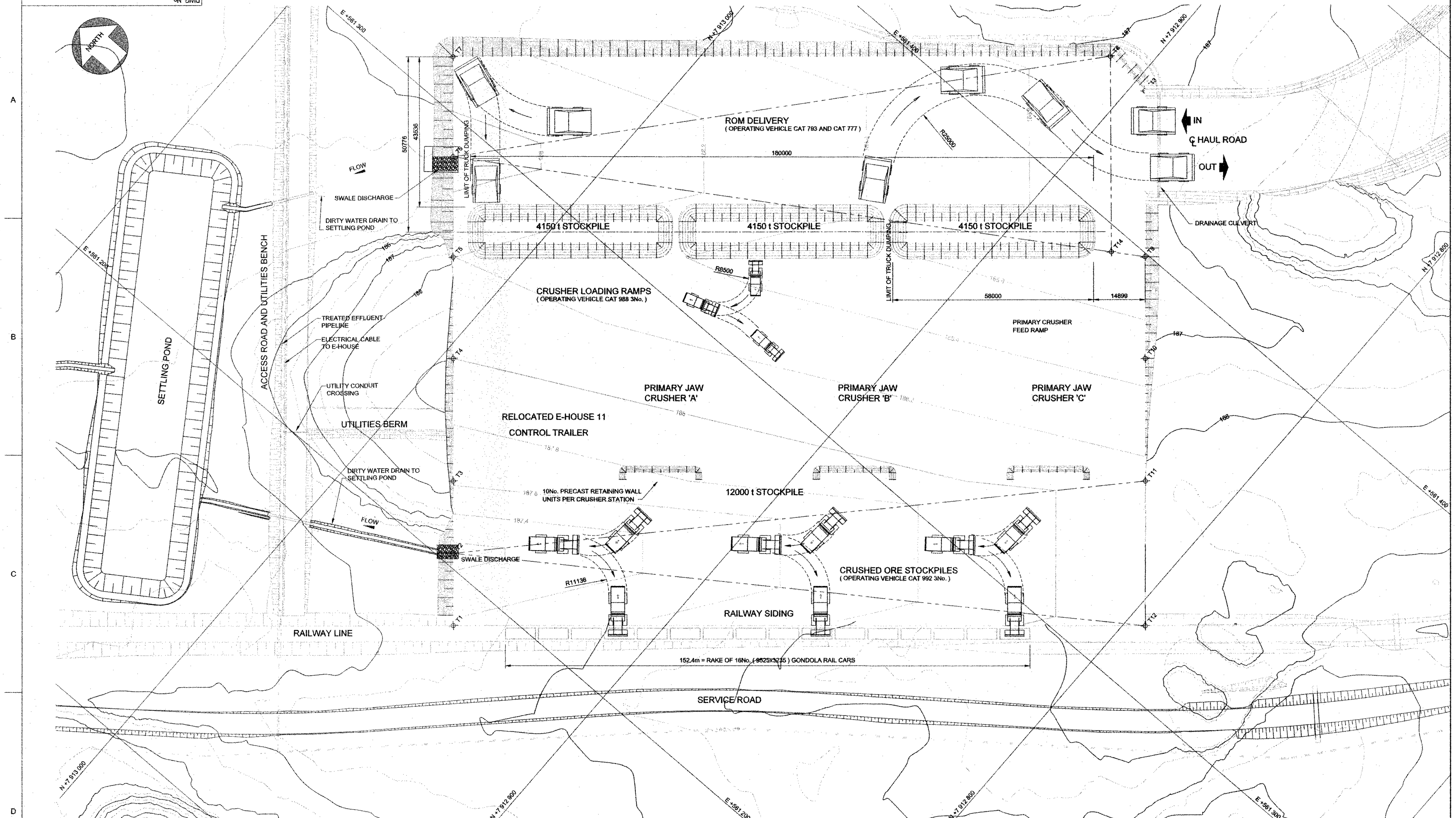
ATTACHMENT 14

Mine Site Material Handling and Water Management

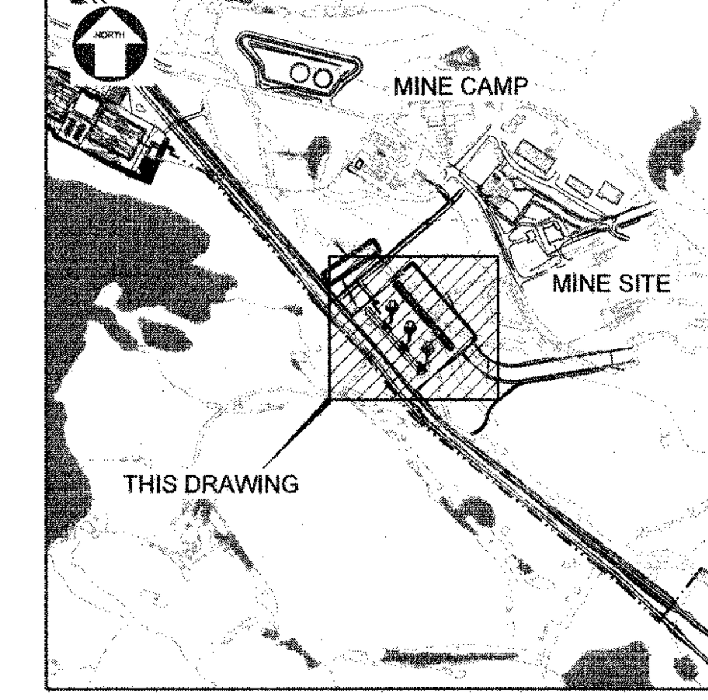
(28 Pages)

DWG. No. H353004-10000-221-272-0006-0001



PLAN ON CRUSHER LOADING PAD

SCALE 1:500



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. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS OTHERWISE SPECIFIED.

LEGEND:

- 198 — CONTOUR
- EXISTING TREATED EFFLUENT
- NEW TREATED EFFLUENT
- ELECTRICAL CABLE

CRUSHER PAD SETTING OUT CO-ORDINATES

POINT	E	N	LEVEL
T1	561 187.603	7 912 946.397	187.630
T2	561 203.499	7 912 960.095	187.430
T3	561 219.407	7 912 973.804	187.630
T4	561 246.299	7 912 996.979	188.000
T5	561 268.645	7 913 016.237	187.630
T6	561 290.613	7 913 035.168	187.630
T7	561 312.582	7 913 054.100	187.630
T8	561 436.553	7 912 910.245	188.130
T9	561 399.145	7 912 864.806	188.130
T10	561 376.815	7 912 845.528	188.480
T11	561 349.940	7 912 822.334	188.130
T12	561 318.095	7 912 794.951	188.130
T13	561 435.506	7 912 896.141	188.130
T14	561 393.858	7 912 873.106	188.700

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date 2018-08-03
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

REFERENCE DRAWINGS

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0008-0001	STANDARD DRAWINGS - TYPICAL PAD, DITCH AND BERM SECTIONS
H353004-00000-221-294-0006-0001	STANDARD DRAWINGS - EARTHWORKS AND DRAINAGE DETAILS
H353004-10000-228-272-0005-0001	CRUSHER PAD - DRAINAGE PLAN
H353004-10000-221-273-0003-0001	CRUSHER PAD - PAD CROSS SECTIONS
H353004-10000-221-272-0007-0001	CRUSHER PAD - CRUSHER BARRIER SETTING OUT PLAN
H353004-00000-224-272-0027-0001	RAILWAY PLAN AND LONGITUDINAL SECTION CH106,900km TO CH109,610kM
H353004-41000-231-260-0002-0001	PRIMARY CRUSHER FEED RAMP - CONCRETE ARRANGEMENT AND DETAILS
H353004-19000-231-260-0001-0003	PRIMARY CRUSHER AREA - RETAINING WALL DETAILS
H353004-19000-231-260-0001-0001	PRIMARY JAW CRUSHER FOUNDATIONS - ARRANGEMENT AND DETAILS

REG. PROFESSIONAL

FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	02/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	13/04/2018

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	I BARNARD	NR	01/08/2018
CHECKER	F HUGO		2018-08-03
DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATIBA		
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		2018-08-03

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

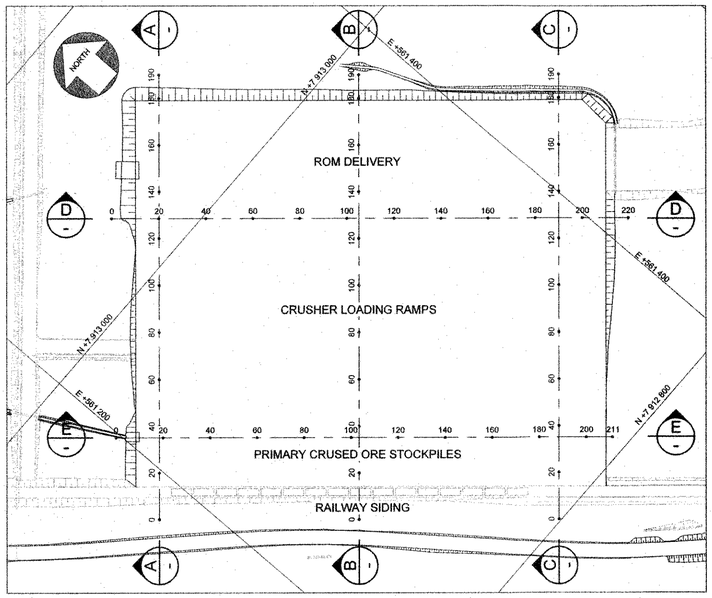
BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD
LAYOUT PLAN

