Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6322/2019/1
Works approval holder	IB Operations Pty Ltd
ACN	165 513 557
Registered business address	Level 2 Hyatt Centre 87 Adelaide Terrace EAST PERTH WA 6004
DWER file number	INS-0002342
Duration	28/04/2020 to 27/04/2027
Date of amendment	01/04/2025
Premises details	Iron Bridge Magnetite Project Mining Tenements M45/1226, M45/1244, L45/293, L45/294, L45/359, L45/360, L45/361, L45/364 and L45/367 MARBLE BAR WA 6760 As defined by the map in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	72 million tonnes per annum

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 01 April 2025, by:

Sonya Poor
Digitally signed by Sonya Poor
Date: 2025.04.01 07:44:18 +08'00'

A/MANAGER, RESOURCE INDUSTRIES
INDUSTRY REGULATION (STATE-WIDE DELIVERY)
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
28/04/2020	W6322/2019/1	Works approval granted.
22/06/2022	W6322/2019/1	Amendment for the installation of a relocated Concentration Handling Facility (CHF) at the Stage 2 Ore Processing Facility (OPF) wet plant. In addition, the relocation of two 2MVA diesel fuelled gensets at the CHF and a 2,000 litre self-bunded diesel fuel tank.
04/01/2024	W6322/2019/1	Amendment for the following: • construction of embankment raises for stages 1B and 2 at the Tailings Storage Facility 2 (TSF2) and the inclusion of scour pits; • amendment to TSF2 monitoring and sampling conditions; and • extend the expiration date by an additional 36 months.
01/04/2025	W6322/2019/1	Amendment to extend time-limited operation from 360 calendar days to 720 calendar days.

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

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure;

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

(c) at the corresponding infrastructure location,

as set out in Table 1.

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 2.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Ore Processing Facility (OPF)	Designed to process 72 million tonnes per annum (Mtpa) of magnetite ore, producing up to 25 Mtpa (wet) of concentrate	Figure 2 and 16 in Schedule 1
		Comprises the following infrastructure/ equipment: a) Run of Mine (ROM) primary crushing hub b) Mobile crushing facility c) Secondary crushers d) Coarse Ore Stockpile (COS) e) Tertiary high pressure grinding rolls (HPGR) crushing / screening f) HPGR primary grinding / air classification g) Fine grinding with magnetic separation and deslime h) Cleaner wet magnetic separation concentrate upgrade circuit i) Concentrate and tailings thickening j) Process water storage: 170,847 m^3 HDPE lined pond with high level detection alarms k) Raw water storage: 63,605 m^3 HDPE lined pond with high level detection alarms l) Slurry Pipe to the TSF: above ground steel pipeline nominal 800 mm diameter, with flow measurement at	Figure 2 and 16 in Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		the start (Tailings Transfer Tank at OPF) and at the end of the pipeline (at the TSF), and continuous monitoring of pipeline pressure and pump performance m) Conveyors (19 enclosed, 6 unenclosed) and enclosed transfer stations n) Mobile conveyor and stacker located on a raised pad o) Concentrate Handling Facility (CHF) located on a raised pad Comprises the following infrastructure/ equipment: i) 4500 tonne day feed stockpile ii) Ore feed hopper iii) Feed conveyor iv) Head chute (new infrastructure) v) Slurry tank (modified) and slurry pump vi) Process water pipelines vii) Slurry pipeline viii) Two 2MVA diesel fueled gensets ix) 2,000L self-bunded diesel fuel tank.	
		Containers for chemicals used in the process, stored in a bunded impermeable area.	Not shown
		All tanks to be installed on concrete ring beams, with concrete bunding and sump system around spillage points (including pump suctions and tank overflows).	Not shown
		Testing of incomplete infrastructure to validate and check design parameters prior to completion of construction. Testing will use or discharge: • ore to test the infrastructure and equipment used to process ore • raw water for testing of tanks and other infrastructure, discharged to the process water pond • tailings discharged to the tailings storage facility, provided satisfaction of Conditions 5 and 6.	Not shown
		Dust minimisation equipment will be comprised of: • water sprays, fitted and operational: ○ to the crusher hopper and along conveyors (where required) ○ transfer points within the crushing hubs ○ dry rejects stacking system and associated mobile conveying system • water trucks:	Not shown

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		○ at the COS ○ at the ore day feed stockpile • dedicated dust collectors at located within the OPF where dry material is handled; collected dust fines will be slurried with process water and pumped back into the processing circuit.	
		Stormwater infrastructure must be designed and constructed so as to meet the following specifications: • Direct all potentially contaminated stormwater to 4 sedimentation basins sized to a 1 in 2 AEP of 1-hour duration, to remove 80% (by mass) of suspended particles prior to release to the environment • Contaminated Water Storage Ponds (silt trap arrangement): up to 5 ponds up to 4 kL in size, un-lined ponds with freeboard of 1 in 2 AEP of 1-hour duration, with any overflow contained within the sump (apron) catchment • 2 Oily Water Separator (OWS) designed to treat water to a Total Recoverable Hydrocarbon (TRH) concentration of 15 mg/L.	Figure 3 in Schedule 1
2.	Scour pits	• Construct scour pits located at intervals and on the upstream side of the tailings pipeline embankment, where practicable to contain material in the event of a failure • Construct scour pits to have sufficient capacity to contain tailings, where possible from contingency discharge • Construct external bunds to reduce surface runoff interaction	Figure 17 and Figure 18 in Schedule 1

Table 2: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location

1.	RWP	• Located directly downstream of the TSF
		• Construct two embankments (9.5 m and 16 m)
		• Embankments made from local borrow, mine waste rock and plant dry rejects, which are not classified as PAF
		• Bituminous Geomembrane (BGM) liner covering upstream face of the embankments (impermeable)
		• Embankments to include contingency seepage control:
		  ○ rockfill seepage collection drain in the base of the embankment foundation discharging into a seepage monitoring sump directly downstream of each embankment
		  ○ toe drain
		  ○ seepage monitoring sump (soak well) lined with a geotextile cloth installed in a rock-filled interception trench
		• Grout curtain to be constructed at the RWP South embankment
		• 2 pumps mounted on a single mobile pontoon located within a channel excavated to access the central part of the RWP area from its southern perimeter with a maximum combined pumping rate of 1980 m^3/hour
		• Process control for water return pumps to the OPF to include staged levels of alarms to allow appropriate escalation and response
		• Installed flow meters to continuously monitor water recovery volumes.
			Figure 5, Figure 6, Figure 12, Figure 13, Figure 14 and Figure 15 in Schedule 1

	Infrastructure	Design and construction requirements	Infrastructure location
2.	TSF – Stage 1A	• Construct main embankments A and B to RL 281.6 m, sacrificial bund to RL 276 m and the north decant system • Embankments made from local borrow, mine waste rock and plant dry rejects, which are not classified as PAF • BGM liner covering upstream face of main embankment A (impermeable) • Sacrificial bund of 8 metres to limit the size of the initial TSF catchment area to 12.1 km^2, with tailings only deposited into the northern side of the TSF • 1 gravity decant structure designed to ensure and maximise gravity decant via inverted box culverts with segmented stoplogs on top, directed to an outfall pipe constructed through main embankment A • minimum 2 sets of VWP in the foundations of Main Embankment A, comprised of minimum 3 VWP's located within the embankment footprint • Distribution pipeline from OPF to TSF of 7 km made of nominally 800 mm steel adapted into polyethylene pipework and at least 2 spigot discharge points • TSF pipelines to have installed with flow measurement at the start (Tailings Transfer Tank at OPF) and at the end of the pipeline (at the TSF), and continuous monitoring of pipeline pressure and pump performance.	Figure 4, Figure 5, Figure 7, Figure 9, Figure 11 and Figure 15 in Schedule 1
3.	TSF – Stage 1B	• Main embankments C and D to RL 281.6 m and the south decant system • Embankments are made from local borrow, mine waste rock and plant dry rejects, which are not classified as PAF • Downstream batter slope must be constructed to 1.75(H):1(V) with the inclusion of the upstream Bench, to maintain the same extent of the downstream footprint • BGM liner covering upstream face of embankments (impermeable) • 1 gravity decant structure designed to ensure and maximise gravity decant via inverted box culverts with segmented stoplogs on top, directed to an outfall pipe constructed through main embankment C • Minimum 1 set of VWP in the foundation of TSF Main Embankment C, comprised of minimum 3 VWP's located within the embankment footprint • Freeboard designed to store the run-off of a 1:100 AEP, 72 hr storm and the 400 mm decant pond depth • Spillway capacity 1:1,000 AEP with flow and erosion control installed, spillway directed to the RWP • Distribution pipeline and two spigots (if different to	Figure 4, Figure 6, Figure 8, Figure 9, Figure 10 and Figure 15 in Schedule 1

	Infrastructure	Design and construction requirements	Infrastructure location
		Stage 1A).	
4.	TSF – Stage 2	• Main embankments A to D to RL 292.2 m, utilising the downstream raise method • Construct a new west embankment A to provide confinement at the south-west of the TSF • Downstream batter slope must be constructed to 1.75(H):1(V) with the inclusion of the upstream Bench, to maintain the same extent of the downstream footprint • North and south decant systems will be raised to Stage 2 elevation, constructed on embankments A and C • Embankments are made from local borrow, mine waste rock and plant dry rejects, which are not classified as PAF • BGM liner covering upstream face of embankments (impermeable) • Freeboard designed to store the run-off of a 1:100 AEP, 72 hr storm and the 400 mm decant pond depth • Spillway capacity 1:100,000 AEP with flow and erosion control installed, spillway directed to the RWP • Distribution pipeline and two spigots (if different to Stage 1B).	Figure 19, Figure 20, Figure 21, Figure 22, Figure 23, and Figure 24 in Schedule 1

Environmental compliance reporting

3. The works approval holder must, within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

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

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

4. The Environmental Compliance Report required by condition 3 must include as a minimum the following:

(a) certification by a suitably qualified and experienced Engineer (eligible for membership of the Institute of Engineers, Australia) that the items of infrastructure or component(s) thereof, as specified in condition 1, have or have not been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed general arrangements and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1;

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

(d) where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the works approval holder must correct the non-compliant or defective works, prior to re-certifying, or provide to the CEO a description of, and explanation

for, any departures from the requirements specified in Table 1 that do not require relocation or rectification and do not constitute a material defect along with the Environmental Compliance Report.

5. The works approval holder must, within 60 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.

6. The Critical Containment Infrastructure Report required by condition 5 must include as a minimum the following:

(a) certification by a suitably qualified Tailings Dam Design Engineer or their delegate such that each item of critical containment infrastructure or component thereof, as specified in condition 2, has or has not 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

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

Environmental commissioning phase

Environmental commissioning requirements

7. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 8 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 3 of this works approval.

8. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 3 may only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

Table 3: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
Comprises the following infrastructure/ equipment: a) ROM primary crushing hub b) Mobile crushing facility c) Secondary crushers d) COS e) Tertiary HPGR crushing / screening f) HPGR primary grinding / air classification g) Fine grinding with magnetic separation and deslime h) Cleaner wet magnetic separation concentrate upgrade circuit i) Concentrate and tailings thickening j) Process water storage ponds k) Raw water storage ponds l) Slurrying pumps m) Slurry Pipes and flow meters n) Conveyors and enclosed transfer stations o) Mobile conveyor and stacker p) CHF day feed stockpile q) CHF ore feed hopper and 100 mm grizzly (if installed) r) CHF slurry tank and agitator s) CHF head chute	Environmental commissioning to validate and check design parameters of facilities with water, ore and slurry. Environmental commissioning requires the ore and slurry throughput to be increased over a period until stable operations are achieved.	For a period not exceeding 10 calendar months for each item of infrastructure.

9. During environmental commissioning, the works approval holder must ensure that the emission specified in Table 4, are discharged only from the corresponding discharge point and only to the corresponding discharge point location.

Table 4: Authorised discharge points during commissioning

	Emission	Discharge point	Discharge point location
1.	Dry Rejects	Spreader discharge and emergency stacker discharge	Dry Rejects Spreader, Dry Rejects Emergency Stacker
2.	Oily water	Compressors/Dryers Oil/Water discharge points	Compressed Air Station

Environmental commissioning reporting

10. The works approval holder must submit to the CEO an Environmental Commissioning Report within 60 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 3.

11. The works approval holder must ensure the Environmental Commissioning Report required by condition 10 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of ore processed;

(b) a summary of the environmental performance of each item of infrastructure as constructed or installed;

(c) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(d) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration of time limited operations

12. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1:

(a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 3 has been submitted by the works approval holder for that item of infrastructure; and

(b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 8, the Environmental Commissioning Report for that item of infrastructure as required by condition 10 has been submitted by the works approval holder.

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 infrastructure is not authorised to undertake environmental commissioning, the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 has been submitted to the CEO; and

(b) where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 meets the requirements of that condition; or

(c) where at least 45 business days have passed after the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 has been submitted to the CEO.

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

(a) for a period not exceeding 720 calendar days from the day the works approval holder meets the requirements of condition 12 or 13 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 14(a).

Time limited operations requirements

15. 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

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	OPF	• Record volumes of wet ore concentrate produced during time limited operation • Ensure dust minimisation and stormwater management is undertaken.	Figure 2 in Schedule 1
2.	RWP	• Pump water only to the OPF for re-processing • Regular inspections	Figure 5 and Figure 6 in Schedule 1
3.	TSF Stage 1A, Stage 1B, and Stage 2	• Can accept up to 31.9 Mt (wet) of tailings per annum • Record volumes of wet tailings produced during time limited operation • Freeboard of 1:100 AEP, 72 hour rainfall event and normal operating (decant) pond depth of 400 mm (for Stage 1B and Stage 2) • Water balance • Regular inspections	Figure 5, Figure 6, and Figure 19 in Schedule 1
4.	CHF	• Record volumes of ore concentrate processed through the CHF • Ensure stormwater management is undertaken.	Figure 16 in Schedule 1
5.	Scour pits	• Maintain the integrity of the external bunds to reduce surface water interaction • Tailings once dried out must be removed from the scour pits following a scouring event, as soon as practicable • Any tailings spill that occurs on undisturbed ground in the process of scouring must be cleaned-up	Figure 17 in Schedule 1

16. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 6, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 6: Authorised discharge points

	Emission	Discharge point	Discharge point location
1.	Water from sedimentation basins or sediment traps	L1: basins/traps	Figure 3 in Schedule 1
2.	Contaminated Water	L3: OPF sediment pond indicative location	Figure 3 in Schedule 1
3.	RWP decant water	L5: RWP emergency spillway	Figure 14 in Schedule 1

17. During time limited operations, the works approval holder must record all applicable data monthly for the site water balance.

