



**SNC • LAVALIN**

**WHALE TAIL INFRASTRUCTURE ENGINEERING  
PROJECT (AMARUQ)**  
Nunavut



**AGNICO EAGLE**

**WHALE TAIL PROJECT, NUNAVUT**  
**DESIGN REPORT AND DRAWINGS**  
*Design report for culverts (roads #1 & 13)*

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## APPENDICES

**APPENDIX A: General project location plan**

**APPENDIX B: Plan general view – Layout of proposed culverts on roads #1 & 13**

**APPENDIX C: Culverts installation (61-417-230-226)**

**APPENDIX D: Construction drawings**

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## 1. GENERAL



SNC-Lavalin Stavibel has been mandated by Agnico Eagle to design the Infrastructure for the Whale Tail Project. The Amaruq property is a 408 square kilometer (km<sup>2</sup>) site located on Inuit-Owned Land approximately 150 kilometers (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine in the Kivalliq Region of Nunavut. The deposit will be mined as an open pit (i.e., Whale Tail Pit), and ore will be hauled by truck to the approved infrastructure at Meadowbank Mine for milling. The Project facilities will consist of a personnel camp, power plant, maintenance shop, tank farm, water and sewage collection and treatment system, haul roads and access roads.

Infrastructures are designed to accommodate the personnel, equipment and fuel requirements. Given its location, projects infrastructures were designed to accommodate cold temperatures and permafrost conditions.

### 1.1. DEVELOPMENT OF ROAD INFRASTRUCTURES FOR THE MINING OPERATIONS

Road infrastructures are essential to allow mining operations and the logistics associated with the camp activities. In addition, these roads provide access to different infrastructures (i.e. stockpile, dike, etc.) so is important to have an effective design.

In Appendix B, there is an overall plan showing the location of roads 1, and 13. Each road will be used with heavy truck loaded (CAT 777: 90 metric tons, CAT 785: 140 metric tons and long haul truck: 150 metric tons). In addition, the thickness of steel culverts, the loads of vehicles must be considered.



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## 1.2. SCOPE OF WORK

SNC-Lavalin Stavibel Inc. has been hired by Agnico Eagle to provide professional engineering services related to the design of roads #1 and #13 and for drainage, respecting Water Management and Environment requirements.

Accordingly, the scope of the mandate includes:

- Geometric design of roads, their horizontal geometry and vertical profile.
- Structural design of the roads.
- Calculation of surface runoff rates and sizing of the culverts.
- Environmental impact attenuation measures during construction.
- Stabilization of structures.

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## **2. DESIGN CRITERIA – DESIGN OF CULVERTS**

### **2.1. CULVERT DESIGN BASIS AND WATER MANAGEMENT STRATEGY**

The overall objective of the water management strategy of this project is to develop a practical and feasible site-wide water management plan to minimize the potential negative impacts of mining development on the surrounding environment including habitats for fish and wildlife, and to facilitate mine operation and long-term closure and reclamation of the mine site. To attain this objective, culverts are used to control and divert runoff underneath the road and new facilities.

All culverts are required and installed at the lower point of their watershed to allow runoff flow by gravity under the roads. Locations of proposed culverts are shown in Appendix B.

In water management, those culverts (#1, #13-1 & #13-2) will allow the flow of the clean water from Lake A53. This water will travel in East Diversion Channel and goes to the South Whale Tail Lake (Lake A55). For the design report of the East Diversion Channel, see reference document: 6118-E-132-002-TCR-018.

### **2.2. HYDRAULIC ANALYSES AND PEAK FLOW CALCULATION**

Hydrologic and hydraulic analyses were carried out to determine culvert sizes to accommodate a 100-year peak design flow.

The others hydrologic and hydraulic information's are given in the design report of the East Diversion Channel: 6118-E-132-002-TCR-018.

Estimated peak flows, culverts capacity and characteristics of each culverts (roads #1 & #13) are given in Table 2.1 Characteristics of the culverts.

## 2.3. CULVERTS

### A. Specification

All proposed culverts are Aluminized Corrugated Steel Pipe (ACSP) TYPE 2, with a profile of 68 x 13mm (helical) and a minimum size of 600mm. The thickness of each culvert is shown in the table below.

Ø	Gage (mm)
600	2.8
700	2.8
800	2.8
900	3.5
1000	3.5
1200	3.5
1400	4.2
1500	4.2



### B. Installation

A minimum of fill cover will be placed over and all around the culverts according to the Standard Proctor Maximum Dry Density (ASTM D698) and these specifications:

- Minimum recovery height over culverts : 0.9 m
- Minimum spacing between culvert walls: 1.2 m
- Seating or recovery materials: MG 20 or (0-50mm)
- Seating thickness:
  - Recommended: 300 mm;
  - Minimum: 150 mm.

All details and layout for the culverts installation are shown on drawing 61-417-230-226 presented in Appendix C.

Given the nature of the existing soils, which are composed of mostly gravel, sand and some silt, no spec protection has been provided to protect inverts of culverts from the effects of permafrost thaw. However, special precautions (compaction, material, etc.) will

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be applied for the compaction of the bedding and the lateral cover of the culverts to avoid settlements.

The timeline, for the installation of the culverts on the road #1, it will be as soon as possible and need to be done before the spring freshet. The culverts on road #13 are planned at same time of the construction of east diversion channel. This infrastructure will be done after the completion of the works at the Whale Tail Dike.

## 2.4. EROSION CONTROL

Erosion control is provided by the installation of rip rap at the culvert entrance and exit. The rip rap consists of fragmented rocks (150-300mm) from an NAG (Non Acid Generator) and Non Metal Leaching source of rock. To insure the quality of materials, a sampling protocol is followed on construction site (180601-16MN056\_ARD-ML Sampling Plan). For the installation, see drawing 61-417-230-226, in Appendix C.



If the construction is during the summer, it is planned to use anti-sediment barriers (geotextile curtain) to limit erosion and the transport of fine particles into the watercourses.

