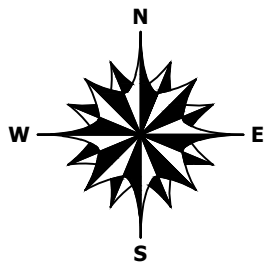


APPENDIX E

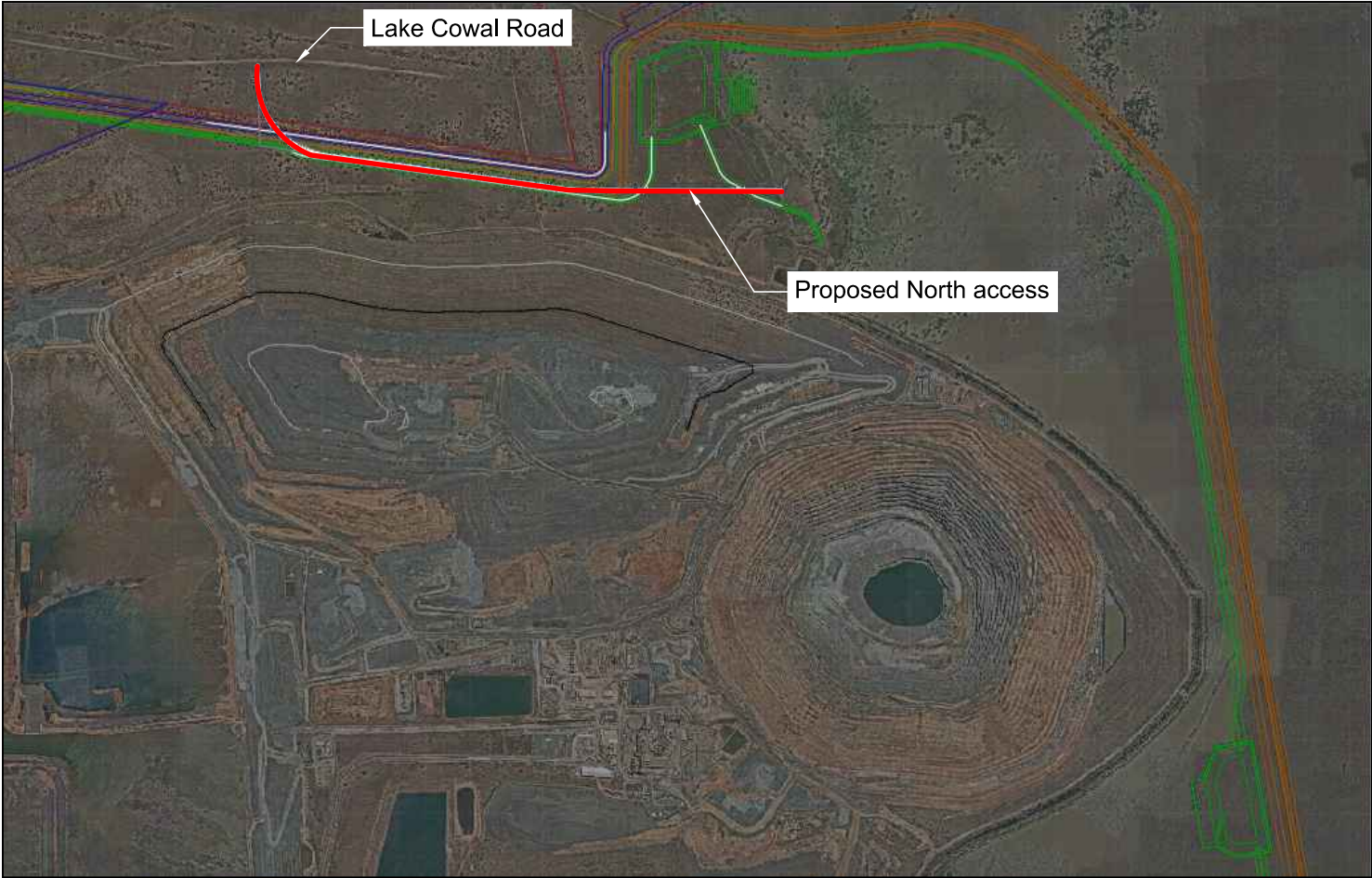
Design and engineering drawings northern access road



COWAL GOLD MINE OPERATIONS
LAKE COWAL, NSW, 2671
NORTHERN ACCESS ROAD AND CULVERT CROSSINGS



DRAWING TABLE		
DRAWING NUMBER	TITLE	REVISION
NAR_C001	Title page	A
NAR_C002	Construction notes	A
NAR_C003	Construction notes	A
NAR_C004	Existing conditions	A
NAR_C301	Overall design layout	A
NAR_C302	Design layout - CH0.00 - 100.00	A
NAR_C303	Design layout - CH100.00 - 600.00	A
NAR_C304	Design layout - CH600.00 - 1100.00	A
NAR_C305	Design layout - CH1100.00 - 1565.00	A
NAR_C306	Design layout - CH1560.00 - 1993.54	A
NAR_C307	Typical sections & Pavement design	A
NAR_C308	Northern Access Road longitudinal section - CH0.00 - 500.00	A
NAR_C309	Northern Access Road longitudinal section - CH500.00 - 1000.00	A
NAR_C310	Northern Access Road longitudinal section - CH1000.00 - 1500.00	A
NAR_C311	Northern Access Road longitudinal section - CH1500.00 - 1993.54	A
NAR_C312	Lake Protection Bund intersection longitudinal section	A
NAR_C313	Northern Access Road cross sections	A
NAR_C801	Culvert crossing - UCDS Channel	A
NAR_C802	Culvert crossing - ICDS NWRD toe drain West	A
NAR_C803	Culvert crossing - ICDS NWRD toe drain South	A



LOCALITY MAP
N.T.S.
Source of map: Projence



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A Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER					PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
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GENERAL

- 1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING DOCUMENTS:
 - OTHER PROVIDED ENGINEERING DRAWINGS;
 - GEOTECHNICAL ENGINEERING REPORTS;
 - TECHNICAL SPECIFICATIONS;
 - SUPPLEMENTARY SPECIFICATIONS;
 - WRITTEN INSTRUCTIONS.
- 2. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT SPECIFICATION FOR THE WORKS TOGETHER WITH THE REQUIREMENTS OF ALL THE RELEVANT CODES OF PRACTICE REFERRED TO THEREIN AND THE REQUIREMENTS OF TNSW STANDARDS AND SPECIFICATIONS.
- 3. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. DISCREPANCIES SHALL BE REFERRED TO THE SITE SUPERINTENDENT.
- 4. DO NOT OBTAIN DIMENSIONS FROM SCALING.
- 5. NATURAL SURFACE LEVELS ON THE DRAWINGS ARE INDICATIVE ONLY.
- 6. ANY PERMITS AND APPROVALS REQUIRED FOR CONSTRUCTION OF PERMANENT OR TEMPORARY WORKS SHALL BE OBTAINED BY THE CONTRACTOR.
- 7. TNSW STANDARD DETAILS ARE TO BE ADOPTED UNLESS STATED OTHERWISE.
- 8. DESIGN SUBJECT TO GROUND CONDITIONS. PRESENCE OF SHALLOW ROCK MAY REQUIRE DESIGN SURFACE TO BE LIFTED TO MINIMISE ROCK BREAKING.

ROADWORKS

- 1. NOTWITHSTANDING THE DETAILS SHOWN ON THE DRAWINGS ALL PUBLIC ROAD WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TNSW STANDARD SPECIFICATIONS AND DRAWINGS.
- 2. GEOTECHNICAL TEST RESULTS ARE TO BE FORWARDED TO THE SUPERINTENDENT PRIOR TO FINAL BOXING. TESTS SHALL INCLUDE SOAKED CBR AND/OR OTHER TESTS AS REQUESTED BY THE SUPERINTENDENT. THESE TESTS SHALL BE USED TO CONFIRM THE PAVEMENT DESIGN SHOW ON THESE DRAWINGS.
- 3. THE PAVEMENT DESIGN ON THE DRAWINGS IS NOT FOR CONSTRUCTION UNTIL FINAL CBR TESTS ARE REVIEWED AND APPROVED BY THE SITE SUPERINTENDENT. CONSTRUCTION OF THE PAVEMENT TO THE DESIGN SHOWN ON THE DRAWINGS PRIOR TO RECEIPT OF THE FINAL CBR TEST SHALL BE UNDERTAKEN AT THE CONTRACTOR'S OWN RISK.
- 4. THE CONTRACTOR SHALL OBTAIN THE LOCATION OF ALL SERVICES AND PROTECT THESE SERVICES PRIOR TO WORKING IN THE VICINITY. ANY DAMAGE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 5. WORK TO ANY SERVICES SHOULD BE DONE IN CONSULTATION WITH THE APPROPRIATE SERVICE PROVIDER.
- 6. EXISTING ROADS/STRUCTURES WITHIN THE LIMITS OF THE CONSTRUCTION WORKS SHALL BE PROTECTED FROM DAMAGE. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

PAVEMENTS

- 1. GRANULAR PAVEMENT MATERIAL OF PUBLIC ROADS TO BE IN ACCORDANCE WITH TNSW CONSTRUCTION SPECIFICATIONS AND ALL DOCUMENTS REFERENCED WITHIN THESE SPECIFICATIONS.
- 2. GEOTECHNICAL TESTING IS TO BE UNDERTAKEN AS DIRECTED BY THE SUPERVISING ENGINEER AT MINIMUM AT COMPLETION OF THE BULK EARTHWORKS TO TNSW SPECIFICATION.
- 3. SAMPLING SHALL BE CARRIED OUT IN ACCORDANCE WITH RMS GUIDELINES.
- 4. TRAFFIC NUMBERS ARE BASED ON TNSW GUIDELINES.
- 5. FINAL PAVEMENT DESIGN IS SUBJECT TO SUPERVISING ENGINEER'S DIRECTION AND MAY RESULT IN AN AMENDMENT TO THE PAVEMENT DESIGN SHOWN ON THIS DRAWING.
- 6. PAVEMENT DESIGN IS BASED ON TNSW GUIDELINES.

ABBREVIATIONS USED ON THE PLANS

SW	STORMWATER	K+C	CONCRETE KERB AND CHANNEL
W	WATER	AC	ASPHALTIC CONCRETE
FH	FIRE HYDRANT	TOB	TOP OF BANK
SV	SLUICE VALVE	BOB	BOTTOM OF BANK
GV	GATE VALVE	CL	CENTRELINE
EB	EDGE OF BITUMEN	B'DY	BOUNDARY
ES	EDGE OF SHOULDER		
NRLG	NORHERN RIVERS LOCAL GOVERNMENT		

SUBGRADE PREPARATION GENERAL

- 1. CLEARING, STRIPPING AND GRUBBING MUST BE CARRIED OUT IN ALL AREAS SUBJECT TO EARTHWORKS (AS TRAFFICABILITY CONDITIONS ALLOW).
- 2. SOILS CONTAINING ORGANIC MATTER MUST BE STRIPPED FROM THE CONSTRUCTION ARE AND MUST NOT BE USED FOR STRUCTURAL FILL.
- 3. DEPRESSIONS FORMED BY THE REMOVAL OF EXISTING STRUCTURES, VEGETATION, UNDERGROUND ELEMENTS ETC. MUST HAVE ALL DISTURBED WEAKENED SOIL CLEANED OUT AND MUST BE BACKFILLED WITH COMPACTED SELECT MATERIAL.
- 4. IN AREAS WHERE WEAK SOILS FORM THE SUBGRADE THE SUPERVISING ENGINEER MAY DIRECT THE INSTALLATION OF A BRIDGING/WORKING LAYER TO SUPPORT CONSTRUCTION EQUIPMENT AND ALLOW FOR THE PLACEMENT OF FILL.
- 5. EXISTING SOILS ARE KNOW TO LOSE STRENGTH IF THEY BECOME WET AND THE CONTRACTOR MUST MAKE EFFORT TO AVOID WETTING.

SUBGRADE PREPARATION ROADWORKS

- 1. THE SUBGRADE MUST BE PROOF ROLLED UNDER THE SUPERVISION OF AN NER ENGINEER USING A STATIC VEHICLE WITH A TARE WEIGHT IS TO BE TO THE INSPECTING ENGINEER'S SATISFACTION AND RMS STANDARD.
- 2. AREA DEMONSTRATING EXCESSIVE MOVEMENT UNDER PROOF ROLLING MUST BE DRIED AND RECOMPACTED OR REMOVED AND REPLACE WITH COMPACTED FILL.
- 3. ANY FILL MATERIAL ENCOUNTERED SHOULD BE CONSIDERED UNCONTROLLED AND REQUIRING TREATMENT.

