Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6829/2023/1
Works approval holder	Eastern Metropolitan Regional Council
ABN	89 631 866 056
Registered business address	226 Great Eastern Highway BELMONT WA 6104
DWER file number	DER2023/000429
Duration	09/11/2023 to 09/11/2028
Date of issue	10/11/2023
Premises details	Red Hill Waste Management Facility 1094 Toodyay Road RED HILL WA 6056 Lot 1 on Diagram 15239, Lot 2 on Diagram 68630, Lot 11 on Diagram 69105 and Lot 12 on Deposited Plan 26468

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production / design capacity**
Category 64: Class II or III putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the *Landfill Waste Classification and Waste Definitions 1996,* is accepted for burial.	350,000 tonnes per annual period
Category 65: Class IV secure landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the *Landfill Waste Classification and Waste Definitions 1996,* is accepted for burial.	Not applicable

This works approval is granted to the works approval holder, subject to the attached conditions, on 10 November 2023, by:

Marko Pasalich
Digitally signed by Marko Pasalich
Date: 2023.11.10 09:30:58 +08'00'

A/MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
10/11/2023	W5475/2014/1	Works approval granted.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Decommissioning and Construction phase

Critical containment infrastructure

1. The works approval holder must:

(a) decommission the existing critical containment infrastructure;

(b) construct and install the critical containment infrastructure;

(c) in accordance with the corresponding decommissioning, design, construction and installation requirements; and

(d) at the corresponding infrastructure location

as set out in Table 1

Table 1: Decommissioning, design, construction and installation requirements

Infrastructure	Decommissioning, design, construction and installation requirements	Infrastructure location
Leachate pond 2 and leachate evaporators	**Decommissioning stage**	As shown in Schedule 1, Figures 1 - 6
	a) Eleven floatable leachate evaporators to be disconnected and removed from the pond. b) Existing lining system inclusive of a geosynthetic clay liner and a double-textured high-density polyethylene to be removed in its entirety and disposed of at an appropriately licensed facility.	
	Construction and installation stage	
	c) Earthworks and filling to be conducted in accordance with AS3798 and AS1289. d) The leachate pond must consist of the following composite lining system (top to bottom as shown in Figure 4): i. 2mm high-density polyethylene double-textured geomembrane. ii. Geosynthetic clay liner. iii. 500 mm thick engineered clay attenuation layer. iv. Prepared sub-grade. e) Composite lining system to achieve a permeability of less than $1x10^{-9}$ metres per second or equivalent. f) Geosynthetic layers to be secured in a ≥ 0.6m deep anchor trench around the perimeter of the pond. g) Must be constructed and installed according to the specifications set out in *Technical Specifications.* h) CQA activities must be undertaken according to the *Construction Quality Assurance Plan.* i) Designed to maintain a freeboard of no less than 500 mm.	

Infrastructure	Decommissioning, design, construction and installation requirements	Infrastructure location
	j) Leachate pond must provide a minimum operational storage capacity[1] of 63,540m^3. k) Leachate pond must provide a minimum surface area of 9,896m^3. l) Pond crest to be designed and constructed to slope away from the pond to prevent stormwater ingress. m) Designed to contain leachate and stormwater produced over a 90th percentile rainfall year. n) Internal pond side slope of 1:2.5. o) Leachate storage depth of 7 m (including 0.5 m freeboard). p) Reinstallation of eleven floatable leachate evaporators underlined with HDPE geomembrane. q) Any new pipework, fittings, joints and pumps installed through the works subject to this works approval must be: i. Constructed of impervious material that is free from leaks and/or defects. ii. Tested and visually inspected to confirm they are free from leaks and defects prior to use.	

Note 1: Operation capacity assumes that a 500 mm freeboard is maintained within the capacity of the pond.

Compliance reporting

2. The works approval holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition being constructed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.