**Table 2.1: Characteristics of the culverts**

LOCATION		Ø (mm)	Length (m)	Slope (%)	Material		Estimated Peak Flow (m³/s)	Culvert Flow capacity (m³/s)
ROAD	# CULVERT				Type	Thickness (mm)		
ROAD # 1 - AWR road	Existing (4x)	900	32	2,6	ACSP	3,5	2,3	1,7
ROAD # 1 - AWR road	1A	1200	32	0,5	ACSP	3,5	2,3	3,1
ROAD # 1 - AWR road	1B	1200	32	0,5	ACSP	3,5	2,3	3,1
ROAD #13 - Whale Tail Dike	13-1A	1200	30	0,3	ACSP	3,5	2,3	3,1
ROAD #13 - Whale Tail Dike	13-1B	1200	30	0,3	ACSP	3,5	2,3	3,1
ROAD #13 - Whale Tail Dike	13-2A	1200	38	0,3	ACSP	3,5	2,3	3,1
ROAD #13 - Whale Tail Dike	13-2B	1200	38	0,3	ACSP	3,5	2,3	3,1

(1) ACSP: Aluminized Corrugated Steel Pipe

(2) All culverts are helical profile 68 x 13mm.

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### 3. VARIOUS CALCULATIONS



To establish the sizing and number of culvert on each road, calculations need to be done with different equations (i.e.: Rainfall intensity, concentration time, etc.). To know the formula used, please see the document: 6118-E-132-002-TCR-018 - Design report of the East Diversion Channel.

### 4. CONCLUSION

To allow the flow of the clean water from Lake A53 to the east diversion channel and Lake A55, some culverts are required on the road #1 & #13. Four (4) existing culverts of Ø 900mm are already installed by the exploration team on the road #1 to allow the water flow. After theoretical validation, the number and sizing, of those existing culverts, are enough to allow the peak flow from the lake A53. But after feedback from the people at the site, the winter condition showed that sometime, the culverts could be freezing. So to prevent this situation, the engineer designed two (2) additional culverts, called dry culverts. The principle of these designs it to put new culverts higher than the existing one. So if the existing culverts freeze, the higher culverts can allow the peak flow of water from Lake A53.

The culverts on the road #13 are installed to given access to the Whale Tail Dike and the Pad "Q". Those culverts will be installed on the bed of east diversion channel and will have the same slope as this one. On the drawing 61-417-230-226 (appendix C), details are showed for the installation of culverts. Larger diameter was used instead of multiple small one to prevent freezing and the maintenance will be easier (i.e. cleaning, etc.).

Culverts capacity and characteristics of each culvert are given in Table 2.1 Characteristics of the culverts.

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## 5. LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Agnico Eagle Mines Ltd., and their agents, SNC-Lavalin Stavibel does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Agnico Eagle Mines Ltd. or for any Project other than the proposed development at the subject site, Any such unauthorized use of this report is at the sole risk of the user, Use of this report is subject to the terms and conditions stated in SNC-Lavalin Stavibel's Services Agreement.

## 6. FIGURES AND DRAWINGS

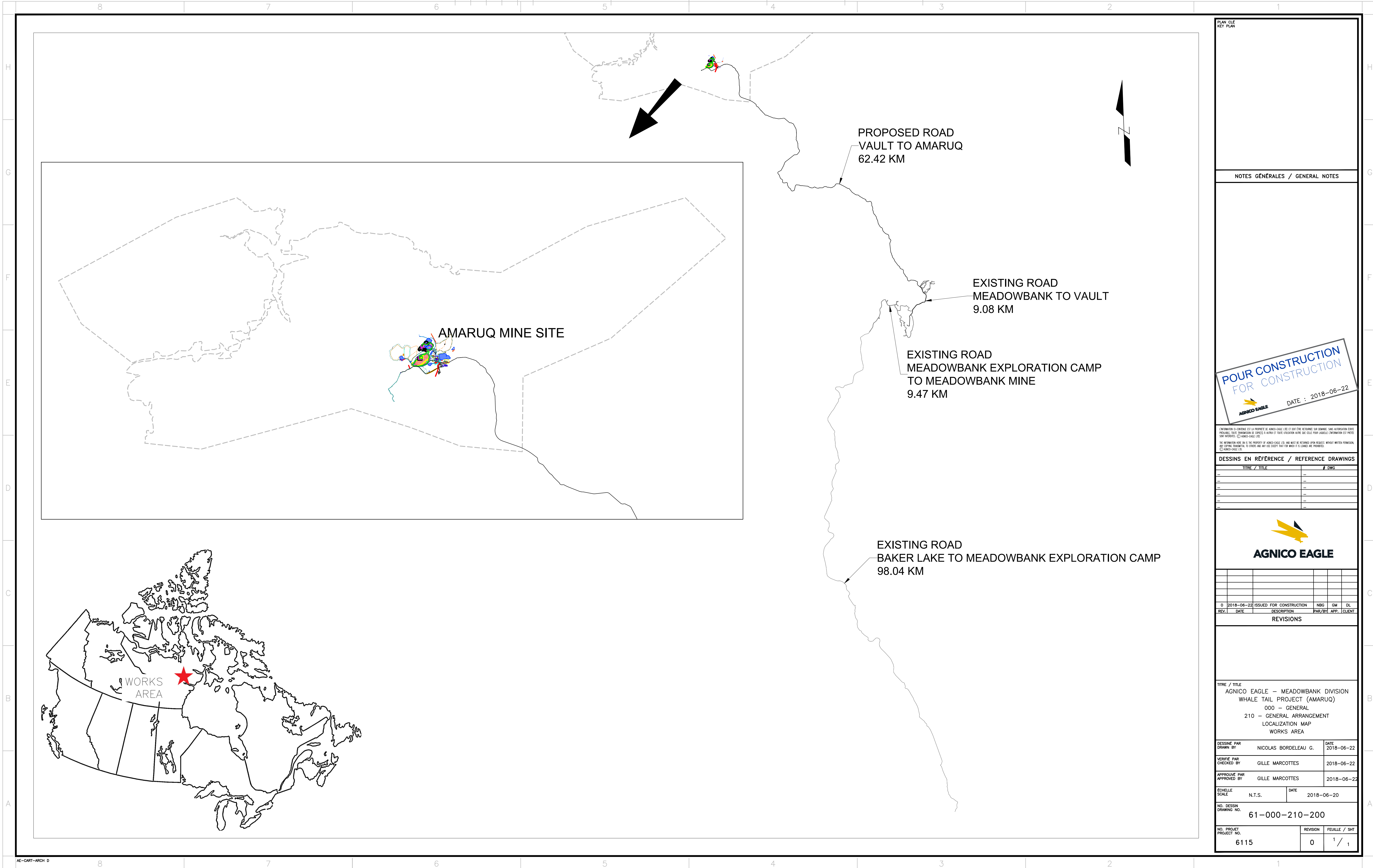
The following plans and drawings were prepared for the design of the structures (shown in Appendix D).

