

CONSTRUCTION SUMMARY REPORT CULVERT ROAD 11

Agnico Eagle Mines Ltd

Report

653281-0004-40ER-0006_0

November 29, 2019

Authorized Signatory:

Israël Gagnon, P.Eng., MBA
Mechanical Engineer

EXECUTIVE SUMMARY

SNC Lavalin Stavibel inc was retained by Agnico Eagle Mines Limited to prepare a construction summary (as-built) report for the Road 11 culvert part of Whale Tail Gold Project, Nunavut. SNC Lavalin Stavibel inc previously prepared the construction drawings and specifications as well as the design report for the Culvert on road 8, 9, 11, and 22.

SNC Lavalin Stavibel inc. wasn't involved in the construction of the culvert installation, the information presented in this report was provided in part by Agnico Eagle.

The Road 11 culvert construction part of Whale Tail Gold Project was completed in July 2018. The construction monitoring and quality assurance was managed by Agnico Eagle.

This report summarizes the as-built information for road 11 culvert construction.

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This document presents the road 11 culvert construction summary report required by the Water Licence 2AM-WTP1826 Part D Item 15. As required by Water Licence Schedule D, this report contains the final design and construction drawings, a summary of construction activities including photographic recorded before, during and after construction. The as-built drawings, detailed explanation of field decision to reflect any deviations from the original construction drawings/plans and how such deviations may affect performance of engineered structures, a discussion of the mitigation measures implemented during construction and its effectiveness are also presented.

2.1 Site location plan

[illegible]

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2.2 Culvert

The installed culverts will be in service for up to 15 years. All culverts are Aluminized Corrugated Steel Pipe (ACSP) TYPE 2, with a profile of 68 x 13mm (helical) and a minimum size of 600mm.

2.3 Culvert installation

A minimum fill cover is 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 culvert installation are shown on drawing 61-417-230-226 presented in Appendix A.

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 (50-300mm) from an NAG (Non Acid Generator) and Non Metal Leaching source of rock. For the installation, see drawing 61-417-230-226, in Appendix A. During construction, in the summer, anti-sediment barriers (geotextile curtain) were used to limit erosion and the transport of fine particles into the watercourses.

2.5 Drawings and photographs

Road 11 culvert final design and construction drawings are available in appendix A, construction pictures are available in Appendix C. An as built drawing of culvert 11-4 can be consulted in Appendix B.

3. Field decisions

No water was observed where culvert 11-1, 11-2, 11-3 and 11-5 were supposed to be installed during road 11 construction. For this reason, Agnico decided not to install those 4 culverts. Agnico will continue to monitor the road and evaluate if those culverts need to be installed in the future.

For culvert 11-4, Agnico Eagle Mine elected to install only the two 900 mm culverts even though the construction drawing asked for 4 culverts, two 1200 mm and two 900 mm. This decision was taken because of minimal water level at that creek on road 11 construction.

4. Mitigation measure

Quarrying activities to build road 11 wasn't near fish-bearing waters. During the road 11 construction, to limit sediments released in water Agnico Eagle Mine used geomembrane to contain sediment from culvert construction process. No water was used to manage dust emissions from construction.

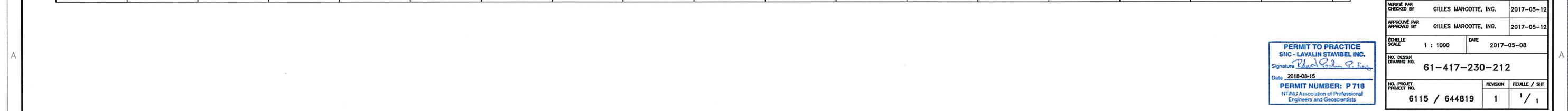
Appendix A

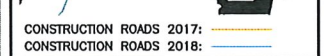
Final construction drawings





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Project # : 644819-0000

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS	
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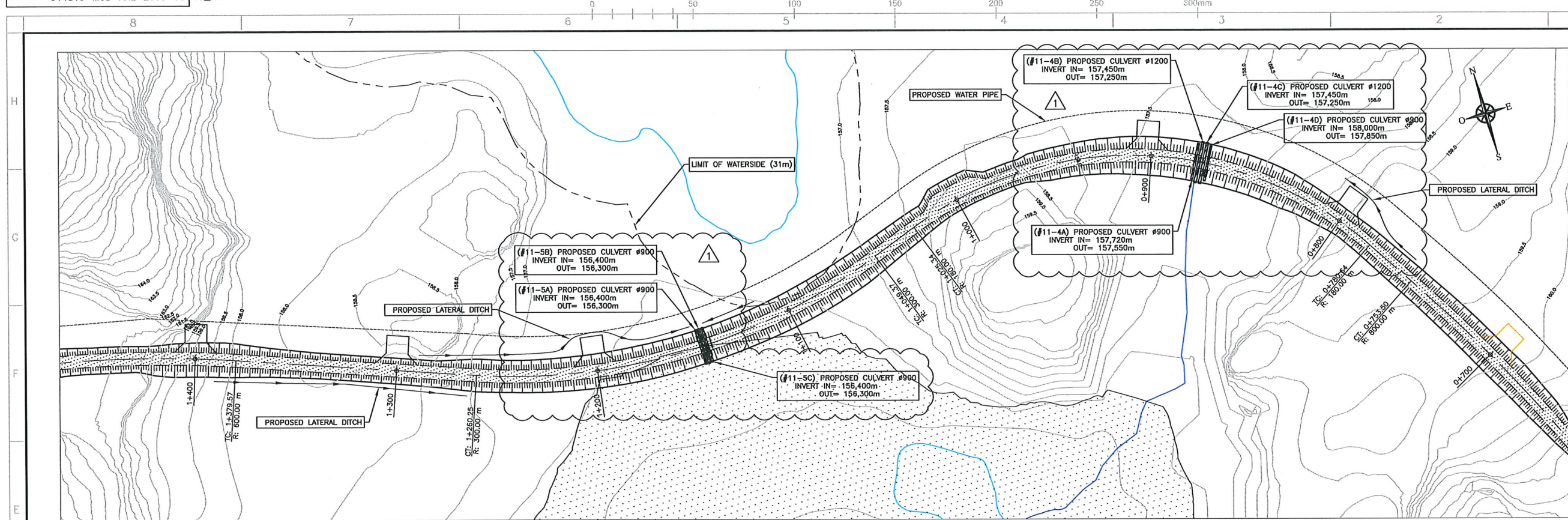
REVISIONS
DIGITALLY SIGNED DOCUMENT


