Knight Piésold CONSULTING

Management System Certified By: bsi ISO 9001 Quality Management Systems CERTIFIED FS 64925 | ISO 14001 Environmental Management CERTIFIED EMS 550121 | ISO 45001 Occupational Health and Safety Management CERTIFIED OHS 550122

August 27, 2024

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Mr. Jim Patterson
Mr. Rudolf Dietrich
Deputy Project Directors - Sustaining Projects
Baffinland Iron Mines Corporation
#300 - 360 Oakville Place Drive
Oakville, Ontario L6H 6K8
Canada

Dear Jim and Rudy,

RE: Construction Summary of CV-059 Remedial Measures

1.0 INTRODUCTION

Baffinland Iron Mines Corporation (Baffinland) completed remedial work on culverts installed on fish-bearing streams along the Milne Inlet Tote Road (Tote Road) between February 18, 2024, and May 13, 2024. The completed work was based on the design presented in the Knight Piésold Ltd. (KP) Design Report "*Tote Road Permanent Crossing Plan - Round CSP Culvert Installations*" (KP, 2024a). This letter summarizes the works completed at water crossing CV-059 on April 11, 2024, shortly after the as built survey was completed. This letter will be appended to the As-Built Summary Report for the February to May 2024 construction season, to be issued under separate cover.

2.0 BACKGROUND

Water crossing CV-059 is located at km 60 on the Tote Road which connects the Milne Inlet Port Site and the Mary River Mine Site. The existing water crossing at CV-059 consisted of four x 0.5 m corrugated steel pipe (CSP) culvert barrels. The proposed (remediated) design for the crossing consisted of one x 1.8 m diameter low flow CSP culvert, and one x 1.0 m diameter high flow CSP culvert. The 1.8 m diameter low flow culvert was embedded 40% of the total diameter below grade, with protruding coarse riprap mixed with finer material similar to the natural stream substrate to replicate the stream bottom and create velocity refuge for fish. The 1.0 m diameter high flow culvert was to be installed with an invert set at 0.15 m above the infill elevation (top of embedment material) of the 1.8 m diameter low flow culvert.

3.0 MATERIALS USED

The following materials were used for the installation of the CV-059 remediated water crossing.

- Culvert Backfill - Culvert Backfill material consisted of 32 mm minus material that was crushed and screened at the aggregate quarry located at the Milne Inlet Port. The material was backhauled to the km 60 laydown area on the Tote Road using Baffinland's ore hauling trucks (OHTs). The 32 mm minus material was stockpiled at the km 60 laydown area for use at both water crossings CV-059 and CV-057. Particle size gradations from laboratory tests show that the processed material met the material specifications as shown on Figure 1.
- Bedding Material - 3/16 inch (4.75 mm) minus material was used in limited quantities for the 2 inch (50 mm) thick uncompacted bedding material below the low and high flow culverts. Similar to the

32 mm minus material, the 3/16 inch minus material was crushed, screened, and hauled from the aggregate quarry at Milne Inlet Port and stockpiled at the km 60 laydown area. The maximum particle size for the Bedding Material was required to be half of the depth of the culvert undulations (corrugations), which are 13 mm as per the Manufacturer's Specifications. Particle size gradations from laboratory tests are shown on Figure 2 and show that approximately 5% of the particles in the record samples were greater than the maximum particle size of 6.5 mm. This small quantity of slightly larger particles was considered acceptable to meet the design intent.

- Riprap - Coarse and fine riprap were crushed and screened at the Mary River Mine Site. The riprap materials were hauled to the km 60 laydown area using CAT 745 articulated haul trucks on the Tote Road.
- Local Borrow Material - This material consisted primarily of reusing excavated material from the existing road embankment. Excavation of this material was completed by blasting frozen material that surrounded the existing culverts.
- Non-Woven Geotextile - 4.1 mm thick Texel 160E needle punched non-woven geotextile rolls were stored at the km 60 laydown. The non-woven geotextile was installed beneath the fine riprap on the road embankment slopes and adjacent ditch according to the manufacturers recommendations and generally as shown on the design drawings.
- Round CSP Culverts - 8 m sections of 1.8 m diameter round CSP for low flow culvert, and 6 m sections of 1.0 m diameter round CSP for high flow culvert were stored at the km 60 laydown.

4.0 CONSTRUCTION SEQUENCE

Construction activities for CV-059 began on February 19, 2024, and were completed on April 10, 2024. The construction sequence is described below:

1. Excavation
   a. Drilling of blast holes in the frozen road embankment and underlying foundations soils was completed on February 19, 2024.
   b. The drilled holes were loaded and blasted on February 21, 2024.
   c. The excavation of blast material commenced on February 22, 2024 and was completed on February 24, 2024. This involved the removal of unsuitable materials (frozen blast material, previous culverts), preparation of the foundation surface and as-built survey. CV-059 was over blasted by approximately 2 m depth than shown on the construction drawings. All blast materials were removed from the culvert footprint as part of the foundation preparation.
   d. The as-built survey of CV-059 excavation was completed March 5, 2024.

2. Backfilling and Culvert Installation
   a. Backfilling of the excavation commenced on March 5, 2024 and was completed to the base of the 1.8 m diameter culvert on March 16, 2024. Culvert Backfill material was placed and compacted in 200 and 300 mm lifts, prior to placement and compaction of the bedding layer for the low flow culvert. It is noted that due to the over blasting, the final excavation was much deeper than the design specified/anticipated. The Culvert Backfill was extended at a 1H:1V slope down to the base of the over blasted excavation. Baffinland made the decision to use the frozen blasted material as "local borrow area fill" outside of the Culvert Backfill placed directly around the culverts.
   b. The 1.8 m diameter round CSP low flow culvert was installed on March 17, 2024. The 1.8 m diameter low flow culvert was installed using two, 8 m sections followed by one, 1.7 m cut section and then one final 8 m section for a total length of 25.7 m.

c. The 1.0 m diameter round CSP high flow culvert was installed on March 19, 2024. The 1.0 m diameter high flow culvert was installed using two, 6 m sections followed by a cut 4.6 m section, and then one final 6 m section for a total length of 22.6 m.
d. Backfilling around the culverts continued until April 10, 2024. This included continued placement of Culvert Backfill and local borrow area fill.
e. Local Borrow Area Fill (March 20 to 23, 2024) and road topping (March 31 to April 10, 2024) were placed and compacted above the Culvert Backfill material.
f. Coarse riprap and stream substrate material were placed within the interior of the 1.8 m diameter round CSP low flow culvert from March 26 to 30, 2024.
g. Fine riprap was placed above the non-woven geotextile along the upstream and downstream 2H:1V road embankment side slopes between March 24 and April 3, 2024.
h. Mixed coarse riprap and stream substrate materials were placed and graded for the inlet and outlet aprons between March 25and 30, 2024.
i. An as-built survey of the in-culvert boulders was completed on April 10, 2024. The as-built details for the in-culvert boulders are shown on Drawing 725.
j. An as-built survey of the completed road surface was completed on April 11, 2024.

5.0 AS-BUILT DETAILS

Details of the water crossing installation are shown on Drawings 725 and 726 (attached).

Select photos taken during construction are included in Appendix A.

6.0 DESIGN CHANGES AND DEVIATIONS

The following design changes and deviations were made for water crossing CV-059 during construction.

1. Over blast of the design excavation by approximately 2 m occurred during drilling and blasting at CV-059. In order to backfill the additional excavation depth, Culvert Backfill was extended at a 1H:1V slope from the culvert design elevation to the base of the excavation. Due to the over blasting, the final fill volume was significantly larger than the design volume.
2. Baffinland chose to re-use blasted frozen material from the existing road embankment as local borrow area fill placed outside of the Culvert Backfill area (i.e. culvert structural backfill zones). KP recommended against the use of this material as road embankment fill during the installation of CV-059 (KP, 2024c). It is highly possible that some of the excavated frozen material contained higher than desired ice content significantly increasing the likelihood of significant settlement of the fill material following thaw, given the inability to properly compact frozen material with higher ice content.
3. Design Change 01 (No. CVDC-01, KP, 2024b) was issued on February 28, 2024 documenting the approved design change to use finer bedding material to meet the culvert manufacturer's recommendations. The specified 25 mm minus material was changed to a 3/16 inch minus to meet the revised recommendations.

The design change documentation is included in the As-Built Summary Report for the February to May 2024 construction season.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Culvert crossing CV-059 was generally constructed in agreement with the design (KP, 2024a). However, key construction deviations included over blasting of the excavation and the use of frozen blasted material as local borrow area fill.

KP recommends monitoring of the final road surface elevation and side slopes for signs of settlement and instability as a result of the thaw or creep settlement of frozen blast material as backfill. As communicated during construction, Baffinland should be prepared for localized thaw settlement of the road surface leading to the requirement for repairs and/or maintenance of the road crossing over the initial years of operation. Care will need to be taken to maintain and/or repair any softer areas or area of settlement that may develop in close proximity to the culvert installations in order to minimize potential damage to the culverts.

Monitoring the water crossing remediation in its entirety for signs of sloughing, erosion, or other potential issues is also recommended. It is understood that this monitoring will be completed as part of the post-construction monitoring plan to be implemented by Baffinland.

8.0 REFERENCES

Knight Piésold Ltd. (KP). 2024a. *Tote Road Permanent Crossing Plan - Round CSP Culvert Installations.* February 8. North Bay, Ontario. Ref. No. NB102-181/77-4, Rev 2.

Knight Piésold Ltd. (KP). 2024b. Design Change (CVDC-01). Design Change 01 - Culvert Bedding Material to: Baruck Wile and Rudolf Dietrich, Baffinland Iron Mines Corporation. Re: *Culvert Bedding Design Change.* February 26. Ref. No. 11.

Knight Piésold Ltd. (KP). 2024c. Memorandum to: Michael Burns and Rudolf Dietrich, Baffinland Iron Mines Corporation. Re: *Permanent Crossing Plan - Round CSP Culverts, Response to Baffinland Request for Information (RFI) No. 1.* March 8. North Bay, Ontario. Ref No. NB24-00286 (NB102-181/93).

Yours truly,
Knight Piésold Ltd.

REGISTERED PROFESSIONAL ENGINEER
G.M. JOHNSTONE
LICENSEE
2024-08-27
NT/NU

Prepared: _____
Greg Johnstone, P.Eng., CPESC
Project Engineer

Reviewed: _____
C. A. (Andy) Phillips, P.Eng.
Senior Engineer

PERMIT TO PRACTICE
KNIGHT PIESOLD LTD.
Signature _____
Date 2024-08-27
PERMIT NUMBER: P 547
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

