

10 October 2023  
Ref: 2718\_DA1\_320\_002

Chief Executive Officer  
North Burnett Regional Council  
PO Box 390  
Gayndah QLD 4625

Attention: Rachael Duncan – Acting Planning and Environment Manager  
Via email: [admin@northburnett.qld.gov.au](mailto:admin@northburnett.qld.gov.au)

Dear Rachael,

## RESPONSE TO INFORMATION REQUEST

### DEVELOPMENT APPLICATION FOR A MATERIAL CHANGE OF USE – DEVELOPMENT PERMIT FOR EXTRACTIVE INDUSTRY AND ASSOCIATED ENVIRONMENTALLY RELEVANT ACTIVITIES AT LAND LOCATED ON PARADISE ROAD, CORINGA QLD 4621, PROPERLY DESCRIBED AS LOT 17 CK1566

#### NORTH BURNETT REGIONAL COUNCIL REFERENCE: DA230023

On behalf of Galilee Crushing & Civil Pty Ltd, the applicant for the abovementioned application, Groundwork Plus provides the following response to the Information Request issued by the North Burnett Regional Council ('Council') on 26 May 2023.

In accordance with Section 13.2 of the Development Assessment Rules ('DA Rules') under Section 68(1) of the *Planning Act 2016*, this letter comprises a response to all items requiring additional information as requested by Council. Each item raised in the Information Request letter has been re-stated below with a corresponding response.

*Traffic Impacts—Council seeks further information related to traffic impacts on the road network because of the development. This information is required for Council to understand potential impacts on the road network and to impose reasonable and relevant conditions.*

1. Please provide a Traffic and Road Impact Assessment and related Traffic Management Plan, prepared by a suitably qualified Registered Professional Engineer Queensland (RPEQ) that addresses, but not limited to, the following information:
  - (a) Identification of the access locations to the Extractive Industry and Paradise Dam Improvement Project sites, and the proposed haul route between the properties;
  - (b) Provide an assessment of the road alignment of the haul route including available sight distance(s);
  - (c) Provide a road condition assessment of the haul route including pavement/formation width, pavement condition, and any necessary road and/or pavement upgrades to accommodate the expected vehicle numbers and loadings;

#### QLD/NSW – HEAD OFFICE

6 Mayneview Street, Milton Qld 4064  
PO 1779, Milton BC Qld 4064

**Phone:** +61 7 3871 0411

#### SA/WA/NT

2/3 16 Second St, Nuriootpa SA 5355  
PO Box 854, Nuriootpa SA 5355

**Phone:** +61 8 8562 4158

#### VIC/TAS

WeWork | Groundwork Plus  
Office 21-106  
120 Spencer Street, Melbourne  
Vic 3000

#### GEOTECHNICAL LABORATORY

Unit 78/109 Leitchs Road  
Brendale Qld 4500

**Phone:** 0417 615 217

- (d) Details of the proposed truck management and interaction with background and construction traffic; and
- (e) Identify the haul routes, material quantities, truck types and truck numbers, to be imported from other locations.

**Response:**

A response to Item 1 has been prepared by McMurtrie Consulting Engineers (refer **Attachment 1 – Traffic Assessment**).

*Proposed plans—The proposed plan only identifies the spatial location of the proposed quarry footprint area on the subject land. Council seeks additional site-specific detailed proposal plan(s) which identify the location and scale of necessary and ancillary site operational information.*

2. Please provide additional proposed detail plan(s) which identify the location of necessary and ancillary site information relating to the proposed development's operation, including but not limited to, locations of proposed buildings or structures (eg. offices), on-site services (eg. drainage systems, water and wastewater capture, storage and disposal), site access locations, service roads from extraction areas, stockpiling and processing areas (from activities conducted on-site and imported from off-site), car parking, internal roads/tracks, material conveyor systems, etc.

**Response:**

A Site Layout Plan has been prepared for the proposed quarry operation which indicates the anticipated locations of the site's features (refer **Attachment 2 – Site Layout Plan**). Please note, the locations of the site features are subject to change and vary depending on progression of extraction and access on the site. Mobile plant and equipment will be used for extraction and processing and will move around the site as required to be as close as possible to the working areas. As such, specifying a location within the extraction, processing, stocking and dispatch area for features such as processing equipment, roads, drainage and storage is not possible. These features will be located throughout the extraction, processing, stocking and dispatch area at various stages through the life of the project.

