APPENDIX C

AS BUILT AND INFRASTRUCTURE MONITORING REPORTS

APPENDIX C.1

Construction Summary Report

Baffinland Iron Mines Corporation
Mary River Expansion Project

Construction Summary Report: Stockyard #1 Expansion

2019-08-08	0	Approved for Use	G. Peace	R. Bader	M. Coakley	D. Henkelman
Date	**Rev.**	**Status**	**Prepared By**	**Checked By**	**Approved By**	**Approved By**
			HATCH			**Client**

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1. Facility Description

1.1 Purpose and Design Basis

The Milne Port Stockyard #1 pad is to be extended to accommodate additional ore storage.

Settlement Pond 1A was created to allow for the potential of additional runoff due to the extension of Stockpile #1 through an overflow spillway from the existing settlement Pond No.1. This was completed March 4, 2019.

1.2 Location and Base Elevations

The Milne Port Stockyard #1 pad extension is located between northing 7975645 and 7976022, and easting 502967 and 503224. The pad elevation varies from EL.9.06 to EL. 10.588 meters above sea level.

The berm is 0.5 meters wide at the top with elevation between EL. 9.4 to EL. 10.0 meters above sea level.

1.3 Geometry and Access

The pad ties into the existing Stockyard #1.

2. Construction Activity Summary

Construction activities on the Port Site Stockyard #1 extension started on April 15, 2019, and were completed on May 1, 2019.

The following summarizes the construction activities for the pad:

- Excavation and removal of snow and ice
- Excavation to design subgrade
- Backfilling with Type 12 (ROQ) as required
- Backfilling with Type 8
- Topping with waste ore
- Build drainage control berm.

3. QA/QC

Quality Assurance (QA) was performed by the Hatch Construction Supervisor during daily audits with the Allnorth surveyor as well as the Nuna Supervisor as applicable.

For document of the preparation for the subgrade, installation of fill and final inspection see Appendix A.

4. Photographic Records

Figure 4-1: Ore Pad Excavation

Figure 4-2: Compacting Rock Fill

Figure 4-3: Levelling Type 8

Figure 4-4: Ore Pad Expansion

Figure 4-5: Removing Overburden

Figure 4-6: Ripping Frozen Waste Ore Stockpile

Figure 4-7: South West Berm Construction

Figure 4-8: Compacting Type 8

Figure 4-9: Placing Sacrificial Waste Iron Ore

5. As-built Drawings

The as-built drawings incorporate contractor red line markups, field instructions, requests for information, field sketches and all other inputs provided by the EPCM field team. As-built drawings are attached in Appendix A. These drawings are representative of the final as-built drawings.

Table 5-1: Hatch As-built Drawing List

Drawing Number	Title	Revision
H353004-00000-221-294-0002-0001	Site Wide Standard Drawing Earthworks and Drainage Details	1
H353004-40000-221-272-0006-0001	Port Site Stockyard 1 – Extension Layout	1
H353004-40000-221-273-0008-0001	Port Site Stage 1 – New Stockyard No. 1 Cross Sections - Sheet 1	0
H353004-40000-221-273-0008-0002	Port Site Stage 1 – New Stockyard No. 1 Cross Sections - Sheet 2	0
H353004-40000-228-271-0007-0001	Port Site - Stockyard No.1 Berm (P-SWD-4) Drainage Plan	1

6. Field Decisions

The following section describes the most relevant field decisions made during construction:

- Topping the pad with waste ore at the request of operations.

7. Performance Evaluation

Not done.

8. Vibration Monitoring and Quarrying Activity

ROQ and type 8 material was sourced from existing stockpiles.

9. Environmental Monitoring

Environmental monitoring during the construction of the Port Site Stockyard #1 Expansion was conducted as per the Environmental Protection Plan (EPP), Baffinland document number BAF-PH1-830-P16-0008.

In addition to the EPP, construction follows the requirements of the Environmental Health and Safety Management Framework, Baffinland document number BAF-PH1-830-STD-0001. The Baffinland on-site Environmental Management Team was responsible for environmental monitoring at all sites during construction and following-up with the construction team(s) if there were any reported environmental incidents or non-conformances.

The Stockyard #1 Expansion construction was also required to follow the requirements of the Surface Water and Aquatic Ecosystems Management Plan, BAF-PH1-830-P16-0026. This Management Plan outlines the best management practices implemented to limit the potential for adverse impacts to receiving waters, aquatic ecosystems, fish and fish habitat used during construction. In addition this plan details the systems in place to mitigate and manage drainage and runoff at the building sites, address point and non-point discharges to surface waters and assess those discharges on water quality and quantity relative to their receiving water systems.

The Spill Contingency Plan, BAF-PH1-830-P16-0036, in conjunction with the Emergency Response Plan, BAF-PH1-830-P16-0007, provides guidance and instructions for first responders and Baffinland Management in the event of a spill event or other emergency such as fire or accident.

The risks to the water quality in the respective rivers and streams as a result of construction of the Port Stockyard #1 Expansion would originate from the following sources based on construction methodology:

- Spills from equipment
- Increase in sediment load in the water.

As construction took place during the winter any risks to the environment would only be from spills from equipment. There were no spills reported from equipment used at the construction site during construction.

10. Earthworks Data

The survey data collected has been included in Appendix B.

11. Unanticipated Observations

Nothing to report.

12. Surface Monitoring

Not conducted.

13. Required Maintenance

None conducted to date.

14. Adaptive Management

Nothing to report.

15. Concordance with Type “A” Water Licence

BaffinLand’s Type A Water Licence, Schedule D, outlines the requirements for Construction Summary/Monitoring Reports. The following table provides a concordance of this report with the requirements of Schedule D.

Table 15-1: Table of Concordance for Schedule D

Schedule D Item No.	Schedule D Description	Corresponding Section in this Report
1a	description of all infrastructure and facilities designed and constructed to contain, withhold, divert or retain Water and/or Waste;	1
1b	a summary of construction activities including photographic records before, during and after construction of the facilities and infrastructure designed to contain, withhold, divert or retain Water and/or Waste;	2, 3, 4
1c	as-built drawings and design for facilities and infrastructure, in Item 1(a) of this schedule, designed and constructed to contain, withhold, divert or retain Water and/or Waste;	5, Appendix A
1d	documentation of field decisions that deviate from the original plans and any data used to support or developed	6

Schedule D Item No.	Schedule D Description	Corresponding Section in this Report
	facilities and infrastructure to withhold, divert or retain Water and/or Waste;	
1e	a comparison of measured versus predicted performance of infrastructure and facilities;	7
1f	any blast vibration monitoring and control for quarrying activity carried out in close proximity to fish bearing waters;	8
1g	monitoring conducted for sediment and explosives residue release from construction areas;	9
1h	monitoring undertaken in accordance with Part D of the Water Licence during the Construction Phase of the Project;	8, 9
1i	details confirming that the requirements of the CCME guidance document entitled “Aboveground Storage Tank Systems for Petroleum and Allied Petroleum Products (2003)” have been met by the Licensee;	N/A
1j	data collected from instrumentation used to monitor earthworks and the interpretation of that data;	12
1k	a discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk during construction;	11
1l	an overview of any method including frequency used to monitor deformations, seepage and geothermal responses;	12
1m	a summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams;	13
1n	a summary of adaptive management principles and practices applied during the relevant phases of the Project and their overall effectiveness.	14

16. Concordance with Commercial Lease Requirements

The following table provides a concordance of this report with the requirements of the Commercial Lease for As-Built reporting.

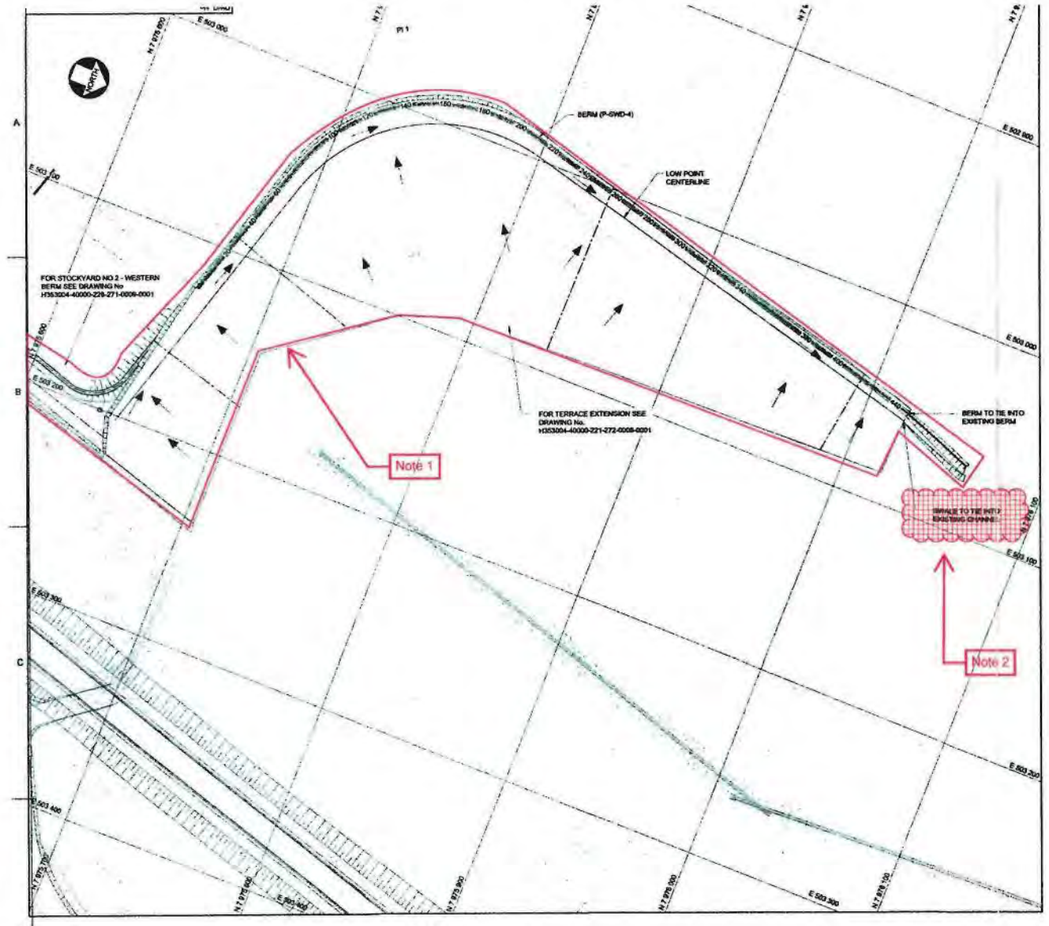
Table 16-1: Table of Concordance for Commercial Lease As-Built Requirements

Component	Minimum Information Requirements	Corresponding Section in this report
1	The name and contact information of the person and company responsible for completing the construction, construction monitoring and preparing the As-Built Report	Appendix D
2	The name and contact information of the Baffinland representatives(s) that QIA can contact should it have any questions or comments regarding the As-Built Report	Appendix D
3	An introduction to the infrastructure or facilities including but not limited to the construction background, concept and construction history	1,2
4	Construction records including As-Built drawings signed and stamped by a professional engineer detailing surveys, planar and cross sections that illustrate all designed components. This should be provided in PDF format and if requested the native file (e.g. CAD, .dxf, etc.).	Appendix A Appendix E
5	Detailed description of any deviations from the For Construction Design. Deviations that should be noted include, but are not limited to, changes in design and construction materials, construction methodology or monitoring	5,6
6	Observed performance of the construction including a comparison to predicted performance. Recommendations for performance monitoring based on observations during construction if applicable	N/A
7	A description and list of instrumentation installed, if applicable, and results of construction monitoring including all environmental data. Recommendations for additional performance or environmental monitoring based on observations and monitoring results, if applicable.	N/A

Component	Minimum Information Requirements	Corresponding Section in this report
9	A summary of adaptive management principles and practices related to environmental management and monitoring applied during the relevant phases of the Project and their overall effectiveness	NA
10	Photographic records before, during and after construction of the facilities or infrastructure.	4
11	Map(s) to illustrate the completed construction in relation to Lease boundaries and water bodies. The minimum distance from completed or modified facilities and infrastructure to the surveyed boundary of the Property, surveyed boundary of the Impact Area, and the original high water mark should be provided.	Appendix C
8	A summary of quality assurance testing results, if applicable, and comparison of these results to construction/design requirements to ensure performance of the infrastructure or facilities.	3 Appendix A Appendix E

Appendix A

As-built Drawings



PLAN
SCALE 1:1000

TYPICAL SECTION THROUGH BERM
SCALE 1:25

STOCKYARD BERM

NAME	CH	E	N	DETAILS
START	0.000	503 123.987	7 975 683.514	L 78.218m
BCC1 PI1 ECC1	78.218 215.899	503 049.456 502 967.148 502 989.959	7 975 687.247 7 975 713.457 7 975 798.773	R 90.000m DA 87°39'00" TL 86.363m AL 137.681m
END	449.002	503 051.520	7 976 021.600	L 233.103m

KEY PLAN

NOTES:
1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYERWORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-40000-221-294-0002-0001

LEGEND:

10.20	CONTOUR ELEVATION
✱ 43	SETTING OUT POINT NUMBER
EG	EXISTING GROUND
CH	CHAINAGE
EL	ELEVATION
➤	ON PAD FLOW DIRECTION

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REDLINE DRAWING

CHANGES, ADDITIONS, DELETIONS AND RELOCATIONS IN RED INK USING STANDARD SYMBOLS, DELETIONS TO BE CLOUDED AND HATCHED.

REDLINE BY: ☑ CONSTRUCTION ☐ COMMISIONING ☐ SUSTAINMENT
NAME/SIGN Bradford Watkin COMPANY Nuna East
DATE OF AS-BUILT: May 6, 2019 ☐ CHECK IF NO CHANGE
CHECKED BY:
NAME/SIGN: COMPANY:

Note 1: Final surface fill changed to Iron Ore Rejects 200mm thick. See RFI-023 for details. Fill details see RFI-0010.

Note 2: Swale deleted from scope. See RFI-0100

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

BERM LEVEL	9.75	9.96	9.93	9.98	9.97	9.97	9.98	9.95	9.97	9.90	9.87	9.84	9.82	9.79	9.76	9.73	9.71	9.68	9.64	9.59	9.52	9.48	9.43	9.40
STOCKYARD GROUND LEVEL	9.784	9.749	9.709	9.668	9.631	9.656	9.627	9.622	9.593	9.566	9.539	9.515	9.477	9.441	9.404	9.366	9.328	9.290	9.255	9.228	9.201	9.165	9.092	8.775
GROUND LEVELS ON CL	9.320	9.516	9.346	9.194	9.120	9.052	9.071	8.977	8.910	9.005	9.355	9.534	9.563	9.344	9.295	9.324	9.201	9.085	8.998	8.893	8.856	9.212	9.103	
CHAINAGE (m)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	449

PROFILE STOCKYARD BERM
FROM 0.000 TO 449.002

Bradford Watkin
QA/QC
Reviewed

Released for Use

PERMIT TO PRACTICE
HATCH LTD
Signature
Date 2018-07-12
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-228-271-0009-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-228-272-0008-0001	STOCKYARD 1 - TERRACE EXTENSION - LAYOUT

REFERENCE DRAWINGS

R. A. HALIM
LICENSEE
2018-07-13
NWT/NU

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC STAMP REMOVED	GPM	FH	13-07-2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/05/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	GP MEADES	NR	18/05/2018
DESIGNER	B ROOS	NR	18/05/2018
CHECKER	F HUGO		2018-07-13
DESIGN COORD.	R GOOSEN		2018-07-13
RESP. ENG.	R HALIM		2018-07-13
LEAD DISC. ENG.	A GROBBELAAR		2018-07-13
AREA LEAD	V LAVRIC	V. Lavric	2018-07-13
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		18-7-13

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

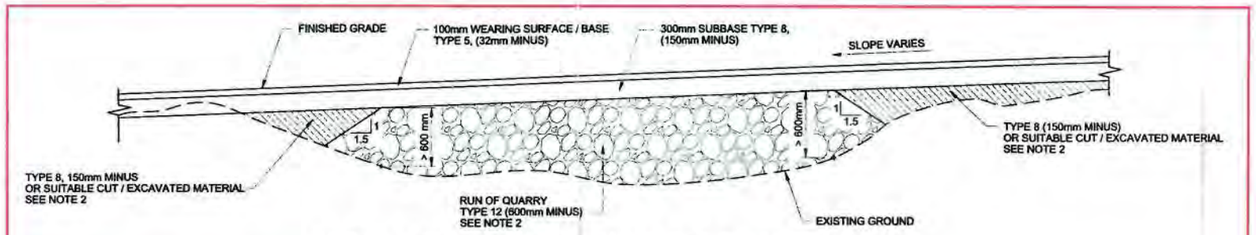
BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD NO 1 - BERM (P-SWD-4)
DRAINAGE PLAN

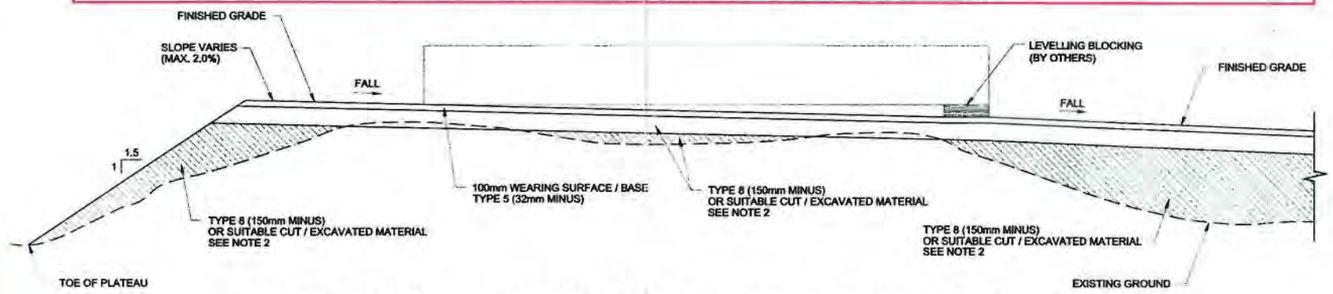
SCALE: OR AS NOTED
DWG. No. H353004-40000-228-271-0007-0001
REV 1
SHEET SIZE E

DWG. No. H353004-00000-221-294-0002-0001

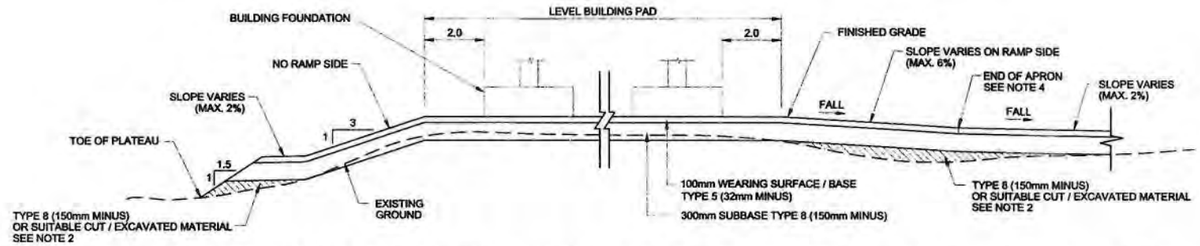
Note 1: Final surface fill changed to Iron Ore Rejects 200mm thick. See RFI-023 for details. Fill details see RFI-0010.