SCALE 1:500 OR AS NOTED | DWG. No. H353004-10000-221-272-0006-0001 | REV 1

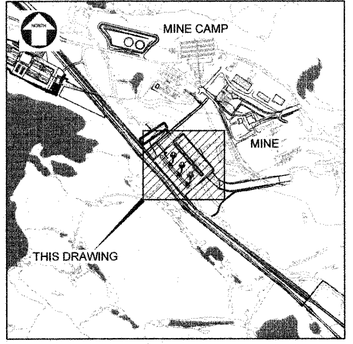
SHEET SIZE: E

DWG. No. H353004-10000-221-273-0003-0001



PLAN ON CRUSHER PAD

SCALE 1:1000



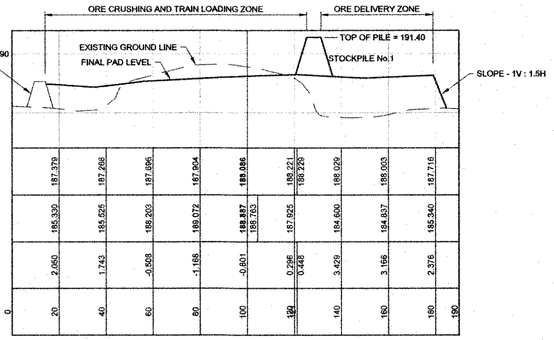
KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016)
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS OTHERWISE SPECIFIED.

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 182.000

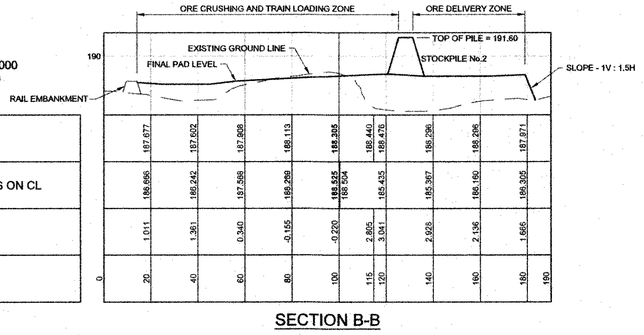


PAD LEVEL	187.379	187.268	187.096	187.804	188.086	188.221	188.229	188.029	188.003	187.718	
GROUND LEVELS ON CL	185.330	185.525	186.203	186.072	188.887	188.763	187.926	184.600	184.837	185.340	
CUT (-) / FILL (+)	2.050	1.743	-0.938	-1.168	-0.801	0.226	0.448	3.429	3.166	2.378	
DISTANCE (m)	20	40	60	80	100	120	121	140	160	180	190

SECTION A-A

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 185.000

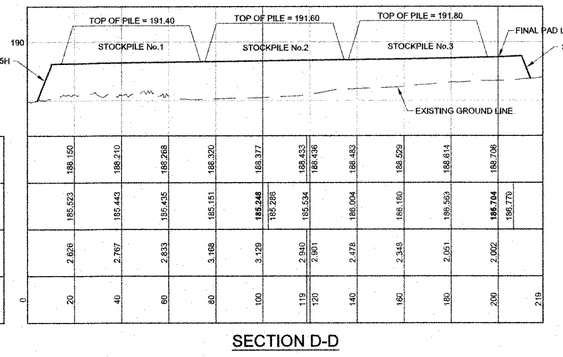


PAD LEVEL	187.677	187.602	187.268	188.113	188.385	188.440	188.476	188.286	188.286	187.971	
GROUND LEVELS ON CL	186.666	186.242	187.588	188.269	188.525	188.504	189.435	185.367	186.160	186.305	
CUT (-) / FILL (+)	1.011	1.361	0.340	-0.155	-0.220	2.805	3.041	2.928	2.136	1.666	
DISTANCE (m)	20	40	60	80	100	115	120	140	160	180	190

SECTION B-B

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 182.000

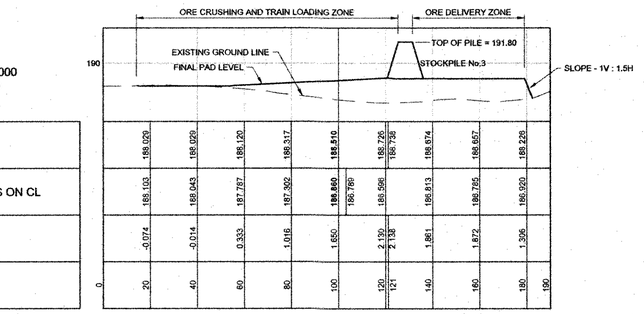


PAD LEVEL	188.150	188.210	188.268	188.320	188.377	188.433	188.436	188.483	188.529	188.614	188.706	
GROUND LEVELS ON CL	185.523	185.443	185.435	185.151	185.248	185.286	185.534	186.004	186.160	186.553	186.704	186.779
CUT (-) / FILL (+)	2.626	2.767	2.833	3.168	3.129	2.940	2.901	2.478	2.348	2.061	2.002	
DISTANCE (m)	20	40	60	80	100	119	120	140	160	180	200	219

SECTION D-D

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 185.000

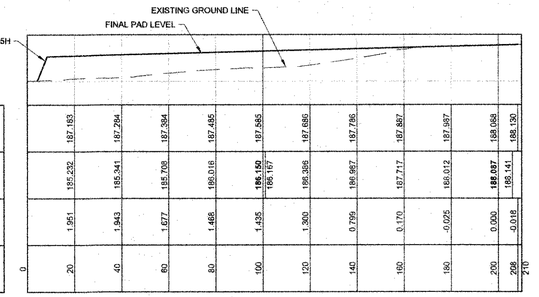


PAD LEVEL	188.029	188.029	188.120	188.317	188.510	188.726	188.738	188.674	188.657	188.228	
GROUND LEVELS ON CL	188.103	188.043	187.787	187.302	186.860	186.766	186.596	186.813	186.785	186.920	
CUT (-) / FILL (+)	-0.074	-0.014	0.333	1.016	1.650	2.139	2.138	1.861	1.872	1.306	
DISTANCE (m)	20	40	60	80	100	120	121	140	160	180	190

SECTION C-C

SCALES:
HORIZONTAL 1:1000
VERTICAL 1:200

DATUM 183.000



PAD LEVEL	187.183	187.294	187.384	187.485	187.585	187.686	187.786	187.887	187.987	188.068	188.130	
GROUND LEVELS ON CL	185.232	185.341	185.708	186.016	186.159	186.167	186.386	186.967	187.717	188.012	188.037	188.141
CUT (-) / FILL (+)	1.951	1.943	1.677	1.468	1.426	1.300	0.799	0.170	-0.025	0.000	-0.018	
DISTANCE (m)	20	40	60	80	100	120	140	160	180	200	208	210

SECTION E-E

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date 2018-08-03
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	
H353004-00000-221-294-0008-0001	STANDARD DRAWINGS - TYPICAL PAD, DITCH AND BERM SECTIONS
H353004-10000-221-272-0006-0001	CRUSHER PAD - LAYOUT PLAN
H353004-10000-231-260-0003-0001	PRIMARY CRUSHER STOCKPILE - RETAINING WALL DETAILS
H353004-10000-231-280-0002-0001	PRIMARY CRUSHER FFED RAMP - CONCRETE ARRANGEMENT AND DETAILS
H353004-10000-231-260-0001-0001	PRIMARY JAW CRUSHER - ARRANGEMENT AND DETAILS

REGISTERED PROFESSIONAL ENGINEER — R. A. HALIM — LICENSEE — 2018-08-03 — NWT/NU

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	02/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	13/04/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	I BARNARD	NR	01/08/2018
CHECKER	F HUGO		2018-08-02
DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATIBA		2018-08-03
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		2018-08-03

