Soil Conservation Service

SDW - Pollution Incident Response Management Plan (PIRMP)

Lake George Mine Rehabilitation, Captains Flat

The Soil Conservation Service acknowledges the traditional custodians of the land where we live and work and pays respect to Elders past, present and emerging. Through our work on what was and always will be Aboriginal land, we commit to our shared responsibility to heal and protect Country for all future generations.

Connect with us

www.scs.nsw.gov.au

scs.enquiries@scs.nsw.gov.au

www.linkedin.com/company/soil-conservation-service

Pollution Incident Response Management Plan - Lake George Mine Rehabilitation, Captains Flat.

More information

[redacted]

Document build

Version	Date	Author/Reviewer	Details/sections changed
0.1	15/11/2023	[redacted]	All – Concept for review
0.2	17/11/2023	[redacted]	All – Changes to communications and actions
0.3	17/11/2023	[redacted]	*Commentary provided via teams meeting further recommendations of communications and actions procedures
0.4	27/11/2023	[redacted]	For review
0.5	28/11/2023	[redacted]	*Commentary provided marked up PDF document
0.6	28/11/2023	[redacted]	Sent for Review – [redacted]
0.7	13/05/2024	[redacted]	Sections 3 and 7
0.8	29/07/2024	[redacted]	Departmental name change
0.9	13/05/2024	[redacted]	For application
1.0	13/08/2024	[redacted]	Addition of relevant internal stakeholders

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing, August 2024. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Soil Conservation Service or the user's independent adviser.

Contents

1. Purpose

Department of Primary Industries and Regional Development holds an Environment Protection Licence with the NSW Environment Protection Authority (EPA) for Lake George Mine, Captains Flat. As per the Protection of the Environment Operations Act 1997 (the POEO Act), the holder of an Environment Protection Licence must prepare, keep, test, and implement a pollution incident response management plan (PIRMP) that complies with Part 5.7A of the POEO Act in relation to the activity to which the licence relates.

If a pollution incident occurs during an activity so that material harm to the environment (within the meaning of section 147 of the POEO Act) is caused or threatened, the person carrying out the activity must immediately implement this plan in relation to the activity required by Part 5.7A of the POEO Act.

A copy of this plan must be kept at the licensed premises, or where the activity takes place in the case of mobile plant licences and be made available on request by an authorised EPA officer and to any person who is responsible for implementing this plan.

Parts of the plan must also be available either on a publicly accessible website, or if there is no such website, by providing a copy of the plan to any person who makes a written request. The sections of the plan that are required to be publicly available are set out in section 74 of the Protection of the Environment Operations (General) Regulation 2022.

Note: This plan must be developed in accordance with the Protection of the Environment Operations Act 1997 and the Protection of the Environment Operations (General) Regulation 2022.

Licensees should also refer to the EPA's Guideline 2022: Pollution incident response management plans.

2. Environmental Protection License (EPL) details

Name of Licensee

Department of Regional NSW

ABN: 19948325463

EPL Number

21721

Premises name and address

Lake George Mine. Miners Road, Captains Flat NSW 2623

Website address:

https://www.scs.nsw.gov.au

Scheduled activity/activities on EPL

- Establishment of the site office;
- Preparation of bunded lay down area;
- Importation and stockpiling of imported clean remedial materials (i.e. subsoil, topsoil, lime, alternative liming product etc.) to be stored in the bunded lay down area;
- Preparation of the Northern Dumps access track;
- Geotechnical investigations;
- Installation and maintenance of erosion and sediment controls across the whole site to prevent the pollution of waters.

3. Scope

If Soil Conservation Service identifies through routine or event based monitoring that a pollution incident has occurred within the Captains Flat Project site such that material harm to the environment (within the meaning of section 147 of the POEO Act) is caused or threatened, construction activity contributing to the pollution incident must immediately cease until appropriate control measures are deemed effective.

3.1. Responsibilities

3.1.1. SCS PIRMP activation

Name of person responsible: [redacted]
Position or title: Project Director
Business hours contact number/s: [redacted]
After hours contact number/s: [redacted]
Email: [redacted]

3.1.2. Notifying relevant authorities

Name of person responsible: [redacted]
Position or title: Project Manager
Business hours contact number/s: [redacted]
After hours contact number/s: [redacted]
Email: [redacted]

3.1.3. Managing response to pollution incident

Name of person responsible: [redacted]
Position or title: Environmental Manager
Business hours contact number/s: [redacted]
After hours contact number/s: [redacted]
Email: [redacted]

3.2. Notifications and Communications

3.2.1. Notification of relevant authorities

Authority	Contact Information
Environmental Protection Agency (EPA)	Ph: 131 555
Safework NSW	Ph: 131 050
Queanbeyan Palerang Regional Council	Ph: 1300 735 025
Water NSW	Ph: 1800 061 069
Department of Fisheries	Ph: (02) 4478 9100
Department of Environment & Heritage	Ph: 1300 361 967
NSW Health – Goulburn Public Health Unit (closest public health unit)	Ph: (02) 4825 4944
NSW Fire & Rescue/ NSW RFS	Ph: 000

Table 1. Relevant Authorities

3.2.2. Notification of relevant internal stakeholders

Authority	Contact Information
Legacy Mines Program [redacted]	[redacted]
NSW Public Works [redacted]	[redacted]

Table 2. Relevant Internal Stakeholder

3.2.3. Notification of neighbours and the local community

Resident	Contact Information	Method of Contact
8 Copper Creek Rd, Captains Flat	M: [redacted]	Phone call/door knock
5 Old Mines Rd, Captains Flat	M: [redacted]	Phone call/door knock
44 Old Mines Rd, Captains Flat	M: [redacted]	Phone call/door knock
66 Old Mines Rd, Captains Flat	M: [redacted]	Phone call/door knock
NSW State Emergency Service (Queanbeyan)	Ph: 13 25 00	Phone call
Department of Education (Captains Flat Public School)	Ph: (02) 6236 6253	Phone call
Palerang Regional Council Aquatics (Captains Flat Pool)	Ph: (02) 6236 6264	Phone call
QPRC (Colin Winchester Oval)	Ph: 1300 735 025	Phone call

Table 3. Neighbours

3.3. Description and likelihood of hazards and actions

3.3.1. Active contamination hazards

Hazard description	Potential impact(s)	likelihood (High/Medium/Low)
Uncontrolled Sediment dam discharge	Pollution of waters	High with an extended rainfall event that exceeds design storm event for basin sizing
Uncontrolled discharge from site generally	Pollution of waters	High given no allowable discharge site methodology.
Air pollution	Poor air quality	Medium - high winds in place/dry conditions
Hydrocarbon/chemical spill	Soil and water contamination	Medium
Contaminated material transit loss	Contamination outside REF	Low

Table 4. Hazards and Impacts

3.3.2. Pre-emptive Actions

Hazard description	Pre-emptive actions
Uncontrolled Sediment dam discharge	Appropriately sized sediment basin for design rainfall or storm event set with the EPA. Appropriately designed CDU tanks to treat water to desired water quality in discussions with the EPA. Management review of TARP locations, meteorological observations and forecasts, inspection, and analysis of water storage systems pre, duration and post event
Uncontrolled discharge from site generally	Maintain site in accordance with approved Surface Water Management plan, specifically directing maximum disturbed catchment areas to basins Instigate appropriate controls at end of shift or prior to rainfall events. Minimise disturbed areas. Progressively stabilise disturbed areas.
Air pollution	Air quality monitoring, management review of monitoring locations, utilisation of trigger alarm, monitor or stop works during high winds, operator awareness and work methodology, utilisation of dust suppression techniques (tamping stockpiles, surface wetting, tackifiers, dust suppressants

Hydrocarbon/chemical spill	Education of staff to correct response and reporting procedure, plant maintenance records, correct storage and transportation of hydrocarbons and chemicals, pre-start checks, availability to spill kits, correct refuelling procedures, dedicated maintenance area, correct disposal of contaminated material
Contaminated material transit loss	Covered loads &/or material conditioning (wetting), site speed limits, correct operator behaviour

Table 5. Hazards and Impacts

3.4. Inventory of Pollutants

Potential pollutant/Location	Amount
Flocculant (TBA) - Sediment dams	TBA
Fuels (TBA) and Fuel storage container at main compound area	TBA
Alternative lime product/ Mill stockpile area	5000 m^3
In-situ contaminated soils (Lead, Zinc and associated metals)/ site wide)	70,000 m^3

Table 6. Pollutants Inventory

3.5. Environmental Harm Minimisation

3.5.1. Insitu-Water

Water within permanent basins to be treated to allow for onsite re-use. Surface Water Management plan to reasonably consider risk of pollution event and on-ground works to ensure compliance with Surface Water Management Design. Current surface water methodology intent is not discharging any site water to the surrounding environment within design storm criteria; however, this requires further investigation for feasibility in construction phase.

3.5.2. Safety Equipment and general controls

Safety Equipment including but not limited to;

- Engagement of suitably qualified onsite occupational hygienist specialist to advice upon safe work controls for construction activities
- Site specific PPE and education on how to use correctly.
- Use of wet decontamination unit/s
- Appropriate use of Red/Green demarcation and exclusion zones
- Use of appropriate chemical dosing unit/s (CDU) for insitu water treatment
- Appropriately sized water storage systems
- Implementation of erosion and sediment controls
- Use of clean water (run-on water) diversions
- Readily available general and marine spill kits
- Complaint Fuel and Chemical Storage container
- Regular inspection regime

3.5.3. Communicating with neighbours and the local community

SCS to engage with appropriate project stakeholders' to ensure regular communications to surrounding residents with information that can minimise the risk of harm and exposure to site contaminants.

Information that can minimise the risk of harm (but not limited to);

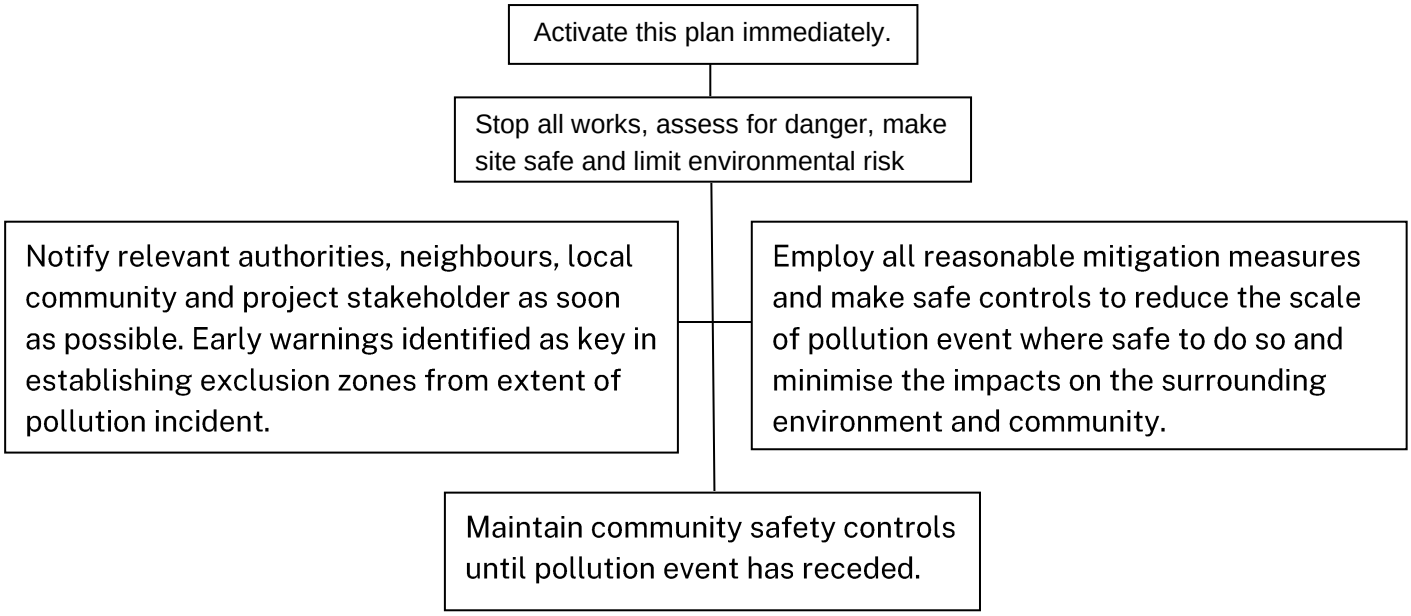
- Water Pollution: Avoid use of waters from the Molonglo river or any water stored within the site defined basins
- Air Pollution: Avoid/limit going outside where within construction site or defined exclusion zone, if to go outside, wear a suitable PPE face mask, Do not hang clothes outside to dry and thoroughly wash any home grown fruit/vegetables before consumption, if driving through active site ensure vehicle has windows up and air conditioning on re-circulation.
- Follow instruction from construction site staff and do not enter construction site exclusion zones.

