



June 23<sup>rd</sup>, 2020

Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
P.O Box 119  
Gjoa Haven, NU X0B 1J0

**Re: Agnico Eagle Mines – Whale Tail Project Responses to WRSF Instrumentation Design Report Re-Comments**

Dear Mr. Dwyer,

As requested, the following responses are intended to address the comments made in the below letter:

- KivIA – June 3<sup>rd</sup>, 2020, Whale Tail 60-day Notice for WRSF – Appendix B Instrumentation

Should you have any questions or require further information, please do not hesitate to contact us.

Best regards,

Marie-Pier Marcil  
[Marie-pier.marcil@agnicoeagle.com](mailto:Marie-pier.marcil@agnicoeagle.com)  
819-759-3555 x 4105836  
Senior Compliance Technician



## **1 Kivalliq Inuit Association (KivIA)**

### **1.1 Drawing number 948-011-002: Whale Tail WRSF Monitoring Section Details (Figure 1)**

**Comment 1:** The KivIA still requests updated plans with the overburden thickness plotted. AEM's response that there is only 2 to 3 metres expected at the thermistor locations has not taken into consideration the 6 to >10 metres of overburden documented in drill holes (Figures 2 and 4) within the footprint of the WRSF. This will lead to thermistors strings of 21 to >25 metres depth, assuming the original 15 metres depth into bedrock is maintained.

In addition, the KivIA requests that AEM comment on the possibility of additional thermistors along cross section K – L (Figure 3) that could monitor the extent of talik development related to the expanded open pit; and its potential impact on future permafrost development in the WRSF.

**Agnico Eagle's Response:**

*The instrumentation drawings have been updated to show the overburden layer thickness that is expected to be encountered during the installation of the thermistor strings at the WT WRSF. The updated drawings are attached to this response.*

*Section K-L is outside of the WT WRSF limit and this request seem to be out of scope of the WRSF instrumentation program submission. Agnico will consider this recommendation when evaluating area where additional thermistor strings should be installed to monitor permafrost development. This information will be presented in the next thermal monitoring management plan update.*

### **1.2 Drawing number 948-011-005: IVR WRSF Monitoring Details (Figure 1)**

**Comment 2:** The KivIA requests that AEM review any existing drill data in the IVR WRSF foot print and if there is >5 metres of overburden then the plans should be updated to show the overburden thickness.

**Agnico Eagle's Response:**

*The drawings have been updated to show the overburden layer thickness that is expected to be encountered during the installation of the thermistor strings at the IVR WRSF. The updated drawings are attached to this response.*

AGNICO EAGLE

WHALE TAIL MINE

WRSF INSTRUMENTATION DESIGN

CONCEPTUAL DRAWINGS

DRAWING INDEX

DRAWING #	DESCRIPTION
948-011-000	DRAWING INDEX, COVER SHEET AND LOCALLITY MAP
948-011-001	WRSF GENERAL ARRANGEMENT
948-011-002	WASTE ROCK STORAGE FACILITY PRIMARY MONITORING STATION DETAILS
948-011-003	WASTE ROCK STORAGE FACILTY SECONDARY MONITORING STATION DETAILS
948-011-004	IVR GENERAL ARRANGEMENT
948-011-005	IVR MONITORING

LOCALITY PLAN:



AERIAL IMAGERY: GOOGLE EARTH 2018  
NOT TO SCALE

PREPARED BY:



**O'Kane  
Consultants Pty Ltd.**

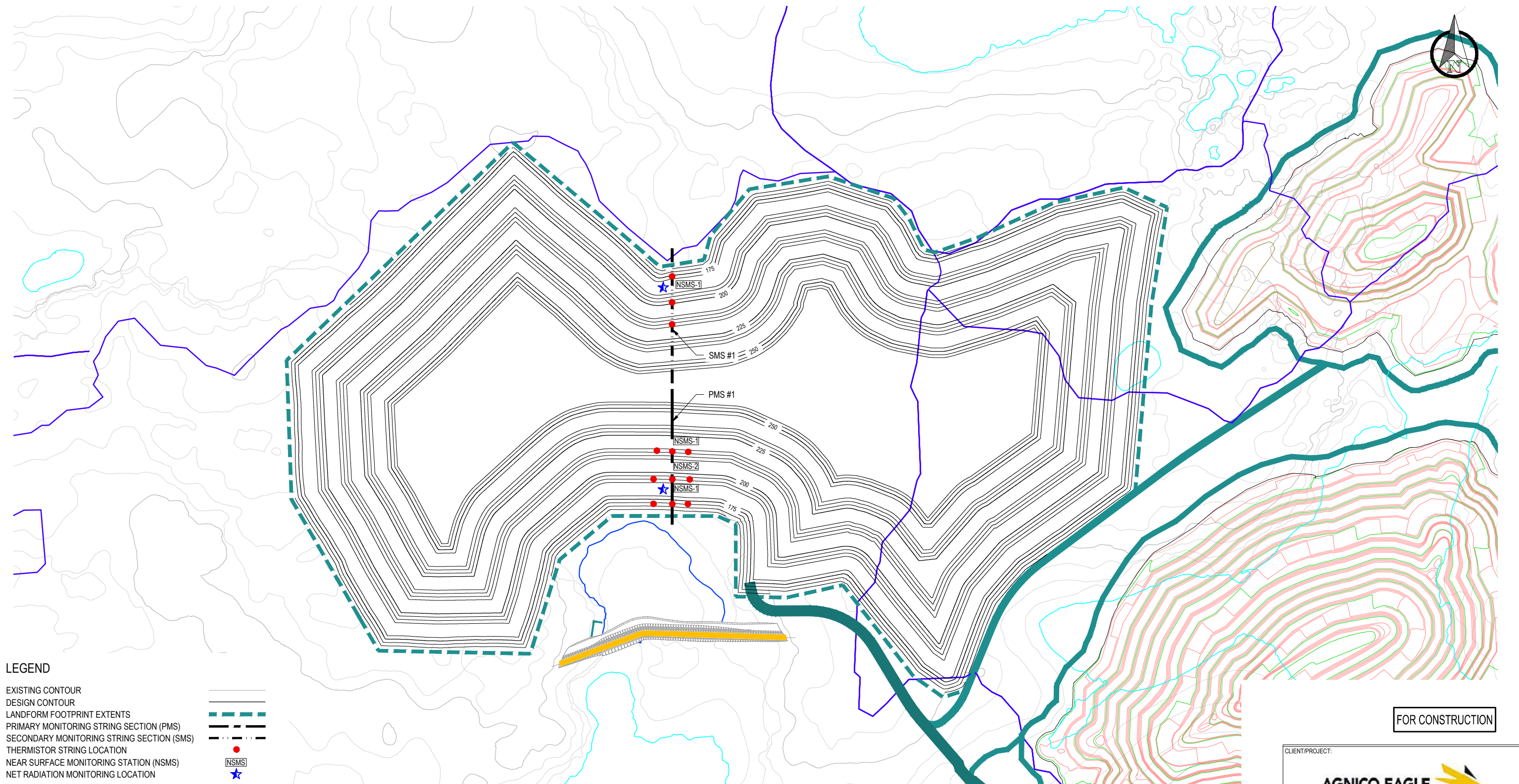
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Specialists in Geochemistry and Unsaturated Zone Hydrology*

PROVIDED FOR:

**AGNICO EAGLE**







LEGEND

- EXISTING CONTOUR
- DESIGN CONTOUR
- LANDFORM FOOTPRINT EXTENTS
- PRIMARY MONITORING STRING SECTION (PMS)
- SECONDARY MONITORING STRING SECTION (SMS)
- THERMISTOR STRING LOCATION
- NEAR SURFACE MONITORING STATION (NSMS)
- NET RADIATION MONITORING LOCATION

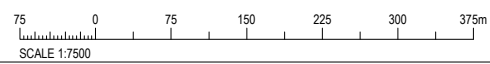
NOTE

- ALL UNITS IN METRES U.N.O.
- ALL TOPOGRAPHY PROVIDED BY AGNICO EAGLE.
- REFER TO DWG. 948-011-002 FOR WRSF MONITORING SECTION DETAILS.
- REFER TO DWG. 948-011-003 FOR TYPICAL THERMISTOR DETAILS.
- FINAL LOCATION AND CONFIGURATION IS SUBJECT TO CHANGE WITH APPROVAL BY THE ENGINEER.

**PERMIT TO PRACTICE**  
**M. A. O'KANE CONSULTANTS INC.**  
Signature: *[Signature]*  
Date: *April 30, 2020*  
**PERMIT NUMBER: P 768**  
NT/NU Association of Professional Engineers and Geoscientists



WHALE TAIL WRSF GENERAL ARRANGEMENT  
1:7500



FOR CONSTRUCTION

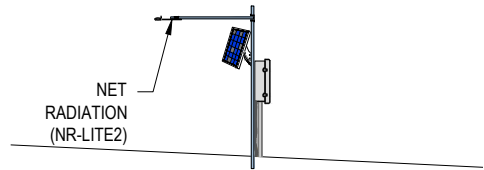
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**AGNICO EAGLE**  
WHALE TAIL WRSF INSTRUMENTATION

