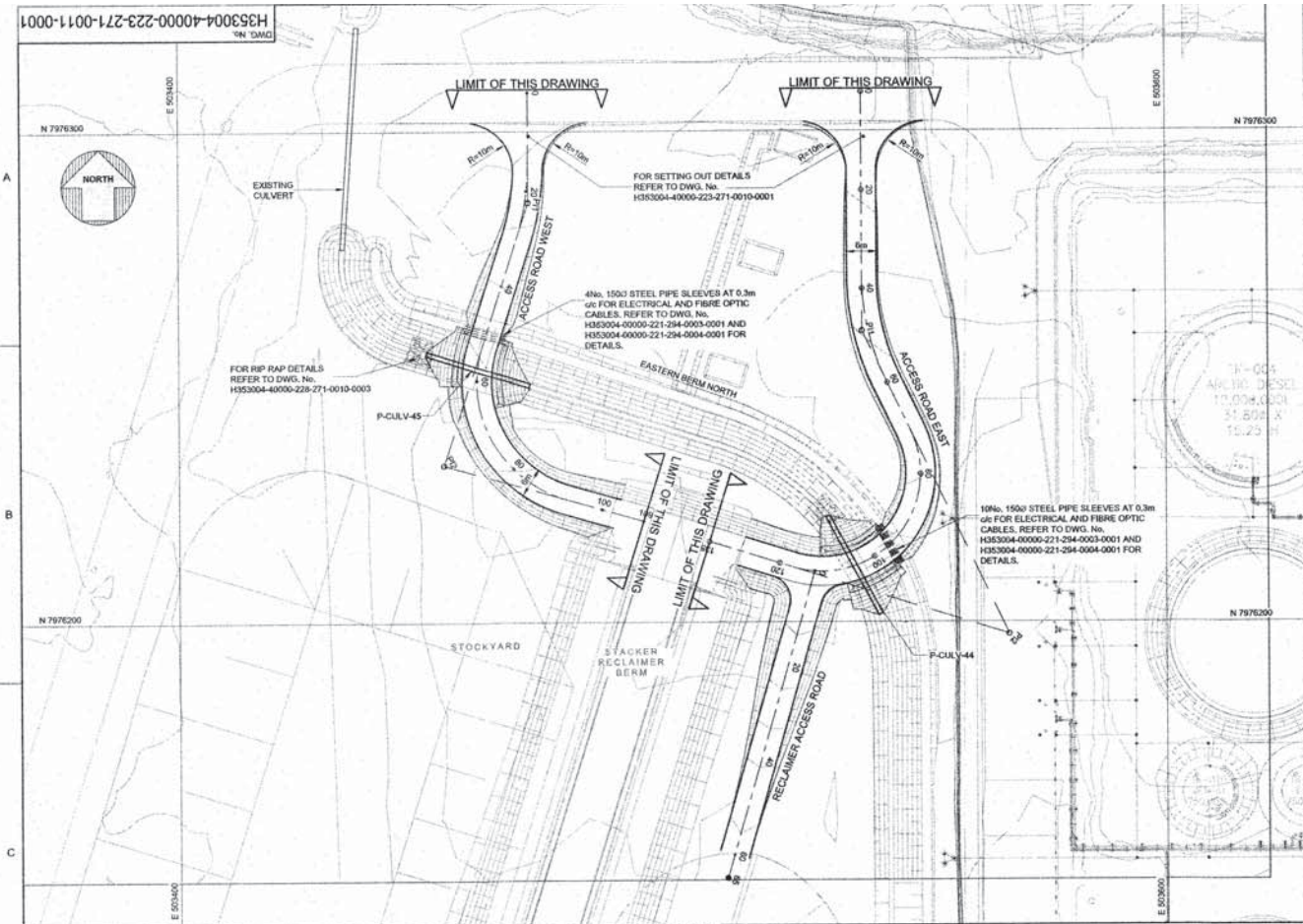
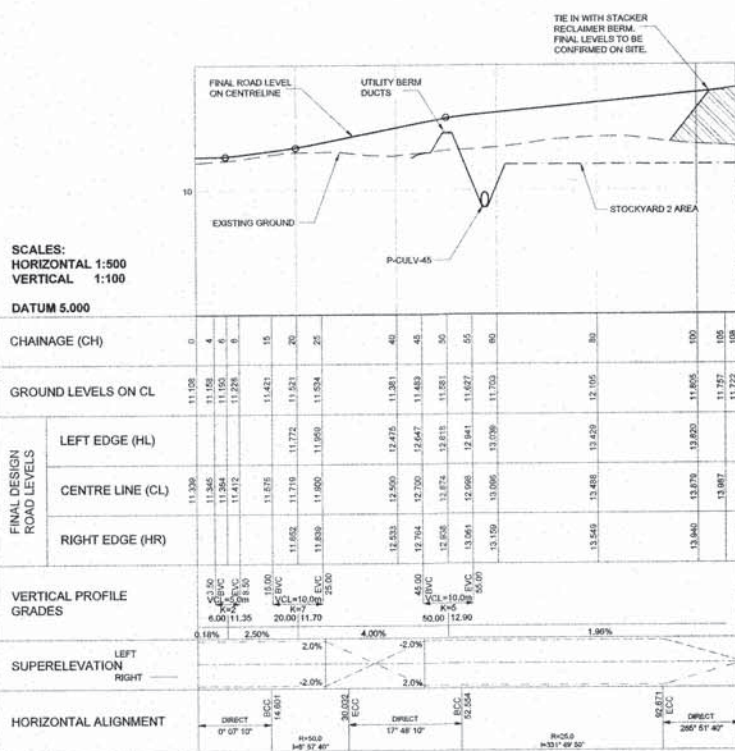
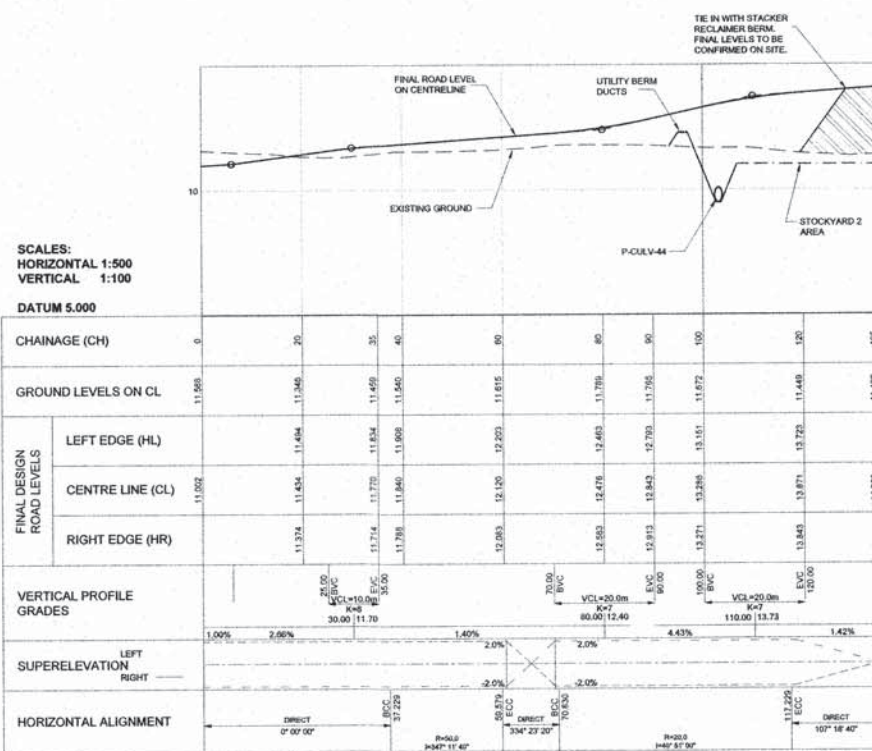




