

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/155-2025

Dated: 19 May 2026

LOT 1 RP602347

DENHAM STREET

LOT 3 RP600326

LOT 3 RP604831

WEST STREET



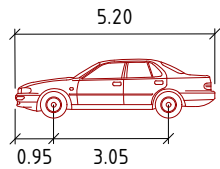
REDRIDGE ENGINEERING GROUP

DRAWN	ASC	DATE	08/25
DESIGN	ASC	DATE	08/25
			
REDRIDGE ENGINEERING GROUP			
RED LION HOTEL DENHAM ST			
PROPOSED CARPARK			
EXTENSION PROPOSALS			
WEST STREET CARPARK			
SITE PLAN - SATELLITE IMAGERY			
FILE NO	G2502-01-CP1 (WEST).DWG		
JOB NO	2502		
SCALE	0 1:250 HORZ. 5	AT	A3 SIZE
DRAWING NUMBER	2502-W1	ISSUE	SHEET NO.
		C	1



DRAWN	ASC	DATE	08/25
DESIGN	ASC	DATE	08/25
			
			
REDRIDGE ENGINEERING GROUP			
RED LION HOTEL DENHAM ST			
PROPOSED CARPARK			
EXTENSION PROPOSALS			
WEST ST CARPARK			
SITE PLAN - LAYOUT DETAILS			
FILE NO			
G2502-01-CP2 (WEST).DWG			
JOB NO			
2502			
SCALE	1:200 HORZ.		AT A3 SIZE
			
DRAWING NUMBER		ISSUE	SHEET NO.
2502-W2		C	2

G2502-02-CP3 (WEST).DWG LAST MODIFIED 18/November/2025



PASSENGER-CAR

	METERS
WIDTH	: 1.94
TRACK	: 1.84
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 33.6
VEHICLE PROFILE	



DATUM GDA94 Z56

BUILDING ROOF LINE

ROCKHAMPTON REGIONAL COUNCIL

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REVERSE OUT - ALL BAYS

FORWARD IN - ALL BAYS

WEST STREET



REDRIDGE ENGINEERING GROUP

DRAWN ASC DATE 08/25

DESIGN ASC DATE 08/25



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REDRIDGE ENGINEERING GROUP
RED LION HOTEL DENHAM ST
PROPOSED CARPARK
EXTENSION PROPOSALS
WEST ST CARPARK
VEHICLE TURNING PATHS

FILE NO
G2502-01-CP3 (WEST).DWG
JOB NO
2502

SCALE 0 1:200 HORZ. 4 AT A3 SIZE

DRAWING NUMBER 2502-W3 ISSUE SHEET NO. 3

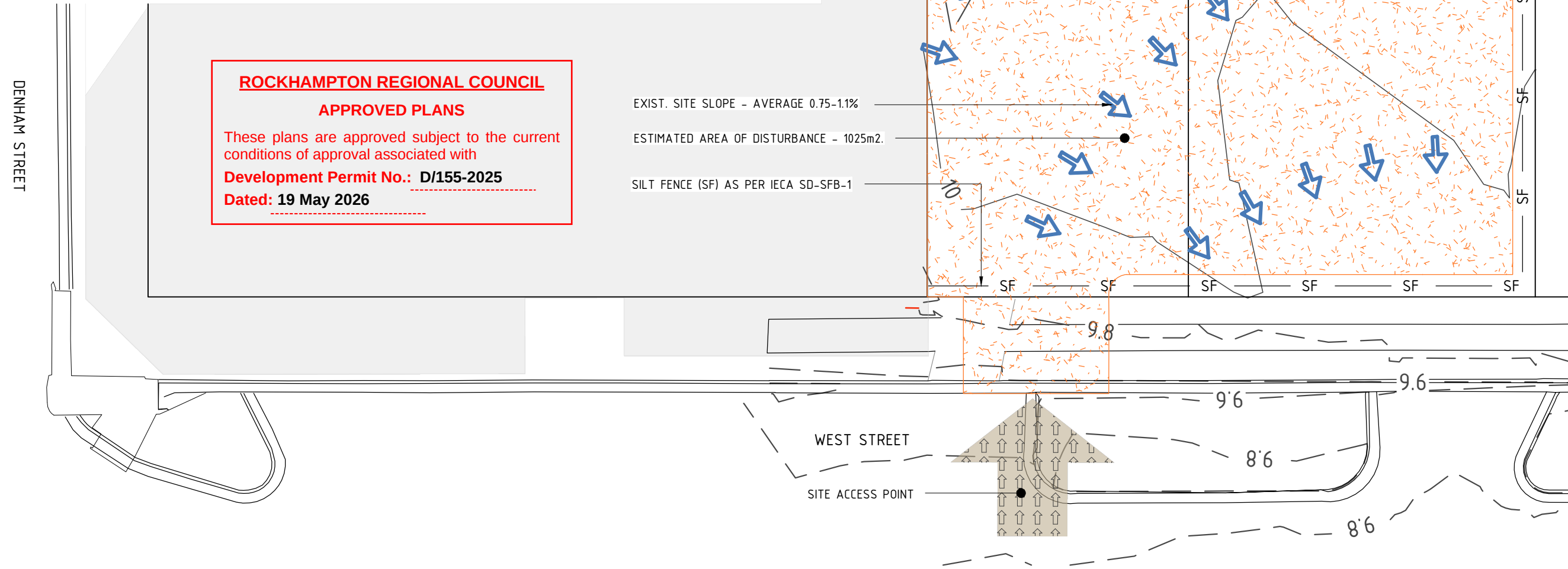
G2502-02-CP4 (WEST).DWG LAST MODIFIED 19/November/2025

NOTES:
GENERAL

1. CONSTRUCTION TO BE CARRIED OUT & COMPLETED BACK TO FINISHED DESIGN LEVEL SEQUENTIALLY IN APPROVED SECTIONS.
2. FINAL HARD COVERINGS TO BE CONSTRUCTED AS SOON AS EXCAVATION FOR A SECTION OF WORKS HAS BEEN COMPLETED. DISTURBANCE OF SECTIONS NOT CURRENTLY BEING CONSTRUCTED TO BE MINIMISED. DISTURBED AREAS AWAITING CONSTRUCTION TO BE SEALED WITH AN APPROVED POLYMERIC EMULSION BLEND SOIL BINDER (WET EARTH DUSTWORX GX™ OR APPROVED EQUIV.).
3. RE-APPLICATIONS OF BINDER TO BE CARRIED OUT TO MAINTAIN EFFECTIVE SURFACE SEALING UNTIL SUCH TIME AS FINAL CONSTRUCTION IS COMMENCED..

MANAGEMENT

1. THE CONTRACTOR SHALL HAVE APPOINTED A SUITABLY QUALIFIED SITE WORKS PRACTICES SUPERVISOR TO MANAGE SOIL EROSION & POLLUTION BY SEDIMENTS & OTHER CONTAMINANTS.
2. THE SITE WORKS PRACTICES SUPERVISOR SHALL ALSO BE RESPONSIBLE FOR CONTROLLING SUBCONTRACTORS ETC ON THE SITE.
3. THE SITE WORKS PRACTICES SUPERVISOR SHALL SET UP A REGULAR PROGRAM OF INSPECTION OF THE SITE TO ENSURE THAT THE MEASURES INTRODUCED TO CONTROL SOIL & WATER ON THE SITE ARE WORKING CORRECTLY & REMAINING IN GOOD ORDER. THE RE-ESTABLISHMENT OF GROUND COVERS SHALL BE REGULARLY MONITORED DURING THE CONSTRUCTION PERIOD & AREAS MADE GOOD IMMEDIATELY THERE ARE SIGNS OF DETERIORATION.
4. THE SUITABILITY OF THE SEDIMENT & EROSION CONTROL MEASURES IN PLACE SHALL BE CONTINUALLY REVIEWED AND ADJUSTMENTS MADE AS REQUIRED TO MAINTAIN ADEQUATE PROTECTION AND CONTROL MEASURES.
5. THE SEDIMENT & EROSION CONTROL MEASURES SHALL REMAIN IN FORCE & BE MAINTAINED UNTIL SUCH TIME AS REHABILITATION IS COMPLETED & PERMANENT POST PRODUCTION MEASURES ARE IN PLACE & SUFFICIENTLY ESTABLISHED TO ENSURE SITE STABILITY.
6. SUITABLE DEVICES SUCH AS A WATER TRUCK SHALL BE AVAILABLE AT ALL TIMES FOR DUST SUPPRESSION.
7. STORMWATER RUNOFF SHALL BE DIRECTED AWAY FROM THE WORKS & DISTURBED AREAS AS FAR AS IS POSSIBLE.
8. CONTAMINATED STORMWATER RUNOFF SHOULD BE DISCHARGED FROM THE WORK AREAS AS SOON AS POSSIBLE & COLLECTED IN A SUMP ON SITE EITHER FOR RE-USE OR DISPOSED OF OFF SITE. WATER SHOULD NOT BE ALLOWED TO ACCUMULATE INTO LARGE VOLUMES.
9. SILT BARRIERS ARE TO BE USED TO CATCH SILT IN WATER DISCHARGES. EVERY EFFORT IS TO BE MADE TO ENSURE THAT THE WATER PASSING THROUGH THE SITE FINALLY DISCHARGES IN AN UNPOLLUTED STATE, FREE OF AS MUCH SEDIMENT & SILT AS POSSIBLE.
10. WATER CONTAMINATED WITH CHEMICALS, CEMENT OR OTHER POLLUTANTS SHALL NOT BE ALLOWED TO DISCHARGE INTO THE EXTERNAL STORMWATER SYSTEM.
11. INSPECTIONS SHOULD BE UNDERTAKEN DURING ANY STORM EVENT THAT THREATENS TO EXCEED THE AVAILABLE CAPACITY IN THE SEDIMENT OR POLLUTION STORAGE STRUCTURES; AFTER ANY STORM THAT HAS CAUSED RUNOFF; WEEKLY AS A MATTER OF SITE ROUTINE FOR ALL SITE WORK PRACTICES; & BEFORE SITE CLOSURE OR ANY OTHER TIME WHEN THE SITE MAY BE UNATTENDED FOR LONGER THAN 12 HOURS.
12. THE SITE WORKS PRACTICES SUPERVISOR SHALL MAINTAIN A RECORD OR DIARY DOCUMENTING DATES OF INSTALLATION & REMOVAL OF SITE WORK PRACTICES REPAIR OF ANY DAMAGE TO SITE WORKS PRACTICES RAINFALL DEPTHS, DURATIONS & TIMES STORAGE CAPACITY AVAILABLE IN CONTROL STRUCTURES CONDITION OF SITE WORK PRACTICE STRUCTURES & STABILISED SURFACES. RECORD KEEPING MUST INCLUDE A PHOTOGRAPHIC RECORD.

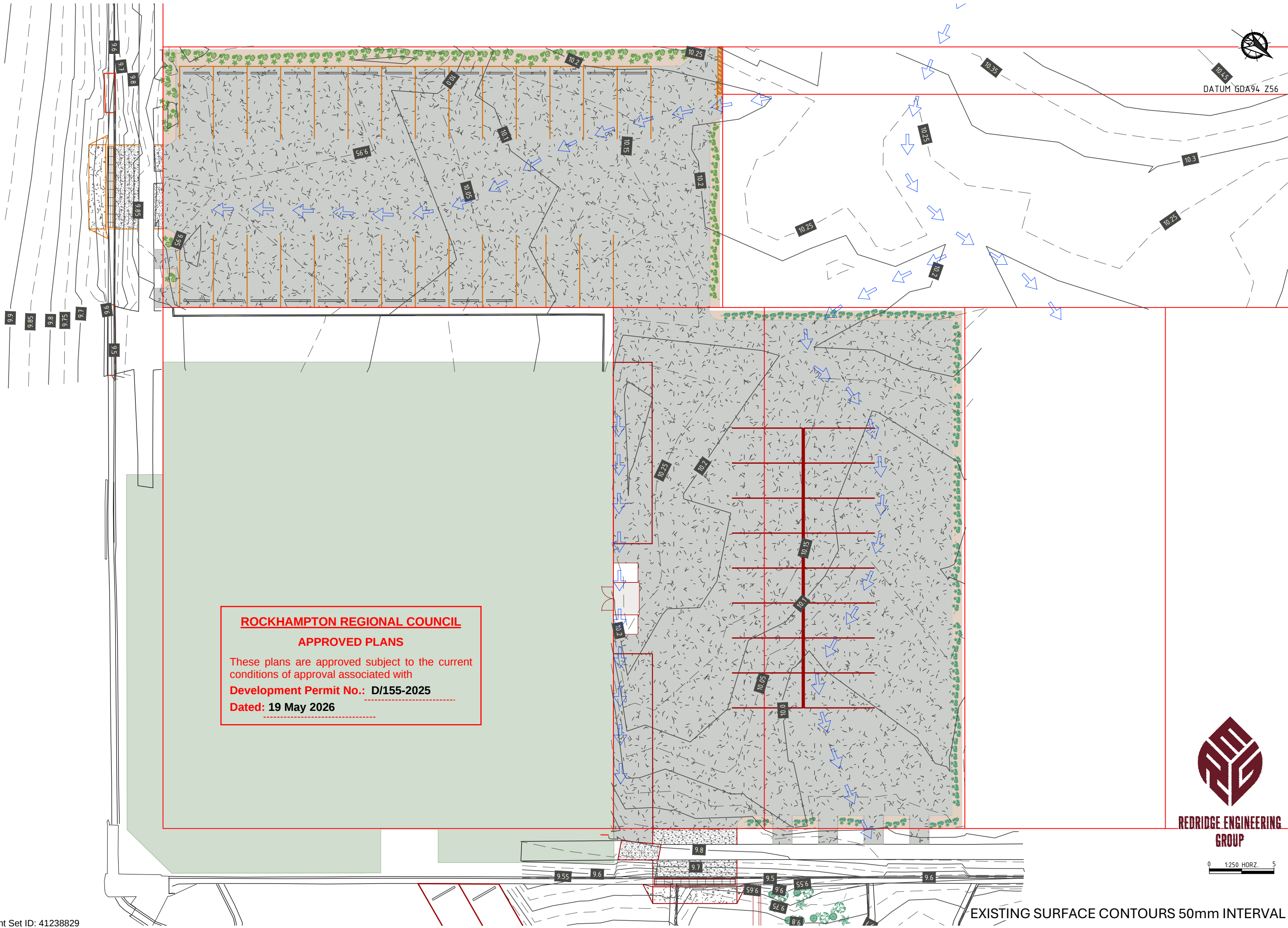


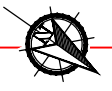
DATUM GDA94 Z56



REDRIDGE ENGINEERING GROUP

DRAWN	ASC	DATE	08/25
DESIGN	ASC	DATE	08/25
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REDRIDGE ENGINEERING GROUP			
RED LION HOTEL DENHAM ST			
PROPOSED CARPARK			
EXTENSION PROPOSALS			
WEST ST CARPARK			
PRE-CONSTRUCTION ESC PLAN			
FILE NO	G2502-01-CP4 (WEST).DWG		
JOB NO	2502		
SCALE	0 1:200 HORZ. 4	AT	A3 SIZE
DRAWING NUMBER	2502-W4	ISSUE	C
SHEET NO.			4





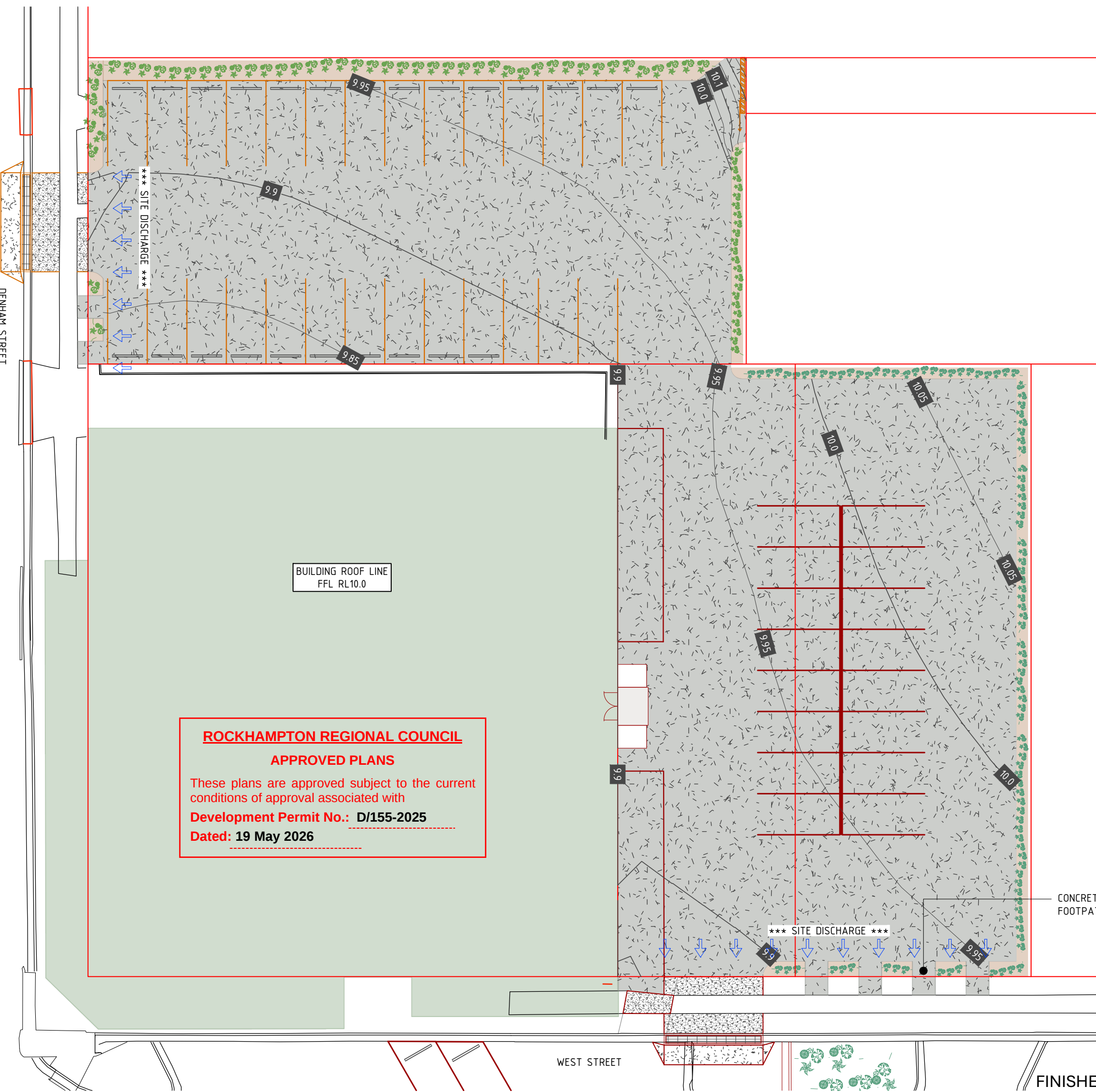
DATUM GDA94 Z56



**REDRIDGE ENGINEERING
GROUP**

0 1:250 HORZ. 5

**CONCEPT STORM WATER FLOW PATHS
FINISHED SURFACE CONTOURS 50mm INTERVAL**



BUILDING ROOF LINE
FFL RL10.0

ROCKHAMPTON REGIONAL COUNCIL

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WEST STREET

DENHAM STREET

ROCKHAMPTON REGIONAL COUNCIL

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Dated: 19 May 2026

NOISE IMPACT ASSESSMENT

Proposed Carpark

Red Lion Hotel

138 Denham St, Allenstown, Rockhampton

QLD 4700

Date: 27 November 2025

Number of Pages: 18 (inc.)

DOCUMENT CONTROL

Rev No.	Issue Date	Revision Description	Author	Review
0	26/11/2025	Noise Impact Assessment	RF	MF
1	27/11/2025	Adjust noise barriers	RF	MF

CLIENT

Report Issued	Attention	Phone	Email
Red Lion Holdings	Manager	0418 799 825	rob@thecarrgroup.com.au

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This report by Alpha Acoustics Pty Ltd is prepared for a client and is based on the agreed objective, scope, conditions and limitations as may be stated in the executive summary. The report presents only the information that Alpha Acoustics Pty Ltd believes, in its professional opinion, is relevant and necessary to describe the issues involved. The report should not be used for anything other than the intended purpose and should not be reproduced, presented or reviewed except in full. The intellectual property of this report remains with Alpha Acoustics Pty Ltd. The client is authorised, upon payment to Alpha Acoustics Pty Ltd of the agreed report preparation fee, to provide this report in full to any third party.

Recommendations made in this report are intended to resolve acoustical problems only. We make no claim of expertise in other areas and draw your attention to the possibility that our recommendations may not meet the structural, fire, thermal, or other aspects of building construction

We encourage clients to check with us before using materials or equipment that are alternative to those specified in our acoustical report.

The integrity of acoustic structures is very dependent on installation techniques. For example, a small crack between the top of a wall and a ceiling can reduce the effective sound transmission loss of a wall from R_w 50 to R_w 40. Therefore, the use of contractors that are experienced in acoustic construction is encouraged. Furthermore, two insulation products may have the same thermal R rating but the sound absorption of one may be entirely deficient, therefore the use of materials and equipment that are supported by acoustic laboratory test data is encouraged.

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1 INTRODUCTION AND SITE DESCRIPTION

Alpha Acoustics Pty Ltd has been engaged to provide a noise impact assessment of the proposed carpark at the licensed premise, Red Lion Hotel, located at 138 Denham St, Allenstown QLD 4700.

Potential noise impacts are assessed in accordance with the noise criteria set out in the Acoustic Quality Objectives of the Environmental Protection (Noise) Policy 2008 (EPP Noise).

Scope of Work

- Inspect the site and environs
- Measure the background noise levels at nominated sensitive receivers
- Establish acceptable noise level criterion
- Quantify noise emissions from premises at the nominated residences
- Prepare a Noise Impact Report

Figure 1.1 Street View of Red Lion Hotel Rockhampton (Google Maps)



2 PROJECT DESCRIPTION

The main noise sources at the proposed carpark include:

- Cars driving on site and people talking
- Car doors closing and cars starting

Table 2.1 Receiver Assessment Locations

Receiver ID	Receiver Type	Receiver Address
ML2	Residential	144 West Street
ML3	Residential	129 West Street

Background noise was measured in octave bands at the sensitive assessment locations. During the background noise measurements, the venue was not operating. Figure 2.1 below displays the venue and surrounds.

Table 2.2 Venue Operational Hours

Operational Days	Open	Close
Monday – Sunday	10:00	02:00

Figure 2.1 Location Map 138 Denham St, Allenstown (SPP IMS)



3 NOISE SURVEY AND INSTRUMENTATION

All instrument systems had been laboratory calibrated using instrumentation traceable to Australian National Standards and certified within the last two years thus conforming to Australian Standards. The measurement system was also calibrated prior to and after the noise survey. Calibration drift was found to be less than 0.3 dB during attended measurements. No adjustments for instrument drift during the measurement period were warranted.

Table 3.1 Noise Instrumentation

Description	Model No.	Serial No.
Modular Precision Sound Analyser	B&K 2260	245 9227
Condenser Microphone 0.5" diameter	B&K 4189	245 8107
Acoustical Calibrator	B&K 4231	267 1553
Microphone Windscreen	Acoustically transparent foam	

The Bruel & Kjaer 2260 Sound Analyser is a real-time precision integrating sound level meter with octave and third octave filters that samples noise at a rate of 10 samples per second. Measurements are stored as L_{eq} , L_1 , L_{10} , L_{50} and L_{90} statistical data at 15 minute intervals (longer or shorter intervals optional) over the desired monitoring period.

4 MEASURED BACKGROUND NOISE LEVELS

To assess the severity of a possible environmental noise problem in a residential or commercial area it is necessary to measure the background noise level at the times and locations of worst possible annoyance. The lower the background noise level, the more perceptible the intrusive noise becomes and the more potentially annoying.

The L_{90} background noise level is a statistical measure of the sound pressure level that is exceeded for 90% of the measuring period (typically 15 minutes).

The times of worst possible annoyance are likely to be during the evening and night time operation of the venue when ambient noise levels are typically at their lowest.

The background sound pressure levels used in this assessment were based on attended measurements taken on Monday 21st August 2017 (see Figure 4.1 below for measurement locations). Noise measurements were taken at the background noise measurement location(s) with the octave band centre frequency results (where applicable) of those measurements.

Figure 4.1 Background Level Receivers – Noise Measurement Locations



Table 4.1 Background L₉₀ Noise Levels

ID	Location of Measurement	Time	Background Noise Levels L_{90} at Octave Band Centre Frequencies (Hz)						
			dB(A)	63	125	250	500	1k	2k
Day and Evening									
ML2	144 West Street	10:00 – 22:00	34	45	41	34	31	30	23
ML3	129 West Street	10:00 – 22:00	34	45	41	34	31	30	23
Night Time									
ML2	144 West Street	22:00 – 00:00	36	46	43	37	33	31	25
ML3	129 West Street	22:00 – 00:00	35	44	42	37	32	31	24

Table 4.2 Meteorological Conditions During Testing

Meteorological Parameter	Monday 21 st August 2017 Weather Conditions	Suitable for Testing
Skies	Clear	Yes
Temperature	15 °C	Yes
Humidity	39 %	Yes
Wind Speed	0 - 1 m/s	Yes
Precipitation	0 mm	Yes

Atmospheric conditions were ideal for noise monitoring. Noise measurements were therefore considered reliable and typical for the receptor area.

5 ACCEPTABLE NOISE LEVELS

5.1 Environmental Protection (Noise) Policy

The Acoustic Quality Objectives and the Background Creep requirements of the Environmental Protection (Noise) Policy 2008 (EPP Noise) have been used as the assessment criteria for the development. Operational activities for the proposed use have been assessed against the Acoustic Quality Objectives as shown in **Table 5.1**.

Table 5.1: Acoustic Quality Objectives of EPP Noise

Sensitive Receptor	Time of Day	Acoustic Quality Objective (Measured at the Receptor) dB(A)			Environmental Value
		LAeq,adj,1hr	LA10,adj,1hr	LA01,adj,1hr	
Dwellings (for outdoors)	Daytime and evening (7am to 10pm)	50	55	65	Health and wellbeing
Dwellings (for indoors)	Daytime and evening (7am to 10pm)	35	40	45	Health and wellbeing
Dwellings (for indoors)	Night-time (10pm to 7am)	30	35	40	Health and wellbeing in relation to the ability to sleep
Commercial and retail activity	When activity is open for business	45			Health and wellbeing in relation to the ability to converse

Introduced plant have the potential to increase background noise levels in the area. These have been assessed against the Background Creep requirements of EPP Noise.

To the extent that it is reasonable to do so, noise from an activity must not be:

- For continuous noise (e.g. fan noise) – Measured by LA90,T more than nil dB(A) greater than the existing acoustic environment measured by LA90,T.
- For noise that varies over time (i.e. vehicle movements) – Measured by LAeq,adj,T more than 5 dB(A) greater than the existing acoustic environment measured by LA90,T.

Noise emission limits for the control of background creep, based on measured background levels are shown in **Table 5.2** below.

Table 5.2: Background creep requirements of EPP Noise

Time of Day	Measured Background Level LA90 dB(A) At ML2	Permitted Noise Emission dB(A)	
		Continuously Operating Plant LA90,T	Time Varying Noise LAeq,adj,T
Daytime (7am to 6pm)	34	34	39
Evening (6pm to 10pm)	34	34	39
Night (10pm to 7am)	34*	34	39

The daytime background noise level is used to assess night time levels as the daytime background noise level was 1 dB(A) less than the night time background noise level.

5.2 Project Specific Noise Criteria

Considering the criteria discussion above, the project specific noise criteria is summarised in **Table 5.3.3** below.

Table 5.3.3: Project Specific Noise Levels

Time of Day	Recommended Noise Limits dB(A)	
	Continuously Operating Plant LA90,T	Time Varying Noise LAeq,adj,T
Daytime and evening (7am to 10pm)	n/a	34+5 = 39 dB(A) Leq (Outdoors)
Night-time (10pm to 7am) ¹	n/a	30+5 = 35 dB(A) Leq (outdoors)

Note 1: A conservative 5 dB(A) inside to outside building façade correction has been applied.

The major sources of noise at the proposed carpark of the Red Lion Hotel include cars driving, cars doors closing and cars starting. Figure 6.1 show the site plans of the proposed carpark.

The proposed carpark operations have been simulated and assessed to determine the noise impact from the operation of the proposed carpark as shown in Table 6.1 below. To predict LAeq noise levels for car movements, a moving point source has been input to the model, travelling at 10km/hr.

Name	Descriptor	Sound Power Levels in dB(Z)								Total in dB(A)
		63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2 kHz	4 kHz	8 kHz	
Vehicle movements and people talk	L _{eq}	68	75	69	66	69	70	66	63	75
Vehicle starting / door closing	L _{Max}	90	92	91	87	84	81	80	77	90

6.2 Normalisation Moderated Outputs

Table 6.2 below shows the modelled noise levels at the nearest sensitive receivers to the development.

Table 4.2.1 – Modelled Noise Emissions from the proposed Carpark

Receptor	Predicted Worst Case LAeq	LAeq Criteria	Pass / Fail	Predicted LAMax	LAMax Criteria	Pass / Fail
144 West Street	26	35	Pass	44	50	Pass
129 West Street	34	35	Pass	48	50	Pass

7 RECOMMENDATIONS

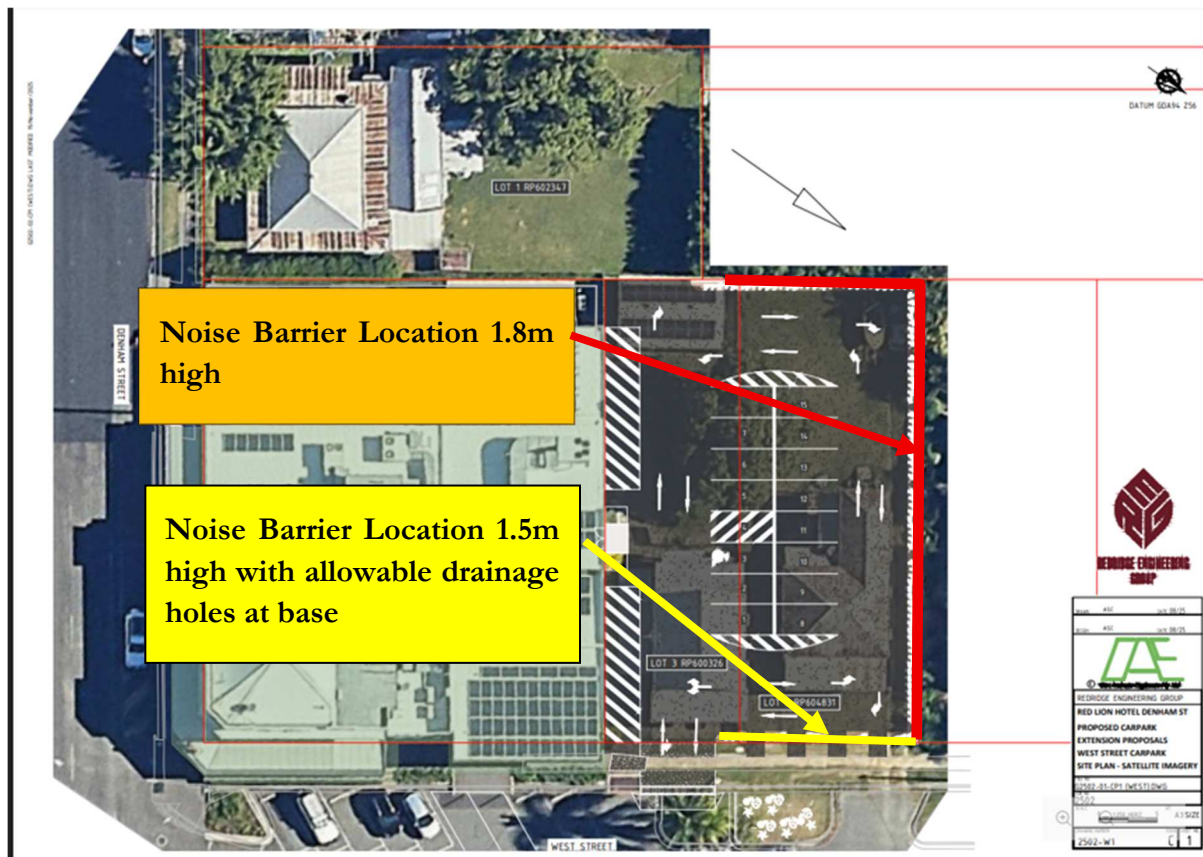
Noise emissions from the operation of the proposed carpark are shown to comply with the noise criteria at the nearest residential receivers under the following conditions.

7.1 Required Noise Controls

In order to comply with the noise limits for the carpark, the following mitigation measures are recommended:

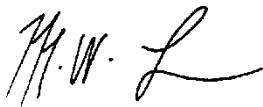
- Construct a 1.8m high noise barrier bordering the adjacent residences
- Construct a 1.5m high noise barrier along the West Street boundary. (with drainage gaps up to 100mm allowed at the base and the driveway open)
- The noise barrier should be constructed from any solid gap free material with a surface density of at least 15kg/m². For example a masonry wall or lapped timber fence using 25mm pine palings and 50% overlapping would be suitable. The noise barriers should not be metal or tin.
- Noise barrier locations are shown in Figure 7.1 below

Figure 7.1 Noise Barriers Locations



8 NOISE IMPACT STATEMENT

Measurements and calculations show that, noise emissions from the operation of the proposed carpark at the Red Lion Hotel, located at 138 Denham St, Allentown, Rockhampton QLD 4700, will comply with the set noise criteria outlined in this report for the time of operation **provided the recommendations in Section 7 of this report are implemented in full.**



MATTHEW FISHBURN BE(Mech) Hons, MAAS, MIEAust, CPEng, RPEQ [14356]

Principal Consulting Acoustical Engineer

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APPENDIX A – GLOSSARY OF ACOUSTIC TERMS

The following is a brief description of the technical terms used to describe traffic noise to assist in understanding the technical issues presented in this document.

Event maximum sound pressure level ($L_{A\%,adj,T}$), L_{01}

The L_{01} level is calculated as the noise level equalled and exceeded for 1% of the measurement time, for example 9 seconds in any 15-minute interval. L_{01} is an appropriate level to characterise single events, such as from impulsive or distinctive pass-by noise. In this Report, the measured L_{01} levels for day/evening/night are not averaged but are arranged from low to high in the relevant day/evening/night interval and the value that is found at the 90th percentile (L_{10} of L_{01} sample) in the interval is recorded as its “ L_{01} ” level. The level can be adjusted for tonality or impulsiveness.

Average maximum sound pressure level ($L_{A\%,adj,T}$), L_{10}

The “ L_{10} ” level is an indicator of “steady-state” noise or intrusive noise conditions from traffic, music and other relatively non-impulsive noise sources. The L_{10} level is calculated as the noise level equalled and exceeded for 10% the measurement time, for example 90 seconds in any 15-minute interval. The measured L_{10} time-intervals for day/evening/night are arithmetically averaged to present the “average maximum” levels of the environment for day/evening/night. The level can be adjusted for tonality or impulsiveness.

Background sound pressure level ($L_{A90,T}$), L_{90}

Commonly called the “ L_{90} ” or “background” level and is an indicator of the quietest times of day, evening or night. The L_{90} level is calculated as the noise level equalled and exceeded for 90% the measurement time. The measured L_{90} time-intervals are arithmetically averaged to present the “average background” levels of the environment for day/evening/night. The level is recorded in the absence of any noise under investigation. The level is not adjusted for tonality or impulsiveness.

Equivalent Continuous or time average sound pressure level ($L_{Aeq,T}$), L_{eq}

Commonly called the “ L_{eq} ” level it is the logarithmic average noise level from all sources far and near. The maximum 1-hour levels within the day/evening/night time intervals are referenced for building design. The level can be adjusted for tonality.

Façade-adjusted level

A sound level that is measured at a distance of 1.0 metre from a wall or facade. The level is nominally 2.5 dB higher than the free-field level.

Free-field level

A sound level that is measured at a distance of more than 3.5 metres from a wall or facade.

Weighted Sound Reduction Index, R_w

A single number value used to compare the sound reduction index of building elements. Similar to the Sound Transmission Class (STC) rating that is still in common use. R_w and STC are not identical though may be considered, for most applications, as being interchangeable. A high R_w indicates high sound reduction.