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OKC PROJECT NO.: 948/011

**WHALE TAIL WRSF GENERAL ARRANGEMENT**

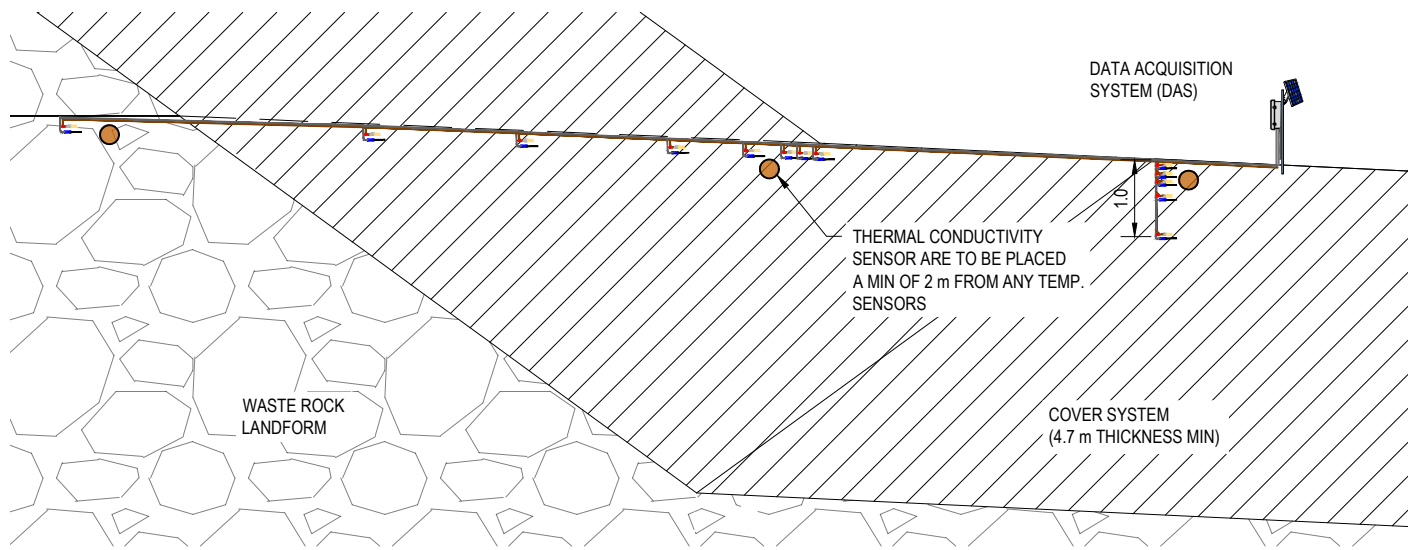
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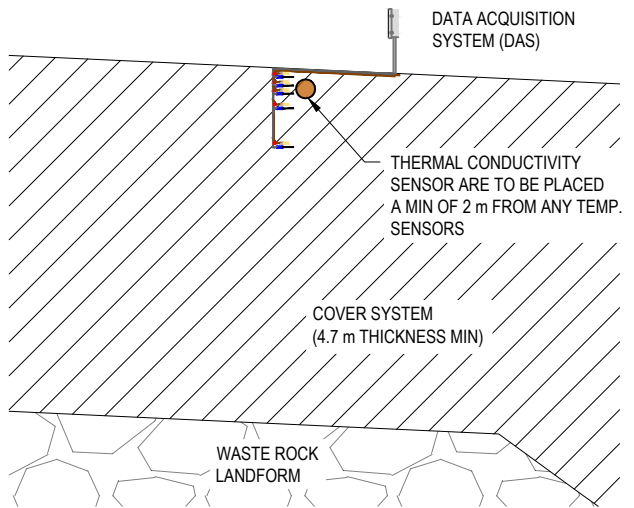
TYPICAL METEOROLOGICAL STATION

