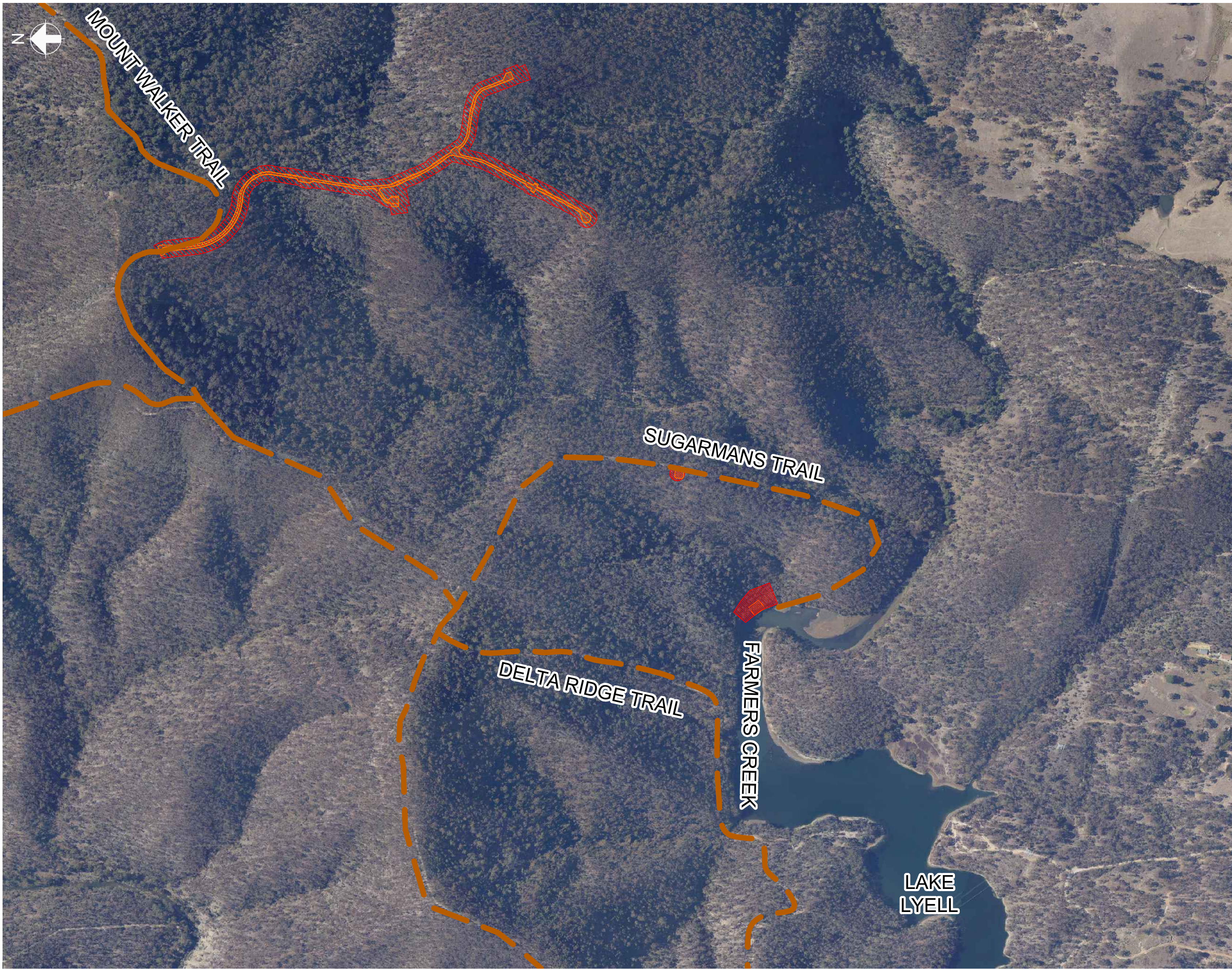


LAKE LYELL PHES

CIVIL ENGINEERING - CONCEPT DESIGN



LOCALITY PLAN
N.T.S

DRAWING No.	
279966-CICW-DRG-0001	COVER SHEET, DRAWING LIST & LOCALITY PLAN
279966-CICW-DRG-0002	GENERAL NOTES & LEGEND
279966-CICW-DRG-0030	SITE CLEARANCE - OVERALL PLAN
279966-CICW-DRG-0040	SITE CLEARANCE - NORTHERN PLAN
279966-CICW-DRG-0200	BULK EARTHWORKS PLAN
279966-CICW-DRG-0300	CIVIL WORKS - OVERALL PLAN
279966-CICW-DRG-0301	CIVIL WORKS & STORMWATER PLAN - SHEET 1 OF 3
279966-CICW-DRG-0302	CIVIL WORKS & STORMWATER PLAN - SHEET 2 OF 3
279966-CICW-DRG-0303	CIVIL WORKS & STORMWATER PLAN - SHEET 3 OF 3
279966-CICW-DRG-0341	ROAD - TYPICAL SECTION
279966-CICW-DRG-0351	ROAD - LONGITUDINAL SECTION - MC20 - SHEET 1 OF 2
279966-CICW-DRG-0352	ROAD - LONGITUDINAL SECTION - MC20 - SHEET 2 OF 2
279966-CICW-DRG-0361	ROAD - LONGITUDINAL SECTION - MC30
279966-CICW-DRG-0365	ROAD - LONGITUDINAL SECTION - MC40
279966-CICW-DRG-0371	ROAD - CROSS SECTIONS - MC20 - SHEET 1 OF 5
279966-CICW-DRG-0372	ROAD - CROSS SECTIONS - MC20 - SHEET 2 OF 5
279966-CICW-DRG-0373	ROAD - CROSS SECTIONS - MC20 - SHEET 3 OF 5
279966-CICW-DRG-0374	ROAD - CROSS SECTIONS - MC20 - SHEET 4 OF 5
279966-CICW-DRG-0375	ROAD - CROSS SECTIONS - MC20 - SHEET 5 OF 5
279966-CICW-DRG-0381	ROAD - CROSS SECTIONS - MC30
279966-CICW-DRG-0385	ROAD - CROSS SECTIONS - MC40
279966-CICW-DRG-0391	CIVIL WORKS - DETAILS

NOT FOR CONSTRUCTION

Scales

NOT TO SCALE

Design Model Version

Issue	Date	By	Chkd	Appd

3	08/03/22	AN	LC	EGM
PLANNING APPLICATION				
Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

NOT TO SCALE

Discipline

Civil

ARUP

Anup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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Drawing Title

COVER SHEET, DRAWING LIST & LOCALITY PLAN

Drawing Status

PLANNING APPLICATION

Job No	Drawing No	Issue
279966-00	CICW-DRG-0001	3

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

GENERAL

1. ALL DIMENSIONS ARE TO BE OBTAINED BY MILLIMETRES AND ALL LEVELS IN METRES AND UNO.
2. NO DIMENSIONS ARE TO BE OBTAINED BY SCALING FROM DRAWINGS.
3. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO PROCEEDING WITH THE WORKS.
5. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS, EXISTING LEVELS AND PROPOSED SET-OUT ON SITE PRIOR TO THE COMMENCEMENT OF WORKS. ANY DISCREPANCIES OR OMISSIONS ARE TO BE REPORTED TO THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE WORKS AND SURROUNDING AREA UNTIL PROJECT COMPLETION AND SHALL ENSURE THAT NO PART OF THE WORKS ARE OVERSTRESSED BY CONSTRUCTION LOADING.
7. ALL EARTHWORK AND WATER QUALITY TESTING IS TO BE CARRIED OUT BY A NATA REGISTERED LABORATORY. TESTING METHODS ARE TO BE IN ACCORDANCE WITH THE APPLICABLE AUSTRALIAN STANDARD.
8. ON COMPLETION OF THE WORKS THE CONTRACTOR SHALL PROVIDE AN AS-CONSTRUCTED SURVEY OF THE SITE.
9. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED ON THE DRAWINGS, THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE PRODUCT TO THE SUPERINTENDENT FOR APPROVAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT INFORMATION TO DEMONSTRATE TO THE SUPERINTENDENT'S SATISFACTION THAT THE ALTERNATIVE PROPOSED IS OF EQUIVALENT QUALITY TO THE PRODUCT SPECIFIED.

DESIGN REFERENCE AND INPUTS

1. DESIGN BASED ON LAKE LYELL MBES 1 m AVE GRID AHD LIDAR SURVEY DATED 05 MARCH 2019 PROVIDED BY ENERGY AUSTRALIA.
2. DRAWINGS TO BE READ IN CONJUNCTION WITH THE GEOTECHNICAL GROUND INVESTIGATION SCOPE OF WORKS.

CLEARING WORKS

1. PROPOSED GROUND INVESTIGATION AND ACCESS TRACK CONSTRUCTION WORKS TO BE WITHIN THE FOOTPRINT OF THE ENVIRONMENTAL ASSESSMENT BOUNDARY.

DRAINAGE

1. DRAINAGE FEATURES TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH NSW RURAL FIRE SERVICE - FIRE TRAIL DESIGN, CONSTRUCTION AND MAINTENANCE MANUAL AND MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION - VOLUME 2C UNSEALED, 2008.
2. CONTRACTOR TO PREPARE DETAILED EROSION AND SEDIMENT CONTROL PLAN (ESCP) AS PART OF THEIR CONSTRUCTION MANAGEMENT PLAN (CMP)

ITEMS TO BE DEVELOPED BY CONTRACTOR

1. CONTRACTOR TO SURVEY EXISTING MOUNT WALKER TRACK MINIMUM 50 m BEYOND THE PROPOSED CONNECTION TO THE NEW ACCESS TRACK. CONTRACTOR TO DEVELOP DETAILED DESIGN BASED ON THIS SURVEY.
2. CONTRACTOR TO MAKE FINAL ASSESSMENT OF EXCAVATION BATTERS IN ROCK MATERIAL. DESIGN ASSUMES 1H:1V.
3. CONTRACTOR TO DEVELOP EROSION AND SEDIMENT CONTROL MEASURES AND COMPLETE FINAL SIZING OF FEATURES IN ACCORDANCE WITH MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION - VOLUME 2C UNSEALED ROADS.

ABBREVIATIONS

AHD	AUSTRALIAN HEIGHT DATUM
ARI	AVERAGE RECURRENCE INTERVAL
AR&R	AUSTRALIAN RAINFALL AND RUNOFF
AS	AUSTRALIAN STANDARD
BEL	BULK EARTHWORKS LEVEL
DRG	DRAWING
IJ	ISOLATION JOINT
IL	INVERT LEVEL
DD	DISH DRAIN
K&G	KERB AND GUTTER
KO	KERB ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
RL	REDUCED LEVEL
RCP	REINFORCED CONCRETE PIPE
R RJ	RUBBER RING JOINTED
SSL	STRUCTURAL SLAB LEVEL
STD	STANDARD
TBC	TO BE CONFIRMED
TYP	TYPICAL
OMC	OPTIMUM MOISTURE CONTENT
UNO	UNLESS NOTED OTHERWISE
VC	VEHICLE CROSSOVER
VENM	VIRGIN EXCAVATED NATURAL MATERIAL
VOL	VOLUME

EROSION CONTROL MEASURES

1. CONTROLS AFFECTED BY WORKS ARE TO BE RE-ESTABLISHED PRIOR TO THE COMPLETION OF EACH DAYS WORK.
2. NO DISTURBANCE OF SITE OTHER THAN THE IMMEDIATE AREA OF THE WORKS.
3. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS THROUGH REGULAR WATERING.
4. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE TRACK ROLLED, SEEDED OR MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
5. ESTABLISHMENT OF FIRE BREAKS SHALL BE CARRIED OUT IN CONSULTATION WITH A NSW RURAL FIRE SERVICE (NSW RFS) OFFICER.

SEDIMENT CONTROL MEASURES

1. PERMANENT DRAINAGE STRUCTURES INCLUDING PIPES AND PITS ARE TO BE HANDED OVER IN A CLEAN CONDITION AT THE COMPLETION OF THE CONTRACT MAINTENANCE PERIOD.
2. CONTRACTOR TO PLACE SEDIMENT FENCE MINIMUM 3.0 m FROM EDGE OF CUT / FILL BATTER ALONG LENGTH OF PROPOSED ACCESS TRACK.

EXISTING FEATURES

	BOUNDARY
	DRIVEWAY, PATHWAY OR CYCLE WAY
	TOP OF BATTER
	BOTTOM OF BATTER
	KERB AND GUTTER
	KERB ONLY
	KERB INLET PIT
	DISHED CROSSING
	FENCE
	EDGE OF GARDEN
	SPOT LEVEL
	BOLLARDS
	EXISTING CONTOURS
	EXISTING TREE
	STORMWATER EASEMENT

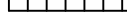
EXISTING UTILITIES

	STORMWATER
	WATER
	ELECTRICAL (UNDERGROUND)
	ELECTRICAL (OVERHEAD)
	COMMUNICATIONS
	GAS
	COMMUNICATION - JUNCTION PIT
	ELECTRICAL - SUBSTATION
	SEWER - SEPTIC TANK
	STORMWATER - GRATED PIT
	STORMWATER - KERB INLET PIT

GEOTECHNICAL INVESTIGATIONS

BHXXX		BORE HOLE
TPXXX		TEST PIT

EROSION AND SEDIMENT CONTROL MEASURES

	TEMPORARY CONSTRUCTION EXIT
	CONSTRUCTION COMPOUND
	SEDIMENT FENCE
	STOCKPILE
	FILTER SOCK
	RIISING MAIN

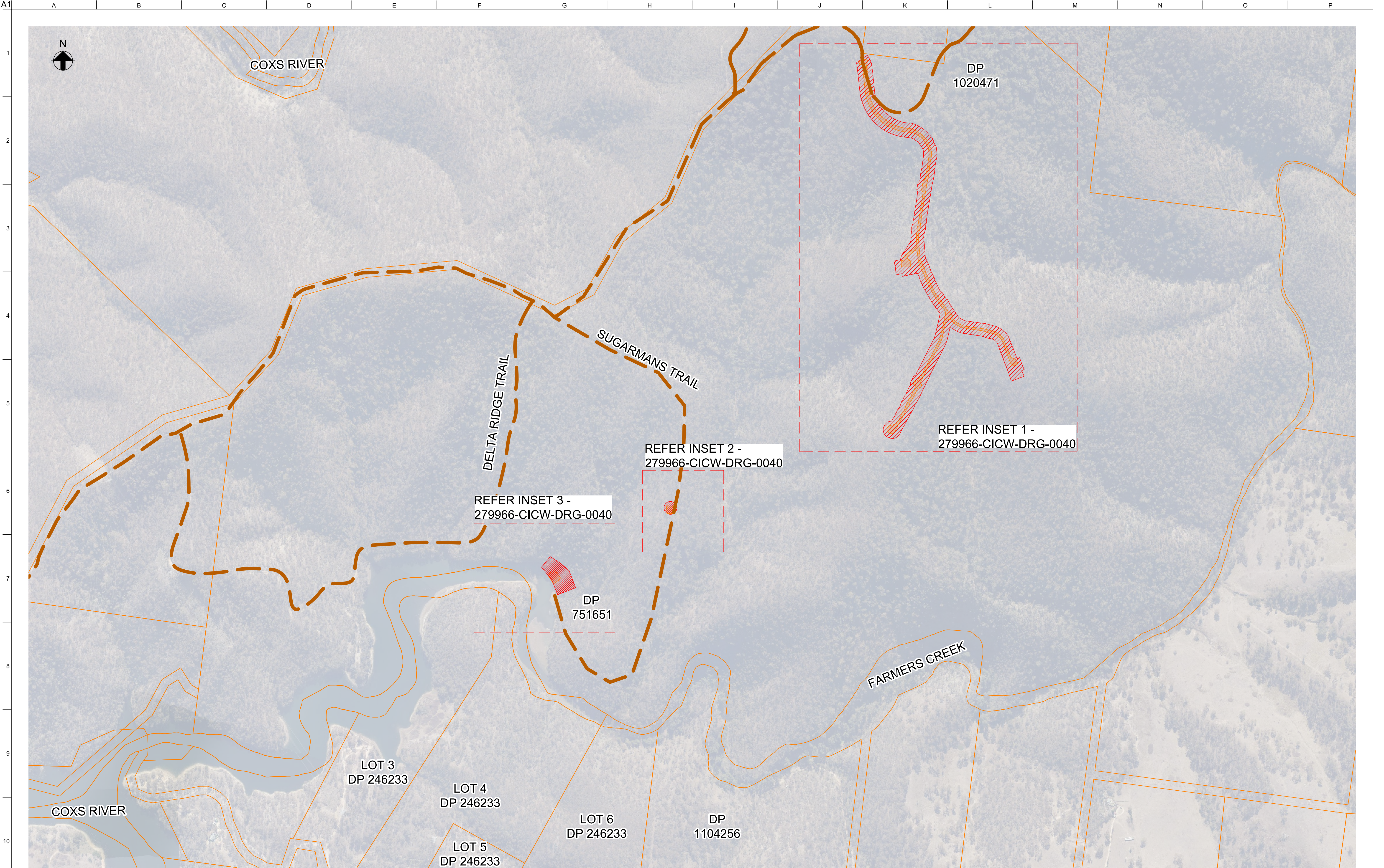
CIVIL WORKS

	EXTENT OF WORKS BOUNDARY
	EDGE OF PAVEMENT
	MINOR CONTOUR
	MAJOR CONTOUR

DRAINAGE

	TABLE DRAIN
	MITRE DRAIN
	RIP RAP ROCK PROTECTION
	LEVEL SPREADER

[illegible]