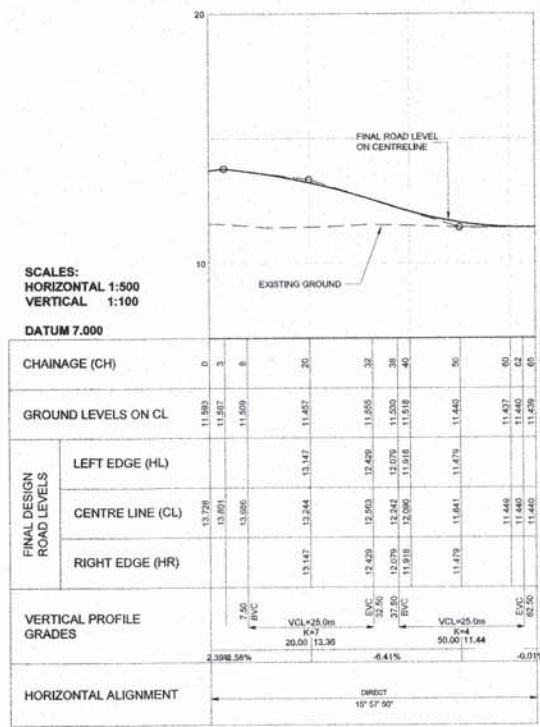
PLAN
SCALE 1:500



RECLAIMER ACCESS ROAD - WEST
CH 0.000 TO CH 108.000



RECLAIMER ACCESS ROAD - EAST
CH 0.000 TO CH 134.901



RELAIMER ACCESS ROAD
CH 0 TO CH 65

SETTING OUT DATA-RECLAIMER ACCESS ROAD				
NAME	CH	E	N	DETAILS
START	0.000	503528.641	7978210.298	L 0.000m
END	65.000	503510.764	7978147.804	L 0.001m

SETTING OUT DATA-RECLAIMER ACCESS ROAD - WEST				
NAME	CH	E	N	DETAILS
START	0.000	503470.902	7978307.871	L 14.801m
BCC1	14.001	503470.872	7978293.370	R 50.000m
PH	30.002	503470.855	7978285.493	DA 17°44'00"
ECC1		503468.477	7978275.068	TL 7.777m
				AL 15.431m
BCC2	52.554	503461.591	7978256.644	R 25.000m
PH	92.871	503453.085	7978232.021	DA 11°15'00"
ECC2		503478.562	7978224.952	TL 25.862m
				AL 40.117m
END	108.751	503494.029	7978220.558	L 18.080m

SETTING OUT DATA-RECLAIMER ACCESS ROAD - EAST				
NAME	CH	E	N	DETAILS
START	0.000	503536.441	7978307.871	L 37.229m
BCC1	37.229	503539.441	7978270.642	R 50.000m
PH	59.579	503538.441	7978258.277	DA 25°38'40"
ECC1		503545.353	7978246.029	TL 11.365m
				AL 22.359m
BCC2	70.830	503548.217	7978236.884	R 25.000m
PH	117.229	503546.063	7978107.482	DA 132°05'20"
ECC2		503534.230	7978111.144	TL 45.913m
				AL 49.399m
END	134.901	503507.358	7978216.403	L 17.673m

CULVERT SCHEDULE (THIS SCHEDULE TO BE READ IN CONJUNCTION WITH DRG. No. H353004-00000-221-294-0001-0001-TYPICAL CULVERT DETAILS)														
			CULVERT AT UPSTREAM				CULVERT AT DOWNSTREAM				NOTE: FINAL US INVERT AND DS INVERT LEVELS ARE TO BE CONFIRMED ON SITE			
CULVERT ID	FISH BEARING	NUMBER OF PIPES	D (mm)	LENGTH (m)	E (mm)	W (mm)	TYPE	NORTHING	EASTING	US INV. ELEV (m)	RIP RAP REQ'D	NORTHING	EASTING	DS INV. ELEV (m)
P-CULV-44	N	1	900	22.54	0	900	CSP	7976201.604	503542.015	9.497	N	7976221.463	503531.367	9.452
P-CULV-45	N	1	900	21.56	0	900	CSP	7976248.219	503471.058	9.317	N	7976254.910	503450.146	9.274

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTAT (2016)
2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS NOTED OTHERWISE.
5. FOR TYPICAL CROSS-SECTION DETAILS REFER TO THE PRIMARY ROAD SECTION ON DRAWING No. H353004-00000-221-273-0001-0001.
6. SAFETY BERMS, 1m HIGH, TO BE CONSTRUCTED OVER THE ENTIRE WIDTH OF DITCH ON BOTH SIDES OF THE ROAD. FOR DITCH DETAILS REFER TO DRAWING No. H353004-00000-271-0010-0003.

CULVERT SCHEDULE LEGEND:

- CULVERT DIAMETER
- EMBEDMENT DEPTH
- CULVERT SPACING AND BEDDING CLEARANCE
- C = 500 WHILE D = 900mm
- C = 300 WHILE D = 900mm
- CULVERT BACKFILL TOP WIDTH
- W = (n * D) + (n * C)
- n = no. of pipe/culvert
- CULVERT MATERIAL
- CULVERT UPSTREAM INVERT ELEVATION
- CULVERT DOWNSTREAM INVERT ELEVATION
- RIPRAP APPROX LENGTH
- L = 4m (APPROX)
- CULVERT SLOPE
- CULVERT LENGTH
- CORRUGATED STEEL PIPE

PERMIT TO PRACTICE
HATCH LTD.
Signature: _____
Date: _____
PERMIT NUMBER: P-513
The Association of Professional Engineers, Geoscientists and Geotechnical Engineers (APEGGA)

DRAWING No.	REFERENCE DRAWINGS
H353004-00000-221-294-0001-0001	TYPICAL CULVERT DETAILS
H353004-00000-221-273-0001-0001	TYPICAL CROSS SECTION DETAILS
H353004-00000-221-271-0003-0001	STOCKPILE 2 - STACKER RECLAIMER BERM
H353004-00000-228-271-0010-0003	STOCKPILE 2 - EASTERN BERM PLAN AND PROFILE SHEET 3 OF 3
DRAWING No.	DRAWING TITLE



FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION	DESCRIPTION	REVISIONS
No.		

