

Flood Emergency Management Plan

Proposed Industrial Development

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1583

Date: 6 August 2025



916-944 Greenbank Road, North Maclean
Lot 2 SP267252

For: NUCRUSH GROUP

15 May 2025

Ref: G24-062 FEMP REV 0



SUNSHINE COAST

Suite 2, Norval Corporate Centre
13 Norval Court
Maroochydore QLD 4558

P: 07 5391 3777 **F:** 07 5646 5857

PO Box 2016
Fortitude Valley BC, QLD 4006

E: sunshinecoast@westerapartners.com.au

BRISBANE

Level 2, 33 Longland Street
Newstead QLD 4006

P: 07 3852 4333 **F:** 07 5646 5857

PO Box 2016
Fortitude Valley BC, QLD 4006

E: brisbane@westerapartners.com.au

GOLD COAST

Level 3, 17 Welch Street
Southport QLD 4215

P: 07 5571 1599 **F:** 07 5646 5857

PO Box 6138
Southport Mail Centre 9726

E: goldcoast@westerapartners.com.au

NORTHERN NSW

Suite 24 Level 2
11-13 Pearle Street
Kingscliff NSW 2487

P: 02 6674 8047 **F:** 07 5646 5857

PO Box 1131
Kingscliff NSW 2487

E: nsw@westerapartners.com.au

CENTRAL VICTORIA

10 Garsed Street
Bendigo VIC 3550

P: 03 5441 0922 **F:** 07 5646 5857

PO Box 489
Bendigo VIC 3552

E: centralvic@westerapartners.com.au

DOCUMENT INFORMATION

Client Contact: Nucrush Group

Project Name: Flood Emergency Management Plan for
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Westera Partners Contact:

Peter Garrett Phone: 07 5571 1599
Email: peterg@westerapartners.com.au

Bret Arthur Email: breta@westerapartners.com.au

Tom Macdougall Email: tomm@westerapartners.com.au

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This report has been prepared for Nucrush Group for the purpose of accompanying a Development Application for the above address. This report must only be used by Nucrush Group for this purpose and must not be used or relied upon by any other person for any other purpose.

The assessment, conclusions or recommendations in this report are based on conditions encountered and information received at the time of preparing the report and may not be relied upon as site conditions or operations vary over time.

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1 INTRODUCTION

Westera Partners Pty Ltd has been commissioned by Nucrush Group to prepare a Flood Emergency Management Plan (FEMP). This is in response to Item 12 of an information request received following submission of a Priority Development Area (PDA) Development Application for a Material Change of Use to establish a concrete batching plant and other industrial uses on the subject site at 916-944 Greenbank Road, North Maclean.

The application was submitted to Economic Development Queensland (EDQ) as the delegate for the Minister for Economic Development Queensland (MEDQ) for PDA Development Applications in the Greater Flagstone Priority Development Area (GFPDA).

The development is proposed to be non-sequentially staged and was comprised of the following components:

- **PDA Development Permit for Material Change of Use** for Medium impact industry (Concrete batching plant), forming Stage 1; and
- **PDA Development Permit for Material Change of Use** for a Plan of Development for Low impact industry, Service industry and Warehouse land uses, forming Stage 2.

This report has been prepared to provide the following details to Economic Development Queensland (EDQ), Council of the City of Logan (LCC), owners of the site and the operators of each stage of the proposed industrial development:

- Current Flood Information;
- Current flood evacuation procedures;
- Recommendations for development on the subject site; and
- Demonstrate compliance with Council's Flood Hazard Overlay code.

The owners and operators of the development will be the active management entity.

It is recommended that this FEMP be reviewed every 5 years or following any significant flood event (generally considered to exceed 5% AEP) and that it be considered a 'live' document so that it may be updated with any changes to flood levels or protocols in the future. This process should be put in place to help aid the owners and the operators each stage to stay up to date with current flooding information and protocols.

To aid the readers understanding of the terminology used in this report, the following equivalent Annual Exceedance Probability (AEP) events have been used:

- 1 in 20-year flood event shall be referred to as the 5% AEP event;
- 1 in 50-year flood event shall be referred to as the 2% AEP event; and
- 1 in 100-year flood event shall be referred to as the 1% AEP event.

Refer to the Australian Rainfall and Runoff (ARR) probability terminology webpage for further information:

https://arr.ga.gov.au/_data/assets/pdf_file/0006/40398/New-ARR-Probability-Terminology_final.pdf

2 SITE DESCRIPTION

2.1 Location and Land Use

The site of the proposed development is located at 916-944 Greenbank Road, North Maclean, with a real property description of Lot 2 SP267252. The total area of the subject site is 2.53 ha. The area of the proposed Medium impact industry (Concrete batching plant) component of the site is approximately 1.30 ha. The balance area of approximately 1.23 ha. is proposed to be Low impact industry, Service industry and warehouse land uses. The current zoning of the lot is Priority Development Area (PDA). Refer to Figure 1 and Appendix A for the proposed development layout.

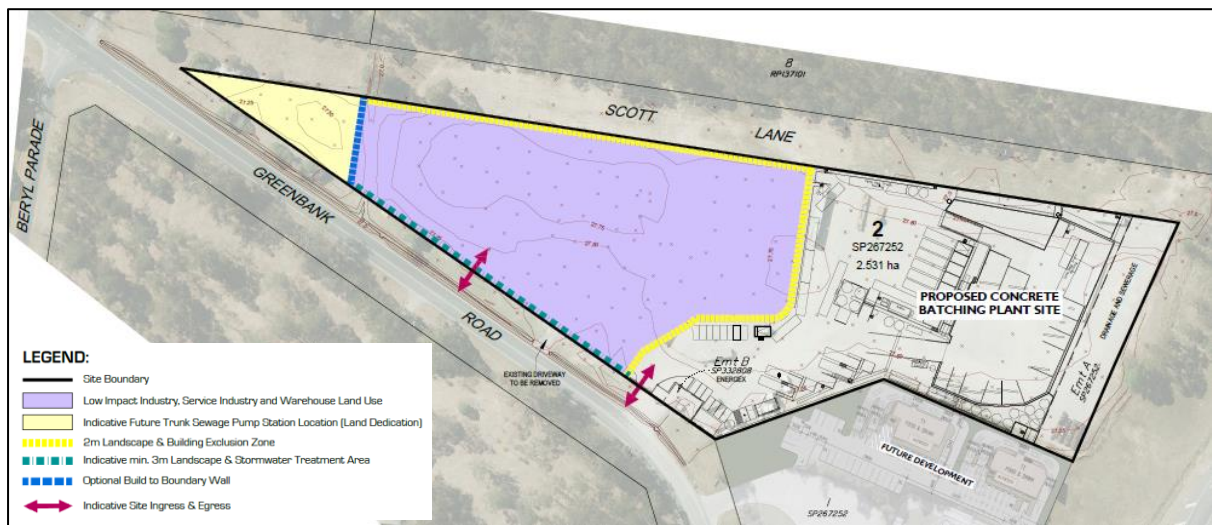


Figure 1 – Proposed Development Layout

The subject site is bound by Greenbank Road to the south and southwest, an existing commercial development to the south, the Mt Lindesay Highway to the east and an unformed road (Scott Lane) to the north. Figure 2 below shows the context of the site location in relation to the surrounding area. Refer also to Appendix A for a Contour and Detail Survey of the existing site and surrounding areas (prepared by RPS).

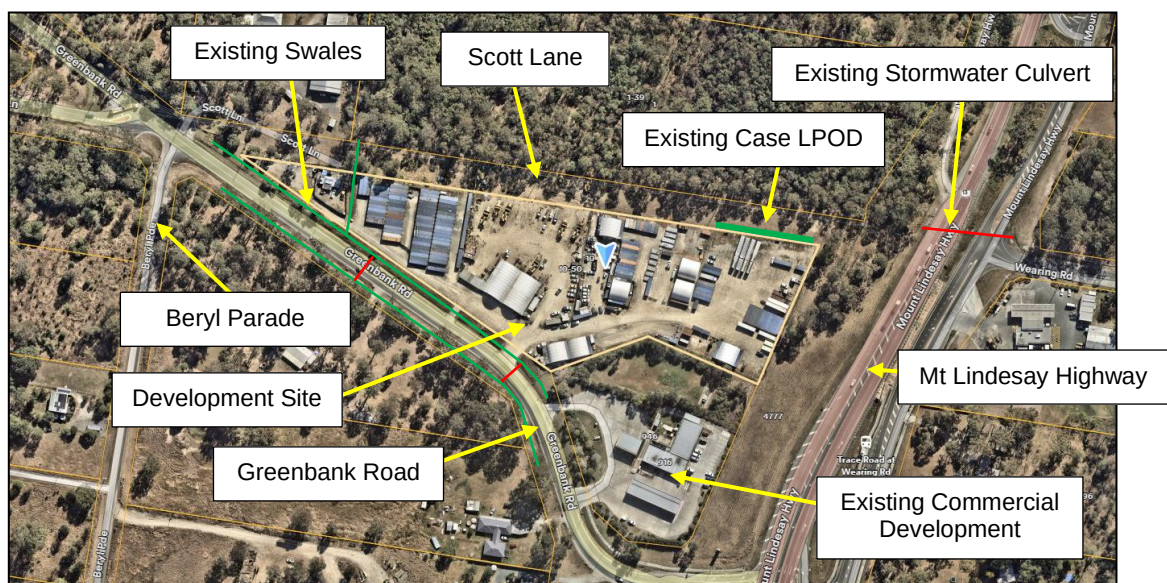


Figure 2 – Site location (Nearmap 2024)

2.2 Development Description

The proposed plan of development for the site is shown in Appendix A.

To prevent/minimize the risk of flood affectation to the site, the development site has previously been approved to be filled to above the designated flood level (DFL) of 27.6m AHD as part of the current PDA approval (DEV/2017/850). The site is therefore not deemed to require compensatory cut to maintain flood storage within the site.

The proposed minimum floor level for structures both at the Concrete batching plant and the Low impact industry, Service industry and Warehouse uses components will be set at DFL + 500mm freeboard in accordance with the LCC planning scheme. As the site is likely to store noxious or hazardous material the minimum storage level for these materials will be located above the 0.2% AEP flood level. The 0.2% AEP flood level as reported in the LCC property flood report is 28.7m AHD.

As such, the site currently achieves an acceptable level of flood immunity to ensure minimal risk to life and property, noting that any risks associated with hazardous chemical storage will be managed through separate regulation and resolved through detailed building design.

The primary source of flood risk to occupants of the site will be related to evacuation away from the site during a major regional flood event.

2.3 Persons at Risk

The proposed development of the site provides the following:

Stage 1 – Concrete batching plant

There will be a maximum of 16 staff on site at any given time with the breakdown of staff detailed in Figure 3 below. Note that the agitator drivers are only on site during the batching process for their delivery so the average staff number on site at any one time will be closer to the lower limit of 3 staff.

Land Use	Staff Level	Number of staff	Position
Batching Plant	Senior Staff	3	1 X Plant Manager (office)
			1 X Batchers (Batch Office)
			1 X Services Supervisor (Yard)
	Workers	13	1 X FEL Driver
			12 X Agitator Drivers

Figure 3 – Staffing Details (Nucrush Group)

It has been assumed there will be no vulnerable people on site at the concrete batching plant. A vulnerable person has been defined for the purposes of this report as persons older than 70, younger than 12, and/or suffering from an acute or chronic disability [Teague *et al.* 2010] – 2009 Victorian Bushfire Royal Commission definition.

Stage 2 – Low impact industry development

Based on an indicative assessment of the stage 2 plan of development component of the site an indicative floor area of 4,180m² has been adopted for assessment purposes to understand the potential staffing, traffic volumes, car parking and impact for the Low impact industry, Service industry and Warehouse land uses. This potential floor area is based on a maximum potential car parking supply of at least 47 car parking spaces for staff and visitors i.e. this would equate to a maximum of 47 staff and visitors on site at any given time. It has also been assumed there will be no vulnerable people on the low industry component of the site for the purposes of this assessment. However, should a vulnerable person be on site, additional requirements will need to be evaluated and implemented.

3 SITE FLOODING

3.1 Current Flood Model

The subject site is identified as being affected by flooding according to LCC's current flood mapping (Logan Planning Scheme 2015 Version 9.1 with TLPI No. 1/2023). Site flooding is associated with riverine flooding in the Logan River catchment. The site is located at the upstream end of 'Unnamed_29' catchment which flows generally north-wards then eastwards before discharging into the Logan River approximately 4.68km downstream of the site. An indicative flow path is shown in Figure 4.

Table 1 below provides the flood levels for the site based on the Logan and Albert Rivers Flood Study 2023. The Designated Flood Level (DFL) for the site is 27.6m AHD (1% AEP).

Table 1 – Council's adopted flood levels at this site

Likelihood	River flooding level (m AHD)
1% AEP	27.6m AHD
0.5% AEP	28.1m AHD
0.2% AEP	28.7m AHD
0.05% AEP	29.0m AHD
Probable Maximum Flood (PMF)	32.1m AHD

The site is proposed to be filled to above the 1% AEP river flood level of 27.6m AHD. The existing DA approval for the site is based on this fill level. Refer to Appendix C for Council's complete Property Flood Report for the site.

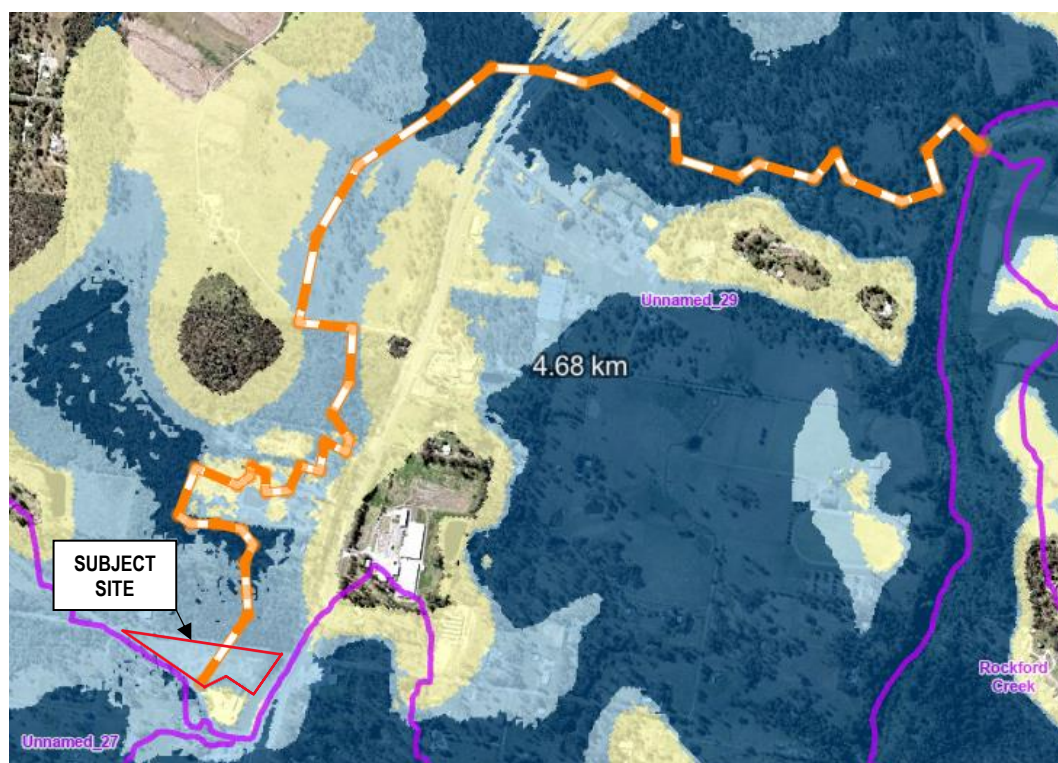


Figure 4 – Indicative flow path to Logan River (Logan Flood Portal, extracted April 2025)

The flood model details for this property are discussed in the following Sections 3.1.1, 3.1.2 and 3.1.3.

3.1.1 Property Flood and Isolation Risk

The site is in a moderate flood risk area based on the Logan and Albert Rivers Flood Study 2023 (refer to Figure 5). A moderate risk indicates the site is less frequently affected by flooding than a high-risk site or is impacted by more frequent flooding but with shallow or slower moving floodwater. Given this site is located at the top end of the catchment the floodwater will more likely be shallow or slower moving. Based on Australian Rainfall and Runoff (ARR) flood hazard criteria with moderate risk a flood hazard of H1 or H2 will apply for a 1% AEP event as follows:

H1 – Generally safe for people, vehicles and building up to maximum 0.3m flood depth.

H2 – Unsafe for small vehicles.

Given the proposed site fill level above 1% AEP and the proposed industrial uses of the site, the impact to people and vehicles will be reduced. For higher flood hazard criteria H5 and H6 which apply to less frequent floods, greater than 1% AEP, it is proposed that early warning of these events will enable the site to be evacuated to mitigate risks to people and vehicles.

The adjacent existing commercial development (service station) is a low flood risk area which has an extremely unlikely chance of flooding (1% chance or less over a 30-year period) and will provide a refuge island in small flooding events which impact the site (refer to Figure 6).

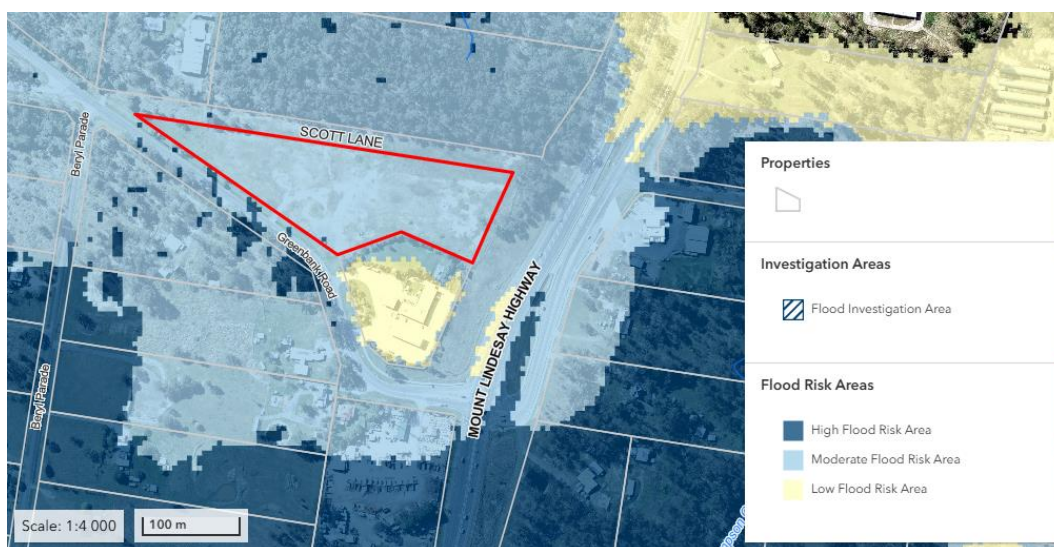


Figure 5 – Flood Risk Areas (Logan Flood Portal, extracted April 2025)



Figure 6 – Isolation Risk Areas (Logan Flood Portal, extracted April 2025)

3.1.2 Property Climate Scenarios

In current climate conditions the majority of the proposed development areas of the site will only be impacted by flood events with greater than a 0.05% chance of occurring in any given year i.e. by extremely unlikely flood events with a 1% chance of occurring over a 30-year period (refer to Figure 7). The depth of flooding above DFL associated with a 0.05% AEP would be 1.40m.

For future climate conditions when climate change is taken into account, this increases to flood events with greater than a 0.5% chance of occurring in any given year i.e. by flood events with a 15% chance of occurring over a 30-year period (refer to Figure 8). However, the depth of this more recurrent flooding above DFL associated with a 0.5% AEP will be reduced to 0.5m i.e. lower flood depth but will occur more frequently.

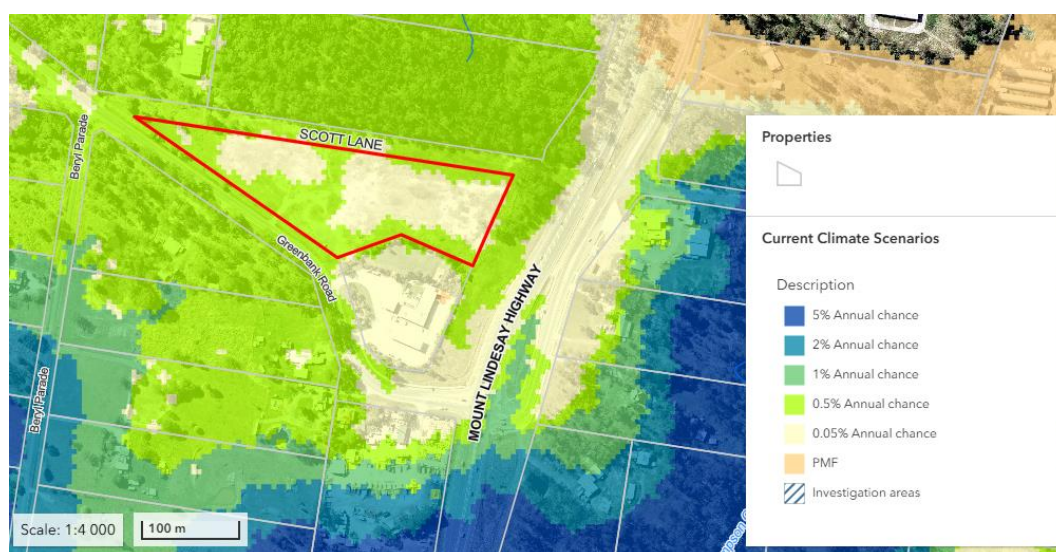


Figure 7 – Current Climate Scenarios (Logan Flood Portal, extracted April 2025)

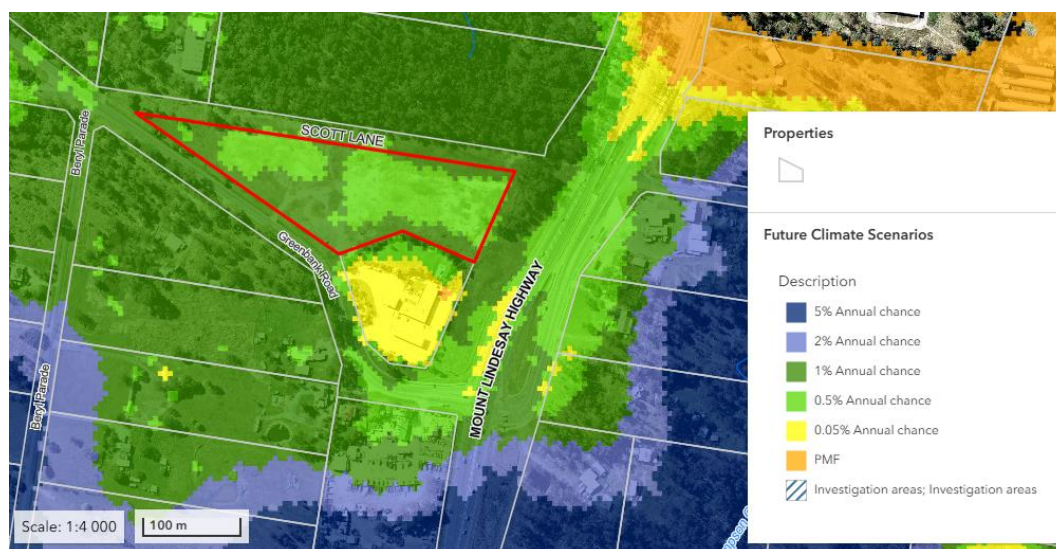


Figure 8 – Future Climate Scenarios (Logan Flood Portal, extracted April 2025)

3.1.3 Property Overland Flow

Apart from an existing drainage path across the western extremity, the site will not be impacted by overland flow paths (refer Figure 9). The proposed development layout of the site will mitigate the impact of the western overland flow path by providing localised site drainage as required to improve and channelise this flow to the existing downstream outlet.



