



<b>Works approval number</b>	W6538/2021/1
<b>Works approval holder</b>	BHP Nickel West Pty Ltd
<b>ACN</b>	004 184 598
<b>Registered business address</b>	125 St Georges Terrace PERTH WA 6000
<b>DWER file number</b>	DER2021/000130
<b>Duration</b>	18/08/2021 to 17/08/2026
<b>Date of issue</b>	18/08/2021
<b>Premises details</b>	Nickel West Leinster Nickel Operations Legal description - Mining tenements ML255SA, M36/4, M36/87, M36/102, M36/103, M36/131, M36/156, M36/230, M36/389, M36/439, L36/93, G36/49, G36/50 and G36/51 LEINSTER WA 6437

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i> )	Assessed design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore: premises on which (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam	3,600,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 18 August 2021, by:

**A/MANAGER, RESOURCE 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
18/08/2021	W6538/2021/1	Works approval granted for: <ul style="list-style-type: none"><li>the construction of the TSF2 (Stages 1-4) and TSF3 Cell E (Stages 1 – 5) embankment raises.</li></ul>

## 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:

## Infrastructure and equipment

1. The works approval holder is authorised to:
  - (a) construct embankment raises for TSF2 and TSF3 Cell E to the construction height; and
  - (b) operate TSF2 and TSF3 Cell E until the end of Stage 4 and Stage 5 respectively to the operating height, as specified in Table 1.

**Table 1: Staged construction and operating heights for TSF2 and TSF3 Cell E**

Stages	TSF	Construction height (m RL)	Operating height (m RL) (includes freeboard as specified in Table 2)
Stage 1	TSF 2	RL 10 552.5	RL 10 552.5
	TSF 3 Cell E	RL 10 550	RL 10 550
Stage 2	TSF 2	RL 10 555	RL 10 555
	TSF 3 Cell E	RL 10 552.5	RL 10 552.5
Stage 3	TSF 2	RL 10 557.5	RL 10 557.5
	TSF 3 Cell E	RL 10 555	RL 10 555
Stage 4	TSF 2	RL 10 560	RL 10 560
	TSF 3 Cell E	RL 10 557.5	RL 10 557.5
Stage 5	TSF 3 Cell E	RL 10 560	RL 10 560

2. The works approval holder must:
  - (a) construct the infrastructure;
  - (b) in accordance with the corresponding design and construction requirements; and
  - (c) at the corresponding infrastructure location as set out in Table 2.

**Table 2: Design and construction requirements for TSF2 and TSF3 Cell E embankment raises**

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Tailings Storage Facility (TSF) 2 (Stages 1-4) and TSF3 Cell E (Stages 1 – 5) embankment raises	<ul style="list-style-type: none"> <li>Embankment raises to TSF2 shall be constructed in accordance with design drawing F005.</li> <li>Embankment raises to TSF3 Cell E shall be constructed in accordance with design drawing F010.</li> <li>Embankments are to be constructed using</li> </ul>	TSF2 and TSF3 Cell E embankment raise design as shown in Figure 3 and Figure 4 of Schedule 2.