EXCAVATION

- 1. ALL EXCAVATIONS DEEPER THAN 1.5M WILL NEED TO BE TEMPORARILY SUPPORTED OR BATTERED TO UNSURE SAFETY.
- 2. TEMPORARY CUT BATTERS ARE TO BE MAXIMUM SLOPE OF 1:1.

PAVEMENT TESTING

- 1. MINIMUM OF THREE (3) SUBGRADE CBR (4 DAY SOAKED) TESTS PER LOT TO BE COMPLETED WITH SAMPLES TAKEN AT 300mm DEEP WITHIN EXTENTS OF NEW PAVEMENT. TESTES TO BE COMPLETED ONE (1) WEEK PRIOR TO PAVEMENT PREPARATION AND RESULTS ISSUED TO INGEN CONSULTING.
- 2. THE SURFACE OF THE SUBGRADE/FILL MATERIAL AND BASE SHALL BE COMPACTED TO 98% DDR, TRIMMED, PROFILED, PROOF ROLLED AND CHECK LEVELLED PRIOR TO PLACING AND COMPACTING OF CBR45 (TYPE 2.3) PAVEMENT BASE.
- 3. PAVEMENT BASE TO BE INSPECTED PRIOR TO BOXING AND REINFORCEMENT.
- 4. TESTING OF SUBGRADE, PAVEMENT BASE-COURSE AND CONCRETE TESTING SHALL BE UNDERTAKE BY THE CONTRACTOR AND RESULTS PROVIDED TO THE SUPERINTENDENT.



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A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER					PROJECT NUMBER: J1230	ORIGINAL SIZE: A3		
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BULK EARTHWORKS

1. ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH TfNSW, UNDER LEVEL 1 SUPERVISION.
2. INSITU SOILS ARE NOT TO BE USED A STRUCTURAL FILL.
3. IMPORTED GENERAL FILL MUST BE COHESIVE IN NATURE AND GOOD QUALITY LOW PLASTICITY WITH:

3.1. A LIQUID LESS THAN 45%

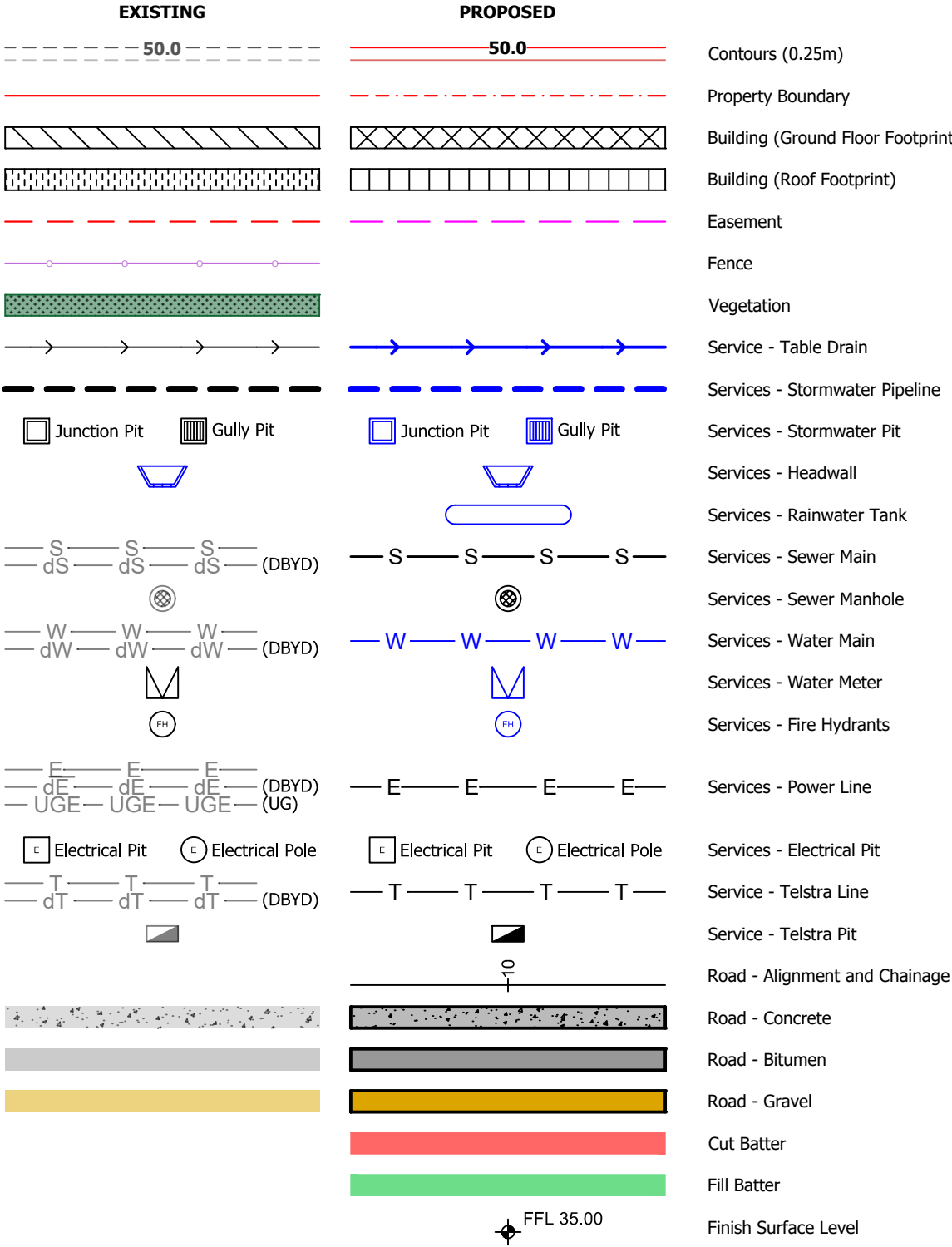
3.2. PLASTICITY INDEX OF LESS THAN 15%

3.3. SOAKED CBR GREATER THAN 10%

3.4. MAXIMUM PARTICLE SIZE OF 75mm

3.5. AT LEAST 80% PASSIVE THE 19mm SIEVE.
4. FILL MATERIAL MUST BE PLACED IN LAYERS NOT EXCEEDING 150mm AS PER RMS STANDARDS.
5. UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT, MINIMUM RELATIVE STANDARD COMPACTION OF ALL EARTHWORKS IS TO A DENSITY NOT LESS THAN 98%.
6. THE SUB-BASE MATERIAL SHOULD BE COMPACTED TO A DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY.
7. UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT, ALL FILL SHALL BE PLACED AT BETWEEN +2% AND -2% OPTIMUM MOISTURE CONTENT.
8. FIELD DENSITY TESTING MUST BE CARRIED OUT TO CHECK THE STANDARD OF COMPACTION ACHIEVED AND THE MOISTURE CONTENT IN ACCORDANCE WITH AS3798-2007.
9. BATTER SLOPES IN THE EXISTING FILLING CUT TO BE NO DEEPER THAN 2m, MAY BE DESIGN FOR TEMPORARY CONDITION OF 1:1.5 AND PERMANENT SLOPES OF 1:2.5.
10. ALL OF THE SITE SHALL BE KEPT FREE DRAINING DURING ALL PHASES OF THE PROJECT.
11. NOTWITHSTANDING THE LIMITS AND FILLING SHOWN ON THE CROSS SECTION THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT DURING CONSTRUCTION AND SIMILARLY THE FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION.
12. ALL LEVELS PROVIDED ARE TO FINISHED FLOOR & FINISHED SURFACE LEVEL UNLESS SPECIFIED OTHERWISE.
13. WHERE A RISK OF SOME FUTURE DIFFERENTIAL SETTLEMENT CAN BE ACCEPTED EXCAVATE SORT AND RE COMPACT THE TOP 0.5m.
14. ALL VERGES ARE TO BE STABILIZED/LANDSCAPED AS PER THE APPROVED LANDSCAPING PLANS AND RMS STANDARDS.

