

**1818 LAKES ROAD – NORTH DANDLUP  
ENGINEERING SERVICING REPORT**

Prepared for  
Western Corporate  
JULY 2025

**CLIENT: WESTERN CORPORATE**

**PROJECT: 1818 LAKES ROAD – NORTH DANDALUP**

**TITLE: ENGINEERING SERVICING REPORT**

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## 1 INTRODUCTION

TABEC Pty Ltd have prepared the following servicing report to support the Shire of Murray Local Planning Scheme No.4 - Scheme Amendment No. 333 - Lot 39 Lakes Road, North Dandalup (the Site), rezoning from Rural to Special Rural.

This report summarises the availability of existing infrastructure assets in proximity to the land holding and the potential engineering infrastructure requirements to support rural residential development within the study area. In particular the report considers minor earthworks, roads, drainage, wastewater, water, gas, power, and communication servicing requirements to support development.

The investigation, servicing recommendations and preparation of the report is primarily based on preliminary advice from the various authorities. The information is current at the time of preparing the report and is therefore subject to change as planning and development progresses in and around the site.

## 2 STUDY AREA AND SITE FEATURES

### 2.1 Site Locality and Planning Context

The proposed development site, Lot 39 (No. 1818) Lakes Road, as shown in Figure 1 below, covers an area of approximately 196 hectares and is located within the Shire of Murray. The Site is generally bound by Lakes Road to the north, Lot 38 Lakes Road to the west, Shanns Road to the south and established rural residential landholdings to the east.

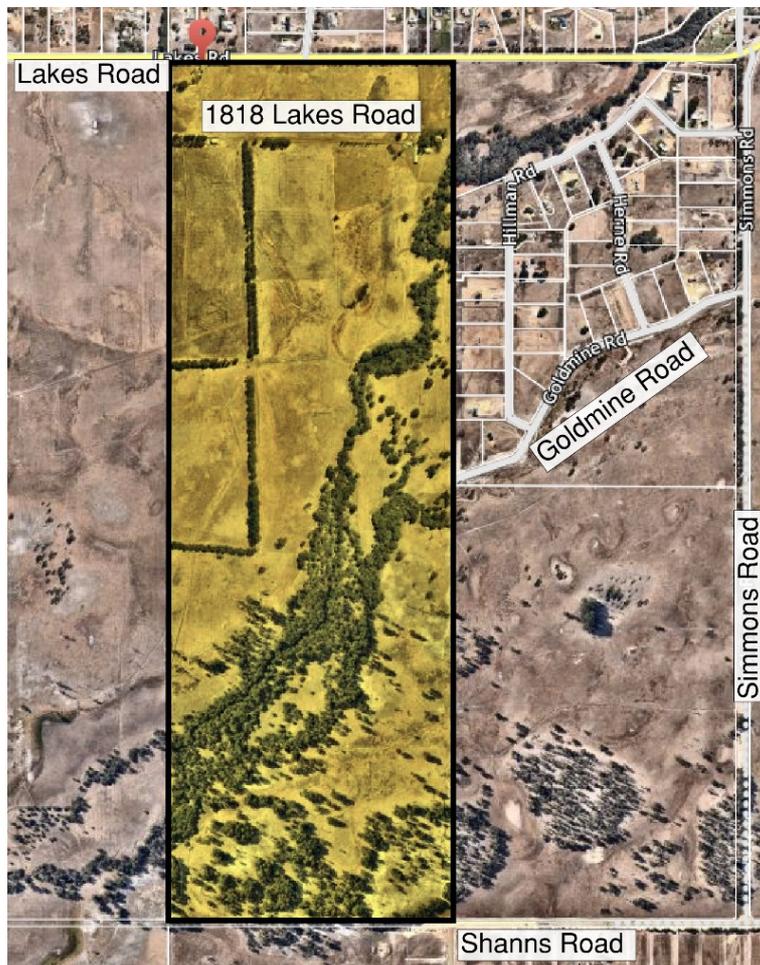
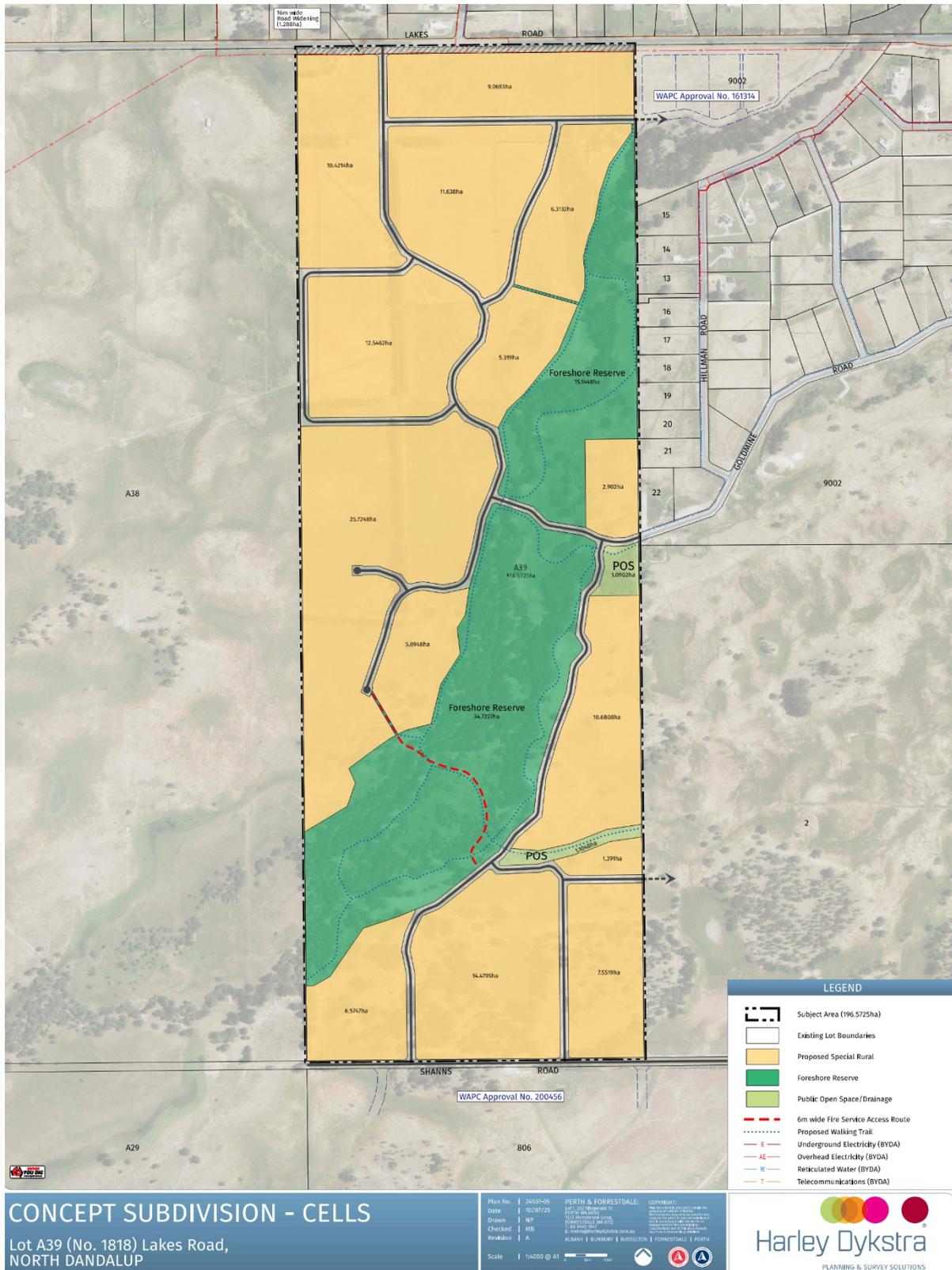