*Sale of extracted material—The application's proposal description states that the development would establish a hard rock quarry to supply quarry material to the nearby Paradise Dam Improvement Project. The proposal description and supporting material continues to state that the principal contractor has indicated some quarry material may be imported to the subject land for processing from external sites. The application material does not provide any discussion about whether any extracted quarry material from the subject land would be used for other purposes or be sold to third parties or other customers.*

3. Please provide Council further discussion that clarifies whether any extracted quarry material from the subject land may be used or sold to parties other than those for the nearby Paradise Dam Improvement Project during the life of the development.

**Response:**

All material produced from the proposed quarry operation will be for the purpose of supplying the Paradise Dam Improvement Project and ancillary works. No material will be sold to any other customers.

4. In the instance extracted quarry material should be used or sold to parties other than those for the nearby Paradise Dam Improvement Project, please provide Council further information about the common haul route to be used as part of the Traffic Impact Assessment requested above.

**Response:**

Not applicable. Refer to response 3 above.

We confirm that pursuant to the DA Rules, this letter and the attachments provided comprise a full response to all of the items raised in the Information Request letter issued by Council. It is therefore requested that Council continue with their assessment of the application.

Yours faithfully

**Groundwork Plus Pty Ltd**



**Sam Lyons**  
**Senior Town Planner**

*Enc/s:*

*Attachment 1 – Traffic Assessment*

*Attachment 2 – Site Layout Plan*

# Attachment 1

---

Traffic Assessment

# Technical Memorandum

## To:

Sam Lyons  
Senior Town Planning Consultant  
Groundwork Plus  
slyons@groundwork.com.au

## From

Chris Hewitt  
Associate Director/Principal Civil Engineer  
McMurtrie Consulting Engineers  
chris@mcmengineers.com

## 1 Introduction

McMurtrie Consulting Engineers (MCE) has been engaged by Galilee Crushing to respond to information requests issued by both North Burnett Regional Council (NBRC) and the State Assessment and Referral Agency (SARA) with regards to a proposed quarry adjacent to Paradise Dam.

The site is located on Paradise Road, Coringa QLD 4621, on land described as Lot 17 on CK1566, which is adjacent to Paradise Dam. The intended use of the site is a quarry with a production of up to 1,000,000 tonnes per annum, which will service the upcoming Paradise Dam reconstruction.

Figure 1 shows the projected production rates for the operation of the quarry, as supplied by the quarry operator. As can be seen, a peak production rate of 80,000 tonnes per month is anticipated.

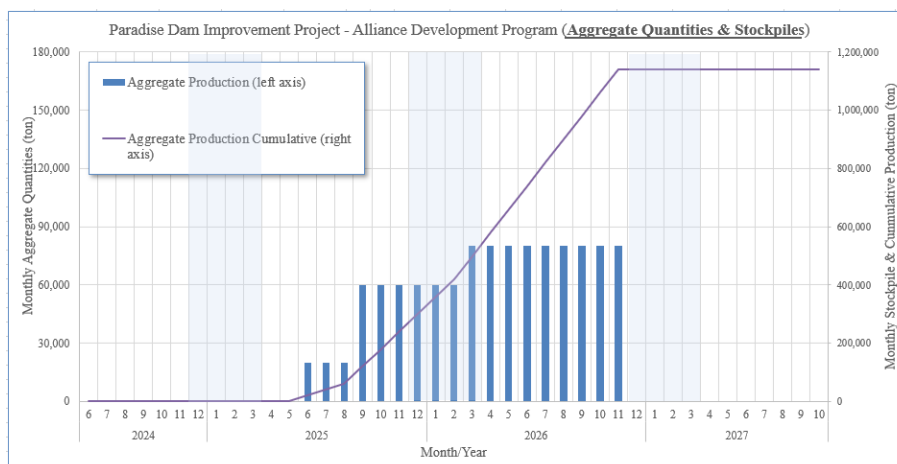


Figure 1 - Production projections

[Source: Blackwater Quarries]

## 2 Development Traffic

### 2.1 Traffic Generation

Based on the proposed 1,000,000 tonne/annum quarry production limit which is a 'worst case scenario' as material could potentially be delivered via conveyor and other means taking trucks off the road.