DETAIL A  
1:50



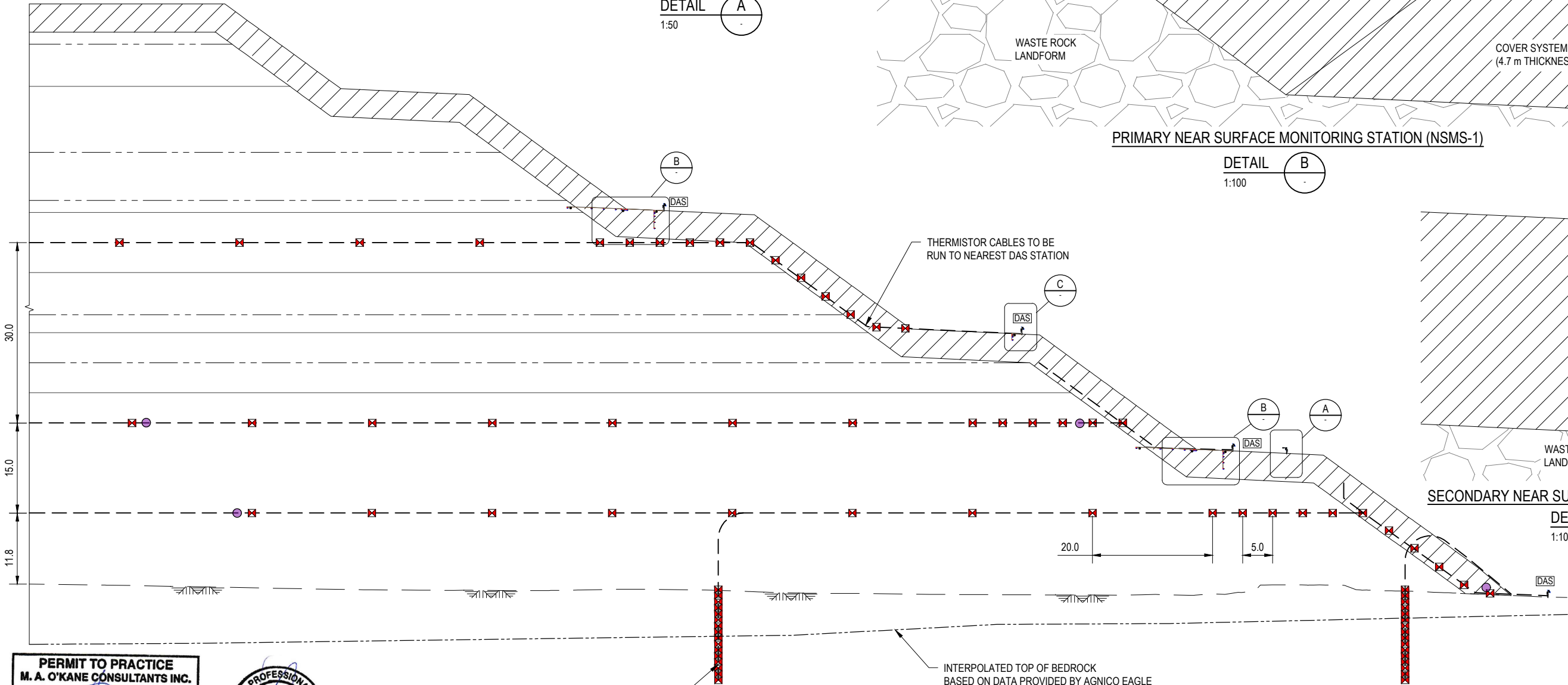
PRIMARY NEAR SURFACE MONITORING STATION (NSMS-1)

DETAIL B  
1:100



SECONDARY NEAR SURFACE MONITORING STATION (NSMS-2)

DETAIL C  
1:100



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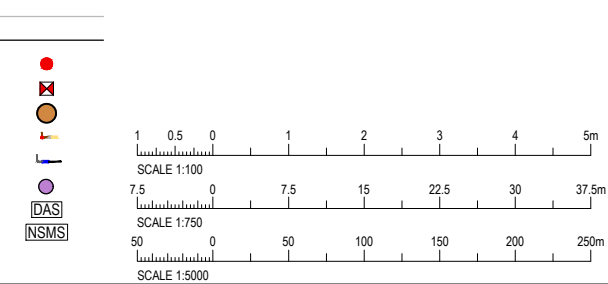


THERMISTOR STRING TO BE INSTALLED  
WITHIN BEDROCK FOUNDATION  
15 m DEPTH @ 1 m SPACING  
LOCATED ONLY AT PMS

INTERPOLATED TOP OF BEDROCK  
BASED ON DATA PROVIDED BY AGNICO EAGLE

LEGEND

- EXISTING CONTOUR
- DESIGN CONTOUR
- THERMISTOR STRING LOCATION
- THERMISTOR
- THERMAL CONDUCTIVITY
- SOIL MATRIX SUCTION
- VOLUMETRIC WATER CONTENT
- DIFFERENTIAL PRESSURE SENSOR
- DATA ACQUISITION SYSTEM
- NEAR SURFACE MONITORING STATION



SECTION 1  
1:750

WRSF THERMISTOR STRING SECTION

NOTE

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- PLACEMENT SCHEDULE PROVIDED BY AGNICO EAGLE AND IS SUBJECT TO CHANGE.
- ALL DATA ACQUISITION SYSTEM AND MET STATION LOCATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE.
- REFER TO DWG 948-011-003 FOR THERMISTOR STRING DETAILS.
- FINAL LOCATION AND CONFIGURATION IS SUBJECT TO CHANGE WITH APPROVAL BY THE ENGINEER.