Figure 1 – Aerial Image of Site – 1818 Lakes Road (Nearmaps, March 2025)

The Site is planned to deliver approximately 125 (>1ha) rural residential lots once developed. The proposed Concept Subdivision Plan prepared by Harley Dykstra, is presented in Figure 2 below.



Lot 39 Lakes Road is currently zoned 'Rural' under the Local Planning Scheme No.4 for the Shire of Murray, with neighbouring sites zoned Special Rural. The location of the Site within the context of Local Planning Scheme No. 4 is indicated in Figure 3 below.

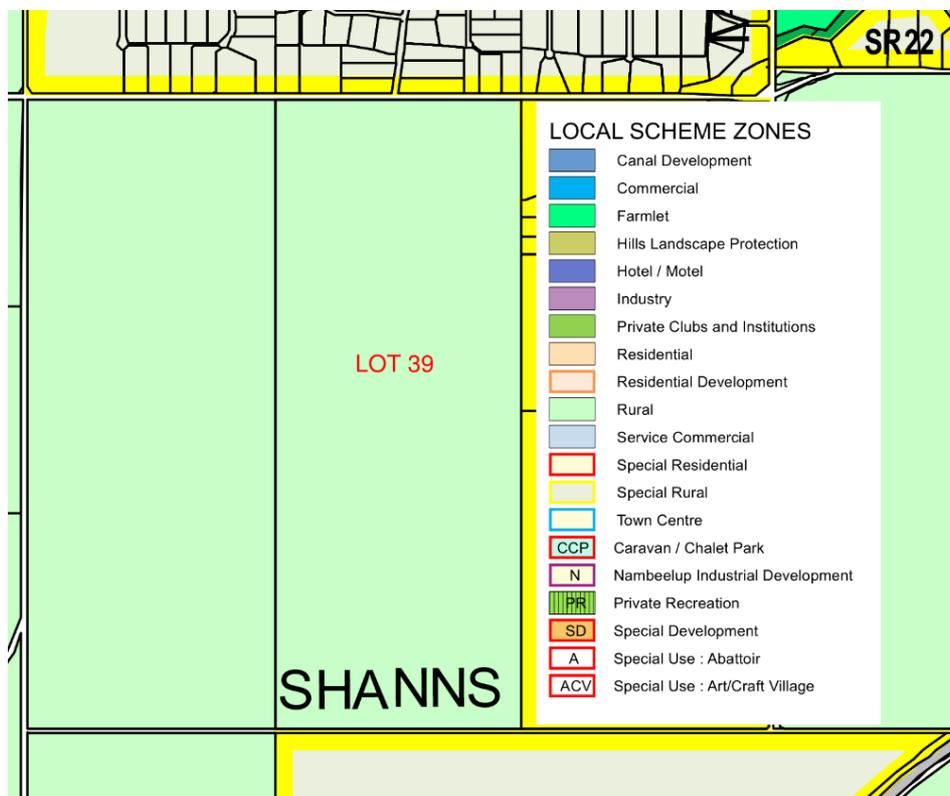


Figure 3 – Extract from Local Planning Scheme No.4 – Murray Overall (Shire of Murray, Oct 2024)

## 2.2 Existing Features and Topography

The site is generally comprised of grassy paddocks with North Dandalup River cutting through the Site, entering from the northeast corner and exiting the Site at the south western boundary. There are also existing creeks that run from the eastern boundary, that connect with the North Dandalup River.

There are significant trees and vegetation surrounding North Dandalup River as well as at the southern end of the site. There are linear formations of mature trees within the site the most significant of which runs parallel to the western site boundary.

There are existing water tanks within the eastern and northern portions of the landholding, with two existing single-storey residential dwellings and associated sheds located in the north-west and north east corners of the Site. Agricultural fencing and gates also exist along the site boundaries and internally within the proposed development area. It is understood that the existing residential dwellings are to be maintained in the proposed development outcome, otherwise all internal fencing and structures associated with the existing rural land use are to be removed.

