

## **ATTACHMENT 7**

### **TOTE ROAD REALIGNMENT DRAWINGS**

- 7.1 Tote Road Relocation Drawings
- 7.2 Tote Road Rail Crossing Drawings
- 7.3 Tote Road Typical Drawings

**ATTACHMENT 7.1**

**TOTE ROAD RELOCATION DRAWINGS**









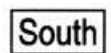








SCALE 1:1000



LONGSECTION PLATFORM ROAD 1  
FROM 0.000 TO 800.000



LONGSECTION PLATFORM RO  
FROM 0.000 TO 124.081

<div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <h1 style="margin: 0;">NOT FOR CONSTRUCTION</h1> </div> </div>		<p>THIS DRAWING WAS PREPARED BY THE CLIENT FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT AND IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE.</p>		
		<p>THIS DRAWING WAS PREPARED BY THE CLIENT FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT AND IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE. THE CLIENT AND THE DESIGNER ASSUME NO LIABILITY FOR THE USE OF THIS DRAWING FOR ANY OTHER PURPOSE.</p>		
NAME				
SIGNATURE				
ENG REG NUMBER				
REVISION DATE				
ORIGINAL DATE	0	APPROVED FOR USE	WR	FVB 2017/02/05
REG. PROFESSIONAL	No.	DESCRIPTION	BY	CHKD DATE
		REVISIONS		

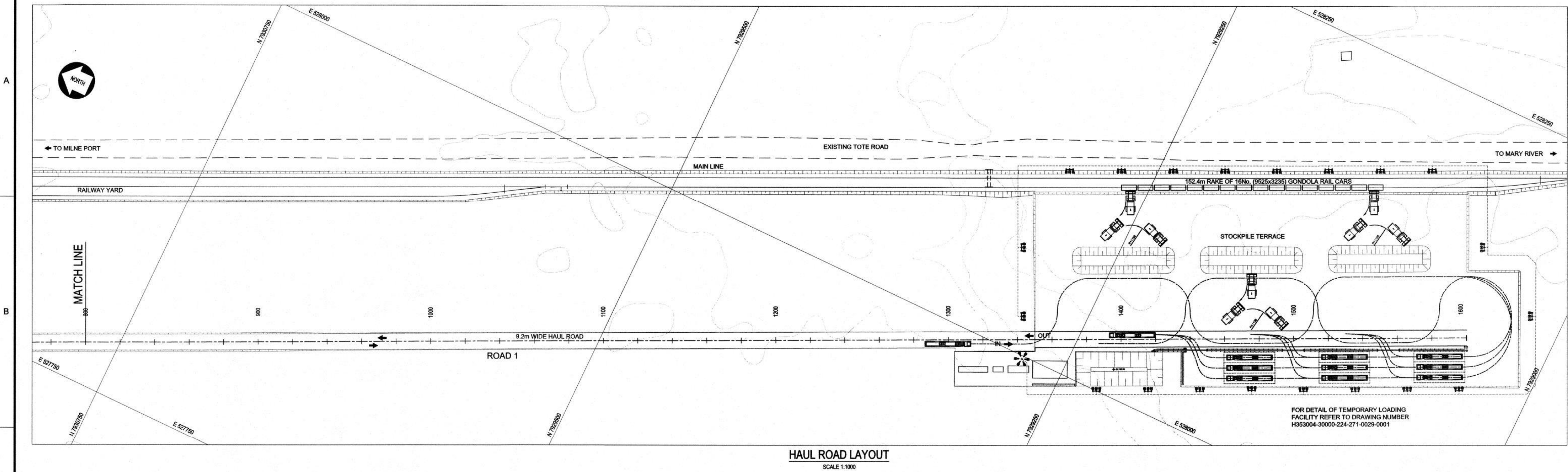
THIS DRAWING WAS PREPARED BY HATCH LTD. (HATCH) FOR THE EXCLUSIVE USE OF BAYFARLAND IRON MINES LP (CLIENT) AND ITS USE IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN HATCH AND THE CLIENT, INCLUDING ANY LIMITATIONS ON LIABILITY CONTAINED HEREIN. THIS DRAWING AND ITS CONTENTS REMAIN THE 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 MOODIFIED WITHOUT THE WRITTEN CONSENT OF HATCH.



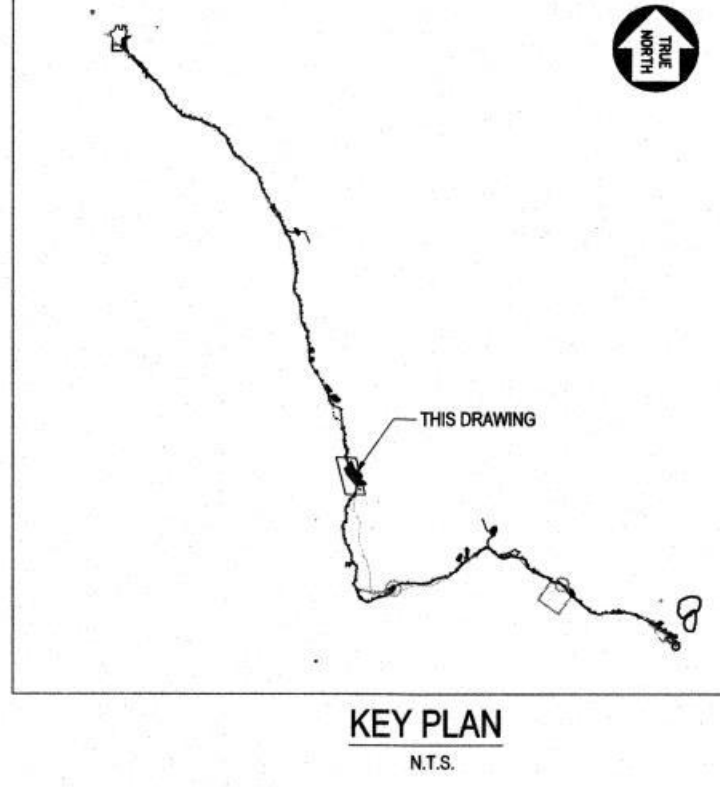
SCALE 1:2000 OR AS NOTED	DWG. No. H353004-30000-224-271-0029-0002	REV 0
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\$USERNAMES	\$TIMES
\$DATES	
\$CELLS	





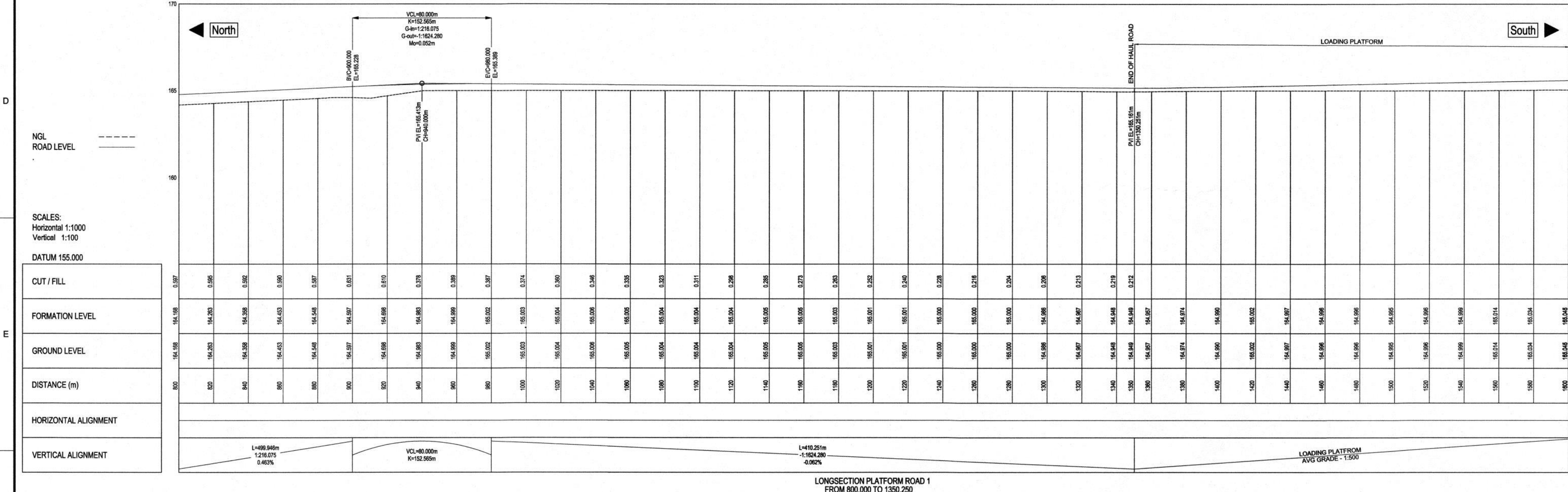
HAUL ROAD LAYOUT  
SCALE 1:1000



- NOTES:
1. LIDAR SURVEY PROVIDED BY PHOTOSAT (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:

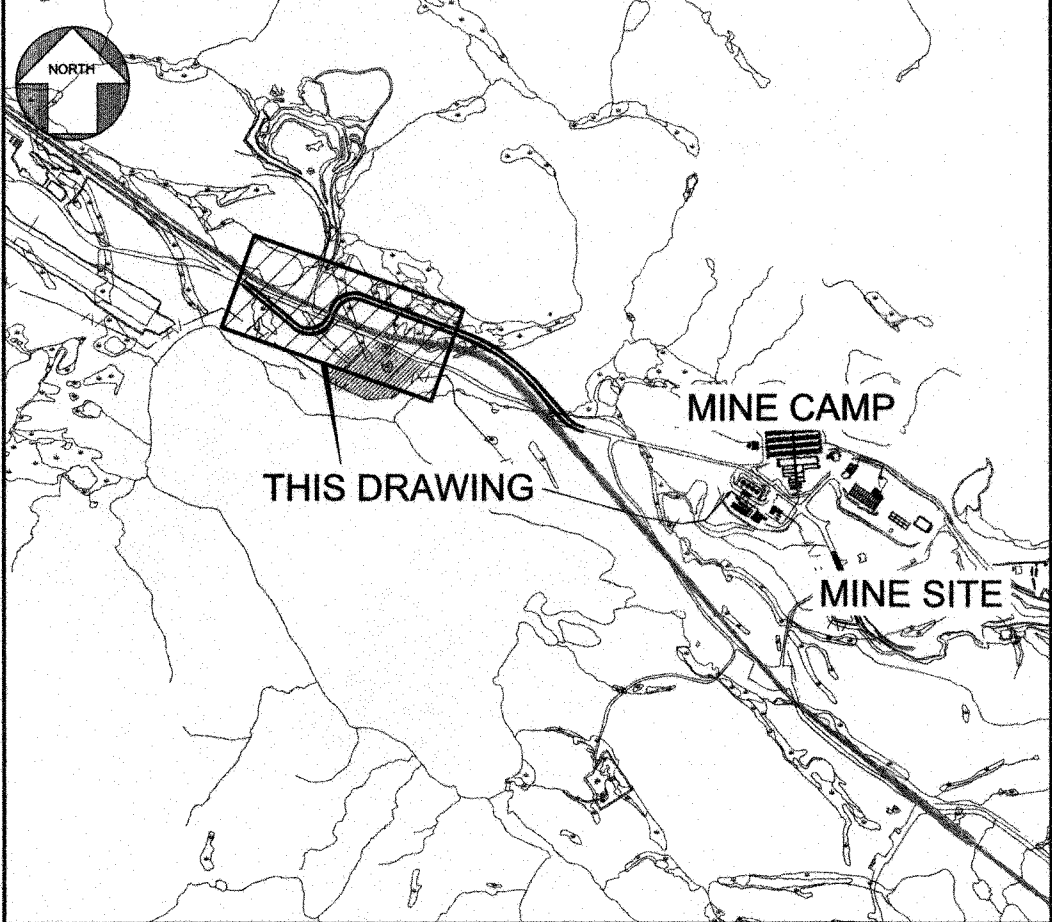
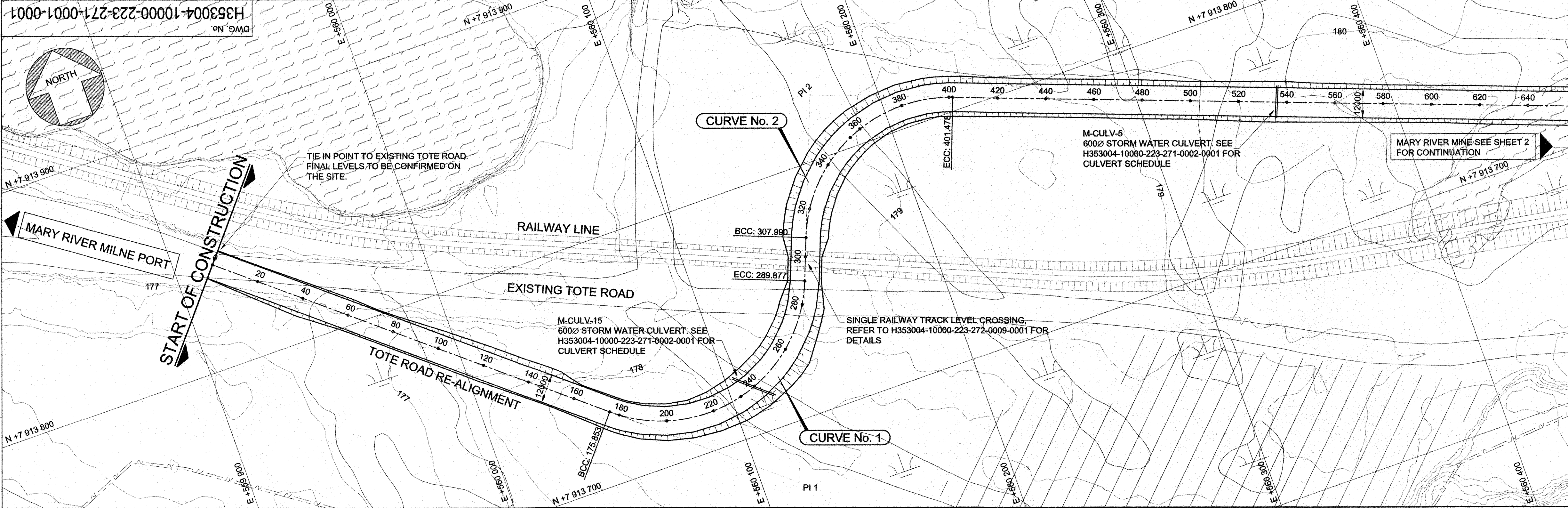
198 CONTOUR  
NEW TREATED EFFLUENT



LONGSECTION PLATFORM ROAD 1  
FROM 800.000 TO 1350.250

HATCH		Baffinland	
BAFFINLAND IRON MINES LP MARY RIVER EXPANSION PROJECT		RAIL SITE (56km) HAUL ROAD LAYOUT AND PROFILE 0.800 KM TO 1.350 KM	
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 D STANGER CLIENT F PITTMAN		SCALE 1:1000 DWG. No. H353004-30000-224-271-0029-0003 REV 0	
NOT FOR CONSTRUCTION		APPROVED FOR USE	
NAME		SIGNATURE	
SIGNATURE		DATE	
ENG. REG. NUMBER		DATE	
REVISION DATE		DATE	
ORIGINAL DATE		DATE	
REG. PROFESSIONAL		DATE	
REVISIONS		DATE	
DRAWING APPROVAL STATUS: APPROVED FOR USE		DATE	





KEY PLAN  
NOT TO SCALE

LEGEND:

- 175 CONTOUR
- EXISTING POWER LINE
- EXISTING RAW WATER PIPELINE

SETTING OUT DATA - TOTE ROAD1

NAME	CHAINAGE	E	N	DETAILS
START	0.000	559 915.860	7 913 842.912	L = 175.853m
BCC1	175.853	560 050.515	7 913 729.808	R = 60.000m
PI1		560 114.788	7 913 675.822	DA = 108°53'00"
ECC1	289.877	560 145.066	7 913 754.109	TL = 83.938m
BCC2	307.990	560 151.600	7 913 771.003	R = 60.000m
PI2		560 172.970	7 913 826.259	DA = 89°16'30"
ECC2	401.478	560 228.492	7 913 805.590	TL = 93.487m
BCC3	680.370	560 489.862	7 913 708.293	R = 500.000m
PI3		560 611.102	7 913 663.161	DA = 29°00'50"
ECC3	933.554	560 695.239	7 913 564.890	TL = 129.368m
BCC4	1036.850	560 762.419	7 913 486.424	R = 100.000m
PI4		560 783.306	7 913 462.029	DA = 35°36'30"
ECC4	1099.000	560 814.492	7 913 454.356	TL = 32.116m
END	1100.000	560 815.463	7 913 454.117	L = 1.000m

NOTES:

- LIDAR SURVEY PROVIDED BY PHOTSAT (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 OTHERWISE SPECIFIED.
- REFER TO THE "PRIMARY ROAD - TYPICAL CROSS SECTION" ON DRAWING No. H353004-10000-221-0002-0001 FOR CROSS SECTIONAL DETAILS.

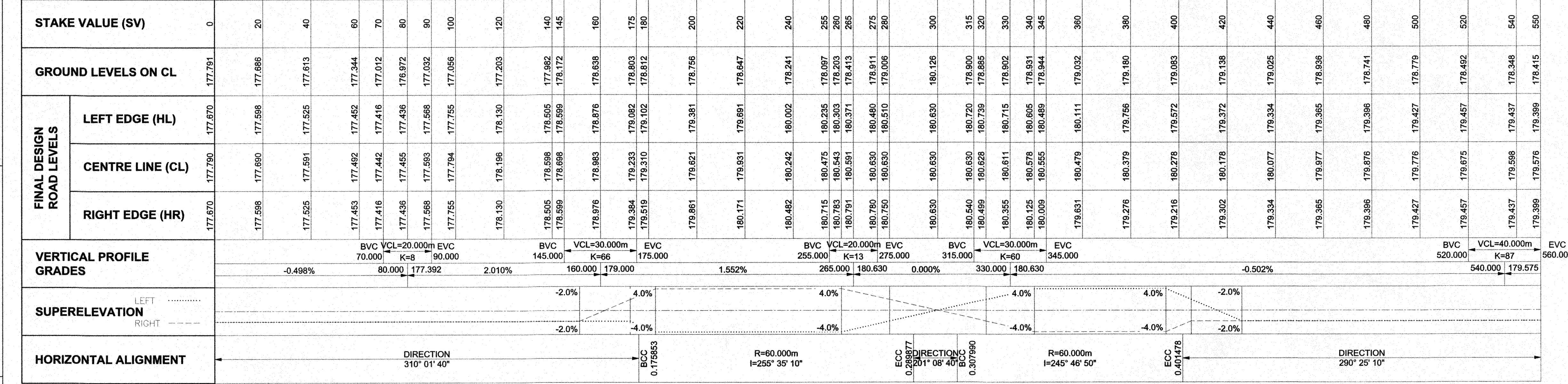
ROAD DATA LEGEND:

- 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)

PERMIT TO PRACTICE  
HATCH LTD.  
Signature: *[Signature]*  
Date: 2017-12-05  
PERMIT NUMBER: P 512  
The Association of Professional Engineers,  
Geologists and Geophysicists of NWT/NU

SCALES:  
Horizontal 1:1000  
Vertical 1:200

DATUM 175.000



DRAWING No.	DRAWING TITLE
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H353004-00000-224-272-0027-0001	RAILWAY PLAN AND LONGITUDINAL SECTION CH106,900km TO CH109,611km
H353004-10000-221-273-0002-0001	HAUL, PRIMARY AND SECONDARY ROADS - TYPICAL CROSS SECTIONS
H353004-10000-223-272-0009-0001	TOTE ROAD & RAILROAD LEVEL CROSSING - LAYOUT PLAN AND DETAILS
H353004-10000-223-271-0002-0001	TOTE ROAD RE-ALIGNMENT SHEET 2 OF 2- PLAN AND PROFILE

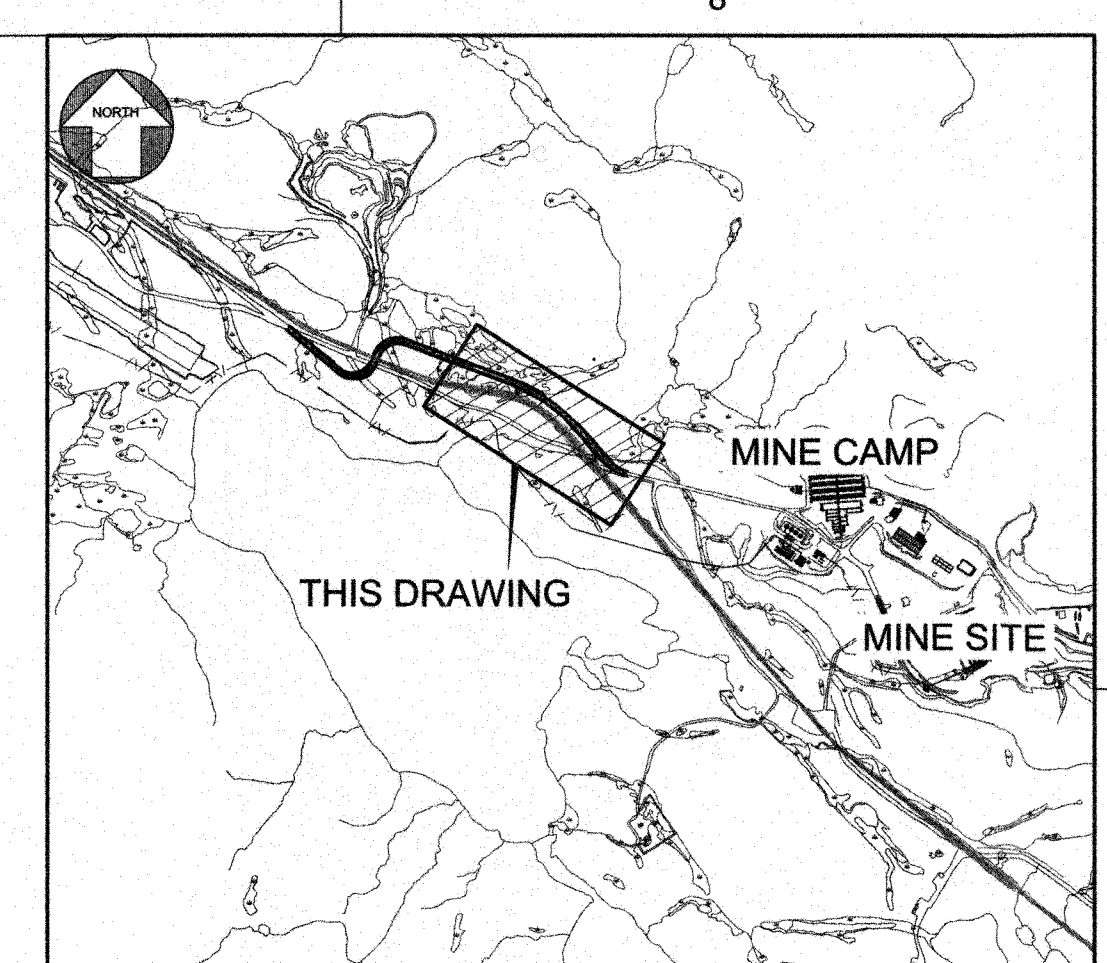
REGISTERED PROFESSIONAL ENGINEER  
L. 247  
R. A. HALIM  
LICENSEE  
2017-12-05  
NWT/NU