 G. MARCOTTE
 LICENSÉE

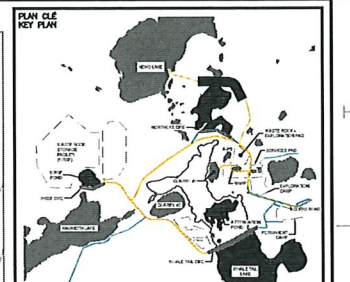
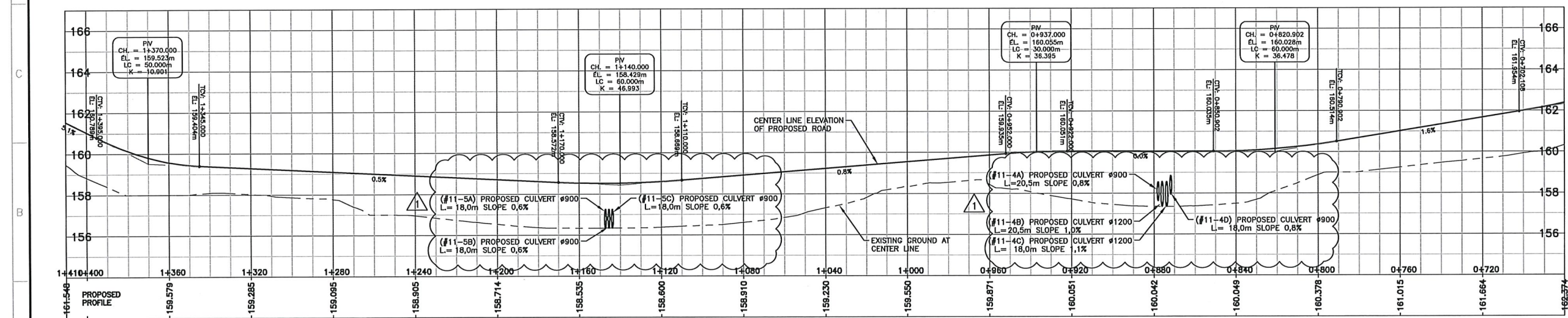
DESSINÉ PAR DRAWN BY	YVES BOISVERT, TECH.	DATE 2017-05-08
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APPROVED PAR APPROVED BY	GILLES MARCOTTE, INC.	2017-05-12
SCHÉLLE	DATE	

61-417-230-212



ROAD TO NEMO LAKE
SCALE : 1:1000



CONSTRUCTION ROADS 2017: —
CONSTRUCTION ROADS 2018: —

NOTES GÉNÉRALES / GENERAL NOTES

SERVICE ROAD TO NEMO LAKE
0+700 @ 1+400

VOLUME 0-50 = 745 m³
BACKFILL = 14620 m³

**POUR CONSTRUCTION
FOR CONSTRUCTION**

 **AGNICO EAGLE**

DATE : 2018-08-13



Project # : 644819-0000

[illegible]

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

[illegible]

A	2018-05-13	REVISED FOR CONSTRUCTION	Y.B.	G.M.	E.T.
O	2017-09-05	ISSUED FOR CONSTRUCTION	Y.B.	G.M.	E.T.
C	2017-07-07	FOR COMMENTS SIGNALISATION	Y.B.	G.M.	E.T.
B	2017-05-16	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.
A	2017-05-12	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.
REV.	DATE	DESCRIPTION	PAR/PM	APP.	CLIENT

REVISIONS



TITLE / TITLE
 20180202
 AGNICO EAGLE - AMARUQ DIVISION
 417 - ROADS, YARDS, FENCES AND OTHER
 230 - GENERAL EARTH WORKS
 PLAN & PROFILE
 SERVICE ROAD TO NEMO LAKE
 0+700 @ 1+400

DESSINE PAR	DATE
REVISÉ PAR	DATE

DESIGN BY	YVES BOISVERT, TECH.	2017-05-08
ISSUED FOR		

VERIFIED BY	GILLES MARCOTTE, ING.	2017-05-12
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APPROUVE PAR APPROVED BY	GILLES MARCOTTE, ING.	2017-05-12
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ÉCHELLE		DATE
SCALE	1 - 1000	2017-05-08

SCALE	1 : 1000	2017-05-08
NO. 000000		

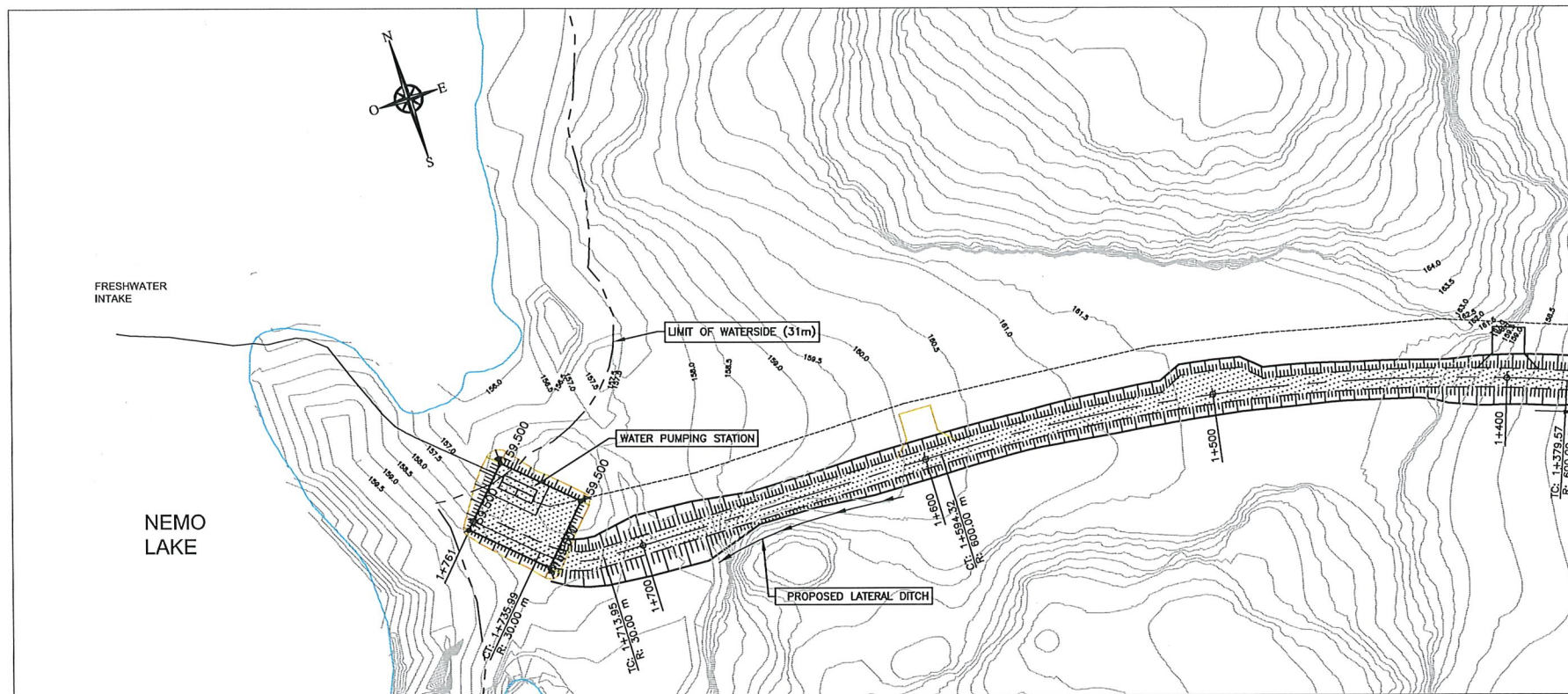
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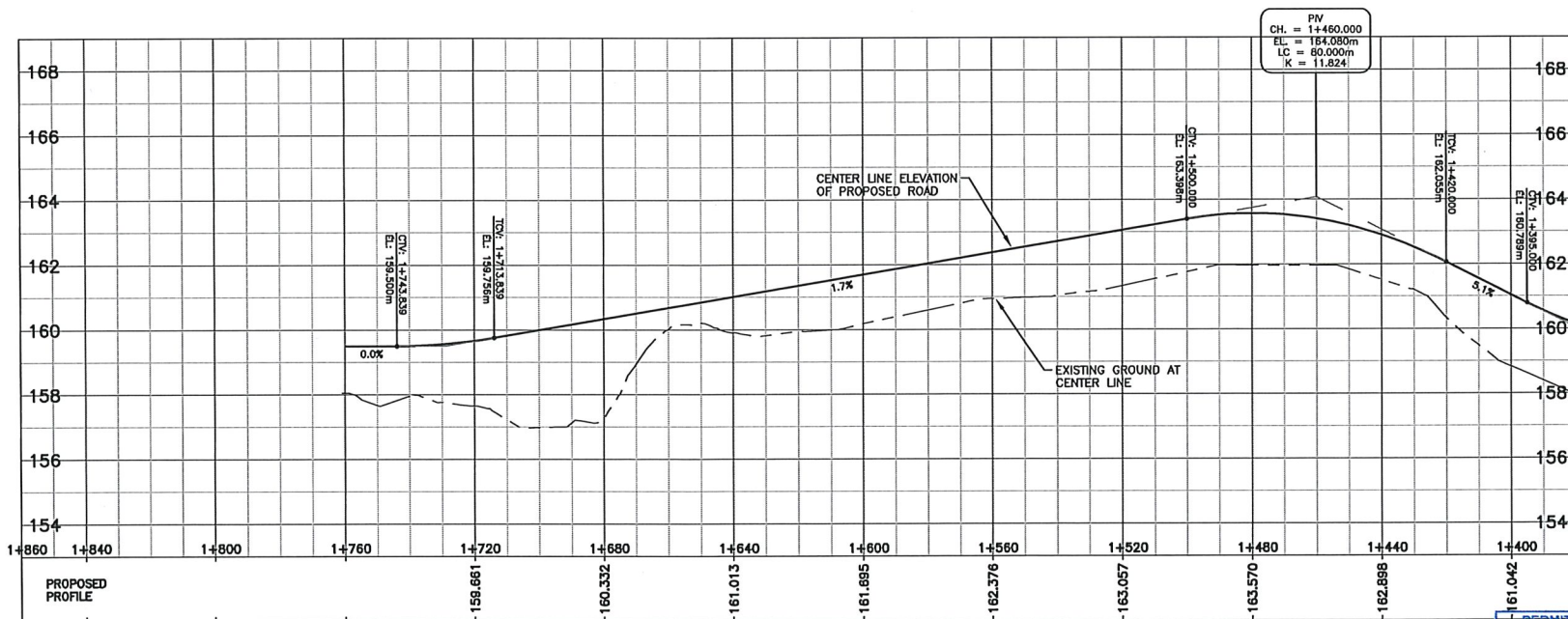
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHI
0415 / 041210	1	1 /