Figure 9 – Overland Flow (Logan Flood Portal, extracted April 2025)

3.1.4 Property Flood Depths

Areas of the existing site impacted by the 1% AEP event with flooding less than 0.3m depth are currently limited to along the site boundaries (refer to Figure 10). Detailed design for the proposed development including completion of filling to the approved fill levels to and above the 1% AEP flood level will mitigate this impact to the site in the long term. Increased flood depths for events greater than 1% AEP based on the existing levels are shown in Figure 11 and Figure 12.



Figure 10 – Flood Depth 1% AEP (Logan Flood Portal, extracted April 2025)



Figure 11 – Flood Depth 0.5% AEP (Logan Flood Portal, extracted April 2025)



Figure 12 – Flood Depth 0.05% AEP (Logan Flood Portal, extracted April 2025)

3.2 Property Flood Evacuation

The evacuation options from the site are as follows:

- North-bound or south-bound along the Mount Lindesay Highway, which is accessed from the site via the highway intersection with Greenbank Road; or
- West-bound along Greenbank Road.

However, the evacuation route south-bound along the Mount Lindesay Highway will become flooded at Thompson Gully (between Greenbank Road and the Maclean Bridge over the Logan River). Similarly, the evacuation route west-bound along Greenbank Road will become flooded approximately 1.45km west of the site. These are high flood risk areas and are shown in Figure 13 below.

The only available evacuation route with low to medium flood risk will be north-bound along the Mount Lindesay Highway to the grade separated interchange located at the Crowson Lane intersection, then west-bound via Crowson Lane back to Greenbank Road toward Teviot Road.

The evacuation route will be flood free up to a 2% AEP flood event (refer Figure 14). Flood risk mapping for 1% AEP and 0.5% AEP events (refer Figures 15 and 16 respectively) indicate this north-bound evacuation route remains available with flood depths from less than 0.3m for 1% AEP, to 0.3m to 0.5m for 0.5% AEP. The hazard rating for evacuations via this route is therefore Flood Hazard Category H2 or below. A description of Flood Hazard Categories is included in the following Section 3.3.

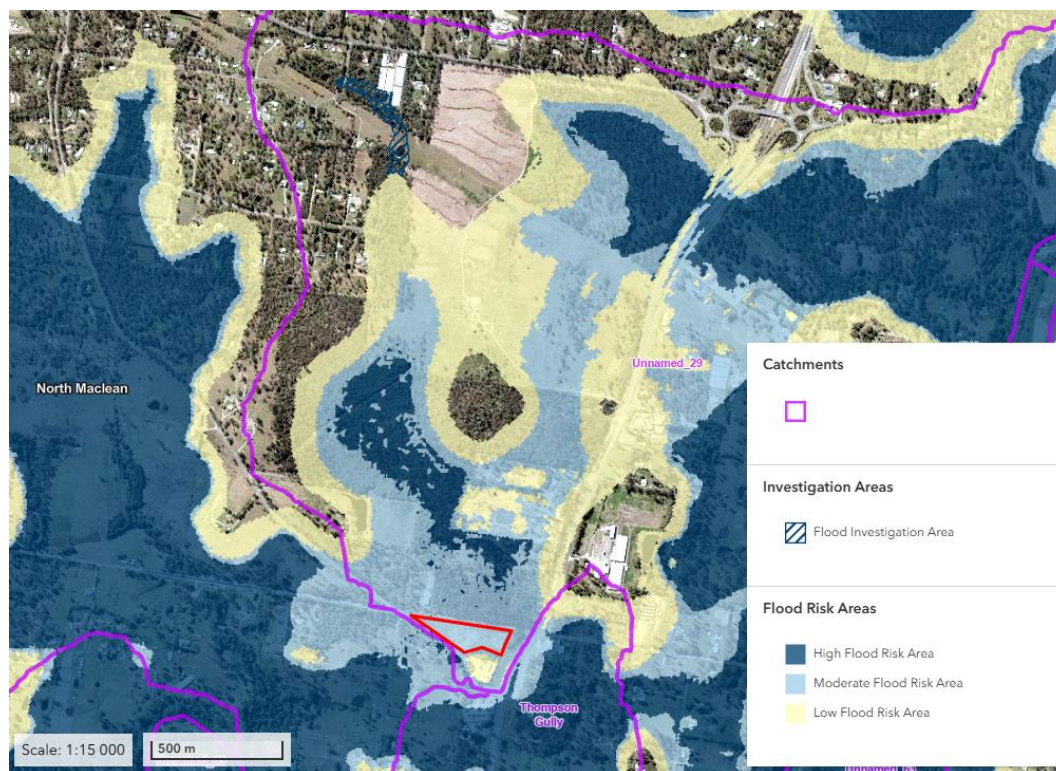


Figure 13 – Evacuation Flood Risk (Logan Flood Portal, extracted April 2025)



Figure 14 – Evacuation Flood Depth 2% AEP (Logan Flood Portal, extracted April 2025)



Figure 15 – Evacuation Flood Depth 1% AEP (Logan Flood Portal, extracted April 2025)



Figure 16 – Evacuation Flood Depth 0.5% AEP (Logan Flood Portal, extracted April 2025)

3.3 Flood hazard characteristics

The following tables outline the degree of flood hazard as defined by the Australian Disaster Resilience Handbook (ADRH) – Guideline 7-3 prepared by the Australian Institute for Disaster Resilience for the Commonwealth of Australia (2017). These flood hazard classifications are also summarised in Flood Vulnerability Curves provided in the ADRH as shown in Figure 17 below.

Table 2 – Hazard Vulnerability Classification (ADRH 2017)

Hazard Vulnerability Classification	Description
H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles.
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure.
H6	Unsafe for vehicles and people. All building types considered vulnerable to failure.

Table 3 – Hazard Vulnerability Thresholds (ADRH 2017)

Hazard Vulnerability Classification	Classification limit (D and V in combination) m ² /s	Limiting still water depth (D) m	Limiting velocity (V) m/s
H1	$D \cdot V \leq 0.3$	0.3	2.0
H2	$D \cdot V \leq 0.6$	0.5	2.0
H3	$D \cdot V \leq 0.6$	1.2	2.0
H4	$D \cdot V \leq 1.0$	2.0	2.0
H5	$D \cdot V \leq 4.0$	4.0	4.0
H6	$D \cdot V > 4.0$	-	-

With evacuation route flood depths of up to 0.5m depth for up a 0.5% AEP event, the site will be able to be evacuated using large vehicles and 4WDs. These types of vehicles would be more prevalent in use for the proposed industrial uses of the site and it would be reasonable to expect these vehicles to be available for evacuation if required. Therefore, it follows that the proposed land uses for this development will be compatible with the inherent flood risk of the site.

Any residual flood risks for the site, including the risk of floods in excess of 0.5% AEP will be mitigated through flood preparation and flood risk management procedures outlined in Section 4.

3.4 PMF Flood impact

The Probable Maximum Flood (PMF) is defined as the largest flood that could conceivably be expected to occur at a particular location and is usually estimated from probable maximum precipitation. The PMF defined for this site equates to a flood water level of 32.1m AHD (from Table 1). For context, the PMF event is statistically between a 1 in 10,000 year and 1 in 10,000,000-year event.

Should a PMF event occur (or a flood event that results in flood water depth greater than 4.5m above the designated flood level), the entire site and all evacuation routes will be inundated. However, as there are no habitable areas located on site, impacts will be limited to operational activities only which can be rectified after the event.

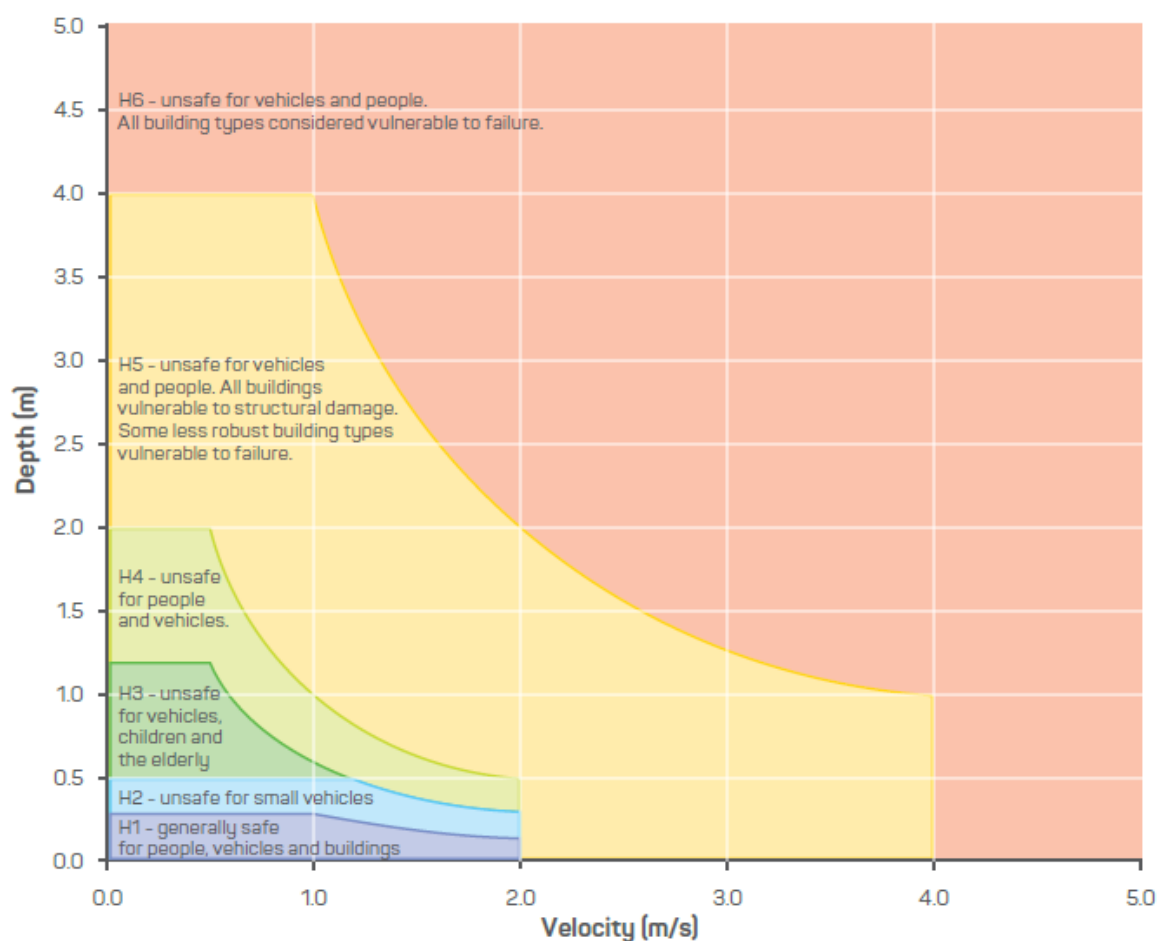


Figure 17 – General Flood Hazard Vulnerability Curves (ADRH 2017)

Due to the long lead time for a PMF event there will be adequate time available to secure and evacuate the site. Also, based on preliminary site design levels the aggregate storage area at the concrete batching plant which is set above the main plant level at 30.2m AHD will be 2.60m above the DFL and approximately 1.2m above the 0.05% AEP flood event.

4 FLOOD PREPARATION

The flood evacuation procedures established for the development should be regularly reviewed and updated if necessary. The site supervisor for the concrete batching plant and the building manager for the low impact industry development should assume responsibility for:

- Making all staff, tenants, and occupants aware of the FEMP procedures including support and monitoring arrangements during flood; and
- Ensuring flood warning and evacuation information is adequately conveyed to all staff, tenants, and occupants.

Major flood events typically are expected to have relatively short onset timelines however the warnings for a possible large rainfall event occurring in the region are likely to be forecast by BOM well before the event occurs (cyclonic rain, storm surge or periods of sustained rainfall). It is possible that users of the site could be notified by either local news broadcasts or directly via local authorities prior to a future major flood event. Major flood events typically have reasonable warning time (6 hrs to 24 hrs) through notification of impending severe weather by the Bureau of Meteorology.

It is recommended that the site supervisor/building manager regularly monitor social media outlets and register/subscribe to Council Disaster Dashboard Service for updates. Due to the location of the development in a rural location and adjacent to the upstream boundary of the contributing catchment there are no local in-stream monitoring gauges to provide flood warnings.

4.1 Monitoring

The City of Logan Council, QLD State Emergency Service (SES) and the Bureau of Meteorology provide access to a number of real-time rainfall and flood level monitors that provide data on upstream river conditions. The following web pages are recommended to regularly monitor forecast rainfall events, severe weather warnings and current rainfall data (in order of importance).

1. Forecast Rainfall
 - <http://www.bom.gov.au/jsp/watl/rainfall/pme.jsp>
2. Current Weather Warnings
 - <http://www.bom.gov.au/qld/warnings/>
3. Rain events
 - <http://www.bom.gov.au/products/IDR664.loop.shtml#skip>
4. City of Logan Disaster Dashboard
 - <https://disaster.logan.qld.gov.au>

It is recommended that the site supervisor for the concrete batching plant monitor the above websites to advise staff, tenants, and visitors of the current and predicted flood alerts and whether to relocate vehicles and goods to higher ground within the site.

The primary source of monitoring for the site should be the following flood monitoring stations, then forecast rainfall and severe Thunderstorm warnings as these are the precursor to large rain events that are attributed to flash flooding:

Maclean's Bridge (Maclean Bridge Alert – BOM Station No. 40935)

There is a 24-hour flood monitoring station on the Logan River at Maclean's Bridge which is located just south of the site on the Mount Lindesay Highway. The contributing catchment to this alert is located upstream of the catchment that directly impacts the site. The site's catchment joins the Logan River approximately 4.6km downstream of Macleans Bridge.

The Maclean Bridge Alert will be the primary flood alert for the site and provide an early indication of flooding in the Logan River upstream of the site catchment. Flooding at Macleans Bridge also impacts evacuation routes south-bound along the Mount Lindesay Highway and west-bound along Greenbank Road.

Logan River at Waterford (Waterford Alert – BOM Station No. 40878)

A secondary flood alert is a 24-hour flood monitoring station on the Logan River at Waterford which is located approximately 16km north-east of the site. The site location relative to these two flood monitoring stations is shown in Figure 18 below.



Figure 18 – Logan-Albert River Basin – Flood Warning Network (BOM)

4.2 Flood Risk Management Procedures

The site supervisor/building manager shall prepare, implement, and revise the following procedures in an ongoing effort to adequately address and improve flood risk mitigation for the staff, tenants, and occupants of the site.

It is recommended that the site supervisor/building manager conduct regular training and provide information to all occupants on an ongoing basis. These training drills are considered akin to fire drills and should promote awareness of risk/hazard, evacuation protocols and clarity on roles and responsibilities during a flood event.

Council require that the FEMP protocols must be practiced (drilled) every year. Best practice is to ensure records are kept of this procedure and further improvements may be made to this FEMP through practicing this protocol to ensure that it is kept up to date (living document).

4.2.1 Prior to Flood Event

The site supervisor/building manager shall be responsible for monitoring the above-mentioned websites and information hubs for high levels of forecast rainfall and severe weather warnings (flash flood warnings).

When flash flooding is deemed likely to occur (e.g. river levels rising downstream in the Logan River, further heavy rainfall incoming on the BOM rain radar), notifications shall be issued to all occupants that a localised flood event is likely to occur, and the FEMP protocols are enacted.

If time permits (forecast heavy rainfall), it is critical that evacuees are mobilised as quickly as possible and prior to a low degree of flood hazard on site and over the evacuation routes to the south and west.

Occupants with vehicles and storage areas below DFL shall be advised as their property may be subject to flood water inundation should the peak flood event reach the designated flood level. If time permits (prior to flood water ingress), it is recommended to relocate these items to higher ground to avoid damage.

4.2.2 During a flood event

It is expected that no persons will be on site during a major flood event. During the flood event the expected level of flood waters impacting the site will be monitored and if necessary mobile plant and equipment stored on the site will be relocated accordingly to the higher area on site. This includes any hazardous materials. Should persons be on site during the flood event and evacuation becomes necessary, depending on expected flood water levels, the site supervisor shall facilitate the safe passage of evacuees to higher ground or off-site.

4.2.3 After a flood

Once the flood water has receded, the site supervisor/building manager shall complete a site inspection to confirm that safe egress is possible from the site. It is advisable that all occupants remain within the safety of the site until safe egress is confirmed by the site supervisor/building manager.

Aspects for the site supervisor/building manager to inspect after the flood include:

- Hazards created by flood waters including debris, scour, and biological hazards (raw sewage, chemicals, and animal carcasses);
- Ingress of water to structures; and
- Damage to building or structures.

Should structures be inundated by flood water as designed, the pump-out may not occur until the peak of the flood has been reached and flood waters are receding.

4.3 Flood-related information

It is highly recommended that the following items be kept on site in preparedness for a significant flood event:

- Portable AM/FM radio with spare batteries;
- Torch with spare batteries;
- First aid kits (with supplies necessary for over 55-year-old persons);
- Candles and waterproof matches/lighter; and
- Supply of fresh drinking water.

Local ABC radio is considered the best source of public information during an emergency. ABC Brisbane 612AM is the local station for this property.

In the likely event that power is cut to the site during a flood event, electrical and mechanical services (air condition, refrigeration, lifts, automatic doors, security systems etc) will not function.

Backup power has not been proposed as part of this development and therefore a suitable generator may be required to assist with site remediation in the event of a blackout.

During times of flood, the Council drinking water supply can become contaminated. It is recommended that staff and tenants listen to local radio and SES/rescue personnel for updates on the drinking water status to prevent any outbreak of sickness or disease if sheltering in place.

4.4 Emergency Contact Information

It is considered that the primary objective during a flood event is protection of life with protection of property and vehicles secondary to this objective. The proposed site is safe to access for all flood events up to and including the 1% AEP event.

Contact phone numbers that may be required during a flood event:

- Police, fire, and ambulance in an emergency: 000
- State Emergency Service (SES): 132 500
- Non-emergency medical help: 13 HEALTH (13 43 25 84) – QLD Health
- Non-emergency police contact: 13 14 44 – Policelink

5 APPENDICES

5.1 Appendix A – Development Layout and Survey

DESIGN CRITERIA

- Development is to be in accordance with the provision of the Industry and Business Area -PDA Guideline No. 10 (May 2015 version), except for the following provisions:
- A. All advertising devices are to be in accordance with Logan City Council's Planning Scheme.
 - B. End of trip facilities are to be provided within all tenancies as per Guideline 10 - Industry and business areas.
 - C. All refuse storage areas, materials, plant areas and services will be suitably screened to all boundaries.
 - D. Buildings are shaped, designed and finished so that the maximum length of unvaried or unarticulated (blank) wall does not exceed 20 metres (unless facing a side or rear property boundary).
 - E. Roofing materials are pre coloured and non-reflective.
 - F. Glazing treatment must use non-reflective materials/products.
 - G. Where buildings face the public realm areas, including streets, parks and walkways, significant overlooking and surveillance opportunities must be incorporated with positive CPTED practice. Where public use walkways are incorporated between or within sites, the buildings must front activated zones to these walkways in accordance with positive CPTED practice.
 - H. All service areas, plant and air conditioning plant is to be screened, integrated into the building, or located on the roof with screening.
 - I. Maximum 75% site cover may be achieved, as per *Guideline 10 - Industry and business areas*, for the Low Impact Industry, Service Industry and Warehouse land uses site, independent of the maximum site cover of 75% for the concrete batching plant site:
 - J. Greenbank Road and Scott Lane frontage:
 - Building development along the Scott Lane must be setback a minimum of 2.0 metres;
 - Any building located within 3.0m of Greenbank Road must include an articulated facade and a minimum of 2 colours (which may contain glazing).
 - K. Zero setbacks to side and rear boundaries will be permitted subject to sight lines and other constraints affecting adjoining development.
 - L. Bicycle parking will be provided at the rate of one space per five car parking spaces.
 - M. Landscaping:-
 - Preference is to be given to utilising plant species that are native and endemic to the area and are low maintenance species.
 - All street frontages, not developed as Built to Boundary buildings will require a 2.0m minimum width landscape strip, except at vehicular and pedestrian access points.
 - N. Car parking:-
 - Car parking will be provided in accordance with Table 1.
 - Service vehicles must enter and leave the Site in a forward direction.
 - Where an onsite refuse collection area is provided, access and manoeuvring areas are designed and provided to enable access by a refuse collection vehicle based on the Design Service Vehicle in Austroads/Standards Australia HB72 Design Vehicles and Turning Path Templates.
 - All premises are identified by the provision of a street number in a prominent location, preferably near the site entry, i.e. on the kerb or letterbox or by signage on the building or site.
 - O. Clear and safe pedestrian movement must be maintained throughout the site.
 - P. For non-built form outcomes on the site, land uses must adhere to points A, C, H, N, and O.