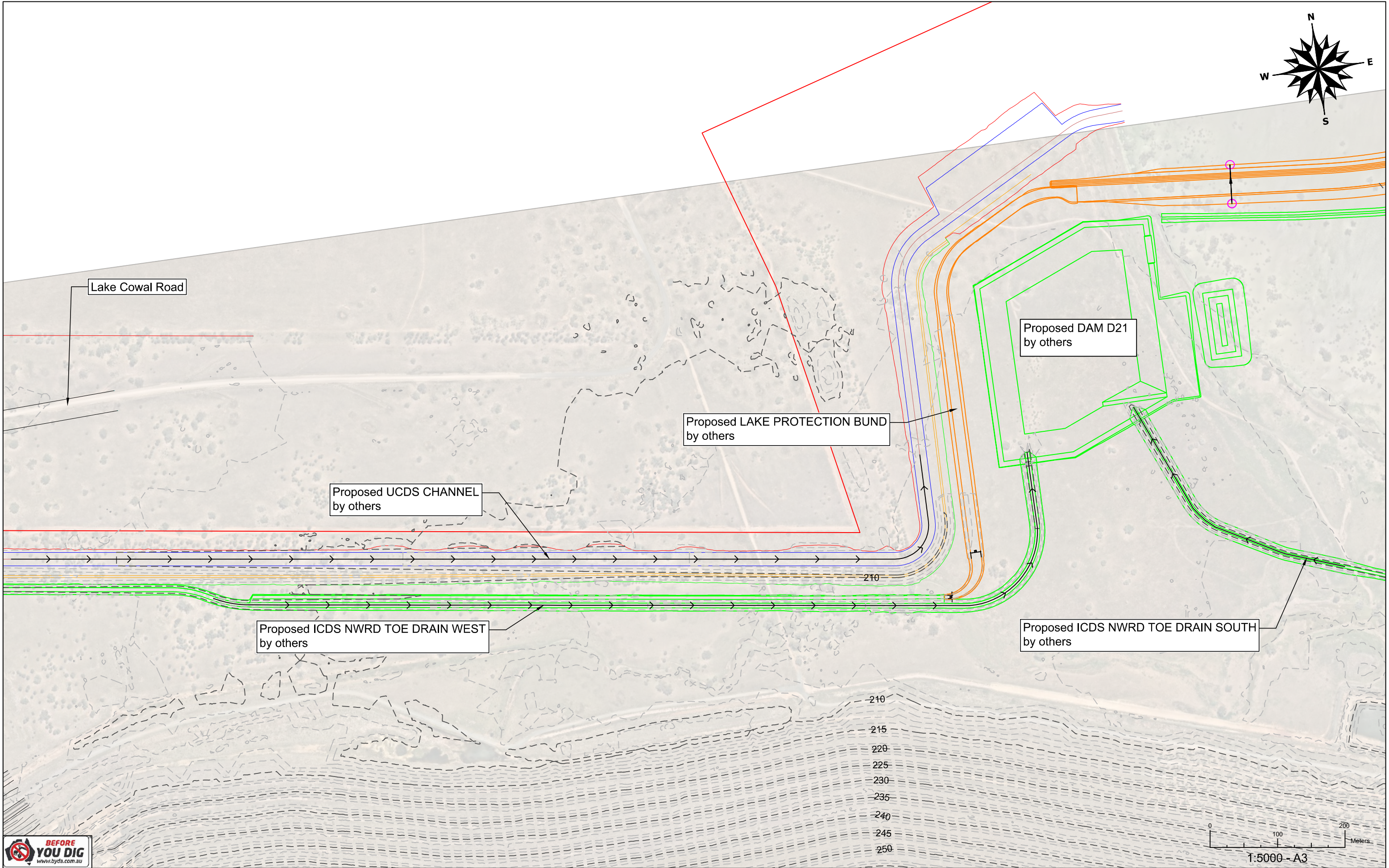
LEGEND



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						Signed:	Date: 28/03/23			PROJECT NUMBER: J1230
										ORIGINAL SIZE: A3
										DRAWING NUMBER: J1230_NAR_C003
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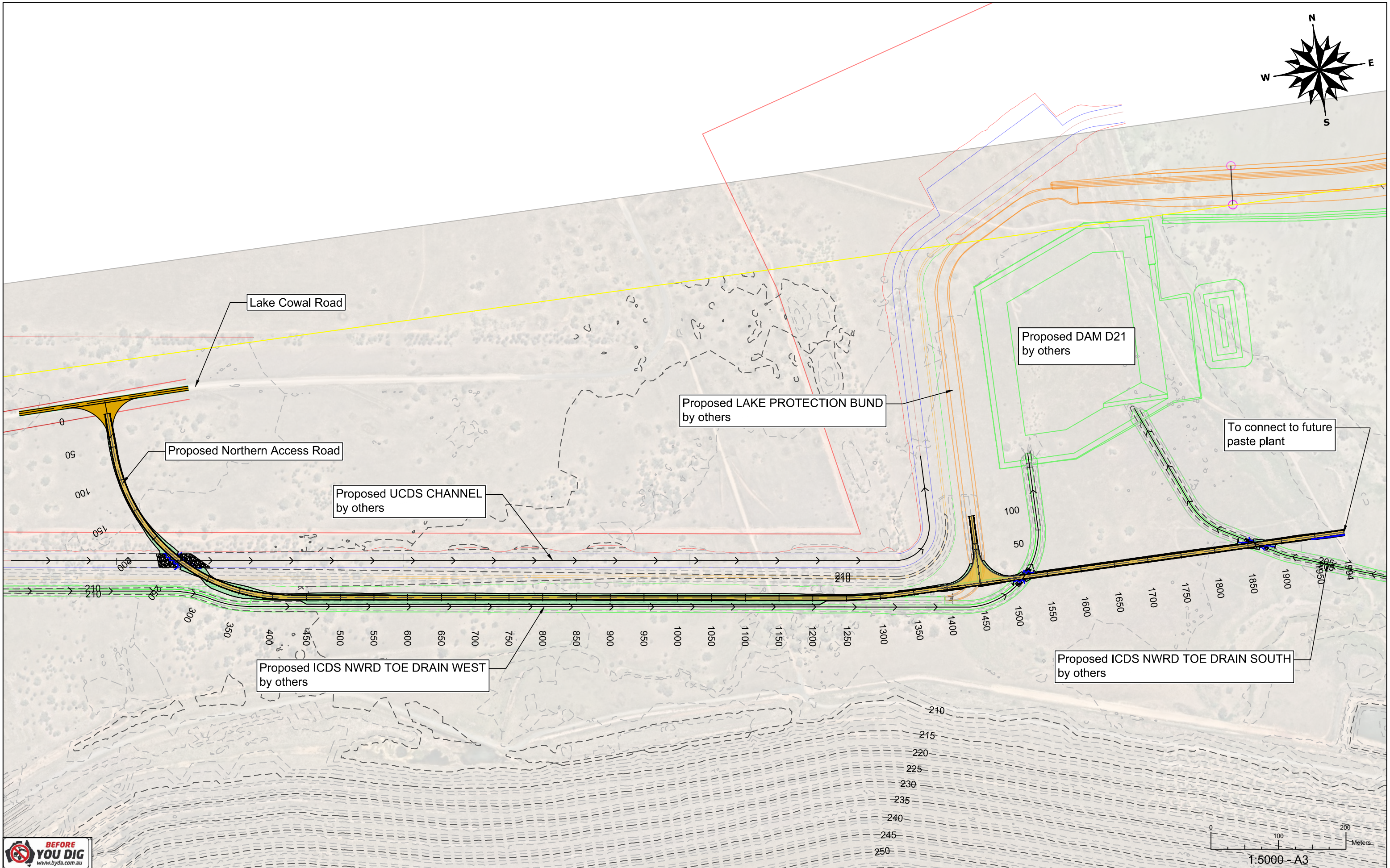
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ACN: 623 948 112
a: Alstonville, NSW
p: +614 1726 4987
e: michiel@ingenconsulting.com.au
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Cowl Gold Operations
Lake Cowal Road
Lake Cowal, NSW 2671

PROJECT:
North Access Road
Cowl Gold Mine Operations
Lake Cowal, NSW, 2671

DRAWING TITLE: Existing conditions	
PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
DRAWING NUMBER: J1230_NAR_C004	REVISION: A



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Ingen Consulting Pty Ltd
ACN: 623 948 112
a: Alstonville, NSW
p: +614 1726 4987
e: michiel@ingenconsulting.com.au
w: www.ingenconsulting.com.au

CLIENT:
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Cowal Gold Operations
Lake Cowal Road
Lake Cowal, NSW 2671

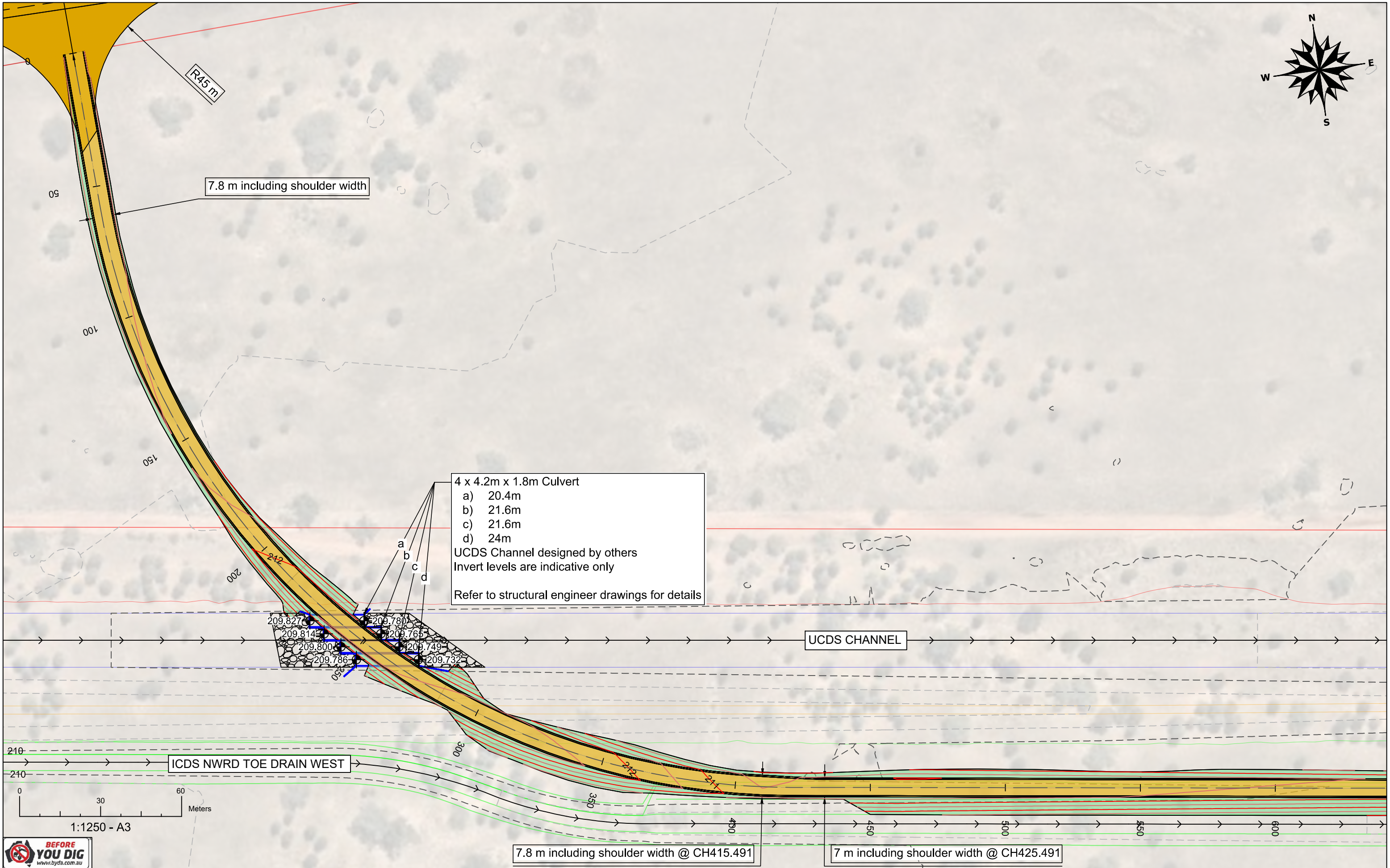
PROJECT:
North Access Road
Cowal Gold Mine Operations
Lake Cowal, NSW, 2671

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DRAWING NUMBER: J1230_NAR_C301	REVISION: A

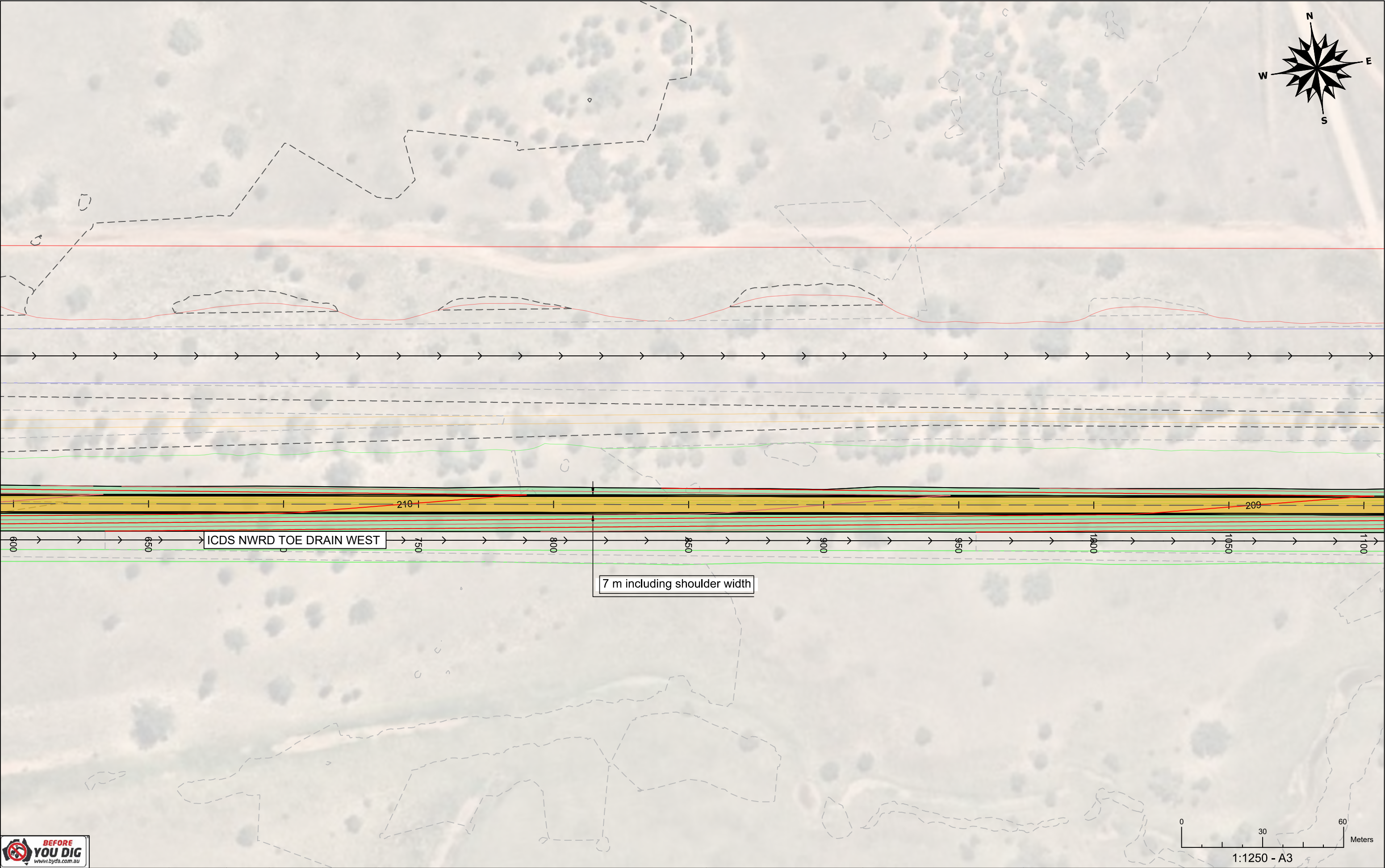
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A	Draft For Review	28/03/23	MC	MK	MK							PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
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A	Draft For Review	28/03/23	MC	MK	MK								PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
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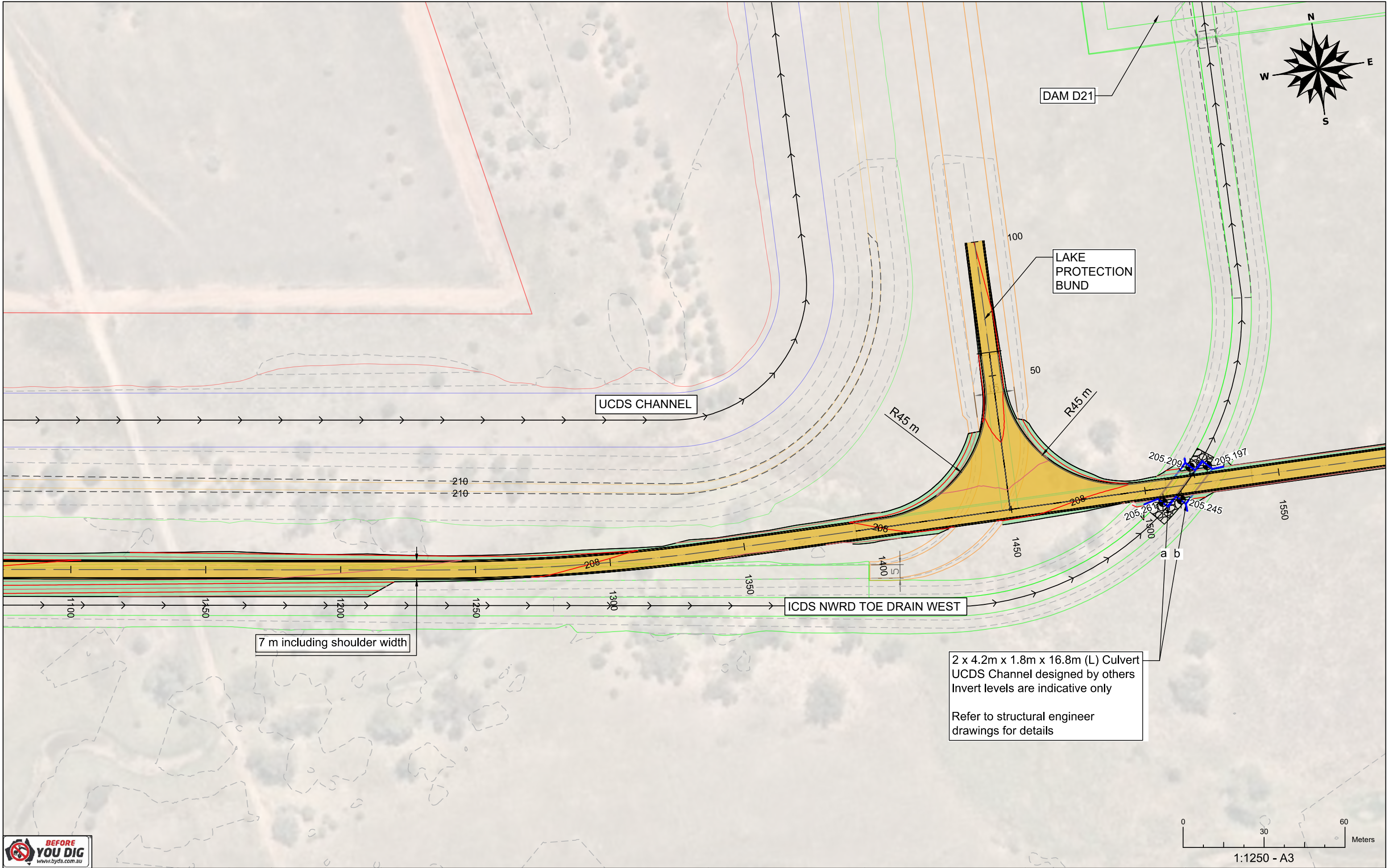
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p: +614 1726 4987
e: michiel@ingenconsulting.com.au
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Cowal Gold Operations
Lake Cowal Road
Lake Cowal, NSW 2671