3.5.4. Minimising harm to persons surrounding the workplace.

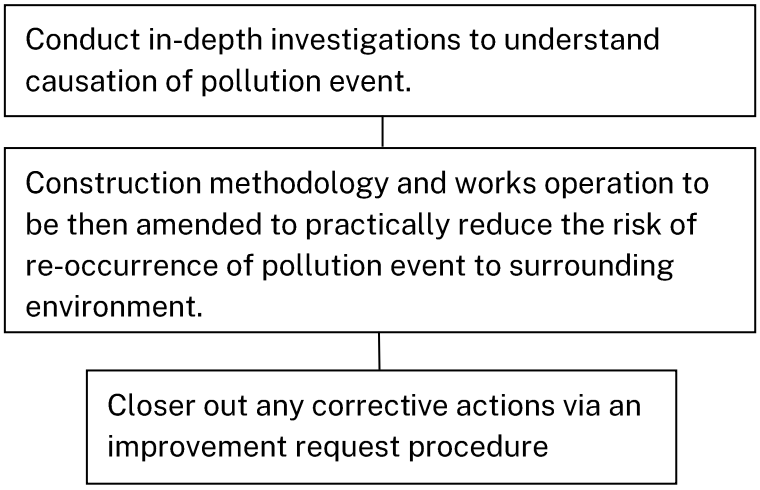
Works to ensure that construction site activities have appropriate exclusion zones from any members of the public. Exclusion zones to be as per direction of specialist occupational hygiene specialist and onsite construction site managers. Monitoring equipment to be readily used and engaged to ensure that construction works does not adversely impact the greater surrounding environment and public.

4. Actions to be taken during or immediately after a pollution incident.

Actions taken during and immediately after;



Actions taken after pollution event;



5. Coordinating with persons

Communications are to be as per section 3.1:

Project Director, [redacted] to activate the PIRMP;
Project Manager, [redacted] to notify relevant authorities, staff and stakeholders;
Project Manager, [redacted] to manage pollution incident;

All communications from Soil Conservation Service are to be made through the Project Director, [redacted]

6. Staff Training

Pollution response to be tool-boxed in regular intervals with consideration to work sequence tasks. Staff to be educated on correct ERSED and surface water management controls. All controls to be in accordance with approved surface water management plan.

Pollution response drill to be conducted during project lifecycle to ensure compliance with this PIRMP and be tailored to appropriately manage the risks in-line with project work sequence activities.

7. Testing and updating of the PIRMP

Upkeep of Test register to track events and PIRMP testing/updates (at a minimum every 12 months or within 1 month of pollution incident). Testing and update of the PIRMP to consider the current work sequences of the project.

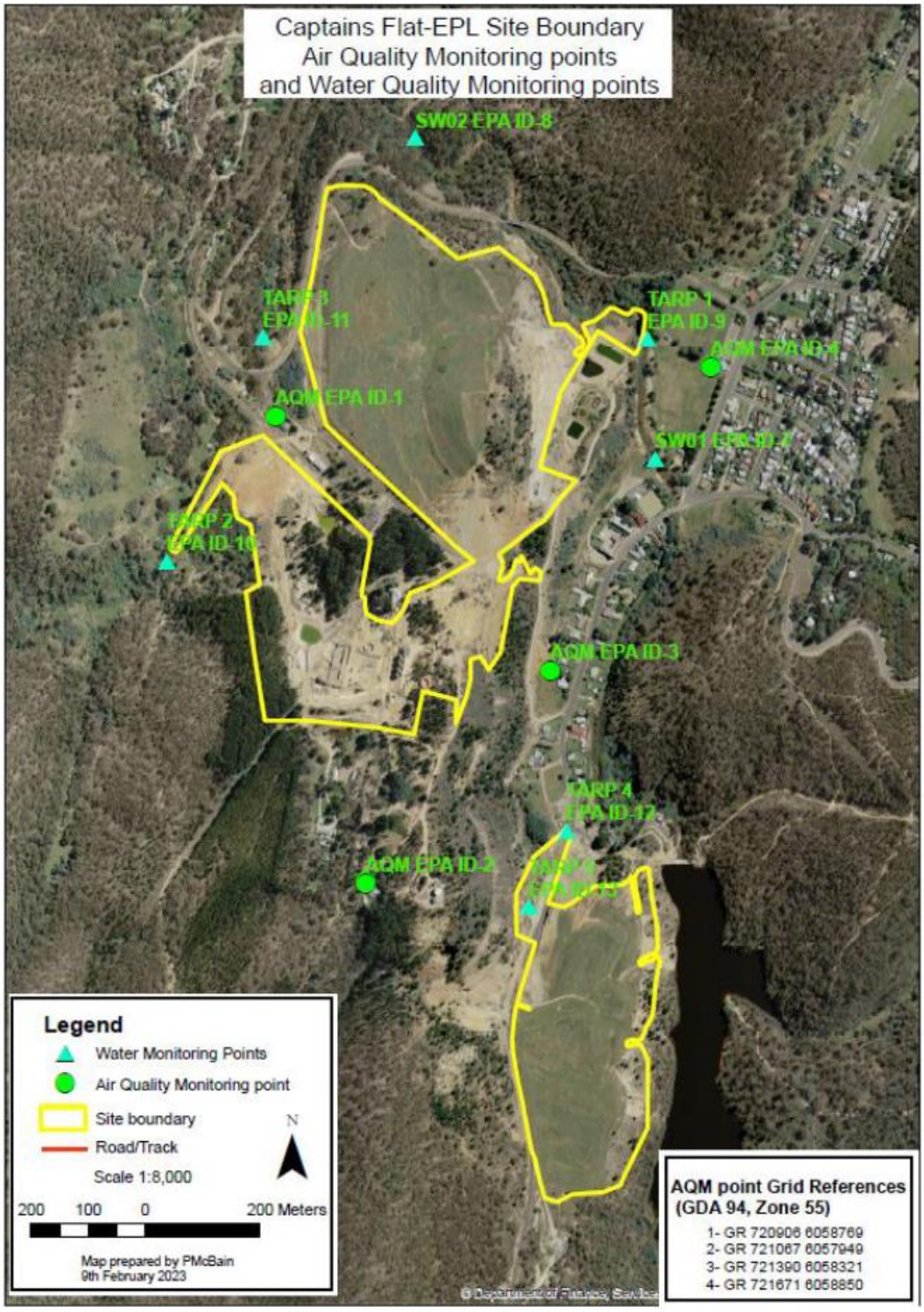
Records to be updated and stored in CM10 content manager.

Responsible personnel:

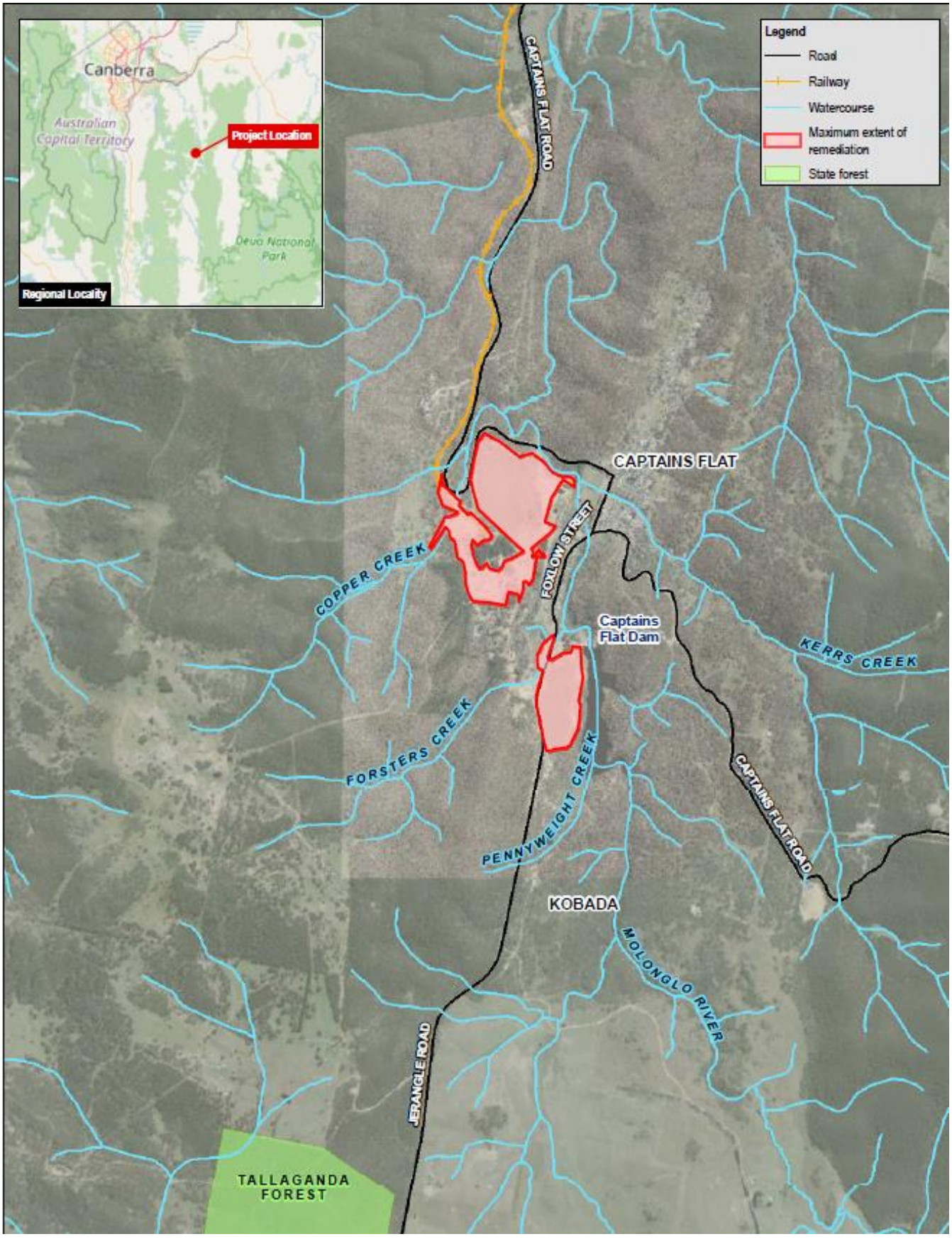
Project Director, [redacted] to activate the PIRMP;
Project Manager, [redacted] to action the PIRMP test drill.