FOR CONSTRUCTION			
No.	DESCRIPTION	BY	CHK'D
0	APPROVED FOR CONSTRUCTION	IBB	EB
DATE: 28/11/2017			

HATCH			
DESIGNER	CHECKER	DESIGN COORD.	RESP. ENG.
S HALL	E BALEGAMIRE	R GOOSEN	R HALIM
LEAD DISC. ENG.	AREA MANAGER	PROJ. MANAGER	CLIENT
A GROBBELAAR	V LAVRIC	S HEINER	F PITTMAN
DRAFTSPERSON	NR	NR	NR
IBB	EB	EB	EB
DATE	DATE	DATE	DATE
28/11/2017	28/11/2017	28/11/2017	28/11/2017

Baffinland  
BAFFINLAND IRON MINES LP  
MARY RIVER EXPANSION PROJECT  
MINE SITE  
TOTE ROAD RE-ALIGNMENT SHEET 1 OF 2  
PLAN AND PROFILE  
SCALE: 1:1000  
DWG. No. H353004-10000-223-271-0001-0001  
REV 0  
SHEET SIZE: D





**KEY PLAN**  
NOT TO SCALE

**LEGEND:**

180 CONTOUR

## SETTING OUT DATA - TOTE ROAD1

NAME	CHAINAGE	E	N	DETAILS
START	0.000	559 915.860	7 913 842.912	L = 175.853m
BCC1 P11 ECC1	175.853  289.877	560 050.515 560 114.789 560 145.066	7 913 729.808 7 913 675.822 7 913 754.109	R = 60.000m DA = 108°53'00" TL = 83.938m AL = 114.023m
BCC2 P12 ECC2	307.990  401.478	560 151.600 560 172.970 560 228.492	7 913 771.003 7 913 826.259 7 913 805.590	R = 60.000m DA = 89°16'30" TL = 59.244m AL = 93.487m
BCC3 P13 ECC3	680.370  933.554	560 489.862 560 611.102 560 695.239	7 913 708.293 7 913 663.161 7 913 564.890	R = 500.000m DA = 29°00'50" TL = 129.368m AL = 253.184m
BCC4 P14 ECC4	1036.850  1099.000	560 762.419 560 783.306 560 814.492	7 913 486.424 7 913 462.029 7 913 454.356	R = 100.000m DA = 35°36'30" TL = 32.116m AL = 62.151m
END	1100.000	560 815.463	7 913 454.117	L = 1.000m

**NOTES:**

1. LIDAR SURVEY PROVIDED BY PHOTSAF (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 OTHERWISE SPECIFIED.
5. REFER TO THE "PRIMARY ROAD - TYPICAL CROSS SECTION" ON DRAWING NO. H353004-1000-221-0002-0001 FOR CROSS SECTIONAL DETAILS.

## 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)

**PERMIT TO PRACTICE**  
**HATCH LTD.**

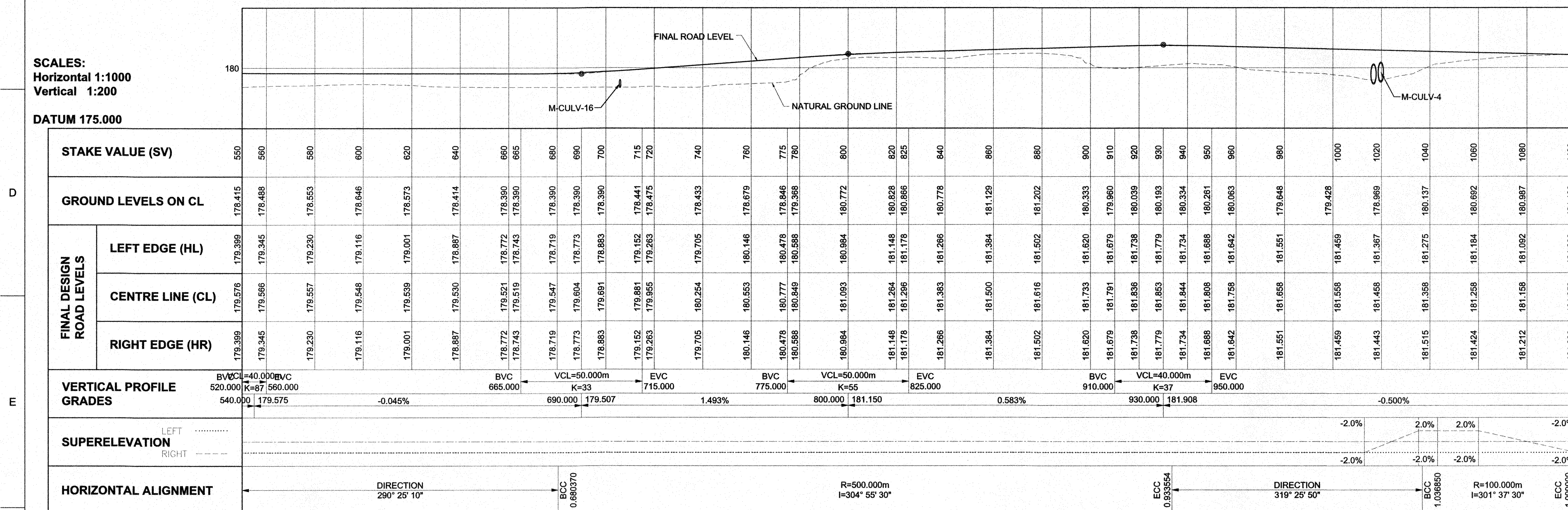
Signature \_\_\_\_\_  
Date \_\_\_\_\_ 2017-12-05

**PERMIT NUMBER: P 512**

The Association of Professional Engineers,  
Geologists and Geophysicists of NWT/NU

**SCALES:**  
Horizontal 1:1000  
Vertical 1:200

**DATUM 175.000**



FOR CONSTRUCTION

THIS DRAWING WAS PREPARED BY HATCH LTD. ("HATCH") FOR THE EXCLUSIVE USE OF BAFINLAND 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 HATCH'S ROYALTY (FREE, REVOCABLE, PERPETUAL AND NON-EXCLUSIVE) LICENSE TO USE AND REPRODUCE THIS 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**

BAFFINLAND IRON MINES LP  
MARY RIVER EXPANSION PROJECT

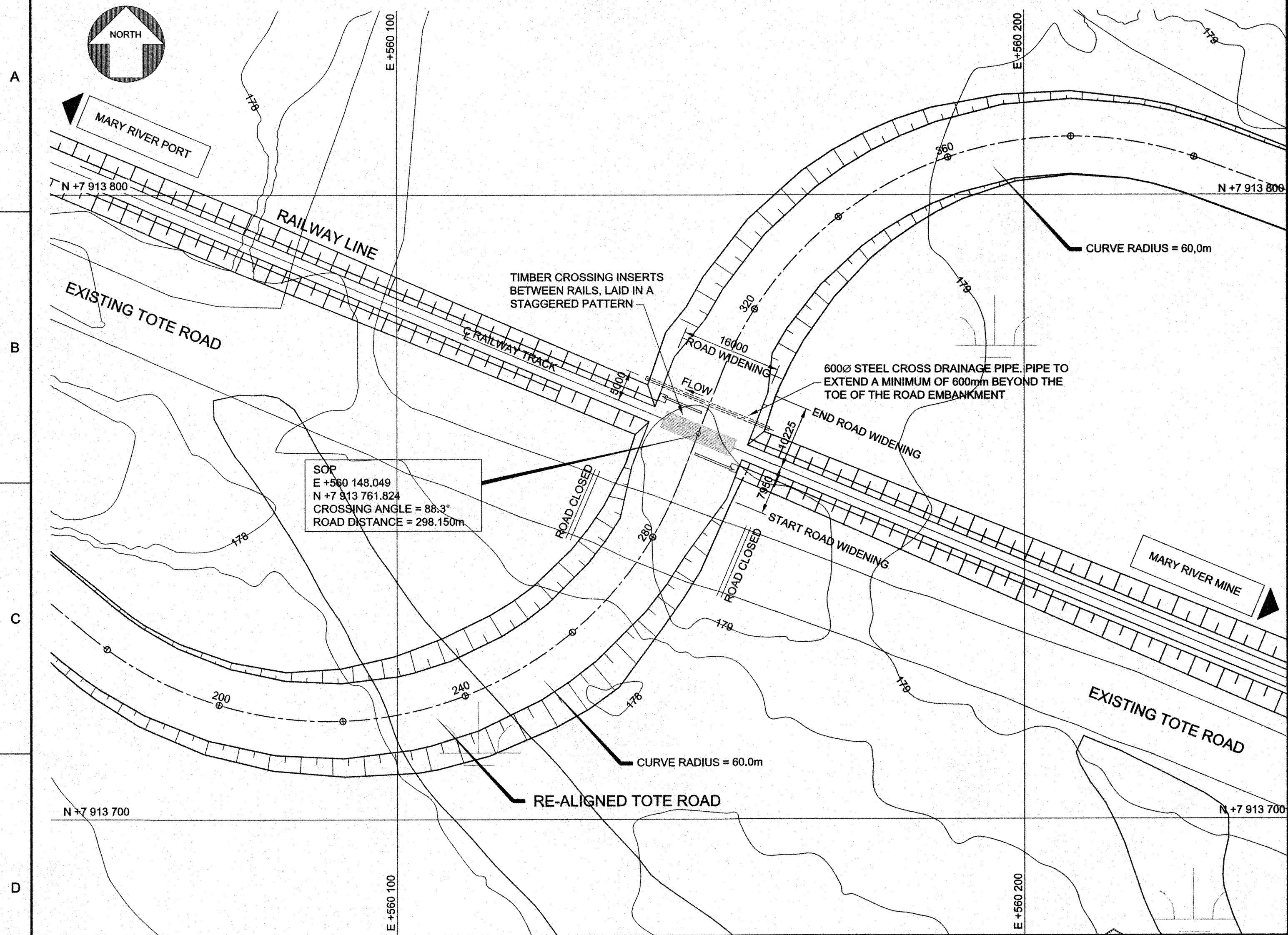
5	8	8	6	<p><b>MINE SITE</b></p> <p><b>TOTE ROAD RE-ALIGNMENT SHEET 2 OF 2</b></p> <p><b>PLAN AND PROFILE</b></p>
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MODIFIED WITHOUT THE WRITTEN CONSENT OF HATCH.									
						DRAFTSPERSON	I BARNARD	NR	06/10/2017
						DESIGNER	S HALL	NR	06/10/2017
						CHECKER	E BALEGAMIRE	<i>E. Balegamire</i>	2017-12-18
						DESIGN COORD.	R GOOSEN	<i>R. Goosen</i>	2017-12-14
						RESP. ENG.	R HALIM	<i>R. Halim</i>	2017-12-05
						LEAD DISC. ENG.	A GROBBELAAR	<i>A. Grobbelaar</i>	2017-12-05
						AREA MANAGER	V LAVRIC	<i>V. Lavric</i>	2017-12-08
						PROJ. MANAGER	S HEINER	<i>S. Heiner</i>	2017-12-08
0	APPROVED FOR CONSTRUCTION								
No.	DESCRIPTION	IHB	EB	28/11/2017	CLIENT	F PITTMAN		<i>F. Pittman</i>	2017-12-18
		BY	CHK'D	DATE	ROLE		NAME	SIGNATURE	DATE
	REVISIONS				DRAWING APPROVAL STATUS:	Approved for Construction			