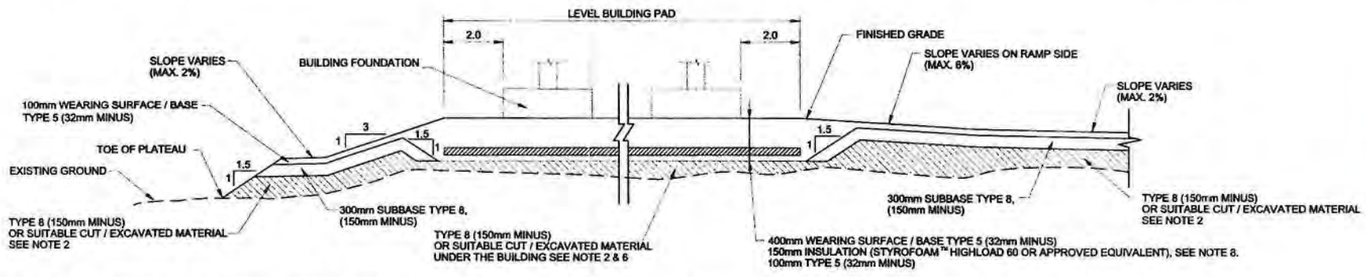
DETAIL 1 - TYPICAL EARTHWORKS FOR FINISHED GRADING



DETAIL 2 - TYPICAL EARTHWORKS FOR SKIDDED BUILDINGS - ALL GROUND MATERIALS



DETAIL 3 - TYPICAL EARTHWORKS FOR "FOLD-AWAY" / "FABRIC" BUILDINGS - IN NON-FROST SUSCEPTIBLE GROUND MATERIAL



DETAIL 4 - TYPICAL EARTHWORKS FOR "FOLD-AWAY" / "FABRIC" BUILDINGS - IN FROST SUSCEPTIBLE GROUND MATERIAL

NOTES:

1. ALL DIMENSIONS SHOWN ARE IN METRES, UNLESS OTHERWISE NOTED.
2. FOR FILL DEPTH > 600mm AND DEPENDING ON FILL EXTENT, USE TYPE 12 MATERIAL, ie RUN OF QUARRY (600mm MINUS).
3. THE FOUNDATIONS SHOWN ON THESE DETAILS ARE PRELIMINARY AND SHOULD BE VALIDATED AFTER FINALIZING THE BUILDINGS / STRUCTURES.
4. FOR BUILDINGS WITH NO TRUCK ACCESS RAMP REQUIREMENTS, SLOPE FINISH GRADE FROM EDGE OF BUILDING PAD TO SURROUNDING GRADE AT 3H:1V AS INDICATED ON THE DRAWING COVERING THE SPECIFIC BUILDING. OTHERWISE SLOPE AWAY TO THE SURROUNDING GRADE AT 2% MAXIMUM.
5. CUT / EXCAVATION MATERIAL USED AS FILL SHALL BE FREE FROM FROZEN MATERIAL, ICE, ORGANIC MATERIAL AND SHALL BE COMPACTED AS APPROVED BY THE COMPANY'S REPRESENTATIVE.
6. IF RUN OF QUARRY IS USED, THEN PLACE 300mm TYPE 8 MATERIAL (150mm MINUS) UNDER TYPE 5 (32mm MINUS).
7. "FROST SUSCEPTIBLE" AND "NON-FROST SUSCEPTIBLE" GROUND MATERIAL IS TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER ON SITE OR THEIR DESIGNATE.
8. INSULATION UNDER BUILDINGS TO BE PROVIDED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

MATERIAL AND COMPACTION SPECIFICATION:

SUBGRADE PREPARATION:
THE SUBGRADE SHOULD SHOULD BE PROOF-ROLLED AND INSPECTED PRIOR TO PLACING FILL MATERIALS. THE IDENTIFIED SOFT AREAS SHALL BE FURTHER COMPACTED, OR IF NECESSARY, BE MITIGATED USING GRANULAR OR ROCK FILL. A QUALIFIED GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE THE SUBGRADE.
THE ROCKFILL SHALL NOT BE PLACED IN WATER OR ON ICE. DEWATERING IS REQUIRED WHERE PONDING WATER IS ENCOUNTERED. OVER-EXCAVATION IS REQUIRED FOR GROUND ICE, IF ENCOUNTERED.
THE SUBGRADE ON THE GROUND SHALL BE LEFT AS IT IS NATURALLY BEFORE CONSTRUCTION AS MUCH AS POSSIBLE. THE OVER-EXCAVATION SHOULD BE MINIMIZED TO AVOID DISTURBANCE OF THE EXISTING PERMAFROST.

TYPE 5 (CRUSHER RUN 32mm MINUS MATERIAL) OR TYPE 3 (CRUSHER RUN 50mm MINUS):
THE MATERIAL MUST BE PLACED IN LIFTS NOT EXCEEDING 200mm AND SHALL BE COMPACTED BY MINIMUM 5 PASSES OF A MINIMUM 15 TON VIBRATORY ROLLER WITH VIBRATIONS IN THE RANGE OF 1200 TO 1500 vpm AND THE ROLLER SPEED OF ABOUT 2mph (3.2km/h). ALTERNATIVELY, THE COMPACTION SHOULD ACHIEVE A MINIMUM OF 100 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY TEST METHOD ASTM D698.

TYPE 8 (CRUSHER RUN 150mm MINUS):
THE ROCKFILL MUST BE PLACED IN LIFTS NOT EXCEEDING 500mm. THE PLACEMENT SHALL AVOID SEGREGATION AND NESTING OF COARSE PARTICLES. IT SHALL BE COMPACTED BY MINIMUM 5 PASSES OF A MINIMUM 15 TON VIBRATORY ROLLER WITH VIBRATIONS IN THE RANGE OF 1200 TO 1500 vpm AND THE ROLLER SPEED OF ABOUT 2mph (3.2km/h). EACH LIFT MUST BE "PROOF-ROLLED" PRIOR TO PLACING THE SUBSEQUENT LIFT.

TYPE 12 (RUN OF MINE, TYPICALLY 600mm MINUS):
THE ROCKFILL, IF USED, MUST BE PLACED IN LIFTS NOT EXCEEDING 1000mm. THE ROCKFILL SHALL BE COMPACTED BY MINIMUM 5 PASSES OF A MINIMUM 15 TON VIBRATORY ROLLER WITH VIBRATIONS IN THE RANGE OF 1200 TO 1500 vpm AND THE ROLLER SPEED OF ABOUT 2mph (3.2km/h). ALTERNATIVE COMPACTORS SUCH AS HEAVY LOADED RUBBER TIRED HAUL TRUCKS CAN ONLY BE USED AS PER A WRITTEN APPROVAL FROM THE ENGINEER.

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REDLINE DRAWING

CHANGES, ADDITIONS, DELETIONS AND RELOCATIONS IN RED INK USING STANDARD SYMBOLS, DELETIONS TO BE CLOUDED AND HATCHED.

REDLINE BY: ☑ CONSTRUCTION ☐ COMMISIONING ☐ SUSTAINMENT
NAME/SIGN: Bradford Watkin COMPANY: Nuna East
DATE OF AS-BUILT: May 6, 2019 ☐ CHECK IF NO CHANGE
CHECKED BY:
NAME/SIGN: COMPANY:

Released for Use

Bradford Watkin QA/QC Reviewed

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

REGISTERED PROFESSIONAL ENGINEER R. A. HALIM LICENSEE 2018-09-14 NWT/NU

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	MATERIAL AND COMPACTION SPECIFICATION ADDED	IHB	FH	16/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	01/12/2017

REVISIONS

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	16/08/2018
DESIGNER	I BARNARD	NR	16/08/2018
CHECKER	F HUGO		2018-09-14
DESIGN COORD.	R GOOSEN		2018-09-14
RESP. ENG.	R HALIM		2018-09-14
LEAD DISC. ENG.	A GROBBELAAR		2018-09-14
AREA LEAD	V LAVRIC	N/A	
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		18-09-17

DRAWING APPROVAL STATUS: Approved for Construction

HATCH

Baffinland

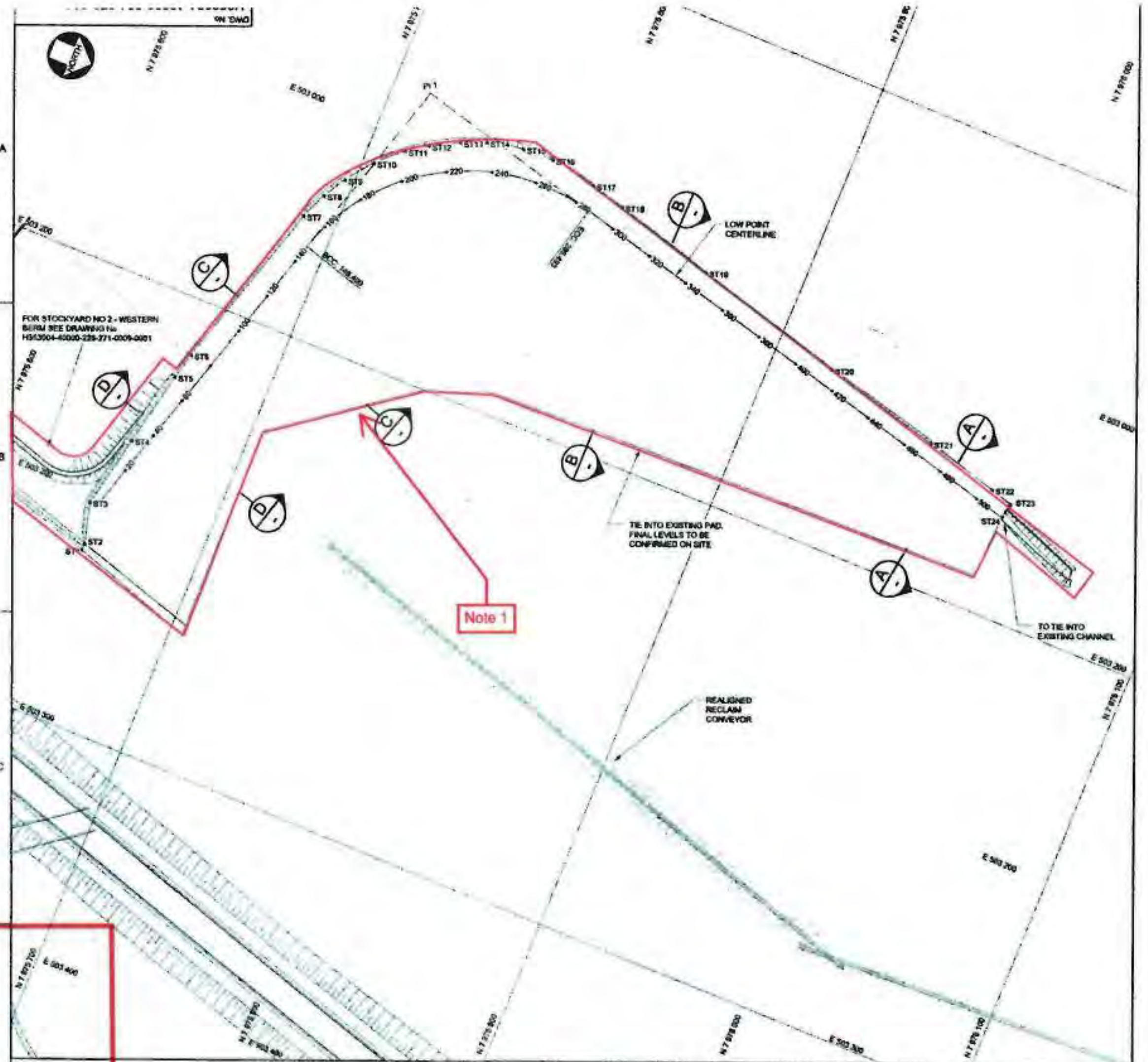
BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

SITE WIDE
STANDARD DRAWING
EARTHWORKS & DRAINAGE DETAILS

DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	REG. PROFESSIONAL

SCALE: NTS OR AS NOTED
DWG. No.: H353004-00000-221-294-0002-0001
RE
SHEET SIZE

1 2 3 4 5 6 7 8

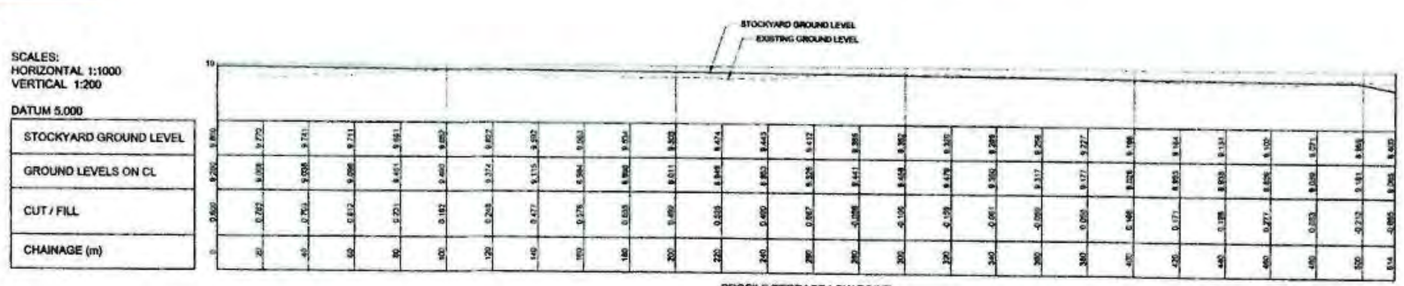


PLAN
SCALE 1:1000

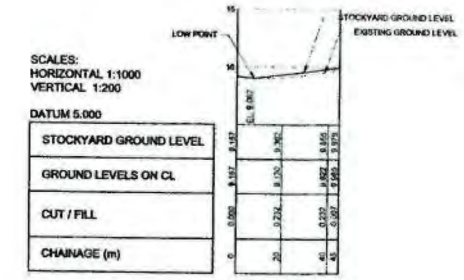
Note 1: Final surface fill changed to Iron Ore Rejects 200mm thick. See RFI-023 for details. Fill details see RFI-0010.

Note 2: Swale deleted from scope. See RFI-0100

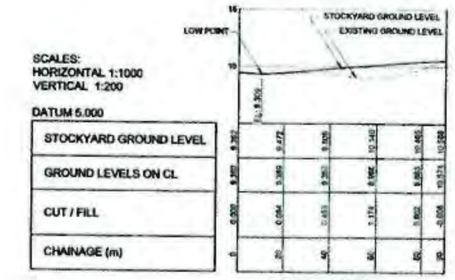
TYPICAL DETAIL : TIE-IN POINT
SCALE 1:100



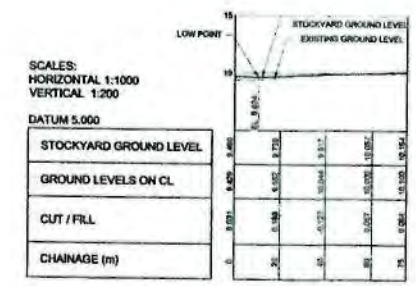
PROFILE TERRACE LOW POINT
FROM 0.000 TO 514.116



PROFILE SECTION A-A

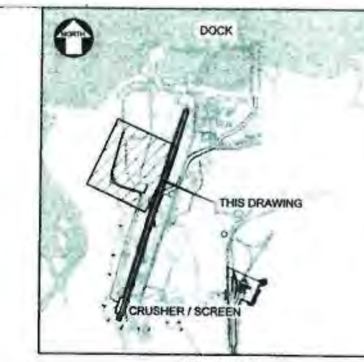


PROFILE SECTION B-B



PROFILE SECTION C-C

PROFILE SECTION D-D



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYERWORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-40000-221-294-0002-0001

LEGEND:

10.20	CONTOUR ELEVATION
43	SETTING OUT POINT NUMBER
EG	EXISTING GROUND
CH	CHAINAGE
EL	ELEVATION

STOCKYARD No. 1

POINT	E	N	LEVEL
ST1	503 223.052	7 975 650.441	11.020
ST2	503 220.022	7 975 650.976	10.000
ST3	503 202.185	7 975 645.000	9.500
ST4	503 160.671	7 975 652.740	9.651
ST5	503 136.070	7 975 658.716	9.500
ST6	503 124.576	7 975 682.575	9.500
ST7	503 048.229	7 975 680.425	8.700
ST8	503 038.395	7 975 690.283	9.650
ST9	503 026.337	7 975 696.053	9.650
ST10	503 014.815	7 975 705.208	9.650
ST11	503 006.632	7 975 715.561	9.650
ST12	502 998.488	7 975 724.898	9.643
ST13	502 991.956	7 975 737.006	9.623
ST14	502 987.728	7 975 747.804	9.614
ST15	502 984.312	7 975 763.769	9.601
ST16	502 983.825	7 975 777.576	9.591
ST17	502 987.422	7 975 798.579	9.650
ST18	502 991.746	7 975 815.874	9.542
ST22	503 046.008	7 976 012.373	9.300
ST23	503 046.993	7 976 022.281	9.300
ST24	503 055.860	7 976 020.930	9.400

SETTING OUT DATA TERRACE LOW POINT

NAME	CH	E	N	DETAILS
START	0.000	503 202.287	7 975 646.310	L 148.400m
BCC1 PI1 ECC1	148.400 286.493	503 060.100 502 976.948 502 996.729	7 975 691.768 7 975 716.582 7 975 800.593	R 90.000m DA 87°54'40" TL 86.779m AL 138.092m
END	514.116	503 055.860	7 976 020.830	L 227.623m

NUNA
NUNA EAST LTD

REDLINE DRAWING

CHANGES, ADDITIONS, DELETIONS AND RELOCATIONS IN RED INK USING STANDARD SYMBOLS, DELETIONS TO BE CLOUDED AND HATCHED.

REDLINE BY: ☑ CONSTRUCTION ☐ COMMISSIONING ☐ SUSTAINMENT

NAME/SIGN: Bradford Watkin COMPANY: Nuna East

DATE OF AS-BUILT: May 6, 2019 ☐ CHECK IF NO CHANGE

CHECKED BY:

NAME/SIGN: COMPANY:

Released for Use

PERMIT TO PRACTICE
HATCH LTD
Signature
Date
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

Bradford Watkin QA/QC Reviewed

FOR CONSTRUCTION

DRAWING No.	DRAWING TITLE
H353004-40000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-226-271-0009-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-226-271-0007-0001	STOCKYARD NO 1 - BERM (P-SWD-6) - PLAN/PROFILE

REFERENCE DRAWINGS

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC STAMP REMOVED	GPM	FH	13/07/2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/05/2018

REVISIONS

REG. PROFESSIONAL

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	GP MEADES	NR	18/05/2018
DESIGNER	B ROOS	NR	18/05/2018
CHECKER	F HUGO		2018-07-13
DESIGN COORD.	R GOOSEN		2018-07-13
RESP. ENG.	R HALIM		2018-07-13
LEAD DISC. ENG.	A GROBBELAAR		2018-07-13
AREA LEAD	V LAVRIC		2018-07-13
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		18-7-18

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD 1 - EXTENSION
LAYOUT

SCALE 1:1,000 OR AS NOTED

DWG. No. H353004-40000-221-272-0006-0001

REV 1

SHEET SIZE E

H353004-40000-221-273-0008-0001
DWG. No.

SECTION D - D

FOR LOCATION OF SECTIONS REFER TO DWG. No.
H353004-40000-221-272-0019-0001

SECTION C - C

FOR LOCATION OF SECTIONS REFER TO DWG. No.
H353004-40000-221-272-0019-0001

SECTION B - B

FOR LOCATION OF SECTIONS REFER TO DWG. No.
H353004-40000-221-272-0019-0001

SECTION A - A

FOR LOCATION OF SECTIONS REFER TO DWG. No.
H353004-40000-221-272-0019-0001

NUNA EAST LTD

REDLINE DRAWING

CHANGES, ADDITIONS, DELETIONS AND RELOCATIONS IN RED INK USING STANDARD SYMBOLS, DELETIONS TO BE CLOUDED AND HATCHED.

REDLINE BY: ✓ CONSTRUCTION ○ COMMISIONING ○ SUSTAINMENT
NAME/SIGN Bradford Watkin COMPANY Nuna East
DATE OF AS-BUILT: May 6, 2019 ☐ CHECK IF NO CHANGE
CHECKED BY:
NAME/SIGN: COMPANY:

Note 1: Final surface fill changed to Iron Ore Rejects 200mm thick. See RFI-023 for details. Fill details see RFI-0010.