18. During time limited operations and within 60 days of tailings deposition to the TSF commencing, the works approval holder must provide to the CEO results of at least 40 individual representative tailings samples from TSF2 Stage 1A tailings, including pore water for disposal characterisation studies / investigations, to determine the likely behaviour of elements under a range of leaching conditions, and may include, but not be limited to:

(a) testing using the LEAF 1313 pH-dependent leaching test coupled with geochemical modelling (US EPA, 2017); and

(b) geotechnical characterisation of tailings including: particle size distribution, volume of solids, settling test (drained and undrained), air drying test and hydraulic conductivity of the same tailings tested in 18 (a); and

(c) the contaminants listed in Table 7.

All test results shall be collated and provided in a report to the CEO no more than 60 days after sample results become available.

Table 7: Tailings characterisation parameters

Stream	Contaminants		
Tailings leachate (mg/L)	Ag – Silver	Fe – Iron	Sb – Antimony
	Al – Aluminium	Hg – Mercury	Se – Selenium
	As – Arsenic	K – Potassium	Si – Silicon
	Ba – Barium	Mg – Magnesium	Sn – Tin
	Bi – Bismuth	Mn – Manganese	Sr – Strontium
	C total – Carbon total	Mo – Molybdenum	Tl – Thallium
	C carbonate – Carbon carbonate	Na – Sodium	Ti – Titanium
	Ca – Calcium	Ni – Nickel	V – Vanadium
	Cd – Cadmium	P – Phosphorus	U – Uranium
	Co – Cobalt	Pb – Lead	Zn – Zinc
	Cr – Chromium	S total – Sulfur total	TDS (total dissolved solids)
	Cu – Copper	S sulfide – Sulfur sulfide	
Tailings leachate (-)	pH		

19. During time limited operations, the works approval holder must conduct visual inspections of the infrastructure specified in Table 8.

Table 8: Inspections of infrastructure

	Infrastructure	Type of inspection	Frequency
1.	Tailings delivery pipelines	To confirm integrity	Daily
2.	RWP water return pipelines	To confirm integrity	Daily
3.	Tailings storage facility embankment freeboard	To confirm required freeboard capacity is available	Daily

Monitoring during time limited operations

20. The works approval holder must monitor emissions during time limited operations in accordance with Table 9.

Table 9: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit
L1: Basins/ traps	Discharge point at basins/traps	Total Suspended Solids	During discharge	Spot sample	mg/L
L3: OPF sediment pond indicative location	Contaminated Water Storage Ponds overflow	Total Reportable Hydrocarbons	During discharge (when overflowing)	Spot sample	mg/L
L5: RWP emergency spillway	At RWP emergency spillway	Quality and estimate of volume	During discharge	Spot sample	N/A

21. During time limited operations, the works approval holder shall sample monthly the composition of the tailings decant water (if available) from the TSF for the parameters in Table 7. A minimum of 5 samples shall be analysed for TSF2 Stage 1A tailings decant water only.

22. The works approval holder must record the results of all monitoring activity required by conditions 20 and 21.

23. The works approval holder must ensure that, for condition 21 monthly monitoring is undertaken at least 15 days apart.

Compliance reporting during time limited operations

24. The works approval holder must submit to the CEO a report on the time limited operations within 60 calendar days of the completion date of time limited operations or 60 calendar days before the expiration date of the works approval, whichever is the sooner.

25. The works approval holder must ensure the report required by condition 23 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of ore concentrate produced by the OPF, amount of ore concentrate processed through the CHF and tailings deposited into TSF;

(b) a summary of monitoring results obtained during time limited operations under conditions 20 and 21;

(c) a summary of the environmental performance of all infrastructure as constructed or installed, which includes records detailing the:

(i) tailings density (solid vs water content);

(ii) TSF and RWP water balance(s) as conducted in condition 17; and

(iii) confirmation of visual inspections as conducted under condition 19.

(d) a review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(e) 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

26. 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.

27. 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;

(b) any maintenance of infrastructure that is performed in the course of complying with conditions 1 and 2;

(c) monitoring programmes undertaken in accordance with conditions 20 and 21; and

(d) complaints received under condition 26.

28. The books specified under condition 27 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 10 have the meanings defined.

Table 10: Definitions

Term	Definition
AEP	annual exceedance probability
BGM	Bituminous Geomembrane
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
CHF	Relocated Concentrate Handling Facility
COS	Coarse Ore Stockpile
critical containment infrastructure	means the items of infrastructure listed in condition T2.
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.
DRL	Dry Rejects Landform
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.

Term	Definition
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
HPGR	high pressure grinding roll
LEAF	Leaching Environmental Assessment Framework
mg/L	milligrams per litre
mm	millimetre
Mtpa	million tonnes per annum
mbgl	Metres below ground level
m RL	Metres at relative level
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Measure
OPF	Ore Processing Facility
OWS	Oily Water Separator
PAF	Potentially Acid Forming
premises	the premises to which this licence applies, as specified at the front of this licence 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.
ROM	Run of Mine
RWP	Return Water Pond
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.
TRH	Total Recoverable Hydrocarbon
TSF	Tailings Storage Facility
VWP	Vibrating Wire Piezometers
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

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

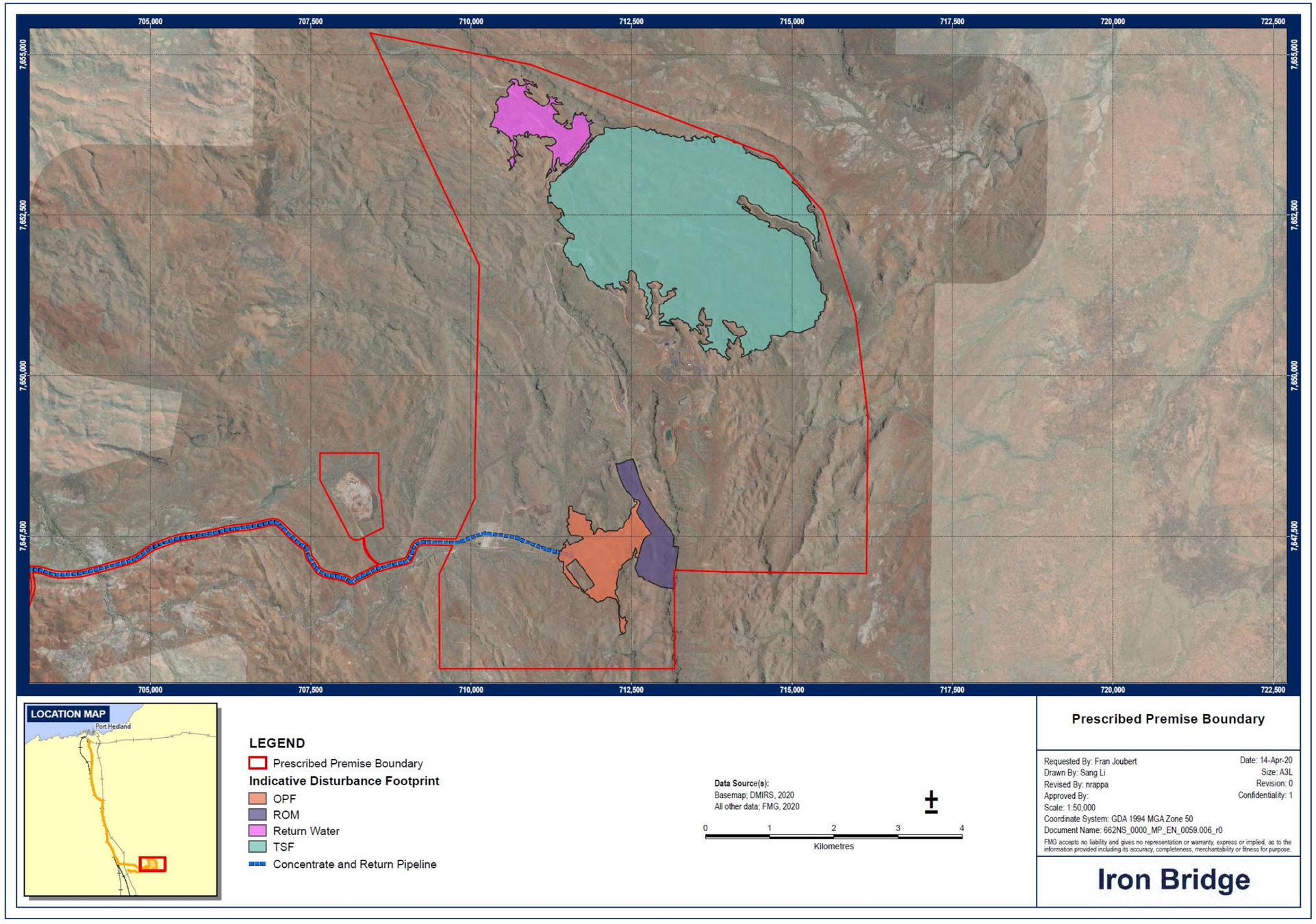


Figure 1: Map of the boundary of the prescribed premises

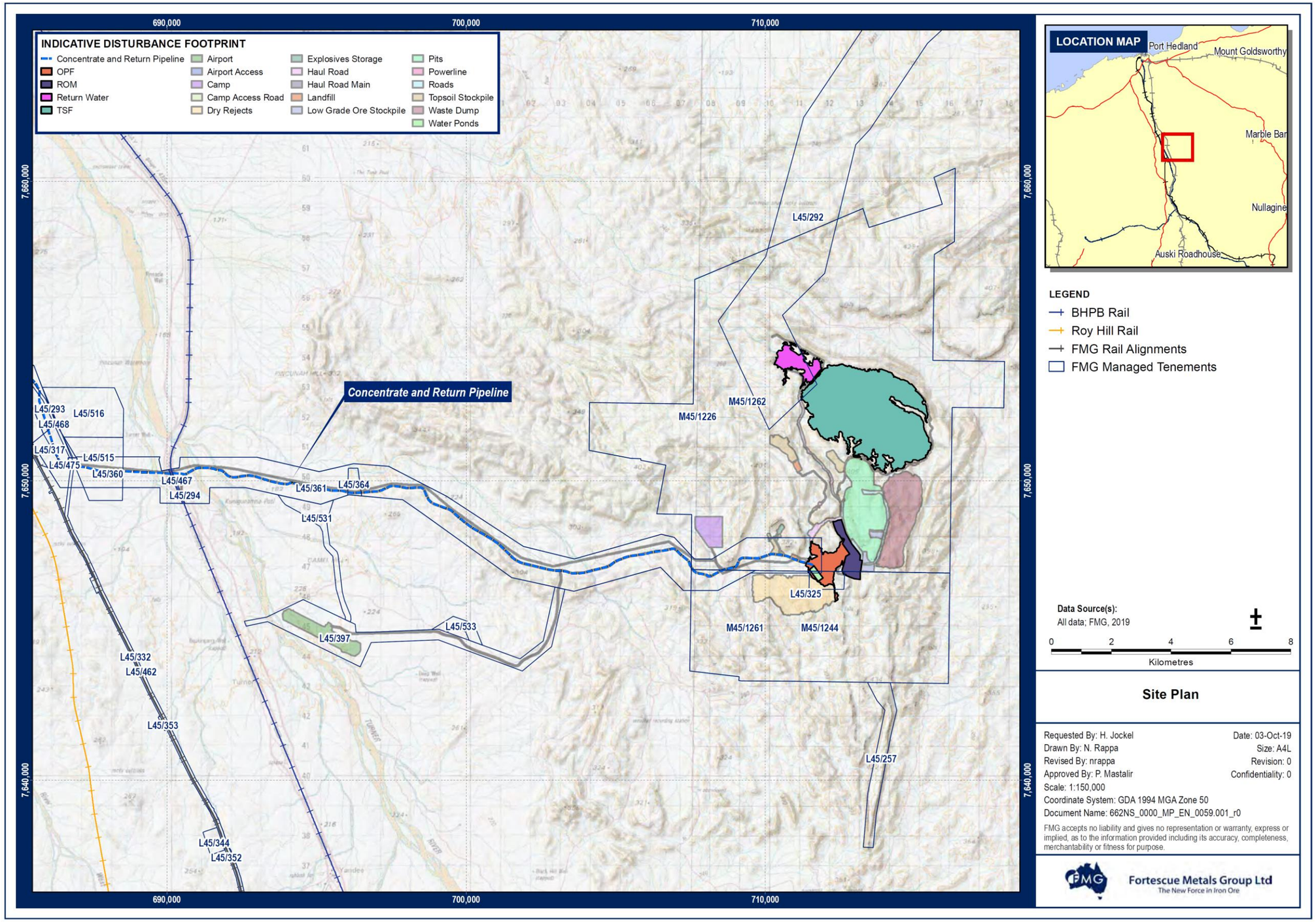


Figure 2: Map of the activities within the prescribed premises

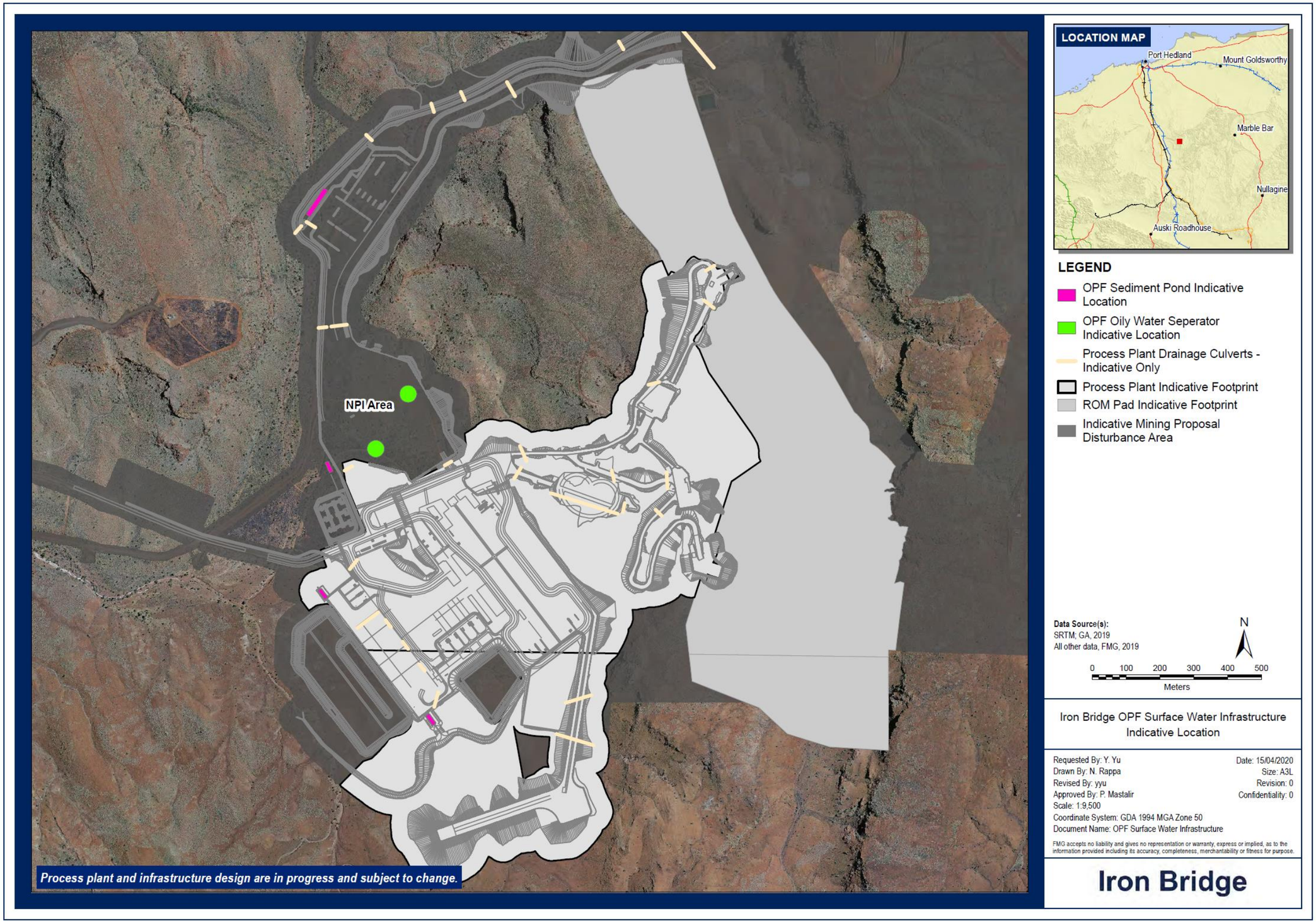


Figure 3: Map of sedimentation basins and OWS infrastructure (indicative)