- **61-417-230-226\_R3** : CROSS SECTION AND DETAILS
  
- **61-417-230-231\_R2** : PLAN & PROFILE / ROAD WIDENING #15 – ACCESS ROAD / 0+000 @ 0+600
  
- **61-417-230-232\_R2** : PLAN & PROFILE / ROAD WIDENING #15 – ACCESS ROAD / 0+600 @ 1+160
  
- **61-417-230-236\_R1** : PLAN & PROFILE / ROAD #13 – TO WHALE TAIL DIKE / 0+000 @ 0+459
  
- **61-417-230-237\_R1** : PLAN & PROFILE / ROAD #13 – TO WHALE TAIL DIKE / 0+459 @ 0+600

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## APPENDIX A

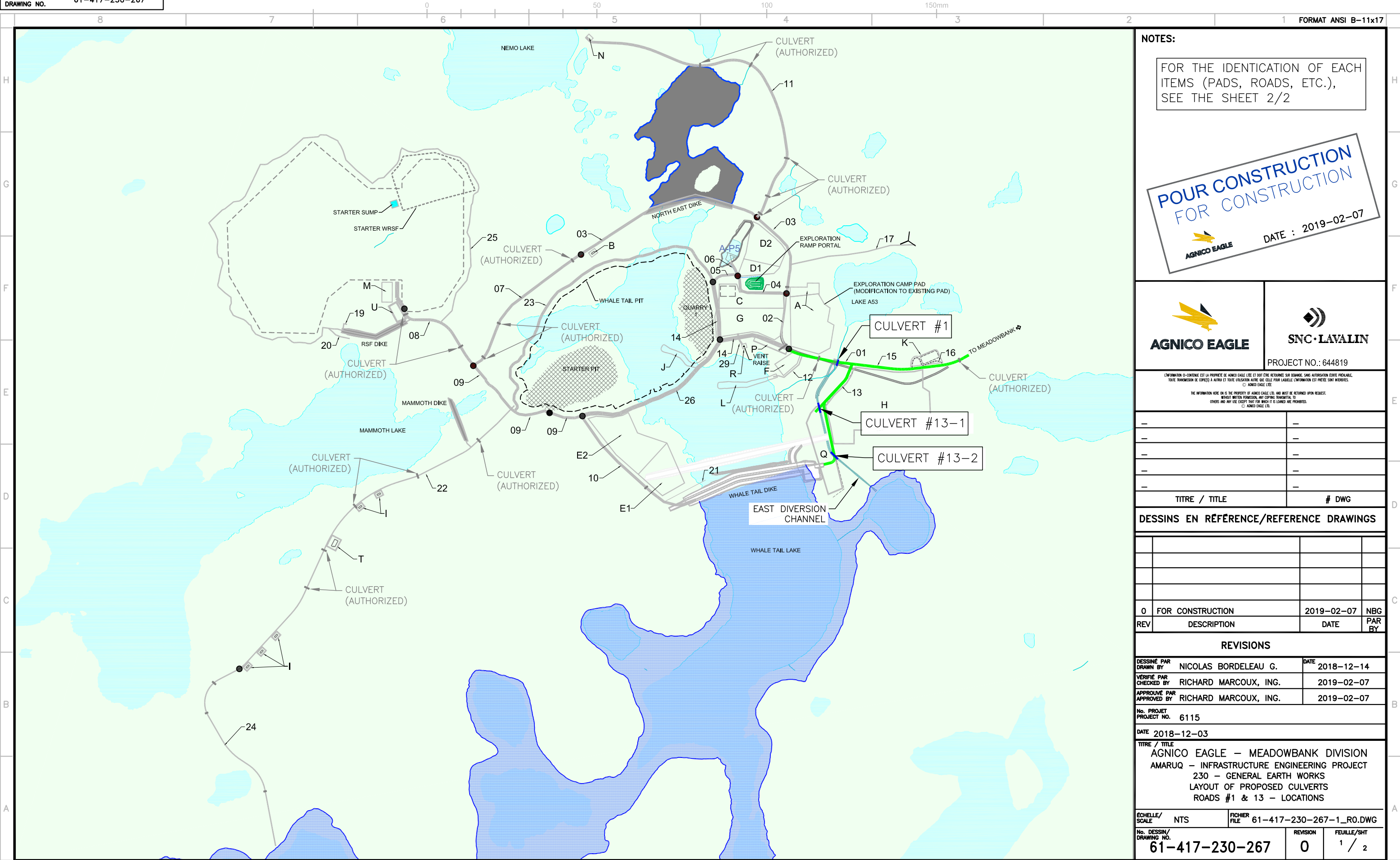
### General project location plan



## **APPENDIX B**

**Plan general view – Layout of proposed culverts on roads #1 & 13**





<table><tr><th>PAD NUMBER</th><th>DESCRIPTION</th><th>CONST. STATUS</th></tr><tr><td>A</td><td>Exploration Ramp Garage Pad + Exploration Camp Pad</td><td>Existing</td></tr><tr><td>B</td><td>Temporary Explosive Magasine</td><td>Existing</td></tr><tr><td>C</td><td>Exploration Ramp Pad South (NPAG)</td><td>Existing</td></tr><tr><td>D1</td><td>Exploration Ramp Pad North (UG Waste) Pt.1</td><td>Existing</td></tr><tr><td>D2</td><td>Exploration Ramp Pad North (UG Waste) Pt.2</td><td>Existing</td></tr><tr><td>E1</td><td>West Ore Stockpile Pad &amp; Overburden Storage Pt.1</td><td>Planned</td></tr><tr><td>E2</td><td>West Ore Stockpile Pad &amp; Overburden Storage Pt.2</td><td>Planned</td></tr><tr><td>F</td><td>WTP Pad</td><td>Existing</td></tr><tr><td>F'</td><td>WTP Pad Extension Pad</td><td>Planned</td></tr><tr><td>G</td><td>East Ore Stockpile Pad (Extension Explo. Ramp Pad)</td><td>Existing</td></tr><tr><td>H</td><td>Industrial Pad</td><td>Existing</td></tr><tr><td>I</td><td>Explosive Magasine</td><td>Planned</td></tr><tr><td>J</td><td>Dewatering Ramp Whale Lake Center (Main)</td><td>Planned</td></tr><tr><td>K</td><td>Fuel Tank Containment Basin</td><td>Planned</td></tr><tr><td>L</td><td>Dewatering Ramp Whale Lake Center (Secondary)</td><td>Planned</td></tr><tr><td>M</td><td>Landfill</td><td>Planned</td></tr><tr><td>N</td><td>Nemo Fresh water Pad</td><td>Existing</td></tr><tr><td>P</td><td>Truck Scale pad</td><td>Existing</td></tr><tr><td>Q</td><td>Construction Whale Tail Dike Pad</td><td>Existing</td></tr><tr><td>R</td><td>Ventilation Raise Pad</td><td>Existing</td></tr><tr><td>S</td><td>Nonexistent</td><td>Nonexistent</td></tr><tr><td>T</td><td>Emulsion Storage pad</td><td>Existing</td></tr><tr><td>U</td><td>Office &amp; Lunch Room Pad</td><td>Planned</td></tr></table>			PAD NUMBER	DESCRIPTION	CONST. STATUS	A	Exploration Ramp Garage Pad + Exploration Camp Pad	Existing	B	Temporary Explosive Magasine	Existing	C	Exploration Ramp Pad South (NPAG)	Existing	D1	Exploration Ramp Pad North (UG Waste) Pt.1	Existing	D2	Exploration Ramp Pad North (UG Waste) Pt.2	Existing	E1	West Ore Stockpile Pad & Overburden Storage Pt.1	Planned	E2	West Ore Stockpile Pad & Overburden Storage Pt.2	Planned	F	WTP Pad	Existing	F'	WTP Pad Extension Pad	Planned	G	East Ore Stockpile Pad (Extension Explo. Ramp Pad)	Existing	H	Industrial Pad	Existing	I	Explosive Magasine	Planned	J	Dewatering Ramp Whale Lake Center (Main)	Planned	K	Fuel Tank Containment Basin	Planned	L	Dewatering Ramp Whale Lake Center (Secondary)	Planned	M	Landfill	Planned	N	Nemo Fresh water Pad	Existing	P	Truck Scale pad	Existing	Q	Construction Whale Tail Dike Pad	Existing	R	Ventilation Raise Pad	Existing	S	Nonexistent	Nonexistent	T	Emulsion Storage pad	Existing	U	Office & Lunch Room Pad	Planned	<table><tr><th>ROAD NUMBER</th><th>DESCRIPTION</th><th>CONST. STATUS</th></tr><tr><td>1</td><td>AWR Road to Exploration Camp</td><td>Existing</td></tr><tr><td>2</td><td>Exploration Camp to Exploration Ramp Pad</td><td>Existing</td></tr><tr><td>3</td><td>North Exploration Road Pt.1</td><td>Existing</td></tr><tr><td>4</td><td>Exploration Ramp Pad to Exploration Ramp</td><td>Existing</td></tr><tr><td>5</td><td>Exploration Ramp to Quarry#1</td><td>Existing</td></tr><tr><td>6</td><td>Exploration Ramp to A-P5</td><td>Existing</td></tr><tr><td>7</td><td>North Exploration Road Pt.2</td><td>Existing</td></tr><tr><td>8</td><td>North Exploration Road to WRSF</td><td>Existing</td></tr><tr><td>9</td><td>North Exploration Road to Starter Pit</td><td>Existing</td></tr><tr><td>10</td><td>Starter Pit to Whale Tail Dike (West Side)</td><td>Existing</td></tr><tr><td>11</td><td>Nemo Fresh Water Pumping Station Road</td><td>Planned</td></tr><tr><td>12</td><td>WTP Access road</td><td>Planned</td></tr><tr><td>13</td><td>Whale Tail Dike East Access (Widening)</td><td>In Progress</td></tr><tr><td>14</td><td>Quarry#1 to Exploration Camp (South Road)</td><td>Existing</td></tr><tr><td>15</td><td>Exploration Camp to AWR (Widening)</td><td>Existing</td></tr><tr><td>16</td><td>Tank Farm Bay</td><td>Planned</td></tr><tr><td>17</td><td>Communication Tower</td><td>Planned</td></tr><tr><td>18</td><td>Nonexistent</td><td>Nonexistent</td></tr><tr><td>19</td><td>RSF Dike pump station Acess</td><td>Planned</td></tr><tr><td>20</td><td>RSF Seepage Collection Pond Acess</td><td>Planned</td></tr><tr><td>21</td><td>Seepage Whale Tail Dike road</td><td>Planned</td></tr><tr><td>22</td><td>Explosive road</td><td>In Progress</td></tr><tr><td>23</td><td>Pit Rim RD North</td><td>Planned</td></tr><tr><td>24</td><td>South Whale Tail Diversion Channel</td><td>Planned</td></tr><tr><td>25</td><td>Road Around RSF</td><td>Planned</td></tr><tr><td>26</td><td>Pit Rim RD South</td><td>Planned</td></tr><tr><td>27</td><td>Nonexistent</td><td>Nonexistent</td></tr><tr><td>28</td><td>Nonexistent</td><td>Nonexistent</td></tr><tr><td>29</td><td>Ventilation Raise Access</td><td>Planned</td></tr></table>			ROAD NUMBER	DESCRIPTION	CONST. STATUS	1	AWR Road to Exploration Camp	Existing	2	Exploration Camp to Exploration Ramp Pad	Existing	3	North Exploration Road Pt.1	Existing	4	Exploration Ramp Pad to Exploration Ramp	Existing	5	Exploration Ramp to Quarry#1	Existing	6	Exploration Ramp to A-P5	Existing	7	North Exploration Road Pt.2	Existing	8	North Exploration Road to WRSF	Existing	9	North Exploration Road to Starter Pit	Existing	10	Starter Pit to Whale Tail Dike (West Side)	Existing	11	Nemo Fresh Water Pumping Station Road	Planned	12	WTP Access road	Planned	13	Whale Tail Dike East Access (Widening)	In Progress	14	Quarry#1 to Exploration Camp (South Road)	Existing	15	Exploration Camp to AWR (Widening)	Existing	16	Tank Farm Bay	Planned	17	Communication Tower	Planned	18	Nonexistent	Nonexistent	19	RSF Dike pump station Acess	Planned	20	RSF Seepage Collection Pond Acess	Planned	21	Seepage Whale Tail Dike road	Planned	22	Explosive road	In Progress	23	Pit Rim RD North	Planned	24	South Whale Tail Diversion Channel	Planned	25	Road Around RSF	Planned	26	Pit Rim RD South	Planned	27	Nonexistent	Nonexistent	28	Nonexistent	Nonexistent	29	Ventilation Raise Access	Planned	<div>NOTES:</div> <div>SEE THE SHEET 1/2, FOR THE LOCATION OF EACH ITEMS (PADS &amp; ROADS)</div> <div><div>POUR CONSTRUCTION FOR CONSTRUCTION</div><div>AGNICO EAGLE</div><div>DATE : 2019-02-07</div></div> <div><div><div><div>AGNICO EAGLE</div></div><div><div>SNC-LAVALIN</div></div></div><div>PROJECT NO.: 644819</div></div> <div><div>L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. 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DATE	2018-12-14	VÉRIFIÉ PAR CHECKED BY	RICHARD MARCOUX, ING.		2019-02-07	APPROUVÉ PAR APPROVED BY	RICHARD MARCOUX, ING.		2019-02-07	No. PROJET PROJECT NO.	6115			DATE	2018-12-03			TITRE / TITLE	AGNICO EAGLE – MEADOWBANK DIVISION AMARUQ – INFRASTRUCTURE ENGINEERING PROJECT 230 – GENERAL EARTH WORKS LAYOUT OF PROPOSED CULVERTS IDENTIFICATION OF ITEMS			ÉCHELLE/ SCALE	NTS	FICHIER FILE	61-417-230-267-1_R0.DWG	No. DESSIN/ DRAWING NO.	61-417-230-267	REVISION	0			FEUILLE/SHT	2 / 2
PAD NUMBER	DESCRIPTION	CONST. STATUS																																																																																																																																																																																																																																																		
A	Exploration Ramp Garage Pad + Exploration Camp Pad	Existing																																																																																																																																																																																																																																																		