Note 2: Swale deleted from scope. See RFI-0100

Released for Use

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date
PERMIT NUMBER: P 012
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0008-0001	STANDARD DRAWING - TYPICAL PAD, DITCH AND BERM SECTIONS
H353004-40000-221-273-0008-0002	STAGE 1 NEW STOCKYARD No.1 - CROSS SECTIONS SHEET 2
H353004-40000-221-272-0019-0001	STAGE 1 NEW STOCKYARD No.1 - LAYOUT PLAN

REFERENCE DRAWINGS

Bradford Watkin
QA/QC
Reviewed

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
0	APPROVED FOR CONSTRUCTION	IHB	FH	12/02/2019

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	
DESIGNER	I BARNARD	NR	
CHECKER	F HUGO		2019-02-15
DESIGN COORD	R GOOSEN		2019-02-15
RESP. ENG.	R HALIM		2019-02-15
LEAD DISC. ENG.	A GROBBELAAR		2019-02-15
AREA LEAD	V LAVRIC	V. Lavric	2019-02-15
ENG. MANAGER	R GOOSEN		2019-02-15
AREA MANAGER	T ATIBA		2019-02-15

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

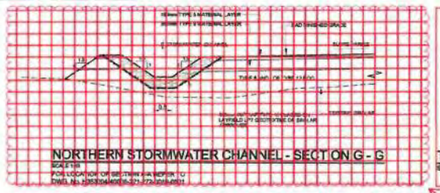
BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STAGE 1 - NEW STOCKYARD No. 1
CROSS SECTIONS - SHEET 1

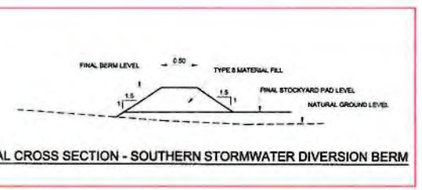
SCALE 1:1000 OR AS NOTED
DWG. No. H353004-40000-221-273-0008-0001
REV 0
SHEET SIZE E

DWG. No. H353004-40000-221-273-0008-0002

NORTHERN STORMWATER CHANNEL - SECTION G - G



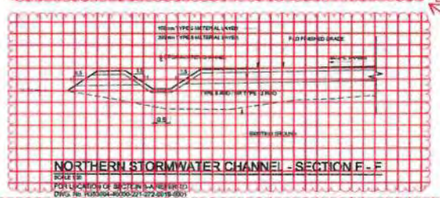
TYPICAL CROSS SECTION - SOUTHERN STORMWATER DIVERSION BERM



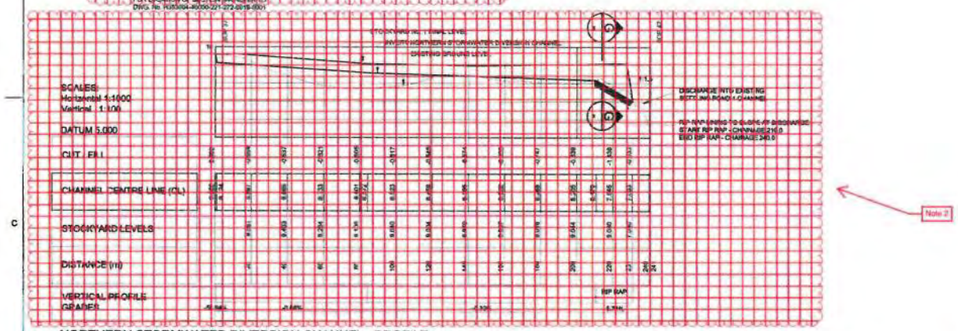
Note 2

Note 2

NORTHERN STORMWATER CHANNEL - SECTION F - F

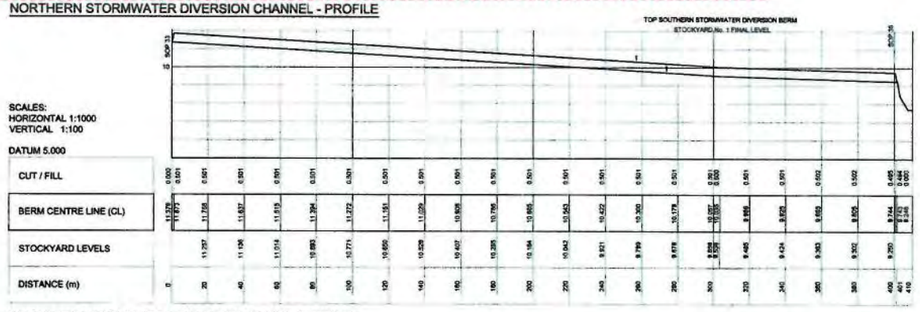


NORTHERN STORMWATER DIVERSION CHANNEL - PROFILE



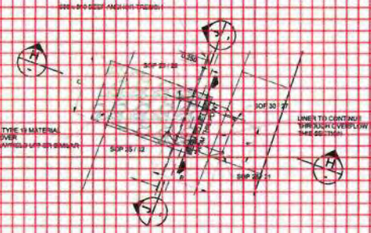
Note 2

SOUTHERN STORMWATER DIVERSION BERM - PROFILE



SECTION E - E

TYPICAL PLAN ON SPILLWAY



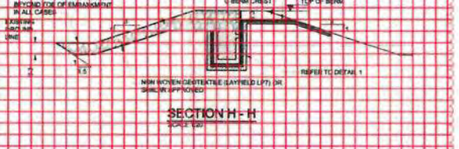
SCALE 1:25

SPILLWAY AND RIP RAP DIMENSIONS

SPILLWAY No.	A	B	C
2	2.000	3.160	x.xxx

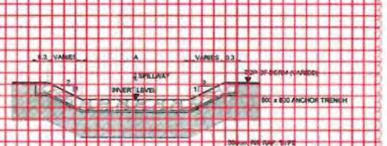
FOR LOCATION OF SPILLWAY AND SETTING OUT CO-ORDINATES (SOP) REFER TO DWG. No. H353004-40000-221-272-0019-0001

SECTION H - H



SCALE 1:50

SECTION J - J



SCALE 1:20

DETAIL 1 - ANCHOR TRENCH DETAIL

Note 2

Note 1: Final surface fill changed to Iron Ore Rejects 200mm thick. See RFI-023 for details. Fill details see RFI-0010.

Note 2: Swale deleted from scope. See RFI-0100

NUNA EAST LTD

REDLINE DRAWING

CHANGES, ADDITIONS, DELETIONS AND RELOCATIONS IN RED INK USING STANDARD SYMBOLS, DELETIONS TO BE CLOUDED AND HATCHED.

REDLINE BY: ☑ CONSTRUCTION ☐ COMMISIONING ☐ SUSTAINMENT

NAME/SIGN: Bradford Watkin COMPANY: Nuna East

DATE OF AS-BUILT: May 6, 2019 ☐ CHECK IF NO CHANGE

CHECKED BY:

NAME/SIGN: COMPANY:

Released for Use

PERMIT TO PRACTICE HATCH LTD

Signature: Date:

PERMIT HOLDER: P.Eng. "The Association of Professional Engineers, Geologists and Geophysicists of (NT/NU)"

H353004-40000-221-264-0008-0001	STANDARD DRAWING - TYPICAL PAD, DITCH AND BERM SECTIONS
H353004-40000-221-273-0008-0001	STAGE 1 NEW STOCKYARD No.1 - CROSS SECTIONS SHEET 1
H353004-40000-221-272-0019-0001	STAGE 1 NEW STOCKYARD No.1 - LAYOUT PLAN
DRAWING No.	DRAWING TITLE

REFERENCE DRAWINGS

Bradford Watkin QA/QC Reviewed

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
0	APPROVED FOR CONSTRUCTION	BB	FH	12/02/2019

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD		NR
DESIGNER	I BARNARD		NR
CHECKER	F HUGO		2019-02-12
DESIGN COORD.	R GOOSEN		2019-02-11
RESP. ENG.	R HALM		2019-02-11
LEAD DISC. ENG.	A GROBBELAAR		2019-02-12
AREA LEAD	V LAVRIC		2019-02-12
ENG. MANAGER	R GOOSEN		2019-02-12
AREA MANAGER	T ATIBA		2019-02-12

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STAGE 1 - NEW STOCKYARD No. 1
CROSS SECTIONS- SHEET 2

SCALE: 1:1,000 OR AS NOTED

DWG No. H353004-40000-221-273-0008-0002

REV 0

SHEET SIZE: E

SUSTAINMENT STAGES

E353004-CC006-400-465-0010 Rev 0

NUNA
NUNA EAST LTD

REQUEST FOR INFORMATION

Request

Contractor RFI #: 0010	**EPCM RFI #:** Click here to enter text.
Subject: Expansion Stage 3 Remaining Early Earthworks – Ore Pad Expansion	**Project Area:** Ore Pad Construction
Contractor: Nuna East Limited	**Name:** Brandon Urquhart
Contract #: H353004-CC006	**Date:** October 25, 2018

Type of Request:

☒ Information only ☐ Engineering Change Request (for changes to Issued for Construction drawings)

Related Drawings:
H353004-40000-221-272-0006-0001 Rev. 1
H353004-40000-228-271-0007-0001 Rev. 1

Description of Request:
Nuna East has been asked to develop an estimate for construction of an expansion to the BIM Ore Pad. Through study of the specifications and topography, we have encountered a few points that require further clarification:

1. In order to follow the Typical detail (H353004-00000-221-294-0002-0001), additional cut volumes of 41007M3 will be required. Is Nuna to construct the pad as per the typical detail (600mm of Type 12, 300mm of Type 8, and 100mm of Type 5) and move additional material, or will the pad design be altered.
2. Nuna will require instruction for a dump location for cut volumes from the pad footprint.
3. There is ice located within the footprint of the proposed expansion. Please identify a dump location for the ice.
4. The issued drawings describe a swail being constructed for water management. DWG files issued to survey for layout include a ditch. We require clarification as to which is correct and require the correct design to be issued to Nuna/survey.

Field Change Requests only: ☐ Potential Cost Impact ☐ Potential Schedule Impact

Response

1. As per the typical detail the following minimum layerworks are required below the finished final level of the terrace: 100mm Type 5 and 300mm Type 8. Where fill is required to achieve this min 400mm layerworks and more fill than 400mm is required, general fill must be used. General fill comprises of a combination of Type 8 and Type 12. Where the general fill depth exceeds 600mm (Below the 400mm minimum), Type 12 must be used to makeup the fill. . Where the fill depth is less than 600mm below the min 400mm, Type 8 must be used. Where excavation is require to get to the final design terrace levels, a maximum over excavation of 400mm below the final surface is required and **NOT** 1000mm. This will reduce the required cut volumes.
2. The dump location will be one of the historical borrow pits at Milne Port. Contact Hatch on site to finalize.
3. The ice can be taken to the established snow dump. Hatch on site can show this location.
4. The only ditch in this area must be the existing ditch, to be filled in where new earthworks are being constructed and tied into at the endpoint of the pad as per the typical detail for the tie in point on the drawing. For details use the 3D model of the Stockpile No 1 Expansion. The DWG file should not be used.

Response by:

Hatch Area Manager	Vlado Lavric	V. Lavric	Nov. 28,2018
Hatch Field Engineering Manager	Glen Peace	Glen O Peace	Nov. 28, 2018
	Name	Signature	Date

Project Name:	Mary River Expansion Stage 3	Project Number:	H353004
CWP No:		RFI No:0023	
Contractor: Nuna East Ltd.		Contract No: CC006	
Initiated By: Darko Filipic		Cost impact?	Y☒ / N☐
Date of Submittal: 2019-02-25		Schedule Impact?	Y☒ / N☐

Information Requested:

Nuna has been informed that BIM is requesting that rejected ore from the existing Ore Stockyard Pad is to be used as fill for the expansion of the pad. This is a change from the IFC drawings and specifications.

If waste ore is to be used as fill, Nuna requires the following information:

1) What is the quantity of iron ore material that is to be used for fill?
2) Where is the iron ore to be used in the layerworks? Is it to be used only as a surfacing layer in place of the Type 5 material, or is it to be used in place of the Type 8 or ROQ as well?
3) Is there a maximum lift thickness for the iron ore fill?
4) Are there any areas within the stockyard expansion pad that the iron ore cannot or be used (ie.in the perimeter berms, ditch bottoms)?
5) Aside from the Ore Stockyard Pad Extension, are there any other locations where the iron ore can be utilized as fill, if there is still a quantity remaining?

Reference Document No.	Revision	Title/Description
H353004-40000-221-272-0006-0001	1	Port Site Stockyard 1 – Extension Layout
H353004-40000-221-272-0007-0001	1	Port Site Stockyard No.1 – Berm (P-SWD-4) Drainage Plan
H353004-40000-221-294-0002-0001	1	Site Wide Standard Drawing Earthworks & Drainage Details

RFI Classification:

Design	☒	Construction	☐	Fabricator/Vendor	☐
Routine Request	☐	Clarification	☒	Other	☐

Project Response: [attach sufficient detail as required]

The top 200 mm of fill is to be iron ore material. If the fill depth is greater than 400 mm to finished level type 12 can be used as bulk fill material up to 400 mm from the finished surface. Type 8 material is to be used to bring the level to within 200 mm of the final surface. Material is to be compacted according to the Placement of Fill Specification H353004-0000-221-078-0001. QA is to be performed. Ore material is not to be used in berms or ditch bottoms.

RFI Follow-up Requirements:

Contract Order Issued Yes ☐/No ☐ (Insert associated tracking #) Back-Charge Required (Yes ☐/No ☐)

As-Built Required Yes ☐/No ☐ Materials Required (Yes ☐/No ☐)

RFI Receipts and Approvals

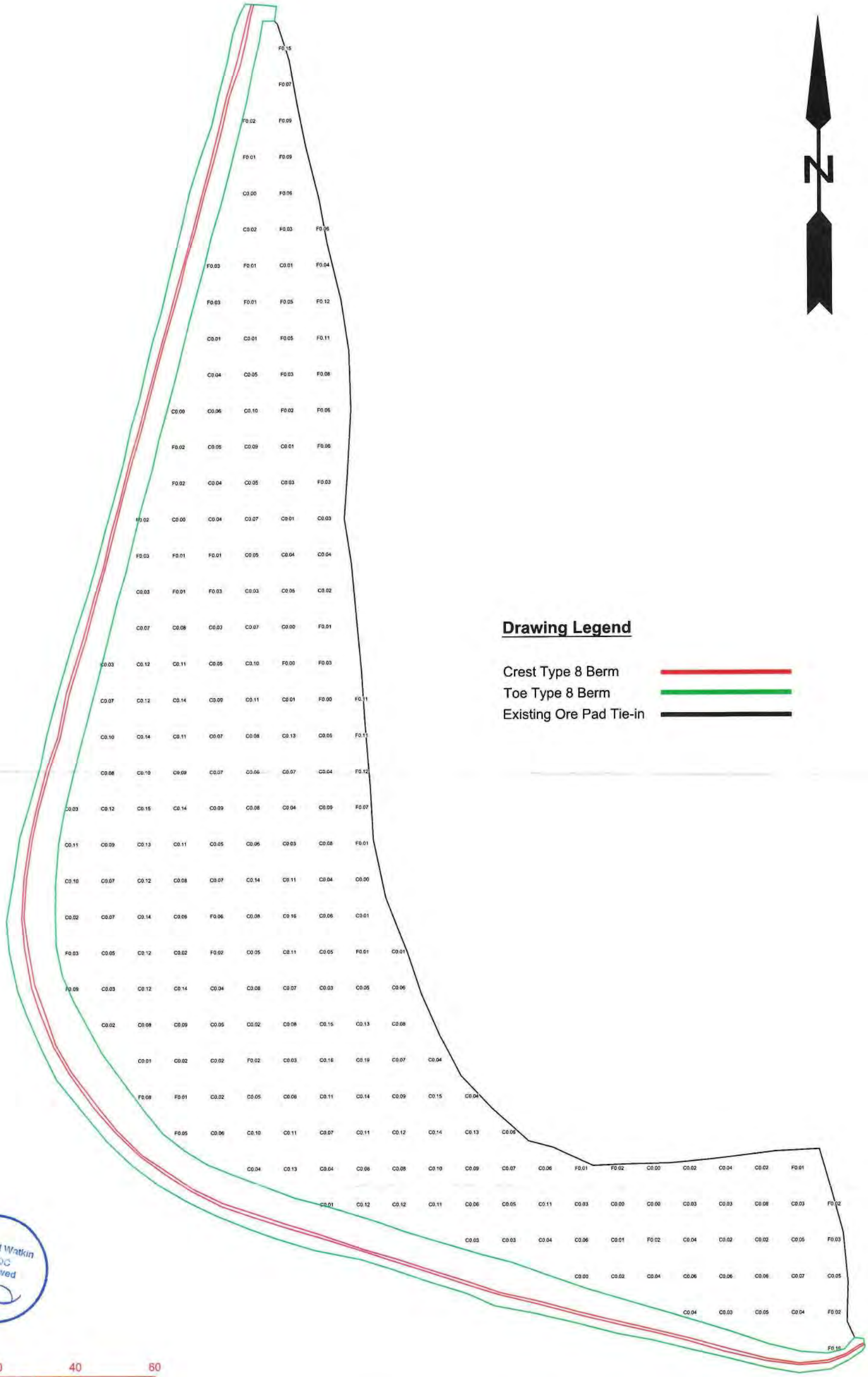
Stakeholder	Name	Signature	Date <YYYY-MM-DD>
Hatch Construction Management	Nick Mills		Mar 1/19
Hatch Engineering Home Office ☐ Site ☐	Glen Peace	G Peace	2019-03-01
Hatch Project Management			
Client (as required):			

Request for Information

Note: The response to this RFI is NOT an authorization to perform a change to the Contract. Work may proceed in accordance with the response only if such work involves NO change in cost or schedule. In the case where the response may involve change in cost or schedule, a Contractual instrument must be issued by Hatch and received by the Contractor before the response can be executed. Where no Contractual instrument is indicated, action must be taken in accordance with (reference appropriate Contract Sections that authorize execution of any change in schedule and cost).