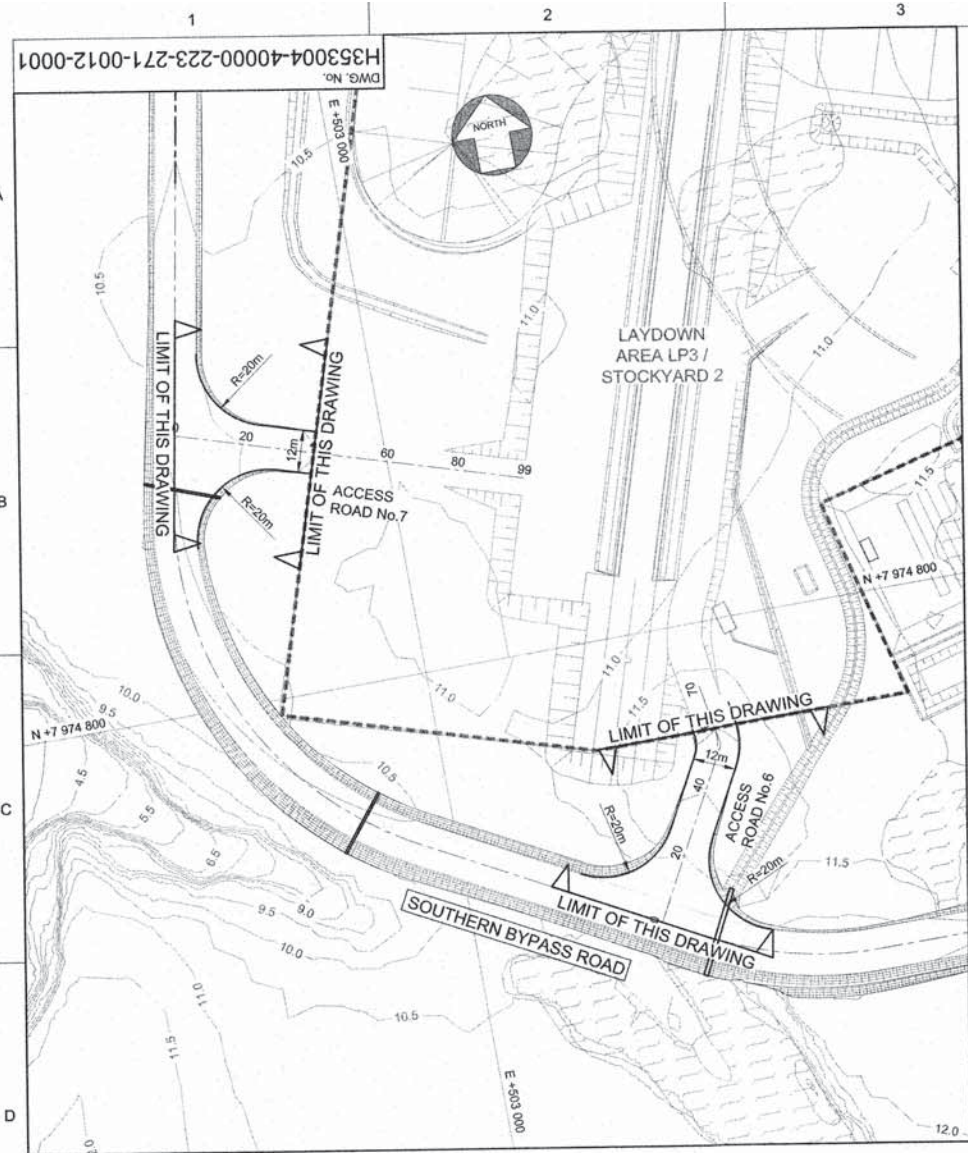
HATCH

DRAFTSPERSON	K. VAN DER MERWE	NR	14/06/2018
DESIGNER	H. HERBST	NR	14/06/2018
CHECKER	F. HUGO	2018-09-25	2018-09-25
DESIGN COORD.	R. JOHNSON	2018-09-25	2018-09-25
RESP. ENG.	R. HALL	2018-09-25	2018-09-25
LEAD DISC. ENG.	A. GROBBELAAR	2018-09-25	2018-09-25
AREA LEAD	V. LAYR	2018-09-25	2018-09-25
ENG. MANAGER	D. STANGER	2018-09-25	2018-09-25
AREA MANAGER	T. ATIBA	2018-09-25	2018-09-25

ROLE	NAME	SIGNATURE	DATE
APPROVED FOR CONSTRUCTION			

BAFFINLAND IRON MINES LP		REV	0
MARY RIVER EXPANSION PROJECT			
PORT SITE - STOCKYARD 2			
NORTHERN ACCESS ROADS			
PLAN AND PROFILE			
DWG. No.	H353004-00000-223-271-0011-0001	SCALE	1:500
DATE	14/06/2018	CH AS NOTED	

STAGES
DESIGN
CONSTRUCTION



PLAN
SCALE 1:1000

SETTING OUT DATA
ACCESS ROAD No.6

NAME	CH	E	N	DETAILS
START	0.000	503 052.575	7 974 718.485	L 47.635m
BCC1	47.635	503 075.284	7 974 760.358	R 15.000m
P11		503 077.778	7 974 764.956	DA 38°27'00"
ECC1	57.701	503 076.872	7 974 770.108	TL 5.231m
END	70.000	503 074.741	7 974 782.221	L 12.299m

ROAD DATA LEGEND:

BVC	BEGINNING VERTICAL CURVE
EVC	END VERTICAL CURVE
BCC	BEGINNING CIRCULAR CURVE
ECC	END CIRCULAR CURVE
R	RADIUS (CURVE)
DA	DEFLECTION ANGLE (CURVE)
TL	TANGENT LENGTH (CURVE)
AL	ARC LENGTH (CURVE)

SETTING OUT DATA
ACCESS ROAD No.7

NAME	CH	E	N	DETAILS
START	0.000	502 942.589	7 974 878.453	
END	98.785	503 036.881	7 974 849.001	L 98.785m

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

CHAINAGE (CH)		0	6	20	40	57	60	70	75
GROUND LEVELS ON CL		10.454	10.609	11.451	11.720	11.707	11.678	11.560	
FINAL DESIGN ROAD LEVELS	LEFT EDGE (HL)				11.669	11.424			
	CENTRE LINE (CL)	12.989	12.869	12.495	11.982	11.500	11.497	11.483	11.477
	RIGHT EDGE (HR)				11.869	11.424			
VERTICAL PROFILE GRADES		-2.00% -2.67% -0.13%							
HORIZONTAL ALIGNMENT		DIRECT 208° 28' 20" BCC 47° 635 EVC 57° 701 DIRECT 170° 01' 20" R=15.0 I=189° 14' 50"							

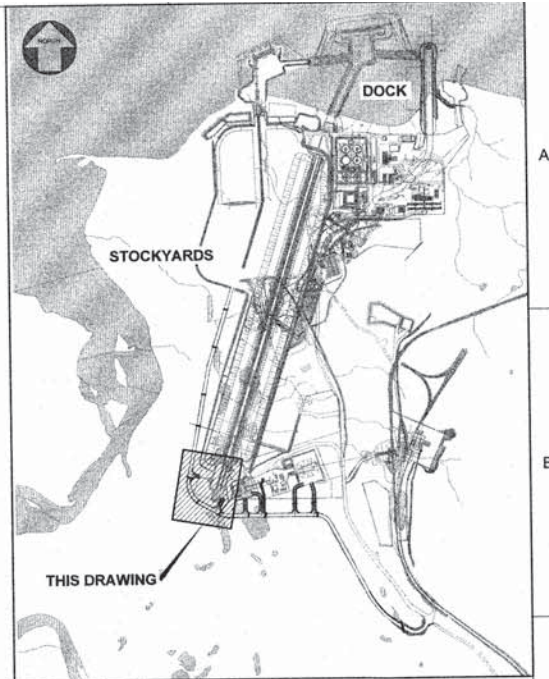
ACCESS ROAD NO.6
FROM 0.000 TO 75.000

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 5.000

CHAINAGE (CH)		0	6	20	40	60
GROUND LEVELS ON CL		10.451	10.570	10.722	10.909	10.987
FINAL DESIGN ROAD LEVELS	LEFT EDGE (HL)		11.674	11.358	10.905	
	CENTRE LINE (CL)	11.973	11.807	11.484	11.021	11.089
	RIGHT EDGE (HR)		11.674	11.358	10.905	
VERTICAL PROFILE GRADES		-0.92% -2.32% 0.34%				
HORIZONTAL ALIGNMENT		DIRECT 287° 20' 50"				

ACCESS ROAD NO.7
FROM 0.000 TO 60.000



KEY PLAN

NOTES:

- LIDAR SURVEY PROVIDED BY PHOTOSAT (2016)
- CO-ORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
- CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
- ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS NOTED OTHERWISE.
- FOR TYPICAL CROSS-SECTION DETAILS REFER TO THE PRIMARY ROAD SECTION ON DRAWING No. H353004-221-273-0001-0001

LEGEND:

----- LAYDOWN AREA BOUNDARY

PERMIT TO PRACTICE
HATCH LTD.
Signature _____
Date 2018-06-25
PERMIT NUMBER: P 512
The Association of Professional Engineers,
Geologists and Geophysicists of NWT/NU

FOR CONSTRUCTION



REG. PROFESSIONAL

THIS DRAWING WAS PREPARED BY HATCH LTD. (HATCH) FOR THE EXCLUSIVE USE OF BAFFINLAND IRON MINES LP ("CLIENT") AND ITS USE IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN HATCH AND THE CLIENT. INCLUDING ANY LIMITATIONS ON LIABILITY CONTAINED THEREIN. THIS DRAWING AND ITS CONTENTS REMAIN THE INTELLECTUAL PROPERTY OF HATCH SUBJECT TO CLIENTS RENTAL FEE. IRREVOCABLE, EXCLUSIVE AND NON-TRANSFERABLE LICENSE TO USE, REPRODUCE, MODIFY, ADAPT, REPRODUCE, TRANSMIT, OR OTHERWISE DISSEMINATE THIS DRAWING AND ITS CONTENTS FOR THE COMPLETION, MAINTENANCE, EXTENSION, REPAIR, OR IMPROVEMENT OF THE PROJECT, INCLUDING THE CONSTRUCTION, INFORMATION CONTAINED HEREIN, SHALL BE TREATED AS CONFIDENTIAL FOR ALL OTHER PURPOSES AND SHALL NOT BE MODIFIED WITHOUT THE WRITTEN CONSENT OF HATCH.