B	Temporary Explosive Magasine	Existing																																																																																																																																																																																																																																																		
C	Exploration Ramp Pad South (NPAG)	Existing																																																																																																																																																																																																																																																		
D1	Exploration Ramp Pad North (UG Waste) Pt.1	Existing																																																																																																																																																																																																																																																		
D2	Exploration Ramp Pad North (UG Waste) Pt.2	Existing																																																																																																																																																																																																																																																		
E1	West Ore Stockpile Pad & Overburden Storage Pt.1	Planned																																																																																																																																																																																																																																																		
E2	West Ore Stockpile Pad & Overburden Storage Pt.2	Planned																																																																																																																																																																																																																																																		
F	WTP Pad	Existing																																																																																																																																																																																																																																																		
F'	WTP Pad Extension Pad	Planned																																																																																																																																																																																																																																																		
G	East Ore Stockpile Pad (Extension Explo. Ramp Pad)	Existing																																																																																																																																																																																																																																																		
H	Industrial Pad	Existing																																																																																																																																																																																																																																																		
I	Explosive Magasine	Planned																																																																																																																																																																																																																																																		
J	Dewatering Ramp Whale Lake Center (Main)	Planned																																																																																																																																																																																																																																																		
K	Fuel Tank Containment Basin	Planned																																																																																																																																																																																																																																																		
L	Dewatering Ramp Whale Lake Center (Secondary)	Planned																																																																																																																																																																																																																																																		
M	Landfill	Planned																																																																																																																																																																																																																																																		
N	Nemo Fresh water Pad	Existing																																																																																																																																																																																																																																																		
P	Truck Scale pad	Existing																																																																																																																																																																																																																																																		
Q	Construction Whale Tail Dike Pad	Existing																																																																																																																																																																																																																																																		
R	Ventilation Raise Pad	Existing																																																																																																																																																																																																																																																		
S	Nonexistent	Nonexistent																																																																																																																																																																																																																																																		
T	Emulsion Storage pad	Existing																																																																																																																																																																																																																																																		
U	Office & Lunch Room Pad	Planned																																																																																																																																																																																																																																																		
ROAD NUMBER	DESCRIPTION	CONST. STATUS																																																																																																																																																																																																																																																		
1	AWR Road to Exploration Camp	Existing																																																																																																																																																																																																																																																		
2	Exploration Camp to Exploration Ramp Pad	Existing																																																																																																																																																																																																																																																		
3	North Exploration Road Pt.1	Existing																																																																																																																																																																																																																																																		
4	Exploration Ramp Pad to Exploration Ramp	Existing																																																																																																																																																																																																																																																		
5	Exploration Ramp to Quarry#1	Existing																																																																																																																																																																																																																																																		
6	Exploration Ramp to A-P5	Existing																																																																																																																																																																																																																																																		