It is expected that approximately 87 truck movements in/out (assuming a 33 tonne payload via 4 axle truck and dog) per day will be generated. Over a 12 hour day, this equates to **15 heavy vehicle trips** (7 in and 7 out rounded up) generated per hour by the quarry export operations. To service 87 truck movements over a 12 hour working period, an estimated 8 staff are required, with an additional 6 support staff estimated to service the quarry operation. Conservatively assuming 2 employees per vehicle results in an additional **14 peak hour light vehicle trips** (7 in in AM peak and 7 out in PM peak), which are likely to occur in the same hour as the opening and closing hours of the quarry.

### 2.2 Impacts on the Road Network

It is understood that an overarching approval is in place for the reconstruction of Paradise Dam, which has allowed for the import of quarry materials to the site from external sources. With this in mind, it can be reasonably inferred that by sourcing quarry materials closer to the construction site, any impacts on the road (state and local) network originally covered by this overarching approval would be significantly reduced.

In any case work to address the impacts of external construction traffic has already commenced with the first package of works, which will include the upgrade of 10 kilometres of Paradise Dam Road which leads to the dam. Road construction activities will include pavement realignment, bitumen surfacing, widening of vertical crests, drainage enhancements, line marking and signage.

The second road upgrade package will replace a low-level crossing at Degilbo Creek with a higher-level bridge, improving its resilience to flood events, with the third package upgrading including the intersection of the Bruce Highway and Booyal-Dallarnil Road.

As such it can be reasonably concluded that analysis on roads and intersections external to the haul route are not required and assessment should only be limited to the haulage route itself, that is only between the quarry and the dam.

### 2.3 Impacts on the State Controlled Road Network

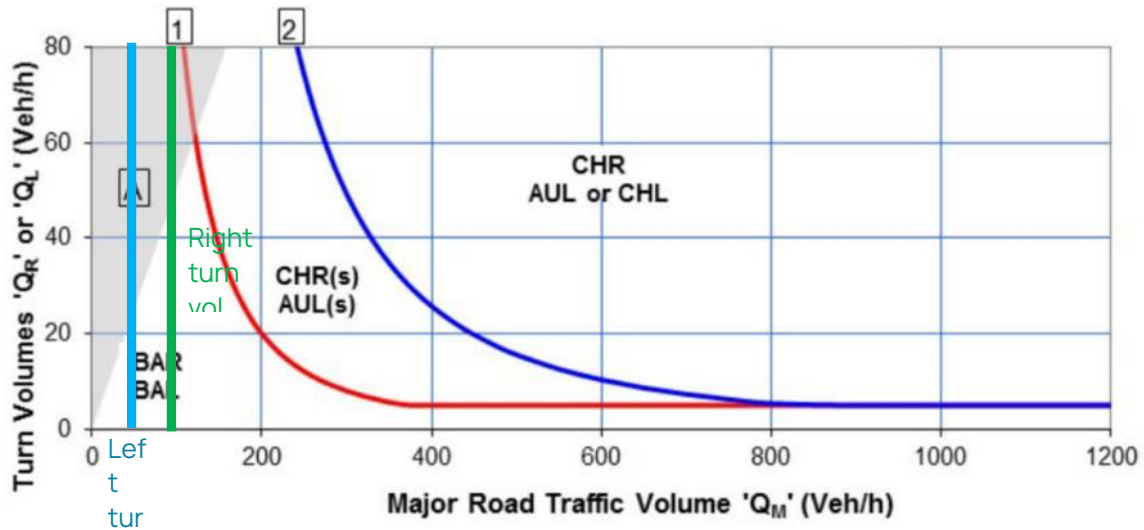
The nearest State Controlled Road that provides access to the site is Booyal – Dallarnil Road, some 16.77km distance from the site as determined by the NVHR Route Planner Tool. The below Table 1 presents the traffic census data for the nearest location to the intersection with Paradise Dam Road.