6115 / 644819	1	/ 1
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FILE NO. 644819-MOD-AXE-2018-08-13_R1.d



ROAD TO NEMO LAKE
SCALE : 1:11000



CONSTRUCTION ROADS 2017:
CONSTRUCTION ROADS 2018:

NOTES GÉNÉRALES / GENERAL NOTES

SERVICE ROAD TO NEMO LAKE
1+400 @ 1+761
VOLUME MG 20 = 370 m³
BACKFILL = 5750 m³
WATER PUMPING STATION PAD
BACKFILL = 1630 m³

**POUR CONSTRUCTION
FOR CONSTRUCTION**
AGNICO EAGLE DATE : 2017-09-08

SNC-LAVALIN
SNC-Lavalin Stantec Inc.
150, rue Grande Océan
Rouyn-Noranda (Québec) J9X 2R7
Tél : 819 765-5181 Fax : 819 797-0158
www.snc-lavalin.com

Project # : 644819-0000

CONTRÔLEUR DE QUALITÉ : Le présent document est le produit de la conception et de la construction de l'ouvrage. Les données techniques, les plans, les spécifications et les autres documents de référence sont indiqués dans le document. Les données techniques, les plans, les spécifications et les autres documents de référence sont indiqués dans le document. Les données techniques, les plans, les spécifications et les autres documents de référence sont indiqués dans le document.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITLE / TITRE	#	DATE

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/APP.	APP.	CLIENT
0	2017-09-08	ISSUED FOR CONSTRUCTION	Y.B.	G.M.	E.T.
1	2017-07-07	FOR COMMENTS SIGNATURE	Y.B.	G.M.	E.T.
2	2017-06-14	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.
3	2017-05-12	ISSUED FOR COMMENTS	Y.B.	G.M.	E.T.

REVISIONS

DIGITALLY SIGNED DOCUMENT



AGNICO EAGLE -- AMARUQ DIVISION
417 - ROADS, YARDS, FENCES AND OTHER
230 - GENERAL EARTH WORKS
PLAN & PROFILE
SERVICE ROAD TO NEMO LAKE
1+400 @ 1+800

DESIGNÉ PAR : YVES BOISVERT, TECH. DATE : 2017-05-08
VÉRIFIÉ PAR : GILLES MARCOTTE, ING. DATE : 2017-05-12
APPROUVÉ PAR : GILLES MARCOTTE, ING. DATE : 2017-05-12
ÉCHELLE : 1 : 1000 DATE : 2017-05-08

PERMIT TO PRACTICE
SNC-LAVALIN STANTEC INC.
Signature: *[Signature]*
Date: 2017-09-11
PERMIT NUMBER: P 718
NTNU Association of Professional
Engineers and Geoscientists

