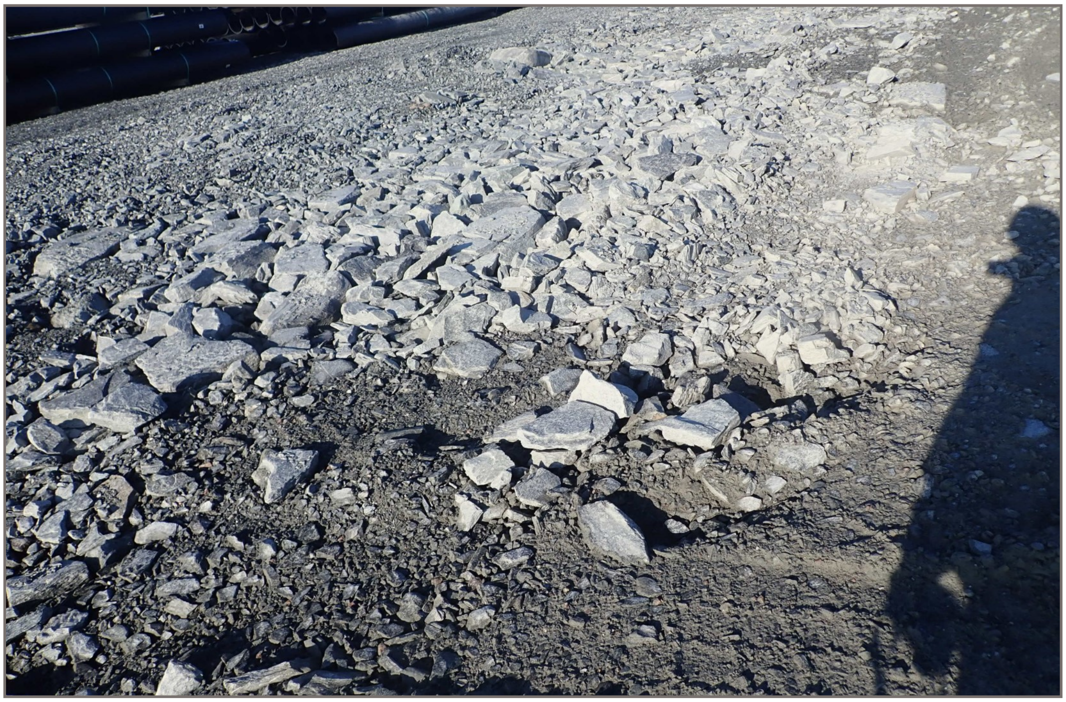


Photo 35: Culvert inlet covered by rockfill km 29.6

APPENDIX P

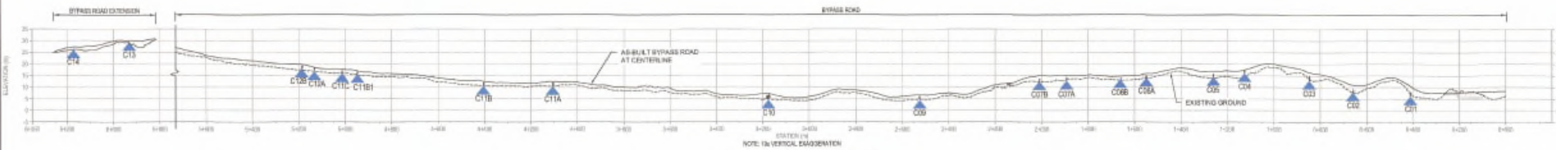
ITIVIA FUEL STORAGE SITE AND BYPASS ROAD

NO. DESSIN DRAWING NO. 65-117-230-201_R4-AS-BUILT-F

FORMAT ARCHD

LEGEND:
CULVERT
BYPASS ROAD

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE DATE : 2019-02-13

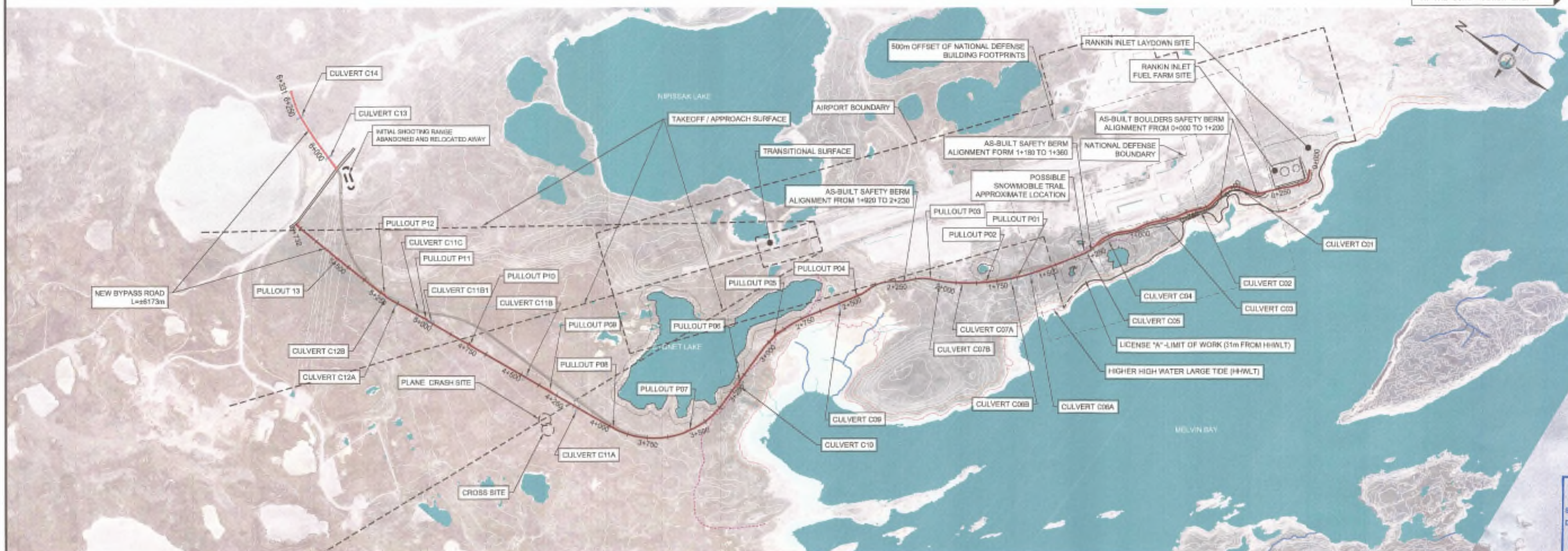


AS-BUILT BYPASS ROAD PROFILE

TETRA TECH

FINAL ISSUE AFTER CONSTRUCTION

SOME ANNOTATIONS HAVE BEEN ADDED TO THE DRAWING ISSUED FOR CONSTRUCTION IN ORDER TO INCORPORATE THE INFORMATIONS RECEIVED. IN THIS PROJECT, TETRA TECH HADN'T DONE ANY FIELD SUPERVISION AT THE CONSTRUCTION SITE.



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

GENERAL NOTES:

1. EXISTING GROUND DTM PROVIDED BY AEM.
2. ALL UNITS ARE IN METERS.
3. ELEVATIONS IN DRAWING PROVIDE FINISHED GRADE ELEVATIONS AT THE TOP OF THE SURFACE GRAVEL LAYER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY, SECURITY AND SLOPES OF ALL EXCAVATIONS/ BACKFILL AND SHALL ABIDE BY ALL RELEVANT STANDARDS AND REGULATIONS. THE STABILITY, DEWATERING AND MAINTENANCE OF ALL EXCAVATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
5. GRANULAR MATERIAL 0-30 mm OR 0-50 mm SHALL BE PLACED IN LIFTS NOT EXCEEDING 300 mm AND COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY (STANDARD PROCTOR). BORROW PIT MATERIAL, GRANULAR FILL MATERIAL 0-600 mm OR OVERBURDEN MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 600 mm AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (STANDARD PROCTOR). MOISTURE CONDITIONING MAY BE REQUIRED PRIOR TO COMPACTION.
6. OVERBURDEN MATERIAL CAN BE USED FOR FILL IN SPECIFIED AREAS ONLY WHEN APPROVED BY FIELD GEOTECHNICAL ENGINEER.
7. AN AS-BUILT DRAWING SHALL BE PROVIDED AFTER CONSTRUCTION.
8. THE LOCATION, ELEVATION AND LENGTH OF CULVERT GROUP SHALL BE CONFIRMED ON SITE.
9.
10. 4
11. NO EQUIPMENT CAN BE STORED AND NO DEPOSITION OF EXCAVATED AND STOCKPILED MATERIALS CAN BE DONE WITHIN THE LICENCE "A" - LIMIT OF WORK (31M) LINE.
12. FOR SUMMER CONSTRUCTION, GEOTEXTILE SHALL BE INSTALLED BETWEEN THE ORIGINAL GROUND AND THE GRANULAR MATERIAL WHEREVER THE ORIGINAL GROUND IS UNSTABLE TO SUPPORT FILL MATERIAL COMPACTION.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
4	2019-02-13	ISSUED FOR AS-BUILT	S.M.	J.A.	
3	2017-07-30	ISSUED FOR 0-230-005, CONFOO4	S.M.	J.A.	
2	2017-07-06	ISSUED FOR 0-230-005, CONFOO5	S.M.	J.A.	
1	2017-04-27	ISSUED FOR CONSTRUCTION	C.M.	J.A.	
0	2017-03-17	ISSUED FOR CONSTRUCTION	C.M.	J.A.	

REVISIONS

PERMIT TO PRACTICE
TETRA TECH INDUSTRIES, INC.
O/A TETRA TECH
Signature
Date 2019-02-13
PERMIT NUMBER: P 1029
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE

AGNICO EAGLE – MELIADINE DIVISION
117 – ROADS, FENCES, AND YARDS
230 – GENERAL EARTH WORKS
RANKIN INLET BYPASS ROAD
PLAN / PROFILE
GENERAL OVERVIEW

DESSINÉ PAR / DRAWN BY	PATRICK HAMEL	DATE 2017-03-17
VÉRIFIÉ PAR / CHECKED BY	JOSÉE ALARIE	2017-03-17
APPROUVÉ PAR / APPROVED BY	JOSÉE ALARIE	2017-03-17
ÉCHELLE / SCALE 1:10000	DATE 2016-11-07	
NO. DESSIN / DRAWING NO.	65-117-230-201	
NO. PROJET / PROJECT NO. 6515 / 28920	REVISION 4	FEUILLE / SHT 1/1

AE-SART-ARCH D

FILE NO. 65-117-230-201_R4-AS-BUILT-f.dwg

NO. DESSIN DRAWING NO. 65-116-210-200

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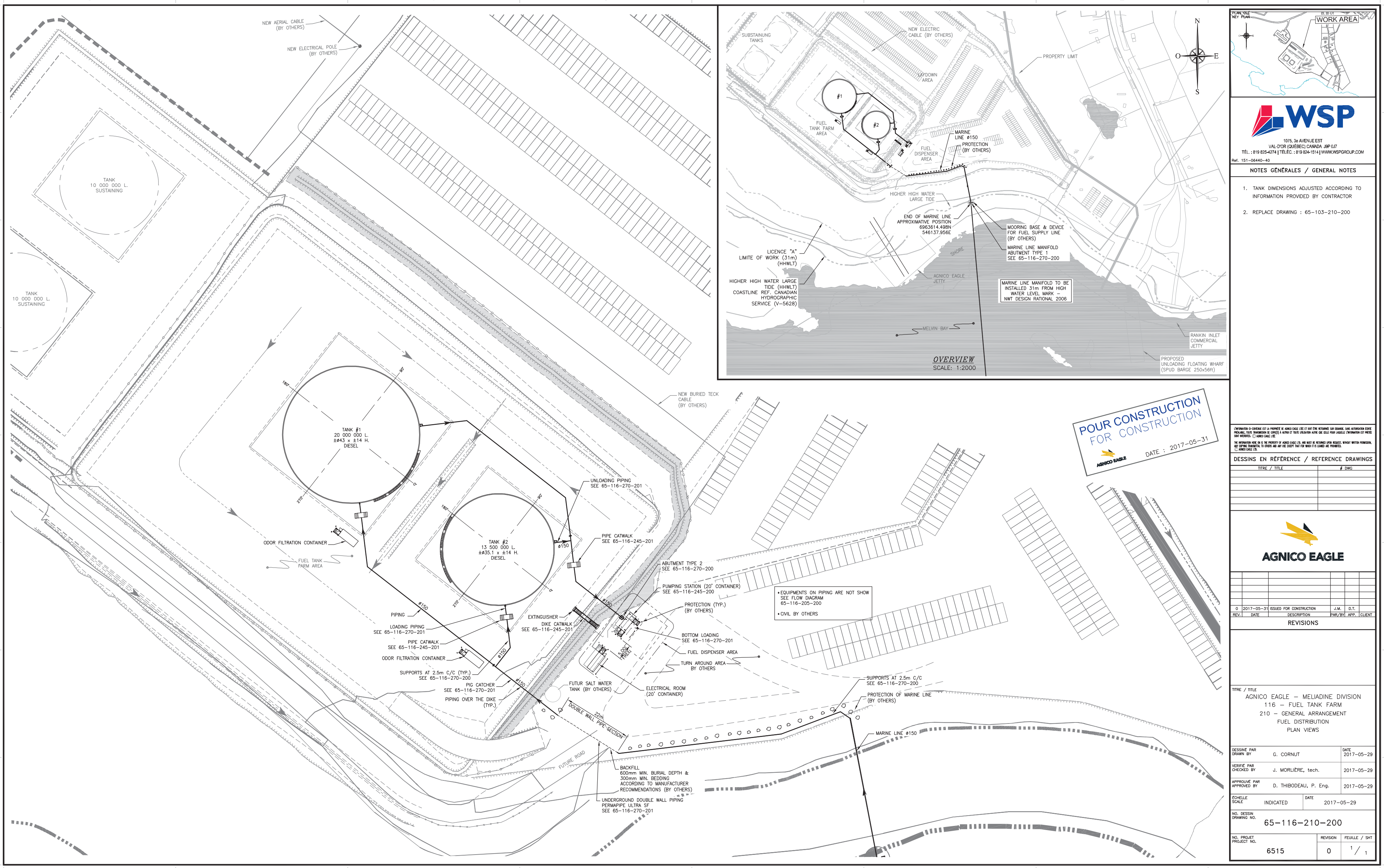

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FILE NO. 65-116-210-200_R0.dwg

Photo 1: Culvert C05.

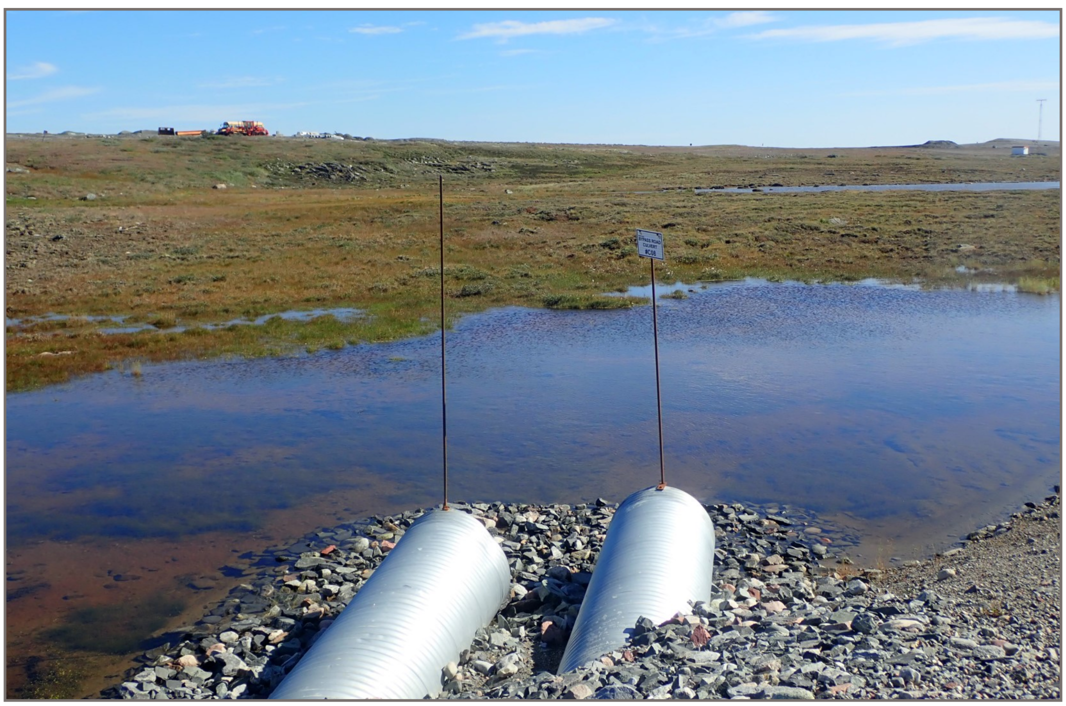


Photo 2: Culvert C07a (C08 on sign).

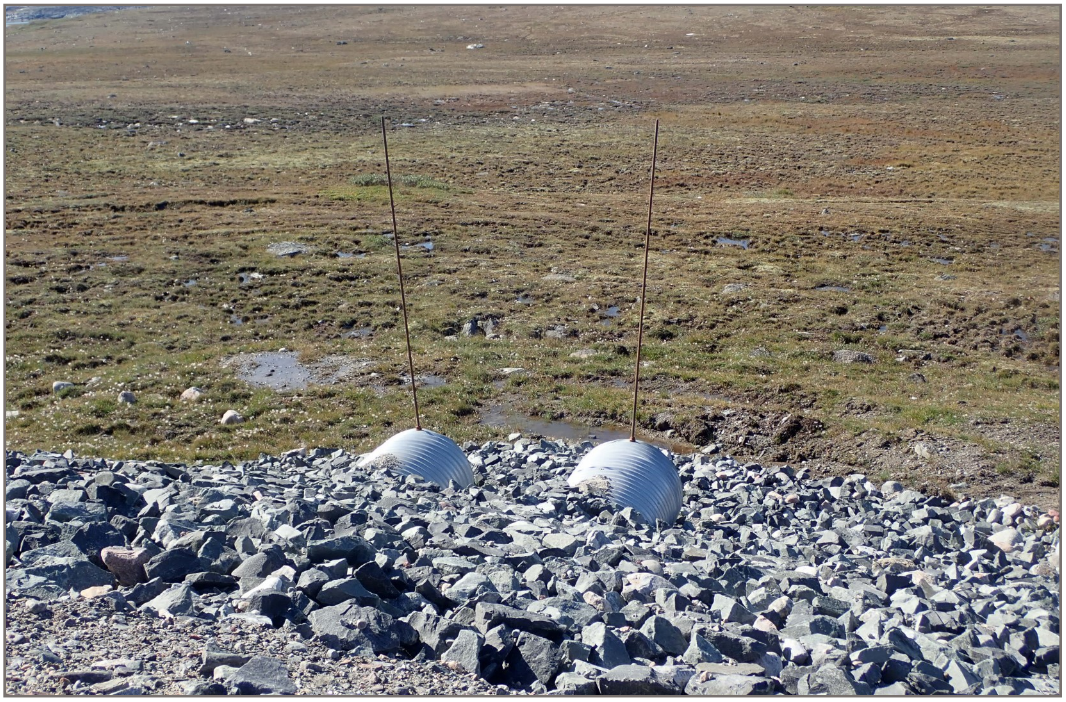


Photo 3: Culvert C07b (C09).

Photo 4: Culvert C09 (C10).

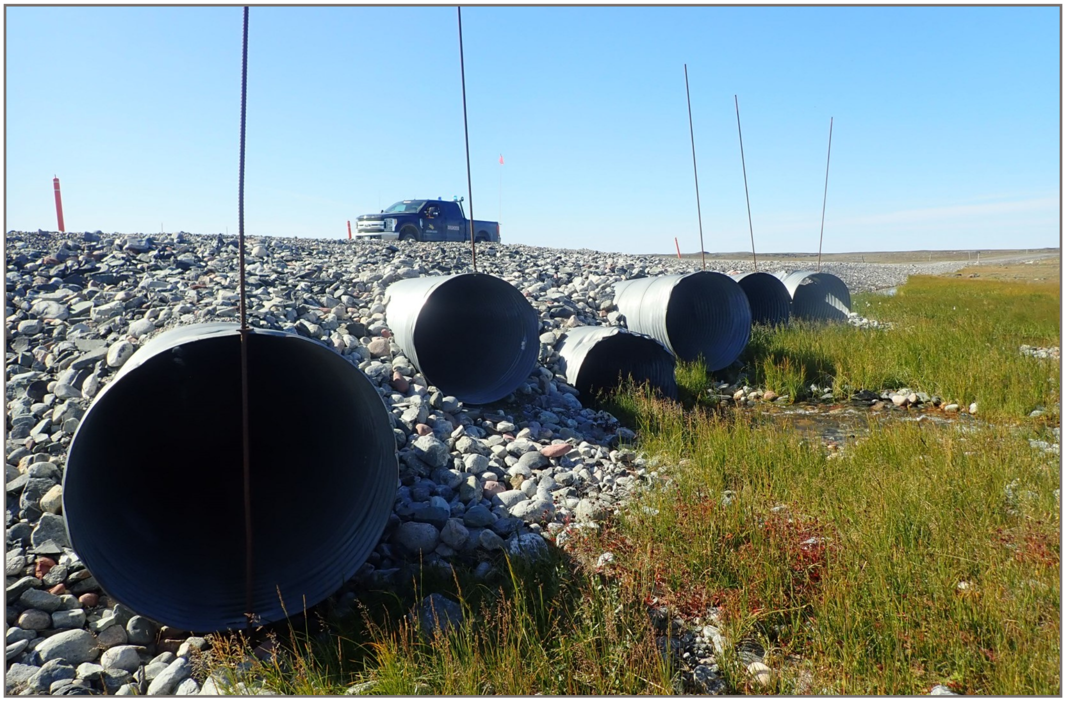


Photo 5: Culvert C10 (C11 on sign).

Photo 6: Overview of Bypass Road from KM 5.5 to KM 4.0.

Photo 7: Culvert C12a.

Photo 8: Culvert C12b.

Photo 9: Culvert 13.

Photo 10: Culvert C14.

TETRA TECH

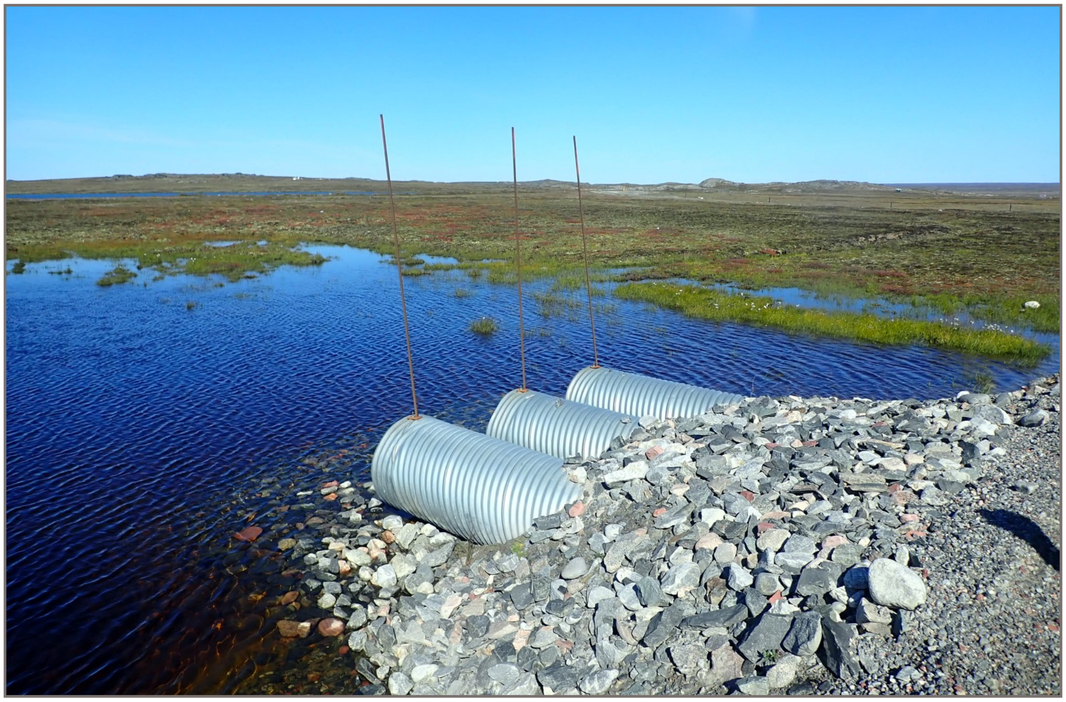


Photo 11: Culvert 14.