	Infrastructure	Design and construction requirements	Infrastructure location
		<p>upstream construction method.</p> <ul style="list-style-type: none"> <li>Upstream raises of embankments constructed using compacted tailings sourced from adjacent beaches.</li> <li>A waste rock buttress will be constructed that ensures the factors of safety for embankment stability are maintained above the minimum requirements as set out in the ANCOLD (2019) guidelines.</li> <li>Oxide capping with a thickness of 0.8m and 0.3m to be applied to the external sides of slope embankments and crest respectively.</li> <li>6m wide bench to be included at Stage 2 of the embankment raises being at RL 10,555m for TSF2 and RL 10,552.5m for TSF3 Cell E.</li> <li>Constructed and operated to provide a minimum 500mm total freeboard (including an allowance for a 1:100 AEP 72-hour rainfall event) above the normal operating pond, with a sub-minimum of 300mm operational freeboard.</li> </ul>	
2.	TSF decant tower and causeway	<ul style="list-style-type: none"> <li>The centrally located decant tower and causeway of TSF2 and TSF3 to be constructed in accordance with design drawing's F006 and F011 respectively.</li> <li>Decant water to be pumped back into processing plant for re-use in the process circuit via the return water pond located to the north of TSF3 Cell AB.</li> </ul>	Decant tower and causeway raise design as shown in Figure 5 and Figure 6 of Schedule 2.
3.	Tailings and return water pipelines	<ul style="list-style-type: none"> <li>Pipelines to be contained within bunded open trenches to contain leaks and spillages from pipe burst events.</li> <li>Pipelines to be fitted with automatic leak detection and shutoff systems to minimise discharge and allow for maintenance and recovery of materials.</li> </ul>	Not applicable.
4.	Tailings distribution system	<ul style="list-style-type: none"> <li>Existing tailings distribution system at TSF 2 and TSF Cell E to be raised to internal embankment crest from the previous raise once embankment lift has been constructed.</li> <li>Embankment perimeter wall of TSF2 and TSF Cell E fitted with a tailings deposition main ring that contains multiple spigot attachment valves located at nominal 40m intervals along the distribution pipelines constructed in accordance with design drawings F007 and F012.</li> </ul>	Tailings distribution pipeline plan and spigot design as shown in Figure 7 and Figure 8 of Schedule 2.

## Construction of seepage recovery bore

3. The works approval holder must design, construct and install the production bore in accordance with the requirements specified in Table 3.

**Table 3: Construction and operational requirements – production bores**

Infrastructure	Construction and operational requirements	Seepage recovery bore locations	Timeframe
Production bore for recovery of seepage from TSF2	<ul style="list-style-type: none"> <li>Installation of one seepage recovery bore by a suitably qualified hydrogeologist.</li> <li>Drilling and construction of the seepage recovery bore will be in accordance with the <i>Minimum Construction Requirements for Water Bores in Australia</i>.</li> <li>The vertical (top of casing) and horizontal position of the seepage recovery bore must be surveyed and subsequently mapped by a suitably qualified surveyor.</li> <li>A seepage recovery bore location map (using aerial image overlay) must be prepared and include the location of the seepage recovery bores and its respective identification number.</li> </ul>	Additional recovery bore location as shown in Figure 2 of Schedule 1.	Must be constructed and determined to be operational by the end of the Stage 1 embankment raise for TSF2 and TSF3 Cell E.

## Compliance reporting

4. The works approval holder must within 60 calendar days of an item of infrastructure required by conditions 1, 2 and 3 being constructed and/or installed:
- undertake an audit of their compliance with the requirements of condition 1, 2 and 3; and
  - prepare and submit to the CEO an Environmental Compliance Report on that compliance.
5. The Environmental Compliance Report(s) required by condition 4, must include as a minimum the following:
- certification by a suitably qualified geotechnical engineer that the items of infrastructure or component(s) thereof, as specified in conditions 1 and 2, have been constructed in accordance with the relevant requirements specified in conditions 1 and 2;
  - as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in conditions 1 and 2;
  - where a departure from the requirements specified in Table 1 and Table 2 occurs and is of a type allowed by Condition 1 and 2, the Works Approval

Holder must provide to the CEO a description of, and explanation for the departure;

- (d) a well construction report evidencing compliance with the requirements of Condition 3;
- (e) at the completion of each staged embankment raise as specified in condition 1, the works approval holder must provide an analysis of groundwater monitoring data including tabulated data and groundwater graphical trend analysis for SWL for monitoring bores surrounding TSF2 and TSF3 Cell E; and
- (f) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

## Records and reporting (general)

- 6.** 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.
- 7.** 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 conditions 1 and 2; and
  - (b) complaints received under condition 6.
- 8.** The books specified under condition 7 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 4 have the meanings defined.

**Table 4: Definitions**

Term	Definition
AEP	Annual exceedance probability
ANCOLD (2019)	means the document titled <i>Guidelines on tailings Dams – Planning, design, Construction, Operation and Closure</i> (ANCOLD, July 2019), as amended from time to time.
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
Condition	Condition means a condition to which this Works Approval is subject under s.62 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> 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	<i>Environmental Protection Act 1986</i> (WA).
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA).
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
Minimum Construction Requirements for Water Bores in Australia	means the document titled <i>Minimum Construction Requirements for Water Bores in Australia – Third edition</i> (National Uniform Drillers Licensing Committee, February 2012), as amended from time to time.