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			1	ENGINEER STAMP		MOK	04.30.20	G. MEIERS		12.10.18
			2	INCLUDED INTERPOLATED BEDROCK SURFACE	HSC	MOK	06.10.20			

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**AGNICO EAGLE**

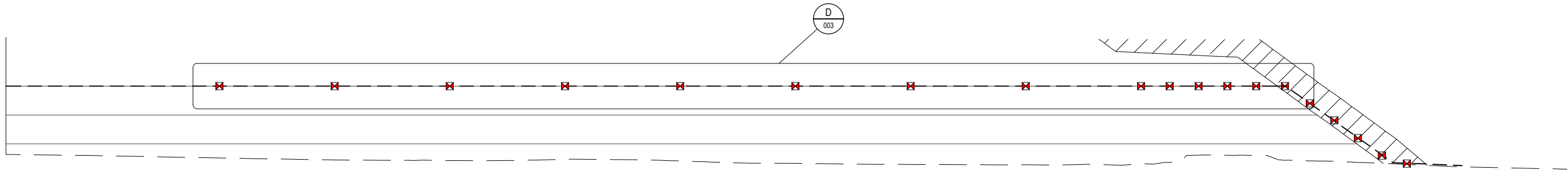
WHALE TAIL WRSF INSTRUMENTATION

PRODUCED BY:

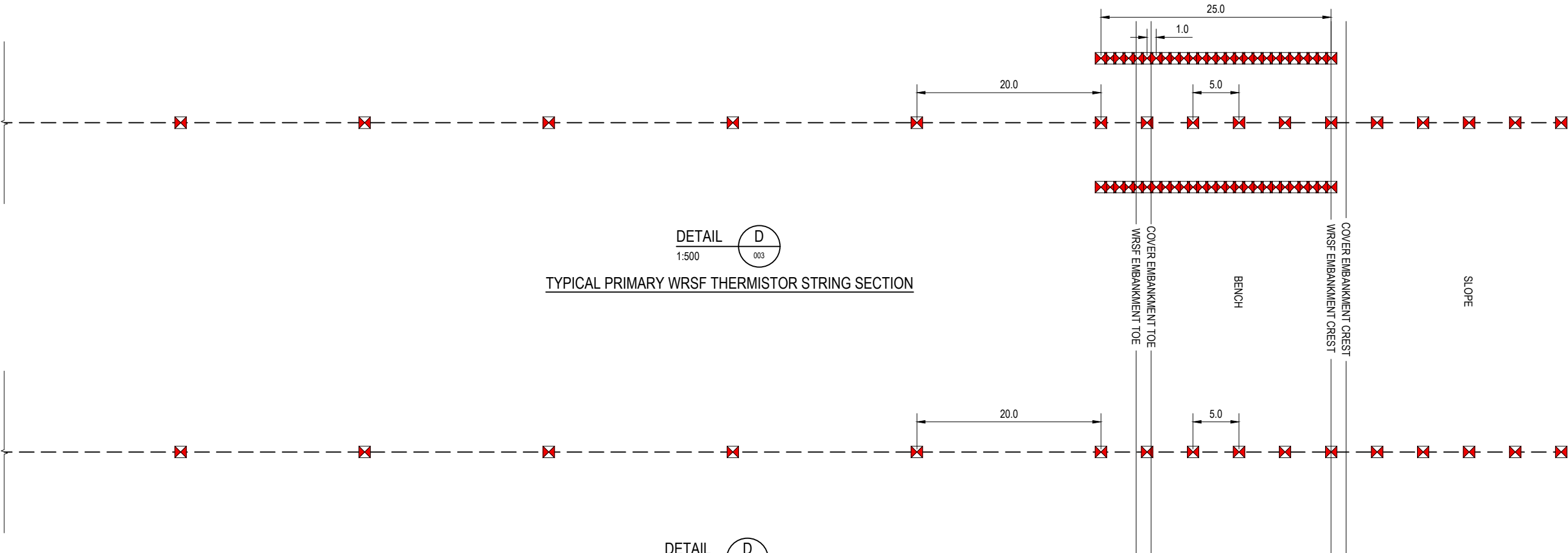
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Specialists in Geochemistry and Unsaturated Zone Hydrology  
OKC PROJECT NO.: 948/011