Table 1 - Future forecast background traffic

Site ID	AADT Segment		Base Data Year	Base Year (2021) AADT				10 Yr. GR %	Background AADT (2023)			
	Start (km)	End (km)		Gaz	% HV	A-Gaz	% HV		Gaz		A-Gaz	
									Total	HV	Total	HV
477 Booyal - Dallarnil Road												
120792	0	18.18	2021	402	28.9%	392	19.8%	4.5%	439	127	428	85

Given only the staff movements (7 in in AM and 7 out in PM peak hourly movements) will utilise the State Controlled Road network (arguably less with car-pooling), and conservatively assuming all in

movements are from the south (Biggenden or Childers via Isis Highway and Booyal-Dallarnil Road), turn warrant comparison has been completed – refer to Figure 2. The additional development volume on the State Controlled network accounts for less than 2% of the projected 2023 AADT. It is expected that this will be negligible in nature due to the relatively short duration of the project with the intersection capable of catering for turning traffic in excess of 80 vph as a BAR/BAL alone.



(a) Design Speed  $\geq 100$  km/h

Figure 2 - AM Turn Warrant Assessment – Paradise Dam Rd / Booyal – Dallarnil Rd Intersection

As shown in Figure 3, a BAR/AUL(s) is already available at the intersection and therefore no further turn treatments are required.





Figure 3 - Site layout plan & haul route

## 2.4 Traffic Distribution

All trips generated by the operation of the quarry will be new heavy vehicle trips to and from the reconstruction site traversing the haul route only.

It is expected that the only trips external to the reconstruction site will be that of the quarry operation staff and truck drivers, which are conservatively assumed to be 7 trips per peak period.

As discussed in Section 2.2, it is expected that the impacts of staff movements would be significantly reduced as compared to a case that assumes importing of quarry materials from an external source, as would be expected by the overarching approval and an additional 7 light vehicle movements in each peak is considered insignificant when compared with other construction traffic.



## 3 Haul Route

The proposed haul route between the quarry site access and the reconstruction site is shown below in Figure 4, consisting of 675m of rural unsealed two way single lane road and 658m of rural sealed two way two lane road. Both roads are local government owned.

