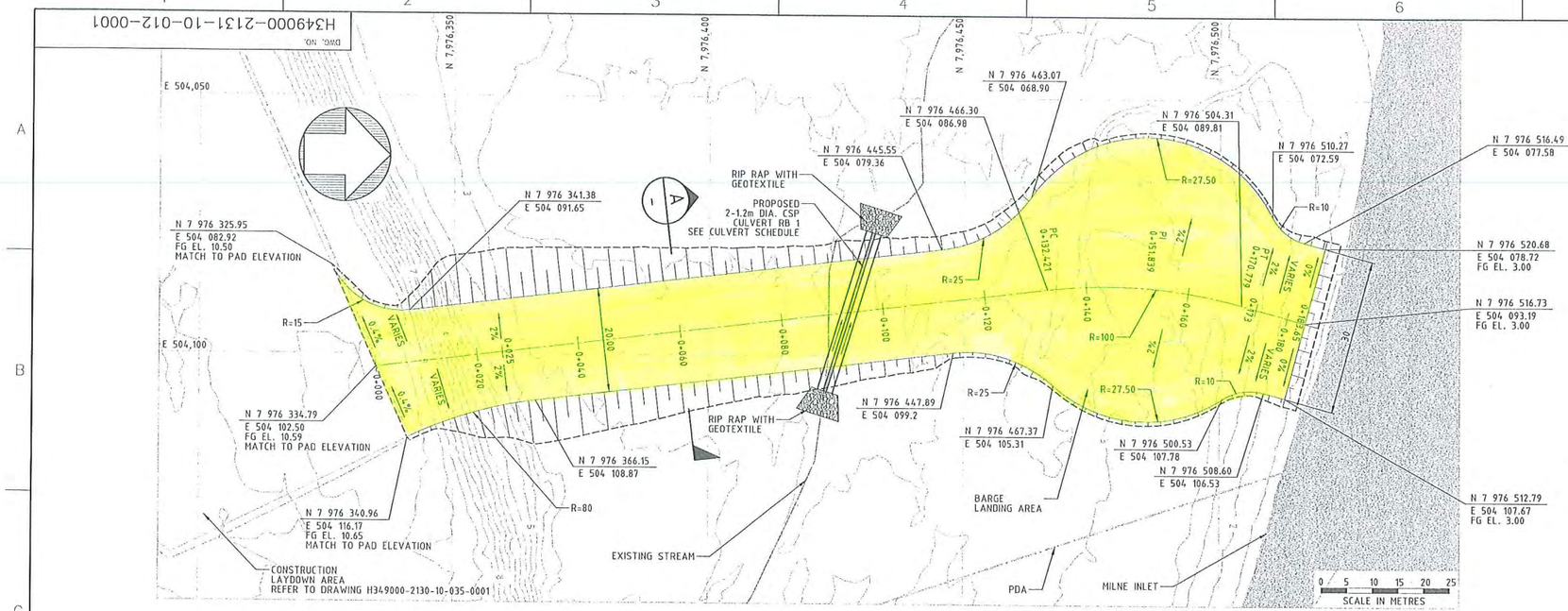
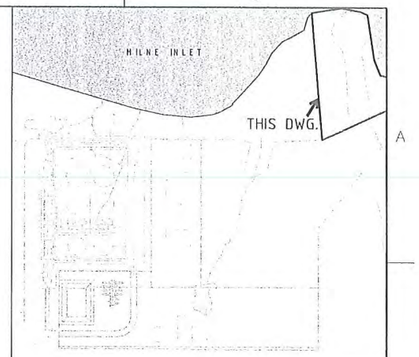
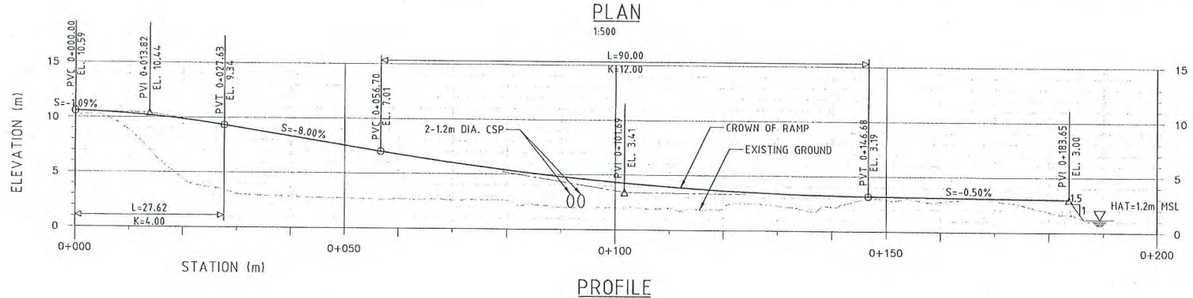
DWG. NO. H349000-2131-10-012-0001