Photo 12: Low area in road northwest of C10, Filled in 2021.

Photo 13: Water collection point between road and hill side near KM 2.35, overtopped road during 2021 freshet.

Photo 14: Water collection point between road and hill side near KM 2.35, overtopped road during 2021 freshet.

Photo 15: ITIVIA Tankfarm—North of tanks.

Photo 16: ITIVIA Tankfarm—Ponded water in facility.

Photo 17: ITIVIA Tankfarm—South of tanks.

Photo 18: ITIVIA Tankfarm—Between tanks.

Photo 19: ITIVIA Tankfarm—Small pedestal width beyond tank base

Photo 20: ITIVIA Tankfarm—Small pedestal width beyond tank base

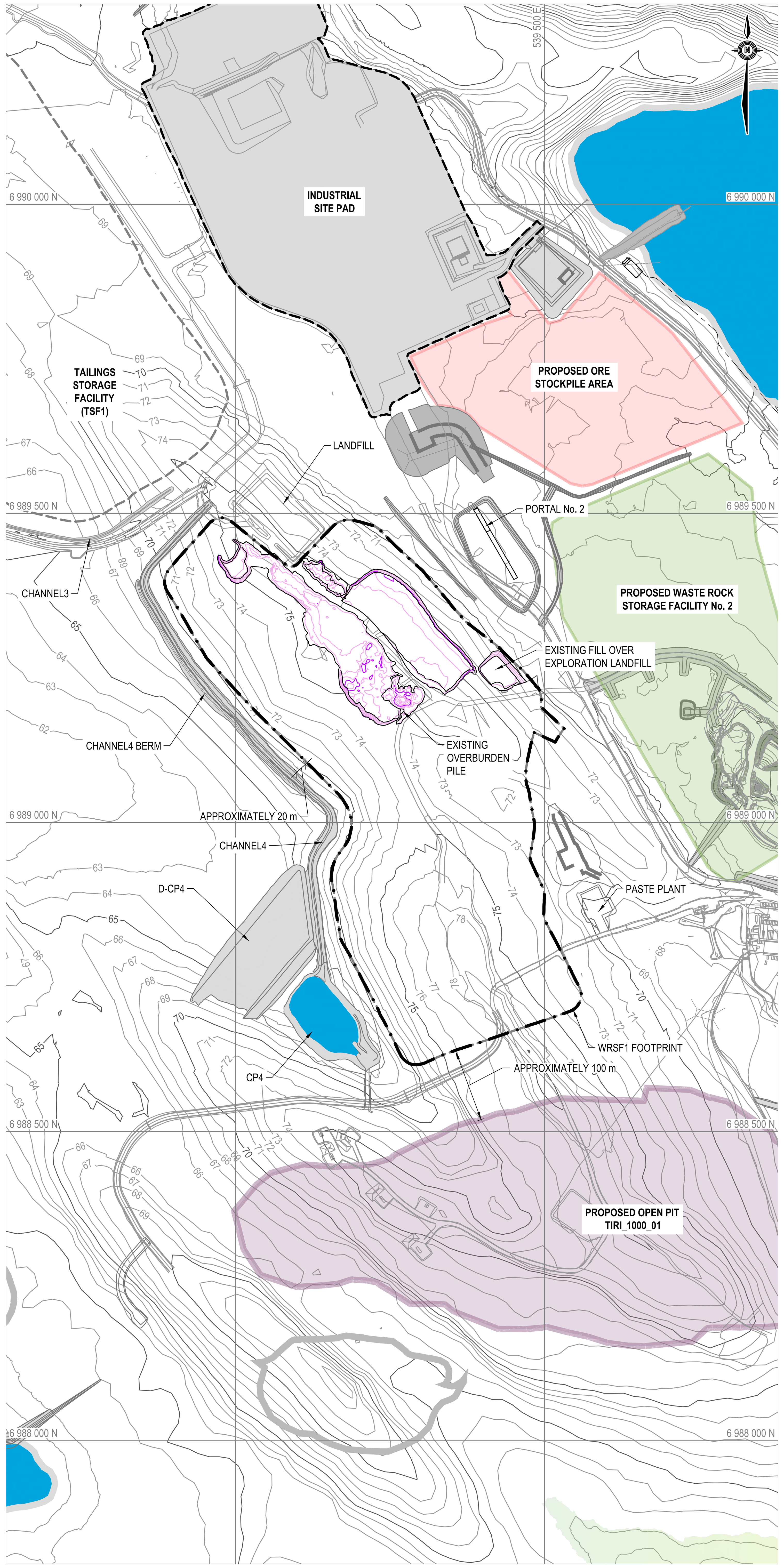
Photo 21: ITIVIA Tankfarm—Airspace below pipe support.

APPENDIX Q

WASTE ROCK STORAGE FACILITY 1

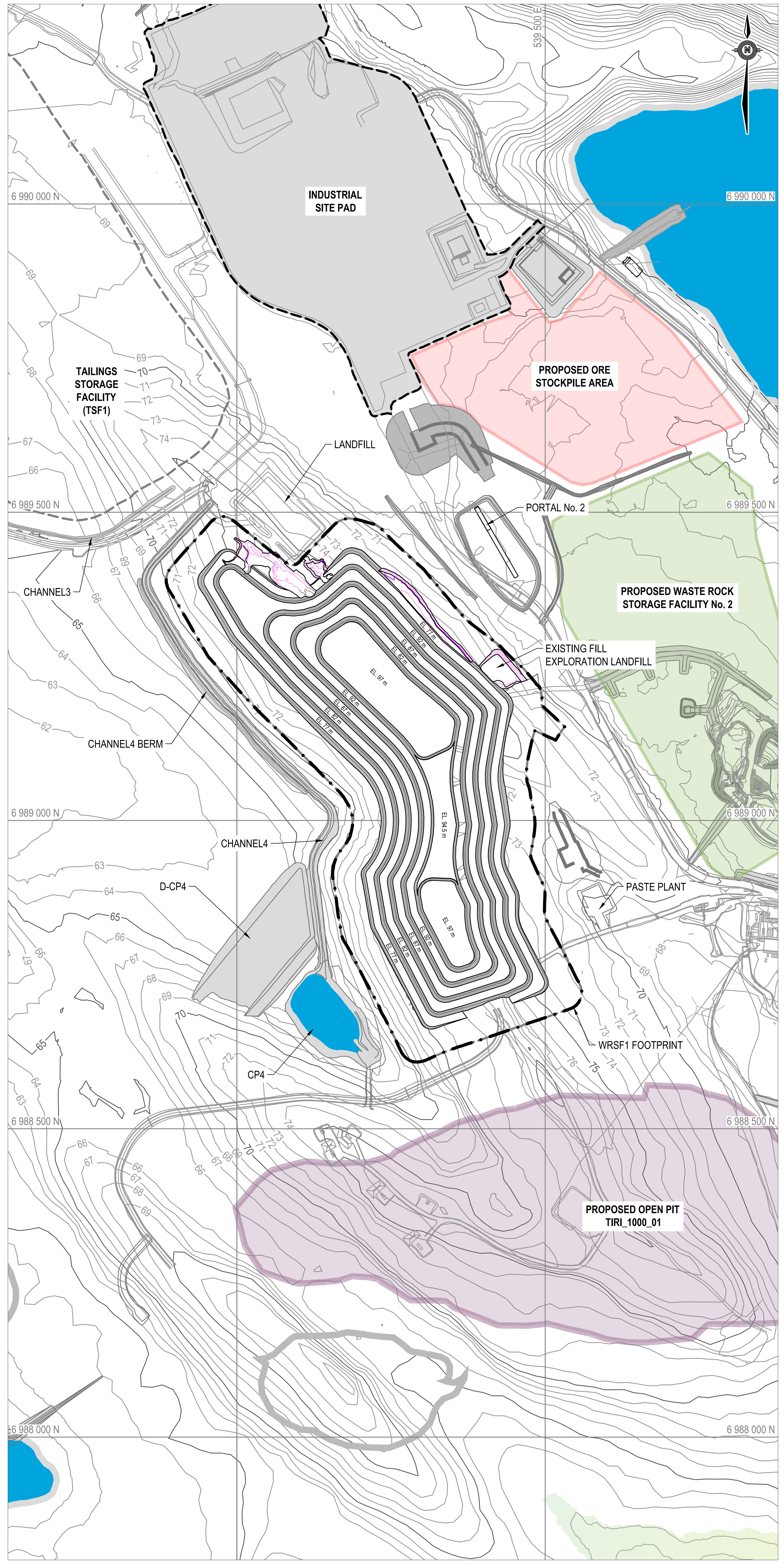
NO. DESSIN DRAWING NO. 65-686-230-200-R1

FORMAT ARCHD



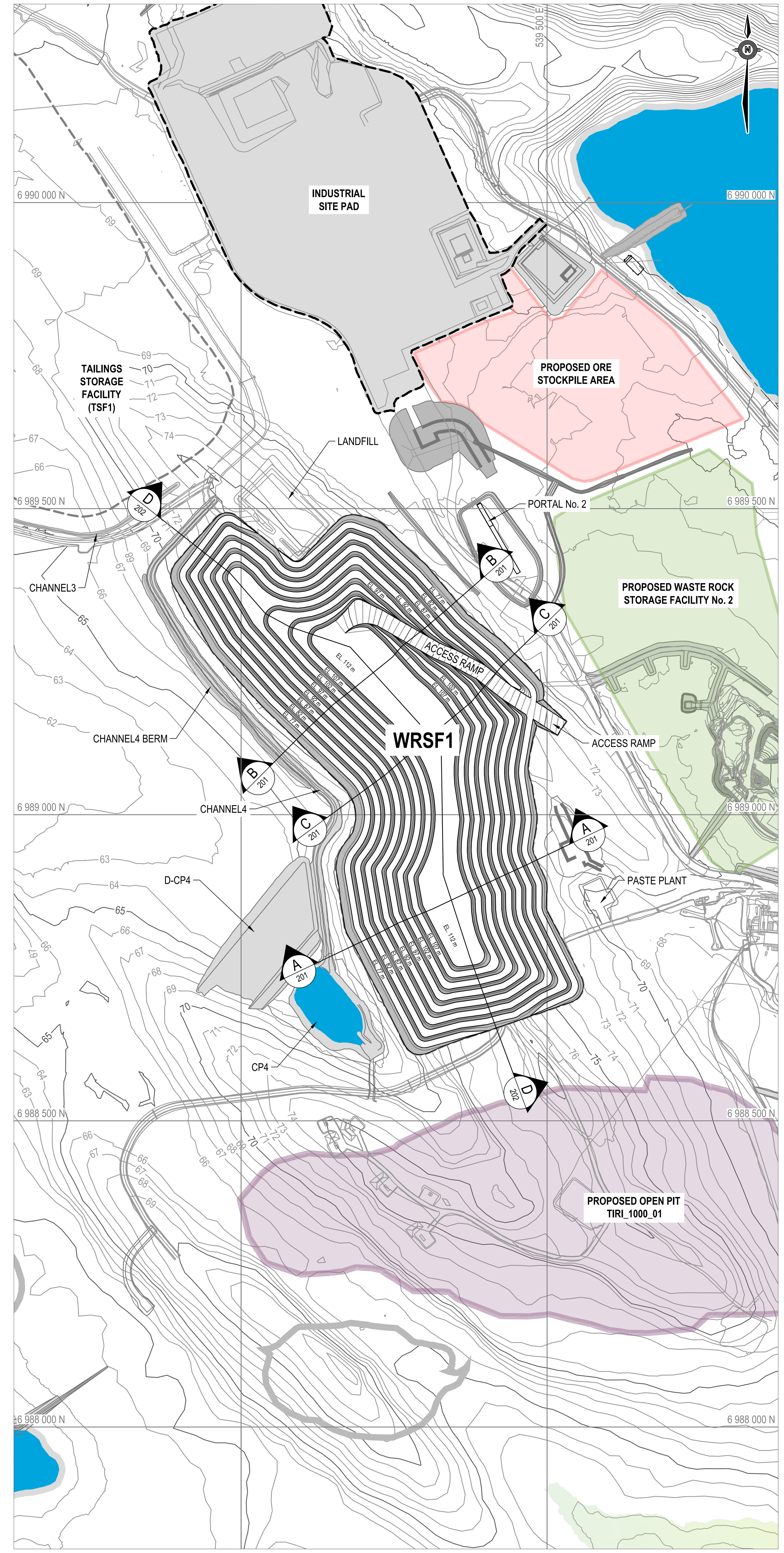
PLAN VIEW SHOWING CURRENT CONDITION

SCALE = 1:5000



PLAN VIEW SHOWING INTERNAL DESIGN GEOMETRY OF OVERBURDEN WASTE IN WRSF1

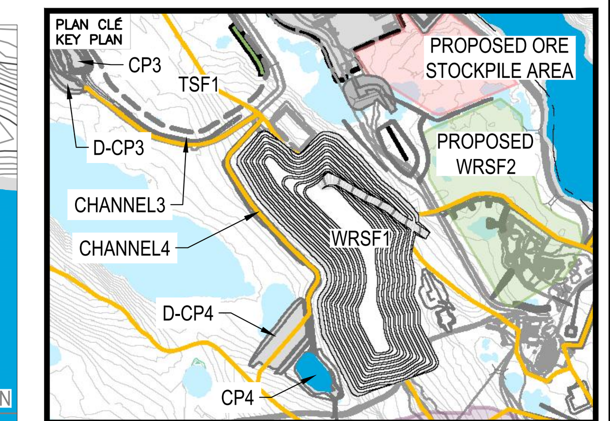
SCALE = 1:5000



PLAN VIEW SHOWING DESIGN GEOMETRY OF WASTE ROCK OUTSIDE SHELL FOR WRSF1

SCALE = 1:5000

PLAN CLÉ
KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF1 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON SEPTEMBER 23, 2019 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF1. THIS WRSF1 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF1, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (77 M AND 82 M) OF THE OVERBURDEN WASTE, IS DIFFERENT FROM THAT USED FOR THIS DESIGN.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
W.T. HORNE
LICENSEE
N.W.T.
NOV 25, 2019

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature [signature]
Date November 25, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE

AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 1

PLAN VIEWS FOR WRSF1

DESSINÉ PAR DRAWN BY	EL	DATE 2019-11-21
VERIFIÉ PAR CHECKED BY	GZ	2019-11-21
APPROUVÉ PAR APPROVED BY	WTH	2019-11-21
ÉCHELLE SCALE	1:2500	DATE 2019-11-21

NO. DESSIN DRAWING NO. 65-686-230-200

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 6

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FILE NO. 65-686-230-200-R1.dwg

NO. DESSIN DRAWING NO. 65-686-230-201-R1

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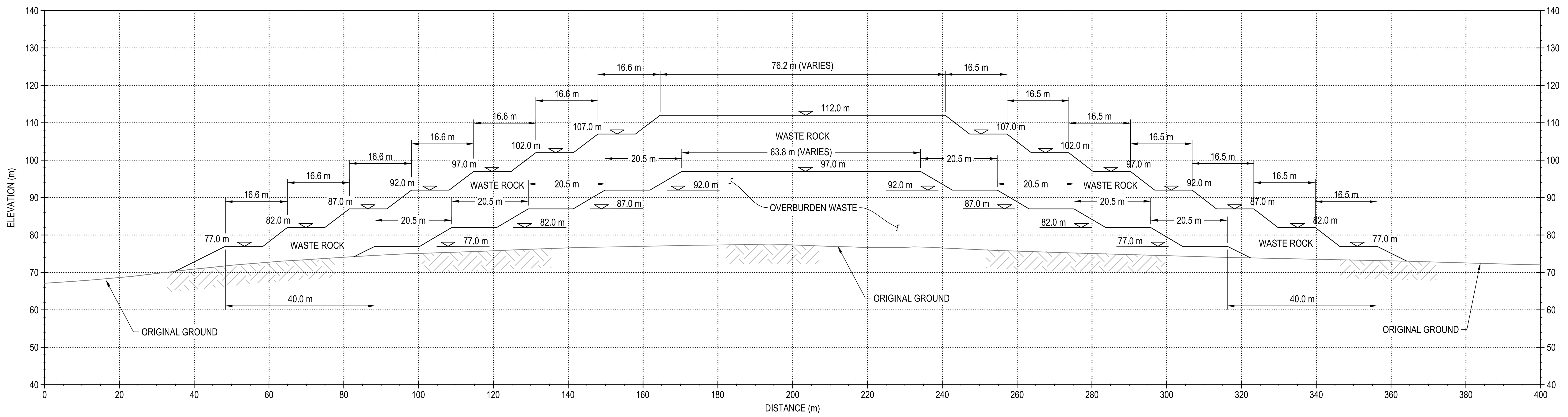

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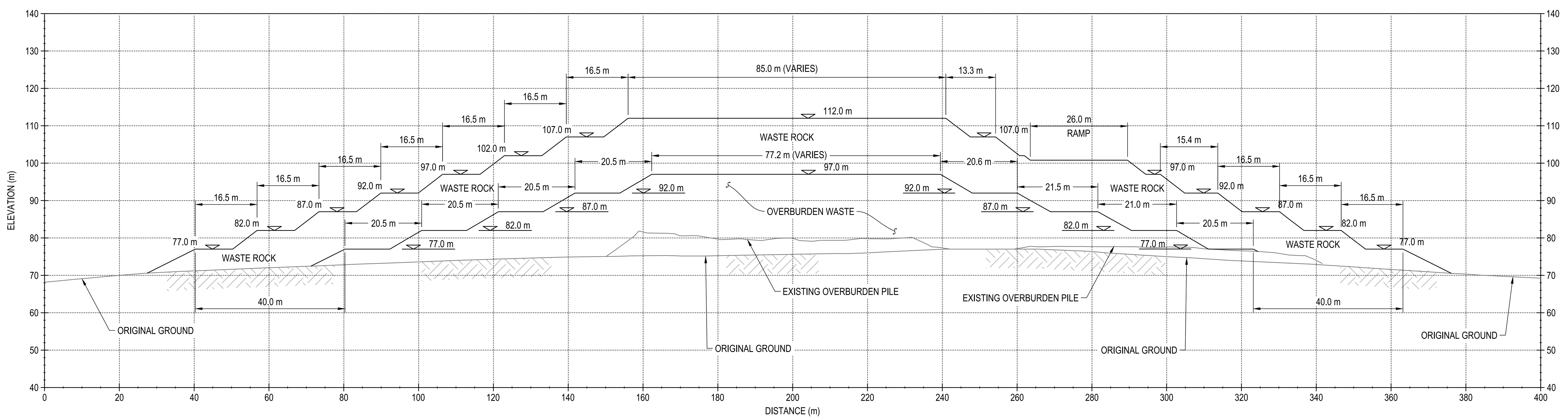

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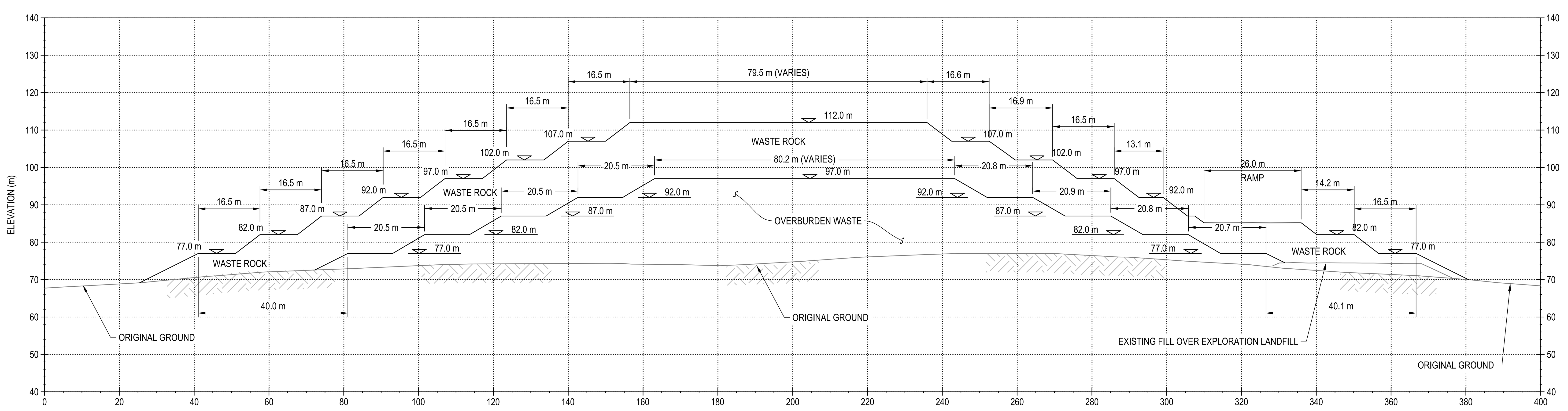

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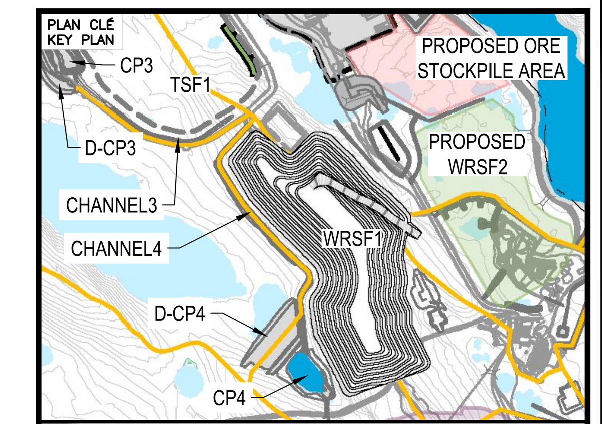
PLAN CLÉ
KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF1 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON SEPTEMBER 23, 2019 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF1. THIS WRSF1 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF1, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (77 M AND 82 M) OF THE OVERBURDEN WASTE, IS DIFFERENT FROM THAT USED FOR THIS DESIGN.
2. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

PERMIT TO PRACTICE TETRA TECH CANADA INC.
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTEROCK STORAGE FACILITY No. 1

SECTIONS A TO C OF WRSF1

DESSINÉ PAR / DRAWN BY	EL	2019-11-21
VÉRIFIÉ PAR / CHECKED BY	GZ	2019-11-21
APPROUVÉ PAR / APPROVED BY	WTH	2019-11-21
ÉCHELLE / SCALE	1:2500	DATE 2019-11-21