PROJECT:
North Access Road
Cowal Gold Mine Operations
Lake Cowal, NSW, 2671

DRAWING TITLE: Design layout - CH600.00 - 1100.00	
PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
DRAWING NUMBER: J1230_NAR_C304	REVISION: A

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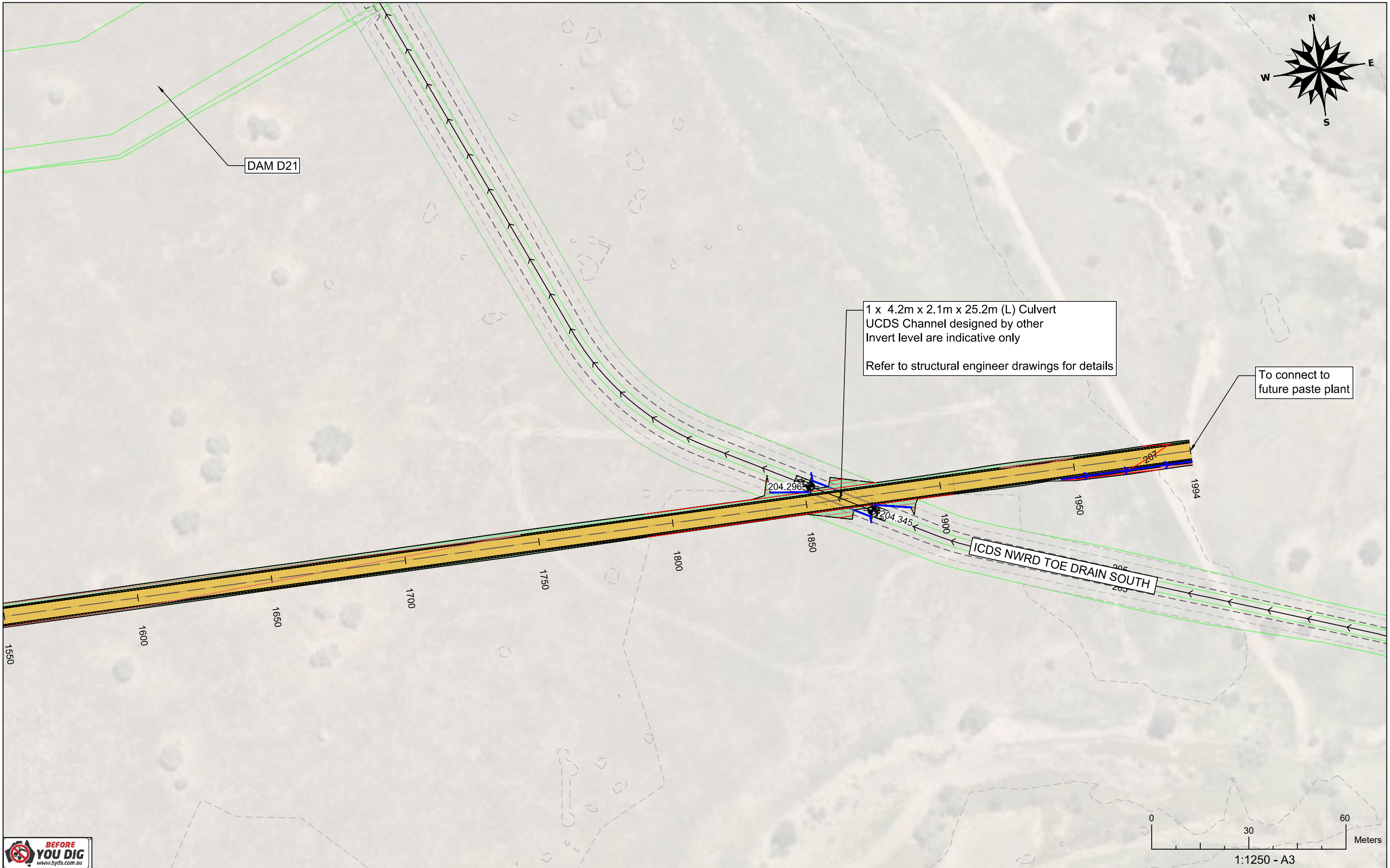
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a: Alstonville, NSW
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Lake Cowal, NSW 2671

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North Access Road
Cowal Gold Mine Operations
Lake Cowal, NSW, 2671

DRAWING TITLE: Design layout - CH1100.00 - 1565.00	
PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
DRAWING NUMBER: J1230_NAR_C305	REVISION: A



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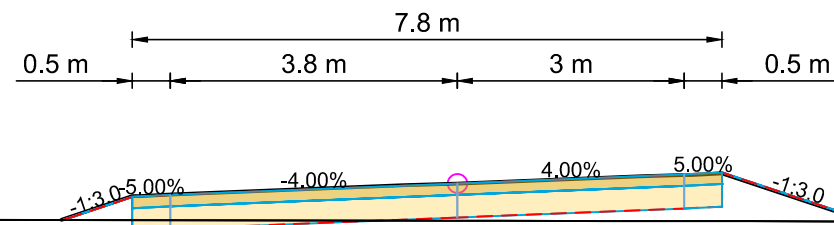
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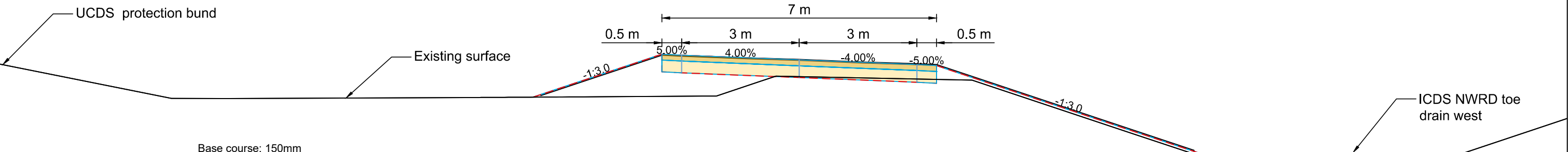
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			PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
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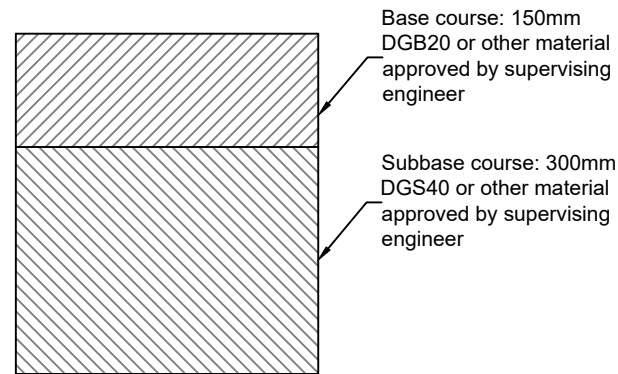
Note:
Existing levels included the level of
the proposed drain channels by others



NORTHERN ACCESS ROAD TYPICAL SECTION - CH38.08 - 225.00
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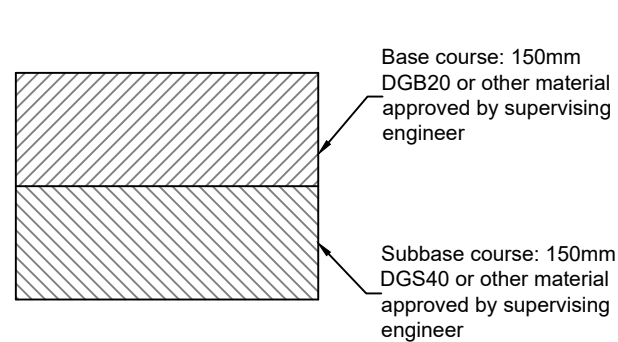


NORTHERN ACCESS ROAD TYPICAL SECTION - CH465.49 - 1240.00
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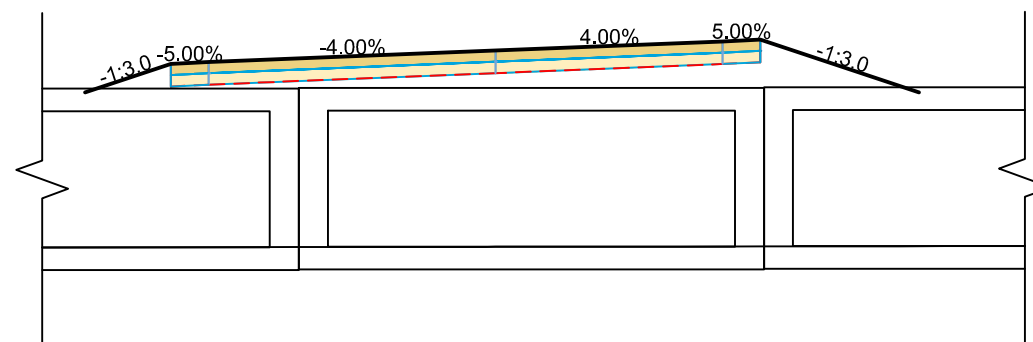