NOT FOR CONSTRUCTION

Scales
NOT TO SCALE

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	08/03/22	AN	LC	EGM
PLANNING APPLICATION				
1	02/02/22	AN	LC	EGM
FOR INFORMATION				
0	26/11/21	HNA	LC	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name:
Signature: Date:

Job Title
LAKE LYELL PHES

Scale at A1
NOT TO SCALE

Discipline
Civil

ARUP

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Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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Drawing Title
SITE CLEARANCE
OVERALL PLAN

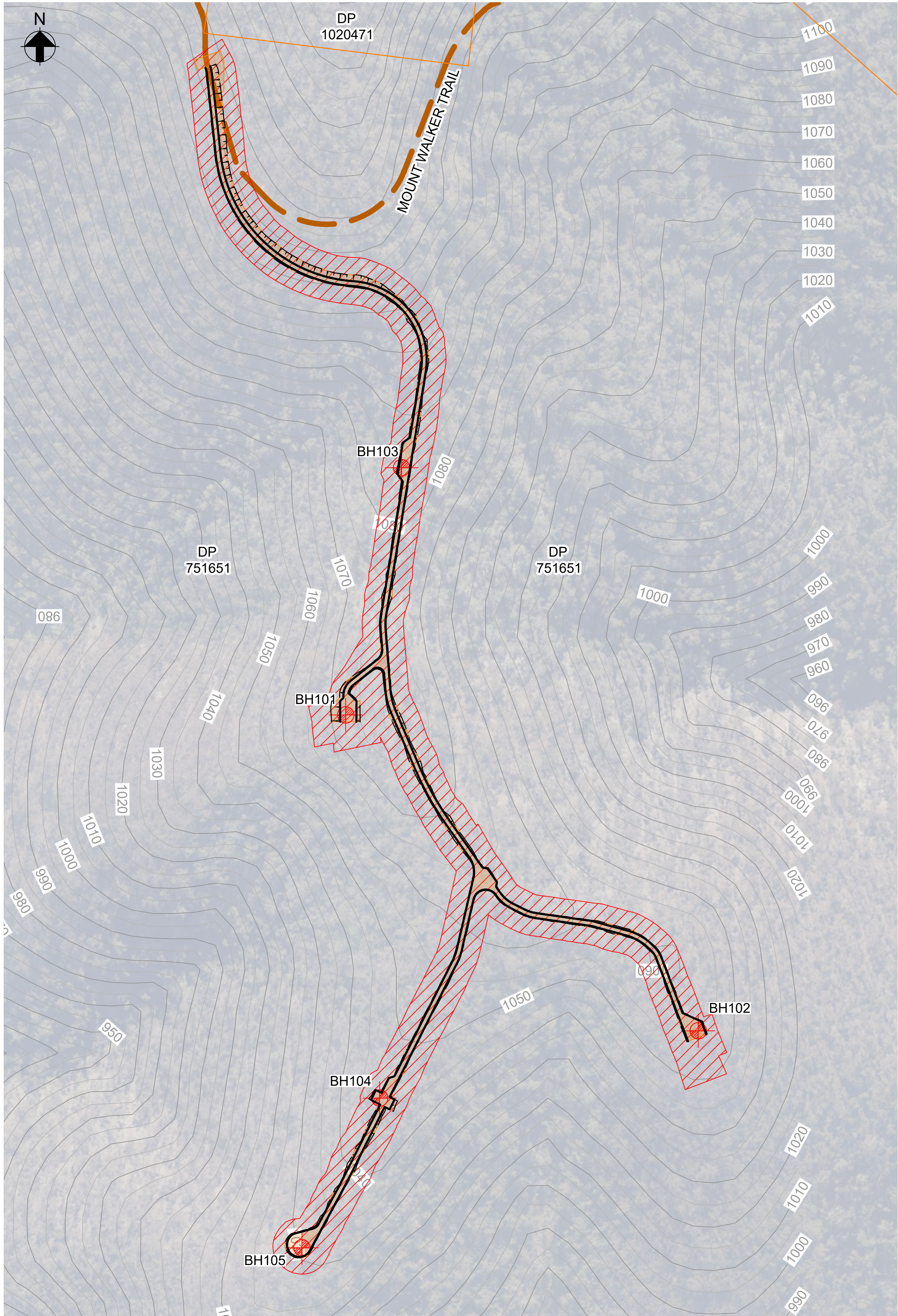
Drawing Status
PLANNING APPLICATION

Job No
279966-00

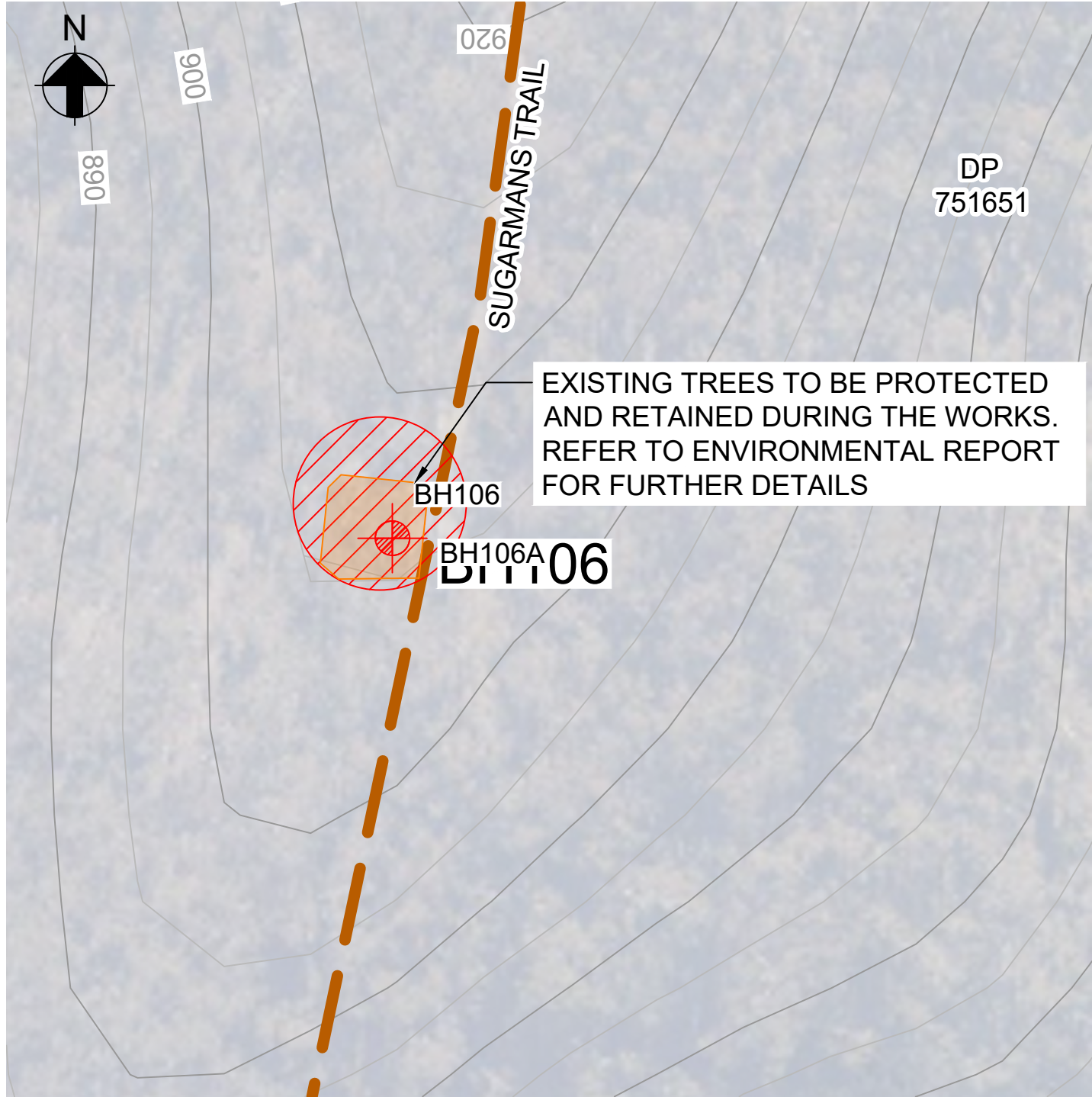
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CICW-DRG-0030

Issue
2

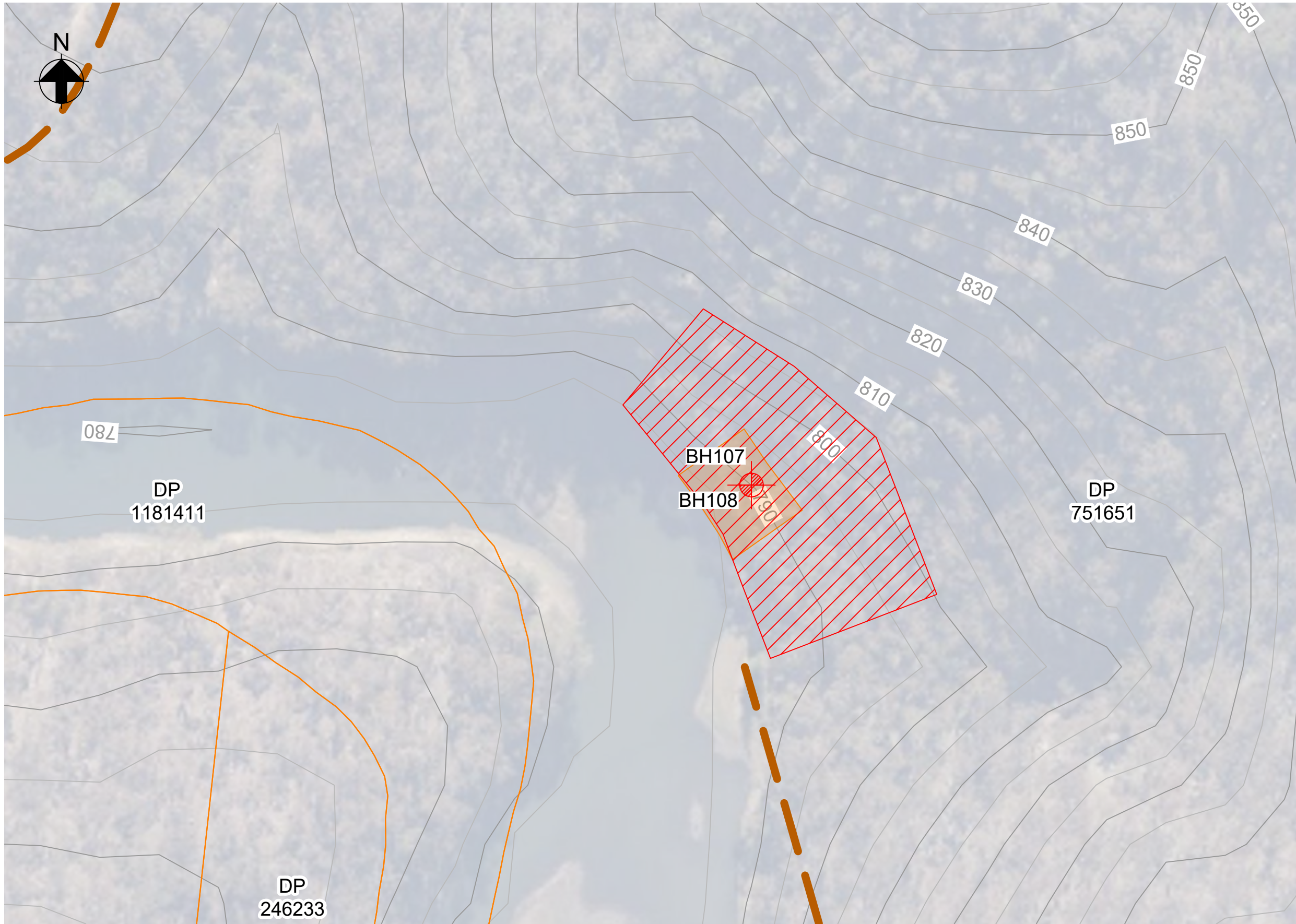
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INSET 1
SCALE 1:2000



INSET 3
SCALE 1:1000



INSET 2
SCALE 1:1000

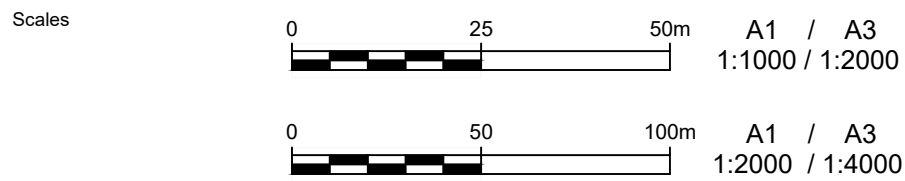
NOTES

- DRAWING SHOWS PRELIMINARY ACCESS TRACK DESIGN WHICH IS TO BE FURTHER DEVELOPED BY THE CONTRACTOR.
- CLEARING EXTENTS IS FOOTPRINT OF PROPOSED ACCESS TRACK, SHOULDERS AND ALL EARTHWORKS BATTER.
- DESIGNS BASED ON LAKE LYELL MBES 1m AVE GRID AHD LiDAR SURVEY DATED 05 MARCH 2019 PROVIDED BY ENERGY AUSTRALIA.
- REFER TO LAKE LYELL PHES - CONCEPT DEVELOPMENT GROUND INVESTIGATION SPECIFICATION FOR DETAILS ON BOREHOLE LOCATIONS AND REQUIREMENTS
- FINAL CONFIGURATION OF DRILL RIG EQUIPMENT AND SUPPORT VEHICLES TBC BY GI CONTRACTOR

LEGEND

- LOT BOUNDARY
- EXISTING TRACK - APPROXIMATE
- CLEARING EXTENT (AREA = 9681 m²)
- ENVIRONMENTAL ASSESSMENT BOUNDARY (AREA = 45598 m²)
- BHXXX BOREHOLE
- TPXXX TESTPIT

NOT FOR CONSTRUCTION



Design Model Version

Issue	Date	By	Chkd	Appd

4	08/03/22	AN	LC	EGM
PLANNING APPLICATION				
3	02/02/22	AN	LC	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

2	26/11/21	HNA	LC	EGM
FOR INFORMATION				
1	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
0	05/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
AS SHOWN