SCALE 1:1,000 OR AS NOTED	DWG. No. H353004-10000-223-271-0002-0001	RE 0
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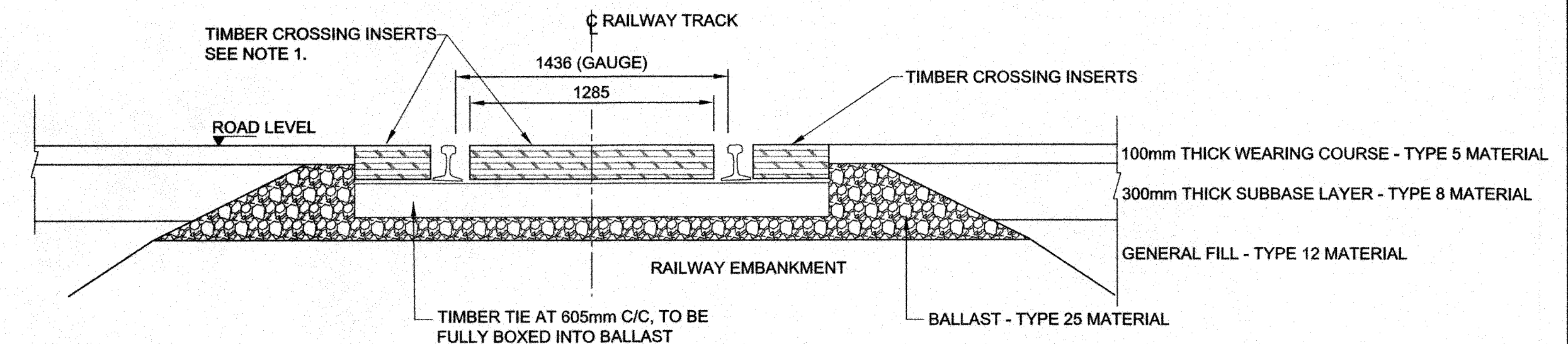
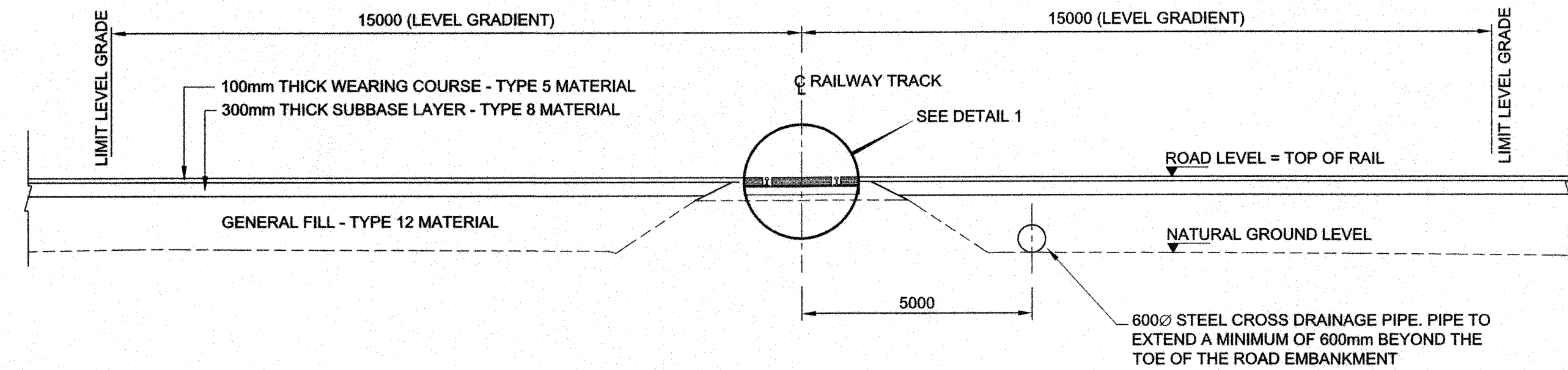
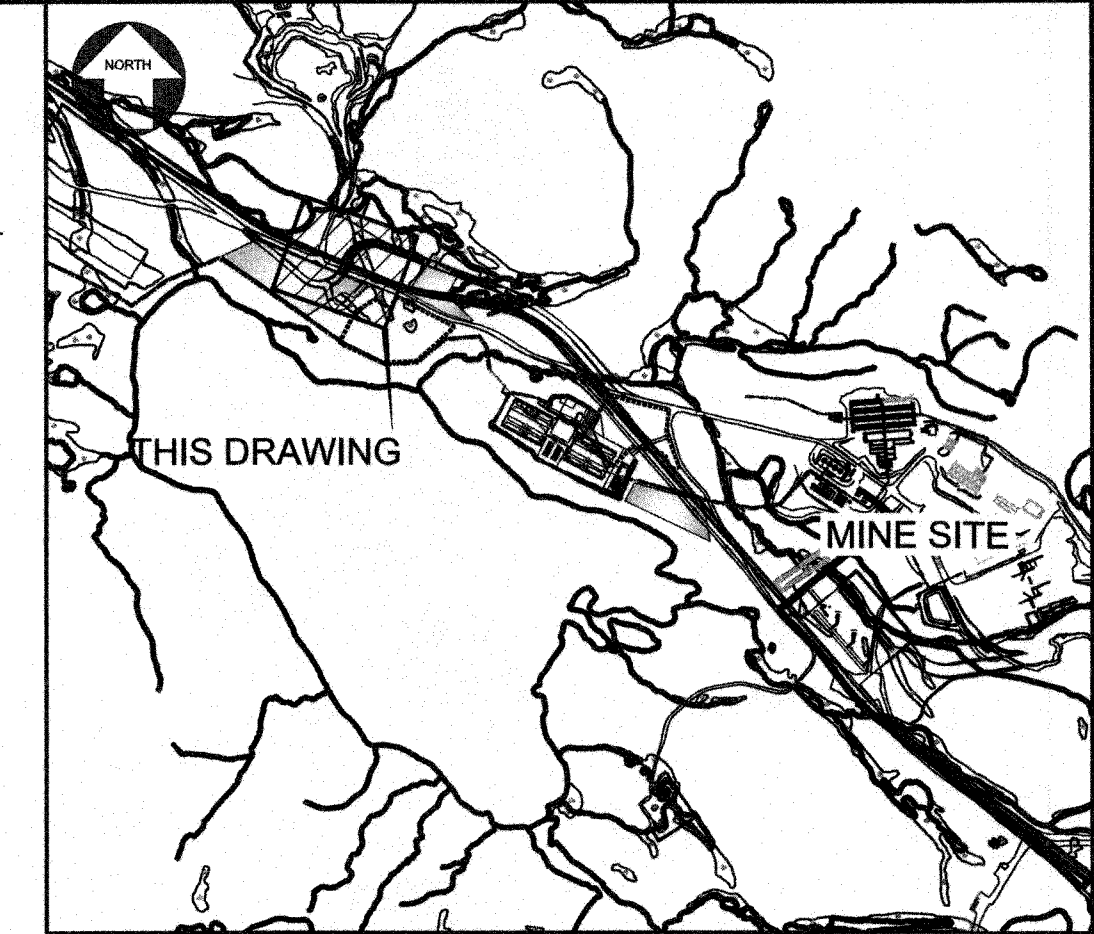
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\$\$\$DATES\$	
\$\$\$FILES\$	





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 MILLIMETERS, UNLESS OTHERWISE SPECIFIED.



NOTE:

1. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 228mm WIDE. INSERTS ARE TO BE FASTENED TO TIMBER TIES USING 305mm LONG LAG SCREWS. A MINIMUM DISTANCE OF 78mm SHALL BE MAINTAINED ON EITHER SIDE THE RAIL HEAD AND THE NEAREST CROSSING INSERT.
2. GRADE CROSSING TO BE SUPPLIED WITH FLASHING LIGHTS AND IS TO HAVE GATED PROTECTION. THE DESIGN AND CONSTRUCTION OF THIS WORK SHALL FORM PART OF THE RAIL SYSTEM CONTRACTORS' SCOPE OF WORK.

PERMIT TO PRACTICE  
HATCH LTD.  
Signature: *[Signature]*  
Date: 2018-01-23  
PERMIT NUMBER: P 512  
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

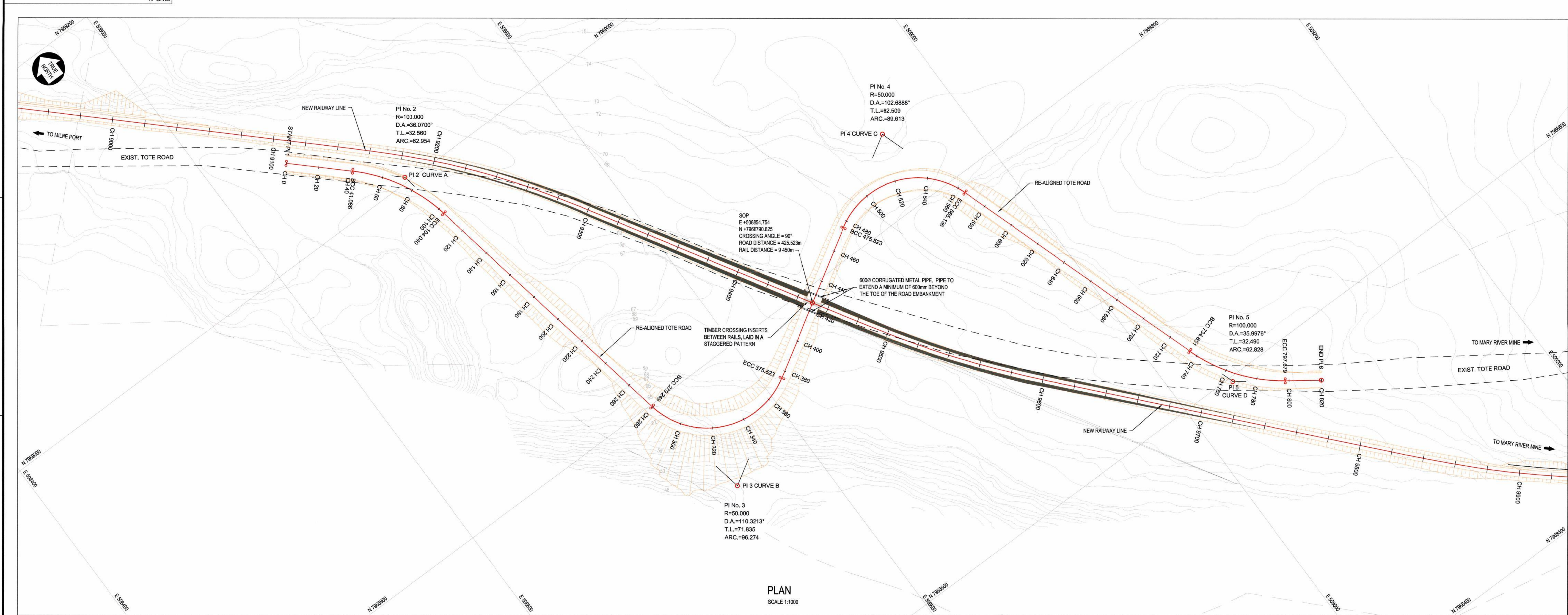
HATCH		Baffinland	
DESIGNER: S HALL		BAFFINLAND IRON MINES LP	
CHECKER: F HUGO		MARY RIVER EXPANSION PROJECT	
DESIGN COORD: R GOOSEN		MINE SITE	
RESP. ENG. R HALIM		TOTE ROAD & RAILROAD CROSSING	
LEAD DISC. ENG. A GROBBELAAR		LAYOUT PLAN AND DETAILS	
AREA MANAGER V LAVRIC		SCALE 1:500	
ENG. MANAGER D STANGER		DWG. No. H353004-10000-223-272-0009-0001	
CLIENT F PITTMAN		REV 0	
DRAFTSPERSON I BARNARD		SHEET SIZE: D	
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			
DESIGNER S HALL			
CHECKER F HUGO			
DESIGN COORD R GOOSEN			
RESP. ENG R HALIM			
LEAD DISC. ENG A GROBBELAAR			
AREA MANAGER V LAVRIC			
ENG. MANAGER D STANGER			
CLIENT F PITTMAN			
DRAFTSPERSON I BARNARD			