Appendix B

Survey Data



Drawing Legend

Crest Type 8 Berm

Toe Type 8 Berm

Existing Ore Pad Tie-in

Bradford Watkin
OM/OC
Reviewed

NOTES: NUMBERS SHOWN ON SURFACE REPRESENT DEVIATIONS FROM DESIGN GRADE (IN METERS)	OWNER: BAFFINLAND IRON MINES LP	PREPARED BY: NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0		Ore Stockyard Expansion Stage 1
	PROJECT: MARY RIVER EXPANSION PROJECT			DRAWING TITLE: Survey Asbuilt of Reject Ore Surface and Type 8 Rock-fill Berm
		DRAWN BY: MATT WALSH	SCALE: BARSCALE / DATE: May 10 2019	DRAWING NAME (YYMMDD): AB 190519 ORE PAD FG w/BERM.dwg

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG) Pad Proper

Port Site Ore Stockyard Expansion Survey Points

Point Number	Northing	Easting	Elevation	Description
3124100	7975855.775	503016.675	9.43	AB ORE FG
3124101	7975853.4	503024.297	9.619	AB ORE FG
3124102	7975850.993	503032.904	9.74	AB ORE FG
3124103	7975848.83	503041.092	9.845	AB ORE FG
3124104	7975846.718	503050.279	10.051	AB ORE FG
3124105	7975844.409	503058.847	10.076	AB ORE FG
3124106	7975842.134	503067.157	10.219	AB ORE FG
3124107	7975840.295	503076.14	10.388	AB ORE FG
3124108	7975831.867	503076.099	10.396	AB ORE FG
3124109	7975831.9	503075.977	10.366	AB ORE FG
3124110	7975834.861	503065.429	10.27	AB ORE FG
3124111	7975837.401	503057.263	10.136	AB ORE FG
3124112	7975837.468	503057.189	10.13	AB ORE FG
3124113	7975840.174	503048.826	10.09	AB ORE FG
3124114	7975842.327	503040.548	9.878	AB ORE FG
3124115	7975845.2	503032.334	9.719	AB ORE FG
3124116	7975847.933	503024.626	9.572	AB ORE FG
3124117	7975851.099	503016.077	9.442	AB ORE FG
3124118	7975842.479	503014.139	9.505	AB ORE FG
3124119	7975840.127	503023.051	9.645	AB ORE FG
3124120	7975837.855	503031.47	9.834	AB ORE FG
3124121	7975835.328	503040.422	9.893	AB ORE FG
3124122	7975833.206	503048.643	10.119	AB ORE FG
3124123	7975831.391	503056.413	10.156	AB ORE FG
3124124	7975829.401	503064.251	10.28	AB ORE FG
3124125	7975827.257	503074.094	10.344	AB ORE FG
3124126	7975818.753	503073.871	10.289	AB ORE FG
3124127	7975821.393	503063.249	10.334	AB ORE FG
3124128	7975825.091	503055.278	10.166	AB ORE FG
3124129	7975828.714	503046.698	10.172	AB ORE FG
3124130	7975830.677	503039.065	9.945	AB ORE FG
3124131	7975833.702	503029.423	9.82	AB ORE FG
3124132	7975835.529	503019.322	9.659	AB ORE FG
3124133	7975836.679	503012.421	9.502	AB ORE FG
3124134	7975828.023	503010.879	9.502	AB ORE FG
3124135	7975825.824	503019.287	9.656	AB ORE FG
3124136	7975823.608	503027.831	9.885	AB ORE FG
3124137	7975821.719	503035.445	9.942	AB ORE FG
3124138	7975820.008	503044.648	10.073	AB ORE FG

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG)

3124139	7975817.474	503052.803	10.145	AB ORE FG
3124140	7975815.058	503061.632	10.251	AB ORE FG
3124141	7975812.583	503070.533	10.234	AB ORE FG
3124142	7975810.756	503076.772	10.203	AB ORE FG
3124143	7975800.617	503076.357	10.189	AB ORE FG
3124144	7975803.922	503067.578	10.218	AB ORE FG
3124145	7975807.664	503058.789	10.107	AB ORE FG
3124146	7975810.781	503049.99	10.044	AB ORE FG
3124147	7975813.188	503041.458	9.973	AB ORE FG
3124148	7975814.745	503032.955	9.895	AB ORE FG
3124149	7975816.287	503023.487	9.861	AB ORE FG
3124150	7975818.504	503014.126	9.67	AB ORE FG
3124151	7975820.384	503007.479	9.477	AB ORE FG
3124152	7975811.117	503005.458	9.528	AB ORE FG
3124153	7975809.357	503014.202	9.631	AB ORE FG
3124154	7975807.361	503022.237	9.79	AB ORE FG
3124155	7975804.987	503030.675	9.847	AB ORE FG
3124156	7975802.703	503038.906	9.895	AB ORE FG
3124157	7975800.54	503047.317	9.997	AB ORE FG
3124158	7975798.239	503055.808	9.99	AB ORE FG
3124159	7975796.323	503063.762	10.089	AB ORE FG
3124160	7975794.033	503071.7	10.24	AB ORE FG
3124161	7975792.2	503078.787	10.218	AB ORE FG
3124162	7975782.88	503079.067	10.186	AB ORE FG
3124163	7975784.76	503069.081	10.149	AB ORE FG
3124164	7975786.704	503060.135	10.044	AB ORE FG
3124165	7975788.662	503051.327	9.981	AB ORE FG
3124166	7975790.385	503042.453	9.876	AB ORE FG
3124167	7975792.344	503033.239	9.835	AB ORE FG
3124168	7975794.776	503024.129	9.835	AB ORE FG
3124169	7975796.722	503015.547	9.654	AB ORE FG
3124170	7975799.115	503007.383	9.593	AB ORE FG
3124171	7975800.313	503002.565	9.452	AB ORE FG
3124172	7975791.399	502999.768	9.53	AB ORE FG
3124173	7975789.415	503008.851	9.601	AB ORE FG
3124174	7975786.785	503018.116	9.708	AB ORE FG
3124175	7975783.777	503027.994	9.808	AB ORE FG
3124176	7975780.879	503036.703	9.849	AB ORE FG
3124177	7975779.499	503046.138	10.022	AB ORE FG
3124178	7975777.797	503056.491	10.175	AB ORE FG
3124179	7975776.551	503067.059	10.132	AB ORE FG
3124180	7975774.993	503076.363	10.152	AB ORE FG
3124181	7975773.031	503082.93	10.114	AB ORE FG
3124182	7975764.019	503083.107	10.091	AB ORE FG

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3124183	7975762.791	503072.709	10.08	AB ORE FG
3124184	7975763.959	503062.176	10.121	AB ORE FG
3124185	7975764.773	503051.184	9.96	AB ORE FG
3124186	7975767.392	503039.999	9.736	AB ORE FG
3124187	7975769.45	503028.78	9.801	AB ORE FG
3124188	7975771.666	503019.099	9.79	AB ORE FG
3124189	7975774.287	503009.311	9.602	AB ORE FG
3124190	7975776.368	503000.001	9.544	AB ORE FG
3124191	7975765.792	502998.859	9.425	AB ORE FG
3124192	7975764.707	503009.017	9.6	AB ORE FG
3124193	7975764.007	503020.469	9.774	AB ORE FG
3124194	7975763.022	503029.784	9.722	AB ORE FG
3124195	7975762.451	503039.238	9.773	AB ORE FG
3124196	7975760.684	503048.891	9.901	AB ORE FG
3124197	7975758.683	503059.243	10.001	AB ORE FG
3124198	7975757.75	503069.386	9.998	AB ORE FG
3124199	7975755.926	503079.663	9.989	AB ORE FG
3124200	7975754.63	503089.826	10.149	AB ORE FG
3124201	7975744.44	503092.937	10.123	AB ORE FG
3124202	7975744.396	503077.63	10.103	AB ORE FG
3124203	7975746.948	503065.803	9.906	AB ORE FG
3124204	7975749.117	503054.29	9.983	AB ORE FG
3124205	7975748.38	503043.732	9.77	AB ORE FG
3124206	7975749.194	503031.563	9.823	AB ORE FG
3124207	7975751.656	503021.454	9.758	AB ORE FG
3124208	7975753.854	503011.048	9.588	AB ORE FG
3124209	7975753.393	503002.471	9.453	AB ORE FG
3124210	7975742.763	503005.89	9.483	AB ORE FG
3124211	7975743.834	503015.409	9.649	AB ORE FG
3124212	7975742.428	503025.156	9.733	AB ORE FG
3124213	7975740.913	503035.894	9.78	AB ORE FG
3124214	7975738.673	503047.221	9.745	AB ORE FG
3124215	7975737.584	503056.119	9.912	AB ORE FG
3124216	7975736.289	503066.062	10.074	AB ORE FG
3124217	7975736.293	503076.072	10.11	AB ORE FG
3124218	7975736.066	503085.122	10.074	AB ORE FG
3124219	7975736.411	503096.471	10.06	AB ORE FG
3124220	7975727.979	503101.601	10.053	AB ORE FG
3124221	7975728.052	503088.979	10.013	AB ORE FG
3124222	7975727.971	503076.346	10.114	AB ORE FG
3124223	7975727.783	503064.91	9.867	AB ORE FG
3124224	7975727.348	503053.918	9.736	AB ORE FG
3124225	7975727.167	503042.87	9.708	AB ORE FG
3124226	7975731.363	503031.084	9.657	AB ORE FG

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3124227	7975733.365	503020.113	9.604	AB ORE FG
3124228	7975732.365	503012.234	9.506	AB ORE FG
3124229	7975724.479	503018.428	9.5	AB ORE FG
3124230	7975724.29	503027.936	9.576	AB ORE FG
3124231	7975723.148	503037.463	9.696	AB ORE FG
3124232	7975722.166	503047.556	9.74	AB ORE FG
3124233	7975721.915	503058.1	9.784	AB ORE FG
3124234	7975720.261	503068.709	9.904	AB ORE FG
3124235	7975719.195	503079.401	9.985	AB ORE FG
3124236	7975718.928	503089.813	9.989	AB ORE FG
3124237	7975721.218	503099.532	10.107	AB ORE FG
3124238	7975722.722	503105.526	10.031	AB ORE FG
3124239	7975714.393	503112.942	10.124	AB ORE FG
3124240	7975704.158	503112.008	10.036	AB ORE FG
3124241	7975694.721	503111.823	9.904	AB ORE FG
3124242	7975684.808	503111.267	9.781	AB ORE FG
3124243	7975685.121	503102.453	9.834	AB ORE FG
3124244	7975694.581	503104.282	9.919	AB ORE FG
3124245	7975704.021	503105.743	10.037	AB ORE FG
3124246	7975713.3	503106.69	10.097	AB ORE FG
3124247	7975713.056	503096.202	10.03	AB ORE FG
3124248	7975704.992	503093.438	9.929	AB ORE FG
3124249	7975696.387	503091.738	9.842	AB ORE FG
3124250	7975687.897	503090.139	9.811	AB ORE FG
3124251	7975691.011	503080.635	9.819	AB ORE FG
3124252	7975700.575	503082.236	9.836	AB ORE FG
3124253	7975711.132	503082.117	9.942	AB ORE FG
3124254	7975711.01	503071.307	9.812	AB ORE FG
3124255	7975701.369	503070.211	9.732	AB ORE FG
3124256	7975694.304	503068.353	9.69	AB ORE FG
3124257	7975697.712	503059.233	9.754	AB ORE FG
3124258	7975706.779	503058.727	9.799	AB ORE FG
3124259	7975715.874	503057.227	9.803	AB ORE FG
3124260	7975714.23	503047.876	9.735	AB ORE FG
3124261	7975706.267	503048.147	9.752	AB ORE FG
3124262	7975710.528	503036.887	9.62	AB ORE FG
3124263	7975718.514	503036.851	9.633	AB ORE FG
3124264	7975717.777	503026.796	9.523	AB ORE FG
3124265	7975680.779	503119.103	9.775	AB ORE FG
3124266	7975692.706	503120.451	9.917	AB ORE FG
3124267	7975704.028	503121.903	10.065	AB ORE FG
3124268	7975708.317	503123.117	10.042	AB ORE FG
3124269	7975705.968	503132.335	10.092	AB ORE FG
3124270	7975698.099	503130.208	10.038	AB ORE FG

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3124271	7975689.248	503128.983	9.99	AB ORE FG
3124272	7975679.016	503126.559	9.782	AB ORE FG
3124273	7975674.51	503136.763	9.835	AB ORE FG
3124274	7975684.702	503139.486	9.922	AB ORE FG
3124275	7975694.133	503142.127	9.971	AB ORE FG
3124276	7975700.904	503143.338	10.056	AB ORE FG
3124277	7975701.326	503152.737	10.091	AB ORE FG
3124278	7975691.94	503151.193	10.001	AB ORE FG
3124279	7975682.686	503149.446	9.903	AB ORE FG
3124280	7975671.802	503147.867	9.806	AB ORE FG
3124281	7975669.414	503159.263	9.845	AB ORE FG
3124282	7975684.186	503162.031	9.926	AB ORE FG
3124283	7975692.693	503163.288	10.095	AB ORE FG
3124284	7975701.616	503164.486	10.177	AB ORE FG
3124285	7975702.695	503175.734	10.264	AB ORE FG
3124286	7975693.756	503174.055	10.147	AB ORE FG
3124287	7975685.464	503172.56	10.069	AB ORE FG
3124288	7975677.422	503170.559	9.992	AB ORE FG
3124289	7975668.117	503168.169	9.897	AB ORE FG
3124290	7975663.931	503179.317	9.917	AB ORE FG
3124291	7975673.741	503181.28	10	AB ORE FG
3124292	7975683.624	503183.504	10.075	AB ORE FG
3124293	7975693.182	503185.765	10.297	AB ORE FG
3124294	7975701.536	503187.071	10.297	AB ORE FG
3124295	7975702.13	503197.665	10.353	AB ORE FG
3124296	7975693.187	503196.773	10.317	AB ORE FG
3124297	7975684.369	503196.61	10.206	AB ORE FG
3124298	7975675.317	503194.992	10.071	AB ORE FG
3124299	7975667.336	503193.099	10.014	AB ORE FG
3124300	7975660.511	503191.324	9.925	AB ORE FG
3124301	7975657.708	503200.954	9.908	AB ORE FG
3124302	7975667.499	503202.282	10.096	AB ORE FG
3124303	7975678.262	503202.829	10.178	AB ORE FG
3124304	7975689.508	503203.618	10.237	AB ORE FG
3124305	7975695.871	503204.327	10.301	AB ORE FG
3124306	7975703.692	503204.869	10.306	AB ORE FG
3124307	7975689.221	503209.103	10.279	AB ORE FG
3124308	7975677.739	503210.254	10.174	AB ORE FG
3124309	7975667.899	503210.035	10.098	AB ORE FG
3124310	7975657.334	503209.371	9.899	AB ORE FG
41240000	7976017.499	503054.352	8.604	AB LIMIT ORE FG
41240001	7976016.429	503053.83	8.721	AB LIMIT ORE FG
41240002	7976004.257	503051.325	9.122	AB LIMIT ORE FG
41240003	7975999.36	503050.336	9.061	AB LIMIT ORE FG

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41240004	7975985.676	503047.135	9.07	AB LIMIT ORE FG
41240005	7975972.208	503043.651	9.139	AB LIMIT ORE FG
41240006	7975960.853	503041.329	9.127	AB LIMIT ORE FG
41240007	7975947.954	503037.979	9.125	AB LIMIT ORE FG
41240008	7975933.917	503034.122	9.138	AB LIMIT ORE FG
41240009	7975920.451	503030.712	9.199	AB LIMIT ORE FG
41240010	7975908.819	503027.228	9.198	AB LIMIT ORE FG
41240011	7975897.642	503024.55	9.172	AB LIMIT ORE FG
41240012	7975897.641	503024.594	9.168	AB LIMIT ORE FG
41240013	7975877.342	503018.975	9.239	AB LIMIT ORE FG
41240014	7975864.356	503015.664	9.24	AB LIMIT ORE FG
41240015	7975853.251	503012.555	9.348	AB LIMIT ORE FG
41240016	7975841.897	503010.067	9.335	AB LIMIT ORE FG
41240017	7975831.82	503007.145	9.346	AB LIMIT ORE FG
41240018	7975821.387	503004.162	9.388	AB LIMIT ORE FG
41240019	7975809.289	503000.932	9.378	AB LIMIT ORE FG
41240020	7975794.607	502997.467	9.414	AB LIMIT ORE FG
41240021	7975778.729	502995.852	9.383	AB LIMIT ORE FG
41240022	7975762.507	502995.963	9.366	AB LIMIT ORE FG
41240023	7975750.416	502999.044	9.351	AB LIMIT ORE FG
41240024	7975737.841	503005.228	9.439	AB LIMIT ORE FG
41240025	7975726.038	503012.702	9.444	AB LIMIT ORE FG
41240026	7975715.995	503020.438	9.371	AB LIMIT ORE FG
41240027	7975705.239	503031.521	9.46	AB LIMIT ORE FG
41240028	7975699.6	503042.299	9.509	AB LIMIT ORE FG
41240029	7975693.421	503057.132	9.585	AB LIMIT ORE FG
41240030	7975689.05	503069.868	9.598	AB LIMIT ORE FG
41240031	7975685.547	503081.903	9.62	AB LIMIT ORE FG
41240032	7975681.689	503094.398	9.669	AB LIMIT ORE FG
41240033	7975678.425	503106.075	9.682	AB LIMIT ORE FG
41240034	7975673.364	503122.176	9.617	AB LIMIT ORE FG
41240035	7975668.883	503136.854	9.687	AB LIMIT ORE FG
41240036	7975665.437	503148.114	9.707	AB LIMIT ORE FG
41240037	7975661.68	503161.279	9.762	AB LIMIT ORE FG
41240038	7975658.416	503172.155	9.801	AB LIMIT ORE FG
41240039	7975654.581	503185.767	9.733	AB LIMIT ORE FG
41240040	7975650.249	503198.791	9.87	AB LIMIT ORE FG
41240041	7975649.35	503210.224	9.708	AB LIMIT ORE FG
41240042	7975657.573	503213.542	9.889	AB LIMIT ORE FG
41240043	7975668.565	503213.806	10.142	AB LIMIT ORE FG
41240044	7975682.005	503212.506	10.123	AB LIMIT ORE FG
41240045	7975694.06	503209.304	10.321	AB LIMIT ORE FG
41240046	7975705.445	503205.991	10.259	AB LIMIT ORE FG
41240047	7975704.91	503193.97	10.293	AB LIMIT ORE FG

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41240092	7975851.914	503027.909	9.638	AB ORE FG
41240093	7975851.508	503038.118	9.711	AB ORE FG
41240094	7975864.35	503040.801	9.655	AB ORE FG
41240095	7975878.369	503043.781	9.715	AB ORE FG
41240096	7975890.257	503046.345	9.704	AB ORE FG
41240097	7975902.599	503048.944	9.703	AB ORE FG
41240098	7975915.964	503052.122	9.679	AB ORE FG
41240099	7975929.443	503054.607	9.635	AB ORE FG
41240100	7975941.736	503057.639	9.599	AB ORE FG
41240101	7975954.598	503060.854	9.655	AB ORE FG
41240102	7975960.71	503063.401	9.596	AB ORE FG
41240103	7975949.19	503069.776	9.806	AB ORE FG
41240104	7975938.287	503066.447	9.71	AB ORE FG
41240105	7975927.909	503063.61	9.72	AB ORE FG
41240106	7975915.423	503061.524	9.783	AB ORE FG
41240107	7975904.746	503058.627	9.773	AB ORE FG
41240108	7975889.642	503054.894	9.803	AB ORE FG
41240109	7975879.621	503051.588	9.853	AB ORE FG
41240110	7975869.316	503051.641	9.905	AB ORE FG
41240111	7975857.592	503048.858	9.888	AB ORE FG
41240112	7975848.124	503047.192	9.961	AB ORE FG
41240113	7975848.15	503047.262	9.952	AB ORE FG
41240114	7975842.627	503047.094	9.999	AB ORE FG
41240115	7975842.635	503057.762	10.107	AB ORE FG
41240116	7975853.928	503059.553	10.097	AB ORE FG
41240117	7975865.595	503060.98	10.085	AB ORE FG
41240118	7975877.52	503062.927	9.975	AB ORE FG
41240119	7975888.774	503064.887	9.989	AB ORE FG
41240120	7975899.973	503066.902	9.963	AB ORE FG
41240121	7975913.369	503068.832	9.94	AB ORE FG
41240122	7975883.333	503071.108	10.144	AB ORE FG
41240123	7975872.874	503072.229	10.208	AB ORE FG
41240124	7975862.976	503067.857	10.188	AB ORE FG
41240125	7975850.982	503066.044	10.194	AB ORE FG
41240126	7975842.617	503065.966	10.215	AB ORE FG

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Port Site Ore Stockyard Expansion Survey Points

Point Number	Northing	Easting	Elevation	Description
3129500	7975651.677	503218.047	9.935	T8 BERM
3129501	7975651.21	503218.11	9.935	T8 BERM
3129502	7975650.681	503218.403	9.56	T8 BERM
3129503	7975652.848	503217.99	9.71	T8 BERM
3129504	7975653.21	503215.553	9.756	T8 BERM
3129505	7975651.125	503216.879	10.005	T8 BERM
3129506	7975650.581	503217.127	10.01	T8 BERM
3129507	7975649.545	503217.699	9.51	T8 BERM
3129508	7975650.003	503212.751	9.774	T8 BERM
3129509	7975648.715	503213.238	9.998	T8 BERM
3129510	7975648.265	503213.45	9.94	T8 BERM
3129511	7975646.998	503213.991	9.294	T8 BERM
3129512	7975644.549	503208.96	9.145	T8 BERM
3129513	7975646.365	503208.436	9.925	T8 BERM
3129514	7975646.982	503208.342	9.941	T8 BERM
3129515	7975648.932	503208.205	9.727	T8 BERM
3129516	7975649.379	503200.911	9.729	T8 BERM
3129517	7975646.229	503200.409	10.056	T8 BERM
3129518	7975645.722	503200.364	10.023	T8 BERM
3129519	7975643.518	503200.279	9.116	T8 BERM
3129520	7975645.085	503191.04	9.131	T8 BERM
3129521	7975646.911	503191.233	10.019	T8 BERM
3129522	7975647.541	503191.373	10.008	T8 BERM
3129523	7975651.425	503192.186	9.751	T8 BERM
3129524	7975655.119	503181.162	9.718	T8 BERM
3129525	7975650.502	503179.723	10.069	T8 BERM
3129526	7975649.466	503179.63	10.029	T8 BERM
3129527	7975648.084	503178.91	9.305	T8 BERM
3129528	7975650.359	503168.796	9.198	T8 BERM
3129529	7975652.506	503169.357	10.145	T8 BERM
3129530	7975653.245	503169.678	10.096	T8 BERM
3129531	7975658.151	503171.123	9.812	T8 BERM
3129532	7975660.916	503161.618	9.702	T8 BERM
3129533	7975655.451	503160.243	10.079	T8 BERM
3129534	7975654.776	503160.072	10.11	T8 BERM
3129535	7975652.702	503159.334	9.223	T8 BERM
3129536	7975654.455	503149.786	9.058	T8 BERM
3129537	7975657.048	503150.078	9.958	T8 BERM
3129538	7975657.806	503150.289	9.928	T8 BERM