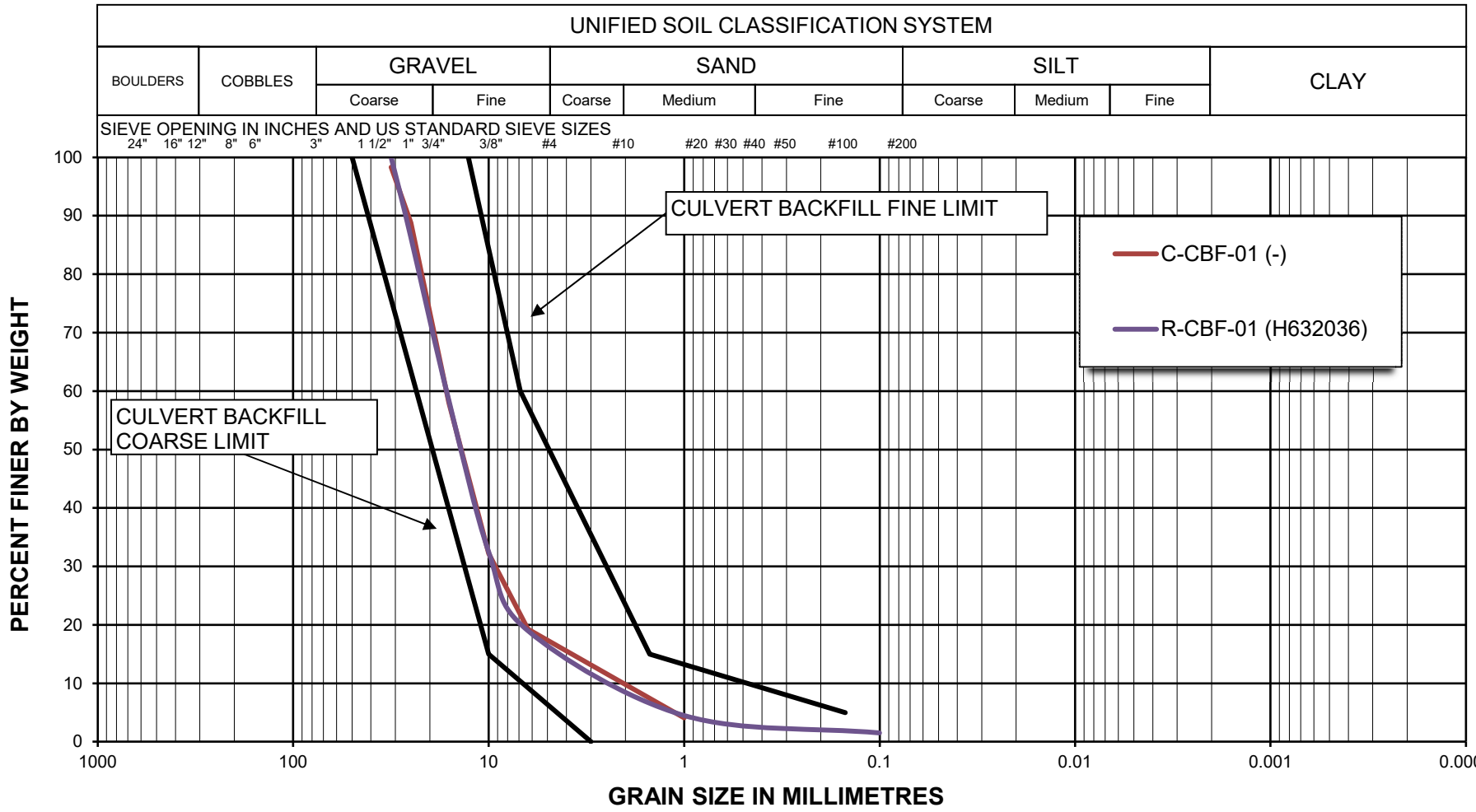
Approval that this document adheres to the Knight Piésold Quality System: _____

Attachments:

Figure 1 Rev 0	Grain Size Distribution - Culvert Backfill - CV-059
Figure 2 Rev 0	Grain Size Distribution - Culvert Bedding (3/16 Inch Minus) - CV-059
Drawing 725 Rev 6	CV-059 - General Arrangement
Drawing 726 Rev 6	CV-059 - Plan and Section
Appendix A	CV-059 As-Built Photo Log

Copy To: Michael Burns, Baffinland Iron Mines Corporation
Jocelyn Larocque, Baffinland Iron Mines Corporation
George Liston, Baffinland Iron Mines Corporation
Connor Devereaux, Baffinland Iron Mines Corporation
Todd Swenson, Baffinland Iron Mines Corporation

/crd



NOTES:

1. CONTROL TESTS (C) CARRIED OUT ON FILL MATERIALS SAMPLED FROM THE BORROW AREA AND STOCKPILE, PRIOR TO MATERIAL COMPACTION.
2. RECORD TESTS (R) CARRIED OUT ON PLACED AND COMPACTED FILL MATERIALS.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	27AUG'24	ISSUED WITH LETTER	GMJ	CAP

BAFFINLAND IRON MINES CORPORATION

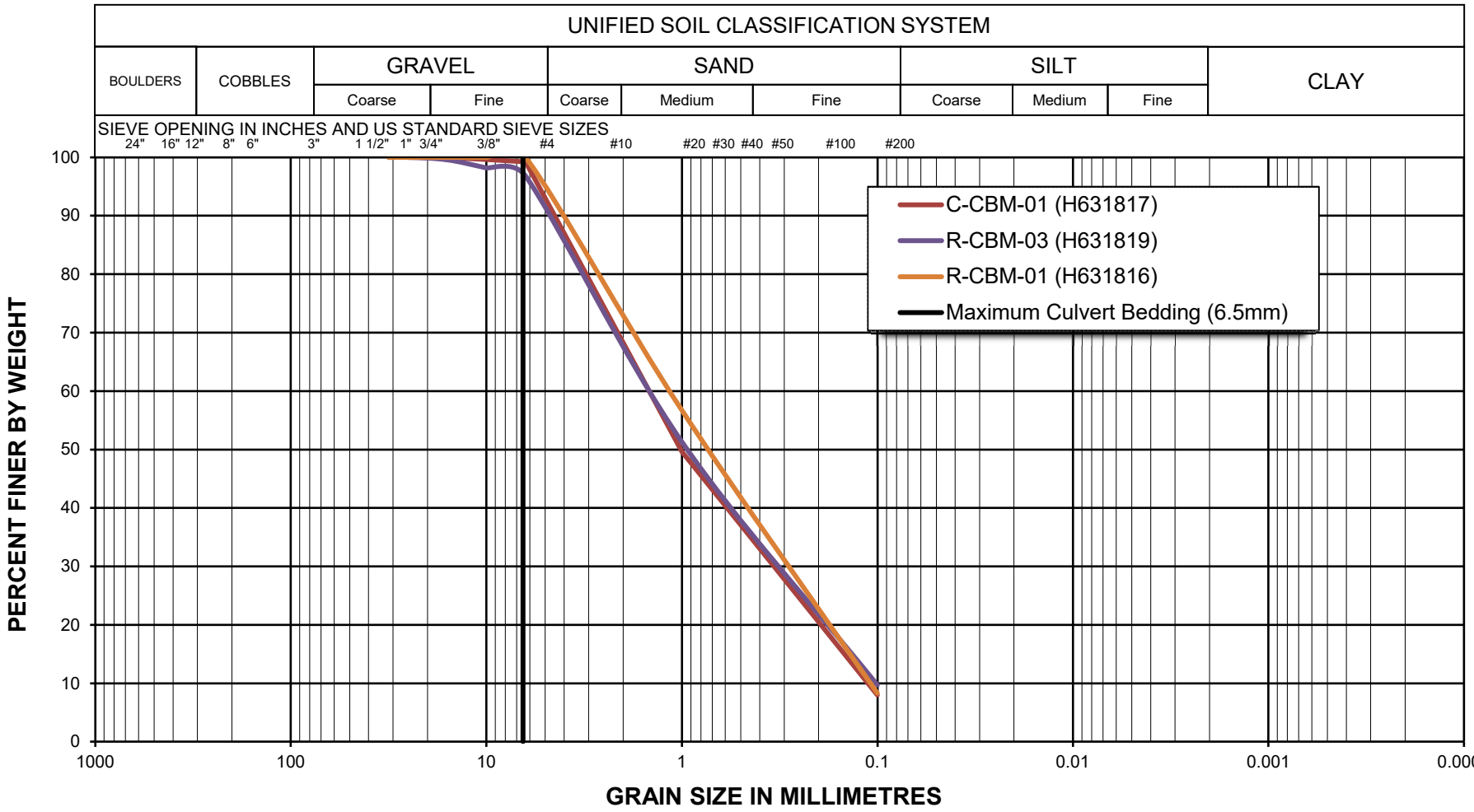
MARY RIVER PROJECT

GRAIN SIZE DISTRIBUTION
CULVERT BACKFILL - CV-059

Knight Piésold CONSULTING

P/A NO.	REF. NO.
NB102-181/93	NB24-00899

FIGURE 1 REV 0



NOTES:

1. CONTROL TESTS (C) CARRIED OUT ON FILL MATERIALS SAMPLED FROM THE BORROW AREA AND STOCKPILE, PRIOR TO MATERIAL COMPACTION.
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REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	27AUG'24	ISSUED WITH LETTER	GMJ	CAP