**ATTACHMENT 7.2**

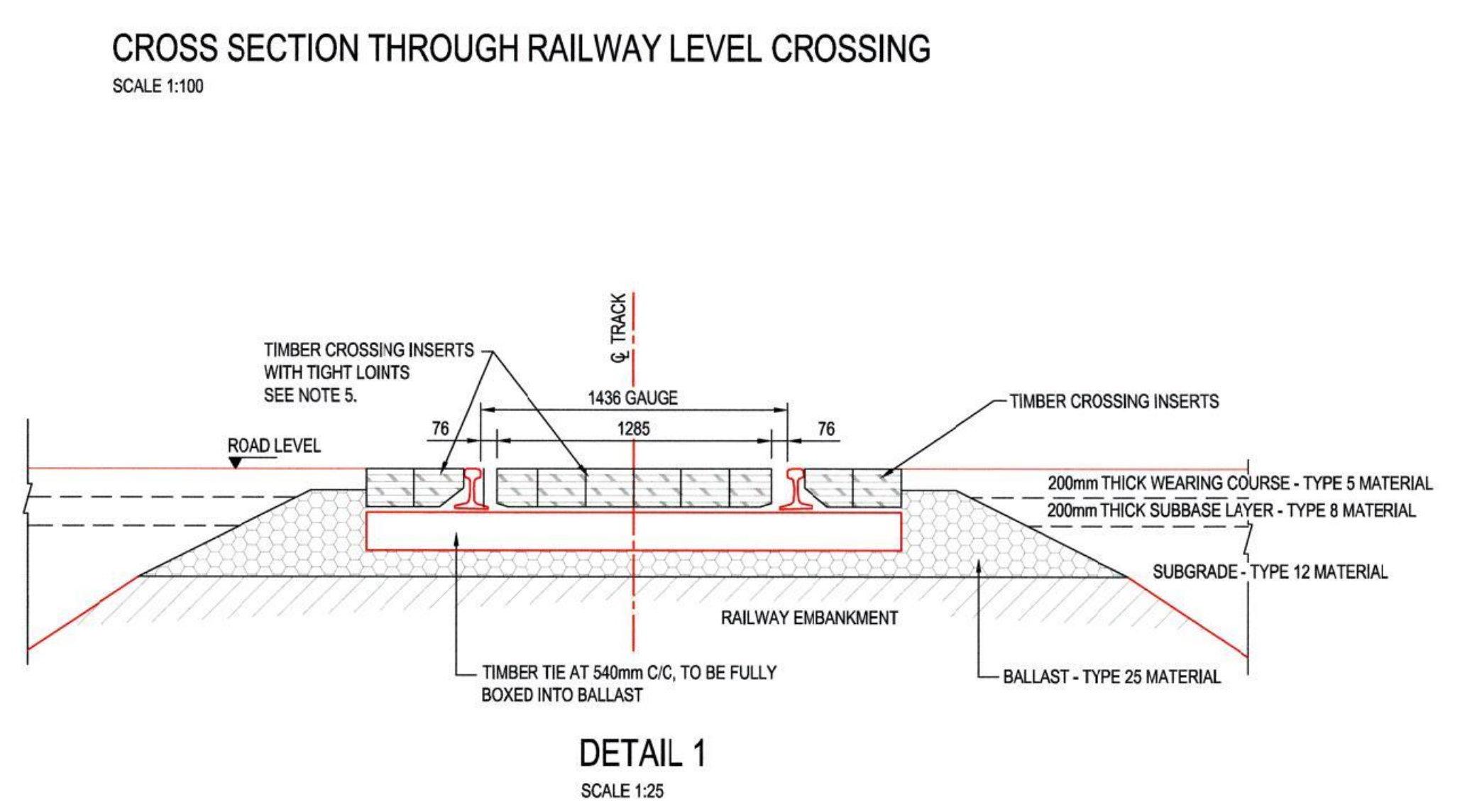
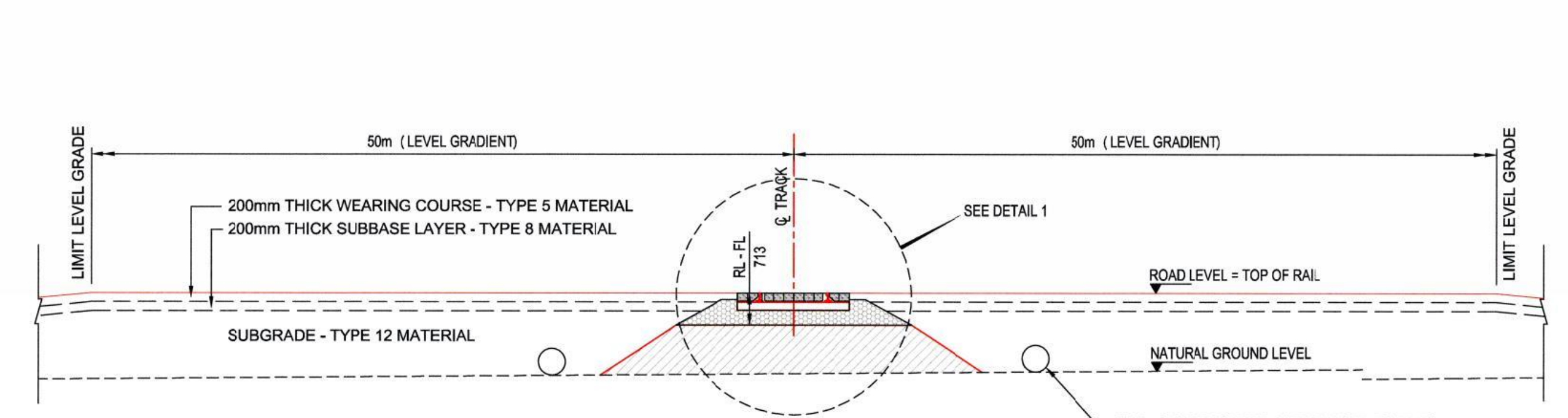
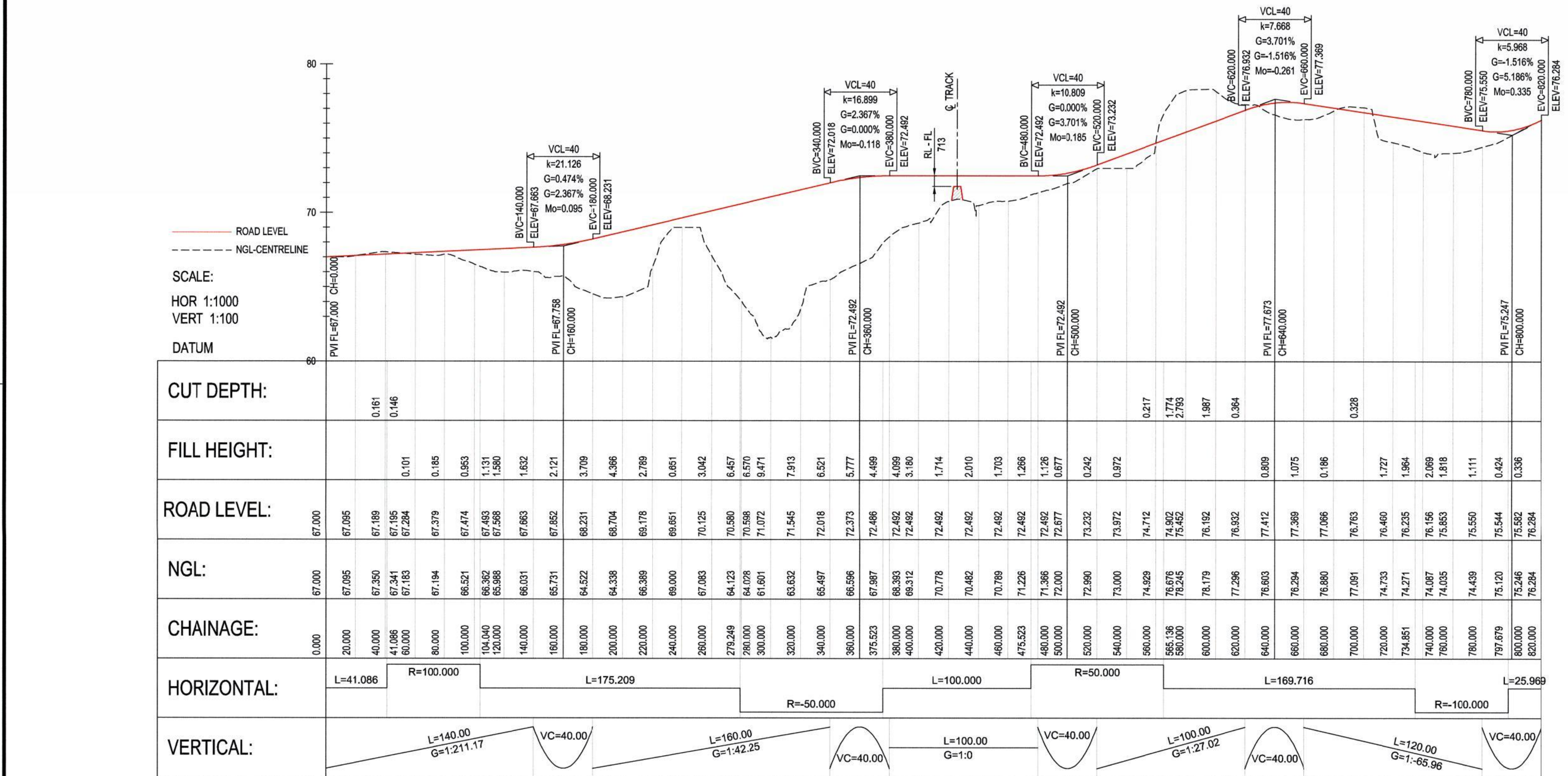
**TOTE ROAD RAIL CROSSING DRAWINGS**





- GENERAL 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 1m.
  4. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
  5. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 22mm WIDE. INSERTS ARE TO BE FASTENED TO TIMBER TIES USING 305mm LONG LAG SCREWS. A MINIMUM DISTANCE OF 76mm SHALL BE MAINTAINED ON GAUGE SIDE THE RAIL HEAD AND THE NEAREST CROSSING INSERT.
  6. THIS DRAWING WAS PREVIOUSLY ISSUED AS:  
H353004-00000-224-272-0037-0001
  7. ALL CHAINAGES INDICATED FOR TOTE ROAD ARE LOCAL CHAINAGES.

CO-ORDINATE LIST UTM (NAD83) ZONE 17		
	E	N
PI 1 START	50845.316	7969053.655
BCC CURVE A	508675.193	7969025.451
PI 2 CURVE A	508698.870	7969003.101
ECC CURVE A	508704.848	7968997.095
BCC CURVE B	508713.023	7968978.866
PI 3 CURVE B	508750.215	7968978.232
ECC CURVE B	508811.852	7968975.146
LEVEL CROSSING	508854.754	7968970.825
BCC CURVE C	508887.556	7968915.504
PI 4 CURVE C	508951.292	7968848.607
ECC CURVE C	508970.830	7968789.230
BCC CURVE D	509023.877	7968628.018
PI 5 CURVE D	509034.033	7968597.156
ECC CURVE D	509060.388	7968578.156
PI 6 END	509078.494	7968565.103



DRAWING No.	REFERENCE DRAWINGS
H353004-30000-224-294-0007	ROAD SIGNAGE DETAIL
H353004-30000-224-294-0010	TYPICAL HAUL ROAD CROSS SECTION
H353004-30000-224-294-0009	TYPICAL LEVEL CROSSING LAYOUT
H353004-30000-224-273-0021	CROSS SECTIONS CH. 0.000m TO CH. 820.000m

REG. PROFESSIONAL	DESIGNER	CHECKER	DATE	ROLE	NAME	SIGNATURE	DATE
	A. VAN NIEKERK	A. AQUIL	2018/04/09	DESIGNER	A. VAN NIEKERK	[Signature]	2018/02/17
	A. VAN NIEKERK	A. AQUIL	2018/04/09	CHECKER	A. AQUIL	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	DESIGN COORD.	A. AQUIL	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	RESP. ENG.	F. VAN BILJON	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	LEAD DISC. ENG.	F. VAN BILJON	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	AREA LEAD	F. VAN BILJON	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	ENG. MANAGER	F. VAN BILJON	[Signature]	2018/04/23
	A. VAN NIEKERK	A. AQUIL	2018/04/09	AREA MANAGER	F. VAN BILJON	[Signature]	2018/04/23

**APPROVED FOR CONSTRUCTION**

**HATCH**

**Baffinland**

**BAFFINLAND IRON MINES LP**

**MARY RIVER PROJECT**

**TOTE ROAD**

**LAYOUT AND LONGITUDINAL SECTION**

**GRADE CROSSING AT CH. 9+450**

SCALE: 1:1000 OR AS NOTED

DWG. No: H353004-30000-224-271-0033-0001

REV: 0

SHEET SIZE: A0





1. LIDAR SURVEY PROVIDED BY PHOTSTAT (2016)
2. CO-ORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
3. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 1m
4. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
5. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 22mm wide. INSERTS ARE TO BE FASTENED TO TIMBER TIES USING 305mm LONG LAG SCREWS. A MINIMUM DISTANCE OF 76mm SHALL BE MAINTAINED ON GAUGE SIDE THE RAIL HEAD AND THE NEAREST CROSSING INSERT.
6. THIS DRAWING WAS PREVIOUSLY ISSUED AS :  
H33004-0000-224-727-0038-0001
7. ALL CHANGES INDICATED FOR TOTE ROAD ARE LOCAL CHANGES.

CO-ORDINATE LIST UTM (NAD83)		ZONE 17
	E	N
PI 1 START	511004.291	79627289.875
BCC CURVE A	511000.828	7962775.881
PI 2 CURVE A	511060.870	79629028.038
BCC CURVE A	511094.347	796285.769
PI 3 CURVE A	511276.085	796280.875
BCC CURVE B	511345.402	796283.743
PI 4 CURVE B	511333.841	7962823.375
LEVEL CROSSING		
BCC CURVE C	511325.821	796109.056
PI 4 CURVE C	511317.401	796147.438
PI 4 CURVE D	511177.677	796107.585
BCC CURVE D	511375.052	796107.585
BCC CURVE D	511554.552	796111.362
PI 5 CURVE D	511571.473	796114.294
ECU CURVE D	511588.374	796117.142
PI 6 CURVE D	511621.562	796117.427



H3S3004-30000-224-294-0007	ROAD SIGNAGE DETAIL
H3S3004-30000-224-294-0010	TYPICAL HAIL ROAD CROSS SECTION
H3S3004-30000-224-294-0009	TYPICAL LEVEL CROSSING LAYOUT
H3S3004-30000-224-273-0022	CROSS SECTIONS CH. 0.00m TO CH. 820.00m
DRAWING No.	DRAWING TITLE
	REFERENCE DRAWINGS



	DRAFTSPERSON	A VAN NIEKERK	NR	2018/02/
	DESIGNER	A VAN NIEKERK	NR	2018/02/
	CHECKER	A AQUIL	<i>AK</i>	2018/02/
	DESIGN COORD.	A AQUIL	<i>AK</i>	2018/02/
	RESP. ENG.	<b>D STANGER</b>	<i>DS</i>	2018/02/
	LEAD DISC. ENG.	F VAN BILJON	<i>FB</i>	2018/02/
	AREA LEAD	F VAN BILJON	<i>FB</i>	2018/02/
	ENG. MANAGER	<b>D STANGER</b>	<i>DS</i>	2018/02/
06	AREA MANAGER	F. PITMAN	<i>FP</i>	2018/02/
	ROLE	NAME	SIGNATURE	DATE

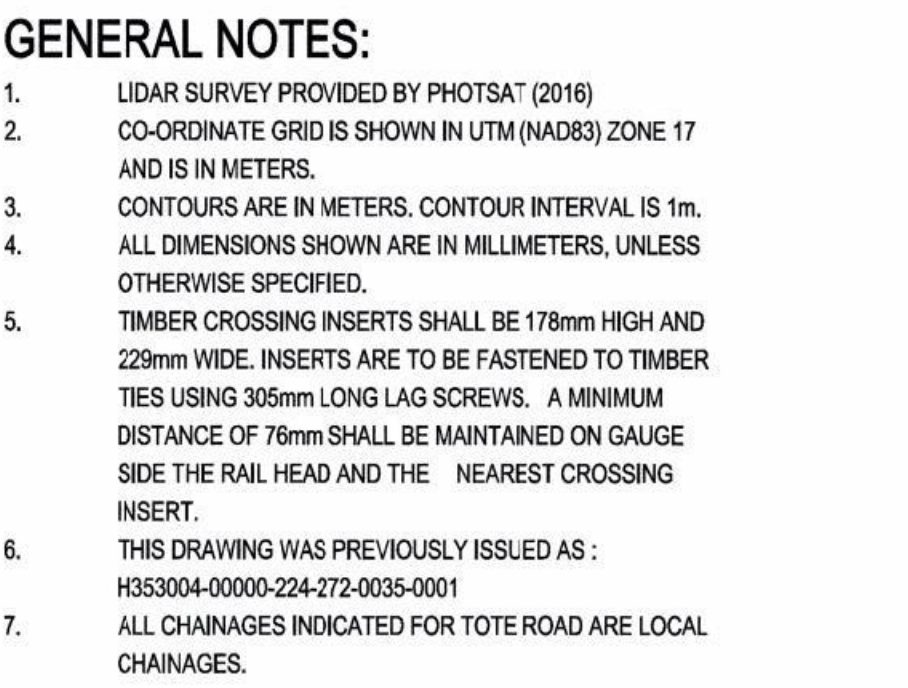
## HATCH

## Baffinland

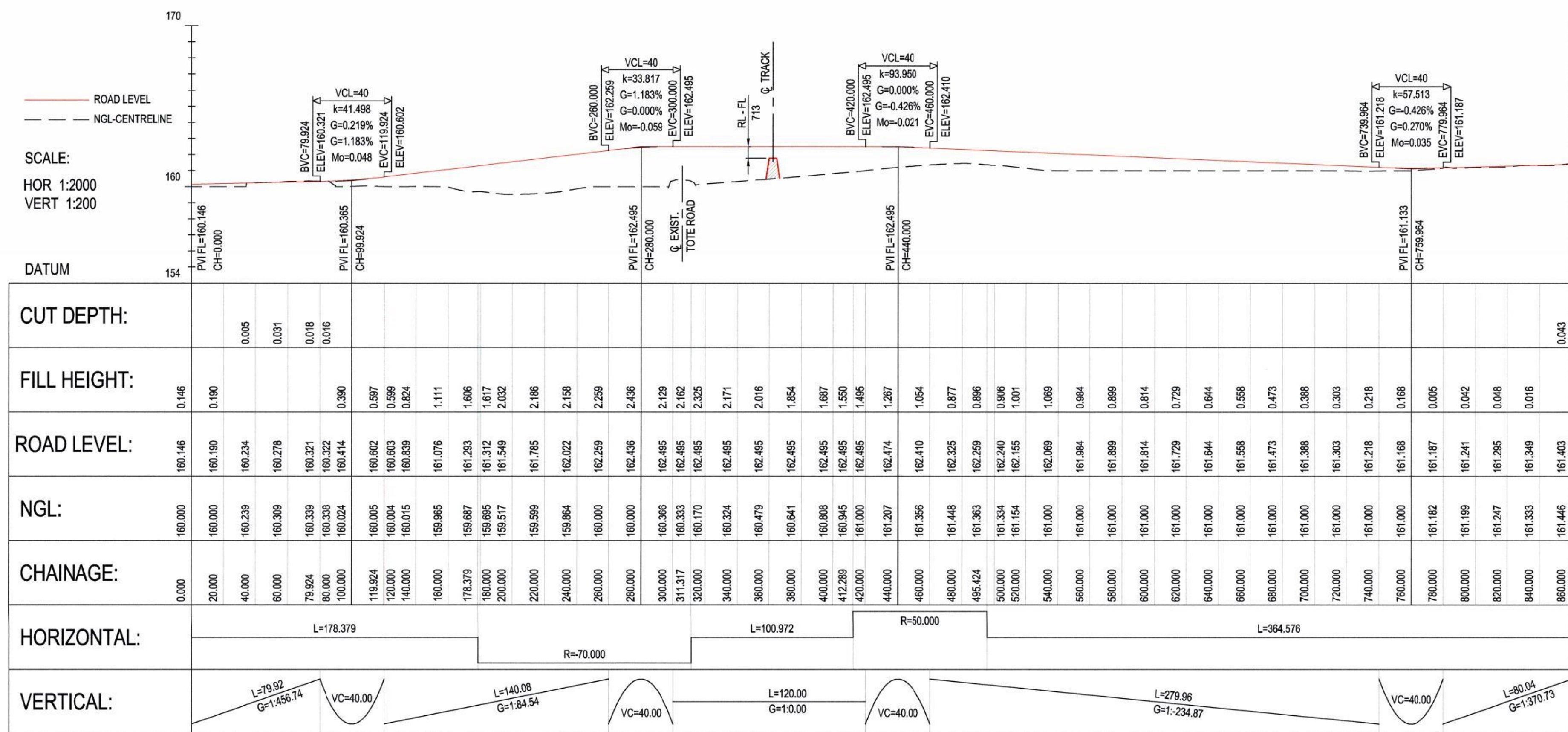
TOTE ROAD  
LAYOUT AND LONGITUDINAL SECTION  
GRADE CROSSING AT CH. 12+530

SCALE	DWG. No.
1:1,000	U250004 00000 004 071 0004 0004

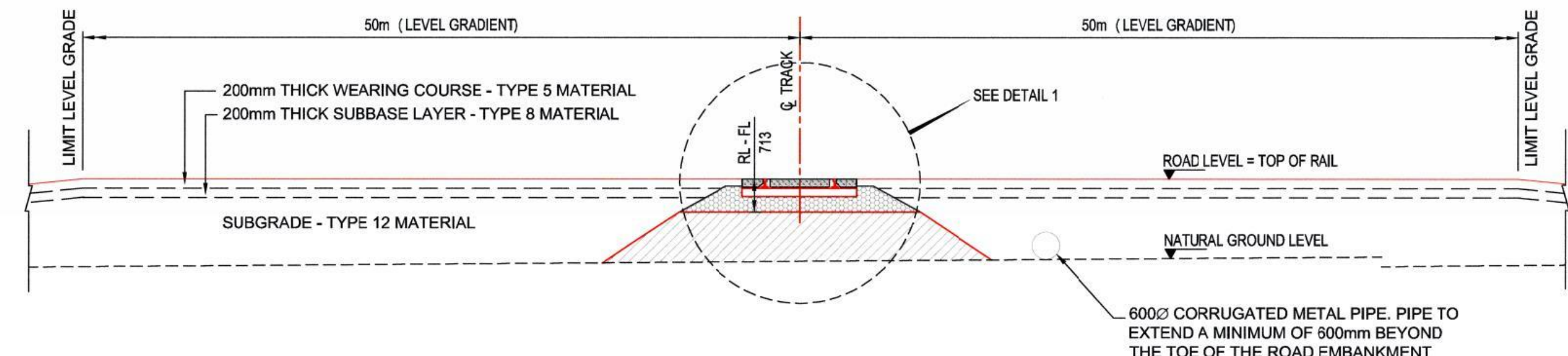




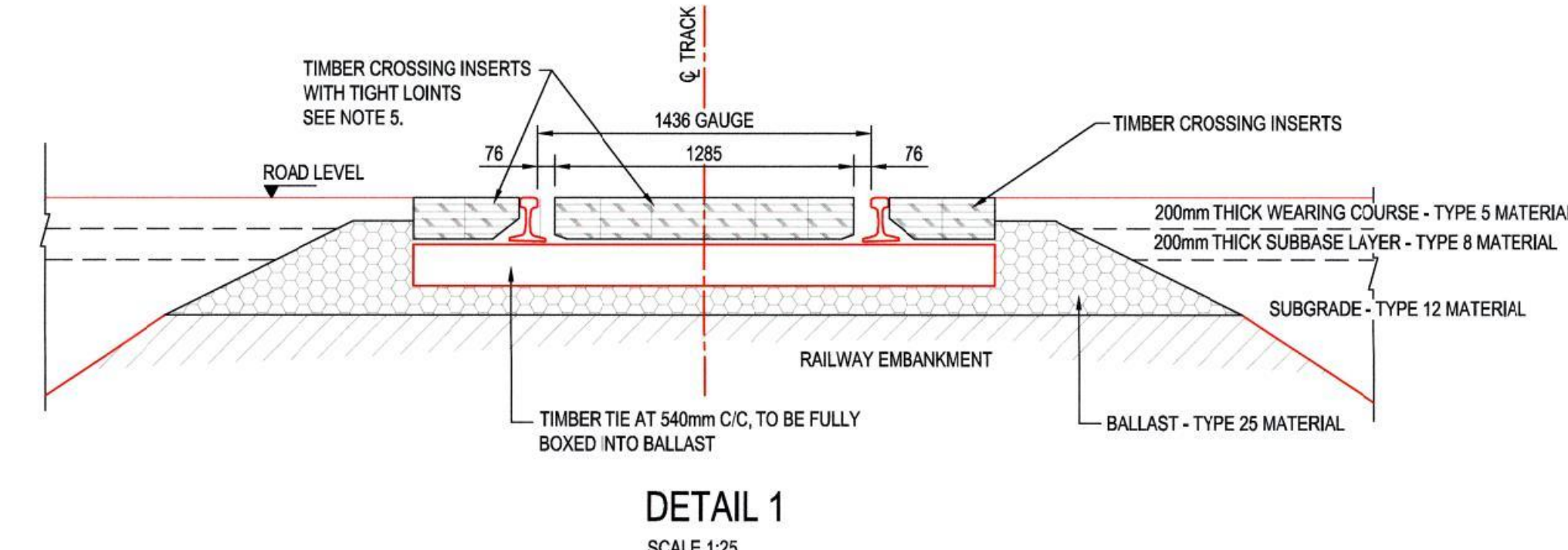
CO-ORDINATE LIST UTM (NAD83) ZONE 17		
	E	N
PI 1 START	527522.280	7930682.001
BCC CURVE A	527501.007	7930474.895
PI CURVE A	527489.343	7930377.798
ECC CURVE A	527585.015	7930396.067
LEVEL CROSSING	527634.679	7930408.631
BCC CURVE B	527683.794	7930418.993
PI CURVE B	527717.424	7930430.355
ECC CURVE B	527743.616	7930375.908
PI 4 END	527786.321	7930015.819



### LONGITUDINAL SECTION



### CROSS SECTION THROUGH RAILWAY LEVEL CROSSING



DETAIL  
SCALE 1:25

H3S3004-30000-224-294-0007	ROAD SIGNAGE DETAIL
H3S3004-30000-224-294-0010	TYPICAL HAIL ROAD CROSS SECTION
H3S3004-30000-224-294-0009	TYPICAL LEVEL CROSSING LAYOUT
H3S3004-30000-224-273-0023	CROSS SECTIONS CH. 0.000m TO CH. 860.000m
DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	



APPROVED FOR CONSTRUCTION

		PURPOSES AND SHALL NOT BE MODIFIED WITHOUT THE WRITTEN CONSENT OF PATRIN.			
0	APPROVED FOR CONSTRUCTION			AJVN	2018/04/08
No.	DESCRIPTION	BY	CHKD	DATE	
REVISIONS					



BAFFINLAND IRON MINES LP  
MARY RIVER PROJECT

TOTE ROAD  
LAYOUT AND LONGITUDINAL SECTION  
GRADE CROSSING AT CH. 55+445

DWG. No.  
H353004-30000-224-271-0035-0001

PERMIT TO PRACTICE  
HATCH LTD.  
Signature: *Duffy*  
Date: 2018-04-20  
PERMIT NUMBER: P 512  
The Association of Professional Engineers  
Geologists and Geophysicists of NWT

