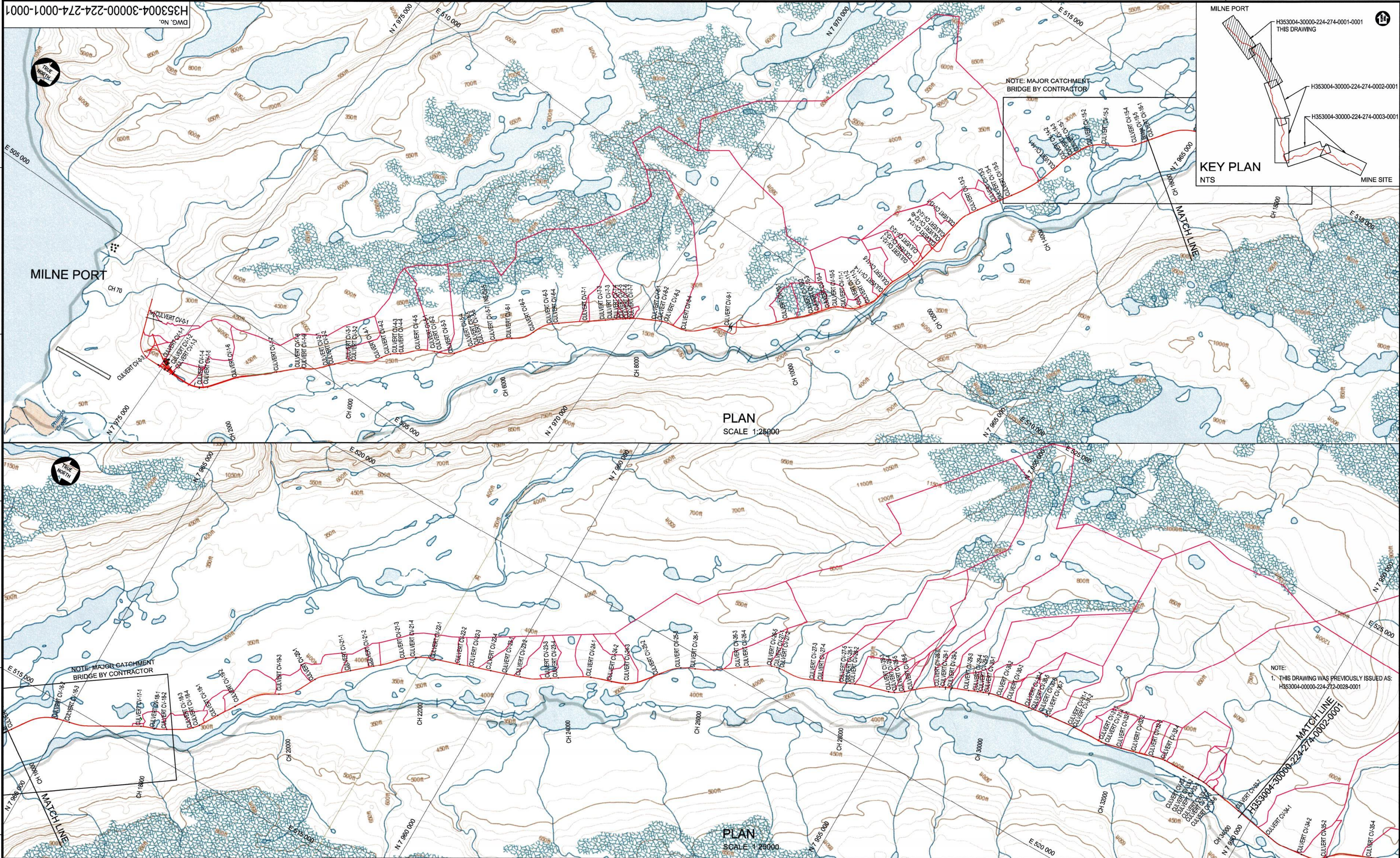


ATTACHMENT 6.5

NORTH RAILWAY CATCHMENT DRAWINGS



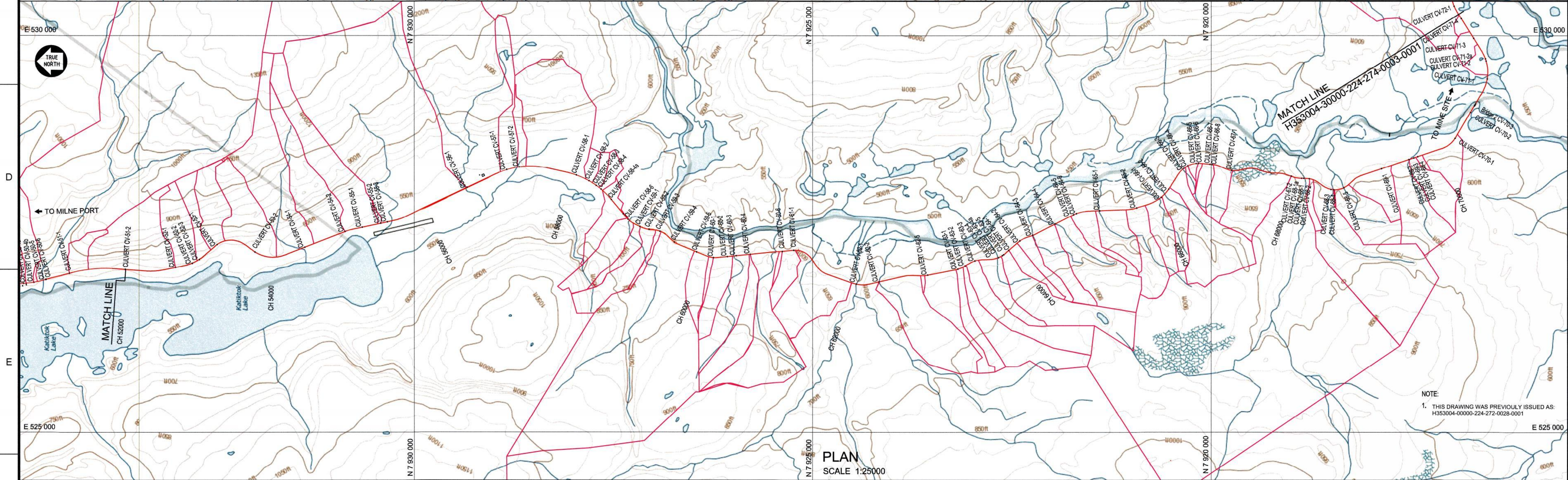
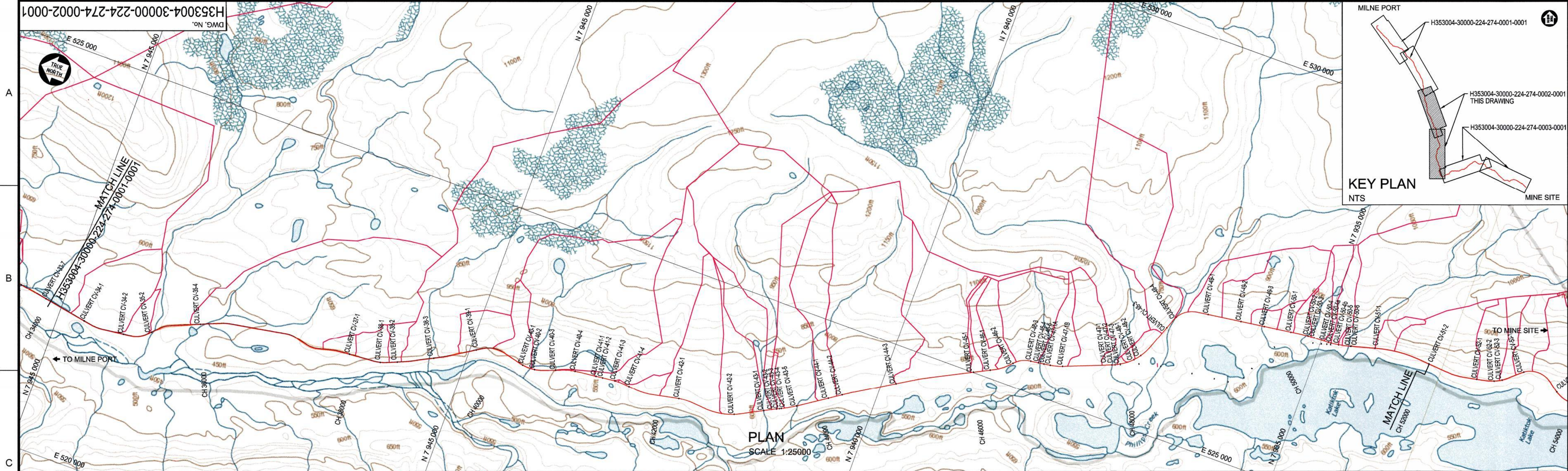
H353004-30000-224-274-0003-0001 DRAINAGE CATCHMENTS SHEET 3 of 3	
H353004-30000-224-274-0002-0001 DRAINAGE CATCHMENTS SHEET 2 of 3	
DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	
REG. PROFESSIONAL	