NO. DESSIN / DRAWING NO. 65-686-230-201

NO. PROJET / PROJECT NO. 6515 | REVISION 0 | FEUILLE / SHT 2 / 6

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FILE NO. 65-686-230-201-R1.dwg

NO. DESSIN / DRAWING NO. 65-686-230-202-R1

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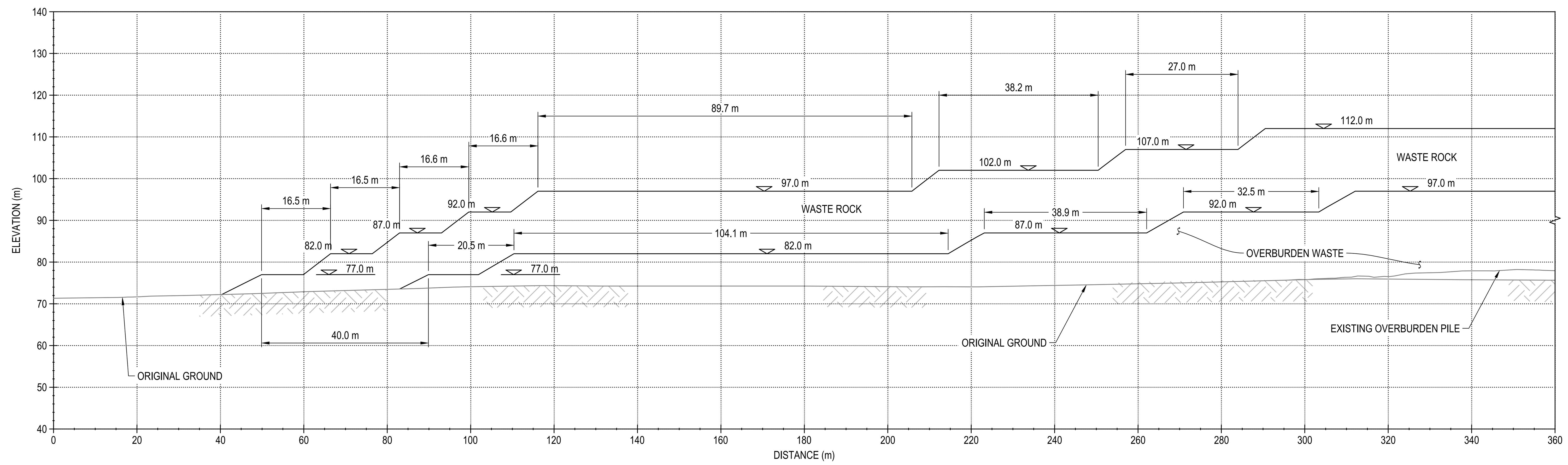

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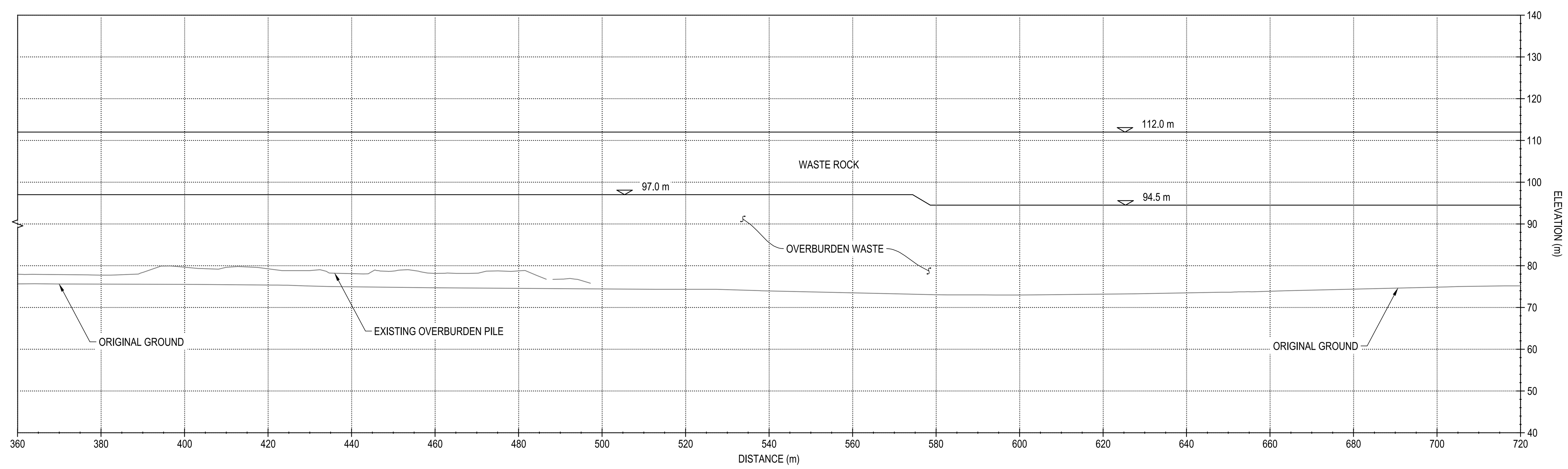

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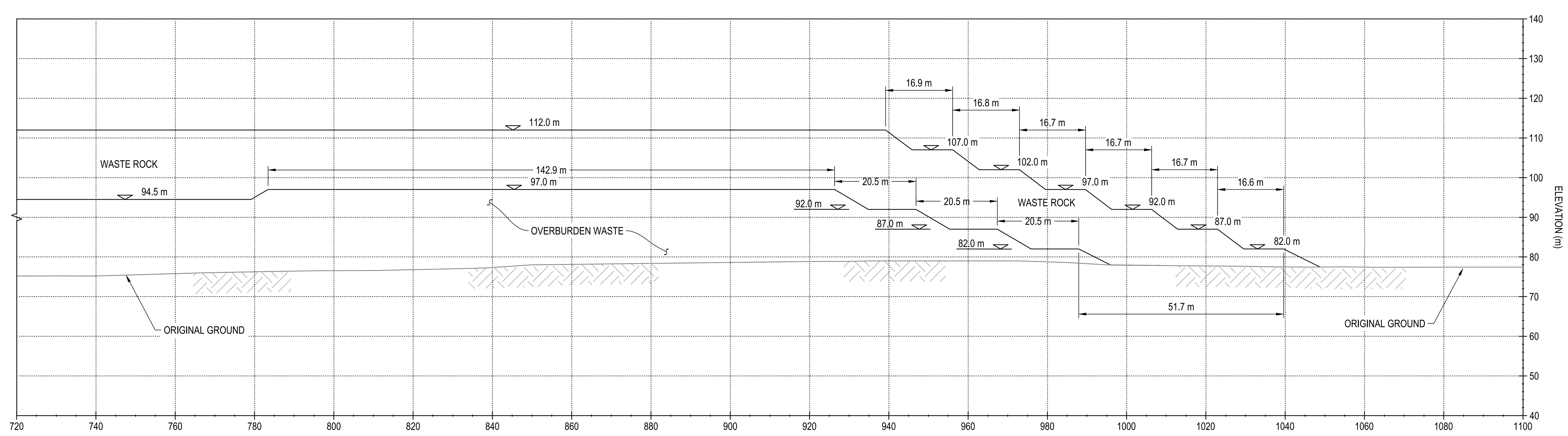

D / 200 SECTION
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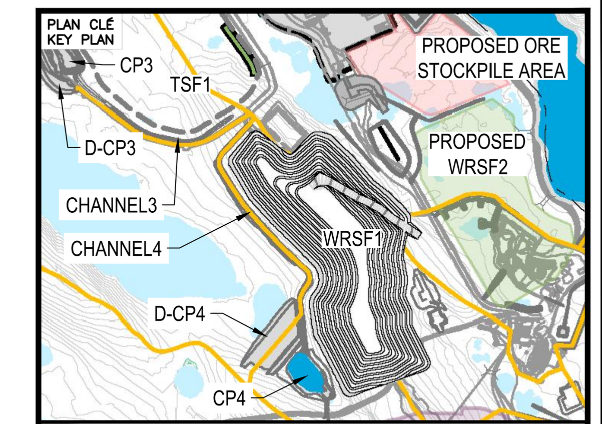
PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

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2. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — W.T. HORNE — LICENSEE — N.W.T. — Nov 25, 2019

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date November 25, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTEROCK STORAGE FACILITY No. 1

SECTION D OF WRSF1

DESSINÉ PAR / DRAWN BY	EL	DATE	2019-11-21
VERIFIÉ PAR / CHECKED BY	GZ		2019-11-21
APPROUVÉ PAR / APPROVED BY	WTH		2019-11-21
ÉCHELLE / SCALE	1:2500	DATE	2019-11-21

NO. DESSIN / DRAWING NO. 65-686-230-202

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	3 / 6

AE-CART-ARCH D

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FILE NO. 65-686-230-202-R1.dwg

NO. DESSIN
DRAWING NO. 65-686-230-203-R1

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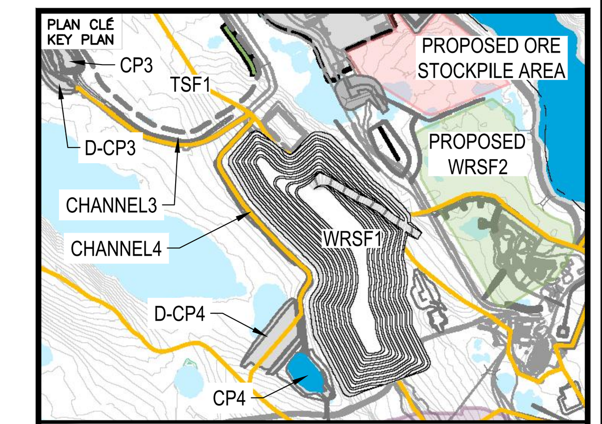
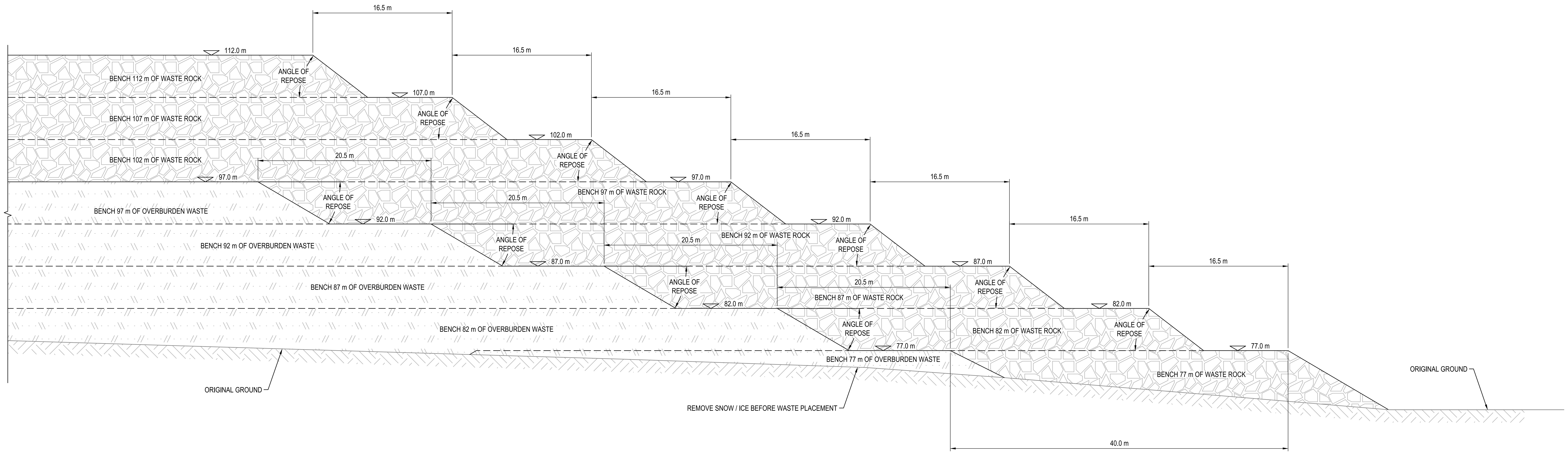
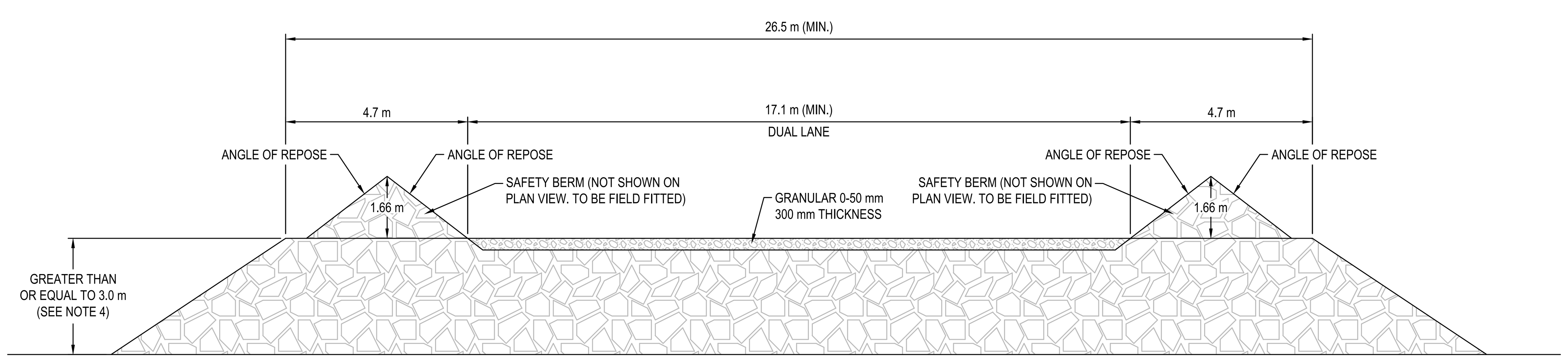
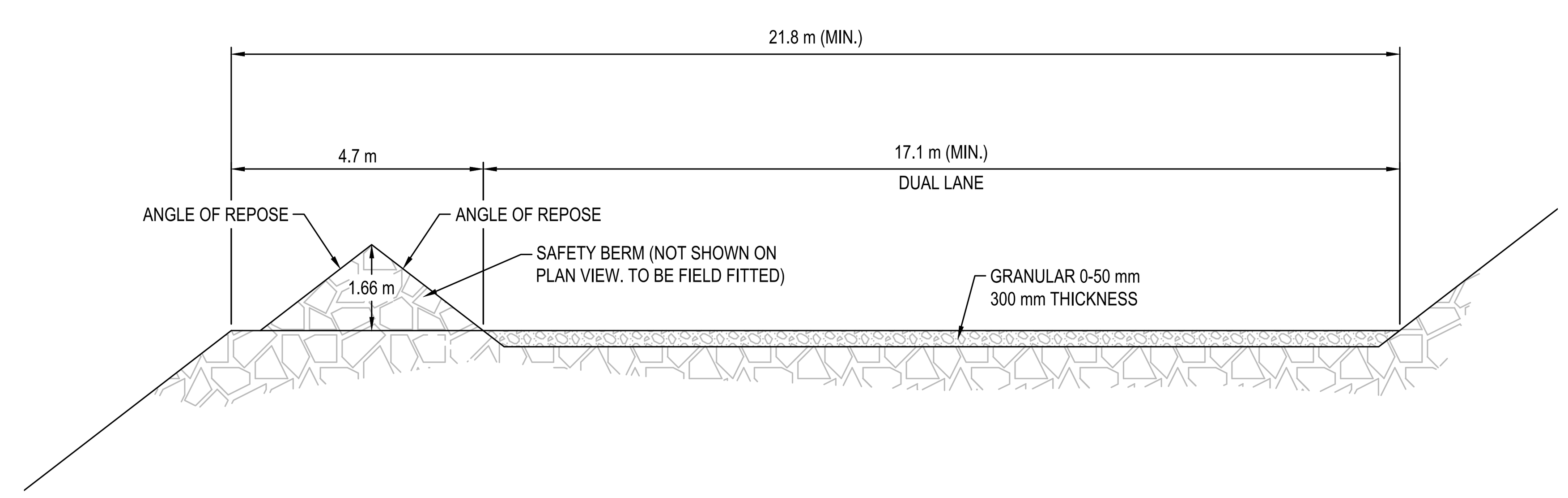




TYPICAL SECTION WITHOUT ACCESS RAMP
SCALE = 1:250



TYPICAL ACCESS RAMP FOR HAUL ROAD WITH TWO SIDE SAFETY BERMS
N.T.S.



TYPICAL ACCESS RAMP FOR HAUL ROAD WITH ONE SIDE SAFETY BERM
N.T.S.

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF1 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON SEPTEMBER 23, 2019 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF1. THIS WRSF1 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF1, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (77 M AND 82 M) OF THE OVERBURDEN WASTE, IS DIFFERENT FROM THAT USED FOR THIS DESIGN.
2. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.
3. ACCESS RAMP DESIGNED FOR HAUL TRUCK TYPE OF CAT 775G.
4. A SAFETY BERM IS REQUIRED IF A DROP OFF GREATER THAN 3 m EXISTS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER W. T. HORNE LICENSEE N.W.T. / NU
PERMIT TO PRACTICE TETRA TECH CANADA INC.
Signature
Date November 26, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTEROCK STORAGE FACILITY No. 1

TYPICAL SECTION AND
ACCESS RAMP DESIGN OF WRSF1

DESSINÉ PAR / DRAWN BY	EL	DATE	2019-11-21
VERIFIÉ PAR / CHECKED BY	GZ		2019-11-21
APPROUVÉ PAR / APPROVED BY	WTH		2019-11-21
ÉCHELLE / SCALE	1:2500	DATE	2019-11-21

NO. DESSIN / DRAWING NO. 65-686-230-203

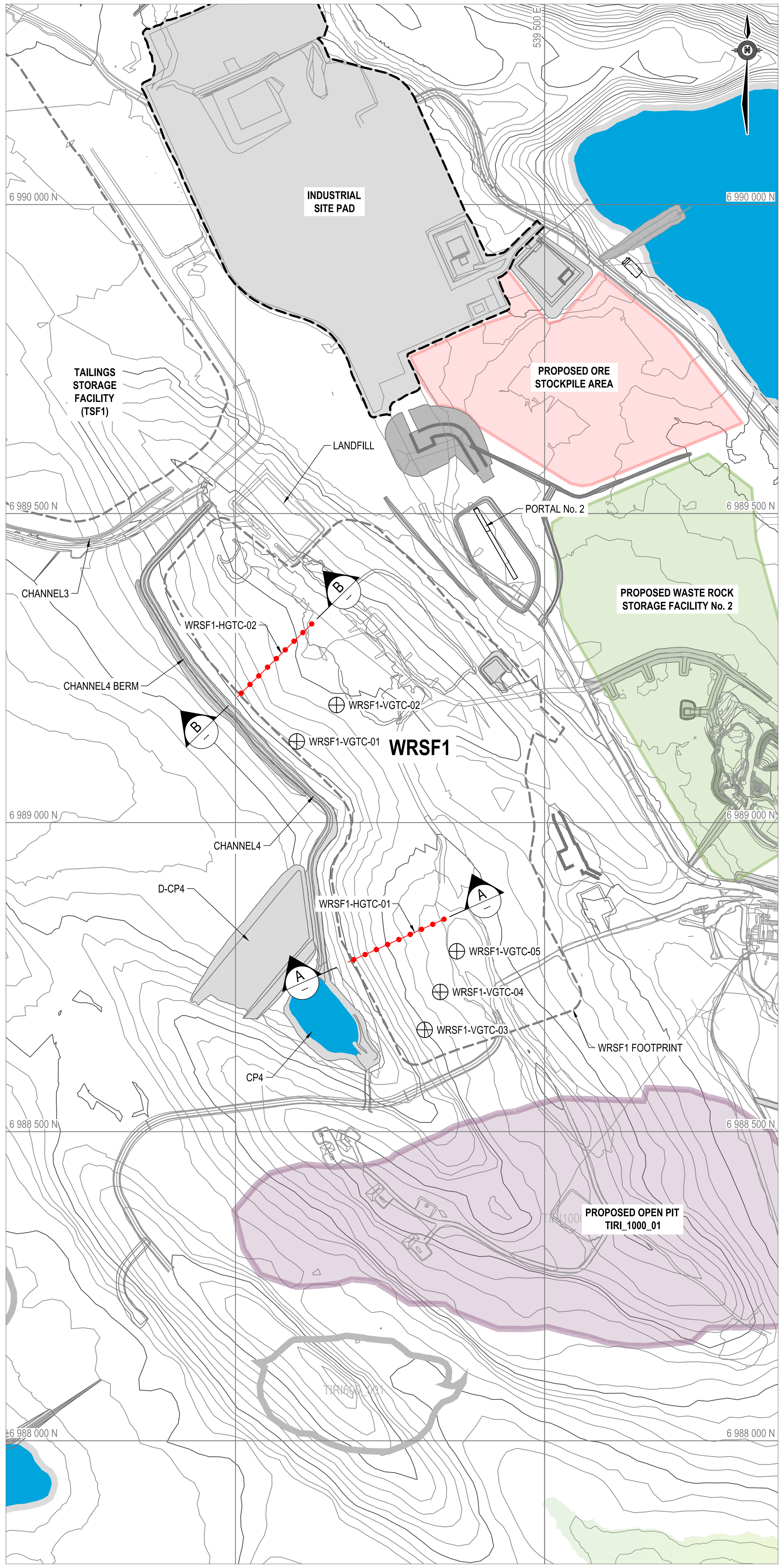
NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	4 / 6

AE-CART-ARCH D
Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-02 (WRSF1)\Production Drawings\65-686-230-203-R1.dwg-2013-02-19 14:03:29

FILE NO. 65-686-230-203-R1.dwg

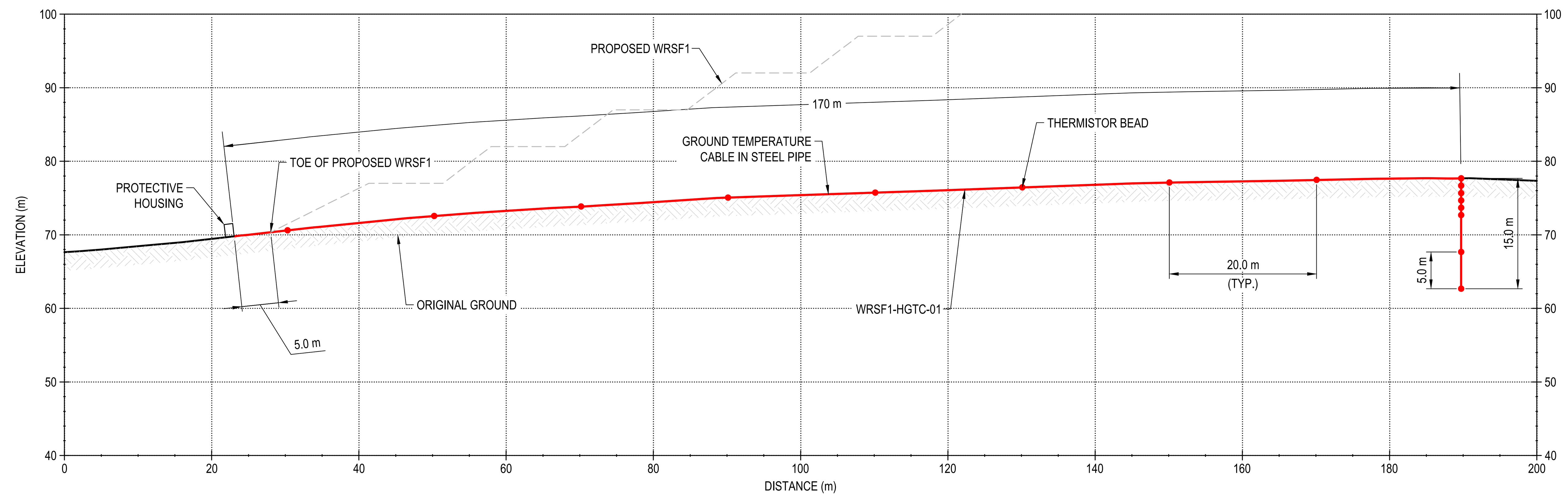
NO. DESSIN DRAWING NO. 65-686-230-204-R1