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3129539	7975663.77	503151.747	9.684	T8 BERM
3129540	7975666.757	503141.652	9.636	T8 BERM
3129541	7975660.38	503139.156	9.91	T8 BERM
3129542	7975659.642	503139.01	9.895	T8 BERM
3129543	7975657.388	503138.42	9.085	T8 BERM
3129544	7975659.924	503127.54	9.076	T8 BERM
3129545	7975662.509	503128.137	9.95	T8 BERM
3129546	7975663.31	503128.35	9.935	T8 BERM
3129547	7975670.531	503130.692	9.621	T8 BERM
3129548	7975674.126	503120.616	9.584	T8 BERM
3129549	7975665.655	503117.636	10.063	T8 BERM
3129550	7975665.056	503117.429	10.041	T8 BERM
3129551	7975662.058	503116.09	9.108	T8 BERM
3129552	7975665.414	503108.784	9.088	T8 BERM
3129553	7975667.595	503109.325	10.024	T8 BERM
3129554	7975668.468	503109.612	10.056	T8 BERM
3129555	7975676.333	503112.301	9.691	T8 BERM
3129556	7975679.837	503100.565	9.698	T8 BERM
3129557	7975672.249	503097.795	10.059	T8 BERM
3129558	7975671.487	503097.655	10.062	T8 BERM
3129559	7975669.138	503096.867	9.154	T8 BERM
3129560	7975672.208	503088.047	9.18	T8 BERM
3129561	7975674.382	503088.587	10.063	T8 BERM
3129562	7975675.134	503088.874	10.027	T8 BERM
3129563	7975682.543	503091.183	9.673	T8 BERM
3129564	7975685.438	503083.101	9.707	T8 BERM
3129565	7975677.585	503080.19	9.993	T8 BERM
3129566	7975677.092	503080.109	9.987	T8 BERM
3129567	7975674.899	503079.481	9.319	T8 BERM
3129568	7975677.404	503066.752	9.063	T8 BERM
3129569	7975681.143	503067.155	9.946	T8 BERM
3129570	7975681.917	503067.417	10.013	T8 BERM
3129571	7975689.497	503070.313	9.653	T8 BERM
3129572	7975691.908	503061.306	9.659	T8 BERM
3129573	7975684.772	503057.948	9.974	T8 BERM
3129574	7975683.828	503057.689	9.934	T8 BERM
3129575	7975680.592	503056.145	9.015	T8 BERM
3129576	7975683.229	503048.51	9.146	T8 BERM
3129577	7975686.562	503049.564	9.916	T8 BERM
3129578	7975687.618	503049.861	9.951	T8 BERM
3129579	7975694.961	503053.323	9.583	T8 BERM
3129580	7975698.25	503044.885	9.527	T8 BERM
3129581	7975690.513	503041.407	9.91	T8 BERM
3129582	7975689.683	503040.941	9.87	T8 BERM

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG)

41240048	7975701.129	503179.794	10.284	AB LIMIT ORE FG
41240049	7975700.116	503165.773	10.18	AB LIMIT ORE FG
41240050	7975700.438	503152.138	10.063	AB LIMIT ORE FG
41240051	7975703.538	503135.817	10.036	AB LIMIT ORE FG
41240052	7975707.738	503125.377	10.077	AB LIMIT ORE FG
41240053	7975716.43	503115.883	10.071	AB LIMIT ORE FG
41240054	7975725.763	503107.07	9.978	AB LIMIT ORE FG
41240055	7975737.086	503101.247	9.999	AB LIMIT ORE FG
41240056	7975748.457	503096.24	10.036	AB LIMIT ORE FG
41240057	7975759.772	503092.537	10.135	AB LIMIT ORE FG
41240058	7975775.11	503086.483	10.23	AB LIMIT ORE FG
41240059	7975791.027	503083.125	10.171	AB LIMIT ORE FG
41240060	7975805.696	503082.333	10.126	AB LIMIT ORE FG
41240061	7975823.92	503080.907	10.269	AB LIMIT ORE FG
41240062	7975837.922	503080.019	10.349	AB LIMIT ORE FG
41240063	7975853.624	503078.597	10.363	AB LIMIT ORE FG
41240064	7975867.673	503077.344	10.267	AB LIMIT ORE FG
41240065	7975879.903	503075.449	10.184	AB LIMIT ORE FG
41240066	7975892.387	503076.374	10.09	AB LIMIT ORE FG
41240067	7975910.315	503077.453	10.014	AB LIMIT ORE FG
41240068	7975926.412	503076.959	9.992	AB LIMIT ORE FG
41240069	7975940.678	503074.843	9.841	AB LIMIT ORE FG
41240070	7975956.069	503071.216	9.802	AB LIMIT ORE FG
41240071	7975968.325	503069.066	9.626	AB LIMIT ORE FG
41240072	7975983.07	503065.493	9.377	AB LIMIT ORE FG
41240073	7975994.539	503063.297	9.326	AB LIMIT ORE FG
41240074	7976006.68	503061.189	9.124	AB LIMIT ORE FG
41240075	7976016.804	503057.952	8.791	AB LIMIT ORE FG
41240076	7976015.985	503056.302	8.788	AB ORE FG
41240077	7976003.814	503056.353	9.098	AB ORE FG
41240078	7975992.976	503055.737	9.173	AB ORE FG
41240079	7975982.2	503054.682	9.259	AB ORE FG
41240080	7975971.687	503053.109	9.308	AB ORE FG
41240081	7975961.252	503051.206	9.393	AB ORE FG
41240082	7975949.796	503049.064	9.39	AB ORE FG
41240083	7975939.524	503046.472	9.392	AB ORE FG
41240084	7975927.476	503044.018	9.426	AB ORE FG
41240085	7975915.991	503040.949	9.433	AB ORE FG
41240086	7975905.452	503039.08	9.487	AB ORE FG
41240087	7975894.392	503036.67	9.462	AB ORE FG
41240088	7975883.719	503034.52	9.486	AB ORE FG
41240089	7975874.673	503032.204	9.501	AB ORE FG
41240090	7975862.06	503030.215	9.492	AB ORE FG
41240091	7975862.037	503030.137	9.501	AB ORE FG

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG) Berm

3129583	7975687.026	503039.531	9.083	T8 BERM
3129584	7975690.992	503031.634	9.079	T8 BERM
3129585	7975693.913	503032.767	9.903	T8 BERM
3129586	7975694.569	503033.124	9.949	T8 BERM
3129587	7975701.293	503037.331	9.483	T8 BERM
3129588	7975705.231	503031.018	9.498	T8 BERM
3129589	7975699.212	503026.395	9.912	T8 BERM
3129590	7975698.475	503025.888	9.894	T8 BERM
3129591	7975695.58	503023.806	9.041	T8 BERM
3129592	7975700.868	503016.814	9.014	T8 BERM
3129593	7975703.701	503018.736	9.835	T8 BERM
3129594	7975703.983	503019.311	9.825	T8 BERM
3129595	7975709.819	503025.002	9.369	T8 BERM
3129596	7975716.278	503019.851	9.405	T8 BERM
3129597	7975710.235	503011.894	9.876	T8 BERM
3129598	7975710.711	503012.429	9.802	T8 BERM
3129599	7975708.066	503009.278	9.061	T8 BERM
3129600	7975715.418	503003.309	9.084	T8 BERM
3129601	7975717.472	503005.693	9.914	T8 BERM
3129602	7975717.97	503006.634	9.915	T8 BERM
3129603	7975723.4	503014.63	9.419	T8 BERM
3129604	7975732.217	503008.15	9.444	T8 BERM
3129605	7975726.643	502999.174	9.91	T8 BERM
3129606	7975726.997	502999.84	9.904	T8 BERM
3129607	7975724.906	502995.697	8.912	T8 BERM
3129608	7975732.49	502991.991	8.927	T8 BERM
3129609	7975734.133	502994.906	9.818	T8 BERM
3129610	7975734.621	502995.471	9.908	T8 BERM
3129611	7975739.171	503004.446	9.449	T8 BERM
3129612	7975746.926	503000.279	9.431	T8 BERM
3129613	7975744.307	502992.247	9.878	T8 BERM
3129614	7975743.904	502991.049	9.819	T8 BERM
3129615	7975742.396	502987.626	8.984	T8 BERM
3129616	7975749.752	502984.927	8.924	T8 BERM
3129617	7975750.653	502988.813	9.792	T8 BERM
3129618	7975751.417	502989.73	9.774	T8 BERM
3129619	7975753.735	502997.327	9.328	T8 BERM
3129620	7975761.949	502995.653	9.325	T8 BERM
3129621	7975761.468	502987.967	9.801	T8 BERM
3129622	7975761.393	502986.936	9.804	T8 BERM
3129623	7975760.668	502982.695	8.849	T8 BERM
3129624	7975769.065	502982.002	8.9	T8 BERM
3129625	7975769.848	502986.205	9.82	T8 BERM
3129626	7975769.939	502986.801	9.853	T8 BERM

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG) Berm

3129627	7975769.635	502995.474	9.363	T8 BERM
3129628	7975778.94	502995.533	9.383	T8 BERM
3129629	7975780.811	502987.552	9.865	T8 BERM
3129630	7975780.854	502986.83	9.822	T8 BERM
3129631	7975781.386	502984.107	9.495	T8 BERM
3129632	7975792.208	502985.711	9.517	T8 BERM
3129633	7975791.919	502988.531	9.922	T8 BERM
3129634	7975791.831	502989.24	9.888	T8 BERM
3129635	7975790.446	502996.476	9.409	T8 BERM
3129636	7975797.887	502997.822	9.326	T8 BERM
3129637	7975799.732	502990.991	9.774	T8 BERM
3129638	7975799.843	502990.379	9.741	T8 BERM
3129639	7975800.544	502988.269	9.487	T8 BERM
3129640	7975811.88	502991.506	9.407	T8 BERM
3129641	7975811.999	502993.468	9.735	T8 BERM
3129642	7975811.769	502994.237	9.754	T8 BERM
3129643	7975809.751	503000.627	9.322	T8 BERM
3129644	7975817.795	503002.693	9.348	T8 BERM
3129645	7975819.808	502996.971	9.807	T8 BERM
3129646	7975820.01	502996.33	9.807	T8 BERM
3129647	7975820.805	502993.375	9.498	T8 BERM
3129648	7975833.144	502996.712	9.47	T8 BERM
3129649	7975832.225	502998.713	9.833	T8 BERM
3129650	7975832.088	502999.565	9.851	T8 BERM
3129651	7975830.257	503006	9.358	T8 BERM
3129652	7975844.919	503009.844	9.295	T8 BERM
3129653	7975847.014	503004.188	9.756	T8 BERM
3129654	7975847.338	503003.472	9.793	T8 BERM
3129655	7975848.024	503001.099	9.442	T8 BERM
3129656	7975859.104	503004.692	9.441	T8 BERM
3129657	7975858.921	503006.617	9.784	T8 BERM
3129658	7975858.853	503007.369	9.755	T8 BERM
3129659	7975857.278	503012.898	9.369	T8 BERM
3129660	7975865.25	503015.281	9.275	T8 BERM
3129661	7975866.996	503009.705	9.765	T8 BERM
3129662	7975867.093	503009.171	9.75	T8 BERM
3129663	7975867.719	503007.191	9.367	T8 BERM
3129664	7975876.599	503009.558	9.339	T8 BERM
3129665	7975876.038	503011.232	9.713	T8 BERM
3129666	7975875.842	503011.96	9.704	T8 BERM
3129667	7975874.272	503017.525	9.219	T8 BERM
3129668	7975882.626	503019.51	9.224	T8 BERM
3129669	7975884.693	503014.236	9.697	T8 BERM
3129670	7975884.859	503013.694	9.72	T8 BERM

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG) Berm

3129671	7975885.368	503012.051	9.378	T8 BERM
3129672	7975895.693	503014.858	9.244	T8 BERM
3129673	7975895.322	503016.356	9.698	T8 BERM
3129674	7975895.139	503017.021	9.708	T8 BERM
3129675	7975893.32	503022.643	9.141	T8 BERM
3129676	7975902.502	503024.71	9.155	T8 BERM
3129677	7975904.283	503019.66	9.68	T8 BERM
3129678	7975904.425	503018.999	9.668	T8 BERM
3129679	7975905.168	503016.905	9.187	T8 BERM
3129680	7975913.795	503019.404	9.152	T8 BERM
3129681	7975913.302	503021.324	9.647	T8 BERM
3129682	7975913.163	503021.984	9.65	T8 BERM
3129683	7975911.499	503027.276	9.099	T8 BERM
3129684	7975919.058	503029.291	9.132	T8 BERM
3129685	7975920.826	503024.005	9.626	T8 BERM
3129686	7975920.985	503023.486	9.615	T8 BERM
3129687	7975921.745	503021.203	9.151	T8 BERM
3129688	7975929.18	503022.995	9.001	T8 BERM
3129689	7975928.348	503025.445	9.646	T8 BERM
3129690	7975928.174	503026.008	9.652	T8 BERM
3129691	7975926.495	503031.139	9.142	T8 BERM
3129692	7975934.597	503033.182	9.176	T8 BERM
3129693	7975936.157	503028.322	9.6	T8 BERM
3129694	7975936.302	503027.743	9.591	T8 BERM
3129695	7975936.908	503025.347	9.072	T8 BERM
3129696	7975945.65	503027.436	8.882	T8 BERM
3129697	7975944.678	503030.003	9.604	T8 BERM
3129698	7975944.473	503030.792	9.609	T8 BERM
3129699	7975942.885	503035.443	9.158	T8 BERM
3129700	7975950.059	503037.476	9.187	T8 BERM
3129701	7975951.385	503032.458	9.624	T8 BERM
3129702	7975951.426	503032.012	9.643	T8 BERM
3129703	7975952.172	503029.108	8.839	T8 BERM
3129704	7975960.135	503031.114	8.797	T8 BERM
3129705	7975959.644	503034.331	9.646	T8 BERM
3129706	7975959.423	503034.936	9.637	T8 BERM
3129707	7975958.069	503039.403	9.199	T8 BERM
3129708	7975966.88	503042.105	9.259	T8 BERM
3129709	7975969.443	503037.461	9.667	T8 BERM
3129710	7975969.658	503036.908	9.678	T8 BERM
3129711	7975970.753	503033.612	8.833	T8 BERM
3129712	7975980.106	503036.596	8.917	T8 BERM
3129713	7975979.239	503039.504	9.698	T8 BERM
3129714	7975978.926	503040.208	9.716	T8 BERM

Mary River Expansion Project
Baffinland - Milne Port Earthworks H353004-CC006
Job File CC006-0019A
Ore Stockyard Expansion (Stage 1)
Final As-Built (FG) Berm

3129715	7975977.454	503044.896	9.136	T8 BERM
3129716	7975986.836	503047.235	9.046	T8 BERM
3129717	7975988.175	503042.646	9.685	T8 BERM
3129718	7975988.453	503041.873	9.688	T8 BERM
3129719	7975988.987	503039.777	9.106	T8 BERM
3129720	7975997.283	503041.697	9.194	T8 BERM
3129721	7975996.727	503043.862	9.647	T8 BERM
3129722	7975996.525	503044.538	9.645	T8 BERM
3129723	7975995.201	503049.299	9.063	T8 BERM
3129724	7976003.799	503051.055	9.098	T8 BERM
3129725	7976005.309	503047.662	9.6	T8 BERM
3129726	7976005.442	503046.524	9.678	T8 BERM
3129727	7976006.12	503044.089	9.158	T8 BERM
3129728	7976014.129	503045.692	9.008	T8 BERM
3129729	7976013.05	503048.422	9.468	T8 BERM
3129730	7976012.657	503049.418	9.442	T8 BERM
3129731	7976011.929	503052.958	8.911	T8 BERM
3129732	7976017.718	503057.181	8.658	T8 BERM
3129733	7976017.722	503053.928	8.652	T8 BERM
3129734	7976018.591	503050.531	9.334	T8 BERM
3129735	7976018.68	503049.774	9.288	T8 BERM
3129736	7976019.372	503047.514	8.97	T8 BERM
3129737	7976022.424	503049.17	8.857	T8 BERM
3129738	7976022.201	503050.785	9.099	T8 BERM
3129739	7976022.091	503051.44	9.079	T8 BERM
3129740	7976022.117	503053.988	8.491	T8 BERM
3129741	7976021.717	503057.683	8.653	T8 BERM

Appendix C

Drawing Illustration in Relation to Lease Boundaries

SAVED: I:\1\02\00181\48\A\Acad\FIGS\B04 R0, 7/13/2018 9:52:56 AM , CVALENTI PRINTED: 7/13/2018 9:57:34 AM, Layout1, CVALENTI
XREF FILE(S): X-C-TOPO-MILN-INDEX; X-C-TOPO-MILN-SITE-LAY; X-C-TOPO-MINE-MILN-FROM-OTHRS-FEB21-18; x-c-topo-mine-miln-from-othrs-jun28-18 IMAGE FILE(S): 170929 - Tote Rd KM 2 to 5 Laydowns_reduced Rev C GIS Baffinland Logo milne port changes - feb 21-2018

502 200 E | 502 800 E | 503 400 E | 504 000 E | 504 600 E | 505 200 E

7 976 300 N | 7 975 700 N | 7 975 100 N | 7 974 500 N | 7 973 900 N | 7 973 300 N | 7 972 700 N

(1) MILNE PORT ORE STOCKPILE WATER MANAGEMENT UPGRADES

MILNE INLET

PHILLIPS CREEK

FORESHORE LEASE BOUNDARY
ORE DOCK
PROPOSED FREIGHT DOCK
EFFLUENT DISCHARGE POINT
MARINE FUEL MANIFOLD BUILDING
HTO CABIN
CULVERT
P-SWD-7
EFFLUENT AND FUEL PIPELINES
SERVICE AREA
FUEL TANK FARM
ORE STOCKPILES
WATER MANAGEMENT BERM
CAMP SITE INFRASTRUCTURE
LP2
P-SWD-3
RELOCATED FACILITIES
CULVERT
CULVERTS
SNOW DUMP
LAND FARM
RIDGE
MAINTENANCE BUILDING
CULVERT
RIDGE
IMPERMEABLE GEOMEMBRANE
CAMP PAD
W10A
W10B
P-SWD-5
CULVERTS BLOCKED OFF
CULVERT
LP3
LP5
LP7
P-SWD-6
CULVERT
TOTE ROAD (OLD ALIGNMENT)
TOTE ROAD (NEW ALIGNMENT)
COMMERCIAL LEASE BOUNDARY
COMMERCIAL LEASE BOUNDARY
TOTE ROAD

SCALE A 120 60 0 200 400 600 m

LEGEND:

- WATER
- BORROW AREAS
- QUARRY AREA
- ROAD
- RIVER/STREAM/DRAINAGE
- QIA SURFACE COMMERCIAL LEASE IMPACT BOUNDARY
- POTENTIAL DEVELOPMENT AREA BOUNDARY
- FOREHORE LEASE BOUNDARY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 17N.
2. TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
3. CONTOUR INTERVAL IS 10 METRES.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	13JUL'18	ISSUED WITH TRANSMITTAL	CM	CJV	CM

Baffinland

MARY RIVER PROJECT

MILNE PORT SITE PLAN
MODIFICATION REQUEST #9

Knight Piésold CONSULTING

P/A NO. NB102-181/48 | REF NO. NB18-00410

FIGURE A1 | REV 0

Appendix D

Contact Information

Role	Name	Email
Preparer of Report	Glen Peace, P.Eng.	glen.peace@hatch.com
Responsible for Construction	Marlon Coakley	marlon.coakley@hatch.com
Baffinland Representative	Christopher Murray	Christopher.murray@baffinland.com

Appendix E

Quality Documentation

ACCEPTANCE OF COMPLETION OF CONSTRUCTION

DECLARATION

NOTE: This declaration shall be completed and signed by the person responsible, in whole or part, for the acceptance of the Quality Control Turnover documentation for the construction, installation, testing and inspection of the project indicated below.

