

SQM
JOIN
3105
5553
1130
1013
651
183
46
11681
11450

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/19-2022

Dated: 20 December 2022



PROPOSED CARAVAN SALES **AND REPAIR CENTRE**

client:

CAPRICORN CARAVAN CENTRE



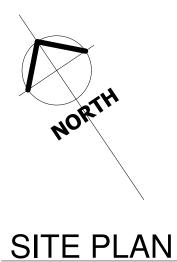
QBCC MEM. NO # 1123040 QCC BDAQ MEM. NO # 0000761

Shop 5/10 Denham St Rockhampton

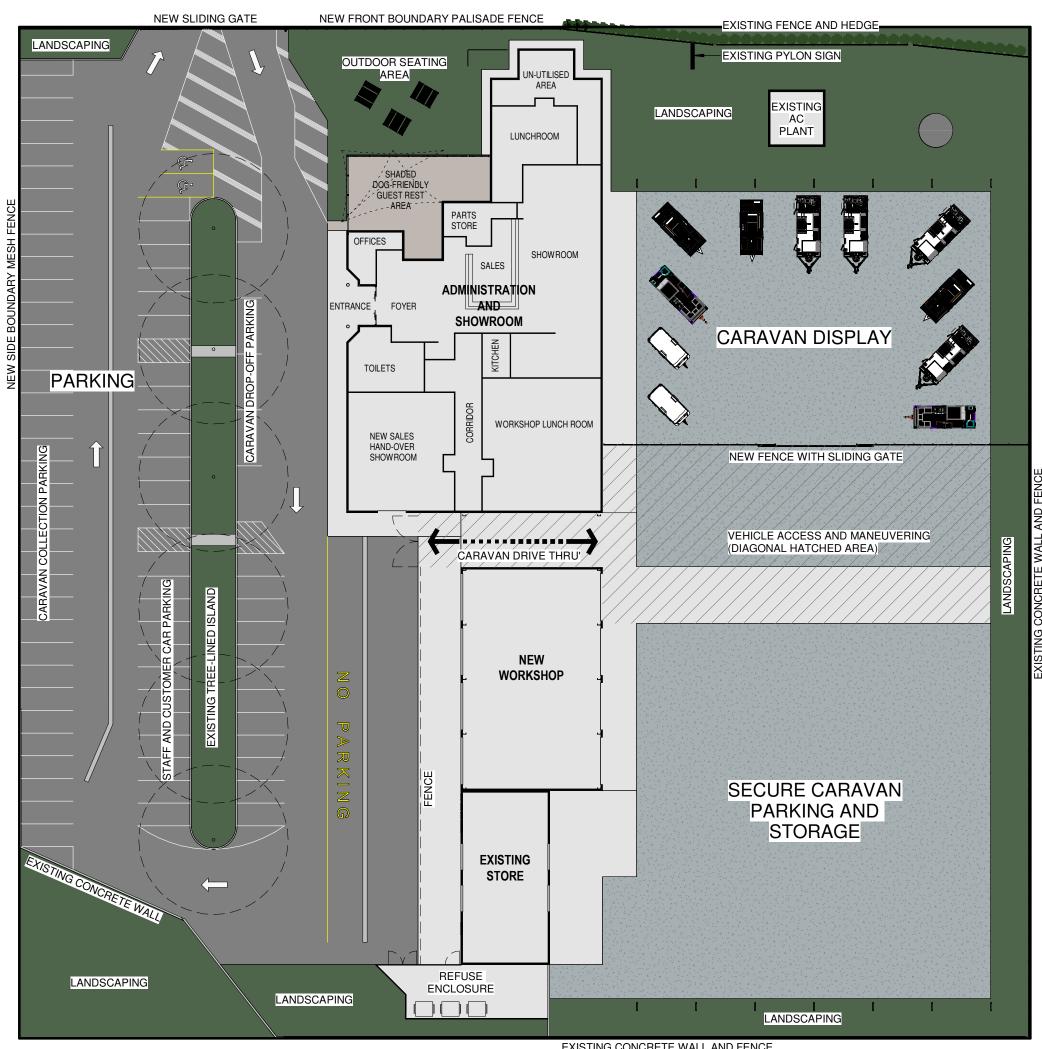
QLD, 4700

title: SITE PLAN

scale: project no: As indicated 2012-04 drawn: drawing no rev:🗟 A01 ΕM



1:600



SCHEDULE OF AREAS				
<u>PROPO</u>	SQM			
•	DRIVEWAY AND CARPARK	3105		
•	LANDSCAPING	2417		
•	EXTERNAL PATHWAYS	676		
•	CARAVAN DISPLAY	1000		
•	SECURE CARAVAN PARKING AND STORAGE	1554		
•	VEHICLE ACCESS AND MANEUVERING	891		
•	OUTDOOR GUEST REST AREA	120		
•	MAIN BUILDING	1013		
	• OFFICES 22			
	 SHOWROOM AND SALES 517 			
	• AMENITIES 54			
	• STORES 78			
	• CORRIDOR 73			
	• LUNCH ROOMS 199			
	• UN-UTILISED 70			
•	WORKSHOP	354		
•	EXISTING STORE	183		
•	WATER TANK AND AC PLANT	46		
•	REFUSE ENCLOSURE	91		
•	TOTAL	11450		

PARKING	
PROVIDED (EXISTING)	77

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client:

project:

CAPRICORN CARAVAN CENTRE



Shop 5/10 Denham St Rockhampton QLD, 4700

building design - documentation

QBCC MEM. NO # 1123040 DCC BDAQ MEM. NO # 0000761

PROPOSED FLOOR PLAN

scale: project no: As indicated 2012-04 drawn: drawing no rev: A02 Α ΕM

1:400

FLOOR PLAN

EXISTING CONCRETE WALL AND FENCE



PERSPECTIVE VIEW FROM PARKING AREA

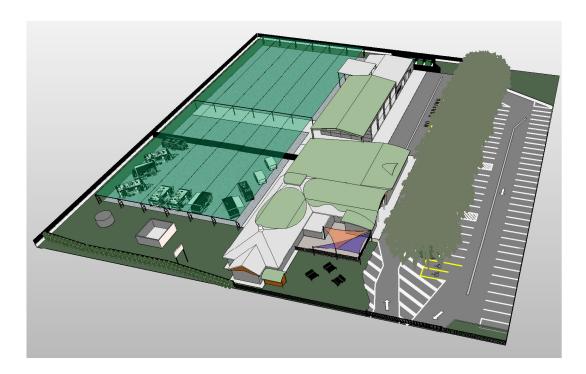


PERSPECTIVE VIEW FROM FITZROY RIVER

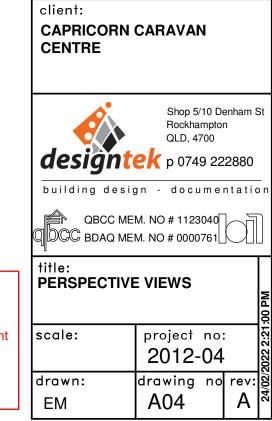




PERSPECTIVE VIEW FROM GLENMORE ROAD



PERSPECTIVE AERIAL VIEW



PROPOSED CARAVAN SALES

AND REPAIR CENTRE

project:

ROCKHAMPTON REGIONAL COUNCIL APPROVED PLANS

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TriCAD Design

Civil Engineering Design & Project Management

~ Design by Example ~

TriCAD Design

ABN 99 753 214 183



FLOOD IMPACT INVESTIGATION

3 Glenmore Road, Park Avenue. QLD. 4701 MCU Application for Proposed Caravan Sales & Repairs Centre

CAPRICORN CARAVAN CENTRE

Lot 1 CP 848924 and Lot 43 LN 1499

Project: MCU Application – Proposed Caravan Sales & Repair Centre

3 Glenmore Road, Park Avenue. Qld 4701.

Client: Capricorn Caravan Centre (ABN 70 697 006 204).

Client Address: 3 Glenmore Road, PARK AVENUE. QLD. 4701.

Owners: Shane and Natasha Titmarsh

Telephone: (07) 4927 4826

Client Email: <u>sales@capricorncaravancentre.com.au</u>

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/19-2022

Dated: 20 December 2022

February 04, 2022

Revision 1

TriCAD Design

7 McGill Court, ABN 99 753 214 183 NORMAN GARDENS. QLD 4701.

Phone: (0410) 665 259 Email: tricadesign@iinet.net.au

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Introduction

TriCAD Design (TcD) has been commissioned by Capricorn Caravan Centre (CCC) to undertake a Flood Impact Investigation on Lot 1 CP848924 and Lot43 LN 1499 - otherwise known as 3 Glenmore Road, Park Avenue, in association with a Material Change of Use (MCU) Application to Rockhampton Regional Council.

It is proposed to establish a Caravan Sales and Repair Centre on the site.

This report has been prepared in association with the Flood Impact Investigation drawings (6 Sheets) prepared by TriCAD Design in support of a proposed application. The location of the proposed development site has been shown in **FIGURE 1** below.

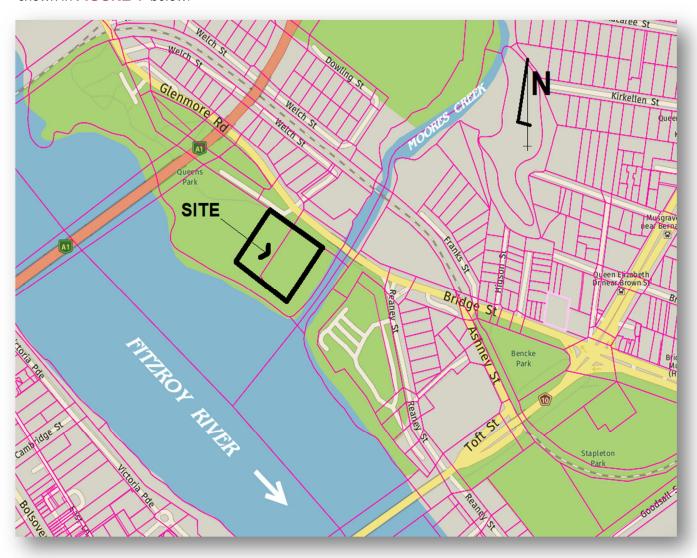


FIGURE 1 – Locality Plan

The existing site was previously operating as the North Rockhampton Bowling Club which closed in September 2018. The current owners purchased the property in March 2021 after being vacant for more than 2½ years.

The purpose of this report is to advise all Stakeholders of the potential flood impacts that may be related to the project site as a consequence of its proximity to the adjoining Fitzroy River and Moores Creek waterways. The report does not comment on the efficacy or functionality of the existing underground stormwater system within the project site.

Available Data

The following data & reports have been used in this report:

- ✓ Flood Report from Rockhampton Regional Council dated 05 January 2022 of Lot 1 CP 848924.
- ✓ Flood Report from Rockhampton Regional Council dated 05 January 2022 of Lot 43 LN 1499.
- ✓ LiDar data (1m grid) of the study area and adjoining waterway floodplain.
- ✓ Aerial imagery of the site provided by NearMap dated 31 January 2022.
- ✓ Existing cadastral data of the subject allotments as provided by Vision Surveys dated 17 January 2022.
- ✓ Minutes of a pre-DA meeting with Council Officers held on the 2 December 2021.
- ✓ Ground survey data undertaken by Vision Surveys of the existing concrete flood wall around the site perimeter dated 19 January 2022.
- ✓ Concept architectural plans prepared by Designtek dated 25 March 2021.

NOTE:

No flood modelling or catchment analysis has been undertaken in the preparation of this report. It is based on historical data freely available online.

Existing Site

The project site is 1.145 Ha in area and is located on the north-west embankment of the confluence between the Fitzroy River and Moores Creek. The site has a frontage onto the southern side of Glenmore Road between Reaney and Welch Streets. The existing concrete flood wall was initially constructed following the devastating 1991 flood but since then has been increased in height and extended at various locations around the site.



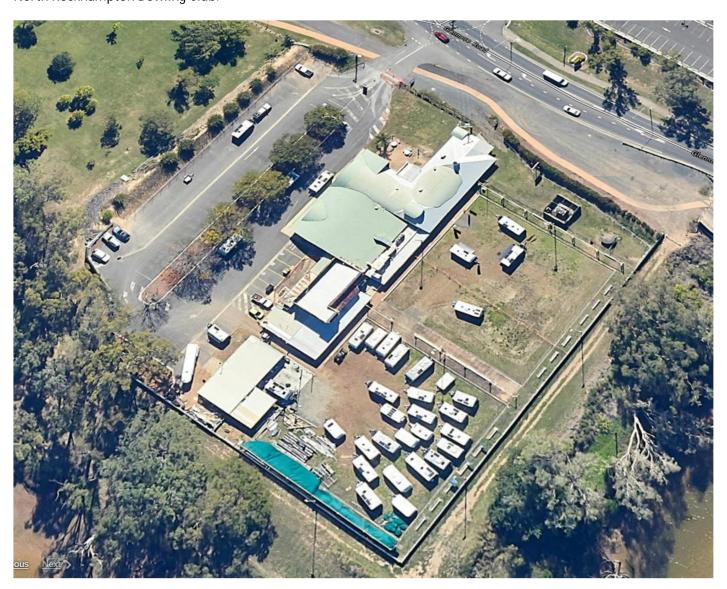






The western lot (Lot 1 CP 848924) principally contains the existing sealed car park and vehicular access onto the site from Glenmore Road.

The eastern lot (Lot 43 LN1499) contains the existing Club house buildings and bowling greens from the former North Rockhampton Bowling Club.



The internal site ground levels within the development site range from approximately RL 8.6 to RL 7.1

Internal stormwater drainage pits and pipelines currently exist within the development site and probably discharge towards the Fitzroy River and Moores Creek. The functionality and efficacy of the existing underground drainage structures is outside the scope of this investigation and have not been assessed.

The impervious area of the pre-developed site is estimated to be approximately 55% of the total site area.

Council's modelling has addressed flood impacts from riverine impacts as well as flood behaviour within adjoining creeks and waterways. This is particularly relevant to this particular site.

Council's advice indicates that there are two sources of flood risk to this development, being from:

- (a) The Fitzroy River catchment (Riverine Impacts) . . . and
- (b) The Moores Creek catchment (Creek Impacts)

The flood risks imposed on the development site from these 2 different sources can be substantially diverse with contrasting consequences. The critical storm duration and the geographical extents of the peak rainfall event all contribute to the degree that any flooding will influence the subject site.

Accordingly, this report has assessed the impacts on the site from both Riverine and Creek flood events.

Council has adopted the 1% AEP storm event as the planning standard for the management of development within the Rockhampton Region. As such, the impacts of the 1% AEP flood event from all sources of flooding, has been adopted as the basis for this report and any potential implications on the proposed development site.

Existing Flood Advice & Historical Data

A Flood Search Property Report dated 6 January 2022 has been sourced from Council regarding the subject allotments. The following table summaries the critical details of that report for the 1% AEP storm event.

Location	Land Parcel	Detail	RL (AHD)
Riverine (Fitzroy River)	Western (CP 848924)	1% AEP (WSL Max)	8.69
Riverine (Fitzroy River)	Eastern (LN 1499)	1% AEP (WSL Max)	8.68
Creek (Moores Creek)	Western (CP 848924)	1% AEP (WSL Max)	7.75
Creek (Moores Creek)	Eastern (LN 1499)	1% AEP (WSL Max)	8.01

TABLE 1 – Summarised Flood Property Report from Council

NOTE:

Council have advised that these details and associated impacts may change as further flood risk analysis and profiling is undertaken, as part of its long-term floodplain management planning for the Fitzroy catchment.

Rockhampton has a long history of flooding with records dating back to 1859. Historical flood events in Rockhampton have been measured, modelled and documented for decades.

The details outlined in **TABLE 2** below outline the findings of numerous flood studies undertaken over the years.

Year	RL ¹ (Gauge Datum)	RL (AHD)	ARI ² (Years)	AEP (%)
January 1918	10.11	8.66	222	0.45%
April 1928	8.75	7.30	50	2.02%
March 1940	8.02	6.57	47	2.12%
January 1951	8.30	6.85	48	2.09%
February 1954	9.40	7.95	71	1.41%
March 1955	8.23	6.78	48	2.10%
February 1956	8.08	6.63	47	2.11%
April 1958	8.15	6.70	48	2.10%
February 1978	8.15	6.70	48	2.10%
May 1983	8.25	6.80	48	2.09%
March 1988	8.40	6.95	48	2.07%
January 1991	9.30	7.85	64	1.56%
January 2008	7.55	6.10	47	2.14%
February 2008	7.75	6.30	47	2.13%
January 2011	9.20	7.75	58	1.73%
April 2017	8.75	7.30	50	2.02%

¹ – Flood Study Report – Fitzroy River Flood Study RRC Revision 3 (18 July 2011) Table 4 - Aurecon Australia.

TABLE 2 – Historical flood data Fitzroy River

² – Rockhampton Flood Management Study – Phase 1 Report Vol 2 (April 1992) Table 4-7 – Camp Scott Furphy Pty Ltd NOTE: Gauge Datum = AHD + 1.448 metres

Plotting the data detailed in **TABLE 2** will show that the 1% AEP (Riverine) flood level in Rockhampton is at RL 8.25 (AHD) – see **FIGURE 2** below.



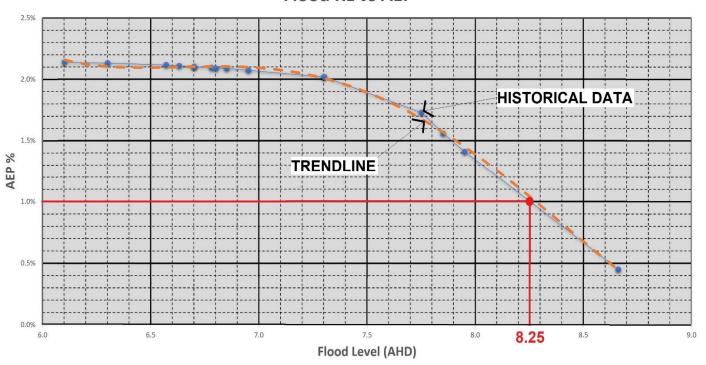


FIGURE 2 - Historical Flood Data



The above aerial image was taken on the 4 April 2017 – with a flood level of RL 7.30 (approx.)



The above aerial image was taken in January 2011 – showing a flood level of approx. RL 7.75 (AHD)



The property flood advice, as received from Council on 5 January 2022, suggesting that the 1% AEP (Riverine) flood level is at RL 8.69 seems to contradict the historical evidence detailed in earlier Flood Reports commissioned by Council - see **TABLE 3** below. Given Council's Flood Property Report depicts that their flood inundation extents and levels are based on existing climate and catchment conditions – it is assumed that no Climate Change impacts are factored into this advice. Accordingly, further discussions with Council will need to be undertaken to clarify the basis for Council's DFE (1% AEP) level for this site.

Report	Report Date	Reference	Flood RL (Gauge Datum)	Flood RL (AHD Datum)
Camp Scott Furphy Pty Ltd	1992	Table A	9.70	8.25
Aurecon Australia	July 2011	Figure 40	9.65	8.20
AECOM Australia Pty Ltd (Modelled)	2019	Figure 29	9.65	8.20
AECOM Australia Pty Ltd (Modelled)	2014	Figure 49	9.60	8.15
AECOM Australia Pty Ltd (Modelled)	2018	Figure 49	9.86	8.41

TABLE 3 – 1% AEP Flood Details Previous Flood Studies

As evident from **TABLE 2** above – a flood level of RL 8.25 (AHD) has only been exceeded once in the past 104 years.

Glenmore Road & Surrounds

Review of existing natural surface levels as shown in **FIGURE 3** below shows that the site is protected to the north and west from the 1% AEP flood inundation by higher ground and the existing levee banks. The site is also protected to the south and east by the existing concrete flood wall. The diagram also indicates that during the 1% AEP storm event, that sections of Glenmore Road is also flooded with flows of up 400mm deep across the crown of the road.



Assumes the 1% AEP flood level (Riverine) of RL8.25 (AHD)

COLOUR	MIN. RL (AHD)	MAX. RL (AHD)
Red	0.00	2.00
Orange	2.00	4.00
Yellow	4.00	6.00
Green	6.00	8.00
Blue	8.00	10.00

FIGURE 3 - Height Isopleths

Queens Park, the foreshores of Moores Creek and the Fitzroy River are discernibly inundated during the 1% AEP flood event. However, any 1% AEP flood impacts from the Moores Creek <u>localised</u> catchment will be negated by the presence of the existing concrete flood wall along the southern and eastern frontages of the site.

Development Flows

It is estimated that the existing site is about 55% imperious. The proposed replacement to the existing workshop area will not increase the impervious footprint of the building area. Accordingly, it is expected that there will be no increased runoff from the site as a consequence of the proposed development. It is further proposed to retain the old bowling green areas as earth hard-stand areas for the storage of business product and caravans. All downpipes from the new Workshop building are to be connected directly into the existing underground pipe system within the development site.

It is intended that the existing concrete flood wall and earth levee banks around the perimeter of the site will be retained. Accordingly, there will be no increased displacement of external flood waters or an increase in any future flood levels as a consequence of this proposed development.

Emergency Management

Although any impacts on the proposed development should be ably managed by the presence of the existing concrete flood wall and earth levee banks – it would be judicious to ensure that an emergency management policy and process was in place to put into action during storm events greater than the 1% AEP or PMF events.

It is evident that the principal risk to the site is from the Fitzroy River during a major flood event. Historically, flooding of the Fitzroy River at Rockhampton is a slow and gradual event. Typically, 2-3 days notice is often given to advise that a significant flood event in Rockhampton is imminent.

The nature of the proposed business is the sale and repair of caravans and campers. All on site product and equipment is transportable and can be safely moved off site as rolling stock should a potential flood notification be given. In the rare event that flood inundation of the existing workshops and/or office space occurs and the concrete flood wall / levee banks are breached – any damage to buildings and/or other property improvements within the development site can be minimised by the advanced implementation of an Emergency Management Plan.

The Emergency Management Plan should be a document that is to be drafted by the business and be available to all personnel and staff within the business. It is a policy and procedure that will be initiated by the business management and astutely executed by all staff.

Conclusions & Recommendations

TriCAD Design has assessed the potential flood impacts on the nominated development site at 3 Glenmore Road, Park Avenue. Based on historical data – it is advised that the property is not impacted by the 1% AEP storm event from either riverine or creek sources.

Accordingly, the following recommendations and considerations are made:

- Undertake further discussions with Council to clarify the DFE (1% AEP) flood level for the property.
- An Emergency Management Plan is to be drafted by the business and implemented as soon as possible.
- All downpipes from the new Workshop are to be connected into the existing underground piped system within the property.

Signed:

(Paul Meredith MIEAust | CPEng | NER | RPEQ)

Meredit

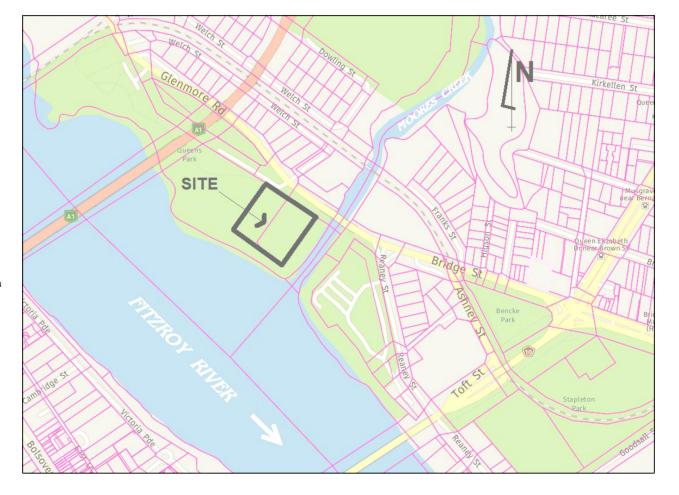
Date: 04 February 2022

PROPOSED CARAVAN SALES & REPAIR CENTRE MATERIAL CHANGE OF USE DOCUMENTATION 3 GLENMORE ROAD, PARK AVENUE, QLD. 4701 Lot 1 on CP 848924 AND Lot 43 on LN 1499

FLOOD IMPACT INVESTIGATION

NOTES:

- 1. ALL DIMENSIONS OF EASEMENTS AND LOTS SHOWN ON THESE PLANS ARE SUBJECT TO SURVEY CONFIRMATION.
- 2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL APPROVAL
- EROSION CONTROL DEVICES AND SILTATION TRAPS ARE TO BE INSTALLED BEFORE THE SITE IS DISTURBED IN ACCORDANCE WITI COUNCIL'S REQUIREMENTS. FULL DETAILS TO BE DOCUMENTED IN THE APPROVED DRAWINGS.
- 4. DENUDED & EXPOSED AREAS TO BE REGRASSED ON COMPLETION OF WORKS.
- ALL ROOF WATER DRAINAGE FROM THE NEW BUILDING IS TO BE DIRECTED ONTO THE EXISTING UNDDERGROUND STORMWATER DRAINAGE SYSTEM ON SITE.
- ALL EXISTING UNDERGROUND SERVICES MUST BE LOCATED AND EXPOSED PRIOR TO EARTHWORKS COMMENCING AND IS THE RESPONSIBILITY OF THOSE PERSONS USING THIS PLAN TO CONFIRM BOTH POSITION & LEVEL OF THESE UTILITIES IN CONJUNCT WITH THE APPROPRIATE AUTHORITY.
- NO WORK TO BE CARRIED OUT ON SUNDAYS AND ONLY BETWEEN THE HOURS 7:00am AND 5:00pm MONDAY TO SATURDAY
 INCLUSIVE
- 8. VEHICULAR ACCESS AND ALL SERVICES ARE TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION WORKS
- CROSS SECTION AND CONTOUR DATA SHOWN ON THESE PLANS HAS BEEN INTERPOLATED FROM LIDAR DATA AND IS SUBJECT TO CONFIRMATION BY DETAILED GROUND SURVEY.



COUNCIL DA-2019-119

PROJECT CIVIL ENGINEERS



TriCAD Design ABN 99 753 214 183
Road & Stormwater Management
Civil Engineering Design & Drafting
Subdivision and Site Development
POSTAL ADDRESS 4 MoGILL COURT, NORWAN GARDENS, 4701.

GUESNIAND AUSTRALIA
Email: tricadesign@inet.net.au Mobile: (0410) 685 259

Client: CAPRICORN CARAVAN CENTRE
JANUARY 2022

PLAN SCHEDULE:

- 0. DRAWING SCHEDULE & LOCALITY SKETCH
- . GENERAL ARRANGEMENT PLAN.
- 2. EXTG. FLOOD WALL & LEVEE BANK DETAILS
- 3. HEIGHT ISOPLETHS.
- I. SITE CROSS SECTIONS SECTION A & B.
- 5. SITE CROSS SECTIONS SECTION C & D.
- 5. SITE CROSS SECTIONS SECTION E & TOP OF WALL PROFILE.

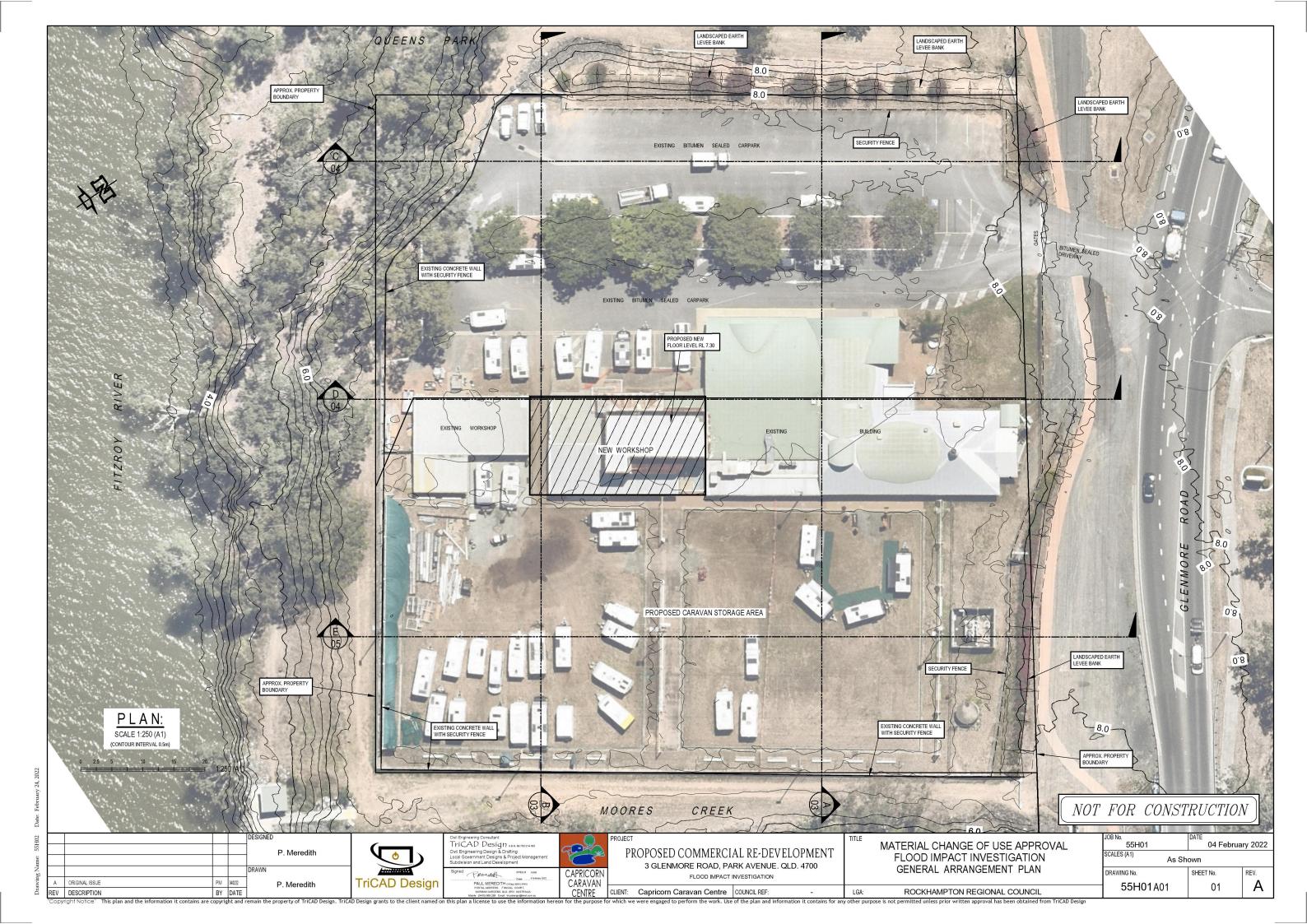
***<u>WARNING</u>*

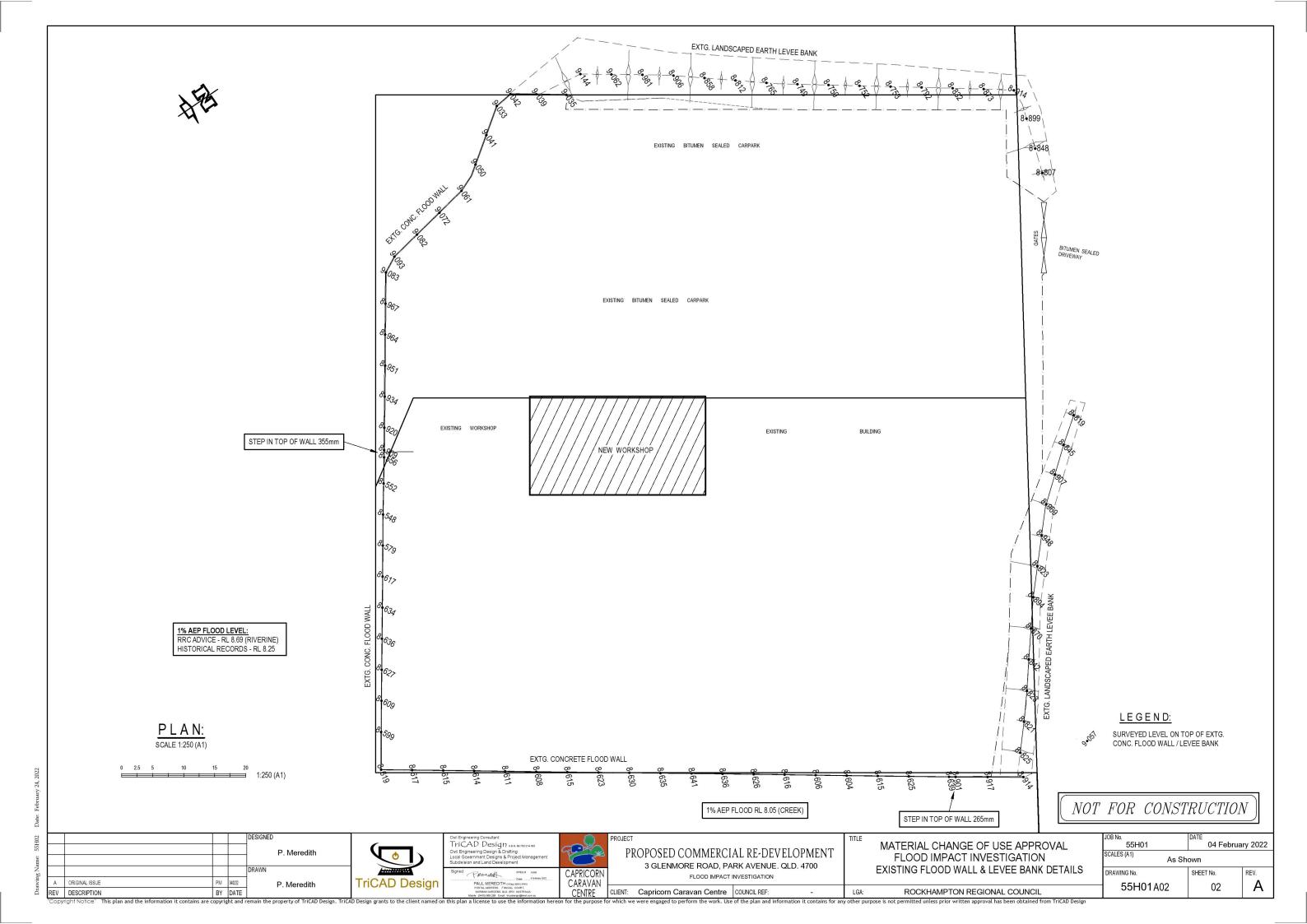
The location of existing public utilities shown on these drawings is approximate only and in some cases may be inaccurate or incomplete. No responsibility is accepted for nor is any guarantee made as to the accuracy of the locations shown that have been plotted from information provided by the relevant public utility authorities. The attention of the user of these drawings is directed to the possible existence of underground public utilities and private service lines not shown or at locations different from those shown on these drawings.

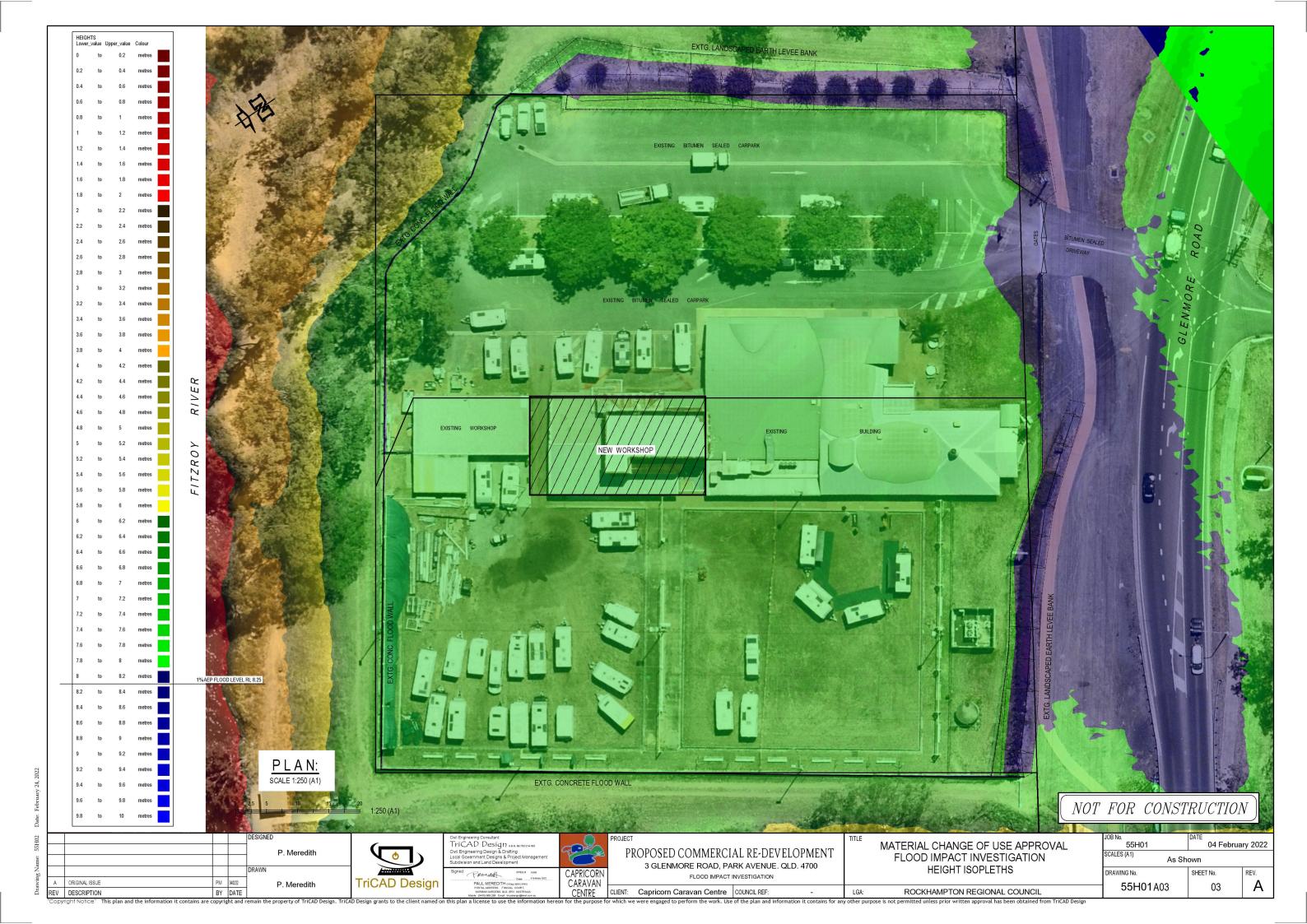
It is the responsibility of those persons using these drawings to confirm the existenc of all public utilities and private service lines within the vicinity of the works in conjunction with the relevant public utility authority and/or by physical location.

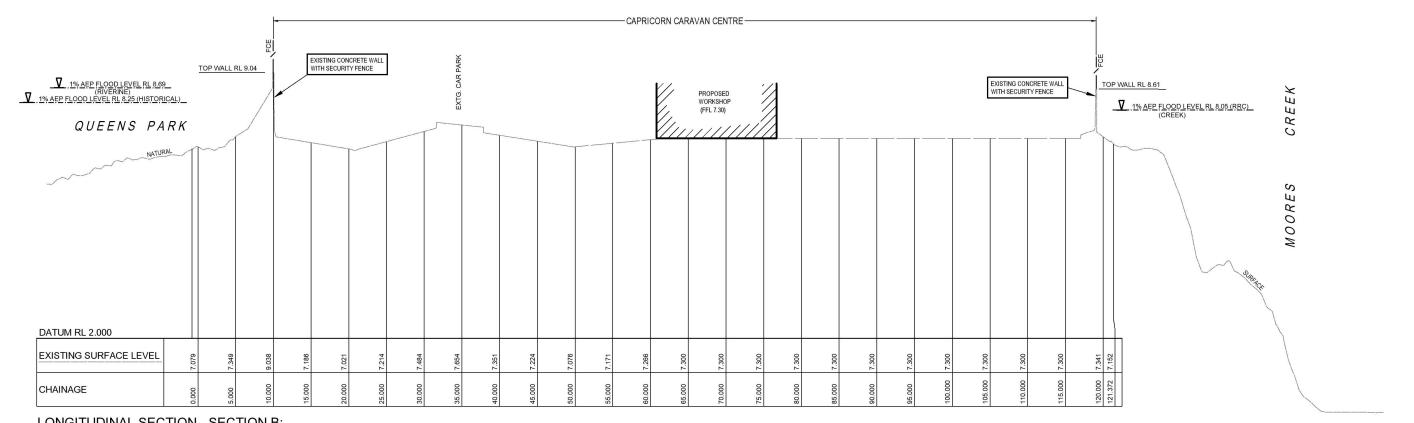
NOT FOR CONSTRUCTION

Revision A:



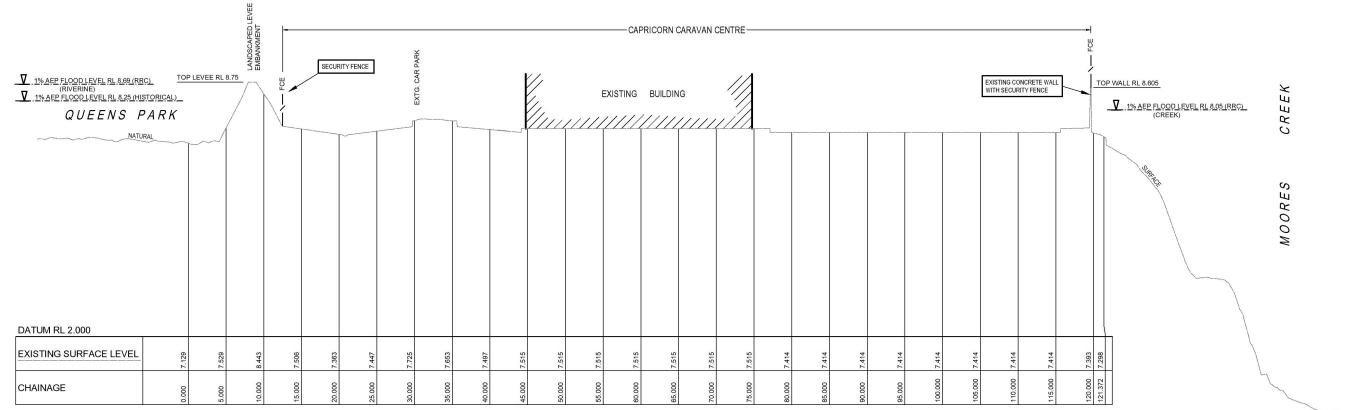






LONGITUDINAL SECTION - SECTION B:

A1 SCALE: H 1:250, V 1:50



LONGITUDINAL SECTION - SECTION A:

A1 SCALE: H 1:250, V 1:50

NOTE:

- CROSS SECTIONS SHOWN ON THESE DRAWINGS ARE BASED ON LIDAR DATA AND IS SUBJECT TO CONFIRMATION BY DETAILED GROUND SURVEY.
- EXISTING SERVICES AND UTILITIES HAVE NOT BEEN SHOWN ON THESE SECTIONS AND IT IS THE USERS RESPONSIBILITY TO CONFIRM AND LOCATE ALL EXISTING SERVICES PRIOR TO ANY WORKS COMMENCING.

NOT FOR CONSTRUCTION

P. Meredith ORIGINAL ISSUE P. Meredith REV DESCRIPTION



Civil Engineering Consultant:
TriCAD Design ABN. 89753 214 183 P. Mereditt

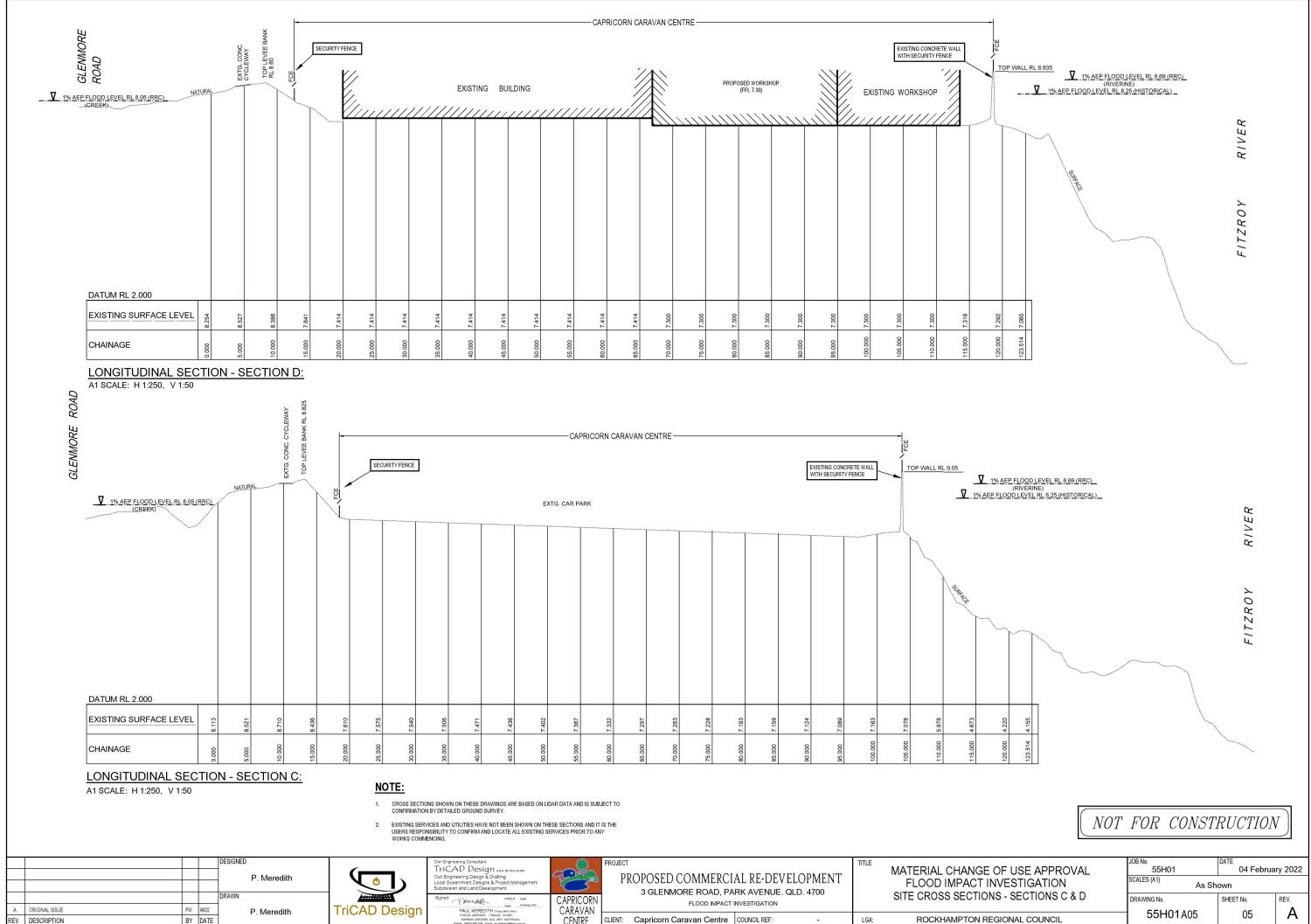
CAPRICORN CARAVAN

PROPOSED COMMERCIAL RE-DEVELOPMENT 3 GLENMORE ROAD, PARK AVENUE. QLD. 4700 FLOOD IMPACT INVESTIGATION

MATERIAL CHANGE OF USE APPROVAL FLOOD IMPACT INVESTIGATION SITE CROSS SECTIONS - SECTIONS A & B

55H01 04 February 2022 CALES (A1) As Shown DRAWING No. SHEET No. REV. Α 55H01A04 04

ROCKHAMPTON REGIONAL COUNCIL BY DATE CLIENT: Capricorn Caravan Centre COUNCIL REF: LGA:



CLIENT: Capricorn Caravan Centre COUNCIL REF:

LGA:

REV DESCRIPTION

BY DATE