FORMAT ARCHD



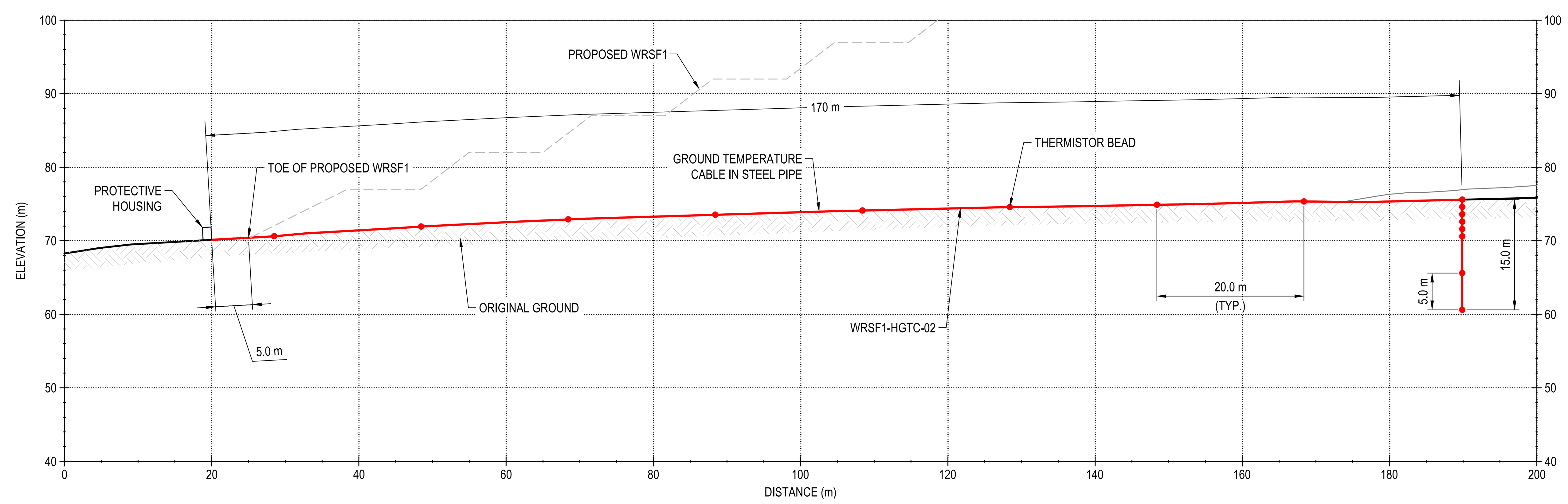
PLAN VIEW SHOWING PROPOSED LOCATIONS OF GROUND TEMPERATURE CABLES FOR WRSF1

SCALE = 1:5000



A WRSF1-HGTC-01

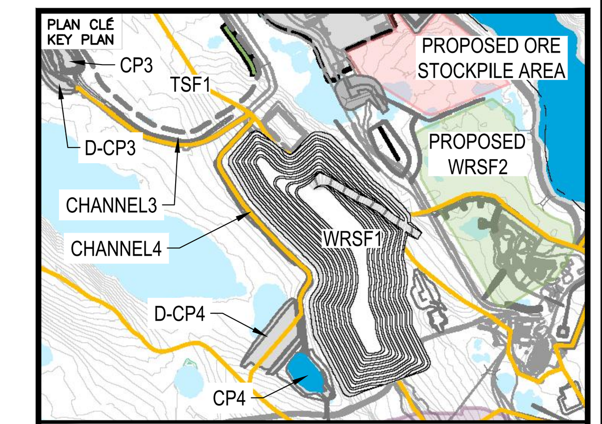
SCALE: 1:500



B WRSF1-HGTC-02

SCALE: 1:500

PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. A TOTAL OF 16 THERMISTOR BEADS FOR EACH GROUND TEMPERATURE CABLE

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
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–	–
–	–
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

PERMIT TO PRACTICE TETRA TECH CANADA INC.
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 1

PROPOSED GROUND TEMPERATURE CABLE AND THERMISTOR BEAD LOCATIONS FOR WRSF1

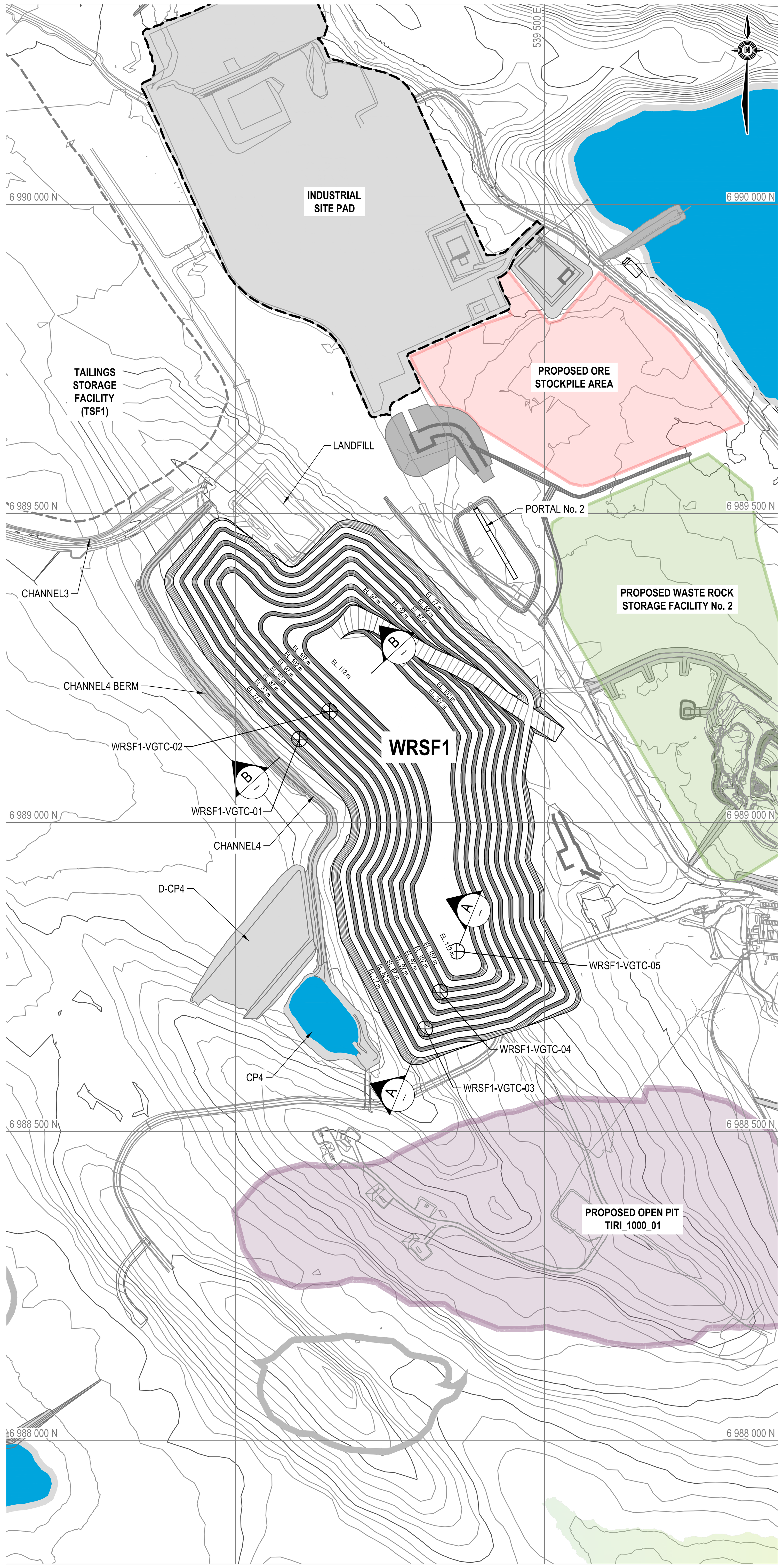
DESSINÉ PAR / DRAWN BY	EL	DATE	2019-11-21
VÉRIFIÉ PAR / CHECKED BY	GZ		2019-11-21
APPROUVÉ PAR / APPROVED BY	WTH		2019-11-21
ÉCHELLE / SCALE	1:2500	DATE	2019-11-21

NO. DESSIN / DRAWING NO. 65-686-230-204

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	5 / 6

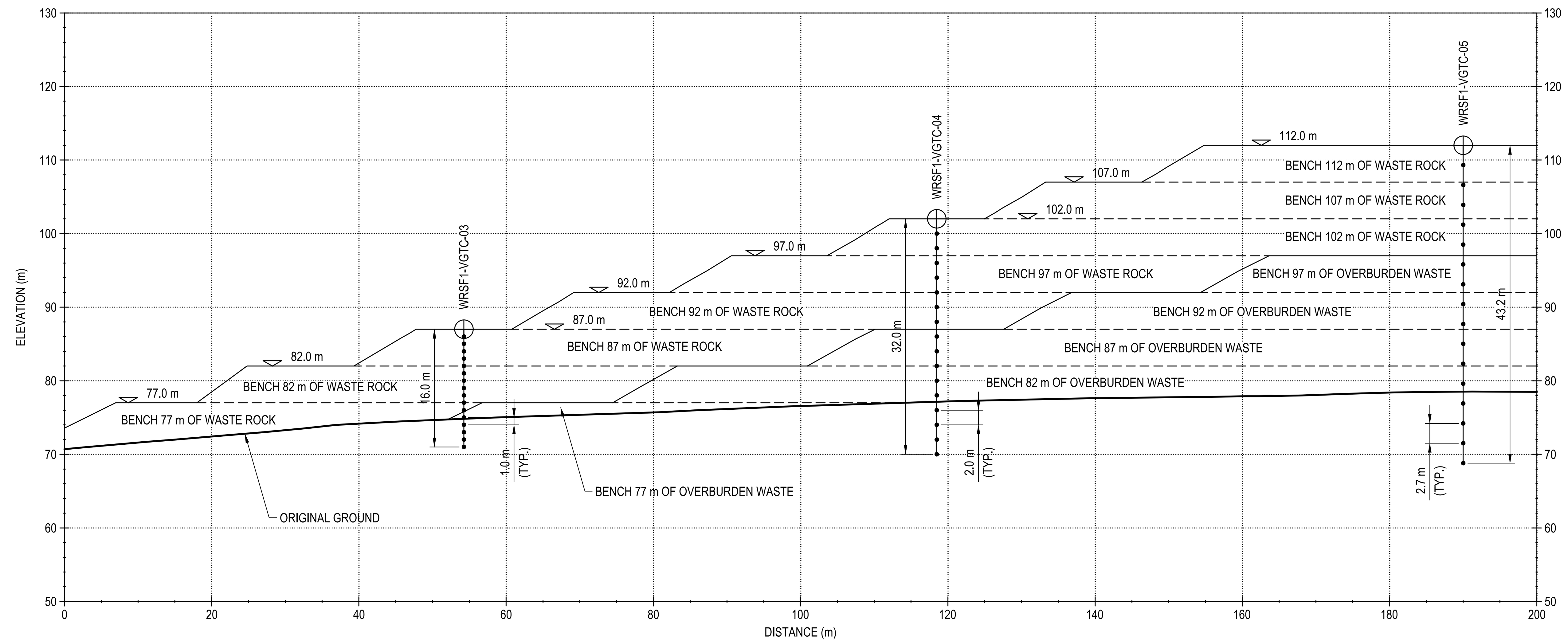
NO. DESSIN DRAWING NO. 65-686-230-205-R1

FORMAT ARCHD



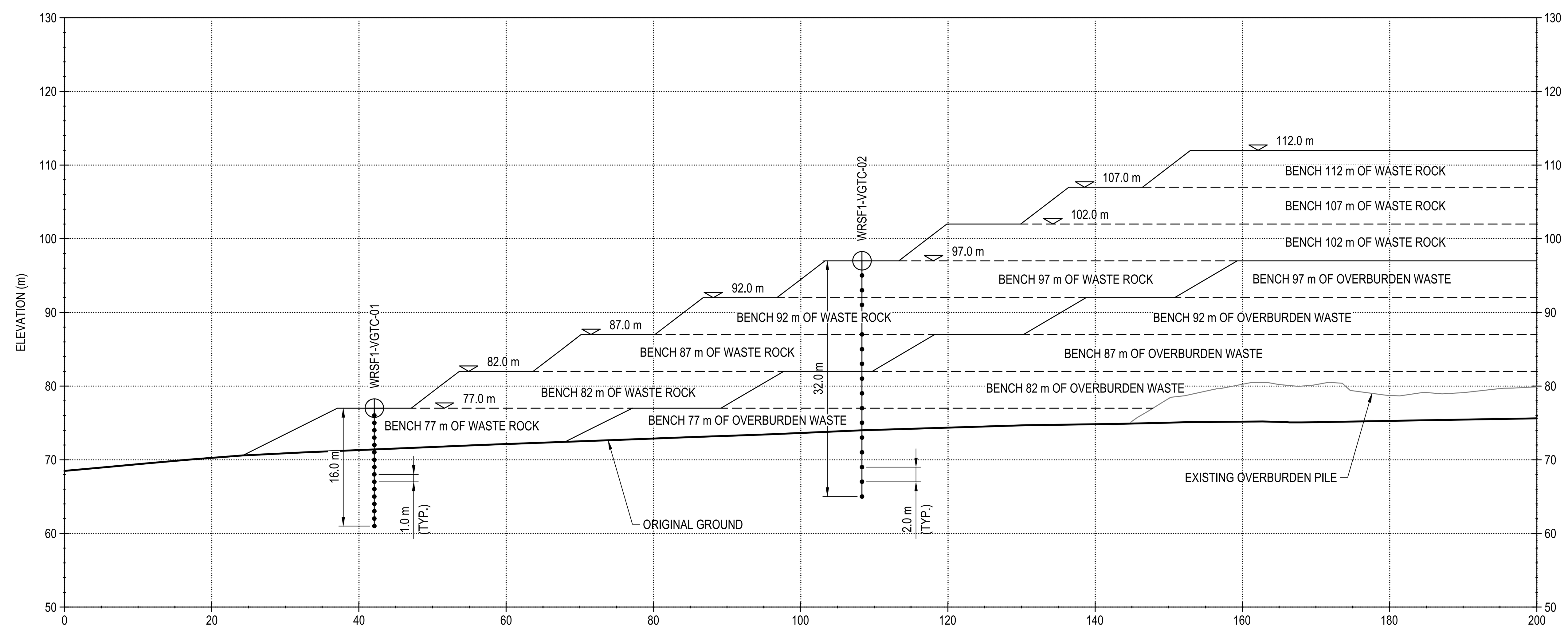
PLAN VIEW SHOWING PROPOSED LOCATIONS OF GROUND TEMPERATURE CABLES FOR WRSF1

SCALE = 1:5000



A INSTRUMENTATION

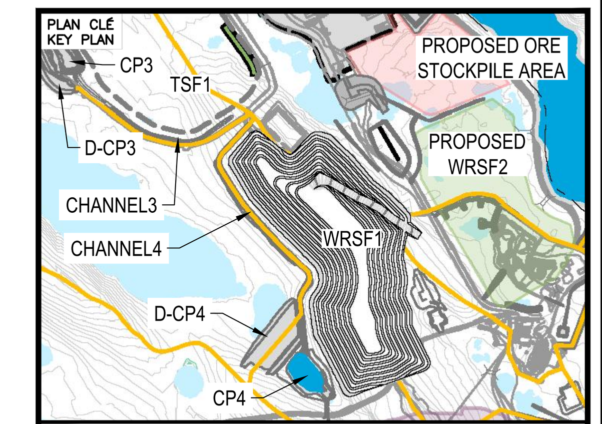
SCALE: 1:500



B INSTRUMENTATION

SCALE: 1:500

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. A TOTAL OF 16 THERMISTOR BEADS FOR EACH GROUND TEMPERATURE CABLE

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2019-11-21	ISSUED FOR CONSTRUCTION	GZ	WTH	

REVISIONS

PERMIT TO PRACTICE TETRA TECH CANADA INC.
Signature
Date November 26, 2019
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

W. T. HORNE LICENSEE N.W.T. Nov 25, 2019

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 1

PROPOSED GROUND TEMPERATURE CABLE AND THERMISTOR BEAD LOCATIONS FOR WRSF1

DESSINÉ PAR DRAWN BY	EL	DATE	2019-11-21
VÉRIFIÉ PAR CHECKED BY	GZ		2019-11-21
APPROUVÉ PAR APPROVED BY	WTH		2019-11-21
ÉCHELLE SCALE	1:2500	DATE	2019-11-21

NO. DESSIN DRAWING NO. 65-686-230-205

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	6 / 6

AE-CART-ARCH D

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-02 (WRSF1)\Production Drawings\65-686-230-205-R1.dwg-2013-02-19 14:03:29

FILE NO. 65-686-230-205-R1.dwg

Photo 1: WRSF1—Viewed from Crusher Ramp—Waste Rock in WRSF1 in distance.

Photo 2: WRSF1—Viewed from Paste Plant Ramp—Low point along toe of WRSF.

Photo 3: WRSF1—Viewed from Paste Plant Ramp—Ground conditions at settlement in first bench surface. Settlement area circled in photo.

Photo 4: WRSF1—Settlement zone on first bench, shown in Photo 3.

Photo 5: WRSF1—Haul ramp onto WRSF.

Photo 6: WRSF1—Waste rock placement—widening lower bench.

Photo 7: WRSF1—West side of WRSF, CP4 Berm in background.

Photo 8: WRSF1—West side of WRSF looking northwest, TSF in distance.

Photo 9: WRSF1—Winter placement overburden (surface) with summer placement overburden overtop.

Photo 10: WRSF1—Recent overburden placement outside of WRSF overburden limits.

Photo 11: WRSF1—Condition of winter placement overburden on top bench.

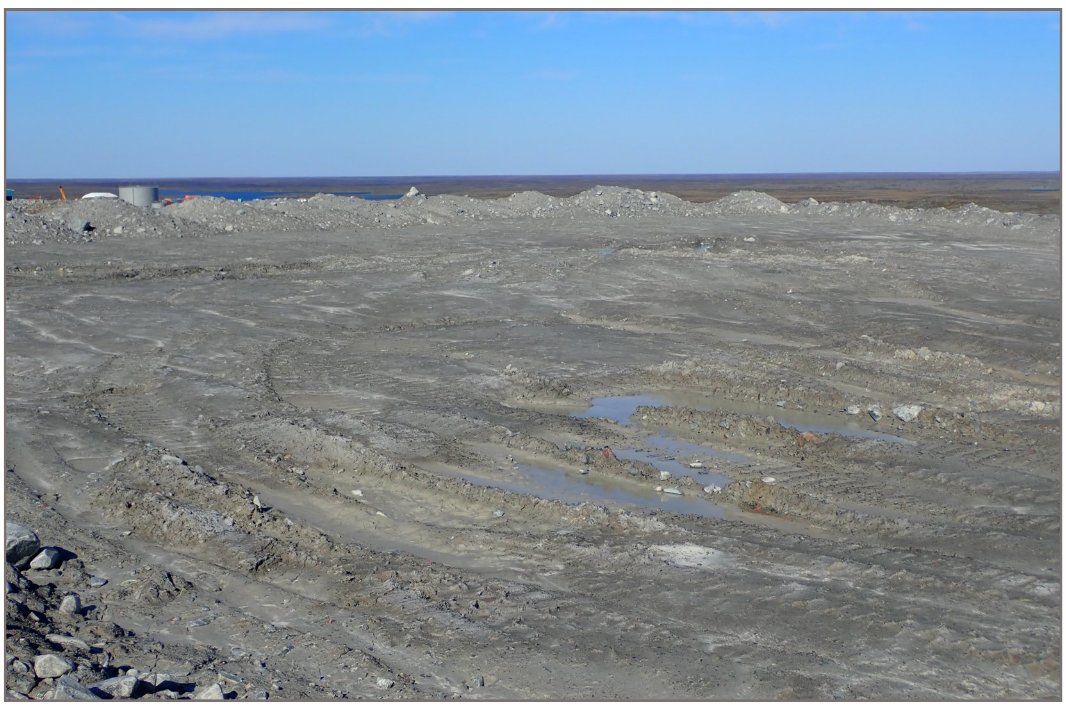
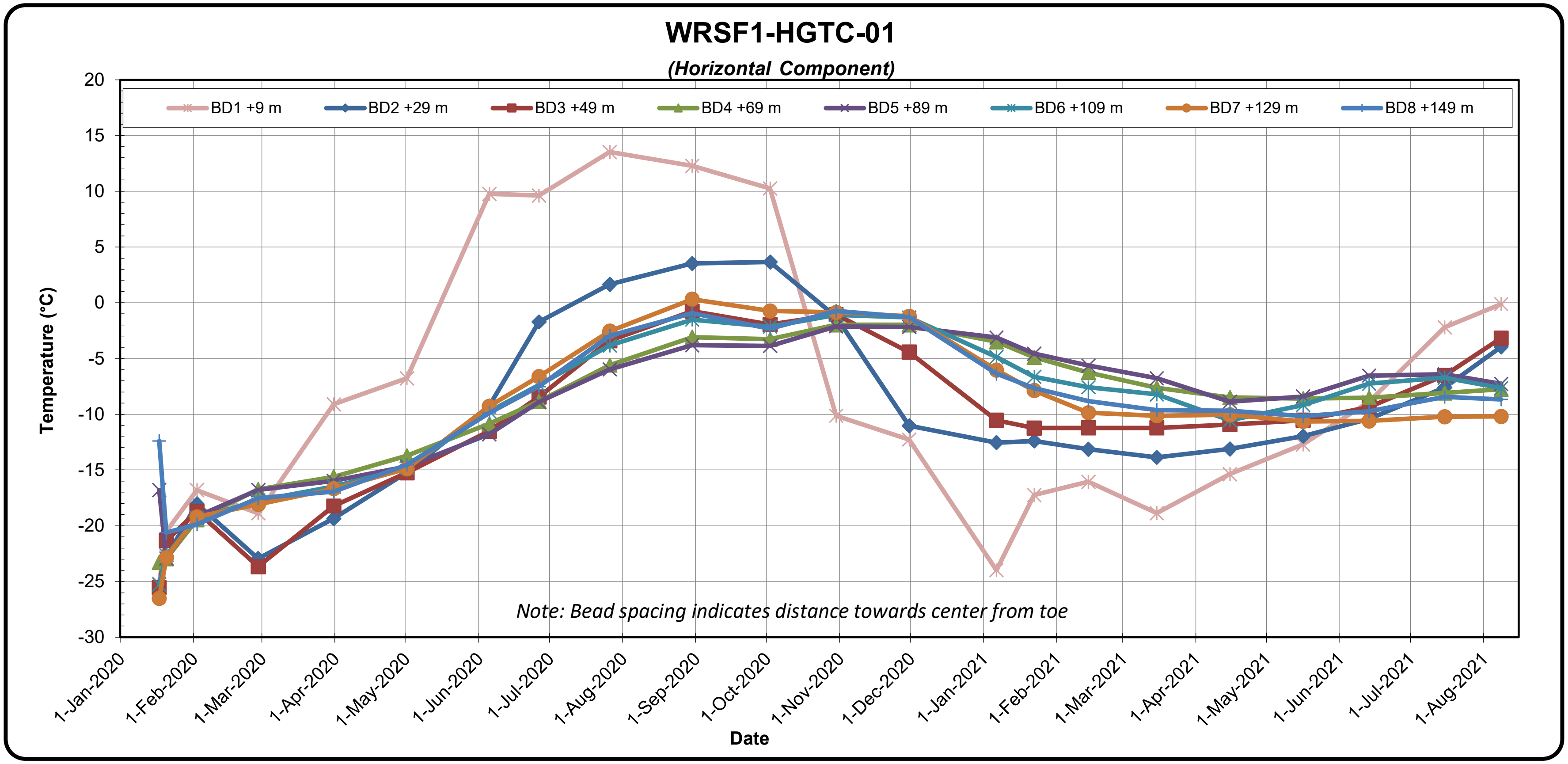


Photo 12: WRSF1—Condition of winter placement overburden on top bench.