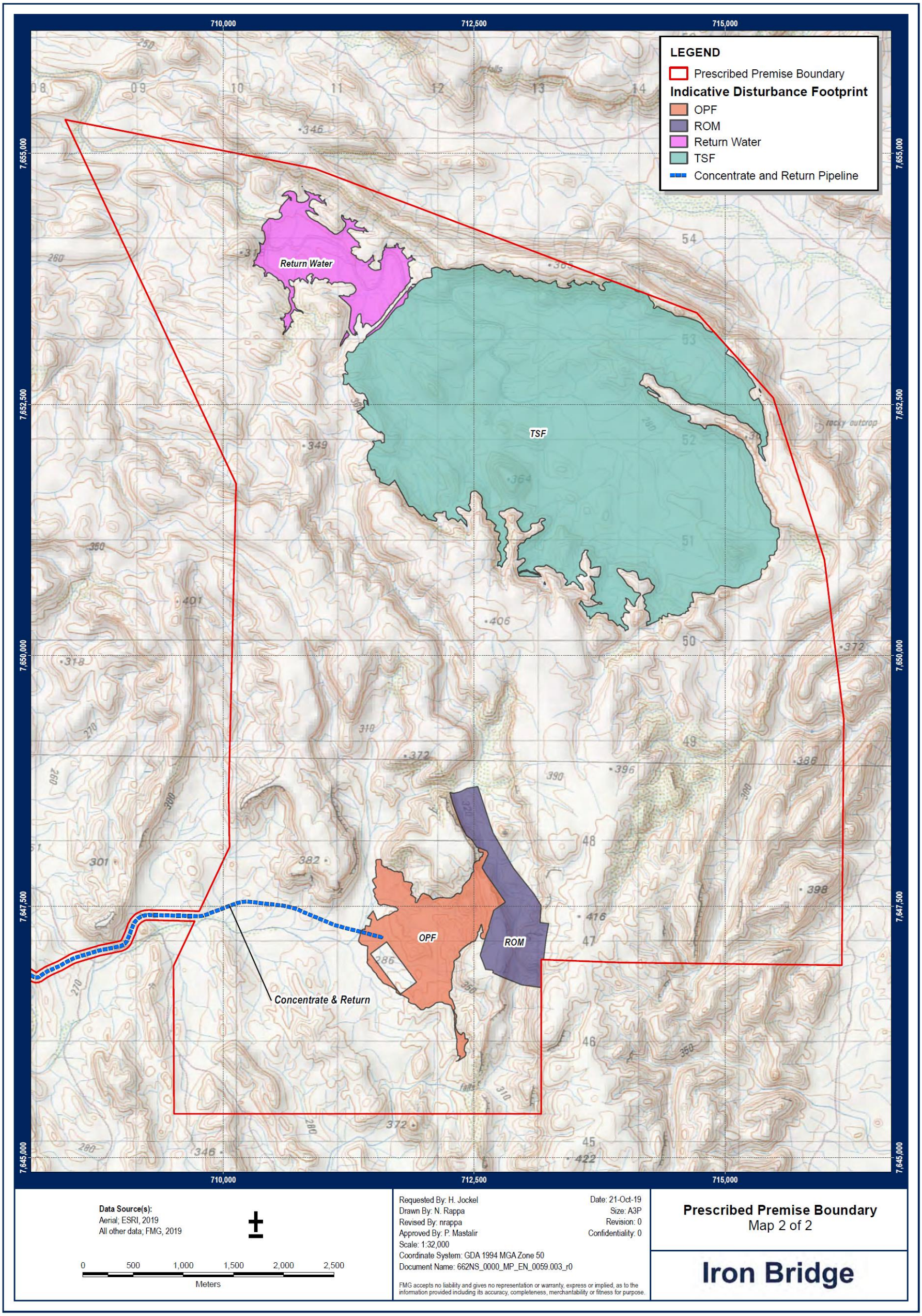


Figure 4: Map of the proposed activities in this works approval

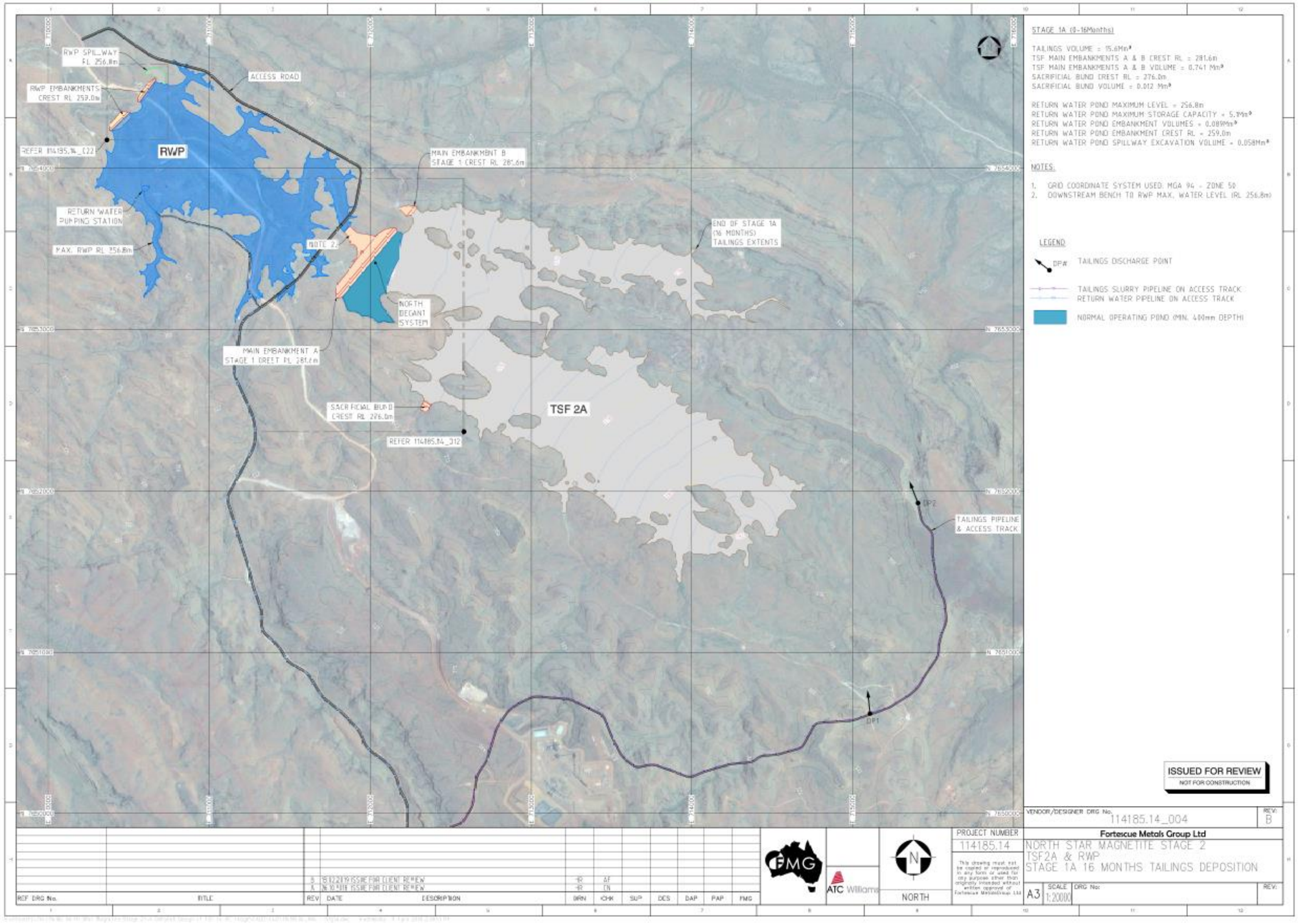


Figure 5: Map of the TSF Stage 1A and RWP

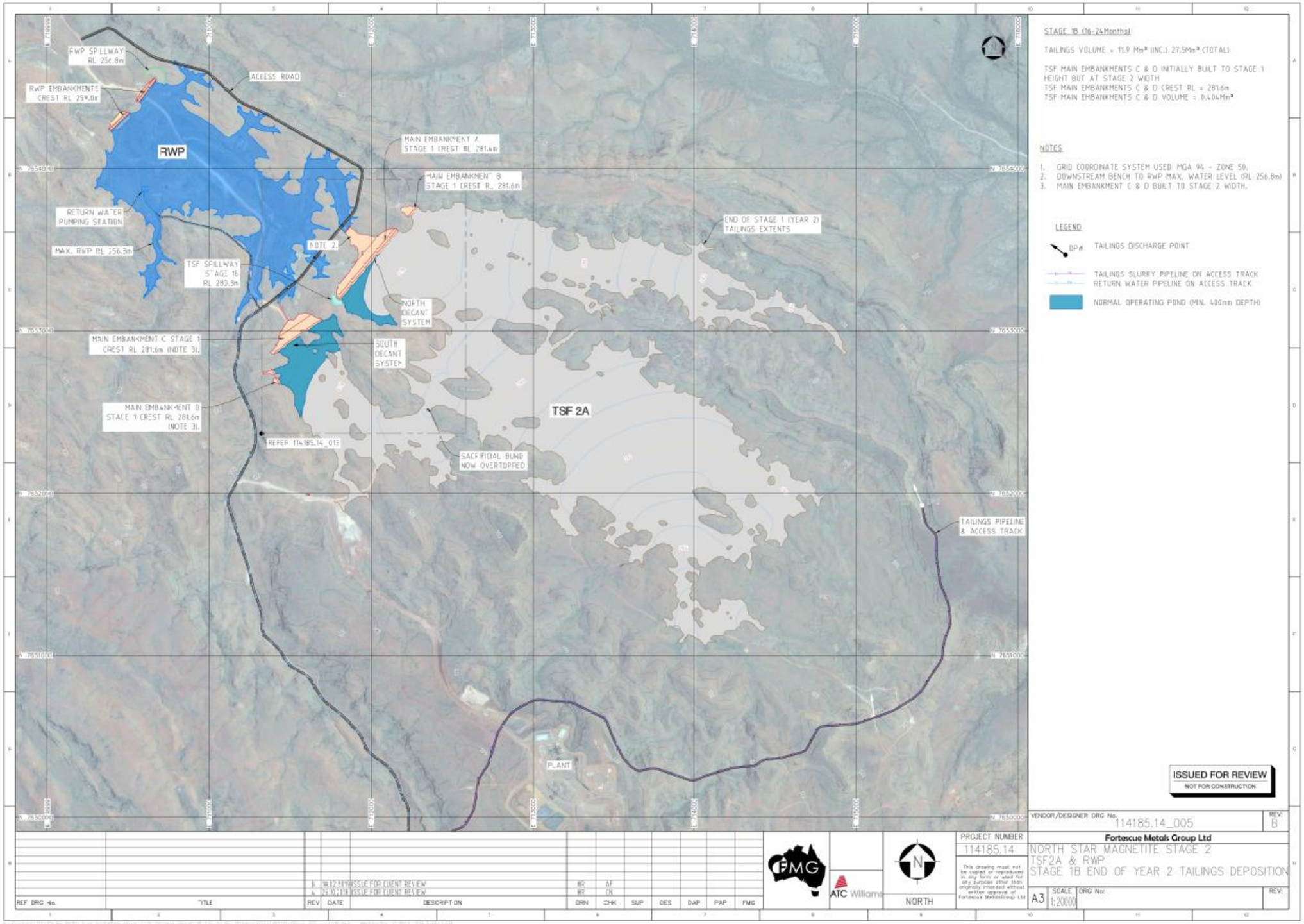


Figure 6: Map of the TSF Stage 1B and RWP

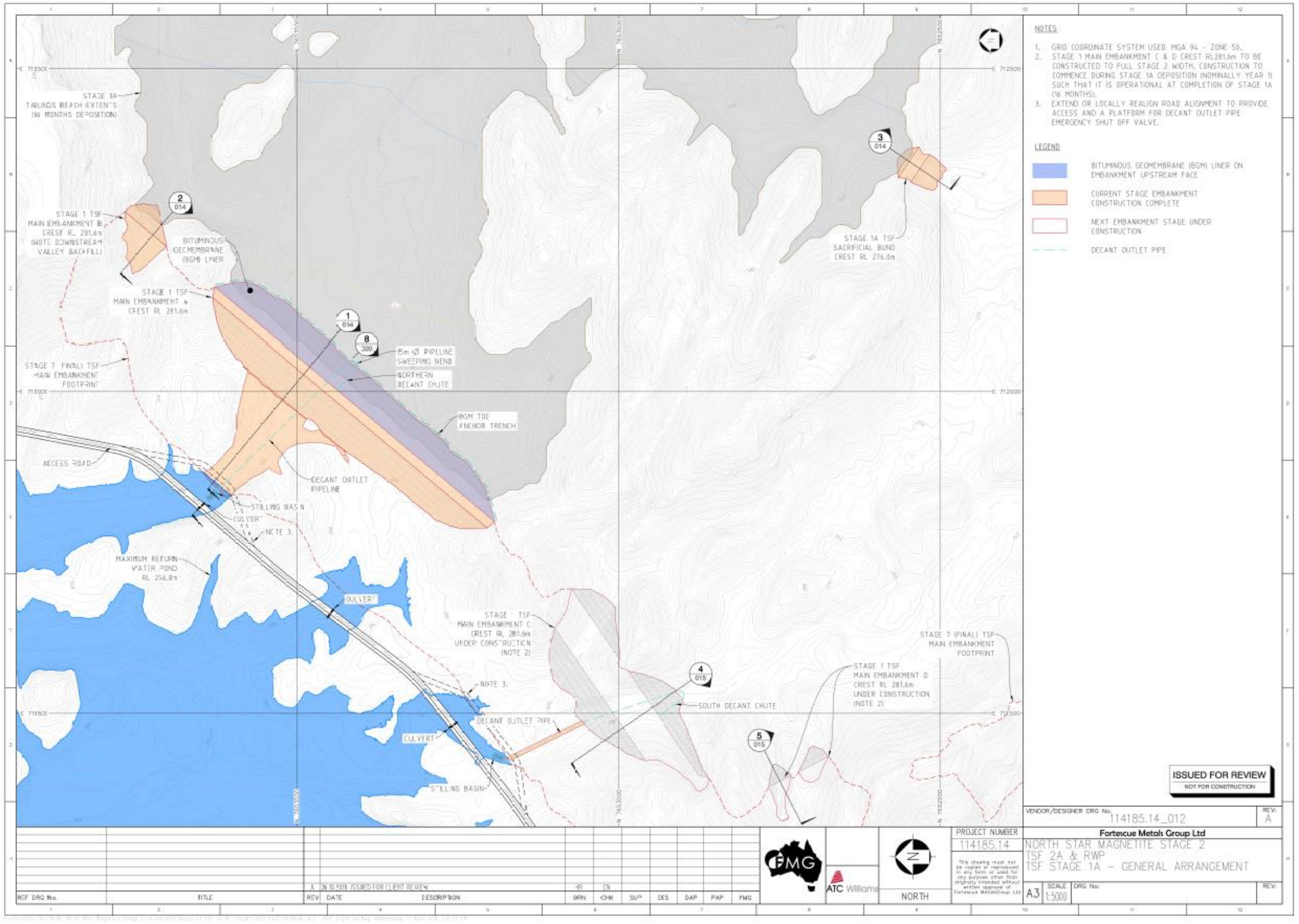


Figure 7: TSF Stage 1A embankments

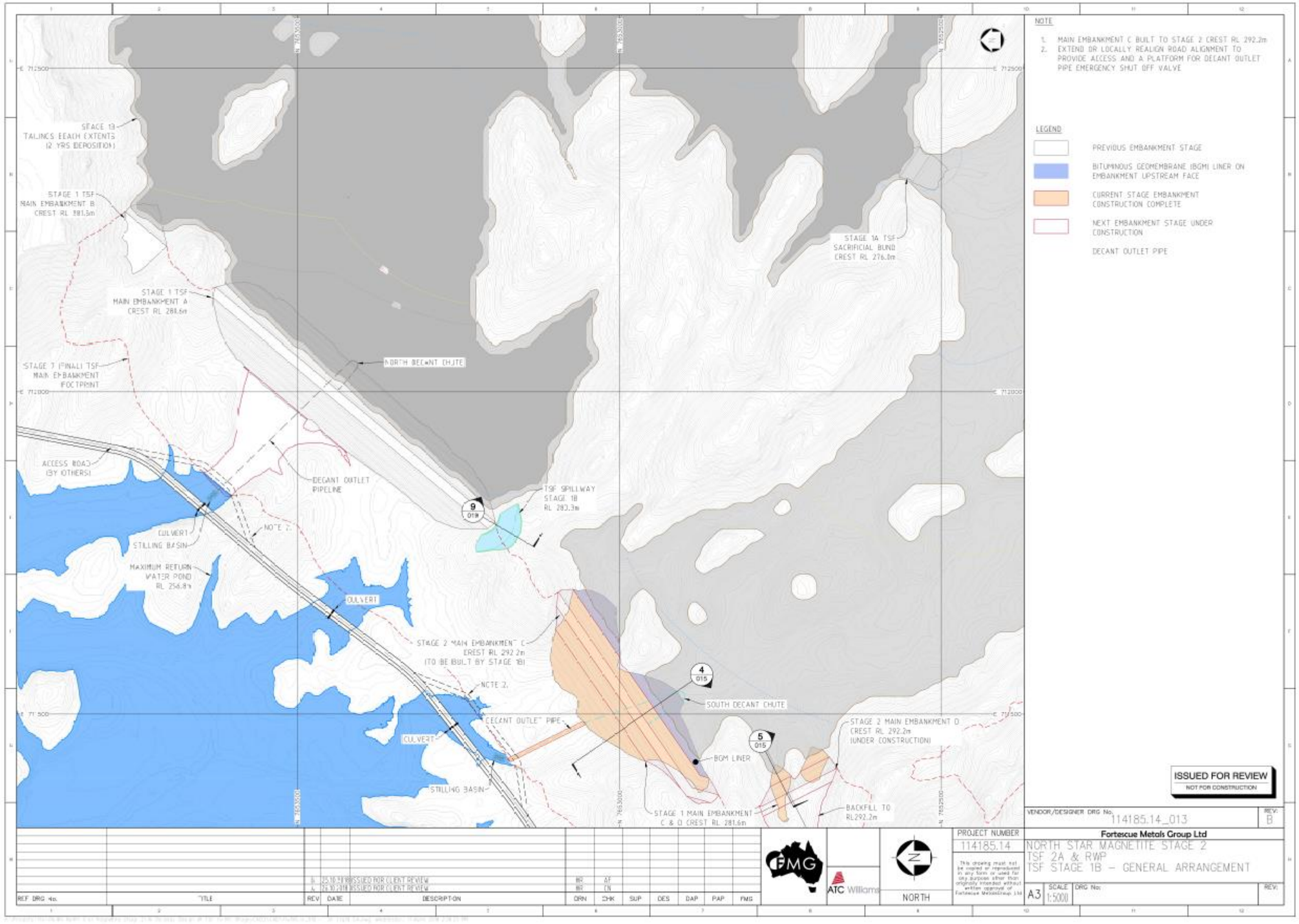


Figure 8: TSF Stage 1B embankments

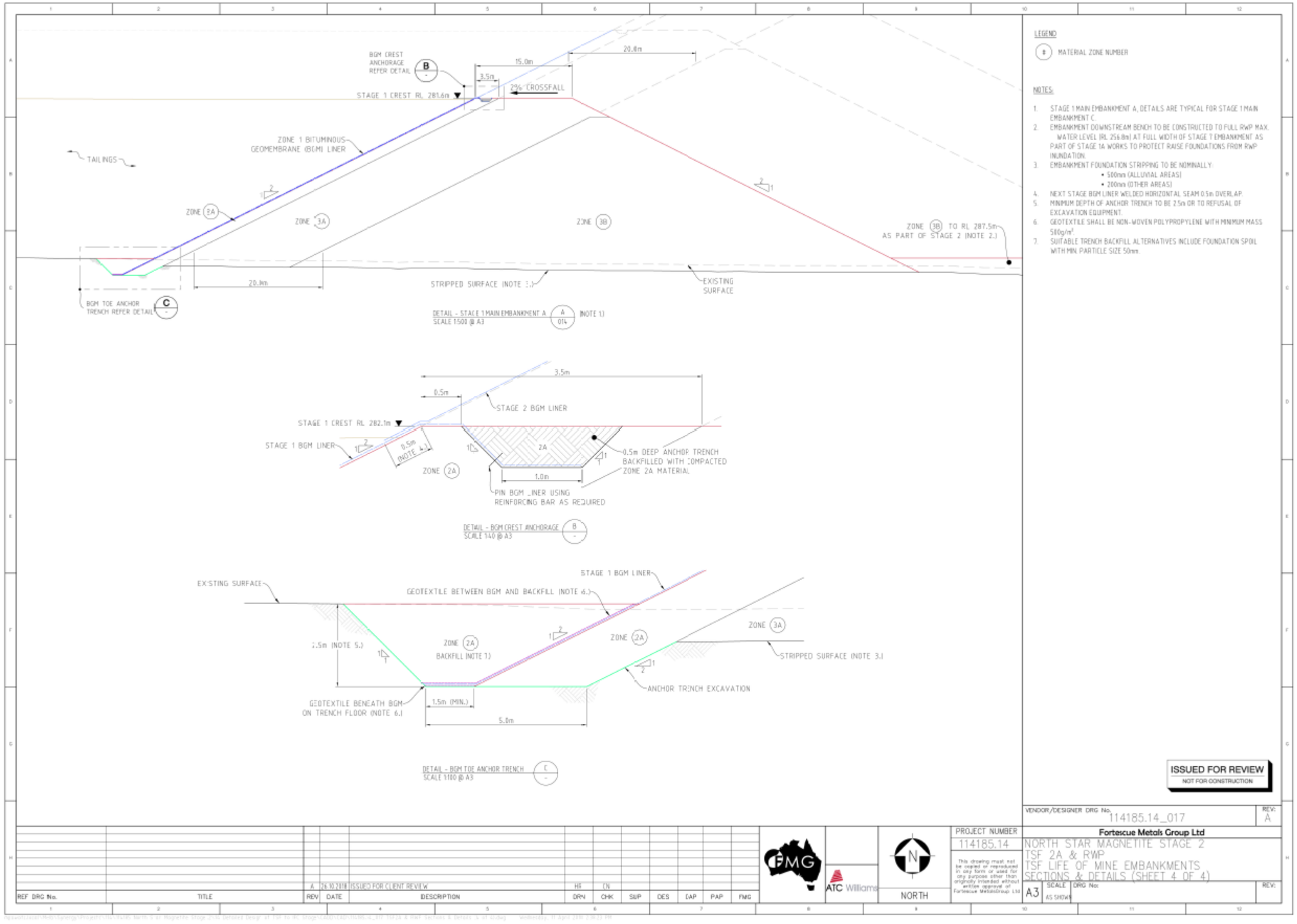


Figure 9: TSF Stage 1 embankment A construction cross-section

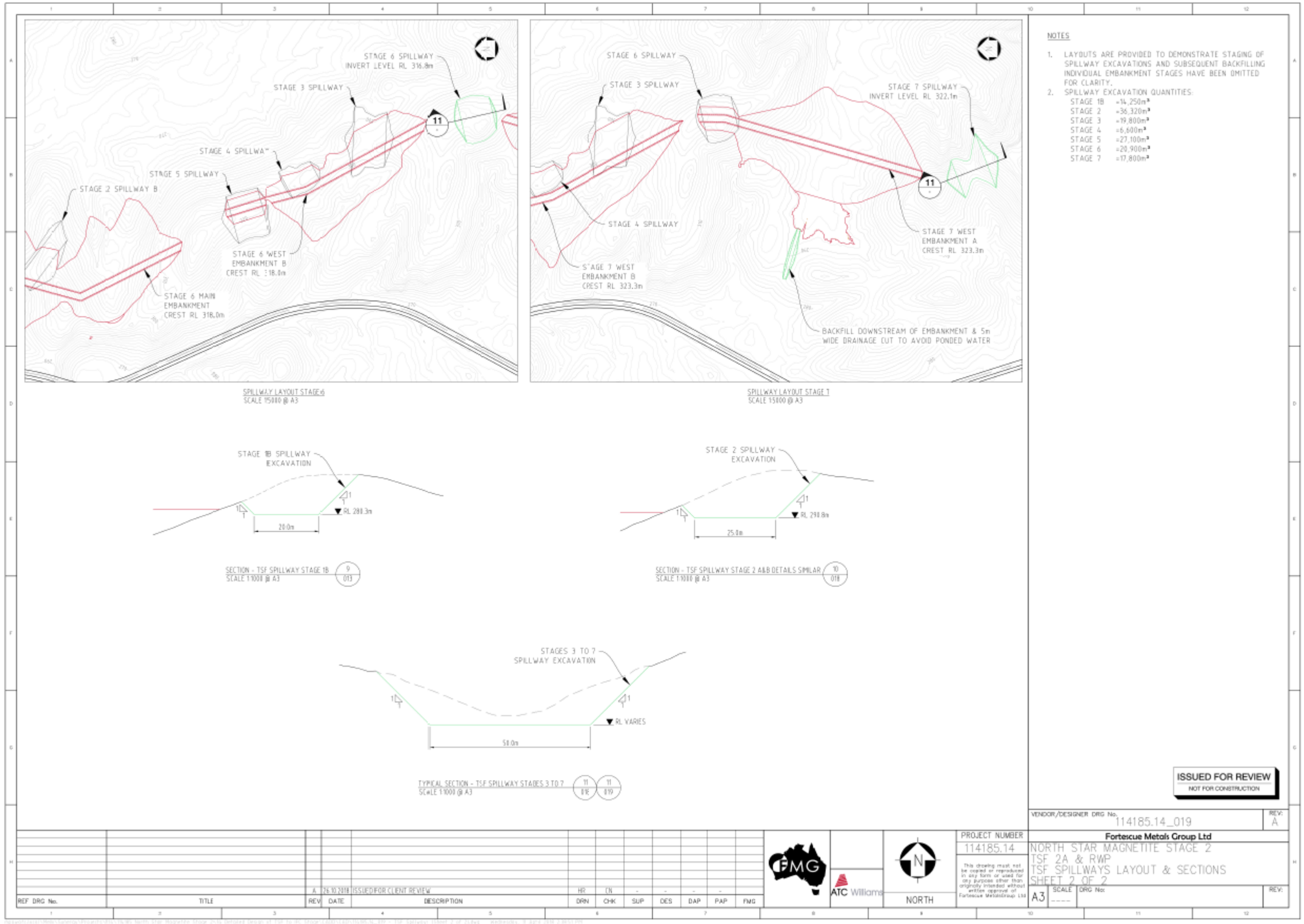


Figure 10: TSF Stage 1B spillway design cross-section

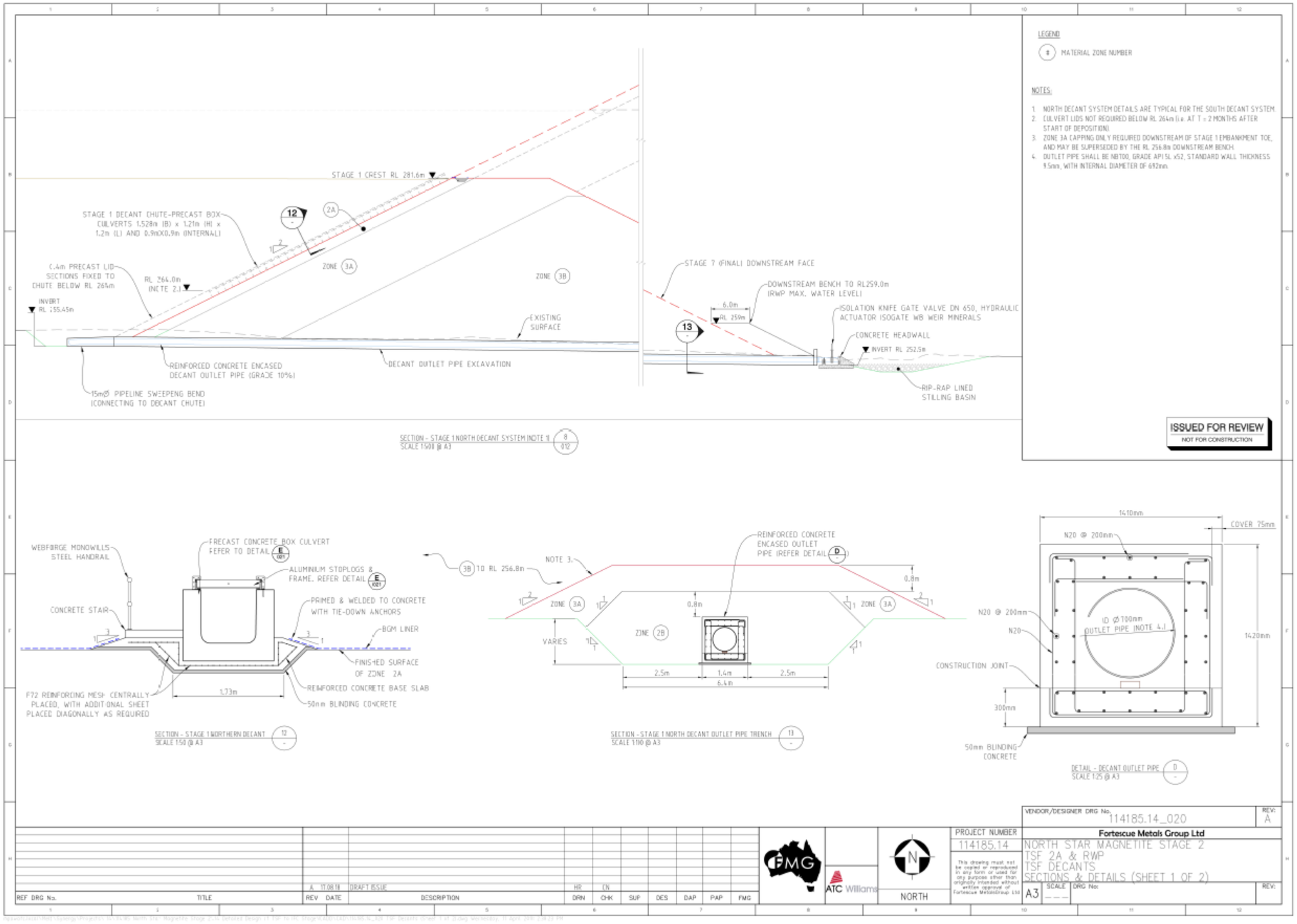


Figure 11: TSF northern decant cross-section

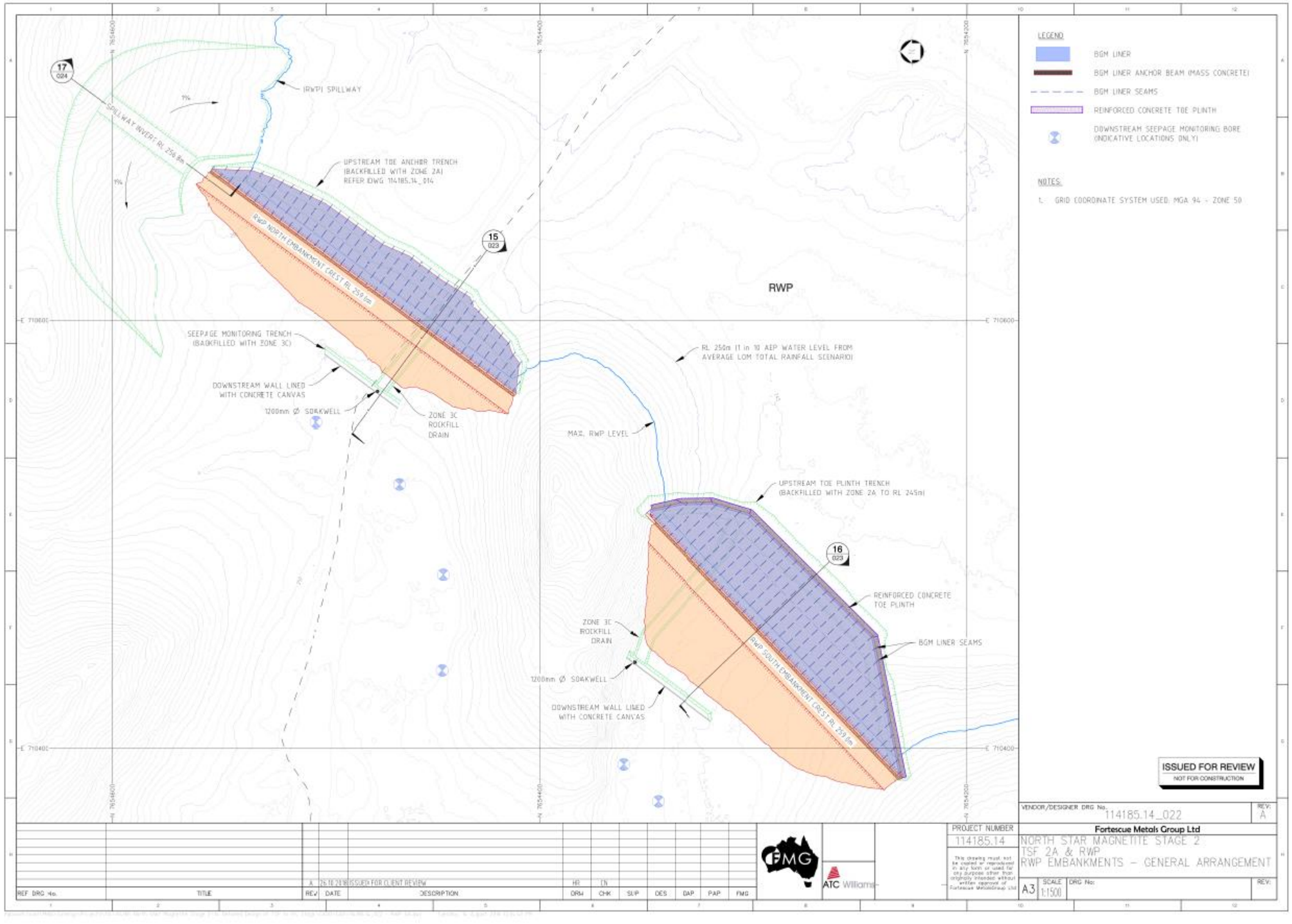


Figure 12: RWP embankments, bore locations (indicative) and emergency spillway

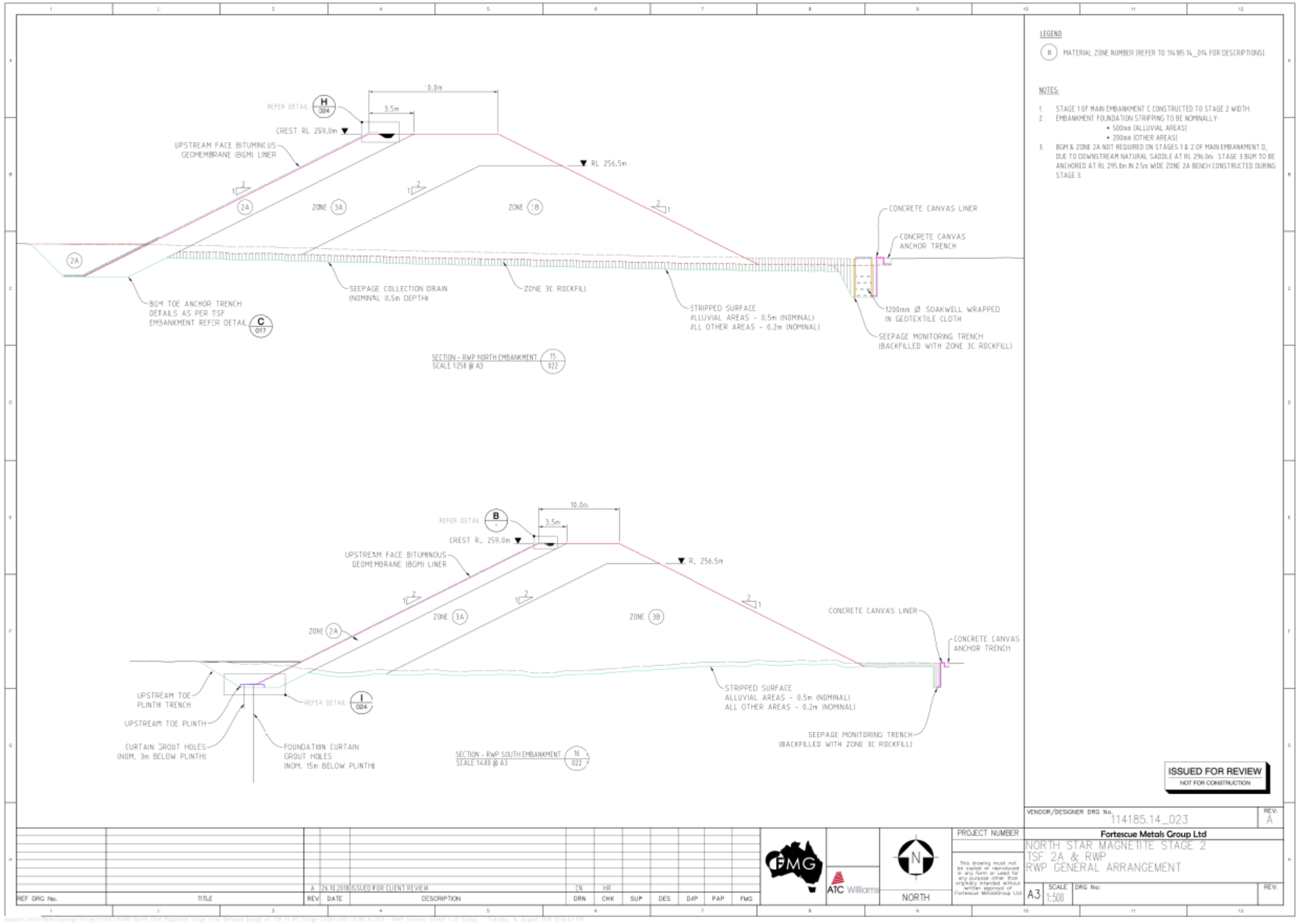


Figure 13: RWP embankments cross-section

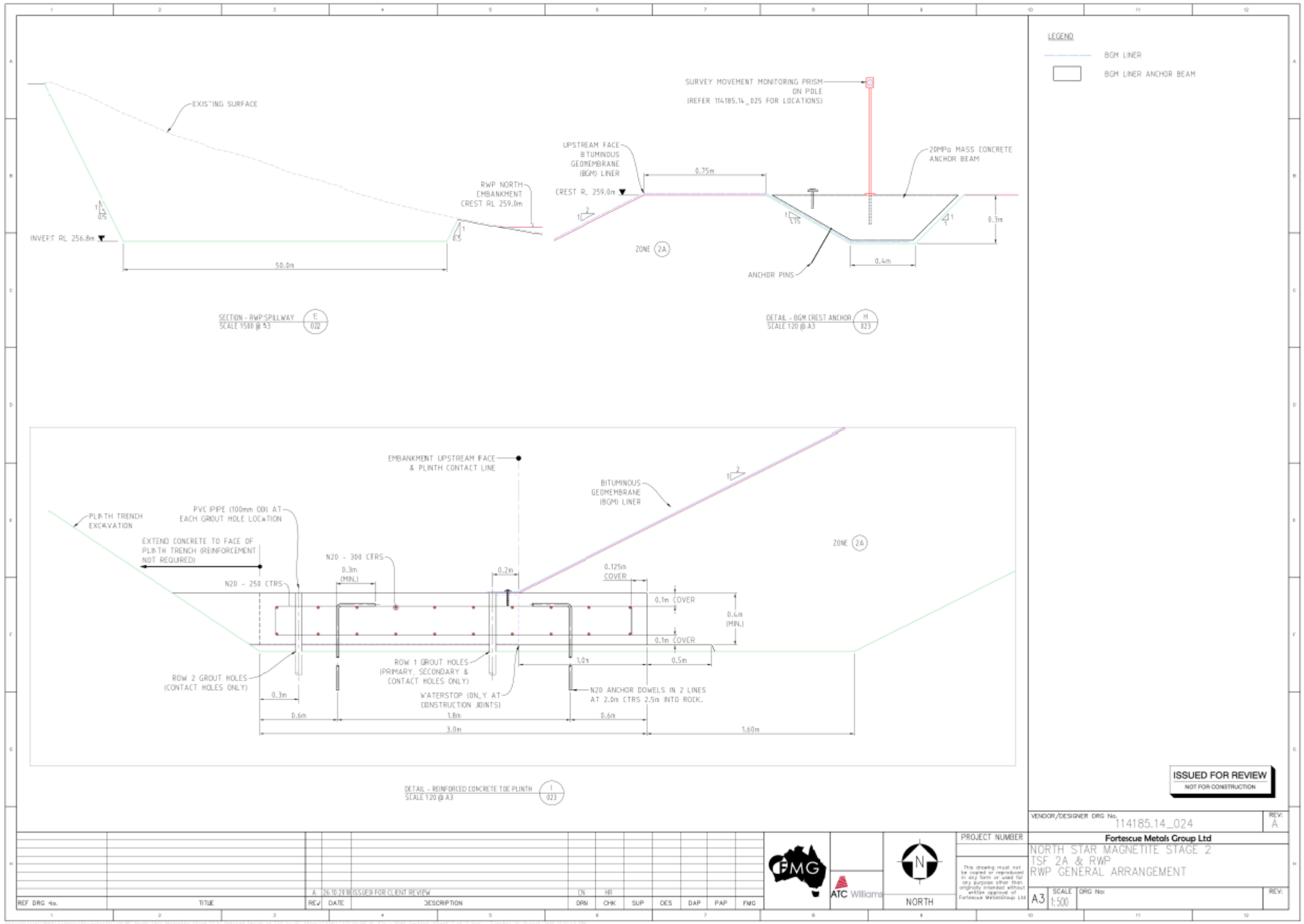


Figure 14: RWP emergency spillway cross-section and toe plinth

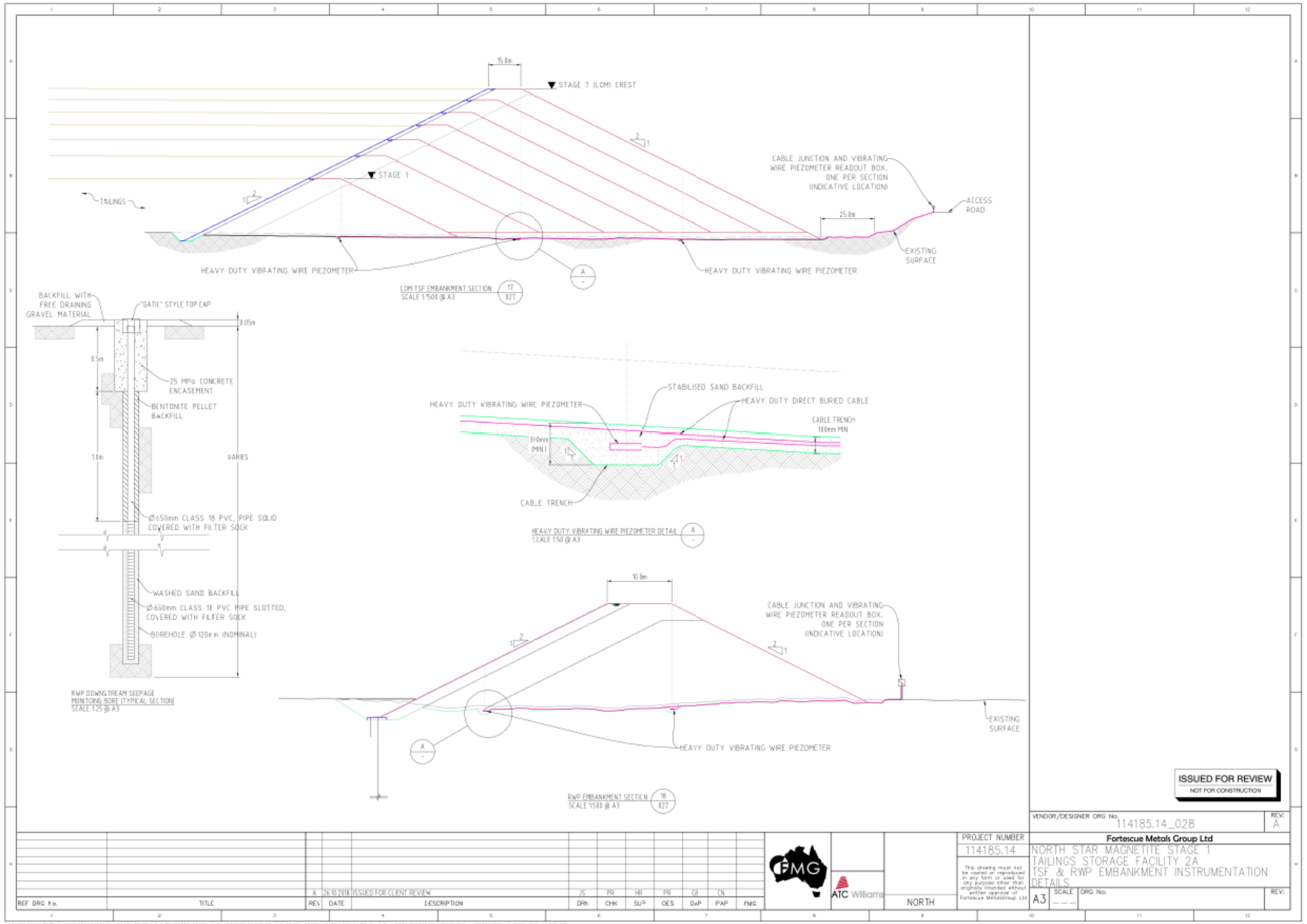


Figure 15: Construction of TSF and RWP embankments

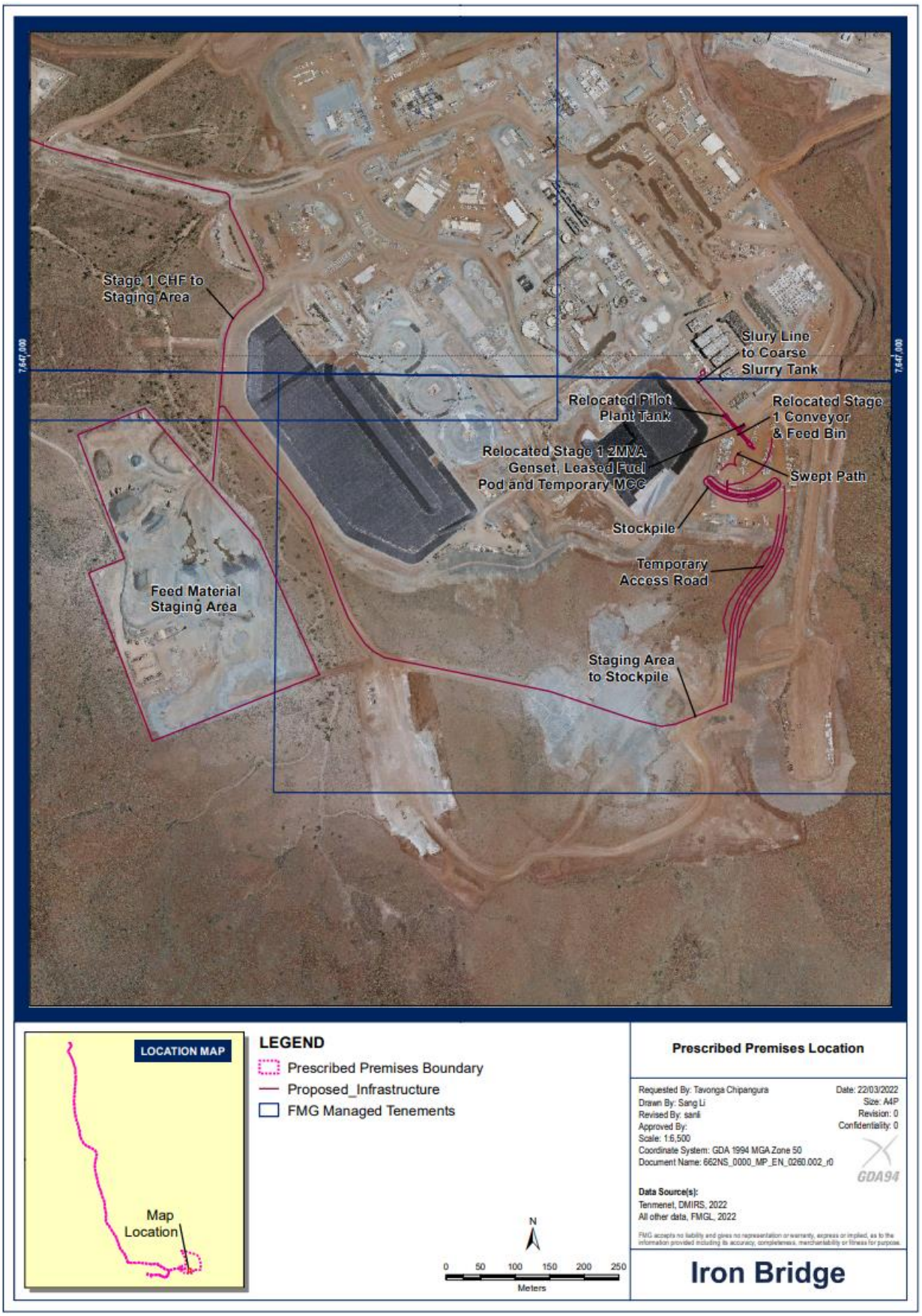


Figure 16: Location of Concentrator Handling Facility infrastructure

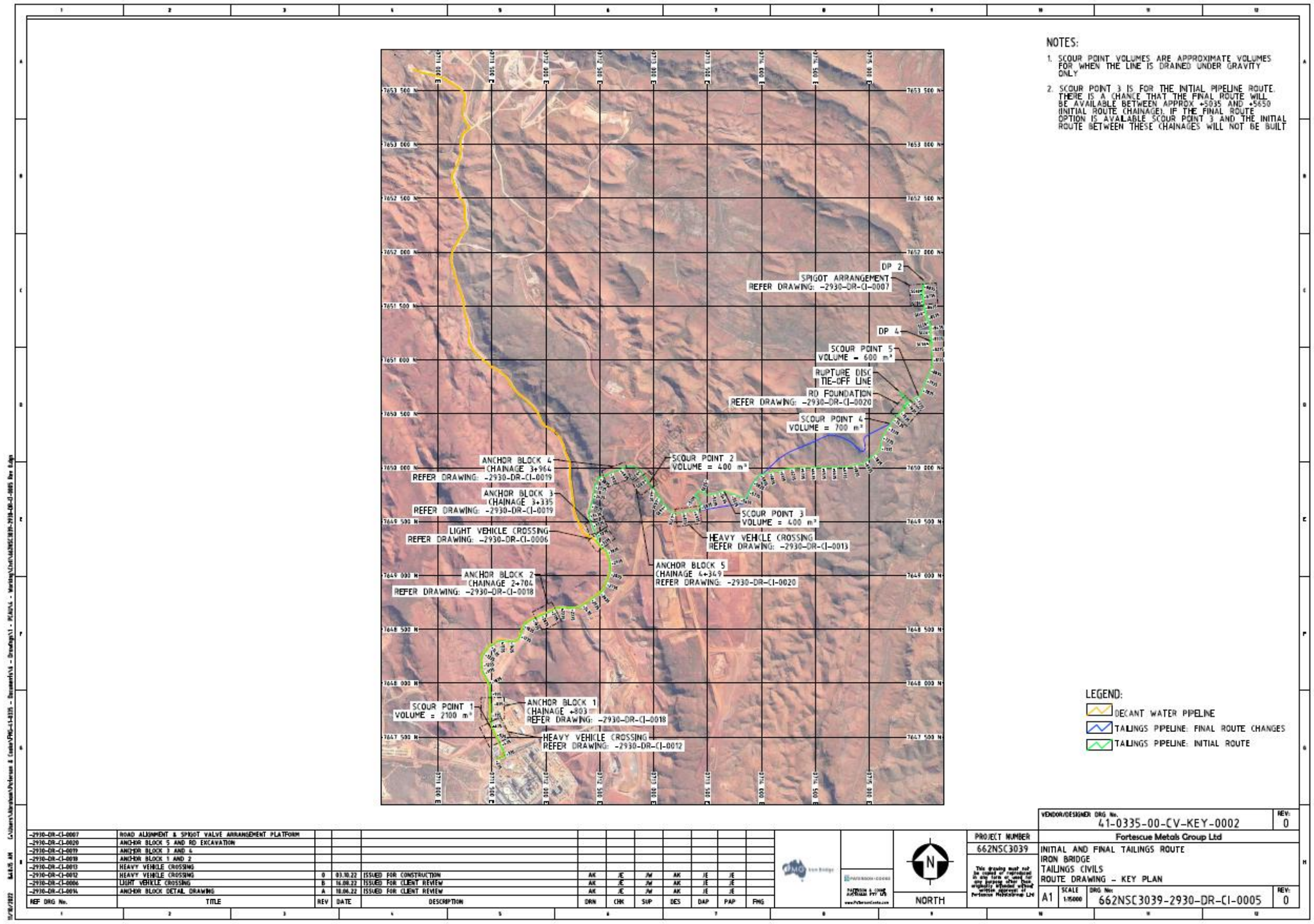
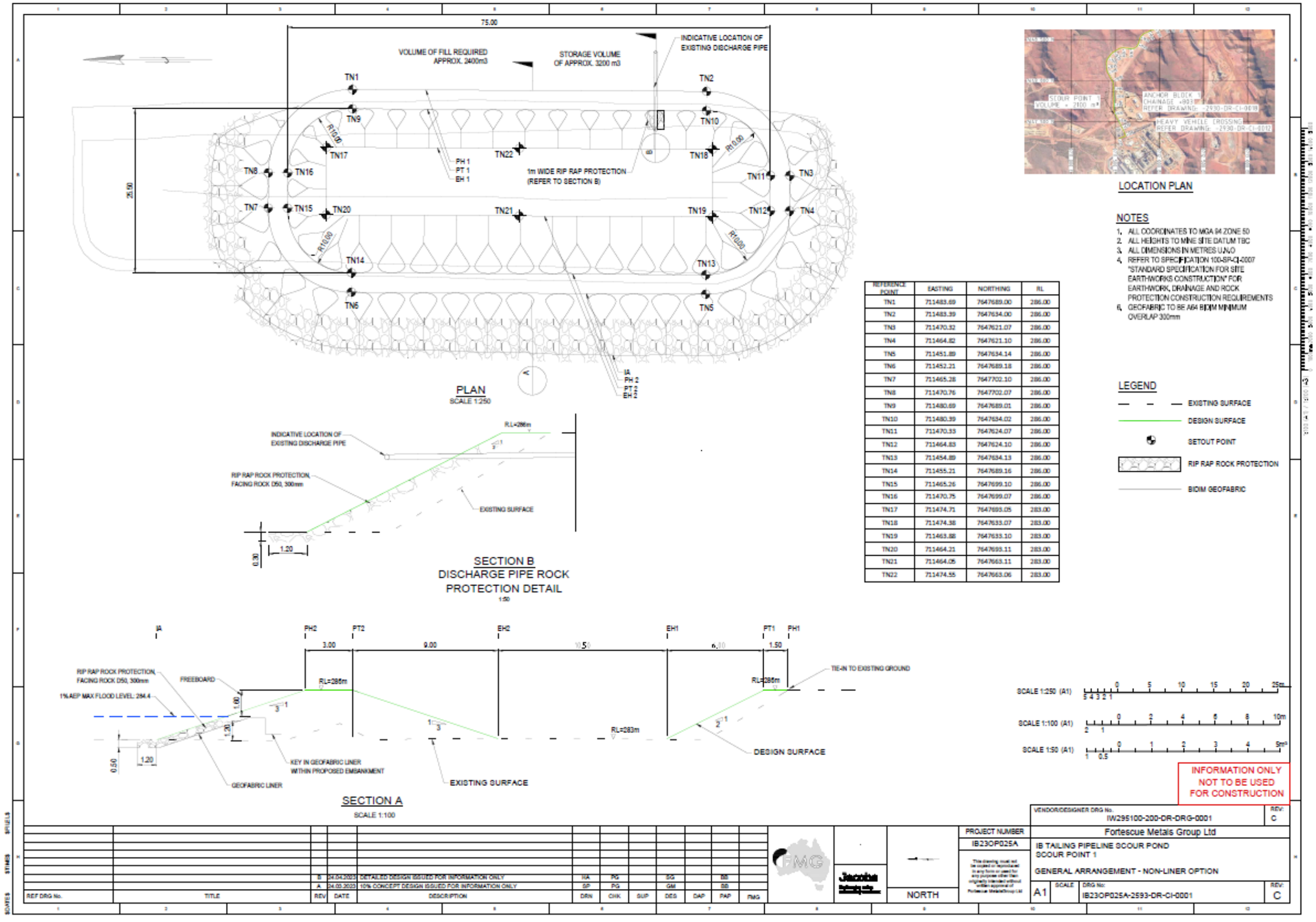


Figure 17: Indicative locations of the scour pits

W6322/2019/1 (Date of amendment: 01/04/2025)



REFERENCE POINT	EASTING	NORTHING	RL
TN1	711483.69	7647689.00	286.00
TN2	711483.39	7647634.00	286.00
TN3	711470.32	7647621.07	286.00
TN4	711464.82	7647621.10	286.00
TN5	711451.89	7647634.14	286.00
TN6	711452.21	7647689.18	286.00
TN7	711465.28	7647702.10	286.00
TN8	711470.76	7647702.07	286.00
TN9	711480.69	7647689.01	286.00
TN10	711480.39	7647634.02	286.00
TN11	711470.33	7647624.07	286.00
TN12	711464.83	7647624.10	286.00
TN13	711454.89	7647634.13	286.00
TN14	711455.21	7647689.16	286.00
TN15	711465.26	7647699.10	286.00
TN16	711470.75	7647699.07	286.00
TN17	711474.71	7647693.05	283.00
TN18	711474.38	7647633.07	283.00
TN19	711463.88	7647633.10	283.00
TN20	711464.21	7647693.11	283.00
TN21	711464.05	7647663.11	283.00
TN22	711474.55	7647663.06	283.00

Figure 18: Indicative scour pit design

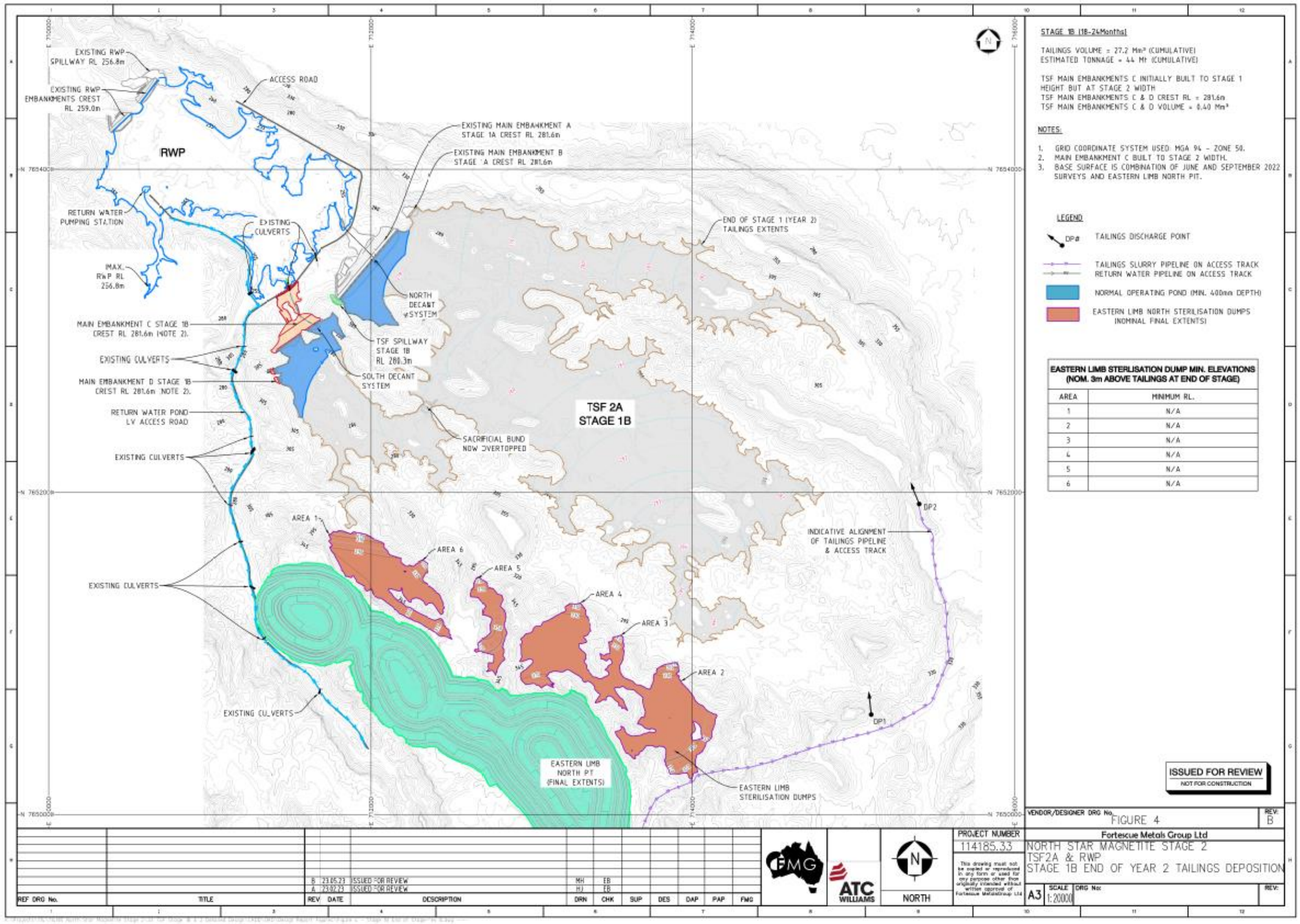


Figure 19: Map of the TSF Stage 2 and RWP

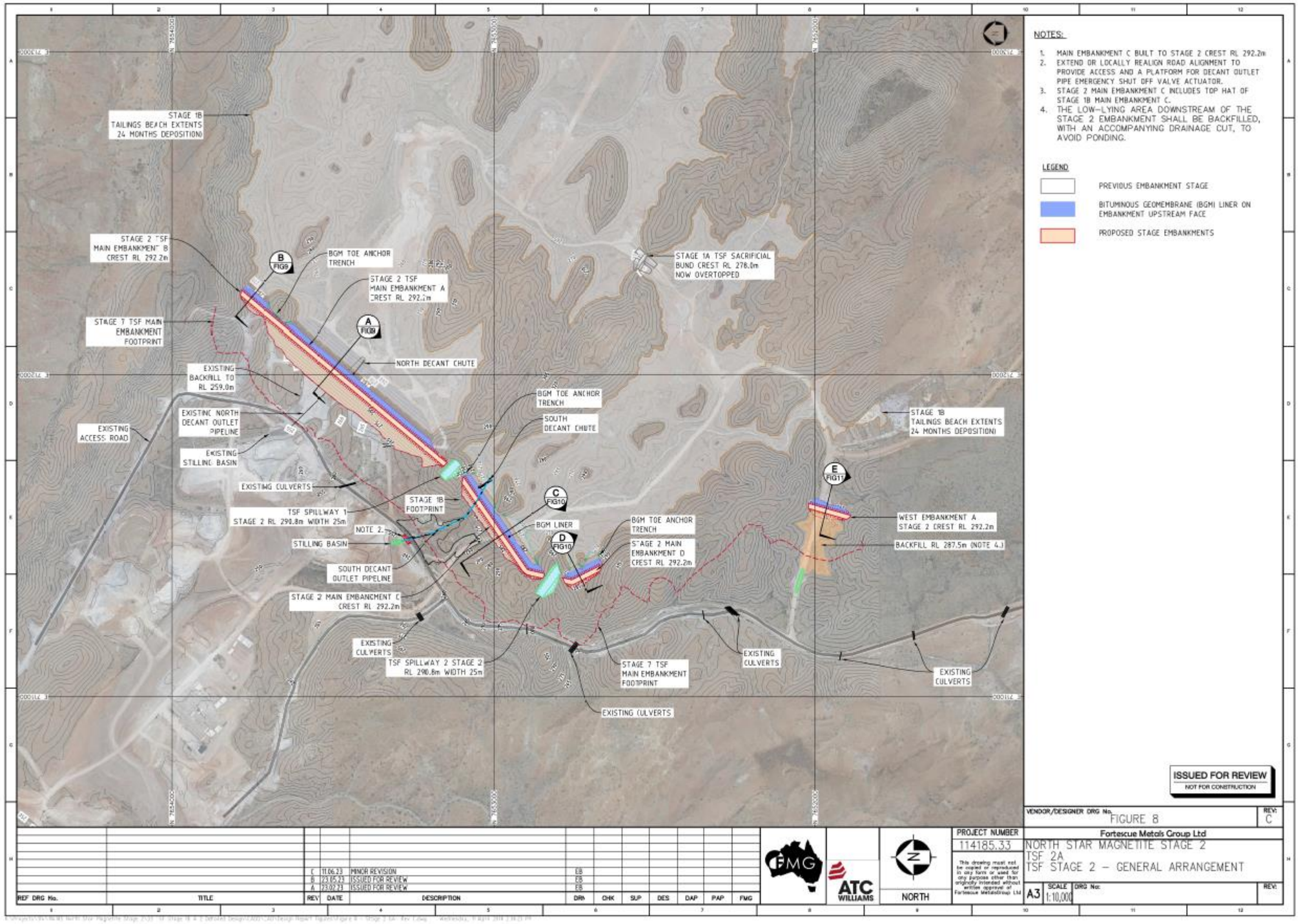
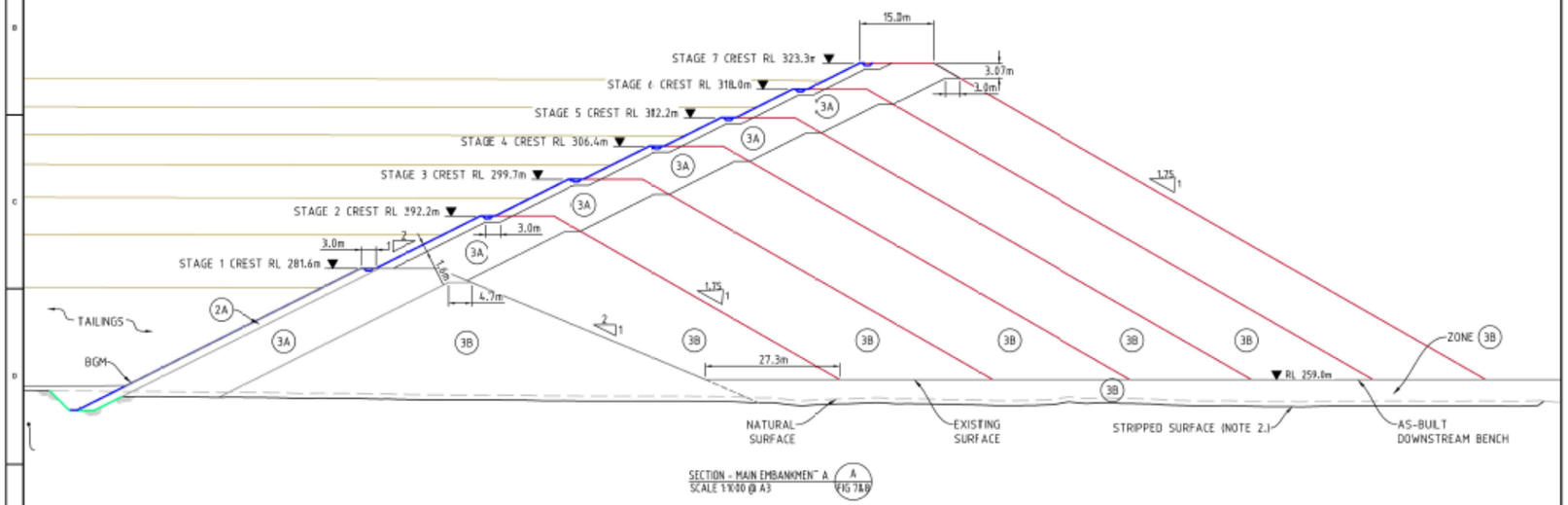
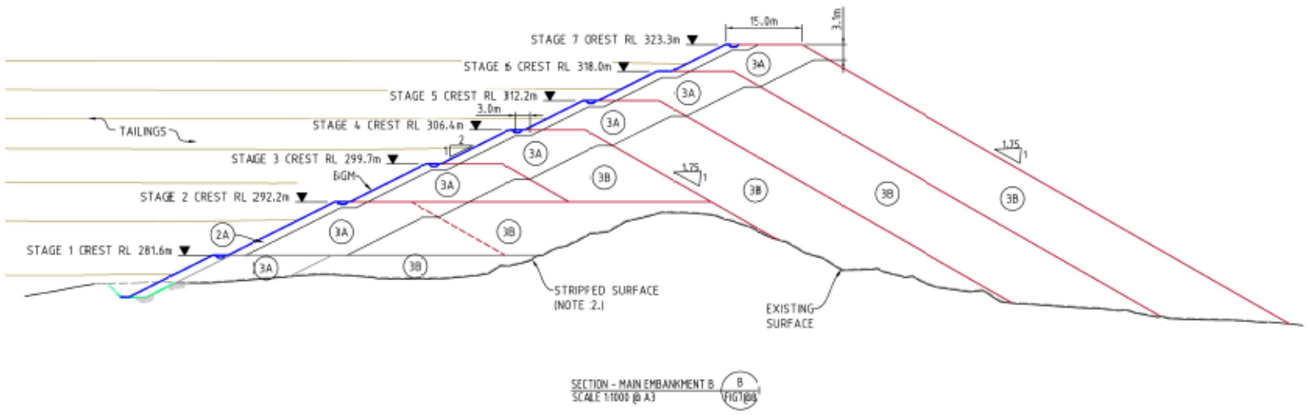


Figure 20: TSF Stage 2 general arrangement

ZONE	MATERIAL DESCRIPTION	PLACEMENT	COMPACTION
BGM	BITUMINOUS GEOMEMBRANE LINER	PLACE ON PREPARED SURFACE AND ANCHORED AT PERIMETER	N.A.
2A	BGM SUPPORT LAYER - 30 mm MINUS COARSE REJECTS	HORIZONTAL LAYERS - LOOSE THICKNESS 400mm	6 PASSES OF MINIMUM 10 TONNE STATIC MASS VIBRATING ROLLER
3A	TRANSITION ROCKFILL - COARSE REJECTS/APPROVED MINE SPOIL/DESIGNATED QUARRIES & EXCAVATIONS	HORIZONTAL LAYERS - LOOSE THICKNESS 400mm	6 PASSES OF MINIMUM 10 TONNE STATIC MASS VIBRATING ROLLER
3B	GENERAL ROCKFILL - APPROVED MINE SPOIL/DESIGNATED QUARRIES & EXCAVATIONS	HORIZONTAL LAYERS - LOOSE THICKNESS 800mm OR HORIZONTAL LAYERS - LOOSE THICKNESS 1600mm	6 PASSES OF MINIMUM 10 TONNE STATIC MASS VIBRATING ROLLER OR 10 PASSES OF 4 SIDED 8 TONNE IMPACT ROLLER





LEGEND

(B) MATERIAL ZONE NUMBER (REFER TO 114185.14_014 FOR DESCRIPTIONS).

NOTES:

1. EMBANKMENT C DOWNSTREAM BENCH TO BE CONSTRUCTED TO FULL RWP MAX WATER LEVEL (RL 256.8m) AT FULL WIDTH OF STAGE 7 EMBANKMENT AS PART OF STAGE 1B WORKS TO PROTECT RAISE FOUNDATIONS FROM RWP INUNDATION.
2. EMBANKMENT FOUNDATION STRIPPING TO BE NOMINALLY:
   - 500mm (ALLUVIAL AREAS)
   - 200mm (OTHER AREAS).

3.- PRESENTED TAILINGS SURFACES ARE SCHEMATIC AND FOR VISUALISATION PURPOSE ONLY.

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

REF DRG No.	TITLE	REV	DATE	DESCRIPTION	DRN	CHK	SUP	DES	DAP	PAP	FMG
		A	23.02.23	ISSUED FOR INFORMATION	EB						

VENDOR/DESIGNER DRG No. FIGURE 9 — REV: A

PROJECT NUMBER 114185.14

Fortescue Metals Group Ltd

NORTH STAR MAGNETITE STAGE 1
TSF 2A
TSF EMBANKMENTS
SECTIONS & DETAILS (SHEET 1 OF 3)

A3 — SCALE AS SHOWN — DRG No: — REV:

FMG — ATC WILLIAMS — NORTH

Figure 21: Construction of TSF Stages 2 to 7 embankments A and B

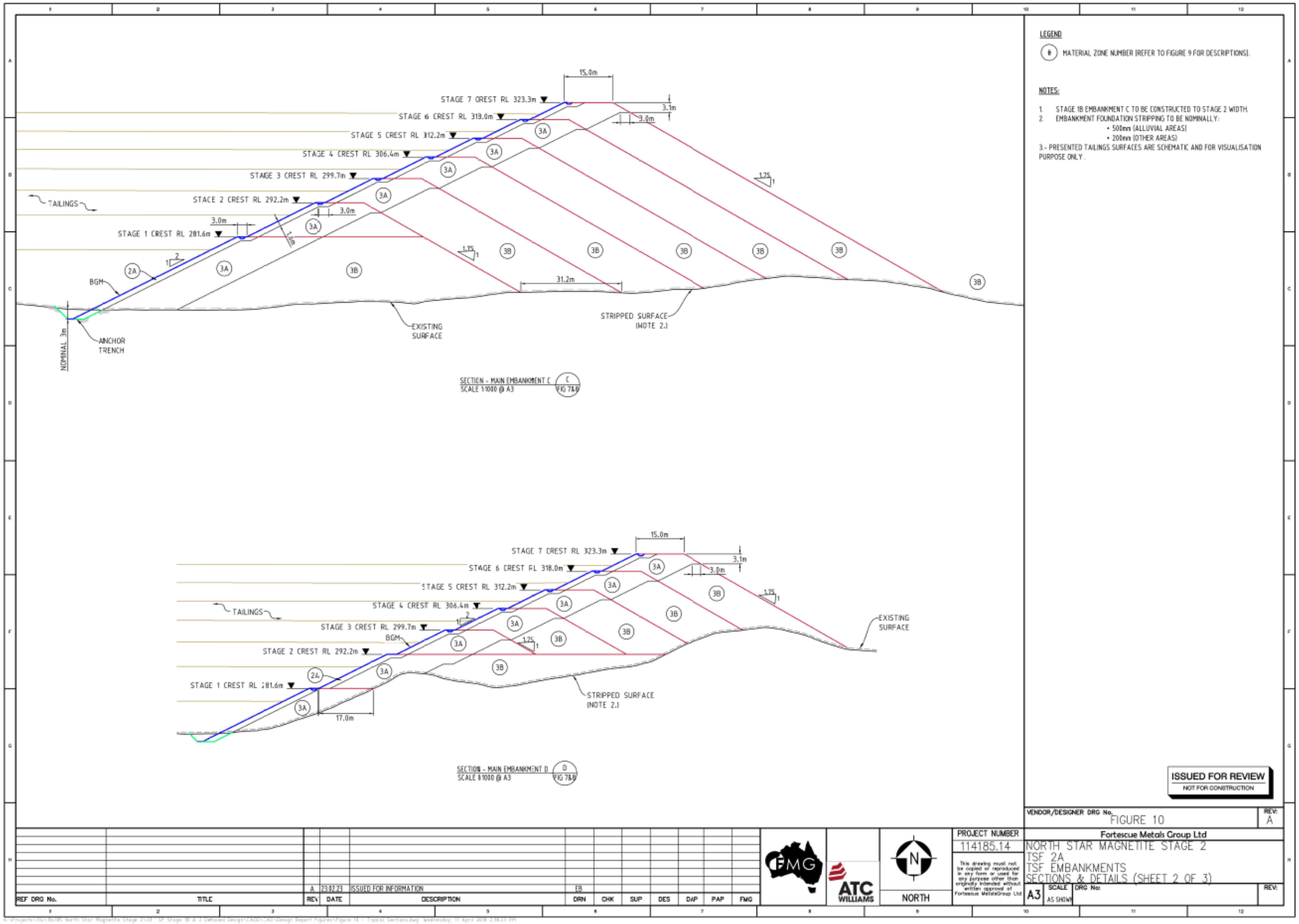


Figure 22: Construction of TSF Stages 2 to 7 embankments C and D

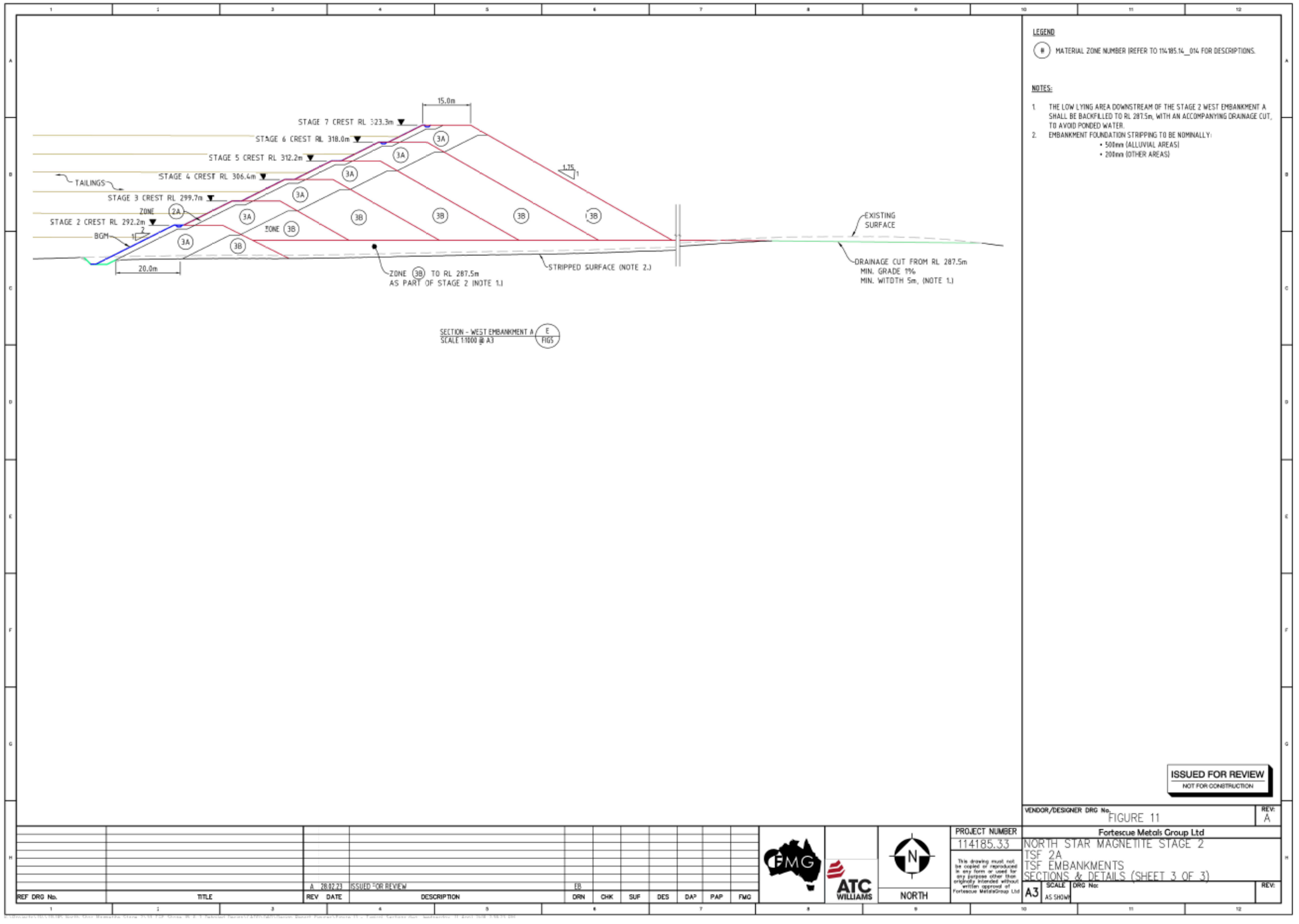


Figure 23: Construction of TSF Stages 2 to 7 embankment E

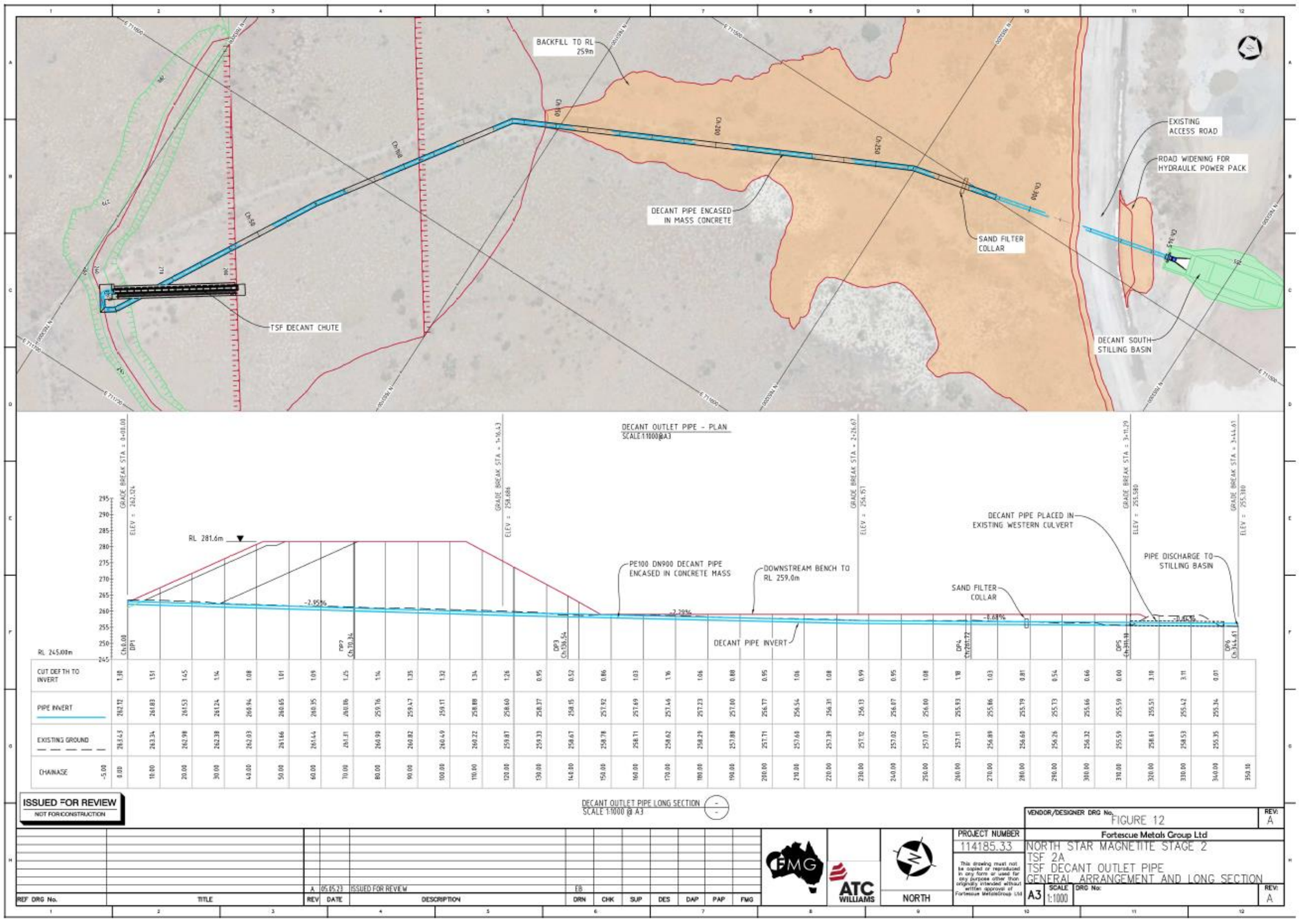


Figure 24: Construction of TSF Stage 2 decant outlet pipe