3. The Critical Containment Infrastructure Report required by condition 2 must include as a minimum the following:

(a) certification by a suitably qualified CQA engineer/consultant who has undertaken CQA activities for the relevant stage of leachate pond construction;

(b) details the CQA procedures and testing undertaken for the relevant works;

(c) confirms subgrade preparation and installation of the composite lining system have met the relevant requirements specified in condition 1 and *Technical Specification*;

(d) confirms the quality control and assurance measures specified in condition 1 and *Construction Quality Assurance Plan* have been completed and that satisfactory results have been demonstrated;

(e) includes evidence of quality assurance and conformance testing works;

(f) includes as constructed plans of geosynthetic or geotextile material for the relevant works that include roll numbers, panel layouts, seam locations and repair locations;

(g) photographic evidence of the installation of the infrastructure;

(h) certifies that the sub-grade and composite liner system is free of fault or defect, built to the design specification and fit for the intended purpose; and

(i) be signed by both the suitably qualified CQA engineer/consultant and a person authorised to represent the works approval holder and contains the printed names and positions of these people.

Operations

4. The works approval holder may only commence use of the infrastructure identified in condition 1 where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report required by condition 2 meets the requirements of condition 3.

Records and reporting

5. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

6. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1; and

(b) complaints received under condition 5.

7. The books specified under condition 6 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
AS 1289	means the Australia Standard 1289 Methods for testing of soils for engineering purposes
AS 3798	means the Australian Standard 3798 Guidelines on earthworks for commercial and residential developments
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Construction Quality Assurance Plan	means the document titled *Construction Quality Assurance Plan Red Hill Waste Management Facility – Leachate Pond Redevelopment*, dated June 2023, Project Number: TW22164 Prepared for the Eastern Metropolitan Regional Council by Talis Consultants (DWERDT799713).
CQA	construction quality assurance
critical containment infrastructure	means the items of infrastructure listed in condition 1.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).

Term	Definition
premises	the premises to which this works approval applies, as specified at the front of this works approval and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
suitably qualified engineer	means a person who: a) holds a Bachelor of Engineering recognised by Engineers Australia; and b) has a minimum of five years of experience working in a supervisory area of civil or structural engineering; or c) is otherwise approved in writing by the CEO to act in this capacity.
suitably qualified CQA engineer/consultant	means a person who: a) holds a Bachelor of Engineering recognised by Engineers Australia; and b) has a minimum of five years of experience working in a supervisory area of construction quality assurance; and c) is employed by an independent third-party external to the works approval holder's business and liner installation contractor. or d) is otherwise approved in writing by the CEO to act in this capacity.
Technical Specification	means the document titled *Technical Specification Red Hill Waste Management Facility – Leachate Pond Redevelopment*, dated June 2023, Project Number: TW23021 Prepared for the Eastern Metropolitan Regional Council by Talis Consultants (DWERDT799713).
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map and site layout

The boundary of the prescribed premises is shown in the map below (Figure 1)