NOT FOR CONSTRUCTION			
No.	DESCRIPTION	BY	CHK'D
0	APPROVED FOR USE	NMJH	RA
REVISIONS			

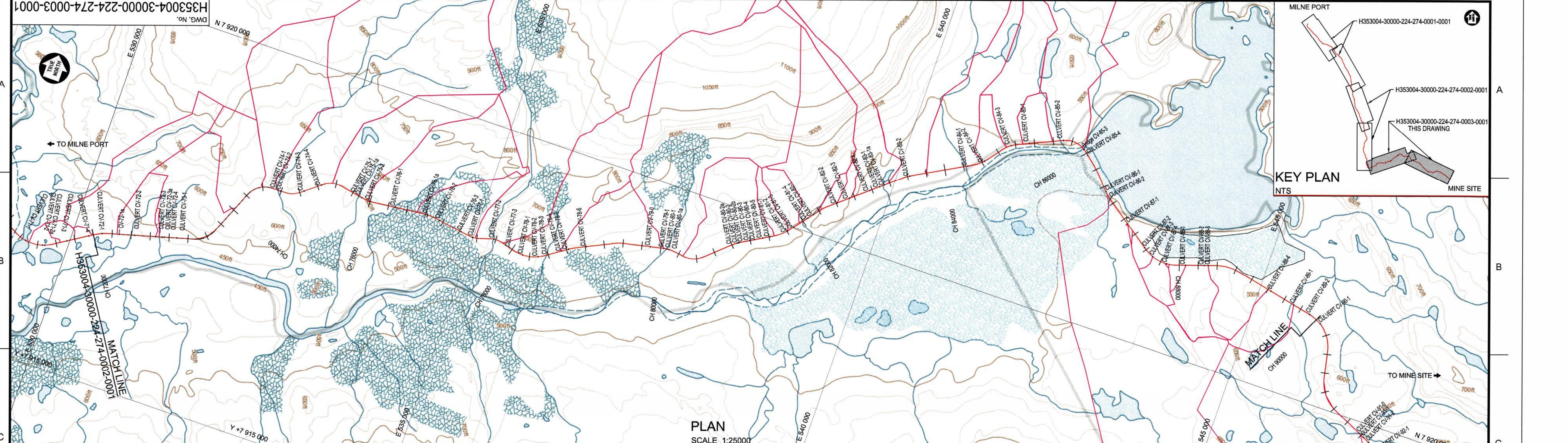
THIS DRAWING WAS PREPARED BY HATCH LTD. (HATCH) FOR THE EXCLUSIVE USE OF BAFFINLAND IRON MINES LP (CLIENT) AND ITS USE IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN HATCH AND THE CLIENT. INCLUDING ANY LIMITATIONS ON LIABILITY CONTAINED THEREIN. THIS DRAWING AND ITS CONTENTS REMAIN THE INTELLECTUAL PROPERTY OF HATCH SUBJECT TO CLIENTS ROYALTY-FREE, IRREVOCABLE, PERPETUAL AND NON-EXCLUSIVE LICENSE TO USE AND REPRODUCE THE DRAWING FOR PURPOSES CONNECTED WITH THE PROJECT, INCLUDING THE CONSTRUCTION, COMPLETION, MAINTENANCE, EXTENSION, REINSTATEMENT AND REPAIR OF THE PROJECT. THIS DRAWING, AND THE INFORMATION CONTAINED HEREIN, SHALL BE TREATED AS CONFIDENTIAL FOR ALL OTHER PURPOSES AND SHALL NOT BE MODIFIED WITHOUT THE WRITTEN CONSENT OF HATCH.			
ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	M HERBST		2017/02/09
DESIGNER	M HERBST		2017/02/09
CHECKER	A AQUIL		2016/04/23
DESIGN COORD.	A AQUIL		2016/04/23
RESP. ENG.	F VAN BILJON		2016/04/23
LEAD DISC. ENG.	F VAN BILJON		2016/04/23
AREA LEAD	F VAN BILJON		2016/04/23
ENG. MANAGER	D STANGER		2017/01/14
AREA MANAGER	P PITTMAN		2018/04/25

DRAWING APPROVAL STATUS:			
APPROVED FOR USE			

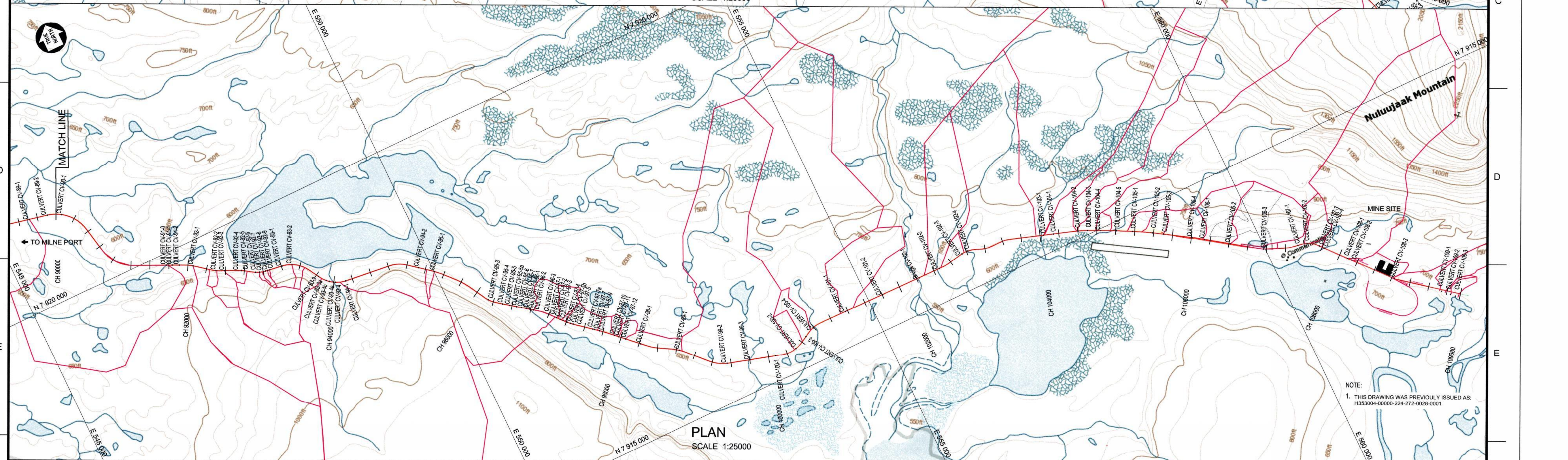
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Baffinland			
BAFFINLAND IRON MINES LP MARY RIVER PROJECT			
RAIL SITE DRAINAGE CATCHMENTS SHEET 1 OF 3			



H353004-30000-224-274-0003-0001		DRAINAGE CATCHMENTS SHEET 3 OF 3		H353004-30000-224-274-0001-0001		DRAINAGE CATCHMENTS SHEET 1 OF 3	
DRAWING No.		DRAWING TITLE		DRAWING No.		DRAWING TITLE	
REFERENCE DRAWINGS		REG. PROFESSIONAL		REVISIONS		SUBMITTALS	
NOT FOR CONSTRUCTION		0		APPROVED FOR USE		BY	
HATCH		Baffinland		Baffinland IRON MINES LP		MARY RIVER PROJECT	
DRAFTSPERSON		M HERBST		NR		2017/02/09	
DESIGNER		M HERBST		NR		2017/02/09	
CHECKER		A AQUIL		2018/04/23		2018/04/23	
DESIGN COORD.		A AQUIL		2018/04/23		2018/04/23	
RESP. ENG.		F VAN BILJON		2018/04/23		2018/04/23	
LEAD DISC. ENG.		F VAN BILJON		2018/04/23		2018/04/23	
AREA LEAD		F VAN BILJON		2018/04/23		2018/04/23	
ENG. MANAGER		D STANGER		2018/04/23		2018/04/23	
CLIENT		F PITTMAN		2018/04/23		2018/04/23	
DRAWING APPROVAL STATUS:		APPROVED FOR USE		SCALE		1:25,000	
DRAWING No.		H353004-30000-224-274-0002-0001		REV		0	
SHEET SIZE: A1		SHEET 2 OF 3		SHEET 1 OF 3		SHEET 2 OF 3	