8. Maps

8.1. Air Quality Monitoring and Water Quality Monitoring Locations



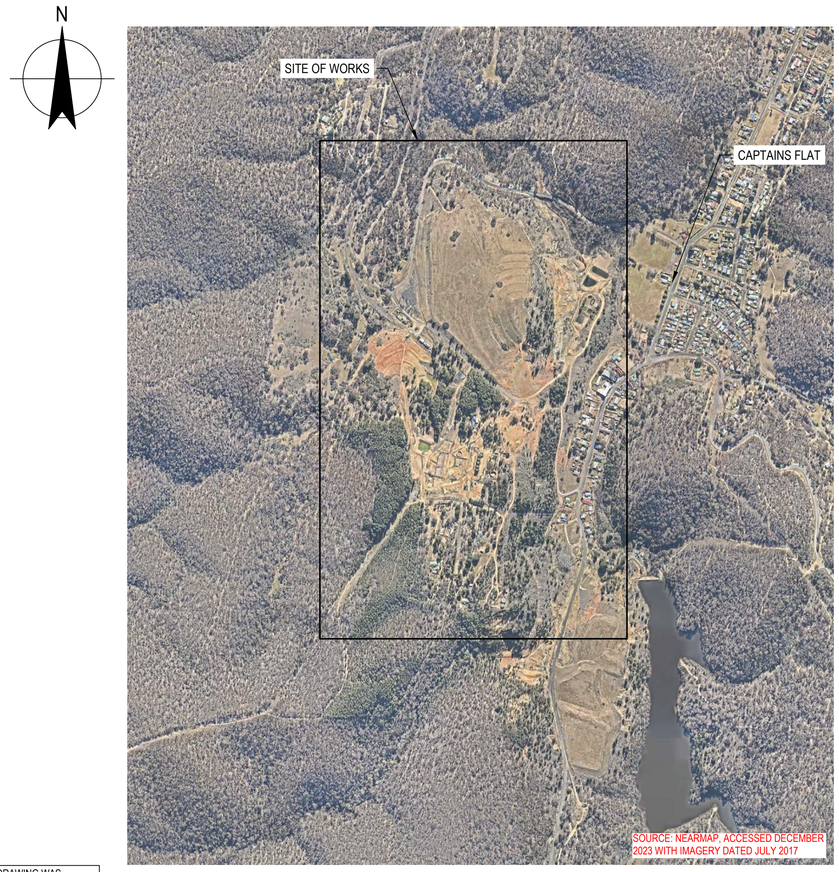
8.2. Site Remediation Location



8.3. Design Remediation Intent

See next page.

DEPARTMENT OF REGIONAL NSW
LAKE GEORGE MINE, CAPTAINS FLAT
CAPPING AND REVEGETATION WORKS
12581924



LOCALITY PLAN
SCALE NTS

THE ORIGINAL OF THIS DRAWING WAS PRODUCED USING COLOUR SEPARATION FOR GREATER CLARITY. WORKING WITH A BLACK AND WHITE COPY MAY CAUSE ERRORS. IF THIS DRAWING IS NOT IN COLOUR THEN YOU DO NOT HAVE THE CORRECT PRESENTATION.

DRAWING LIST

DRG No.	DRAWING TITLE
12581924-C001	COVER SHEET, LOCALITY PLAN AND DRAWING LIST
12581924-C002	EXISTING SITE LAYOUT
12581924-C003	GENERAL ARRANGEMENT
12581924-C004	TYPICAL SECTIONS AND DETAILS
12581924-C008	CONTAINMENT CELL LAYOUT PLAN
12581924-C009	CONTAINMENT CELL INDICATIVE FINAL LANDFORM
12581924-C010	CONTAINMENT CELL LONG SECTION
12581924-C011	CONTAINMENT CELL CROSS SECTION SHEET 1 OF 5
12581924-C012	CONTAINMENT CELL CROSS SECTION SHEET 2 OF 5
12581924-C013	CONTAINMENT CELL CROSS SECTION SHEET 3 OF 5
12581924-C014	CONTAINMENT CELL CROSS SECTION SHEET 4 OF 5
12581924-C015	CONTAINMENT CELL CROSS SECTION SHEET 5 OF 5
12581924-C016	CONTAINMENT CELL TYPICAL SECTIONS AND DETAILS
12581924-C017	CONTAINMENT CELL TYPICAL FILL STAGING
12581924-C018	COPPER CREEK WORKS LAYOUT PLAN
12581924-C019	COPPER CREEK WORKS CROSS SECTION

DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION. WHERE THE DRAWINGS & THE SPECIFICATION DO NOT AGREE, THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE CLIENT'S REPRESENTATIVE.

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author	R. LOPEZ	Drafting Check	
Designer	M. LE	Design Check	

NOT TO SCALE

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Project No. 12581924

Client: DEPARTMENT OF REGIONAL NSW

Project: LAKE GEORGE MINE, CAPTAINS FLAT

Status: PRELIMINARY Status Code: S4

Drawing Title: CAPPING AND REVEGETATION WORKS
COVER SHEET, LOCALITY PLAN AND DRAWING LIST

Drawing No. 12581924-C001

Size: A1

Rev: B

Plot Date: 25 January 2024 - 12:39 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C001.dwg

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FOR CONTINUATION BELOW SEE INSET

LEGEND:

- EXISTING SURFACE
- HYDROLINES
- EXISTING FLOW PATH
- REHABILITATION AND CAPPING EXTENTS (REFER NOTES 2 AND 3)

NOTES:

1. EXISTING SURVEY AND AERIAL SUPPLIED BY SEAM SPATIAL DATED 14 NOVEMBER 2023
2. ALL AREAS AND LOCATIONS ARE APPROXIMATE (REFER NOTE 3)
3. EXTENT OF REHABILITATION AND CAPPING AREAS TO BE CONFIRMED BY CLIENT'S REPRESENTATIVE AS PART OF CLEARING AND GRUBBING
4. CONTRACTOR COMPOUND, SET DOWN AND STOCKPILING AREAS TO BE CONFIRMED BY CLIENT'S REPRESENTATIVE PRIOR TO SITE MOBILISATION
5. CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES WITH THE CLIENT'S REPRESENTATIVE PRIOR TO INITIATION OF THE WORKS. CONTRACTOR SHALL PROTECT EXISTING SERVICES FOR THE ENTIRE DURATION OF THE WORKS, AND MAKE GOOD ANY DAMAGE INCURRED
6. CONTRACTOR TO CONFIRM LOCATION OF SURVEY BENCHMARKS WITH THE CLIENT'S REPRESENTATIVE PRIOR TO INITIATION OF THE WORKS
7. CONTRACTOR TO NOTIFY CLIENT'S REPRESENTATIVE FOR APPROVAL PRIOR TO REMOVAL OF ANY TREES OR LARGE PLANTS
8. NO EXISTING STRUCTURES SHALL BE DAMAGED OR REMOVED WITHOUT WRITTEN CONSENT FROM THE CLIENT'S REPRESENTATIVE

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

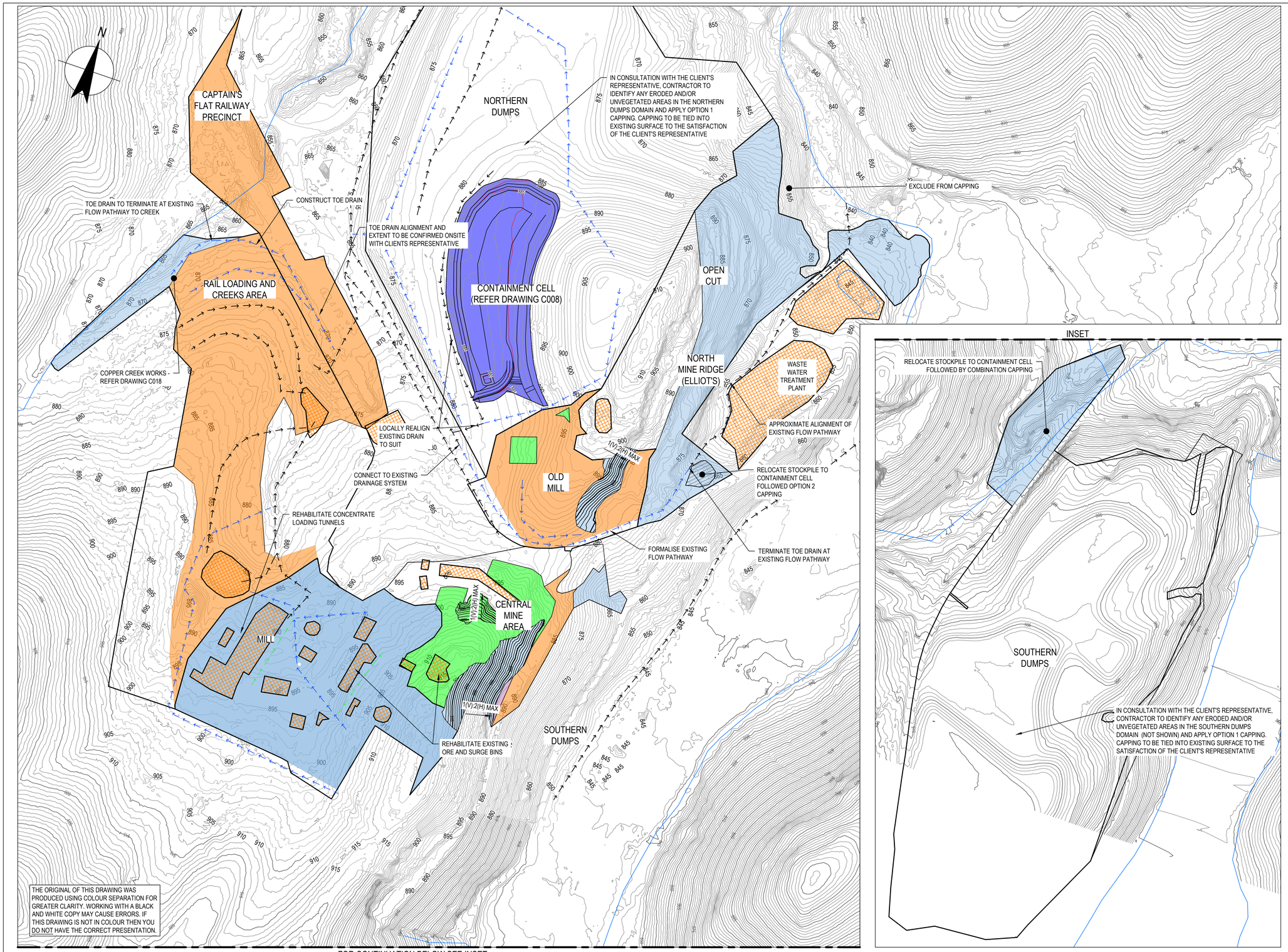
Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS EXISTING SITE LAYOUT

Size A1

Drawing No. 12581924-C002 Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C002.dwg



LEGEND:

- EXISTING SURFACE
- HYDROLINES
- EXISTING FLOW PATH
- PROPOSED FLOW PATH
- PROPOSED SUBSOIL DRAIN
- REHABILITATION AND CAPPING EXTENTS (APPROX.)
- EXISTING INFRASTRUCTURE (APPROX.)
- OPTION 1 CAPPING
- OPTION 2 CAPPING
- OPTION 3 CAPPING
- OPTION 4 CAPPING
- CONTAINMENT CELL
- COMBINATION CAPPING (REFER NOTE 5)

NOTES:

1. REFER NOTES ON DRG C002.
2. CONTRACTOR TO ARRANGE FOR A SUITABLY QUALIFIED STRUCTURAL AND/OR GEOTECHNICAL ENGINEER TO INSPECT ALL EXISTING STRUCTURES IN THE PROPOSED CAPPING AREAS TO CONFIRM CAPPING EXTENT, OFFSET, TERMINATION AND TIE-IN ADJACENT TO THESE STRUCTURES.
3. ALL DRAINAGE TO BE CONSTRUCTED WITH MINIMUM 1% LONGITUDINAL FALL.
4. ALL DRAINAGE ALIGNMENTS ARE CONSIDERED INDICATIVE AND SHOULD BE SET-OUT AND CONFIRMED ON-SITE WITH CLIENT'S REPRESENTATIVE TO ACHIEVE MINIMUM SLOPE REQUIREMENTS.
5. CLIENT'S REPRESENTATIVE TO CONFIRM FINAL EXTENTS, PROPORTIONS AND CAPPING TYPES FOR COMBINATION CAPPING AREAS FOLLOWING CLEARING AND GRUBBING.