Photo 13: WRSF1—Waste rock plating in overburden for access.

Photo 14: WRSF1—Recent placement within overburden limit.


WRSF1-HGTC-01
(Horizontal Component)
BD1 +9 m
BD2 +29 m
BD3 +49 m
BD4 +69 m
BD5 +89 m
BD6 +109 m
BD7 +129 m
BD8 +149 m
Temperature (°C)
20
15
10
5
0
-5
-10
-15
-20
-25
-30
Note: Bead spacing indicates distance towards center from toe
1-Jan-2020
1-Feb-2020
1-Mar-2020
1-Apr-2020
1-May-2020
1-Jun-2020
1-Jul-2020
1-Aug-2020
1-Sep-2020
1-Oct-2020
1-Nov-2020
1-Dec-2020
1-Jan-2021
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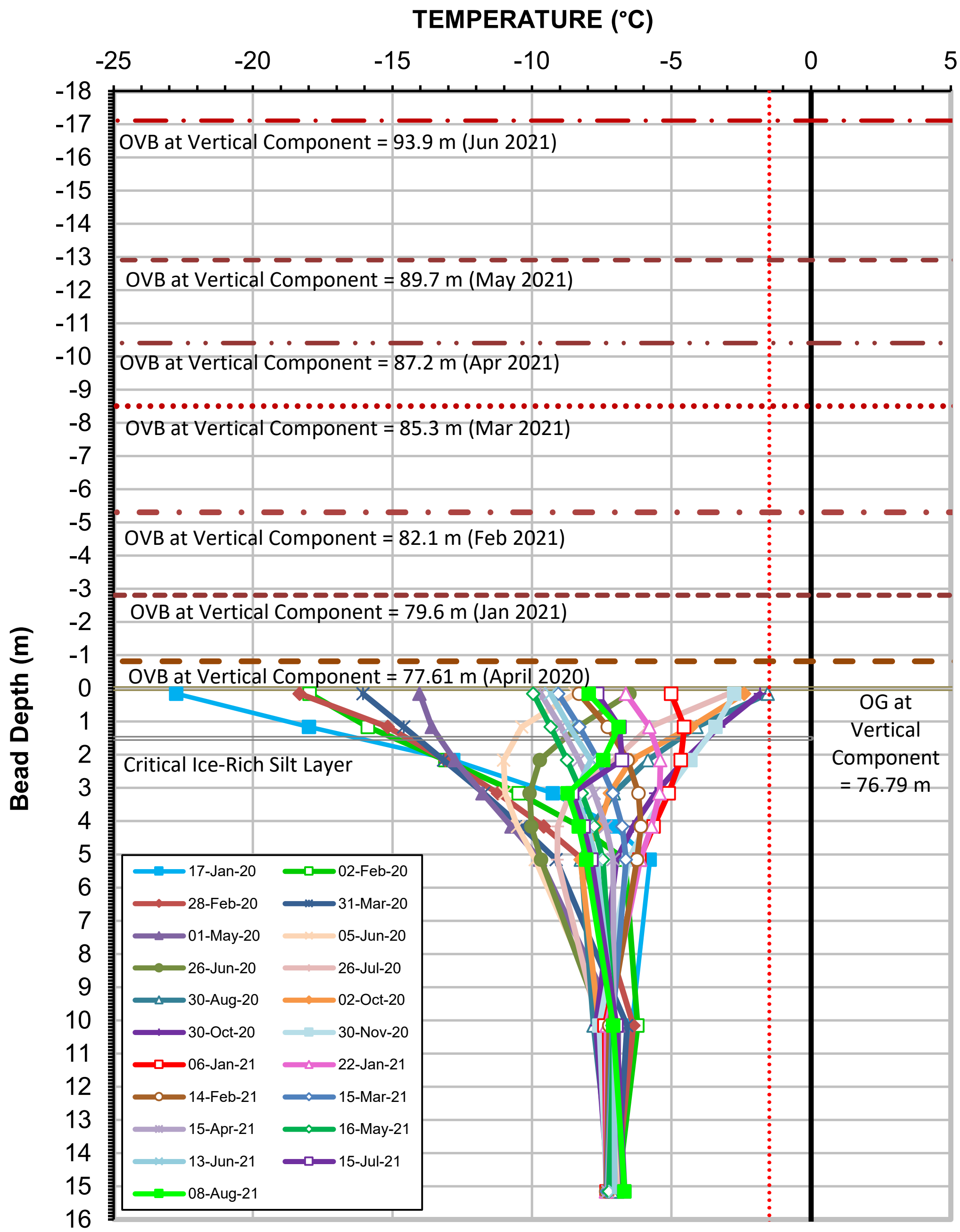
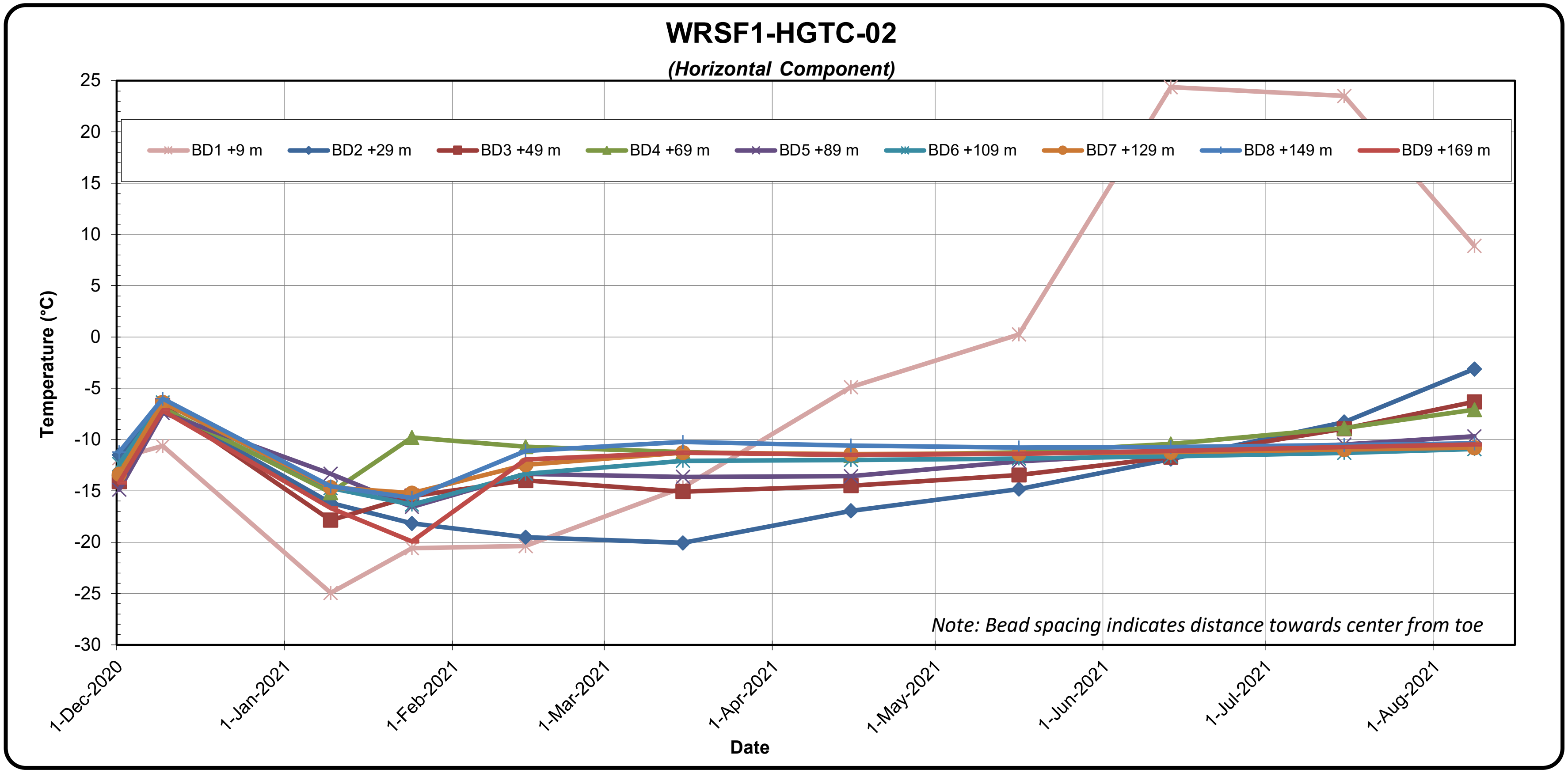
1-May-2021
1-Jun-2021
1-Jul-2021
1-Aug-2021
Date

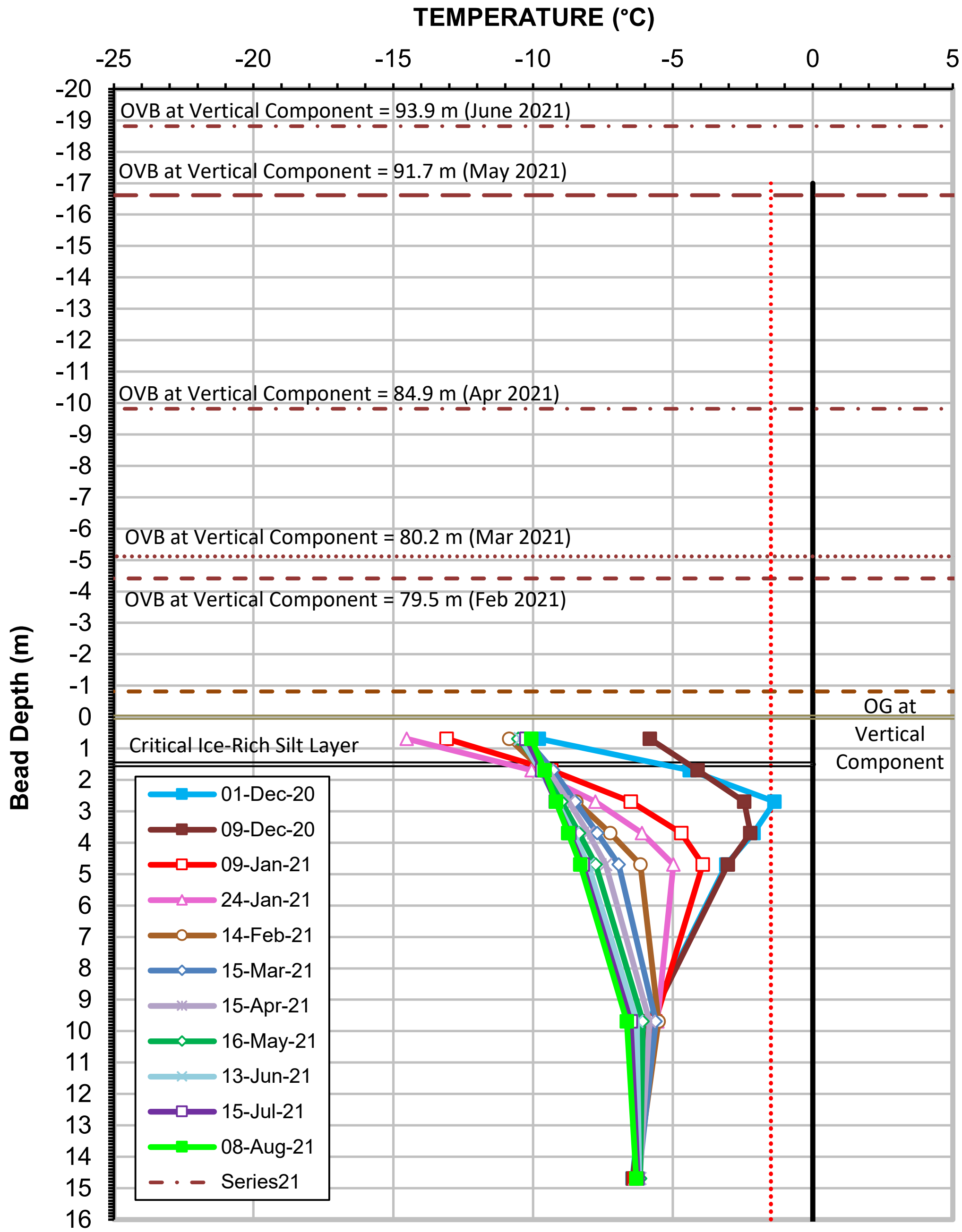


Ground Temperature Profile for Cable WRSF1-HGTC-01
(*Vertical Component*)
Waste Rock Storage Facility 1

Date Installed: January 14, 2020



WRSF1-HGTC-02
(Horizontal Component)
BD1 +9 m
BD2 +29 m
BD3 +49 m
BD4 +69 m
BD5 +89 m
BD6 +109 m
BD7 +129 m
BD8 +149 m
BD9 +169 m
Temperature (°C)
Date
Note: Bead spacing indicates distance towards center from toe



Ground Temperature Profile for Cable WRSF1-HGTC-02
(*Vertical Component*)
Waste Rock Storage Facility 1

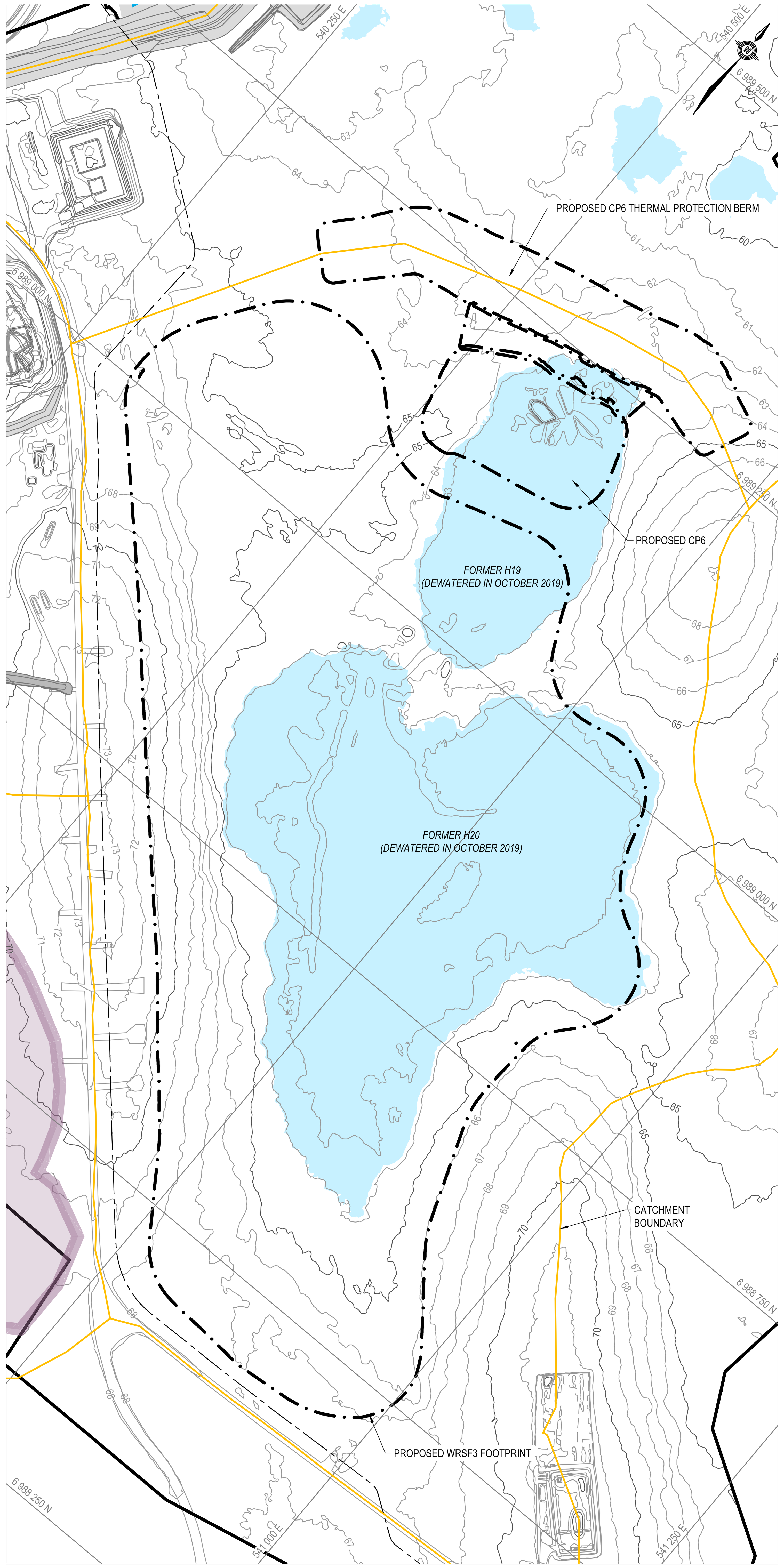
Date Installed: December 1, 2020

APPENDIX R

WASTE ROCK STORAGE FACILITY 3

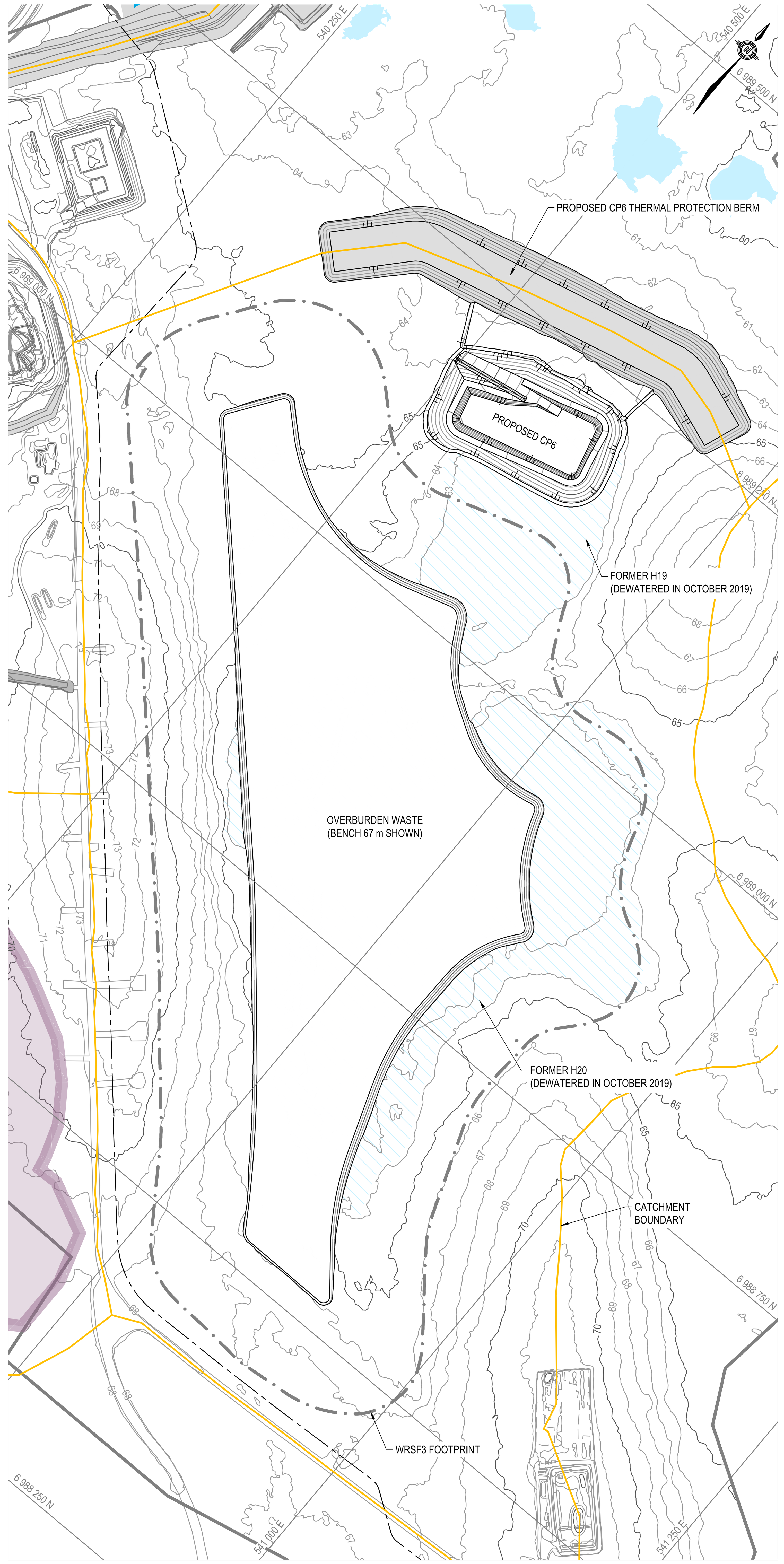
NO. DESSIN DRAWING NO. 65–686–230–205

FORMAT ARCHD



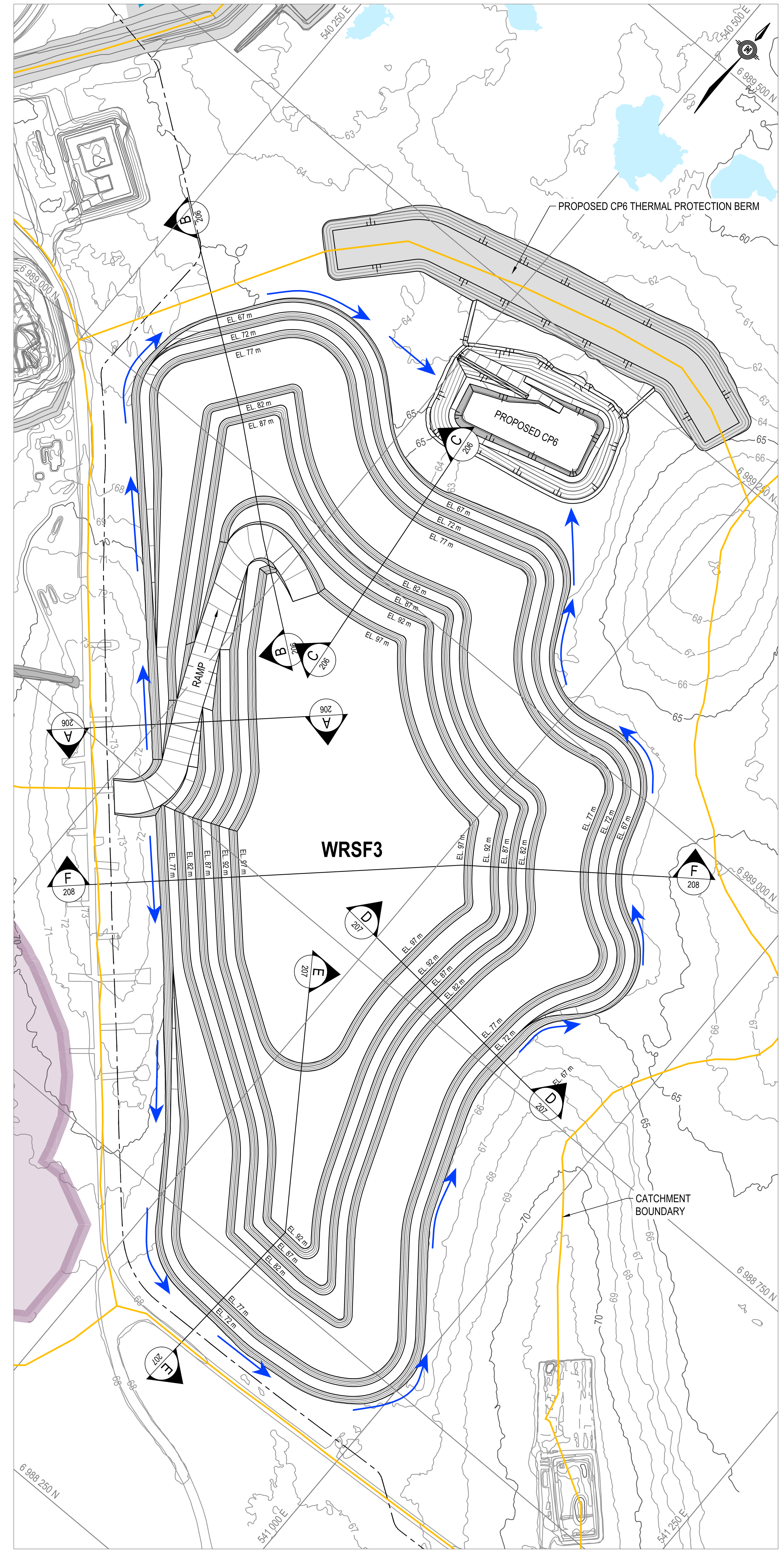
PLAN VIEW SHOWING CURRENT CONDITION

SCALE = 1:2500



PLAN VIEW SHOWING INTERNAL DESIGN GEOMETRY OF OVERBURDEN WASTE IN WRSF3

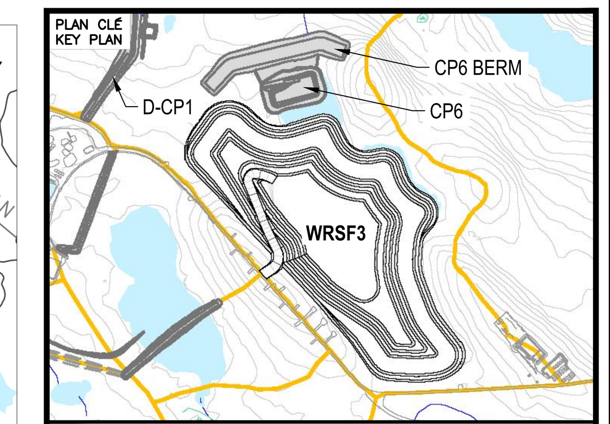
SCALE = 1:2500



PLAN VIEW SHOWING DESIGN GEOMETRY OF WASTE ROCK OUTSIDE SHELL FOR WRSF3

SCALE = 1:2500

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF3 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON JANUARY 29 AND FEBRUARY 3, 2020 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF3. THIS WRSF3 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF3, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (67 M AND 72 M) OF THE WASTE ROCK AND OVERBURDEN, IS DIFFERENT FROM THAT USED IN THIS DESIGN.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020–02–21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020–02–14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER G. ZHANG LICENSEE NWT/NU Feb. 21, 2020