Discipline
Civil

ARUP

Arup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com

CONSULT AUSTRALIA
Member Firm
Arup Pty Ltd
ABN 76 625 912 885

Drawing Title
SITE CLEARANCE
NORTHERN PLAN

Drawing Status
PLANNING APPLICATION

Job No
279966-00

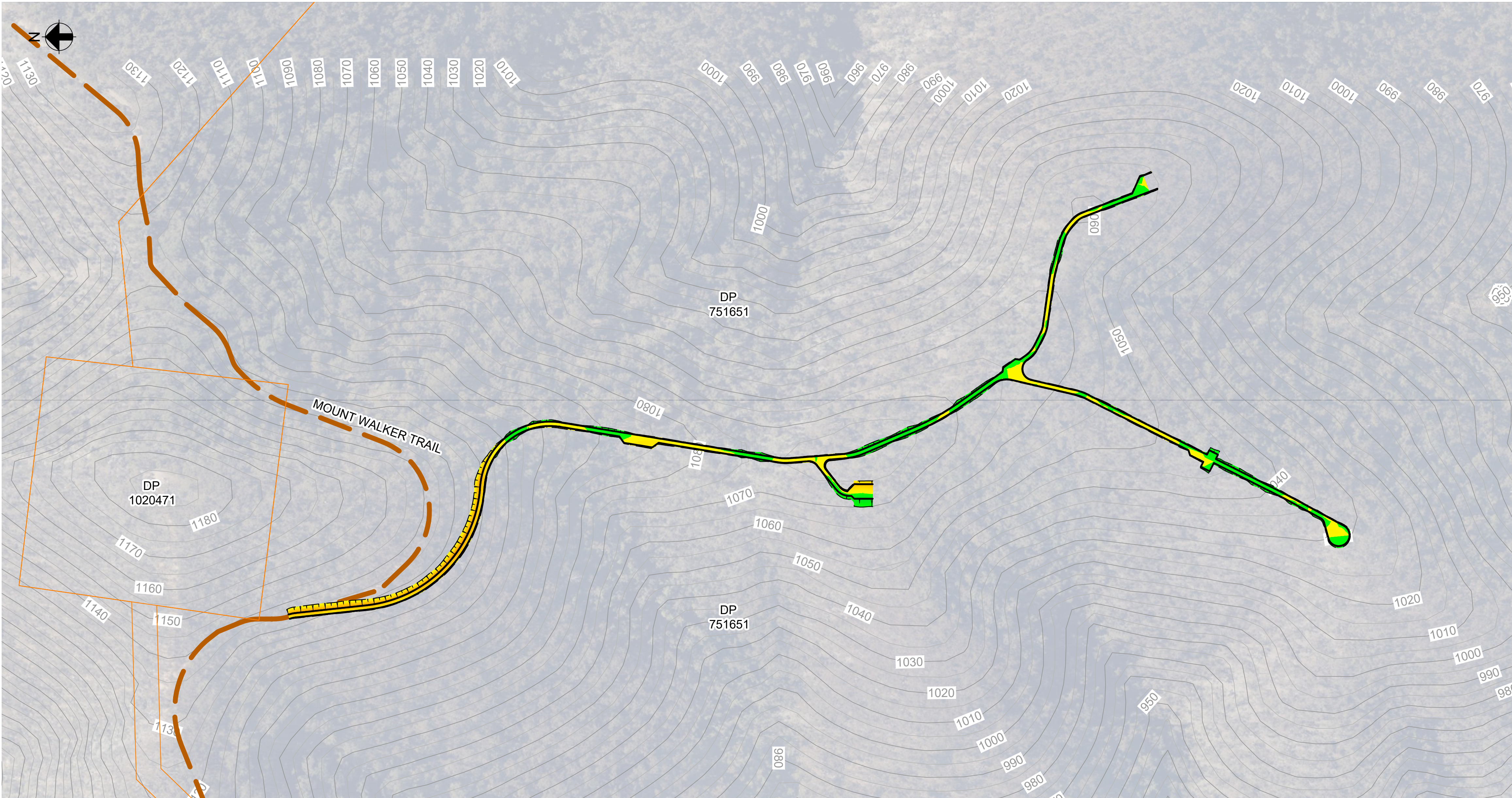
Drawing No
CICW-DRG-0040

Issue
4

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOTES:

1. BULK EARTHWORKS SHOWN IS A COMPARISON BETWEEN EXISTING GROUND SURFACE, AS PER LIDAR SURVEY RECEIVED 5th MARCH 2019 AND PROPOSED SURFACE LEVEL. NO ALLOWANCES HAVE BEEN MADE FOR PAVEMENT BOXING.
2. NO TOPSOIL STRIP ALLOWED. SITE IS MIXTURE OF TOPSOIL AND ROCKY OUTCROPS.
3. NO ALLOWANCE MADE FOR STORMWATER TRENCHING.
4. NO SPECIFIC ASSESSMENT OF QUANTITY OF CUT MATERIAL THAT IS ROCK HAS BEEN UNDERTAKEN. ROCK IS UNDERSTOOD TO BE SHALLOW AND THE CONTRACTOR SHALL TAKE THIS INTO CONSIDERATION.
5. EARTHWORKS QUANTITIES ARE THEORETICAL AND INDICATIVE ONLY WITH NO ALLOWANCE FOR BULKING FACTORS. CONTRACTOR IS TO MAKE THEIR OWN ASSESSMENT OF EARTHWORKS QUANTITIES.



PLAN
SCALE 1:2000

CUT/FILL LEGEND				Colour
Lower_value	Upper_value			
-3.0	to	-2.75	m	
-2.75	to	-2.5	m	
-2.5	to	-2.25	m	
-2.25	to	-2.0	m	
-2.0	to	-1.75	m	
-1.75	to	-1.5	m	
-1.5	to	-1.25	m	
-1.25	to	-1.0	m	
-1.0	to	-0.75	m	
-0.75	to	-0.5	m	
-0.5	to	-0.25	m	
-0.25	to	0.0	m	
0.0	to	0.25	m	
0.25	to	0.5	m	
0.5	to	0.75	m	
0.75	to	1.0	m	
1.0	to	1.25	m	
1.25	to	1.5	m	
1.5	to	1.75	m	
1.75	to	2.0	m	
2.0	to	2.25	m	

CUT / FILL VOLUMES	
TOTAL CUT	-3059 m ³
TOTAL FILL	698 m ³
NET	-2361 m ³

NOT FOR CONSTRUCTION

Scales
0 50 100m
A1 / A3
1:2000 / 1:4000

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:2000m
Discipline
Civil

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Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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Drawing Title
BULK EARTHWORKS
PLAN

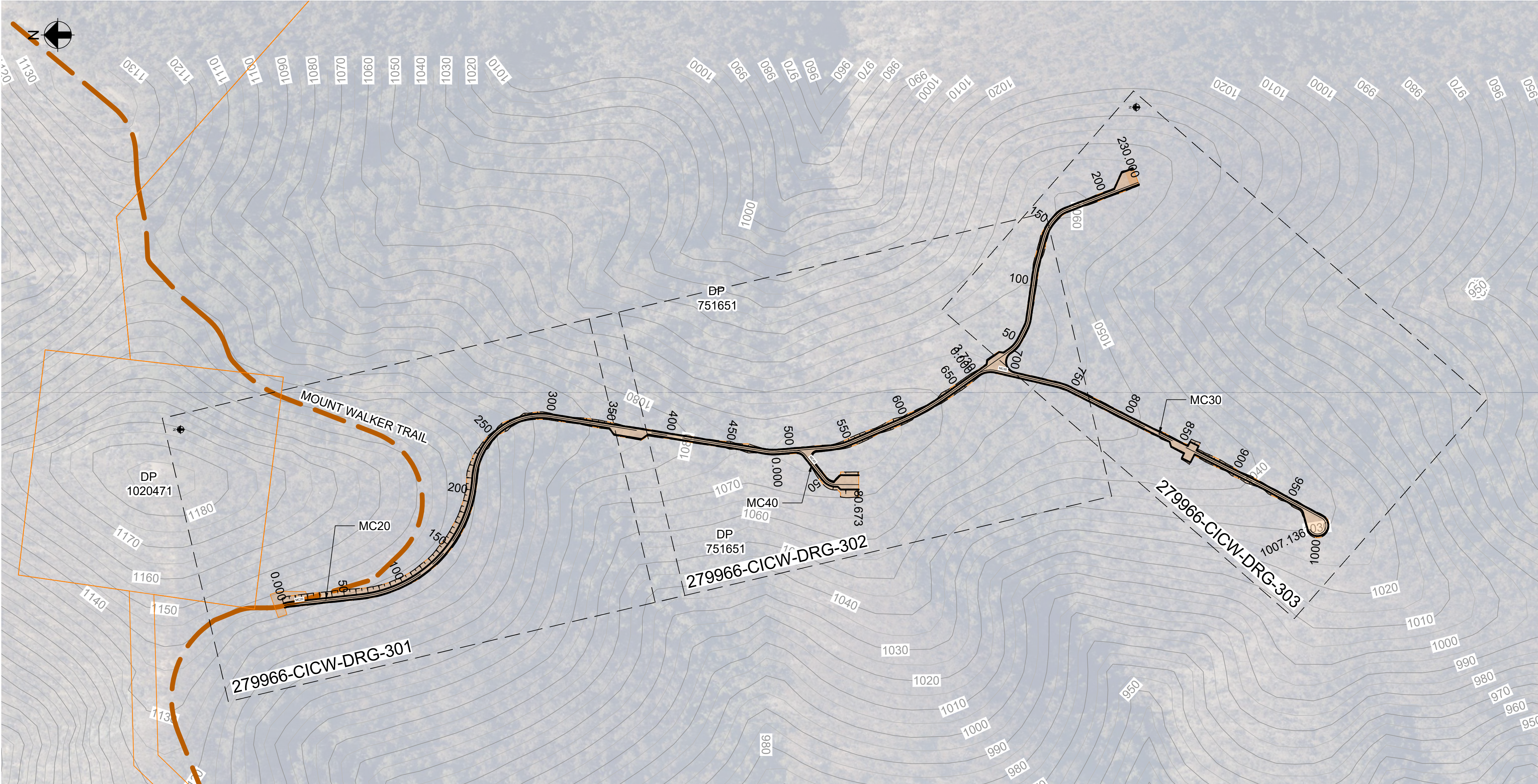
Drawing Status
Issued For Information

Job No 279966-00	Drawing No CICW-DWG-0200	Issue 2
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DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOTES:

1. BULK EARTHWORKS SHOWN IS A COMPARISON BETWEEN EXISTING GROUND SURFACE, AS PER LIDAR SURVEY RECEIVED 5th MARCH 2019 AND PROPOSED SURFACE LEVEL. NO ALLOWANCES HAVE BEEN MADE FOR PAVEMENT BOXING.
2. NO TOPSOIL STRIP ALLOWED. SITE IS MIXTURE OF TOPSOIL AND ROCKY OUTCROPS.
3. NO ALLOWANCE MADE FOR STORMWATER TRENCHING.
4. NO SPECIFIC ASSESSMENT OF QUANTITY OF CUT MATERIAL THAT IS ROCK HAS BEEN UNDERTAKEN. ROCK IS UNDERSTOOD TO BE SHALLOW AND THE CONTRACTOR SHALL TAKE THIS INTO CONSIDERATION.
5. EARTHWORKS QUANTITIES ARE THEORETICAL AND INDICATIVE ONLY WITH NO ALLOWANCE FOR BULKING FACTORS. CONTRACTOR IS TO MAKE THEIR OWN ASSESSMENT OF EARTHWORKS QUANTITIES.



PLAN
SCALE 1:2000

NOT FOR CONSTRUCTION

Scales
0 50 100m
A1 / A3
1:2000 / 1:4000

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

1	02/02/22	AN	LC	EGM
FOR INFORMATION				
0	26/11/21	HNA	LC	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:2000m
Discipline
Civil

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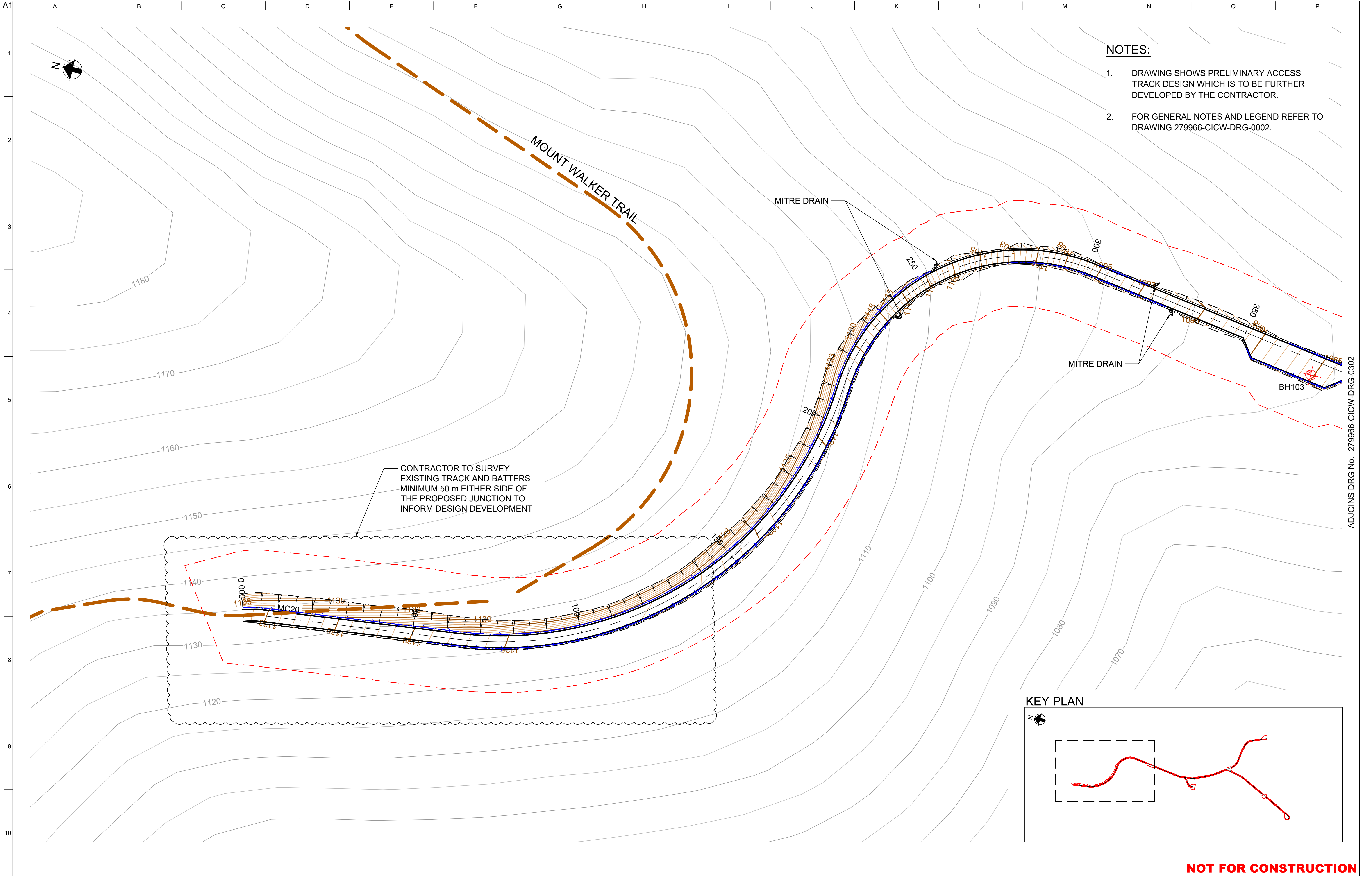