NORTHERN ACCESS ROAD TYPICAL SECTION - CH1560 - 1820 & CH1900 - 1994
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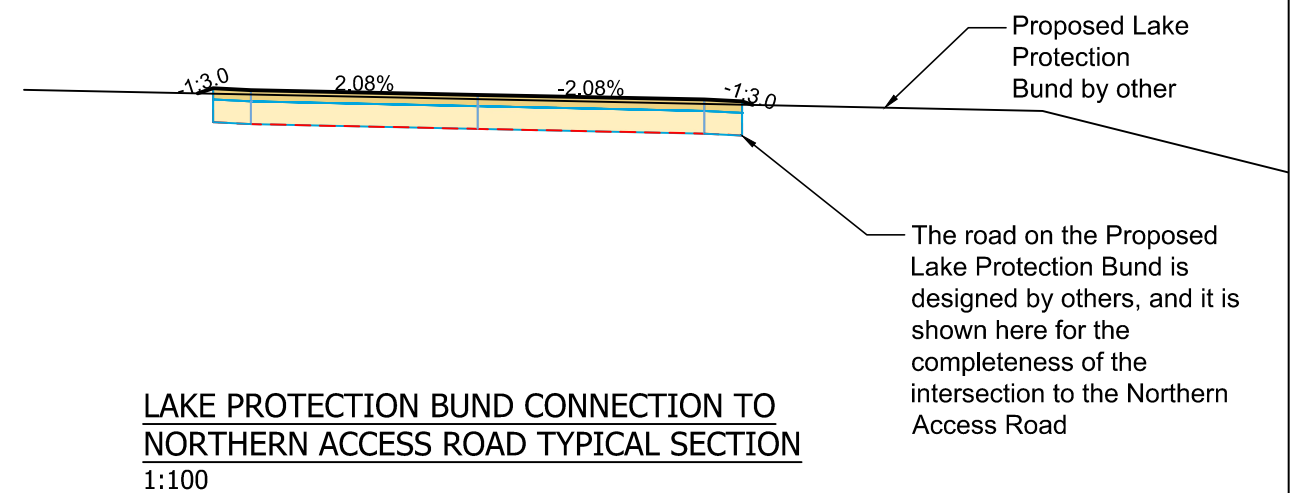
UNSEALED PAVEMENT DESIGN FOR NORTHERN ACCESS ROAD
Assumed CBR 3%, as instructed by Project Manager
1:10



UNSEALED PAVEMENT DESIGN FOR NORTHERN ACCESS ROAD AT CULVERT CROSSING
1:10



NORTHERN ACCESS ROAD TYPICAL SECTION AT CULVERT CROSSING
1:100



LAKE PROTECTION BUND CONNECTION TO NORTHERN ACCESS ROAD TYPICAL SECTION
1:100



REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:	INGEN CONSULTING	CLIENT:	PROJECT:	DRAWING TITLE:
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSC, BSc, RPEng, RPEQ, NER	INGEN CONSULTING ENGINEERED WITH PURPOSE	Evolution Mining (Cowl) Pty Ltd Cowl Gold Operations Lake Cowl Road Lake Cowl, NSW 2671	North Access Road Cowl Gold Mine Operations Lake Cowl, NSW, 2671	Typical sections & Pavement design
						Signed: Date: 28/03/23				PROJECT NUMBER: J1230 ORIGINAL SIZE: A3
										DRAWING NUMBER: J1230_NAR_C307 REVISION: A

Note:	Existing levels included the level of the proposed drain channels by others
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Datum 200.000

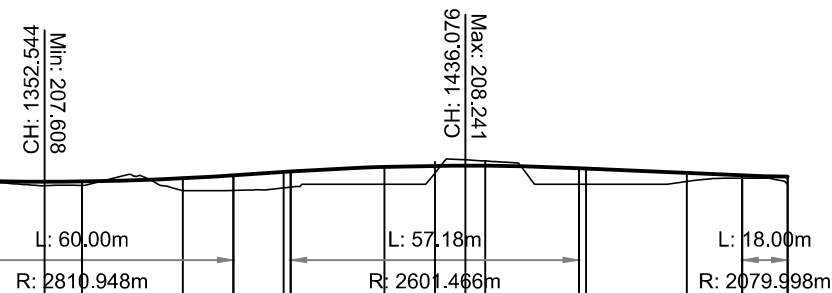
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Scale Horizontal 1:1500 Vertical 1:300

NORTH ACCESS RD LONGITUDINAL SECTION



REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:		Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowal) Pty Ltd Cowal Gold Operations Lake Cowal Road Lake Cowal, NSW 2671	PROJECT: North Access Road Cowal Gold Mine Operations Lake Cowal, NSW, 2671	DRAWING TITLE:		
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPeng, RPEQ, NER					Northern Access Road longitudinal section - CH500.00 - 1000.00		
						Signed:					Date: 28/03/23	PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
												DRAWING NUMBER: J1230_NAR_C309	REVISION: A

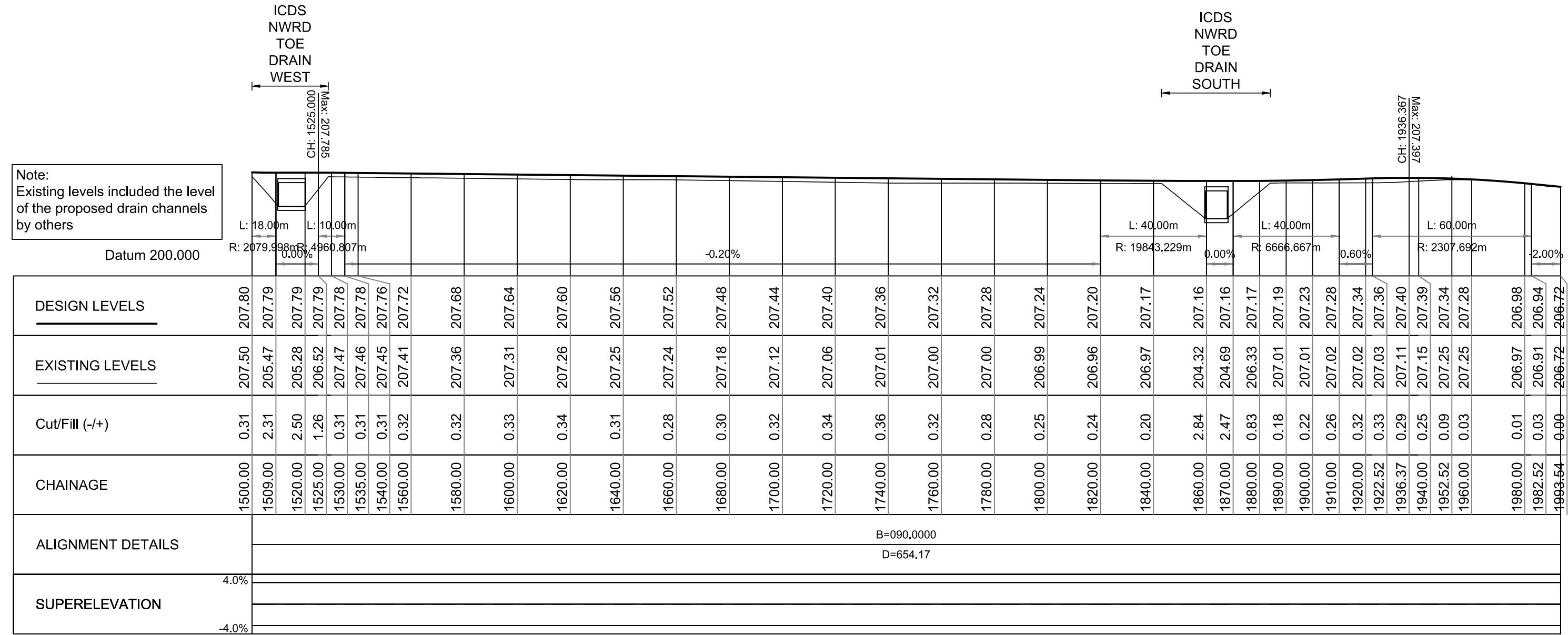


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Scale Horizontal 1:1500 Vertical 1:300

NORTH ACCESS RD LONGITUDINAL SECTION





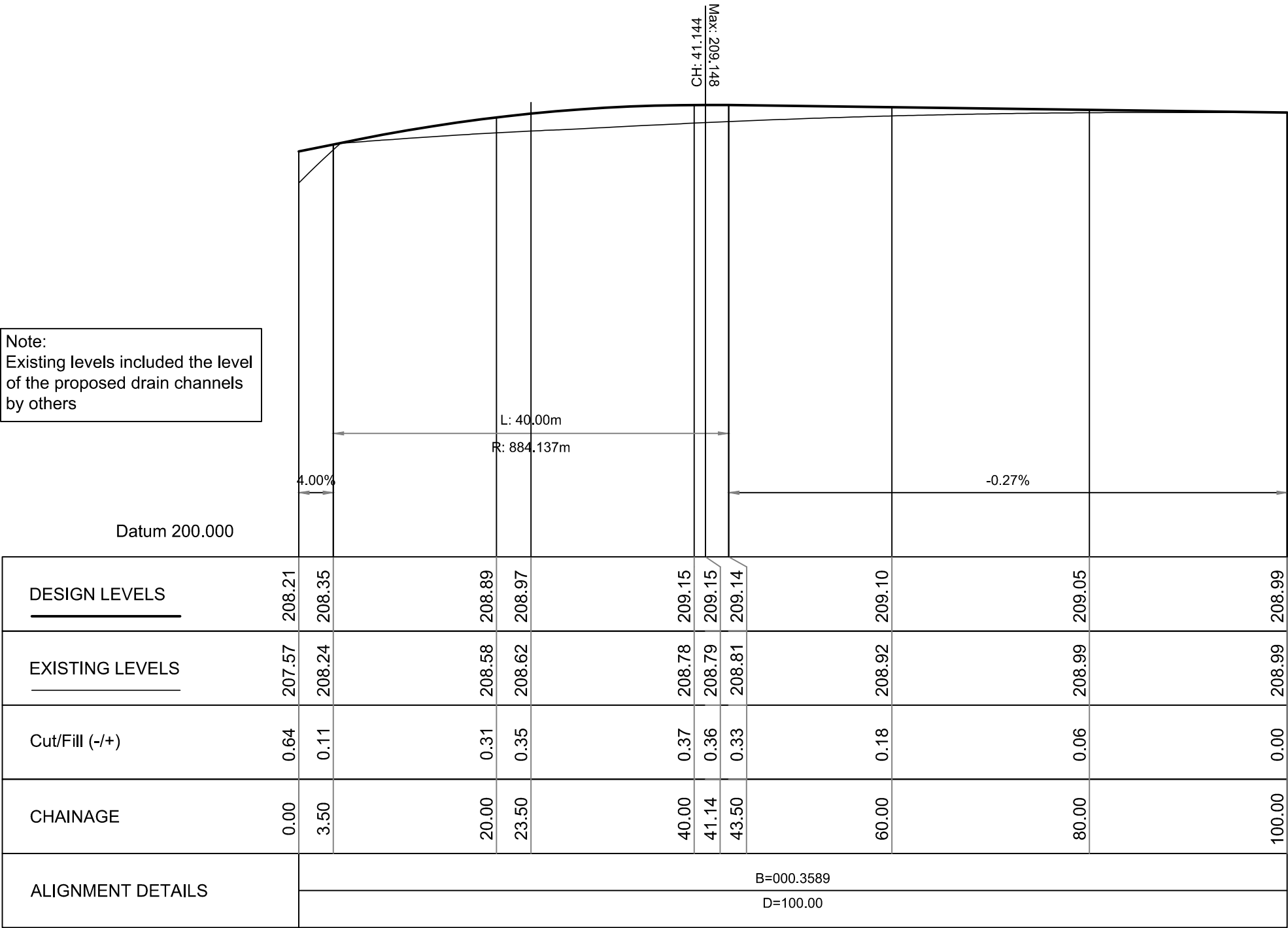
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NORTH ACCESS RD LONGITUDINAL SECTION



REV: A	DESCRIPTION: Draft For Review	DATE: 28/03/23	DRAWN: MC	REVIEWED: MK	APPROVED: MK	APPROVED BY: Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER	<div>INGEN CONSULTING ENGINEERED WITH PURPOSE</div>	Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowl) Pty Ltd Cowl Gold Operations Lake Cowl Road Lake Cowl, NSW 2671	PROJECT: North Access Road Cowl Gold Mine Operations Lake Cowl, NSW, 2671	DRAWING TITLE: Northern Access Road longitudinal section - CH1500.00 - 1993.54	
						PROJECT NUMBER: J1230					ORIGINAL SIZE: A3	
						DRAWING NUMBER: J1230_NAR_C311					REVISION: A	

Note:
Existing levels included the level
of the proposed drain channels
by others