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PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ — Drafting Check
Designer M. LE — Design Check

0 20 40 60 80 100m
SCALE 1:2000 AT ORIGINAL SIZE

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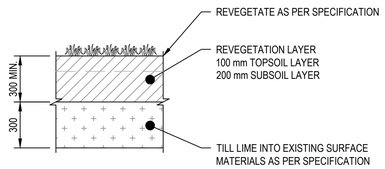
Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW
Project LAKE GEORGE MINE, CAPTAINS FLAT
Status PRELIMINARY — Status Code S4

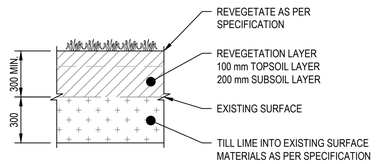
Drawing Title CAPPING AND REVEGETATION WORKS GENERAL ARRANGEMENT
Size A1
Drawing No. 12581924-C003
Rev B

Plot Date: 25 January 2024 - 1:00 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C003.dwg



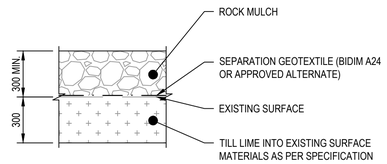
1 - DETAIL SCALE 1 : 20

TYPICAL CAPPING PROFILE
OPTION 1



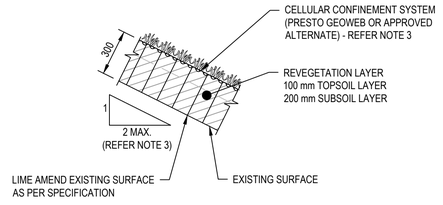
2 - DETAIL SCALE 1 : 20

TYPICAL CAPPING PROFILE
OPTION 2



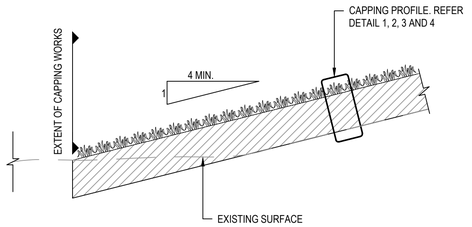
3 - DETAIL SCALE 1 : 20

TYPICAL CAPPING PROFILE
OPTION 3



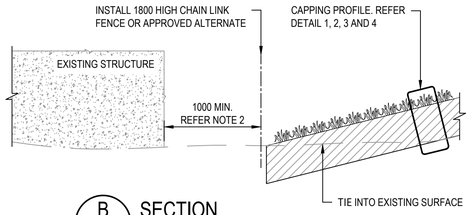
4 - DETAIL SCALE 1 : 20

TYPICAL CAPPING PROFILE
OPTION 4



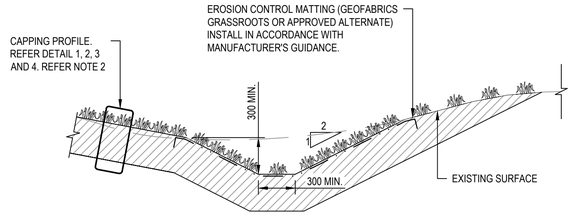
A - SECTION SCALE 1 : 25

TYPICAL TIE-IN WITH EXISTING SURFACE
(CAPPING TERMINATION)



B - SECTION SCALE 1 : 25

TYPICAL CAPPING TERMINATION AT
EXISTING STRUCTURE



C - SECTION SCALE 1 : 25

TIE-IN WITH EXISTING SURFACE
AND TYPICAL PERIMETER DRAIN

NOTES:

1. REFER NOTES ON DRG C002 AND C003.
2. CONTRACTOR TO ARRANGE FOR A SUITABLY QUALIFIED STRUCTURAL AND/OR GEOTECHNICAL ENGINEER TO INSPECT ALL EXISTING STRUCTURES IN THE PROPOSED CAPPING AREAS TO CONFIRM CAPPING EXTENT, OFFSET, TERMINATION AND TIE-IN ADJACENT TO THESE STRUCTURES.
3. FINAL GRADING AND INSTALLATION METHOD FOR CELLULAR CONFINEMENT SYSTEM TO BE CONFIRMED IN CONSULTATION WITH THE MANUFACTURER BASED ON REVEGETATION MATERIAL PROPERTIES.

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ Drafting Check
Designer M. LE Design Check

0 200 400 600 800 1000mm
SCALE 1:20 AT ORIGINAL SIZE

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

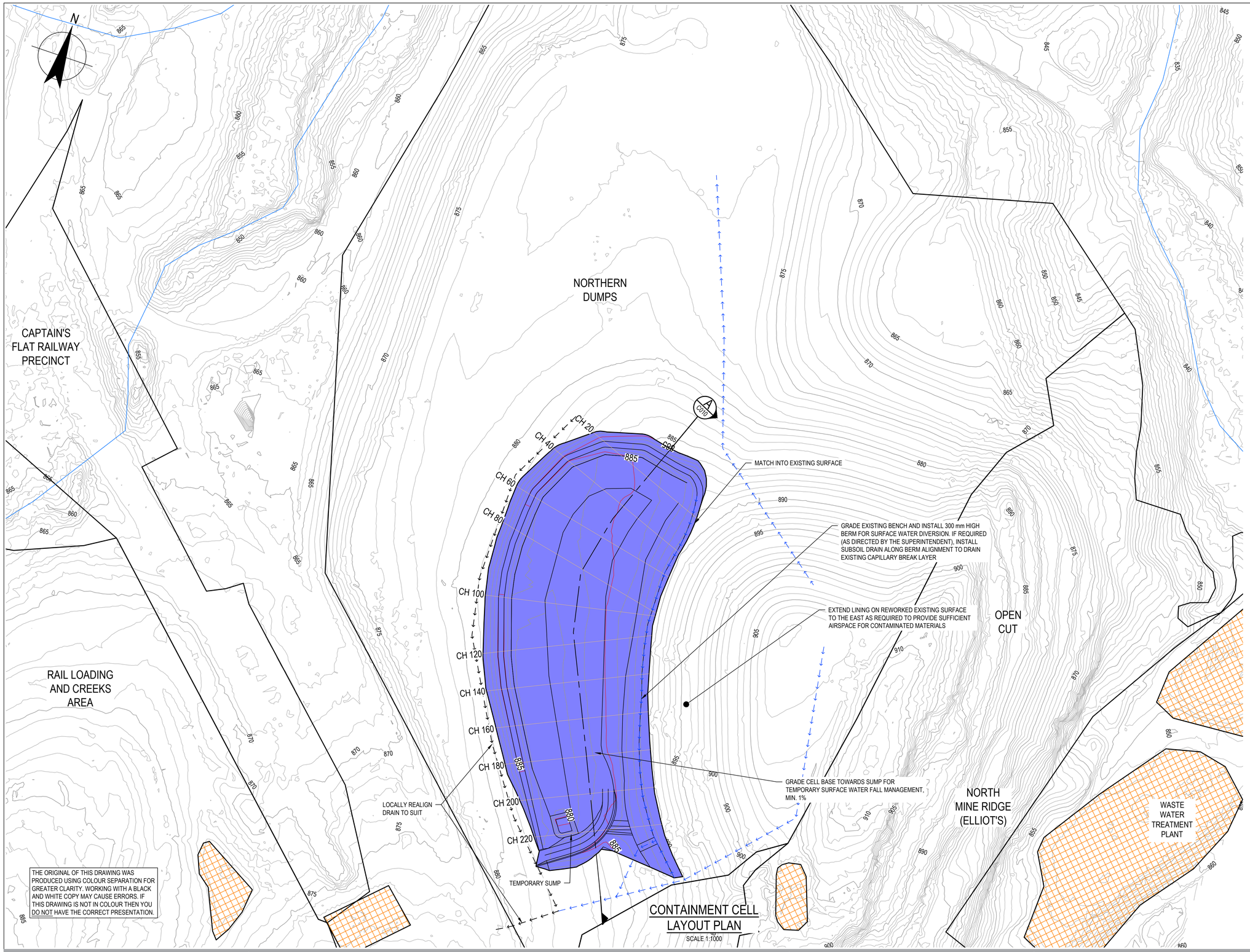
Drawing Title CAPPING AND REVEGETATION WORKS
TYPICAL SECTIONS AND DETAILS

Size A1

Drawing No. 12581924-C004

Rev B

Plot Date: 25 January 2024 - 12:39 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C004.dwg



LEGEND:

- 400 — EXISTING CONTOUR (1 m INTERVALS)
- 400 — DESIGN CONTOURS (0.2 m INTERVALS)
- EXISTING INFRASTRUCTURE (APPROX.)
- EXISTING FLOW PATH
- PROPOSED FLOW PATH

NOTES:

1. CONTAINMENT CELL EXTENT BASED ON ESTIMATED QUANTITIES OF CONTAMINATED MATERIAL TO BE CONTAINED. THE CLIENT'S REPRESENTATIVE AND CONTRACTOR SHALL REVIEW THE ESTIMATED QUANTITIES ON A REGULAR BASIS AND AT A MINIMUM, IMMEDIATELY PRIOR TO CONSTRUCTION OF THE CONTAINMENT CELL (WHICH SHALL FORM A HOLD POINT FOR THE WORKS). THE DESIGNER SHALL BE ENGAGED TO UPDATE THE DESIGN SHOULD THE QUANTITIES VARY SIGNIFICANTLY FROM THESE ESTIMATES AND THE REVISED DESIGN INCORPORATED INTO THE CONSTRUCTION WORKS. THE CONTRACTOR SHALL ALLOW FOR SUFFICIENT CONTINGENCY IN THEIR CONSTRUCTION PROGRAM FOR THIS TO OCCUR IF NEEDED.