7	North Exploration Road Pt.2	Existing																																																																																																																																																																																																																																																		
8	North Exploration Road to WRSF	Existing																																																																																																																																																																																																																																																		
9	North Exploration Road to Starter Pit	Existing																																																																																																																																																																																																																																																		
10	Starter Pit to Whale Tail Dike (West Side)	Existing																																																																																																																																																																																																																																																		
11	Nemo Fresh Water Pumping Station Road	Planned																																																																																																																																																																																																																																																		
12	WTP Access road	Planned																																																																																																																																																																																																																																																		
13	Whale Tail Dike East Access (Widening)	In Progress																																																																																																																																																																																																																																																		
14	Quarry#1 to Exploration Camp (South Road)	Existing																																																																																																																																																																																																																																																		
15	Exploration Camp to AWR (Widening)	Existing																																																																																																																																																																																																																																																		
16	Tank Farm Bay	Planned																																																																																																																																																																																																																																																		
17	Communication Tower	Planned																																																																																																																																																																																																																																																		
18	Nonexistent	Nonexistent																																																																																																																																																																																																																																																		
19	RSF Dike pump station Acess	Planned																																																																																																																																																																																																																																																		
20	RSF Seepage Collection Pond Acess	Planned																																																																																																																																																																																																																																																		
21	Seepage Whale Tail Dike road	Planned																																																																																																																																																																																																																																																		
22	Explosive road	In Progress																																																																																																																																																																																																																																																		
23	Pit Rim RD North	Planned																																																																																																																																																																																																																																																		
24	South Whale Tail Diversion Channel	Planned																																																																																																																																																																																																																																																		
25	Road Around RSF	Planned																																																																																																																																																																																																																																																		
26	Pit Rim RD South	Planned																																																																																																																																																																																																																																																		
27	Nonexistent	Nonexistent																																																																																																																																																																																																																																																		
28	Nonexistent	Nonexistent																																																																																																																																																																																																																																																		
29	Ventilation Raise Access	Planned																																																																																																																																																																																																																																																		
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APPROUVÉ PAR APPROVED BY	RICHARD MARCOUX, ING.		2019-02-07																																																																																																																																																																																																																																																	
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DATE	2018-12-03																																																																																																																																																																																																																																																			
TITRE / TITLE	AGNICO EAGLE – MEADOWBANK DIVISION AMARUQ – INFRASTRUCTURE ENGINEERING PROJECT 230 – GENERAL EARTH WORKS LAYOUT OF PROPOSED CULVERTS IDENTIFICATION OF ITEMS																																																																																																																																																																																																																																																			
ÉCHELLE/ SCALE	NTS	FICHIER FILE	61-417-230-267-1_R0.DWG																																																																																																																																																																																																																																																	
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		FEUILLE/SHT	2 / 2																																																																																																																																																																																																																																																	