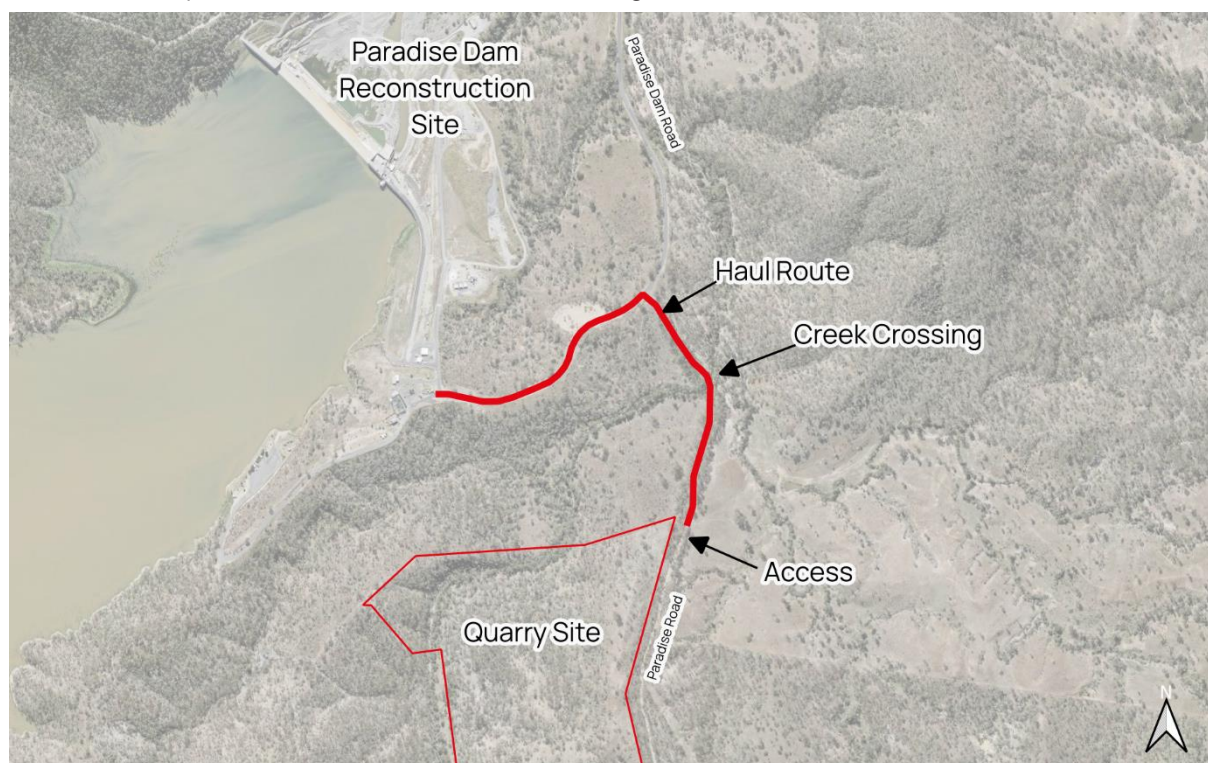


Figure 4 - Site layout plan & haul route

The section of Paradise Road north of the creek crossing has an unsealed travel lane (two way one lane) of 4m width on a 6m formation (i.e. 1m shoulder width). The section of Paradise Road south of the creek crossing has an unsealed travel lane (two way one lane) of 3.5m width on a 5m wide formation (i.e. 0.75m shoulders). The section of Paradise Road through the crossing has an unsealed (on rock) travel lane (two way one lane) of 3.5m width without shoulders.

The section of Paradise Dam Road utilised as part of the Haul Route has a sealed width of 7m width (two way two lane). It is expected that this section would fall under the purview of the overarching approval.

### 3.1 Intersection

The intersection of Paradise Dam Road and Paradise Road is a three-way priority (give way) controlled intersection, with priority given to the Paradise Dam Road approaches. One lane in each direction of travel is provided on each approach to the intersection, with no turn treatments provided on any leg of the intersection.

A Turn Warrant Assessment has been carried out and it is recommended that a Basic Right-Turn Treatment (BAR) and Rural Basic Left-Turn Treatment (BAL) be provided at the intersection in accordance with Austroads Guide to Road Design Part 4A Section 7.5.1 and Section 8.2.1 respectively (Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, 2021). Further information can be provided as part of an Operational Works Application (Roadworks). Refer to Figure .





### 3.2 Creek Crossing

Vegetation clearing through the creek crossing is proposed to increase sight distances as shown in Figure , as well as installation of controls (give-way and storage bay holding northbound traffic) to manage vehicle movements through the crossing during construction. The amount of vegetation clearing is quantified in Figure 7 to provided Stopping Sight Distance (SSD). It is further noted that given the majority of traffic using this section will be trucks hauling between the reconstruction site and the quarry, significant mitigation of vehicle interaction hazards can be achieved through positive communications between vehicles.