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Feb 21, 2020
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
PLAN VIEW

DESSINÉ PAR DRAWN BY	EL	DATE	2020–02–21
VERIFIÉ PAR CHECKED BY	GZ		2020–02–21
APPROUVÉ PAR APPROVED BY	WTH		2020–02–21
ÉCHELLE SCALE	1:2000	DATE	2020–02–21

NO. DESSIN DRAWING NO. 65–686–230–205

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 6

AE-CART-ARCH D

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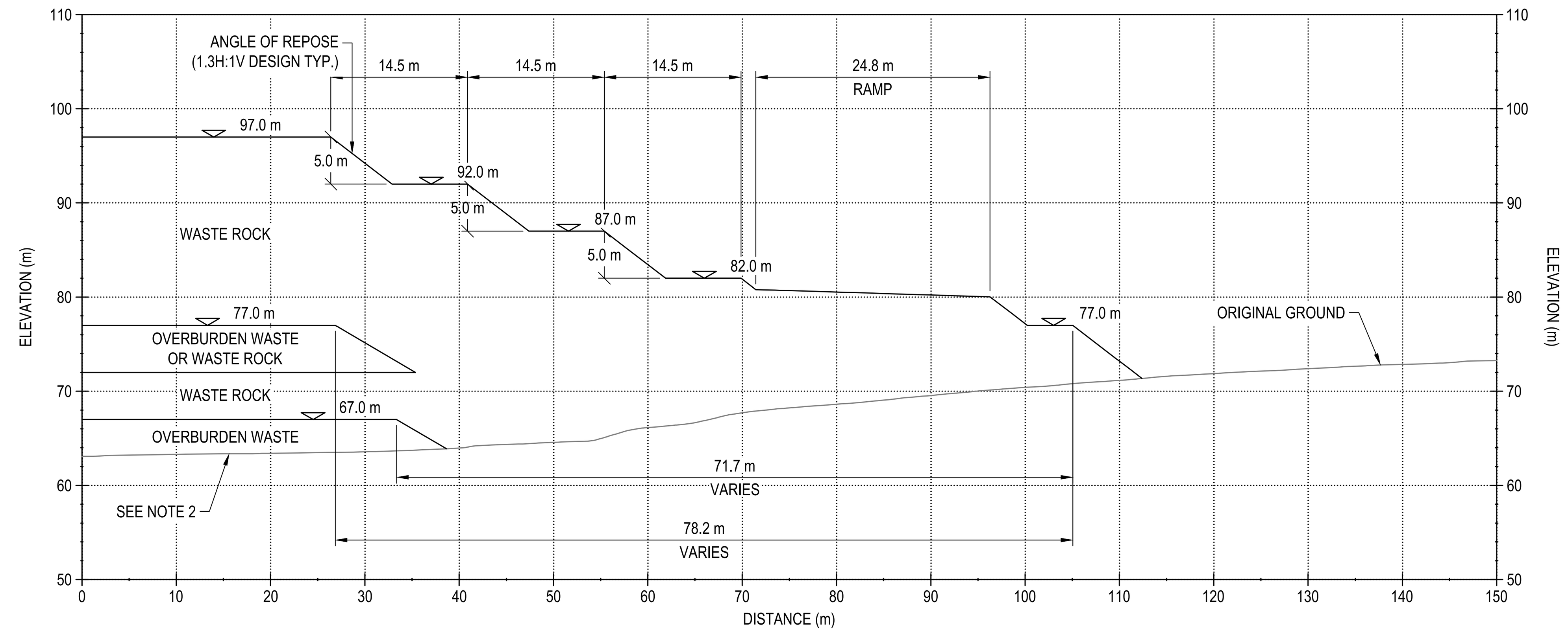
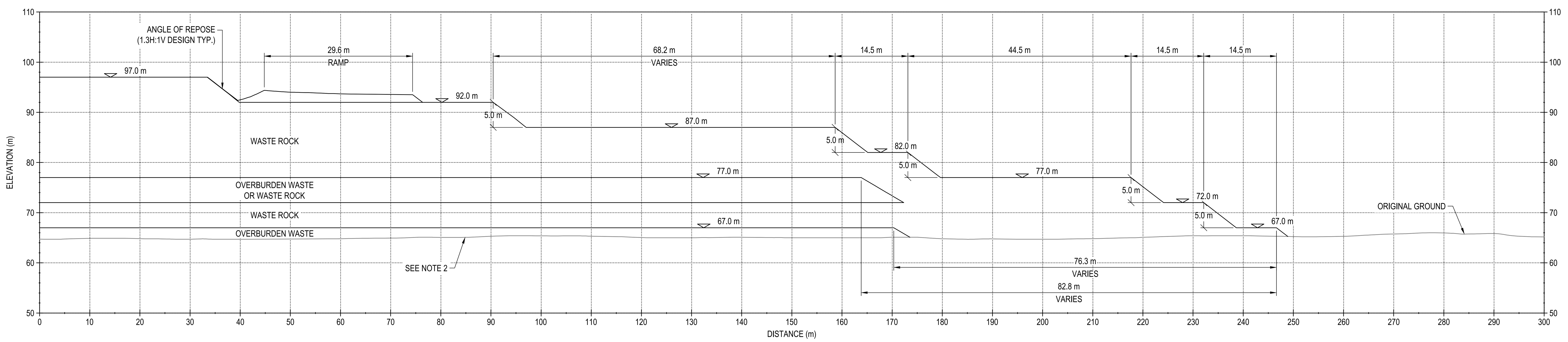
FILE NO. 65–686–230–205.dwg

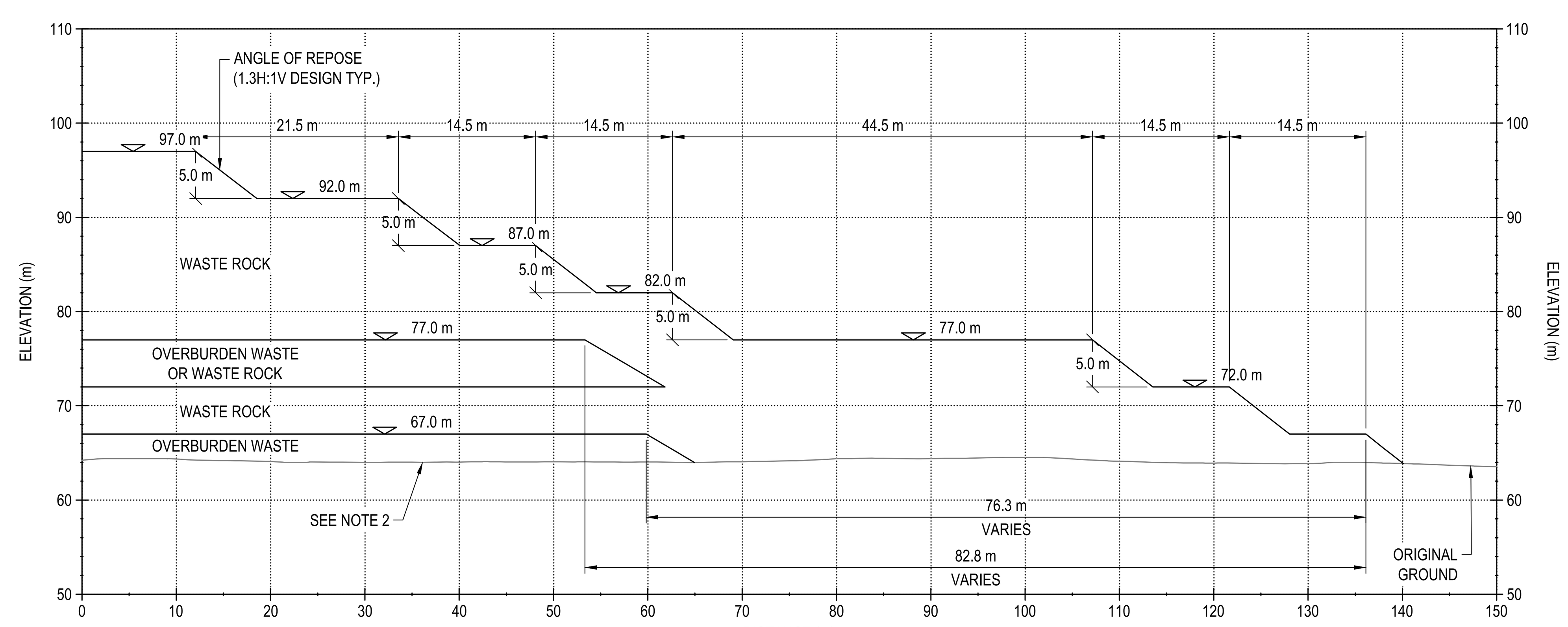
FORMAT ARCHD



A SECTION
205 SCALE: 1:500

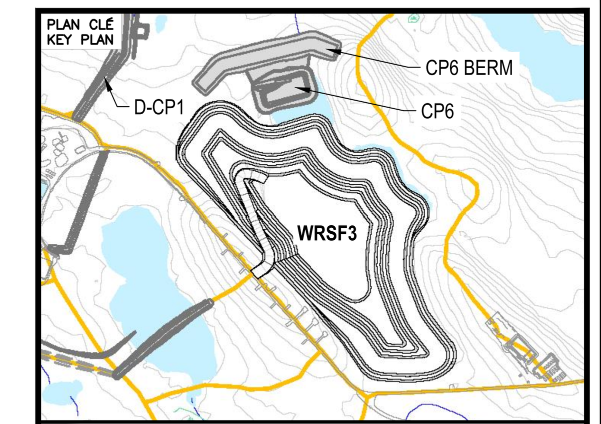


B SECTION
205 SCALE: 1:500



C SECTION
205 SCALE: 1:750

PLAN CLÉ / KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF3 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON JANUARY 29 AND FEBRUARY 3, 2020 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF3. THIS WRSF3 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF3, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (67 M AND 72 M) OF THE WASTE ROCK AND OVERBURDEN, IS DIFFERENT FROM THAT USED IN THIS DESIGN.
2. THE FORMER LAKES H19 AND H20 WERE NOT COMPLETELY DEWATERED BEFORE THE REMAINING WATER FROZE LAST FALL. THEREFORE, THERE IS A LAYER OF SOLID/CLEAR ICE WITHIN THE FORMER H19 AND H20 AREAS. THIS LAKE ICE LAYER TOGETHER WITH ANY SNOW/ICE WITHIN THE WRSF3 FOOTPRINT SHOULD BE COMPLETELY REMOVED BEFORE PLACING THE WASTE ROCK AND OVERBURDEN IN WRSF3.
3. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020-02-21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-02-14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — G. ZHANG — LICENSEE — NWT/NU — Feb. 21, 2020

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Feb. 21, 2020
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
SECTIONS A TO C

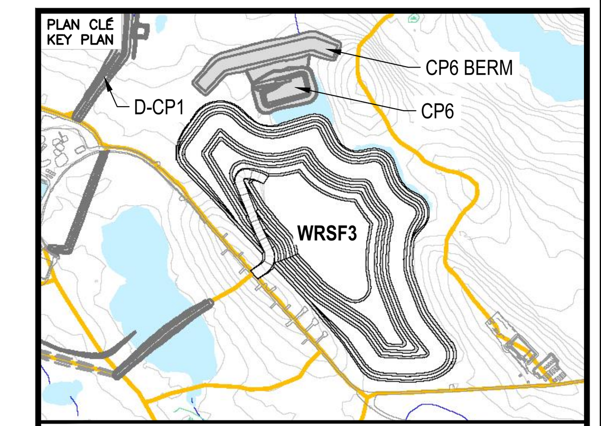
		DATE
DESSINÉ PAR / DRAWN BY	EL	2020-02-21
VÉRIFIÉ PAR / CHECKED BY	GZ	2020-02-21
APPROUVÉ PAR / APPROVED BY	WTH	2020-02-21
ÉCHELLE / SCALE	1:2000	2020-02-21

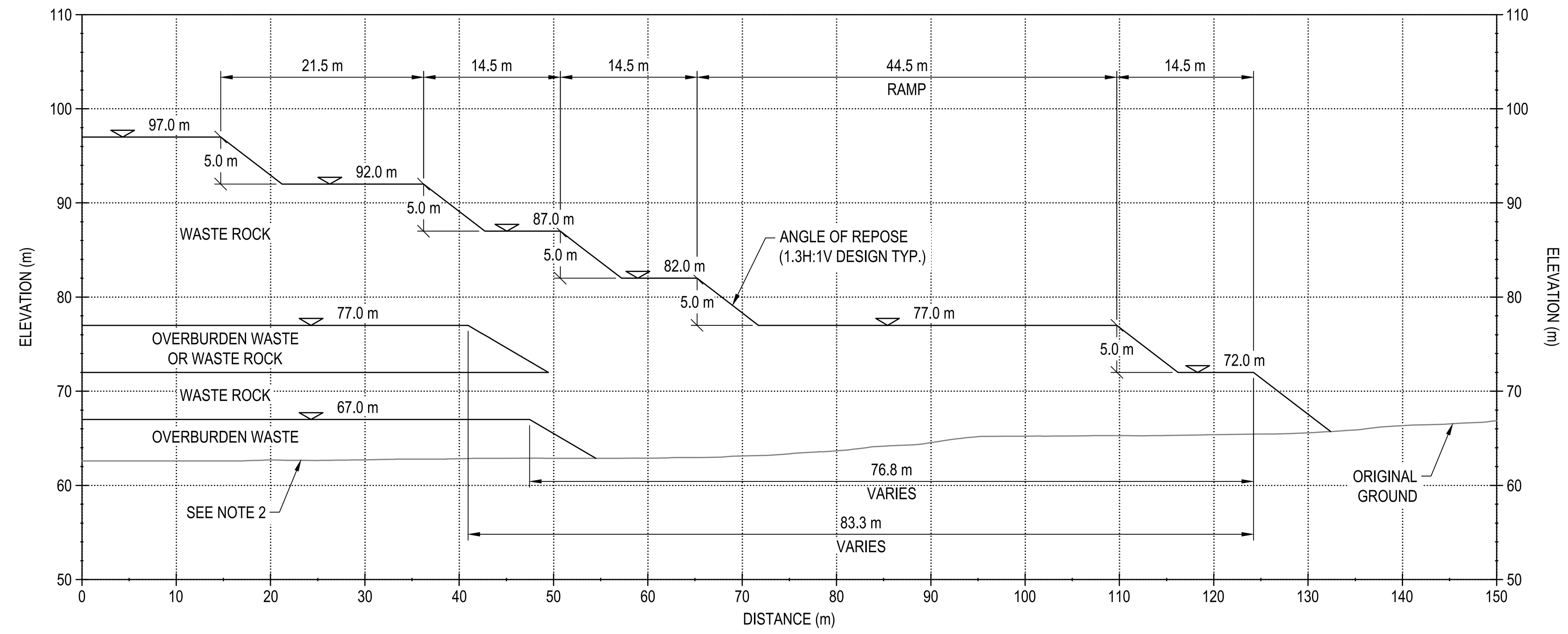
NO. DESSIN / DRAWING NO. 65-686-230-206

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	2 / 6

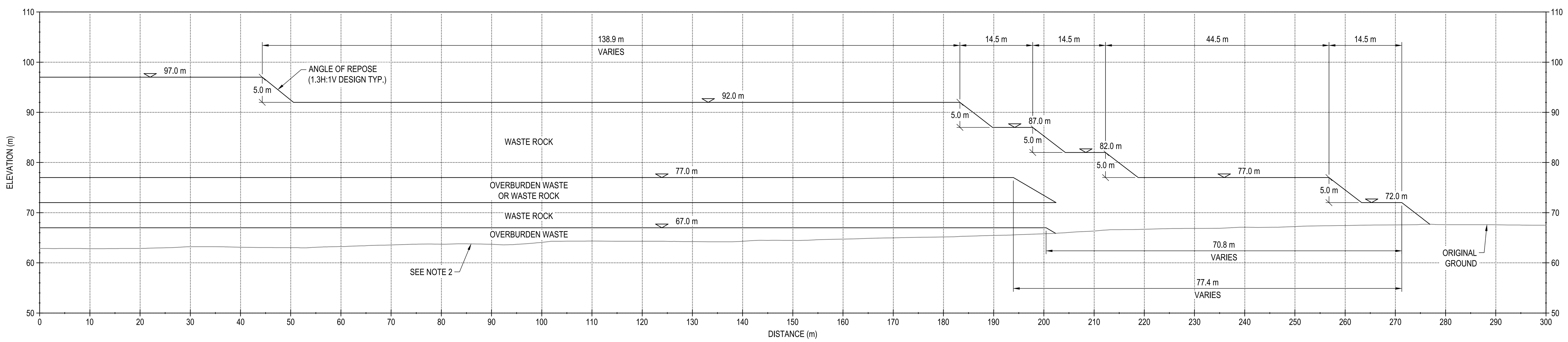
NO. DESSIN / DRAWING NO. 65–686–230–207

FORMAT ARCHD





D SECTION
205 SCALE: 1:500



E SECTION
205 SCALE: 1:500

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF3 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON JANUARY 29 AND FEBRUARY 3, 2020 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF3. THIS WRSF3 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF3, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (67 M AND 72 M) OF THE WASTE ROCK AND OVERBURDEN, IS DIFFERENT FROM THAT USED IN THIS DESIGN.
2. THE FORMER LAKES H19 AND H20 WERE NOT COMPLETELY DEWATERED BEFORE THE REMAINING WATER FROZE LAST FALL. THEREFORE, THERE IS A LAYER OF SOLID/CLEAR ICE WITHIN THE FORMER H19 AND H20 AREAS. THIS LAKE ICE LAYER TOGETHER WITH ANY SNOW/ICE WITHIN THE WRSF3 FOOTPRINT SHOULD BE COMPLETELY REMOVED BEFORE PLACING THE WASTE ROCK AND OVERBURDEN IN WRSF3.
3. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020–02–21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020–02–14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — G. ZHANG — LICENSEE — NWT/NU — Feb 21, 2020

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date Feb. 21, 2020
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
SECTIONS D AND E

DESSINÉ PAR / DRAWN BY	EL	DATE 2020–02–21
VÉRIFIÉ PAR / CHECKED BY	GZ	2020–02–21
APPROUVÉ PAR / APPROVED BY	WTH	2020–02–21
ÉCHELLE / SCALE	1:2000	DATE 2020–02–21

NO. DESSIN / DRAWING NO. 65–686–230–207

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	3 / 6

AE–CART–ARCH D

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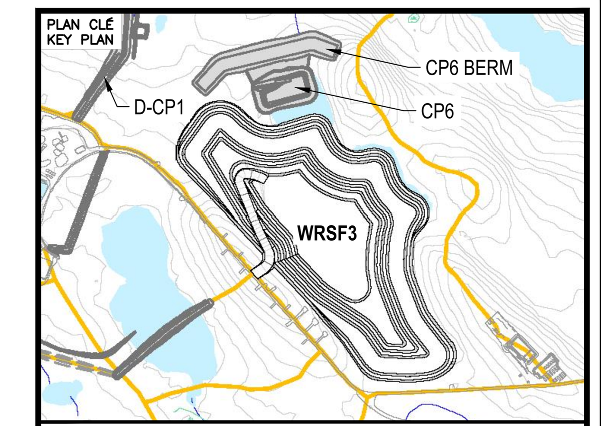
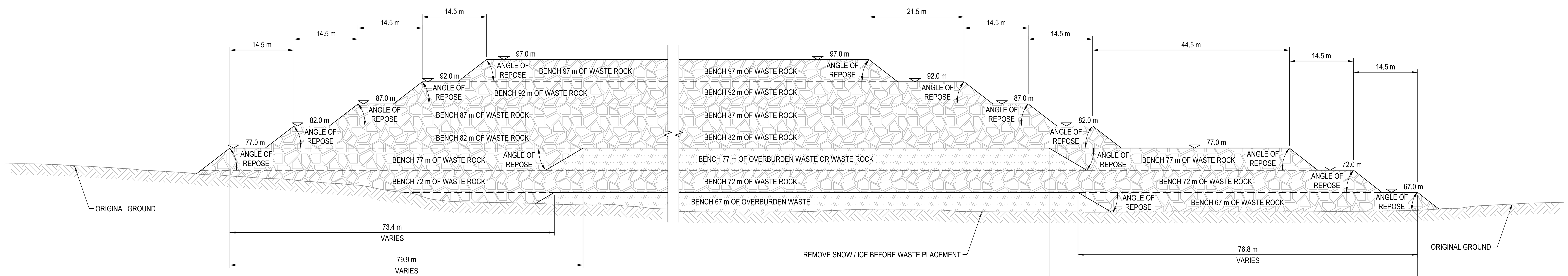
FILE NO. 65–686–230–207.dwg