**APPENDIX C**  
**Culverts installation (61-417-230-226)**

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NOTES GÉNÉRALES / GENERAL NOTES

 SNC-LAVALIN

Project # : 644819-0000

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**AGNICO EAGLE**

3	2019-02-07	ISSUED FOR CONSTRUCTION	Y.B.	R.M.	E.T.
2	2017-09-15	ISSUED FOR CONSTRUCTION	Y.B.	G.M.	E.T.
1	2017-09-08	ISSUED FOR CONSTRUCTION	Y.B.	G.M.	E.T.
0	2017-08-09	ISSUED FOR CONSTRUCTION	D.D.	G.M.	E.T.
C	2017-07-07	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.
B	2017-06-16	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.
REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLD

## REVISIONS

TITRE / TITLE

AGNICO EAGLE - AMARUQ DIVISION

417 - ROADS, YARDS, FENCES AND OTHER

230 - GENERAL EARTH WORKS

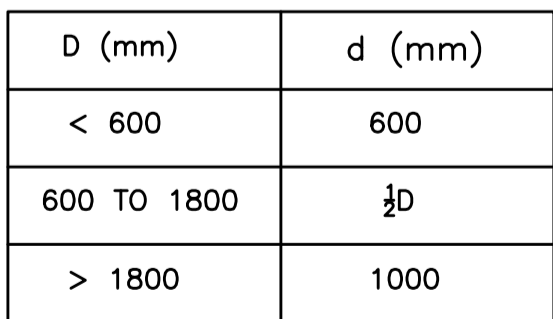
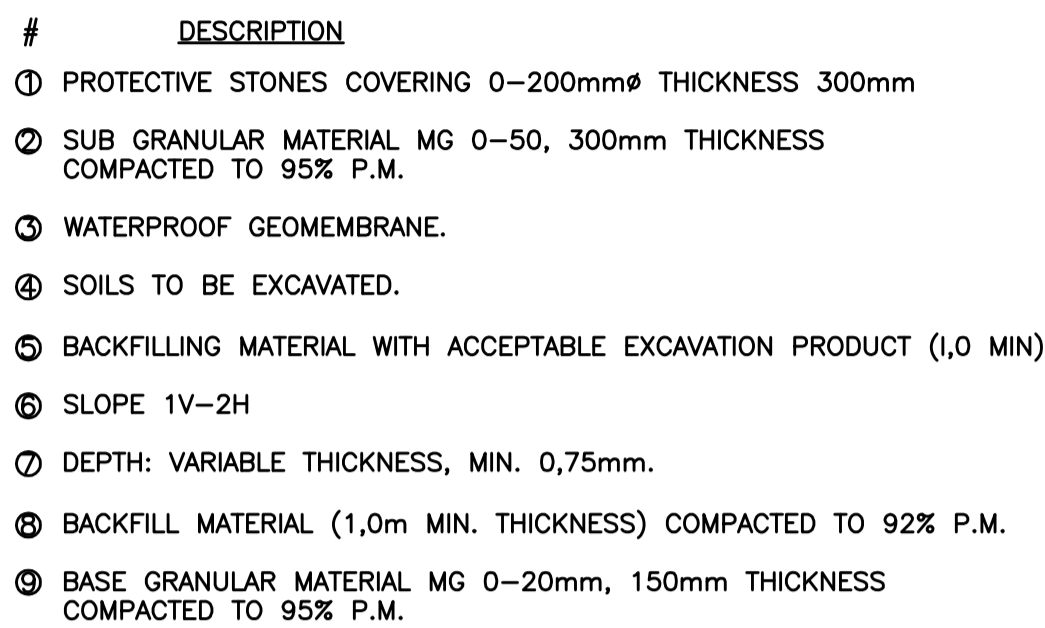
CROSS SECTION AND DETAILS

DESSINÉ PAR DRAWN BY	YVES BOISVERT, TECH.	DATE 2017-06-
VÉRIFIÉ PAR CHECKED BY	GILLES MARCOTTE, ING.	2017-06-
APPROUVÉ PAR APPROVED BY	GILLES MARCOTTE, ING.	2017-06-

ÉCHELLE SCALE	DATE 2017-06-15
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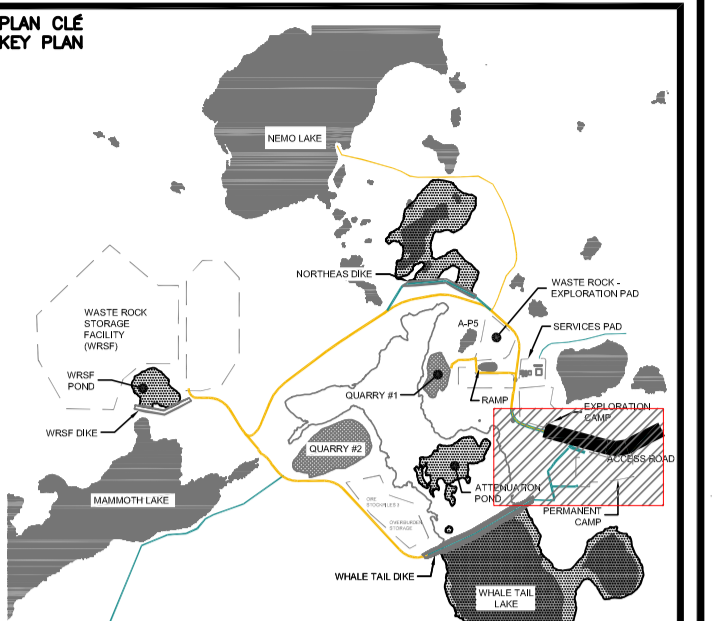
NO. DESSIN  
DRAWING NO.

