Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6859/2023/1
Works approval holder	Pilgangoora Operations Pty Ltd
ACN	616 560 395
Registered business address	Level 2, 146 Colin Street WEST PERTH WA 6005
DWER file number	INS-0002699
Duration	19/03/2024 to 18/03/2029
Date of issue	19/03/2024
Date of amendment	2 September 2025
Premises details	Pilgangoora Operations Mining tenements M45/1230 and M45/1260 MARBLE BAR WA 6760 As depicted in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production / design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	4,000,000 tonnes per annum

This works approval is granted to the works approval holder, subject to the attached conditions, on 2 September 2025, by:

Cathie Derrington

Digitally signed by Cathie Derrington
Date: 2025.09.02 08:46:03 +08'00'

SENIOR ENVIRONMENTAL OFFICER,
GREEN ENERGY
an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Works approval history

Date	Reference number	EO Number	Summary of changes
19/03/2024	W6859/2023/1		Works approval granted.
02/09/2025	W6859/2023/1	APP-0029231	Removal of CCIR design and construction requirements for tailing storage facility (TSF) TSF3 Stage 2.

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:

Construction phase

General

1. The works approval holder must manage stormwater generated during the construction/installation of the infrastructure specified in Table 1, by capturing all sediment laden stormwater within sediment basins, prior to release to the environment.

Infrastructure and equipment

2. The works approval holder must:

(a) construct the critical containment infrastructure;

(b) in accordance with the corresponding design and construction requirements; and

(c) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Critical containment infrastructure design and construction requirements

Item	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Tailings Storage Facility 3 (TSF3) Stage 1	(a) Embankments to be constructed in accordance with the design details shown in Figure 4 and Figure 8 of Schedule 2. (b) Embankment settlement pins to be installed at regular intervals along the embankment crest and constructed in accordance with the design details shown in Figure 12 of Schedule 2. (c) Install vibrating wire piezometers (VWP) in accordance with the design details shown in Figure 12 of Schedule 2. VWP fitted with instrument readout stations (to download data to a central storage location). (d) Embankment height not to exceed RL 180.2m as shown in Figure 4 and Figure 8 of Schedule 2. (e) Constructed so a minimum freeboard of 500 mm is maintained following a 1% AEP, 72-hour rainfall event. (f) Freeboard makers placed on embankment to allow visual freeboard inspection. (g) Underdrainage system constructed/ installed in accordance with the design details shown in Figure 5, Figure 6 and Figure 7 of Schedule 2. (h) Decant pump platform and access causeway located as shown in Figure 3 of	As shown Figure 2 of Schedule 1

Item	Infrastructure	Design and construction / installation requirements	Infrastructure location
		Schedule 2 and constructed in accordance with design details shown in Figure 9 of Schedule 2. (i) Distribution pipeline fitted with spigot offtakes located at regularly spaced intervals (nominally every 25 m) along the embankment crest. Spigot clamps installed on each offtake hose allowing the deposition location to be controlled. (j) Tailings delivery pipeline to be connected to the distribution pipeline on the embankment crest. Pipework to be located on the upstream side of the embankment crest. (k) Decant pipeline to be contained on the upstream crest of the TSF and within a bunded easement to the decant water storage pond.	
2.	TSF3 decant water storage pond	(a) Constructed in accordance with the design details shown in Figure 10 of Schedule 2. (b) Constructed with a capacity to store a maximum of 50 ML of collected decant water. (c) Constructed so a minimum freeboard of 500 mm is maintained following a 1% AEP, 72-hour rainfall event. (d) Embankment height must not exceed RL 180.8m.	As shown Figure 2 of Schedule 1 and Figure 3 of Schedule 2
3.	NLO Stage 5 embankment lift	(a) Embankments to be constructed in accordance with the design details shown in Figure 14, Figure 15 and Figure 16 of Schedule 2. (b) Embankment height not to exceed RL 192.1m. (c) Constructed so a minimum freeboard of 500 mm is maintained following a 1% AEP, 72-hour rainfall event. (d) Upstream spigot deposition of tailings from the Stage 5 embankment crest. (e) The Stage 5 decant raise to comprise of 1.8 m diameter slotted precast concrete decant tower sections surrounded by free-draining coarse rockfill. Constructed in accordance with the design details shown in Figure 17 of Schedule 2. (f) Extend embankment piezometer cables to ensure the continued monitoring of the phreatic surface. (g) Install embankment settlement pins at	As shown in Figure 12 Schedule 1 and Figure 13 of Schedule 2

Item	Infrastructure	Design and construction / installation requirements	Infrastructure location
		regular intervals along the Stage 5 embankment crest to monitor embankment movements.	
4.	New and reinstalled tailings delivery pipelines and decant return water pipelines	(a) Pipelines constructed according to Australian Standards AS/NZS 2033, 4129, 4130 and 4131 for polyethylene pipes. (b) Pipelines located within bunded corridors for secondary spillage containment. (c) Equipped with leakage detection (flow and pressure monitoring) with automatic cut-outs in the event of a pipeline failure. (d) Where pipelines are constructed within road corridors, those roads must be bunded by earthen windrows to contain pipelines leaks. (e) Following construction and prior to time limited operations: (i) Pipelines must be leak tested. (ii) All flow meters to be calibrated; and (iii) All pressure meters to be calibrated.	Within the Premises boundary shown in **Figure 1** of Schedule 1

Critical containment infrastructure report

3. The works approval holder must within 90 calendar days of the Critical Containment Infrastructure identified by condition 2 being constructed:

(a) undertake an audit of their compliance with the requirements of condition 2; and

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

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

(a) certification by a suitably qualified geotechnical engineer that each item of critical containment infrastructure or component thereof, as specified in condition 2, has been built and installed in accordance with the requirements specified in condition 2;

(b) as constructed plans and a detailed site plan showing the location and dimensions for each item of critical containment infrastructure or component thereof, as specified in condition 2;

(c) photographic evidence of the installation of the infrastructure; and

(e) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person;

Non-Critical Containment Infrastructure and equipment

5. The works approval holder must:

(a) construct the infrastructure;

(b) in accordance with the corresponding design and construction requirements;

(c) at the corresponding infrastructure location; and

(d) as set out in Table 2.

Table 2: Design and construction requirements

Item	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Tailings Storage Facility 3 (TSF3) Stage 2	(a) Embankments to be constructed in accordance with the design details shown in Figure 20 of Schedule 2 (b) Embankment settlement pins to be installed at regular intervals along the embankment crest and constructed in accordance with the design details shown in Figure 12 of Schedule 2. (c) Embankment height not to exceed RL 184.1 m as shown in Figure 8 and Figure 20 of Schedule 2. (d) Constructed so a minimum freeboard of 500 mm is maintained following a 1% AEP, 72-hour rainfall event. (e) Freeboard makers placed on embankment to allow visual freeboard inspection. (f) Decant pump platform and access causeway located as shown in Figure 19 of Schedule 2 and constructed in accordance with design details shown in Figure 20 of Schedule 2. (g) Distribution pipeline fitted with spigot offtakes located at regularly spaced intervals (nominally every 25 m) along the embankment crest. Spigot clamps installed on each offtake hose allowing the deposition location to be controlled. (h) Tailings delivery pipeline to be connected to the distribution pipeline on the embankment crest. Pipework to be located on the upstream side of the embankment crest. (i) Decant pipeline to be contained on the upstream crest of the TSF and within a bunded easement to the decant water storage pond.	As shown in Figure 2 of Schedule 1

Non-Critical Containment Infrastructure Compliance reporting

6. The works approval holder must within 90 calendar days of an item of infrastructure required by condition 4 constructed:

(a) undertake an audit of their compliance with the requirements of condition 4;

(b) and prepare and submit to the CEO an Environmental Compliance Report on that compliance.

7. The Environmental Compliance Report required by condition 6, must include as a minimum the following:

(a) certification by a suitably qualified and experienced Engineer that the items of infrastructure or component(s) thereof, as specified in condition 4 have been constructed in accordance with the relevant requirements specified in condition 4;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in 4; and

(c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Construction of groundwater monitoring wells

8. The works approval holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 3 .

Table 3: Infrastructure requirements – groundwater monitoring wells

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring well(s): TSF3MB001_D TSF3MB001_S TSF3MB002_D TSF3MB002_S TSF3MB003_D TSF3MB003_S TSF3MB004_D TSF3MB004_S TSF3MB005_D TSF3MB005_S TSF3MB006_D TSF3MB006_S TSF3MB007_D TSF3MB007_S TSF3MB008_D TSF3MB008_S	<u>Well design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores*. Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary/seasonal perched features are present, wells must be nested, and the perched features individually screened. The screened interval should be no longer than 6 metres. <u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring wells. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.	As depicted in Figure 11 of Schedule 2. Map of groundwater monitoring well locations. An allowance of +/- 25 m for each groundwater monitoring well location is permitted.	Must be constructed, developed (purged), and determined to be operational by no later than 30 calendar days prior to commencement of time limited operations.

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	Well construction log: Well construction details must be documented within a well construction log to demonstrate compliance with *ASTM D5092/D5092M-16*. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	Well development: All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development activities and included in the well construction log.		
	Installation survey: the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Well network map: a well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells in the monitoring network and their respective identification numbers.		

Note 1: refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on well screen depth and length.

Groundwater monitoring prior to time limited operations

9. The works approval holder must conduct groundwater monitoring in accordance with the requirements specified in Schedule 3 and:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) in the corresponding unit;

(d) at no less than the corresponding frequency;

(e) using the corresponding method,

as set out in Table 4

Table 4 Groundwater monitoring of ambient concentrations

Monitoring location	Parameter	Unit	Averaging period	Frequency	Method
Groundwater monitoring well(s) TSF3MB001_D TSF3MB001_S TSF3MB002_D TSF3MB002_S TSF3MB003_D TSF3MB003_S TSF3MB004_D TSF3MB004_S TSF3MB005_D TSF3MB005_S TSF3MB006_D TSF3MB006_S TSF3MB007_D TSF3MB007_S TSF3MB008_D TSF3MB008_S as depicted in Figure 11 of Schedule 2. Map of groundwater monitoring well locations.	Standing Water Level[1]	mbgl	Spot sample	A single sampling event undertaken prior to commencement of time limited operations	AS/NZS 5667.1 AS/NZS 5667.11
	pH[1]	pH units			
	Electrical Conductivity	µS/cm			
	Total Dissolved Solids	mg/L			
	Total Alkalinity as $CaCO_3$				
	Carbonate Alkalinity as CO_3				
	Bicarbonate Alkalinity as HCO_3				
	Fluoride by ISE				
	Chloride, Cl				
	Sulfate, SO_4				
	Nitrite, NO_2				
	Nitrate, NO_3				
	Sodium, Na				
	Potassium, K				
	Calcium, Ca				
	Magnesium, Mg				
	Total Hardness by Calculation				
	Phosphorus, P				
	Total Phosphorus				
	Total Nitrogen				
	Aluminium, Al				
	Arsenic, As				
	Cadmium, Cd				
	Cobalt, Co				
	Chromium, Cr				
	Copper, Cu				
	Iron, Fe				
	Lithium, Li				
	Manganese, Mn				
	Nickel, Ni				
	Lead, Pb				
	Zinc, Zn				

Monitoring location	Parameter	Unit	Averaging period	Frequency	Method
	Barium, Ba				
	Boron, B				
	Mercury, Hg				
	Molybdenum, Mo				
	Antimony, Sb				
	Selenium, Se				
	Silicon, Si				
	Tin, Sn				
	Vanadium, V				
	Uranium, U				
	Thorium, Th				
	Bismuth, Bi				
	Niobium, Nb				
	Thallium, Tl				
	Caesium, Cs				
	Rubidium, Rb				
	Radium-266	Bq/L			
	Radium-228				

Note 1: In-field non-NATA accredited analysis permitted.

10. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified in condition 9.

Compliance reporting (well construction and ambient groundwater monitoring)

11. The works approval holder must, within 60 calendar days of the monitoring wells being constructed, submit to the CEO a construction report evidencing compliance with the requirements of condition 8.

12. The works approval holder must submit to the CEO, a monitoring report demonstrating compliance with condition 8, and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program (as outlined in Schedule 3);

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown); and

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites.

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

Time limited operations phase

Commencement and duration (critical containment infrastructure)

13. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 2:

(a) where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 3 and 4 meets the requirements of those conditions; or

(b) where at least 45 business days have passed after the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 3 and 7 has been submitted to the CEO.

Commencement and duration (Non-critical containment infrastructure)

14. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 5 where the Environmental Compliance Report as required by condition 6 has been submitted by the works approval holder for that item of infrastructure.

15. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 16 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 14 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the Environmental Protection Act 1986, if one is granted before the end of the period specified in condition 15(a)

Time limited operations requirements and emission limits

16. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

item	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	TSF3 Stage 1	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) The supernatant pond is maintained at the decant tower location at the waste dump side (remote from the main embankment) (c) Visual inspections daily and following a 1% AEP, 72-hour rainfall event to check: (i) A minimum freeboard of 500 mm is being maintained (ii) Location and size of decant pond (in hectares and expressed as a total percentage of the surface area of the TSF) (iii) Change in seepage conditions or sudden change in water level (iv) Signs of erosion	As shown in Figure 2 of Schedule 1 and Figure 3 of Schedule 2
2.	Tailings Storage Facility 3 (TSF3) Stage 2	(a) To be maintained as per the design and construction/installation requirements in condition 4 (b) The supernatant pond is maintained at the decant tower location at the waste dump side (remote from the main embankment) (c) Visual inspections daily and following a 1% AEP, 72-hour rainfall event to check: i. A minimum freeboard of 500 mm is being maintained ii. Location and size of decant pond (in hectares and expressed as a total percentage of the surface area of the TSF) iii. Change in seepage conditions or sudden change in water level iv. Signs of erosion	As shown in Figure 2 of Schedule 1 and Figure 19 Schedule 2
3.	NLO TSF Stage 5	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Visual inspections daily and following a 1% AEP 72-hour, rainfall event to check: i. A minimum freeboard of 500 mm is being maintained ii. Location and size of decant pond (in hectares and expressed as a total percentage of the surface area of the TSF) iii. Change in seepage conditions or sudden change in water level iv. Signs of erosion	As shown in Figure 2 of Schedule 1 and Figure 13 of Schedule 2

item	Site infrastructure and equipment	Operational requirement	Infrastructure location
4.	Decant water storage pond	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Visual inspections daily and following a 1% AEP. 72-hour rainfall event to check freeboard capacity and for any signs of erosion.	As shown Figure 2 of Schedule 1 and Figure 3 of Schedule 2
5.	Pipelines carrying tailings and decant return water	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Visual inspections every 24 hours when in operation to check the integrity of pipelines and bunding	Not applicable
6.	Vibrating wire piezometers (VWP)	(a) Fortnightly inspections to ensure integrity of VWPs and to ensure telemetry data is downloading to a central storage location	Within TSF3 and NLO Stage 5 embankments as determined by the design engineer specifications

Emissions and discharges

2. The works approval holder must ensure that the emissions specified in Table 6, are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 6: Authorised discharge points

Emission	Discharge point	Discharge point location
Tailings from the onsite Ngungaju Plant and the Pilgangoora Lithium-Tantalum Project (L9056)	NLO TSF Stage 5	As shown in Figure 2 of Schedule 1 and Figure 13 of Schedule 2
	TSF3	TSF3 as shown in Figure 2 of Schedule 1 and Figure 3 of Schedule 2

Tailings characterisation

3. During the first 60 calendar days of time limited operations, the works approval holder must undertake at least one kinetic test on a sample of material that is collected from the TSF3. To obtain a statistically representative sample of this material, the works approval holder must undertake the sampling in accordance with the following procedure:

(a) Collect a minimum 100 g sample of tailings material from every sixth tailings discharge spigot to obtain a total of 30 separate samples.

(b) Combine the samples into a mine-dump composite sample; and

(c) Dry sieve the mine-dump composite sample to ≤ 2 mm (final composite sample should weigh at least 1,000 g after sieving.

4. The results from the kinetic test required in condition 3 shall be collated in excel format and provided in a report to the CEO no more than 60 calendar days after sample collection.

Groundwater monitoring during time limited operations

5. The works approval holder must conduct groundwater monitoring in accordance with the requirements specified in Schedule 3 and:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) with the corresponding limit;

(d) in the corresponding unit;

(e) at no less than the corresponding frequency;

(f) using the corresponding method,

as set out in Table 7.

Table 7: Groundwater monitoring during time limited operations

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
Groundwater monitoring well(s) TSF3MB001_D TSF3MB001_S TSF3MB002_D TSF3MB002_S TSF3MB003_D TSF3MB003_S TSF3MB004_D TSF3MB004_S TSF3MB005_D TSF3MB005_S TSF3MB006_D TSF3MB006_S TSF3MB007_D TSF3MB007_S TSF3MB008_D TSF3MB008_S as depicted in Figure 11 of Schedule 2. Map of groundwater monitoring well locations.	Standing water level	6	4	mbgl	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations (specifically tailings deposition into TSF3). AND A single sampling event undertaken between 120 and 180 calendar days following commencement of time limited operations (specifically tailings deposition into TSF3).	AS/NZS 5667.1 & AS/NZS 5667.11
	pH[1]	-	-	pH units		
	Electrical conductivity (EC)			µS/cm		
	Total Dissolved Solids			mg/L		
	Total Alkalinity as $CaCO_3$					
	Carbonate Alkalinity as CO_3					
	Bicarbonate Alkalinity as HCO_3					
	Fluoride by ISE					
	Chloride, Cl					
	Sulfate, SO_4					
	Nitrite, NO_2					
	Nitrate, NO_3					
	Sodium, Na					
	Potassium, K					
	Calcium, Ca					
	Magnesium, Mg					

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
	Total Hardness by Calculation					
	Phosphorus, P					
	Total Phosphorus					
	Total Nitrogen					
	Aluminium, Al					
	Arsenic, As					
	Cadmium, Cd					
	Cobalt, Co					
	Chromium, Cr					
	Copper, Cu					
	Iron, Fe					
	Lithium, Li					
	Manganese, Mn					
	Nickel, Ni					
	Lead, Pb					
	Zinc, Zn					
	Barium, Ba					
	Boron, B					
	Mercury, Hg					
	Molybdenum, Mo					
	Antimony, Sb					
	Selenium, Se					
	Silicon, Si					
	Tin, Sn					
	Vanadium, V					
	Uranium, U					
	Thorium, Th					
	Bismuth, Bi					
	Niobium, Nb					
	Thallium, Tl					
	Caesium, Cs					
	Rubidium, Rb					
	Radium-266			Bq/L		

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
	Radium-228					

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: The limits of reporting must be set to allow comparison with relevant assessment levels.

21. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified in condition 5.

22. The works approval holder must record, investigate, take corrective action and report to the CEO within 14 calendar days, in the event of a parameter in Condition 5 exceeding the corresponding limit or management action trigger.

23. The works approval holder must include the following information in the report referred to in condition 22 in relation to any exceedances of any limit identified in that condition:

(a) the nature of the exceedance;

(b) the time and date when the exceedance occurred;

(c) whether any environmental impact occurred as a result of the exceedance and, if so, what that impact was and where the impact occurred;

(d) the details of the management action(s) taken pursuant with condition 22 in response to the exceedance;

(e) the details and result of any investigation undertaken into the cause of the exceedance; and

(f) what action has been taken, or will be taken, to prevent the exceedance occurring again and for the purpose of minimising the likelihood of pollution or environmental harm.

Groundwater monitoring reporting requirements

24. The works approval holder must submit to the CEO, a monitoring report demonstrating their compliance with condition 5, and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program (as specified in Schedule 3);

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites;

(i) an interpretive summary and assessment of results against previous monitoring results; and

(j) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

Water balance monitoring

25. The works approval holder must review and assess the water balance for the TSF3 each monthly period, and (as a minimum) record the following information:

(a) site rainfall (as determined by an on-site weather station);

(b) evaporation rate (as determined by an on-site weather station);

(c) decant water recovery volumes;

(d) volume of tailings deposited; and

(e) estimate of seepage losses.

Time limited operations - compliance reporting

26. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations.

27. The works approval holder must ensure the report required by condition 26 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of tailings discharged and material processed;

(b) a summary of monitoring results obtained under condition 9, 5 and 25;

(c) a summary of the environmental performance of all infrastructure as constructed or installed; and

(d) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

28. 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.

29. 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(s) 2, 4 and 8;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 16;

(c) monitoring programmes undertaken in accordance with condition(s) 9, 5 and 25; and

(d) complaints received under condition 28.

30. The books specified under condition 29 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 8 have the meanings defined.

Table 8: Definitions

Term	Definition
AEP	means annual exceedance probability (used for design events e.g. rainfalls and floods)
ARI	average recurrence interval
Assessment of Site Contamination NEPM	means the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended from time to time
Guideline: Assessment and management of contaminated sites"	means the document titled *Assessment and management of contaminated sites* (Department of Water and Environmental Regulation, November 2021), as amended from time to time
AS1726	means the Australian Standard AS1726 *Geotechnical Site Investigations*
AS/NZS 2033	means the Australian Standard AS/NZS 2033: Installation of polyethylene pipe systems
AS/NZS 4129	means the Australian Standard AS/NZS 4129: fittings for polyethylene (PE) pipes for pressure applications
AS/NZS 4130	means the Australian Standard AS/NZS 4130 Polyethylene pipes for pressure applications
AS/NZS 4131	means the Australian Standard AS/NZS 4131 Polyethylene compounds for pressure pipes and fittings.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality - Sampling Guidance on sampling of groundwaters*
ASTM D5092/D5092M-16	means the ASTM international standard for *Standard practice for design and installation of groundwater monitoring wells (*Designation: ASTM D5092/D5092M-16*).*
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
critical containment infrastructure	means the items of infrastructure listed in condition 2.
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.

Term	Definition
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).
Freeboard	Means the distance between the maximum water surface elevation and the top of the retaining banks or structures at their lowest point
Kinetic Test	Kinetic test means a test undertaken in accordance with US EPA Method 1627: *Kinetic Test Method for the Prediction of Mine Drainage Quality*, December 2011
L9056	means EP Act Licence L9056/2017/1 for the Pilgangoora Lithium – Tantalum Project
monthly period	means a one-month period commencing from the first day of a month until the last day of that same month.
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 in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
suitably qualified geotechnical engineer	means a competent professional who: (a) holds a qualification in geotechnical engineering or equivalent; and (b) has a minimum of at least three years experience working as a geotechnical engineer.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
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

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

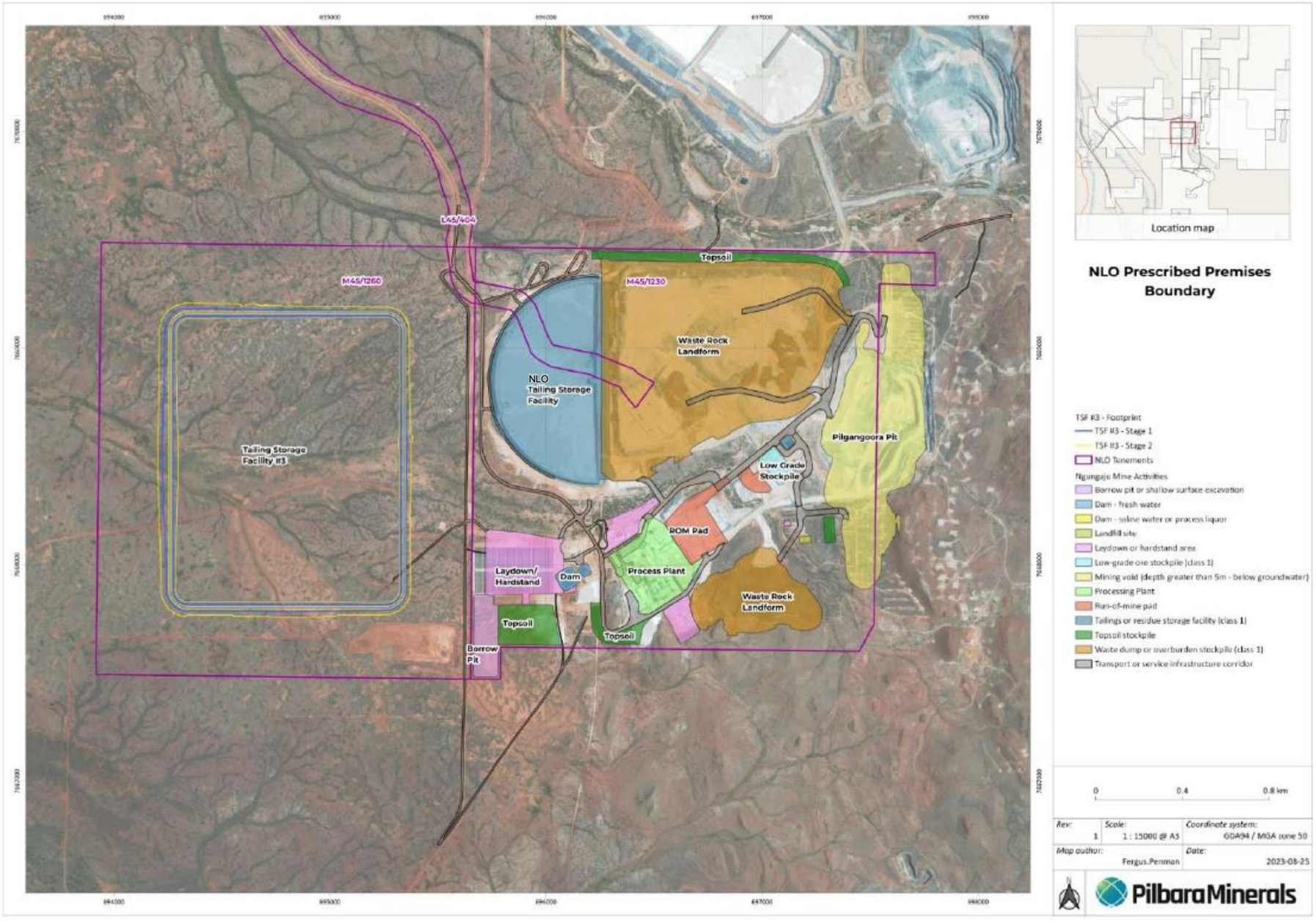

Figure 1: Map of the boundary of the prescribed premises

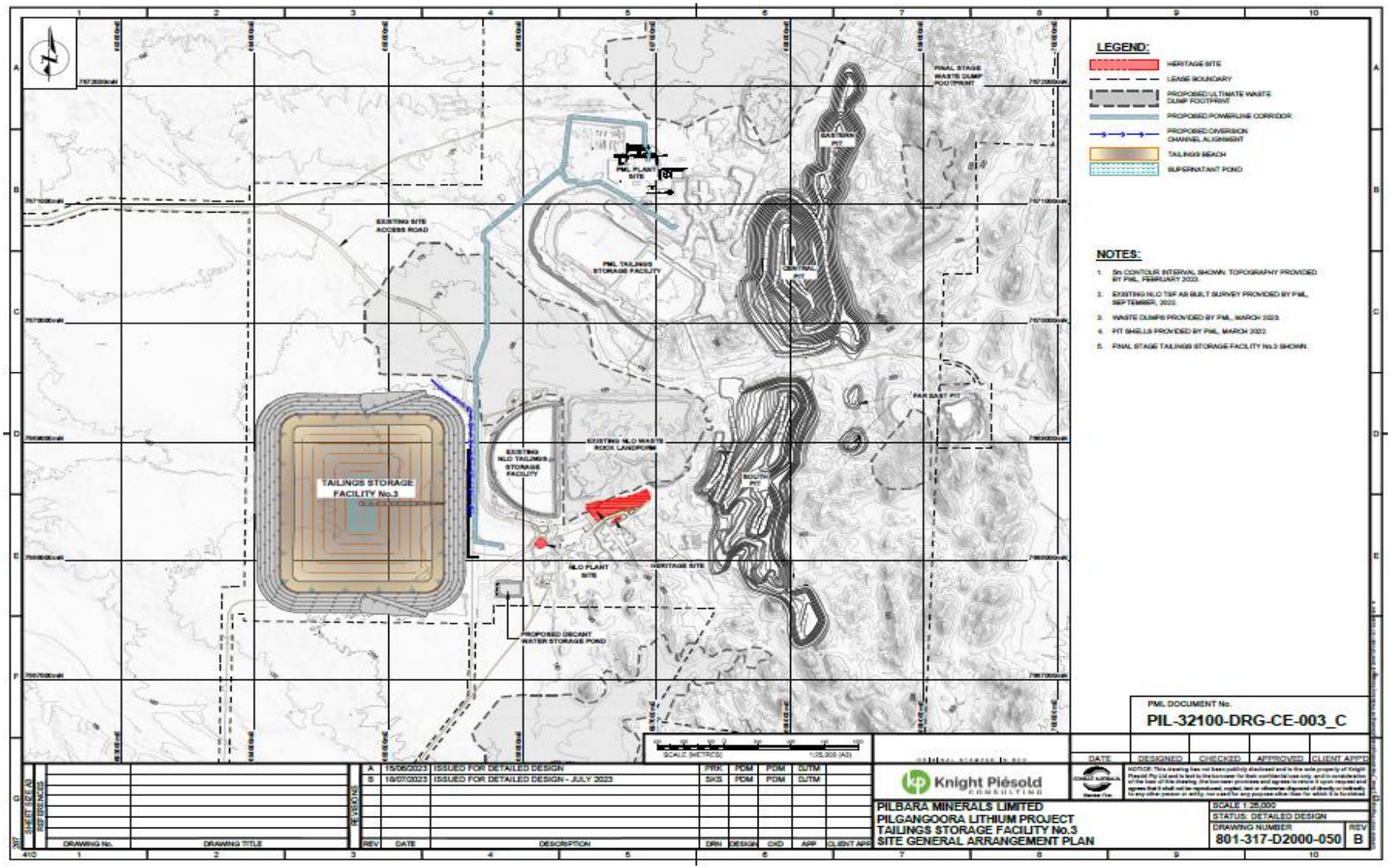

Figure 2: Premises infrastructure locations

Schedule 2: Construction details

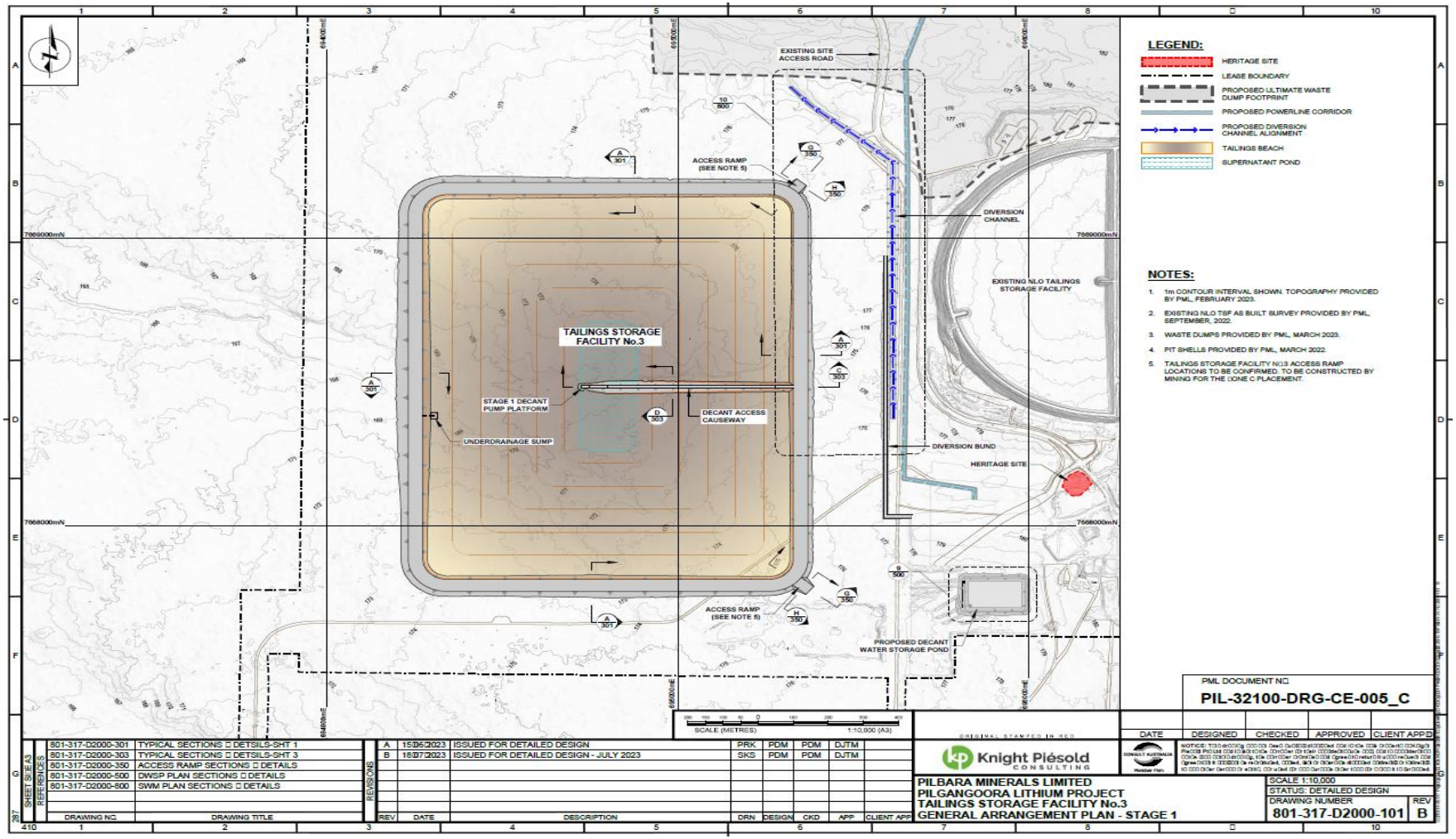

Figure 3: TSF3 general arrangement plan - Stage 1

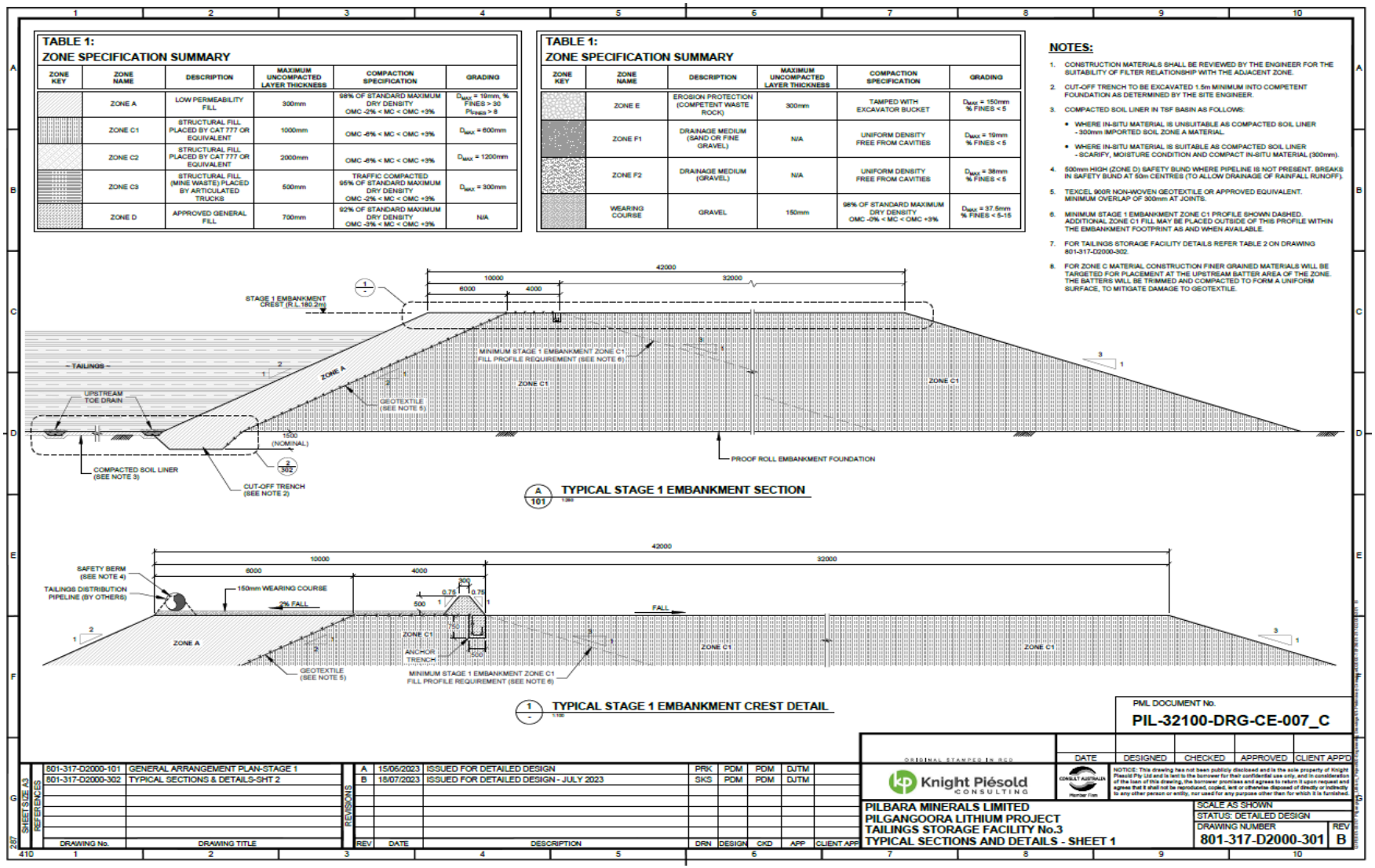

Figure 4: TSF3 Stage 1 embankment construction details

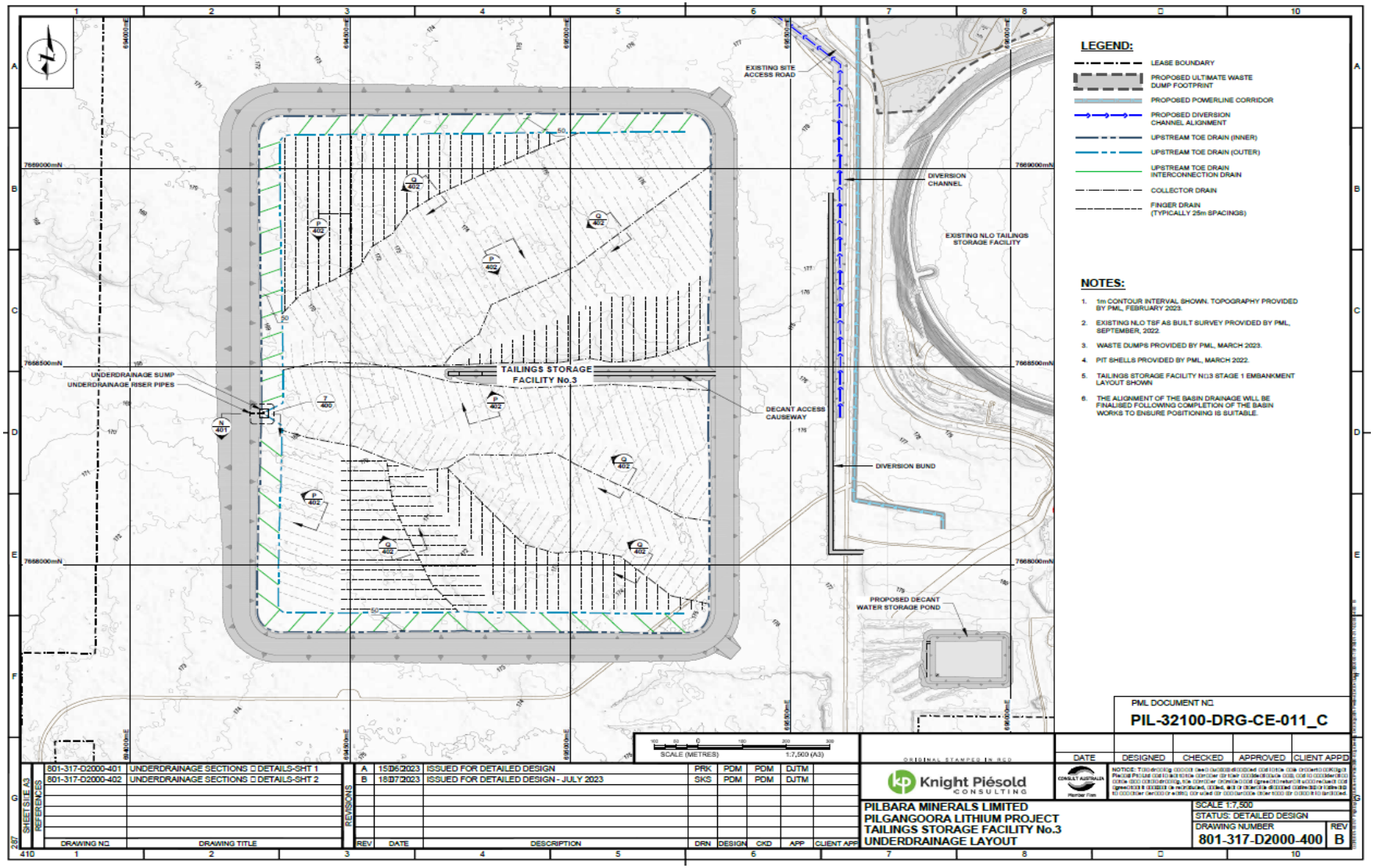

Figure 5: TSF3 Stage 1 underdrainage layout

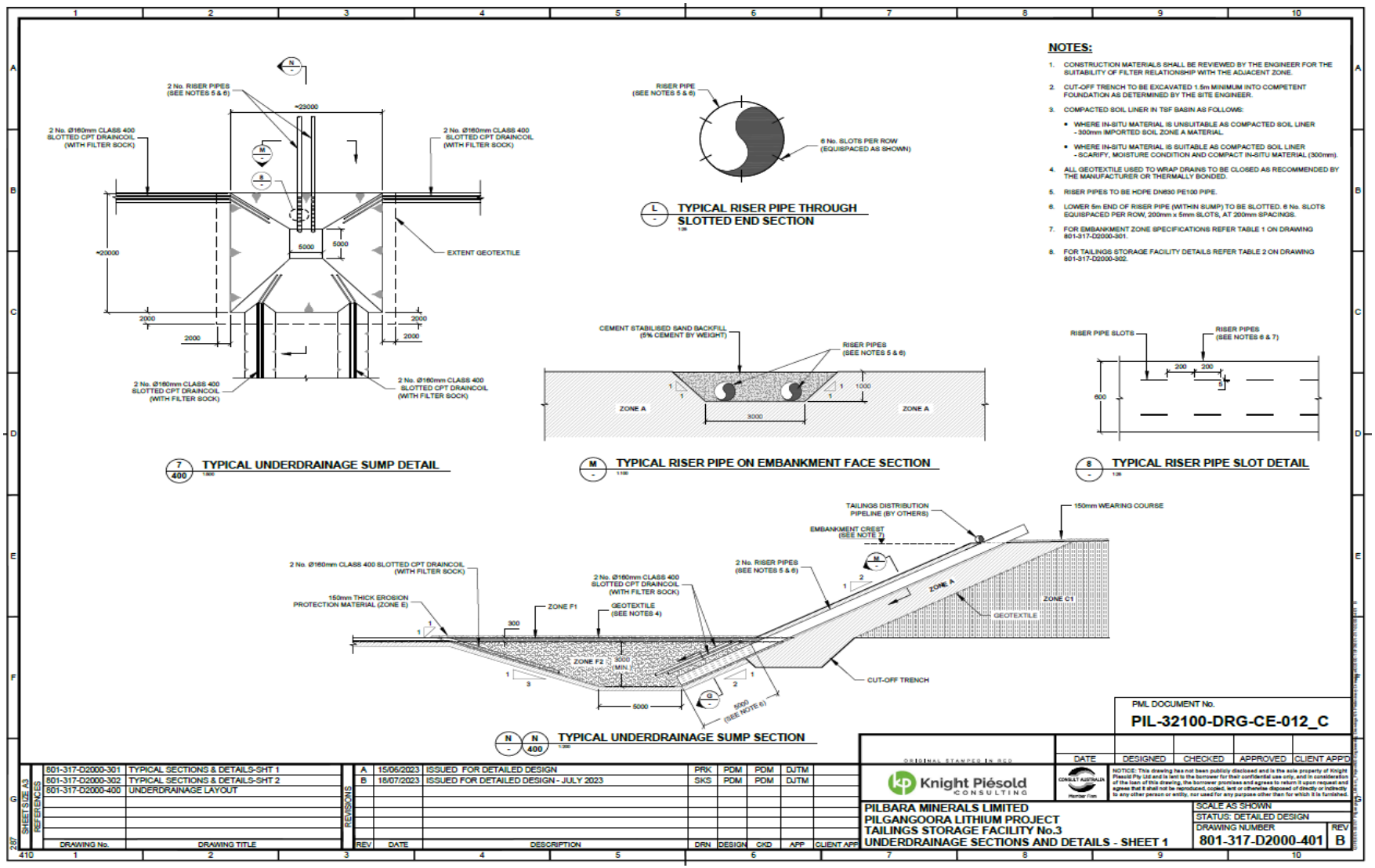

Figure 6: TSF3 Stage 1 underdrainage sections and details – sheet 1

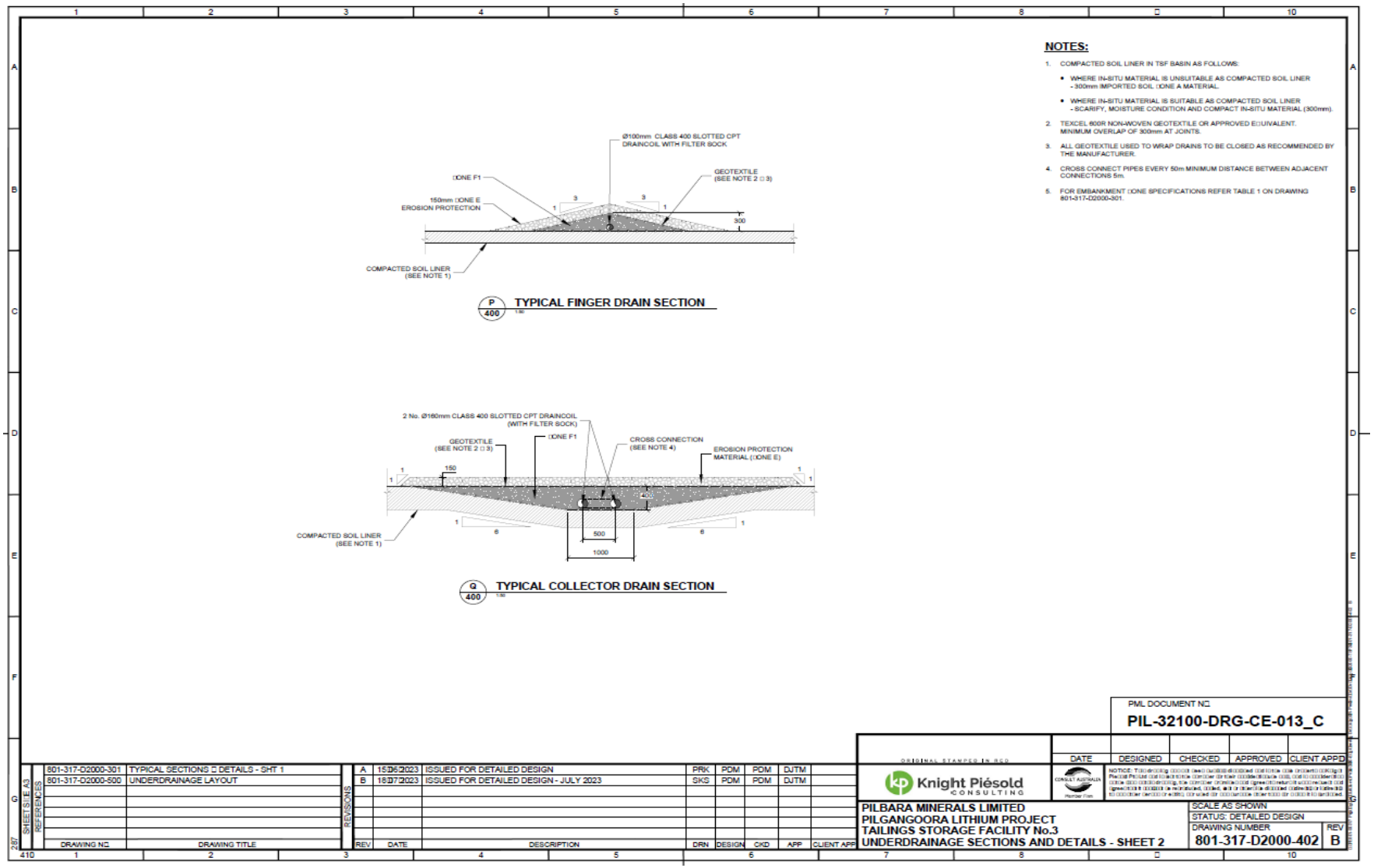

Figure 7: TSF3 Stage 1 underdrainage sections and details – sheet 2

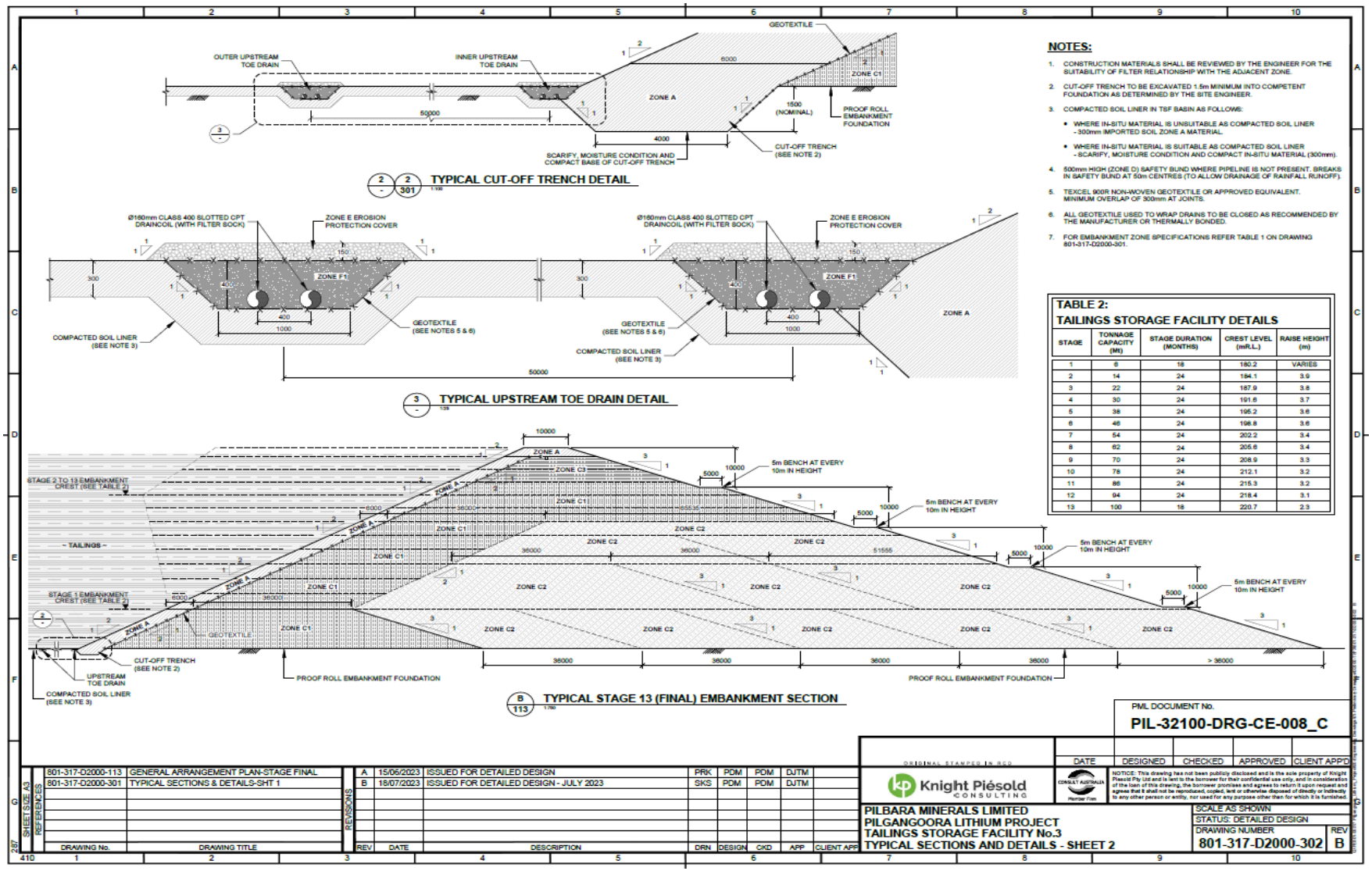

Figure 8: TSF3 typical sections and details

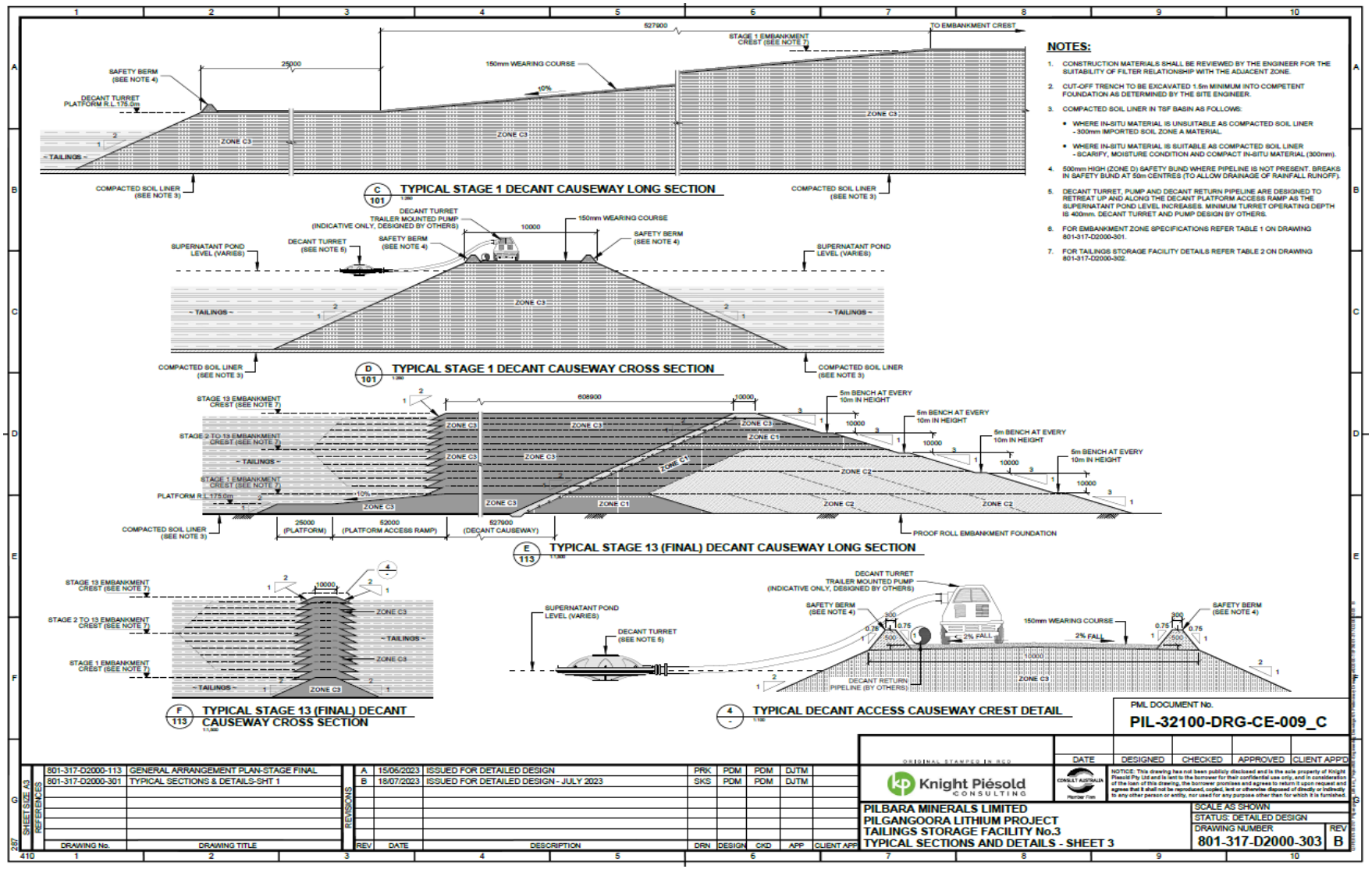

Figure 9: TSF3 decant and causeway typical sections and details

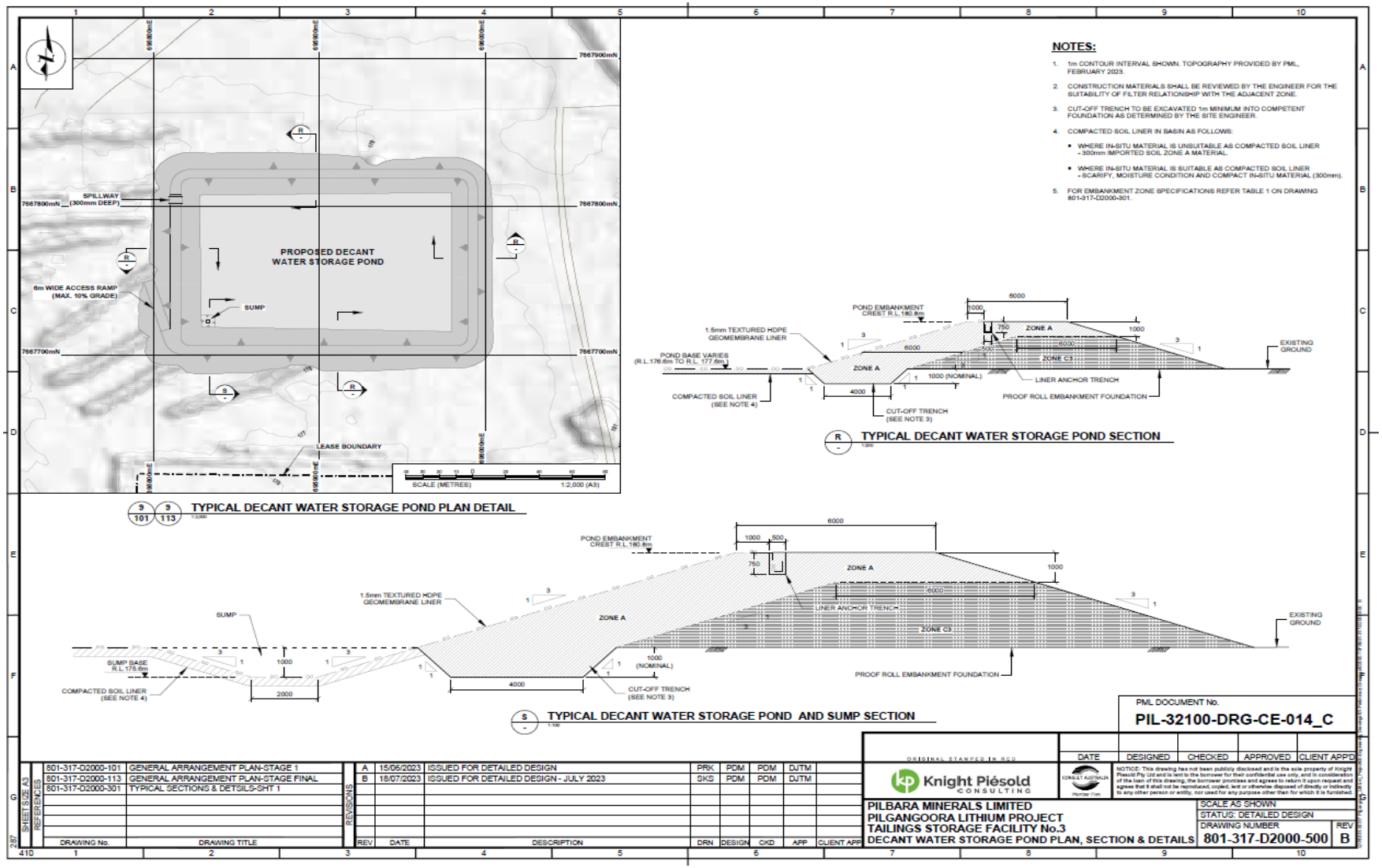

Figure 10: Decant water storage pond cross section and design details

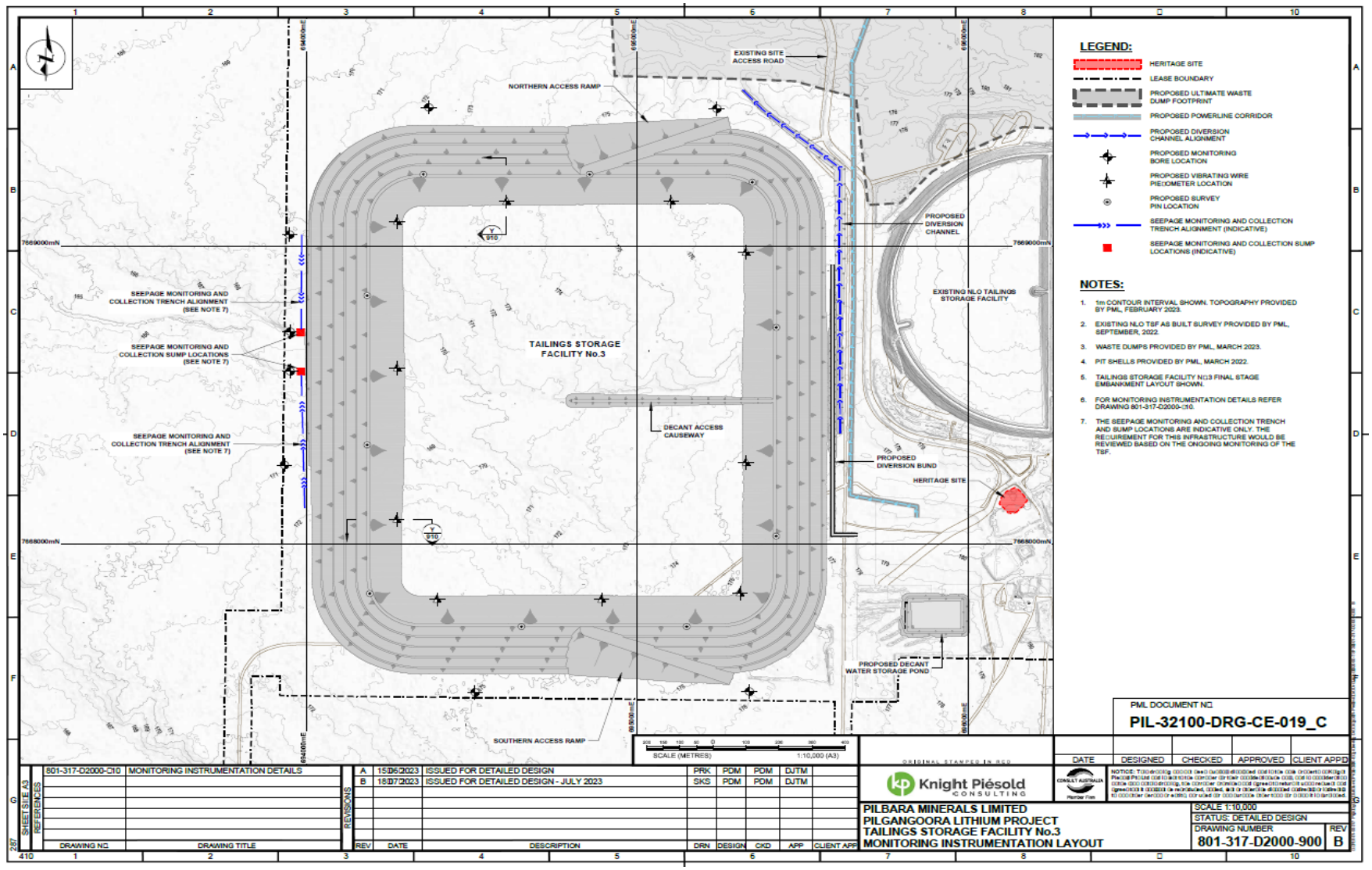

Figure 11: TSF3 groundwater and seepage monitoring locations and details

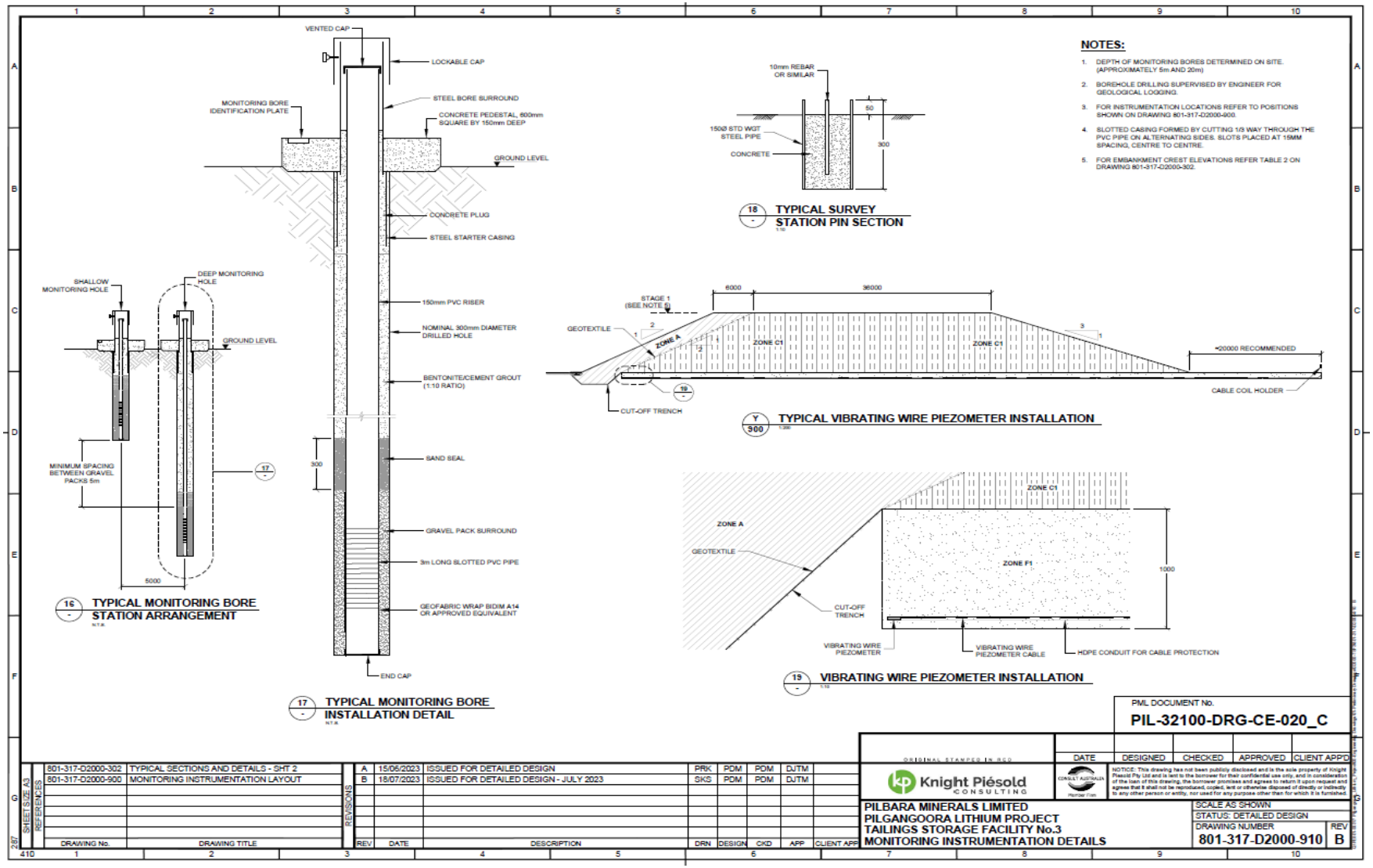

Figure 12: TSF3 groundwater monitoring bore and vibrating wire piezometer design details

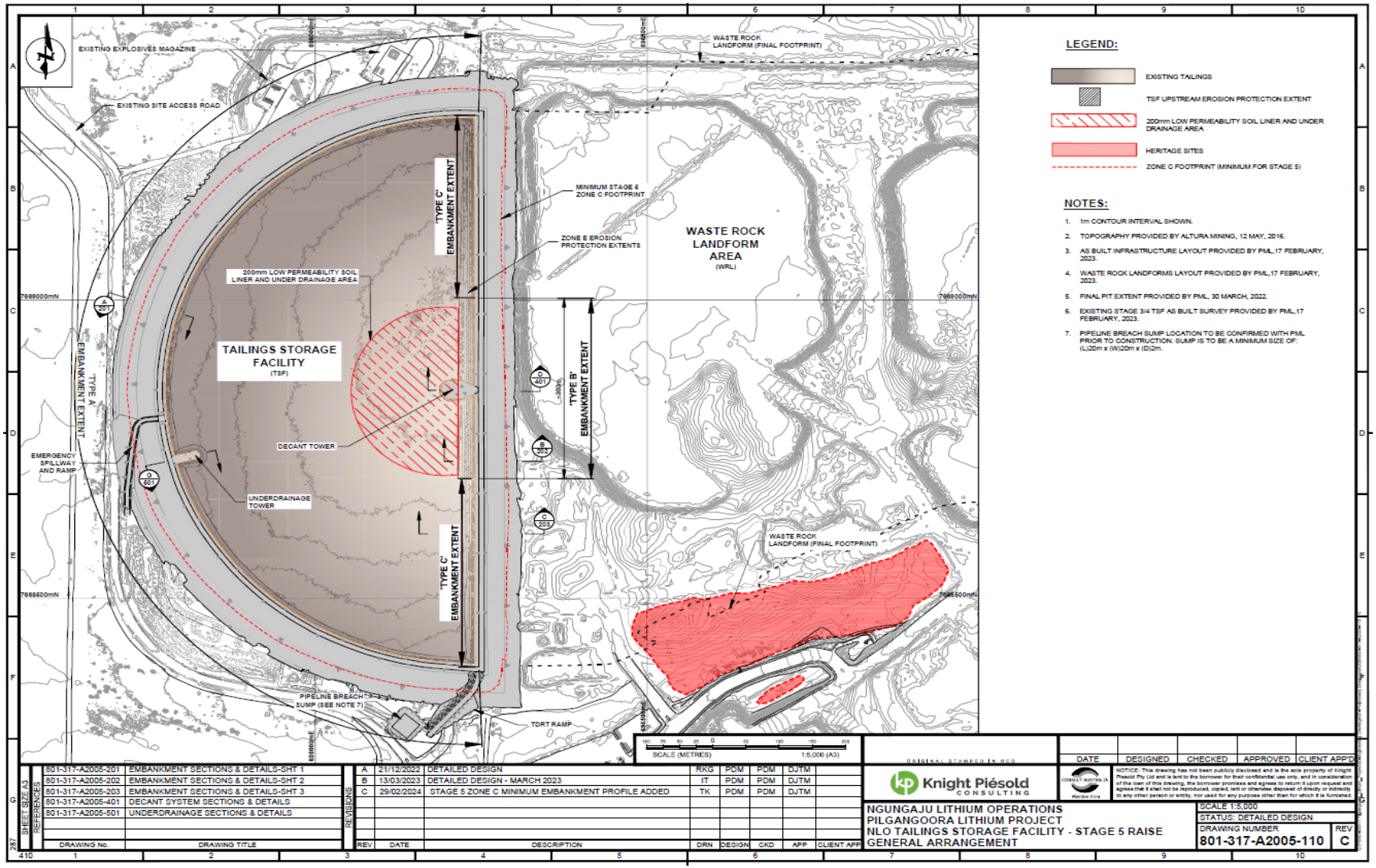

Figure 13: NLO TSF raise 5 general arrangement

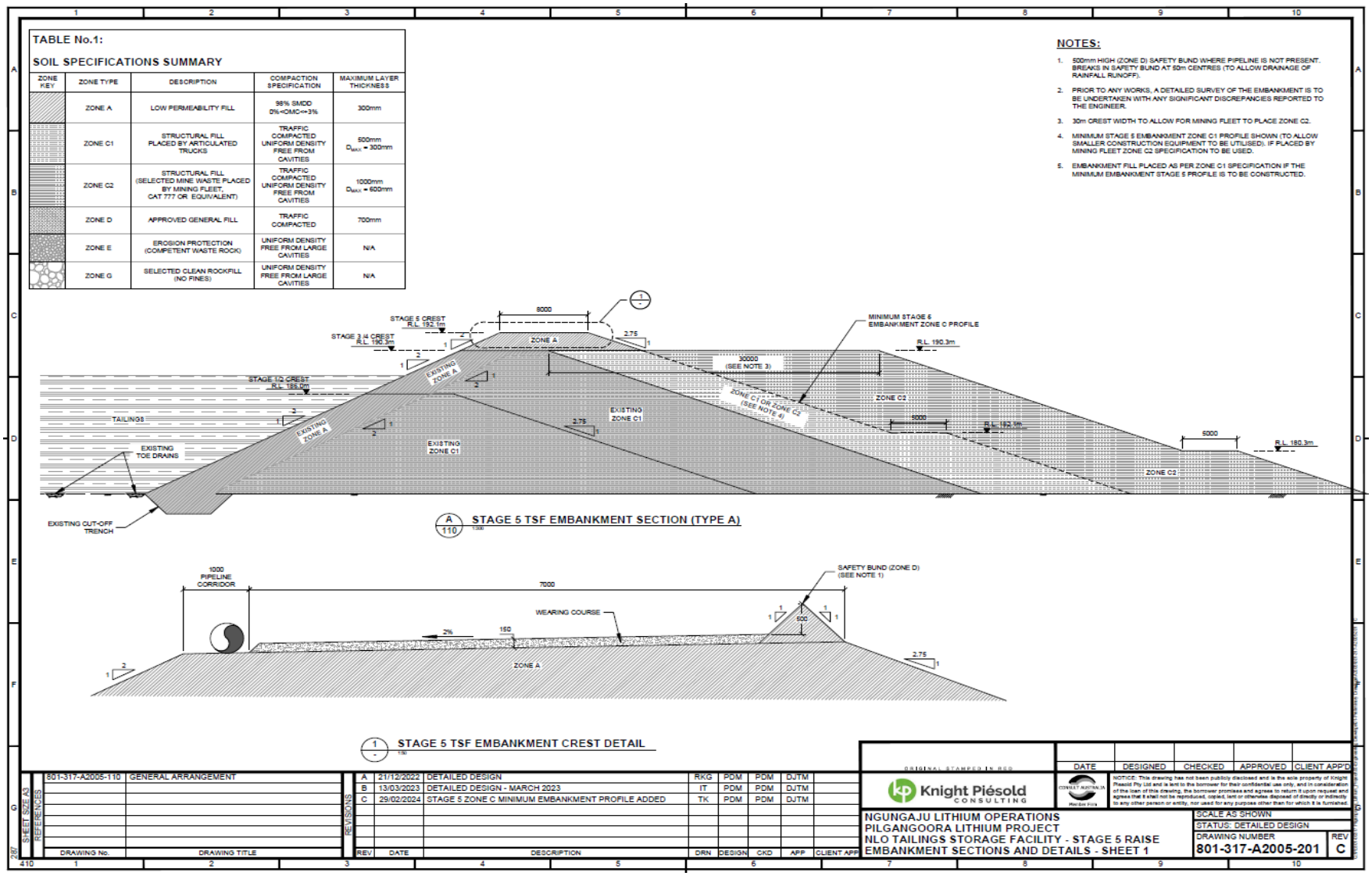

Figure 14: NLO TSF raise 5 embankment construction details – Type A

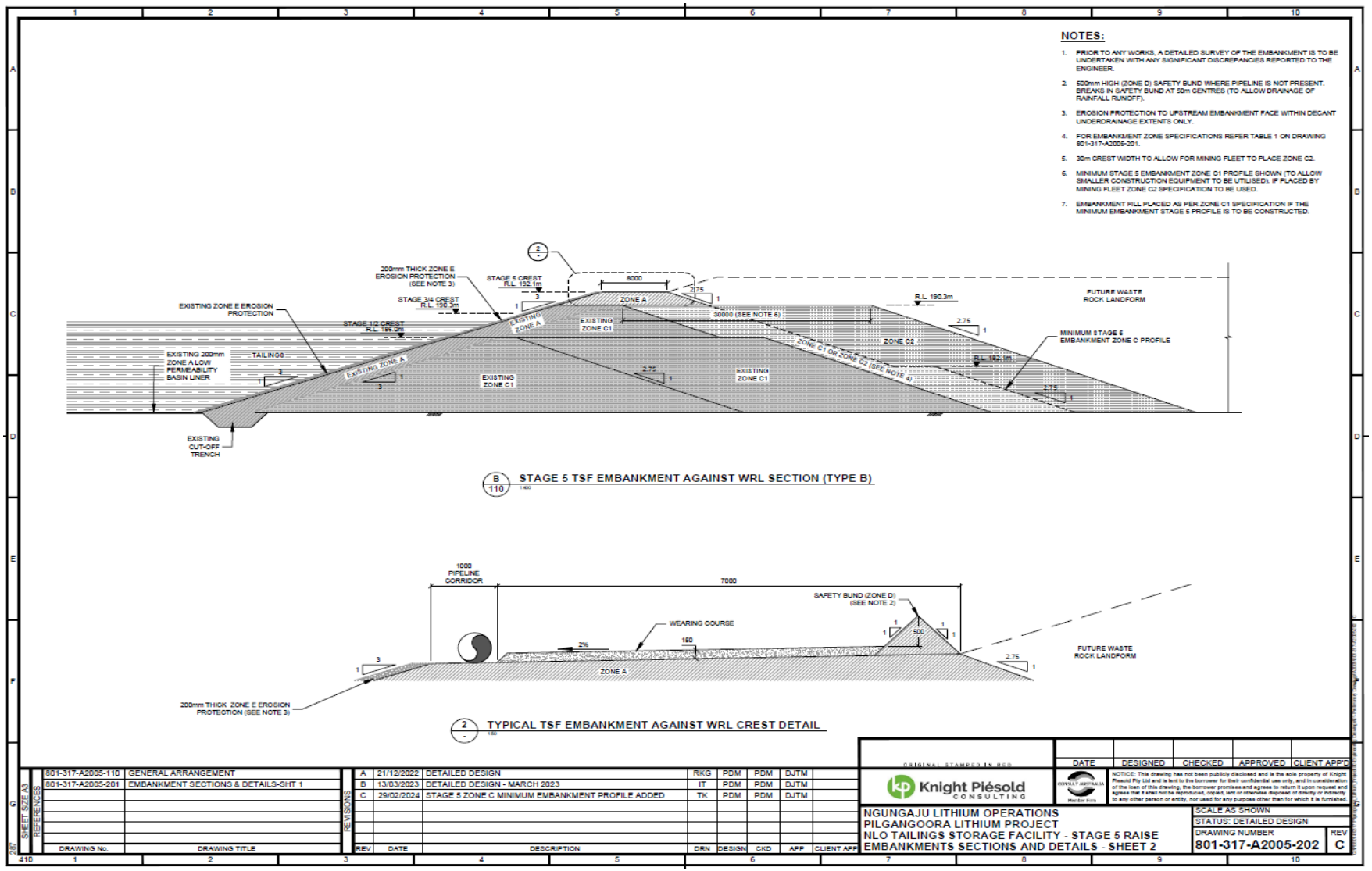

Figure 15: NLO TSF raise 5 embankment construction details – Type B

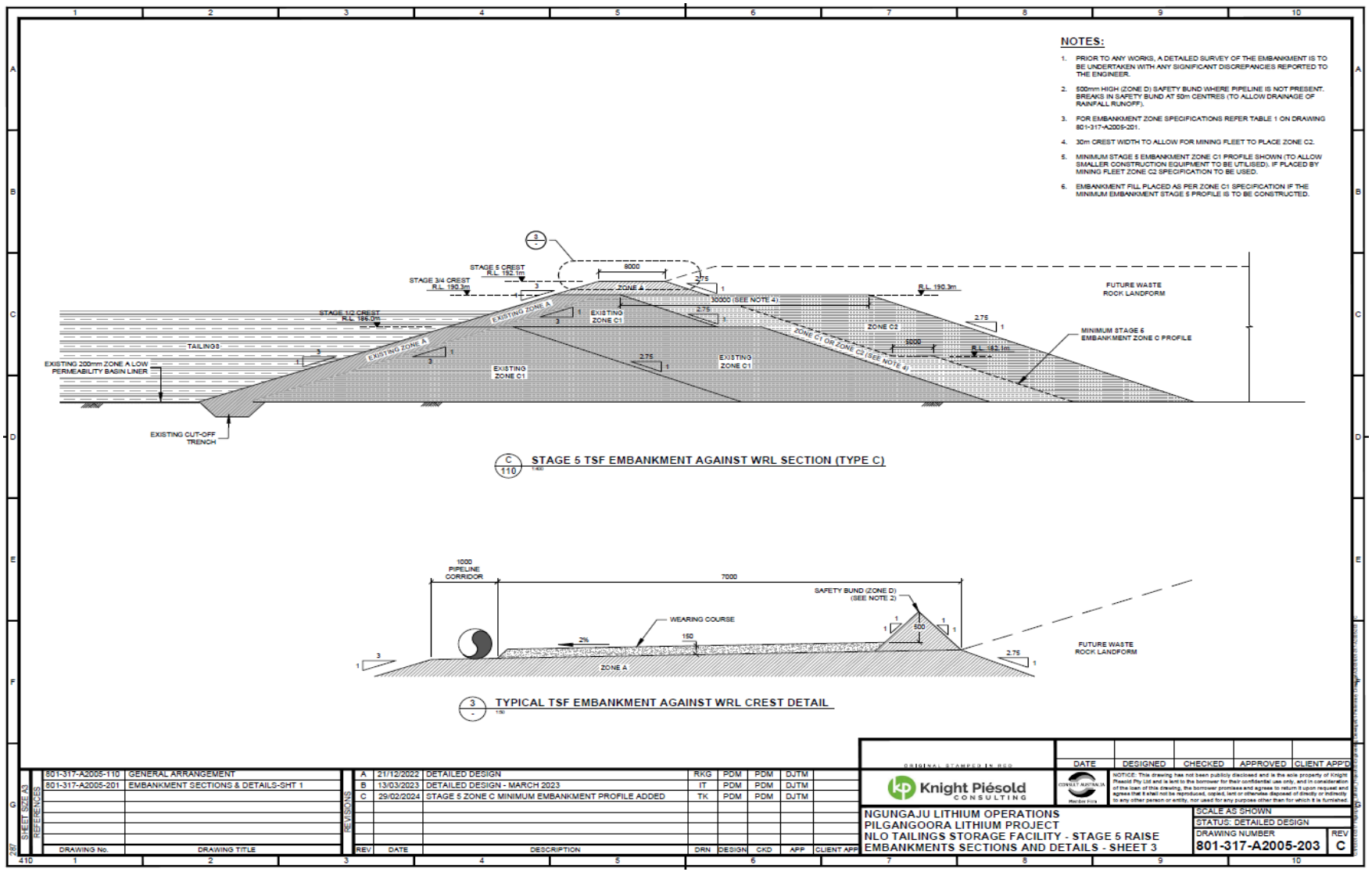

Figure 16: NLO TSF raise 5 embankment construction details – Type C

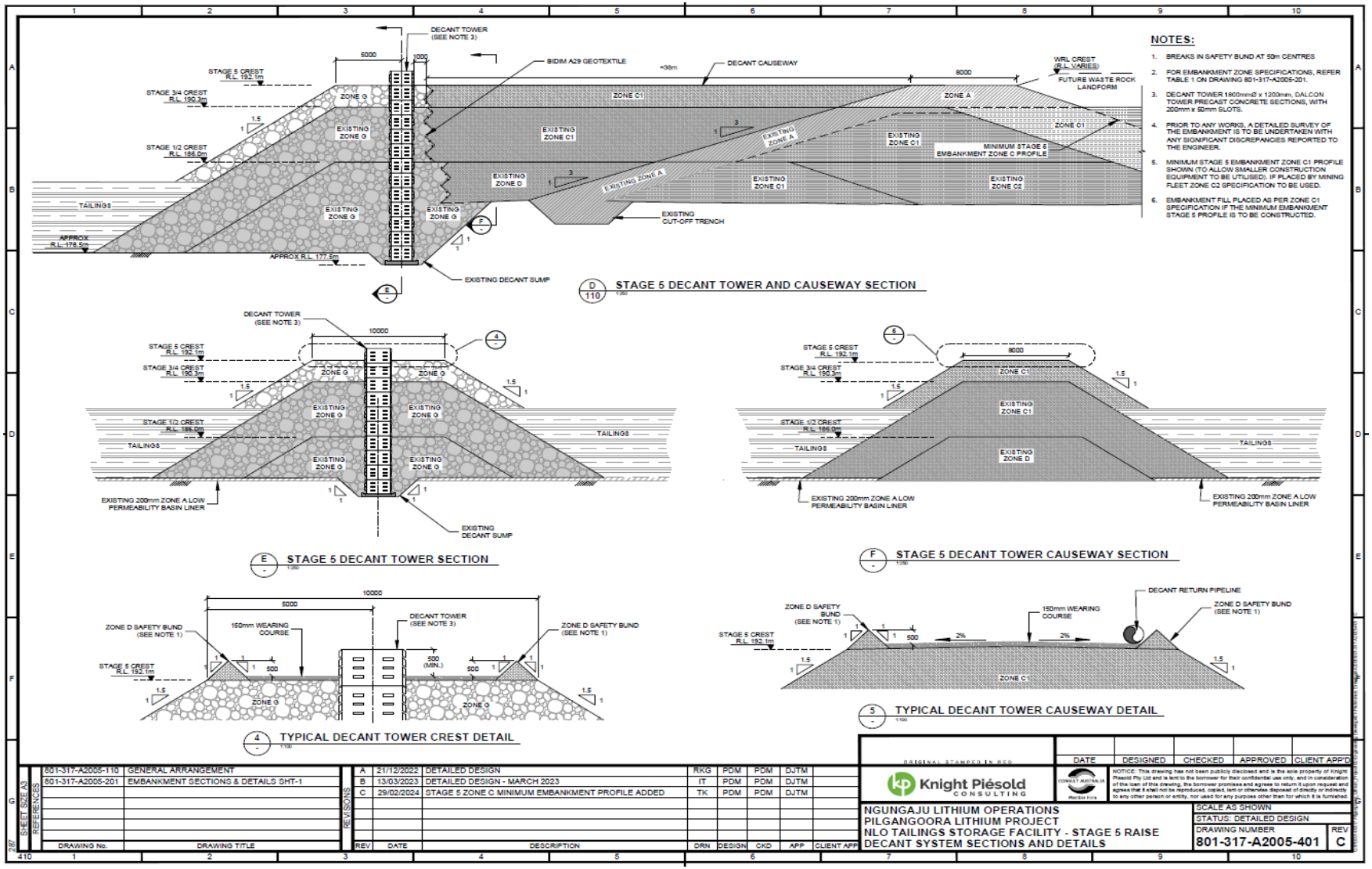

Figure 17: NLO TSF raise 5 decant details

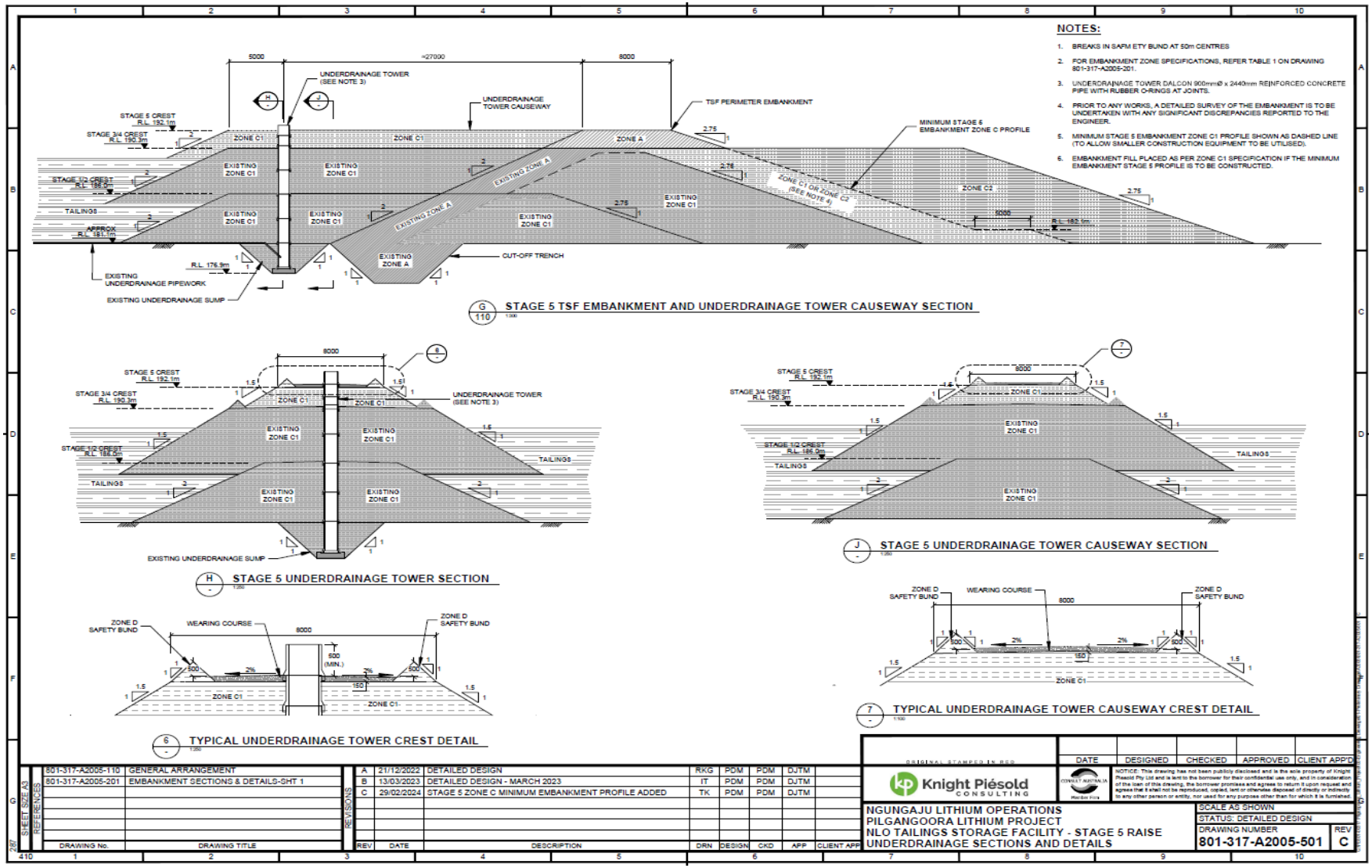

Figure 18: NLO TSF raise 5 underdrainage decant tower details

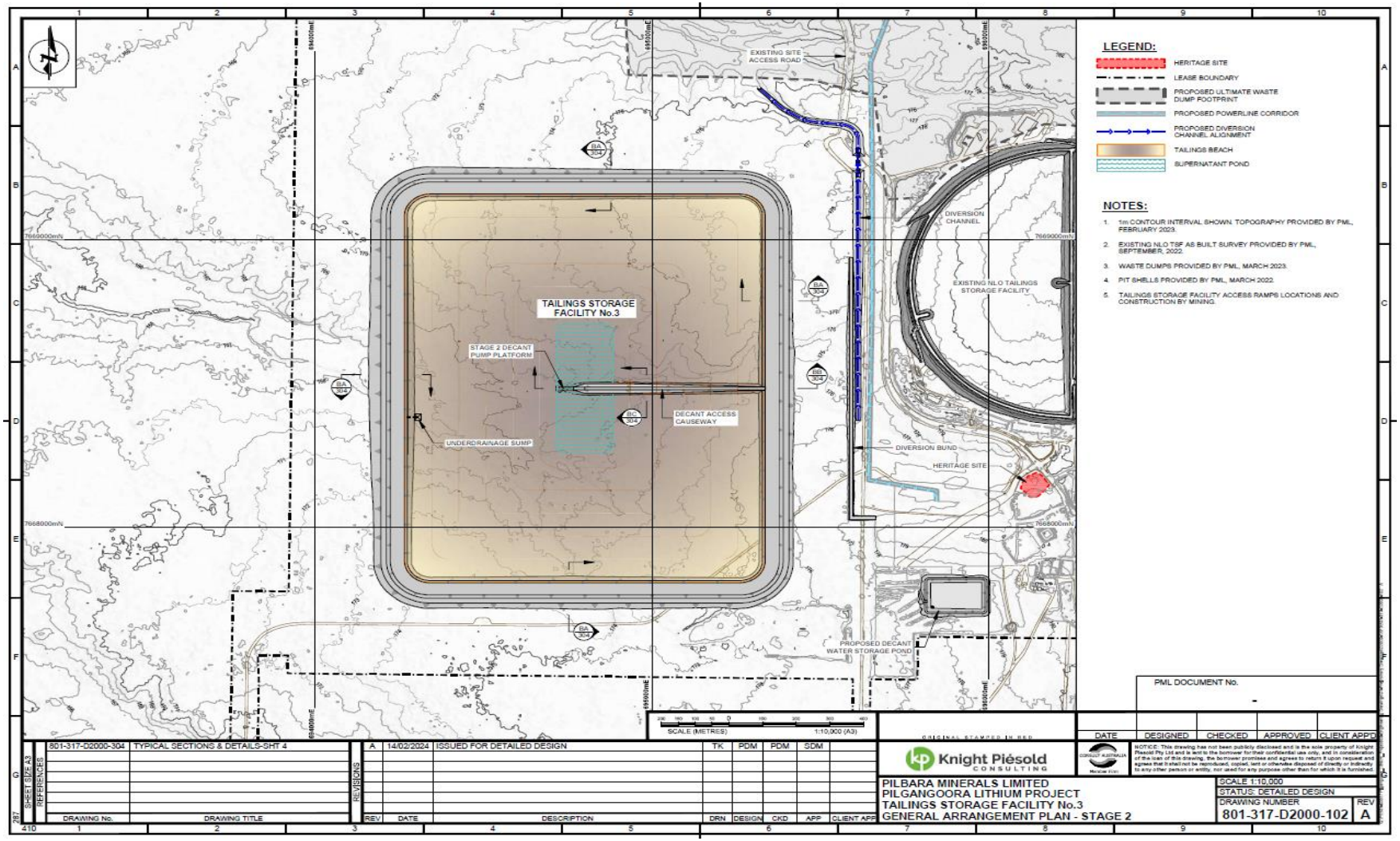

Figure 19: TSF3 Stage 2 - general arrangement plan

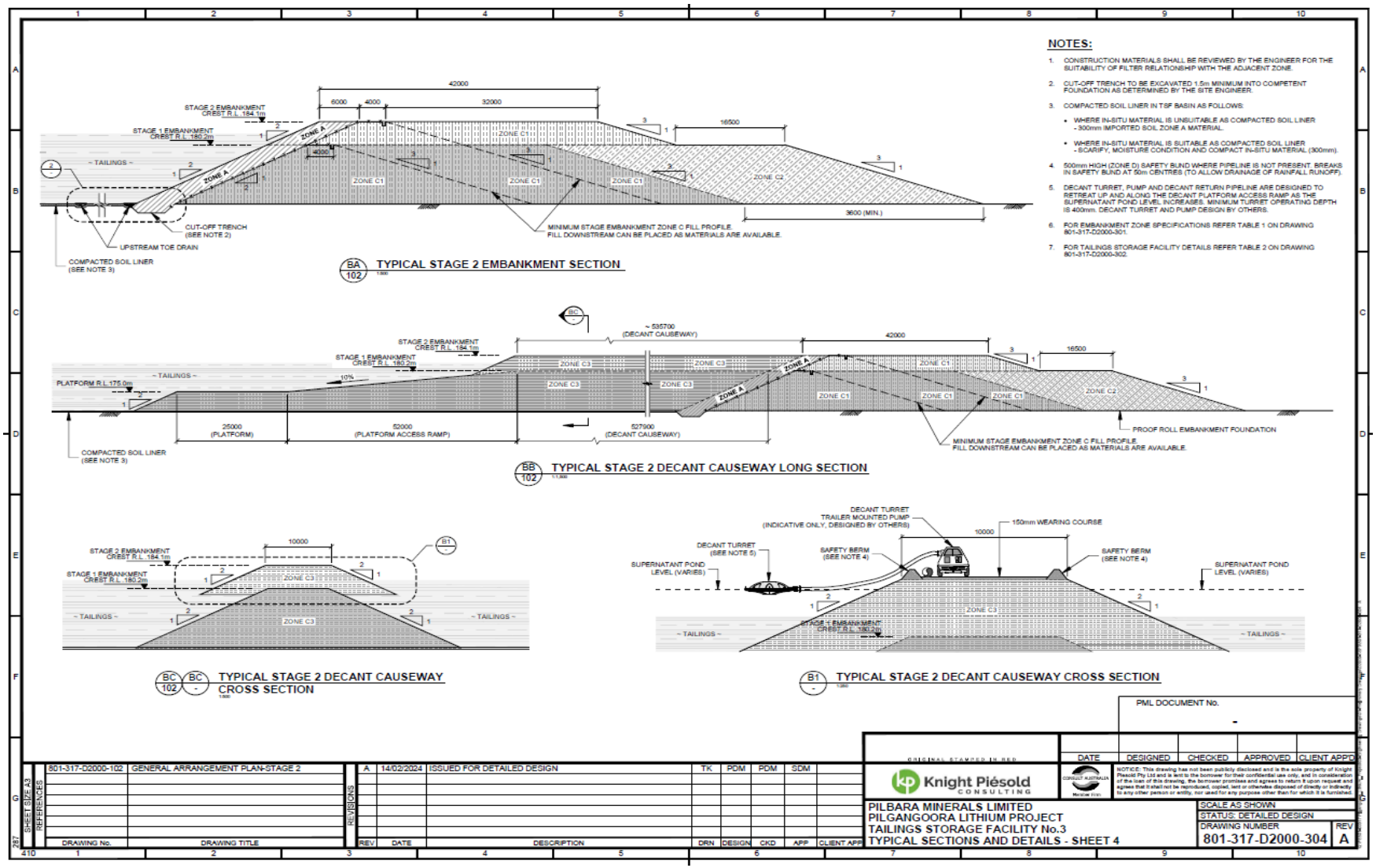

Figure 20: TSF3 Stage 2 - embankment construction details

Schedule 3: Groundwater monitoring quality assurance and quality control

The works approval holder must adhere to the following field quality assurance and quality control procedures, as specified in Schedule B2 of the Assessment of Site Contamination NEPM, and must include as a minimum:

(a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;

(b) field instrument calibration for instruments used on site;

(c) blind replicate samples and rinsate blanks must be collected in the field and sent to the primary laboratory to determine the precision of the field sampling and laboratory analytical program;

(d) completed field monitoring sheets / sampling logs for each sample collected, showing:

i. time of collection;

ii. location of collection;

iii. initials of sampler;

iv. sampling method;

v. field analysis results;

vi. duplicate type / location (if relevant); and

vii. site observations and weather conditions, and

(e) chain-of-custody documentation must be completed which details the following information:

i. site identification;

ii. the sampler;

iii. nature of the sample;

iv. collection time and date;

v. analyses to be performed;

vi. sample preservation method;

vii. departure time from site;

viii. dispatch courier(s); and

ix. arrival time at the laboratory.