PLAN
SCALE 1:25000

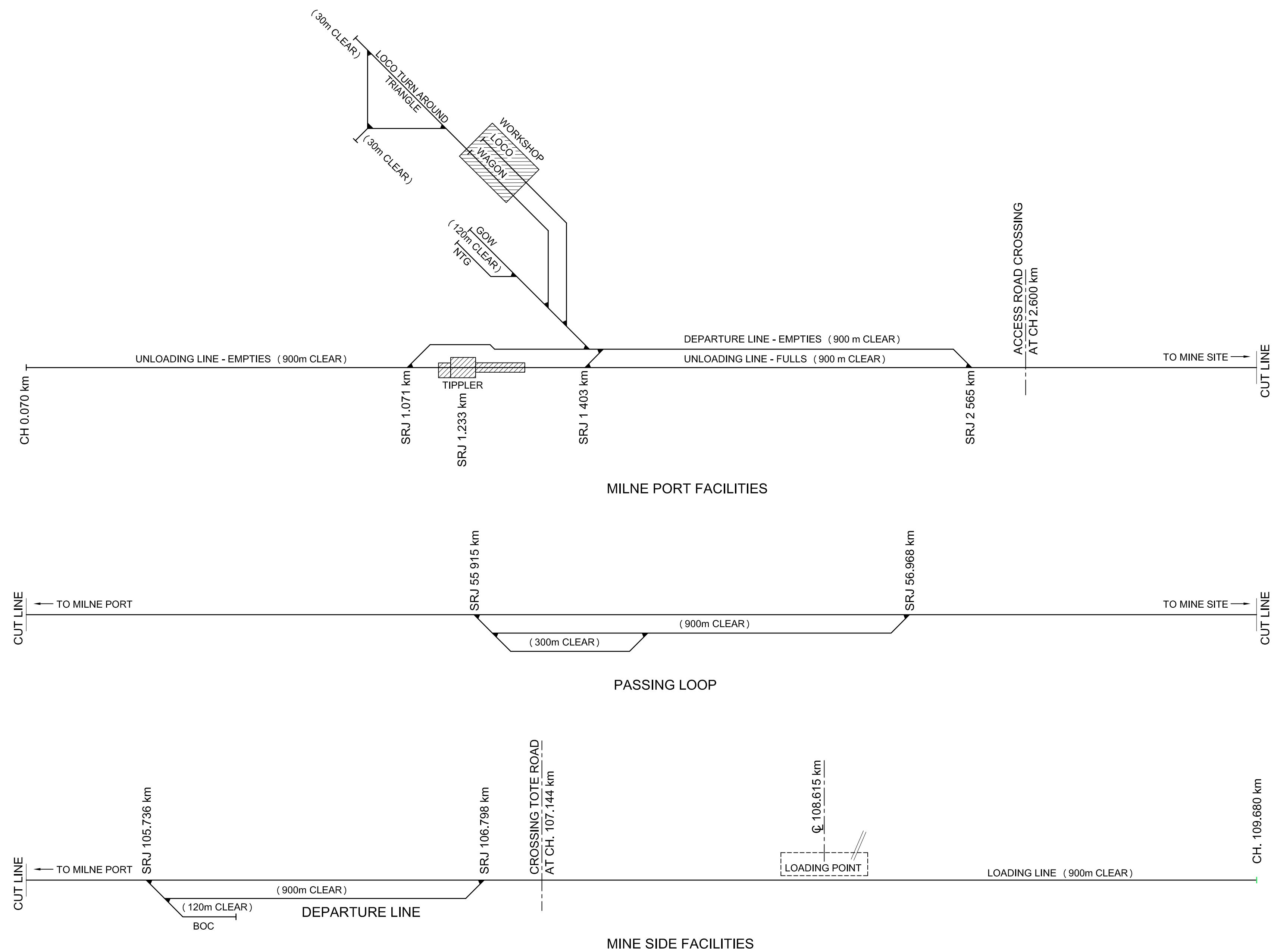


PLAN
SCALE 1:25000

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ATTACHMENT 6.6

DIAGRAMMATIC CONCEPTUAL LAYOUT



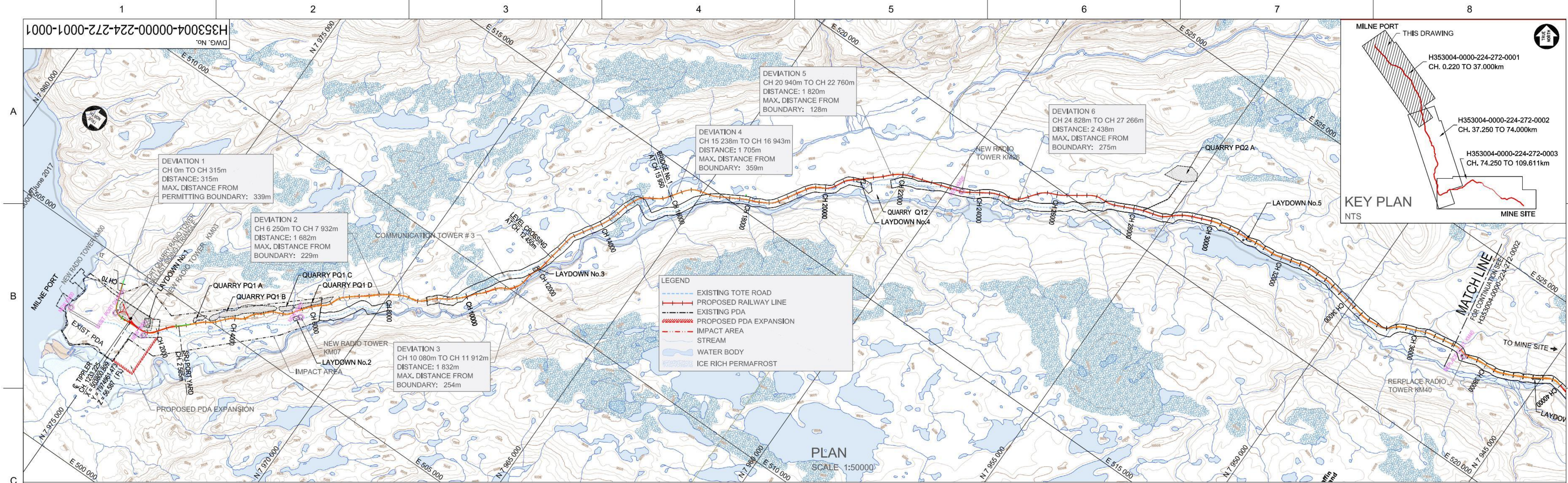
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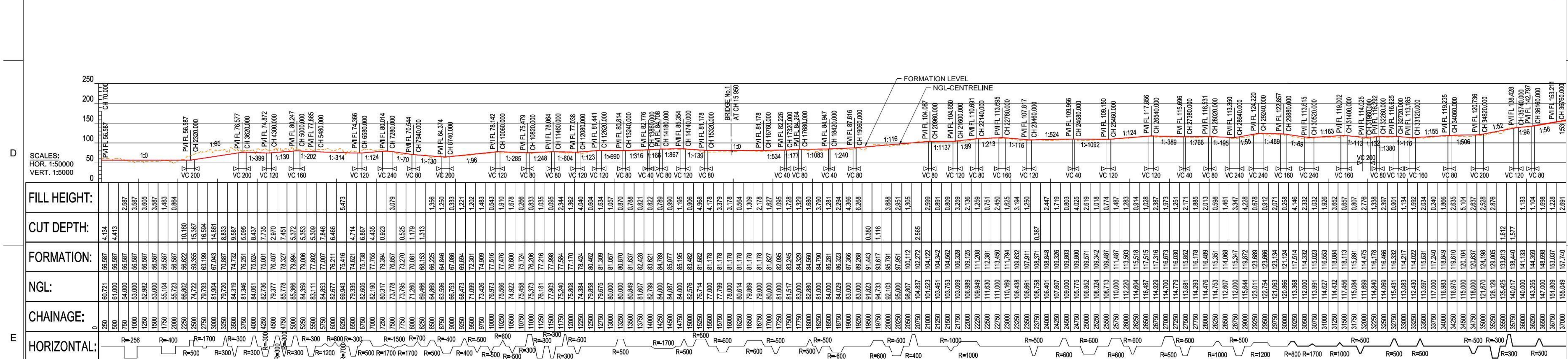
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ATTACHMENT 6.7

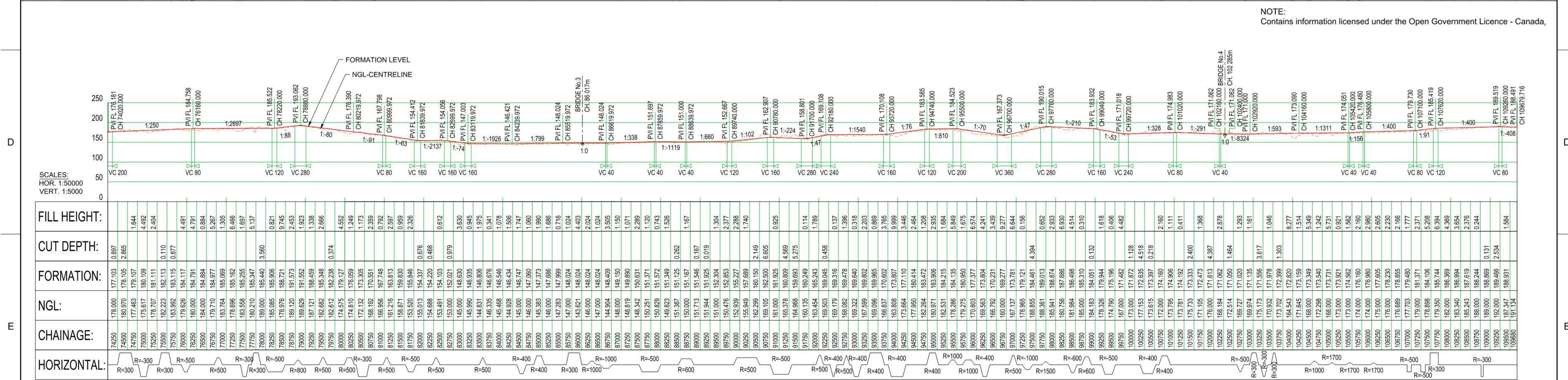
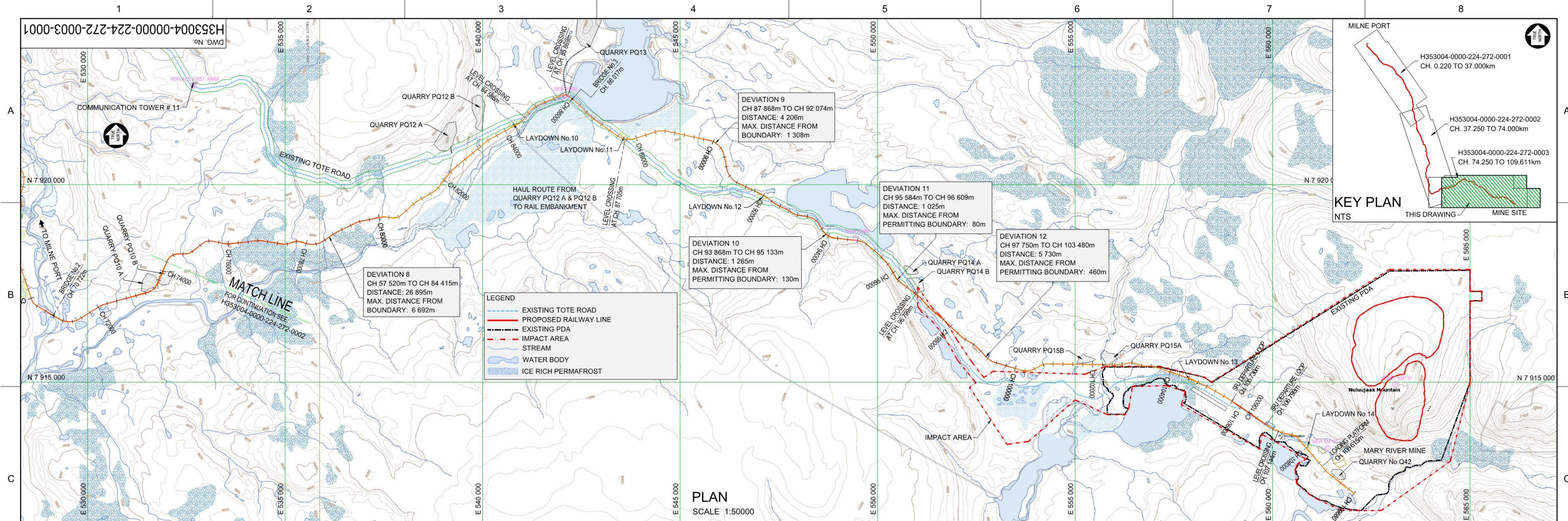
NORTH RAILWAY PLAN & PROFILE DRAWINGS