CONTAINMENT CELL LAYOUT PLAN

SCALE 1:1000

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 10 20 30 40 50m

SCALE 1:1000 AT ORIGINAL SIZE

GHD
11/F Alphaland Southgate Tower
2258 Chino Roce Ave corner EDSA
Makati City 1232 Philippines
T 63 2 909 8600 **F** 63 2 909 8601
E mnlmail@ghd.com **W** www.ghd.com
www.ghd.com

Project No. 12581924

Client: DEPARTMENT OF REGIONAL NSW

Project: LAKE GEORGE MINE, CAPTAINS FLAT

Status: PRELIMINARY Status Code: S4

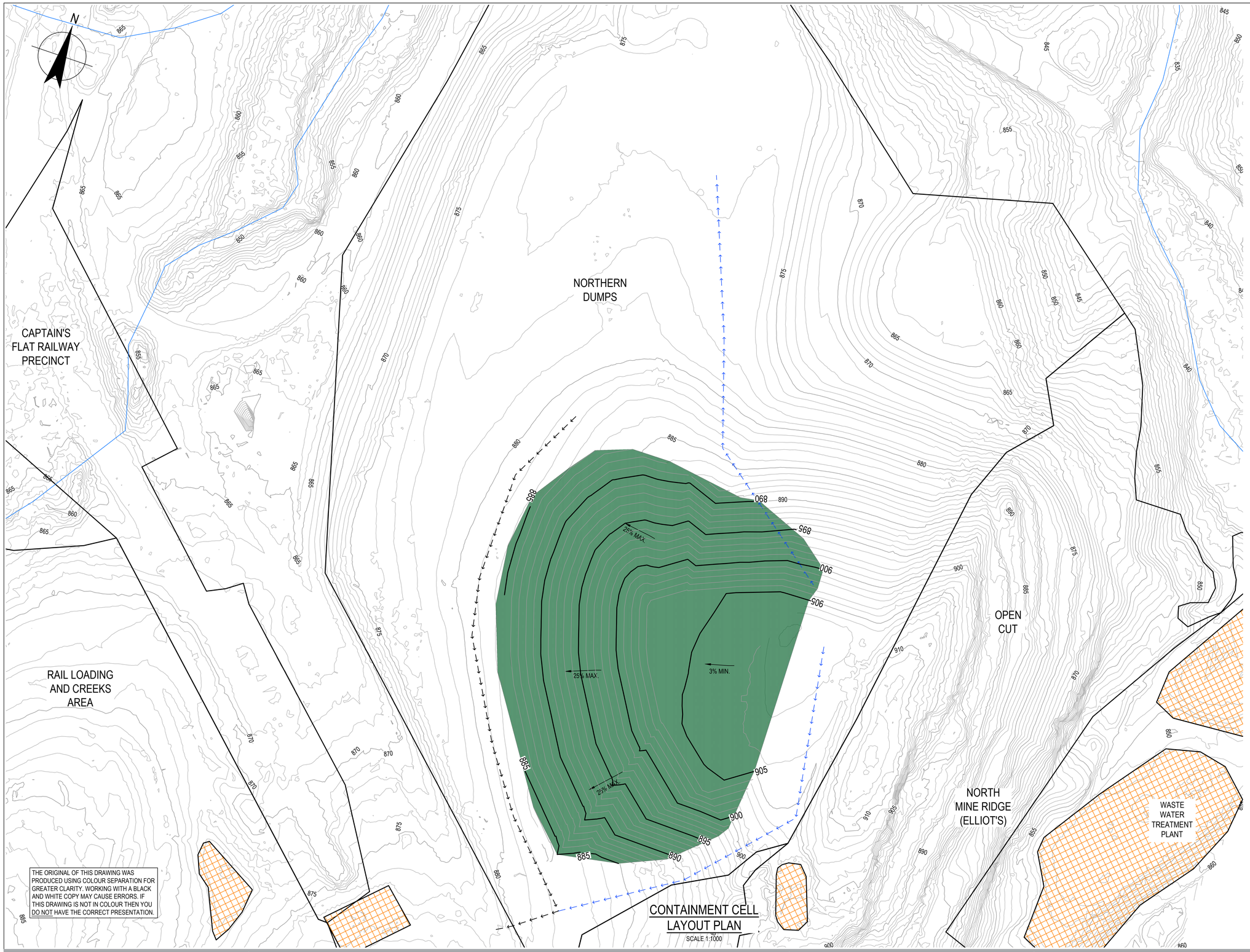
Drawing Title: CAPPING AND REVEGETATION WORKS CONTAINMENT CELL LAYOUT PLAN

Size: A1

Drawing No.: 12581924-C008

Rev: B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C008.dwg



LEGEND:

- 400 — EXISTING CONTOUR (1 m INTERVALS)
- 400 — DESIGN CONTOURS (0.2 m INTERVALS)
- EXISTING INFRASTRUCTURE (APPROX.)
- EXISTING FLOW PATH
- PROPOSED FLOW PATH

NOTES:

1. CONTAINMENT CELL EXTENT BASED ON ESTIMATED QUANTITIES OF CONTAMINATED MATERIAL TO BE CONTAINED. THE CLIENT'S REPRESENTATIVE AND CONTRACTOR SHALL REVIEW THE ESTIMATED QUANTITIES ON A REGULAR BASIS AND AT A MINIMUM, IMMEDIATELY PRIOR TO CONSTRUCTION OF THE CONTAINMENT CELL (WHICH SHALL FORM A HOLD POINT FOR THE WORKS). THE DESIGNER SHALL BE ENGAGED TO UPDATE THE DESIGN SHOULD THE QUANTITIES VARY SIGNIFICANTLY FROM THESE ESTIMATES AND THE REVISED DESIGN INCORPORATED INTO THE CONSTRUCTION WORKS. THE CONTRACTOR SHALL ALLOW FOR SUFFICIENT CONTINGENCY IN THEIR CONSTRUCTION PROGRAM FOR THIS TO OCCUR IF NEEDED.

THE ORIGINAL OF THIS DRAWING WAS PRODUCED USING COLOUR SEPARATION FOR GREATER CLARITY. WORKING WITH A BLACK AND WHITE COPY MAY CAUSE ERRORS. IF THIS DRAWING IS NOT IN COLOUR THEN YOU DO NOT HAVE THE CORRECT PRESENTATION.

CONTAINMENT CELL LAYOUT PLAN

SCALE 1:1000

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 10 20 30 40 50m

SCALE 1:1000 AT ORIGINAL SIZE

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2258 Chino Roce Ave corner EDSA
Makati City 1232 Philippines
T 63 2 909 8600 **F** 63 2 909 8601
E mnlmail@ghd.com **W** www.ghd.com

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GHD Pty Ltd

Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL
LAYOUT PLAN

Size A1

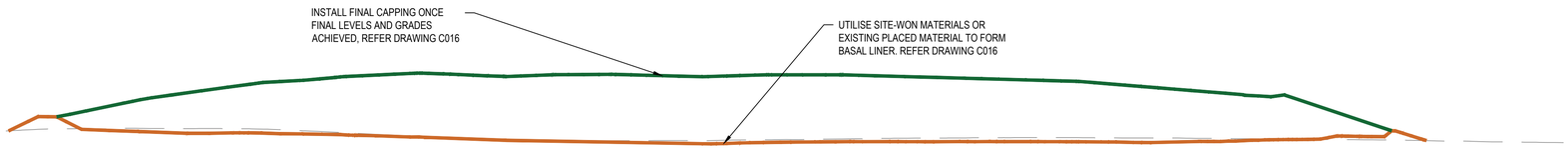
Drawing No. 12581924-C009

Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C009.dwg

NOTES:

1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM RL. 875.00

FINAL LANDFORM (INDICATIVE MAX HEIGHT)													
DESIGN CELL SUBGRADE		885.42	885.14	884.68	883.98	883.60	883.48	883.70	883.71	883.65	883.79	884.59	
EXISTING SURFACE LEVEL	885.45	885.89	885.79	884.92	884.00	883.86	883.97	884.18	884.34	884.32	884.20	884.02	883.76	883.54
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	240.00	254.84

A SECTION
C008 SCALE 1 : 500

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**
Designer M. LE **Design Check**

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

GHD

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS CONTAINMENT CELL LONG SECTION

Size A1

Drawing No. 12581924-C010

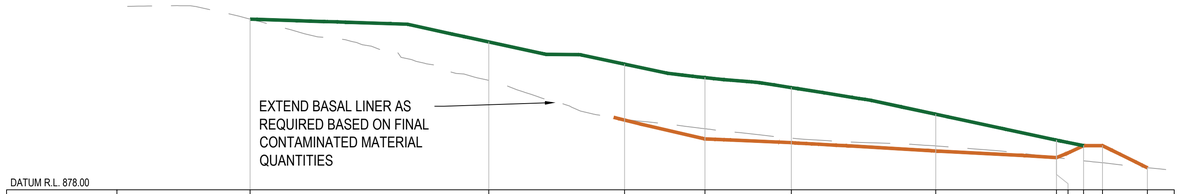
Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C010.dwg

NOTES:

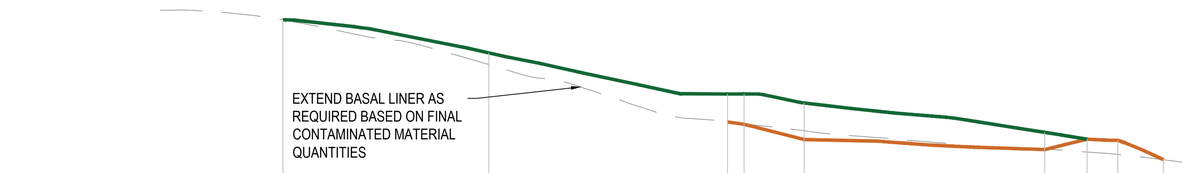
1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)											
DESIGN CELL SUBGRADE			889.38	886.31	885.7	884.34	883.25	883.25	885.21	885.2	881.6
DEPTH CUT - / FILL +	-0.96	-0.85	-0.13	-1.66	-0.73	-0.83	0.01	0.01	2.47	2.78	0
EXISTING SURFACE LEVEL	905.85	895.85	889.51	887.97	886.43	885.17	883.24	883.24	882.74	882.42	881.6
OFFSET FROM CENTRELINE	-38.96	0	22.16	35.27	49.37	72.96	92.67	92.67	97.1	100.18	107.5

CH 40



DATUM R.L. 879.00

FINAL LANDFORM (INDIC. MAX HEIGHT)										
DESIGN CELL SUBGRADE			889.22	888.85	886.37	884.72	886.42	886.24	883.1	
DEPTH CUT - / FILL +	-6.49	-3.91	0.03	-0.02	-1.43	-0.05	2.11	2.28	0.03	
EXISTING SURFACE LEVEL	905.91	898.61	889.2	888.87	887.8	884.77	884.32	883.96	883.07	
OFFSET FROM CENTRELINE	-33.61	0	38.97	41.67	51.47	90.73	97.66	102.67	110.1	

CH 20

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

GHD

www.ghd.com

Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL CROSS SECTION
SHEET 1 OF 5

Size A1

Drawing No. 12581924-C011

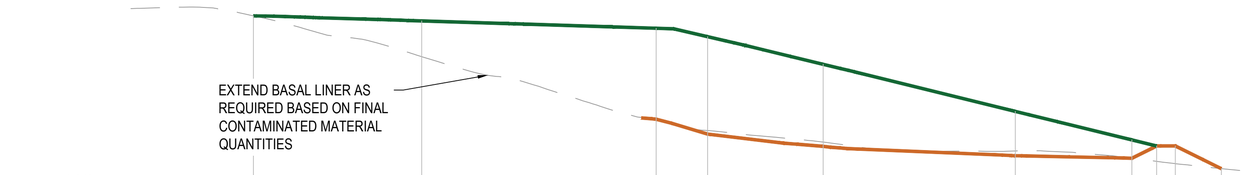
Rev A

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C011.dwg

NOTES:

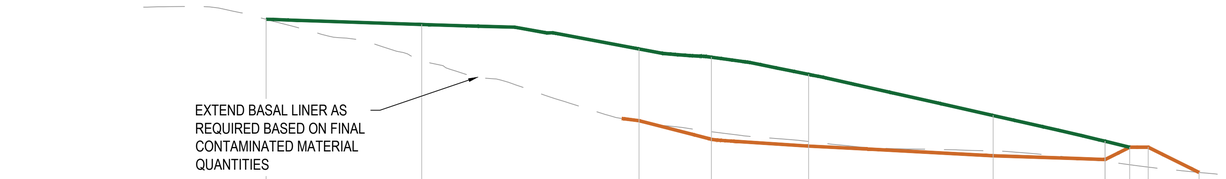
1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)											
DESIGN CELL SUBGRADE			889.26	886.84	884.84	883.3	882.9	884.9	884.9	881.2	
DEPTH CUT - / FILL +	-10.99	-6.78	0.03	-0.57	-0.69	-0.78	0.01	2.51	2.89	-0	
EXISTING SURFACE LEVEL	906.13	899.47	889.23	887.41	885.53	884.08	882.88	882.39	882.01	881.2	
OFFSET FROM CENTRELINE	-27.48	0	38.27	46.66	65.52	96.89	115.92	119.97	123.01	130.53	