NO. DESSIN DRAWING NO. 65-686-230-208

FORMAT ARCHD

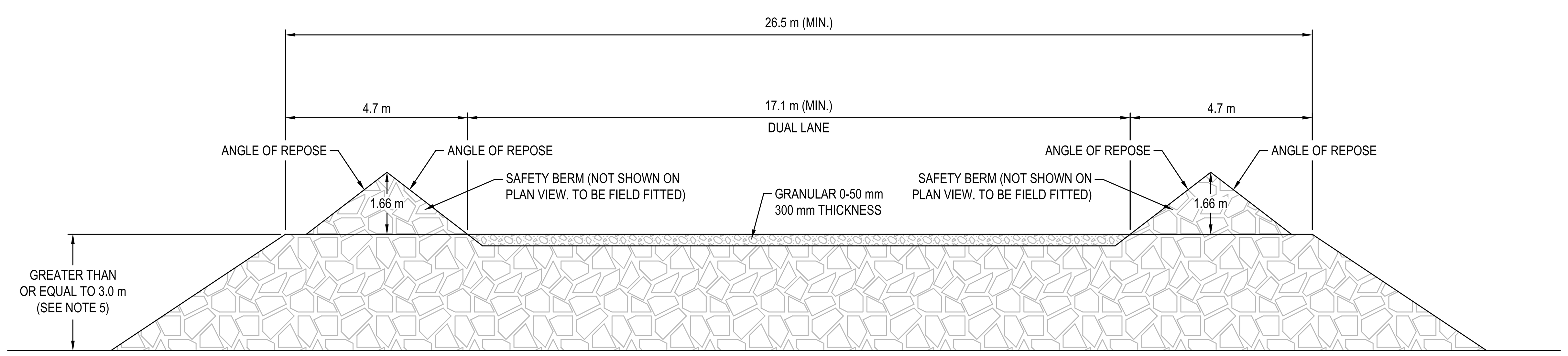
PLAN CLÉ KEY PLAN





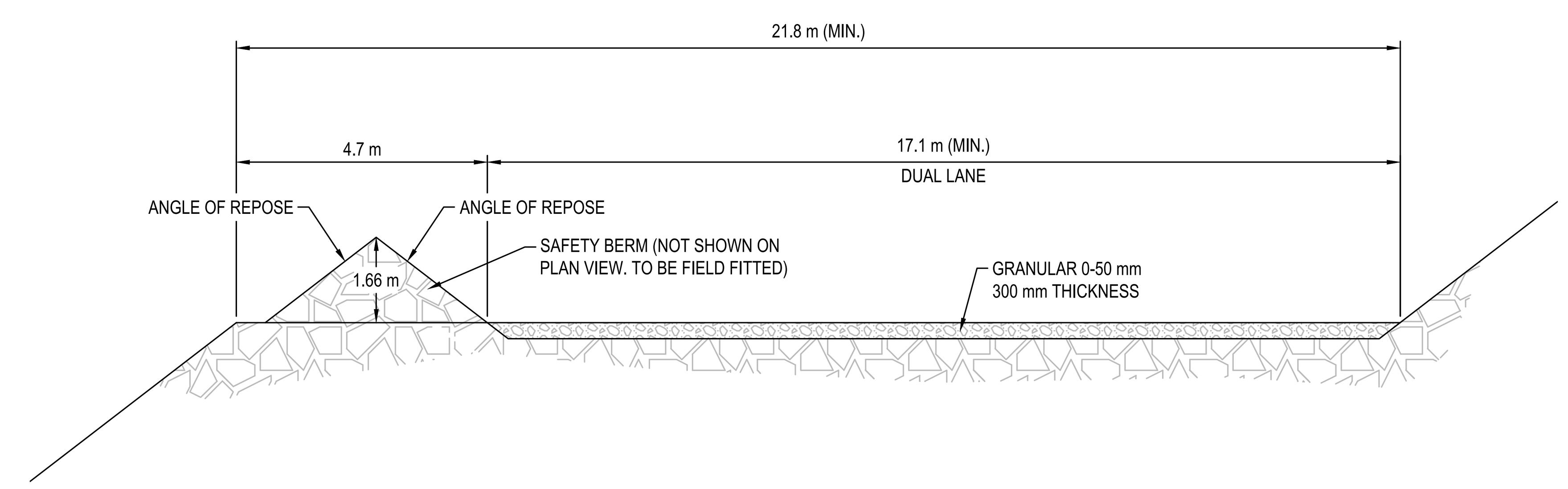
F / 205 TYPICAL SECTION WITHOUT ACCESS RAMP

SCALE: 1:500



TYPICAL ACCESS RAMP FOR HAUL ROAD WITH TWO SIDE SAFETY BERMS

N.T.S.



TYPICAL ACCESS RAMP FOR HAUL ROAD WITH ONE SIDE SAFETY BERM

N.T.S.

TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. THE WRSF3 DESIGN PRESENTED HEREIN HAS BEEN BASED ON THE WASTE ROCK AND OVERBURDEN PRODUCTION PLAN THAT WAS PROVIDED ON JANUARY 29 AND FEBRUARY 3, 2020 AND THE CORRESPONDING PRELIMINARY WASTE ROCK AND OVERBURDEN PLACEMENT PLAN THAT WAS DEVELOPED FOR THE DESIGN OF WRSF3. THIS WRSF3 DESIGN SHOULD BE REVIEWED OR UPDATED (IF REQUIRED) IF THE FINAL WASTE ROCK AND OVERBURDEN PLACEMENT PLAN FOR WRSF3, ESPECIALLY THE PLACEMENT PLAN FOR THE INITIAL BENCHES (67 M AND 72 M) OF THE WASTE ROCK AND OVERBURDEN, IS DIFFERENT FROM THAT USED IN THIS DESIGN.
2. THE FORMER LAKES H19 AND H20 WERE NOT COMPLETELY DEWATERED BEFORE THE REMAINING WATER FROZE LAST FALL. THEREFORE, THERE IS A LAYER OF SOLID/CLEAR ICE WITHIN THE FORMER H19 AND H20 AREAS. THIS LAKE ICE LAYER TOGETHER WITH ANY SNOW/ICE WITHIN THE WRSF3 FOOTPRINT SHOULD BE COMPLETELY REMOVED BEFORE PLACING THE WASTE ROCK AND OVERBURDEN IN WRSF3.
3. THE MAXIMUM LIFT THICKNESS DURING WASTE PLACEMENT SHOULD BE LIMITED TO 2.5 M FOR THE OVERBURDEN WASTE AND TO 5.0 M FOR THE WASTE ROCK.
4. ACCESS RAMP DESIGNED FOR HAUL TRUCK TYPE OF CAT 775G OR SMALL EQUIPMENT.
5. A SAFETY BERM ON THE SIDE OF A HAUL ROAD IS REQUIRED IF A DROP OFF GREATER THAN 3 M EXISTS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020-02-21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-02-14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

G. ZHANG LICENSEE NWT/NU Feb 21, 2020

PERMIT TO PRACTICE TETRA TECH CANADA INC.
Signature
Date Feb 21, 2020
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
TYPICAL SECTION AND ACCESS RAMP

DESSINÉ PAR DRAWN BY	EL	DATE	2020-02-21
VÉRIFIÉ PAR CHECKED BY	GZ		2020-02-21
APPROUVÉ PAR APPROVED BY	WTH		2020-02-21
ÉCHELLE SCALE	1:2000	DATE	2020-02-21

NO. DESSIN DRAWING NO. 65-686-230-208

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	4 / 6

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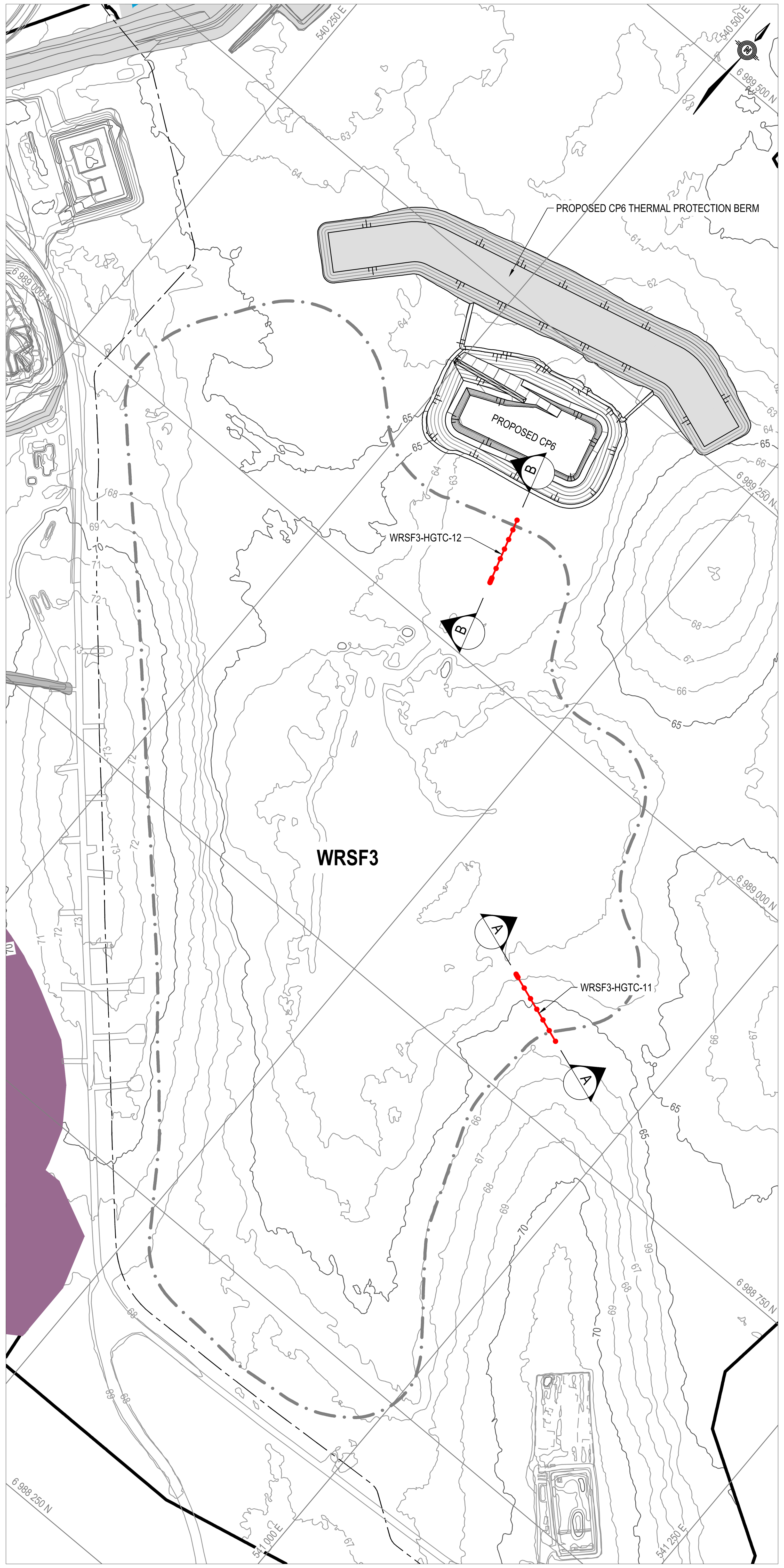
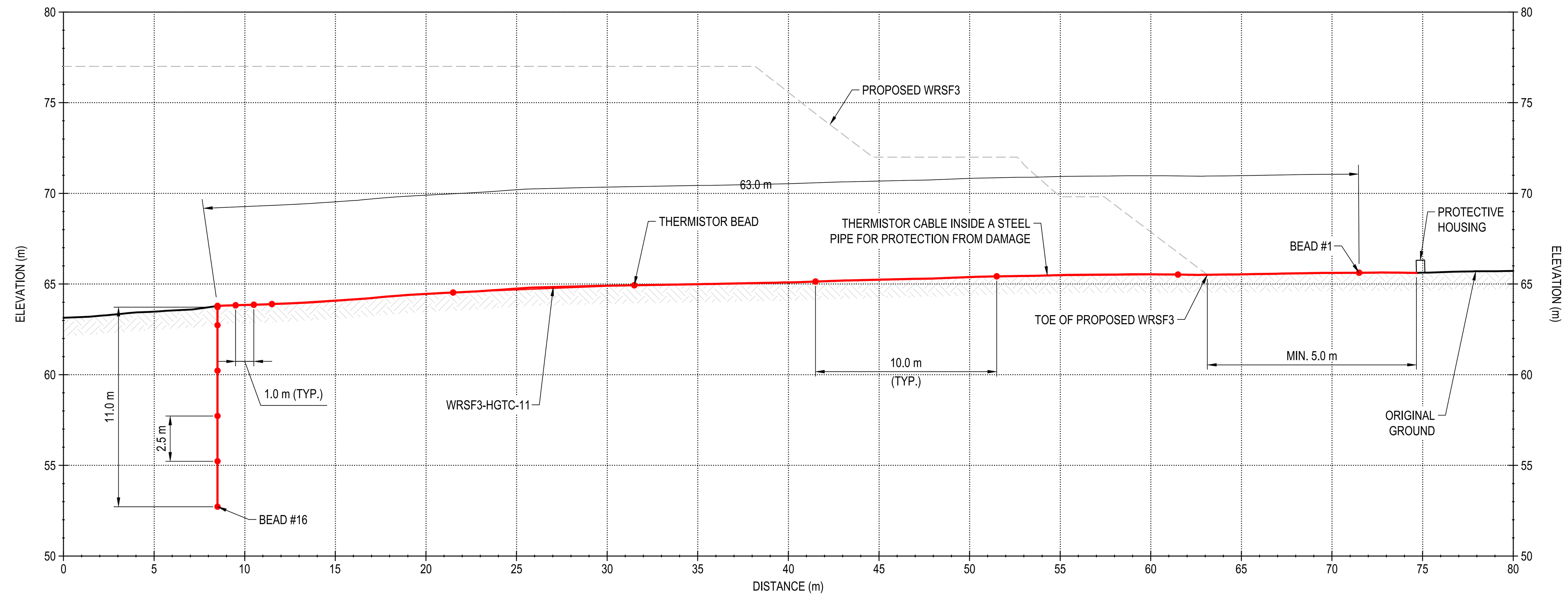
FILE NO. 65-686-230-208.dwg

NO. DESSIN DRAWING NO. 65-686-230-209-001



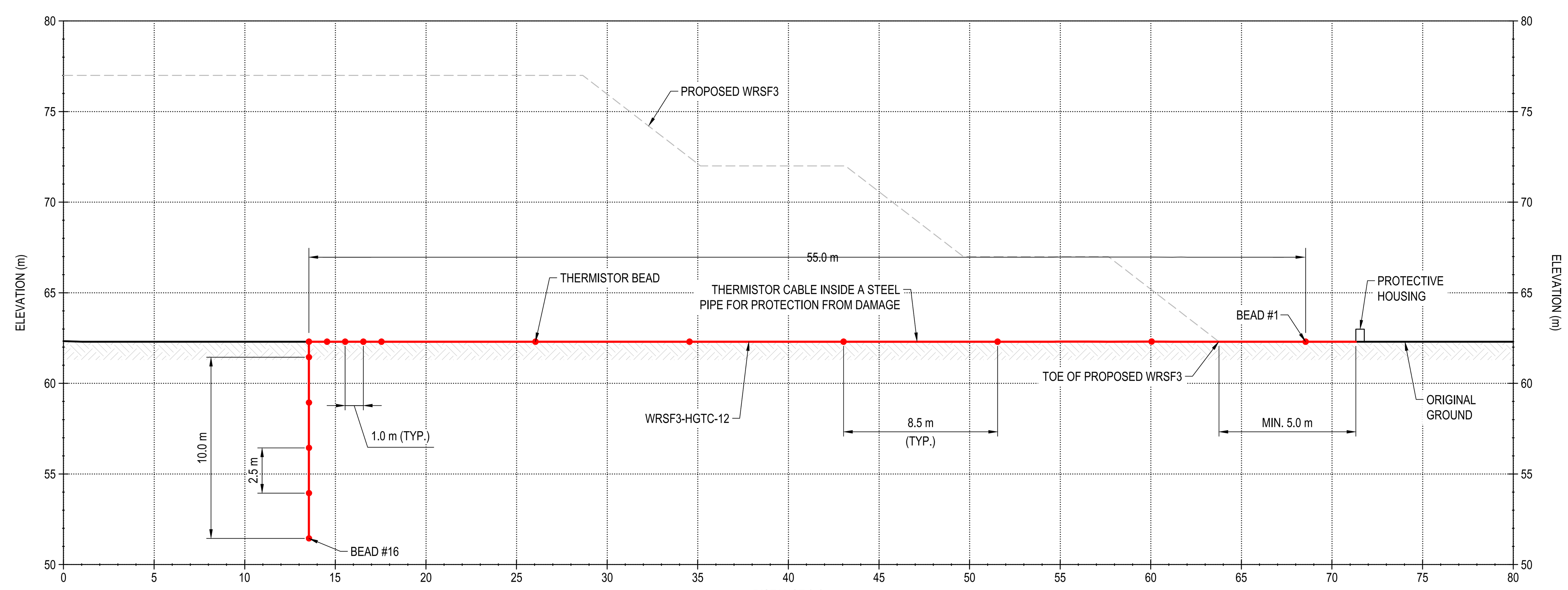
PLAN VIEW SHOWING LOCATIONS OF GROUND TEMPERATURE CABLES FOR WRSF3

SCALE = 1:5000



A WRSF3-HGTC-11

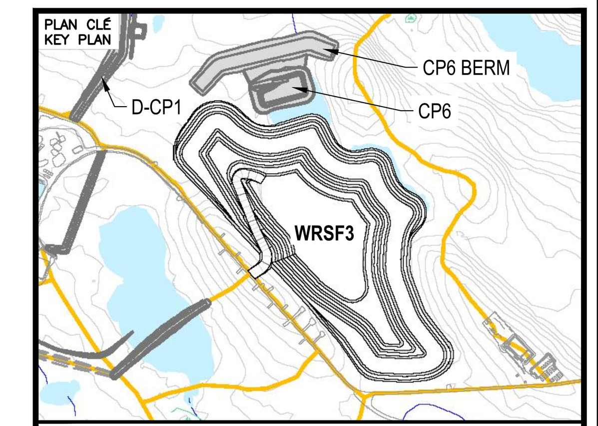
SCALE: 1:500



B WRSF3-HGTC-12

SCALE: 1:500

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. A TOTAL OF 16 THERMISTOR BEADS FOR EACH GROUND TEMPERATURE CABLE.
2. THE THERMISTOR CABLES FOR WRSF3-HGTC-11 AND WRSF3-HGTC-12 WERE MANUFACTURED BEFORE THE DESIGN OF WRSF3. THESE CABLES WERE INSTALLED ON JANUARY 25 AND 26, 2020 DURING THE SITE INVESTIGATION. DUE TO HOLE SLOUGHING ISSUE, THE BOTTOMS OF BOTH CABLES WERE NOT INSTALLED TO THE DESIGN DEPTH. THE AS-INSTALLED BEAD LOCATIONS INSIDE THE HOLES ARE SHOWN ON THIS DRAWING. THE PLANNED BEAD LOCATIONS FOR THE HORIZONTAL PORTION OF THE CABLES ARE SHOWN SINCE THE ACTUAL INSTALLATION DETAILS ARE NOT AVAILABLE.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020-02-21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-02-14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

PERMIT TO PRACTICE TETRA TECH CANADA INC.
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

G. ZHANG LICENSEE NWT/NU — Feb 21, 2020

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
GROUND TEMPERATURE CABLE AND THERMISTOR BEAD LOCATIONS

DESSINÉ PAR DRAWN BY	EL	2020-02-21
VÉRIFIÉ PAR CHECKED BY	GZ	2020-02-21
APPROUVÉ PAR APPROVED BY	WTH	2020-02-21
ÉCHELLE SCALE	1:2000	DATE 2020-02-21

NO. DESSIN DRAWING NO. 65-686-230-209-001

NO. PROJET PROJECT NO. 6515 | REVISION 0 | FEUILLE / SHT 5 / 6

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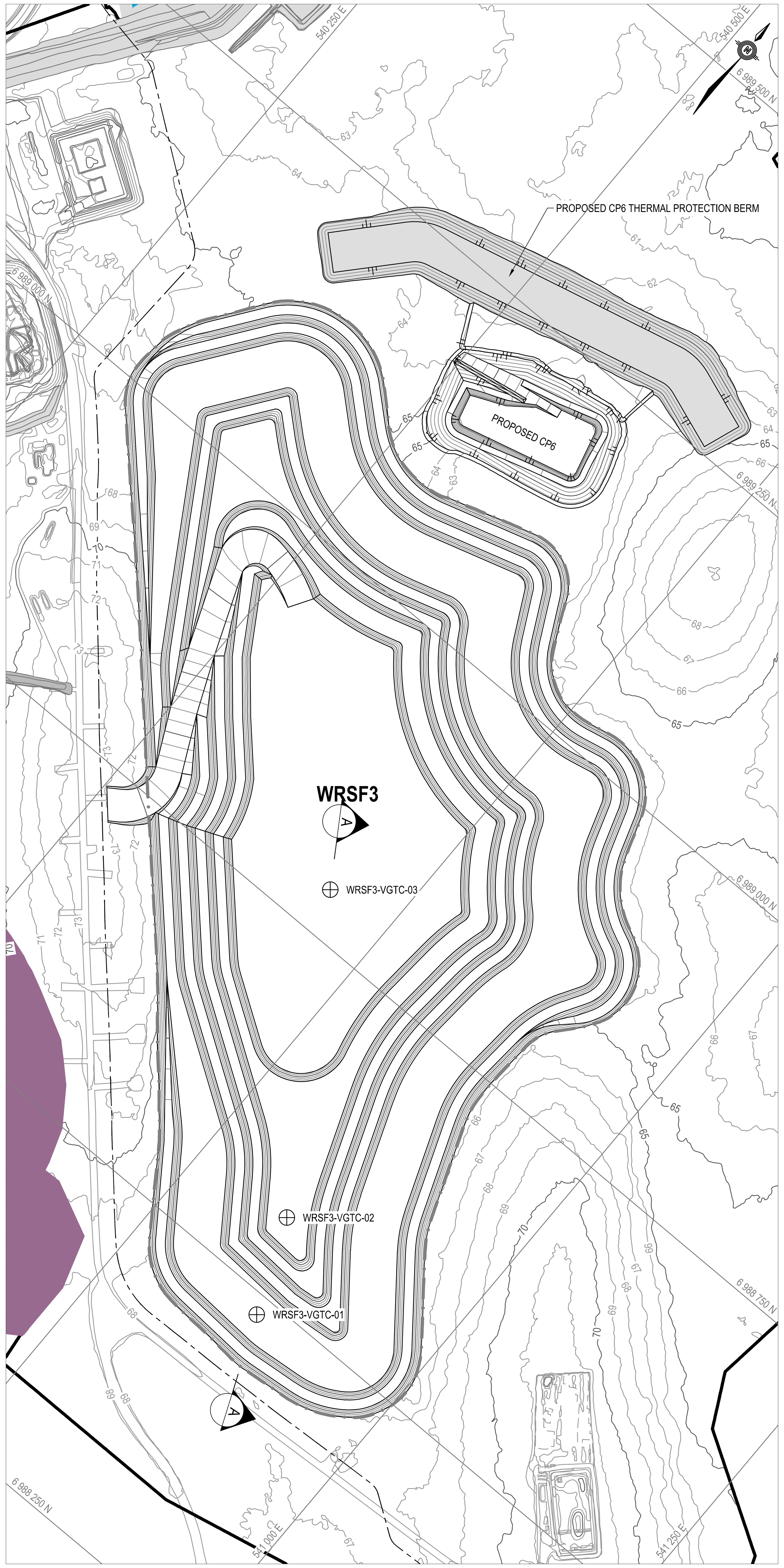
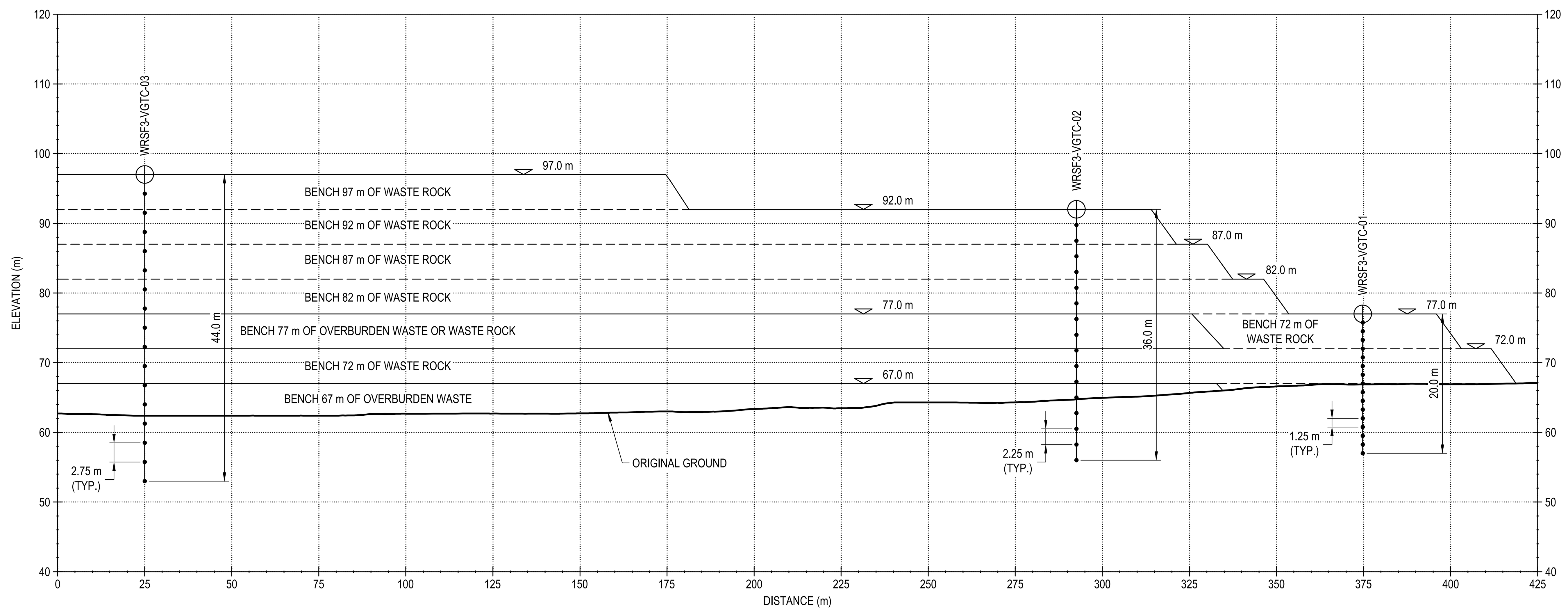
FILE NO. 65-686-230-209-001

NO. DESSIN DRAWING NO. 65-686-230-209-002

FORMAT ARCHD

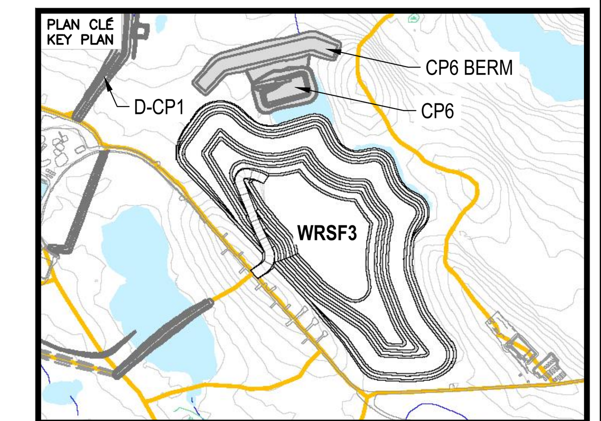


PLAN VIEW SHOWING LOCATIONS OF GROUND TEMPERATURE CABLES FOR WRSF3
SCALE = 1:5000



A INSTRUMENTATION
SCALE: 1:500

PLAN CLÉ KEY PLAN



TETRA TECH

NOTES GÉNÉRALES / GENERAL NOTES

1. A TOTAL OF 16 THERMISTOR BEADS FOR EACH GROUND TEMPERATURE CABLE.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2020-02-21	ISSUED FOR CONSTRUCTION	GZ	WTH	
A	2020-02-14	ISSUED FOR REVIEW	GZ	WTH	

REVISIONS

G. ZHANG LICENSEE NWT/NU — Feb 21, 2020

PERMIT TO PRACTICE TETRA TECH CANADA INC.
Signature
Date Feb. 21, 2020
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT
WASTE ROCK STORAGE FACILITY No. 3

MELIADINE WRSF3 DETAILED DESIGN:
GROUND TEMPERATURE CABLE AND
THERMISTOR BEAD LOCATIONS

		DATE
DESSINÉ PAR DRAWN BY	EL	2020-02-21
VÉRIFIÉ PAR CHECKED BY	GZ	2020-02-21
APPROUVÉ PAR APPROVED BY	WTH	2020-02-21
ÉCHELLE SCALE	1:2000	2020-02-21

NO. DESSIN DRAWING NO. 65-686-230-209-002

NO. PROJET PROJECT NO. 6515 | REVISION 0 | FEUILLE / SHT 6 / 6

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FILE NO. 65-686-230-209-002.dwg

Photo 1: WRSF3 - Access to WRSF. Marginalized ore temporarily stored on surface.

Photo 2: WRSF3 - Waste rock stored in WRSF3

Photo 3: WRSF3—Ponding at the toe on east side of WRSF.

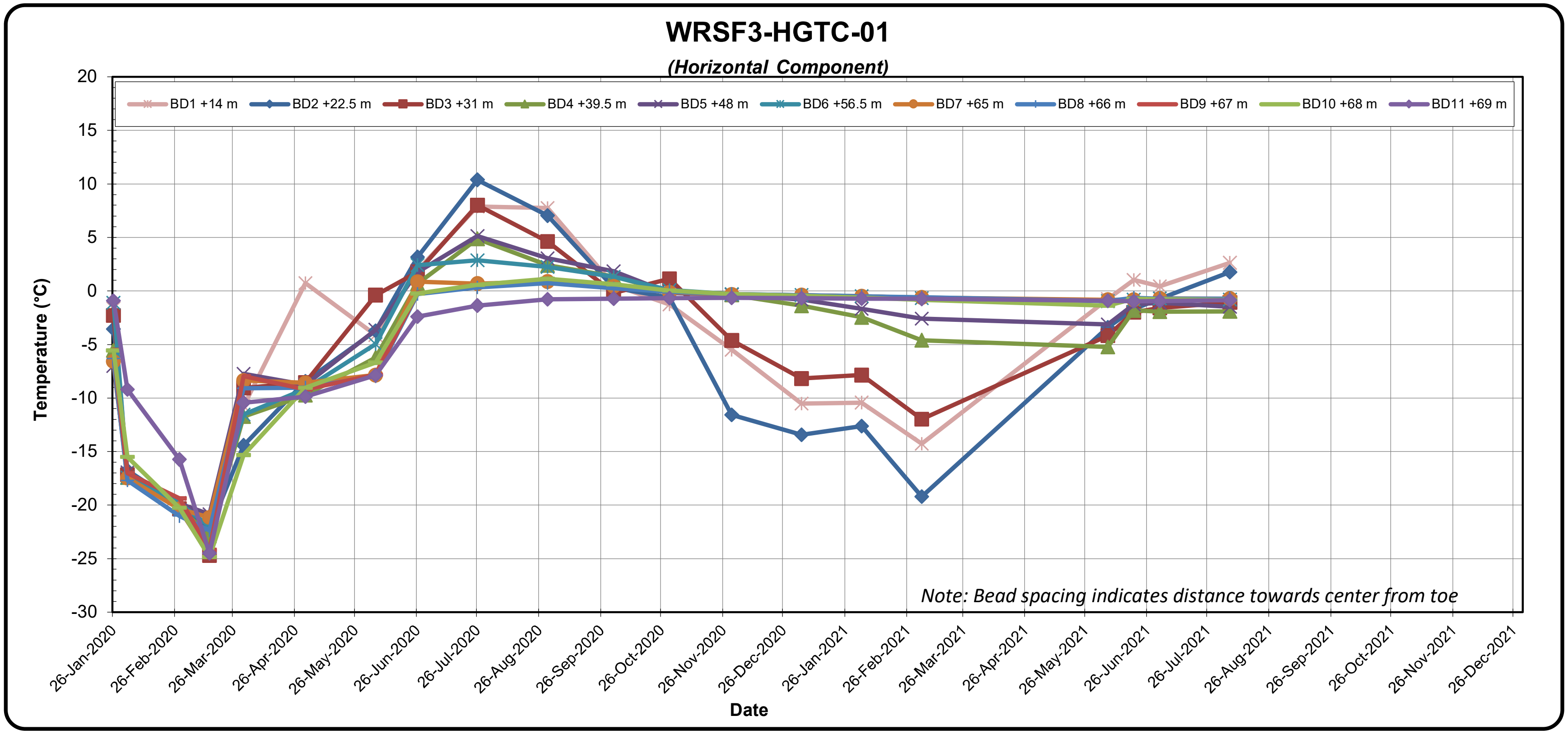
Photo 4: WRSF3—Horizontal GTC at east side of WRSF.

Photo 5: WRSF3—Northeast corners.

Photo 6: WRSF3—Settlement in access ramp from WRSF3 to CP6.

Photo 7: WRSF3—Thermal cover placed in 2021 between WRSF3 and CP6 due to significant settlement and erosion in area.

Photo 8: WRSF3—Flow path from northeast corner of WRSF to CP6.


WRSF3-HGTC-01
(Horizontal Component)
BD1 +14 m
BD2 +22.5 m
BD3 +31 m
BD4 +39.5 m
BD5 +48 m
BD6 +56.5 m
BD7 +65 m
BD8 +66 m
BD9 +67 m
BD10 +68 m
BD11 +69 m
Temperature (°C)
Date
Note: Bead spacing indicates distance towards center from toe
20
15
10
5
0
-5
-10
-15
-20
-25
-30
26-Jan-2020
26-Feb-2020
26-Mar-2020
26-Apr-2020
26-May-2020
26-Jun-2020
26-Jul-2020
26-Aug-2020
26-Sep-2020
26-Oct-2020
26-Nov-2020
26-Dec-2020
26-Jan-2021
26-Feb-2021
26-Mar-2021
26-Apr-2021
26-May-2021
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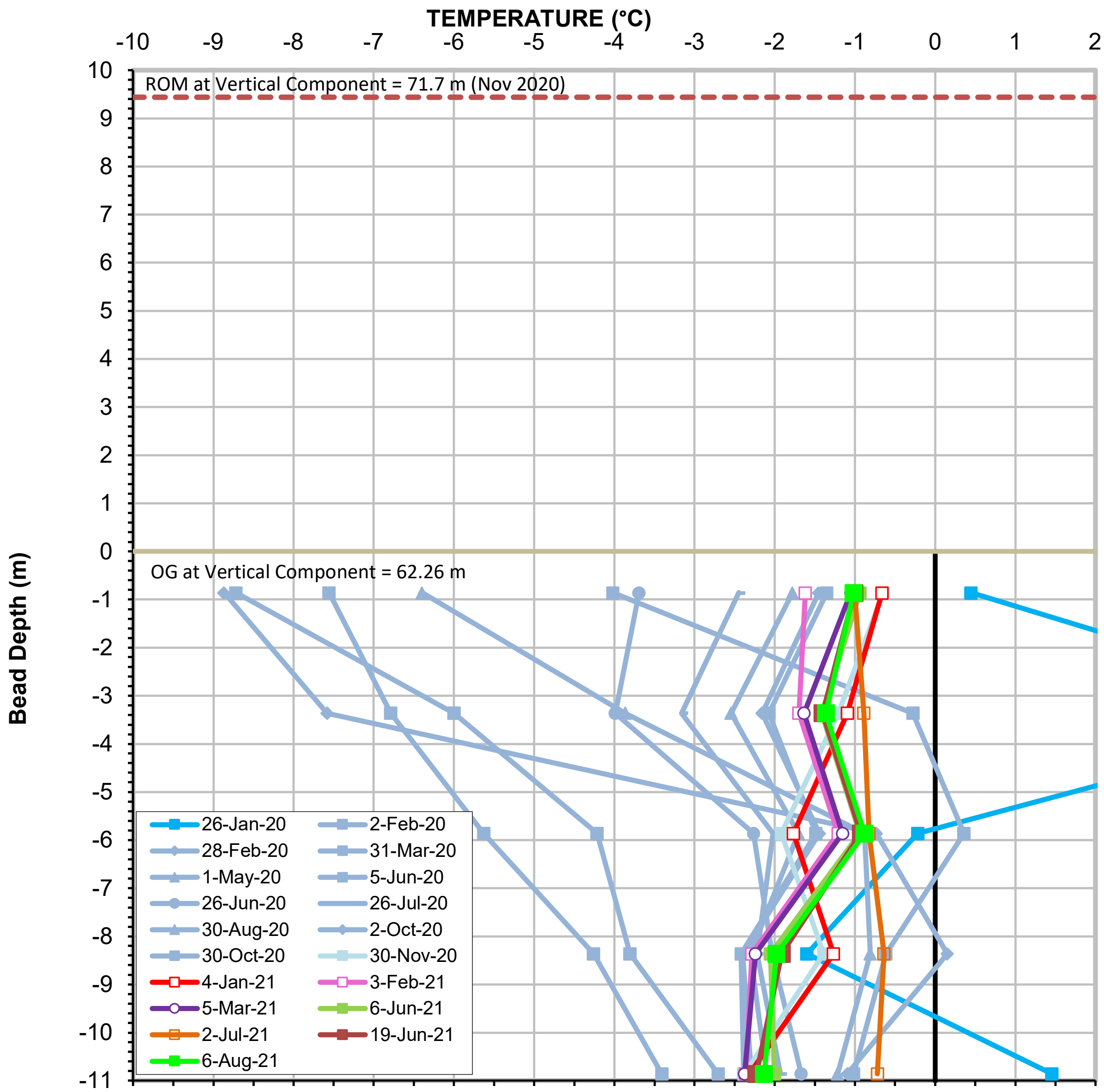
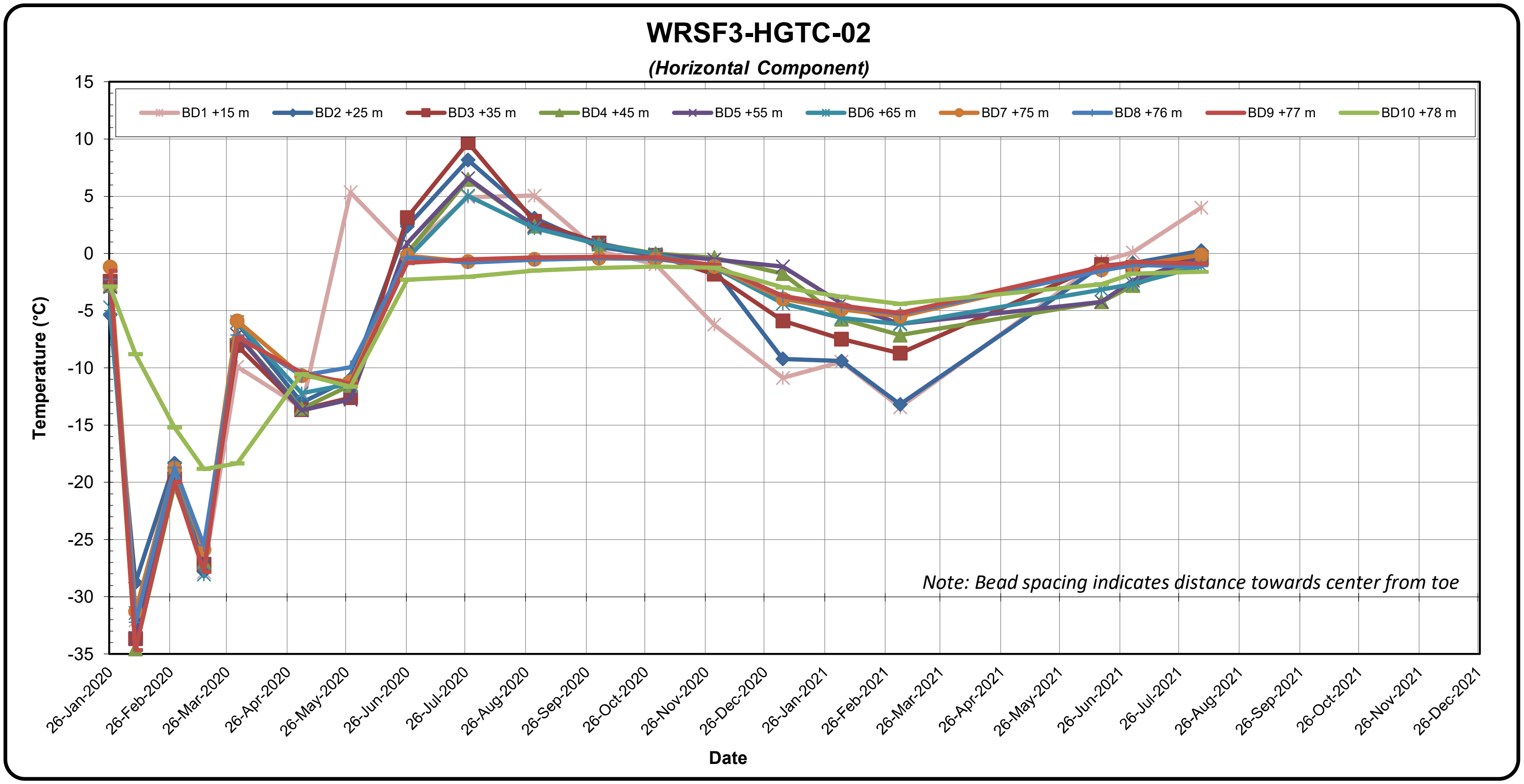
26-Nov-2021
26-Dec-2021

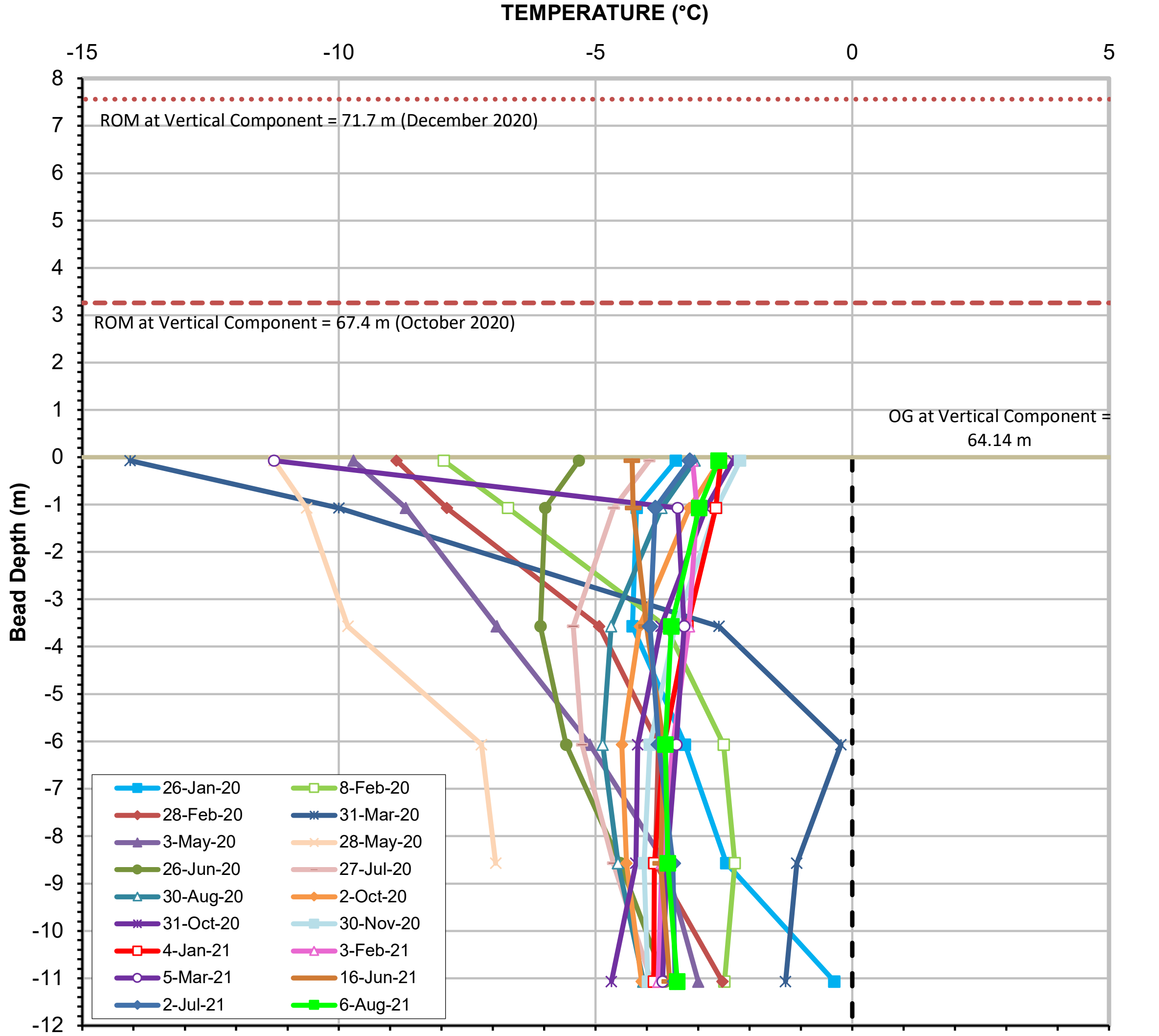


Ground Temperature Profile for Cable WRSF3-HGTC-01
(*Vertical Component*)
Waste Rock Storage Facility 3

Serial No.: 2712
Date Installed: January 25, 2020



WRSF3-HGTC-02
(Horizontal Component)
BD1 +15 m
BD2 +25 m
BD3 +35 m
BD4 +45 m
BD5 +55 m
BD6 +65 m
BD7 +75 m
BD8 +76 m
BD9 +77 m
BD10 +78 m
Temperature (°C)
Date
Note: Bead spacing indicates distance towards center from toe



Ground Temperature Profile for Cable WRSF3-HGTC-02
(*Vertical Component*)
Waste Rock Storage Facility 3

Serial No.: 2711
Date Installed: January 26, 2020