DEVELOPMENT STANDARDS

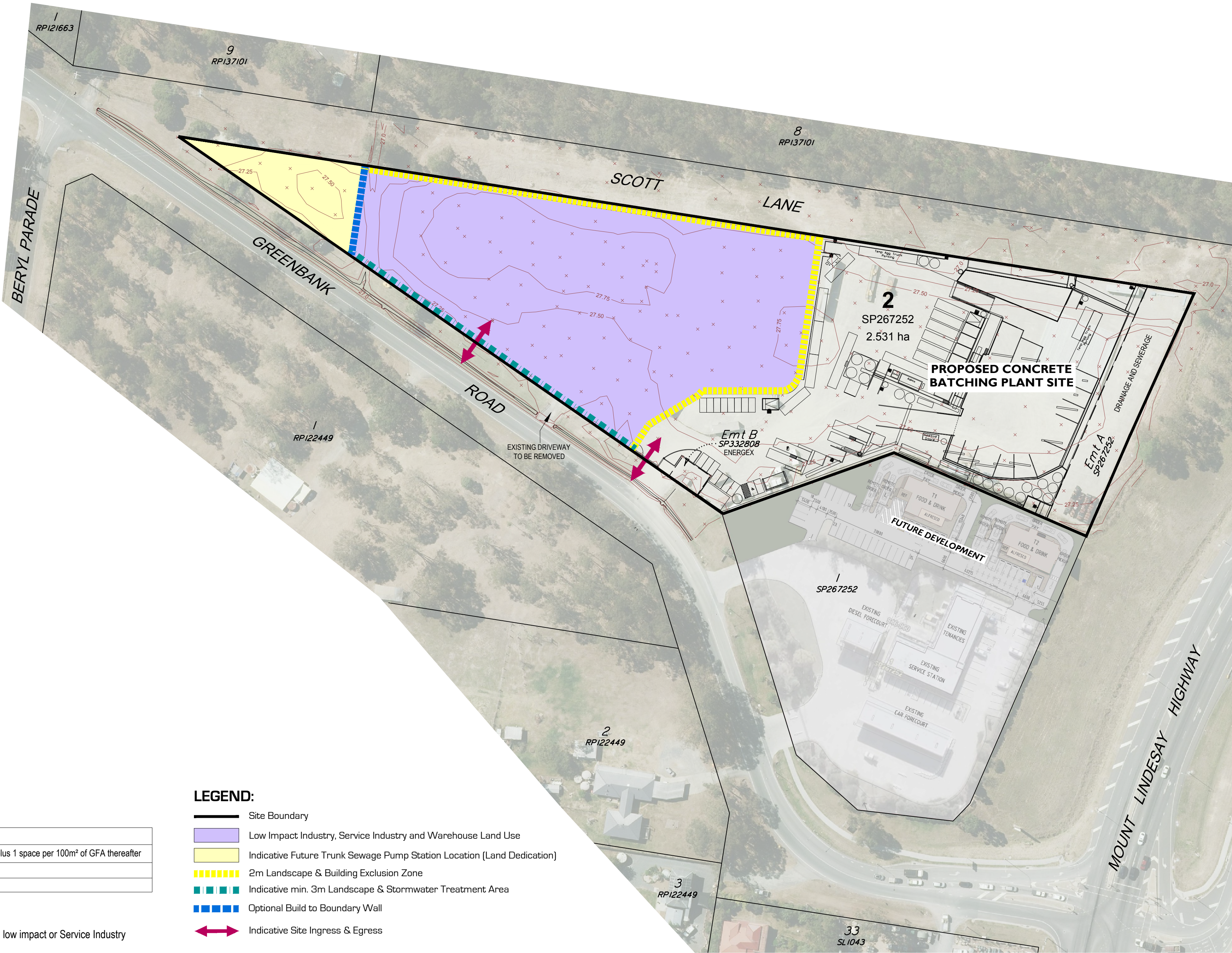
All engineering works are to comply with the PDA Guideline No. 13 Engineering Standards, dated September 2017.
Driveway construction is to be in accordance with Council standards.

TABLE 1

Approved Uses *	Car Parking Rate
Low Impact Industry #	1 space per 50m² of GFA up to 500m²; plus 1 space per 100m² of GFA thereafter
Service Industry	1 space per 25m² of GFA
Warehouse	1 space per 100m² of GFA

NOTE:

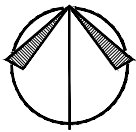
Includes ancillary shop for the sale of goods directly associated with a low impact or Service Industry



LEGEND:

- Site Boundary
- Low Impact Industry, Service Industry and Warehouse Land Use
- Indicative Future Trunk Sewage Pump Station Location (Land Dedication)
- 2m Landscape & Building Exclusion Zone
- Indicative min. 3m Landscape & Stormwater Treatment Area
- Optional Build to Boundary Wall
- Indicative Site Ingress & Egress

PLAN REF: AU015412-POD-4a
DATE: 7 MAY 2025
CLIENT: NERANG PASTORAL CO. PTY LTD
DRAWN: BJB
SCALE (A2): 1:1000
SHEET: 2 of 2



SITE PLAN - ALL STAGES

Lot 2 on SP267252
916 - 944 GREENBANK ROAD, NORTH MACLEAN



RPS AAP Consulting Pty Ltd
ACN 117 883 173
ABN 97 117 883 173
Lakeside Corporate Space, Suite 425, Level 2
Building 4, 34-36 Glenferrie Drive, Robina
T +61 7 555 36900
W rpsgroup.com

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A TETRA TECH COMPANY

DESIGN CRITERIA

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DEVELOPMENT STANDARDS

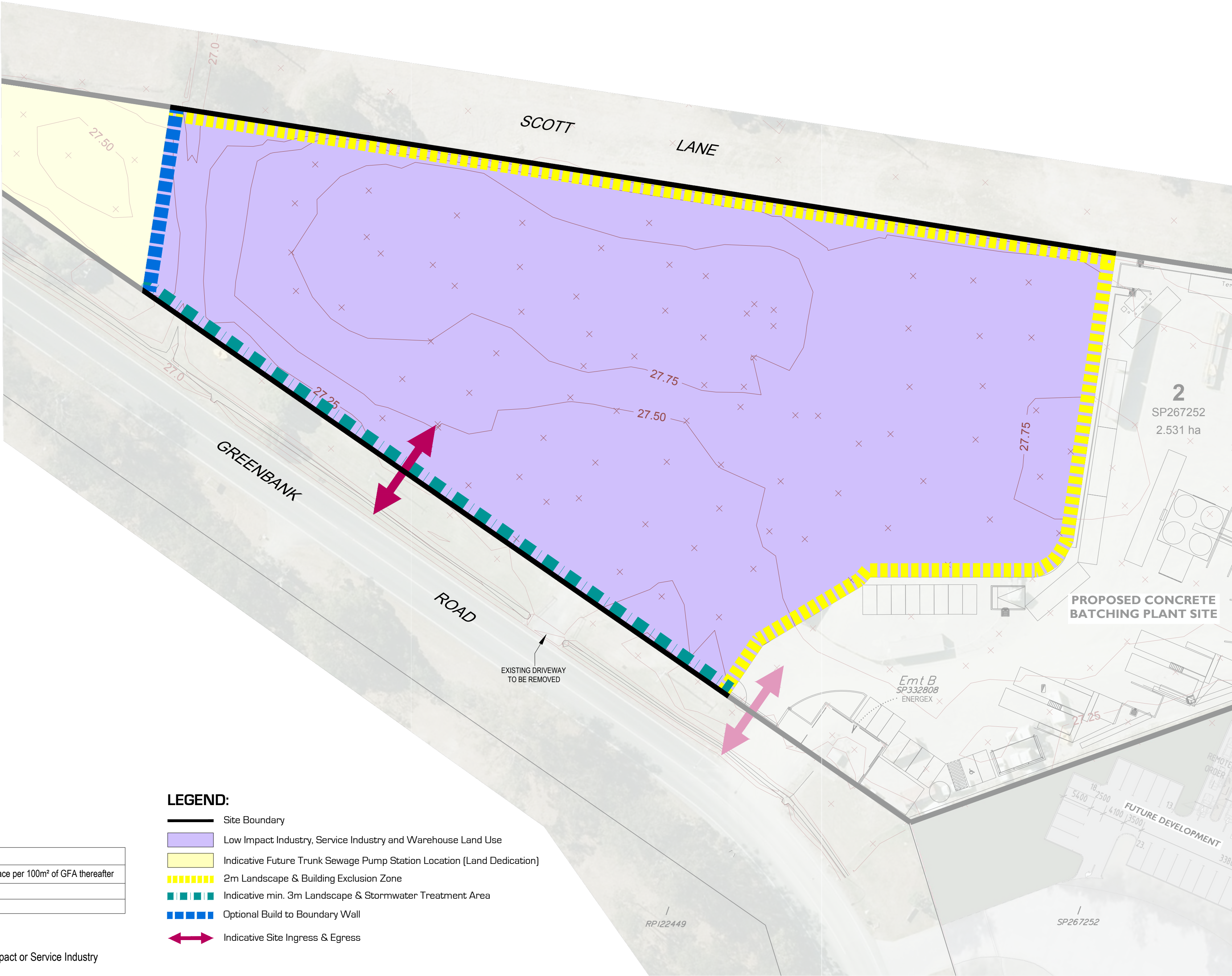
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NOTE:

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PLAN REF: AU015412-POD-4a
DATE: 7 MAY 2025
CLIENT: NERANG PASTORAL CO. PTY LTD
DRAWN: BJB
SCALE (A2): 1:500
SHEET: 1 of 2



SITE PLAN - STAGE 2

Lot 2 on SP267252
916 - 944 GREENBANK ROAD, NORTH MACLEAN



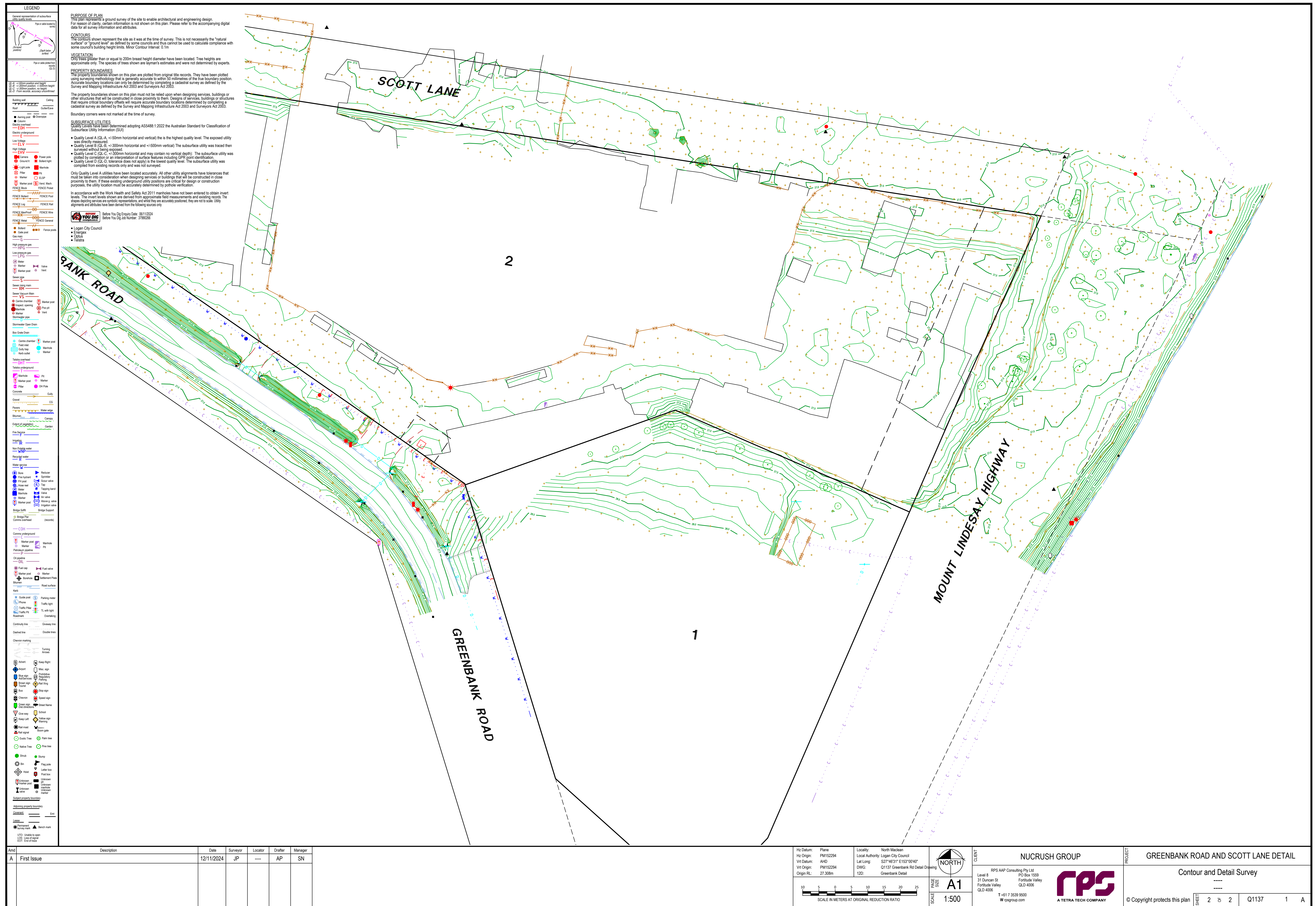
RPS AAP Consulting Pty Ltd
ACN 117 883 173
ABN 97 117 883 173
Lakeside Corporate Space, Suite 425, Level 2
Building 4, 34-36 Glenferrie Drive, Robina
T +61 7 555 36900
W rpsgroup.com

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A TETRA TECH COMPANY





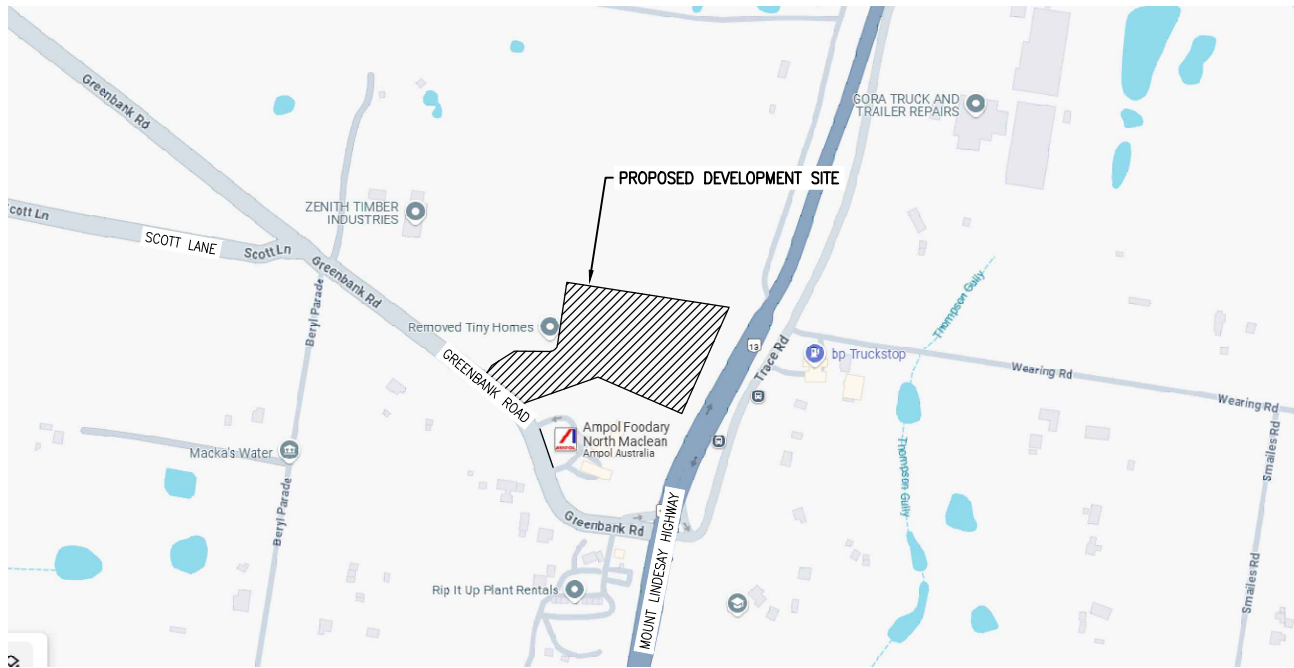
5.2 Appendix B – Preliminary Engineering Drawings

PROPOSED CONCRETE BATCHING PLANT

916-944 GREENBANK ROAD, NORTH MACLEAN

NUCRUSH GROUP

Project Number: G24-062



LOCALITY PLAN
NOT TO SCALE

INDEX OF DRAWINGS

PRELIMINARY GENERAL DRAWINGS

G24-062-PC01 PRELIMINARY COVER SHEET

PRELIMINARY CIVIL DRAWINGS

G24-062-PC02 PRELIMINARY CIVIL NOTES AND LEGEND

G24-062-PC03 PRELIMINARY CIVIL WORKS SITE PLAN

G24-062-PC04 PRELIMINARY CIVIL WORKS PLAN

PRELIMINARY EARTHWORKS DRAWINGS

G24-062-PC05 PRELIMINARY EARTHWORKS PLAN

G24-062-PC06 PRELIMINARY EARTHWORKS SECTIONS 1 of 2

G24-062-PC07 PRELIMINARY EARTHWORKS SECTIONS 2 of 2

STORMWATER MANAGEMENT DRAWINGS

G24-062-SW01 EXISTING CATCHMENT PLAN

G24-062-SW02 DEVELOPED CATCHMENT PLAN

G24-062-SW03 BIORETENTION BASIN 1 & 3 PLAN & SECTIONS

G24-062-SW04 BIORETENTION BASIN 2 PLAN & SECTIONS

G24-062-SW05 BIORETENTION BASIN NOTES & TYPICAL DETAILS

				DESIGNED G.G.J.	 P. GARRETT RPEQ 23009 For and on behalf of WESTERA PARTNERS PTY. LTD.	 WESTERA PARTNERS STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS www.westerapartners.com.au ABN 52 097 417 975	BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 DATE A.H.D. P.M.152294 R.L.27.308	PROJECT LOCATION TITLE CLIENT	PROPOSED CONCRETE BATCHING PLANT LOT 2 on SP267252 916-944 GREENBANK ROAD, NORTH MACLEAN PRELIMINARY COVER SHEET NUCRUSH GROUP	DRAWING STATUS PRELIMINARY N.F.C.	
				DRAWN Y.N.M.							DRAWING NUMBER G24-062-PC01	
				CHECKED B.C.A.							SHEET NUMBER 01 OF 07	
				APPROVED P.C.G.							REVISION	
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED		

WESTERA PARTNERS HAS LIMITED CONTROL OR INPUT TO LOCAL GOVERNMENT OR OTHER LEGISLATED APPROVALS UNLESS SPECIFICALLY ENGAGED BY IT'S CLIENT. ANY CHANGES TO APPROVAL REQUIREMENTS (INCLUDING ORDERS FOR SUSPENSION OF WORKS ETC) SHOULD BE COMMUNICATED TO WESTERA PARTNERS AND ALL OTHER RELEVANT DESIGNERS TO ALLOW ASSESSMENT OF POTENTIAL RISKS AND ENSURE DESIGN AND SAFETY COMPLIANCE.

G2 ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES STANDARD DRAWINGS & SPECIFICATIONS AND COMPLETED TO THE SATISFACTION OF THE SUPERINTENDENT AND LOCAL AUTHORITY.

G3 UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.

G4 PRIOR TO THE COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR MUST LOCATE ALL EXISTING SERVICES AND PROMPTLY PROVIDE THE LOCATION DATA TO THE DESIGN ENGINEER TO ASSESS IMPACTS ON THE DESIGN.

G5 ALL CONNECTIONS TO EXISTING SEWERS AND WATER MAINS ARE TO BE CONSTRUCTED BY THE LOCAL AUTHORITY OR AN APPROVED CONTRACTOR. THE CONTRACTOR IS TO ALLOW IN HIS CONTRACT SUM FOR THE COST OF ANY PROPOSED CONNECTIONS.

G6 ALL SEWERS ARE TO BE 150MM DIA. U.P.V.C. CLASS SN8 RUBBER RING JOINTED AND PROPERTY CONNECTIONS ARE TO BE 100MM DIA. U.P.V.C CLASS SN6 UNLESS NOTED OTHERWISE

G7 THE PAVEMENT DEPTHS SHOWN ARE PRELIMINARY ONLY AND ARE TO BE VERIFIED FOLLOWING SUB-SOIL TESTS OF THE SUB-GRADE MATERIAL.

G8 ALL ROOFWATER CONNECTIONS FROM KERB ADAPTERS ARE TO BE 100MM DIA CLASS SN10 AT A MIN GRADE OF 1.0% UNLESS SHOWN OTHERWISE. ROOFWATER CONNECTIONS FROM FIELD INLETS OR GULLY PITS ARE TO BE 150MM DIA CLASS SN8 AT A MIN GRADE OF 1.0% UNLESS NOTED OTHERWISE.

ALL U.P.V.C. STORMWATER DRAINAGE PIPES ARE TO BE CLASS SN8 (U.N.O.)

ALL R.C. PIPES ARE TO BE CLASS 3 (U.N.O.)
PIPES UP TO AND INCLUDING 600Ø SHALL BE SPIGOT AND SOCKET PIPES WITH RUBBER RING JOINTS. PIPES GREATER THAN 600Ø SHALL BE EITHER SPIGOT AND SOCKET PIPES WITH RUBBER RING JOINTS OR INTERNAL FLUSH JOINTED PIPES WITH EXTERNAL ELASTOMERIC BAND.

ALL F.R.C. PIPES ARE TO BE FRCPIPE+ CLASS 4 (U.N.O.) AND SHALL BE DUAL RUBBER RING JOINT WITH COLLAR. PIPES SHALL BE FROM 225Ø TO 600Ø ONLY.

POLYPROPYLENE/POLYETHYLENE STORMWATER PIPE MINIMUM CLASS SN8 (U.N.O.) SUBJECT TO ACCEPTANCE BY CERTIFYING ENGINEER AND LOCAL AUTHORITY. CONSTRUCTION AND EMBEDMENT TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

G10 WATER PIPES SHALL BE;
- P.V.C.-M WATER PIPES ARE TO BE SERIES 2 PN16 SN10 R.R.J.
- D.I.C.L. WATER PIPES ARE TO BE PN35 WITH ALL FITTINGS TO BE FUSION BONDED POLYMERIC COATED.
- PE WATER PIPES ARE TO BE PN16 SDR11 PE100. DN25 AND DN32 WATER SERVICES SHALL BE PE80B.

G11 ALL "AS CONSTRUCTED" INFORMATION IS TO BE RECORDED AS REQUIRED BY THE LOCAL AUTHORITY AND SUBMITTED TO THE SUPERINTENDENT IMMEDIATELY AFTER COMPLETION OF THE WORKS.

G12 ALL ALLOTMENTS ARE TO BE GRADED AT A MINIMUM GRADE OF 1 IN 200.

C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH A53600 CONCRETE STRUCTURES CODE AND THE REFERENCED STANDARDS THEREIN.

C2 THE CONCRETE STRENGTH GRADE AND THE COVER TO REINFORCEMENT FOR THE VARIOUS CONCRETE ELEMENTS SHALL BE AS LISTED BELOW:

- CLIMATE ZONE:

- LOCATION:

C3	CONCRETE TO HAVE A MAXIMUM AGGREGATE SIZE OF 20mm WITH 80mm MAXIMUM SLUMP, A WATER/CEMENT RATIO OF NOT GREATER THAN 0.65 AND A MAXIMUM FINAL BASIC DRYING SHRINKAGE STRAIN OF 800×10^{-6} , UNLESS APPROVED OTHERWISE.
C4	NO ADDITIVES SHALL BE ADDED OR APPLIED TO THE CONCRETE MIX WITHOUT THE APPROVAL OF THE ENGINEER.

AMBIENT AIR TEMPERATURE	MAX. BATCHING TO PLACEMENT TIME
10° – 24°C	120 MINUTES
25° – 27°C	90 MINUTES
28° – 30°C	60 MINUTES
31° – 33°C	45 MINUTES
34° – 36°C	30 MINUTES
37°C+	NO PLACEMENT OF CONCRETE UNLESS CHILLED WATER OR ICE IN MIX

C7 ALL CONCRETE SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH AS1379 ADOPTING THE PROJECT ASSESSMENT METHOD FOR COMPRESSIVE STRENGTH AND SLUMP COMPLIANCE. THE RESULTS OF ALL TESTS SHALL BE PROMPTLY SUBMITTED TO THE ENGINEER FOR REVIEW.

C9 CURING OF ALL CONCRETE SURFACES SHALL COMMENCE IMMEDIATELY AFTER COMPLETING CONCRETE FINISHING AND SHALL CONTINUE FOR 7 DAYS. CONTRACTOR TO CONFIRM METHOD OF CURING WITH ENGINEER PRIOR TO USE.

C11 BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS, IF ANY.

C13 WHERE SERVICE PIPES PENETRATE CONCRETE ELEMENTS, PROVISION SHOULD BE MADE TO ALLOW FOR MOVEMENT OF THE ELEMENT.

C15 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.

C17 WELDING AND HEATING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.

C19 LAP REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.

C21 BAR REINFORCEMENT SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING TABLE.

WHERE LAPS ARE SHOWN ON THE DRAWINGS THE ABOVE LAP LENGTHS SHALL BE ADOPTED UNLESS NOTED OTHERWISE. WHERE BARS OF DIFFERENT DIAMETER ARE SHOWN LAPPED, ADOPT THE LAP LENGTH APPROPRIATE TO THE SMALLER DIAMETER BAR.

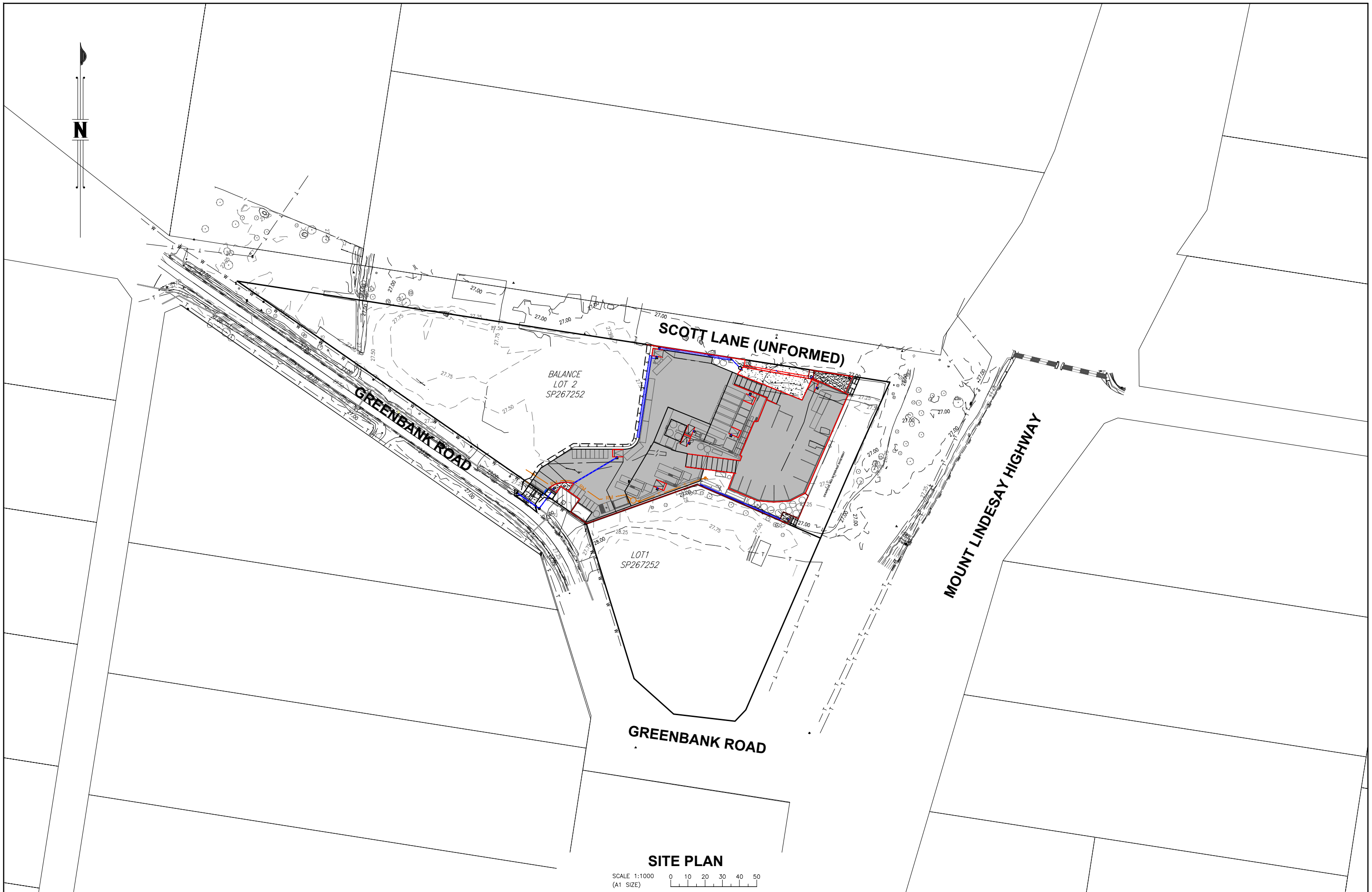
REINFORCED CONCRETE PAVEMENT	
REINFORCED CONCRETE PATHWAY/CROSSOVER	
TURF	
STONE PITCHING	
CEMENT GROUTED STONE PITCHING	
TELECOMMUNICATION	— T —
GAS MAIN	— GAS —
ELECTRICITY OVERHEAD	— V —
ELECTRICITY UNDERGROUND	— E —
LIGHT POLE	— —
POWER POLE	— —
PIT (TELSTRA/ELEC)	— —
EDGE OF BITUMEN	— —
FENCE	— / — / — / —
EXISTING SURFACE LEVEL	× 2.53
EXISTING CONTOUR MINOR	— — 33.75 — —
EXISTING CONTOUR MAJOR	— — 34.00 — —
DESIGN SURFACE LEVEL	× 2.53
DESIGN CONTOUR MINOR	— — 33.75 — —
DESIGN CONTOUR MAJOR	— — 34.00 — —
RETAINING WALL	
STAGE BOUNDARY	
SETTLEMENT PIT	

	NEW	EXISTING
STORMWATER PIPE		
SAG GULLY PIT		
ON GRADE GULLY PIT		
MANHOLE		
600 x 600 FIELD INLET		
900 x 600 FIELD INLET		
1050 DIA FIELD INLET		
HEADWALL		
KERB ADAPTER WITH ROOFWATER PIPE		
STORMWATER STRUCTURE LABEL		

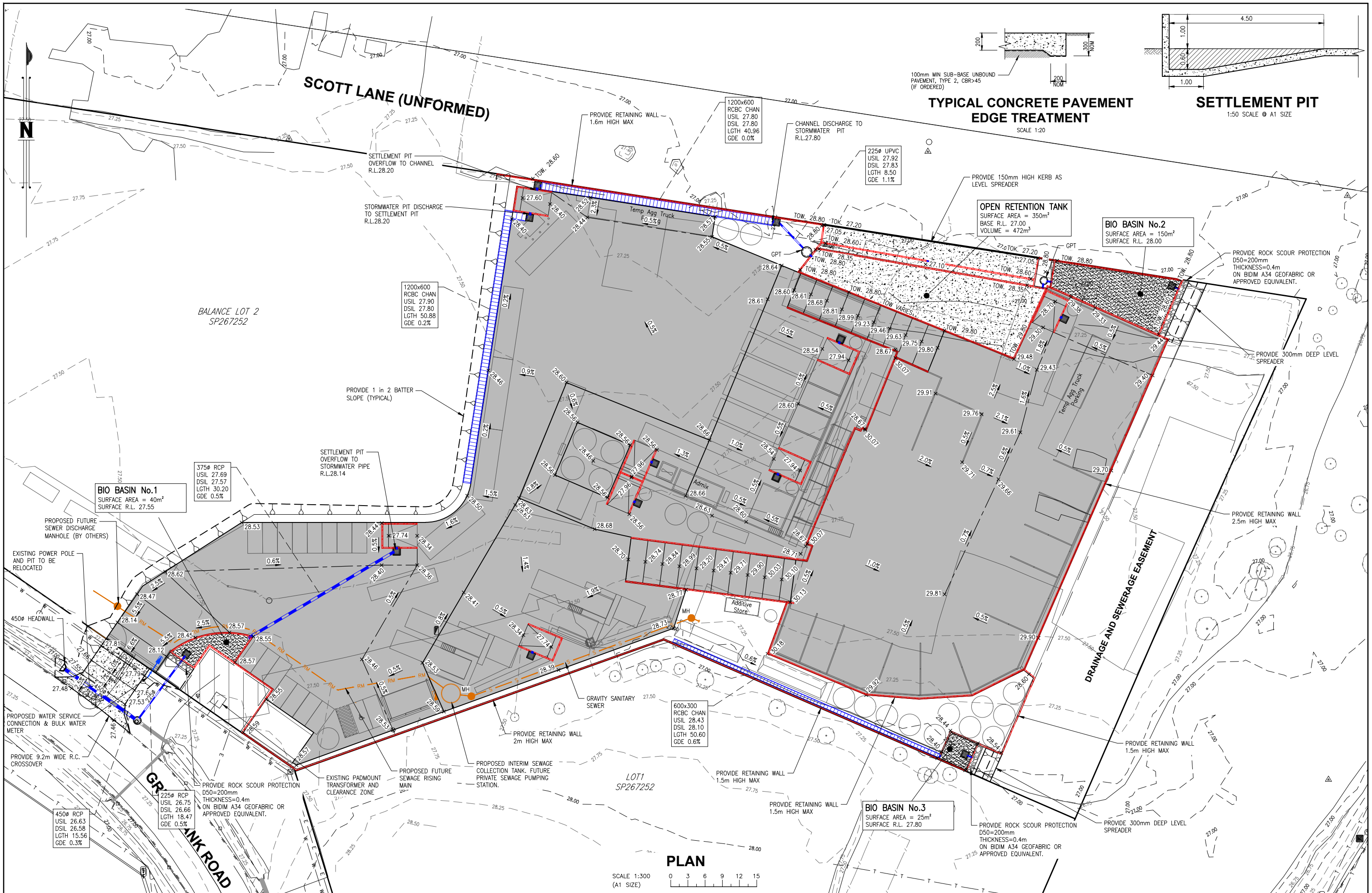
	NEW	EXISTING	DISUSED
WATER MAIN			
FIRE HYDRANT			
DUAL OUTLET FIRE HYDRANT			
SWABBING DUAL OUTLET FIRE HYDRANT			
SWABBING FIRE HYDRANT			
ISOLATION VALVE			
SCOUR VALVE			
AIR VALVE			
DEAD END			
TEST/CHLORINATION POINT			
REDUCER			
PIPE MATERIAL CHANGE			
WATER SERVICE PRE-TAPPED TEE			
WATER SERVICE PIPE & CONDUIT			
FLOW METER			
FLUSHING POINT			

	NEW	EXISTING	DISUSED
GRAVITY SEWER MAIN			
SEWER RISING MAIN			
SEWER VACUUM MAIN			
MAINTENANCE HOLE & END OF LINE			
END OF LINE			
MAINTENANCE SHAFT			
HORIZONTAL/VERTICAL BEND			
COMPOUND BEND			
STUB / TEMPORARY END			
RODDING END			
PROPERTY CONNECTION			
OVERFLOW MAINTENANCE HOLE			
ISOLATION VALVE			
SCOUR VALVE AND CHAMBER			
GAS RELEASE VALVE			
FLUSHING POINT			
DISCHARGE MAINTENANCE HOLE			
ISOLATION VALVE			
VENT POLE / ODOUR CONTROL UNIT			

G24-062-PC Pre Civil Notes.dwg



				DESIGNED G.G.J.	 P. GARRETT RPEQ 23609 For and on behalf of WESTERA PARTNERS PTY. LTD.					 WESTERA PARTNERS STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS www.westerapartners.com.au ABN 52 097 417 975	BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 DATE A.H.D. P.M.152294 R.L.27.308 USE FIGURED DIMENSIONS ONLY. DO NOT SCALE. IF A DISCREPANCY ARISES CHECK WITH THE PROJECT ENGINEER AND/OR SUPERVISING AUTHORITY. DO NOT WORK FROM REDUCED SCALE DRAWINGS (A1-A3 SIZE PAPER). COPYRIGHT OF ALL DRAWINGS & WORKS EXECUTED FROM THEM IS VESTED IN WESTERA PARTNERS AND USE OF THERE FORE WITHOUT PERMISSION IS STRICTLY PROHIBITED. IT IS THE BUILDERS RESPONSIBILITY TO ENSURE ALL WORKS ARE CARRIED OUT WITH DUE CARE AND DILIGENCE TO COMPLY WITH THE CONTRACT DOCUMENTS.	PROJECT	PROPOSED CONCRETE BATCHING PLANT			DRAWING STATUS		PRELIMINARY N.F.C.					
				DRAWN Y.N.M.									LOCATION	LOT 2 on SP267252 916-944 GREENBANK ROAD, NORTH MACLEAN			DRAWING NUMBER		G24-062-PC03					
				CHECKED B.C.A.										TITLE	PRELIMINARY CIVIL WORKS SITE PLAN			SHEET NUMBER		03 OF 07				
				APPROVED P.C.G.										CLIENT	NUCRUSH GROUP			REVISION						
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED														



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EARTHWORKS NOTES

- EW1 IN CASE OF DOUBT – ASK!
- EW2 ALL LEVELS TO AHD, DIMENSIONS IN METERS U.N.O.
- EW3 ALL LIAISON WITH LOCAL, STATE & STATUTORY AUTHORITIES IS THE CONTRACTOR'S RESPONSIBILITY.
- EW4 THE LOCATION OF EXISTING SERVICES IS FOR CONTRACTOR'S INFORMATION ONLY, THE LOCATION OF SERVICES WILL BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS.
- EW5 ANY DAMAGE CAUSED TO THE EXISTING SERVICE WILL BE MADE GOOD AT THE CONTRACTOR'S EXPENSE.
- EW6 EARTHWORK PROCEDURES ARE TO BE CARRIED OUT IN ACCORDANCE WITH AS 3798 – 2007 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'.
- EW7 EARTHWORKS OPERATIONS ARE TO BE CARRIED OUT IN GENERAL ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- EW8 WORKS NOT SPECIFICALLY REFERRED TO, ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GENERAL DRAWINGS AND SPECIFICATIONS OF THE LOCAL AUTHORITY (LOGAN CITY COUNCIL).
- EW9 THE CONTRACTOR IS TO ALLOW FOR ALL FEES AND HAULAGE COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL FROM THE SITE.
- EW10 ALL COSTS ASSOCIATED WITH NOISE AND DUST SUPPRESSION FOR SITE WORKS ARE DEEMED THE CONTRACTOR'S RESPONSIBILITY.
- EW11 COMPACTION STANDARDS
– MINIMUM RELATIVE COMPACTIONS TO AS 3798 TABLE 5.1 (REFER BELOW)

ITEM	APPLICATION	MINIMUM RELATIVE COMPACTION, %	
		MINIMUM DENSITY RATIO (COHESIVE SOILS) (SEE NOTE 1*)	MINIMUM DENSITY INDEX (COHESIONLESS SOILS) (SEE NOTE 2*)
1	RESIDENTIAL – LOT FILL, HOUSE SITES	95 std (SEE NOTE 3*)	65
2	COMMERCIAL – FILLS TO SUPPORT MINOR LOADINGS, INCLUDING FLOOR LANDINGS OF UP TO 20 kPa AND ISOLATED PAD OR STRIP FOOTINGS TO 100 kPa	98 std (SEE NOTE 4*)	70
3	PAVEMENTS (SEE NOTE 5*)	95 std	65
	(a) FILL TO SUPPORT PAVEMENTS	98 std	80
	(b) SUBGRADE (TO DEPTH OF 0.3m)	95 mod	NOT USUALLY APPLICABLE
	(c) SUB-BASE COURSES	98 mod	NOT USUALLY APPLICABLE
	(d) BASE COURSE	95 mod (SEE NOTE 5*)	NOT USUALLY APPLICABLE

*REFER TO AS 3798 FOR TABLE NOTES.
– 'MODIFIED' TO AS 1289 TEST 5.2.1.
– 'STANDARD' TO AS 1289 TEST 5.1.1.

- EW12 PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR WILL PROVIDE SCOUR AND EROSION PROTECTION INCLUDING PROVISION OF SILT TRAPS AND FENCES TO MINIMISE DEPOSITION OF MATERIAL DOWNSTREAM OF THE PROPERTY.
- EW13 NO BLASTING WILL BE PERMITTED.
- EW14 THE LOCATION OF THE SITE SHEDS, SITE OFFICE AND AMENITIES BUILDING WILL BE LOCATED TO SUIT TEMPORARY UTILITY SERVICES OR AS AGREED WITH THE MANAGER.
- EW15 TESTING FREQUENCY AS 3798 – 2007 SECTION 8.0 OR AS APPROVED BY THE GEOTECHNICAL ENGINEER.
- EW16 AT COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A "WORKS AS CONSTRUCTED" SURVEY AND SUBMIT THE DETAIL PLAN TO THE MANAGER.
- EW17 THE LOCATION OF TEMPORARY STOCKPILES DURING CONSTRUCTION IS TO BE AGREED WITH THE MANAGER.

EARTHWORKS SUMMARY

AREA OF FILL – 10,569 m²
AREA OF CUT – 890 m²
VOLUME OF FILL – 11,434 m³
VOLUME OF CUT – 266 m³

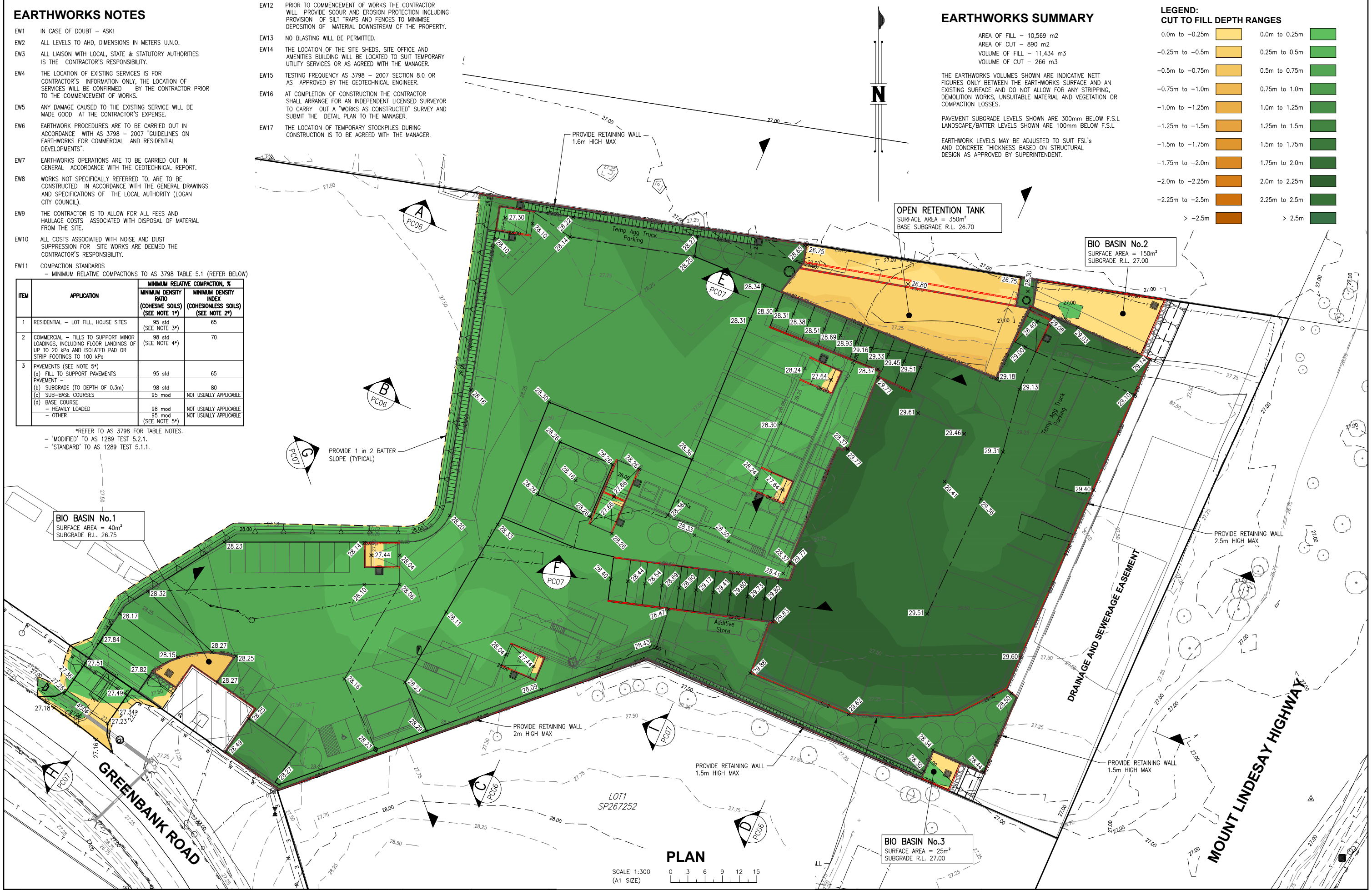
THE EARTHWORKS VOLUMES SHOWN ARE INDICATIVE NETT FIGURES ONLY BETWEEN THE EARTHWORKS SURFACE AND AN EXISTING SURFACE AND DO NOT ALLOW FOR ANY STRIPPING, DEMOLITION WORKS, UNSUITABLE MATERIAL AND VEGETATION OR COMPACTION LOSSES.