HATCH

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE - STOCKYARD 2
SOUTHERN ACCESS ROADS
PLAN AND PROFILES

DRAFTSPERSON	K VAN DER MERWE	NR	14/06/2018
DESIGNER	H HERBST	NR	14/06/2018
CHECKER	F HUGO		2018-06-21
DESIGN COORD.	R GOOSEN		2018-06-21
RESP. ENG.	R HALIM		2018-06-25
LEAD DISC. ENG.	A GROBBELAAR		2018-06-25
AREA LEAD	V LAVRIC		2018-06-25
ENG. MANAGER	D STANGER		2018-06-25
AREA MANAGER	T ATIBA		2018-06-25
ROLE	NAME	SIGNATURE	DATE

DRAWING APPROVAL STATUS: Approved for Construction

SCALE	DWG. No.	REV
1:1,000 OR AS NOTED	H353004-40000-223-271-0012-0001	0

H353004-40000-223-271-0006-0002	SOUTHERN BYPASS ROAD PLAN AND PROFILE SHEET 2
H353004-40000-223-271-0006-0001	SOUTHERN BYPASS ROAD PLAN AND PROFILE SHEET 1
H353004-10000-221-273-0001-0001	MODULE, PRIMARY AND SECONDARY ROADS - TYPICAL CROSS-SECTION

DRAWING No.	DRAWING TITLE

REFERENCE DRAWINGS

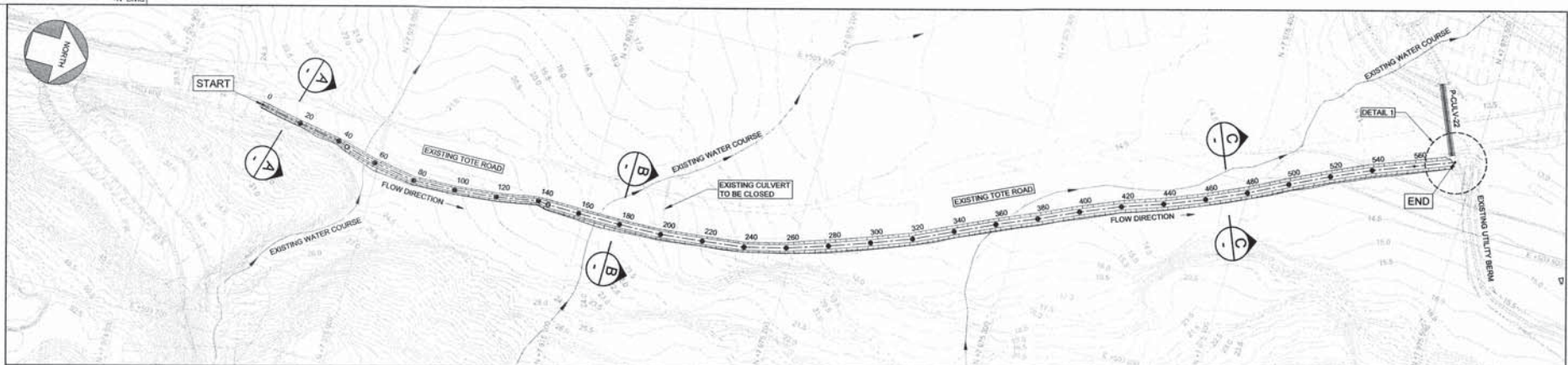
REG. PROFESSIONAL

No.	DESCRIPTION
0	APPROVED FOR CONSTRUCTION

REVISIONS

BY	CHK'D	DATE
KVDM	FB	14/06/2018

SUSANNAH STINES
JAMES STINES



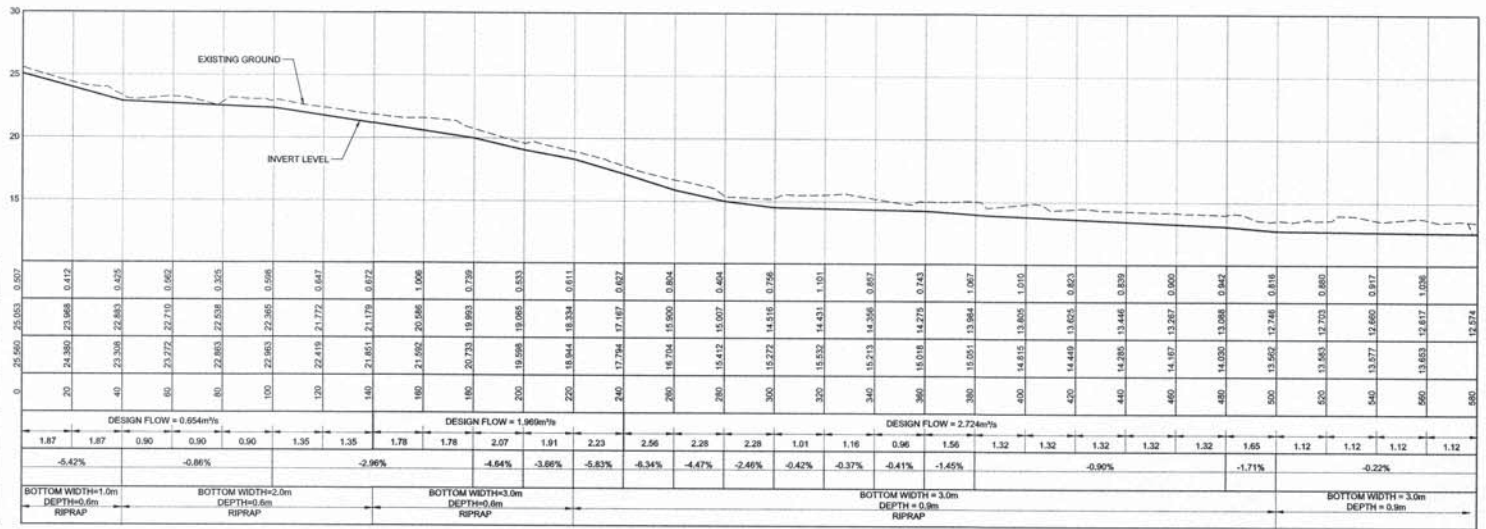
LAYOUT
SCALE 1:1000

EG ---
INVERT ---

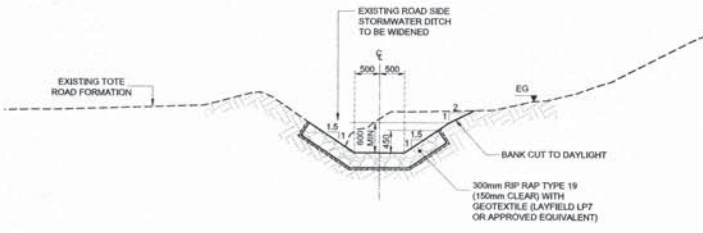
SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 10.000

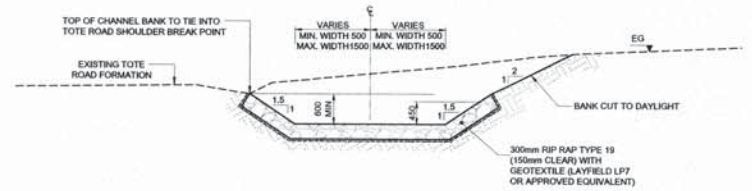
DEPTH TO INVERT (m)	0.507
INVERT LEVELS (m)	25.503
GROUND LEVELS ON CL (m)	25.560
DISTANCE (m)	20
HYDRAULICS	Q(m³/s) V(m/s)
VERTICAL PROFILE GRADES	
CHANNEL SECTION	



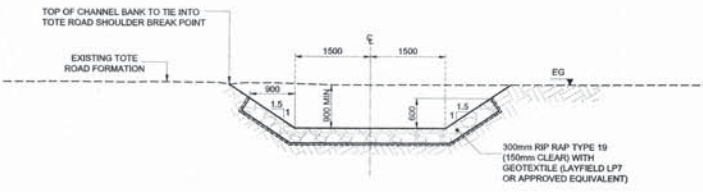
ROADSIDE CHANNEL LONGITUDINAL PROFILE



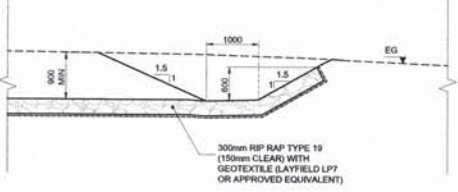
SECTION A-A
TYPICAL CROSS SECTION DETAIL OF EXISTING
ROADSIDE STORMWATER DITCH UPGRADE
SCALE 1:50