BAFFINLAND IRON MINES CORPORATION

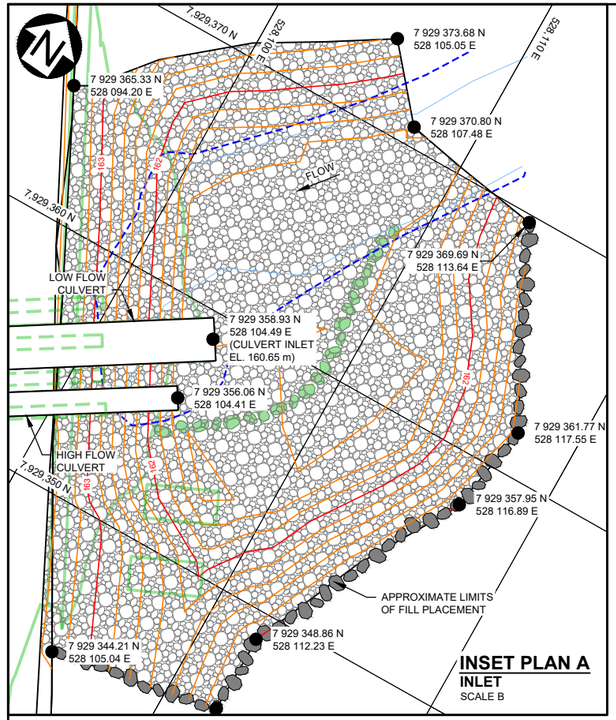
MARY RIVER PROJECT

GRAIN SIZE DISTRIBUTION
CULVERT BEDDING (3/16 INCH MINUS) - CV-059

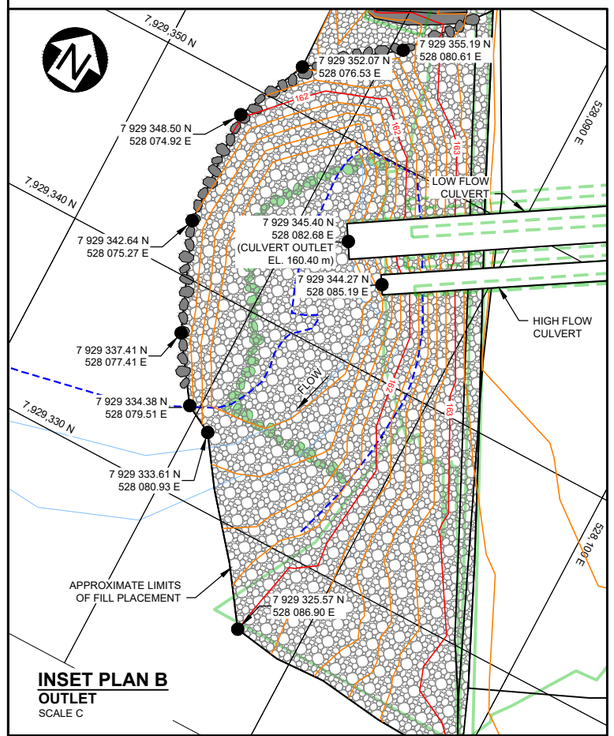
Knight Piésold CONSULTING

P/A NO.	REF. NO.
NB102-181/93	NB24-00899

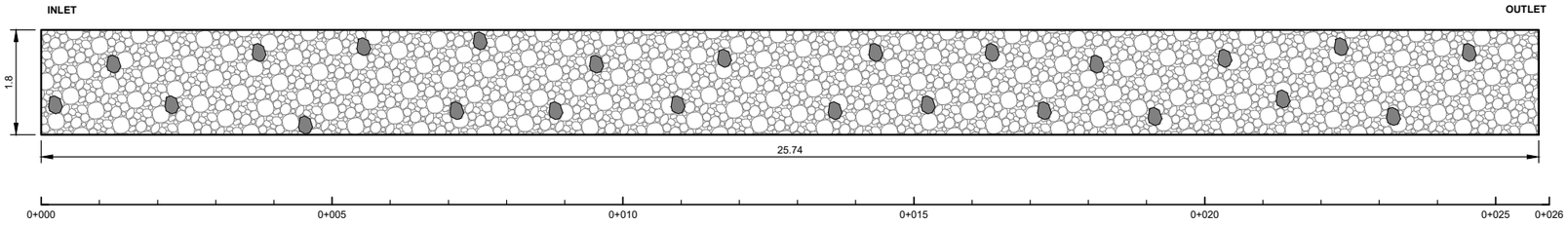
FIGURE 2 REV 0



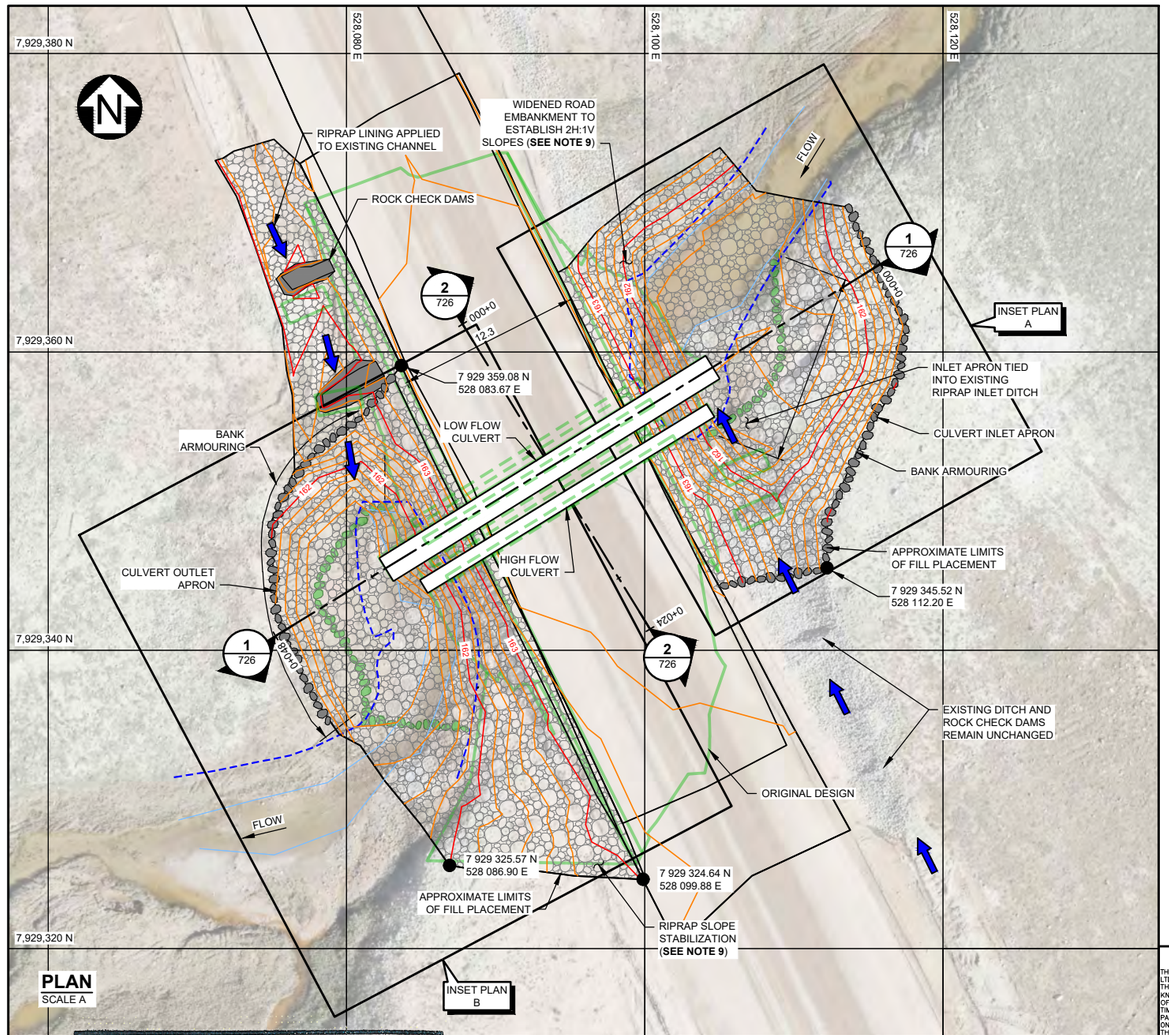
INSET PLAN A
INLET
SCALE B



INSET PLAN B
OUTLET
SCALE C



A - DETAIL
CV-059 IN CULVERT AS-BUILT BOULDER PLACEMENT PLAN
SCALE A



PLAN
SCALE A

AS-BUILT BOULDER PLACEMENT SUMMARY (SEE DETAIL A)

CHAINAGE	DIMENSIONS
0+000	0.3 x 0.2
0+001	0.4 x 0.3
0+002	0.25 x 0.15
0+003	0.4 x 0.3
0+004	0.5 x 0.1
0+005	0.5 x 0.4
0+007	0.4 x 0.4
0+007	0.4 x 0.3
0+008	0.4 x 0.3
0+009	0.3 x 0.2
0+010	0.4 x 0.2
0+011	0.4 x 0.3
0+013	0.2 x 0.2
0+014	0.3 x 0.2
0+015	0.3 x 0.3
0+016	0.3 x 0.3
0+017	0.4 x 0.2
0+018	0.3 x 0.1
0+019	0.3 x 0.2
0+020	0.3 x 0.3
0+021	0.4 x 0.1
0+022	0.3 x 0.3
0+023	0.4 x 0.2
0+024	0.3 x 0.2

LEGEND:

- COARSE RIPRAP
- FINE RIPRAP
- CONTOUR
- ROCK CHECK DAM
- PREVIOUS CULVERT CONFIGURATION
- ORIGINAL DESIGN LINEWORK
- APPROXIMATE LIMITS OF FILL PLACEMENT
- APPROXIMATE HIGH WATER MARK (HWM)
- SURVEYED WETTED WIDTH
- RIPRAP LINED EXISTING CHANNEL
- SETTING OUT POINT
- RIPRAP FOR BANK ARMOURING AND CHANNEL OUTLET
- BOULDER LOCATION WITHIN CULVERT

NOTES:

1. COORDINATE GRID IS UTM NAD83, ZONE 17.
2. DRONE IMAGERY PROVIDED BY KITIKMEOT CHALLENGER, AUGUST 2023. CULVERT CV-059 AS-BUILT SURVEYS PROVIDED BY NUNA, APRIL 11, 2024. CONTOUR INTERVAL IS 0.2 m.
3. DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
4. ALL WORK WAS COMPLETED DURING FROZEN CONDITIONS.
5. CULVERTS BACKFILLED TO ESTABLISH ROAD SIDE SLOPES AT MIN. 2H:1V. ALL SLOPES WERE STABILIZED WITH FINE RIPRAP OVERLYING NON-WOVEN GEOTEXTILE AS SHOWN ON **DRAWING 726 (SECTION 1)**.
6. MATERIAL SPECIFICATIONS INCLUDED ON **DRAWING 703**.
7. ROCK CHECK DAMS TO BE CONSTRUCTED OF FINE RIPRAP THAT IS FREE OF FINE AND DELETERIOUS MATERIALS. THE STRUCTURES ARE TO BE CONSTRUCTED IN A STABLE MANNER TO REDUCE RUNOFF WATER FLOW VELOCITIES AND PROMOTE SETTLING OF SUSPENDED PARTICLES. PERIODIC MAINTENANCE WILL BE REQUIRED TO REMOVE ACCUMULATED SEDIMENT.
8. EROSION AND SEDIMENT CONTROL MEASURES INCLUDED ARE LIMITED TO THE WATER CROSSING AND THE IMMEDIATE SURROUNDING AREA. THE DESIGN AND INSTALLATION OF OTHER TOTE ROAD EROSION AND SEDIMENT CONTROL MEASURES WILL BE DOCUMENTED SEPARATELY.
9. SLOPE STABILIZED WITH FINE RIPRAP OVERLYING NON-WOVEN GEOTEXTILE.

SCALE A: 4 2 0 4 8 12 16 20 m
SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE C: 3 1.5 0 5 10 15 m

DRG. NO.	DESCRIPTION
703	CULVERT FILL MATERIALS AND GEOSYNTHETICS SPECIFICATIONS
726	CSP CULVERTS - CV-059 PLAN AND SECTION

REFERENCE DRAWINGS

PERMIT TO PRACTICE
KNIGHT PIESOLD LTD.
Signature
Date 2024-08-27
PERMIT NUMBER: P 547
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

AS-BUILT RECORD

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
6	27AUG'24	AS-BUILT RECORD WITH REVISIONS	GMJ	EDW/AS		
5	27MAY'24	ISSUED FOR AS-BUILT RECORD	GMJ	AS	CAP	CNH
4	08FEB'24	REVISED INCORPORATING DFO ADVICE	GMJ	EDW	TJP	KEH
3	23JAN'24	DESIGNS MODIFIED - ISSUED FOR CONSTRUCTION	GMJ	EDW	CAP	KEH
2	26OCT'23	REVISED OUTLET ELEVATION	GMJ	AS	CAP	KEH
1	06SEP'23	REVISED WITH UPDATED SURVEY DATA	GMJ	EDW	CAP	KEH
0	03FEB'23	ISSUED FOR CONSTRUCTION	GMJ	EDW	CAP	KEH

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
G.M. JOHNSTONE
LICENSEE
2024-08-27
NT/NU

Knight Piésold CONSULTING

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

PERMANENT CROSSING PLAN
ROUND CSP CULVERTS - CV-059
GENERAL ARRANGEMENT

PROJECT NO.	DRAWING NO.	REVISION
NB102-181/77	725	6

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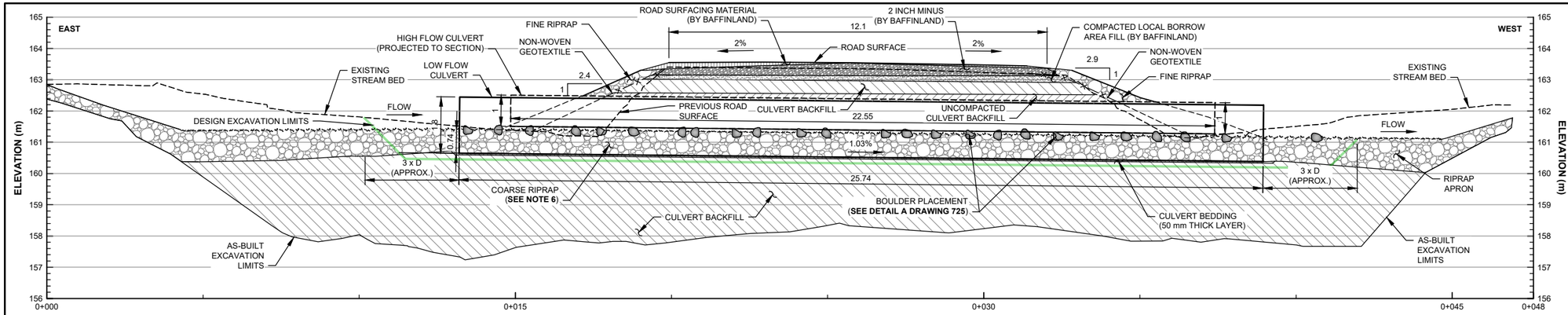
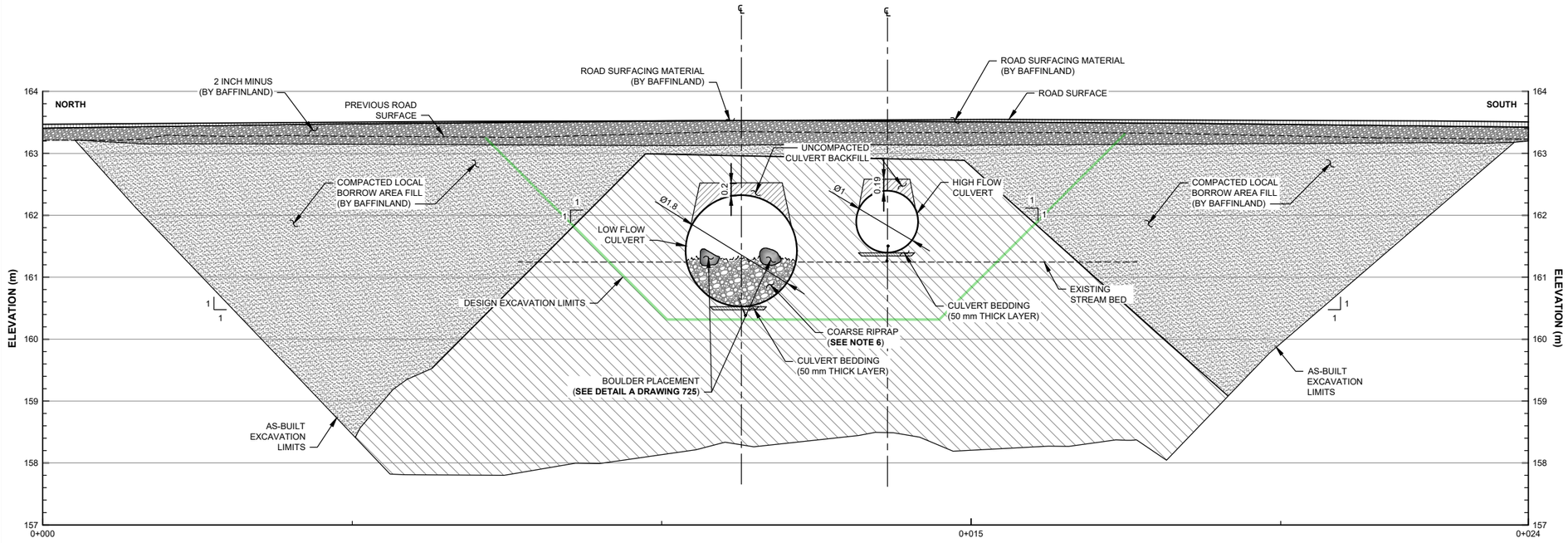