Drawing Title
CIVIL WORKS
OVERALL PLAN

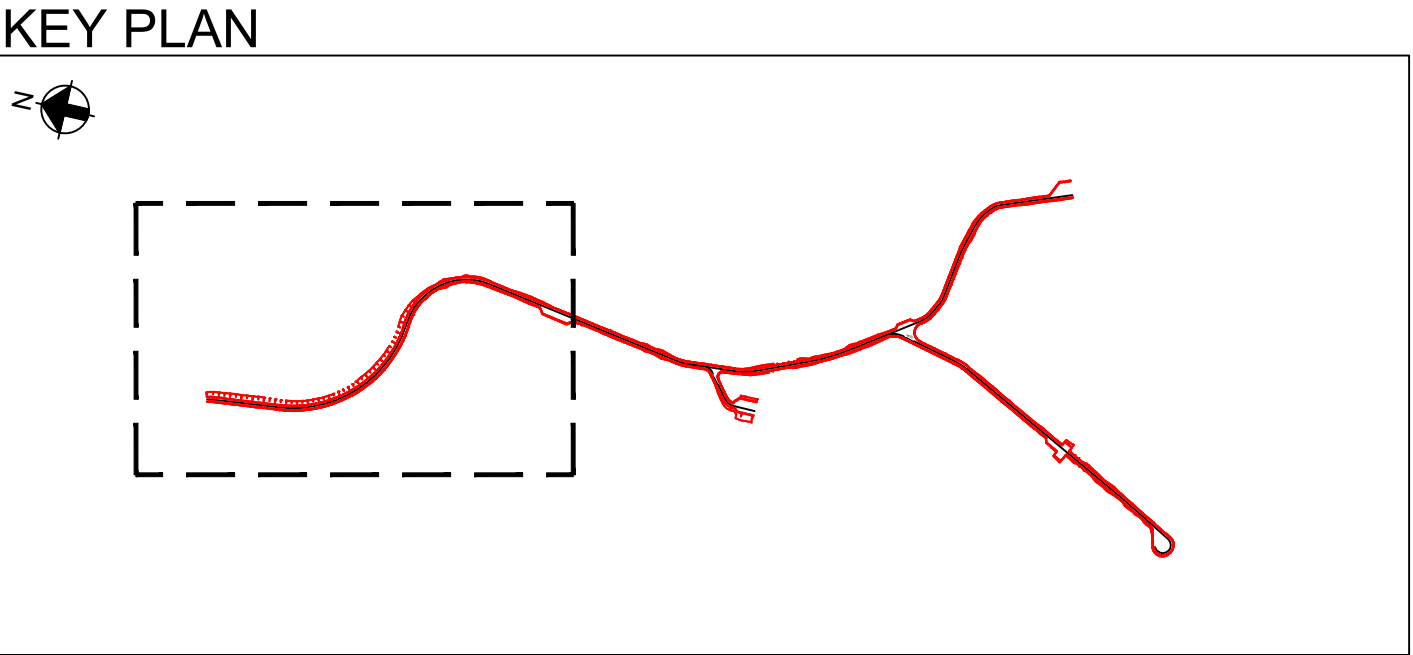
Drawing Status
Issued For Information

Job No 279966-00	Drawing No CICW-DRG-0300	Issue 1
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DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



- NOTES:**
- DRAWING SHOWS PRELIMINARY ACCESS TRACK DESIGN WHICH IS TO BE FURTHER DEVELOPED BY THE CONTRACTOR.
 - FOR GENERAL NOTES AND LEGEND REFER TO DRAWING 279966-CICW-DRG-0002.



A1 / A3
1:500 / 1:1000

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:500m

Discipline
Civil

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Drawing Title
**CIVIL WORKS & STORMWATER
PLAN
SHEET 1 OF 3**

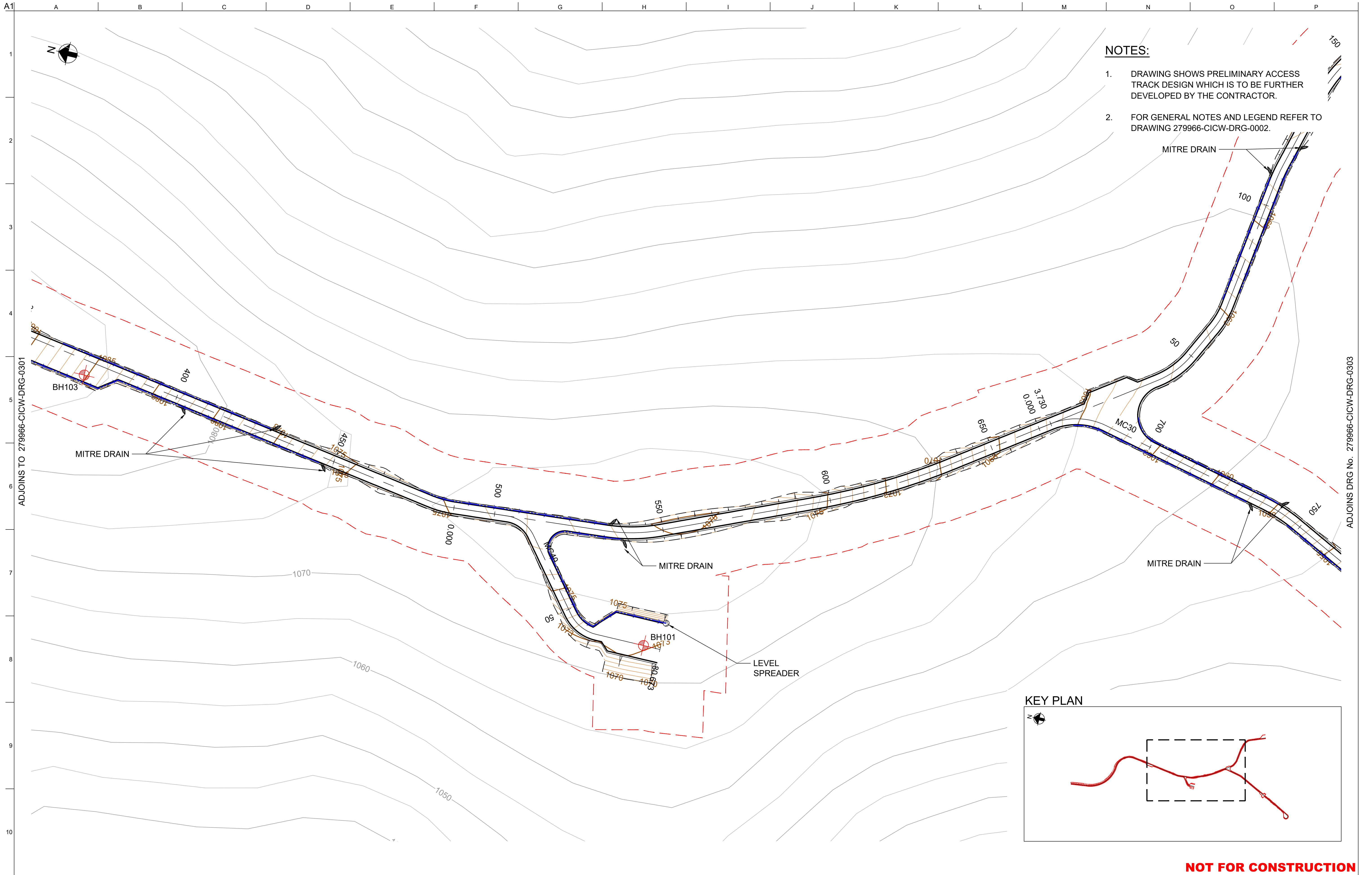
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Job No
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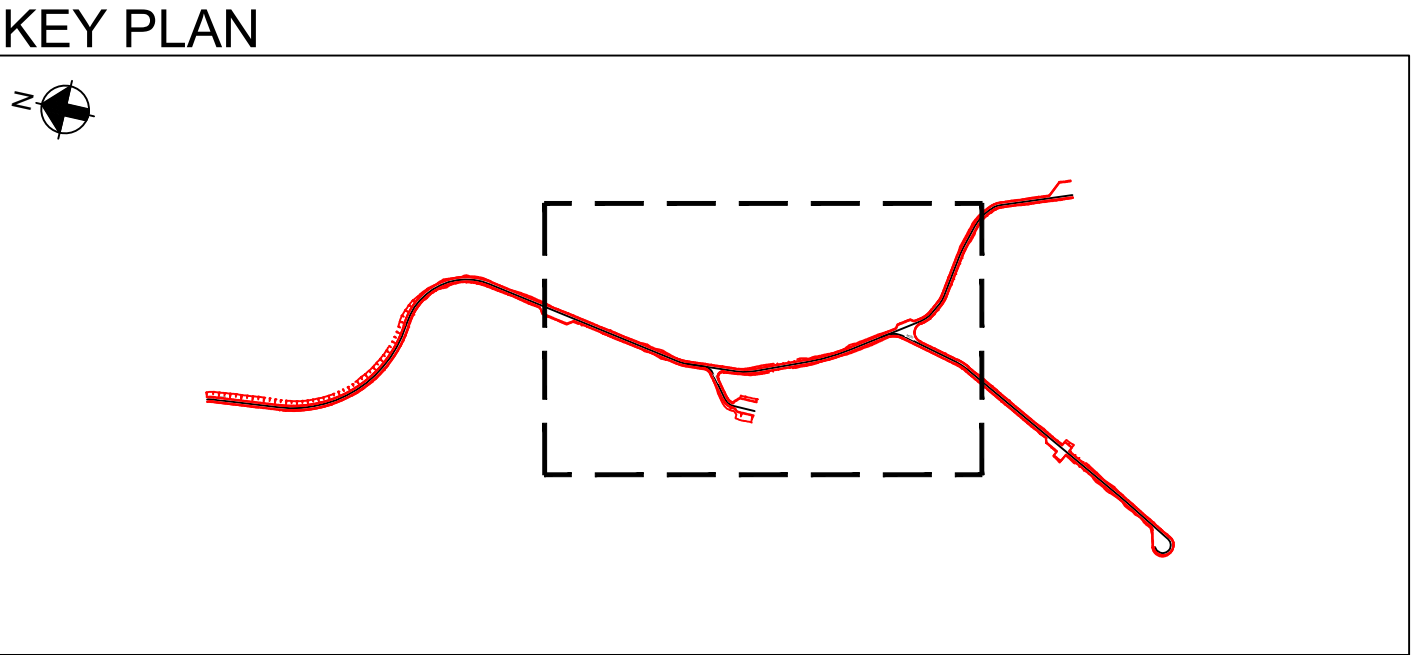
Drawing No
CICW-DRG-0301

Issue
2

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



- NOTES:**
- DRAWING SHOWS PRELIMINARY ACCESS TRACK DESIGN WHICH IS TO BE FURTHER DEVELOPED BY THE CONTRACTOR.
 - FOR GENERAL NOTES AND LEGEND REFER TO DRAWING 279966-CICW-DRG-0002.



NOT FOR CONSTRUCTION

Scales

0 10 20m

A1 / A3
1:500 / 1:1000

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				

Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:500m

Discipline

Civil

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www.arup.com

CONSULT AUSTRALIA

Member Firm
Anup Pty Ltd
ABN 76 625 912 665

Drawing Title

CIVIL WORKS & STORMWATER PLAN

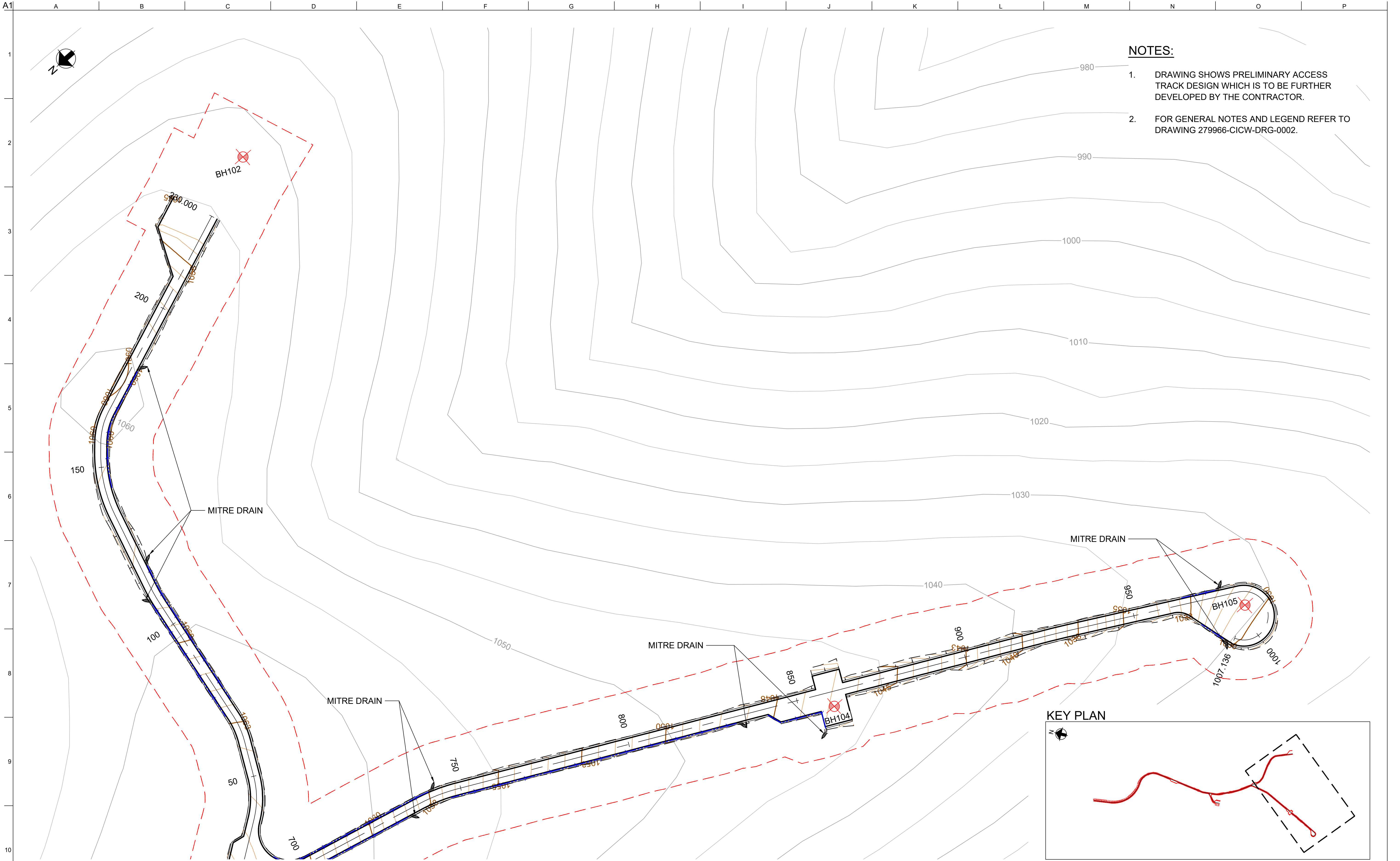
SHEET 2 OF 3

Drawing Status

Issued For Information

Job No	Drawing No	Issue
279966-00	CICW-DRG-0302	2

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



- NOTES:**
- DRAWING SHOWS PRELIMINARY ACCESS TRACK DESIGN WHICH IS TO BE FURTHER DEVELOPED BY THE CONTRACTOR.
 - FOR GENERAL NOTES AND LEGEND REFER TO DRAWING 279966-CICW-DRG-0002.