PAVEMENT SUBGRADE LEVELS SHOWN ARE 300mm BELOW F.S.L
LANDSCAPE/BATTER LEVELS SHOWN ARE 100mm BELOW F.S.L

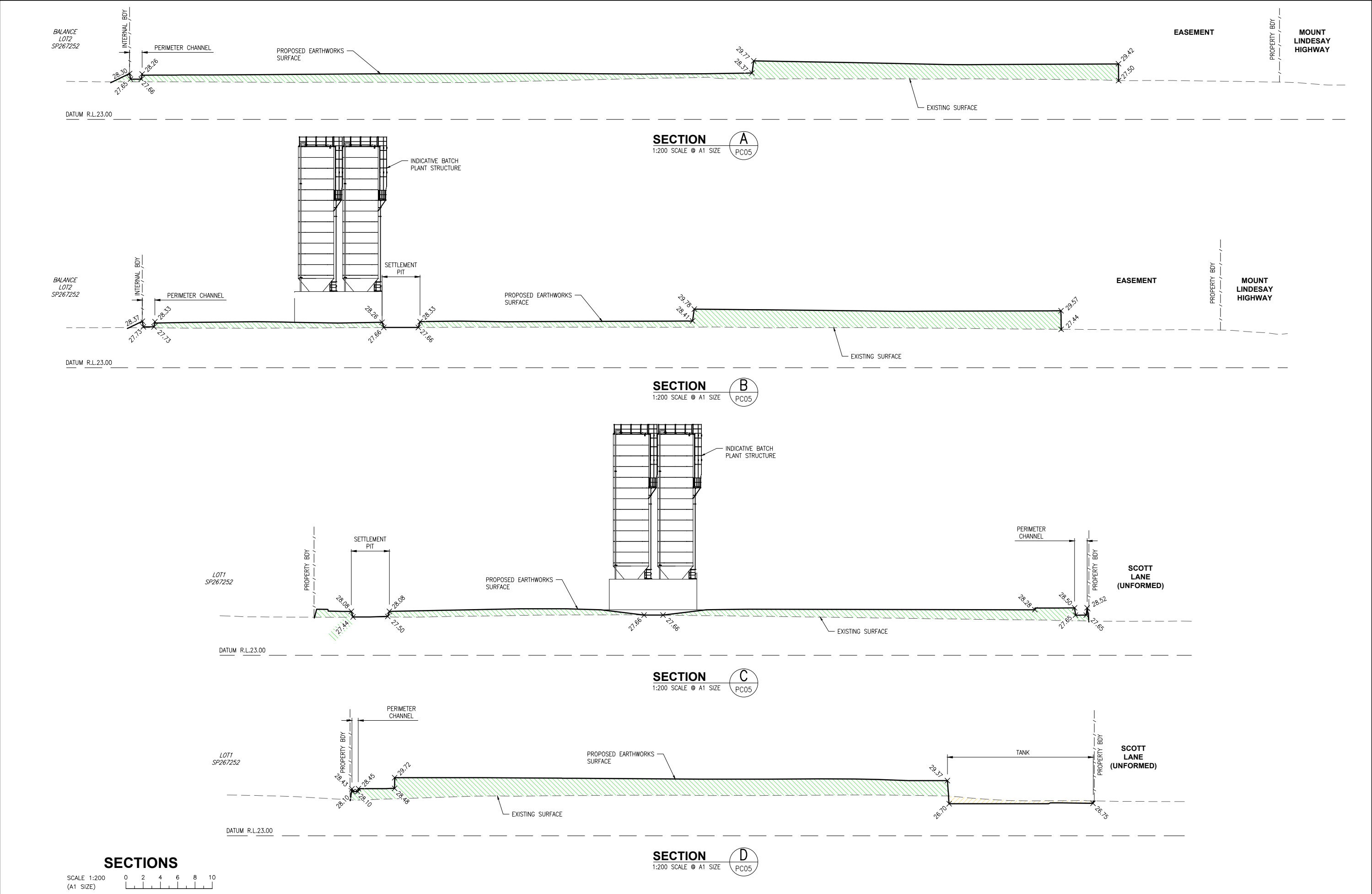
EARTHWORK LEVELS MAY BE ADJUSTED TO SUIT FSL'S AND CONCRETE THICKNESS BASED ON STRUCTURAL DESIGN AS APPROVED BY SUPERINTENDENT.

LEGEND:
CUT TO FILL DEPTH RANGES

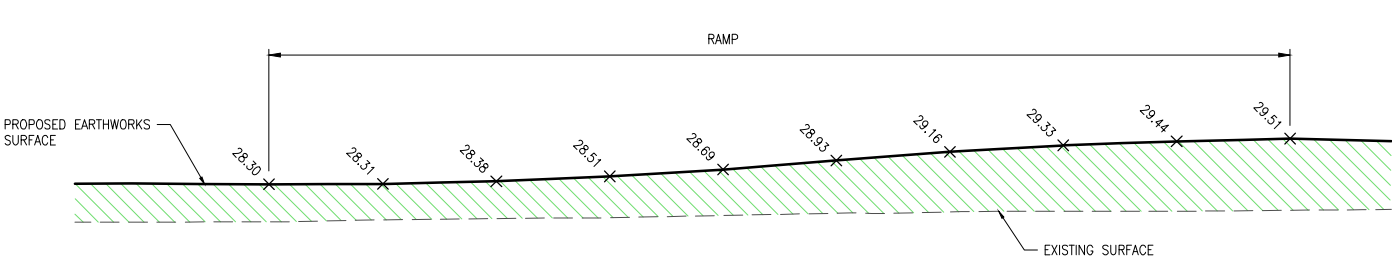
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-0.75m to -1.0m	0.75m to 1.0m
-1.0m to -1.25m	1.0m to 1.25m
-1.25m to -1.5m	1.25m to 1.5m
-1.5m to -1.75m	1.5m to 1.75m
-1.75m to -2.0m	1.75m to 2.0m
-2.0m to -2.25m	2.0m to 2.25m
-2.25m to -2.5m	2.25m to 2.5m
> -2.5m	> 2.5m



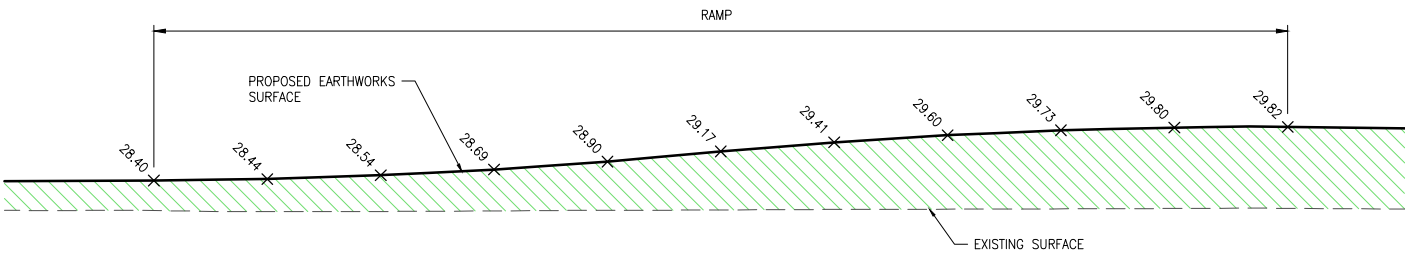
				DESIGNED G.G.J. E brisbane@westerapartners.com.au			WESTERA PARTNERS STRUCTURAL·CIVIL·ENVIRONMENTAL ENGINEERS www.westerapartners.com.au ABN 52 097 417 975	BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 DUTY A.H.D. P.M.152294 R.L.27.308	PROJECT LOCATION TITLE CLIENT	PROPOSED CONCRETE BATCHING PLANT LOT 2 on SP267252 916–944 GREENBANK ROAD, NORTH MACLEAN PRELIMINARY EARTHWORKS PLAN NUCRUSH GROUP	DRAWING STATUS PRELIMINARY N.F.C. DRAWING NUMBER G24-062-PC05 SHEET NUMBER 05 OF 07	REVISION		
				DRAWN Y.N.M.											
				CHECKED B.C.A.											
				APPROVED P.C.G.											
				DATE DECEMBER 2024	P. GARRETT RPE022309 For and on behalf of WESTERA PARTNERS PTY. LTD.			APPROVED							
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DOCUMENT CONTROL						



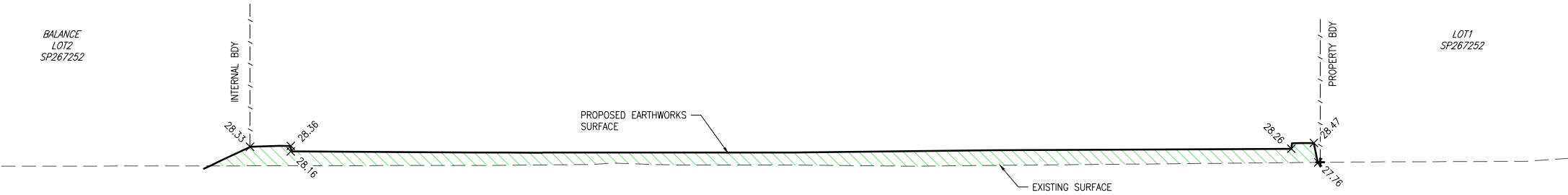
								DESIGNED G.G.J.			 WESTERA PARTNERS STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS www.westerapartners.com.au ABN 52 097 417 975	BRISBANE T 07 3852 4333 E: brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E: goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E: sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E: nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E: centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 USE FIGURED DIMENSIONS ONLY. DO NOT SCALE. IF A DISCREPANCY ARISES CHECK WITH THE PROJECT ENGINEER AND/OR SUPERVISING AUTHORITY. DO NOT WORK FROM REDUCED SCALE DRAWINGS (A1-A3 SIZE PAPER). COPYRIGHT OF ALL DRAWINGS & WORKS EXECUTED FROM THEM IS VESTED IN WESTERA PARTNERS AND USE OF THERE FORE WITHOUT PERMISSION IS STRICTLY PROHIBITED. IT IS THE BUILDERS RESPONSIBILITY TO ENSURE ALL WORKS ARE CARRIED OUT WITH DUE CARE AND DILIGENCE TO COMPLY WITH THE CONTRACT DOCUMENTS.	DATUM A.H.D. P.M.152294 R.L.27.308	PROJECT LOCATION PROPOSED CONCRETE BATCHING PLANT LOT 2 on SP267252 916-944 GREENBANK ROAD, NORTH MACLEAN	DRAWING STATUS PRELIMINARY N.F.C.					
						DRAWN Y.N.M.		DRAWING NUMBER G24-062-PC06													
						CHECKED B.C.A.															
						APPROVED P.C.G.															
						DATE DECEMBER 2024															
								DOCUMENT CONTROL		APPROVED											
No.	DATE	REVISIONS						DES	DRN	CHK	APD										
																		SHEET NUMBER 06 OF 07		REVISION	



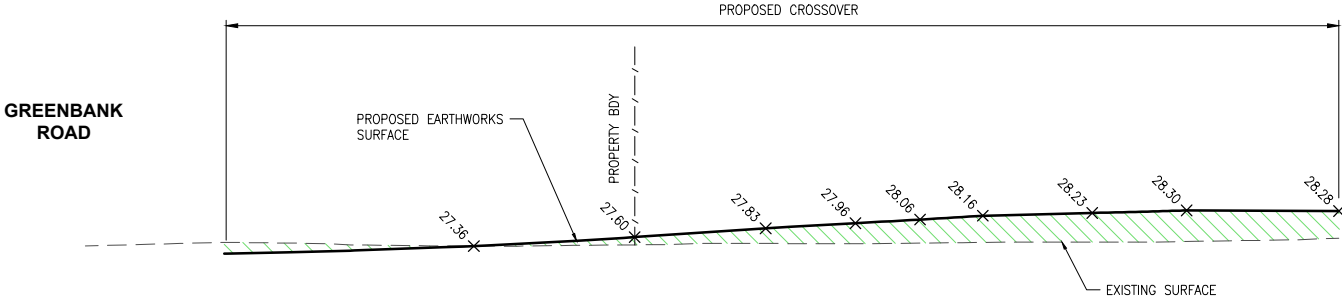
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PC05



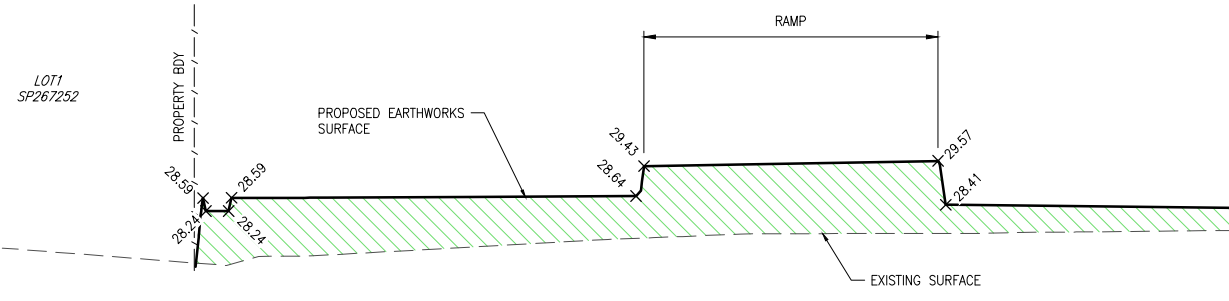
SECTION F
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SECTION G
1:100 SCALE @ A1 SIZE
PC05



SECTION H
1:100 SCALE @ A1 SIZE
PC05

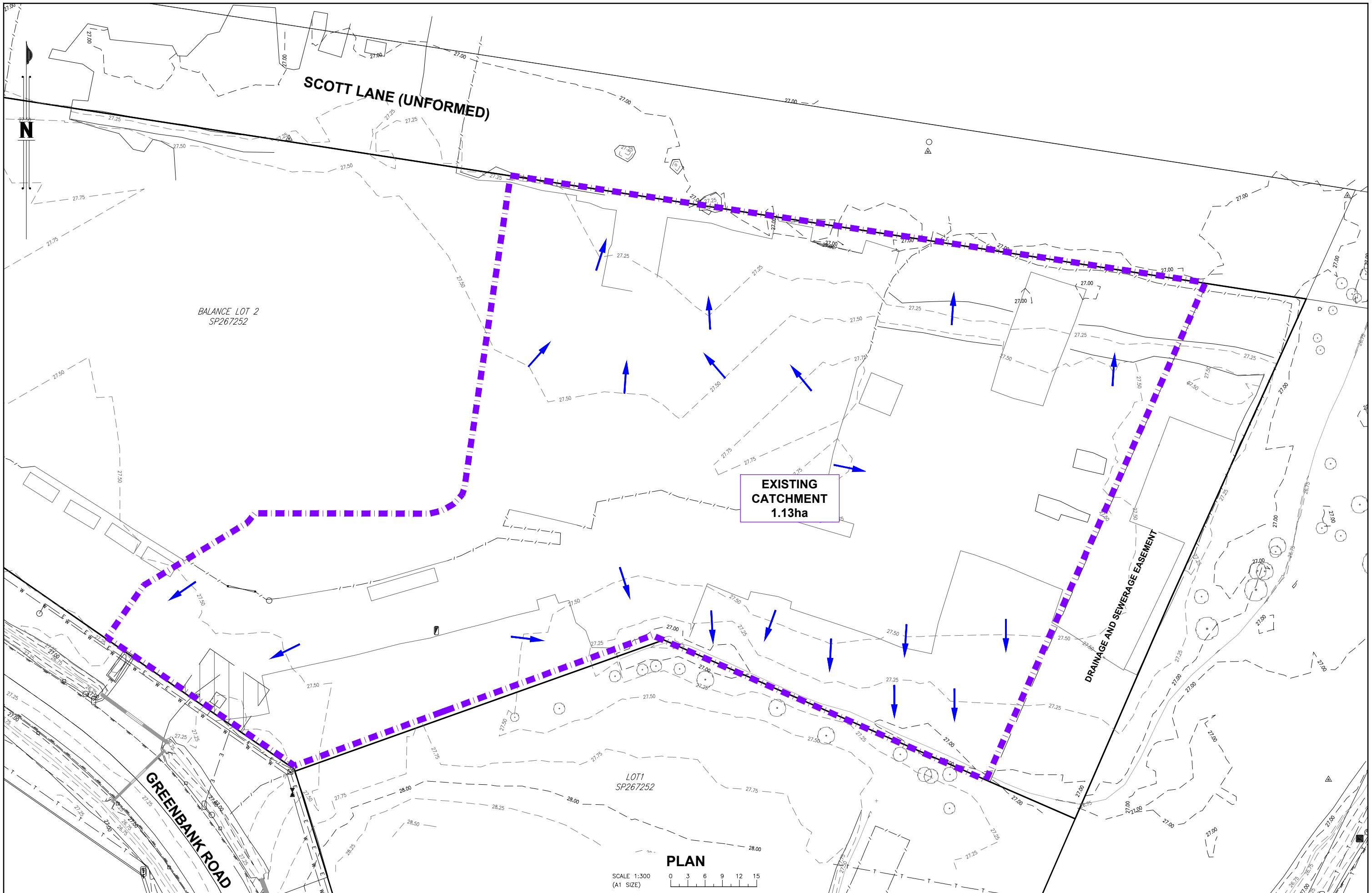


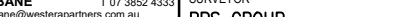
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1:100 SCALE @ A1 SIZE
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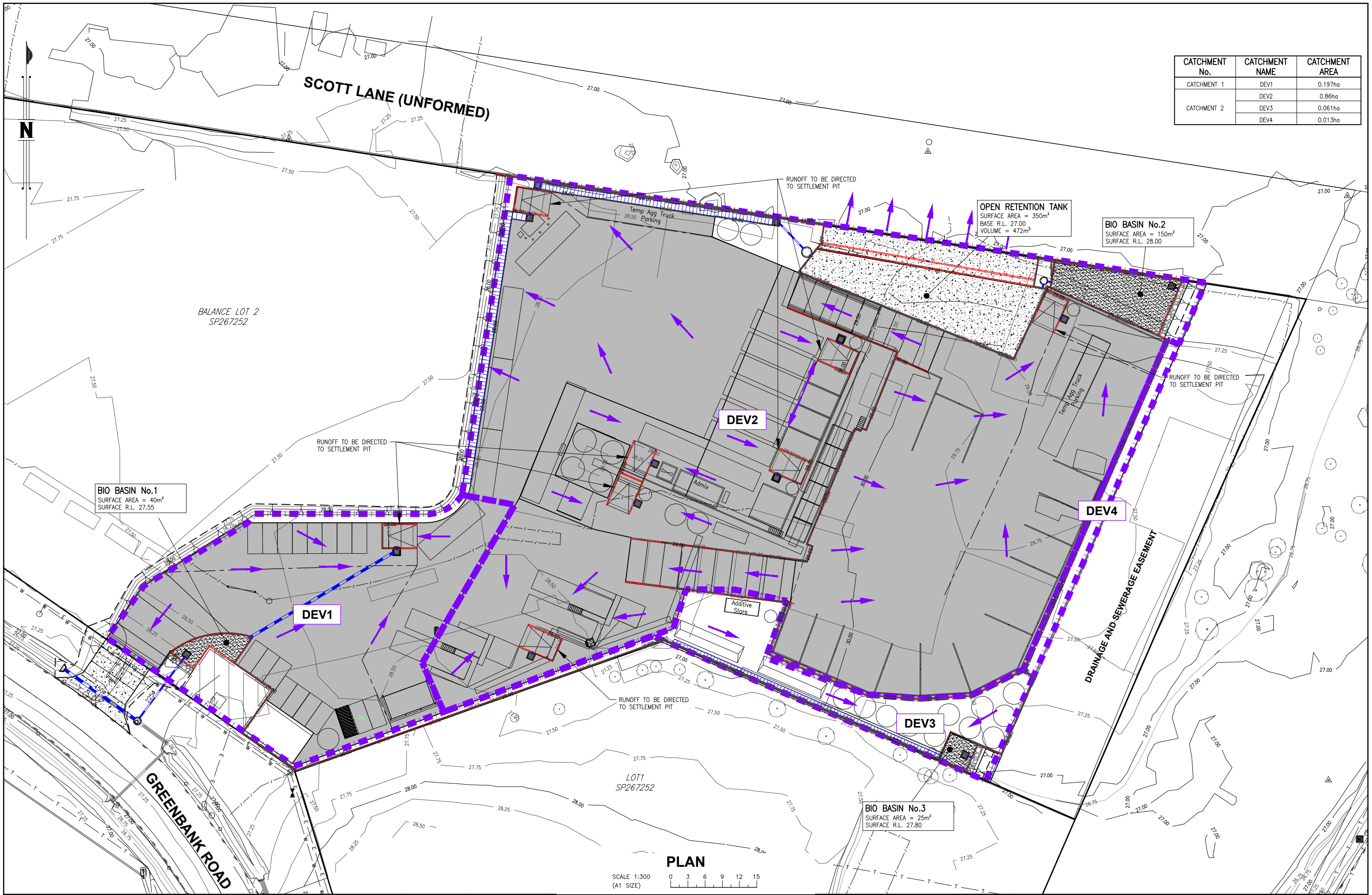
SECTIONS

SCALE 1:100 (A1 SIZE)

				DESIGNED G.G.J.			BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 DATE A.H.D. P.M.152294 R.L.27.308	PROJECT LOCATION TITLE CLIENT	PROPOSED CONCRETE BATCHING PLANT LOT 2 on SP267252 916-944 GREENBANK ROAD, NORTH MACLEAN PRELIMINARY EARTHWORKS SECTIONS 2 of 2 NUCRUSH GROUP	DRAWING STATUS PRELIMINARY N.F.C. DRAWING NUMBER G24-062-PC07 SHEET NUMBER 07 OF 07 REVISION	
				DRAWN Y.N.M.								
				CHECKED B.C.A.								
				APPROVED P.C.G.								
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DATE DECEMBER 2024	DOCUMENT CONTROL		APPROVED



				DESIGNED G.G.J.	 P. GARRETT RPEQ 23609 For and on behalf of WESTERA PARTNERS PTY. LTD.	 STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS www.westerapartners.com.au ABN 52 097 417 975	BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au	SURVEYOR RPS GROUP PHONE 07 3539 9500 DATE A.H.D. P.M.152294 R.L.27.308	PROJECT LOCATION TITLE CLIENT	PROPOSED CONCRETE BATCHING PLANT LOT 2 on SP267252 916-944 GREENBANK ROAD, NORTH MACLEAN EXISTING CATCHMENT PLAN NUCRUSH GROUP	DRAWING STATUS PRELIMINARY N.F.C. DRAWING NUMBER G24-062-SW01 SHEET NUMBER 01 OF 05	REVISION
				DRAWN Y.N.M.								
				CHECKED B.C.A.								
				APPROVED P.C.G.								
				DATE DECEMBER 2024								
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED		



CATCHMENT No.	CATCHMENT NAME	CATCHMENT AREA
CATCHMENT 1	DEV1	0.197ha
	DEV2	0.86ha
CATCHMENT 2	DEV3	0.061ha
	DEV4	0.013ha

BIO BASIN No.1
SURFACE AREA = 40m²
SURFACE R.L. 27.55

OPEN RETENTION TANK
SURFACE AREA = 350m²
BASE R.L. 27.00
VOLUME = 472m³

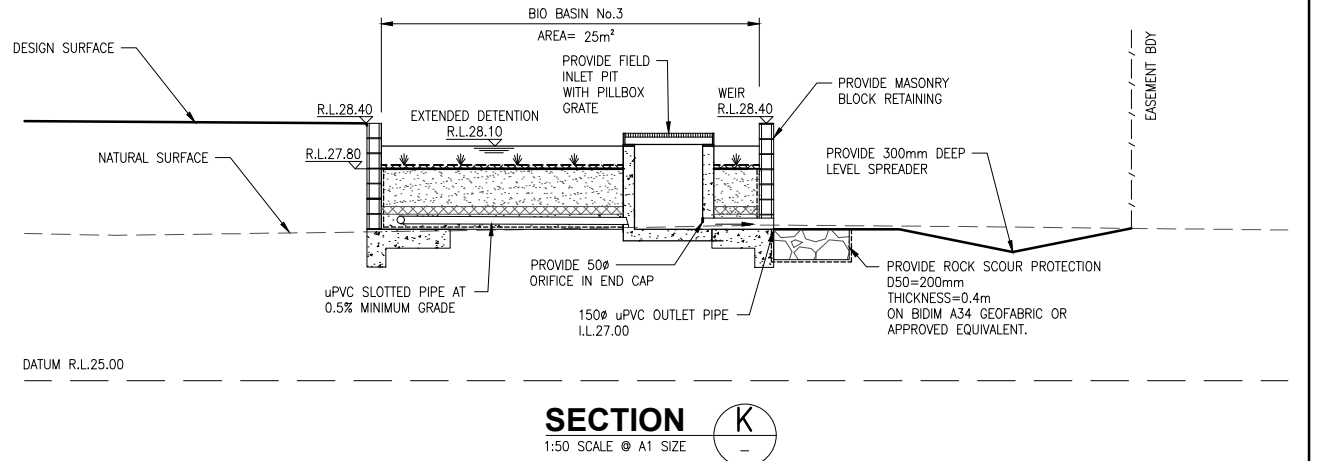
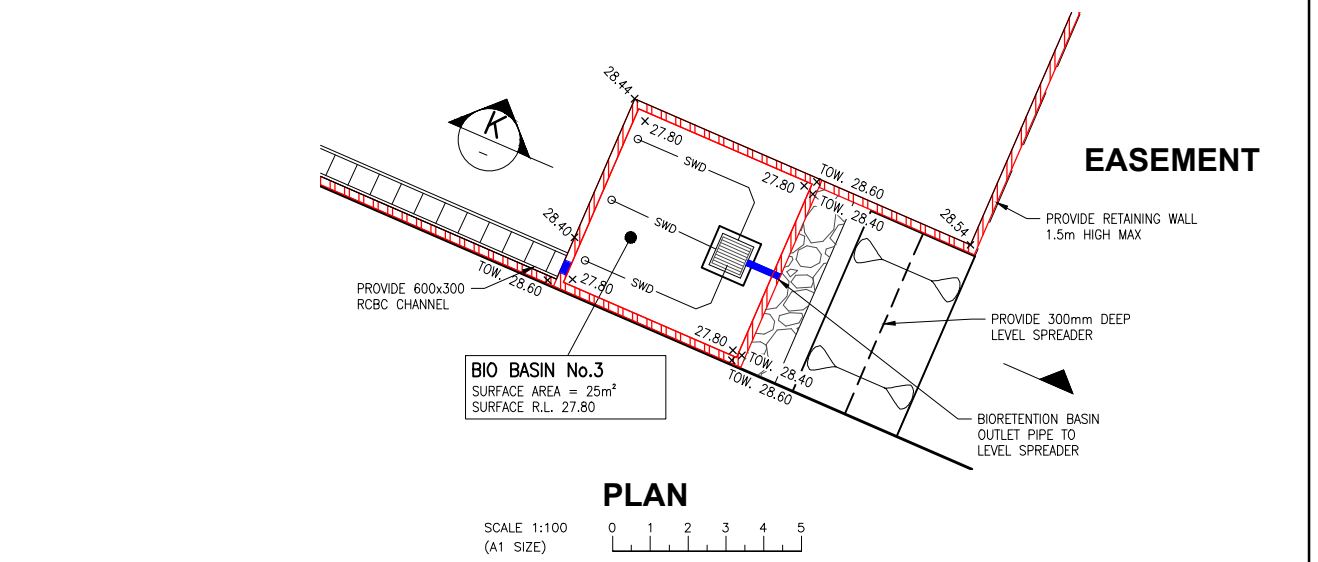
BIO BASIN No.2
SURFACE AREA = 150m²
SURFACE R.L. 28.00

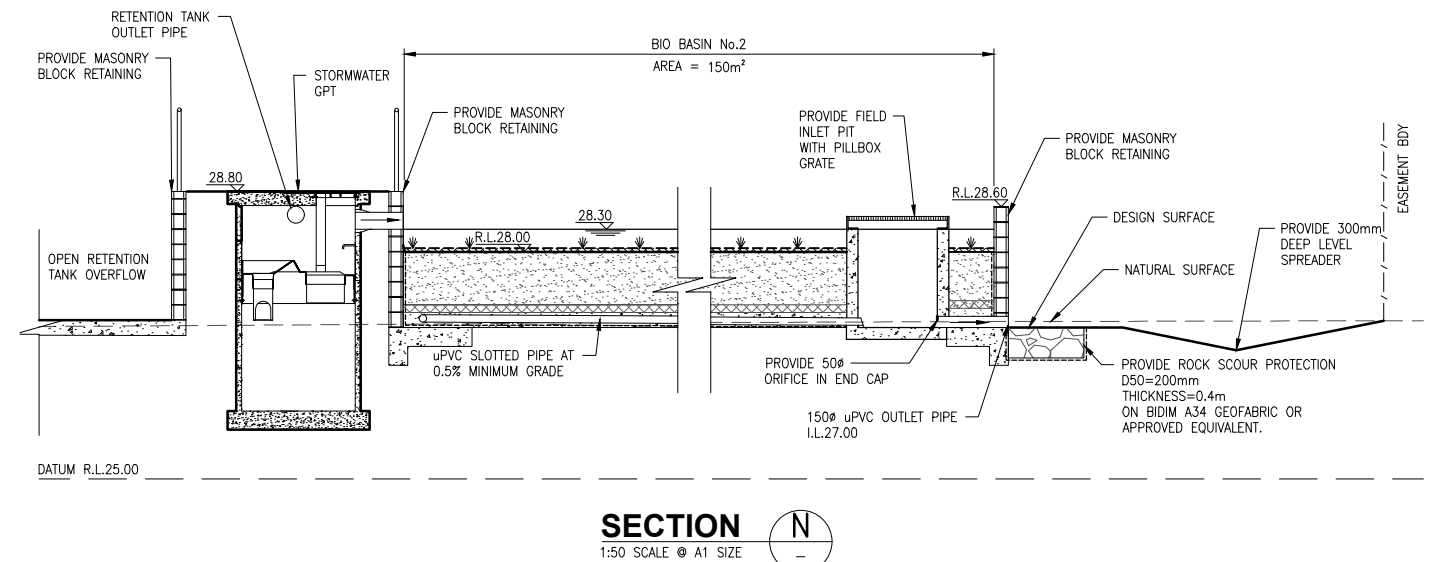
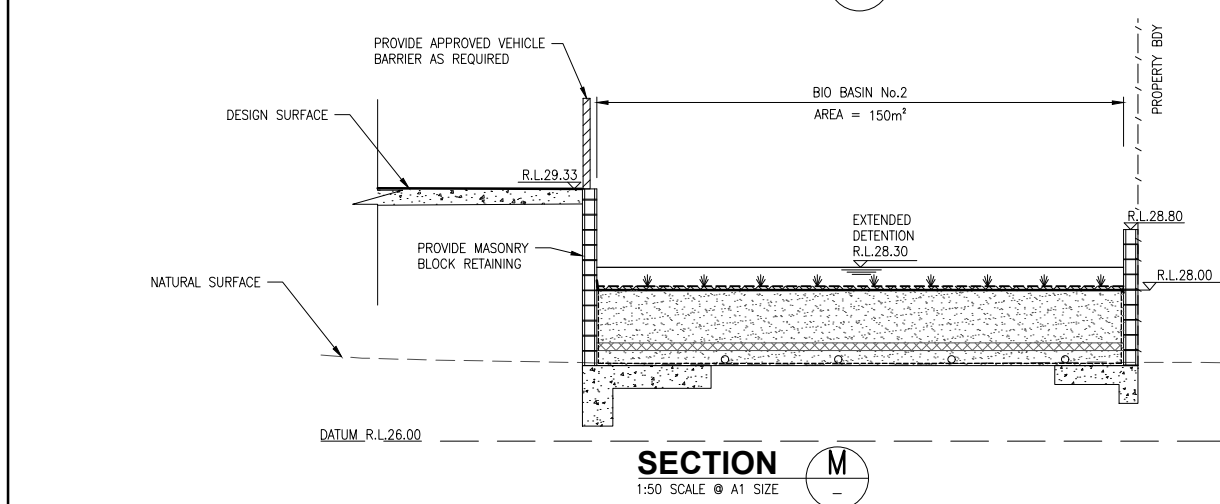
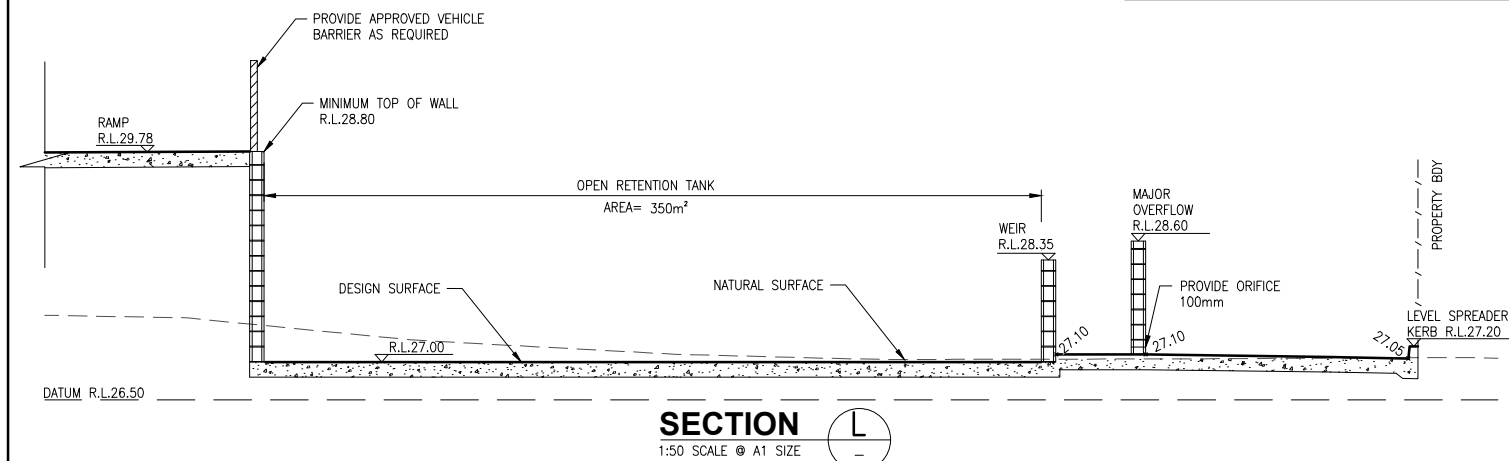
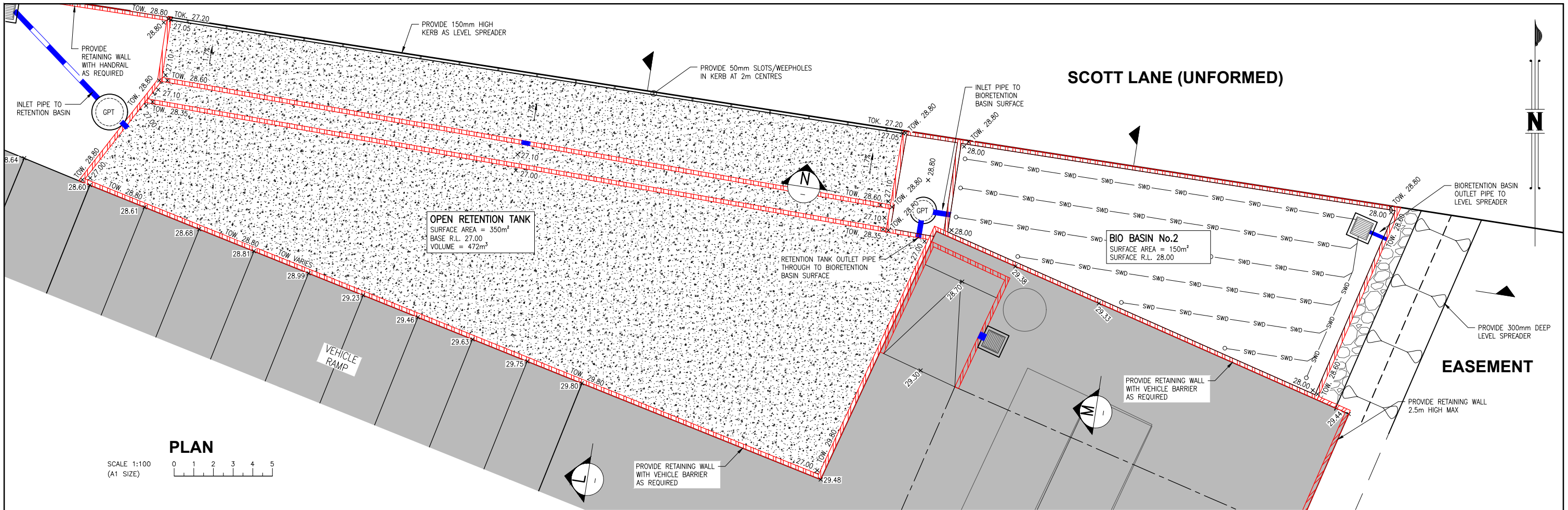
BIO BASIN No.3
SURFACE AREA = 25m²
SURFACE R.L. 27.80

PLAN

SCALE 1:300
(A1 SIZE)

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				DRAWN Y.N.M.									
				CHECKED B.C.A.									
				APPROVED P.C.G.									
No.	DATE	REVISIONS			DES	DRN	CHK	APD	DOCUMENT CONTROL				

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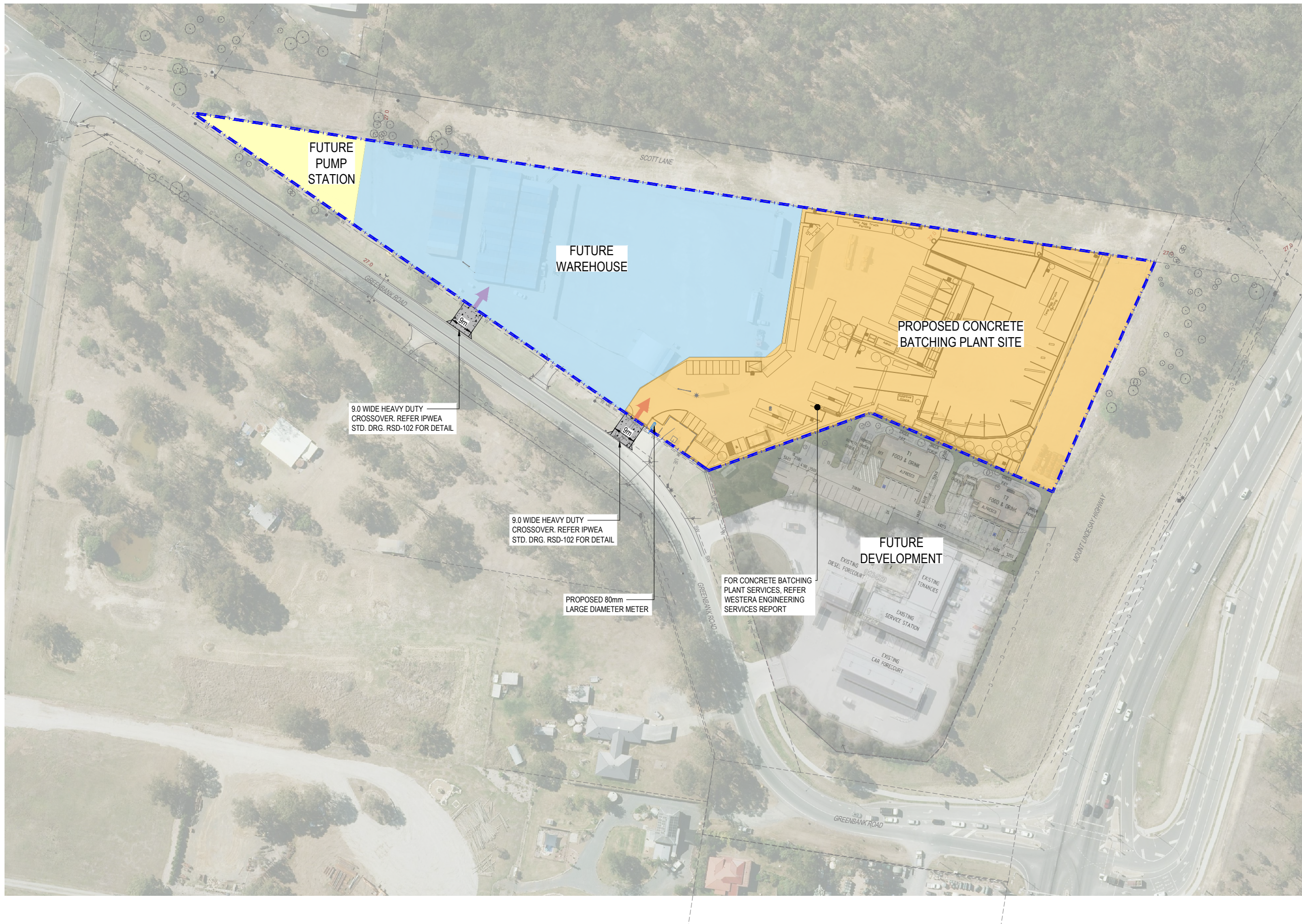
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LEGEND

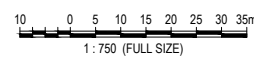
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— W — W —	EXISTING WATER
— S — S —	EXISTING SEWER
— SW — SW —	EXISTING STORMWATER
— UE — UE —	EXISTING UNDERGROUND ELECTRIC
— OH — OH —	EXISTING OVERHEAD ELECTRIC
— C — C —	EXISTING COMMS
—	PROPOSED WATER
- - - - -	DEVELOPMENT SITE BOUNDARY
	PROPOSED CROSSOVER



Prepared for : NUCRUSH PTY LTD

Designer : CARL KRUGER
Checked : JOHN GARCIA
Date : 06-12-2024

PROPOSED SITE PLAN
916-944 GREENBANK ROAD, NORTH MACLEAN



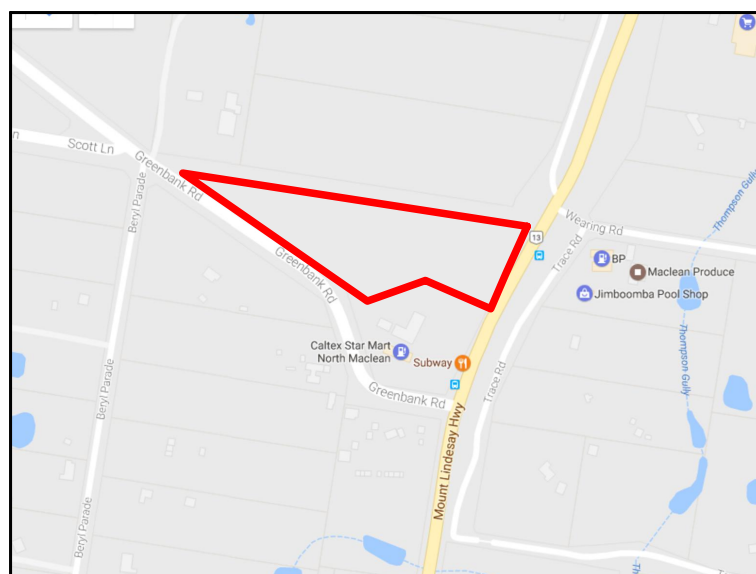
BE230342-SK-01



Gold Coast | Brisbane | Toowoomba
Ipswich | Moreton Bay
Phone: +61 7 5509 6400
Fax: +61 7 5509 6411
Email: admin@burchills.com.au
Coote Burchills Engineering Pty Ltd
ABN 76 166 942 365

LOT 2 ON SP267252, 916-944 GREENBANK ROAD, NORTH MACLEAN, LOGAN

CONCEPTUAL STORMWATER MANAGEMENT DRAWINGS



LOCALITY PLAN

SCHEDULE OF DRAWINGS	
Drawing No.	Drawing Title
N000	LOCALITY AND DRAWING INDEX PLAN
N200	PRE-DEVELOPMENT CATCHMENT PLAN
N201	POST-DEVELOPMENT CATCHMENT PLAN
N202	MUSIC CATCHMENT PLAN
N400	OPERATIONAL CONTROL PLAN
N401	OPERATIONAL CONTROL TYPICAL CROSS SECTION
N500	EROSION & SEDIMENT CONTROL PLAN
N501	EROSION & SEDIMENT CONTROL TYPICAL CROSS SECTION