SECTION B-B
TYPICAL CROSS SECTION DETAIL OF
600mm DEEP ROADSIDE CHANNEL
SCALE 1:50



SECTION C-C
TYPICAL CROSS SECTION DETAIL OF
900mm DEEP ROADSIDE CHANNEL
SCALE 1:50

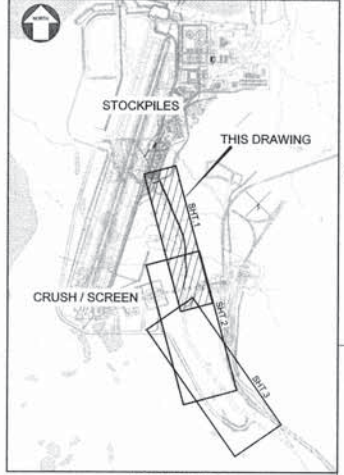


SECTION D-D
TYPICAL CROSS SECTION DETAIL OF
900mm DEEP ROADSIDE CHANNEL
SCALE 1:50

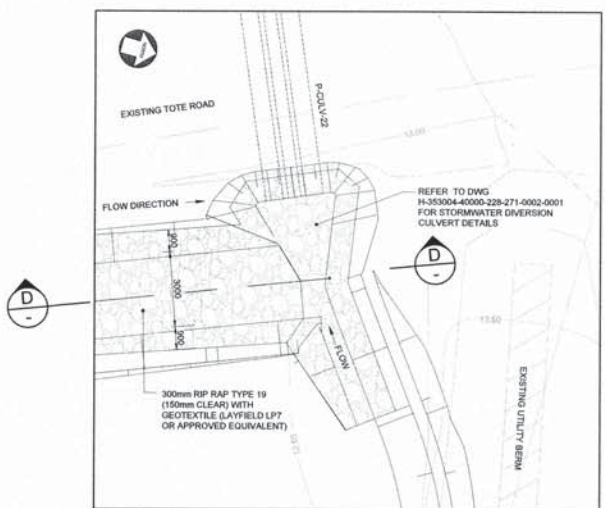
- NOTES:
1. LIDAR SURVEY PROVIDED BY PHOTOSAT (2016)
 2. COORDINATE GRID IS SHOWN IN UTM (NAD83)
 3. EG CONTOURS AND ELEVATIONS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
 4. ALL DIMENSIONS ARE IN MILLIMETER UNLESS NOTED OTHERWISE.

LEGEND:

- EG ---
CONTOUR ELEVATION
EG ---
EXISTING GROUND



KEY PLAN



DETAIL 1
SCALE 1:100

PERMIT TO PRACTICE
HATCH LTD
Signature: [Signature]
Date: [Date]
PERMIT NUMBER: P 512
The Association of Professional Engineers,
Geologists and Geophysicists of Ontario

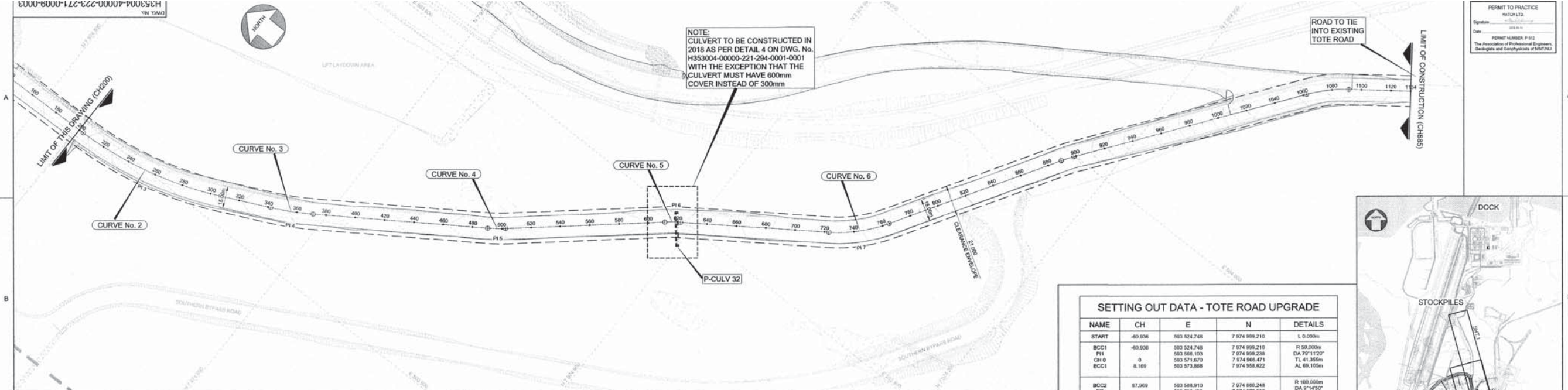
DRAWING No.	DRAWING TITLE
H353004-40000-223-271-0009-0002	TOTE ROAD UPGRADE - SHEET 2
H353004-40000-223-271-0002-0001	CONSTRUCTION PHASE - ACCESS ROADS DRAINAGE DETAILS
H353004-40000-221-294-0002-0010	STANDARD DRAWING - EARTHWORKS AND DRAINAGE
H353004-40000-221-294-0001-0001	STANDARD DRAWING - TYPICAL CULVERT DETAIL
H353004-40000-220-272-0001-0001	PORT SITE - BLOCK PLAN

REFERENCE DRAWINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FOR CONSTRUCTION	DESCRIPTION	REVISIONS	DATE	BY	CHKD	DATE
1	EDC STAMP REMOVED					
2	FOR CONSTRUCTION					

DRAFTSPERSON	H HERBST	NR	10/04/2018
DESIGNER	H HERBST	NR	10/04/2018
CHECKER	F HUGO	2018-09-14	2018-09-14
DESIGN COORD.	R GOOSEN	2018-09-14	2018-09-14
RESP. ENG.	R HALM	2018-09-14	2018-09-14
LEAD DISC. ENG.	A GROBELAAR	2018-09-14	2018-09-14
AREA LEAD	V LAVRIC	2018-09-14	2018-09-14
ENG. MANAGER	D STANGER	2018-09-14	2018-09-14
AREA MANAGER	TATBA	2018-09-14	2018-09-14

BAFFINLAND	BAFFINLAND IRON MINES LP	MARY RIVER EXPANSION PROJECT
PORT SITE	TOTE ROAD DRAINAGE UPGRADE	PLAN AND PROFILE SHEET 1 OF 3
DWG. No.	H353004-40000-223-271-0009-0001	REV 1
SCALE	1:1,000	OR AS NOTED
SHEET SIZE	E	1