1. **Owner of the facility:** Baffinland Iron Mines Corporation
2. **Contractor:** Nuna East Limited
3. **Construction:** Ore Stockyard Number 1 Expansion
4. **Location:** Port Site Ore Stockyard No. 1
5. **Description:** Expansion of existing Ore Stockyard No. 1

STATEMENT OF COMPLIANCE

I, the undersigned, declare that the described project complies in all respects with the regulations and codes for construction, installation, testing and inspection of the above listed construction and all applicable turnover documentation has been forwarded to and accepted by the owner.

Nuna Representative:

Signature	Print Name	Title	Date
	Bradford Watkin	QC Coordinator	July 8, 2019

Client Representative:

Signature	Print Name	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 15, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0001
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 1 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 15, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chalsson /	Materials Technician	July 8/2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 16, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0002
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 2 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 16, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chaisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 17, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0003
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 3 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 17, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 18, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0004
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 4 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 18, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0005
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 5 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chaisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 25, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0006
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 6 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 25, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 26, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0007
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 7 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 26, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chisholm /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	SUBGRADE APPROVAL REPORT	Exhibit 1-8b QDE Revision 0 Page 1 of 1

Date: April 29, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0008
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard Expansion No. 1 Stage 1		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 8 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

INSPECTION DESCRIPTION		Verified (Initial)
Organic Soil Present.	☐ YES ☑ NO ☐ N/A	
Snow or Ice Present.	☑ YES ☐ NO ☐ N/A	
Ponded Water Present.	☐ YES ☑ NO ☐ N/A	
Water Seepage.	☐ YES ☑ NO ☐ N/A	
Frozen Soil Present.	☑ YES ☐ NO ☐ N/A	
Excavation Cleared of Foreign and Loose Soil Material.	☑ YES ☐ NO ☐ N/A	
Excavation Matches Design and IFC drawings.	☑ YES ☐ NO ☐ N/A	
Was Over Excavation Required. Depth: (_____)	☐ YES ☑ NO ☐ N/A	
Excavation Satisfactory and Accepted.	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 29, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 15, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0001
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 1 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 15, 2019
Contractor QC Designate – Print/Sign	Title	Date
Ricky Chaisson /	Materials Technician	July 8, 2018
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 16, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0002
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 2 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 16, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 17, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0003
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 3 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 17, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 18, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0004
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 4 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 18, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisso /	Materials Technician	July 8/19
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0005
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 5 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

/			
Construction Designate – Print/Sign		Title	Date
Bradford Watkin /		QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign		Title	Date
Rob chaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 25, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0006
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 6 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 25, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 26, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0007
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 7 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

Construction Designate – Print/Sign Bradford Watkin /	Title QC Coordinator	Date April 26, 2019
Contractor QC Designate – Print/Sign Rob Chrisson /	Title Material Technician	Date July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	PROOF ROLL COMPACTION VERIFICATION REPORT	Exhibit 1-5 QDE Revision 0 Page 1 of 2

Date: April 29, 2019	**Project:** Mary River Expansion Stage 3	**ITP #:** CC006-0019A	**Report No.:** 0008
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Subsystem:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 8 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1
Proof Rolled With: A loaded 745 Articulated Haul Truck

INSPECTION DESCRIPTION		Verified (Initial)
Visible Deflections	☐ YES ☑ NO ☐ N/A	
Rebound of Surface	☐ YES ☑ NO ☐ N/A	
Formation of Cracks Patterns	☐ YES ☑ NO ☐ N/A	
Ridging Between Wheel Ridges	☐ YES ☑ NO ☐ N/A	
Inconsistency Compaction Between Areas	☐ YES ☑ NO ☐ N/A	
Surface Uniform and Level	☑ YES ☐ NO ☐ N/A	
Proof Roll Test Satisfactory and Accepted	☑ YES ☐ NO ☐ N/A	
Elevation Record (Survey)	☑ YES ☐ NO ☐ N/A	

Comments:

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 29, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chaisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD

AUTHORIZATION FOR BACKFILL

Exhibit :1-3a QDE
Revision 0

Date: April 15, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0001
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐	**Excavation Permit No.:** N/A		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 1 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

INSPECTION DESCRIPTION:		Verified (Initial)
1. Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2. Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3. Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4. All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5. Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6. Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7. Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8. Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9. Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10. Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11. Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12. Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13. Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Christian	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

INSPECTION DESCRIPTION:		Verified (Initial)
1. Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2. Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3. Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4. Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5. Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6. Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7. Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8. Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 15, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 16, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0002
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐		**Excavation Permit No.:** N/A	
Drawing No.: H353004-40000-221-272-0006-0001			**Rev.:** 1

Area / Section Inspected: Area 2 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Christian	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 16, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 17, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0003
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐	**Excavation Permit No.:** N/A		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 3 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Christian	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA MINE EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 17, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chalsson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 18, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0004
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐	**Excavation Permit No.:** N/A		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 4 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

INSPECTION DESCRIPTION:		Verified (Initial)
1. Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2. Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3. Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4. All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5. Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6. Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7. Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8. Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9. Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10. Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11. Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12. Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13. Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Chrisman	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

INSPECTION DESCRIPTION:		Verified (Initial)
1. Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2. Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3. Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4. Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5. Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6. Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7. Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8. Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA MINA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 18, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0005
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐		**Excavation Permit No.:** N/A	
Drawing No.: H353004-40000-221-272-0006-0001			**Rev.:** 1

Area / Section Inspected: Area 5 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Chrisson	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA MINA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chaisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 25, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0006
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐	**Excavation Permit No.:** N/A		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 6 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Chalsson	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA MINING EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 25, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chaisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 26, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0007
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐	**Excavation Permit No.:** N/A		
Drawing No.: H353004-40000-221-272-0006-0001		**Rev.:** 1	

Area / Section Inspected: Area 7 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Christian	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 26, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chrisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

NUNA NUNA EAST LTD	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Date: April 29, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0008
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Location: Milne Port	**Elevation:** N/A	**Sub-System:** N/A	
Area: Milne Port	**Area Description:** Ore Stockyard No. 1 Expansion Stage 1		
Compaction Required Yes ☑ No ☐		**Excavation Permit No.:** N/A	
Drawing No.: H353004-40000-221-272-0006-0001			**Rev.:** 1

Area / Section Inspected: Area 8 on marked up drawing H353004-40000-221-272-0006-0001 Rev 1

PRE-BACK FILL INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Excavation cleared of frozen material, foreign objects and debris.	☑ YES ☐ NO ☐ N/A	
2.	Water seepage or ponded water present in excavation.	☐ YES ☑ NO ☐ N/A	
3.	Organic and loose soil present.	☐ YES ☑ NO ☐ N/A	
4.	All installations in the excavation are complete.	☐ YES ☐ NO ☑ N/A	
5.	Concrete substructures complete.	☐ YES ☐ NO ☑ N/A	
6.	Electrical installation(s) complete.	☐ YES ☐ NO ☑ N/A	
7.	Piping installation(s) complete.	☐ YES ☐ NO ☑ N/A	
8.	Sewer vents and manhole installation complete.	☐ YES ☐ NO ☑ N/A	
9.	Frost blocks installed as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
10.	Geotextile fabric installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
11.	Insulation installed per IFC drawings.	☐ YES ☐ NO ☑ N/A	
12.	Culverts installation(s) as per specification and IFC drawings.	☐ YES ☐ NO ☑ N/A	
13.	Overall condition of base is suitable for backfilling and compaction.	☑ YES ☐ NO ☐ N/A	

APPROVAL TO PROCEED WITH BACKFILL

Contractor QC Designate		Client Designate	
Bradford Watkin		Rob Christian	
Name (print)	Signature	Name (print)	Signature

IN PROCESS INSPECTION

	INSPECTION DESCRIPTION:		Verified (Initial)
1.	Backfill material is free of foreign material and conforms to specification.	☑ YES ☐ NO ☐ N/A	
2.	Survey check of Location, dimensions and shape of excavation or base.	☑ YES ☐ NO ☐ N/A	
3.	Lift thickness confirmed, and compaction testing performed in accordance with specification.	☑ YES ☐ NO ☐ N/A	
4.	Warning tape(s) installed, depth and type from final grade: (_____),(_____).	☐ YES ☐ NO ☑ N/A	
5.	Red concrete installed over utilities.	☐ YES ☐ NO ☑ N/A	
6.	Soil density test / Sieve tests performed as per specification and test reports completed.	☐ YES ☑ NO ☐ N/A	See Note in comments
7.	Moisture levels acceptable.	☐ YES ☐ NO ☑ N/A	
8.	Final elevation of area is in accordance to IFC drawings.	☑ YES ☐ NO ☐ N/A	

	AUTHORIZATION FOR BACKFILL	Exhibit :1-3a QDE Revision 0

Comments:
Note: At time of construction the material testing program per specification was not available, no sieve testing was conducted, although site Hatch QA verbally confirmed the materials were acceptable.

Attach additional supporting documents, data, or test results to this Report as required

/		
Construction Designate – Print/Sign	Title	Date
Bradford Watkin /	QC Coordinator	April 29, 2019
Contractor QC Designate – Print/Sign	Title	Date
Rob Chisson /	Materials Technician	July 8, 2019
Client QA Designate – Print/Sign	Title	Date

Baffinland – Milne Port Earthworks H353004-CC006

Quality Surveillance Report

Sub-Grade Approval

Project Name:	Mary River Expansion Project
Job File #(s):	Nuna: CC006-0019A
Description of Area Inspected:	*Sub-Grade Approval* ***Work Scope Location:*** *Ore Stockyard Expansion (Stage 1)* ***Location Section:*** *See attached Mapping*
Parties Present at Inspection	*Bradford Watkin, Darko Filipic, Brandon Urquhart (Representing Nuna), Robert Chaisson , Ken MacRae (Allnorth representing Hatch)*

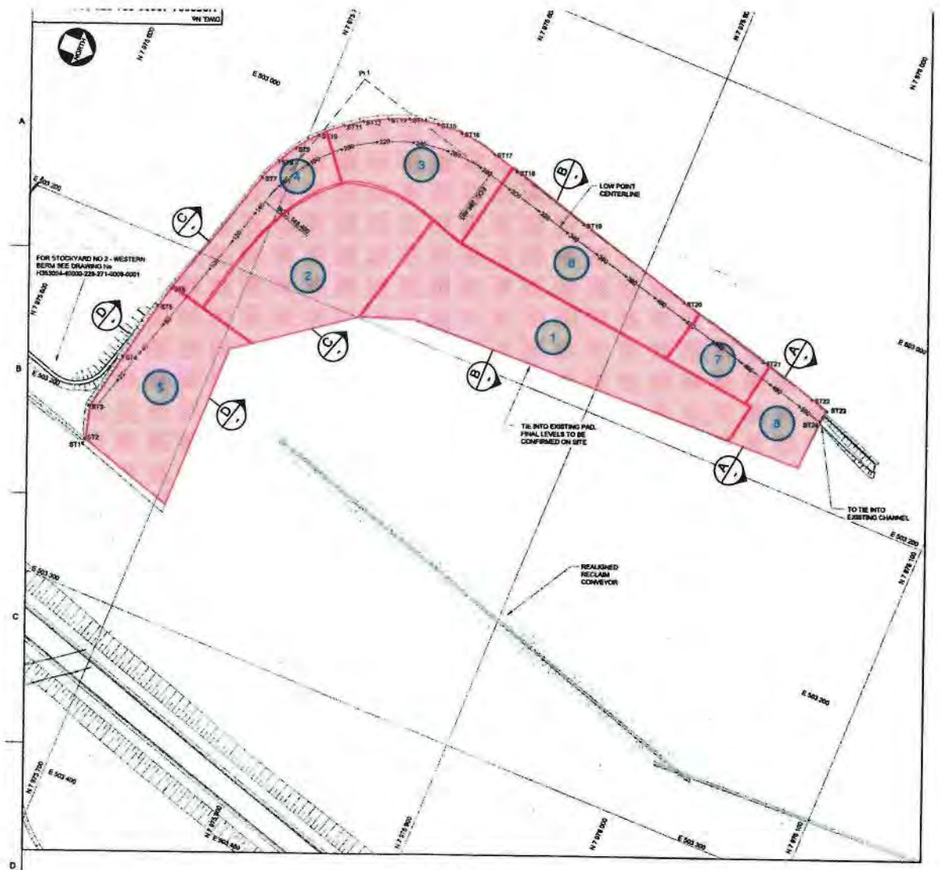
Comments:

A visual inspection of the Ore Stockyard Expansion Pad surface/sub-grade including a proof roll was completed prior to placement of fill material.

Sub-grade: *The sub-grade surface was found to be free of ice, snow and debris. The proof roll indicated the sub-grade was acceptable to specification at time of inspection.*

See attached Drawing(s):

Area number:	Date:	Description of Work	Nuna Representative	Hatch Representative
1.	4/15/19	Sub-grade approval		RC
2.	4/16/19	Sub-grade approval		RC
3.	4/17/19	Sub-grade approval		KMR
4.	4/18/19	Sub-grade approval		KMR
5.	4/19/19	Sub-grade approval		KMR
6.	4/25/19	Sub-grade approval		KMR
7.	4/26/19	Sub-grade approval		KMR
8.	4/29/19	Sub-grade approval		KMR



PLAN
SCALE 1:1000

Subgrade approval

TYPICAL DETAIL : TIE-IN POINT
SCALE 1:100

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL	GROUND LEVELS ON CL	CUT / FILL	CHAINAGE (m)
9.800	9.200	0.600	0
9.770	9.008	0.763	20
9.741	9.038	0.703	40
9.711	9.099	0.612	60
9.681	9.451	0.231	80
9.652	9.460	0.192	100
9.622	9.374	0.248	120
9.592	9.115	0.477	140
9.563	8.984	0.578	160
9.534	8.898	0.635	180
9.503	9.011	0.492	200
9.474	8.949	0.525	220
9.441	8.952	0.490	240
9.412	9.326	0.087	260
9.385	9.441	-0.056	280
9.352	9.456	-0.104	300
9.320	9.479	-0.159	320
9.289	9.350	-0.061	340
9.258	9.317	-0.059	360
9.227	9.177	0.050	380
9.196	9.028	0.168	400
9.164	8.993	0.171	420
9.134	8.939	0.195	440
9.102	8.829	0.273	460
9.071	9.039	0.033	480
8.969	9.181	-0.212	500
8.400	8.985	-0.585	514

PROFILE TERRACE LOW POINT
FROM 0.000 TO 514.116

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL	GROUND LEVELS ON CL	CUT / FILL	CHAINAGE (m)
9.157	9.157	0.000	0
9.362	9.130	0.232	20
9.859	9.622	0.237	40
9.879	9.565	0.307	45

PROFILE SECTION A-A

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL	GROUND LEVELS ON CL	CUT / FILL	CHAINAGE (m)
9.302	9.302	0.000	0
9.472	9.388	0.084	20
9.808	9.760	0.048	40
10.140	8.966	1.174	60
10.465	9.863	0.602	80
10.568	10.574	-0.006	90

PROFILE SECTION B-B

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL	GROUND LEVELS ON CL	CUT / FILL	CHAINAGE (m)
9.480	9.429	0.051	0
9.739	9.552	0.188	20
9.917	10.044	-0.127	40
10.087	10.030	0.057	60
10.154	10.100	0.054	75

PROFILE SECTION C-C

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL	GROUND LEVELS ON CL	CUT / FILL	CHAINAGE (m)
9.880	9.880	0.000	0
9.849	9.022	0.827	20
10.078	9.578	0.501	40
10.258	10.240	0.018	55

PROFILE SECTION D-D

KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYERWORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-00000-221-294-0002-0001

LEGEND:

10.20	CONTOUR ELEVATION
43	SETTING OUT POINT NUMBER
EG	EXISTING GROUND
CH	CHAINAGE
EL	ELEVATION

STOCKYARD No. 1

POINT	E	N	LEVEL
ST1	503 223.052	7 975 650.441	11.020
ST2	503 229.022	7 975 650.975	10.000
ST3	503 202.185	7 975 646.800	9.900
ST4	503 169.871	7 975 652.740	9.851
ST5	503 156.070	7 975 658.716	9.800
ST6	503 124.836	7 975 662.575	9.800
ST7	503 048.229	7 975 685.425	9.700
ST8	503 038.296	7 975 690.283	9.650
ST9	503 026.337	7 975 696.063	9.650
ST10	503 014.815	7 975 705.208	9.650
ST11	503 004.832	7 975 715.951	9.650
ST12	502 998.485	7 975 724.898	9.643
ST13	502 991.864	7 975 737.006	9.623
ST14	502 987.728	7 975 747.804	9.614
ST15	502 984.312	7 975 763.769	9.601
ST16	502 983.625	7 975 777.576	9.591
ST17	502 987.422	7 975 798.579	9.580
ST18	502 991.745	7 975 813.874	9.542
ST22	503 048.008	7 976 012.373	9.300
ST23	503 048.980	7 976 022.281	9.300
ST24	503 065.880	7 976 020.930	8.400

SETTING OUT DATA TERRACE LOW POINT

NAME	CH	E	N	DETAILS
START	0.000	503 202.297	7 975 649.310	L 148.400m
BCC1 PI1 ECC1	148.400 286.493	503 080.100 502 978.948 502 996.720	7 975 691.768 7 975 716.680 7 975 800.893	R 90.000m DA 87°54'40" TL 86.779m AL 138.092m
END	514.116	503 065.880	7 976 020.930	L 227.623m

Released for Use

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date 2018-07-13
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-228-271-0009-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-228-271-0007-0001	STOCKYARD NO 1 - BERM (P-SWD-4) - PLAN/PROFILE

REFERENCE DRAWINGS

Bradford Watkin
QA/QC
Reviewed

REGISTERED PROFESSIONAL ENGINEER
R. HALIM
LICENSEE
L2147
2018-07-13
NWT/NU

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC STAMP REMOVED	GPM	FH	13/07/2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/06/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	GP MEADES	NR	18/05/2018
DESIGNER	B ROOS	NR	18/05/2018
CHECKER	F HUGO		2018-07-13
DESIGN COORD.	R GOOSEN		2018-07-13
RESP. ENG.	R HALIM		2018-07-13
LEAD DISC. ENG.	A GROBBELAAR		2018-07-13
AREA LEAD	V LAVRIC		2018-07-13
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		18-7-18

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD 1 - EXTENSION
LAYOUT

SCALE 1:1,000 OR AS NOTED
DWG No. H353004-40000-221-272-0006-0001
REV 1
SHEET SIZE E

Subgrade Approval

(1) Approved Subgrade April 15/19
(2) Approved Subgrade April 16/19
(3) Approved Subgrade April 17/19
(4) Approved Subgrade April 18/19
(5) Approved Subgrade April 19/19
(6) Approved Subgrade April 25/19
(7) Approved Subgrade April 26/19
(8) Approved Subgrade April 29/19

NUNA EAST LTD

COMPACTION REPORT

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0001
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 1 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 (TYPE 12 PLACEMENT)

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill and method of compaction used:			
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	14:00	Area 1	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 18, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0002
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 2 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 (TYPE 12 PLACEMENT)

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill and method of compaction used:			
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	10:00	Area 2	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 18, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD

COMPACTION REPORT

Exhibit 1-6 QDE
Revision 2

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0003
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 2 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 (TYPE 12 PLACEMENT)

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill and method of compaction used:			
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	16:00	Area 3	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rda Chaissac /		materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD

COMPACTION REPORT

Exhibit 1-6 QDE
Revision 2

Date: April 19, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0004
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 4 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – TYPE 12 PLACEMENT

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill and method of compaction used:			
☐ Sand ☐ Clay ☐ Loam ☐ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	15:00	Area 4	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 19, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD

COMPACTION REPORT

Date: April 20, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0005
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 5 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - TYPE 12 PLACEMENT

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill:** Yes ☐ No ☑	**Vibration on Compactor:** Yes ☑ No ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	16:00	Area 5	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 20, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA
NUNA EAST LTD

COMPACTION REPORT

Date: April 20, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0006
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 6 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - TYPE 12 PLACEMENT

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes ☐ No ☑**	**Vibration on Compactor: Yes ☑ No ☐**
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 12 (ROQ)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	10:00	Area 6	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 20, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chalsson /		materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD

COMPACTION REPORT

Date: April 30, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0007
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 7 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – TYPE 1Q PLACEMENT

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Frozen Existing Ground	☐ Rough ☐ Smooth ☐ Wet ☐ Dry ☑ Frozen	☐ Loose ☑ Hard ☐ Rutted ☐ Other (Specify): _____

Fill thickness:	**Compaction % required:**	**Water used on Fill:** Yes ☐ No ☑	**Vibration on Compactor:** Yes ☑ No ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	17:00	Area 7	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).
Note: In area 7 Type 8 was used due to elevation, no Type 12 (ROQ) was required.