NOTE:
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LONGITUDINAL SECTION			
FILL HEIGHT:			
CUT DEPTH:			
FORMATION:			
NGL:			
CHAINAGE:			
HORIZONTAL:			
NAME			
SIGNATURE			
ENG REG NUMBER			
REVISION DATE			
ORIGINAL DATE			
REG. PROFESSIONAL			
DESCRIPTION			
REVISIONS			
DRAFTSPERSON			
DESIGNER			
CHECKER			
DESIGN COORD.			
RESP. ENG.			
LEAD DISC. ENG.			
ENG. MANAGER			
PROJ. MANAGER			
ROLE			
NAME			
SIGNATURE			
DATE			
DRAWING APPROVAL STATUS:			
Approved for Construction			
SCALE			
1:50,000			
OR AS NOTED			
DWG. No.			
H353004-00000-224-272-0001-0001			
REV			
2			
SHEET SIZE: A1			



F	NAME	Reserved space for Issue Reason stamp applied by Document Control		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 CLIENT'S ROYALTY-FREE, IRREVOCABLE, PERPETUAL AND NON-EXCLUSIVE LICENSE TO USE AND REPRODUCE THE DRAWING FOR PURPOSES CONNECTED WITH THE PROJECT, INCLUDING THE CONSTRUCTION, COMPLETION, MAINTENANCE, EXTENSION, REINSTATEMENT AND REPAIR OF THE PROJECT. THIS DRAWING, AND THE 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				
	SIGNATURE					DRAFTSPERSON	A VAN NIEKERK	NR	2016/12/07	BAFFINLAND IRON MINES LP MARY RIVER PROJECT		
	ENG REG NUMBER					CHECKER		NR		SITE PLAN PLAN AND LONGITUDINAL SECTION CH. 74.250km TO CH. 109.680km		
	REVISION DATE					DESIGN COORD.					SCALE 1:50,000 OR AS NOTED	
	ORIGINAL DATE					RESP. ENG.					DWG. No. H353004-00000-224-272-0003-0001	
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					PROJ. MANAGER					SUSERRAMES SDATES SFILES		
					ROLE					SHEET SIZE: A1		
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					DATE					SHEET SIZE: A1		
					DRAWING APPROVAL STATUS:					SHEET SIZE: A1		
					Approved for Construction					SHEET SIZE: A1		

ATTACHMENT 6.8

KM57 TEMPORARY ORE TRANSFER AREA DRAWINGS

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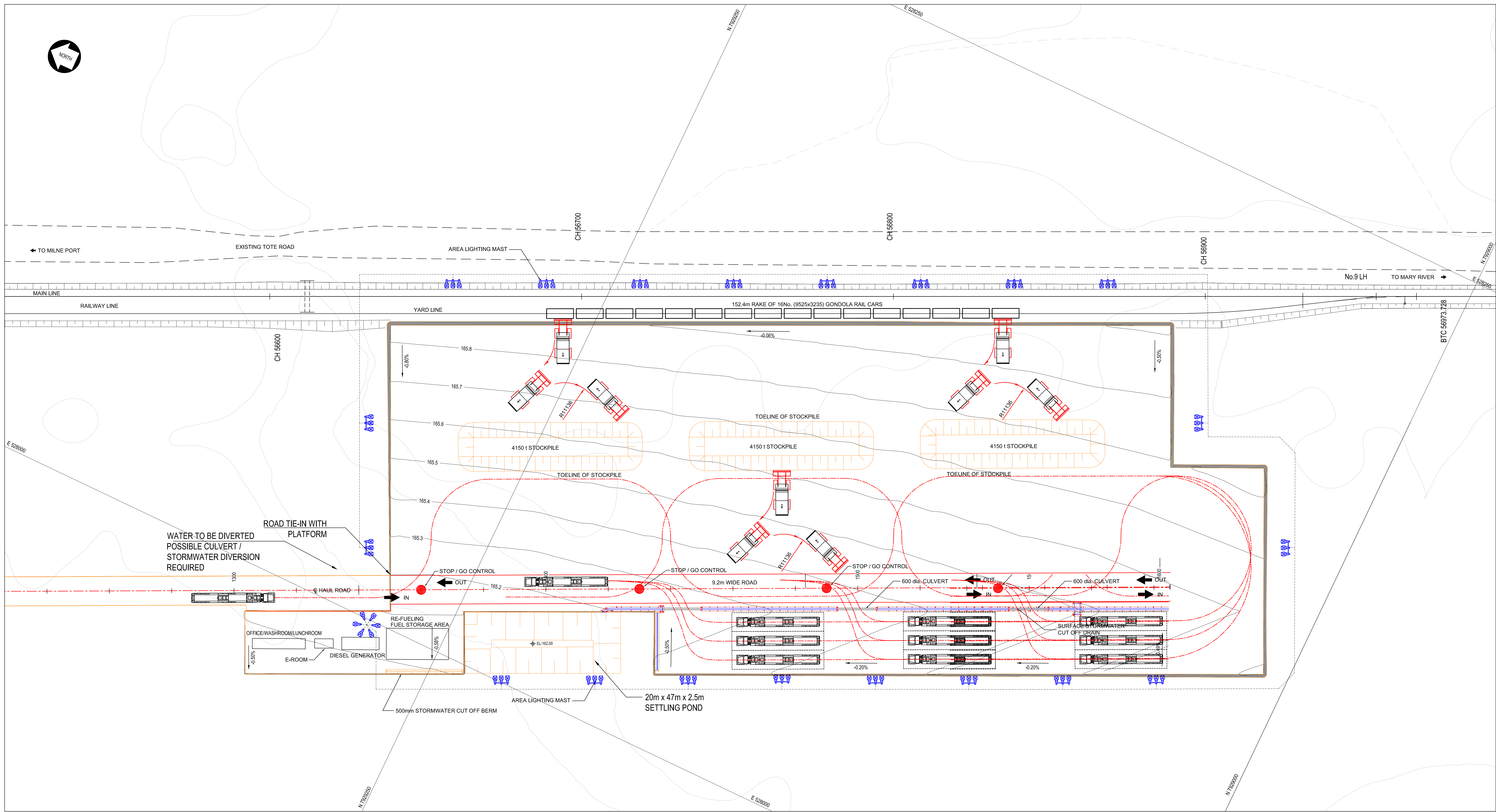
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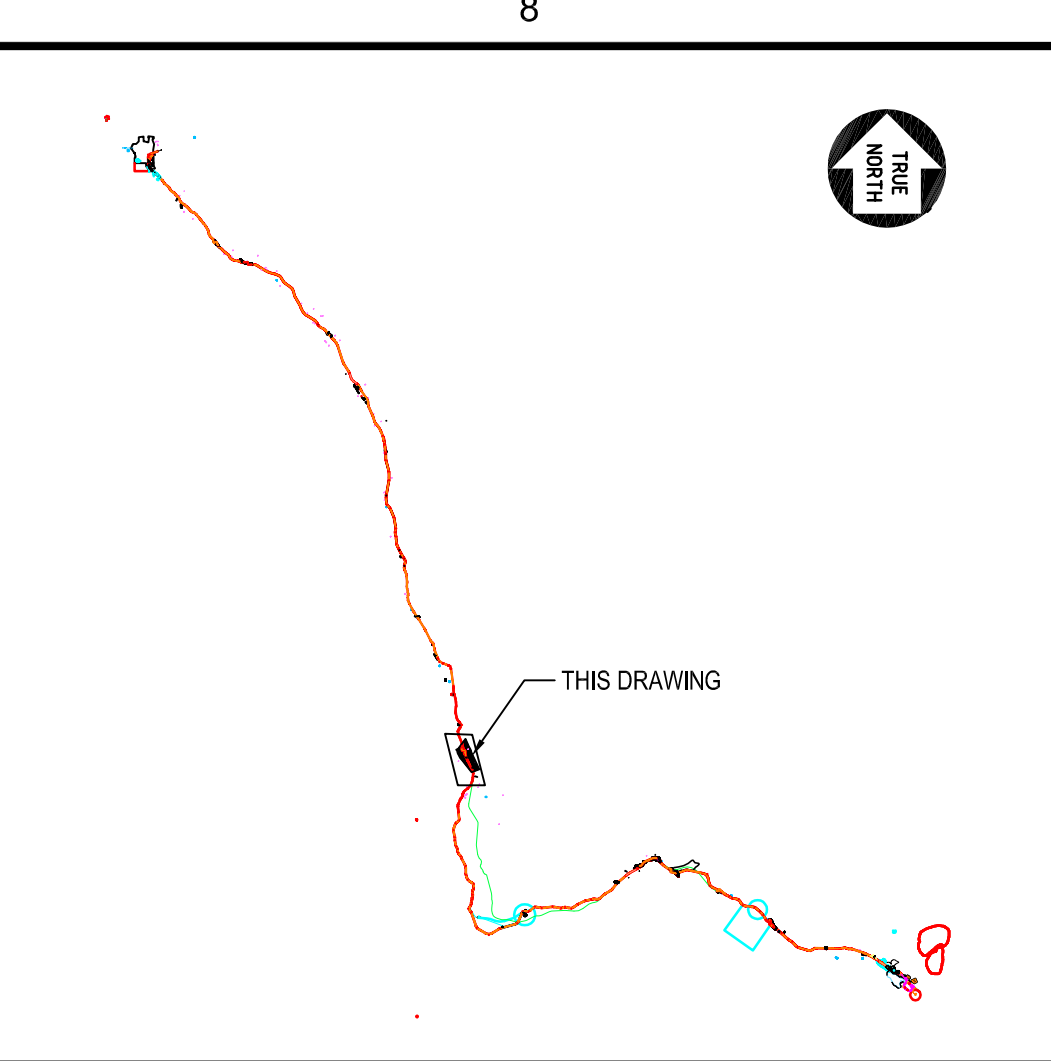
D