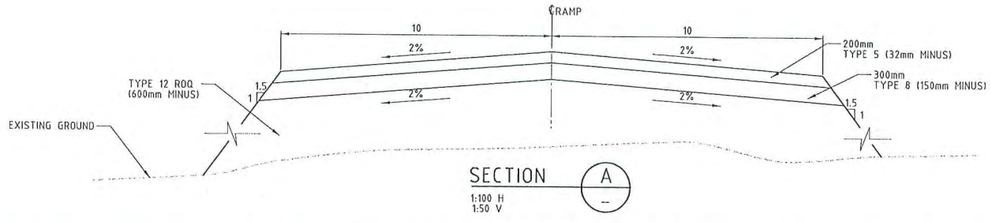




PLAN
1:500



PROFILE
1:500 H
1:250 V



SECTION A
1:100 H
1:50 V

CULVERT ID	FISH BEARING (Y/N)	NUMBER OF PIPES	D (mm)	W (mm)	TYPE	CULVERT AT UPSTREAM NORTHING	CULVERT AT UPSTREAM EASTING	U/S INV. ELV. (m)	CULVERT AT DOWNSTREAM NORTHING	CULVERT AT DOWNSTREAM EASTING	D/S INV. ELV. (m)	C (mm)	L (m)	S (%)	SKEW (DEGREE)	LENGTH (m)
RB 1	N	2	1200	2900	CSP	7 976 422.78	504 106.74	2.20	7 976 432.21	504 076.17	1.88	500	4.8	1.00	113.85	32

CULVERT SCHEDULE
REFER TO DRAWING H349000-1000-10-041-0003 FOR DETAIL

KEY PLAN

LEGEND:

- EXISTING WATERBODY
- EXISTING STREAM
- PROJECT DEVELOPMENT BOUNDARY (PDA)
- FILL SLOPE
- CUT SLOPE
- TOE OF SLOPE
- % GRADING SLOPE
- EXISTING GROUND CONTOURS
- PT POINT OF TANGENT
- PC POINT OF CURVE
- PI POINT OF INTERSECTION
- POE POINT OF END
- PVC POINT OF VERTICAL CURVE
- PVI POINT OF VERTICAL INTERSECTION
- PVT POINT OF VERTICAL TANGENT
- ROQ RUN OF QUARRY
- HAT HIGHEST ASTRONOMICAL TIDE
- MSL MEAN SEA LEVEL
- K RATE OF VERTICAL CURVATURE

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE IN METRES UNLESS NOTED OTHERWISE.
2. TOPOGRAPHY PROVIDED BY TERRAPOINT CANADA INC.
3. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
4. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 0.5 METRES.
5. SAFETY BERM NEEDS TO BE ADDED AS PER SITE REQUIREMENTS AND REQUEST, AS APPROVED BY COMPANY'S REPRESENTATIVE.
6. THE CULVERT UPSTREAM AND DOWNSTREAM LOCATIONS AND INVERT ELEVATIONS ARE BASED ON LIDAR DATA. NO STREAM CROSS-SECTION SURVEY DATA IS AVAILABLE.
7. ADJUST CLUVERT START AND END COORDINATES AND INVERT ELEVATIONS AT FIELD.
8. FLOW DIRECTION MUST BE FROM UPSTREAM TO DOWNSTREAM. PROVIDE AVERAGE STREAM SLOPE ALONG THE CULVERT AS CULVERT SLOPE BASED ON ACTUAL FIELD CONDITIONS.