CH 80



DATUM R.L. 877.00

FINAL LANDFORM (INDIC. MAX HEIGHT)											
DESIGN CELL SUBGRADE			889.37	886.32	885.23	883.65	883.04	883.04	885.04	880.93	
DEPTH CUT - / FILL +	-8.68	-5.32	0.05	-1.25	-0.76	-0.78	0.32	1.32	2.85	-0	
EXISTING SURFACE LEVEL	905.92	899.27	889.31	887.57	885.98	884.44	882.72	882.72	881.79	880.93	
OFFSET FROM CENTRELINE	-25.4	0	35.47	47.28	63.16	93.27	111.54	111.54	118.59	126.88	

CH 60

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

GHD

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL CROSS SECTION
SHEET 2 OF 5

Drawing No. 12581924-C012

Size A1

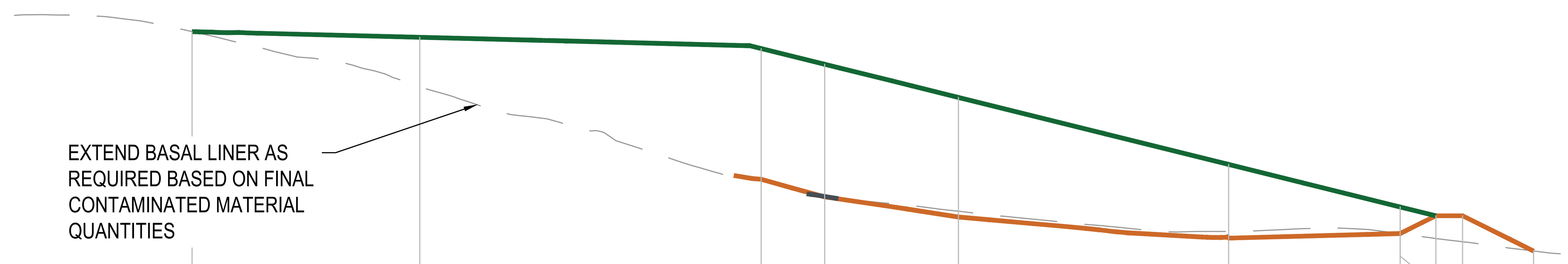
Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C012.dwg

NOTES:

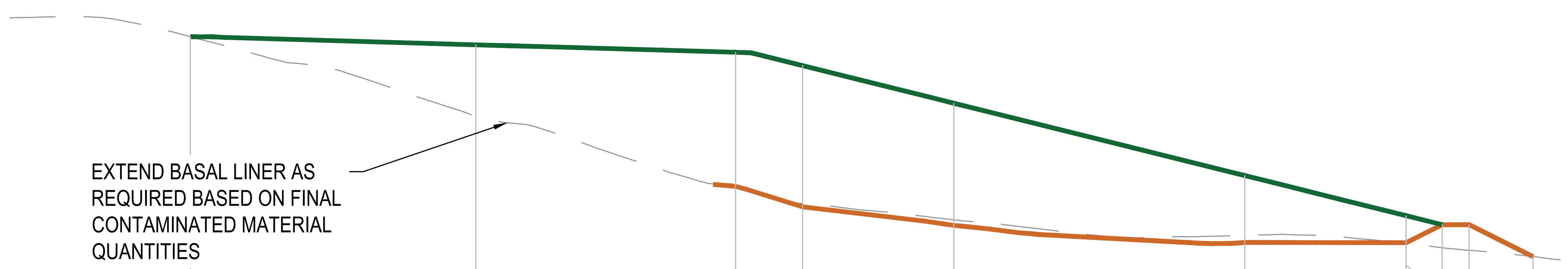
1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)											
DESIGN CELL SUBGRADE			889.19	887.21	884.93	882.55	883.07	883.07	885.07	885.07	881.1
DEPTH CUT - / FILL +	-7.56	-4.98	0.22	0.08	-0.66	-0.76	0.02	0.02	2.56	2.93	-0
EXISTING SURFACE LEVEL	905.85	899.63	888.97	887.13	885.6	883.31	883.05	883.05	882.51	882.14	881.1
OFFSET FROM CENTRELINE	-25.66	0	38.45	45.61	60.68	91.12	110.43	110.43	114.46	117.48	125.47

CH 120



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)											
DESIGN CELL SUBGRADE			889.25	886.99	884.93	883.04	883	883	885	885	881.47
DEPTH CUT - / FILL +	-11.21	-5.23	0.07	-0.36	-0.61	-0.8	0.05	0.05	2.56	2.84	0
EXISTING SURFACE LEVEL	905.86	897.05	889.18	887.35	885.54	883.84	882.95	882.95	882.45	882.17	881.47
OFFSET FROM CENTRELINE	-31.65	0	28.8	36.24	53	85.25	103.13	103.13	107.13	110.13	117.21

CH 100

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**
Designer M. LE **Design Check**

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

GHD
www.ghd.com

Project No. 12581924

Client: DEPARTMENT OF REGIONAL NSW
Project: LAKE GEORGE MINE, CAPTAINS FLAT
Status: PRELIMINARY — Status Code: S4

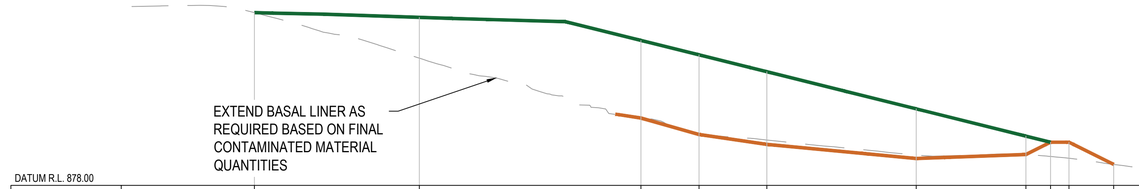
Drawing Title: CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL CROSS SECTION
SHEET 3 OF 5

Size: A1
Drawing No. 12581924-C013 — Rev: B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C013.dwg

NOTES:

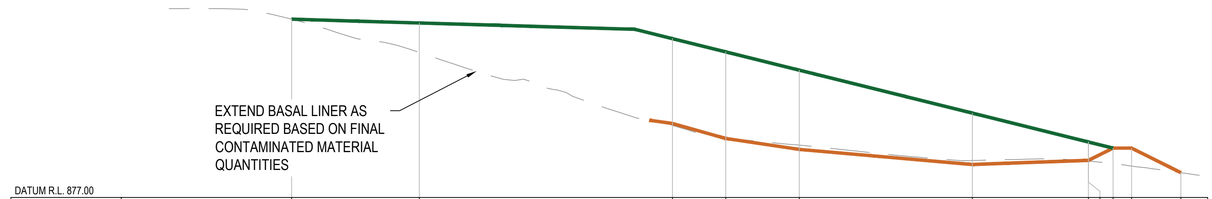
1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)												
DESIGN CELL SUBGRADE			888.89	886.3	884.69	882.38	883.04	885.04	885.04	881.42		
DEPTH CUT - / FILL +	-7.77	-4.36	0.14	-0.01	-0.7	-0.57	0.01	2.33	2.62	0.01		
EXISTING SURFACE LEVEL	906.19	898.76	888.84	886.31	885.39	882.94	883.03	882.71	882.42	881.41		
OFFSET FROM CENTRELINE	-26.91	0	36.18	45.65	56.72	81.1	99.01	103.03	106.05	113.34		

CH 160



DATUM R.L. 877.00

FINAL LANDFORM (INDIC. MAX HEIGHT)												
DESIGN CELL SUBGRADE			889.09	886.63	884.65	882.39	883.06	883.06	885.06	885.06	881.05	
DEPTH CUT - / FILL +	-8.39	-5.86	0.31	0	-0.7	-0.65	0.11	0.11	2.53	2.93	-0	
EXISTING SURFACE LEVEL	906.11	900.68	888.78	886.63	885.55	883.03	882.95	882.95	882.53	882.13	881.05	
OFFSET FROM CENTRELINE	-20.85	0	41.31	50.01	62.01	90.27	109.21	109.21	113.24	116.25	124.3	

CH 140

PRELIMINARY

Rev	Description	Checked	Approved	Date
A	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

GHD

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL CROSS SECTION
SHEET 4 OF 5

Drawing No. 12581924-C014

Size A1

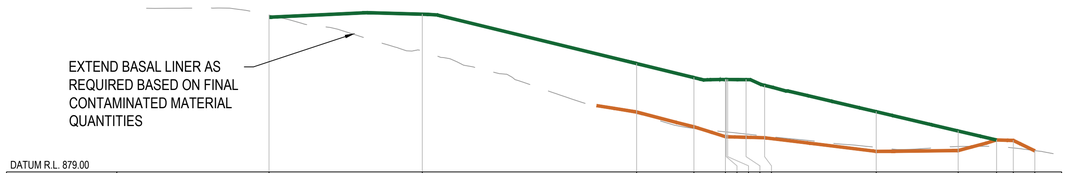
Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C014.dwg

NOTES:

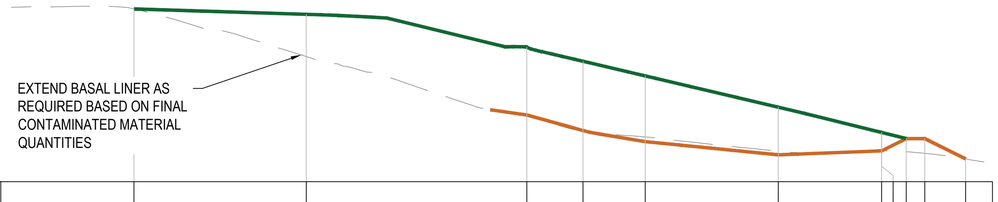
1. REFER NOTES NO C008 AND C009.
2. DETAILED FEATURES SUCH AS DRAINAGE NOT SHOWN. REFER C016 FOR FURTHER DETAILS.



DATUM R.L. 879.00

FINAL LANDFORM (INDIC. MAX HEIGHT)												
DESIGN CELL SUBGRADE			888.78	886.38	884.75	884.75	884.74	884.66	884.58	882.36	882.49	884.22	884.15	882.44
DEPTH CUT - / FILL +	-6.25	-4.42	0.21	0.27	-0.8	-0.77	-0.77	-0.53	-0.3	-0.66	-0.66	1.07	1.23	-0.05
EXISTING SURFACE LEVEL	904.61	898.79	888.57	886.1	885.55	885.54	885.51	885.19	884.88	883.02	883.15	883.15	882.92	882.49
OFFSET FROM CENTRELINE	-25.01	0	34.99	44.34	49.5	49.67	49.84	52.66	55.88	74.11	87.49	93.74	96.47	99.99

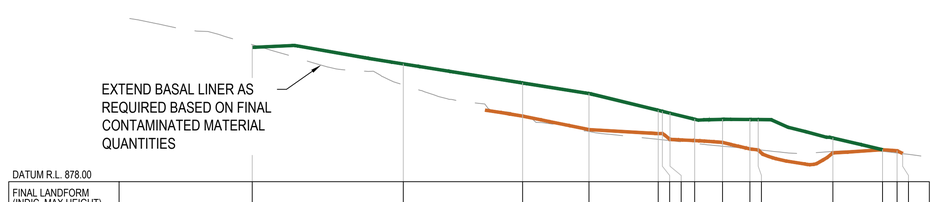
CH 200



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)										
DESIGN CELL SUBGRADE			888.88	886.33	884.52	882.37	883.02	883.02	885.02	881.71
DEPTH CUT - / FILL +	-9.15	-4.39	0.16	0.04	-0.77	-0.61	-0.02	-0.02	2.41	-0.01
EXISTING SURFACE LEVEL	906.18	898.41	888.73	886.29	885.29	882.98	883.04	883.04	882.61	881.71
OFFSET FROM CENTRELINE	-28.12	0	36	45.16	55.33	77.04	93.92	93.92	100.96	107.64