1/725 **SECTION**
CV-059 PROFILE
SCALE A



2/725 **SECTION**
CV-059 INSTALLATION DETAILS
SCALE B

LEGEND:

- COMPACTED LOCAL BORROW AREA FILL (BY BAFFINLAND)
- UNCOMPACTED CULVERT BACKFILL
- CULVERT BACKFILL
- ROAD SURFACING MATERIAL (BY BAFFINLAND)
- 2 INCH MINUS (BY BAFFINLAND)
- COARSE RIPRAP
- FINE RIPRAP
- CULVERT BEDDING MATERIAL
- EXISTING STREAM BED
- NON-WOVEN GEOTEXTILE
- DESIGN LINEWORK
- BOULDER PLACEMENT

NOTES:

1. CULVERT CV-059 AS-BUILT SURVEYS PROVIDED BY NUNA, APRIL 11, 2024.
2. DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE .
3. VEHICLE SAFETY BERMS ARE REQUIRED IN AREAS WITH A DROP OFF GREATER THAN 3.0 m.
4. MATERIAL SPECIFICATIONS INCLUDED ON **DRAWING 703**.
5. CULVERT INFILL MATERIAL TO BE INSPECTED DURING AND AFTER FIRST FRESHET FOLLOWING CONSTRUCTION TO DETERMINE IF ADDITIONAL MATERIAL IS REQUIRED.
6. RIPRAP INTERSTITIAL SPACE ON THE CHANNEL BED FILLED WITH MATERIAL SIMILAR TO THE ADJACENT CHANNEL BED MATERIAL (OR OTHER MATERIAL APPROVED BY THE ENGINEER). THE VOID SPACE MINIMIZED BETWEEN COARSE RIPRAP SUCH THAT CREEK FLOWS ARE MAINTAINED ABOVE THE CHANNEL BED DURING LOW-FLOW CONDITIONS. FINISHED SURFACE ROUGHENED TO MIMIC ADJACENT STREAM BED CONDITIONS.

SCALE A 1 0.5 0 1 2 3 4 5 m

SCALE B 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

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AS-BUILT RECORD

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BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

PERMANENT CROSSING PLAN
ROUND CSP CULVERTS - CV-059
PLAN AND SECTION

PROJECT NO.	DRAWING NO.	REVISION
NB102-181/77	726	6

SAVED: I:\1\02\00181\177\ALV\cad\DWGS\725 726\725 726 R6, 8/27/2024 2:20:05 PM, EWARDELL PRINTED: 8/27/2024 2:20:23 PM, 726, EWARDELL ACAD VERSION: 25.0S (LMS TECH)

APPENDIX A

CV-059 As-Built Photo Log

(Pages A-1 to A-17)

CV-059 AS-BUILT PHOTO LOG

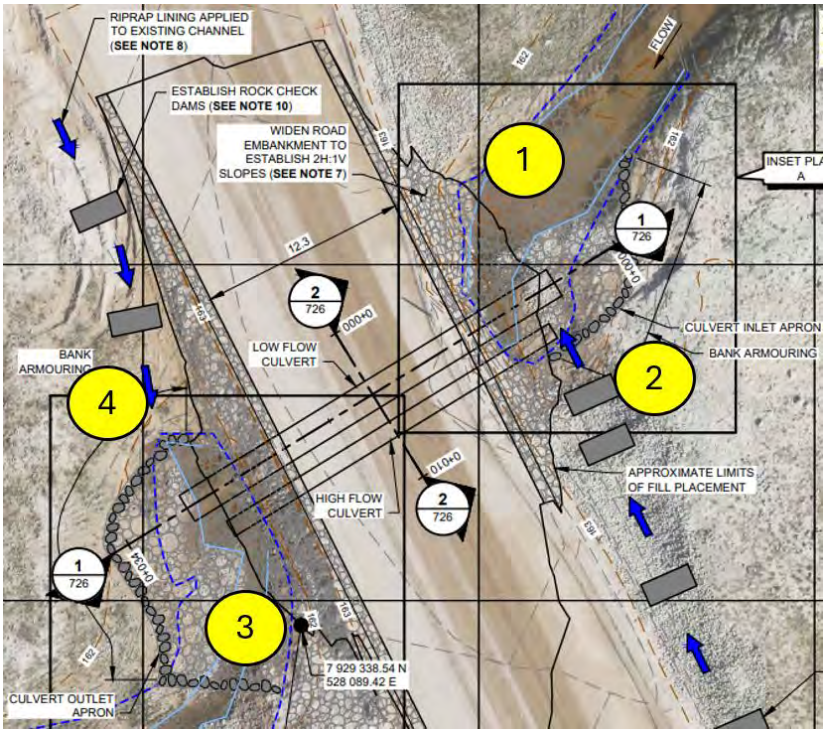

PHOTO 1. Culvert Crossing CV-059 - Photographic Vantage Points (approximate locations indicated with yellow circles).

PHOTO 2. Prior to Construction - Vantage Point 1 - Upstream side of crossing - looking south (February 19, 2024).

PHOTO 3. Prior to Construction - Vantage Point 2 - Upstream side of crossing - looking east (February 19, 2024).

PHOTO 4. Prior to Construction - Vantage Point 3 - Road crossing - looking south (February 20, 2024).

PHOTO 5. Prior to Construction - Vantage Point 4 - Downstream side of crossing - looking south (February 19, 2024).

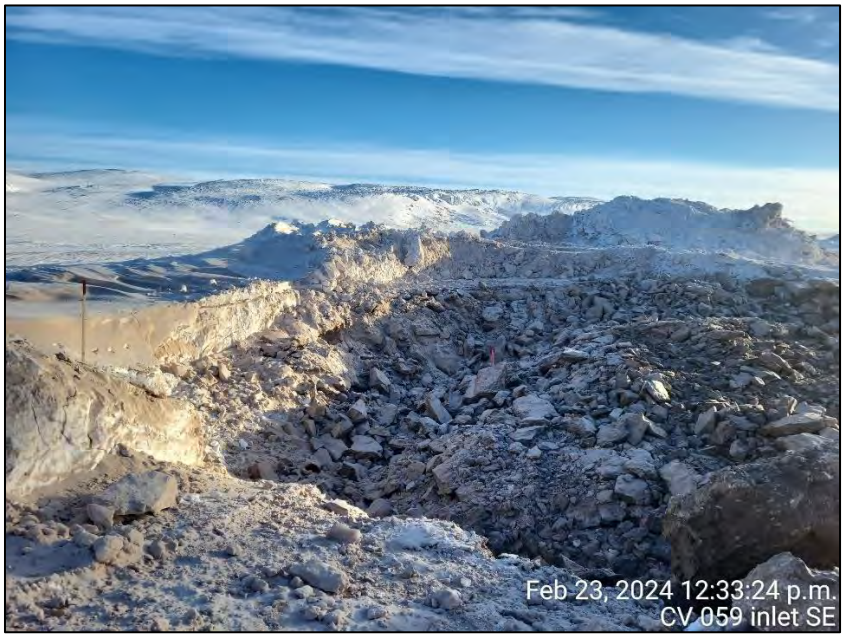

PHOTO 6. During Construction - Vantage Point 1 - Blasted upstream side of crossing - looking southeast (February 23, 2024).

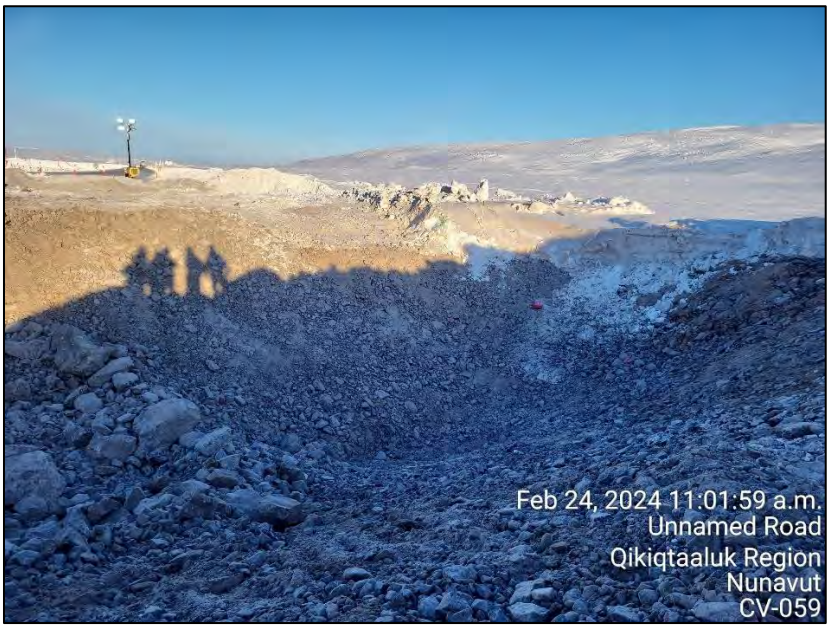

PHOTO 7. During Construction - Vantage Point 1 - Blast Excavation - Road crossing and upstream Inlet - looking south (February 24, 2024).

PHOTO 8. During Construction - Vantage Point 3 - Completed blast excavation with slope stabilization - road crossing and upstream inlet - looking northeast (March 4, 2024).

PHOTO 9. During Construction- Vantage Point 1 - Compaction of culvert backfill material - upstream inlet - looking south (March 12, 2024).

PHOTO 10. During Construction - Vantage Point 2 - Placement of culvert backfill material - upstream inlet - looking west (March 14, 2024).

PHOTO 11. During Construction - Vantage Point 4 - Placement of culvert backfill material - road crossing and downstream outlet - looking southeast (March 15, 2024).

PHOTO 12. During Construction - Vantage Point 4 - Installation of 1.8 m diameter corrugated steel pipe low flow culvert - looking southeast (March 17, 2024).

PHOTO 13. During Construction - Vantage Point 3 - Installation of 1.8 m diameter corrugated steel pipe low flow culvert - looking north (March 17, 2024).

PHOTO 14. During Construction - Vantage Point 3 - Installation of 1.0 m diameter corrugated steel pipe high flow culvert - looking northeast (March 19, 2024).

PHOTO 15. During Construction - Vantage Point 4 - Installation of high flow and low flow culverts - downstream outlet area - looking northeast (March 21, 2024).

PHOTO 16. During Construction - Vantage Point 4 - Grading 2H:1V west side slope at CV-059 - looking southwest (March 24, 2024).

PHOTO 17. During Construction - Vantage Point 3 - Placing geotextile and riprap on west side slope at CV-059 - looking north (March 25, 2024).

PHOTO 18. During Construction - Placement of coarse riprap and stream substrate material using electric wheelbarrow within the interior of the low flow CSP culvert at CV-059 - west (outlet) - looking northeast (March 27, 2024).

PHOTO 19. Following Construction - Vantage Point 3 - Completed CV-059 west (outlet) apron with coarse riprap and stream substrate material - looking northwest (March 29, 2024).

PHOTO 20. Following Construction - Vantage Point 1 - Completed installation of high flow and low flow culverts - upstream inlet area - looking southwest (April 5, 2024).

PHOTO 21. Following Construction - Vantage Point 2 - Completed installation of high flow and low flow culverts - upstream inlet area - looking northwest (April 5, 2024).

PHOTO 22. Following Construction - Vantage Point 3 - Installation of high flow and low flow culverts - downstream outlet area - looking northeast (April 5, 2024).