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE

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REVISIONS

NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE

PROFESSIONAL ENGINEER M.M.S. HASSAN LICENSEE 15MAY13 NT(NU)

ISSUE AUTHORIZATION

REV.	ISSUE FOR	AUTH. BY	DATE
0	CONSTRUCTION	SH DS	2013-05-15

HATCH™

DESIGNED BY	DRAWN BY
D. SINCH	D. SINCH
DATE 2013-04-25	DATE 2013-04-25
CHECKED BY	DISCIP. ENGR.
A. SAHELI	S. HASSAN
DATE 2013-05-15	DATE 2013-05-15
PROJ. DES. COORD.	PROJ. ENGR.
T. THERIAULT	J. CLELAND
DATE 2013-05-15	DATE 2013-05-15
PROJ. MGR.	
S. PERRY	
DATE 2013-05-15	

Baffinland IRON MINES CORPORATION

MARY RIVER PROJECT

MILNE PORT
RAMP TO BEACH
PLAN, PROFILE & SECTION

SCALE	DWG. NO.	REV.
1:500 OR AS NOTED	H349000-2131-10-012-0001	0

ORIGINAL SHEET SIZE: ISO A1 (841 x 594)

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DWG. NO. H349000-4133-10-035-0001

SETOUT POINTS FOR PLATEAU

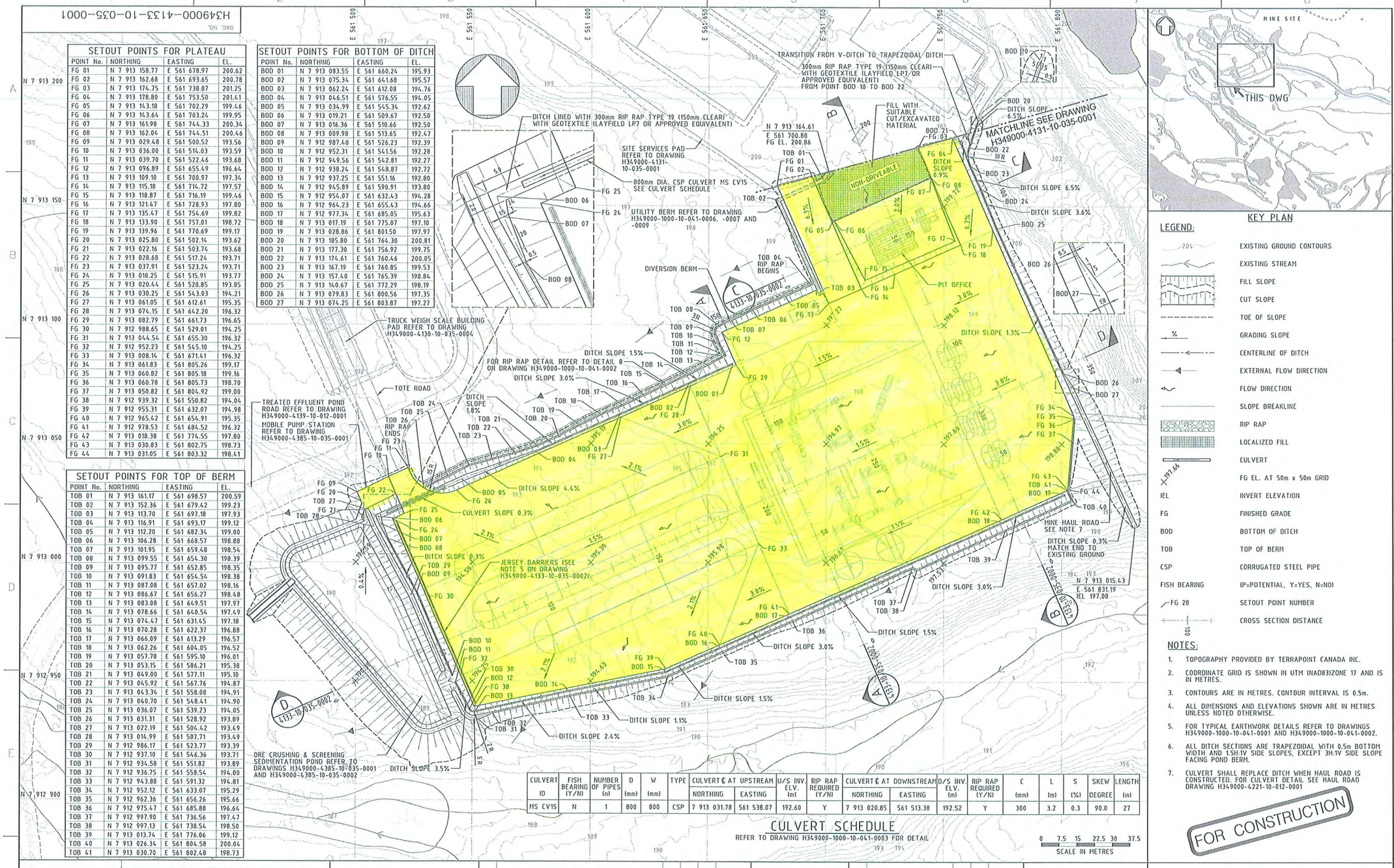
POINT No.	NORTHING	EASTING	EL.
FG 01	N 7 913 158.77	E 561 678.97	200.62
FG 02	N 7 913 162.68	E 561 693.65	200.78
FG 03	N 7 913 174.75	E 561 738.87	201.25
FG 04	N 7 913 178.80	E 561 753.50	201.41
FG 05	N 7 913 143.18	E 561 702.29	199.46
FG 06	N 7 913 143.64	E 561 703.24	199.95
FG 07	N 7 913 161.98	E 561 744.33	200.34
FG 08	N 7 913 162.04	E 561 744.51	200.46
FG 09	N 7 913 029.48	E 561 500.52	193.56
FG 10	N 7 913 036.00	E 561 514.03	193.59