CH 180



DATUM R.L. 878.00

FINAL LANDFORM (INDIC. MAX HEIGHT)																				
DESIGN CELL SUBGRADE			888.68	886.49	885.83	885.65	884.69	884.7	884.4	883.34	883.18	882.69	883.21	883.03	882.59					
DEPTH CUT - / FILL +	-4.58	-1.95	-0.41	0.3	0.93	1.02	0.19	0.46	0.63	-0	-0.03	-0.23	0.28	0.35	0.02					
EXISTING SURFACE LEVEL	900.36	893.77	889.1	886.19	884.9	884.83	884.69	884.24	883.77	883.34	883.2	882.92	882.93	882.68	882.57					
OFFSET FROM CENTRELINE	-24.64	0	19.49	30.32	41.61	42.3	43.54	47.56	52.11	56.69	57.93	70.13	78.24	80.6	81.51					

CH 220

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**

Designer M. LE **Design Check**

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

GHD

www.ghd.com

Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL CROSS SECTION
SHEET 5 OF 5

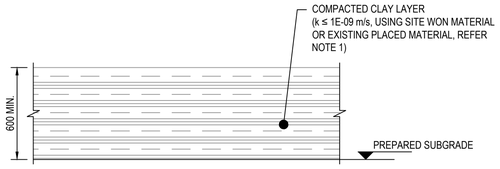
Drawing No. 12581924-C015

Size A1

Rev B

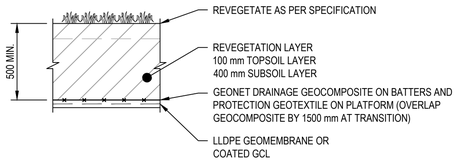
Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C015.dwg



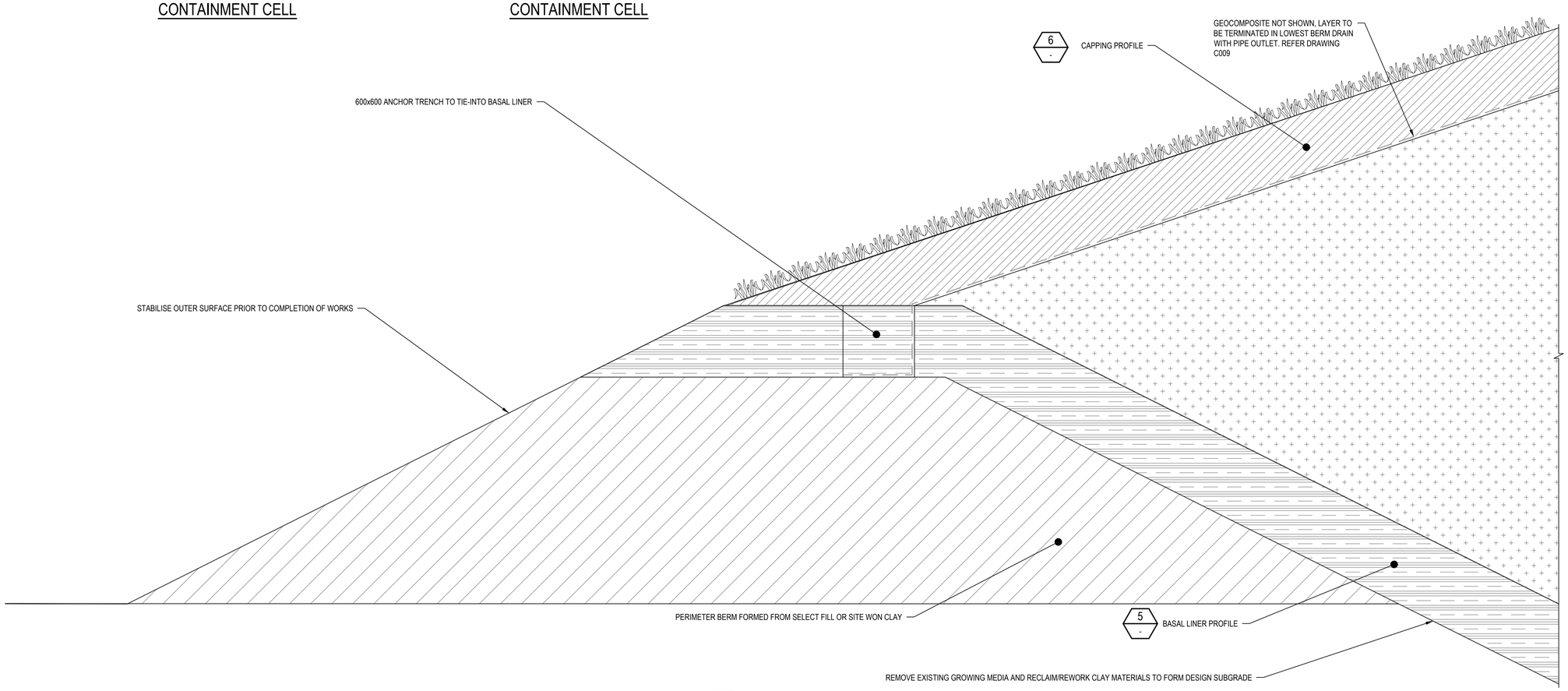
5 DETAIL
- SCALE 1 : 20

TYPICAL BASAL LINER PROFILE
CONTAINMENT CELL



6 DETAIL
- SCALE 1 : 20

TYPICAL CAPPING PROFILE
CONTAINMENT CELL



7 DETAIL
- SCALE 1 : 20

TYPICAL PERIMETER BERM AND LINER TIE-IN

NOTES:

1. CONTRACTOR TO DEVELOP WORK METHOD FOR CLAY LAYER INSTALLATION. SPECIFICALLY, IF THE CONTRACTOR PROPOSES TO RELY ON INSITU CLAY MATERIAL WITHOUT FURTHER REWORK, A TESTING PROGRAM SHALL BE DEVELOPED TO VERIFY THE INSITU CLAY HAS SUITABLE PERMEABILITY. THIS SHALL BE SUBMITTED FOR APPROVAL BY THE CLIENT'S REPRESENTATIVE AND THE DESIGNER. THIS TESTING PROGRAM MAY CONSIDER USE OF EXISTING TESTING RESULTS TO ESTABLISH APPROPRIATE COMPACTION AND MOISTURE CONTENT NEEDED FOR THE INSITU MATERIAL TO ACHIEVE THE REQUIRED PERMEABILITY, AND SUBSEQUENT QUALITY CONTROL TESTING TO SHOW CONFORMANCE WITH THESE REQUIREMENTS.

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**
Designer M. LE **Design Check**

0 200 400 600 800 1000mm
SCALE 1:20 AT ORIGINAL SIZE

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

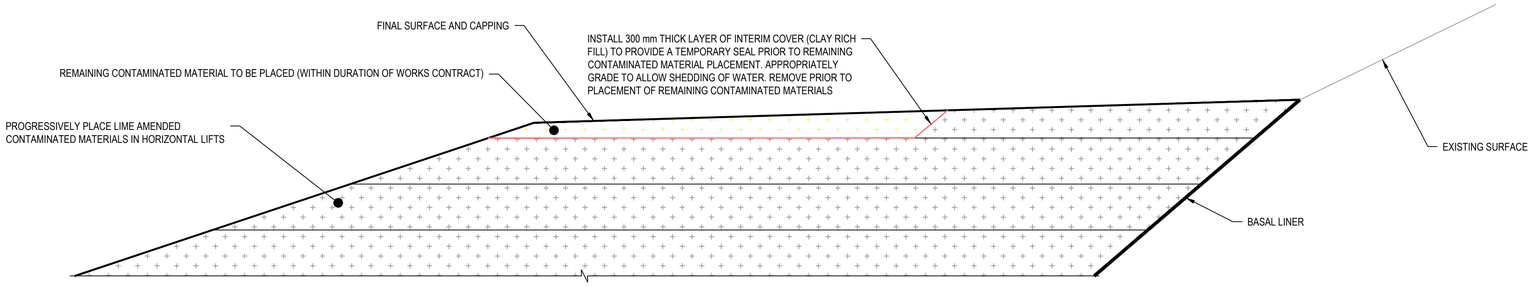
Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL
TYPICAL SECTIONS AND DETAILS

Size A1

Drawing No. 12581924-C016

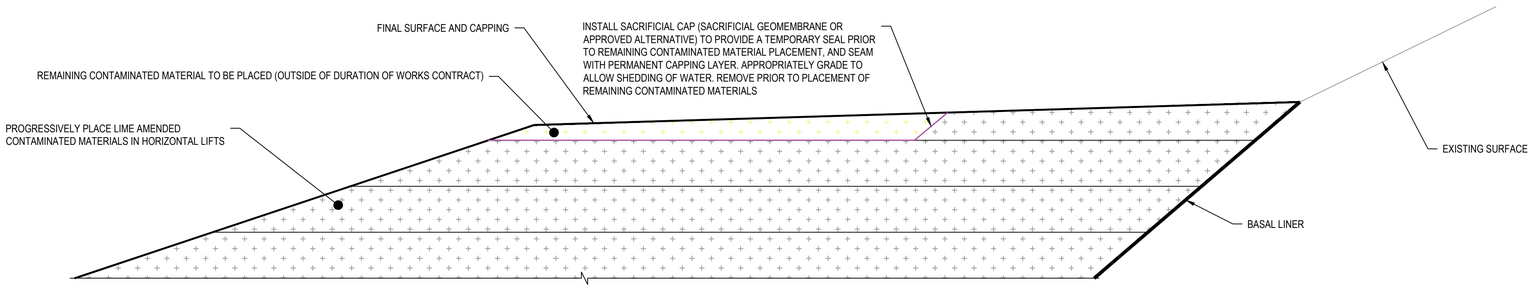
Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez File Name: C:\12d\SW\data\P-00-12D-001\21-12581924 - Captains Flat_2860\CADD\Drawings\12581924-C016.dwg



A SECTION
- SCALE 1 : 200

TYPICAL FILL STAGING FOR STAGED FILLING DURING THE WORKS CONTRACT



B SECTION
- SCALE 1 : 200

TYPICAL FILL STAGING FOR STAGED FILLING OUTSIDE OF THE WORKS CONTRACT

NOTES:

1. FILL STAGING IS INDICATIVE ONLY AND TO BE FINALISED IN CONSULTATION WITH CLIENT'S REPRESENTATIVE AND DESIGNER ONCE FILL VOLUMES AND TIMING ARE ADEQUATELY DEFINED

PRELIMINARY

Rev	Description	Checked	Approved	Date
B	REVISED DRAWING SET			
A	ISSUED AS PRELIMINARY			11/12/23