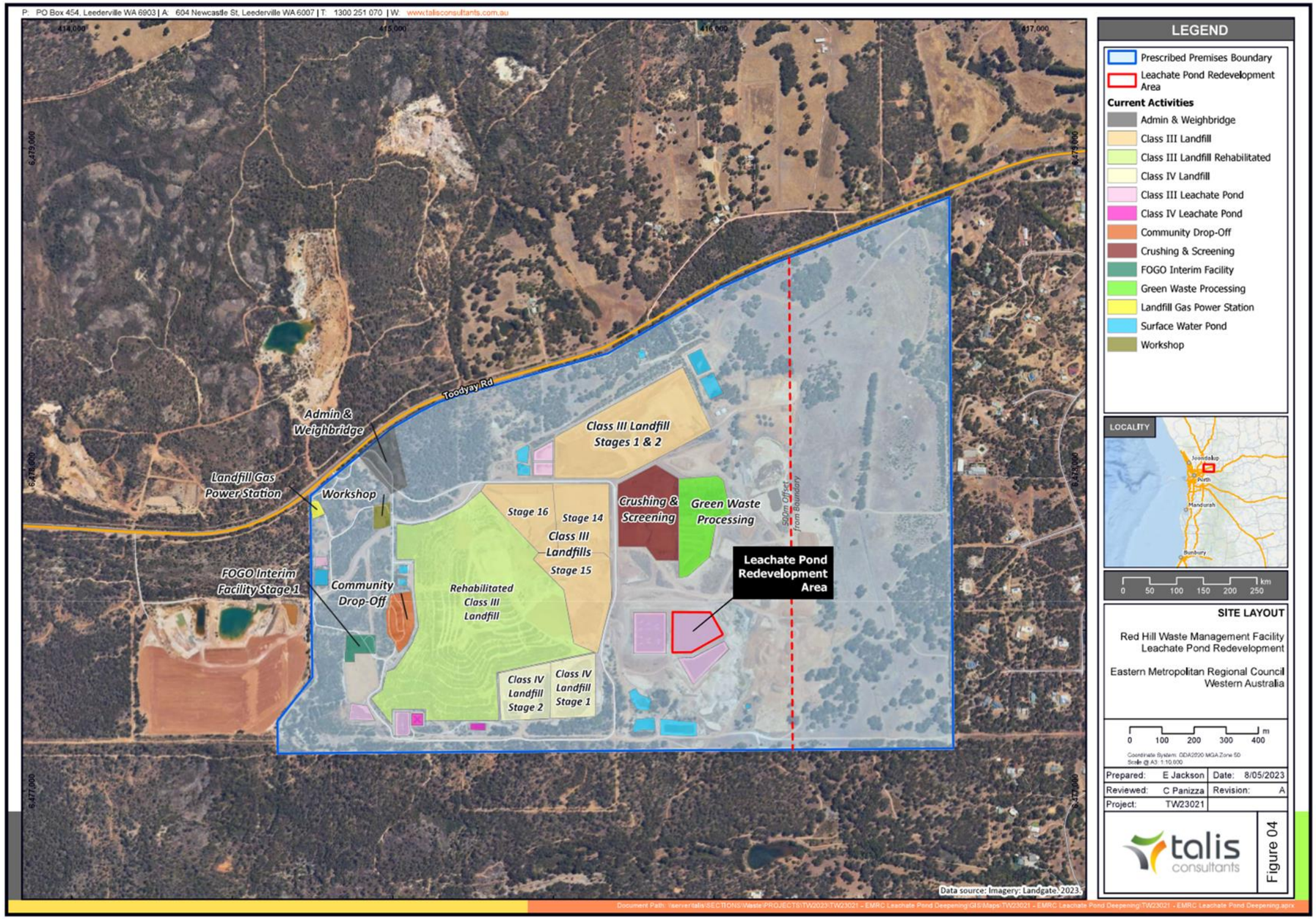


Figure 1: Map of the boundary of the prescribed premises and site layout

Existing leachate pond system and topography

The existing leachate ponds are shown in the map below (Figure 2).

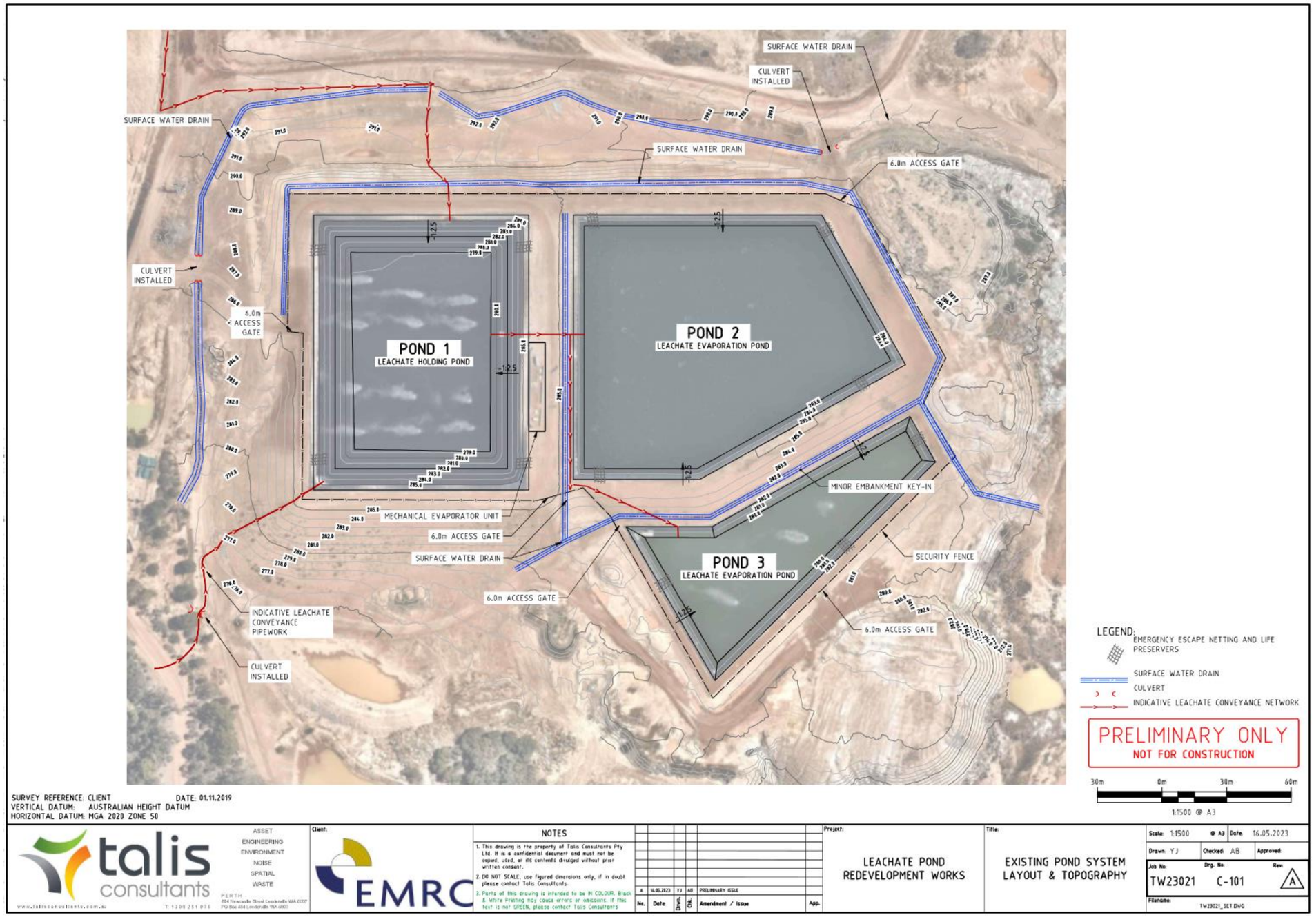


Figure 2: Map of the existing leachate evaporation ponds

Leachate pond redevelopment layout

The leachate pond redevelopment is shown in the map below (Figure 3).