**WHALE TAIL WRSF MONITORING SECTION DETAILS**

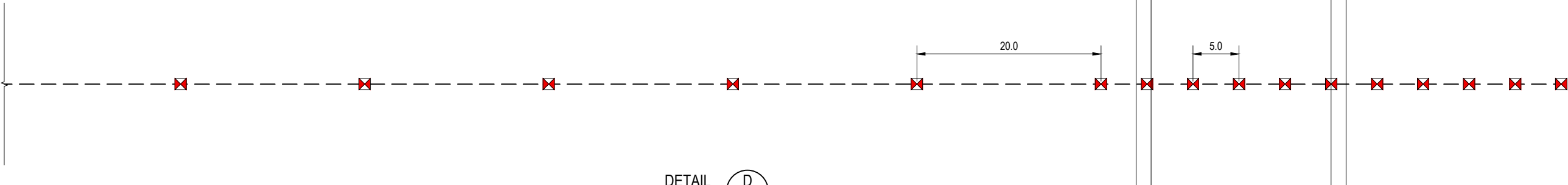
DWG. NO.: 948-011-002 REV.: 2



TYPICAL WRSF THERMISTOR STRING SECTION  
1:750



TYPICAL PRIMARY WRSF THERMISTOR STRING SECTION



TYPICAL SECONDARY WRSF THERMISTOR STRING SECTION

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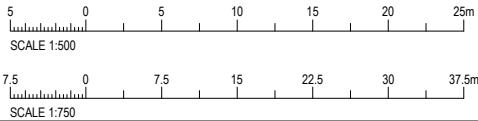
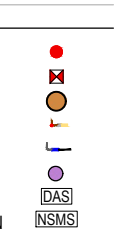


NOTE

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2. ALL TOPOGRAPHY PROVIDED BY AGNICO EAGLE.
3. REFER TO DWG 948-011-001 FOR GENERAL INSTRUMENTATION ARRANGEMENT.
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LEGEND

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- DESIGN CONTOUR
- THERMISTOR STRING LOCATION
- THERMISTOR
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- SOIL MATRIX SUCTION
- VOLUMETRIC WATER CONTENT
- DIFFERENTIAL PRESSURE SENSOR
- DATA ACQUISITION SYSTEM
- NEAR SURFACE MONITORING STATION



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WHALE TAIL WRSF INSTRUMENTATION

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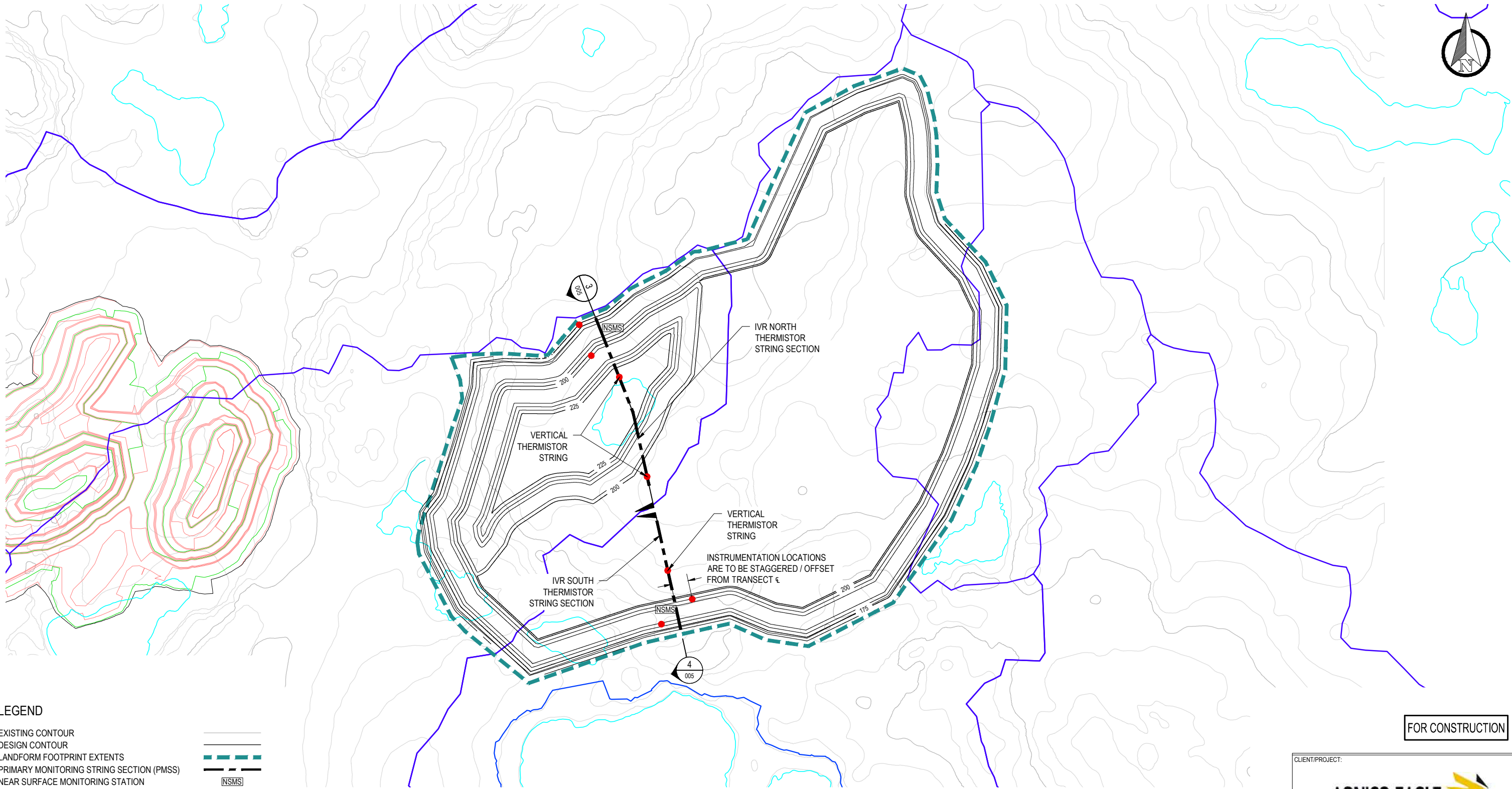
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OKC PROJECT NO.: 948/011