E

F



LOADING PLATFORM LAYOUT
SCALE 1:500



KEY PLAN
N.T.S.

NOTES:

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

LEGEND:

- 198 CONTOUR
NEW TREATED EFFLUENT

H353004-30000-224-273-0032-0001	TEMPORARY LOADOUT CROSS SECTION
H353004-30000-224-271-0029-0003	HAUL ROAD LAYOUT AND PROFILE 800m to 1600m
H353004-30000-224-271-0029-0002	HAUL ROAD LAYOUT AND PROFILE 0.0m to 800m
DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	

NAME	
SIGNATURE	
ENG REG NUMBER	
REVISION DATE	
ORIGINAL DATE	
REG. PROFESSIONAL	

INTERNAL/CLIENT REVIEW			
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A	INTERNAL / CLIENT REVIEW	WR	FVB
No.	DESCRIPTION	BY	CHKD
REVISIONS			
DRAFTSPERSON: S VAN DER WALT			
DESIGNER: S VAN DER WALT			
CHECKER: A AQUIL			
DESIGN COORD.: A AQUIL			
RESP. ENG.: F VAN BILJON			
LEAD DISC. ENG.: F VAN BILJON			
AREA LEAD: F VAN BILJON			
ENG. MANAGER: F VAN BILJON			
AREA MANAGER: F VAN BILJON			
ROLE: NAME SIGNATURE DATE			
DRAWING APPROVAL STATUS: INTERNAL / CLIENT REVIEW			

HATCH			
DRAFTSPERSON	S VAN DER WALT	NR	2018/03/21
DESIGNER	S VAN DER WALT	NR	2018/03/21
CHECKER	A AQUIL		
DESIGN COORD.	A AQUIL		
RESP. ENG.	F VAN BILJON		
LEAD DISC. ENG.	F VAN BILJON		
AREA LEAD	F VAN BILJON		
ENG. MANAGER	F VAN BILJON		
AREA MANAGER	F VAN BILJON		
ROLE	NAME	SIGNATURE	DATE
DRAWING APPROVAL STATUS: INTERNAL / CLIENT REVIEW			

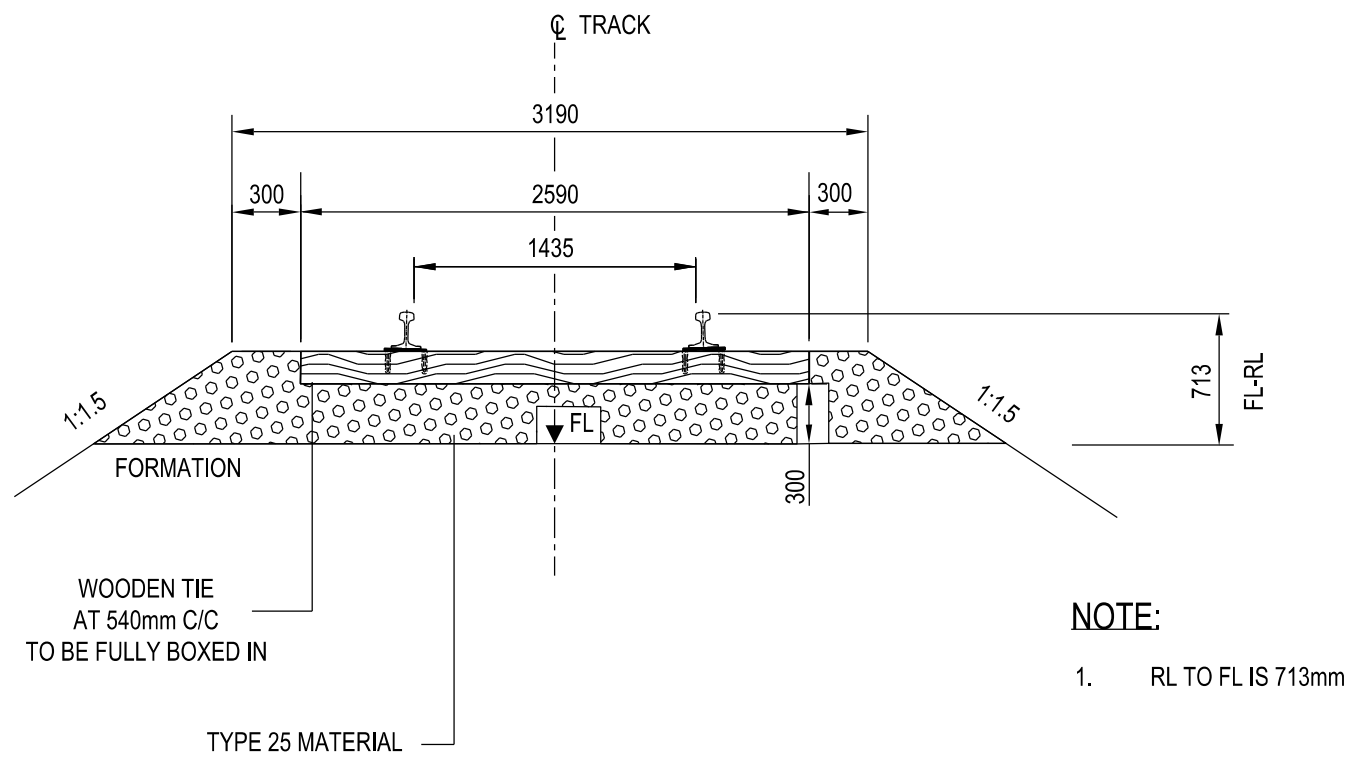
Baffinland			
BAFFINLAND IRON MINES LP			
MARY RIVER EXPANSION PROJECT			
RAIL SITE (56km)			
RAIL TEMPORARY LOADING FACILITY			
SCALE	DWG. No.	REV	
1:2000	H353004-30000-224-271-0029-0001		
OR AS NOTED			
SHEET SIZE: A0			



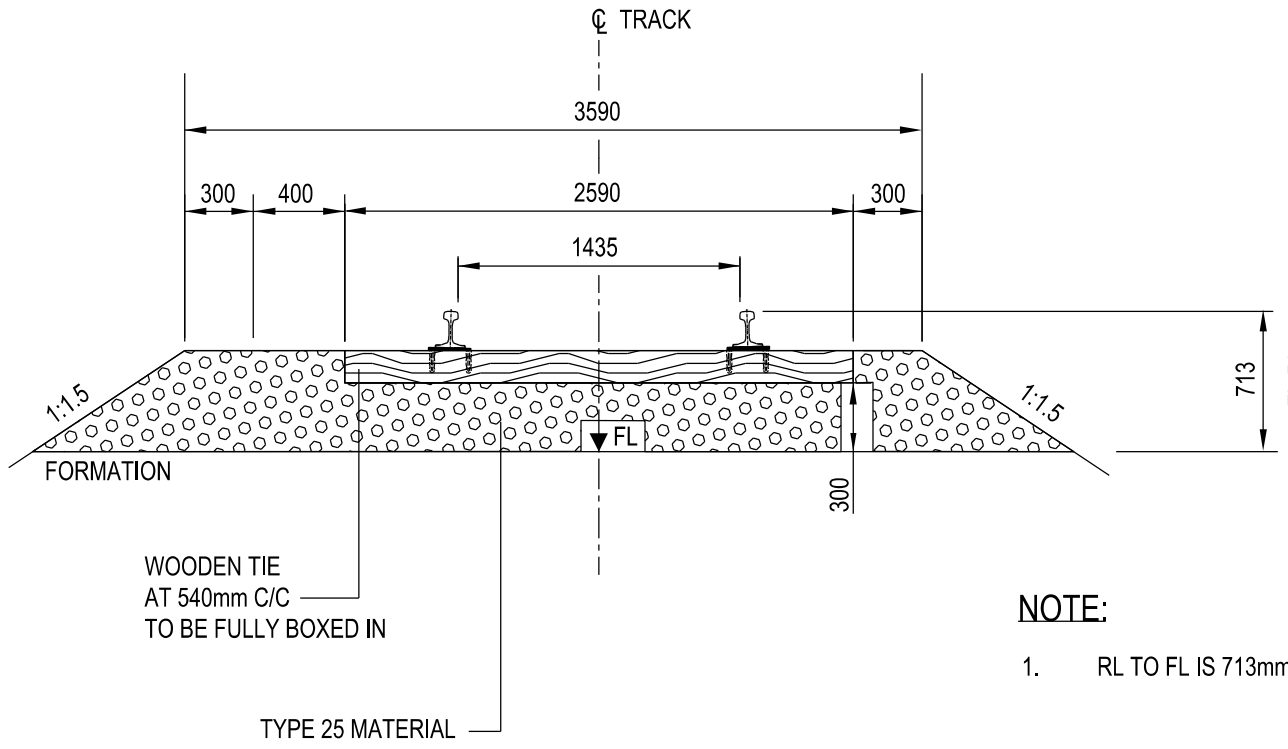
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ATTACHMENT 6.9
RAIL EMBANKMENT DRAWINGS

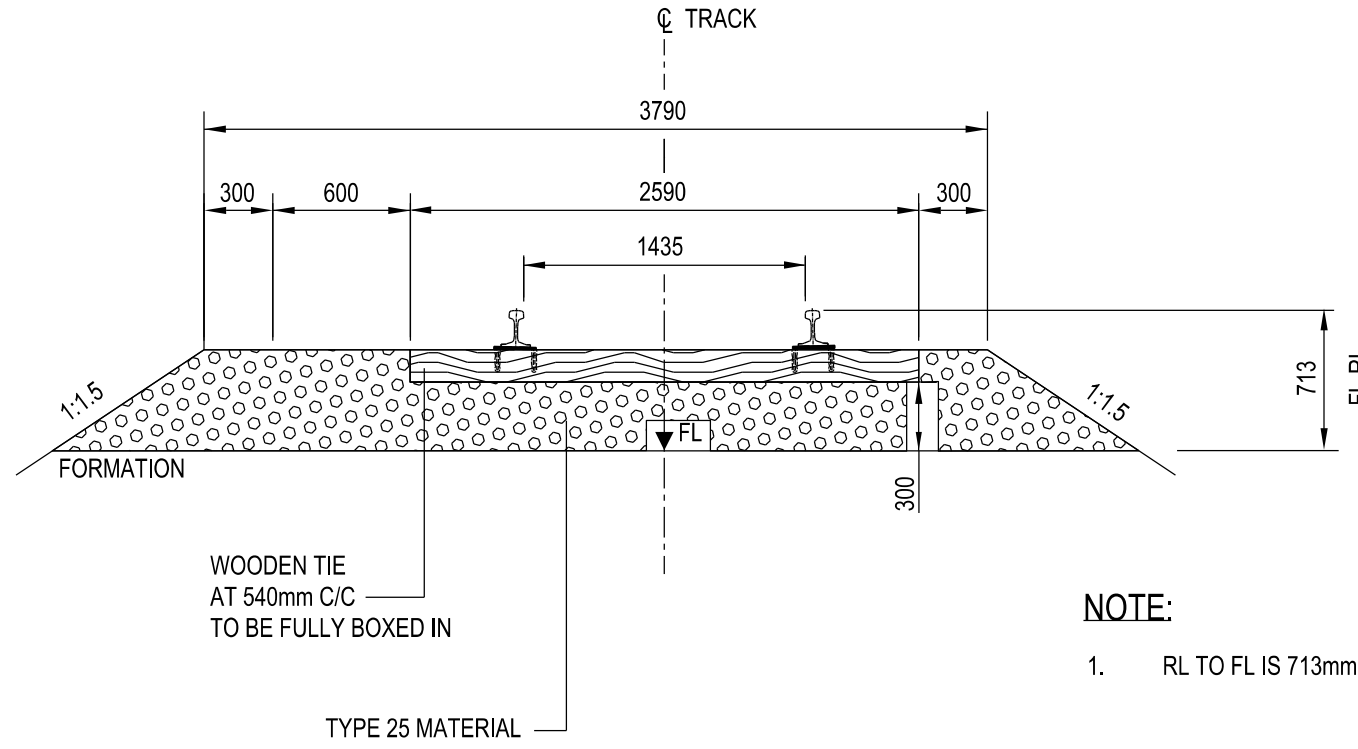
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DWG. No.



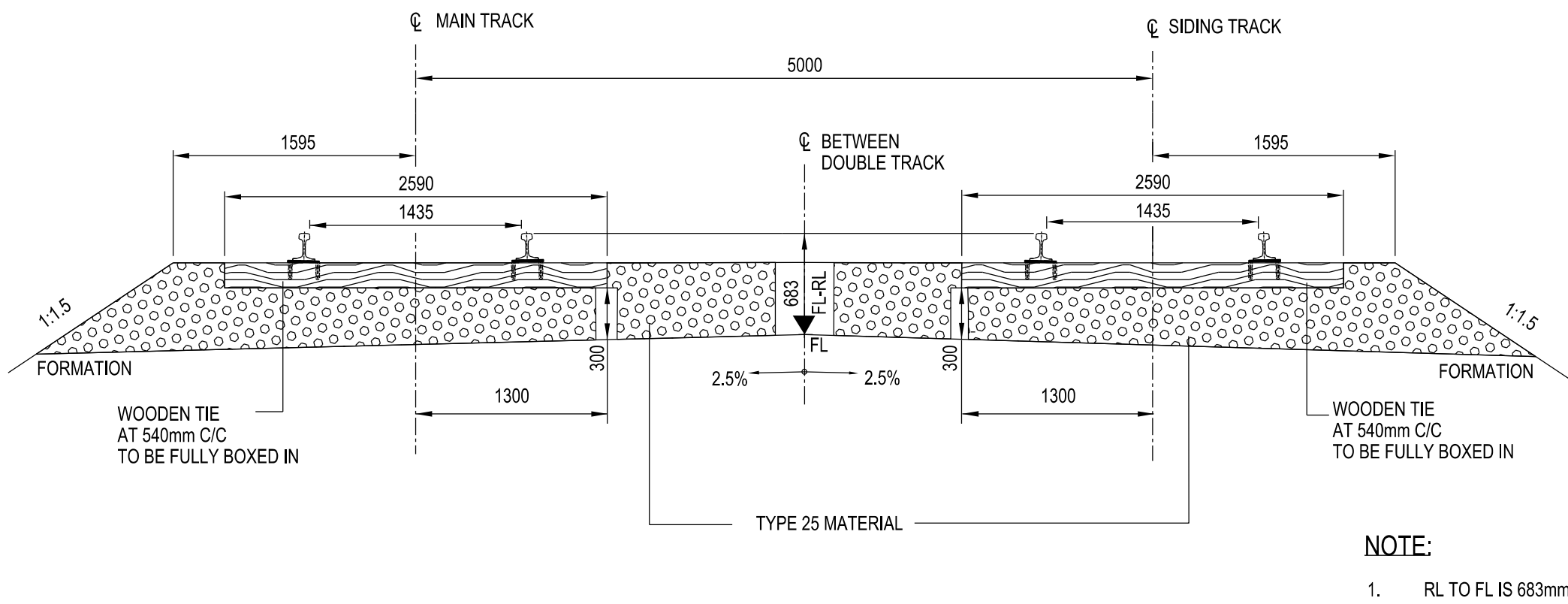
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HARDWOOD TIES
R > 800m AND TANGENT TRACK
NTS



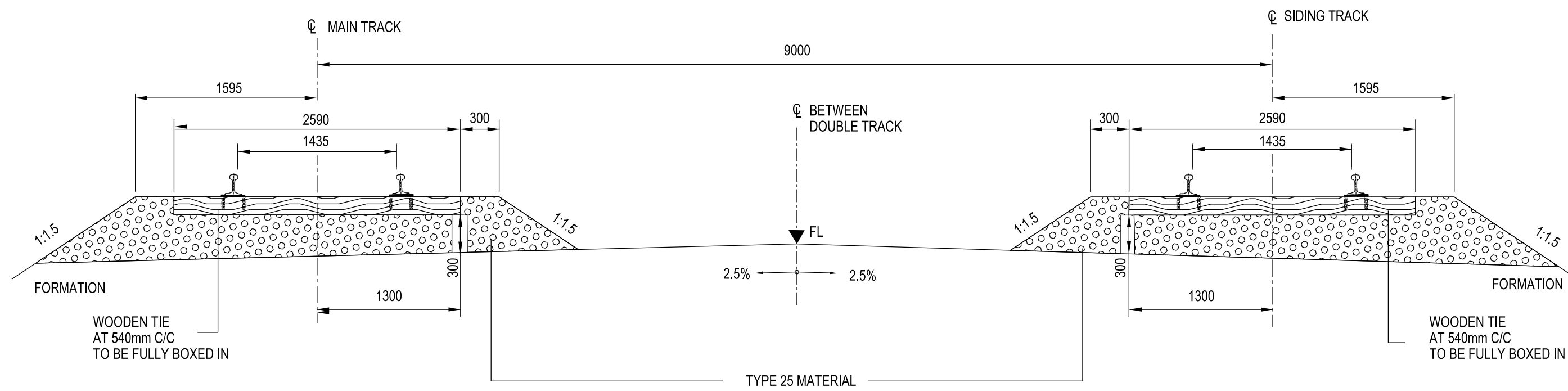
TYPICAL CROSS SECTION- SUPERSTRUCTURE
HARDWOOD TIES
400m < R ≤ 800m
NTS



TYPICAL CROSS SECTION- SUPERSTRUCTURE
HARDWOOD TIES
R ≤ 400m
NTS





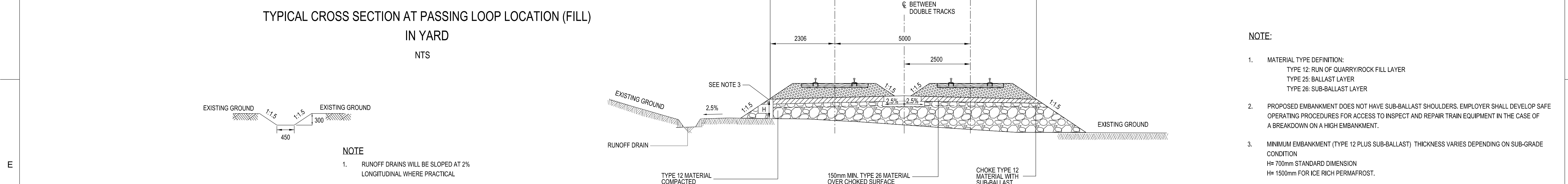
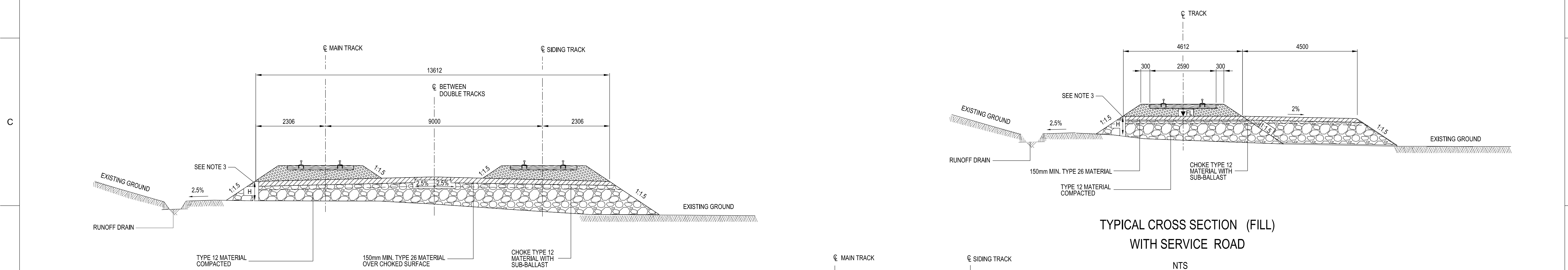
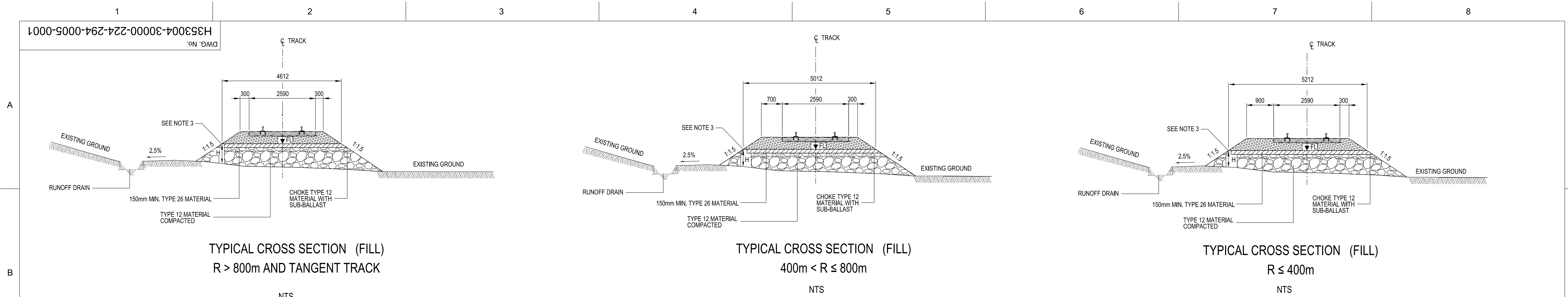
TYPICAL CROSS SECTION AT PASSING LOOP LOCATION-SUPERSTRUCTURE
HARDWOOD TIES
NTS



TYPICAL CROSS SECTION AT PASSING LOOP LOCATION- SUPERSTRUCTURE
IN YARD
HARDWOOD TIES
NTS

NOTE:
1. THIS DRAWING WAS PREVIOUSLY ISSUED AS H353004-00000-220-294-0003-0001.

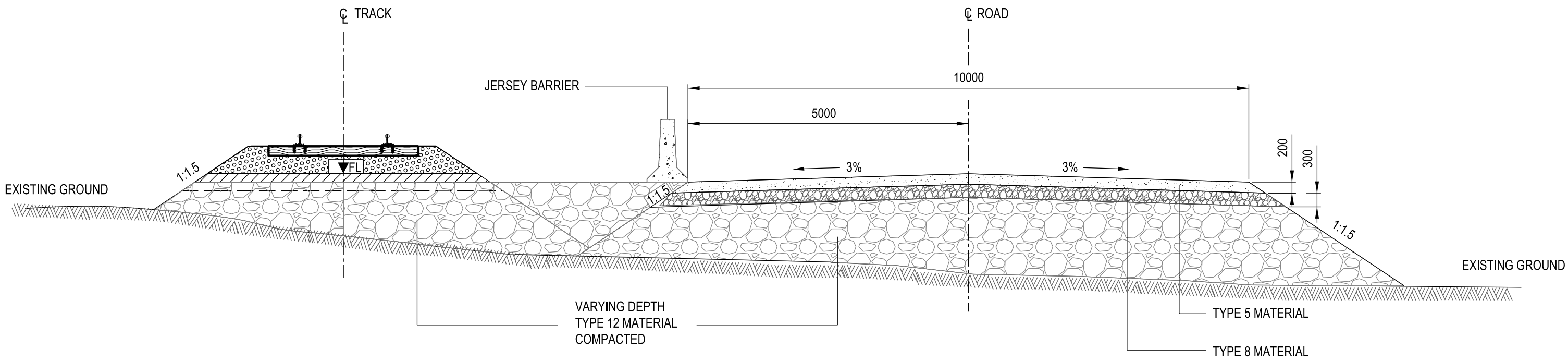
		NAME	NOT FOR CONSTRUCTION				THIS DRAWING WAS PREPARED BY HATCH LTD. ("HATCH") FOR THE EXCLUSIVE USE OF BAFFINLAND IRON MINES LP ("CLIENT") AND ITS USE IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN HATCH AND THE CLIENT. INCLUDING ANY LIMITATIONS ON LIABILITY CONTAINED THEREIN. THIS DRAWING AND ITS CONTENTS REMAIN THE INTELLECTUAL PROPERTY OF HATCH SUBJECT TO CLIENT'S ROYALTY-FREE, IRREVOCABLE, PERPETUAL AND NON-EXCLUSIVE LICENSE TO USE AND REPRODUCE THE DRAWING FOR PURPOSES CONNECTED WITH THE PROJECT, INCLUDING THE CONSTRUCTION, COMPLETION, MAINTENANCE, EXTENSION, REINSTATEMENT AND REPAIR OF THE PROJECT. THIS DRAWING, AND THE INFORMATION CONTAINED HEREIN, SHALL BE TREATED AS CONFIDENTIAL FOR ALL OTHER PURPOSES AND SHALL NOT BE MODIFIED WITHOUT THE WRITTEN CONSENT OF HATCH.																			
		SIGNATURE													MARY RIVER EXPANSION STAGE 3 BAFFINLAND IRON ORE MINES											
		ENG REG NUMBER													RAIL SITE STANDARD DRAWING TYPICAL CROSS SECTION- SHEET 1 OF 4											
		REVISION DATE													SCALE NTS OR AS NOTED				DWG. No. H353004-30000-224-294-0003-0001				REV A			
H353004-30000-224-294-0006-0001		TYPICAL CROSS SECTION- SHEET 4 OF 4																								
H353004-30000-224-294-0005-0001		TYPICAL CROSS SECTION- SHEET 3 OF 4																								
H353004-30000-224-294-0004-0001		TYPICAL CROSS SECTION- SHEET 2 OF 4																								
DRAWING No.		DRAWING TITLE																								
REFERENCE DRAWINGS		REG. PROFESSIONAL																								



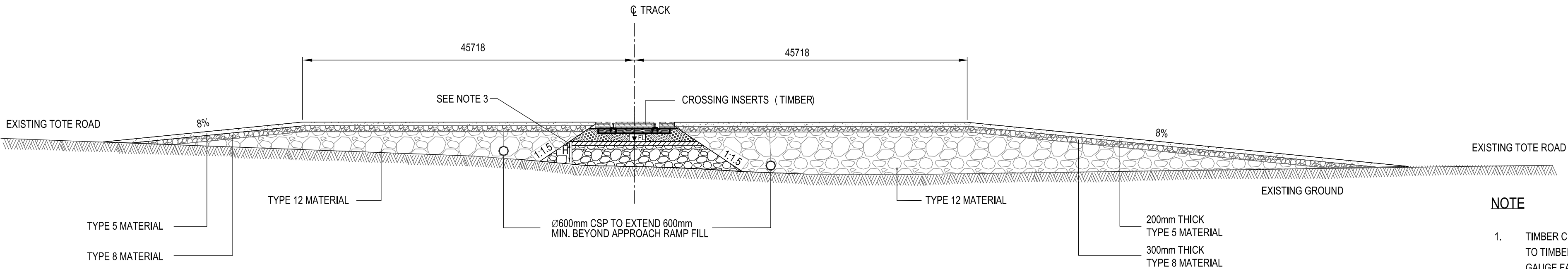
- NOTE:
- MATERIAL TYPE DEFINITION:
TYPE 12: RUN OF QUARRY/ROCK FILL LAYER
TYPE 25: BALLAST LAYER
TYPE 26: SUB-BALLAST LAYER
 - PROPOSED EMBANKMENT DOES NOT HAVE SUB-BALLAST SHOULDERS. EMPLOYER SHALL DEVELOP SAFE OPERATING PROCEDURES FOR ACCESS TO INSPECT AND REPAIR TRAIN EQUIPMENT IN THE CASE OF A BREAKDOWN ON A HIGH EMBANKMENT.
 - MINIMUM EMBANKMENT (TYPE 12 PLUS SUB-BALLAST) THICKNESS VARIES DEPENDING ON SUB-GRADE CONDITION
H= 700mm STANDARD DIMENSION
H= 150mm FOR ICE RICH PERMAFROST.
 - 542 NON-WOVEN GEOTEXTILE UNDER TYPE 12 MATERIAL ON ICE RICH SILT.
 - FOR RUNOFF DRAIN DETAILS REFER TO TYPICAL RUNOFF DRAIN DIMENSIONS.
 - FOR SUPERSTRUCTURE DETAILS REFER TO DRAWING H353004-30000-224-294-0003-0001.
 - THIS DRAWING WAS PREVIOUSLY ISSUED AS H353004-00000-220-294-0005-0001.

H353004-30000-224-294-0003-0001		TYPICAL CROSS SECTION- SHEET 1 OF 4		DRAWING No.		DRAWING TITLE		REFERENCE DRAWINGS	
NAME		SIGNATURE		ENG REG NUMBER		REVISION DATE		ORIGINAL DATE	
REG. PROFESSIONAL		REVISIONS		DRAWING APPROVAL STATUS:		INTERNAL/CLIENT REVIEW		SCALE NTS OR AS NOTED	
DWG. No.		H353004-30000-224-294-0005-0001		REV A		SHEET SIZE: D		\$US\$ \$CAN\$ \$MEX\$ \$INTL\$ \$FILES\$ \$TIMES\$	

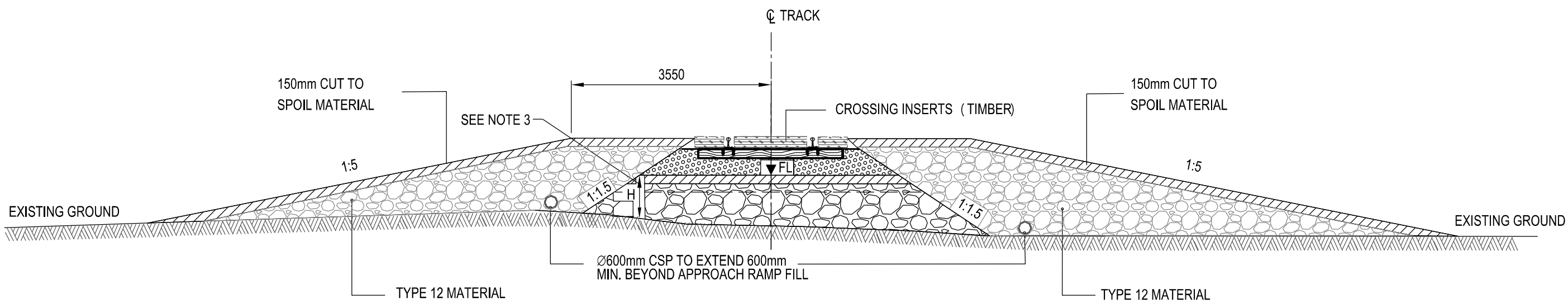
H353004-30000-224-294-0006-0001
DWG. No.



TYPICAL CROSS SECTION FOR TOTE ROAD AND RAIL INTERFACE
NTS



TYPICAL CROSS SECTION FOR LEVEL CROSSING
NTS



TYPICAL CROSS SECTION FOR CARIBOU CROSSING
NTS

NOTE
1. WHERE REQUIRED, JERSEY BARRIER LOCATED ON RAIL SIDE.

NOTE
1. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 229mm WIDE INSERTS TO BE FASTENED TO TIMBER TIES USING 305mm LAG SCREWS. MINIMUM OF 76mm SHALL BE MAINTAINED BETWEEN GAUGE FACE OF THE RAIL AND NEAREST CROSSING INSERT.

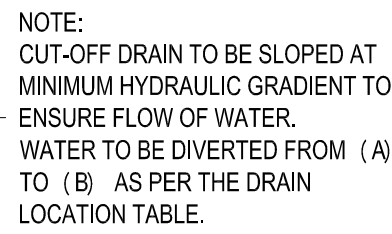
NOTE:
1. MATERIAL TYPE DEFINITION:
TYPE 5: 32mm MINUS
TYPE 8: 150mm MINUS
TYPE 12: RUN OF QUARRY/ROCK FILL LAYER
TYPE 25: BALLAST LAYER
TYPE 26: SUB-BALLAST LAYER
2. PROPOSED EMBANKMENT DOES NOT HAVE SUB-BALLAST SHOULDERS. EMPLOYER SHALL DEVELOP SAFE OPERATING PROCEDURES FOR ACCESS TO INSPECT AND REPAIR TRAIN EQUIPMENT IN THE CASE OF A BREAKDOWN ON A HIGH EMBANKMENT.
3. MINIMUM EMBANKMENT (TYPE 12 PLUS SUB-BALLAST) THICKNESS VARIES DEPENDING ON SUB-GRADE CONDITION
H= 700mm STANDARD DIMENSION
H= 1500mm FOR ICE RICH PERMAFROST.
4. 542 NON-WOVEN GEOTEXTILE UNDER TYPE 12 MATERIAL ON ICE RICH SILT.
5. FOR JERSEY BARRIER DETAILS REFER TO TYPICAL JERSEY BARRIER DIMENSIONS.
6. FOR SUPERSTRUCTURE DETAILS REFER TO DRAWING H353004-30000-224-294-0003-0001.
7. THIS DRAWING WAS PREVIOUSLY ISSUED AS H353004-00000-220-294-0006-0001.

NOTE
1. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 229mm WIDE INSERTS TO BE FASTENED TO TIMBER TIES USING 305mm LAG SCREWS. MINIMUM OF 76mm SHALL BE MAINTAINED BETWEEN GAUGE FACE OF THE RAIL AND NEAREST CROSSING INSERT.

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SUSERNAME\$ \$TIMES
\$DATES\$ \$FILES\$
SHEET SIZE: D

DWG. No.



DIRECTION OF FLOW OF STREAM DIVERSION		
CHAINAGE FROM (km)	CHAINAGE TO (km)	LENGTH (m)
12661	12760	99
20818	20498	320
46454	46473	19
47552	47602	50
49799	49980	181
58940	59060	120
58940	59060	120
59442	59552	110
59706	59552	154
60623	60950	327
61580	61340	240
62550	62920	370
63110	62930	180
63090	62930	160
63724	63555	169
64827	64950	123
66164	66228	64
82266	82094	172
90726	90910	184
89200	90500	1300
91216	90810	306
97286	97194	92

1. THIS DRAWING WAS PREVIOUSLY ISSUED:
H353004-00000-224-272-0032-0001

CUT-OFF DRAIN
TYPICAL CROSS SECTION
SCALE 1:50

HATCH	Signature	Date
Port Area Lead		
Rail Area Lead		
PEng Reviewer (NAPEG)		
Construction		
Other		
BIM	Signature	Date
Port Area Manager		
Mine / Rail Area Manager		
Environmental		
Permitting		
Operations		
Other		
Review Grade (check applicable box below)		
C1	C2	C3
Proceed to next submission & status	Proceed with exceptions as noted to next submission & status	Do not proceed. Revise as noted & resubmit
Client Rep.		Date:

SCALE 1:100 OR AS NOTED	DWG. No. H353004-30000-224-294-0008-0001	REV 0A
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	\$USERNAMES\$	\$TIMES\$
	\$DATES\$	
	\$FILE\$	