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD
PAD CROSS SECTIONS

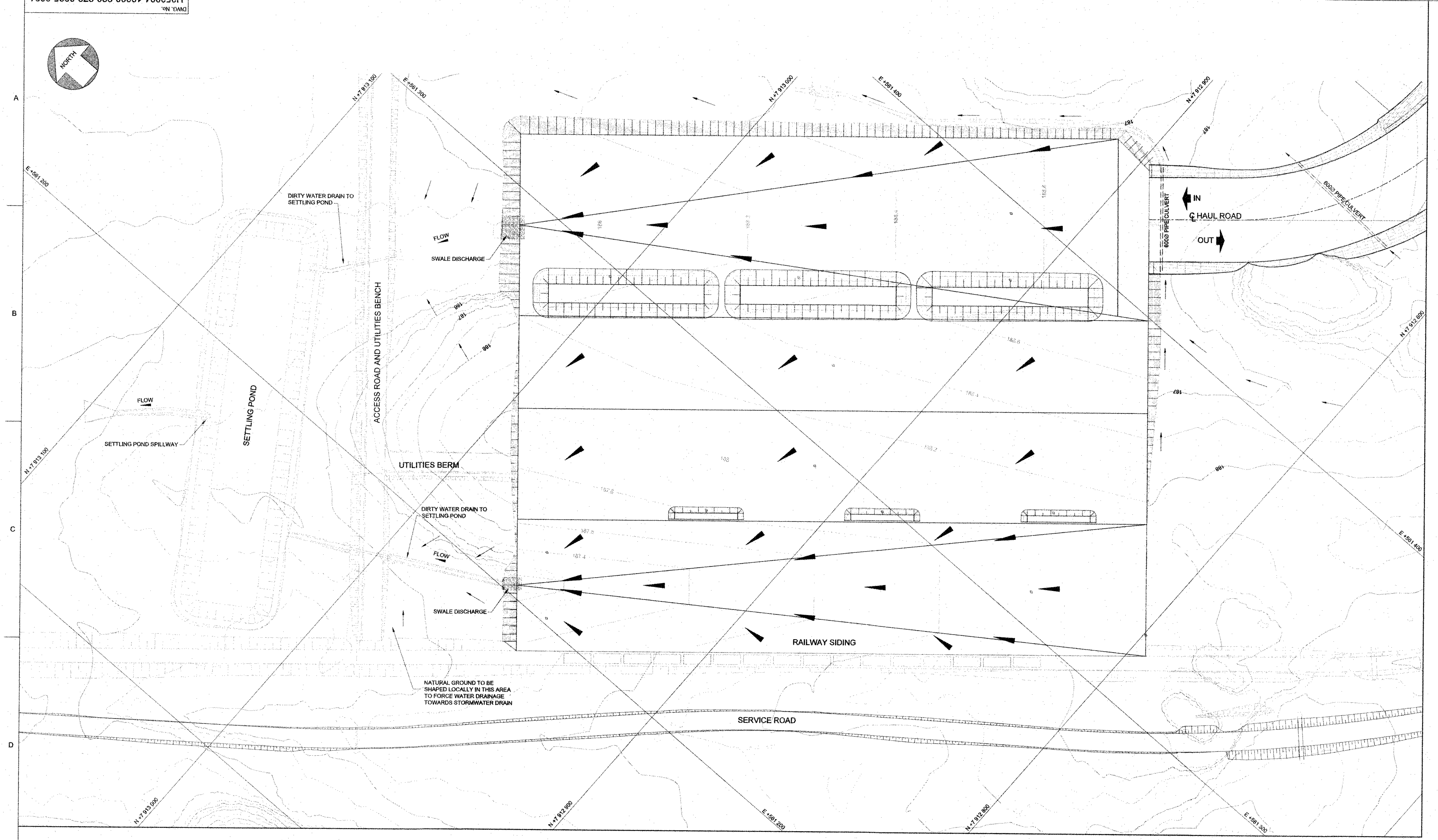
SCALE 1:1000 OR AS NOTED

DWG. No. H353004-10000-221-273-0003-0001

REV 1

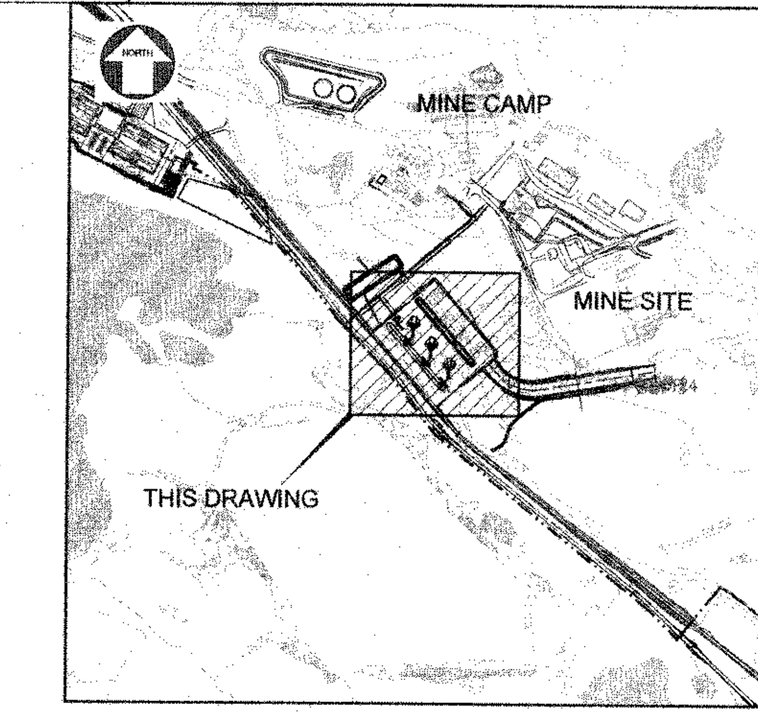
SHEET SIZE: E

USERNAME\DATE\TIME



PLAN ON CRUSHER PAD

SCALE 1:500



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016).
2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83), ZONE 17 AND IS IN METERS.
3. CONTOURS ARE IN METERS. THE CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
5. THE POND IS DESIGNED TO BE OPERATED EMPTY.
6. IT IS ASSUMED THAT ALL RUN OFF COLLECTED BY THE SETTLING POND IS NON-ACID GENERATING AND CAN BE DISCHARGED TO THE ENVIRONMENT ONCE THE REQUIREMENTS OF BIM ENVIRONMENTAL DESIGN CRITERIA HAS BEEN ACHIEVED. WATER TO BE DISCHARGED TO AN APPROVED POINT, IN ACCORDANCE WITH THE CLIENT'S (BIM) ENVIRONMENTAL REQUIREMENTS.
7. THE INSTALLATION OF THE GEOMEMBRANE (ENVIRO LINER 6000HD) IS TO BE IN STRICT ACCORDANCE WITH THE SPECIALIST PROVIDERS SPECIFICATIONS.

LEGEND:

- OFF PAD FLOW DIRECTION
- ON PAD FLOW DIRECTION

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date 2018-08-03
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

REFERENCE DRAWINGS

DRAWING No.	DRAWING TITLE
H353004-10000-228-272-0006-0001	CRUSHER PAD SETTLING POND - DETAILS
H353004-10000-228-272-0005-0001	CRUSHER PAD SETTLING POND - PLAN AND PROFILES
H353004-10000-221-273-0003-0001	CRUSHER PAD - PAD CROSS SECTIONS
H353004-10000-221-272-0006-0001	CRUSHER PAD - LAYOUT PLAN

PROFESSIONAL ENGINEER L1247 R. A. HALIM LICENSEE 2018-08-03 NWT/NU

REG. PROFESSIONAL

FOR CONSTRUCTION

REVISIONS

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	01/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	16/04/2018

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	S HALL	NR	01/08/2018
CHECKER	F HUGO		2018-08-03
DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATTIBA		
ENG. MANAGER	D STANGER		2018-08-03
AREA MANAGER	T ATTIBA		2018-08-03