NO. DESIGN
DRAWING NO. 61-417-230-214

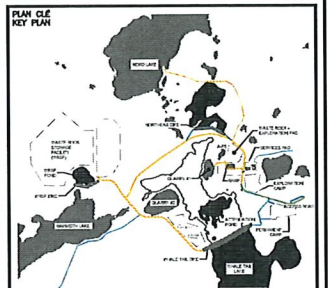
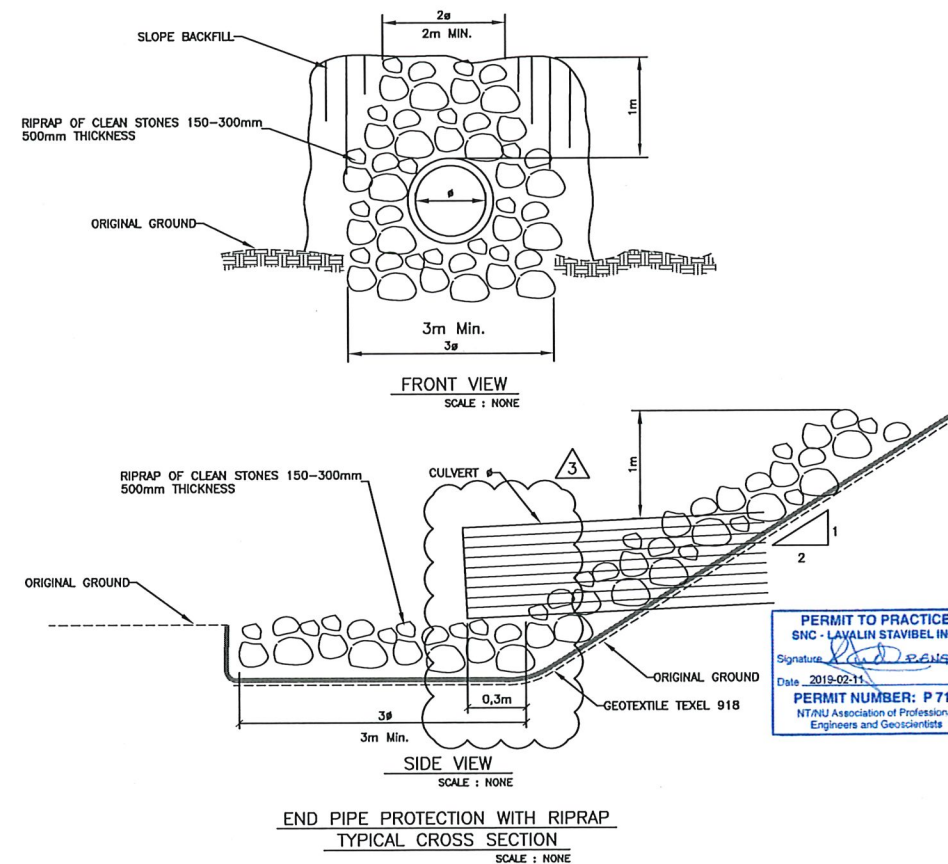
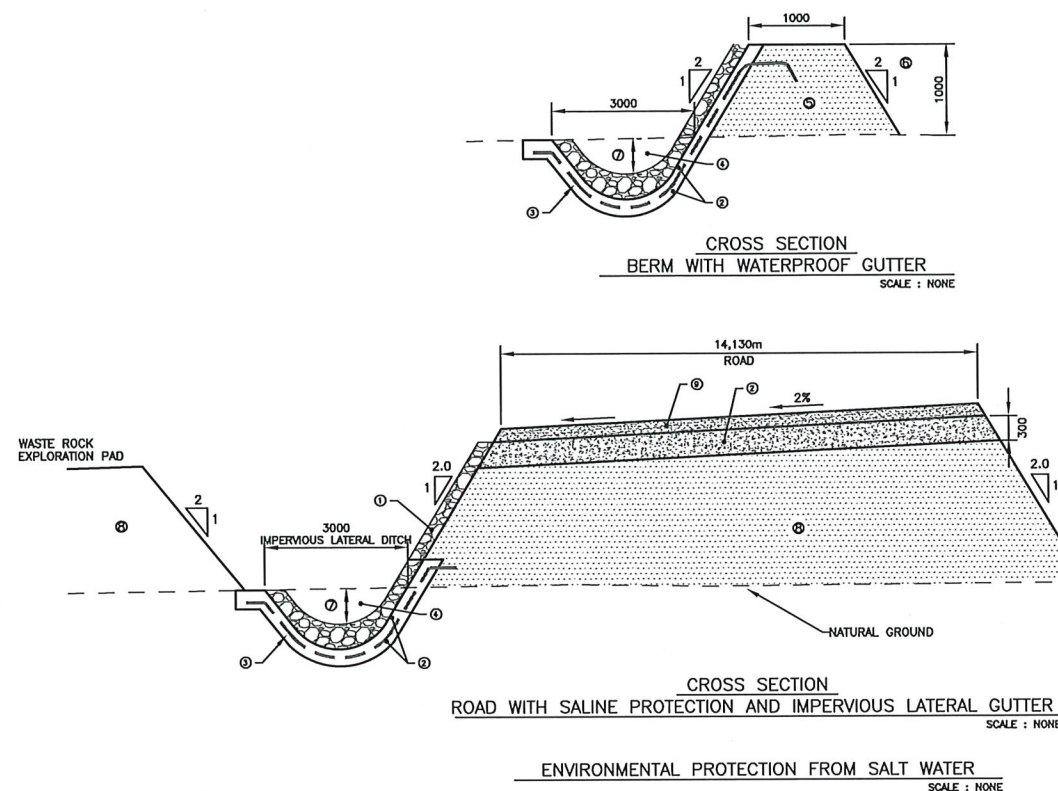
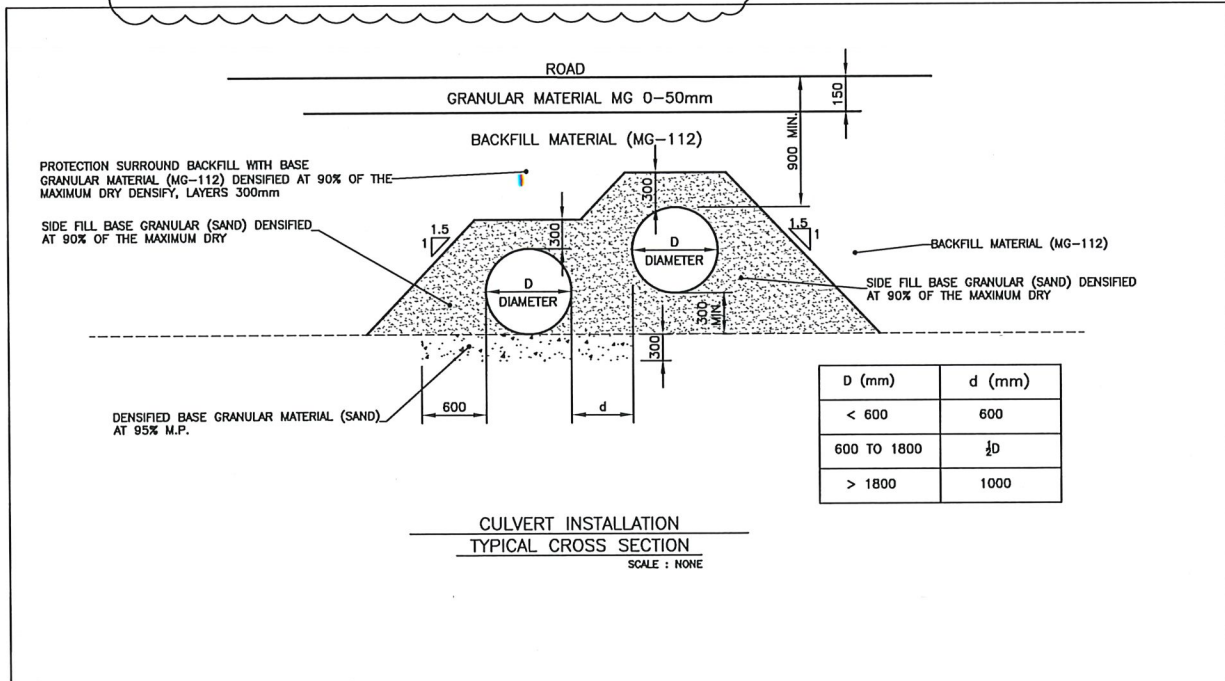
NO. PROJECT	REVISION	FEUILLE / SHEET
6115 / 644819	0	1 / 1