FG 11	N 7 913 039.70	E 561 522.46	193.68
FG 12	N 7 913 096.89	E 561 655.49	196.64
FG 13	N 7 913 109.10	E 561 700.97	197.34
FG 14	N 7 913 115.18	E 561 714.72	197.57
FG 15	N 7 913 118.87	E 561 716.19	199.46
FG 16	N 7 913 121.47	E 561 728.93	197.80
FG 17	N 7 913 135.47	E 561 754.69	199.82
FG 18	N 7 913 133.90	E 561 757.01	198.72
FG 19	N 7 913 139.96	E 561 770.69	199.17
FG 20	N 7 913 025.80	E 561 502.14	193.62
FG 21	N 7 913 022.16	E 561 503.74	193.68
FG 22	N 7 913 028.68	E 561 517.24	193.71
FG 23	N 7 913 037.91	E 561 523.24	193.71
FG 24	N 7 913 018.25	E 561 515.91	193.77
FG 25	N 7 913 020.44	E 561 520.85	193.85
FG 26	N 7 913 030.25	E 561 543.03	194.21
FG 27	N 7 913 061.05	E 561 612.61	195.35
FG 28	N 7 913 074.15	E 561 642.20	196.32
FG 29	N 7 913 082.79	E 561 661.73	196.65
FG 30	N 7 913 044.54	E 561 529.01	194.25
FG 31	N 7 913 044.54	E 561 655.30	196.32
FG 32	N 7 912 952.23	E 561 545.10	194.25
FG 33	N 7 913 008.14	E 561 671.61	196.32
FG 34	N 7 913 061.83	E 561 805.26	199.17
FG 35	N 7 913 060.82	E 561 805.18	199.16
FG 36	N 7 913 060.78	E 561 805.73	198.70
FG 37	N 7 913 050.82	E 561 804.92	199.00
FG 38	N 7 912 939.32	E 561 550.82	194.04
FG 39	N 7 912 955.31	E 561 632.07	194.98
FG 40	N 7 912 965.42	E 561 654.91	195.35
FG 41	N 7 912 978.53	E 561 684.52	196.32
FG 42	N 7 913 018.38	E 561 774.55	197.80
FG 43	N 7 913 030.83	E 561 802.75	198.73
FG 44	N 7 913 031.05	E 561 803.32	198.41