There is existing 22kV overhead distribution power lines that run parallel to Lakes Road approximately 15 to 20m south of the northern boundary of the Site (shown in red on Figure 4 overleaf).

Feature Survey for the site indicates that there is a slight grade from the north-east to the south-west across the site, from RL26m AHD to RL20m AHD, with a number of localised high points (~RL 26m AHD) along the eastern boundary of the Site.

Site topography and existing features are presented in Figure 4 below.

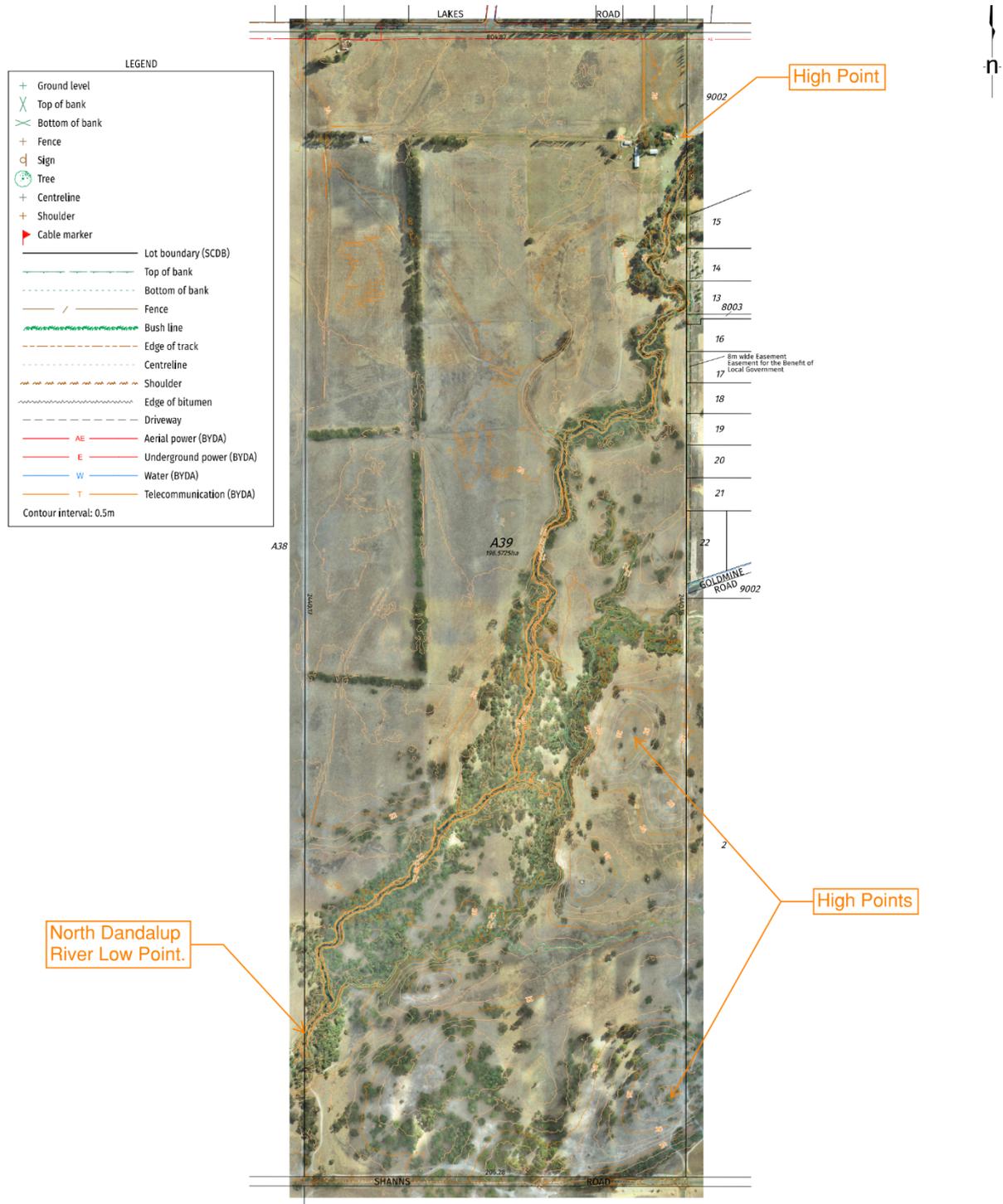


Figure 4 - Topography and Existing Features – Lot 39 (Harley Dykstra, 2025)

### 2.3 Ground Conditions

The Pinjarra Sheet 1:250,000 Environmental Geology resource indicates that the site geology, north of the Dandalup River is consistent with the Pinjarra System, shallow pale sand to sandy loam over clay, The Site, south of North Dandalup River, is mapped as consistent with the Bassendean System, sand dunes and sandplains, moderately well drained deep bleached grey sands.

No geotechnical investigation has been carried out for the Site at this stage, however investigations carried out within the neighbouring developments indicate that the subsurface ground conditions generally consist of sandy soils of varying depth to 1.8m from existing surface, underlain by clayey soils with varying gravel and sand content. Based on our review of existing geological conditions, and neighbouring geotechnical reports, it is our view the land is capable of development.

Geotechnical investigations will be required prior to detailed design of the subdivision.

## 2.4 Groundwater

Groundwater investigation and reporting is currently being carried out by Pentium Water in support of the Local Water Management Strategy (LWMS) for the Site. Five monitoring bores were installed on site in April 2025, and the resulting available data and long-term data from the surrounding DWER bores have been used to estimate the maximum groundwater levels (MGL), refer to Figure 5 below.