PHOTO 23. Following Construction - Vantage Point 4 - Installation of high flow and low flow culverts - downstream outlet area - looking southeast (April 5, 2024).

PHOTO 24. Following Construction - Completed placement of coarse riprap and stream substrate material within the interior of the low flow CSP culvert at CV-059 (March 28, 2024).

PHOTO 25. Material stockpile - 32 mm minus culvert backfill material - km 60 laydown - looking northeast (March 10, 2024).

PHOTO 26. Material Stockpile - Culvert Bedding Material - km 60 laydown - looking north (March 15, 2024).

PHOTO 27. Material Stockpile - Fine Riprap - km 60 laydown - looking southeast (March 22, 2024).

PHOTO 28. Material Stockpile - Coarse Riprap - km 60 laydown (March 21, 2024).

PHOTO 29. Material Stockpile - Stream Substrate Material - km 97 stockpile (February 29, 2024).

PHOTO 30. Equipment - CAT 349F Excavator - km 60 laydown - looking east (March 8, 2024).

PHOTO 31. Equipment - CAT 745C articulated dump truck - km 60 laydown (February 8, 2024).

PHOTO 32. Equipment - Mikasa MVH408 1000 lb plate compactor - km 60 laydown (March 5, 2024).

PHOTO 33. Equipment - Ducar motorized wheel barrow loaded with coarse riprap - CV-059 (March 26, 2024).

Knight Piésold CONSULTING

Management System Certified By: bsi ISO 9001 Quality Management Systems CERTIFIED FS 64925 | ISO 14001 Environmental Management CERTIFIED EMS 550121 | ISO 45001 Occupational Health and Safety Management CERTIFIED OHS 550122

August 28, 2024

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Mr. Jim Patterson
Mr, Rudolf Dietrich
Deputy Project Directors - Sustaining Projects
Baffinland Iron Mines Corporation
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Oakville, Ontario L6H 6K8
Canada

Dear Jim and Rudy,

RE: Construction Summary of CV-057 Remedial Measures

1.0 INTRODUCTION

Baffinland Iron Mines Corporation (Baffinland) completed remedial work on culverts installed on fish-bearing streams along the Milne Inlet Tote Road (Tote Road) between February 18, 2024, and May 13, 2024. The completed work was based on the design presented in the Knight Piésold Ltd. (KP) Design Report "*Tote Road Permanent Crossing Plan - Round CSP Culvert Installations*", (KP, 2024a). This letter summarizes the work completed at water crossing CV-057 on April 11, 2024, shortly after the as-built survey was completed. This letter will also be appended to the As-Built Summary Report for the February to May 2024 construction season, to be issued under separate cover.

2.0 BACKGROUND

Water crossing CV-057 is located at km 60 on the Tote Road which connects the Milne Inlet Port Site and the Mary River Mine Site. The existing water crossing at CV-057 consisted of two x 0.5 m corrugated steel pipe (CSP) culvert barrels. The proposed (remediated) design for the crossing consisted of one x 1.8 m diameter low flow CSP culvert, and a 1.0 m diameter high flow CSP culvert. The 1.8 m diameter culvert was embedded 40% of the total diameter below grade, with protruding coarse riprap mixed with material similar to natural stream substrate to replicate the stream bottom and create velocity refuge for fish. The 1.0 m diameter high flow culvert was installed 0.15 m above the infill elevation (top of embedment material) of the 1.8 m diameter low flow culvert.

3.0 MATERIALS USED

The following materials were used for the installation of the CV-057 remediated water crossing.

- Culvert Backfill - Culvert Backfill material consisted of 32 mm minus material that was crushed and screened at the aggregate quarry located at the Milne Inlet Port. The material was backhauled to the km 60 laydown area using Baffinland's ore hauling trucks (OHTs) southbound on the Tote Road. The 32 mm minus material was stockpiled at the km 60 laydown area for use at both water crossings CV-059 and CV-057. Particle size gradations from laboratory tests show that the processed material met the material specifications as shown on Figure 1. Two control samples and two record samples were collected for CV-057. The control test results indicated that the samples exhibited a coarser

gradation than the specified gradation envelope, and the two record tests were not processed by the Baffinland ALS laboratory and as such no laboratory record test results are available. It is noted that the control test collected at the CV-059 location (sourced from the same stockpile) met the required gradation specifications, as did the corresponding record test for CV-059. Following receipt of the control test results, the stockpile was observed to be slightly segregated. Consequently, it was recommended that Nuna blend the stockpile to mix the fine and coarse portions of the stockpiled material together prior to placement at the water crossing. The blended material was observed to generally meet the culvert backfill specifications.

- Bedding Material - 3/16 inch (4.75 mm) minus material was used in limited quantities for the 2 inch (50 mm) thick uncompacted bedding material below the low and high flow culverts at CV-057. Similar to the Culvert Backfill material, the Bedding Material was crushed, screened, and hauled from the aggregate quarry at Milne Inlet Port and stockpiled at the km 60 laydown area. The maximum particle size for the Bedding Material was required to be half of the depth of the culvert undulations (corrugations), which are 13 mm as per the culvert Manufacturer's Specifications. Particle size gradations from laboratory tests are shown on Figure 2 and show that approximately 2% of the particles in the record sample exceeded the maximum particle size of 6.5 mm. This small quantity of slightly larger particles was considered acceptable to meet the design intent.
- Riprap - Coarse and fine riprap were crushed and screened at the Mary River Mine Site. The riprap materials were hauled to the km 60 laydown area using CAT 745 articulated haul trucks northbound on the Tote Road.
- Local Borrow Material - This material consisted primarily of reusing excavated material from the existing road embankment. Excavation of this material was completed by blasting frozen material that surrounded the existing culverts.
- Non-Woven Geotextile - 4.1 mm thick Texel 160E needle punched non-woven geotextile was stored at the km 60 laydown. The non-woven geotextile was used beneath the fine riprap on the road embankment slopes according to the manufacturers recommendations and generally as shown on the drawings.
- Round CSP Culverts - 8 m sections of 1.8 m diameter round CSP for low flow culvert, and 6 m sections of 1.0 m diameter round CSP for high flow culvert were stored at the km 60 laydown.

4.0 CONSTRUCTION SEQUENCE

Construction activities for CV-057 began on February 19, 2024, and were completed on April 10, 2024. The construction sequence is described below:

1. Excavation
   a. Drilling of blast holes in the frozen road embankment and underlying foundation soils was completed on February 19, 2024.
   b. The drilled holes were loaded and blasted on February 21, 2024.
   c. Excavation of blast material commenced on February 22, 2024 and was completed on February 24, 2024. This involved the removal of unsuitable materials (frozen blast material, previous culverts), preparation of the foundation surface and as-built survey. The excavation was over blasted during the construction process. All frozen blast materials were removed from beneath the culvert footprint as part of the foundation preparation.
   d. As-built survey of the excavation was completed March 11, 2024.

2. Backfilling and Culvert Installation
    a. Backfilling of the excavation commenced on March 11, 2024 and was completed on April 10, 2024. Culvert Backfill material was placed and compacted in 200 and 300 mm lifts (200 mm for material compacted using the hand-guided compactor and 300 mm where the 10 ton vibratory roller was used). Due to over blasting, the final excavation was much deeper than the design specified/anticipated. Culvert Backfill material was extended at a 1H:1V slope down to the base of the over blasted excavation. Baffinland made the decision to use the frozen blasted material as "local borrow area fill" outside of the Culvert Backfill placed directly around the culverts.
    b. The 1.8 m diameter round CSP low flow culvert was installed on March 19 and 20, 2024. The 1.8 m diameter low flow culvert was installed using two, 8 m sections followed by one, 1.9 m cut section and then one final 8 m section for a total length of 25.9 m.
    c. The 1.0 m diameter round CSP high flow culvert was installed on March 21, 2024. The 1.0 m diameter high flow culvert was installed using two, 6 m sections, followed by one 4.9 m cut section and then one final 6 m section for a total length of 22.9 m.
    d. Backfill placement around the culverts continued until April 4, 2024. This included continued placement of Culvert Backfill and local borrow area fill.
    e. Local Borrow Area Fill (March 21 to April 4, 2024) and road topping (April 3 to 10, 2024) was placed and compacted above culvert backfill material and culverts.
    f. Coarse riprap and stream substrate material were placed within the interior of the 1.8 m diameter round CSP low flow culvert from March 27 to 30, 2024.
    g. Fine riprap placed over non-woven geotextile was installed along the upstream and downstream 2H:1V road embankment side slopes between March 31 and April 4, 2024.
    h. Mixed coarse riprap and stream substrate material was placed and graded for the inlet and outlet aprons between March 30, 2024 and April 3, 2024.
    i. An as-built survey of the in-culvert boulders was completed on April 10, 2024. The as-built details for the in-culvert boulders are shown on Drawing 730.
    j. An as-built survey of the final road surface was completed on April 11, 2024.

5.0 AS-BUILT DETAILS

The as-built details are shown on Drawings 730 and 731 attached to this letter.

Select photos taken during construction are included in Appendix A.

6.0 DESIGN CHANGES AND DEVIATIONS

The following design changes and deviations were made for water crossing CV-057 during construction.

1. Over blast of the design excavation by approximately 2 m occurred during drilling and blasting at CV-057. In order to backfill the additional excavation depth, Culvert Backfill was extended at a 1H:1V slope from the culvert design elevation to the base of the excavation. Due to the over blasting, the final fill volume was significantly larger than the design volume.
2. Baffinland chose to re-use the blasted frozen material from the existing road embankment as local borrow area fill placed outside of the Culvert Backfill area (i.e. culvert structural backfill zones). KP recommended against the use of this material as road embankment fill during the installation of CV-057 (KP, 2024c). It is highly possible that some of the excavated frozen material contained higher than desired ice content significantly increasing the likelihood of significant settlement of the fill material following thaw, given the inability to properly compact frozen material with higher ice content.

3. Design Change 01 (No. CVDC-01, KP, 2024b) was issued on February 28, 2024 documenting the approved design change to use finer bedding material to meet the culvert manufacturer's recommendations. The specified 25 mm minus material was changed to a 3/16 inch minus to meet the revised recommendations.

The design change documentation is included in the As-Built Summary Report for the February to May 2024 construction season.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Culvert crossing CV-057 was generally constructed in agreement with the design (KP, 2024a). However, key construction deviations included over blasting of the excavation and use of frozen blasted material as local borrow area fill within the road embankment.

KP recommended monitoring of the final road surface elevation and side slopes for signs of settlement and instability as a result of thaw or creep settlement of frozen blast material as backfill. As communicated during construction, Baffinland should be prepared for localized thaw settlement of the road surface leading to the requirement for repairs and/or maintenance of the road crossing over the initial years of operation. Care will need to be taken to maintain and/or repair any softer areas or area of settlement that may develop in close proximity to the culvert installations in order to minimize potential damage to the culverts.

Additionally, KP recommends monitoring the water crossing remediation in its entirety for signs of sloughing, erosion, or other potential issues. It is understood that this monitoring will be completed as part of the post-construction monitoring plan to be implemented by Baffinland.

8.0 REFERENCES

Knight Piésold Ltd. (KP), 2024a. *Tote Road Permanent Crossing Plan - Round CSP Culvert Installations.* February 8. North Bay, Ontario. Ref. No. NB102-181/77-4, Rev 2.

Knight Piésold Ltd. (KP), 2024b. Design Change (CVDC-01). Design Change 01 - Culvert Bedding Material to: Baruck Wile and Rudolf Dietrich, Baffinland Iron Mines Corporation. Re: *Culvert Bedding Design Change.* February 26. Ref. No. 11.

Knight Piésold Ltd. (KP), 2024c. Memorandum to: Michael Burns and Rudolf Dietrich, Baffinland Iron Mines Corporation. Re: *Permanent Crossing Plan - Round CSP Culverts, Response to Baffinland Request for Information (RFI) No. 1.* March 8. North Bay, Ontario. Ref No. NB24-00286 (NB102-181/93).

Yours truly,
Knight Piésold Ltd.