61-417-230-226		
NO. PROJ. PROJECT NO.	REVISION	FEUILLE / SH
	3	1 / 1



**APPENDIX D**  
**Construction drawings**





NOTES GÉNÉRALES / GENERAL NOTES

**POUR CONSTRUCTION**  
**FOR CONSTRUCTION**

 **AGRICO EAGLE**

DATE : 2019-02-07

SNC-Lavalin StaviBEL inc.  
150, rue Gamble Ouest  
Rouyn-Noranda (Québec) J9X 2R7  
Tel. : 819 764-5181 Fax : 819 797-0158  
[www.sncdavalin.com](http://www.sncdavalin.com)

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TITRE / TITLE	# DWG
CROSS SECTIONS AND DETAILS	61-417-230-226
-	-
-	-
-	-
-	-
-	-

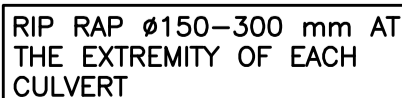


2	2019-02-07	ISSUED FOR CONSTRUCTION	Y.B.	R.M.	E.T.	
1	2018-04-11	ISSUED FOR CONSTRUCTION	D.D.	G.M.	E.T.	
	2018-03-16	ISSUED FOR CONSTRUCTION	O.D.	G.M.	E.T.	
REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT	

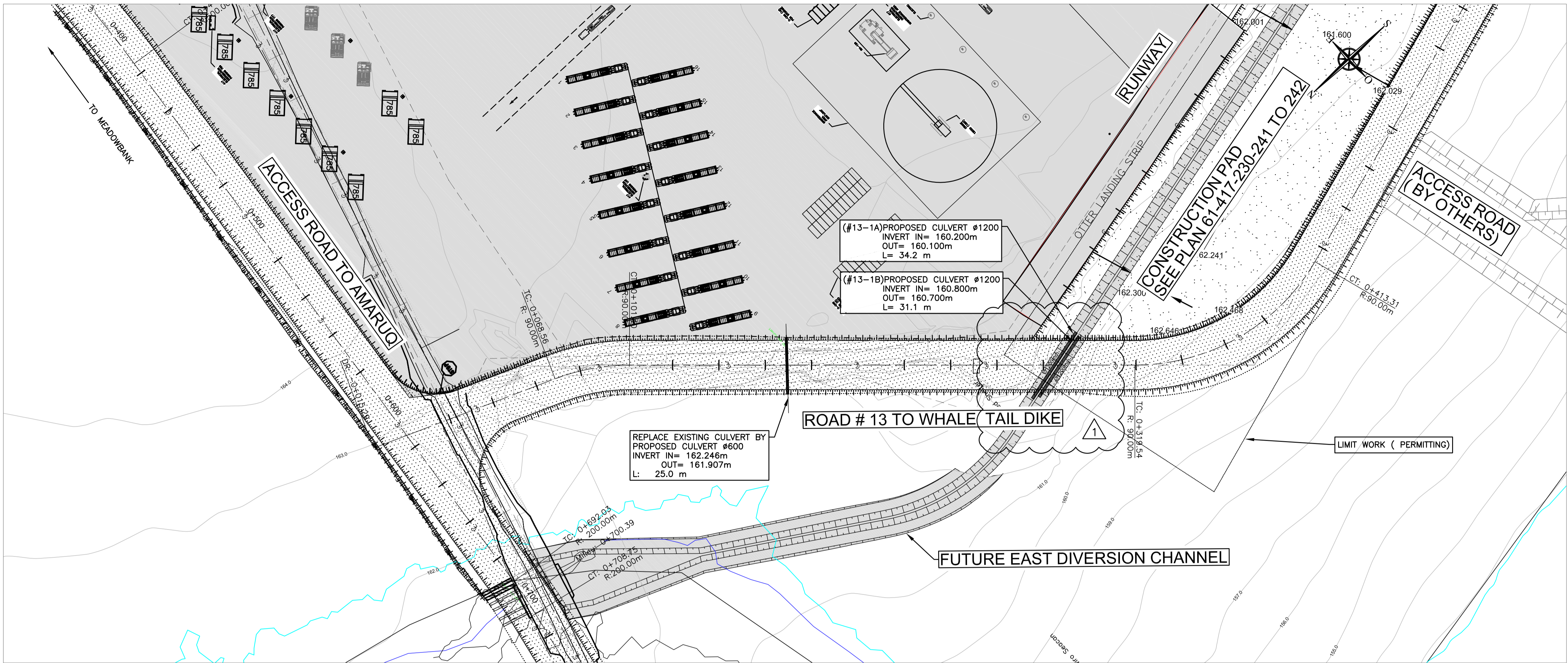
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DESSINÉ PAR DRAWN BY	DANIELLE DESCÔTEAUX, T.P	DATE 2018-03-16
VÉRIFIÉ PAR CHECKED BY	GILLES MARCOTTE, ING.	2018-03-16
APPROUVÉ PAR APPROVED BY	GILLES MARCOTTE, ING.	2018-03-16