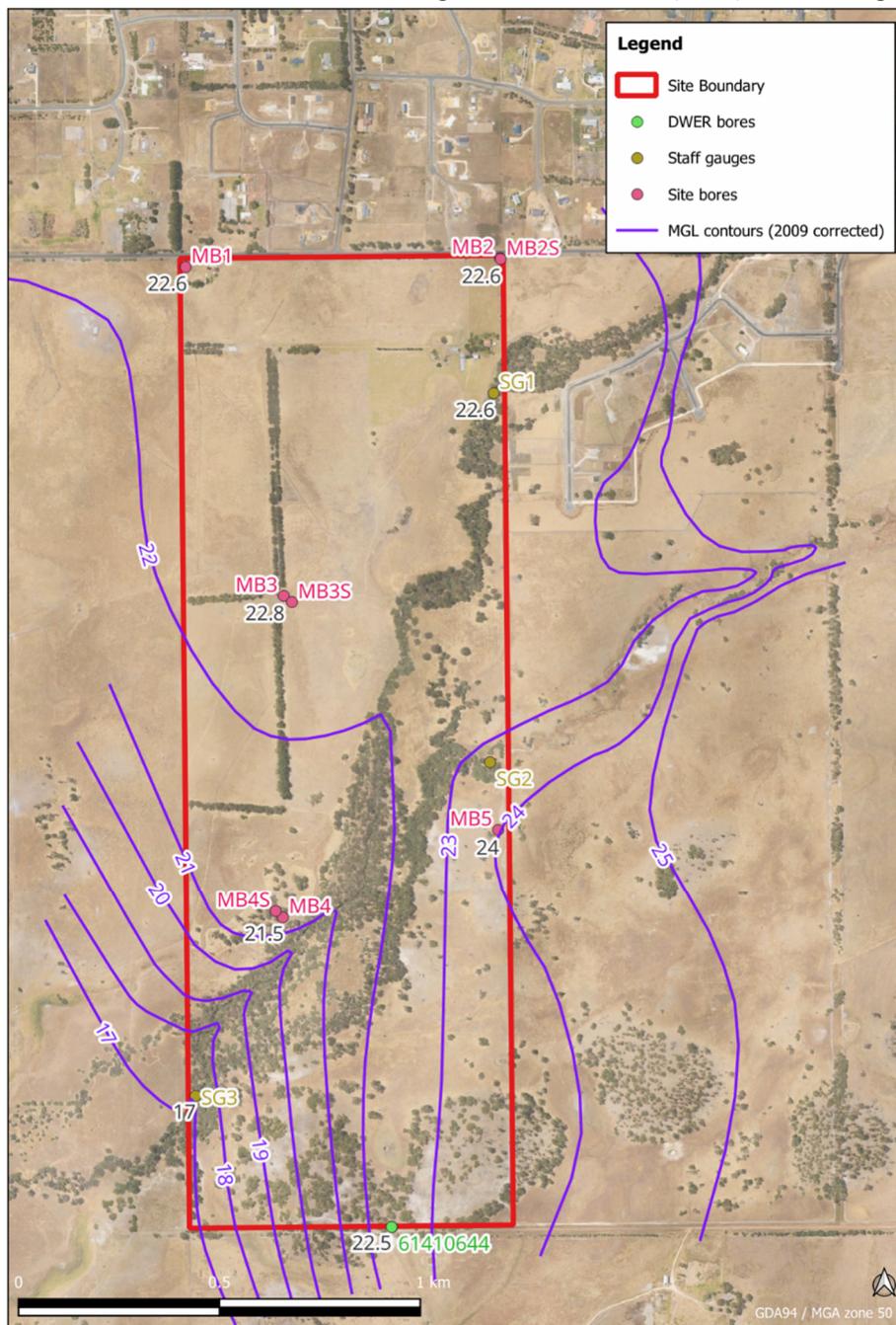


Figure 5 - Groundwater Contours and Monitoring Bore Locations (Pentium Water, 2025)

The MGL across the site ranges from RL 17m AHD to RL 24m AHD, however this may be adjusted depending on data obtained post the winter period. Based on the above MGL's earthworks are not anticipated to intercept groundwater, although civil works, particularly on the western side of the Site may encounter groundwater during the winter months. Suitable forms of dewatering and associated management may be required when undertaking civil works, in accordance with an approved dewatering management plan.

## 2.5 Acid Sulphate Soils

DWER Acid Sulphate Soil (ASS) mapping, excerpt presented in Figure 6 below, indicates that the site area has a moderate to low risk of encountering potential acid sulphate soils within 3m from existing surface. Management of ASS may be required for excavations within 3m of the existing surface should groundwater be intercepted, with any required treatment of ASS undertaken in accordance with an approved ASS management plan.