Scale Horizontal 1:500 Vertical 1:100

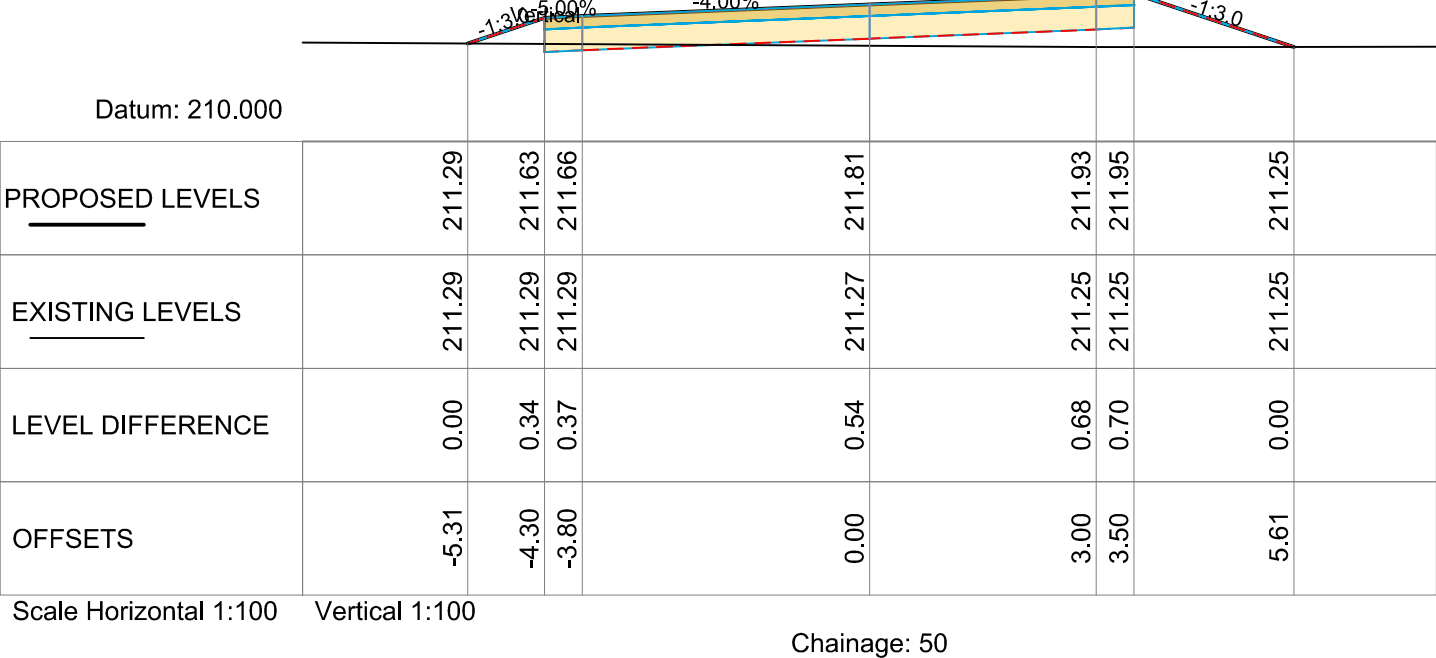
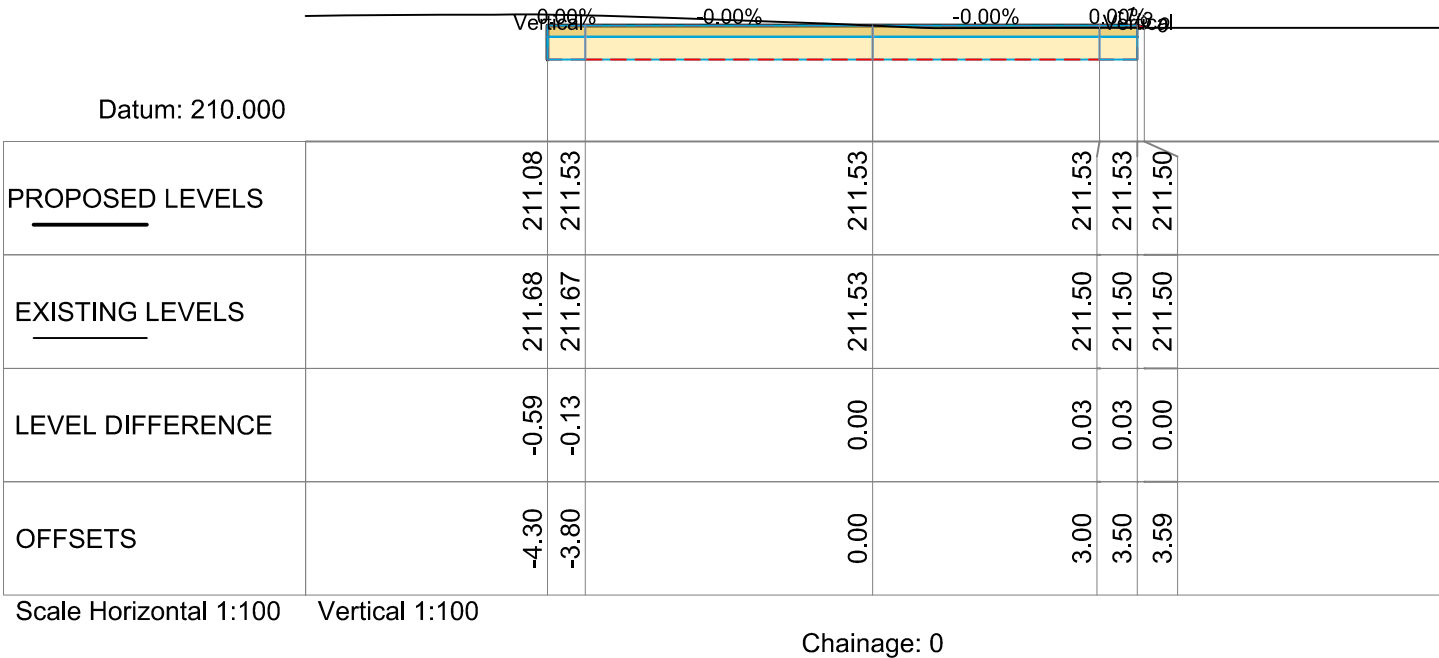
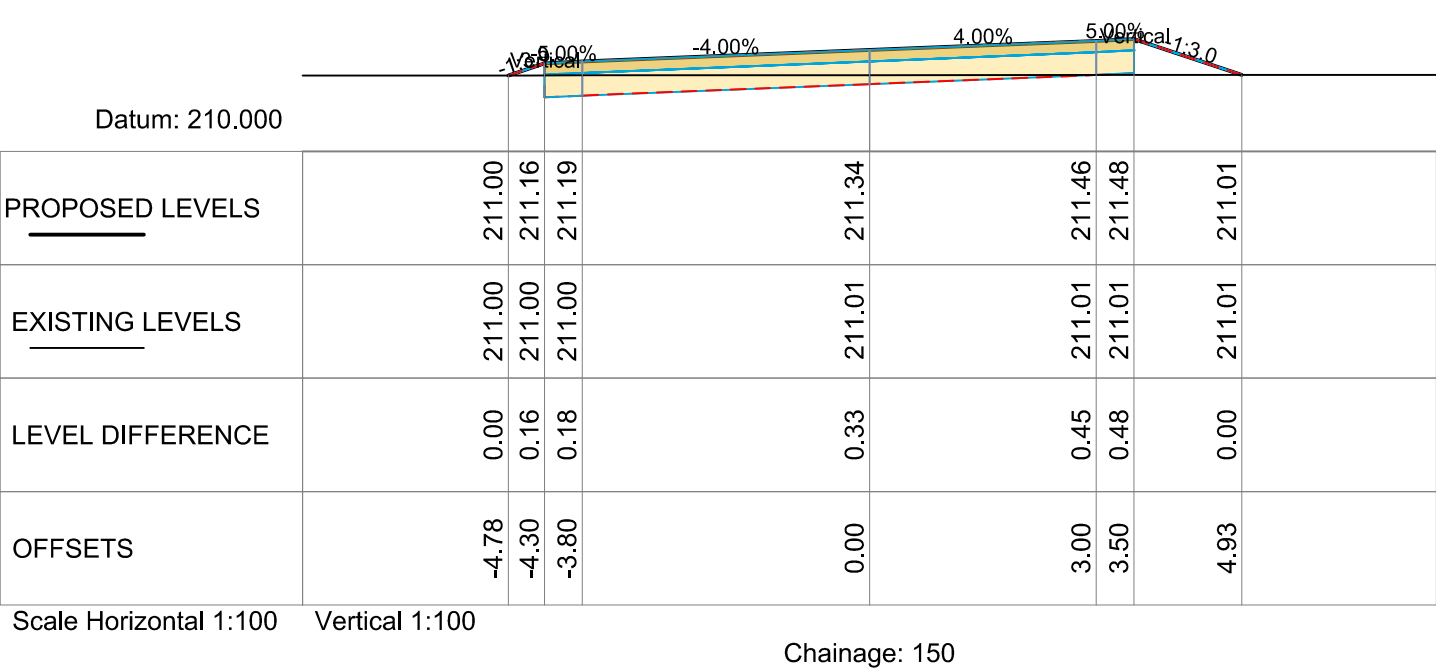
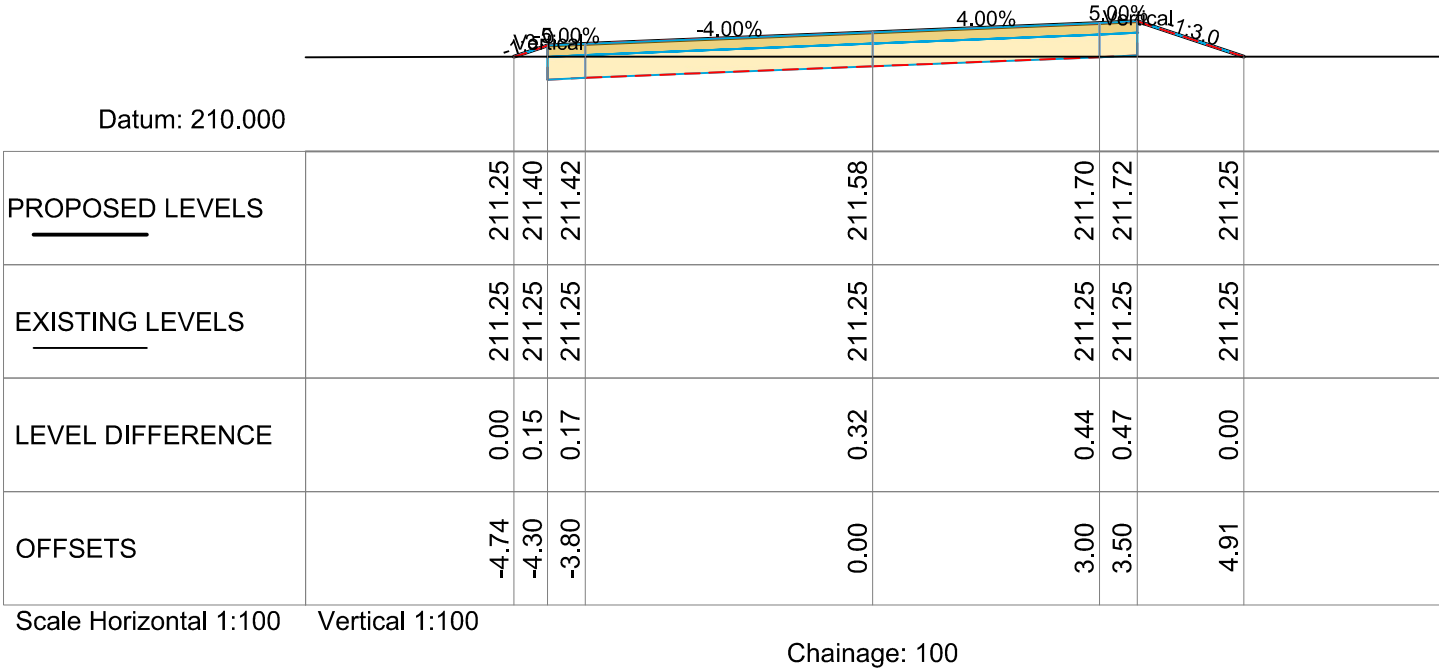
LAKE PROTECTION BUND INTERSECTION LONGITUDINAL SECTION

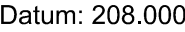


REV: A	DESCRIPTION: Draft For Review	DATE: 28/03/23	DRAWN: MC	REVIEWED: MK	APPROVED: MK	APPROVED BY: Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER	Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowl) Pty Ltd Cowl Gold Operations Lake Cowl Road Lake Cowl, NSW 2671	PROJECT: North Access Road Cowl Gold Mine Operations Lake Cowl, NSW, 2671	DRAWING TITLE: Lake Protection Bund intersection longitudinal section
						Signed: Date: 28/03/23				PROJECT NUMBER: J1230
										ORIGINAL SIZE: A3
										DRAWING NUMBER: J1230_NAR_C312
										REVISION: A