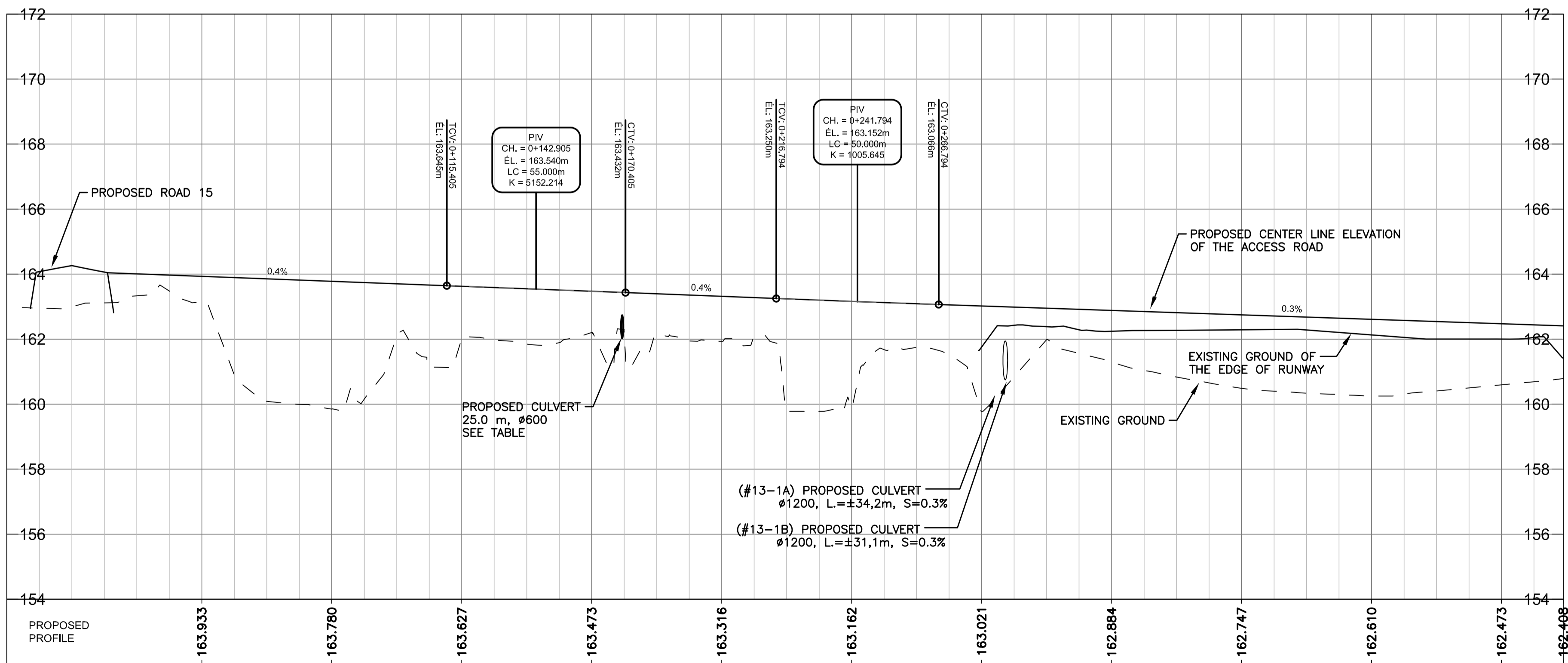
NO. DESSIN  
DRAWING NO. 61-417-230-231



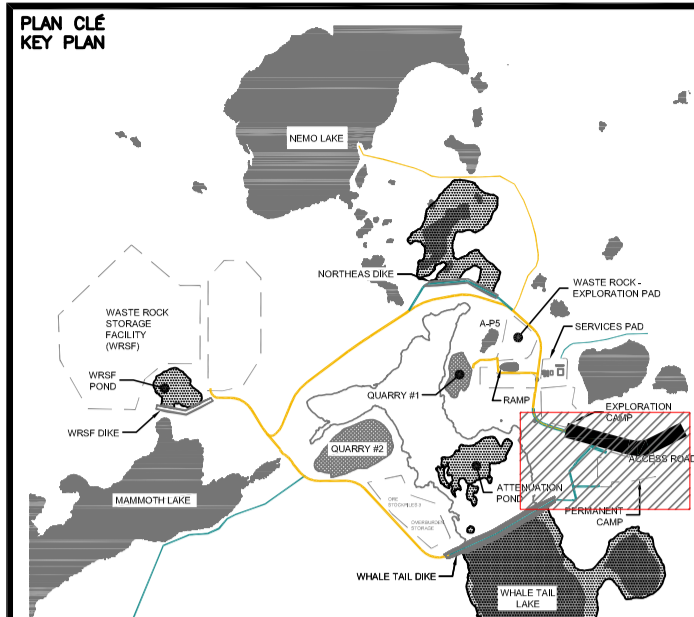




ROAD #13 - TO WHALE TAIL DIKE  
SCALE : 1:1000



RIP RAP #150-300 mm AT  
THE EXTREMITY OF EACH  
CULVERT



CONSTRUCTION ROADS 2017:  
CONSTRUCTION ROADS 2018:

NOTES GÉNÉRALES / GENERAL NOTES

(1) SEE DRAWING 651298-9000-46DD-0001  
THE FOOTPRINT ARE ONLY FOR  
INFORMATION.



SNC-LAVALIN  
SNC-Lavalin Staveland Inc.  
150, rue Gamble Ouest  
Rouyn-Noranda (Québec) J9X 2P7  
Tel.: 819 784-5181 Fax: 819 787-0158  
www.snc-lavalin.com

Project # : 644819-0000

L'APPROUVÉ O-COMPLÈTE EST LA PREMIÈRE DE AGNICO EAGLE INC ET NE PAS ÊTRE RECONSIDÉRÉ EN RAISON. SANS AUTORISATION ÉCRITE  
PRÉALABLE, TOUT CHANGEMENT DE CONCEPTION À L'INTERIEUR DE TOUTE PROJET AGNICO EAGLE INC. SONT INTERDITS. AGNICO EAGLE INC.  
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ANY CHANGES TO THE DESIGN OR ANY THE DESIGN THAT FOR AGNICO EAGLE INC. IS FORWARDED ARE PROHIBITED.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
CROSS SECTIONS AND DETAILS	61-417-230-226
EAST DIVERSION CHANNEL	651298-900-46DD-0001



1	2019-02-07	ISSUED FOR CONSTRUCTION	Y.B.	R.M.	E.T.
0	2018-03-16	ISSUED FOR CONSTRUCTION	D.D.	G.M.	E.T.
REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT

REVISIONS

TITRE / TITLE  
AGNICO EAGLE - WHALE TAIL (AMARUK)  
417 - ROADS, YARDS, FENCES AND OTHER  
230 - GENERAL EARTH WORKS  
PLAN & PROFILE  
ROAD #13 - TO WHALE TAIL DIKE  
0+000 @ 0+459

DESSINÉ PAR DRAWN BY	DANIELLE DESCÔTEAUX, T.P.	DATE 2018-03-16
VÉRIFIÉ PAR CHECKED BY	GILLES MARCOTTE, ING.	2018-03-16
APPROUVÉ PAR APPROVED BY	GILLES MARCOTTE, ING.	2018-03-16

ÉCHELLE  
SCALE 1:1000/1:100 DATE 2018-03-16

NO. DESSIN  
DRAWING NO. 61-417-230-236

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6115	1	1 / 1