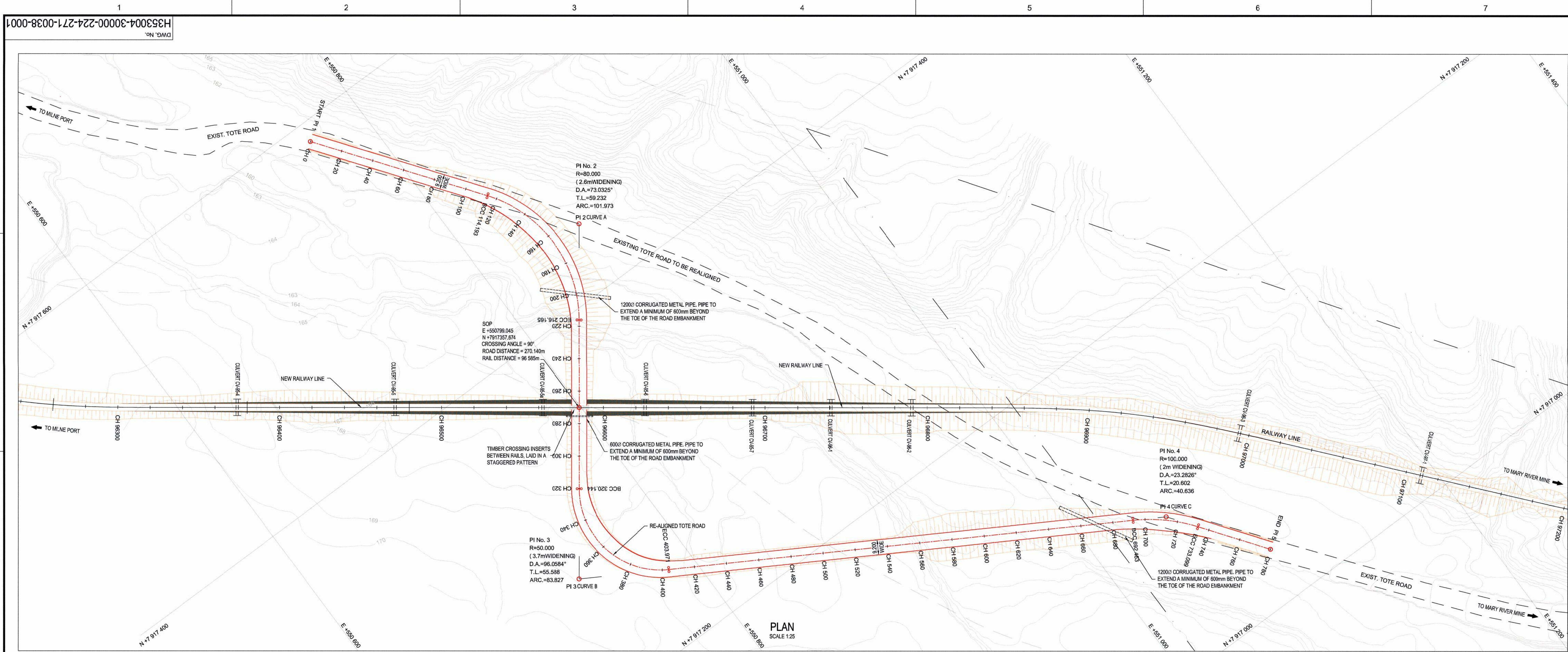






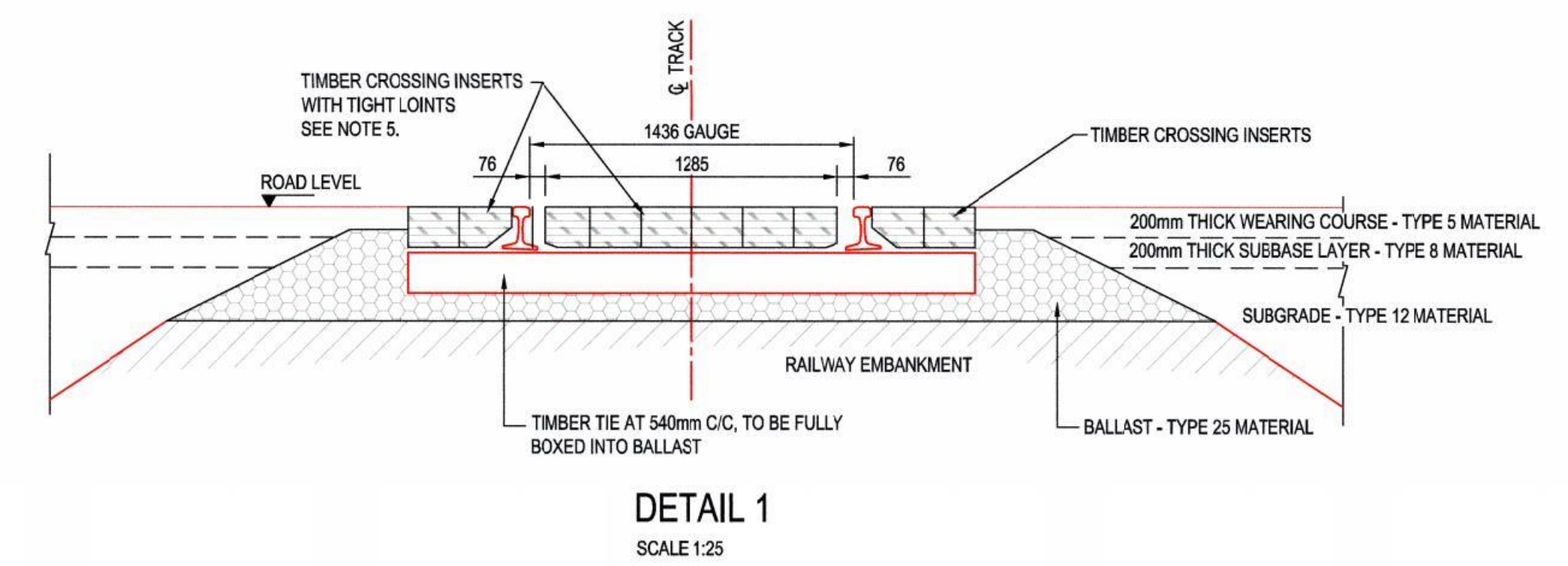
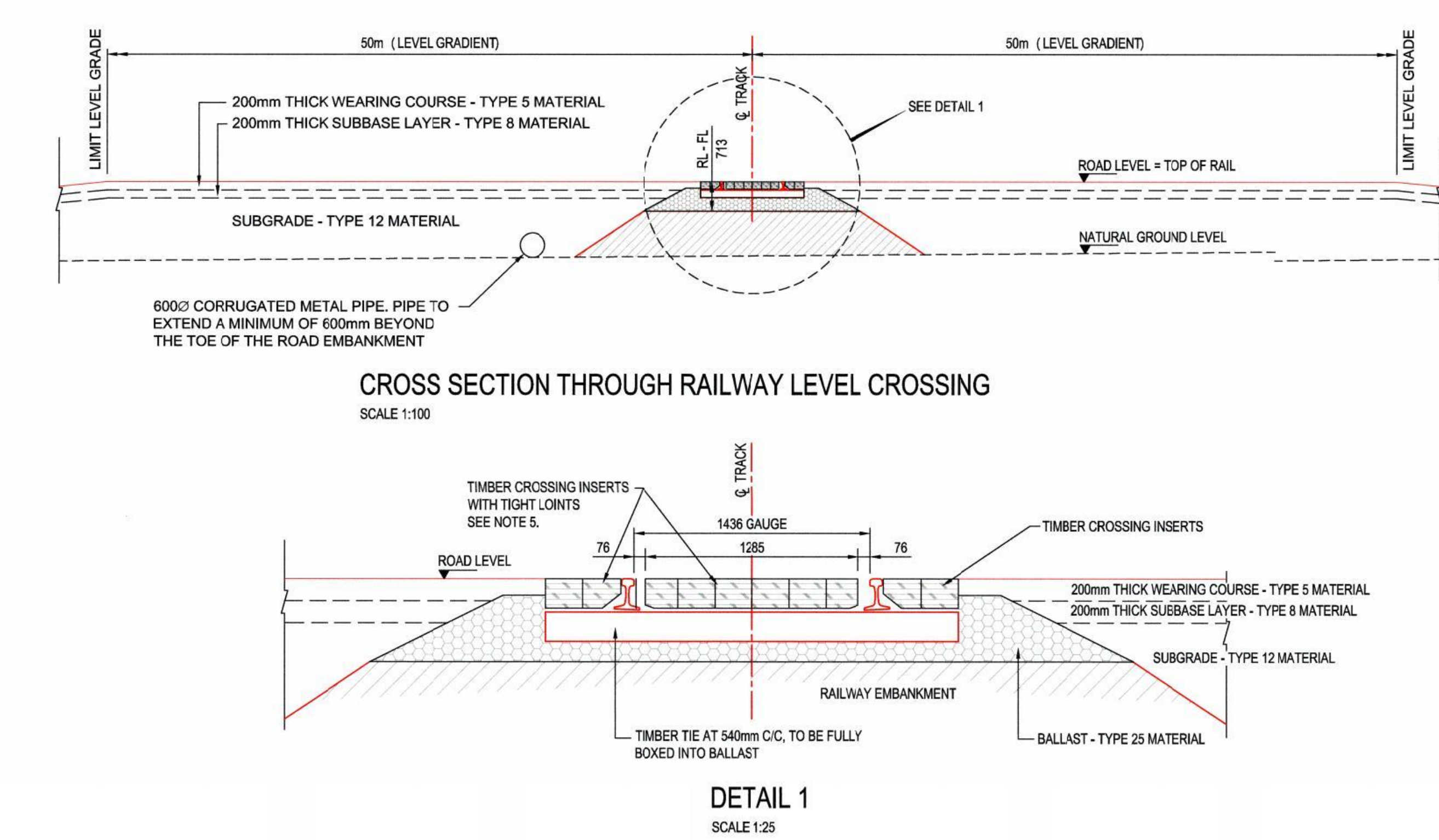
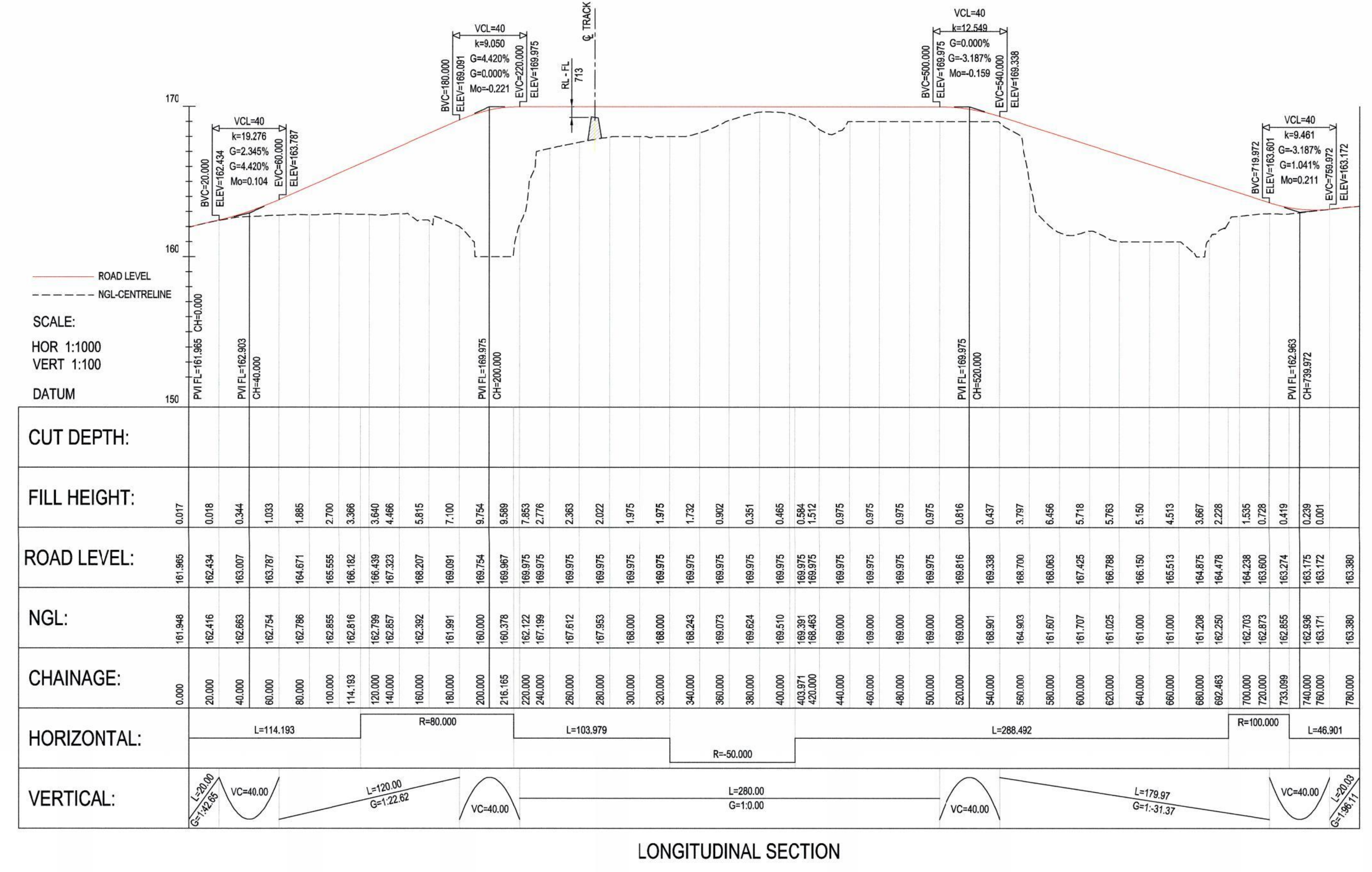






- GENERAL NOTES:**
1. LEAD SURVEY PROVIDED BY PHOTASAT (2016)
  2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METERS.
  3. CONTOURS ARE IN METERS. CONTOUR INTERVAL IS 1m.
  4. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
  5. TIMBER CROSSING INSERTS SHALL BE 178mm HIGH AND 22mm WIDE. INSERTS ARE TO BE FASTENED TO TIMBER TIES USING 305mm LONG LAG SCREWS. A MINIMUM DISTANCE OF 75mm SHALL BE MAINTAINED ON GAUGE SIDE THE RAIL HEAD AND THE NEAREST CROSSING INSERT.
  6. THIS DRAWING WAS PREVIOUSLY ISSUED AS: H353004-30000-224-271-0038-0001
  7. ALL CHANGES INDICATED FOR TOTE ROAD ARE LOCAL CHANGES.

CO-ORDINATE LIST UTM (NAD83) ZONE 17		
	E	N
PI 1 START	550763.942	7917568.105
BOC CURVE A	550831.601	7917468.164
PI 2 CURVE A	550866.695	7917448.449
ECC CURVE A	550831.299	7917400.867
LEVEL CROSSING	550799.040	7917367.873
BOC CURVE B	550769.161	7917317.587
PI 3 CURVE B	550735.942	7917273.016
ECC CURVE B	550763.770	7917244.687
BOC CURVE C	551031.986	7917067.662
PI CURVE C	551049.712	7917067.162
ECC CURVE C	551061.844	7917070.511
PI 5 END	551089.454	7917032.805



DRAWING No.	DRAWING TITLE
H353004-30000-224-294-0007	ROAD SIGNAGE DETAIL
H353004-30000-224-294-0010	TYPICAL HAUL ROAD CROSS SECTION
H353004-30000-224-294-0009	TYPICAL LEVEL CROSSING LAYOUT
H353004-30000-224-273-0026	CROSS SECTIONS CH. 0.000m TO CH. 780.000m

REFERENCE DRAWINGS
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APPROVED FOR CONSTRUCTION					<div>THIS DRAWING WAS PREPARED BY HATCHER TECHNOLOGY FOR THE EXCLUSIVE USE OF HATCHER CONSTRUCTION. ANY REUSE OR REPRODUCTION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF HATCHER TECHNOLOGY IS PROHIBITED. THE INFORMATION AND DATA CONTAINED HEREIN IS THE PROPERTY OF HATCHER TECHNOLOGY AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF HATCHER TECHNOLOGY. THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF HATCHER TECHNOLOGY AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF HATCHER TECHNOLOGY. THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF HATCHER TECHNOLOGY AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF HATCHER TECHNOLOGY.</div>				
0					APPROVED FOR CONSTRUCTION				
No.					DESCRIPTION				
REVISIONS					DRAWING APPROVAL STATUS: APPROVED FOR CONSTRUCTION				

REG. PROFESSIONAL

0

APPROVED FOR CONSTRUCTION

BY

CHKD

DATE

ROLE

NAME

SIGNATURE

DATE

REVISIONS

DRAFTSPERSON

DESIGNER

CHECKER

DESIGN COORD.

RESP. ENG.

LEAD DISC. ENG.

AREA LEAD

ENG. MANAGER

AREA MANAGER

A. VAN NIEKERK

A. VAN NIEKERK

A. AQUIL

A. AQUIL

D. STANGER

F. VAN BILJON

F. VAN BILJON

D. STANGER

F. PITTMAN

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**HATCH**

**Baffinland**

**BAFFINLAND IRON MINES LP**

**MARY RIVER PROJECT**

**TOTE ROAD**

**LAYOUT AND LONGITUDINAL SECTION**

**GRADE CROSSING AT CH. 96+585**

SCALE: 1:100  
OR AS NOTED

DWG. No.: H353004-30000-224-271-0038-0001

REV: 0

SHEET SIZE: A0

PERMIT TO PRACTICE  
HATCH LTD.  
Signature: [Signature]  
Date: 2015-04-24  
PERMIT NUMBER: P-012  
The Association of Professional Engineers,  
Geologists and Geophysicists of NWTNU



**ATTACHMENT 7.3**

**TOTE ROAD TYPICAL DRAWINGS**



- 

dc_pwservice	11:41	E
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