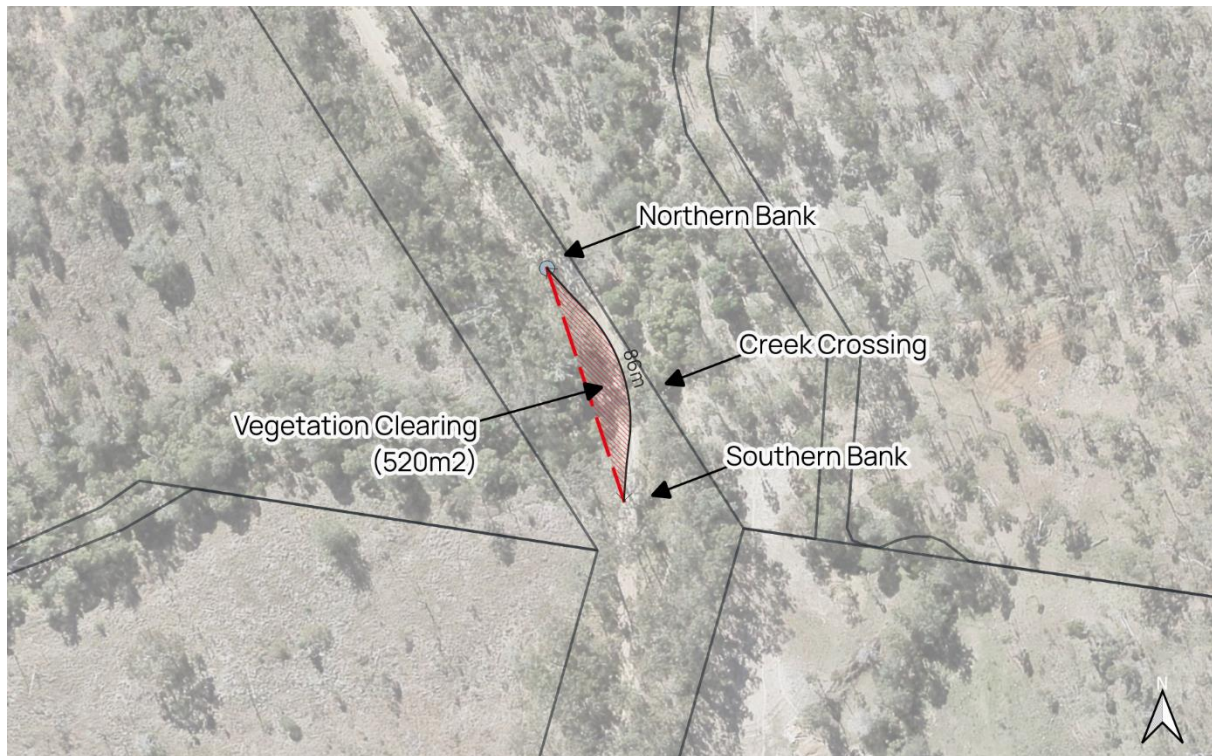


Figure 7 – Vegetation clearing through creek crossing

### 3.3 Paradise Road

Due to the limited width along the Paradise Road alignment, widening to an Unsealed Minor Rural Road standard as per NBRC R3004 Rev A is proposed to facilitate two-way traffic along all sections of the road (excluding the creek crossing). Improvement of the pavement will be required to facilitate the increased HV traffic throughout the construction period.

In lieu of a pavement impact assessment, it is recommended that the applicant enters into an infrastructure agreement with North Burnett Regional Council to complete upgrade/widening works as recommended by this report prior to commencement, with a pre-project dilapidation inspection (based on the newly upgraded works) and a post-project inspection to identify further works required to remediate the link to the pre-project standard.

Further information can be provided as part of an Operational Works Application (Roadworks), which will require pavement widening and strengthening by overlay to cater for the additional heavy vehicle volumes associated with the haulage task.

## 4 Summary

### 4.1 Conclusion

Based on the short duration and limited scope of the proposed development, it is expected that there will be minimal ongoing impact on the traffic operation of the surrounding road network. As discussed, the overarching assessment covering the reconstruction works has considered the impacts on the state road network due to the import of quarry materials, and therefore Sub-Items 2, 3, 4, 5 and 6 of Item 1 of the SARA Information Request are considered to be addressed by proxy.

The impacts of the proposed development on the haul route, which only includes local government roads, are seen to be managed by an implementation of controls (signage, vegetation clearing, speed reductions etc) as well as auxiliary roadworks (intersection turn-treatments, unsealed road widening and overlay).

### 4.2 Qualifications

This traffic memorandum has been prepared by MCE to support a Development Application for a extractive industry use. The site is located on Paradise Road, Coringa QLD 4621, on land described as Lot 17 on CK1566.

The analysis and overall approach were specifically catered to the requirement of this project and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from MCE.

Chris Hewitt  
Principal Civil Engineer

## Appendix A: SISD Calculations

Table 2 - SISD - southern approach

Safe Intersection Sight Distance			
<b>Southern Approach</b>			
	3 sec	Observation time	$SISD = \left( \frac{D_T V}{3.6} \right) + \left( \frac{V^2}{254(d+0.01a)} \right)$
	2 sec	Reaction time	
<b>D<sub>T</sub></b>	5 sec	Decision time	
<b>V</b>	60 km/hr	Operating (85 <sup>th</sup> percentile) speed	
<b>d</b>	0.29 unitless	Coefficient of deceleration	
<b>a</b>	4 %	Longitudinal grade in direction of travel (+ve uphill, -ve downhill)	
<b>SISD</b>	126 m	Safe Intersection Sight Distance	