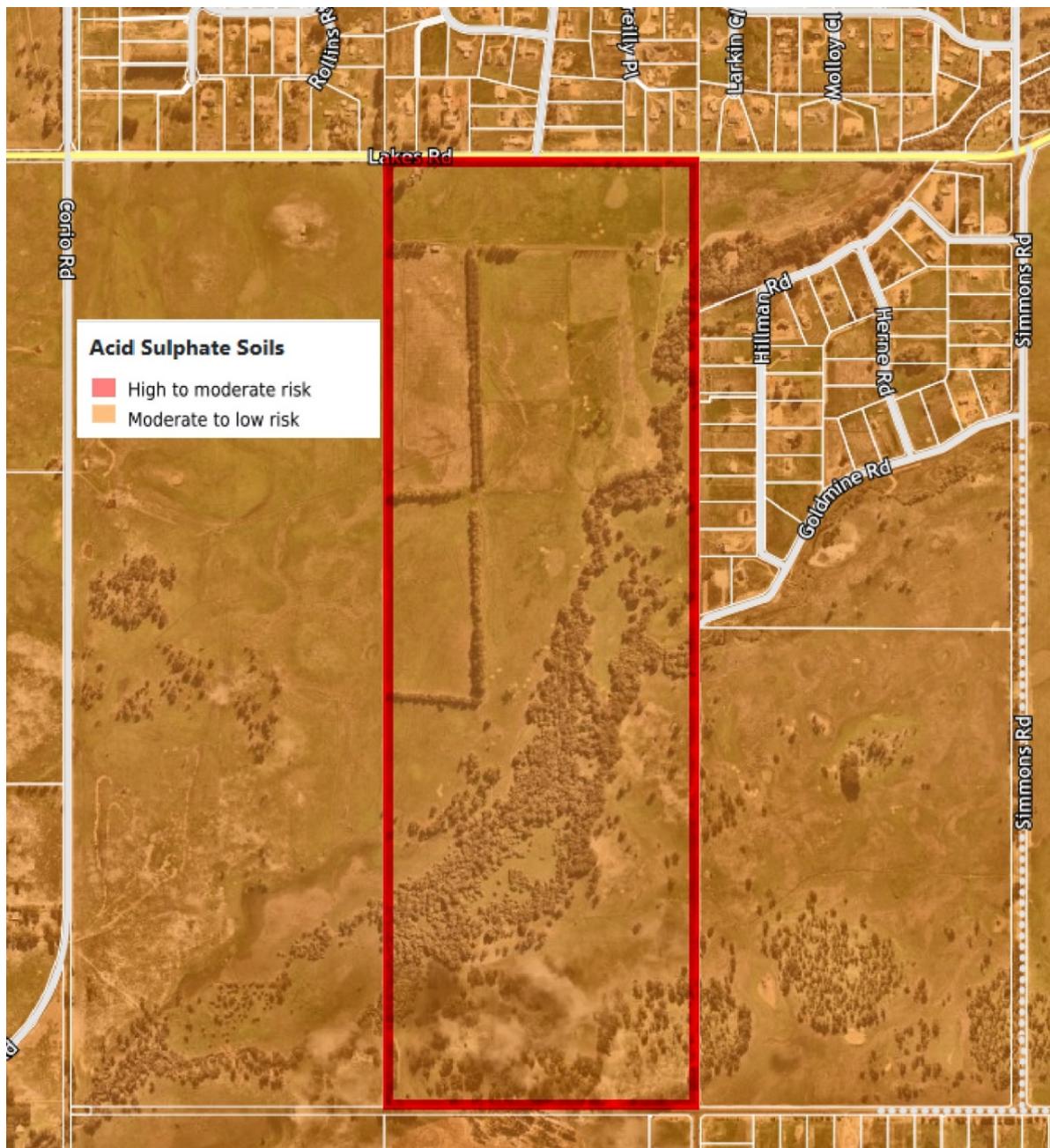


Figure 6 - DWER Acid Sulphate Soils Risk Mapping (DWER, 2025)

### **3 SITEWORKS AND EARTHWORKS**

The Site is to be cleared of all redundant structures, dwellings and internal fencing, with the exception of the perimeter fencing surrounding the Site. New post and rail fencing to each subdivided lot would be required as part of the development.

The proposed area of earthworks will be generally limited to proposed internal road reserves, that will be cleared of existing vegetation and topsoil stripped in accordance with the site preparation recommendations of the geotechnical site investigation report. Where possible, existing trees within road reserve areas will be maintained. Topsoil is to be re-used elsewhere within the Site or disposed off-site if not deemed suitable for reuse.

Following initial clearing and demolition works, earthworks will be undertaken in areas to provide for the desired development form while addressing any engineering constraints specific to the site. Constraints could include:

- Existing clayey ground conditions.
- Management of pre-development stormwater drainage flows through the site.

Finished levels of road reserve areas is to ensure adequate separation between the road pavement and top water levels in adjacent swales and drainage infrastructure, to satisfy Shire requirements.

### **4 STORMWATER DRAINAGE**

A Local Water Management Strategy (LWMS) will be prepared by Pentium Water, detailing the stormwater management strategies to achieve the desired development outcome. The stormwater management strategy for the site is principally to reflect the existing hydrological conditions through maintaining where possible existing peak flows rates and discharge locations.

Stormwater management for the site is proposed to be undertaken in accordance with water sensitive urban design (WSUD) principles. It is anticipated that the stormwater management system will comprise of vegetated roadside swales to treat and detain stormwater runoff during design storm events. The stormwater drainage system for the local road network will need to be designed and constructed in accordance with Shire of Murray requirements to suitably treat surface stormwater runoff prior to being conveyed to the North Dandalup River, via controlled discharge locations.

Assuming a one-way road crossfall, there would likely be a swale on one side of the road with appropriate treatment to promote local infiltration into the natural ground, subject to permeability. Stormwater is to be conveyed via culvert structures at road crossings and residential crossovers.

It is unlikely that pit and pipe drainage would be suitable for the site given the rural residential development standard of development and potential for low permeability through the existing soil profile. A Drainage Concept Plan identifying expected road catchments, swale locations, flow direction and proposed discharge points into North Dandalup River is included in Appendix A. Subsoil drainage is not anticipated to be required for the development of the Site.

Collection and attenuation of the future roof runoff and maintenance of any private drains would remain the responsibility of the individual lot purchaser.

## 5 ROADS AND ACCESS

Access to the proposed subdivision is to be provided via connection to existing Lakes Road to the north, existing Goldmine Road to the east and Shanns Road to the south of the site, refer to Figure 7 below.

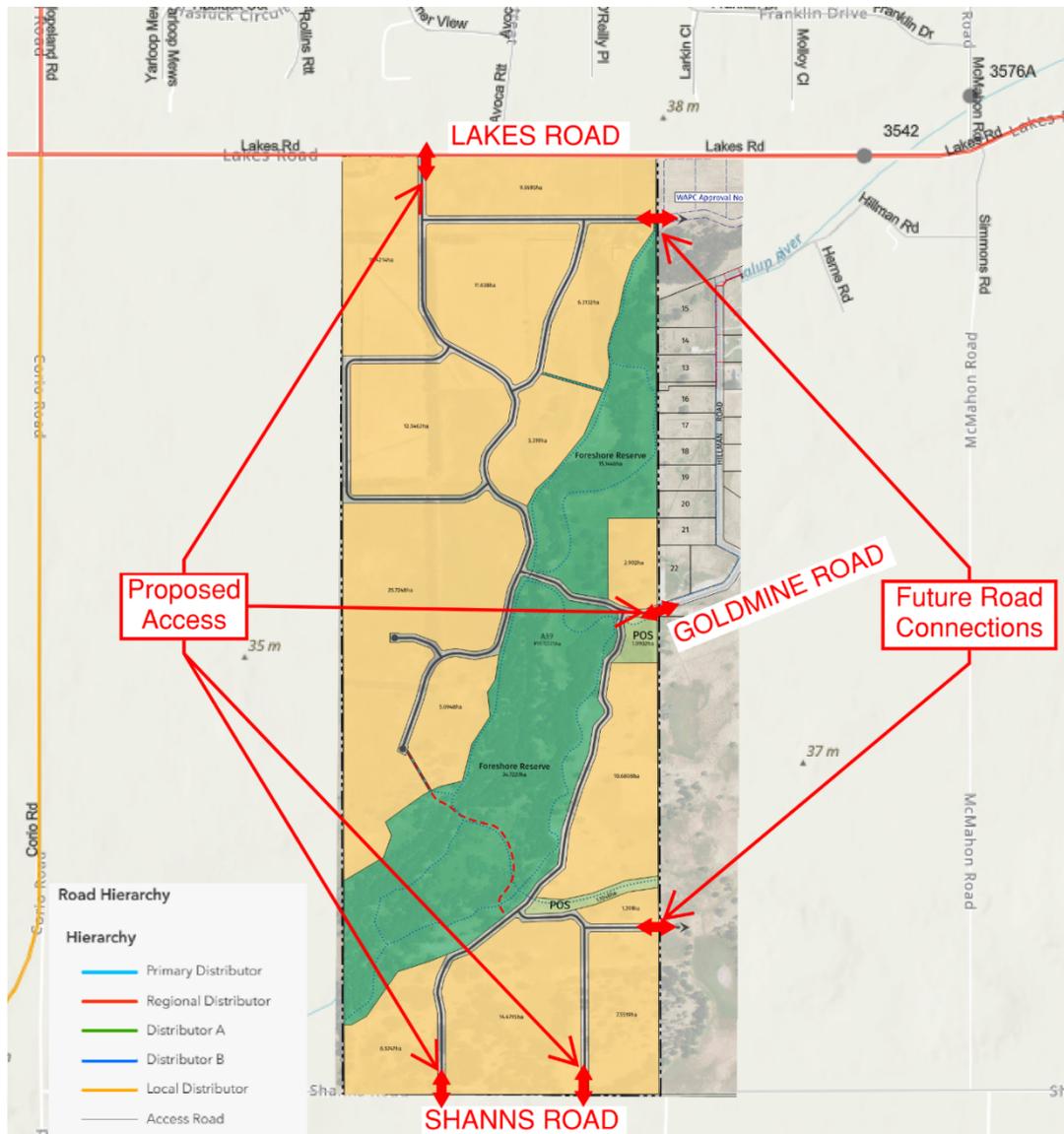


Figure 7 –Internal Subdivision Roads and Access Points (Main Roads RIMS, 2025)

It is noted that Shanns Road has been recently upgraded with a sealed pavement to an extent of approximately 200m west of the site and consists of the following road configuration:

- 7m sealed single carriageway (3.5m lanes), unkerbed;
- 1.2m wide shoulders
- Roadside drainage swales to capture, treat and convey surface run-off.

Traffic assessment for the site is being carried out by PTG, however at the time of this report it is unclear whether any improvements to the existing roads will be required by the Shire of Murray. This would likely be raised at later stages of development and once the traffic assessment has been completed.

Considering the anticipated rezoning for the development and nearby rural residential developments surrounding the Site, the following typical road configuration would be expected as part of development:

- 6m sealed asphalt road.
- 1.2m gravel shoulders.
- One-way crossfall.
- Swales to capture, treat and convey surface run off.

All road construction, including intersection works within Lakes Road, Goldmine Road, and Shanns Road reserve, will be subjected to Shire of Murray standards and approval. Traffic calming mechanisms may be required to be incorporated into the design of the internal road to suitably control traffic speeds through the proposed development.

There are presently no existing pedestrian or cycle networks in proximity to the proposed development site. It is likely that there would be no requirement to make provision for footpath or cycle networks as part of the proposed development.

Residential crossovers will be required for all future proposed lots.

## **6 WASTEWATER**

Water Corporation (WC) is responsible for the operation of existing wastewater services in the North Dandalup area, although there is no extension of the WC sewer reticulation network proposed for the site.

Effluent is intended to be disposed of within the rural residential lots, through the use of on-site ATU's and leach drains given proposed lots are greater than 1 hectare in area. Localised site preparation and earthworks of the building envelope would be required to comply with authority requirements associated with implanting ATU treatment systems. This would remain the responsibility of the future lot purchaser. Lots adjacent to the North Dandalup River and other existing water courses within the site will likely require a minimum 100m setback from watercourses in accordance with the Government Sewage Policy. It is anticipated that the development would comply with this, however this would be dependent on the soil parameters of the site.

There have been no geotechnical investigations made for the Site however, based on geotechnical mapping and investigations within the area it is anticipated that on-site disposal can be achieved in a manner which mitigates potential risks to the receiving environment and public health. A Site Soil Evaluation (SSE) Capability Report is being prepared by Bayley Environmental to support the Scheme Amendment. It should be noted a more detailed SSE Report will be required post the rezoning process to confirm that the site is able to accommodate on-site ATU disposal for the proposed rural subdivision.

## **7 WATER SUPPLY**

Water Corporation are responsible for the operation of existing water services in the North Dandalup area and have advised that the concept plan is consistent with the long-term planning for North Dandalup.

Water Corporation have advised that the development is to be serviced with water via an extension of the existing DN150 reticulation main within Goldmine Road. The DN150 water main is to extend through the subdivision to Shanns Road in the south and connect to the now existing DN150 reticulation main. The DN150 main is to also extend north through the subdivision to Lakes Road to provide service to the proposed rural residential lots.

Water Corporation have advised there will be a future DN200 reticulation main in Lakes Road with the intention of creating a loop to provide security of supply for development south of Lakes Road. It is intended therefore that the extension of the DN150 main that ends at Lakes Road would eventually connect to the future DN200 reticulation main. We understand initially scoping and design planning has commenced on the proposed DN200 water reticulation main in Lakes Road and it is possible the construction of this main may precede the development of the Site.

The existing water reticulation network and proposed extension of water infrastructure is shown in the following Figure 8 below.

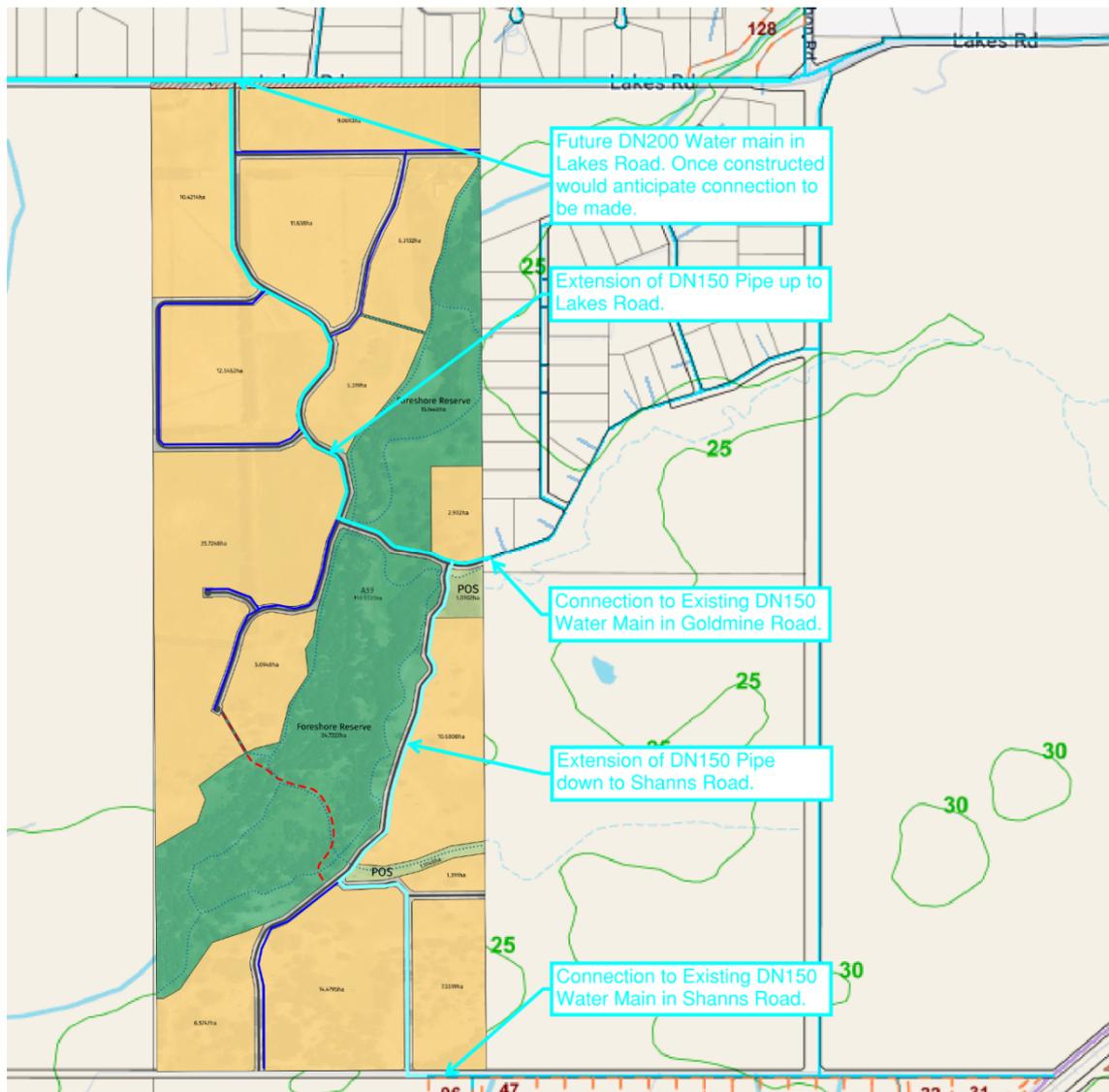


Figure 8 – Existing Water Infrastructure and Network Extension (Esinet, 2025)

Internal water reticulation mains within the proposed development are to be designed and constructed according to the Water Corporation specifications with installation funded by the developer. Standard infrastructure contributions will also apply.

## 8 POWER SUPPLY

Western Power is responsible for the network management, operation, maintenance and the planning of generation and distribution of development in the North Dandalup area.

The site is currently serviced via the PNJ substation - PNJ 517.0 L2 OLD MANDURAH RD 3 RMU. It is labelled as being over 80% utilised and Western Power have advised there are projects underway to address the need for an increase in capacity.

As mentioned in Section 2.2 there is existing 22kV overhead distribution power that runs within the Site, parallel to Lakes Road. This will likely need to be undergrounded as part of any subdivision development works.

Underground Power Development (UPD) have advised the total load for the development will be approximately 500kVA. As the development would likely be completed in stages, it is unlikely that HV reworks or upgrades to the network would be required by Western Power.

Any new transformer assets would need to be situated a sufficient distance from residential dwellings to allow for adequate fire zone separation in accordance with Western Power requirements.

Internal low-voltage network and street lighting will also be required as part of the development in accordance with Western Power requirements.

Western Power design information package (DIP) advice is yet to be received at the time of report preparation. Further planning investigation and provision of the DIP, by Western Power, will be required to determine the existing capacity of the existing HV network and potential network upgrade requirements to service the proposed development.

## 9 TELECOMMUNICATIONS

The area which the development resides is designated as Fixed Wireless, refer to Figure 9. As such, individual servicing for each future lot should be available, however more in-depth investigations should be carried out as part of future stages of development.



Figure 9 – Available NBN Service – Lot 39 (NBN, 2025)

As the area is designated as fixed wireless NBN are unlikely to provide fibre to the future lots. However, the developer would likely be required to cover the cost of trenching, plus supplying and installation of pits and ducting for the development.

Communications infrastructure is not a typical condition of subdivision and therefore not essential to development.

## **10 GAS SUPPLY**

ATCO Gas Network Coverage mapping indicates that there are presently no reticulated assets located in the immediate vicinity of the subject site. Gas reticulation is not a typical condition of subdivision and therefore not essential to facilitate development.

## **11 CONCLUSION**

Based on our review of the site constraints and servicing requirements, Lot 39 (No. 1818) Lakes Road is capable of being serviced to support the proposed rural residential development as indicated on concept subdivision plan 24507-03 prepared by Harley Dykstra.

Should you wish to discuss any aspect of the above, please do not hesitate to contact the undersigned.

Yours sincerely

**TABEC Pty Ltd**



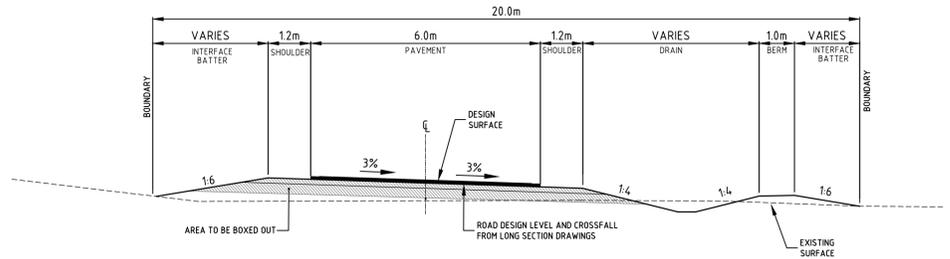
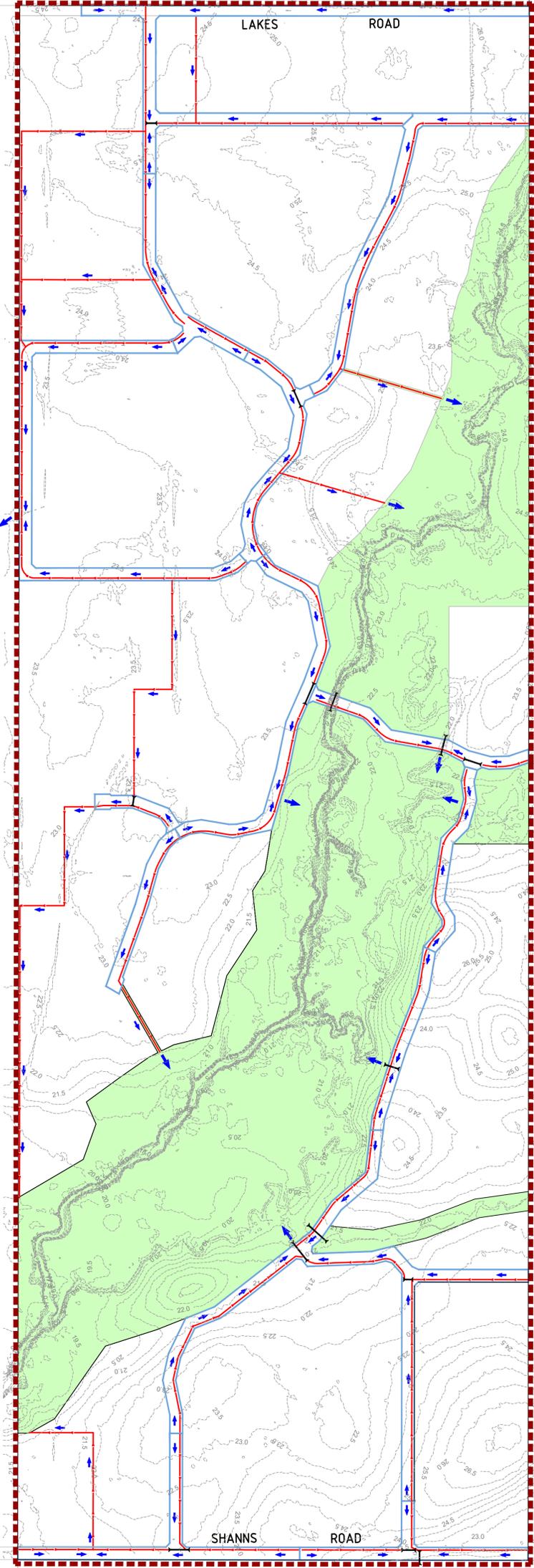
**YASMIN THOMPSON**

**APPENDIX A – DRAINAGE CONCEPT PLAN**



**LEGEND**

- - - - - SITE BOUNDARY
- ROAD CATCHMENT
- SWALE WITH FLOW DIRECTION
- FLOW DIRECTION
-  CULVERT
- - - - - EXISTING SURFACE CONTOURS (0.5m INTERVAL)



**TYPICAL ROAD SECTION**  
1:100

NOTE:  
X-FALL DIRECTION WILL VARY.  
REFER ROAD LONGITUDINAL SECTIONS.

SCALE 1:4000  
0 80 160 240 1:100  
0 2 4 6

**PLAN**  
SCALE 1:4000

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No.	DATE	DRAWN	APPROVED	AMENDMENT
B	28.07.25	KS	AB	LAYOUT AND CATCHMENTS UPDATED
A	03.07.25	KS	AB	ISSUED FOR INFORMATION

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