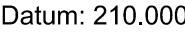
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[illegible]

Scale Horizontal 1:100 Vertical 1:100

Chainage: 250

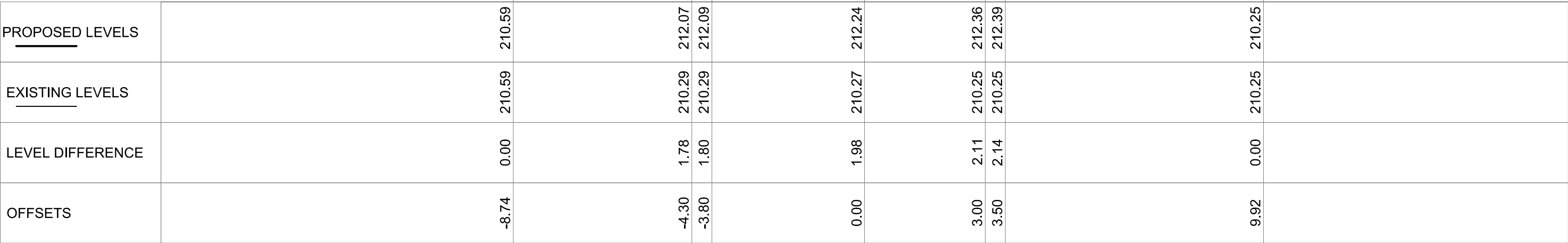


PROPOSED LEVELS	210.76	211.74	211.77	211.92	212.04	212.07	210.75
EXISTING LEVELS	210.76	210.76	210.76	210.76	210.76	210.76	210.75
LEVEL DIFFERENCE	0.00	0.98	1.01	1.16	1.28	1.31	0.00
OFFSETS	-7.26	-4.30	-3.80	0.00	3.00	3.50	7.43

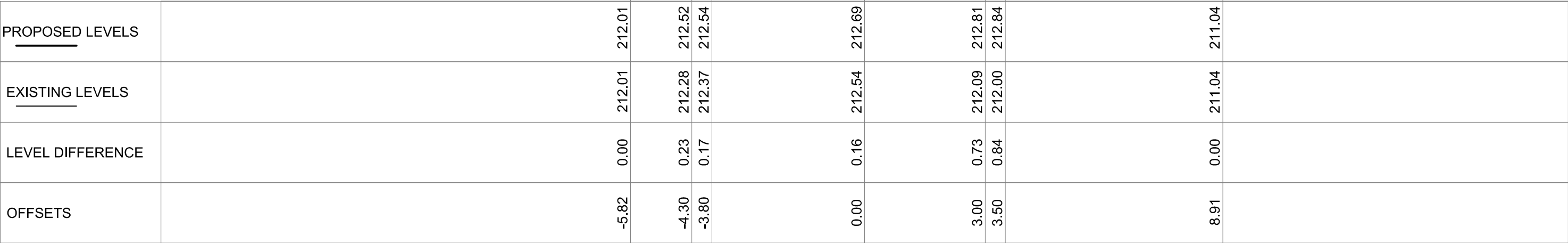
Scale Horizontal 1:100 Vertical 1:100

Chainage: 200

REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:		Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowal) Pty Ltd Cowal Gold Operations Lake Cowal Road Lake Cowal, NSW 2671	PROJECT: North Access Road Cowal Gold Mine Operations Lake Cowal, NSW, 2671	DRAWING TITLE: Northern Access Road cross sections		
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPeng, RPEQ, NER		Signed:	Date: 28/03/23			PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
								Copyright in the drawings, information and data recorded in this document is the property of Ingen Consulting. This document and the information are solely for the use of the authorised recipient and this document may not be used, copied, or reproduced in whole or in part for any purpose than that for which it was supplied by Ingen Consulting. This document shall only be used for construction if stamped and approved for construction.			DRAWING NUMBER: J1230_NAR_C314	REVISION: A	

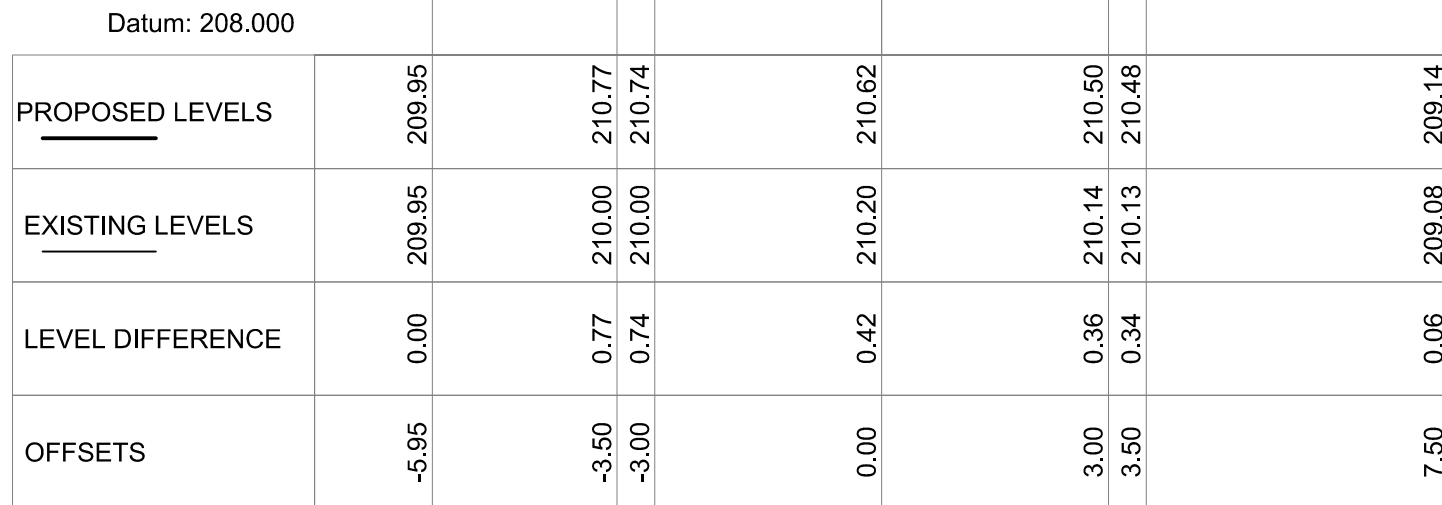


Chainage: 350

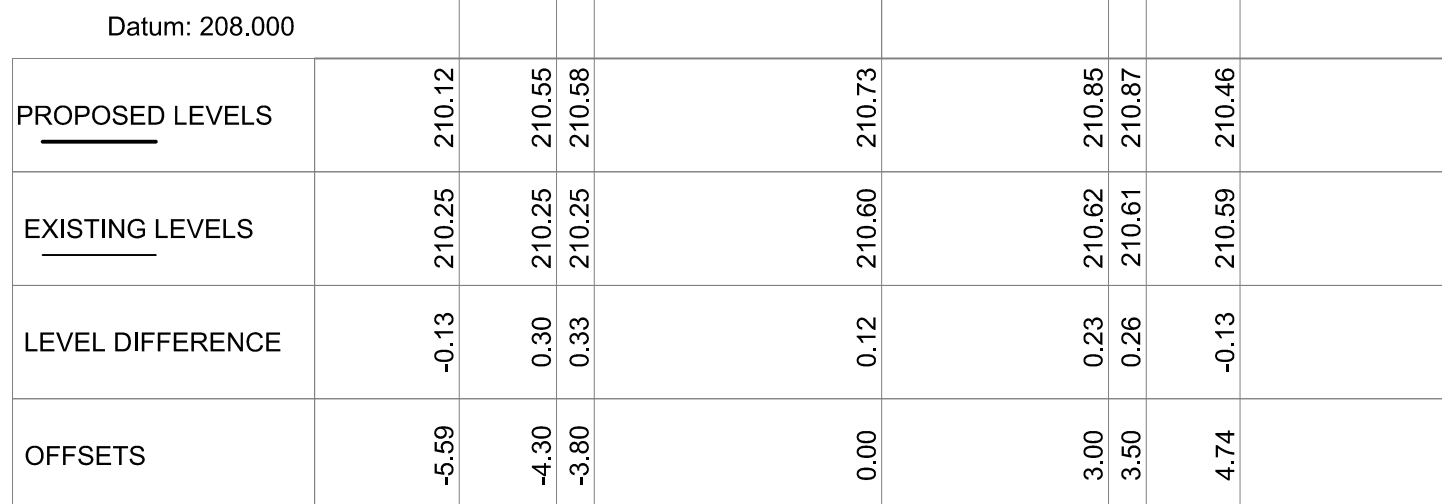


Chainage: 300

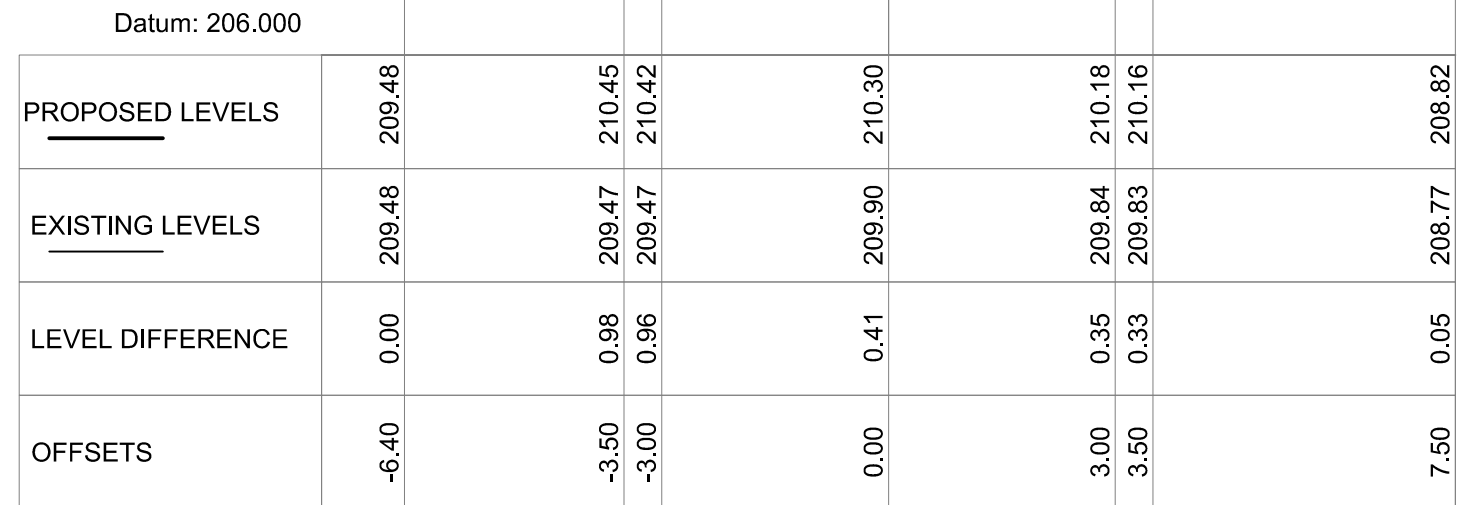
REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:		Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowel) Pty Ltd Cowel Gold Operations Lake Cowal Road Lake Cowal, NSW 2671	PROJECT: North Access Road Cowel Gold Mine Operations Lake Cowal, NSW, 2671	DRAWING TITLE:	
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER					Northern Access Road cross sections	
						Signed:	Date: 28/03/23				PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
											DRAWING NUMBER: J1230_NAR_C315	REVISION: A



Chainage: 550




Chainage: 400

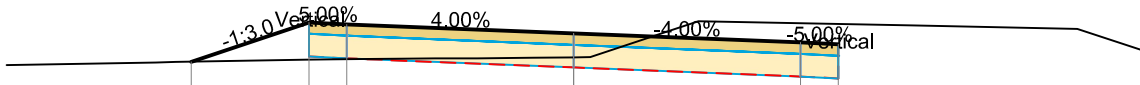


Chainage: 650



Chainage: 450

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A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER						PROJECT NUMBER: J1230	ORIGINAL SIZE: A3
						Signed:	Date: 28/03/23	Copyright in the drawings, information and data recorded in this document is the property of Ingen Consulting. This document and the information are solely for the use of the authorised recipient and this document may not be used, copied, or reproduced in whole or in part for any purpose than that for which it was supplied by Ingen Consulting. This document shall only be used for construction if stamped and approved for construction.		DRAWING NUMBER: J1230_NAR_C316	REVISION: A		



Datum: 206.000

PROPOSED LEVELS		207.57		208.08	208.06		207.94		207.82	207.79	
EXISTING LEVELS		207.57		207.59	207.60		207.62		208.07	208.06	
LEVEL DIFFERENCE		0.00		0.49	0.46		0.32		-0.25	-0.27	
OFFSETS		-5.06		-3.50	-3.00		0.00		3.00	3.50	

Scale Horizontal 1:100 Vertical 1:100

Chainage: 1300

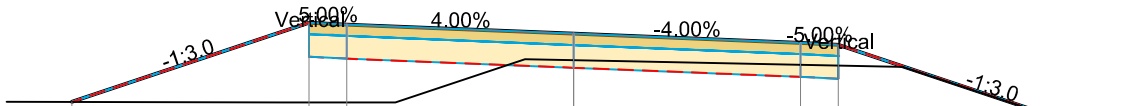


Datum: 206.000

PROPOSED LEVELS		207.34		207.75	207.73		207.61		207.49	207.46	
EXISTING LEVELS		207.34		207.38	207.39		207.47		207.56	207.57	
LEVEL DIFFERENCE		0.00		0.38	0.34		0.14		-0.07	-0.11	
OFFSETS		-4.74		-3.50	-3.00		0.00		3.00	3.50	

Scale Horizontal 1:100 Vertical 1:100

Chainage: 1350

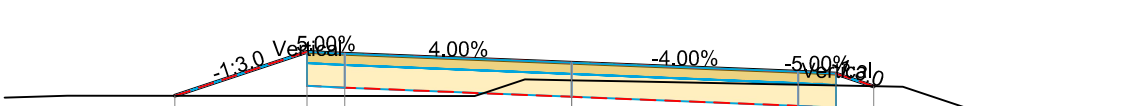


Datum: 206.000

PROPOSED LEVELS		207.81		208.85	208.83		208.71		208.59	208.56		207.23
EXISTING LEVELS												
LEVEL DIFFERENCE		0.00		1.05	1.03		0.35		0.29	0.28		0.01
OFFSETS		-6.64		-3.50	-3.00		0.00		3.00	3.50		7.50

Scale Horizontal 1:100 Vertical 1:100

Chainage: 1150



Datum: 206.000

PROPOSED LEVELS		207.89		208.47	208.44		208.32		208.20	208.18		208.01
EXISTING LEVELS		207.89		207.89	207.88		208.09		208.03	208.02		208.01
LEVEL DIFFERENCE		0.00		0.58	0.56		0.23		0.17	0.16		0.00
OFFSETS		-5.25		-3.50	-3.00		0.00		3.00	3.50		4.00

Scale Horizontal 1:100 Vertical 1:100

Chainage: 1250

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A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER		Evolution Mining (Cowal) Pty Ltd Cowal Gold Operations Lake Cowal Road Lake Cowal, NSW 2671	North Access Road Cowal Gold Mine Operations Lake Cowal, NSW, 2671	Northern Access Road cross sections
						Signed:				PROJECT NUMBER: J1230
						Date: 28/03/23				ORIGINAL SIZE: A3
										DRAWING NUMBER: J1230_NAR_C318
										REVISION: A



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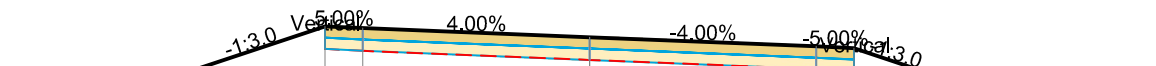


Datum: 206.000

PROPOSED LEVELS	207.13	207.59	207.56	207.44	207.32	207.30	207.12
EXISTING LEVELS	207.13	207.13	207.13	207.12	207.12	207.12	
LEVEL DIFFERENCE	0.00	0.46	0.44	0.32	0.20	0.18	0.00
OFFSETS	-4.88	-3.50	-3.00	0.00	3.00	3.50	4.03

Scale Horizontal 1:100	Vertical 1:100
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Chainage: 1700



Datum: 204.000

PROPOSED LEVELS	207.30	207.93	207.91	207.79	207.67	207.64	207.30
EXISTING LEVELS	205.26	205.22	205.22	205.23	205.24	205.24	205.24
LEVEL DIFFERENCE	2.04	2.71	2.68	2.56	2.43	2.40	2.06
OFFSETS	-5.40	-3.50	-3.00	0.00	3.00	3.50	4.53

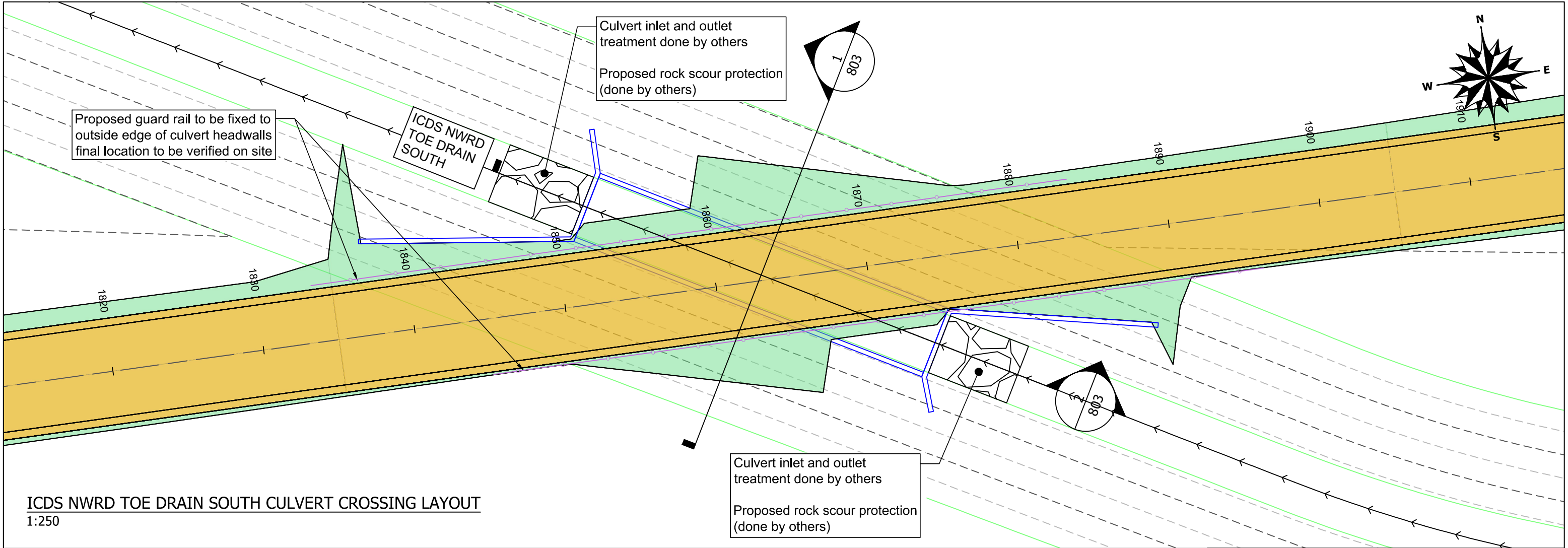
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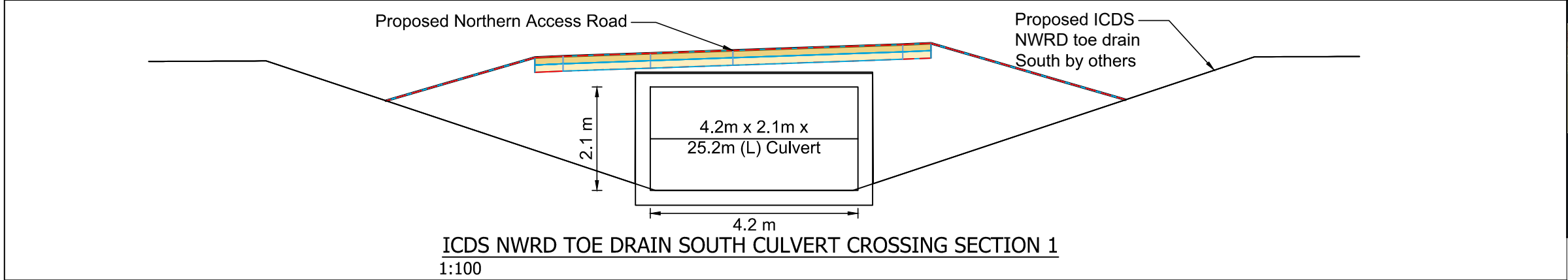
REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:	<div></div>	Ingen Consulting Pty Ltd ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	CLIENT: Evolution Mining (Cowal) Pty Ltd Cowal Gold Operations Lake Cowal Road Lake Cowal, NSW 2671	PROJECT: North Access Road Cowal Gold Mine Operations Lake Cowal, NSW, 2671	DRAWING TITLE: Northern Access Road cross sections	
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER						
Signed: _____ Date: 28/03/23										PROJECT NUMBER: J1230	ORIGINAL SIZE: A3	
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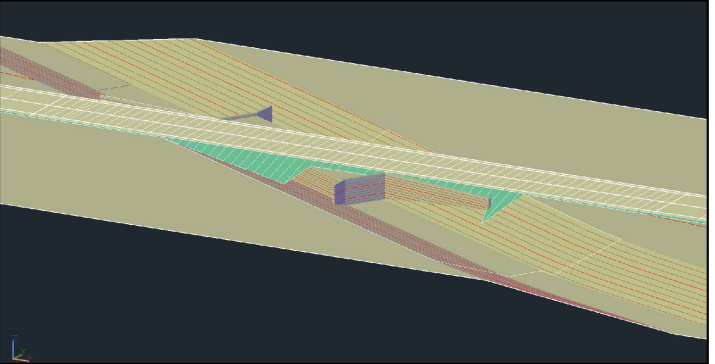
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A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER						
						Signed: _____ Date: 28/03/23						
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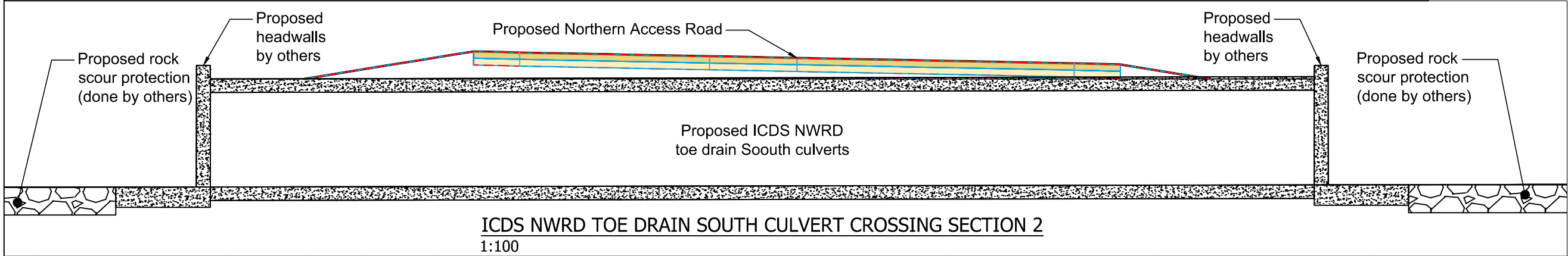
ICDS NWRD TOE DRAIN SOUTH CULVERT CROSSING LAYOUT
1:250



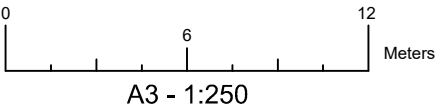
ICDS NWRD TOE DRAIN SOUTH CULVERT CROSSING SECTION 1
1:100



CONCEPT 3D LAYOUT FACING NORTH



ICDS NWRD TOE DRAIN SOUTH CULVERT CROSSING SECTION 2
1:100



REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:	APPROVED BY:	Ingen Consulting Pty Ltd	CLIENT:	PROJECT:	DRAWING TITLE:
A	Draft For Review	28/03/23	MC	MK	MK	Michiel Kamphorst, MSc, BSc, RPEng, RPEQ, NER	ACN: 623 948 112 a: Alstonville, NSW p: +614 1726 4987 e: michiel@ingenconsulting.com.au w: www.ingenconsulting.com.au	Evolution Mining (Cowl) Pty Ltd Cowl Gold Operations Lake Cowl Road Lake Cowl, NSW 2671	North Access Road Cowl Gold Mine Operations Lake Cowl, NSW, 2671	Culvert crossing - ICDS NWRD toe drain South
						Signed: Date: 28/03/23				PROJECT NUMBER: J1230 ORIGINAL SIZE: A3
										DRAWING NUMBER: J1230_NAR_C803 REVISION: A