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD
DRAINAGE PLAN

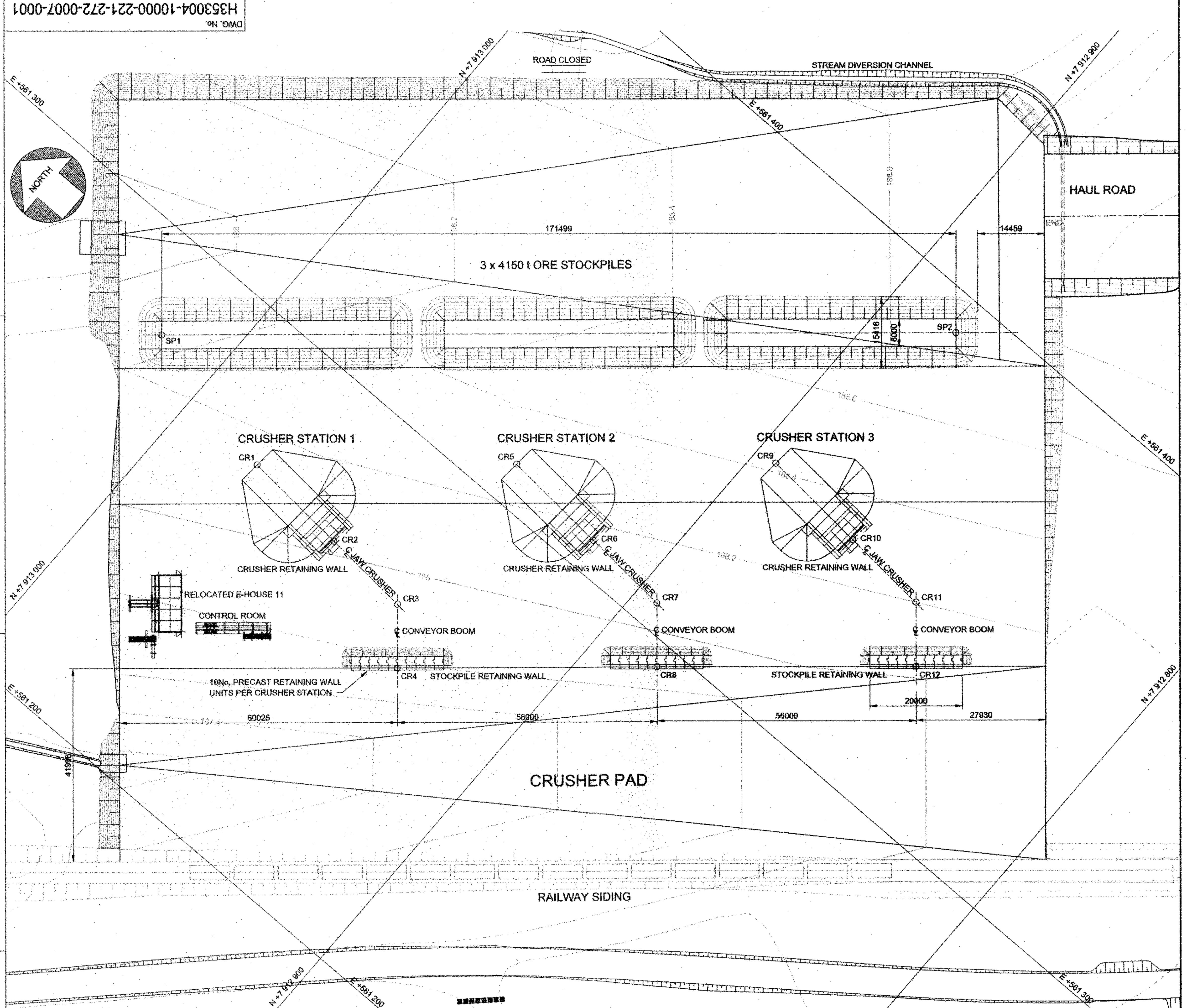
SCALE 1:500 OR AS NOTED

DWG. No. H353004-10000-228-272-0005-0001

REV 1

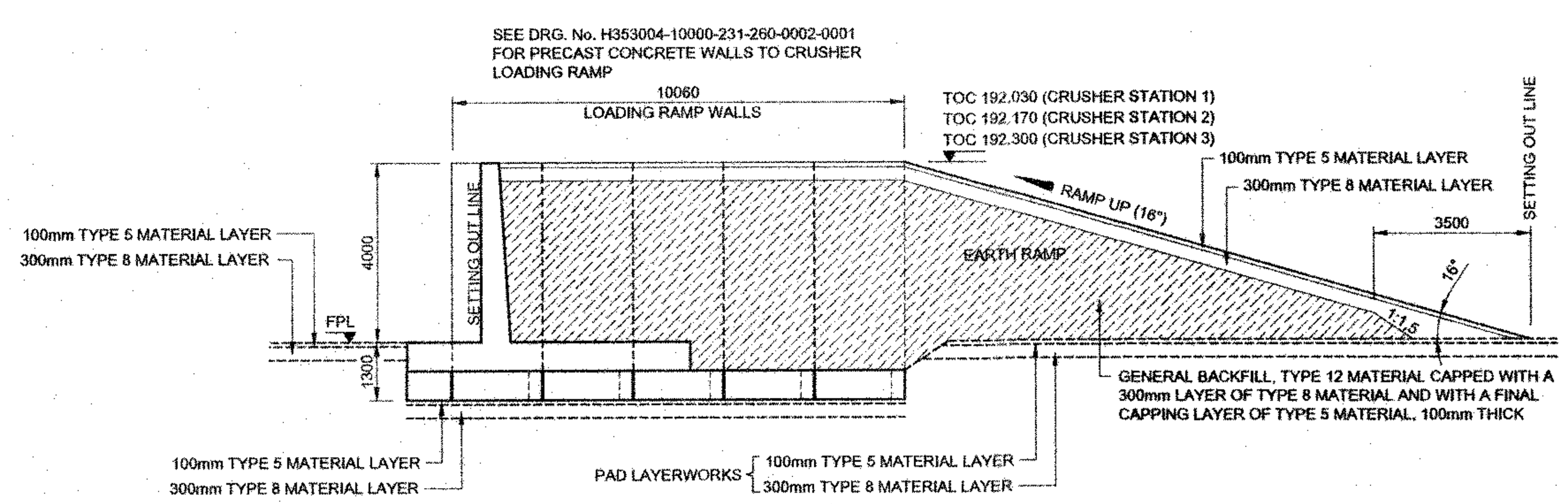
SHEET SIZE: E

$USERNAMES $DATES $FILES $TIMES



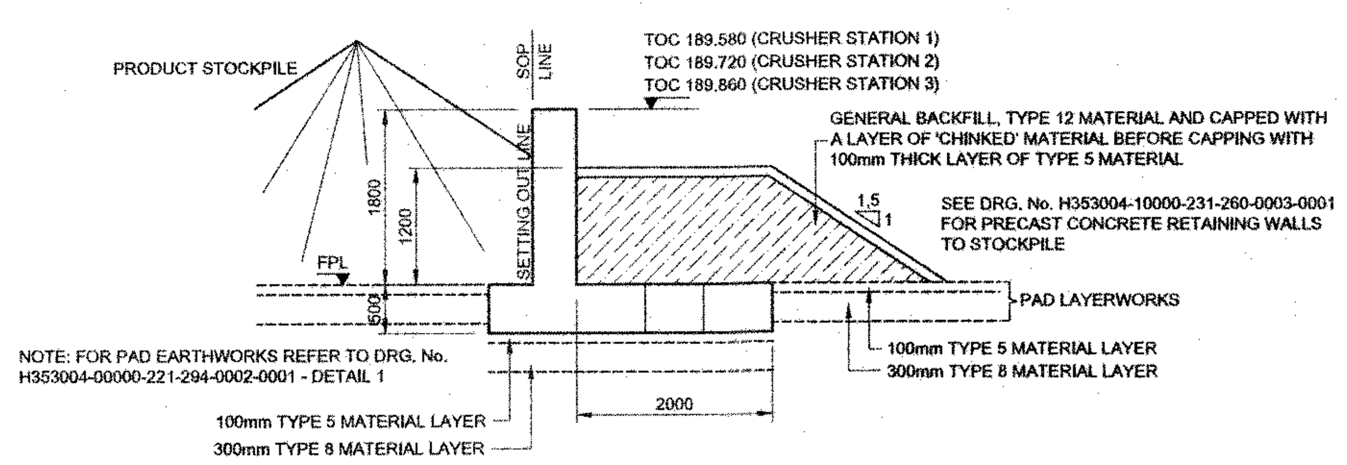
PLAN ON CRUSHER LOADING PAD

SCALE 1:500



TYPICAL ELEVATION ON CRUSHER LOADING RAMP

SCALE 1:100



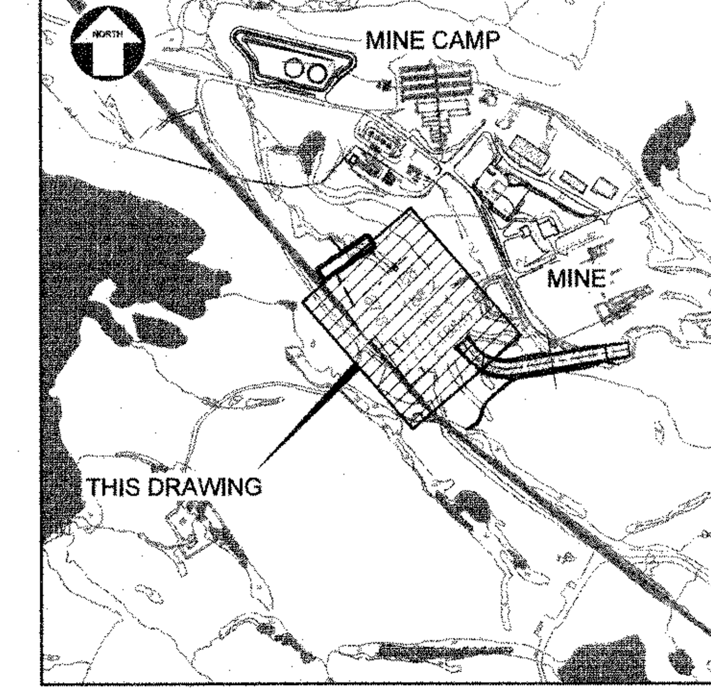
TYPICAL ELEVATION ON STOCKPILE RETAINING WALL

SCALE 1:50

SETTING OUT CO-ORDINATES		
POINT	E	N
ORE STOCKPILES		
SP1	561 280.150	7 913 013.946
SP2	561 392.157	7 912 884.075
CRUSHER STATIONS		
CR1	561 272.137	7 912 979.908
CR2	561 270.408	7 912 956.622
CR3	561 268.974	7 912 937.297
CR4	561 258.561	7 912 928.370
CR5	561 308.711	7 912 937.501
CR6	561 306.982	7 912 914.215
CR7	561 305.549	7 912 894.912
CR8	561 295.155	7 912 885.939
CR9	561 345.285	7 912 895.094
CR10	561 343.556	7 912 871.808
CR11	561 342.123	7 912 852.505
CR12	561 331.728	7 912 843.532

LEGEND:

195	CONTOUR
— — —	TREATED EFFLUENT PIPELINE
TOC	TOP OF CONCRETE
FPL	FINAL PAD LEVEL



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. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS SHOWN ARE IN METERS, UNLESS OTHERWISE SPECIFIED.

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 QUARRY):

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.