Author R. LOPEZ **Drafting Check**
Designer M. LE **Design Check**

0 200 400 600 800 1000mm
SCALE 1:20 AT ORIGINAL SIZE

0 250 500 750 1000 1250mm
SCALE 1:25 AT ORIGINAL SIZE

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Project No. 12581924

Client DEPARTMENT OF REGIONAL NSW

Project LAKE GEORGE MINE, CAPTAINS FLAT

Status PRELIMINARY Status Code S4

Drawing Title CAPPING AND REVEGETATION WORKS
CONTAINMENT CELL
TYPICAL FILL STAGING

Drawing No. 12581924-C017

Size A1

Rev B

Plot Date: 25 January 2024 - 12:40 PM Plotted by: Riken Joshua Lopez

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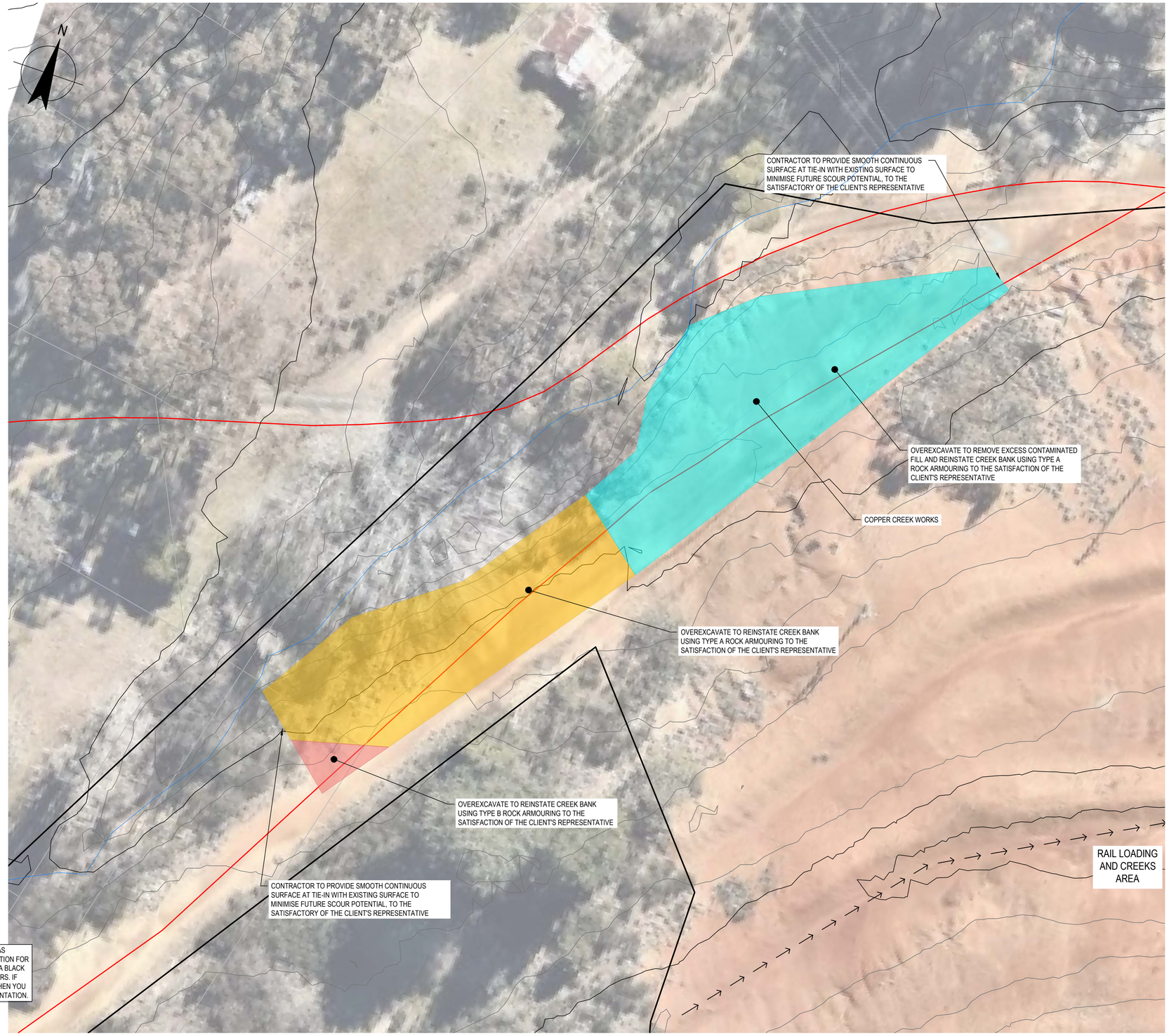

LEGEND

- EXISTING SURFACE
- HYDROLINES
- EXISTING FLOW PATH
- REHABILITATION AND CAPPING EXTENTS

NOTES:

1. REFER NOTES ON DRG. C002 AND C003.
2. EXTENT OF CREEK WORKS AREA TO BE CONFIRMED BY CLIENT'S REPRESENTATIVE AS PART OF SITE ESTABLISHMENT.
3. ALL AREAS ARE APPROXIMATE.

THE ORIGINAL OF THIS DRAWING WAS PRODUCED USING COLOUR SEPARATION FOR GREATER CLARITY. WORKING WITH A BLACK AND WHITE COPY MAY CAUSE ERRORS. IF THIS DRAWING IS NOT IN COLOUR THEN YOU DO NOT HAVE THE CORRECT PRESENTATION.

FOR CONSTRUCTION

Rev	Description	Checked	Approved	Date
0	FOR CONSTRUCTION			

Author R. LOPEZ — Drafting Check
Designer E. STUNTZ — Design Check

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

GHD
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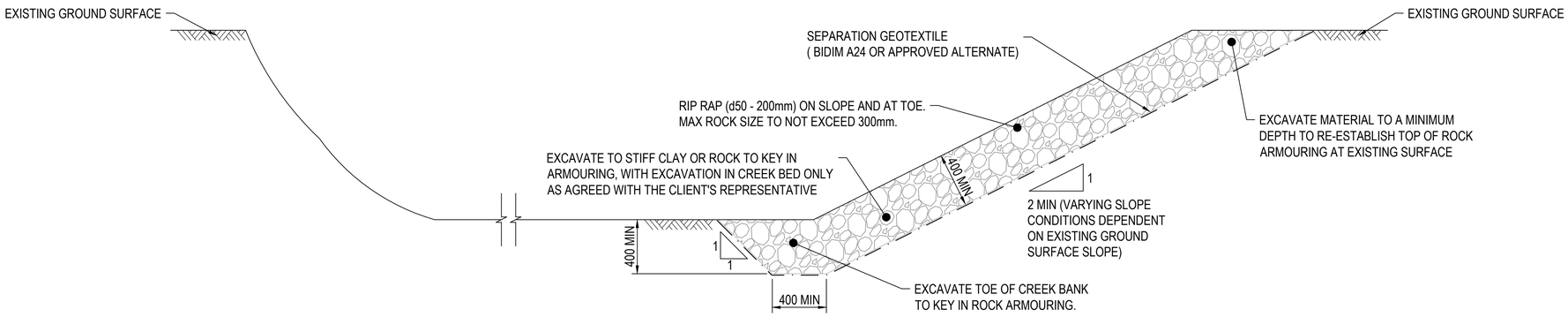
Project No. 12551771

Client DEPARTMENT OF REGIONAL NSW
Project LAKE GEORGE MINE, CAPTAINS FLAT
Status FOR CONSTRUCTION — Status Code S0

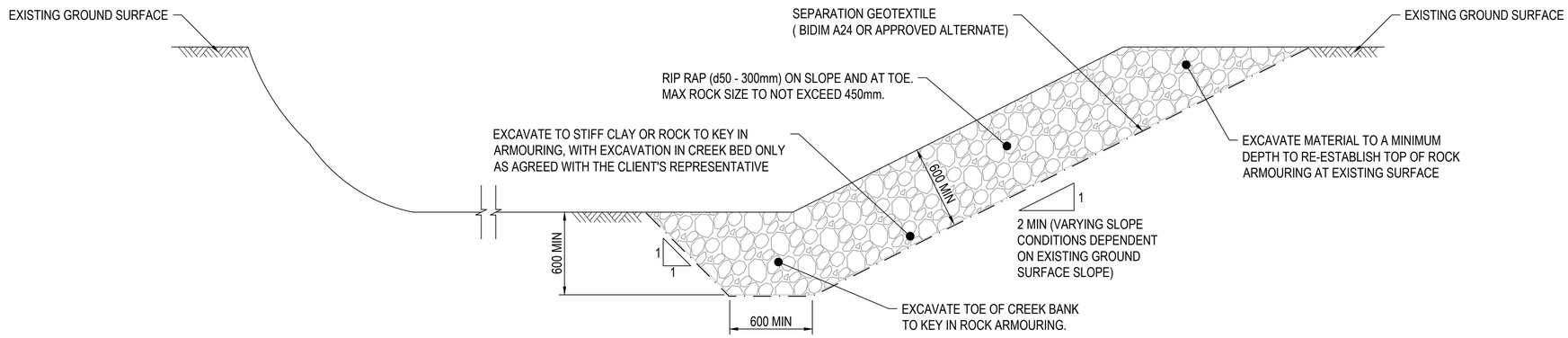
Drawing Title CAPPING AND REVEGETATION WORKS
COPPER CREEK WORKS
LAYOUT PLAN

Drawing No. 12551771-C018
Size A1
Rev 0

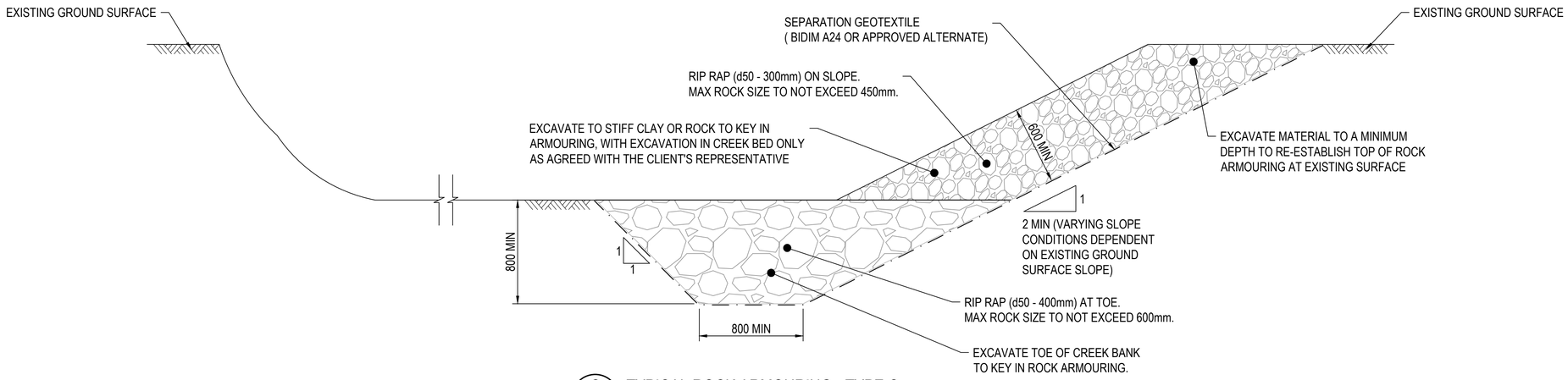
Plot Date: 12 December 2022 - 10:07 AM Plotted by: Nathan Griffiths
File Name: C:\Users\ngriffiths\OneDrive - GHD\Desktop\12551771-C018 NG edits.dwg



A TYPICAL ROCK ARMOURING - TYPE A
SCALE 1 : 20



B TYPICAL ROCK ARMOURING - TYPE B
SCALE 1 : 20



C TYPICAL ROCK ARMOURING - TYPE C
SCALE 1 : 20

FOR CONSTRUCTION

Rev	Description	Checked	Approved	Date
0	FOR CONSTRUCTION			

Author R. LOPEZ **Drafting Check**
Designer E. STUNTZ **Design Check**

0 0.2 0.4 0.6 0.8 1.0m
SCALE 1:20 AT ORIGINAL SIZE

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Project No. 12551771

Client DEPARTMENT OF REGIONAL NSW
Project LAKE GEORGE MINE, CAPTAINS FLAT
Status FOR CONSTRUCTION Status Code S0

Drawing Title CAPPING AND REVEGETATION WORKS
COPPER CREEK WORKS
TYPICAL SECTIONS

Size A1
Drawing No 12551771-C019
Rev 0

Plot Date: 6 December 2022 - 3:06 PM Plotted by: Riken Joshua Lopez
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