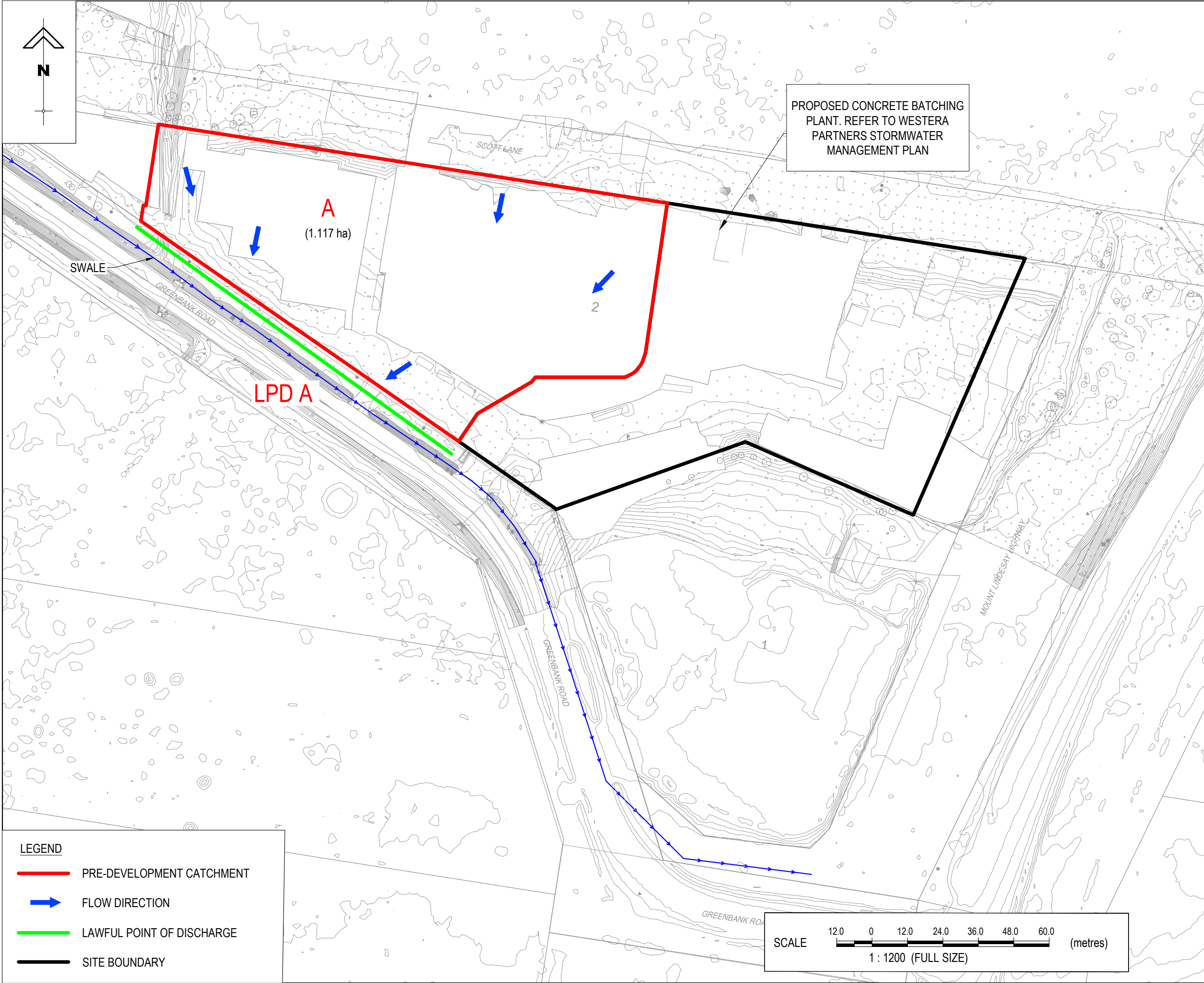
PREPARED FOR

NUCRUSH GROUP PTY LTD

PREPARED BY



GOLD COAST | BRISBANE | TOOWOOMBA
IPSWICH | MORETONBAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
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LOT 2 ON SP267252,
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ROAD, NORTH MACLEAN,
LOGAN

FOR

NUCRUSH GROUP
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ORIGINAL SCALE BEFORE REDUCTION
A3 0 10 20 30 40mm.

A	ORIGINAL ISSUE		06.12.24
VER.	DESCRIPTION	APPR.	DATE

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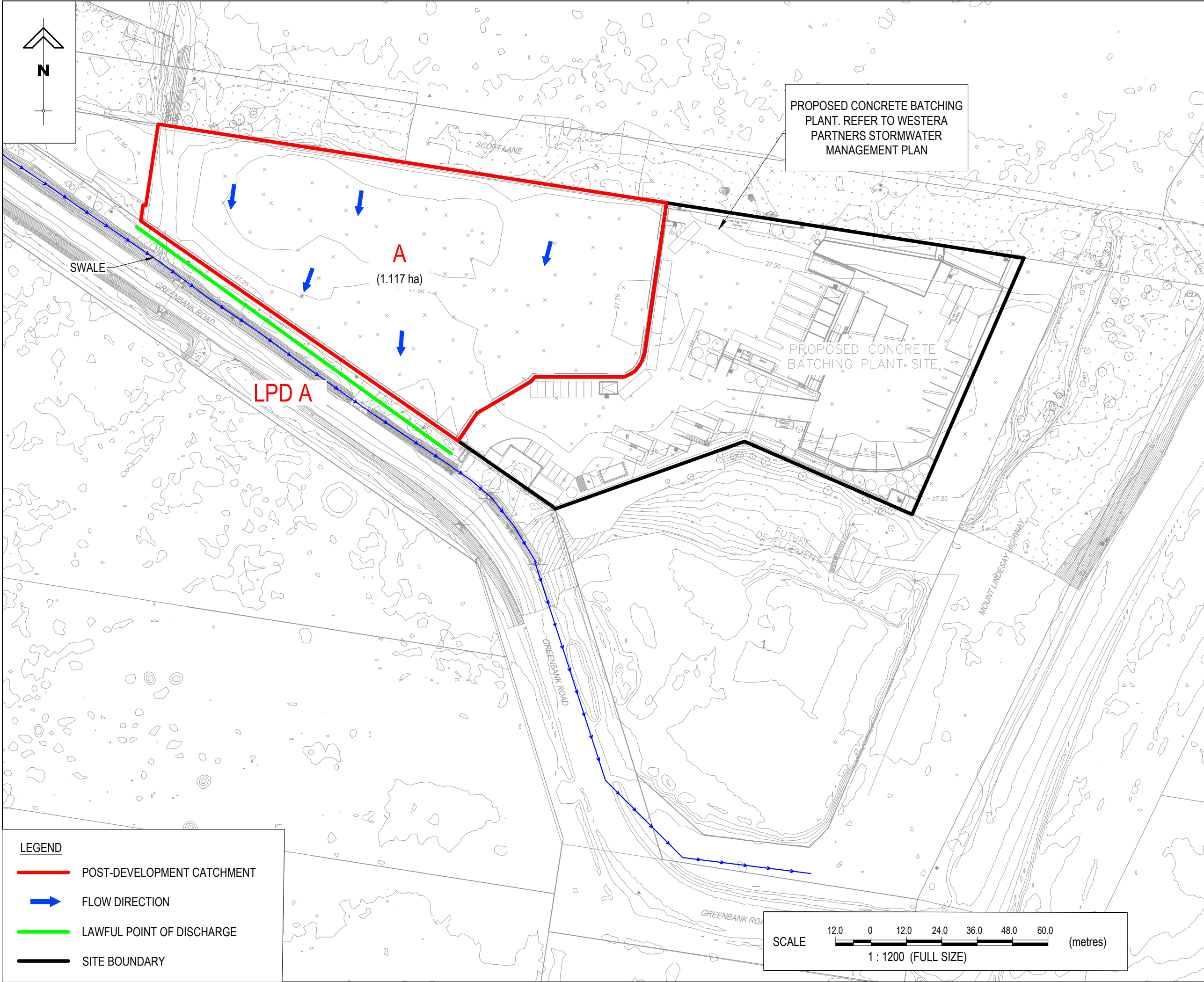
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GOLD COAST | BRISBANE | TOOWOOMBA
IPSWICH | MORETONBAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

DRAWING TITLE :		
PRE-DEVELOPMENT CATCHMENT PLAN (BALANCE AREA)		
DEVEL. APPLIC. No. :		DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY		
DESIGNER : ELLY RICKETTS		
DRAFTSPERSON : TK		
CHECKED : LUCAS FAULKNER		
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No. :		
SCALE : 1:1200	DATUM :	FULL SIZE : A3
PROJECT No. : BE230342	DRAWING No. : N200	VERSION : A



LOT 2 ON SP267252,
916-944 GREENBANK
ROAD, NORTH MACLEAN,
LOGAN

FOR
NUCRUSH GROUP
PTY LTD

ORIGINAL SCALE BEFORE REDUCTION
A3 0 10 20 30 40mm.

A	ORIGINAL ISSUE		06.12.24
VER.	DESCRIPTION	APPR.	DATE

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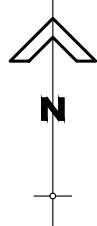
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COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

DRAWING TITLE :		
POST-DEVELOPMENT CATCHMENT PLAN		
DEVEL. APPLIC. No. :		DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY		
DESIGNER : ELLY RICKETTS		
DRAFTSPERSON : TK		
CHECKED : LUCAS FAULKNER		
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No. :		
SCALE : 1:1200	DATUM :	FULL SIZE : A3
PROJECT No. : BE230342	DRAWING No. : N201	VERSION: A



LOT 2 ON SP267252,
916-944 GREENBANK
ROAD, NORTH MACLEAN,
LOGAN

FOR

NUCRUSH GROUP
PTY LTD

PROPOSED CONCRETE BATCHING
PLANT. REFER TO WESTERA
PARTNERS STORMWATER
MANAGEMENT PLAN

ORIGINAL SCALE BEFORE REDUCTION
A3 0 10 20 30 40mm.

A	ORIGINAL ISSUE		06.12.24
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IPSWICH | MORETONBAY
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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

DRAWING TITLE :

MUSIC CATCHMENT PLAN

DEVEL. APPLIC. No. :	DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY	
DESIGNER : ELLY RICKETTS	
DRAFTSPERSON : TK	
CHECKED : LUCAS FAULKNER	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : 1:1000	DATUM : FULL SIZE : A3
PROJECT No. : BE230342	DRAWING No. : N202
	VERSION: A

CATCHMENT A
LUMPED INDUSTRIAL
TOTAL AREA: 1.117 ha
1.117 ha

A
(1.117 ha)

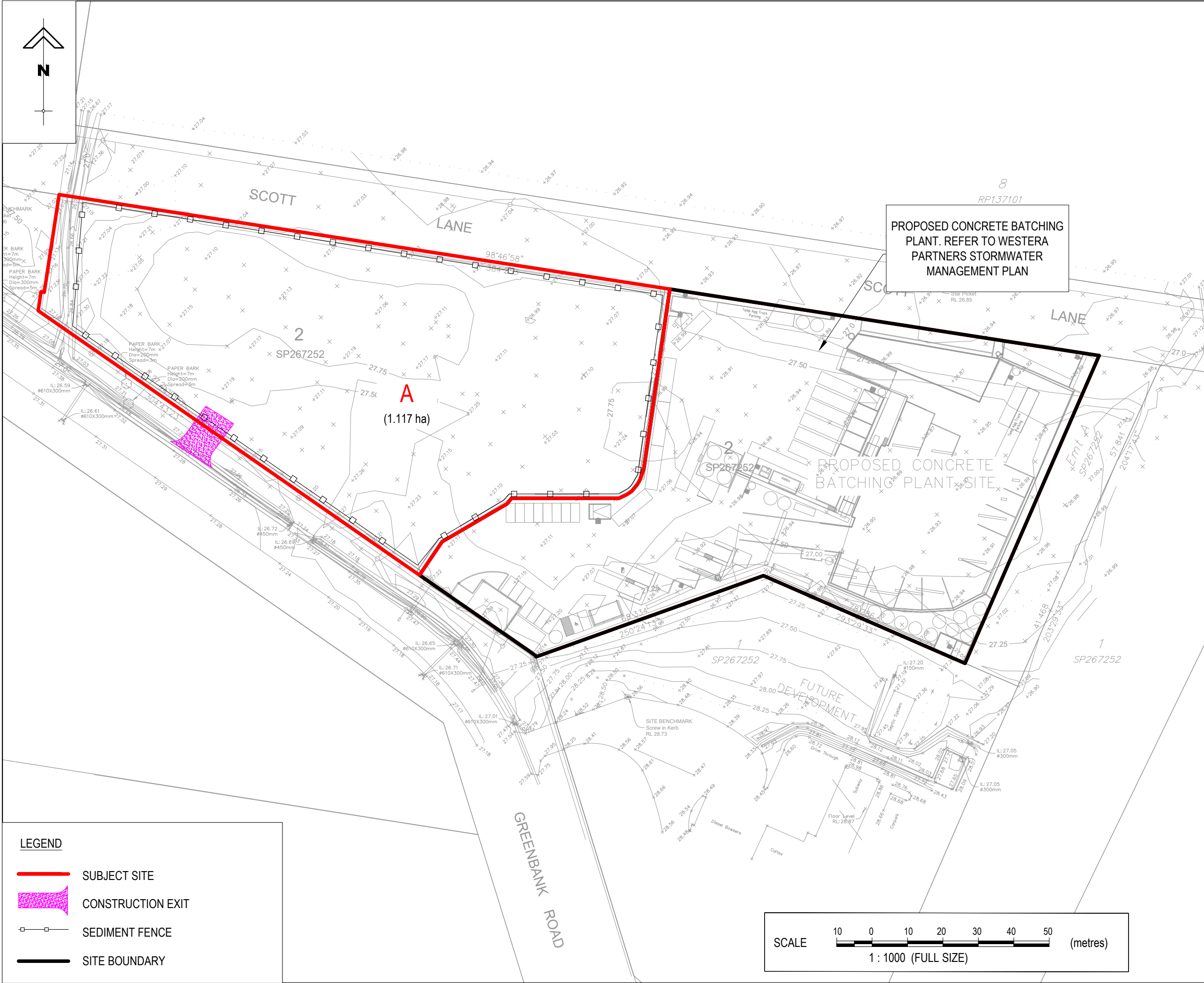
PROPOSED CONCRETE
BATCHING PLANT SITE

FUTURE
DEVELOPMENT

LEGEND

-  MUSIC CATCHMENT
-  SITE BOUNDARY
-  INDUSTRIAL

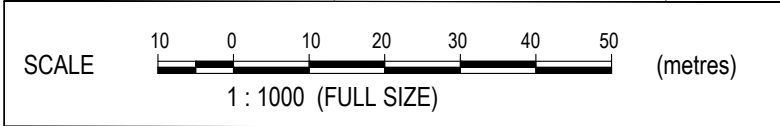
SCALE 10 0 10 20 30 40 50 (metres)
1 : 1000 (FULL SIZE)



LEGEND

- SUBJECT SITE
- CONSTRUCTION EXIT
- SEDIMENT FENCE
- SITE BOUNDARY

PROPOSED CONCRETE BATCHING PLANT. REFER TO WESTERA PARTNERS STORMWATER MANAGEMENT PLAN



LOT 2 ON SP267252,
916-944 GREENBANK
ROAD, NORTH MACLEAN,
LOGAN

FOR

NUCRUSH GROUP
PTY LTD

ORIGINAL SCALE BEFORE REDUCTION
A3

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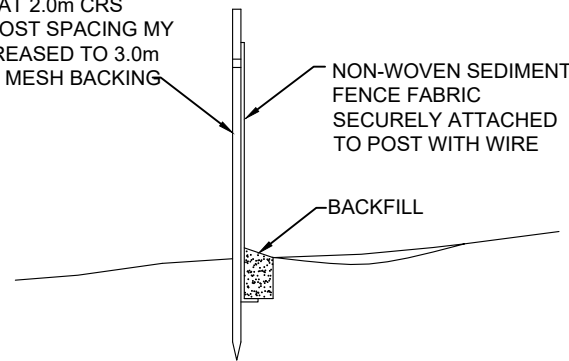
DRAWING TITLE :

EROSION & SEDIMENT
CONTROL PLAN

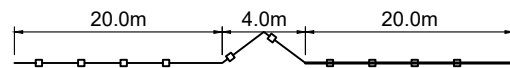
DEVEL. APPLIC. No. :	DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY	
DESIGNER : ELLY RICKETTS	
DRAFTSPERSON : TK	
CHECKED : LUCAS FAULKNER	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS	ABN 76 166 942 365
RPEQ No. :	
SCALE : 1:1000	DATUM : FULL SIZE : A3
PROJECT No. : BE230342	DRAWING No. : N300
	VERSION: A



POSTS AT 2.0m CRS
MAX. (POST SPACING MY
BE INCREASED TO 3.0m
IF WIRE MESH BACKING
USED.)

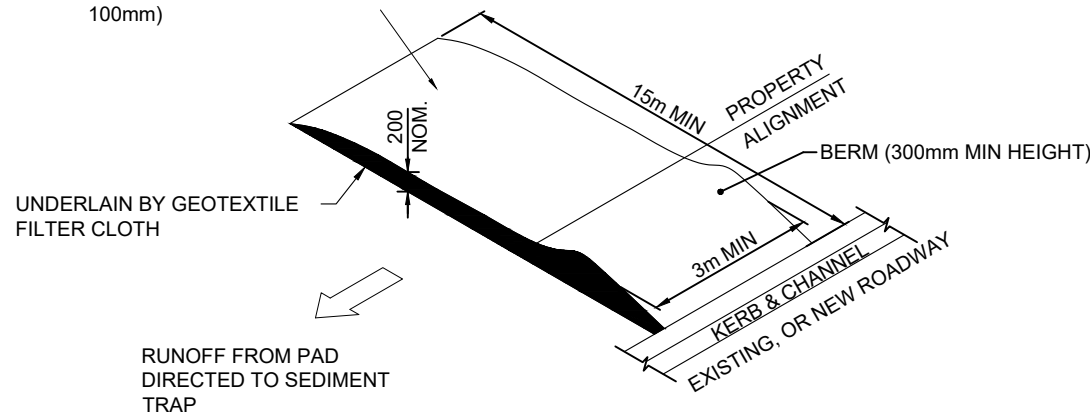


SEDIMENT FENCE DETAIL
N.T.S.



SEDIMENT FENCE SETOUT DETAIL
N.T.S.

UNIFORMLY-SIZED
CRUSHED ROCK (AVOID
ROCK <40mm AND 75 TO
100mm)



STABILISED CONSTRUCTION ACCESS
N.T.S.

GENERAL NOTES:

1. THIS DRAWING HAS BEEN PREPARED AS A GUIDE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MANAGE SITE SEDIMENT AND EROSION CONTROL MEASURES AND DURING THE CONSTRUCTION PERIOD INSTALL ADDITIONAL MEASURES WHERE SCOUR OR SEDIMENT TRANSPORT IS LIKELY TO OCCUR.
2. DELAY CLEARING, GRUBBING AND TOPSOIL STRIPPING UNTIL NECESSARY.
3. COMMENCE WORK ON SITE ONLY AFTER SEDIMENT AND EROSION CONTROL MEASURES ARE IN PLACE.
4. MANAGE SITE ENTRY/EXIT POINTS TO ENSURE SEDIMENT IS NOT TRACKED OFF SITE.
5. SHAKEDOWN AREA: PROVIDES FOR CONSTRUCTION, SERVICE AND STAFF VEHICLES ENTERING PUBLIC ROADS. CONTRACTOR SHALL LOCATE TO SUIT SITE ACTIVITIES. CONSTRUCTED AS 250mm THICK LAYER OF COARSE (150mm -200mm) RIVER GRAVEL OVER A SINGLE LAYER OF HIGH STRENGTH GEOTEXTILE (15m x 5m).
6. THE CONTRACTOR SHALL INSTALL EITHER STORMWATER INLET SEDIMENT TRAPS OR THE EXCAVATED INLET ARRANGEMENT AT ALL STORMWATER STRUCTURES DURING THE CONSTRUCTION.
7. FILTER ROLLS SHALL BE INSTALLED AT GULLY PITS IMMEDIATELY AFTER GULLY PIT CONSTRUCTION AND LEFT IN PLACE DURING THE MAINTENANCE PERIOD. OPERATION OF ROLLS DURING PERIODS OF HEAVY RAIN TO BE MONITORED TO PREVENT FLOODING AND EROSION DAMAGE ELSEWHERE.
8. ARRANGE FOR EROSION CONTROL MEASURES TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE SOURCE OF EROSION.
9. ENSURE STOCKPILED TOPSOIL AND EARTHWORKS ARE NOT ERODED BY WIND AND STORMWATER RUN-OFF AND ARE PROVIDED WITH A SILT FENCE AROUND THE LOW SIDE.
10. ERECT SILT FENCES WHERE SHOWN ON THE DRAWINGS, GENERALLY ALONG THE LOW SIDE OF THE CONSTRUCTION SITE AND ALONG A LINE OF CONSTANT LEVEL. AS AN ALTERNATIVE TO BURYING THE SILT FENCE LOWER EDGE, THE CONTRACTOR MAY ELECT TO PLACE 200mm OF THE FABRIC ON THE GROUND UP-SLOPE OF THE FENCE AND COVER WITH 100mm MIN LAYER OF AGGREGATE.
11. TO PREVENT EROSION, TOPSOIL AND SEED IMMEDIATELY AFTER COMPLETION OF BULK EARTHWORKS TO FINISHED PROFILES.
12. PRIOR TO COMPLETION OF CONSTRUCTION OF PAVEMENT AND SEALING, PLACE SANDBAGS AT 45° TO ARREST SCOUR AGAINST KERB AND CHANNEL AS FOLLOWS:

ROAD GRADE 0.5% - 5% - 25m MAX CRS.
5% - 10% - 10m MAX CRS.
10% - 15% - 15m MAX CRS.
15% - 20% - 5m MAX CRS.
13. SWEEP EXTERNAL ROADS WHERE SEDIMENT HAS BEEN DROPPED FROM CONSTRUCTION VEHICLES. DO NOT WASH SILT INTO THE STORMWATER SYSTEM.
14. ALL SEDIMENT AND EROSION CONTROL STRUCTURES, TRENCHES ETC. SHALL BE REGULARLY MAINTAINED AND INSPECTED FOR EFFECTIVENESS.

LOT 2 ON SP267252,
916-944 GREENBANK
ROAD, NORTH MACLEAN,
LOGAN

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ORIGINAL SCALE BEFORE REDUCTION
A3 0 10 20 30 40mm.

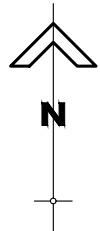
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GOLD COAST | BRISBANE | TOOWOOMBA
IPSWICH | MORETONBAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

DRAWING TITLE :			
EROSION & SEDIMENT CONTROL PLAN TYPICAL CROSS SECTION			
DEVEL. APPLIC. No. :			DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY			
DESIGNER : ELLY RICKETTS			
DRAFTSPERSON : TK			
CHECKED : LUCAS FAULKNER			
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365			
RPEQ No. :			
SCALE : N.T.S		DATUM :	FULL SIZE : A3
PROJECT No. :		DRAWING No. :	VERSION:
BE230342		N301	A



LOT 2 ON SP267252,
916-944 GREENBANK
ROAD, NORTH MACLEAN,
LOGAN

FOR

NUCRUSH GROUP
PTY LTD

ORIGINAL SCALE BEFORE REDUCTION

A3 0 10 20 30 40mm.

VER.	DESCRIPTION	APPR.	DATE
A	ORIGINAL ISSUE		06.12.24

REVISIONS

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GOLD COAST | BRISBANE | TOOWOOMBA
IPSWICH | MORETONBAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

DRAWING TITLE :

OPERATIONAL CONTROL PLAN

DEVEL. APPLIC. No. :	DATE : 06.12.24
PROJECT LEADER : ANDREW GREGORY	
DESIGNER : ELLY RICKETTS	
DRAFTSPERSON : TK	
CHECKED : LUCAS FAULKNER	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS	ABN 76 166 942 365
SCALE : 1:1000	DATUM : FULL SIZE : A3
PROJECT No.: BE230342	DRAWING No. : N400
	VERSION: A

PROPOSED CONCRETE BATCHING
PLANT. REFER TO WESTERA
PARTNERS STORMWATER
MANAGEMENT PLAN

PROPOSED CONCRETE
BATCHING PLANT SITE

INDICATIVE STORMWATER
BASIN FOOTPRINT AND
LOCATION

CATCHMENT A:
BIORETENTION FILTER AREA:
DETENTION VOLUME:
EXTENDED DETENTION VOLUME:
TOTAL VOLUME:

105m²
170m³
32m³
202m³

LEGEND

- POST-DEVELOPMENT CATCHMENT
- FLOW DIRECTION
- ON-SITE DETENTION
- BIORETENTION SYSTEM
- LAWFUL POINT OF DISCHARGE
- SITE BOUNDARY

SCALE 10 0 10 20 30 40 50 (metres)
1 : 1000 (FULL SIZE)

5.3 Appendix C – City of Logan Property Flood Report

PROPERTY FLOOD REPORT



Property Details

Address: 916-944 Greenbank Road NORTH MACLEAN QLD 4280

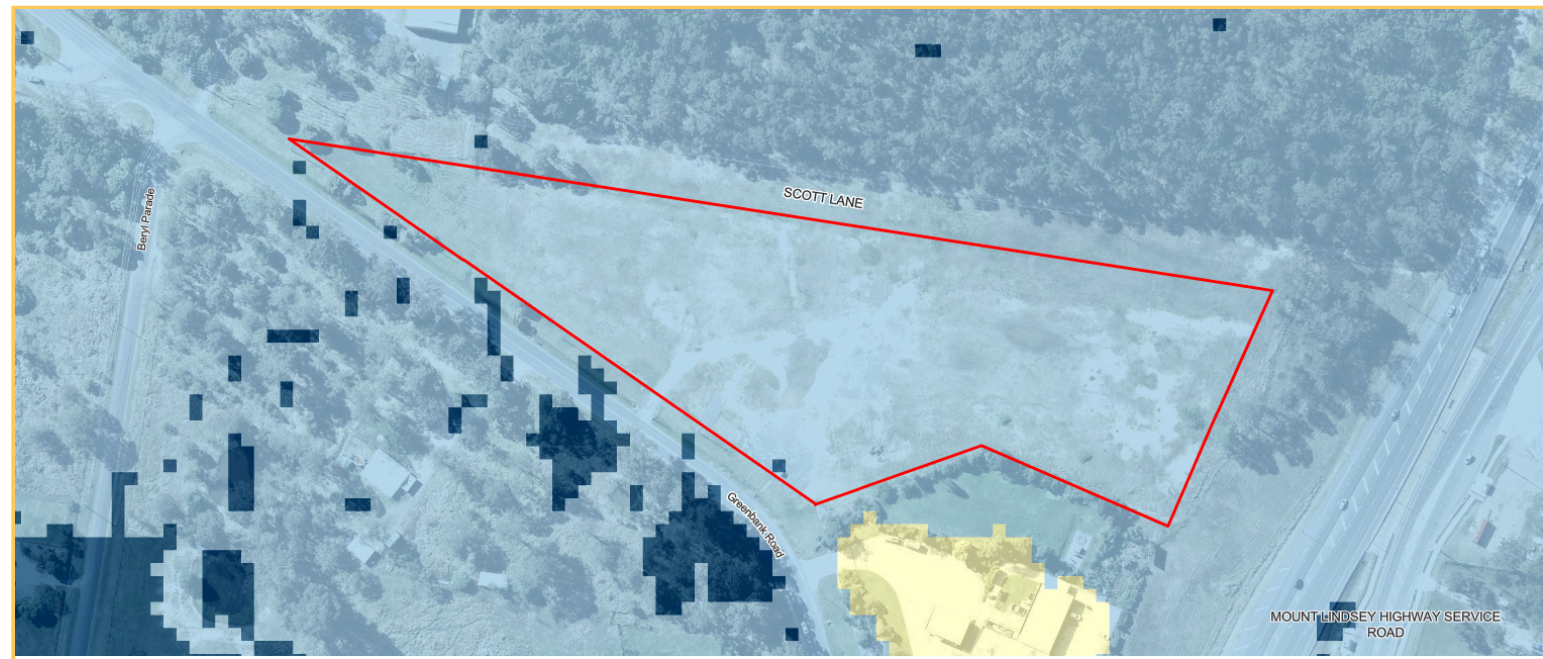
Lot/Plan: Lot 2 SP 267252

Size/Area: 25,277 m²

Property Key: 339905

Latest Flood Risk

The extract below comes from the flood risk map based on the latest (most recent) flood studies accepted by Council applicable for this property.



LEGEND

High

Floodwaters may be deep or fast flowing, or have a relatively high chance of occurrence (e.g. 80% chance in 30 years). Conditions may pose a risk to life and cause damage to buildings, possibly severe. Limited development may be considered if not increasing the flood risk exposure for people or property. These areas are generally better suited to environmental, recreational and some agricultural uses.

Moderate

Less frequently affected by flooding or if more frequent, with shallow or slower moving floodwater. Conditions may pose an unacceptable risk to people or property if not mitigated. Development may be tolerable if measures are taken to address flood impacts, protect people and limit damage.

Low

Extremely unlikely chance of flooding (1% chance or less over a 30 year period) and/or relatively shallow or benign flooding conditions. Development is generally acceptable except for vulnerable uses and essential community infrastructure.

Very Low

Identifies the full floodplain under the largest flood that could conceivably occur. Development is generally acceptable except for essential community infrastructure (e.g. emergency services). Vulnerable uses (e.g. childcare, aged care) may be ok subject to building and site access mitigation measures.

Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Development should avoid these areas until further investigation (updated flood study or localised risk assessment) is completed.



The flood studies this map is based on consider the impacts of climate change, as required by Queensland's planning legislation and policies. The map considers the whole floodplain for Logan and reflects a risk-based approach that takes into account:

- How likely a flood of a given size is in any given year, and
- What the impact or level of danger of that flood is.

Summary Flood Assessment

The table below presents the flood risks applicable to the selected property. There may be multiple studies and flood scenarios affecting the property, particularly for larger sites.

Assessment	Details
Risk area(s)	High, Moderate
Investigation area	Not applicable
Isolation risk	Not applicable
River flooding	1% chance of a flood this size or larger happening in any given year
Creek flooding	Not applicable
Overland flow	Applies. It is possible that flooding from a local waterway which has not yet been studied may also impact the property. Please contact Council for further advice. Overland flow is water (stormwater run-off) that travels over land during heavy rainfall events. It generally occurs quickly and for short durations.

Flood Levels

The table below displays flood levels from the most recently accepted flood studies affecting this property. To view the flood study documents please see the [Flood page](#) on Council's website. The levels are measured in Australian Height Datum (AHD), where sea level is approximately zero (0) metres. The level displayed in the table below is the maximum flood level on the property for that event (likelihood). For some properties, particularly large properties or those on a significant slope, flood levels can vary significantly.

The most likely flood scenarios is shown at the top of the table, with the Probable Maximum Flood (PMF) at the bottom, being the least likely but most serious flood scenario.

Some properties may be impacted by only river flooding or only creek flooding, and some may be impacted by both. There may also be other sources of inundation that may impact the property and affect flood levels, based on overland flow or local creeks where studies have not yet been completed.

Study: Logan and Albert Rivers Flood Study 2023

Likelihood (each year)	River flooding
20% chance	Not applicable
10% chance	Not applicable
5% chance	Not applicable
2% chance	Not applicable
1% chance	27.6 metres AHD
0.5% chance	28.1 metres AHD
0.2% chance	28.7 metres AHD
0.05% chance	29.0 metres AHD
PMF	32.1 metres AHD

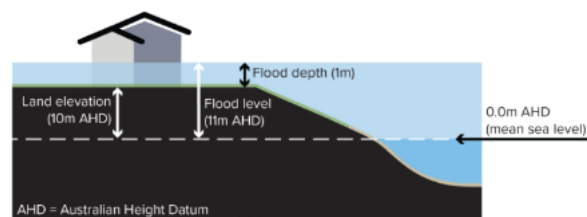
Ground Levels

Ground levels are based on an aerial LiDAR (Light Detection and Ranging) survey, which uses millions of laser point measurements to build a model of the ground surface. The source of the data is displayed in the table below so that you know when the survey was conducted.

Ground level	Details
Minimum ground level	26.8 metres AHD
Maximum ground level	28.7 metres AHD

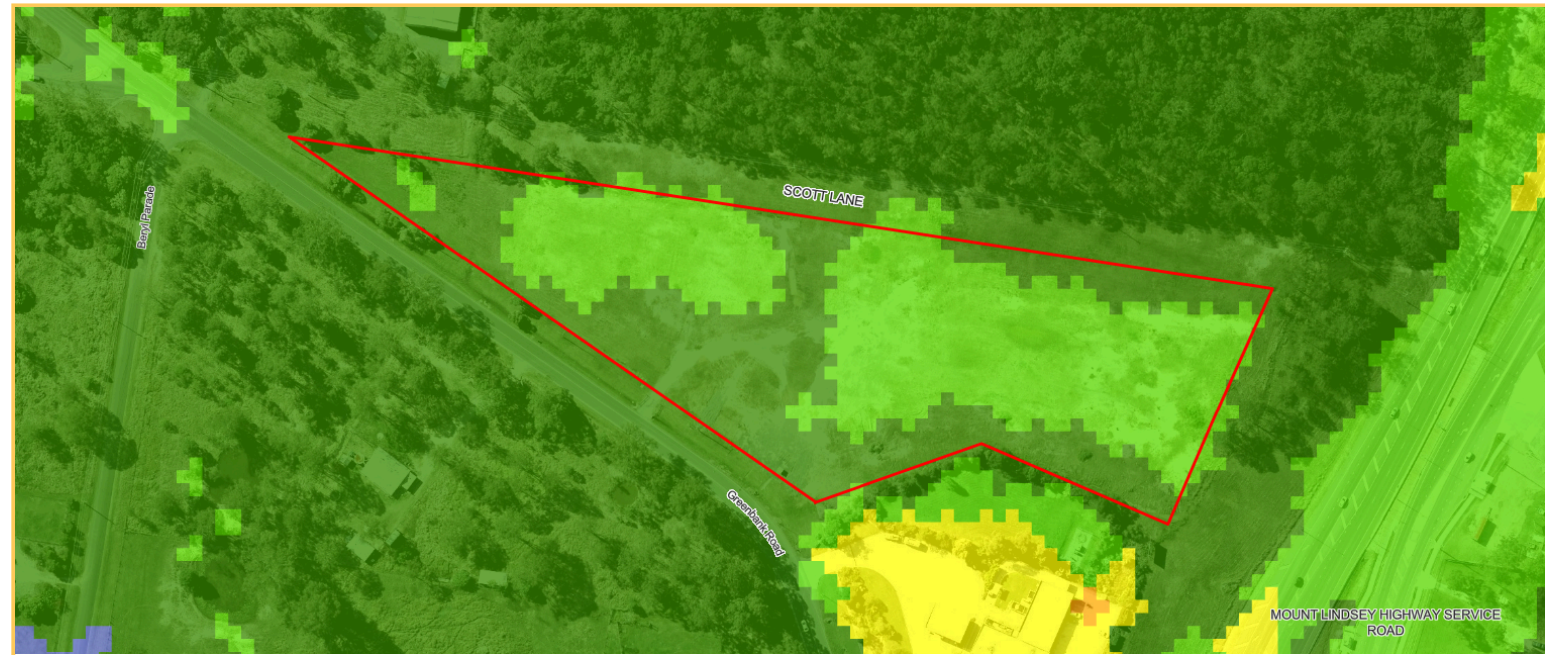
Source: 2021 Digital elevation model (1 metre grid)

The projected flood depth (how deep the water may be above ground, in metres) is the difference between the flood levels in the section above and the ground levels in this table. The diagram below provides an example (land elevation is ground level).



Future Climate Scenarios

This extract comes from the map showing the projected extent of flooding (affected areas) for multiple flood scenarios for all relevant flood studies, **including the projected impacts of climate change**. This map corresponds with the flood levels provided in the table above for the 5%, 2%, 1%, 0.5%, 0.05% and Probable Maximum Flood (PMF) scenarios.



LEGEND



5% chance

The areas modelled to be impacted by a flood that has a 5% (or 1 in 20) chance of happening in any given year, or 80% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.



2% chance

The areas modelled to be impacted by a flood that has a 2% (or 1 in 50) chance of happening in any given year, or 45% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.



1% chance

The areas modelled to be impacted by a flood that has a 1% (or 1 in 100) chance of happening in any given year, or 25% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.



0.5% chance

The areas modelled to be impacted by a flood that has a 0.5% (or 1 in 200) chance of happening in any given year, or 15% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.



0.05% chance

The areas modelled to be impacted by a flood that has a 0.05% (or 1 in 2000) chance of happening in any given year. This is an extremely unlikely flood event with a 1% chance of happening over a 30 year period, not including the impacts of climate change.



PMF

The PMF or probable maximum flood scenario represents the full extent of the floodplain, or the most serious flood that could be expected to occur. This is usually estimated based on the probable maximum rainfall, not including the impacts of climate change.



Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Further investigation is needed.

Current Climate Scenarios

This extract comes from the map showing flood affected areas **without** considering the impacts of climate change. This map represents modelled flooding under current conditions, and can be used for insurance purposes.



LEGEND



5% chance

The areas modelled to be impacted by a flood that has a 5% (or 1 in 20) chance of happening in any given year, or 80% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.



2% chance

The areas modelled to be impacted by a flood that has a 2% (or 1 in 50) chance of happening in any given year, or 45% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.



1% chance

The areas modelled to be impacted by a flood that has a 1% (or 1 in 100) chance of happening in any given year, or 25% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.



0.5% chance

The areas modelled to be impacted by a flood that has a 0.5% (or 1 in 200) chance of happening in any given year, or 15% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.



0.05% chance

The areas modelled to be impacted by a flood that has a 0.05% (or 1 in 2000) chance of happening in any given year. This is an extremely unlikely flood event with a 1% chance of happening over a 30 year period, not including the impacts of climate change.



PMF

The PMF or probable maximum flood scenario represents the full extent of the floodplain, or the most serious flood that could be expected to occur. This is usually estimated based on the probable maximum rainfall, not including the impacts of climate change



Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Further investigation is needed.

Historic Flood Events

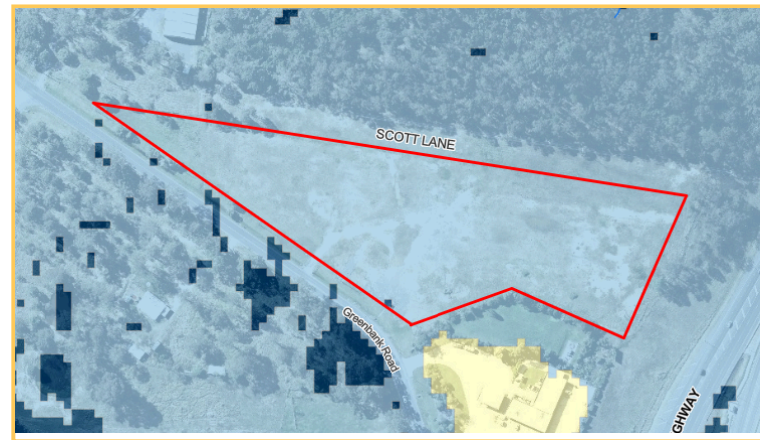
Based on the best information available to Council, the table below indicates whether or not the selected property may have been impacted by significant historic flood events. It is possible that other creek flooding or overland flow, which is not included in Council's mapping of these events, may have impacted the property.

Flood event	Property impacted
1974	No
2017 (after ex Tropical Cyclone Debbie)	No
2022 (late February / early March)	No

Planning Scheme Maps

The selected property is shown below on an extract of the Flood Overlay Maps from the Logan Planning Scheme 2015 V9 with TLPI No. 1/2023. Various provisions of the planning scheme which refer to properties affected by the Flood Overlay Maps will apply to the flood affected areas for the purposes of planning and development. This may include, for example, raised building floor levels and achieving safe vehicle access to the road network.

OM-05.01 Flood risk areas



OM-05.02 High flow area



OM-05.03 Isolated islands



MAP LEGEND

-  **High**
Floodwaters may be deep or fast flowing, or have a relatively high chance of occurrence (e.g. 80% chance in 30 years). Conditions may pose a risk to life and cause damage to buildings, possibly severe. Limited development may be considered if not increasing the flood risk exposure for people or property. These areas are generally better suited to environmental, recreational and some agricultural uses.
-  **Moderate**
Less frequently affected by flooding or if more frequent, with shallow or slower moving floodwater. Conditions may pose an unacceptable risk to people or property if not mitigated. Development may be tolerable if measures are taken to address flood impacts, protect people and limit damage.
-  **Low**
Extremely unlikely chance of flooding (1% chance or less over a 30 year period) and/or relatively shallow or benign flooding conditions. Development is generally acceptable except for vulnerable uses and essential community infrastructure.
-  **Very Low**
Identifies the full floodplain under the largest flood that could conceivably occur. Development is generally acceptable except for essential community infrastructure (e.g. emergency services). Vulnerable uses (e.g. childcare, aged care) may be ok subject to building and site access mitigation measures.
-  **Investigation area**
Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Development should avoid these areas until further investigation (updated flood study or localised risk assessment) is completed.

MAP LEGEND



High flow area

High hazard areas of flooding where significant (deeper, faster) flow of water occurs and in which a building is vulnerable to structural damage or failure from floodwater. Classified as H5 or H6 in the Australian Institute of Disaster Resilience (AIDR) Guideline 7-3 'Flood Hazard'.



High flood island

Areas which are isolated from flood-free land (surrounded by floodwater) but retain a portion of the area as flood free in a probable maximum flood (PMF).



Low flood island

Areas which are surrounded by floodwater and at first isolated from flood-free land, then completely inundated by floodwater (submerged) as the flood continues to rise.



Meadowbrook flood assessment area

Area where the function of important community infrastructure needs to be maintained. Flood mitigation measures and comprehensive emergency management planning is required to adequately manage the risk for flood events.



If more recent flood studies have been completed and accepted by Council, the Latest Flood Risk Map shown at the top of this report may be different from the planning scheme map. The latest flood information should be used to inform development decisions and will be incorporated into the planning scheme in a future amendment.

Further Information

1. Floods are highly unpredictable and variable, and properties may be affected by other sources of potential flooding. Each flood and its impact is different. Areas that were not flooded previously may be affected by future events. Areas that have been previously flooded may be impacted in different ways. This online report cannot take all of this into account.
2. The flood mapping and levels in this report are based on data from flood studies undertaken at a particular time and are subject to change. For example, if the method for calculating flood levels is updated, industry guidelines are updated or more recent information becomes available, this may result in changes to the information in this report. In areas where development is ongoing, the flood mapping and levels may not reflect developed conditions.
3. Flood studies do not create risk. They help us to understand the risk, based on relevant legislation and Queensland Government policies and guidelines. Flood studies also consider a range of other factors such as rainfall and river level information from recent events, climate change and trends, the impacts of development, changes to catchment conditions, new technologies and industry best practice (which help to improve accuracy).
4. Flood studies and models are developed from the best information available at the time. They do not tell you how the flood waters might behave, how quickly they may rise, or how dangerous the flooding will be. The models also cannot represent changes that have occurred since they were developed which may impact flood behaviour, such as earthworks, new developments or road infrastructure.
5. This report is not a substitute for independent professional advice. You should engage the services of a Registered Professional Engineer of Queensland (RPEQ) to get site specific information regarding the flood risk to your property, and how that might affect any proposed building or development work.
6. While Logan City Council takes reasonable care in producing this report, it does not guarantee that the information is accurate, complete or current. Logan City Council does not accept any responsibility for any loss or damage (however it was caused) in connection with the use of or reliance on the information in this report.

Contact Information

Where to go for further information depends on the type of information you need. Please refer to the [Flood Risk Fact Sheet](#) or contact Council using the details below.

Topic	Contact Details
Flood studies and modelling information, and the flood risk on your property	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au . Further information about flooding and flood studies is available on the Flood page on Council's website.
Planning and development enquiries or proposals	Contact Council on 07 3412 3412 or email development@logan.qld.gov.au . Before lodging a development application, pre-lodgement advice is recommended.
Building information	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au . You can also contact a private building certifier .
Properties in Priority Development Areas	Contact Economic Development Queensland . Council is not the planning authority for these properties.
Independent advice about flooding on your property	Contact a registered engineer through the Board of Professional Engineers of Queensland: Phone: 07 3210 3100 Email: admin@bpeg.qld.gov.au Web: Home - Board of Professional Engineers Queensland (bpeg.qld.gov.au)