REGISTERED PROFESSIONAL ENGINEER
G.M. JOHNSTONE
LICENSEE
2024-08-28
NT/NU

Prepared: Greg Johnstone
Greg Johnstone, P.Eng., CPESC
Project Engineer

Reviewed:
C. A. (Andy) Phillips, P.Eng.
Senior Engineer

Approval that this document adheres to the Knight Piésold Quality System:

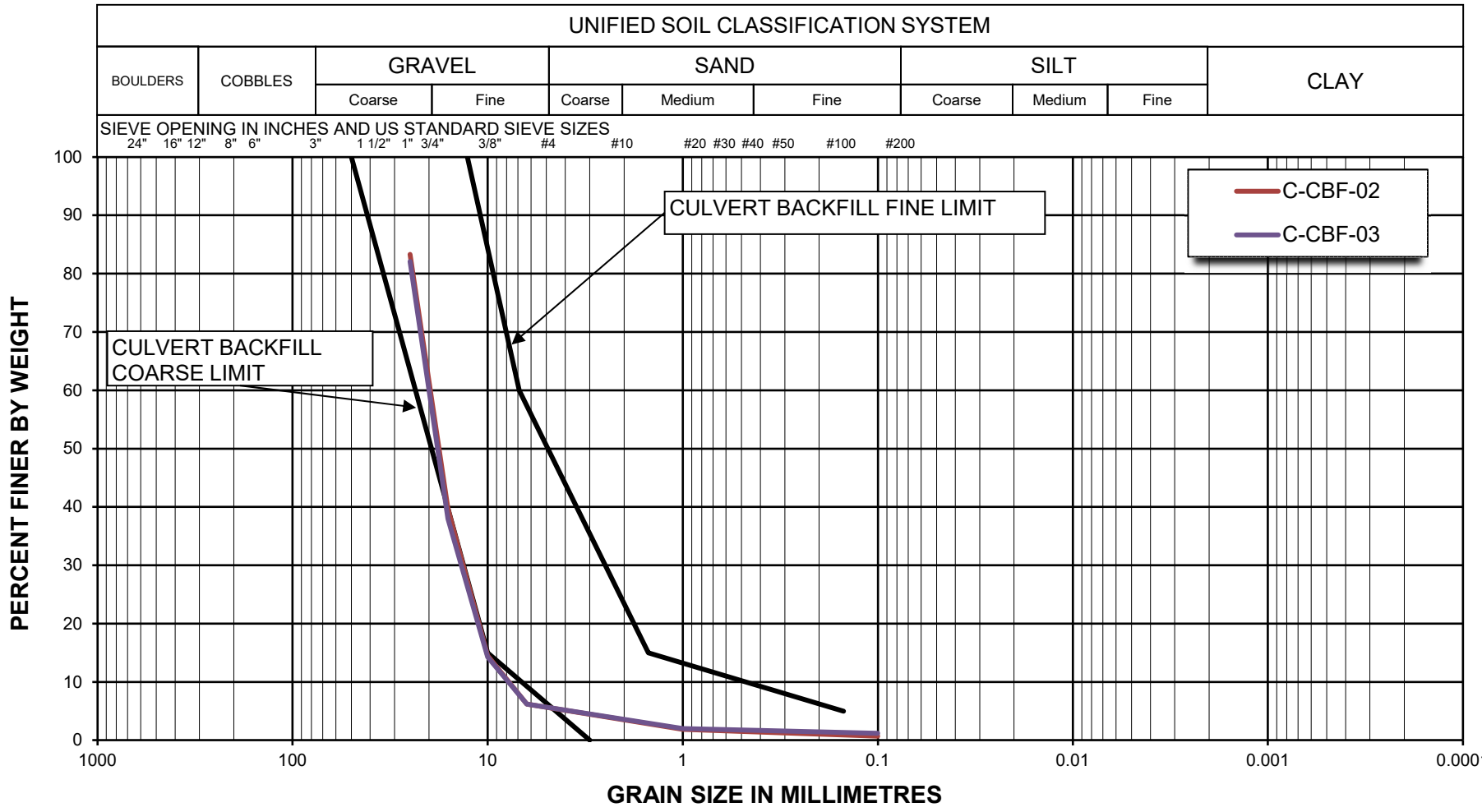
PERMIT TO PRACTICE
KNIGHT PIESOLD LTD.
Signature
Date 2024-08-28
PERMIT NUMBER: P 547
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

Attachments:

Figure 1 Rev 0	Grain Size Distribution - Culvert Backfill - CV-057
Figure 2 Rev 0	Grain Size Distribution - Culvert Bedding (3/16 Inch Minus) - CV-057
Drawing 730 Rev 5	CV-057 General Arrangement
Drawing 731 Rev 5	CV-057 Sections
Appendix A	CV-057 As-Built Photo Log

Copy To:
Michael Burns, Baffinland Iron Mines Corporation
Jocelyn Larocque, Baffinland Iron Mines Corporation
George Liston, Baffinland Iron Mines Corporation
Connor Devereaux, Baffinland Iron Mines Corporation
Todd Swenson, Baffinland Iron Mines Corporation
Pat Smith, Baffinland Iron Mines Corporation
Shannon Mulhall, Baffinland Iron Mines Corporation

/crd



NOTES:

1. CONTROL TESTS (C) CARRIED OUT ON FILL MATERIALS SAMPLED FROM THE BORROW AREA AND STOCKPILE, PRIOR TO MATERIAL COMPACTION.
2. RECORD TESTS (R) CARRIED OUT ON PLACED AND COMPACTED FILL MATERIALS.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	28AUG'24	ISSUED WITH LETTER	GMJ	CAP

BAFFINLAND IRON MINES CORPORATION

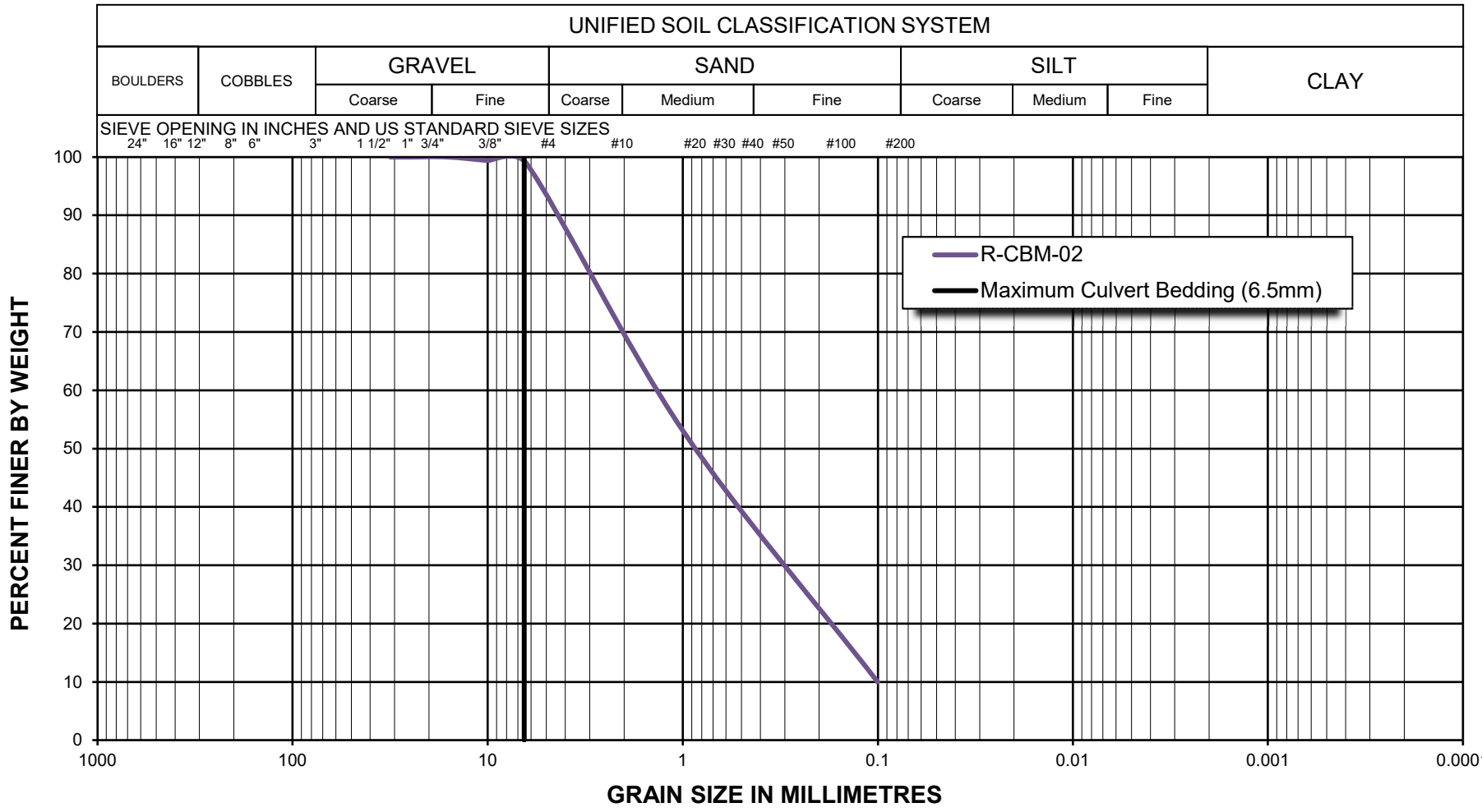
MARY RIVER PROJECT

GRAIN SIZE DISTRIBUTION
CULVERT BACKFILL - CV-057

Knight Piésold CONSULTING

P/A NO.	REF. NO.
NB102-181/93	NB24-00900

FIGURE 1 REV 0



NOTES:

1. CONTROL TESTS (C) CARRIED OUT ON FILL MATERIALS SAMPLED FROM THE BORROW AREA AND STOCKPILE, PRIOR TO MATERIAL COMPACTION.
2. RECORD TESTS (R) CARRIED OUT ON PLACED AND COMPACTED FILL MATERIALS.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	28AUG'24	ISSUED WITH LETTER	GMJ	CAP

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

GRAIN SIZE DISTRIBUTION
CULVERT BEDDING (3/16 INCH MINUS) - CV-057

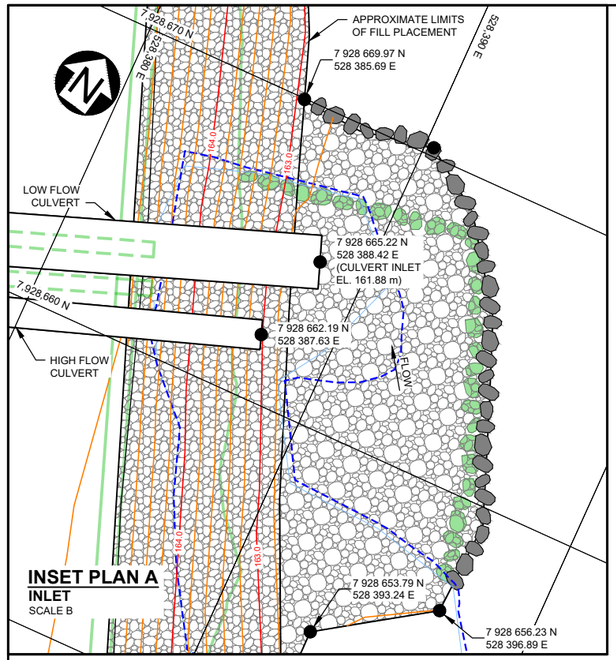
Knight Piésold CONSULTING

P/A NO. NB102-181/93

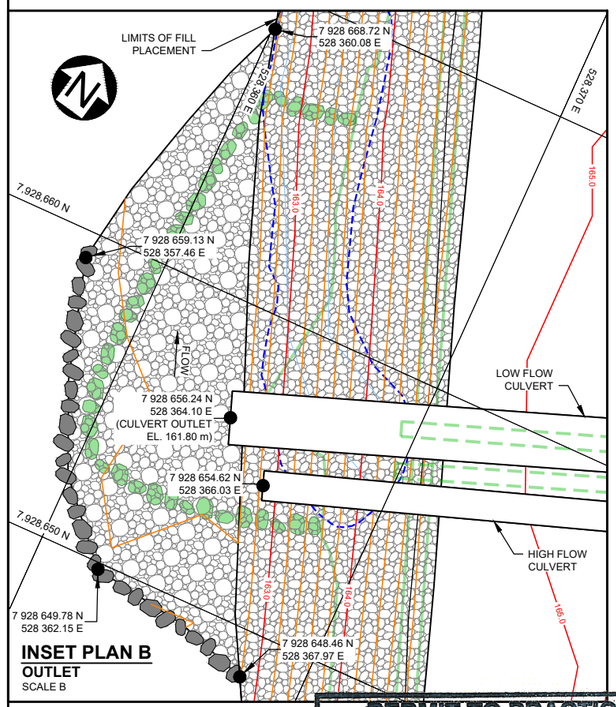
REF. NO. NB24-00900

FIGURE 2

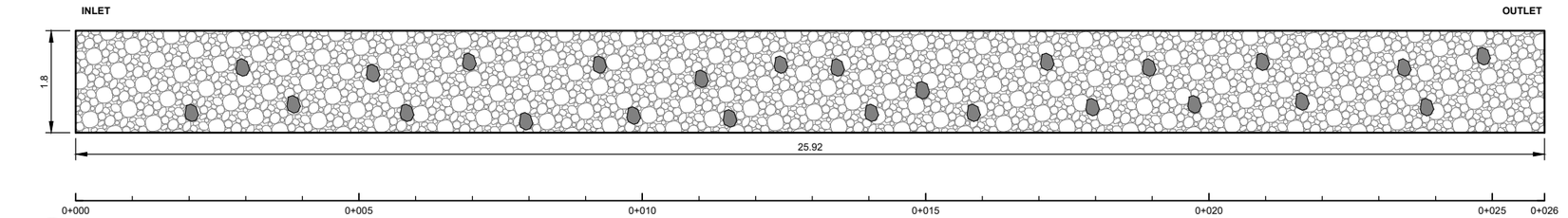
REV 0



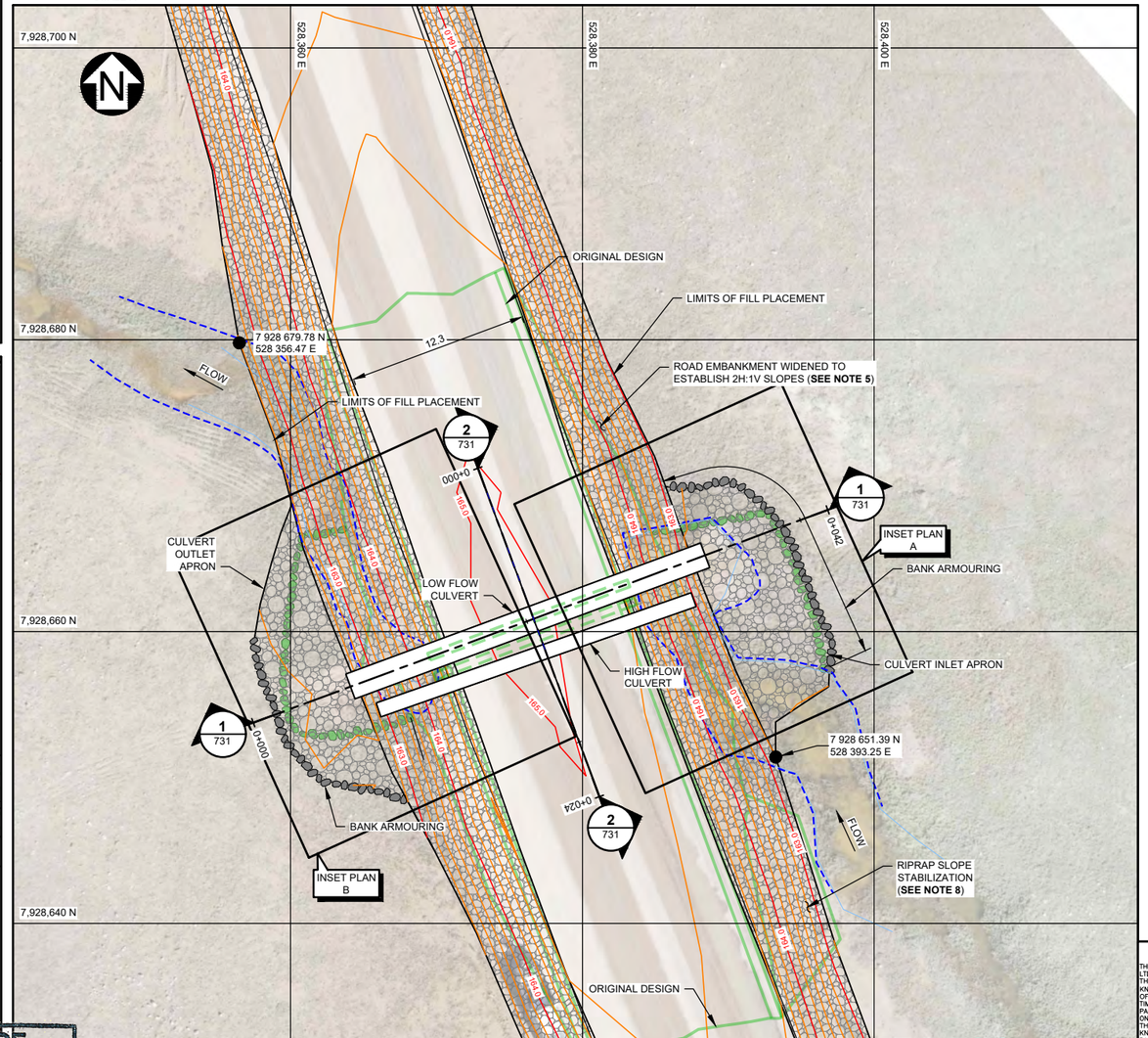
INSET PLAN A
INLET
SCALE B



INSET PLAN B
OUTLET
SCALE B



A - DETAIL
CV-057 IN CULVERT BOULDER AS-BUILT PLACEMENT PLAN
SCALE A



LEGEND:

- COARSE RIPRAP
- FINE RIPRAP
- CONTOUR
- PREVIOUS CULVERT CONFIGURATION
- ORIGINAL DESIGN LINEWORK
- APPROXIMATE LIMITS OF FILL PLACEMENT
- APPROXIMATE HIGH WATER MARK (HWM)
- SURVEYED WETTED WIDTH
- AS-BUILT SURVEY POINT
- RIPRAP FOR BANK ARMOURING AND FIELD FIT CHANNEL OUTLET
- BOULDER LOCATION WITHIN CULVERT

AS-BUILT BOULDER PLACEMENT SUMMARY (SEE DETAIL A)

CHAINAGE	DIMENSIONS
0+001	0.4 x 0.3
0+002	0.3 x 0.15
0+003	0.25 x 0.2
0+004	0.4 x 0.1
0+005	0.3 x 0.1
0+006	0.2 x 0.2
0+007	0.4 x 0.4
0+008	0.4 x 0.2
0+009	0.3 x 0.2
0+010	0.2 x 0.15
0+011	0.2 x 0.1
0+012	0.4 x 0.3
0+012	0.3 x 0.2
0+013	0.4 x 0.3
0+014	0.5 x 0.1
0+015	0.4 x 0.3
0+016	0.3 x 0.25
0+017	0.3 x 0.2
0+018	0.2 x 0.2
0+019	0.4 x 0.2
0+020	0.3 x 0.15
0+021	0.3 x 0.1
0+022	0.5 x 0.2
0+023	0.3 x 0.2
0+024	0.3 x 0.3
0+025	0.3 x 0.2

NOTES:

1. COORDINATE GRID IS UTM NAD83, ZONE 17.
2. DRONE IMAGERY PROVIDED BY KITIKMEOT CHALLENGER, AUGUST 2023. CULVERT CV-057 AS-BUILT SURVEYS PROVIDED BY NUNA, APRIL 11, 2024. CONTOUR INTERVAL IS 0.2 m.
3. DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
4. ALL WORK WAS COMPLETED DURING FROZEN CONDITIONS.
5. ROAD EMBANKMENT FILL PLACED TO ESTABLISH ROAD SIDE SLOPES AT MIN. 2H:1V. ALL SLOPES WERE STABILIZED WITH FINE RIPRAP OVERLYING NON-WOVEN GEOTEXTILE AS SHOWN ON **DRAWING 731 (SECTION 1)**.
6. MATERIAL SPECIFICATIONS INCLUDED ON **DRAWING 703**.
7. EROSION AND SEDIMENT CONTROL MEASURES INCLUDED ARE LIMITED TO THE WATER CROSSING AND THE IMMEDIATE SURROUNDING AREA. THE DESIGN AND INSTALLATION OF OTHER TOTE ROAD EROSION AND SEDIMENT CONTROL MEASURES WILL BE DOCUMENTED SEPARATELY.
8. SLOPE STABILIZED WITH FINE RIPRAP OVERLYING NON-WOVEN GEOTEXTILE.

SCALE A: 4 2 0 4 8 12 16 20 m
SCALE B: 2 1 0 2 4 6 8 10 m

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Date 2024-08-28
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PLAN
SCALE A

DRG. NO.	DESCRIPTION
703	CULVERT FILL MATERIALS AND GEOSYNTHETICS
731	CSP CULVERTS - CV-057 - SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
5	28AUG'24	AS-BUILT RECORD WITH REVISIONS	GMJ	EDW/AS		
4	05JUN'24	ISSUED FOR AS-BUILT RECORD	GMJ	AS	CAP	CNH
3	08FEB'24	REVISED INCORPORATING DFO ADVICE	GMJ	EDW	TJP	KEH
2	23JAN'24	DESIGNS MODIFIED - ISSUED FOR CONSTRUCTION	GMJ	EDW	CAP	KEH
1	06SEP'23	REVISED WITH UPDATED SURVEY DATA	GMJ	EDW	CAP	KEH
0	03FEB'23	ISSUED FOR CONSTRUCTION	GMJ	EDW	CAP	KEH

REVISIONS

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NT/NU

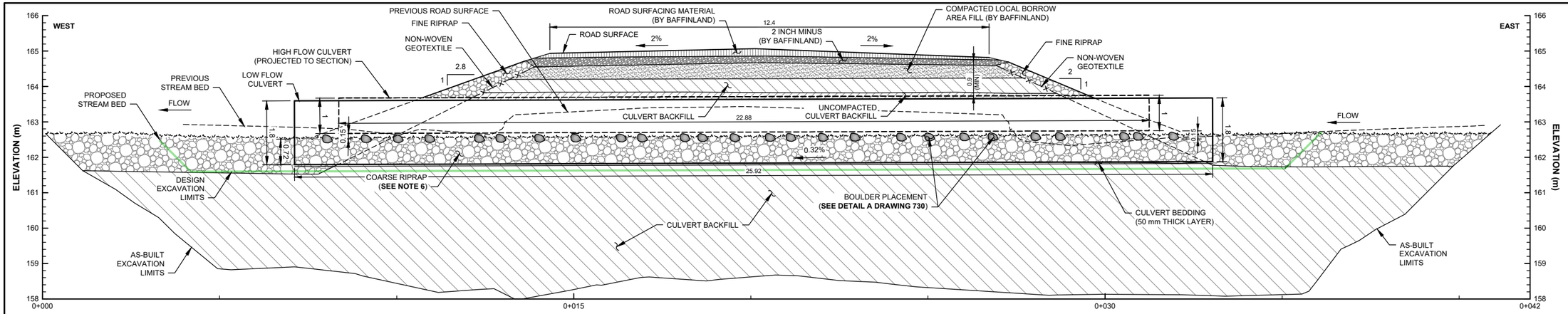
Knight Piésold CONSULTING

BAFFINLAND IRON MINES CORPORATION

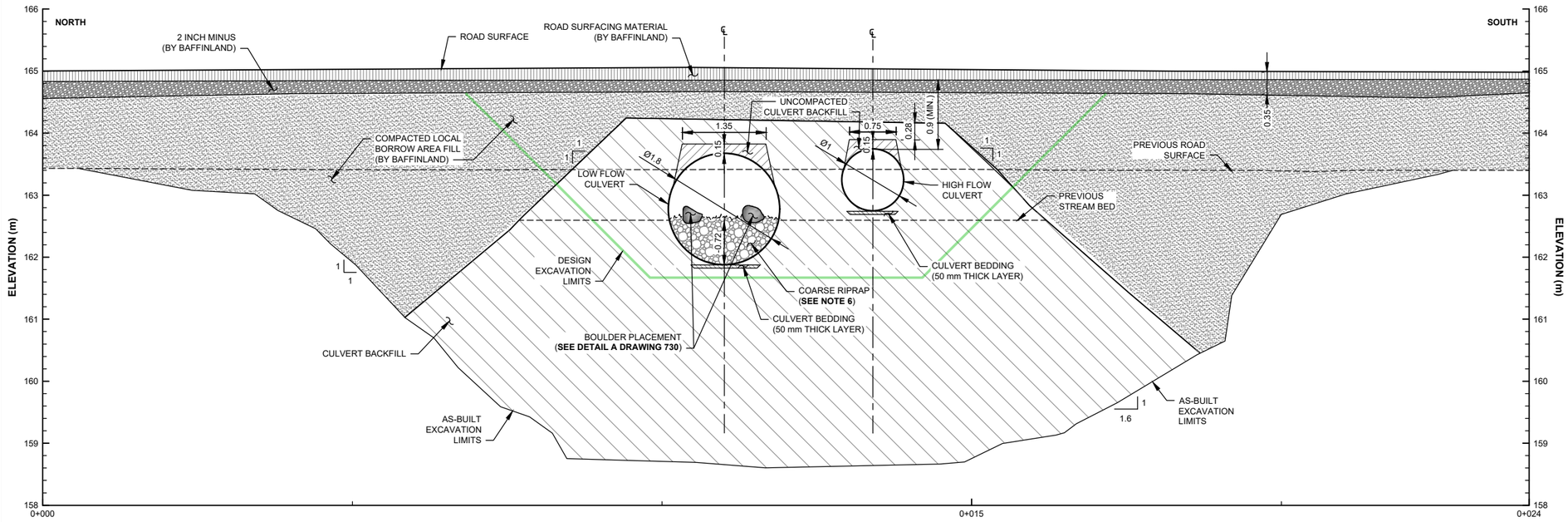
MARY RIVER PROJECT

PERMANENT CROSSING PLAN
ROUND CSP CULVERTS - CV-057
GENERAL ARRANGEMENT

PROJECT NO.	DRAWING NO.	REVISION
NB102-181/93	730	5



1/730 **SECTION**
CV-057 PROFILE
SCALE A



2/730 **SECTION**
CV-057 INSTALLATION DETAILS
SCALE B

LEGEND:

- COMPACTED LOCAL BORROW AREA FILL (BY BAFFINLAND)
- UNCOMPACTED CULVERT BACKFILL
- CULVERT BACKFILL
- ROAD SURFACING MATERIAL (BY BAFFINLAND)
- 2 INCH MINUS (BY BAFFINLAND)
- COARSE RIPRAP
- FINE RIPRAP
- CULVERT BEDDING MATERIAL
- DESIGN LINEWORK
- PREVIOUS STREAM BED
- NON-WOVEN GEOTEXTILE
- BOULDER PLACEMENT

NOTES:

1. CULVERT CV-057 AS-BUILT SURVEYS PROVIDED BY NUNA, APRIL 11, 2024.
2. DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
3. VEHICLE SAFETY BERMS ARE REQUIRED IN AREAS WITH A DROP OFF GREATER THAN 3.0 m.
4. MATERIAL SPECIFICATIONS INCLUDED ON **DRAWING 703**.
5. CULVERT INFILL MATERIAL TO BE INSPECTED DURING AND AFTER FIRST FRESHET FOLLOWING CONSTRUCTION TO DETERMINE IF ADDITIONAL MATERIAL IS REQUIRED.
6. RIPRAP INTERSTITIAL SPACE ON THE CHANNEL BED FILLED WITH MATERIAL SIMILAR TO THE ADJACENT CHANNEL BED MATERIAL (OR OTHER MATERIAL APPROVED BY THE ENGINEER). VOID SPACE MINIMIZED BETWEEN COARSE RIPRAP SUCH THAT CREEK FLOWS ARE MAINTAINED ABOVE THE CHANNEL BED DURING LOW-FLOW CONDITIONS. FINISHED SURFACE ROUGHENED TO MIMIC ADJACENT STREAM BED CONDITIONS.

SCALE A 1.2 0.6 0 2 4 6 m
SCALE B 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

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Date 2024-08-28
PERMIT NUMBER: P 547
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

AS-BUILT RECORD

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
5	28AUG'24	AS-BUILT RECORD WITH REVISIONS	GMJ	EDW/AS	GJ	CNH
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1	06SEP'23	REVISED WITH UPDATED SURVEY DATA	GMJ	EL/EDW	CAP	KEH
0	03FEB'23	ISSUED FOR CONSTRUCTION	GMJ	EDW	CAP	KEH

REVISIONS

DRG. NO.	DESCRIPTION
703	CULVERT FILL MATERIALS AND GEOSYNTHETICS SPECIFICATIONS
730	CSP CULVERTS - CV-057 - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REGISTERED PROFESSIONAL ENGINEER
G.M. JOHNSTONE
LICENSEE
2024-08-28
NT/NU

Knight Piésold CONSULTING

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

PERMANENT CROSSING PLAN
ROUND CSP CULVERTS - CV-057
SECTIONS

P/A NO.	DRAWING NO.	REVISION
NB102-181/93	731	5

SAVED: I:\1\02\00181\177\A\Acad\DWGS\730_731\730_731 R5, 8/28/2024 11:47:53 AM . EWARDELL PRINTED: 8/28/2024 11:48:54 AM, 731. EWARDELL ACAD VERSION: 25.0S (LMS TECH)

APPENDIX A

CV-057 As-Built Photo Log

(Pages A-1 to A-15)

CV-057 AS-BUILT PHOTO LOG

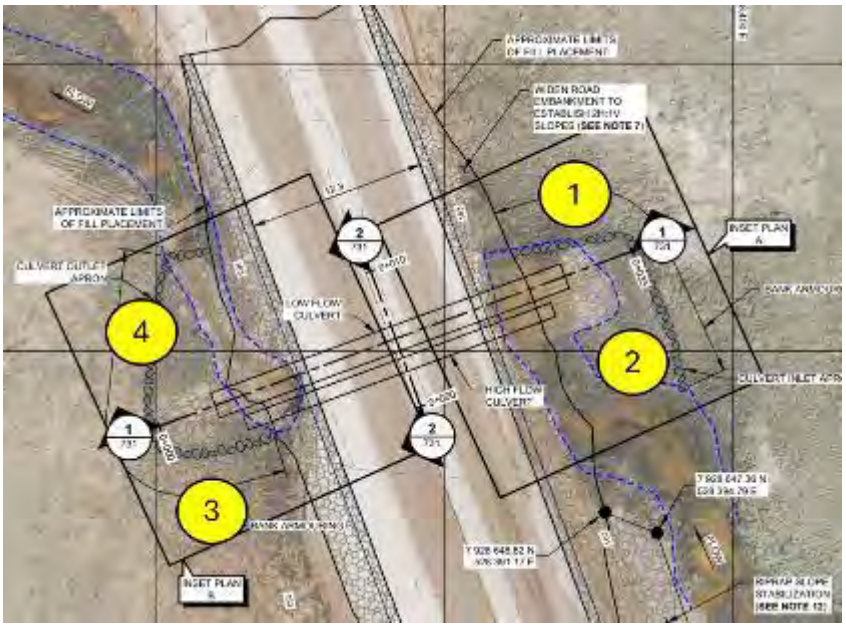

PHOTO 1. Culvert Crossing CV-057 - Photographic vantage points (Approximate locations, indicated with yellow circles).

PHOTO 2. During - Vantage Point 4 - Blast excavation - Road crossing and upstream inlet - looking southeast (February 23, 2024).

PHOTO 3. During - Vantage Point 2 - Blast excavation - Road crossing and downstream outlet - looking west (February 24, 2024).

PHOTO 4. During - Vantage Point 4 - Completed blast excavation with slope stabilization - Road crossing and upstream inlet - looking east (March 11, 2024).

PHOTO 5. During - Vantage Point 1 - Completed blast excavation with slope stabilization - Road crossing and downstream outlet - looking southwest (March 11, 2024).

PHOTO 6. During - Vantage Point 2 - Placement of culvert backfill material - Road crossing and downstream outlet - looking west (March 12, 2024).

PHOTO 7. During - Vantage Point 3 - Compaction of culvert backfill material - Road crossing and downstream outlet - looking north (March 13, 2024).

PHOTO 8. During - Vantage Point 2 - Compaction of culvert backfill material - Road crossing and upstream inlet - looking west (March 15, 2024).

PHOTO 9. During - Vantage Point 3 - Installation of 1.8 m diameter corrugated steel pipe low flow culvert - Road crossing and downstream outlet - looking northeast (March 20, 2024).

PHOTO 10. During - Vantage Point 2 - Installation of 1.0 m diameter corrugated steel pipe high flow culvert - looking northwest (March 19, 2024).

PHOTO 11. During - Vantage Point 2 - Installation of 1.8 m diameter corrugated steel pipe low flow culvert and 1.0 m diameter corrugated steel pipe high flow culvert - Upstream inlet - looking southwest (March 22, 2024).

PHOTO 12. During - Vantage Point 3 - Installation of 1.8 m diameter corrugated steel pipe low flow culvert and 1.0 m diameter corrugated steel pipe high flow culvert - Downstream outlet - looking northeast (March 22, 2024).

PHOTO 13. During - Vantage Point 2 - Placement of culvert backfill material above the low and high flow CSP culverts - Upstream inlet - looking west (March 26, 2024).

PHOTO 14. During - Vantage Point 2 - Placement of geotextile and riprap on west side slope at CV-057 - Upstream inlet - looking west (March 30, 2024).

PHOTO 15. After - Vantage Point 1 - Completed installation of high flow and low flow culverts - Upstream Inlet Area - looking southwest (April 5, 2024).

PHOTO 16. After - Vantage Point 2 - Completed installation of high flow and low flow culverts - Upstream Inlet Area - looking northwest (April 5, 2024).

PHOTO 17. After - Vantage Point 2 - Completed installation of high flow and low flow culverts - Upstream Inlet Area - looking northwest (April 5, 2024).

PHOTO 18. After - Vantage Point 4 - Installation of high flow and low flow culverts - Downstream Outlet Area - looking southeast (April 5, 2024).

PHOTO 19. After - Completed placement of coarse riprap and stream substrate material within the interior of the low flow CSP culvert at CV-057 (March 29, 2024).

PHOTO 20. Material stockpile - 32 mm minus culvert backfill material - km 60 laydown - looking northeast (March 10, 2024).

PHOTO 21. Material stockpile - 32 mm minus culvert backfill material - km 60 laydown - looking northeast (March 10, 2024).

PHOTO 22. Material stockpile - Fine riprap - km 60 Laydown - looking southeast (March 22, 2024).

PHOTO 23. Material stockpile - Blasted material - km 60 laydown - looking northeast (February 23, 2024).

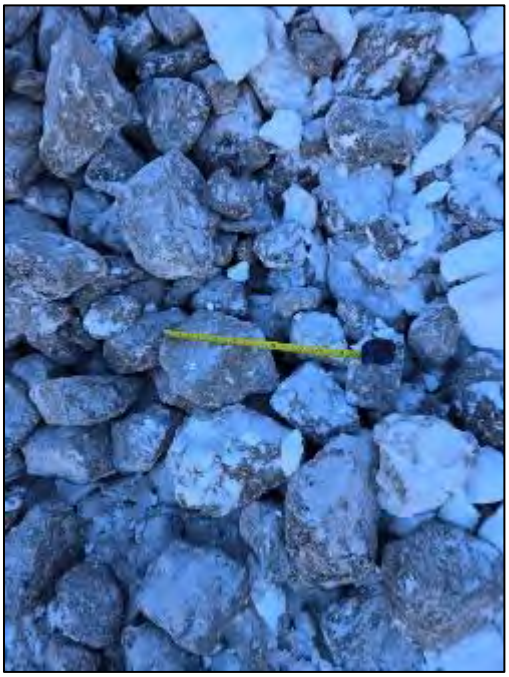

PHOTO 24. Material stockpile - Blasted material - km 60 laydown - looking northeast (February 23, 2024).

PHOTO 25. Material stockpile - Stream substrate material - km 97 stockpile (February 29, 2024).

PHOTO 26. Equipment - CAT 349F excavator - km 60 laydown - looking east (March 08, 2024).

PHOTO 27. Equipment - CAT 745C articulated dump truck - km 60 laydown (February 08, 2024).

PHOTO 28. Equipment - Mikasa MVH408 1000 lb plate compactor - km 60 laydown (March 05, 2024).

PHOTO 29. Equipment - Ducar motorized wheel barrow loaded with coarse riprap - CV-059 (March 26, 2024).