 SNC • LAVALIN		AMARUQ INFRASTRUCTURE ENGINEERING PROJECT				 AGNICO EAGLE Date: 2017-07-10		
		List of materials (culverts)						
LOCALISATION		Fonction	ID	Ø (mm)	Total Length (m)	Material		COMMENTS
ROAD	STATION (m)					Type	Gage (mm)	
ACCESS	0+239	Culvert	1	700	18	ACSP	2,8	
ACCESS	0+618	Culvert	1	1200	18	ACSP	3,5	SNC-Québec, East Channel
ACCESS	0+618	Culvert	2	1200	18	ACSP	3,5	SNC-Québec, East Channel
ACCESS	0+705	Culvert	1	900	18	ACSP	3,5	
ACCESS	0+892	Culvert	1	600	28	ACSP	2,8	
NEMO	0+026	Culvert	1	600	18	ACSP	2,8	
NEMO	0+123	Culvert	1	1200	19	ACSP	3,5	
NEMO	0+123	Culvert	2	900	17	ACSP	3,5	
NEMO	0+123	Culvert	3	900	17	ACSP	3,5	
NEMO	0+344	Culvert	1	600	17	ACSP	2,8	
NEMO	0+876	Culvert	1	1200	20,5	ACSP	3,5	
NEMO	0+876	Culvert	2	1200	20,5	ACSP	3,5	
NEMO	0+876	Culvert	3	900	18	ACSP	3,5	
NEMO	0+876	Culvert	4	900	18	ACSP	3,5	
NEMO	1+148	Culvert	1	900	18	ACSP	3,5	SNC-Québec
NEMO	1+148	Culvert	2	900	18	ACSP	3,5	SNC-Québec
NEMO	1+148	Culvert	3	900	18	ACSP	3,5	SNC-Québec
WRSF	0+240	Culvert	1	600	21	ACSP	2,8	Culvert for service pipelines
WRSF	0+240	Culvert	2	600	21	ACSP	2,8	Culvert for service pipelines
WRSF	10+227	Culvert	1	1200	26,5	ACSP	3,5	
WRSF	10+227	Culvert	2	900	25	ACSP	3,5	
WRSF	10+227	Culvert	3	900	24,5	ACSP	3,5	
WRSF	10+505	Culvert	1	1400	30	ACSP	4,2	
WRSF	10+505	Culvert	2	1200	28	ACSP	3,5	
WRSF	10+505	Culvert	3	1200	26	ACSP	3,5	
WRSF	1+816	Culvert	1	600	23,5	ACSP	2,8	
WRSF	2+315	Culvert	1	900	24	ACSP	3,5	SNC-Québec, North Channel
WRSF	2+512	Culvert	1	600	26	ACSP	2,8	
WHALE TAIL	0+030	Culvert	1	900	23	ACSP	3,5	
WHALE TAIL	0+385	Culvert	1	600	22,5	ACSP	2,8	
WHALE TAIL	0+565	Culvert	1	900	25,5	ACSP	3,5	SNC-Québec, North Channel
WHALE TAIL	0+565	Culvert	2	900	25,5	ACSP	3,5	SNC-Québec, North Channel
RAMP	±0+300	Culvert	1	600	28	ACSP	2,8	Culvert for access to the pad

- (1) ACSP: Aluminized Corrugated Steel Pipe
(2) These lengths are associated with road widths built in 2017
(3) All hardware must be provided, if required

LIST OF MATERIALS

(FOR THE LAST REVISION, SEE DOCUMENT 6115-C-230-MTO-001 & 002)



CONSTRUCTION ROADS 2017:
CONSTRUCTION ROADS 2018:

NOTES GÉNÉRALES / GENERAL NOTES

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2019-02-07

SNC-LAVALIN
SNC-Lavalin Staveland Inc.
150, rue Garfield Ouest
Rouyn-Noranda (Québec) J2X 2P7
Tél.: 819 764-5181 Fax: 819 797-0158
www.snc-lavalin.com


Project #: 644819-0000

CONSTRUCTION ROADS 2017:
CONSTRUCTION ROADS 2018:

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TYPE / TITLE	#

AGNICO EAGLE

	2018-02-07	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	2017-06-09	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/APP.	APP.	CLIENT

REVISIONS

ELECTRONICALLY SIGNED DOCUMENT
Signature: [Signature]
Date: 2019-02-11
2019-02-11

AGNICO EAGLE - AMARUQ DIVISION
417 - ROADS, YARDS, FENCES AND OTHER
230 - GENERAL EARTH WORKS
CROSS SECTION AND DETAILS

DESIGNER: YVES BOISVERT, TECH.
CHECKED BY: GILLES MARCOTTE, ING.
APPROVED BY: GILLES MARCOTTE, ING.