SETOUT POINTS FOR BOTTOM OF DITCH

POINT No.	NORTHING	EASTING	EL.
BOD 01	N 7 913 083.55	E 561 660.24	195.93
BOD 02	N 7 913 075.34	E 561 641.68	195.57
BOD 03	N 7 913 062.24	E 561 612.08	194.76
BOD 04	N 7 913 046.51	E 561 576.55	194.05
BOD 05	N 7 913 034.99	E 561 545.34	192.62
BOD 06	N 7 913 019.21	E 561 509.67	192.50
BOD 07	N 7 913 016.36	E 561 510.66	192.50
BOD 08	N 7 913 009.98	E 561 513.65	192.47
BOD 09	N 7 912 987.40	E 561 526.23	192.39
BOD 10	N 7 912 952.31	E 561 541.56	192.28
BOD 11	N 7 912 949.56	E 561 542.81	192.27
BOD 12	N 7 912 938.24	E 561 548.87	192.72
BOD 13	N 7 912 937.25	E 561 551.16	192.80
BOD 14	N 7 912 945.89	E 561 590.91	193.80
BOD 15	N 7 912 954.07	E 561 632.43	194.28
BOD 16	N 7 912 964.23	E 561 655.43	194.66
BOD 17	N 7 912 977.34	E 561 685.05	195.63
BOD 18	N 7 913 017.19	E 561 775.07	197.10
BOD 19	N 7 913 028.86	E 561 801.50	197.97
BOD 20	N 7 913 185.80	E 561 764.30	200.81
BOD 21	N 7 913 177.30	E 561 756.92	199.75
BOD 22	N 7 913 174.61	E 561 760.46	200.05
BOD 23	N 7 913 167.19	E 561 760.85	199.53
BOD 24	N 7 913 157.40	E 561 765.39	198.84
BOD 25	N 7 913 140.67	E 561 772.29	198.19
BOD 26	N 7 913 079.83	E 561 800.56	197.35
BOD 27	N 7 913 074.25	E 561 803.87	197.27

SETOUT POINTS FOR TOP OF BERM

POINT No.	NORTHING	EASTING	EL.
TOB 01	N 7 913 161.17	E 561 698.57	200.59
TOB 02	N 7 913 152.36	E 561 679.42	199.23
TOB 03	N 7 913 113.70	E 561 697.18	197.93
TOB 04	N 7 913 116.91	E 561 693.17	199.12
TOB 05	N 7 913 112.20	E 561 682.34	199.00
TOB 06	N 7 913 106.28	E 561 668.57	198.88
TOB 07	N 7 913 101.95	E 561 659.48	198.54
TOB 08	N 7 913 099.55	E 561 654.30	198.39
TOB 09	N 7 913 095.77	E 561 652.85	198.35
TOB 10	N 7 913 091.83	E 561 654.54	198.38
TOB 11	N 7 913 087.08	E 561 657.02	198.16
TOB 12	N 7 913 086.67	E 561 656.27	198.48
TOB 13	N 7 913 083.08	E 561 649.51	197.97
TOB 14	N 7 913 078.66	E 561 640.54	197.49
TOB 15	N 7 913 074.47	E 561 631.45	197.18
TOB 16	N 7 913 070.28	E 561 622.37	196.88
TOB 17	N 7 913 066.09	E 561 613.29	196.57
TOB 18	N 7 913 062.26	E 561 604.05	196.52
TOB 19	N 7 913 057.78	E 561 595.10	196.01
TOB 20	N 7 913 053.15	E 561 586.21	195.38
TOB 21	N 7 913 049.00	E 561 577.11	195.10
TOB 22	N 7 913 045.92	E 561 567.76	194.87
TOB 23	N 7 913 043.34	E 561 558.08	194.91
TOB 24	N 7 913 040.70	E 561 548.41	194.90
TOB 25	N 7 913 036.07	E 561 539.23	194.05
TOB 26	N 7 913 031.31	E 561 528.92	193.89
TOB 27	N 7 913 022.19	E 561 504.42	193.49
TOB 28	N 7 913 014.99	E 561 507.71	193.49
TOB 29	N 7 912 986.17	E 561 523.77	193.39
TOB 30	N 7 912 937.10	E 561 546.36	193.71
TOB 31	N 7 912 934.58	E 561 551.82	193.89
TOB 32	N 7 912 936.75	E 561 558.54	194.00
TOB 33	N 7 912 943.88	E 561 591.32	194.81
TOB 34	N 7 912 952.12	E 561 633.07	195.29
TOB 35	N 7 912 962.36	E 561 656.26	195.66
TOB 36	N 7 912 975.47	E 561 685.88	196.64
TOB 37	N 7 912 997.90	E 561 736.56	197.47
TOB 38	N 7 912 997.13	E 561 738.54	198.50
TOB 39	N 7 913 013.74	E 561 776.06	199.12
TOB 40	N 7 913 026.34	E 561 804.58	200.04
TOB 41	N 7 913 030.70	E 561 802.48	198.73



CULVERT ID	FISH BEARING (Y/N)	NUMBER OF PIPES (n)	D (mm)	W (mm)	TYPE	CULVERT ℄ AT UPSTREAM NORTHING	CULVERT ℄ AT UPSTREAM EASTING	U/S INV. ELV. (m)	RIP RAP REQUIRED (Y/N)	CULVERT ℄ AT DOWNSTREAM NORTHING	CULVERT ℄ AT DOWNSTREAM EASTING	D/S INV. ELV. (m)	RIP RAP REQUIRED (Y/N)	C (mm)	L (m)	S (%)	SKEW DEGREE	LENGTH (m)
MS CV15	N	1	800	800	CSP	7 913 031.78	561 538.07	192.60	Y	7 913 020.85	561 513.38	192.52	Y	300	3.2	0.3	90.0	27

CULVERT SCHEDULE

REFER TO DRAWING H349000-1000-10-041-0003 FOR DETAIL

SCALE IN METRES 0 7.5 15 22.5 30 37.5

KEY PLAN

LEGEND:

204	EXISTING GROUND CONTOURS
	EXISTING STREAM
	FILL SLOPE
	CUT SLOPE
	TOE OF SLOPE
%	GRADING SLOPE
	CENTERLINE OF DITCH
	EXTERNAL FLOW DIRECTION
	FLOW DIRECTION
	SLOPE BREAKLINE
	RIP RAP
	LOCALIZED FILL
	CULVERT
197.66	FG EL. AT 50m x 50m GRID
IEL	INVERT ELEVATION
FG	FINISHED GRADE
BOD	BOTTOM OF DITCH
TOB	TOP OF BERM
CSP	CORRUGATED STEEL PIPE
FISH BEARING	IP=POTENTIAL, Y=YES, N=NO)
FG 28	SETOUT POINT NUMBER
100	CROSS SECTION DISTANCE

NOTES:

1. TOPOGRAPHY PROVIDED BY TERRAPOINT CANADA INC.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS AND ELEVATIONS SHOWN ARE IN METRES UNLESS NOTED OTHERWISE.
5. FOR TYPICAL EARTHWORK DETAILS REFER TO DRAWINGS H349000-1000-10-041-0001 AND H349000-1000-10-041-0002.
6. ALL DITCH SECTIONS ARE TRAPEZOIDAL WITH 0.5m BOTTOM WIDTH AND 1.5H:1V SIDE SLOPES, EXCEPT 3H:1V SIDE SLOPE FACING POND BERM.
7. CULVERT SHALL REPLACE DITCH WHEN HAUL ROAD IS CONSTRUCTED. FOR CULVERT DETAIL SEE HAUL ROAD DRAWING H349000-4221-10-012-0001

FOR CONSTRUCTION

H349000-4000-90-014-0003 — MINE SITE – INFRASTRUCTURE LAYOUT
DRAWING NO. — DRAWING TITLE

REFERENCE DRAWINGS

PERMIT TO PRACTICE HATCH LTD.
Signature
Date 2013/08/29
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

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NO.	DESCRIPTION	BY	CHK'D	APP'D	DATE

REVISIONS

REGISTERED PROFESSIONAL ENGINEER M. M. S. HASSAN LICENSEE (BASIC) NT/NU

REV.	ISSUE FOR	AUTH. BY	DATE
0	CONSTRUCTION	SH MM	2013-08-29

ISSUE AUTHORIZATION

HATCH™

DESIGNED BY	DRAWN BY
M. MCDOUGALD	M. MCDOUGALD
DATE 2013-05-28	DATE 2013-05-28
CHECKED BY	PROJ. ENGR.
A. MOHAMMADI	S. HASSAN
DATE 2013-08-29	DATE 2013-08-29
PROJ. DES. ORD.	PROJ. ENGR.
T. THEETEN	J. CLELAND
DATE 2013-08-29	DATE 2013-08-29
PROJ. MGR.	
S. PERRY	
DATE 2013-08-29	

Baffinland

MARY RIVER PROJECT

MINE SITE
ORE CRUSHING & SCREENING
EARTHWORKS & DRAINAGE – PLAN

SCALE	DWG. NO.	REV.
1:750 OR AS NOTED	H349000-4133-10-035-0001	0

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