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.
RL	height relative to the NLN Mine Reference Grid.
suitably qualified geotechnical engineer	means a person who: <ul style="list-style-type: none"> <li>• holds a Bachelor of Engineering recognised by the Australian Institute of Engineers; and</li> <li>• has a minimum of five years of experience working in geotechnical engineering including experience in the design of tailings storage facilities.</li> </ul>
suitably qualified hydrogeologist	means a person who holds a tertiary qualification specialising in environmental science or equivalent and has a minimum of five years of experience working in the area of hydrogeology, including investigation and assessment of groundwater resources, or who is otherwise approved by the CEO to act in this capacity.
SWL	standing water levels.
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.

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**END OF CONDITIONS**



# Schedule 1: Maps

## Premises map

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

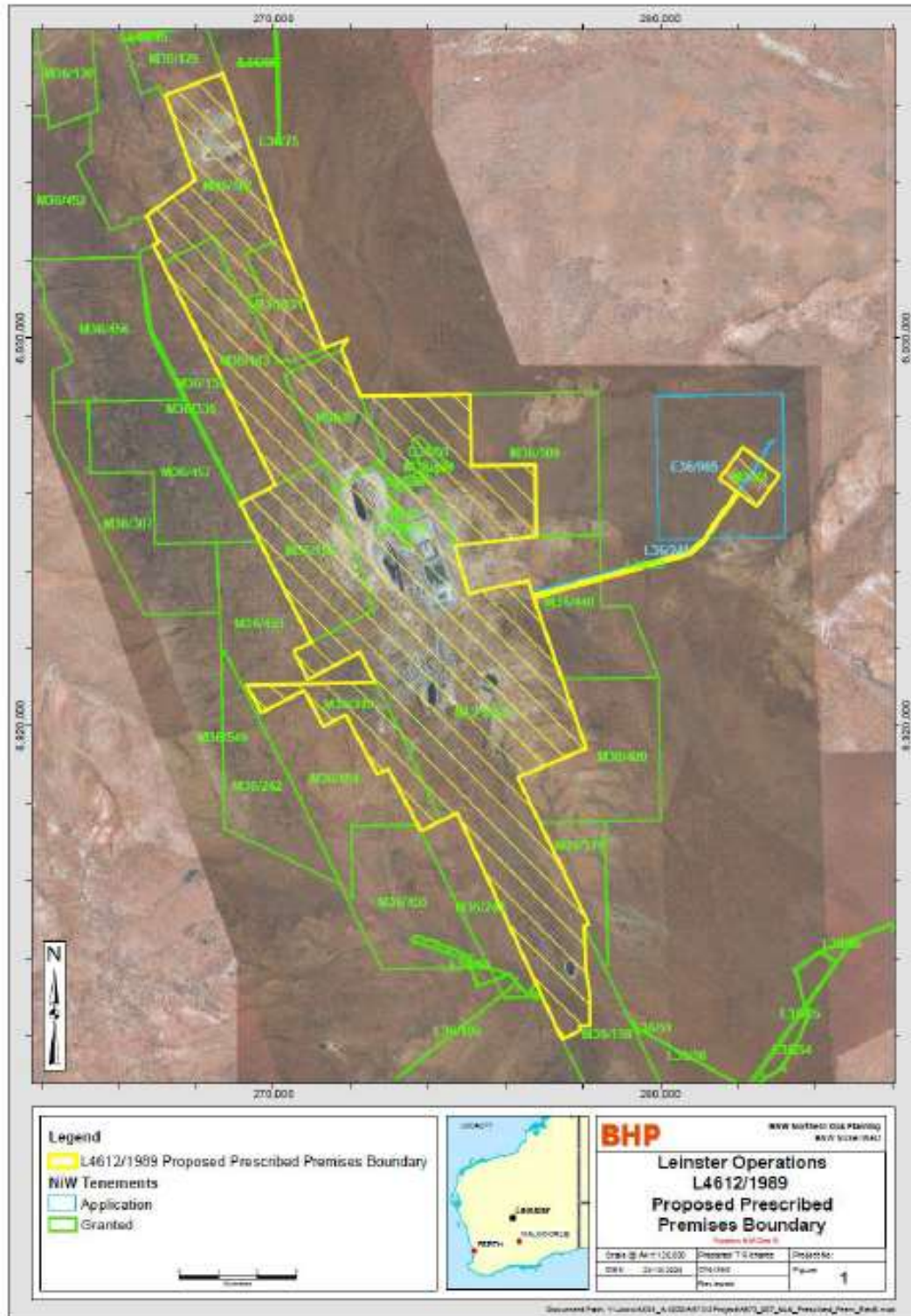


Figure 1: Map of the boundary of the prescribed premises

## Map of monitoring bore locations

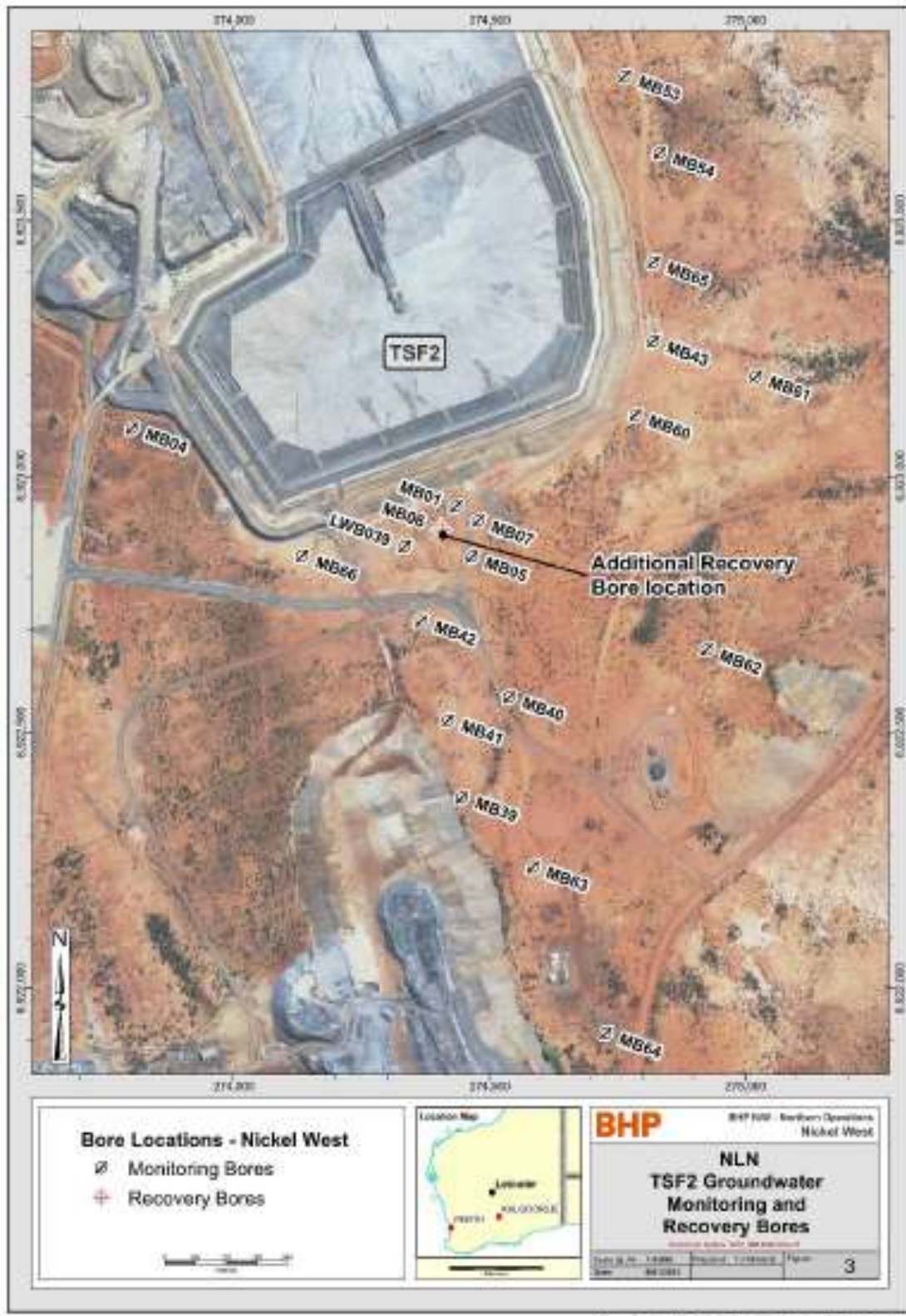


Figure 2: Groundwater monitoring and recovery bores surrounding TSF2

## Schedule 2: Design drawings

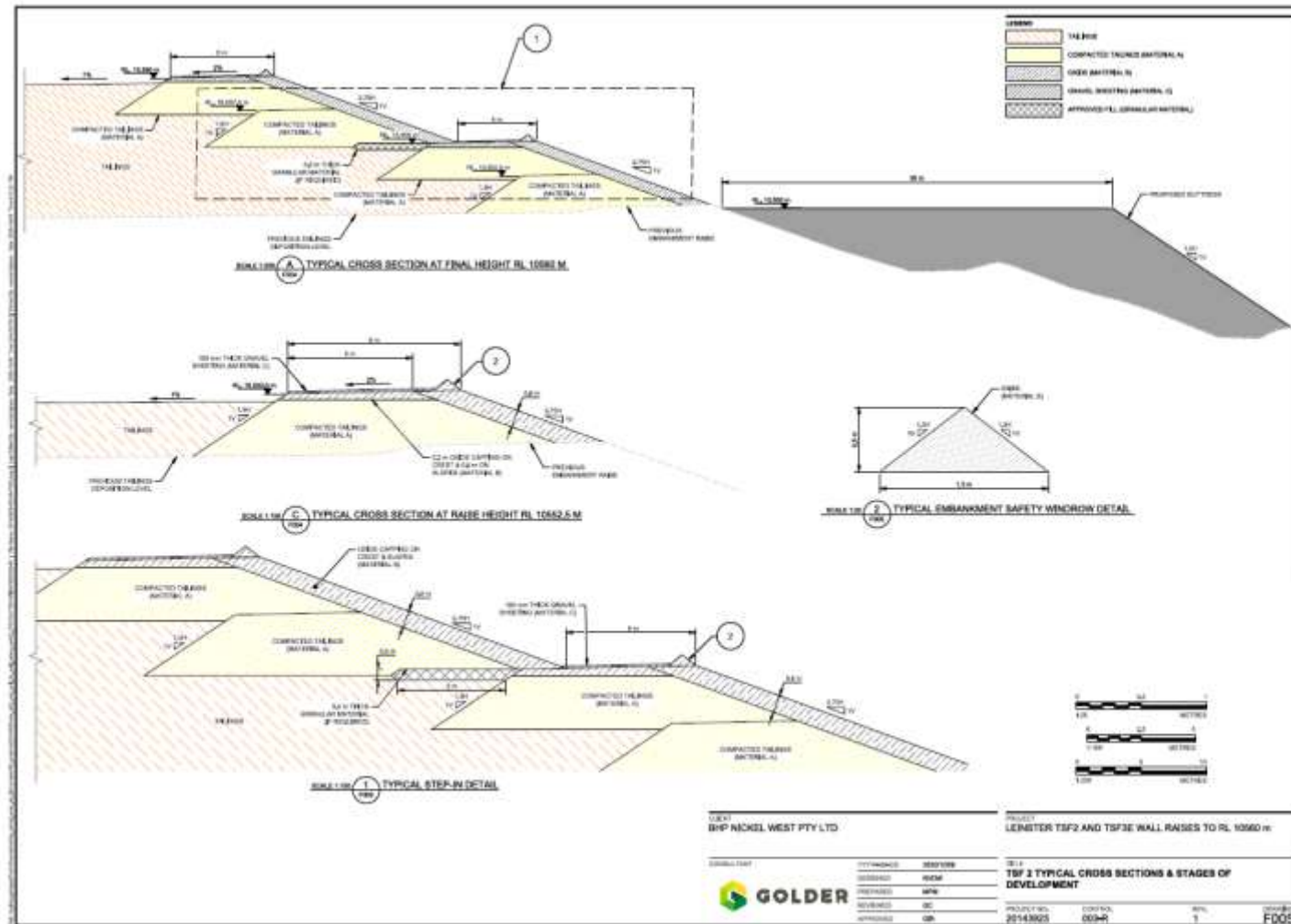


Figure 3: TSF2 embankment raise construction

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IR-T05 Works approval template (v5.0) (February 2020)