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 30, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chaisson /		Materials Technician	July 8/2019
Client QA Designate – Print/Sign		**Title**	**Date**

Baffinland – Milne Port Earthworks H353004-CC006

Quality Surveillance Report

Type 12 (ROQ) Placement Approval

Project Name:	Mary River Expansion Project
Job File #(s):	Nuna: CC006-0019A
Description of Area Inspected:	*Type 12 (ROQ) Placement Approval* ***Work Scope Location:*** *Ore Stockyard Expansion (Stage 1)* ***Location Section:*** *See attached Mapping*
Parties Present at Inspection	*Bradford Watkin, Darko Filipic, Brandon Urquhart (Representing Nuna), Robert Chaisson , Ken MacRae (Allnorth representing Hatch)*

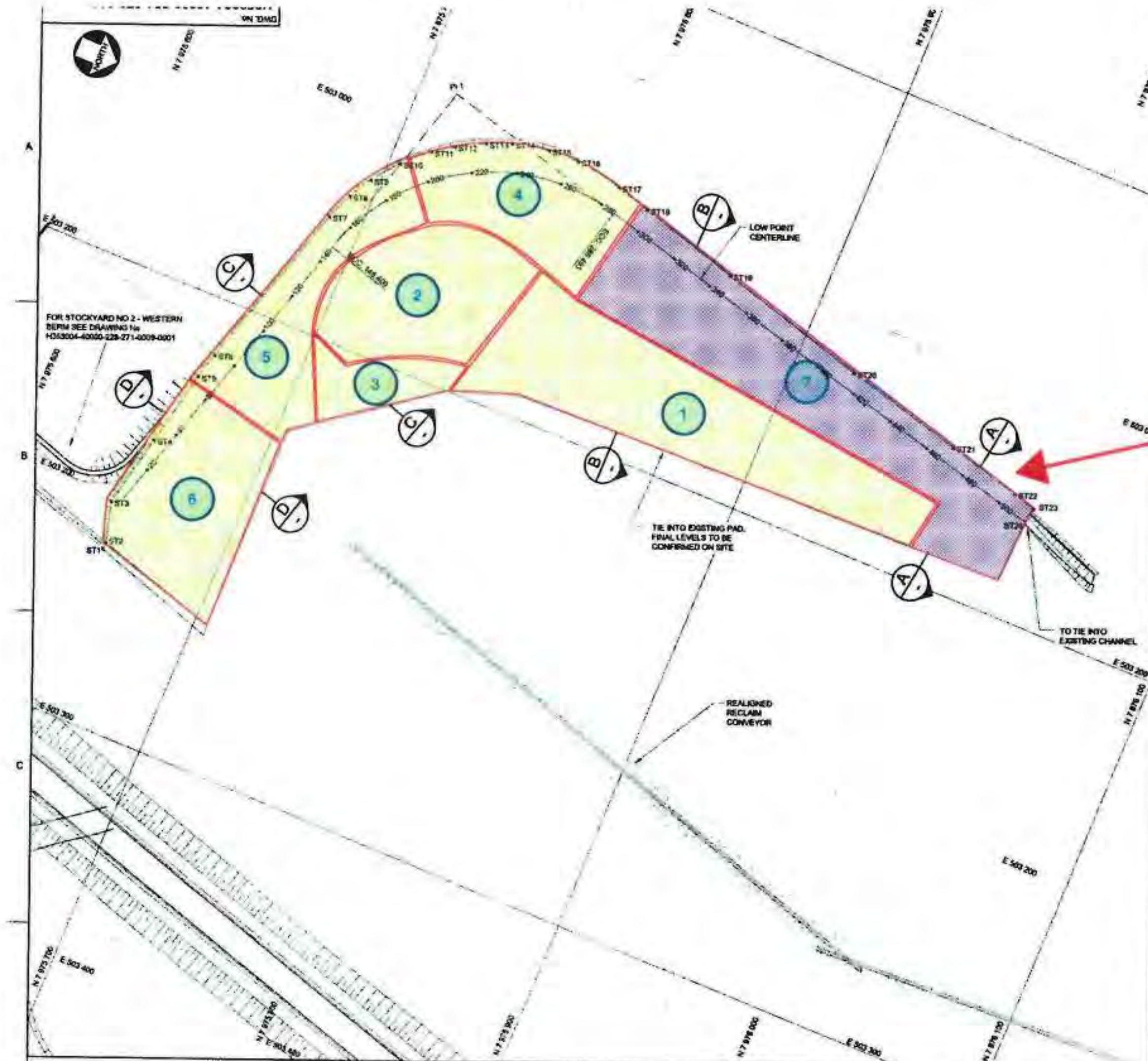
Comments:

A visual inspection of the Ore Stockyard Expansion Pad Type 12 (ROQ) material placement including a ~~proof roll~~ was completed prior to placement of additional fill material.

Type 12 (ROQ) Aggregate: *The Type 12 (ROQ) lift was found to be within tolerances by specification and IFC drawings. The proof roll indicated the lift was acceptable to specification at time of inspection.*

See attached Drawing(s):

Area number:	Date:	Description of Work	Nuna Representative	Hatch Representative
1.	4/17-19/19	Type 12 (ROQ) Approval		KMR
2.	4/17-18/19	Type 12 (ROQ) Approval		KMR
3.	4/17-19/19	Type 12 (ROQ) Approval		KMR
4.	4/19/19	Type 12 (ROQ) Approval		KMR
5.	4/20/19	Type 12 (ROQ) Approval		KMR
6.	4/20/19	Type 12 (ROQ) Approval		KMR
7.	4/29-30/19	Type 8 Placement Approval (No ROQ required here)		KMR

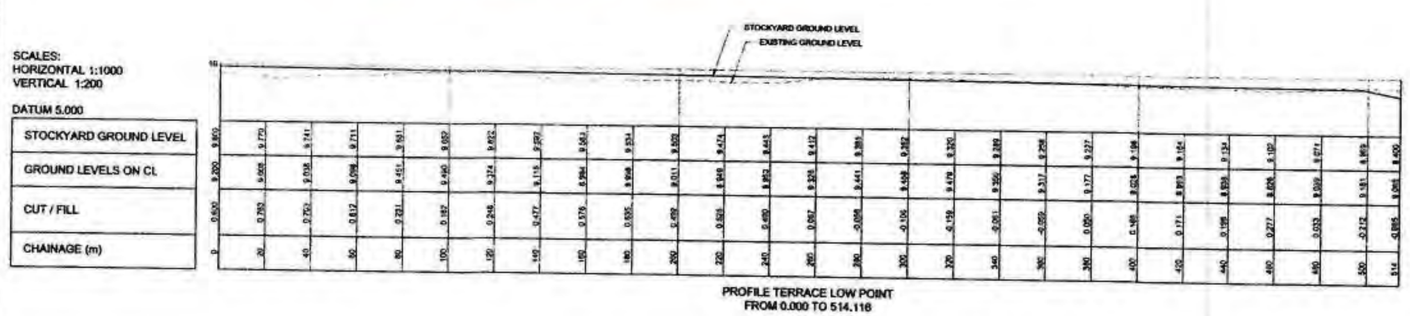


Note: In area 7 Type 8 was used due to elevation, no Type 12 (ROQ) was required.

PLAN
SCALE 1:1000

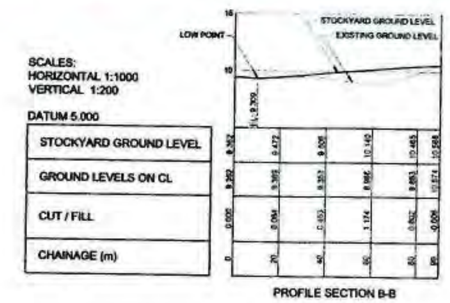
Type 12 (ROQ) approval

TYPICAL DETAIL : TIE-IN POINT

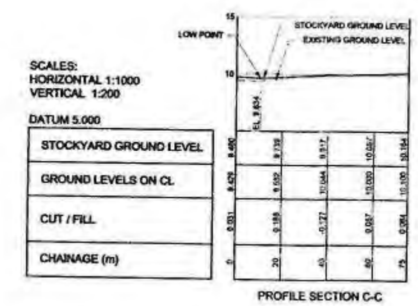


PROFILE TERRACE LOW POINT
FROM 0.000 TO 514.116

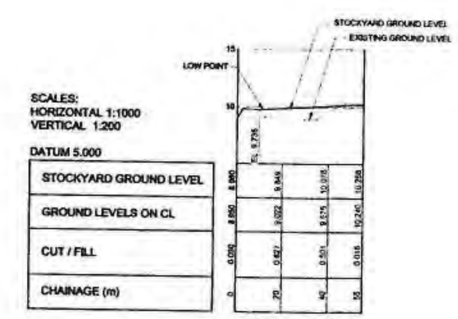
PROFILE SECTION A-A



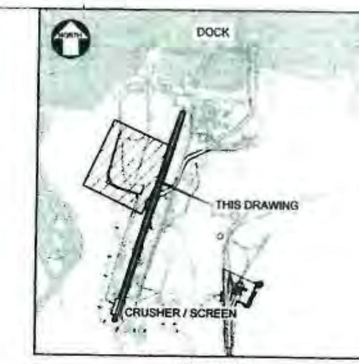
PROFILE SECTION B-B



PROFILE SECTION C-C



PROFILE SECTION D-D



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYERWORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-00000-221-294-0002-0001

LEGEND:

10.20 CONTOUR ELEVATION
43 SETTING OUT POINT NUMBER
EG EXISTING GROUND
CH CHAINAGE
EL ELEVATION

STOCKYARD No. 1

POINT	E	N	LEVEL
ST1	503 223.052	7 975 650.441	11.020
ST2	503 220.022	7 975 650.975	10.000
ST3	503 202.186	7 975 645.889	9.900
ST4	503 169.871	7 975 652.740	9.851
ST5	503 136.070	7 975 658.719	9.800
ST6	503 124.339	7 975 662.575	9.800
ST7	503 048.229	7 975 665.425	9.700
ST8	503 036.306	7 975 690.283	9.650
ST9	503 026.337	7 975 696.063	9.650
ST10	503 014.615	7 975 705.208	9.650
ST11	503 004.632	7 975 715.951	9.650
ST12	502 998.488	7 975 724.808	9.643
ST13	502 991.858	7 975 737.006	9.623
ST14	502 987.726	7 975 747.804	9.614
ST15	502 984.312	7 975 763.758	9.601
ST16	502 983.825	7 975 777.578	9.581
ST17	502 987.422	7 975 796.579	9.850
ST18	502 991.748	7 975 813.874	9.542
ST22	503 048.006	7 976 012.373	9.300
ST23	503 048.983	7 976 022.281	9.300
ST24	503 058.880	7 976 020.930	8.400

SETTING OUT DATA TERRACE LOW POINT

NAME	CH	E	N	DETAILS
START	0.000	503 202.297	7 975 649.310	L 148.400m
BCC1 PI1 ECC1	148.400 286.493	503 083.100 502 976.948 502 988.729	7 975 691.798 7 975 716.992 7 975 805.593	R 90.000m DA 87°54'40" TL 86.779m AL 138.092m
END	514.116	503 058.880	7 976 020.930	L 227.623m

PERMIT TO PRACTICE
HATCH LTD
Signature
Date
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-228-271-0009-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-228-271-0007-0001	STOCKYARD NO 1 - BERM (P-SWD-4) - PLAN/PROFILE

REFERENCE DRAWINGS

Bradford Watkin QA/QC Reviewed

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	SDC STAMP REMOVED	GPM	FH	13/07/2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/05/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	GP MEADES	NR	18/05/2018
DESIGNER	B ROOS	NR	18/05/2018
CHECKER	F HUGO		2018.07.13
DESIGN COORD.	R GOOSEN		2018.07.13
RESP. ENG.	R HALIM		2018.07.13
LEAD DISC. ENG.	A GROBBELAAR		2018.07.13
AREA LEAD	V LAVRIC		2018.07.13
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		18-7-18

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD 1 - EXTENSION
LAYOUT

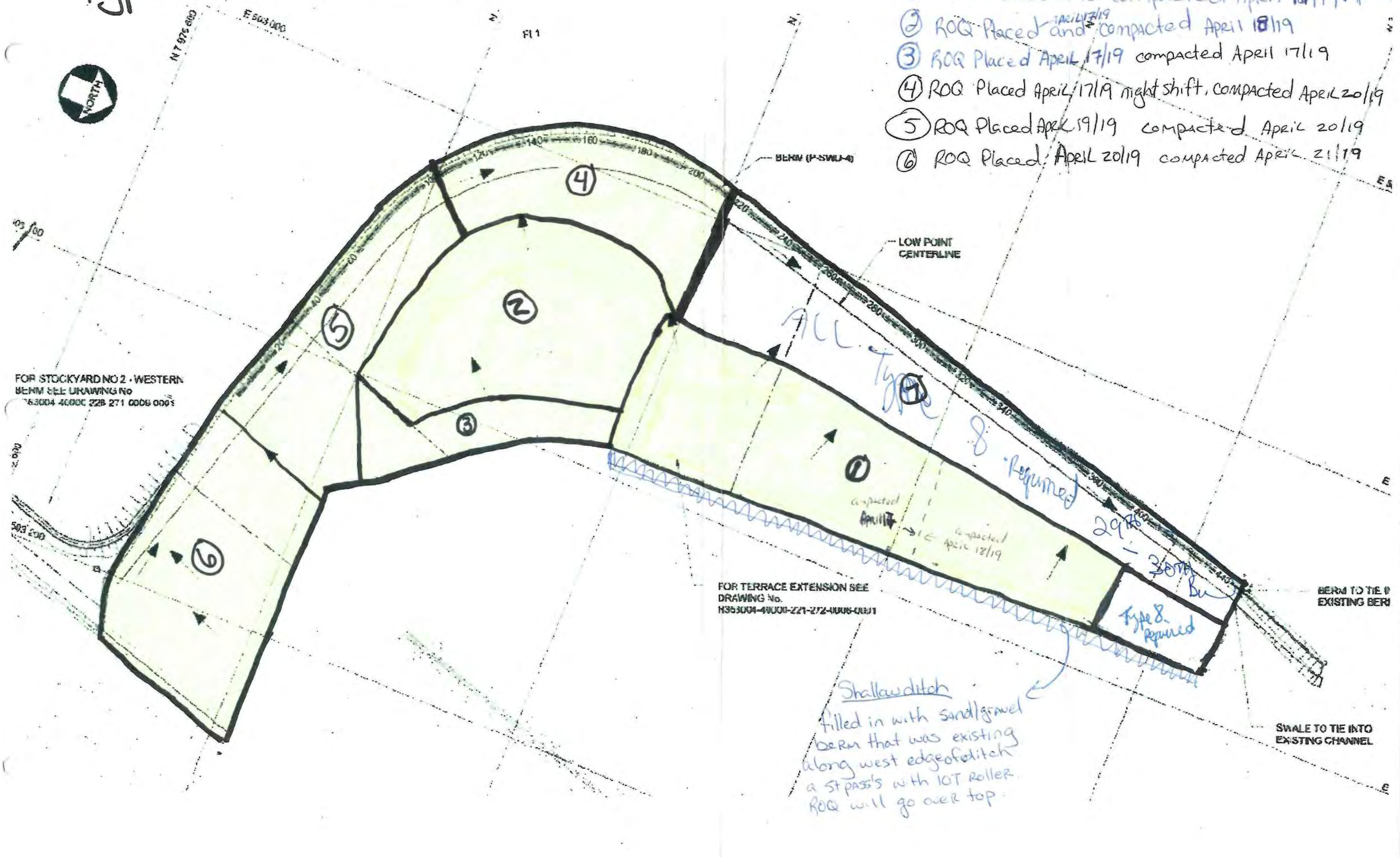
SCALE 1:1,000 OR AS NOTED

DWG No. H353004-40000-221-272-0006-0001 REV 1

SHEET SIZE E

Type 12 ROQ Placement

1. ROQ Placed and compacted April 17/19 & April 18/19
2. ROQ Placed and compacted April 18/19
3. ROQ Placed April 17/19 compacted April 17/19
4. ROQ Placed April 17/19 night shift, compacted April 20/19
5. ROQ Placed April 19/19 compacted April 20/19
6. ROQ Placed April 20/19 compacted April 21/19



NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 21, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0008
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 1 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - Type 8 Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 12 (ROQ)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	10:00	Area 1	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign Bradford Watkin /		**Title** QC Coordinator	**Date** April 21, 2019
Contractor QC Designate – Print/Sign Rob Chaisson /		**Title** Materials Technician	**Date** July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 22, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0009
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 2 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - Type 8 Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 12 (ROQ)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	10:00	Area 1 2 B2	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 22, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Gaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 23, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0010
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 3 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - Type 8 Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	14:00	Area 3	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 23, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Charisson /		materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 26, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0011
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 4 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - Type 8 Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	16:00	Area 4	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 26, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chrisson /		materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: May 1, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0012
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 5 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 - Type 8 Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes ☐ No ☑**	**Vibration on Compactor: Yes ☑ No ☐**
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Type 8 (150 minus)		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	12:00	Area 5	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

	/		
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin	/	QC Coordinator	May 1, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chrisstw	/	materials Technician	July 8 2019
Client QA Designate – Print/Sign		**Title**	**Date**

Baffinland – Milne Port Earthworks H353004-CC006

Quality Surveillance Report

Type 8 Placement Approval

Project Name:	Mary River Expansion Project
Job File #(s):	Nuna: CC006-0019A
Description of Area Inspected:	*Type 8 Placement Approval* ***Work Scope Location:*** *Ore Stockyard Expansion (Stage 1)* ***Location Section:*** *See attached Mapping*
Parties Present at Inspection	*Bradford Watkin, Darko Filipic, Brandon Urquhart (Representing Nuna), Robert Chaisson , Ken MacRae (Allnorth representing Hatch)*

Comments:

A visual inspection of the Ore Stockyard Expansion Pad Type 8 material placement including a proof roll was completed prior to placement of additional fill material.