**WHALE TAIL WRSF TYPICAL THERMISTOR DETAILS**

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LEGEND

- EXISTING CONTOUR
- DESIGN CONTOUR
- LANDFORM FOOTPRINT EXTENTS
- PRIMARY MONITORING STRING SECTION (PMSS)
- NEAR SURFACE MONITORING STATION
- THERMISTOR STRING LOCATION

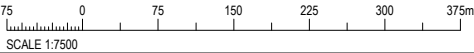
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WHALE TAIL IVR GENERAL ARRANGEMENT  
1:7500



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WHALE TAIL WRSF INSTRUMENTATION

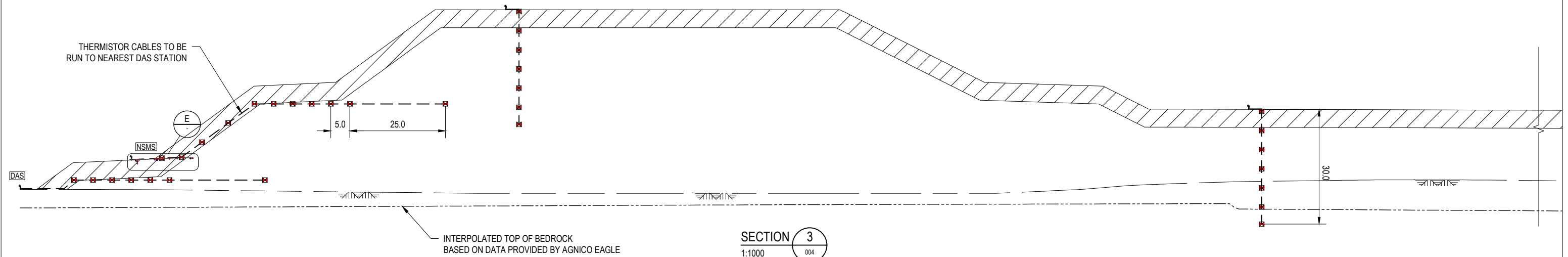
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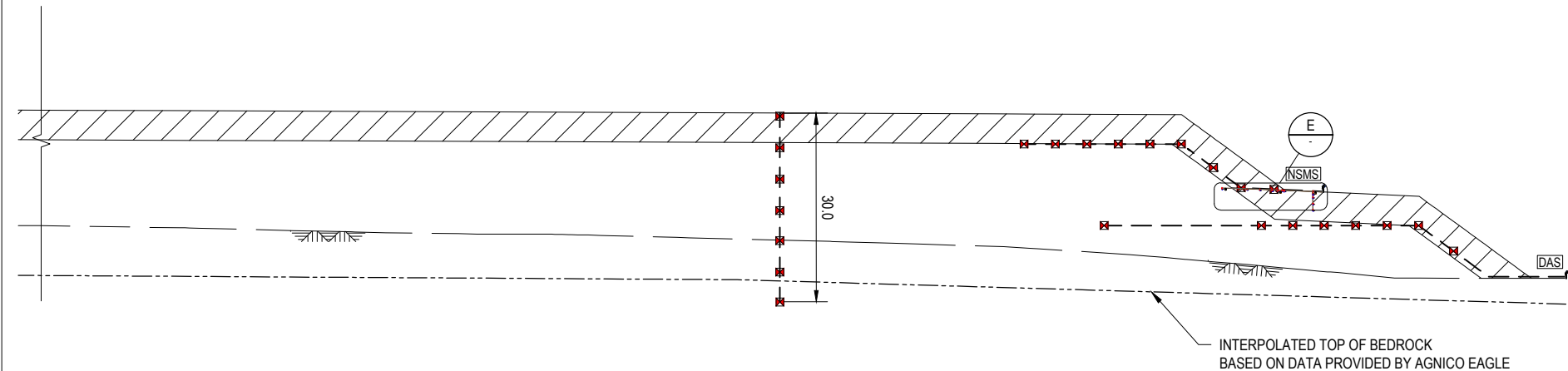
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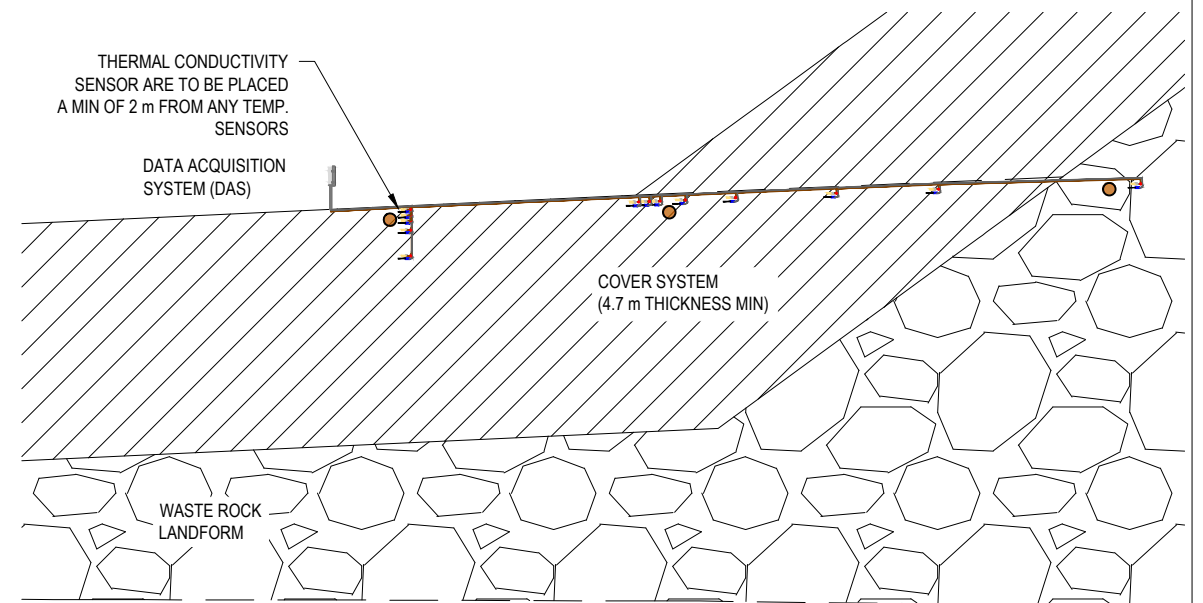
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									SCALE: AS SHOWN	PAGE SIZE: ANSI B
									OKC RPT. NO.: 948/011-01	



SECTION 3  
1:1000  
004  
IVR NORTH THERMISTOR STRING SECTION



SECTION 4  
1:1000  
004  
IVR SOUTH THERMISTOR STRING SECTION



DETAIL E  
1:100  
NEAR SURFACE MONITORING DETAIL

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Date April 30, 2020  
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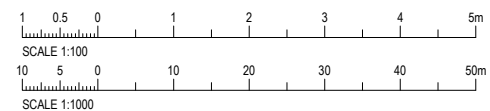
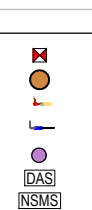


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#### LEGEND

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DESIGN CONTOUR  
THERMISTOR  
THERMAL CONDUCTIVITY  
SOIL MATRIX SUCTION  
VOLUMETRIC WATER CONTENT  
DIFFERENTIAL PRESSURE SENSOR  
DATA ACQUISITION SYSTEM  
NEAR SURFACE MONITORING STATION



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OKC PROJECT NO.: 948/011

**IVR WRSF MONITORING DETAILS**

DWG. NO.: 948-011-005 REV.: 2

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