PERMIT TO PRACTICE
HATCH LTD.
Signature
Date 2018-08-03
PERMIT NUMBER: P 512
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

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H353004-00000-221-294-0008-0001	STANDARD DRAWINGS - TYPICAL PAD, DITCH AND BERM SECTIONS
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H353004-10000-221-272-0006-0001	CRUSHER PAD - LAYOUT PLAN
H353004-41000-231-260-0002-0001	PRIMARY CRUSHER FEED RAMP - CONCRETE ARRANGEMENT AND DETAILS
H353004-19000-231-260-0001-0003	PRIMARY CRUSHER AREA - RETAINING WALL DETAILS
H353004-19000-231-260-0001-0001	PRIMARY JAW CRUSHER FOUNDATIONS - ARRANGEMENT AND DETAILS

REFERENCE DRAWINGS

REGISTERED PROFESSIONAL ENGINEER R. A. HALIM LICENSEE 2018-08-03 NWT/NU

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	02/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	13/04/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	I BARNARD	NR	01/08/2018
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DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATIBA		
ENG. MANAGER	D STANGER		2018-08-03
AREA MANAGER	T ATIBA		2018-08-03

DRAWING APPROVAL STATUS: Approved for Construction

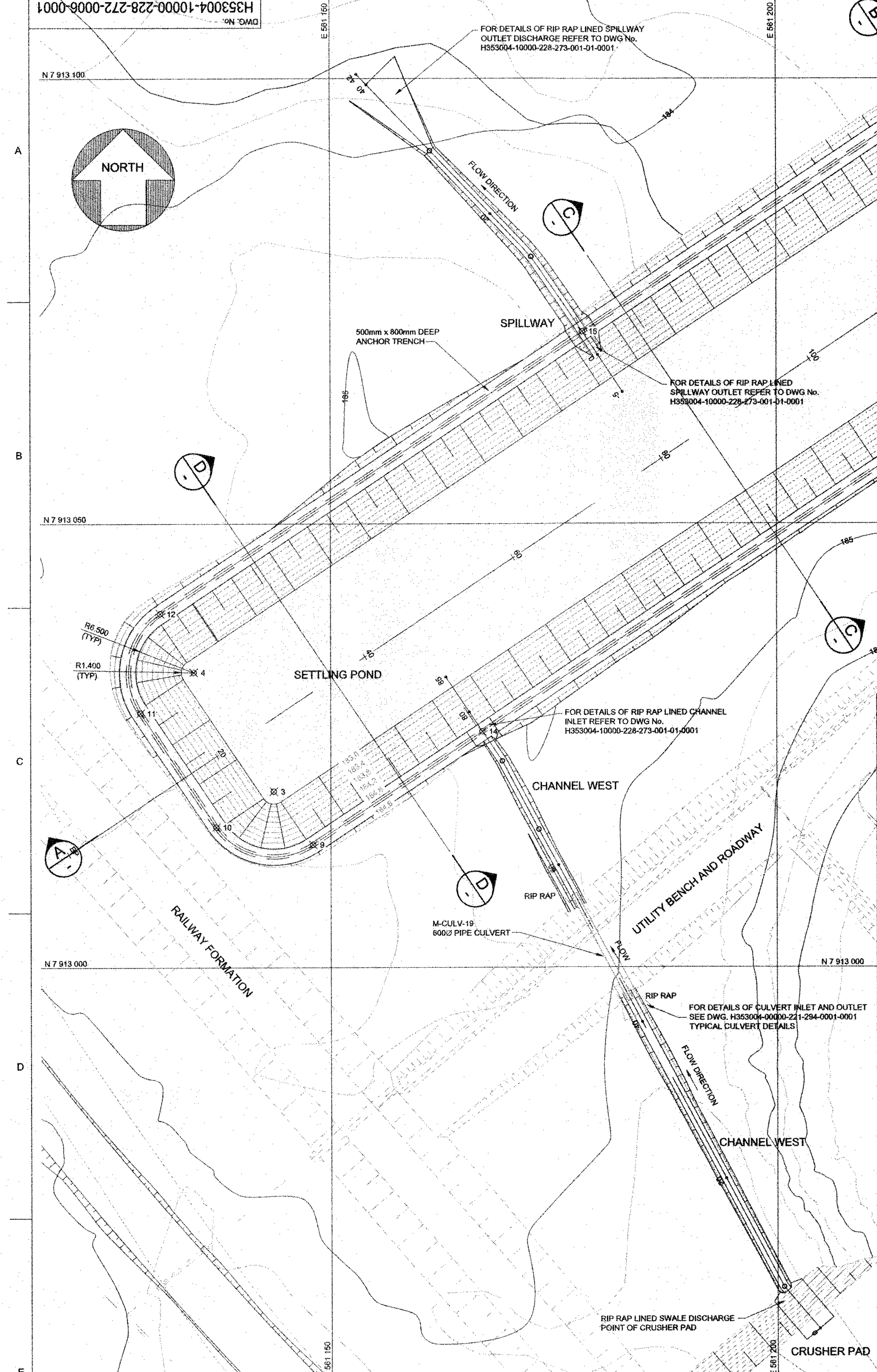
Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD
CRUSHER RAMP & WALLS SETTING OUT

SCALE 1:500 OR AS NOTED | DWG. No. H353004-10000-221-272-0007-0001 | REV 1

SHEET SIZE: E



PLAN ON CRUSHER PAD SETTLING POND

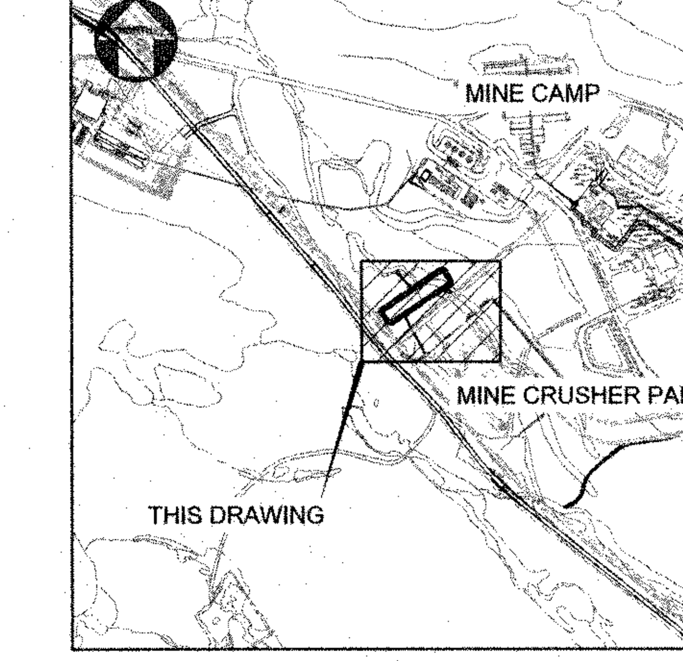
SCALE: 1:250

SETTLING POND SETTING OUT COORDINATES			
POINT	E	N	LEVEL
1	561230.213	7913097.260	182.900
2	561239.178	7913083.871	182.900
3	561143.610	7913019.880	182.900
4	561134.636	7913033.269	182.900
5	561226.019	7913103.478	184.600
6	561236.445	7913101.432	184.600
7	561245.308	7913088.361	184.600
8	561243.330	7913077.625	184.600
9	561147.989	7913013.882	184.600
10	561137.161	7913015.850	184.600
11	561128.686	7913028.689	184.600
12	561130.894	7913039.869	184.600
13	561237.832	7913073.944	184.600
14	561167.005	7913026.623	184.600
15	561178.243	7913071.513	184.600

SETTING OUT DATA-SPILLWAY				
NAME	CH	E	N	DETAILS
START	-5.000	561182.769	7913064.760	L 17.081m
BCC PI ECC	12.081 14.583	561173.260 561172.562 561171.701	7913078.950 7913079.992 7913080.903	R 15.000m DA 9°33'20" TL 1.254m AL 2.502m
END	41.636	561153.009	7913100.460	L 11.818m

SETTING OUT DATA-CHANNEL WEST				
NAME	CH	E	N	DETAILS
START	0.000	561204.752	7912959.261	L 6.177m
END	84.720	561162.912	7913032.733	L 11.353m

SETTING OUT DATA-CHANNEL EAST				
NAME	CH	E	N	DETAILS
START	0.000	561257.379	7913058.273	L 20.012m
BCC PI ECC	20.012 22.707	561241.104 561239.997 561239.238	7913069.919 7913070.712 7913071.844	R 7.500m DA 20°35'30" TL 1.362m AL 2.695m



KEY PLAN

NOTES:

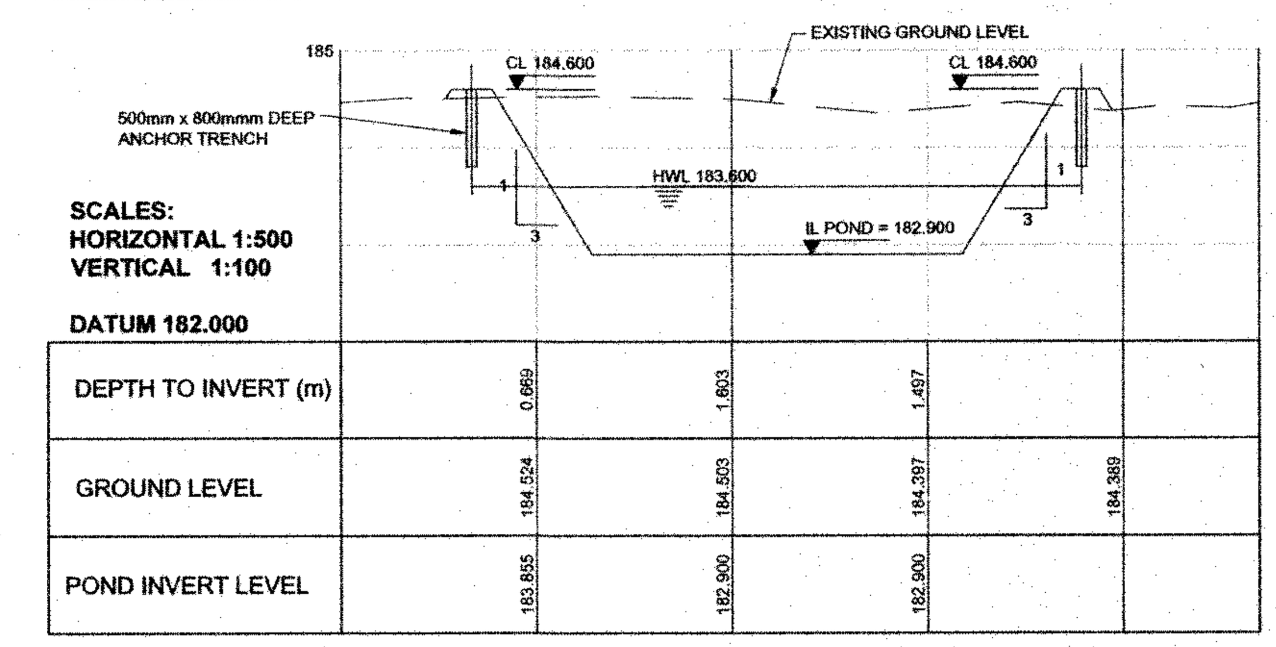
1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016).
2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83), ZONE 17 AND IS IN METERS.
3. CONTOURS ARE IN METERS. THE CONTOUR INTERVAL IS 0.5m.
4. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
5. THE POND IS DESIGNED TO BE OPERATED EMPTY.
6. IT IS ASSUMED THAT ALL RUN OFF COLLECTED BY THE SETTLING POND IS NON-ACID GENERATING AND CAN BE DISCHARGED TO THE ENVIRONMENT ONCE THE REQUIREMENTS OF BIM ENVIRONMENTAL DESIGN CRITERIA HAS BEEN ACHIEVED. WATER TO BE DISCHARGED TO AN APPROVED POINT, IN ACCORDANCE WITH THE CLIENT'S (BIM) ENVIROMENTAL REQUIREMENTS.
7. THE INSTALLATION OF THE GEOMEMBRANE (ENVIRO LINER 6000HD) IS TO BE EXECUTED IN STRICT ACCORDANCE WITH THE VENDORS SPECIFICATIONS.

LEGEND:

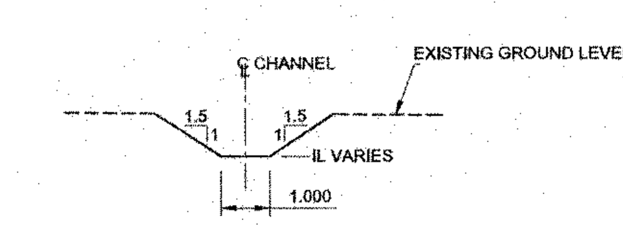
CL CREST LEVEL

IL INVERT LEVEL

HWL HIGH WATER LEVEL

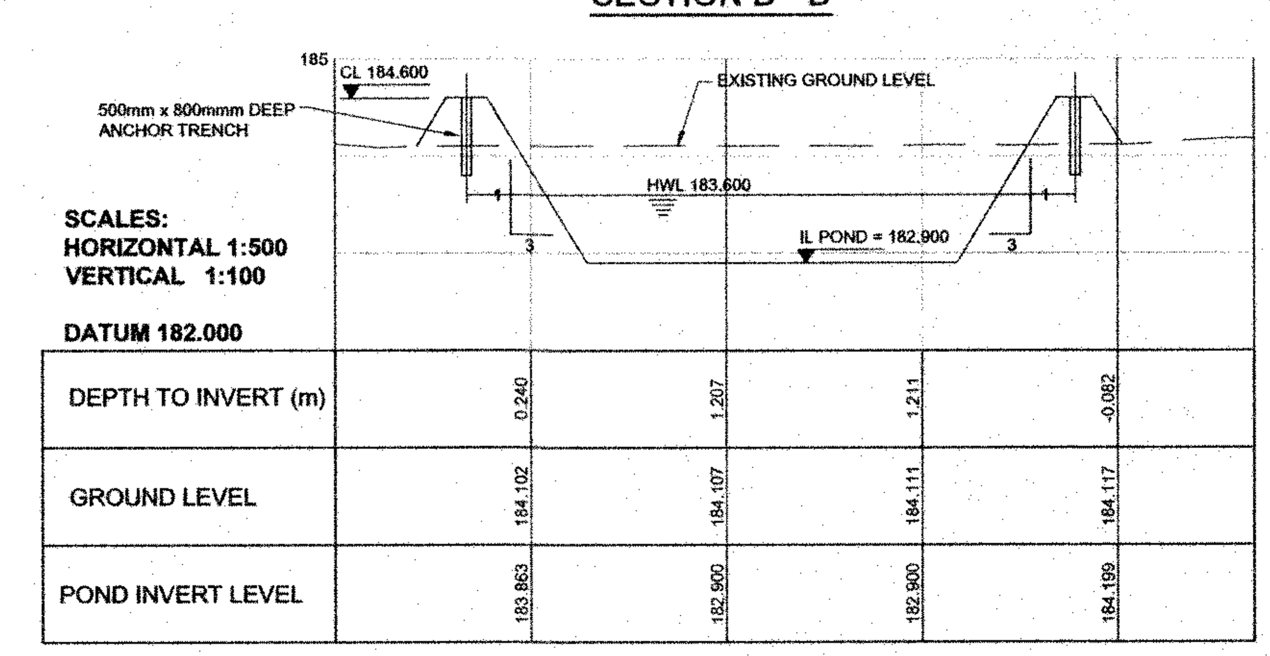


SECTION D - D

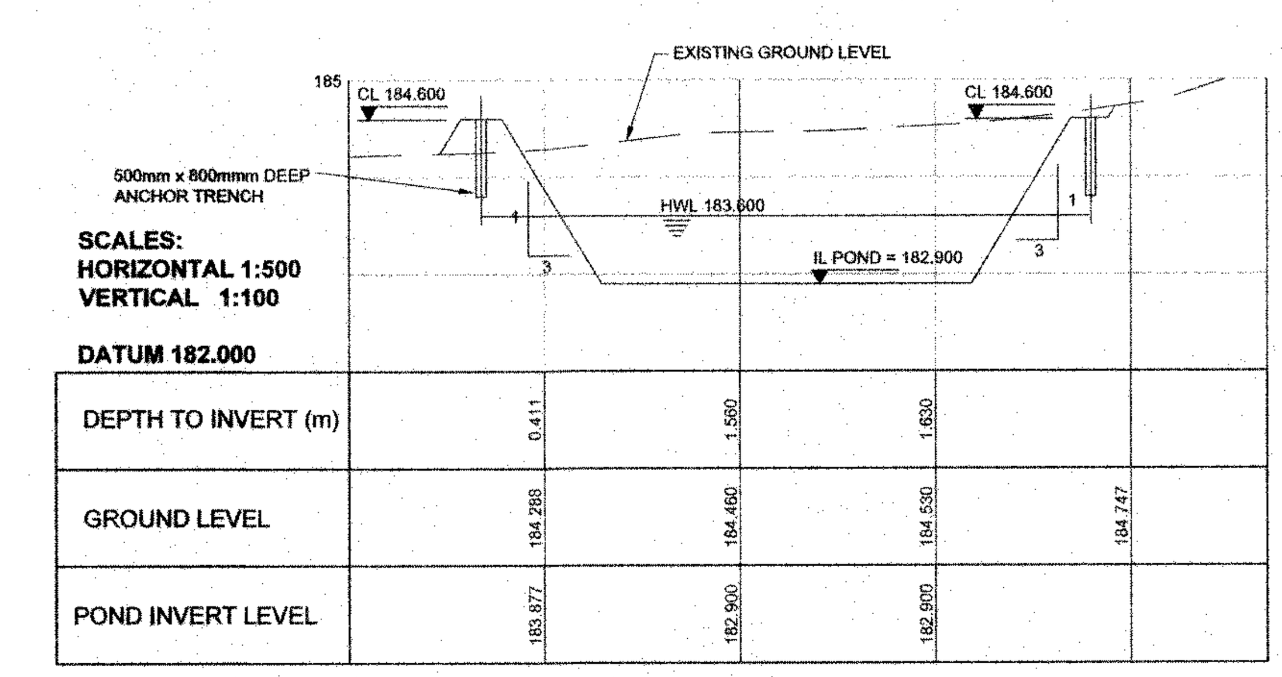


TYPICAL SECTION THROUGH CHANNEL WEST AND EAST

SCALE: 1:100

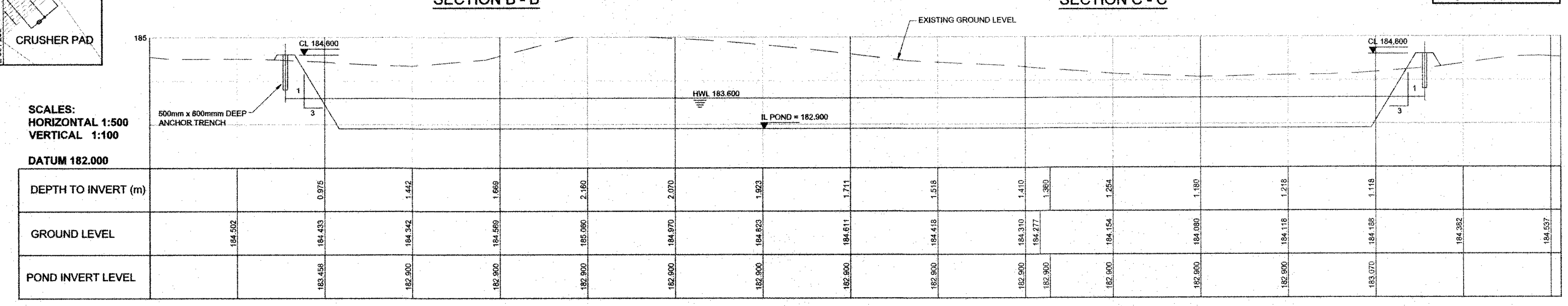


SECTION B - B



SECTION C - C

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



SECTION A - A

DRAWING No.	DRAWING TITLE
H353004-00000-221-294-0001-0001	STANDARD DRAWINGS - TYPICAL CULVERT DETAILS
H353004-10000-221-271-0001-0001	UTILITY BENCH AT CRUSHER PAD - PLAN AND PROFILE
H353004-00000-221-294-0008-0001	STANDARD DRAWINGS - TYPICAL PAD, DITCH AND BERM SECTIONS
H353004-00000-221-294-0002-0001	STANDARD DRAWINGS - EARTHWORKS AND DRAINAGE DETAILS
H353004-10000-221-272-0006-0001	CRUSHER PAD - LAYOUT PLAN
H353004-10000-228-273-0001-0001	CRUSHER PAD SETTLING POND - DETAILS

REFERENCE DRAWINGS

REG. PROFESSIONAL: R. A. HALIM, LICENSEE L1247, 2018-08-03, NWT/NU

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	02/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	01/06/2018

REVISIONS

HATCH

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	H HERBST	NR	01/08/2018
CHECKER	F HUGO		2018-08-03
DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATIBA		
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		2018-08-03

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD SETTLING POND
PLAN AND PROFILES

SCALE 1:250 OR AS NOTED

DWG. No. H353004-10000-228-272-0006-0001

REV 1

SHEET SIZE: E

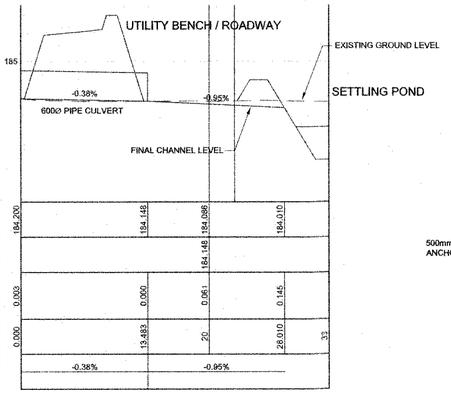
$USERNAME$ $DATE$ $FILE$ $TIME$

DWG. No. H353004-10000-228-273-0001-0001

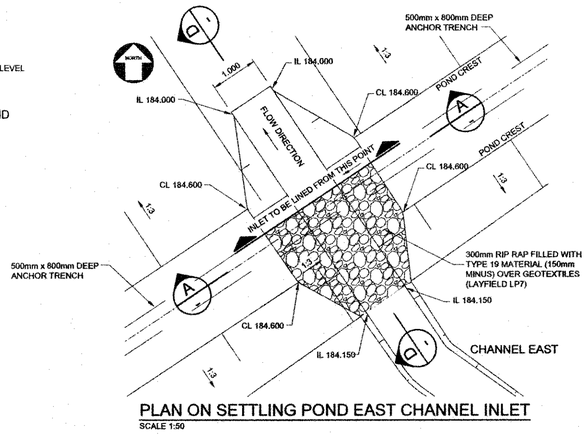
SCALES:
HORIZONTAL 1:500
VERTICAL 1:100

DATUM 182.000

INVERT LEVELS (m)		184.148	184.088		184.010	
GROUND LEVELS ON CL (m)			184.148			
DEPTH TO TRENCH	0.000	0.000	0.061		0.145	
DISTANCE (m)	0.000	13.483	20		26.610	33
VERTICAL PROFILE GRADES		-0.38%		-0.95%		

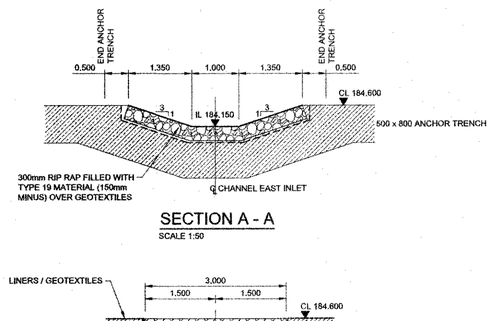


EAST CHANNEL - PROFILE



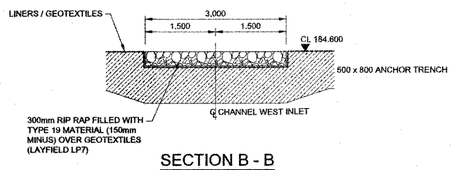
PLAN ON SETTLING POND EAST CHANNEL INLET

SCALE 1:50



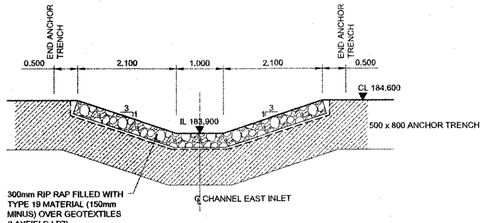
SECTION A - A

SCALE 1:50



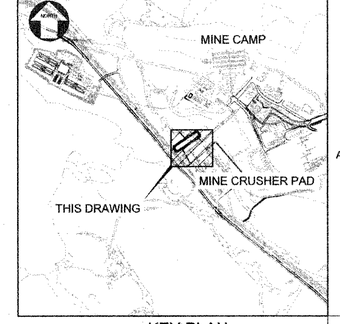
SECTION B - B

SCALE 1:50



SECTION C - C

SCALE 1:50



KEY PLAN

NOTES:

1. LIDAR SURVEY PROVIDED BY PHOTSAT (2016).
2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83), ZONE 17 AND IS IN METERS.
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7. THE INSTALLATION OF THE GEOMEMBRANE (ENVIRO LINER 6000HD) IS TO BE IN STRICT ACCORDANCE WITH THE SPECIALIST PROVIDERS SPECIFICATIONS.

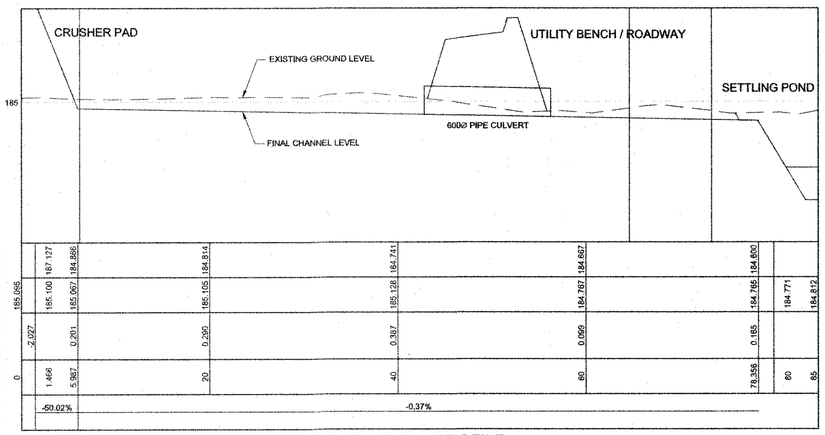
LEGEND:

CL	CREST LEVEL
IL	INVERT LEVEL
HWL	HIGH WATER LEVEL
FBL	FREE BOARD LEVEL
———	TYPE 4 GEO-MEMBRANE (ENVIRO LINER 6000 HD) OR SIMILAR APPROVED
- - - - -	NON WOVEN GEO-TEXTILE (LAYFIELD LP7) OR SIMILAR APPROVED

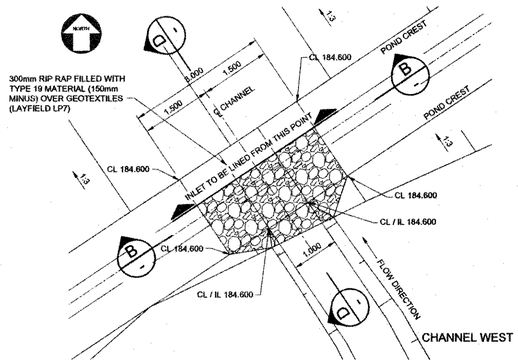
SCALES:
HORIZONTAL 1:500
VERTICAL 1:100

DATUM 182.000

INVERT LEVELS (m)	187.127	184.866	184.814	184.741	184.607	184.600	184.771	184.612
GROUND LEVELS ON CL (m)	185.100	185.067	185.105	185.128	184.767	184.765		
DEPTH TO TRENCH	2.027	0.201	0.290	0.387	0.069	0.165		
DISTANCE (m)	0	1.466	5.867	20	40	60	78.356	80	85
VERTICAL PROFILE GRADES		-50.02%		-0.37%				

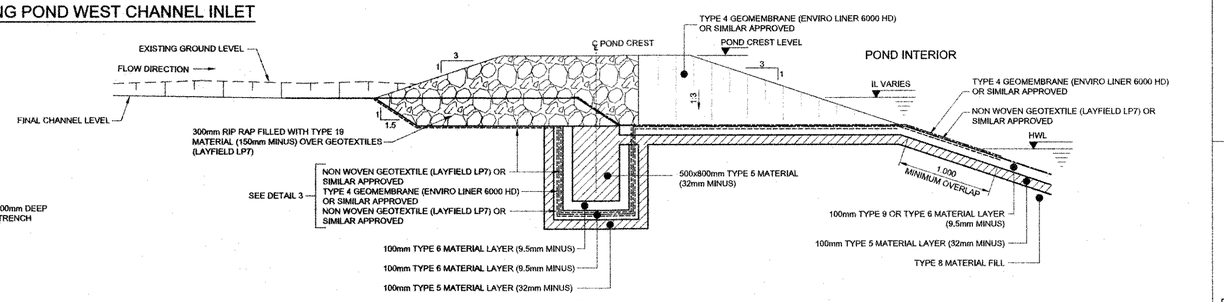


WEST CHANNEL - PROFILE



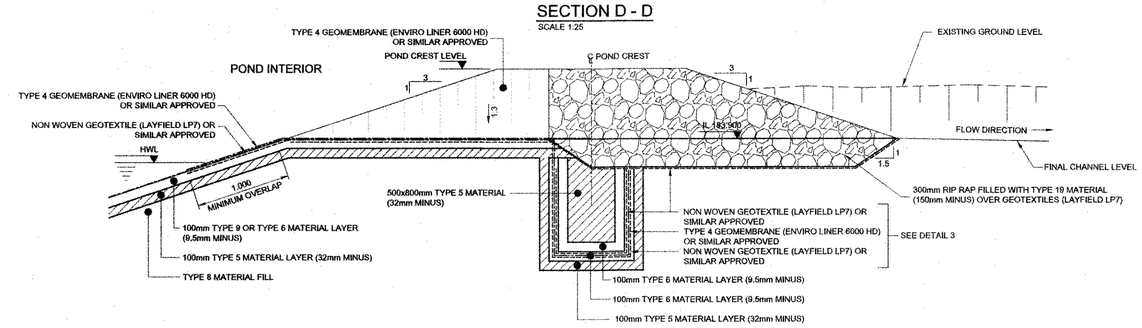
PLAN ON SETTLING POND WEST CHANNEL INLET

SCALE 1:50



SECTION D - D

SCALE 1:25



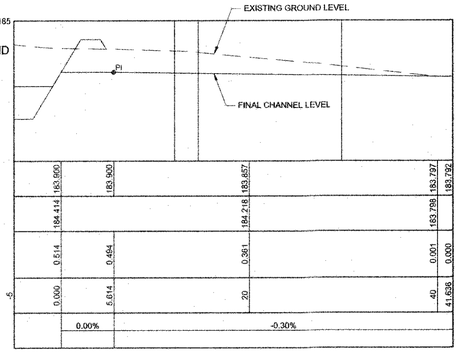
SECTION E - E

SCALE 1:25

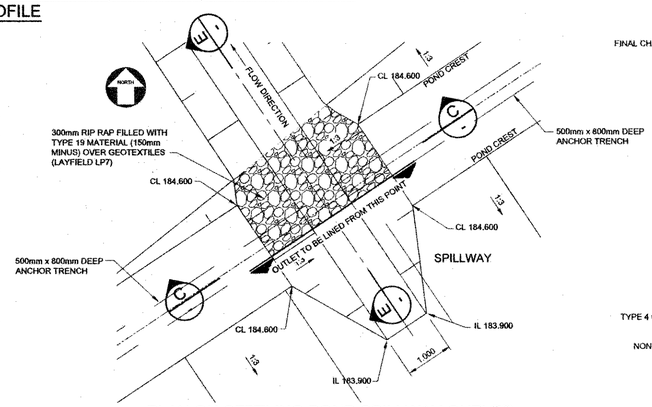
SCALES:
HORIZONTAL 1:500
VERTICAL 1:100

DATUM 182.000

INVERT LEVELS (m)	183.990	183.900		183.857		183.797	183.792	
GROUND LEVELS ON CL (m)	184.414			184.218		183.798		
DEPTH TO TRENCH	0.514	0.494		0.361		0.001	0.000	
DISTANCE (m)	-5	0.000	5.614	20		40	41.638	
VERTICAL PROFILE GRADES		0.00%		-0.30%				

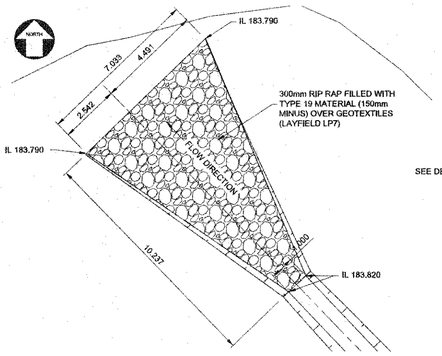


SPILLWAY OUTLET - PROFILE



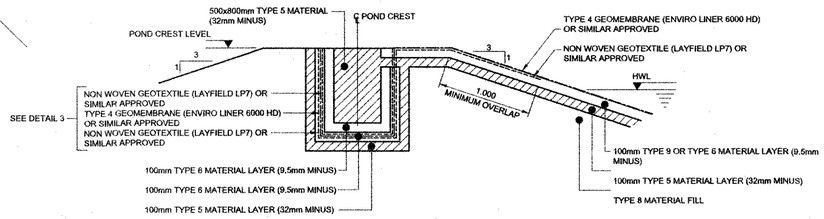
PLAN ON SETTLING POND SPILLWAY OUTLET

SCALE 1:50



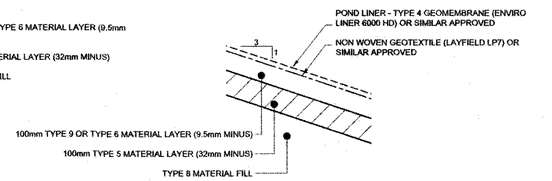
PLAN ON SPILLWAY OUTLET DISCHARGE

SCALE 1:100



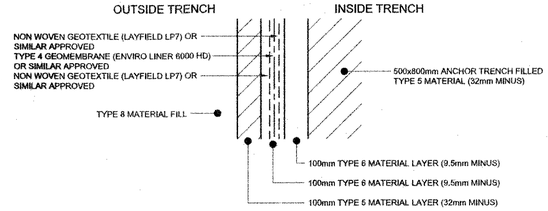
DETAIL 1 - POND LINER ANCHOR TRENCH

SCALE 1:25



DETAIL 2 - POND LINER

SCALE 1:10



DETAIL 3 - TRENCH LINER

SCALE 1:10

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

H353004-00000-221-294-0006-0001	STANDARD DRAWING - EARTHWORKS AND DRAINAGE DETAILS
H353004-10000-221-271-0001-0001	UTILITY BENCH AT CRUSHER PAD - PLAN AND PROFILE
H353004-10000-228-272-0006-0001	CRUSHER PAD SETTLING POND - PLAN AND PROFILES
H353004-10000-221-272-0006-0001	CRUSHER PAD - LAYOUT PLAN
DRAWING No.	DRAWING TITLE

REFERENCE DRAWINGS

REG. PROFESSIONAL

FOR CONSTRUCTION

No.	DESCRIPTION	BY	CHK'D	DATE
1	EDC NOTE REMOVED	JM	FH	02/08/2018
0	APPROVED FOR CONSTRUCTION	IHB	FH	01/06/2018

REVISIONS

HATCH

DRAFTSPERSON	I BARNARD	NR	01/08/2018
DESIGNER	I BARNARD	NR	01/08/2018
CHECKER	F HUGO		2018-08-03
DESIGN COORD.	R GOOSEN		2018-08-03
RESP. ENG.	R HALIM		2018-08-03
LEAD DISC. ENG.	A GROBBELAAR		2018-08-03
AREA LEAD	T ATIBA		
ENG. MANAGER	D STANGER		
AREA MANAGER	T ATIBA		2018-08-03
ROLE	NAME	SIGNATURE	DATE

DRAWING APPROVAL STATUS: Approved for Construction

Baffinland

BAFFINLAND IRON MINES LP
MARY RIVER EXPANSION PROJECT

MINE SITE
CRUSHER PAD SETTLING POND
DETAILS

SCALE	DWG. No.	REV
1:500 OR AS NOTED	H353004-10000-228-273-0001-0001	1

SHEET SIZE: E

$USERNAME$