Type 8 Aggregate: *The Type 8 lift was found to be within tolerances by specification and IFC drawings. The proof roll indicated the lift was acceptable to specification at time of inspection.*

See attached Drawing(s):

Area number:	Date:	Description of Work	Nuna Representative	Hatch Representative
1.	4/21/19	Type 8 approval		KMR
2.	4/21-22/19	Type 8 approval		KMR
3.	4/22-23/19	Type 8 approval		KMR
4.	4/26/19	Type 8 approval		KMR
5.	5/1/19	Type 8 approval		KMR

PLAN
SCALE 1:1000

TYPICAL DETAIL : TIE-IN POINT
SCALE 1:100

Type 8 Placement

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

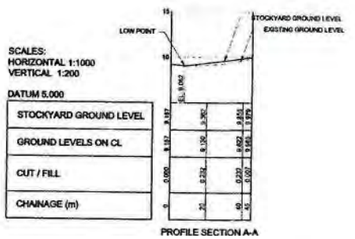
STOCKYARD GROUND LEVEL
GROUND LEVELS ON CL
CUT / FILL
CHAINAGE (m)

PROFILE TERRACE LOW POINT
FROM 0.000 TO 514.116

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL
GROUND LEVELS ON CL
CUT / FILL
CHAINAGE (m)



PROFILE SECTION A-A

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

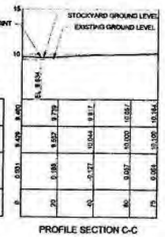
STOCKYARD GROUND LEVEL
GROUND LEVELS ON CL
CUT / FILL
CHAINAGE (m)

PROFILE SECTION B-B

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL
GROUND LEVELS ON CL
CUT / FILL
CHAINAGE (m)

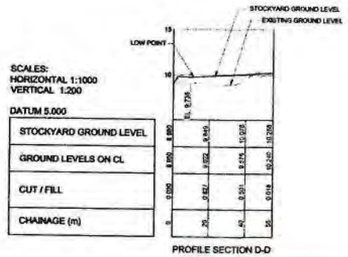


PROFILE SECTION C-C

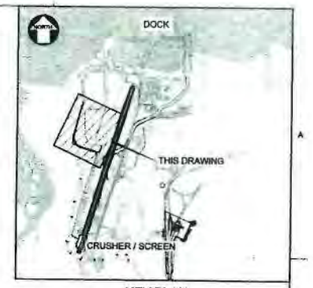
SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

STOCKYARD GROUND LEVEL
GROUND LEVELS ON CL
CUT / FILL
CHAINAGE (m)



PROFILE SECTION D-D



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2018)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYER WORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-40000-221-294-0002-0001

LEGEND:

10.26	CONTOUR ELEVATION
43	SETTING OUT POINT NUMBER
EG	EXISTING GROUND
CH	CHAINAGE
EL	ELEVATION

STOCKYARD No. 1

POINT	E	N	LEVEL
ST1	503 223.012	7 975 660.441	11.020
ST2	503 220.022	7 975 650.976	10.000
ST3	503 202.195	7 975 645.089	9.800
ST4	503 168.871	7 975 622.740	9.951
ST5	503 136.070	7 975 658.716	9.900
ST6	503 124.339	7 975 682.575	9.850
ST7	503 048.229	7 975 689.425	9.700
ST8	503 038.396	7 975 690.283	9.650
ST9	503 026.337	7 975 696.053	9.650
ST10	503 014.815	7 975 705.208	9.600
ST11	503 004.632	7 975 715.951	9.650
ST12	502 998.466	7 975 724.098	9.643
ST13	502 991.956	7 975 737.008	9.625
ST14	502 987.726	7 975 747.804	9.614
ST15	502 984.312	7 975 763.799	9.601
ST16	502 983.825	7 975 777.578	9.591
ST17	502 987.422	7 975 798.379	9.650
ST18	502 991.748	7 975 813.874	9.542
ST22	503 048.008	7 976 012.373	9.300
ST23	503 049.993	7 976 022.291	9.300
ST24	503 055.885	7 976 029.830	9.400

SETTING OUT DATA TERRACE LOW POINT

NAME	CH	E	N	DETAILS
START	0.000	503 202.297	7 975 648.510	L 148.400m
BCC1	148.400	503 089.100	7 975 691.766	R 90.000m
PI1	502 976.948	7 975 756.092	DA 87°54'40"	
ECC1	288.483	502 996.725	7 975 800.593	TL 88.779m
				AL 138.062m
END	514.116	503 055.880	7 976 029.830	L 227.623m

Released for Use

PERMIT TO PRACTICE
HATCH LTD
Signature
Date
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

H353004-40000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-229-271-0008-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-229-271-0007-0001	STOCKYARD NO 1 - BERM (P-SWD-4) - PLAN/PROFILE
DRAWING No.	DRAWING TITLE

REFERENCE DRAWINGS

Bradford Watkin
QA/QC
Reviewed

REG. PROFESSIONAL

FOR CONSTRUCTION

NO.	DESCRIPTION	BY	CHK'D	DATE
1	EDC STAMP REMOVED	GPM	FH	13/07/2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/05/2018

REVISIONS

HATCH

DRAFTSPERSON	GP MEADES	NR	18/05/2018
DESIGNER	B ROOD	NR	18/05/2018
CHECKER	F HUSO		2018-07-12
DESIGN COORD.	R GOOSEN		2018-07-12
RESP. ENG	R HAUM		2018-07-13
LEAD DISC. ENG.	A GROBBELAAR		2018-07-13
AREA LEAD	V LAVRIC		2018-07-13
AREA MANAGER	C STANGER		2018-07-13
AREA MANAGER	T ATEA		18-7-18
ROLE	NAME	SIGNATURE	DATE

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD 1 - EXTENSION
LAYOUT

SCALE: 1:1,000 ON A1 NOTED
DWG No. H353004-40000-221-272-0006-0001
REV 1
SHEET SIZE 1

Type 8 Placement

① Type 8 placed & compacted April 21/19

② Type 8 placed - Nightshift April 21st & Dayshift Apr 22/19 compacted April 22/23 2019

③ Type 8 placed & compacted April 26/19

④ Type 8 placed & compacted April 26/19

⑤ Type 8 placed & compacted May 1/19

NORTH

E 503 000

N 7 975 600

FI 1

BERM (P-SWD-4)

LOW POINT CENTERLINE

FOR STOCKYARD NO 2 - WESTERN BERM SEE DRAWING No 3004-40000-228-271-0009-0001

FOR TERRACE EXTENSION SEE DRAWING No. H353004-40000-221-272-0006-0001

BERM TO TIE IN EXISTING BERM

SWALE TO TIE INTO EXISTING CHANNEL

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 28, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0013
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 1 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – Off spec. Iron Ore Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Off Spec. Iron Ore		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	08:00	Area 1	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 28, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chrisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 29, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0014
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 2 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – Off spec. Iron Ore Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Off Spec. Iron Ore		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	09:00	Area 2	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 29, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chaisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 29, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0014
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 2 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – Off spec. Iron Ore Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes ☐ No ☑**	**Vibration on Compactor: Yes ☑ No ☐**
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Off Spec. Iron Ore		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	09:00	Area 2	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

Baffinland – Milne Port Earthworks H353004-CC006

Quality Surveillance Report

Off Specification Reject Ore Placement Approval

Project Name:	Mary River Expansion Project
Job File #(s):	Nuna: CC006-0019A
Description of Area Inspected:	*Off Spec. Reject Ore Placement Approval* ***Work Scope Location:*** *Ore Stockyard Expansion (Stage 1)* ***Location Section:*** *See attached Mapping*
Parties Present at Inspection	*Bradford Watkin, Darko Filipic, Brandon Urquhart (Representing Nuna), Robert Chaisson , Ken MacRae (Allnorth representing Hatch)*

Comments:

A visual inspection of the Ore Stockyard Expansion Pad Off Spec. Ore material placement including a proof roll was completed prior to placement of additional fill material.

Off Spec. Ore: *The Off Spec. Ore lift was found to be within tolerances by specification, RFI and IFC drawings. The proof roll indicated the lift was acceptable to specification at time of inspection.*

See attached Drawing(s):

Area number:	Date:	Description of Work	Nuna Representative	Hatch Representative
1.	4/28/19	Off Spec. Ore Placement Approval		KMR
2.	4/29/19	Off Spec. Ore Placement Approval		KMR
3.	4/30/19	Off Spec. Ore Placement Approval		KMR
4.	5/2/19	Off Spec. Ore Placement Approval		KMR

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 29, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chrisson /		materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: April 30, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0015
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 3 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – Off spec. Iron Ore Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes** ☐ **No** ☑	**Vibration on Compactor: Yes** ☑ **No** ☐
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Off Spec. Iron Ore		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	11:00	Area 3	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	April 30, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Crowson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

NUNA EAST LTD	COMPACTION REPORT	Exhibit 1-6 QDE Revision 2 Page 1 of 2

Date: May 2, 2019	**Project:** Mary River Expansion Stage 3	**ITP#:** CC006-0019A	**Report No.:** 0016
Contractor: Nuna East Ltd.	**Contract No.:** CC006	**CWP:** N/A	
Tag No.: N/A	**Tag Description:** N/A	**Sub-System:** N/A	
Area: Ore Stockyard No. 1	**Area Description:** Ore Stockyard No. 1 Expansion	**Drawing No.:** H353004-40000-221-272-0006-0001 Rev 1	

Area / Section Inspected: Area 4 – on marked up drawing H353004-40000-221-272-0006-0001 Rev 1 – Off spec. Iron Ore Placement

FILL DATA

Type of Subgrade:	**Condition:**	
☐ Sand ☐ Clay ☐ Bedrock ☑ Other (Specify): Type 8 (150 minus)	☑ Rough ☐ Smooth ☐ Wet ☐ Dry ☐ Frozen	☐ Loose ☐ Hard ☐ Rutted ☑ Other (Specify): Compacted

Fill thickness:	**Compaction % required:**	**Water used on Fill: Yes ☐ No ☑**	**Vibration on Compactor: Yes ☑ No ☐**
Type of fill:		**Method of Compaction used:**	
☐ Sand ☐ Clay ☐ Loam ☑ Other (Specify): Off Spec. Iron Ore		☐ Vibration Plate ☐ Pneumatic Tamper ☐ Steel Wheel ☑ Vibrating Steel Wheel	☐ Rubber Tire ☐ Vibrating Pneumatic ☐ Gas Powered Tamper ☐ Other (Specify): _____

Test Method: Sand Cone Method ☐ Driven Tube Method ☐ Nuclear Method ☐ Proctor Test ☐ Visual Inspection ☑

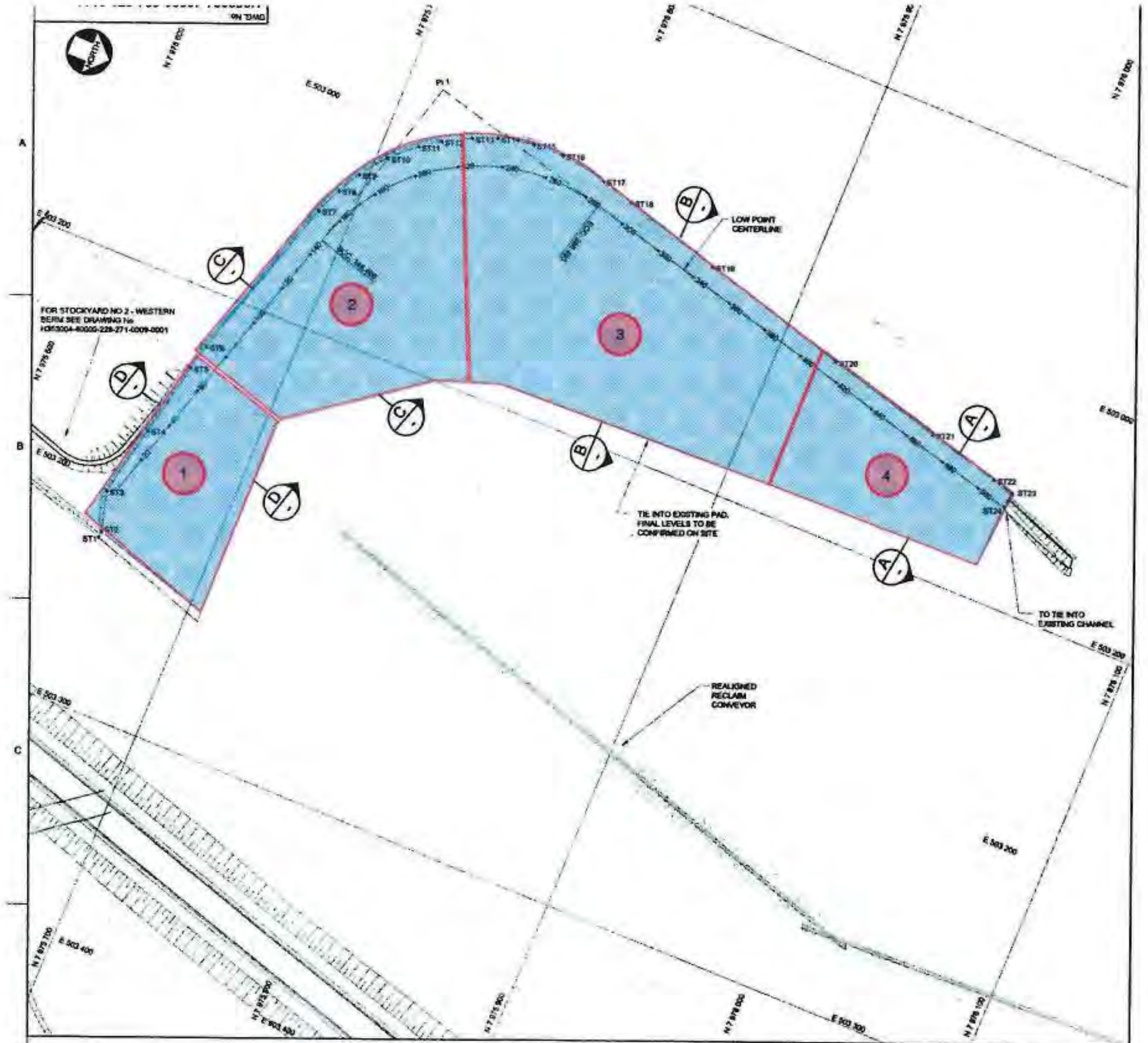
TEST DATA

TEST NO.	TIME	LOCATION	ELEVATION	DENSITY		MOISTURE		COMPACTION		ACCEPTED (Initial for Yes)
				MAX	FIELD	OPTIMUM	FIELD	SPEC	FIELD	
001	14:00	Area 4	N/A	N/A	N/A	N/A	N/A	Visual	Visual	

COMMENTS

Note: No Densometer available for project, compaction to be competed per specification H353004-00000-221-078-0001 Rev 1 and RFI-19 E353004-CC006-400-465-0019 0 V2. (Visual witnessing of compaction).
(5 passes with 10 ton compactor @ 1200-1500 vpm & speed of 3.2km/h (2 mph)).

/			
Construction Designate – Print/Sign		**Title**	**Date**
Bradford Watkin /		QC Coordinator	May 2, 2019
Contractor QC Designate – Print/Sign		**Title**	**Date**
Rob Chrisson /		Materials Technician	July 8, 2019
Client QA Designate – Print/Sign		**Title**	**Date**

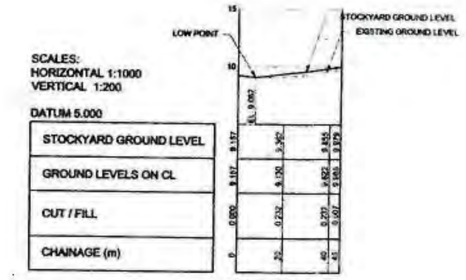


PLAN
SCALE 1:1000

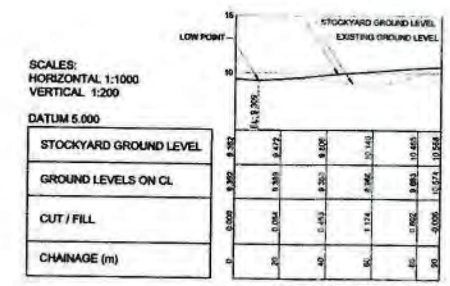
TYPICAL DETAIL : TIE-IN POINT
SCALE 1:100

Off Specification Reject Ore Placement approval

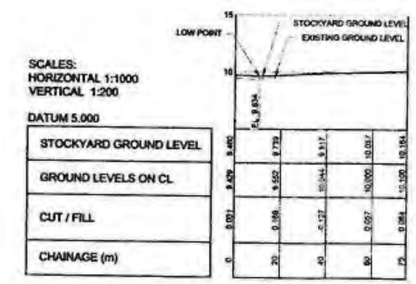
PROFILE TERRACE LOW POINT
FROM 0.000 TO 514.116



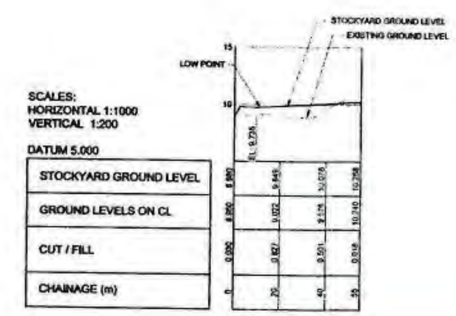
PROFILE SECTION A-A



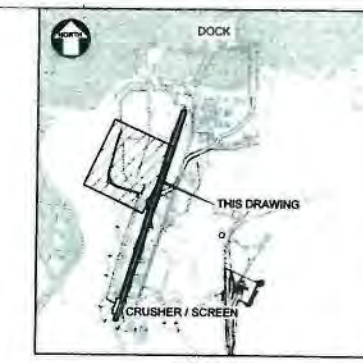
PROFILE SECTION B-B



PROFILE SECTION C-C



PROFILE SECTION D-D



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. LAYDOWN CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.25m
5. ALL DIMENSIONS ARE IN METER UNLESS NOTED OTHERWISE.
6. FOR TYPICAL LAYERWORKS FOR FINISHED GRADING, REFER TO DETAIL 1 ON DWG No. H353004-00000-221-294-0002-0001

LEGEND:

10.20 CONTOUR ELEVATION
43 SETTING OUT POINT NUMBER
EG EXISTING GROUND
CH CHAINAGE
EL ELEVATION

STOCKYARD No. 1

POINT	E	N	LEVEL
ST1	503 223.052	7 975 650.441	11.020
ST2	503 220.022	7 975 650.975	10.000
ST3	503 202.186	7 975 646.589	9.900
ST4	503 160.871	7 975 652.740	9.851
ST5	503 136.070	7 975 658.718	9.800
ST6	503 124.336	7 975 682.575	9.800
ST7	503 044.229	7 975 665.425	9.700
ST8	503 038.396	7 975 690.283	9.650
ST9	503 026.337	7 975 696.053	9.650
ST10	503 014.615	7 975 706.208	9.650
ST11	503 004.632	7 975 715.951	9.630
ST12	502 998.488	7 975 724.098	9.643
ST13	502 991.656	7 975 737.006	9.623
ST14	502 987.720	7 975 747.904	9.614
ST15	502 984.312	7 975 763.768	9.601
ST16	502 983.825	7 975 777.676	9.591
ST17	502 987.422	7 975 798.579	9.550
ST18	502 991.746	7 975 813.674	9.542
ST22	503 046.006	7 976 012.373	9.300
ST23	503 048.993	7 976 022.281	9.300
ST24	503 055.880	7 976 020.830	6.400

SETTING OUT DATA TERRACE LOW POINT

NAME	CH	E	N	DETAILS
START	0.000	503 202.287	7 975 646.310	L 148.400m
BCC1 PI1 ECC1	148.400 286.493	503 060.100 502 978.948 502 998.729	7 975 691.788 7 975 716.500 7 975 800.503	R 90.000m DA 87°54'40" TL 86.779m AL 138.092m
END	514.116	503 055.880	7 976 020.830	L 227.623m

Released for Use

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0002-0001	STANDARD DRAWING - EARTHWORKS & DRAINAGE DETAILS
H353004-40000-228-271-0009-0001	STOCKYARD NO 2 - WESTERN BERM - LAYOUT & LONGITUDINAL SECTION
H353004-40000-228-271-0007-0001	STOCKYARD NO 1 - BERM (P-WD-4) - PLAN/PROFILE

REFERENCE DRAWINGS

Bradford Watkin
QA/QC
Reviewed

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHKD	DATE
1	EDC STAMP REMOVED	GPM	FH	13/07/2018
0	APPROVED FOR CONSTRUCTION	GPM	FH	25/05/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	GP MEADES	NR	16/05/2018
DESIGNER	B ROOS	NR	16/05/2018
CHECKER	F HUGO		
DESIGN COORD.	R GOOSEN		
RESP. ENG.	R HALIM		
LEAD DISC. ENG.	A GROBBELAAR		
AREA LEAD	V LAVRIC		
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
STOCKYARD 1 - EXTENSION
LAYOUT

SCALE 1:1,000 OR AS NOTED

DWG No. H353004-40000-221-272-0006-0001

REV 1

SHEET SIZE: E

WASTE ORE placement sheet

① April 28/19
② April 29/19
③ April 30/19
④ May 2/19

NORTH

E 503 000

N 7 975 000

FI 1

BERM (P-SWL)-4)

LOW POINT CENTERLINE

FOR STOCKYARD NO 2 - WESTERN BERM SEE DRAWING No H353004-40000-228-271-0006-0003

FOR TERRACE EXTENSION SEE DRAWING No. H353004-40000-221-272-0006-0001

BERM TO TIE I EXISTING BER

SWALE TO TIE INTO EXISTING CHANNEL