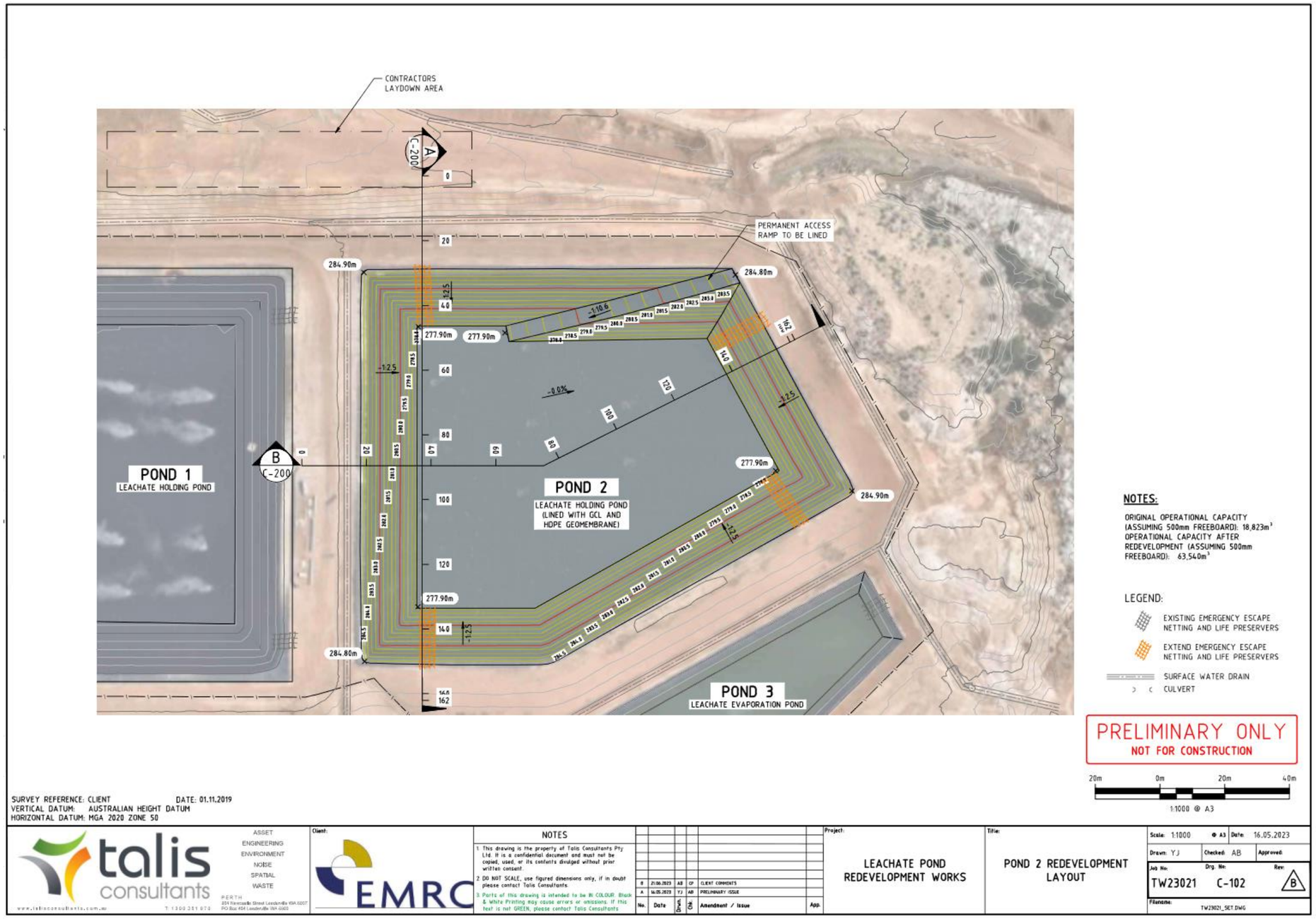


Figure 3: Map of the leachate pond redevelopment

Leachate pond trench and lining detail

The leachate pond trench and lining detail is shown in the schematic below (Figure 4).