DATE: 2017-06-15
DATE: 2017-06-15
DATE: 2017-06-15

SCHEMATIC: [Signature]
DATE: 2017-06-15

NO. 644819-0000
PROJECT NO. 61-417-230-226

NO. 644819-0000
PROJECT NO. 61-417-230-226

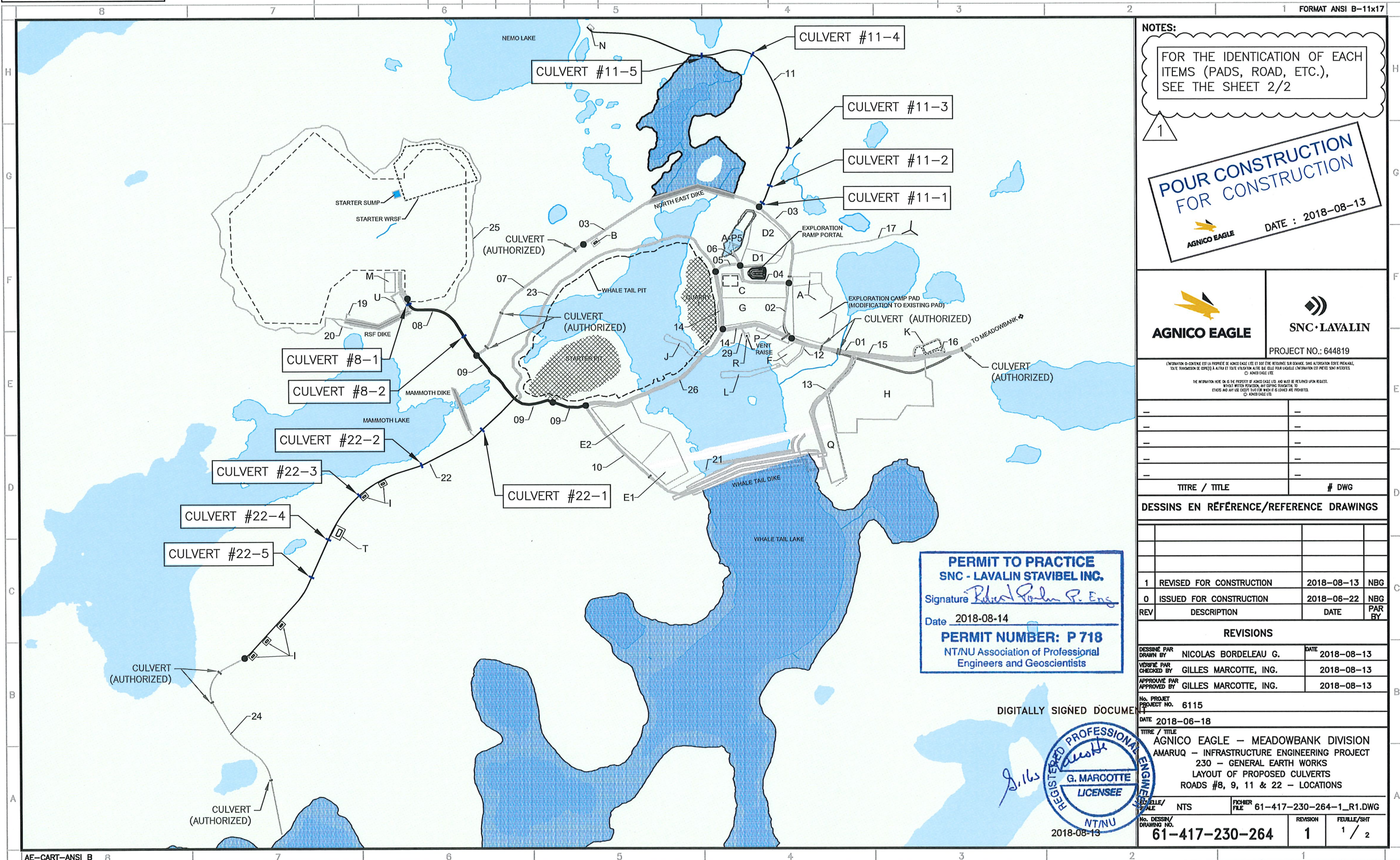
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PROJECT NO. 61-417-230-226

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PROJECT NO. 61-417-230-226

NO. 644819-0000
PROJECT NO. 61-417-230-226

NO. 644819-0000
PROJECT NO. 61-417-230-226



NOTES:
FOR THE IDENTIFICATION OF EACH
ITEMS (PADS, ROAD, ETC.),
SEE THE SHEET 2/2

1
**POUR CONSTRUCTION
FOR CONSTRUCTION**
AGNICO EAGLE
DATE : 2018-08-13

AGNICO EAGLE
SNC-LAVALIN
PROJECT NO.: 644819

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TITRE / TITLE	# DWG

DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS

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0	ISSUED FOR CONSTRUCTION	2018-06-22	NBG
REV	DESCRIPTION	DATE	PAR BY

REVISIONS

DESSINÉ PAR DRAWN BY	NICOLAS BORDELEAU G.	DATE	2018-08-13
VÉRIFIÉ PAR CHECKED BY	GILLES MARCOTTE, ING.		2018-08-13
APPROUVÉ PAR APPROVED BY	GILLES MARCOTTE, ING.		2018-08-13

No. PROJET
PROJECT NO. 6115
DATE 2018-06-18

TITRE / TITLE
AGNICO EAGLE - MEADOWBANK DIVISION
AMARUQ - INFRASTRUCTURE ENGINEERING PROJECT
230 - GENERAL EARTH WORKS
LAYOUT OF PROPOSED CULVERTS
ROADS #8, 9, 11 & 22 - LOCATIONS

ÉCHELLE/ SCALE	NTS	FICHER FILE	61-417-230-264-1_R1.DWG
No. DESSIN/ DRAWING NO.	61-417-230-264	REVISION	1
		FEUILLE/SHT	1 / 2

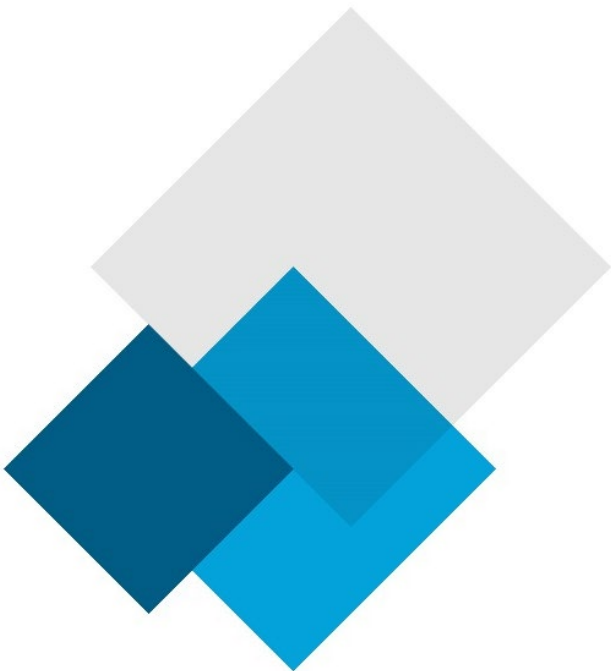
PERMIT TO PRACTICE
SNC - LAVALIN STAVIBEL INC.
Signature *Robert P. Eng*
Date 2018-08-14
PERMIT NUMBER: P 718
NT/NU Association of Professional
Engineers and Geoscientists