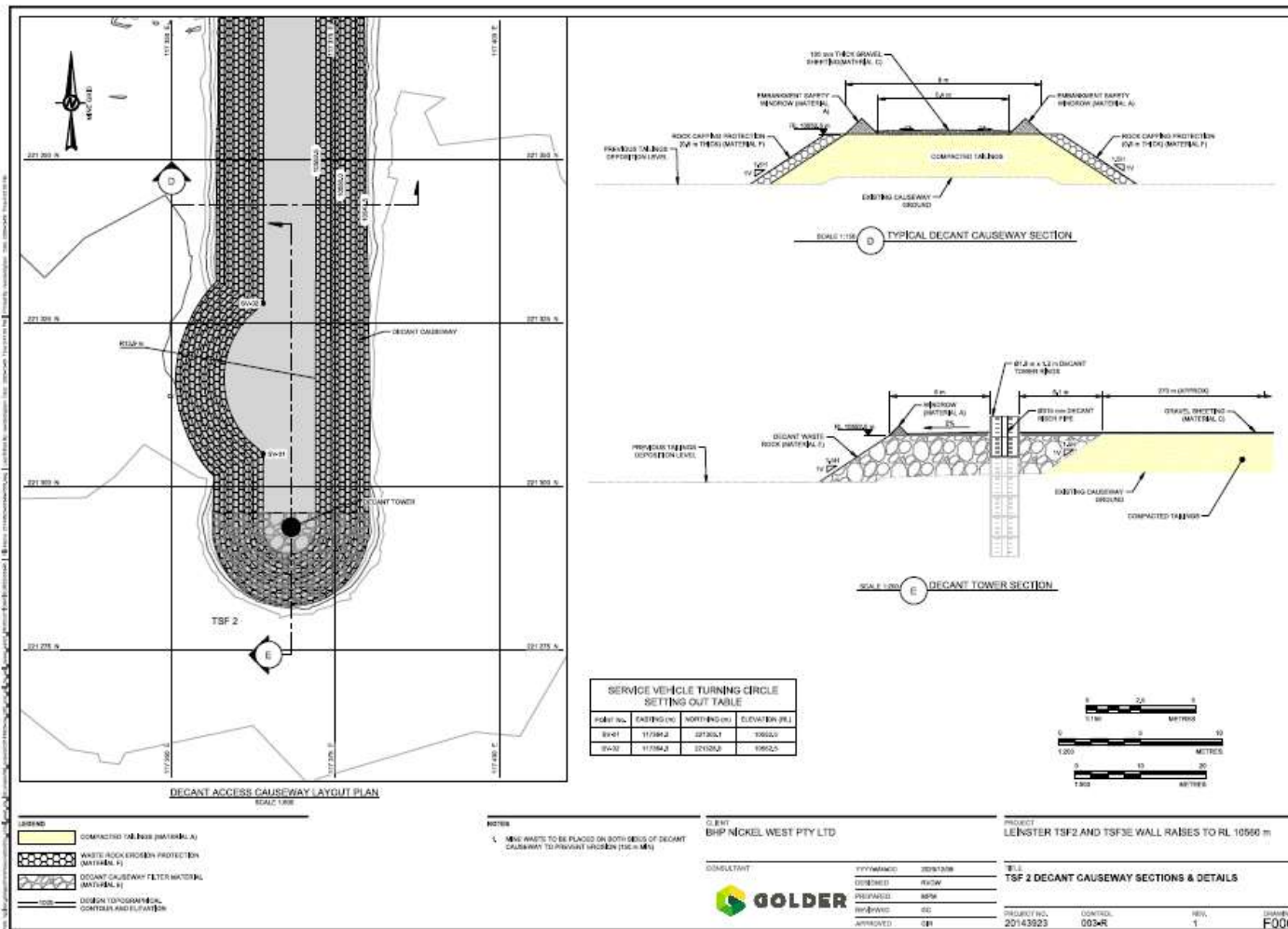


Figure 5: TSF2 Decant tower and causeway raise design

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IR-T05 Works approval template (v5.0) (February 2020)

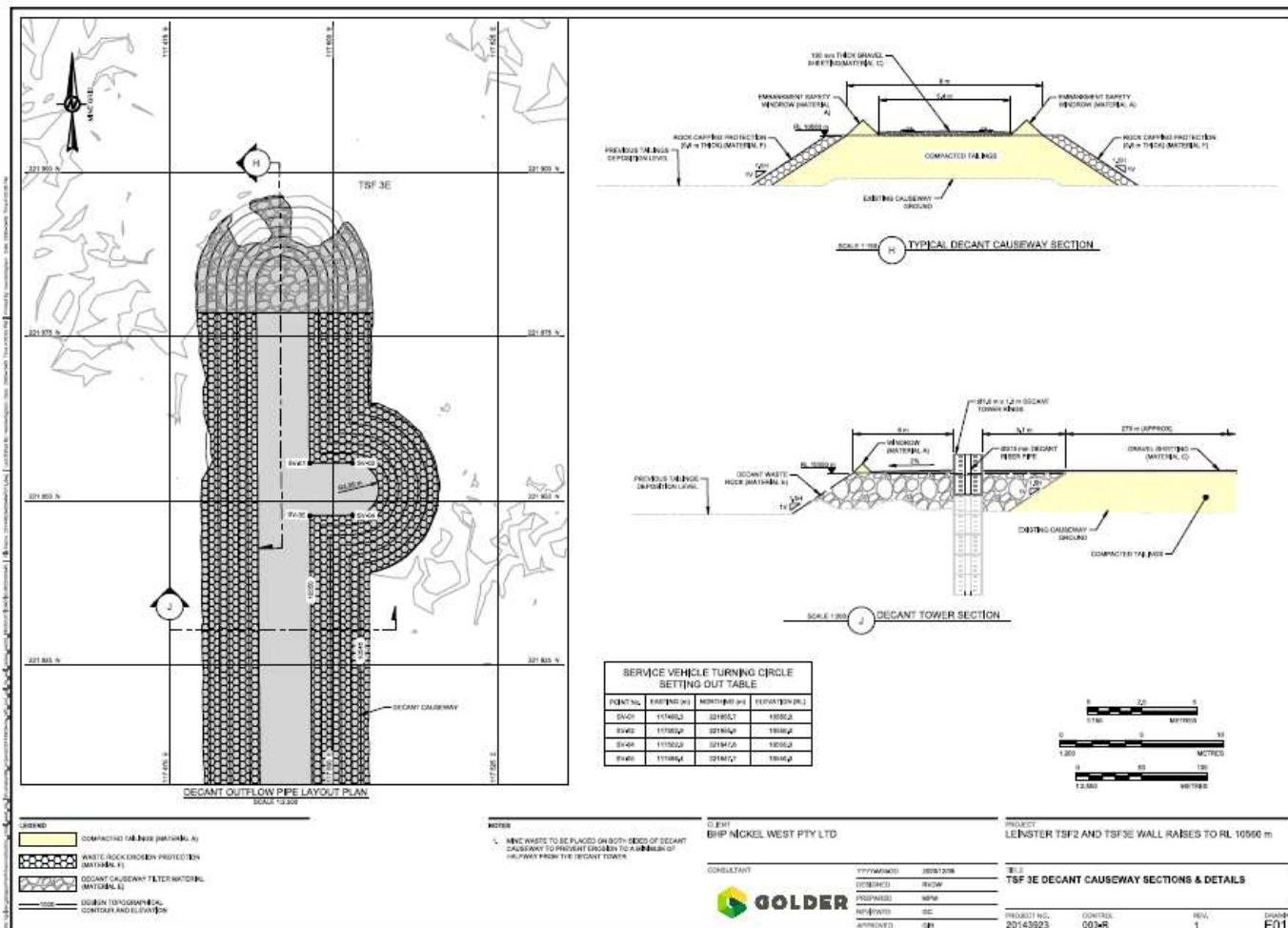


Figure 6: TSF3 Cell E Decant tower and causeway raise design

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IR-T05 Works approval template (v5.0) (February 2020)



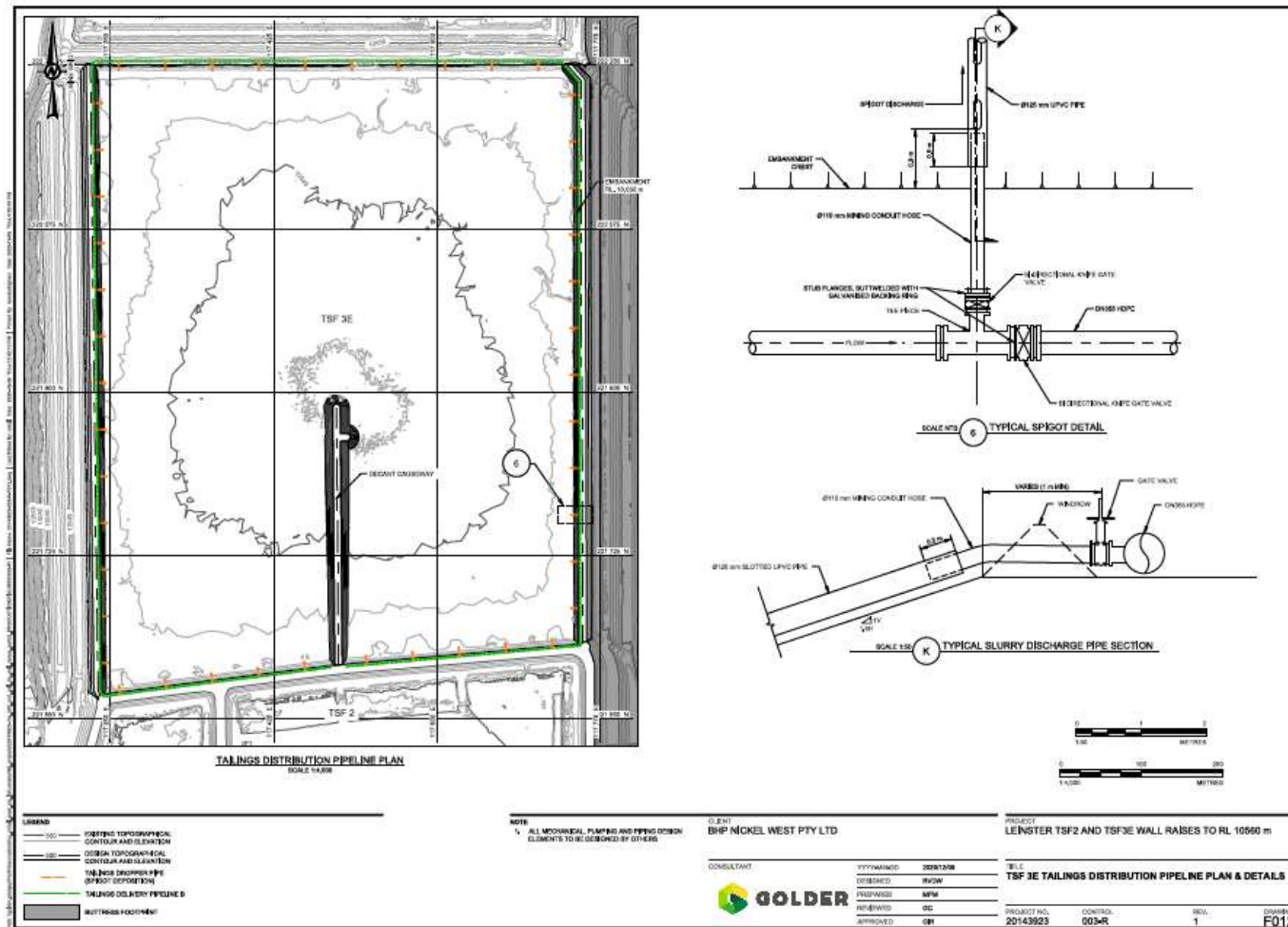


Figure 8: TSF3 Cell E Tailings Distribution pipeline plan and spigot design

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