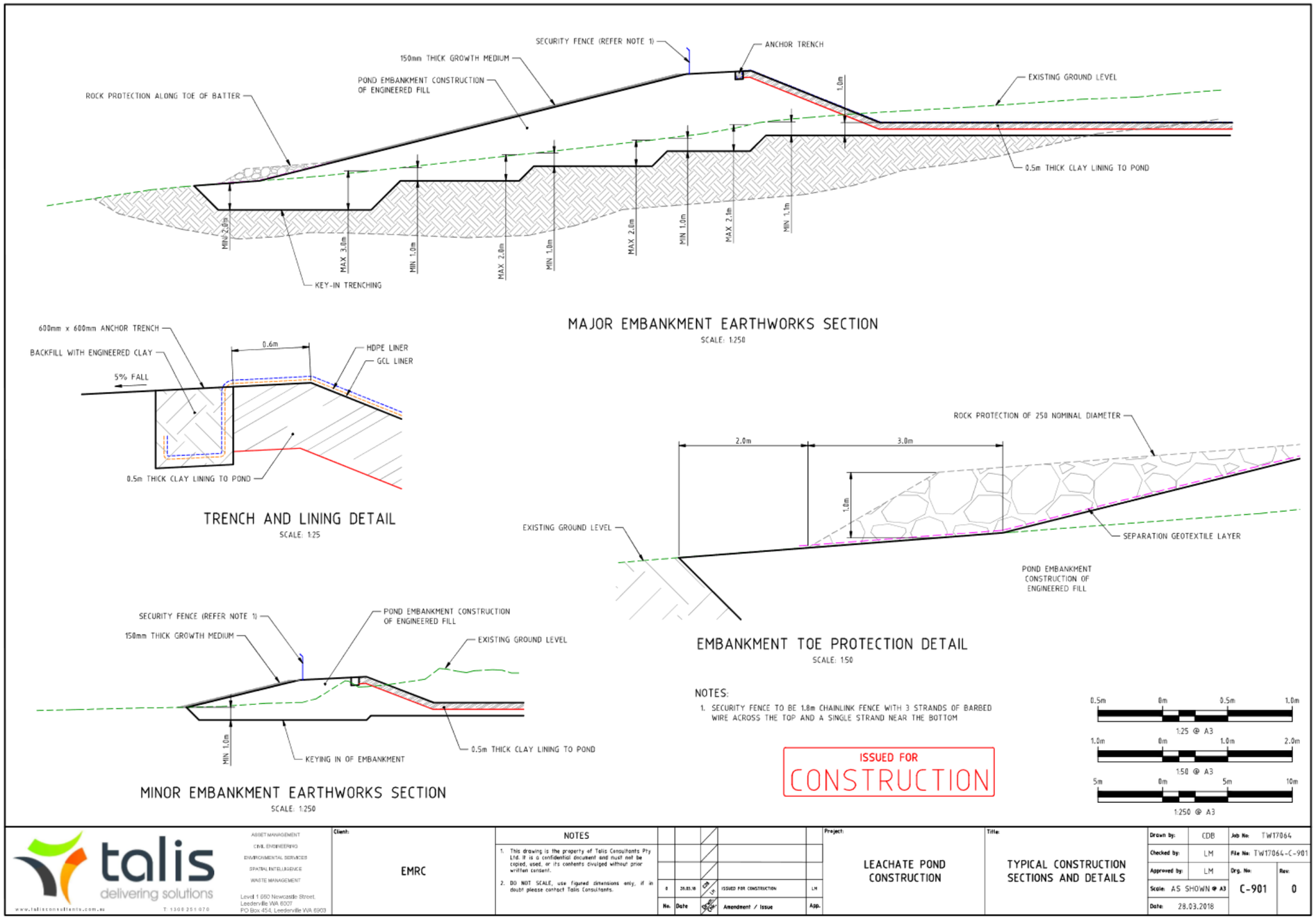


Figure 4: Leachate pond trench and lining detail

Leachate pond cross section 1

The first leachate pond cross sections are shown in the schematic below (Figure 5).

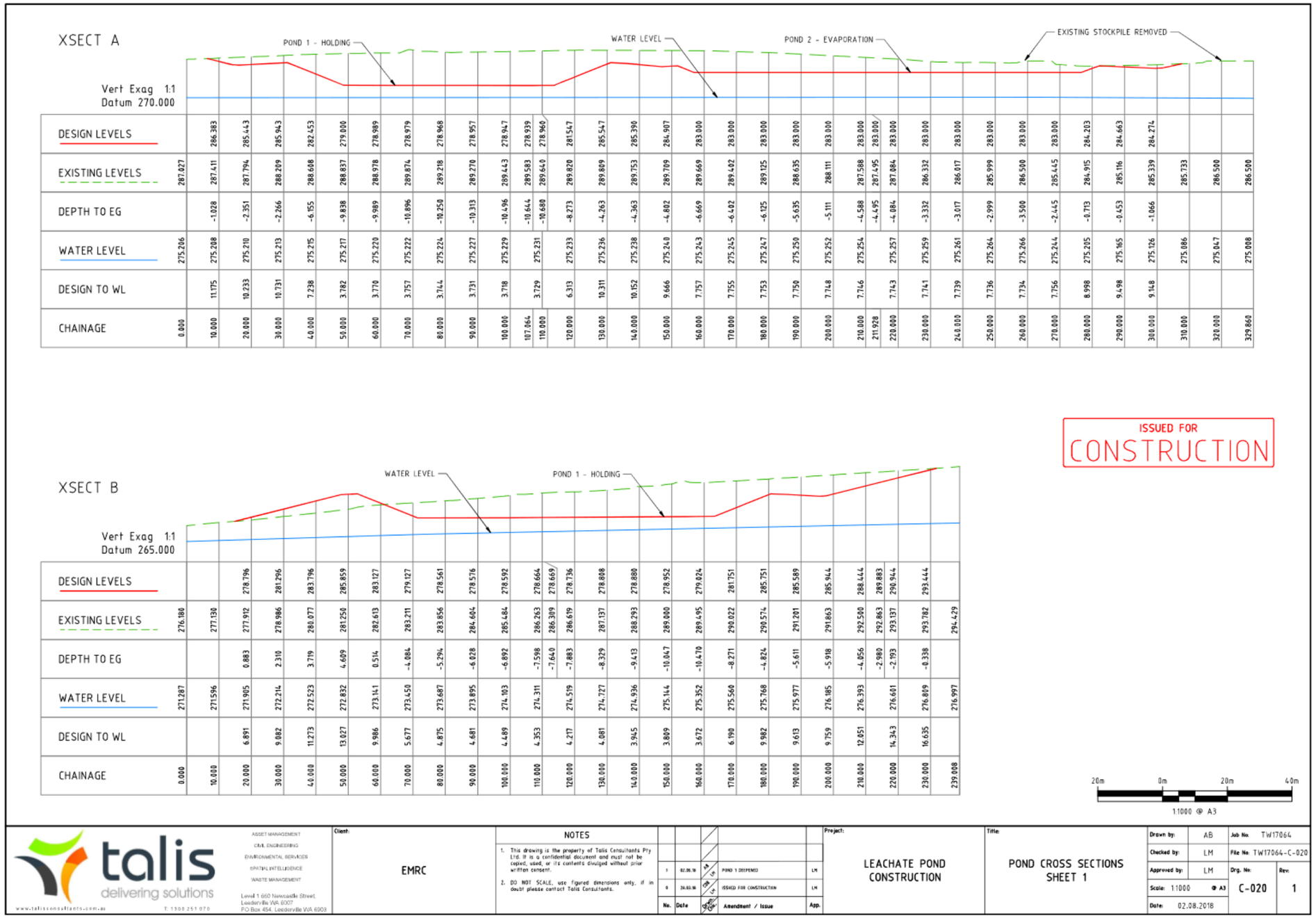
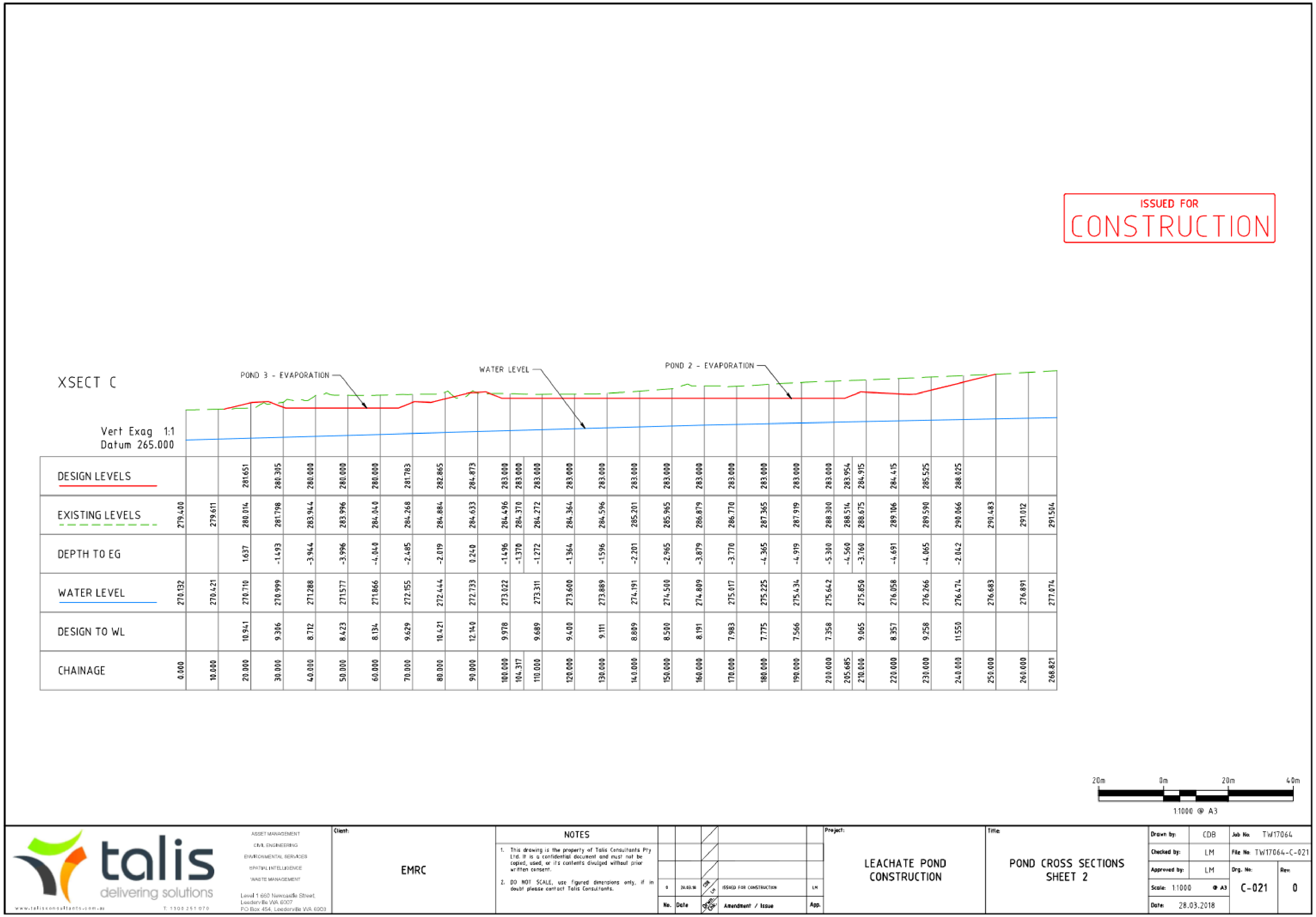


Figure 5: Leachate pond cross section 1

Leachate pond cross section 2

The second leachate pond cross section is shown in the schematic below (Figure 6).



CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	104.317	110.000	120.000	130.000
DESIGN LEVELS			281.651	280.305	280.000	280.000	280.000	281.783	282.865	284.873	283.000	283.000	283.000	283.000	283.000
EXISTING LEVELS	279.400	279.611	280.014	281.798	283.944	283.996	284.040	284.268	284.884	284.633	284.496	284.370	284.272	284.364	284.596
DEPTH TO EG			1.637	-1.493	-3.944	-3.996	-4.040	-2.485	-2.019	0.240	-1.496	-1.370	-1.272	-1.364	-1.596
WATER LEVEL	270.132	270.421	270.710	270.999	271.288	271.577	271.866	272.155	272.444	272.733	273.022		273.311	273.600	273.889
DESIGN TO WL			10.941	9.306	8.712	8.423	8.134	9.629	10.421	12.140	9.978		9.689	9.400	9.111

CHAINAGE	140.000	150.000	160.000	170.000	180.000	190.000	200.000	205.685	210.000	220.000	230.000	240.000	250.000	260.000	268.821
DESIGN LEVELS	283.000	283.000	283.000	283.000	283.000	283.000	283.000	283.954	284.915	284.415	285.525	288.025			
EXISTING LEVELS	285.201	285.965	286.879	286.770	287.365	287.919	288.300	288.514	288.675	289.106	289.590	290.066	290.483	291.012	291.504
DEPTH TO EG	-2.201	-2.965	-3.879	-3.770	-4.365	-4.919	-5.300	-4.560	-3.760	-4.691	-4.065	-2.042			
WATER LEVEL	274.191	274.500	274.809	275.017	275.225	275.434	275.642		275.850	276.058	276.266	276.474	276.683	276.891	277.074
DESIGN TO WL	8.809	8.500	8.191	7.983	7.775	7.566	7.358		9.065	8.357	9.258	11.550			

Figure 6: Leachate pond cross section 2