ADJOINS DRG No. 279966-CICW-DRG-0302

NOT FOR CONSTRUCTION

Scales
0 10 20m
A1 / A3
1:500 / 1:1000

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:500m

Discipline
Civil

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Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com



Drawing Title
**CIVIL WORKS & STORMWATER
PLAN
SHEET 3 OF 3**

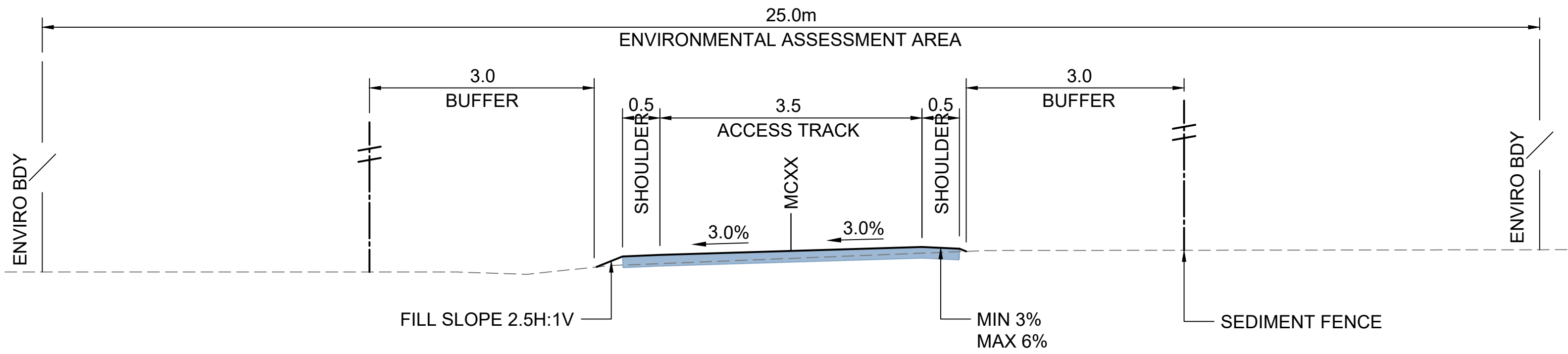
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Issued For Information

Job No
279966-00

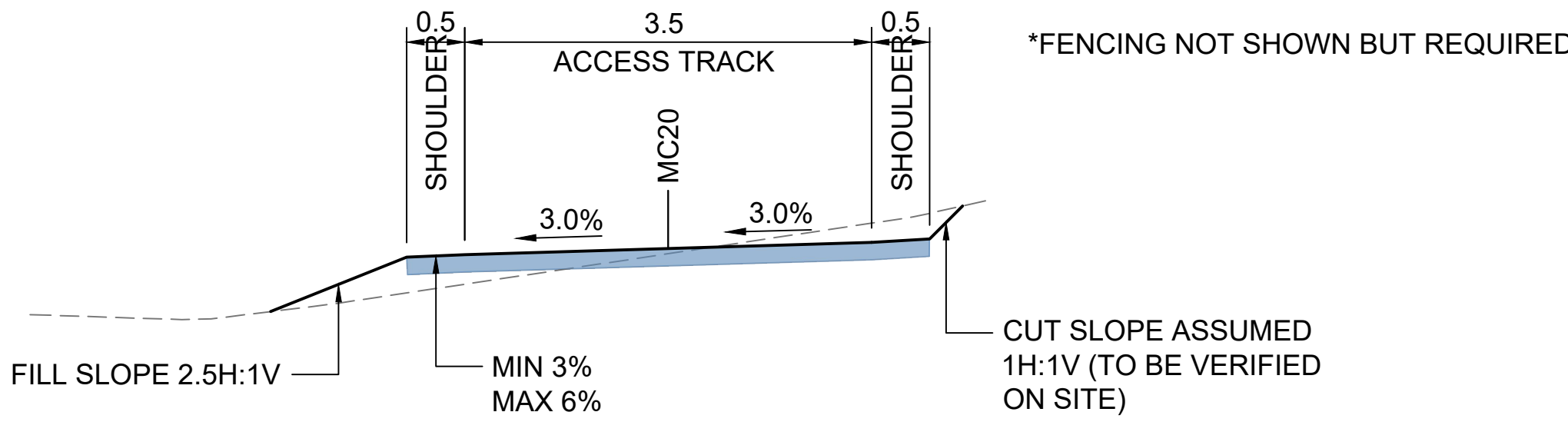
Drawing No
CICW-DRG-0303

Issue
2

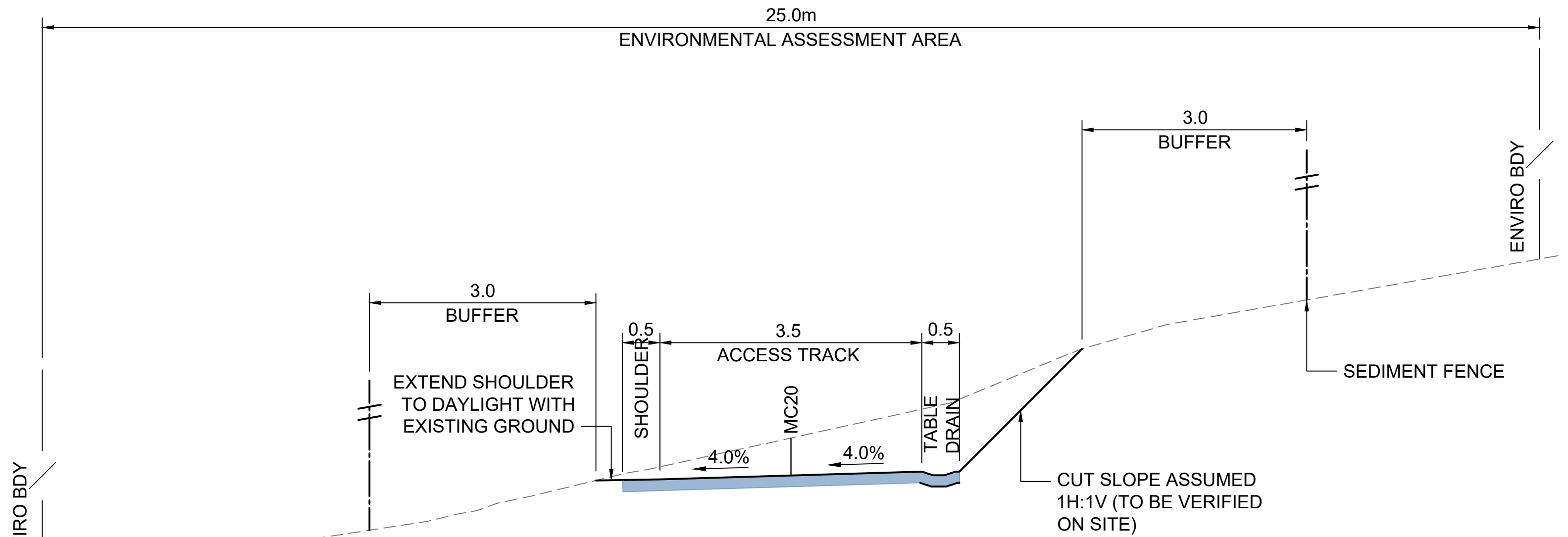
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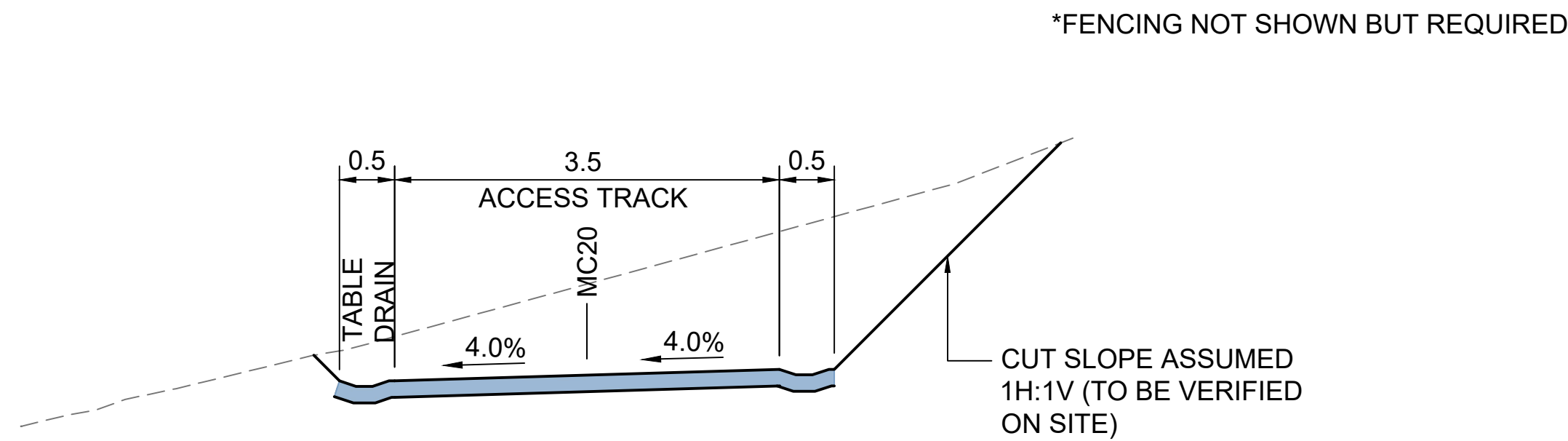
TYPICAL SECTION
LOW FILL - EXISTING SLOPE <6%



TYPICAL SECTION
CUT / FILL - EXISTING SLOPE 6% - 20%



TYPICAL SECTION
CUT TO DAYLIGHT - EXISTING SLOPE >20%



TYPICAL SECTION
CUT BOTH SIDE - EXISTING SLOPE >20%

NOTES:

- REFER TO DRAWING CICW-DRG-0002 FOR GENERAL NOTES.
- CROSSFALL ON ROADS TYPICALLY 3%. MAXIMUM 6%.
- CROSSFALL ON SHOULDERS TYPICALLY 5%. MINIMUM 3%, MAXIMUM 6%.

Scales
0 2.5 5m
A1 / A3
1:100 / 1:200

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:100m
Discipline
Civil

ARUP

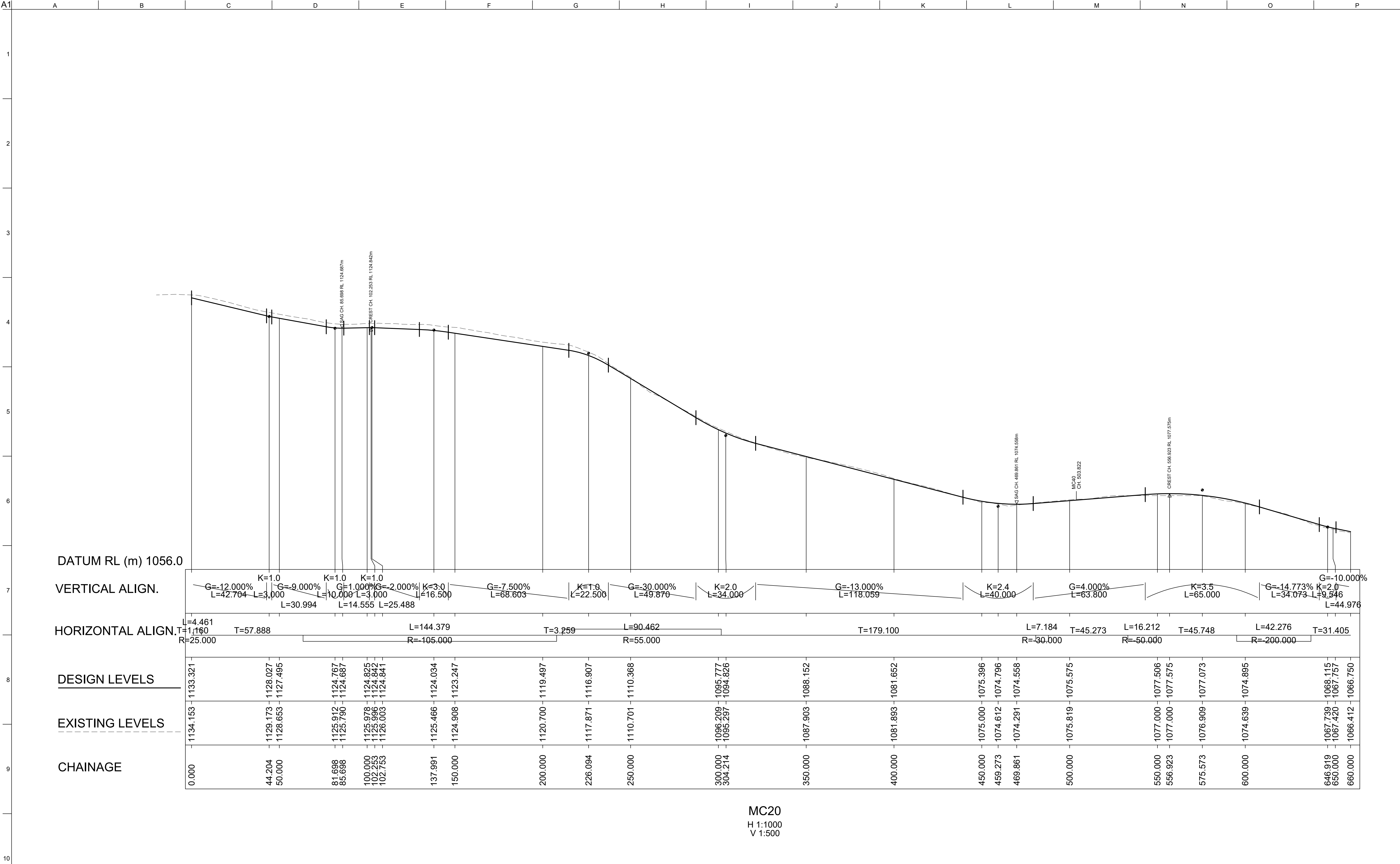
Anup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com

CONSULT AUSTRALIA
Member Firm
Anup Pty Ltd
ABN 76 625 912 885

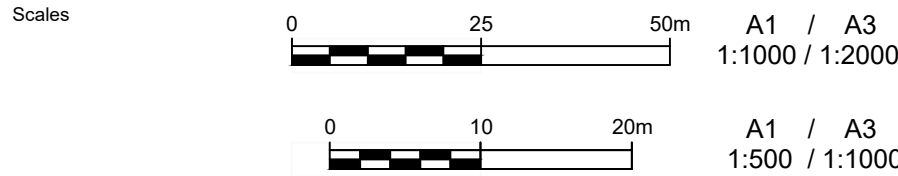
Drawing Title
ROAD
TYPICAL SECTION

Drawing Status
Issued For Information

Job No 279966-00	Drawing No CICW-DRG-0341	Issue 2
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NOT FOR CONSTRUCTION



Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

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FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
AS SHOWN
Discipline
Civil

ARUP

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Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com



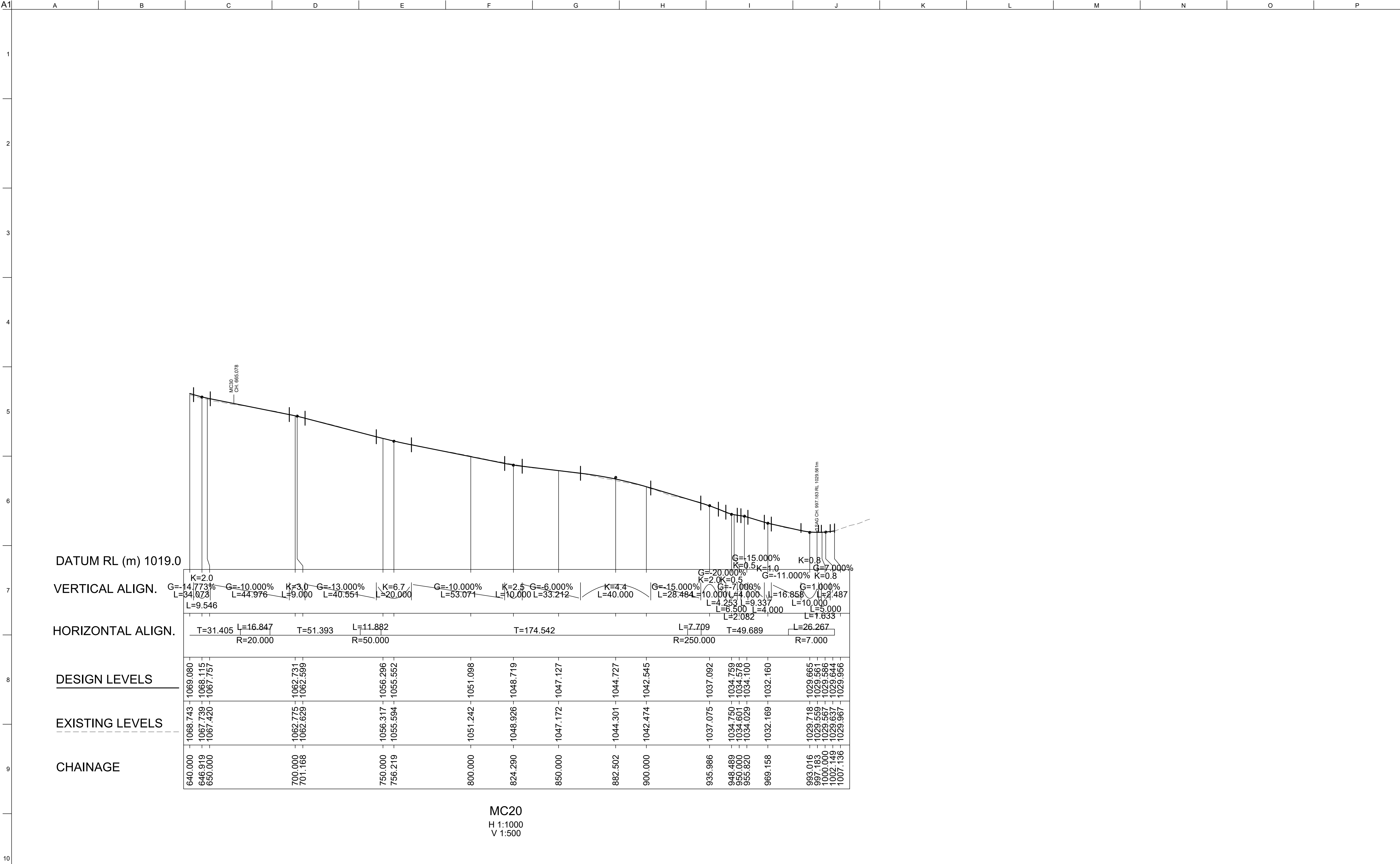
Drawing Title
ROAD
LONGITUDINAL SECTIONS
MC20 - SHEET 1 OF 2

Drawing Status
Issued For Information

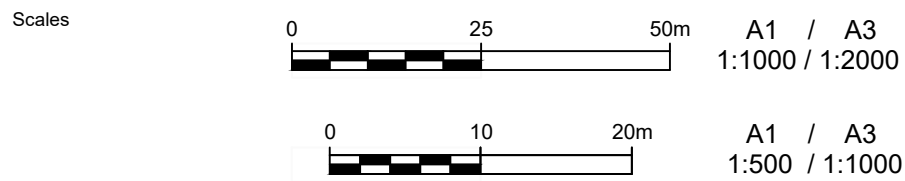
Job No 279966-00	Drawing No CICW-DRG-0351	Issue 2
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Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
AS SHOWN

Discipline
Civil

ARUP

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Drawing Title
ROAD
LONGITUDINAL SECTIONS
MC20 - SHEET 2 OF 2

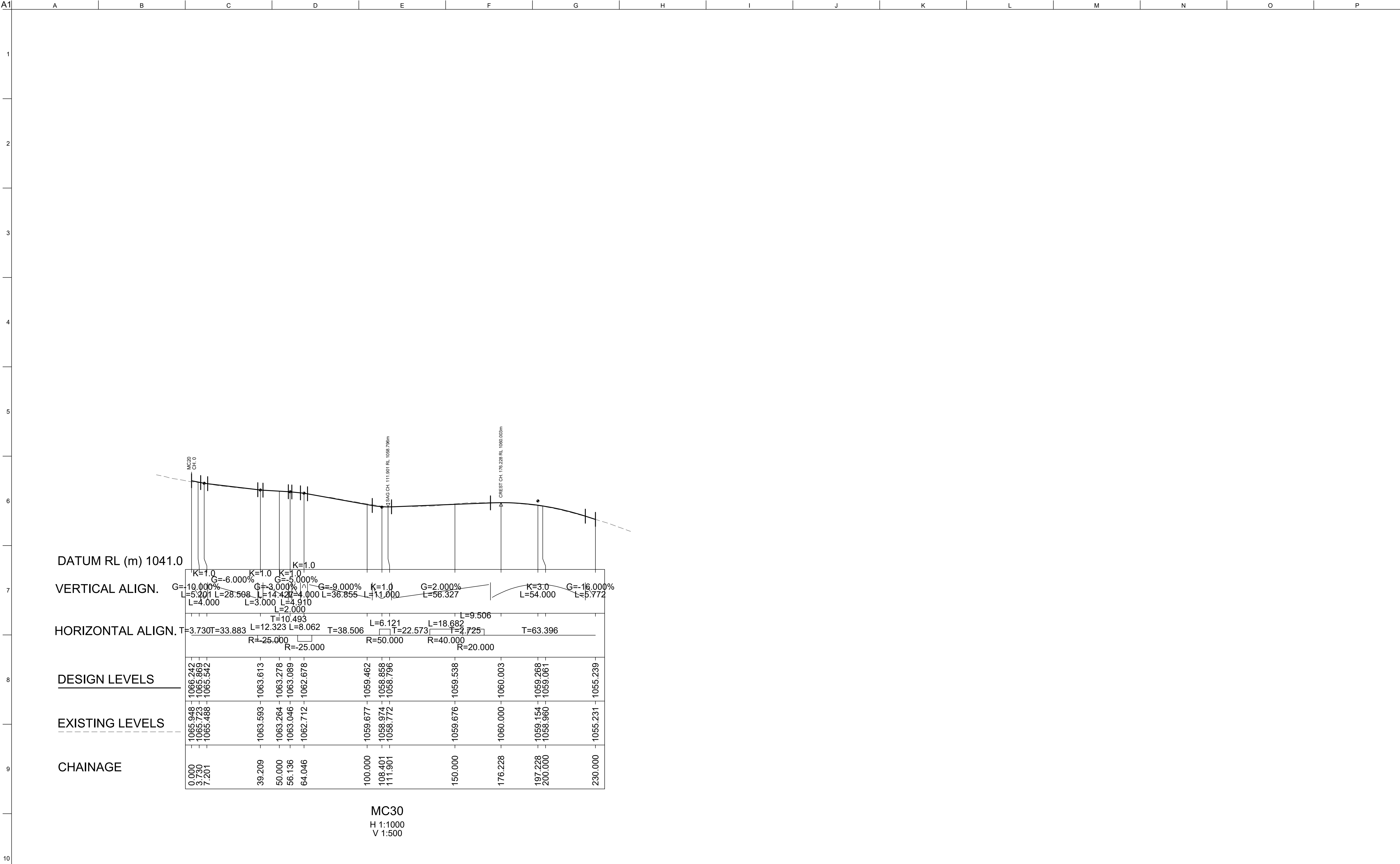
Drawing Status
Issued For Information

Job No
279966-00

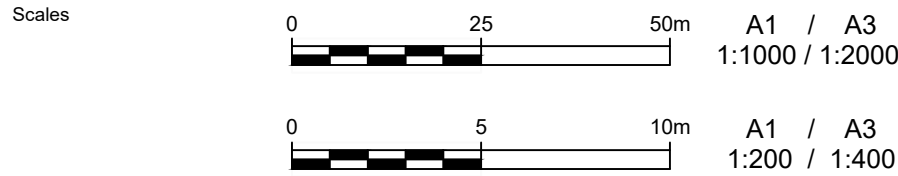
Drawing No
CICW-DRG-0352

Issue
2

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Design Model Version

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Issue	Date	By	Chkd	Appd

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FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
AS SHOWN

Discipline
Civil

ARUP

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Sydney, NSW, 2000
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www.arup.com



Member Firm
Arup Pty Ltd
ABN 76 625 912 885

Drawing Title
ROAD
LONGITUDINAL SECTIONS
MC30

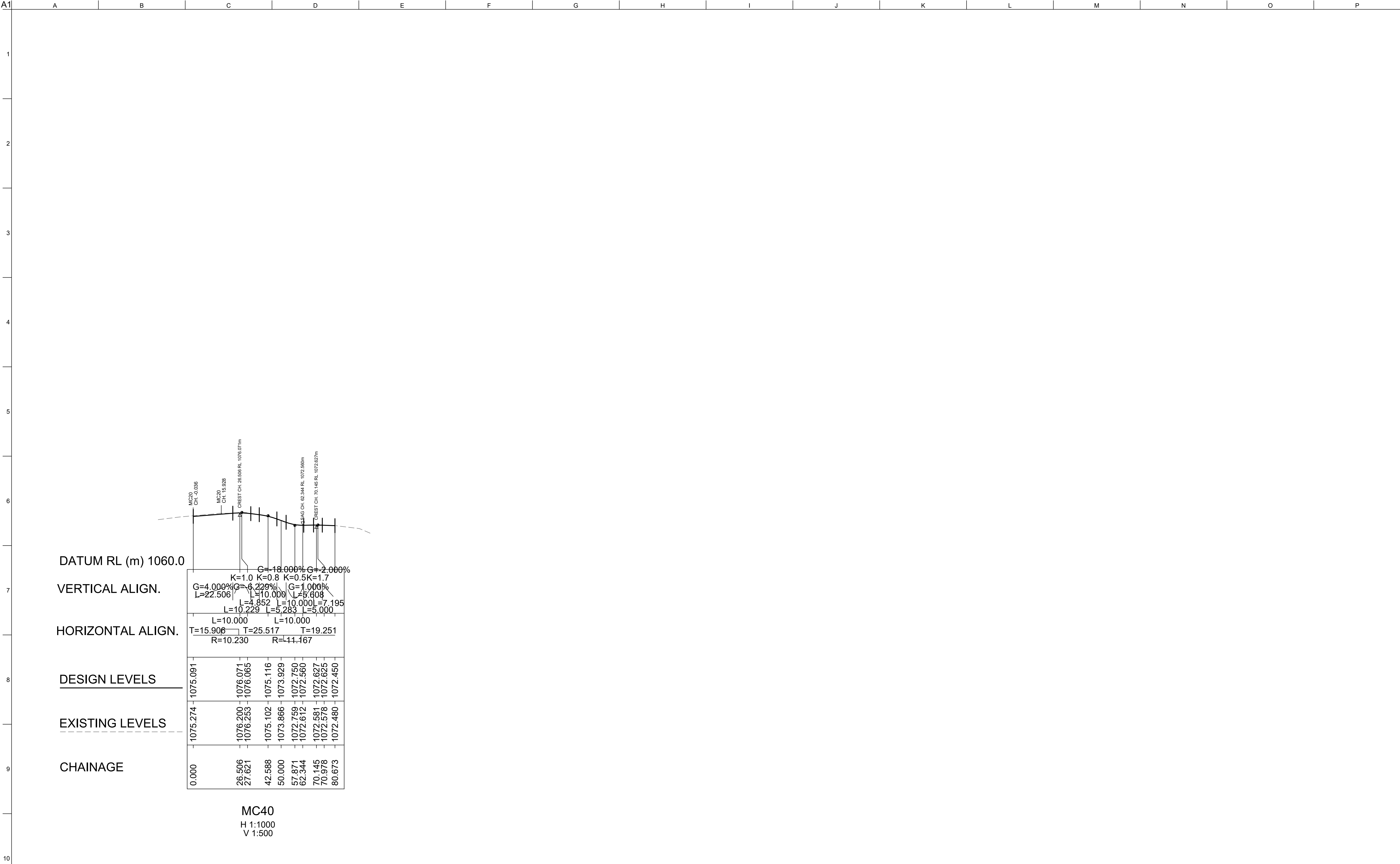
Drawing Status
Issued For Information

Job No
279966-00

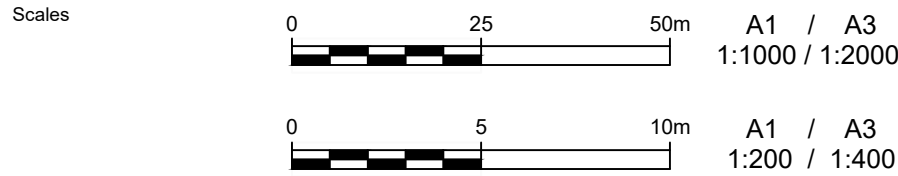
Drawing No
CICW-DRG-0361

Issue
2

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



NOT FOR CONSTRUCTION



Design Model Version

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Issue	Date	By	Chkd	Appd

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FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name:

Signature: Date:

Job Title

LAKE LYELL PHES

Scale at A1

AS SHOWN

Discipline

Civil

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ABN 76 625 912 885

Drawing Title

ROAD
LONGITUDINAL SECTIONS
MC40

Drawing Status

Issued For Information

Job No

279966-00

Drawing No

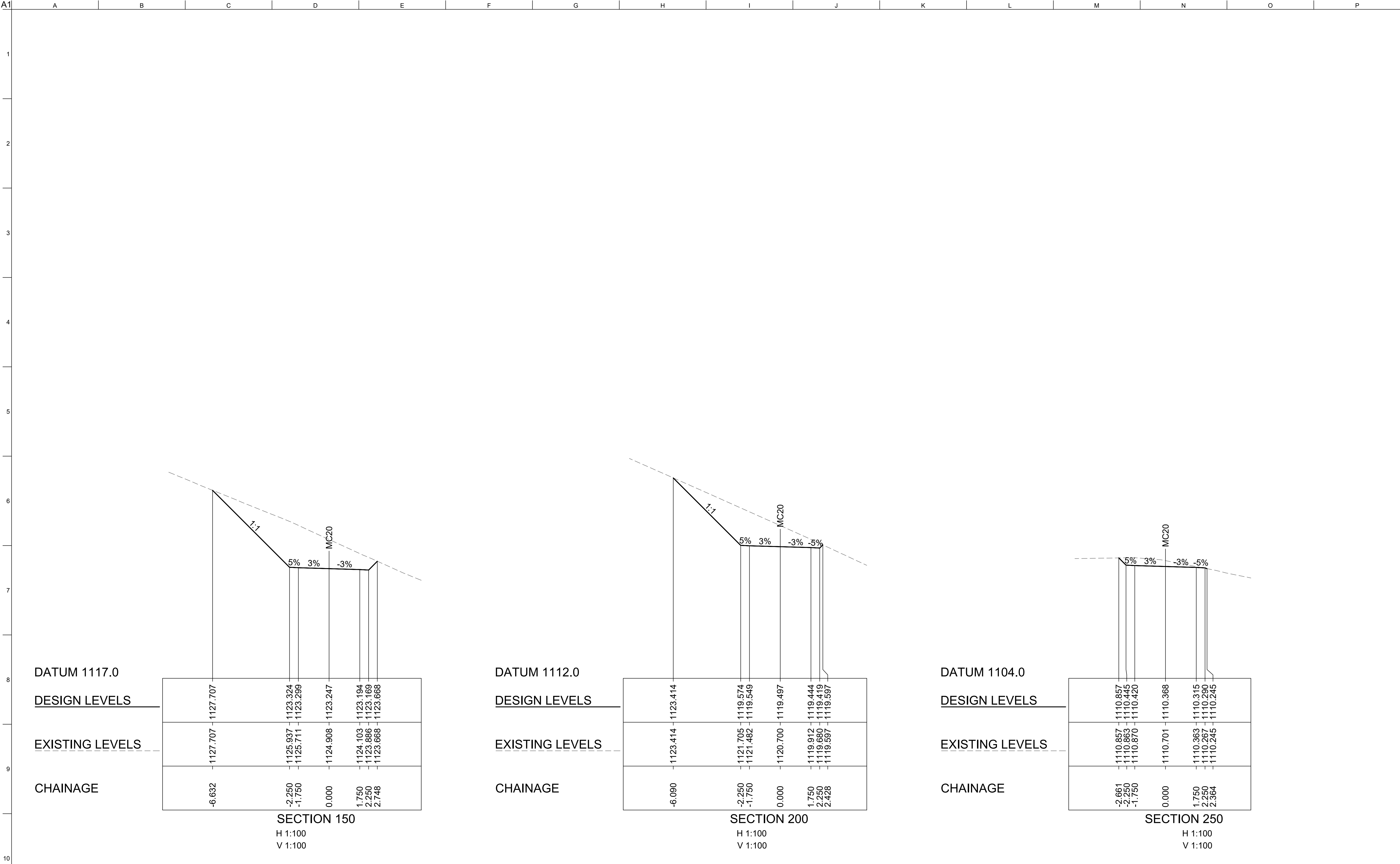
CICW-DRG-0365

Issue

2

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR





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Scales

0 2.5 5m

A1 / A3

1:100 / 1:200

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:100m

Discipline

Civil

ARUP

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Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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Drawing Title

ROAD
CROSS SECTIONS
MC20 - SHEET 2 OF 5

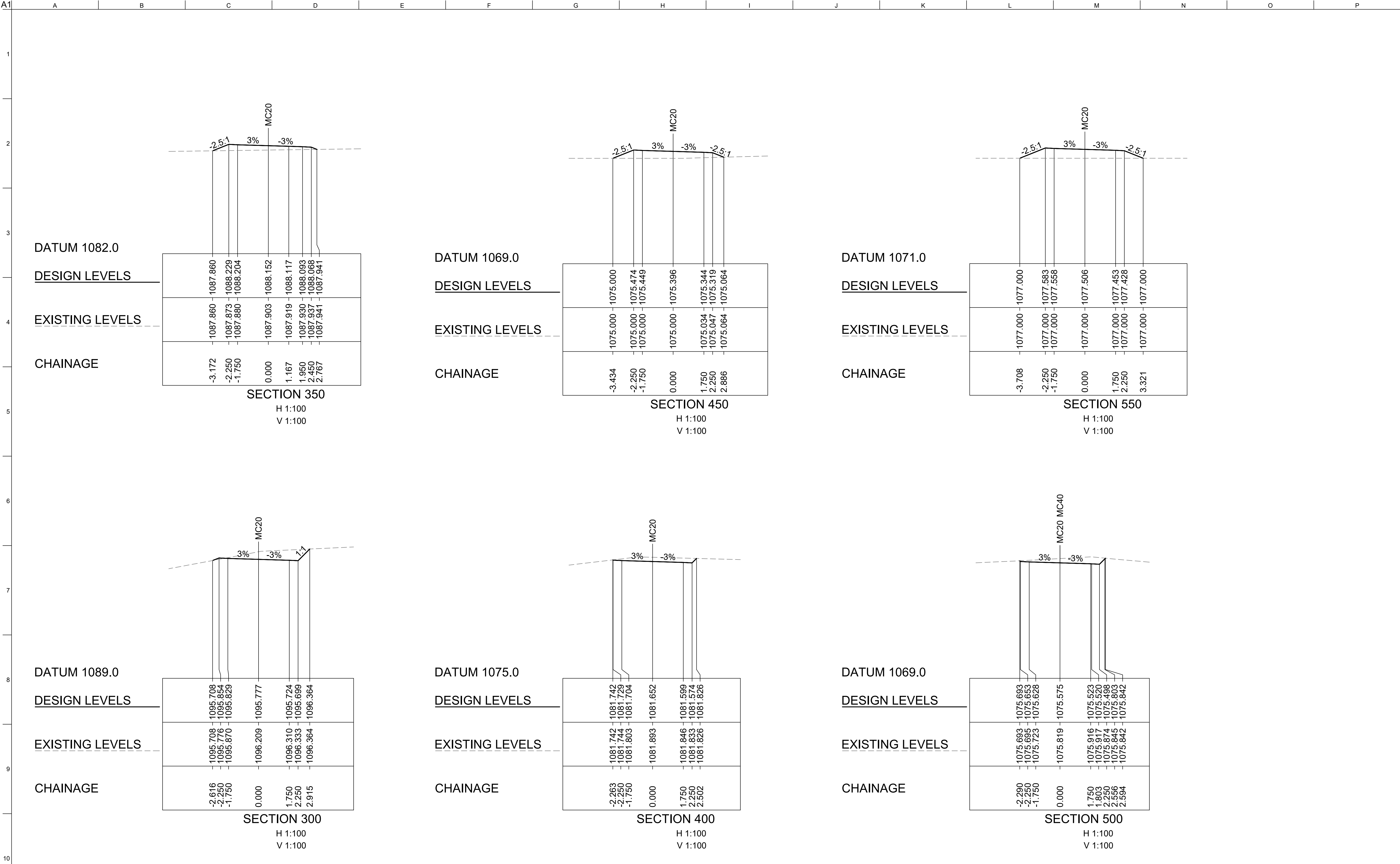
Drawing Status

Issued For Information

Job No	Drawing No	Issue
279966-00	CICW-DRG-0372	2

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Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:100m

Discipline

Civil

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Drawing Title

ROAD

CROSS SECTIONS

MC20 - SHEET 3 OF 5

Drawing Status

Issued For Information

Job No

279966-00

Drawing No

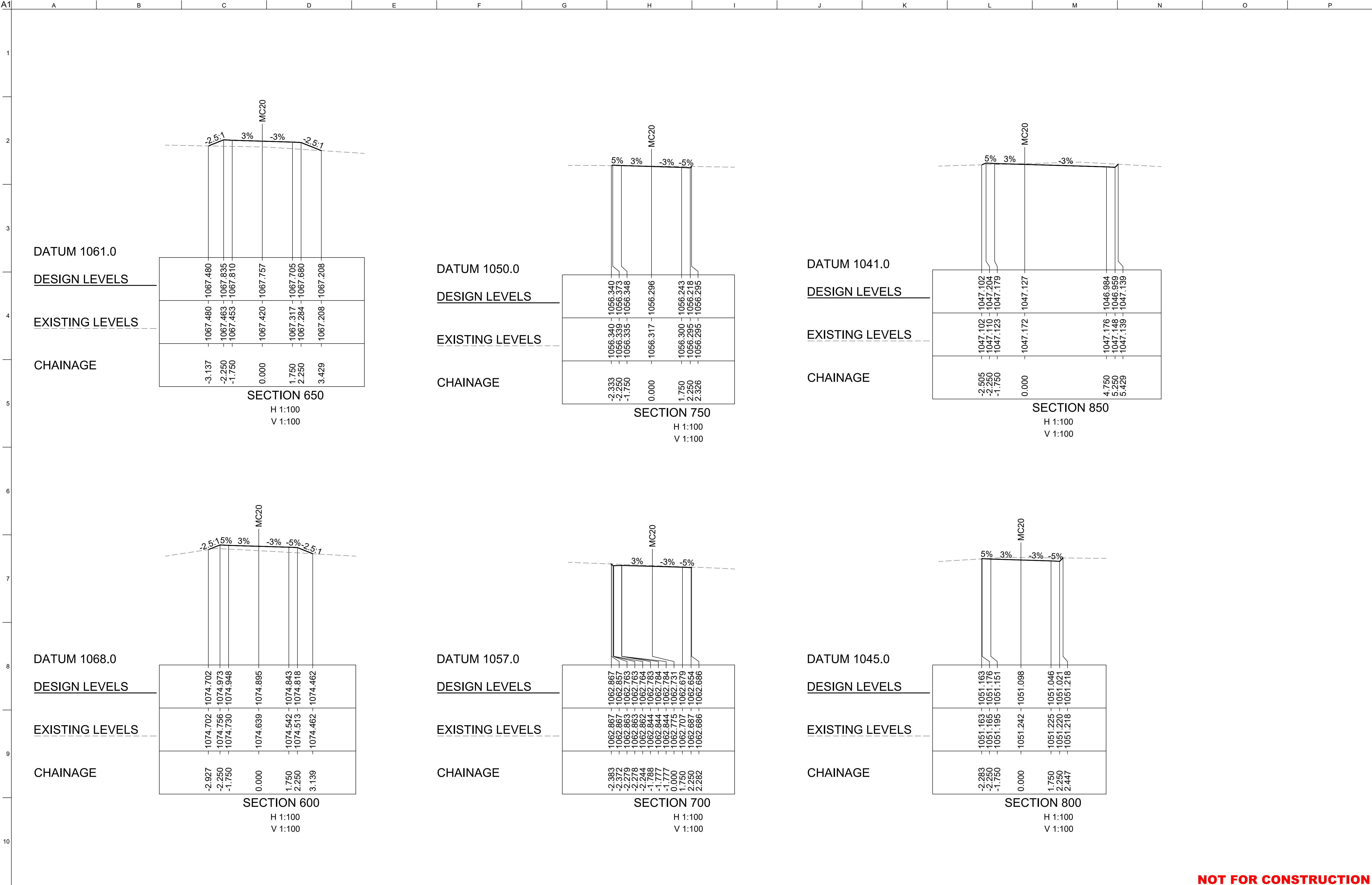
CICW-DRG-0373

Issue

2

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Scales

0 2.5 5m

A1 / A3

1:100 / 1:200

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:100m

Discipline

Civil

ARUP

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Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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Drawing Title

ROAD
CROSS SECTIONS
MC20 - SHEET 4 OF 5

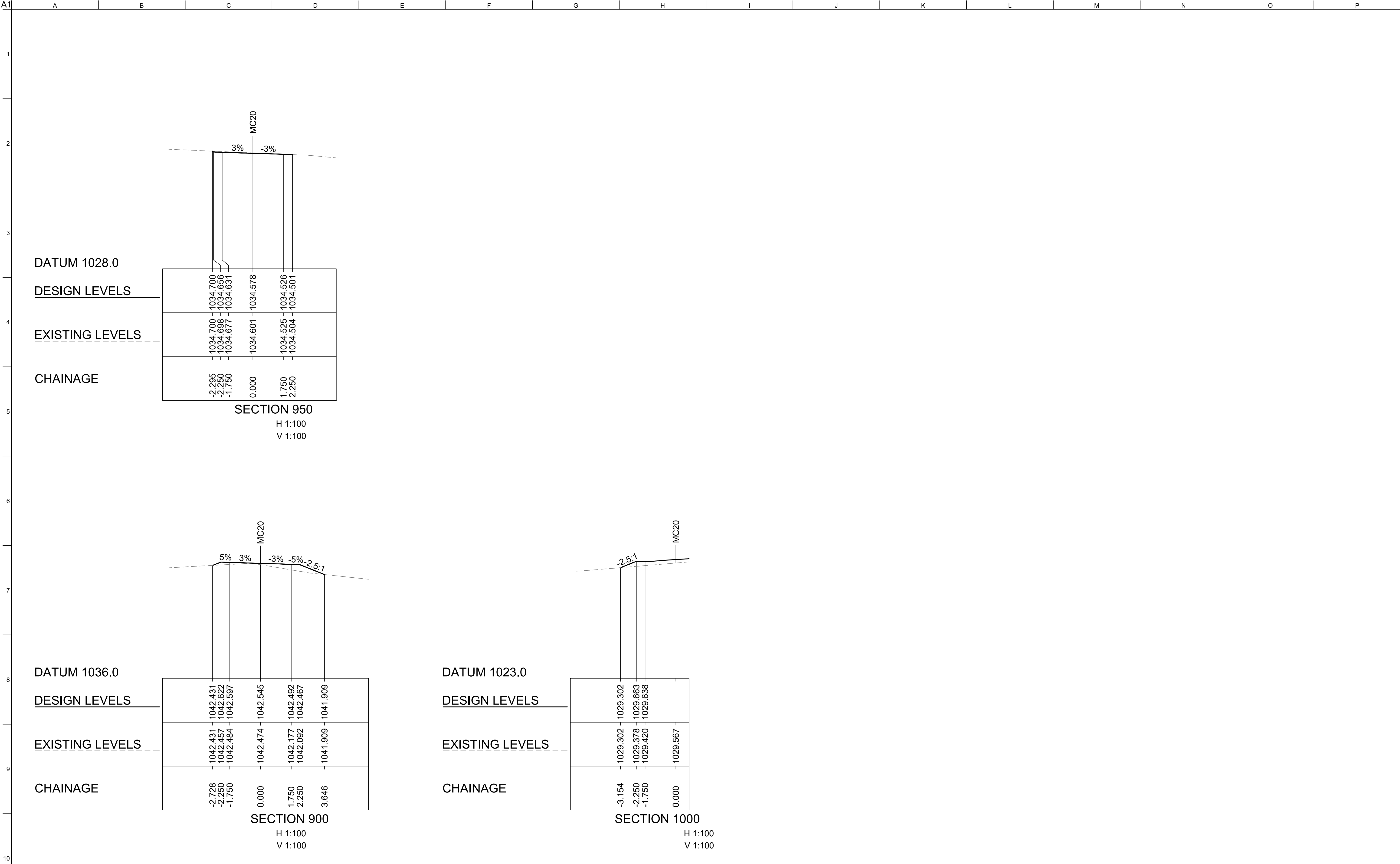
Drawing Status

Issued For Information

Job No	Drawing No	Issue
279966-00	CICW-DRG-0374	2

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Scales

0 2.5 5m

A1 / A3

1:100 / 1:200

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
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FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:100m

Discipline

Civil

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Anup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com



Drawing Title

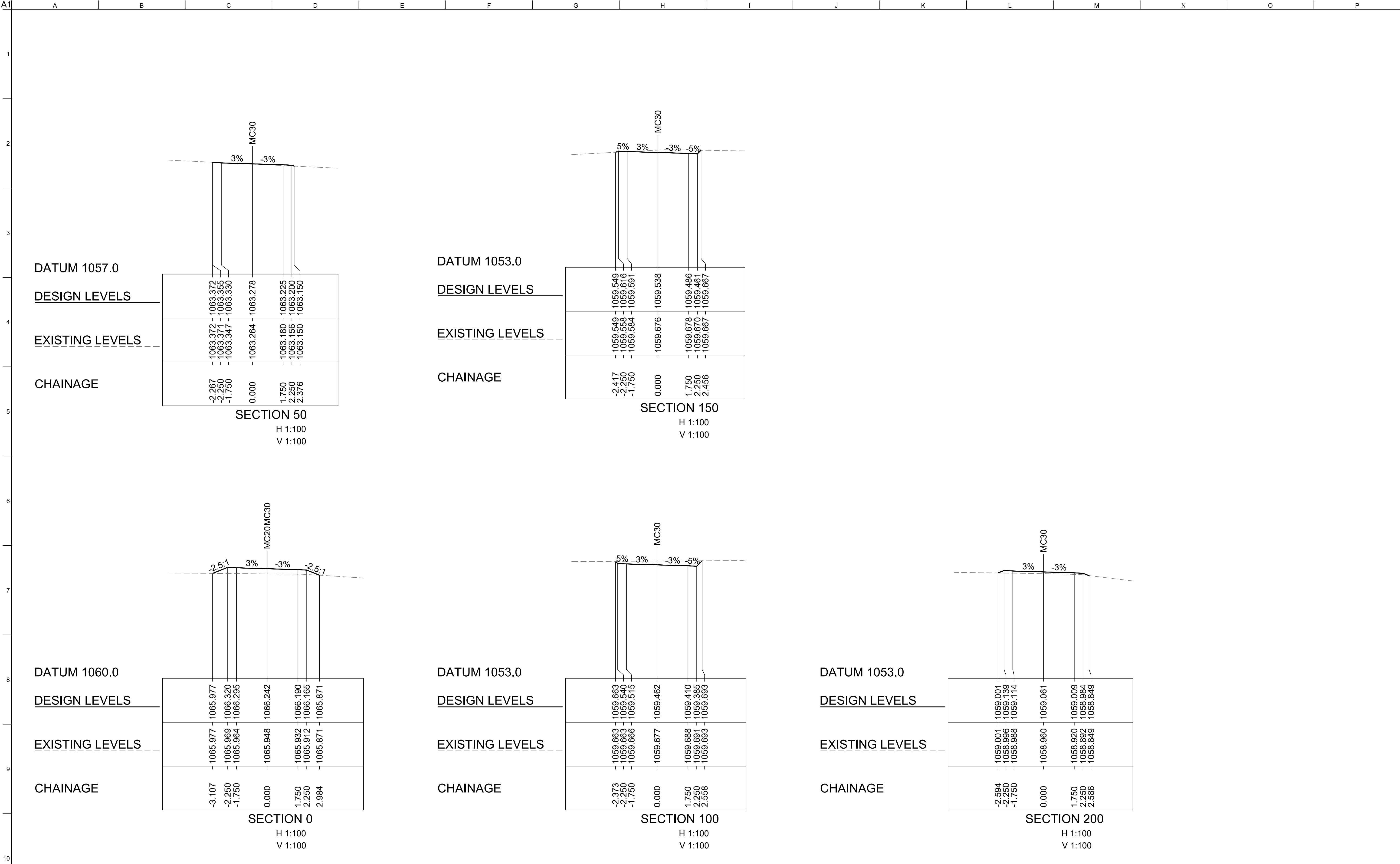
ROAD
CROSS SECTIONS
MC20 - SHEET 5 OF 5

Drawing Status

Issued For Information

Job No	Drawing No	Issue
279966-00	CICW-DRG-0375	2

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Scales

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

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FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name: _____
Signature: _____ Date: _____

Job Title
LAKE LYELL PHES

Scale at A1
1:100m
Discipline
Civil

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Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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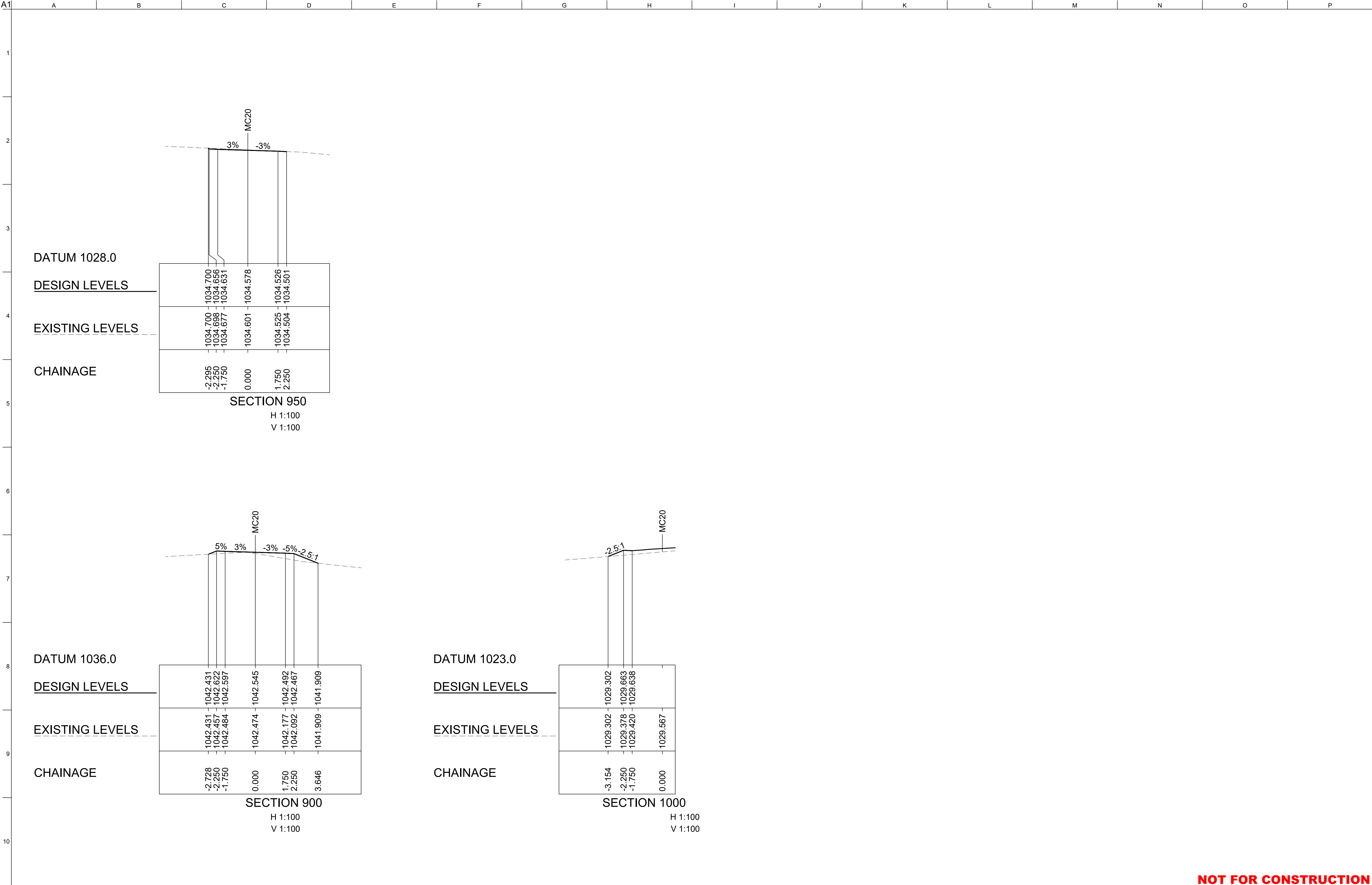
Drawing Title
ROAD
CROSS SECTIONS
MC30

Drawing Status
Issued For Information

Job No 279966-00	Drawing No CICW-DRG-0381	Issue 2
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Scales

0 2.5 5m

A1 / A3

1:100 / 1:200

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
1	26/11/21	HNA	LC	EGM
FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client

ENERGY AUSTRALIA

Engineering Certification (CEng)

Name: _____

Signature: _____ Date: _____

Job Title

LAKE LYELL PHES

Scale at A1

1:100m

Discipline

Civil

ARUP

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Sydney, NSW, 2000
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Drawing Title

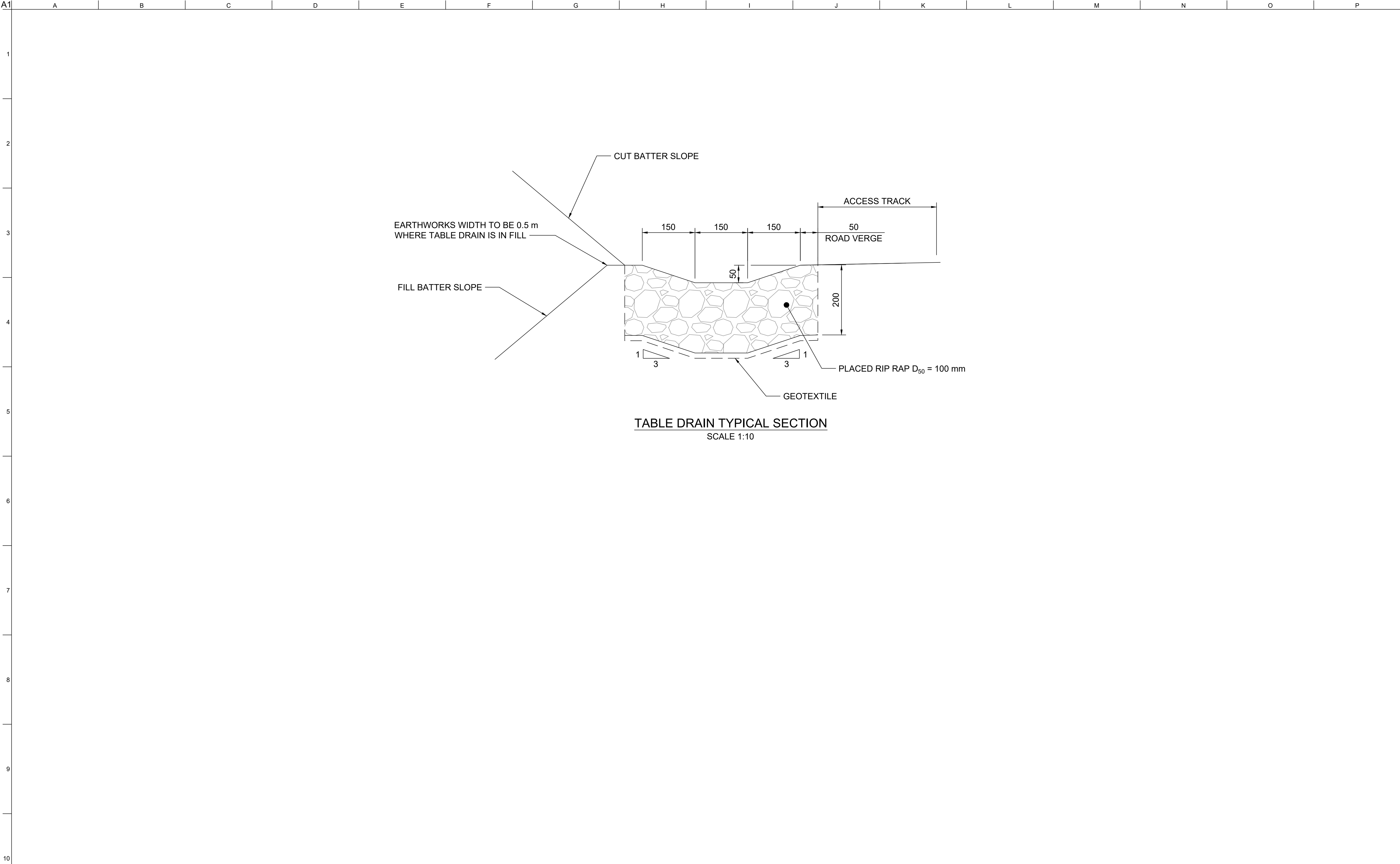
ROAD
CROSS SECTIONS
MC40

Drawing Status

Issued For Information

Job No	Drawing No	Issue
279966-00	CICW-DRG-0385	2

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NOT FOR CONSTRUCTION

Scales
0 250 500mm
A1 / A3
1:10 / 1:20

Design Model Version

Issue	Date	By	Chkd	Appd

Issue	Date	By	Chkd	Appd

2	02/02/22	AN	LC	EGM
FOR INFORMATION				
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FOR INFORMATION				
0	11/11/21	HNA	EGM	EGM
FOR INFORMATION				
Issue	Date	By	Chkd	Appd

Client
ENERGY AUSTRALIA

Engineering Certification (CEng)
Name:
Signature: Date:

Job Title
LAKE LYELL PHES

Scale at A1
1:10mm

Discipline
Civil

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Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
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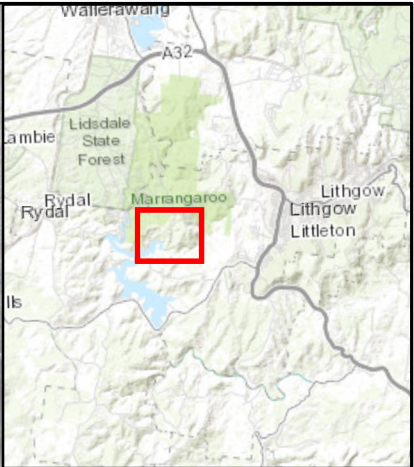
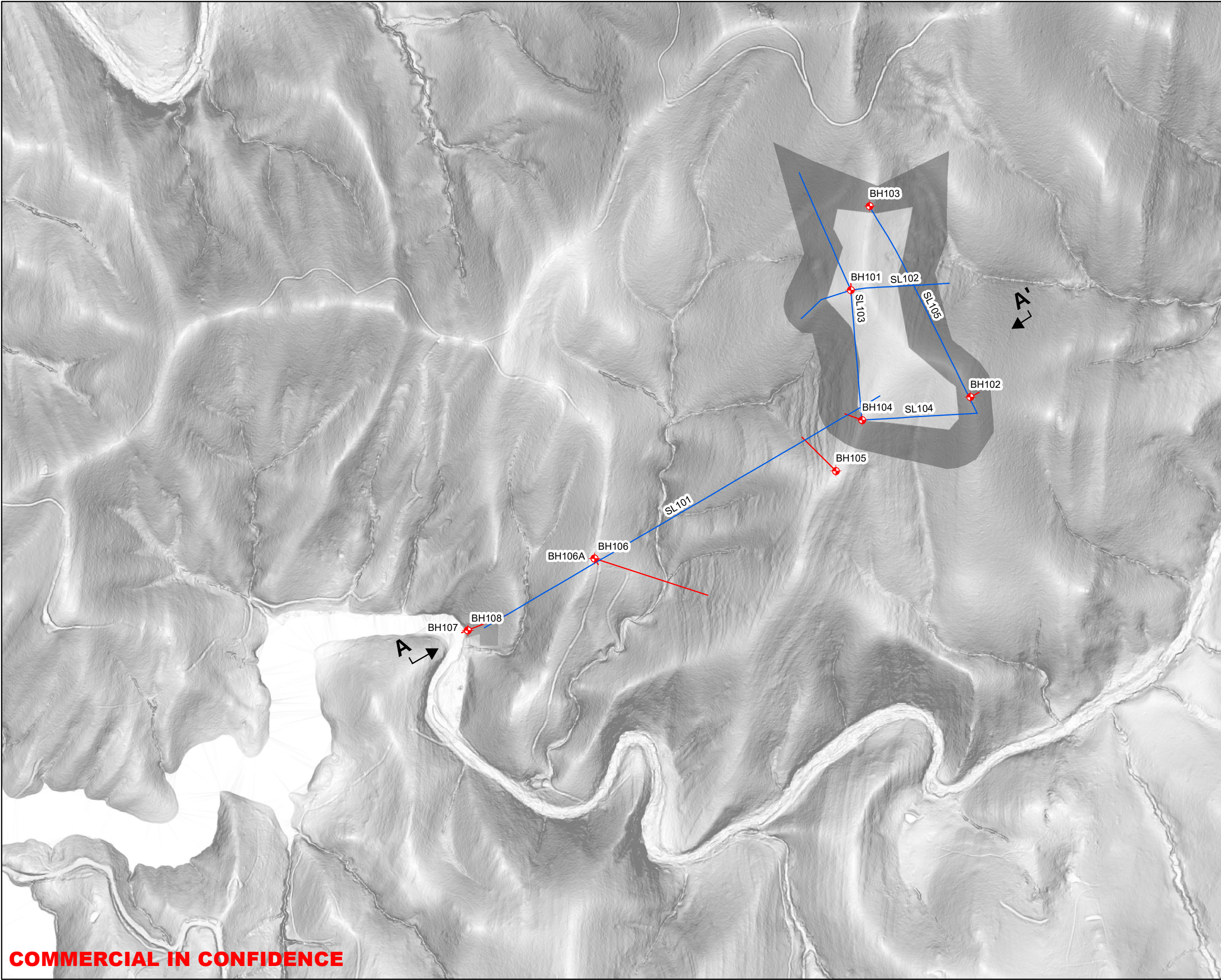


Drawing Title
CIVIL WORKS
DETAILS

Drawing Status
Issued For Information

Job No 279966-00	Drawing No CICW-DRG-0391	Issue 2
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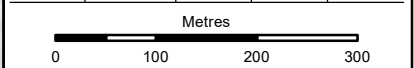
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- Proposed Borehole
- Inclined Borehole Trace
- Proposed Seismic Line
- Outlet
- Reservoir

A-A' Cross-Section

F1	8/03/2022	MLW	MLW	MLW
Issue	Date	By	Chkd	Appd



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151 Clarence St,
PO Box 76 Millers Point, Sydney NSW 2000
Tel +61 (2)9320 9320
www.arup.com

Client
Energy Australia

Job Title
Lake Lyell PHES

Figure Title
**Proposed Ground Investigation Plan -
Boreholes and Seismic Refraction Lines**

Scale at A3 1:7,500	Figure Status Final
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Coordinate System
GDA2020 MGA Zone 56

Job No 279966-00	Drawing No 001-01
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