TOTE ROAD UPGRADE FROM CH.170 TO CH.1134
SCALE 1:1000

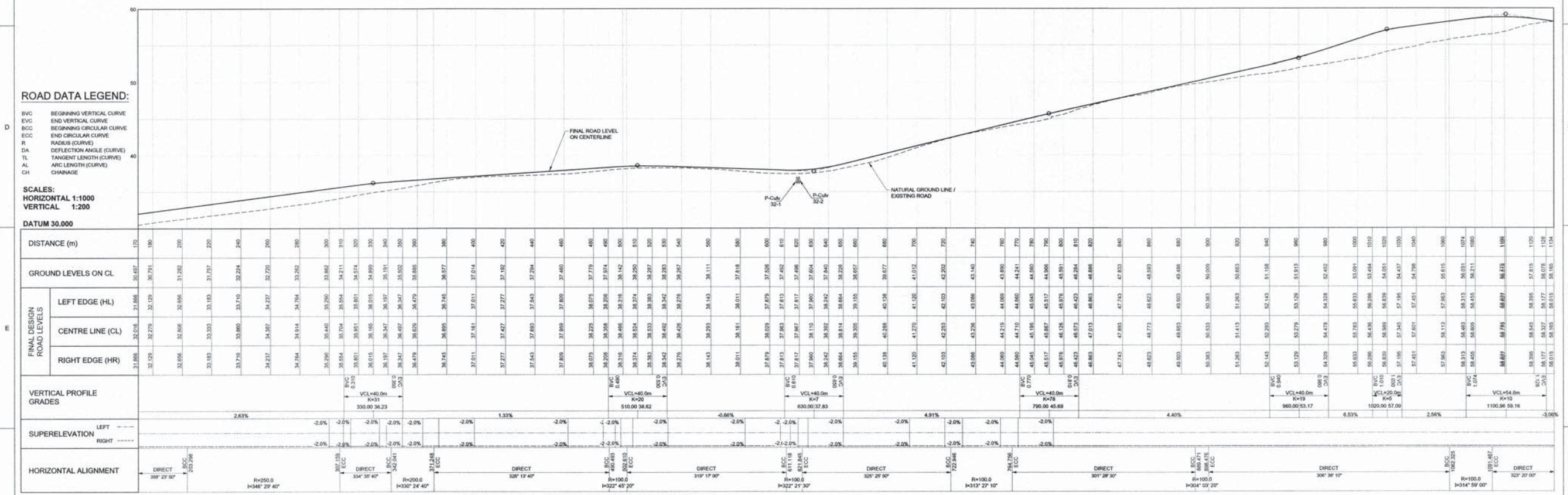
CULVERT SCHEDULE (THIS SCHEDULE TO BE READ IN CONJUNCTION WITH DRG. No. H353004-00000-221-294-0001-0001-TYPICAL CULVERT DETAILS)														
CULVERT AT UPSTREAM					CULVERT AT DOWNSTREAM					NOTE: FINAL US INVERT AND DIS INVERT LEVELS ARE TO BE CONFIRMED ON SITE				
CULVERT ID	FISH BEARING	NUMBER OF PIPES	D (mm)	LENGTH (m)	E (mm)	W (mm)	TYPE	NORTHING	EASTING	US INV. ELEV (m)	RIP RAP REQ'D	NORTHING	EASTING	DIS INV. ELEV (m)
P-CULV. 32	N	2	900	24.150	0	2300	CSP	7974415.110	503802.11	36.500	Y	7974399.888	503783.482	35.350

- NOTES:**
1. LIDAR SURVEY PROVIDED BY PHOTOSAT (2016)
 2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
 3. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
 4. ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS NOTED OTHERWISE.
 5. REFER TO PRIMARY ROAD - TYPICAL CROSS SECTION ON DRAWING No. H353004-00000-221-273-0001-0001 FOR TYPICAL LAYER WORKS. ROAD WIDTH TO BE 15m.
- LEGEND:**
- 198 CONTOUR ELEVATION
 - LIMIT OF CONSTRUCTION UNDER THIS CONTRACT

SETTING OUT DATA - TOTE ROAD UPGRADE				
NAME	CH	E	N	DETAILS
START	-40.936	503 524.748	7 974 999.210	L 0.000m
BCC1	-40.936	503 524.748	7 974 999.210	R 50.000m
PI1	0	503 566.153	7 974 999.238	DA 7°11'20"
CH0	0	503 571.670	7 974 966.471	TL 41.355m
ECC1	8.169	503 573.888	7 974 958.622	AL 60.105m
BCC2	87.969	503 586.910	7 974 880.248	R 100.000m
PI2	104.109	503 590.433	7 974 872.305	DA 9°14'50"
ECC2	104.109	503 590.659	7 974 864.221	TL 5.087m
BCC3	203.296	503 580.434	7 974 765.070	R 250.000m
PI3	307.159	503 554.808	7 974 712.400	DA 27°48'10"
ECC3	307.159	503 617.514	7 974 664.806	TL 52.898m
BCC4	342.041	503 632.479	7 974 633.207	R 250.000m
PI4	371.248	503 638.756	7 974 620.083	DA 8°22'00"
ECC4	371.248	503 646.888	7 974 607.923	TL 14.820m
BCC5	490.493	503 713.178	7 974 508.900	R 100.000m
PI5	502.610	503 716.550	7 974 503.758	DA 6°56'30"
ECC5	502.610	503 720.507	7 974 499.160	TL 6.096m
BCC6	611.118	503 791.287	7 974 416.916	R 100.000m
PI6	621.845	503 794.789	7 974 412.847	DA 6°08'50"
ECC6	621.845	503 797.836	7 974 408.426	TL 5.368m
BCC7	722.948	503 885.201	7 974 325.176	R 100.000m
PI7	764.756	503 887.238	7 974 307.707	DA 23°57'20"
ECC7	764.756	503 885.332	7 974 296.630	TL 2.215m
END	885.116	503 987.982	7 974 233.787	L 120.360m

- ROAD DATA LEGEND:**
- BVC BEGINNING VERTICAL CURVE
 - EVC END VERTICAL CURVE
 - BCC BEGINNING CIRCULAR CURVE
 - ECC END CIRCULAR CURVE
 - R RADIUS (CURVE)
 DA | DEFLECTION ANGLE (CURVE) || TL | TANGENT LENGTH (CURVE) |
| AL | ARC LENGTH (CURVE) |
| CH | CHANGING |

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200
DATUM 30.000



LONGITUDINAL SECTION FROM CH.170 TO CH.885

HATCH

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
TOTE ROAD UPGRADE
PLAN AND PROFILE SHEET 3 OF 3

DWG. No. H353004-00000-223-271-0009-0003

REV 1

SHEET SIZE: E

1 EDC STAMP REMOVED

2 APPROVED FOR CONSTRUCTION

3

4

5

6

7

8

REG. PROFESSIONAL

FOR CONSTRUCTION

DESCRIPTION

REVISIONS

DATE

ROLE

NAME

SIGNATURE

DATE

1

2

3

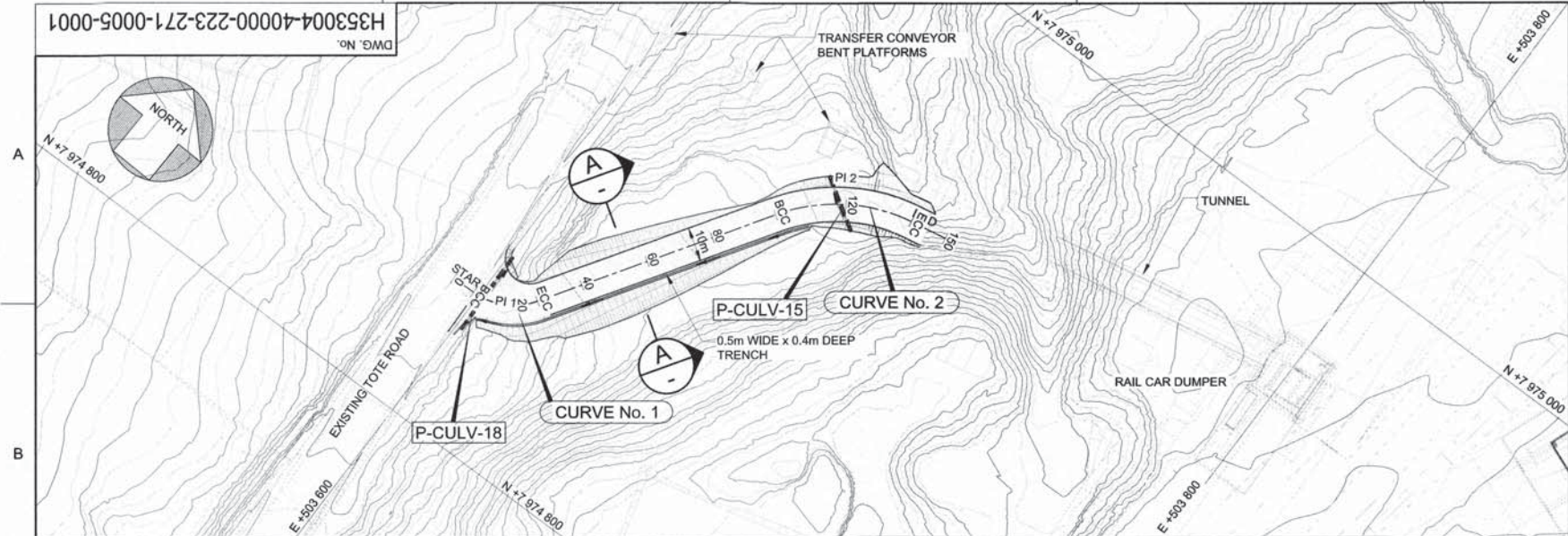
4

5

6

7

8



LAYOUT
SCALE 1:1000

ROAD DATA LEGEND:

BVC	BEGINNING VERTICAL CURVE
EVC	END VERTICAL CURVE
BCC	BEGINNING CIRCULAR CURVE
ECC	END CIRCULAR CURVE
R	RADIUS (CURVE)
DA	DEFLECTION ANGLE (CURVE)
TL	TANGENT LENGTH (CURVE)
AL	ARC LENGTH (CURVE)

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 24.000

VERTICAL PROFILE GRADES

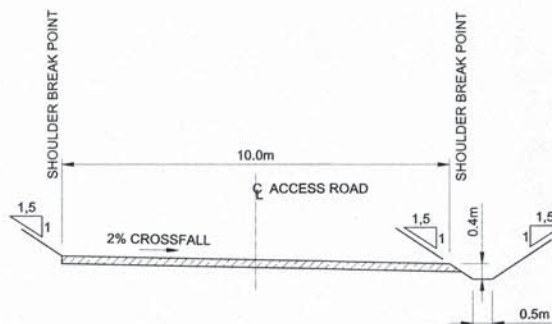
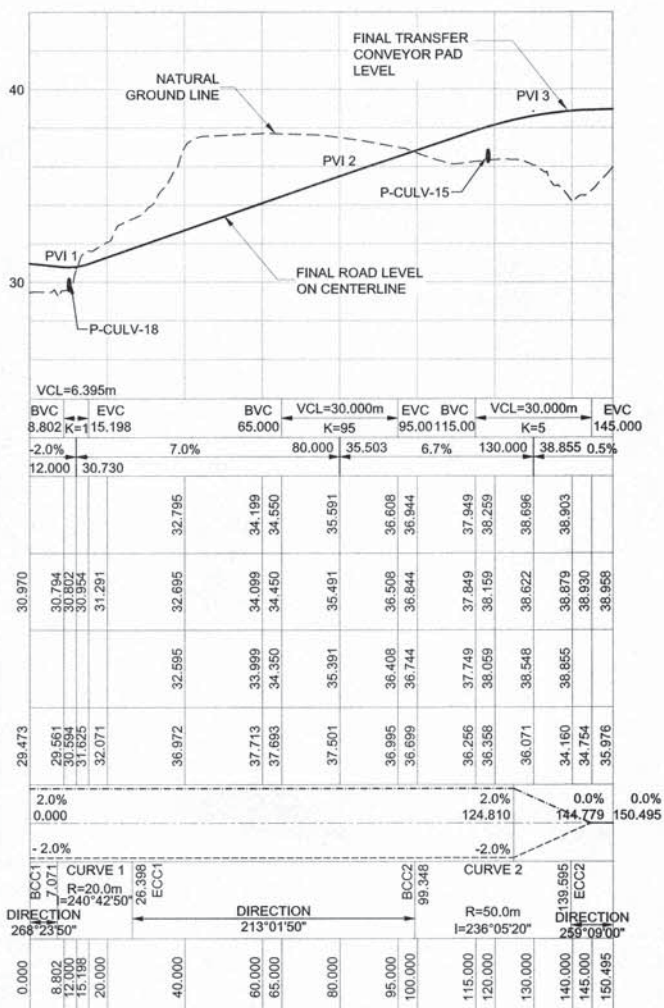
FINAL DESIGN ROAD LEVELS	LEFT EDGE (HL)
	CENTRE LINE (CL)
	RIGHT EDGE (HR)

GROUND LEVELS ON CL

SUPERELEVATION	LEFT
	RIGHT

HORIZONTAL ALIGNMENT

DISTANCE (m)



SECTION A-A
SCALE 1:100

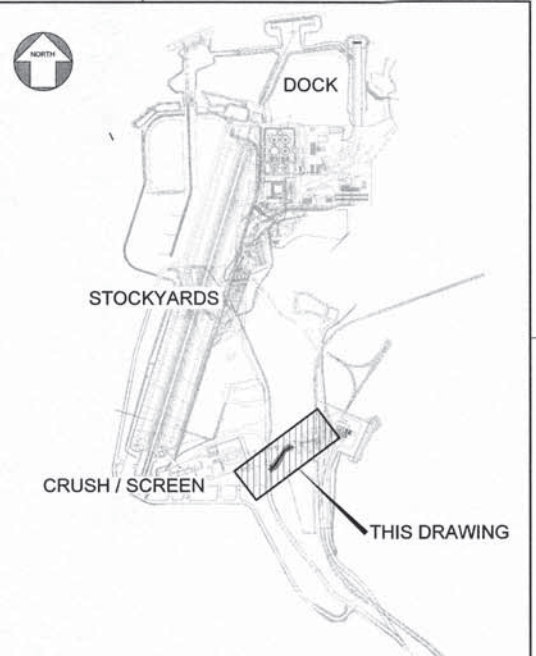
CULVERT SCHEDULE

(THIS SCHEDULE TO BE READ IN CONJUNCTION WITH DRG. No. H353004-00000-221-294-0001-0001-TYPICAL CULVERT DETAILS)

CULVERT ID	FISH BEARING	NUMBER OF PIPES	D (mm)	LENGTH (m)	E (mm)	W (mm)	TYPE	CULVERT AT UPSTREAM		CULVERT AT DOWNSTREAM		NOTE: FINAL U/S INVERT AND D/S INVERT LEVELS ARE TO BE CONFIRMED ON SITE					
								NORTHING	EASTING	U/S INV. ELEV (m)	RIP RAP REQ'D	NORTHING	EASTING	D/S INV. ELEV (m)	RIP RAP REQ'D	C (mm)	L (m)
P-CULV-15	N	1	600	15.003	0	600	CSP	7 974 921.120	503 673.84	36.524	Y	7 974 929.046	503 661.112	35.946	Y	300	2.4
P-CULV-18	N	1	600	25.400	0	600	CSP	7 974 830.712	503 601.78	29.625	Y	7 974 856.116	503 601.143	29.498	Y	300	2.4

SETTING OUT DATA - DUMPER TUNNEL ACCESS ROAD

NAME	CH	E	N	DETAILS
START	0.000	503 591.305	7 974 841.126	L 7.071m
BCC1	7.071	503 598.374	7 974 841.324	R 20.000m
PI1		503 608.862	7 974 841.618	DA 55°22'00"
ECC1	26.398	503 614.582	7 974 850.415	TL 10.483m
BCC2	99.348	503 654.345	7 974 911.575	R 50.000m
PI2		503 665.947	7 974 929.421	DA 46°07'10"
ECC2	139.595	503 686.852	7 974 933.428	TL 21.286m
END	150.495	503 697.557	7 974 935.480	AL 40.247m



KEY PLAN

NOTES:

- LIDAR SURVEY PROVIDED BY PHOTOSAT (2016)
- CO-ORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
- CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
- ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS NOTED OTHERWISE.
- REFER TO DRAWING No.H353004-40000-221-273-0001-0001 FOR TYPICAL PRIMARY ROAD CROSS SECTION.

LEGEND:

198 CONTOUR ELEVATION

CULVERT SCHEDULE LEGEND:

D	CULVERT DIAMETER
E	EMBEDMENT DEPTH
C	CULVERT SPACING AND BEDDING CLEARANCE
C = 500 WHILE D > 900mm	
C = 300 WHILE D <= 900mm	
W	CULVERT BACKFILL TOP WIDTH
W = (n*D) + (n-1)*C	
n = No. OF PIPE/CULVERT	
TYPE	CULVERT MATERIAL
U/S INV.	CULVERT UPSTREAM INVERT ELEVATION
D/S INV.	CULVERT DOWNSTREAM INVERT ELEVATION
L	RIPRAP APRON LENGTH
L = 4xD (APPROX)	
S	CULVERT SLOPE
LENGTH	CULVERT LENGTH
CSP	CORRUGATED STEEL PIPE

PERMIT TO PRACTICE
HATCH LTD.

Signature

Date

PERMIT NUMBER: P 512
The Association of Professional Engineers,
Geologists and Geophysicists of NWT/NU

FOR CONSTRUCTION

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HATCH

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

PORT SITE
DUMPER TUNNEL ACCESS ROAD
PLAN & PROFILE

H353004-40000-223-271-0009-0002	TOTE ROAD UPGRADE - PLAN AND PROFILE SHEET 2 OF 3
H353004-40000-221-272-0001-0001	ROTARY CAR DUMPER - LAYOUT PLAN
H353004-00000-221-294-0001-0001	STANDARD DRAWING - TYPICAL CULVERT DETAILS
H353004-40000-221-273-0001-0001	HAUL, PRIMARY AND SECONDARY ROADS - TYPICAL CROSS SECTIONS

DRAWING No.	DRAWING TITLE
-------------	---------------

REFERENCE DRAWINGS



REG. PROFESSIONAL

1	ENVIRO NOTE REMOVED
0	APPROVED FOR CONSTRUCTION

No.	DESCRIPTION
-----	-------------

REVISIONS

KvdM	FH	16/08/2018
KvdM	EB	19/04/2018

BY	CHK'D	DATE
----	-------	------

DRAFTSPERSON	NAME	DATE
DESIGNER	K VAN DER MERWE	NR
CHECKER	E BALEGAMIRE	NR
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	2018-09-14
ENG. MANAGER	D STANGER	2018-09-14
AREA MANAGER	T ATIBA	2018-09-14

DRAWING APPROVAL STATUS: Approved for Construction

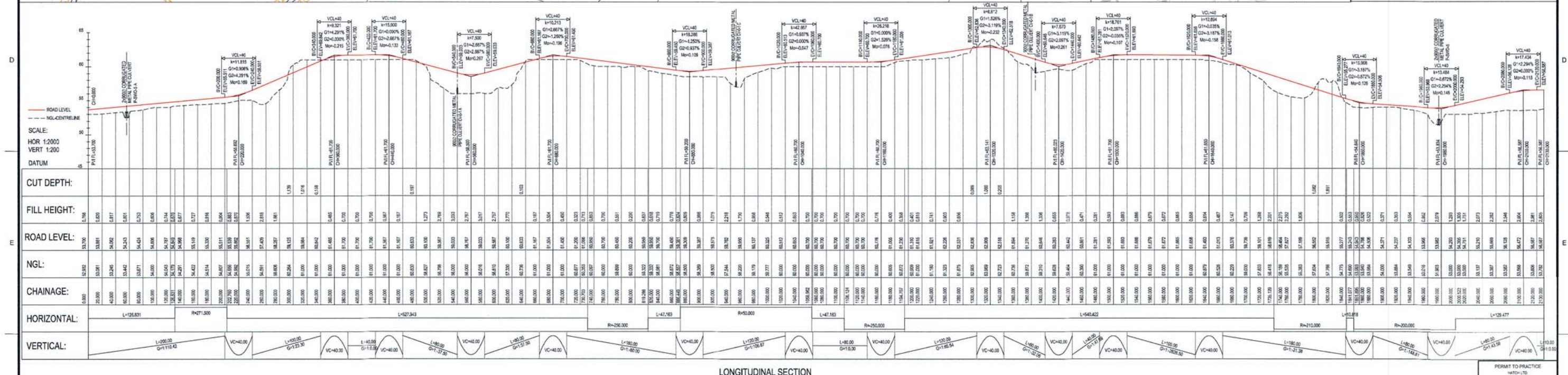
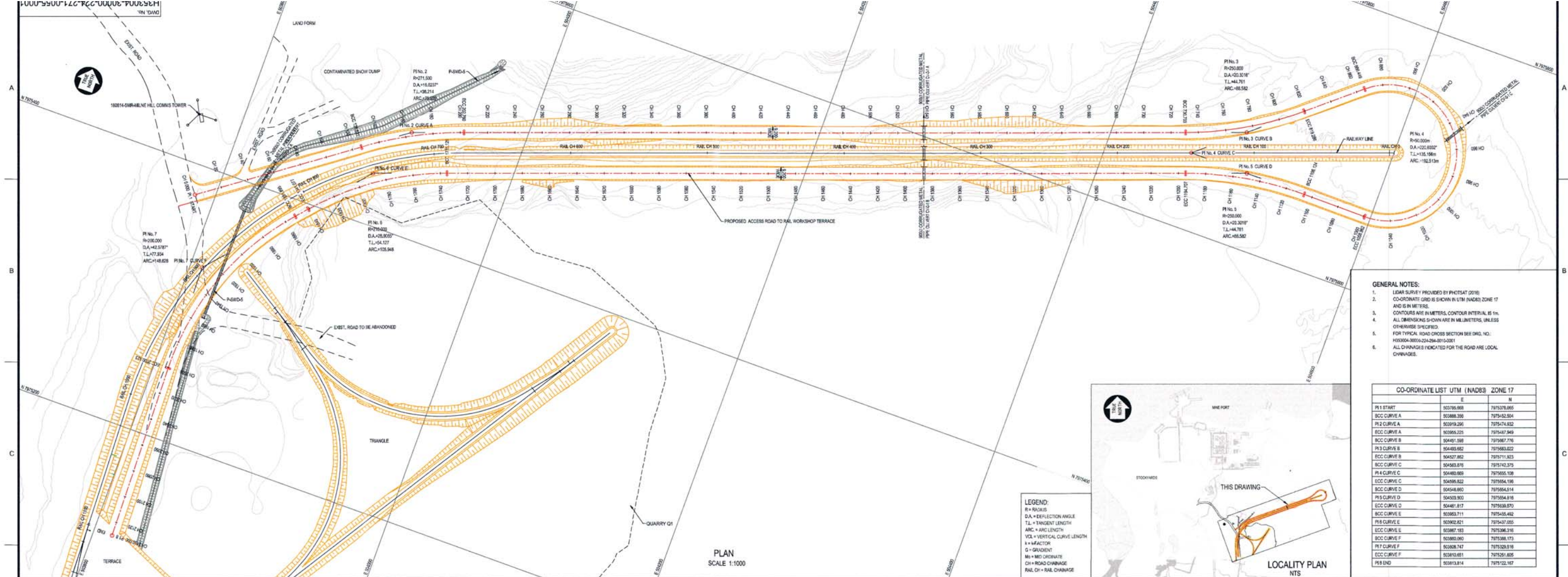
SCALE
1:1,000
OR AS NOTED

DWG. No.
H353004-40000-223-271-0005-0001

REV

1

SHEET SIZE: D



H353004-30000-224-294-0010 TYPICAL HAUL ROAD CROSS SECTION H353004-30000-224-273-0033 CROSS SECTIONS CH. 0+000 TO CH. 2+130km DRAWING No. _____ DRAWING TITLE _____		REFERENCE DRAWINGS		1		2		3		4		5		6		7		8		9		10							
Hatch		Baffinland		BAFFINLAND IRON MINES LP MARY RIVER PROJECT PORT RAIL SITE LAYOUT AND LONGITUDINAL SECTION ACCESS ROAD TO RAIL WORKSHOP		SCALE: 1:1,000 DWG. No. H353004-30000-224-271-0055-0001 SHEET SIZE: A0		REG. PROFESSIONAL		REVISIONS		DRAWING APPROVAL STATUS: APPROVED FOR CONSTRUCTION		APPROVED FOR CONSTRUCTION		FOR CONSTRUCTION		THE UNDERSIGNED HEREBY CERTIFY THAT THE PERSONS WHOSE NAMES ARE AFFIXED TO THIS DRAWING ARE QUALIFIED BY EDUCATION, TRAINING AND EXPERIENCE TO PREPARE THE DRAWING AND TO BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED THEREIN. THE UNDERSIGNED HEREBY CERTIFY THAT THE DRAWING IS A TRUE AND CORRECT REPRESENTATION OF THE INFORMATION CONTAINED THEREIN. THE UNDERSIGNED HEREBY CERTIFY THAT THE DRAWING IS A TRUE AND CORRECT REPRESENTATION OF THE INFORMATION CONTAINED THEREIN. THE UNDERSIGNED HEREBY CERTIFY THAT THE DRAWING IS A TRUE AND CORRECT REPRESENTATION OF THE INFORMATION CONTAINED THEREIN.		DATE: 2018/09/04		DATE: 2018/09/04		DATE: 2018/09/04		DATE: 2018/09/04		DATE: 2018/09/04	