DIGITALLY SIGNED DOCUMENT

G. Marcotte
REGISTERED PROFESSIONAL ENGINEER
G. MARCOTTE
LICENSEE
NT/NU
2018-08-13

Appendix B

Culvert 11-4 As built drawing



2x900mm
CULVERTS

EXCAVATION

GEOGRID &
GEOTEXTILE

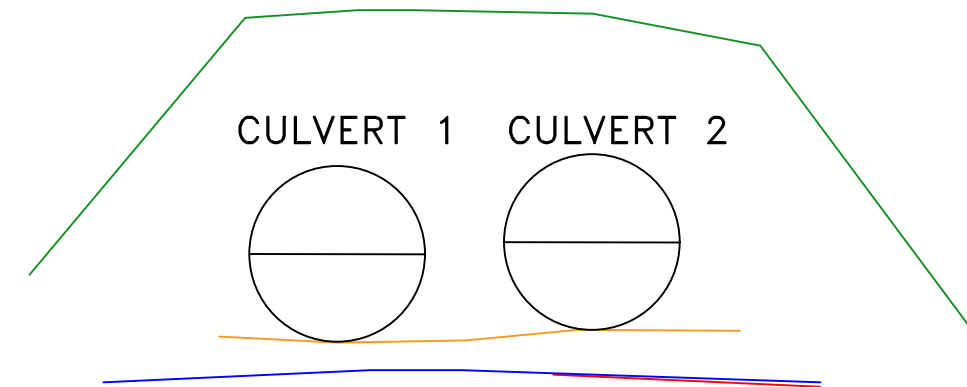
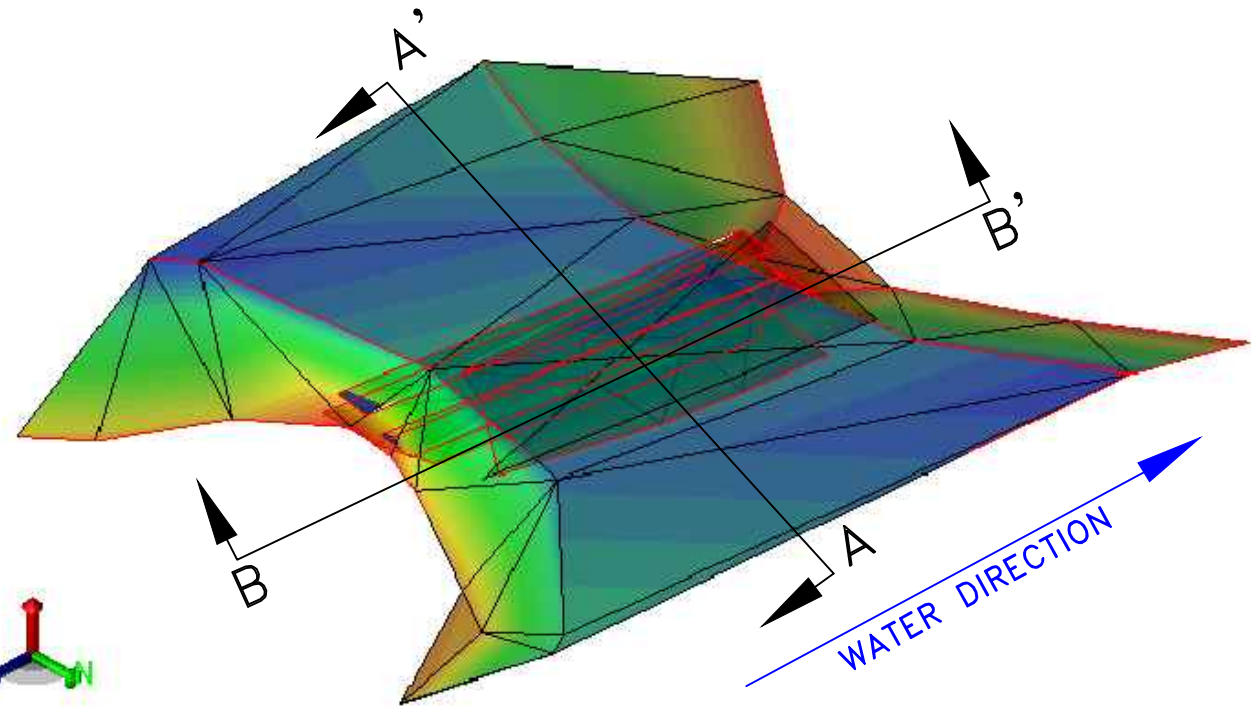
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LAYER

0-3/4"
CAPPING

ROLLING SURFACE

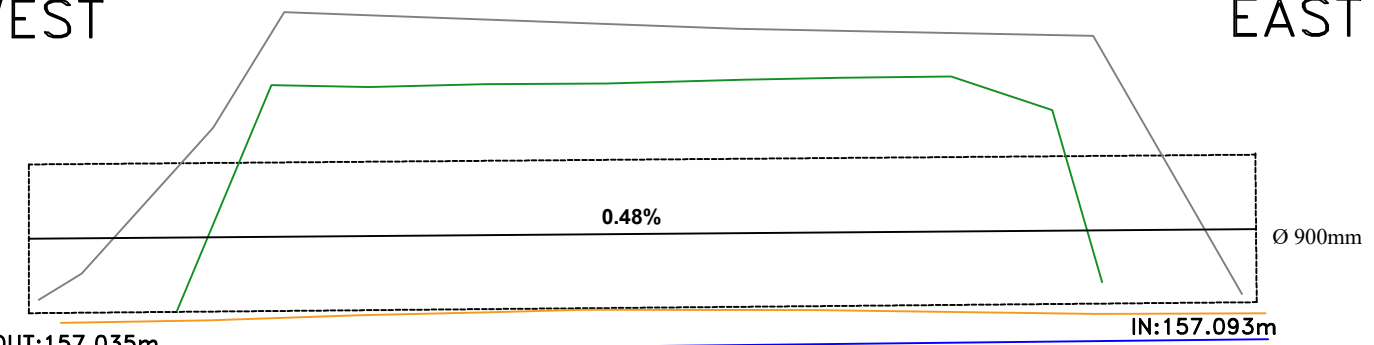
SOUTH

NORTH

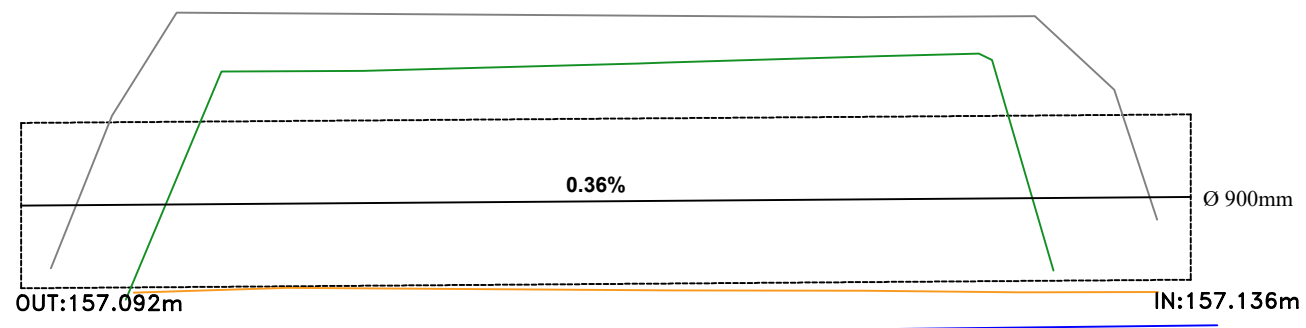


WEST

EAST



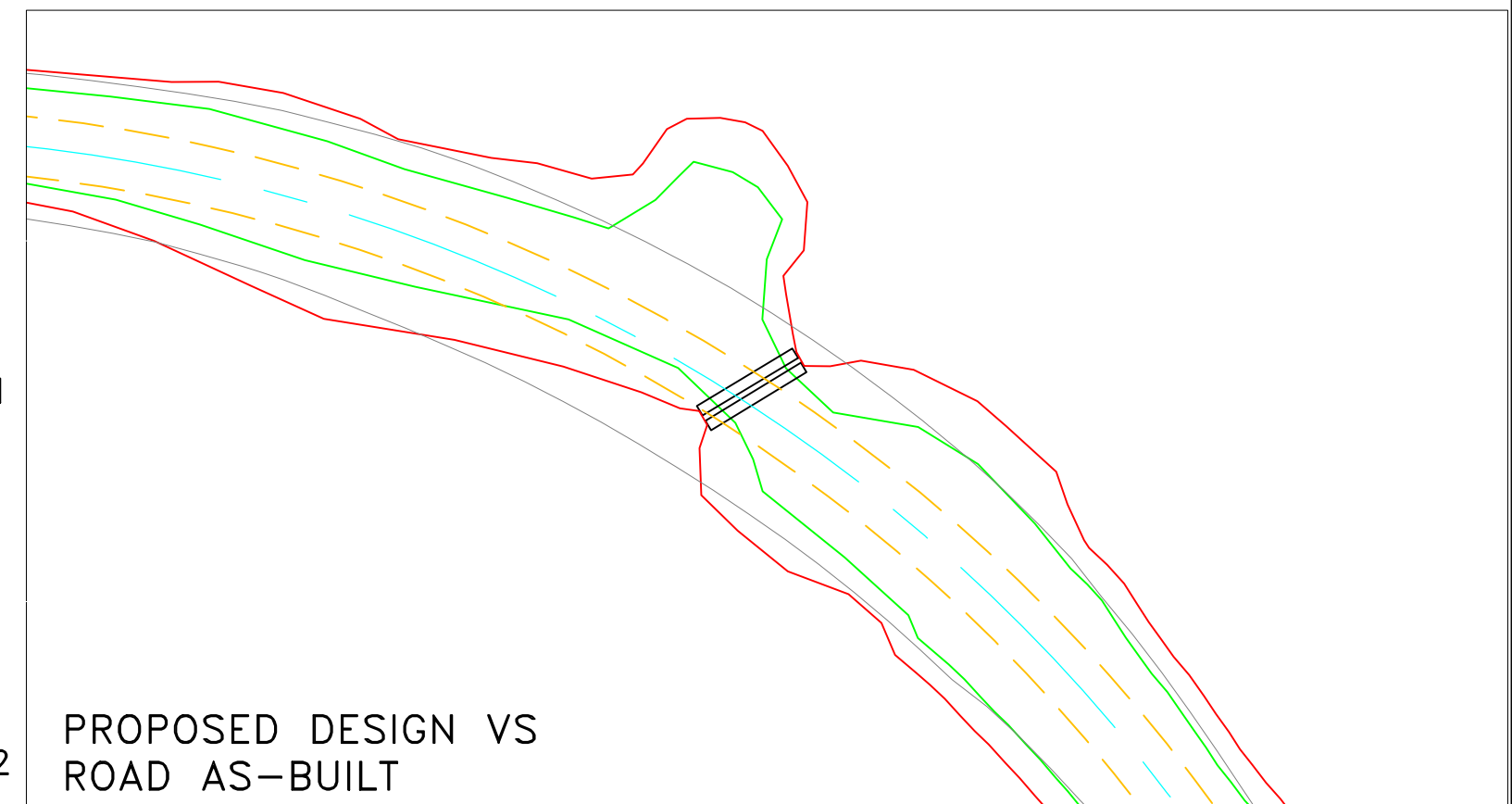
CULVERT 1



CULVERT 2

B-B'

A-A'



PROPOSED DESIGN VS
ROAD AS-BUILT

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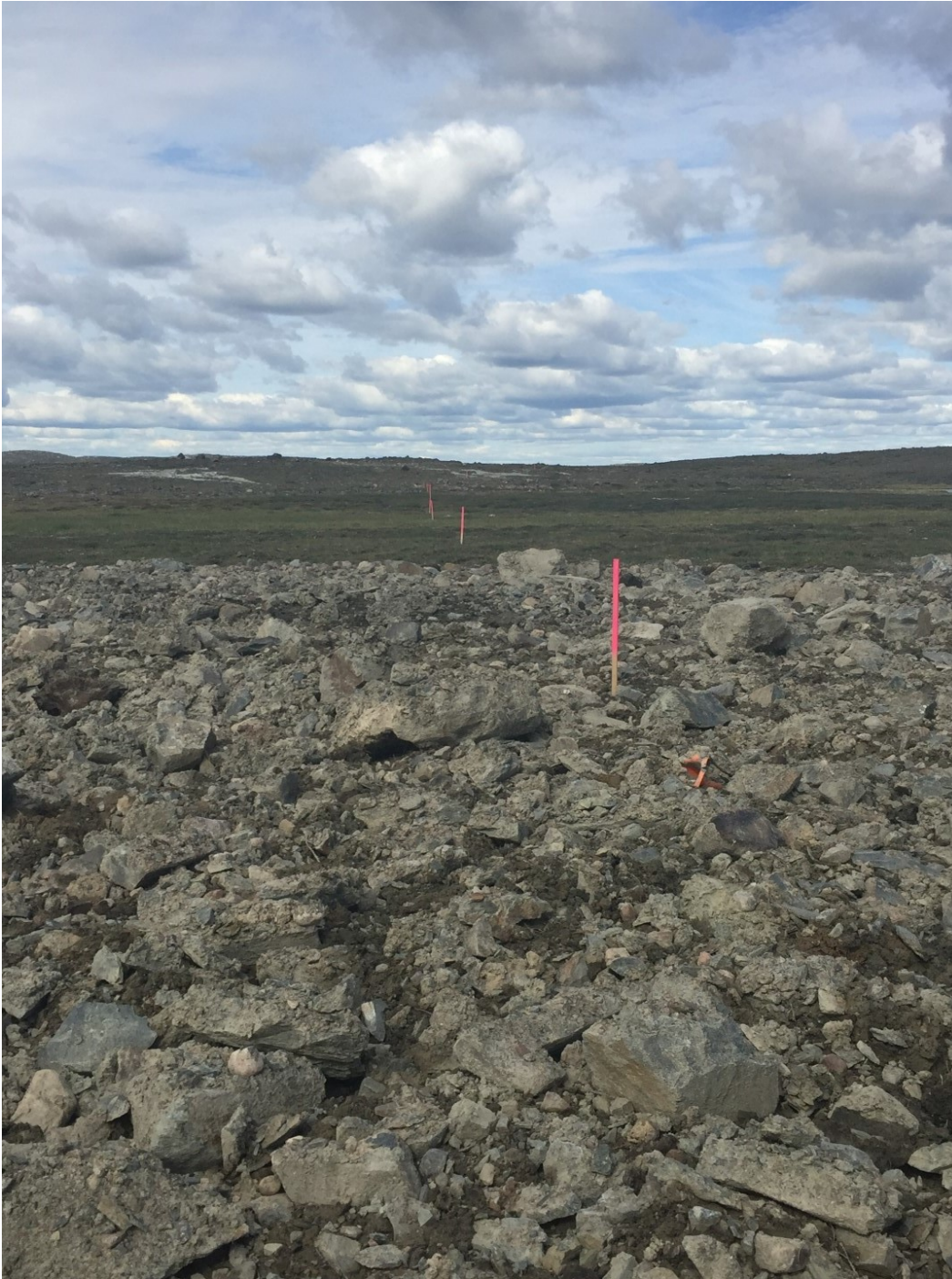
DRAWN BY VJ	DATE 09/15/2018	MODIFIED BY	DATE
SURVEY CHECK	DATE	VJ	09/18/2018
GEOLOGY CHECK	DATE		
ENGINEERING CHECK	DATE		

MEADOWBANK DIVISION			
SURVEYING			
AS BUILT			
CULVERTS			
NEMO LAKE ROAD			
SCALE N.T.S.	DATE 09/15/2018	FILE .DWG	

Appendix C

Pictures





Road 11 pathway



Culvert 11-4 creek before culvert installation



Culvert 11-4 installation



Culvert 11-4 installation



Culvert 11-4 installation