Table 3 - SISD northern approach

Safe Intersection Sight Distance			
<b>Northern Approach</b>			
	3 sec	Observation time	$SISD = \left( \frac{D_T V}{3.6} \right) + \left( \frac{V^2}{254(d+0.01a)} \right)$
	2 sec	Reaction time	
<b>D<sub>T</sub></b>	5 sec	Decision time	
<b>V</b>	60 km/hr	Operating (85 <sup>th</sup> percentile) speed	
<b>d</b>	0.29 unitless	Coefficient of deceleration	
<b>a</b>	-4 %	Longitudinal grade in direction of travel (+ve uphill, -ve downhill)	
<b>SISD</b>	140 m	Safe Intersection Sight Distance	



## Appendix B: Site Photographs



Figure 3 - Photograph looking west on Paradise Dam Rd from Paradise Rd



Figure 4 - Photograph looking south on Paradise Rd from Paradise Dam Rd





Figure 5 - Photograph looking south on Paradise Rd from Quarry Site Access



Figure 6 - Photograph looking north on Paradise Rd from Quarry Site Access





Figure 7 - Photograph looking south on Paradise Rd through Creek Crossing from north of Creek Crossing

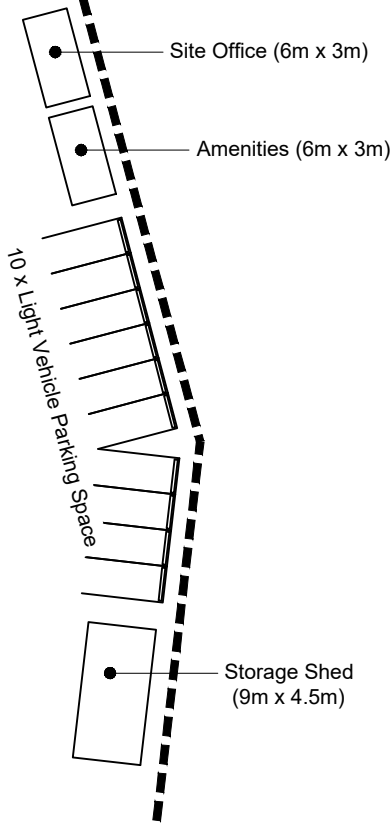
# Attachment 2

---

Site Layout Plan



INSET  
(Scale 1:500)



- Notes:
1. A sump will be established within quarry pit floor areas. Sump to be designed to contain a 1 in 5 year rain event. Sump location subject to change as quarry pit develops.
  2. Processing plant to be mobile equipment. Mobile plant location subject to change based on operational requirements.
  3. Stockpile locations within the stockpile area and quarry floor subject to change based on operational requirements.
  4. Within the extraction, processing, stockpiling and dispatch area additional haul roads may be utilized based on operational requirements.

Legend:

- Site Boundary (151.05 Ha)
- Cadastral Boundary
- Cadastral Boundary - Watercourse
- Extraction, Processing, Stockpiling, Dispatch Area
- Access Road



REV	DESCRIPTION	DATE	BY

Data Sources:

Photography: Digital Globe  
Topography: © The State of Queensland (Department of Resources), 2022  
Cadastral: © The State of Queensland (Department of Resources), 2022  
Ecosystem: Other:

THESE DESIGNS AND PLANS ARE COPYRIGHT AND ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART OR TO BE USED ON ANY PROJECT WITHOUT THE WRITTEN PERMISSION OF GROUNDWORK PLUS PTY LTD. ABN: 13 609 422 791



PROJECT: Paradise Dam Quarry

CLIENT: Galilee Crushing & Civil Pty Ltd

TITLE: Site Operations Layout

GROUNDWORK plus

PH: +61 7 3871 0411  
WWW.GROUNDWORK.COM.AU

SCALE: 1:2000  
When Printed On A3

DATE: 18 September 2023  
PRINTED: 18 September 2023

DRAWN: MR  
CHECKED: JL

DATUM: HORIZONTAL / VERTICAL / ZONE  
GDA2020 / MGA / AHD / 56

DRAWING NUMBER: 2718.DRG.004

REVISION: