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Job Number: 22NL120-T4

Date: 19th June, 2023

Traffic Management Report for 1-3 Walker Street, 2-4 Caldwell Avenue, East Lismore, NSW

Prepared by

LOKA CONSULTING ENGINEERS PTY LTD

Nermein Loka

BSC, ME, MIE(AUST), CPEng, NPER, RPEQ

Senior Civil Engineer

Director

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1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Kennedy Associates Architects to provide a Traffic Management Report for the site at 1-3 Walker Street, 2-4 Caldwell Avenue, East Lismore, NSW (refer to Figure 1-1 and Figure 1-2) for DA stage.

A Traffic Management Plan and Report is required for the proposed development to identify the impacts of the proposal on the local street network and mitigation measures required to ameliorate any impacts. This includes:

- A description of the site and details of the development proposal;
- A review of the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards; and
- An assessment of the adequacy and suitability of the quantum of off-street car parking provided on site.



Figure 1-1 Subject site (from SIX maps)

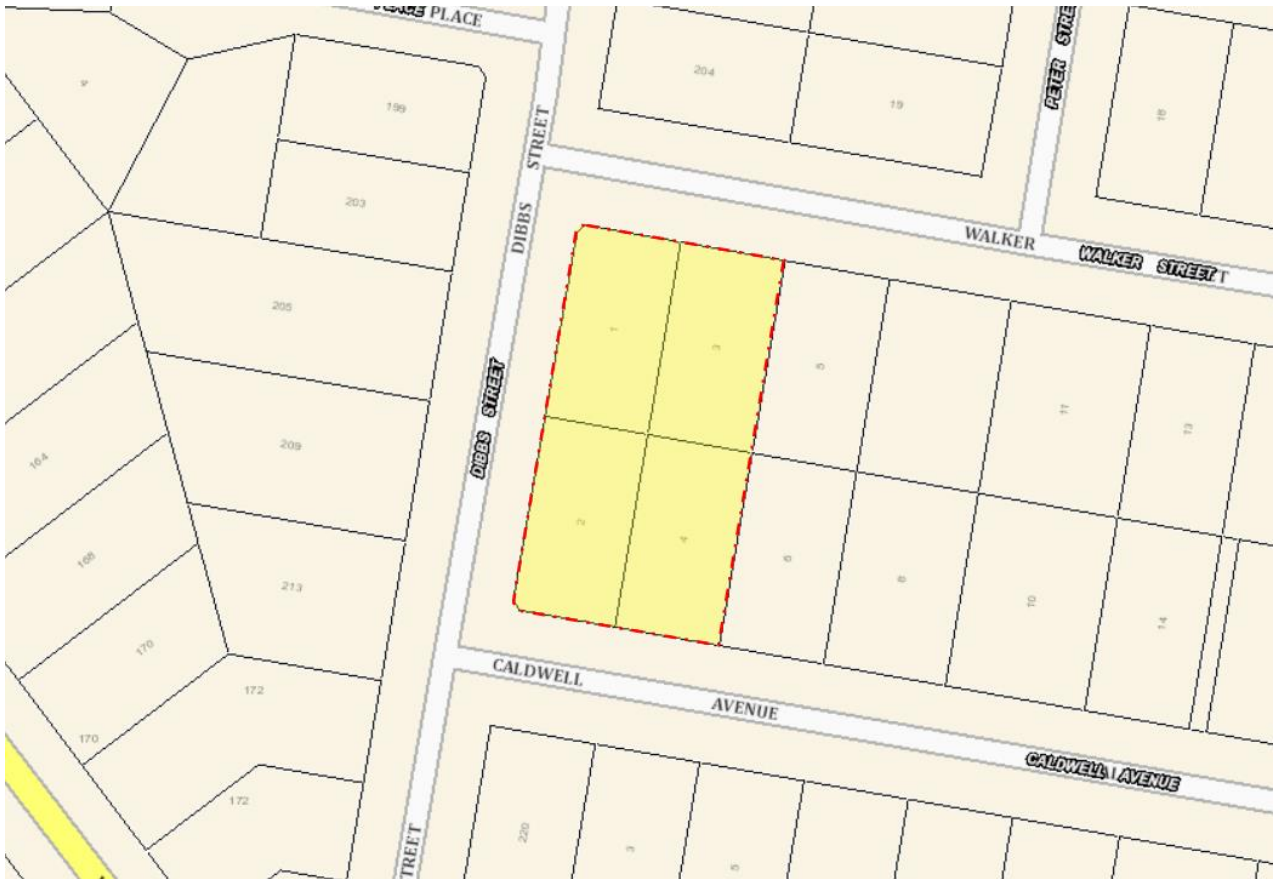


Figure 1-2 Site location (from SIX maps)

2. Proposed Development

The proposed new development will involve the demolition of 4 existing single storey dwellings and the construction of 16 unit residential flat building within a total site area of 2450.96m².

The proposed development is bounded by

- No. 5 Walker Street & No. 6 Caldwell Avenue on the East;
- Dibbs Street on the West;
- Walker Street on the North;
- Caldwell Avenue on the South.

The development consists of 16 units over two levels, ground floor and first floor with one driveway on Dibbs Street.

2.1.Public Transportations

1. It takes 1 minutes walking (1m) from the site to Walker St at Dibbs St bus stop (refer to figure 2-1).
2. It takes 8 minutes walking (550m) from the site to St Carthage's Primary School, Dibbs St bus stop (refer to figure 2-2).

Table 2-1 shows the bus line name; routes and the time between two successive trips. Refer to Transport NSW for accurate details.

Table 2-1 Bus line, route, and time

Stop No.	Line Name	Route	Weekday hours	Weekday interval	Weekend hours	Weekend interval
1	683	Lismore to Lismore Heights via Southern Cross University (Loop Service)	07:16 - 18:26	30 mins.	08:31 - 17:31	60 mins.
2.	653	Dunoon to Lismore	08:51	-----	-----	-----

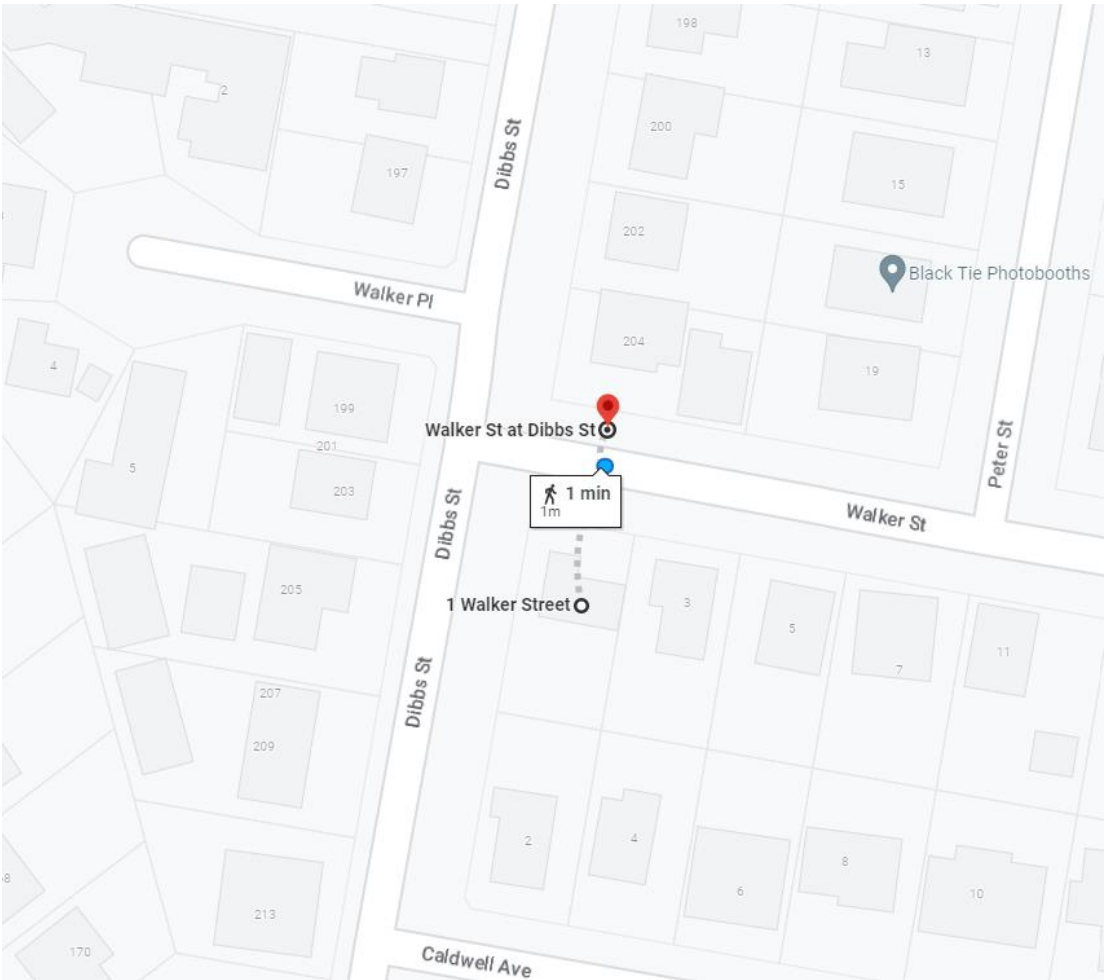


Figure 2-1 Site to Walker St at Dibbs St bus stop (from Google maps)

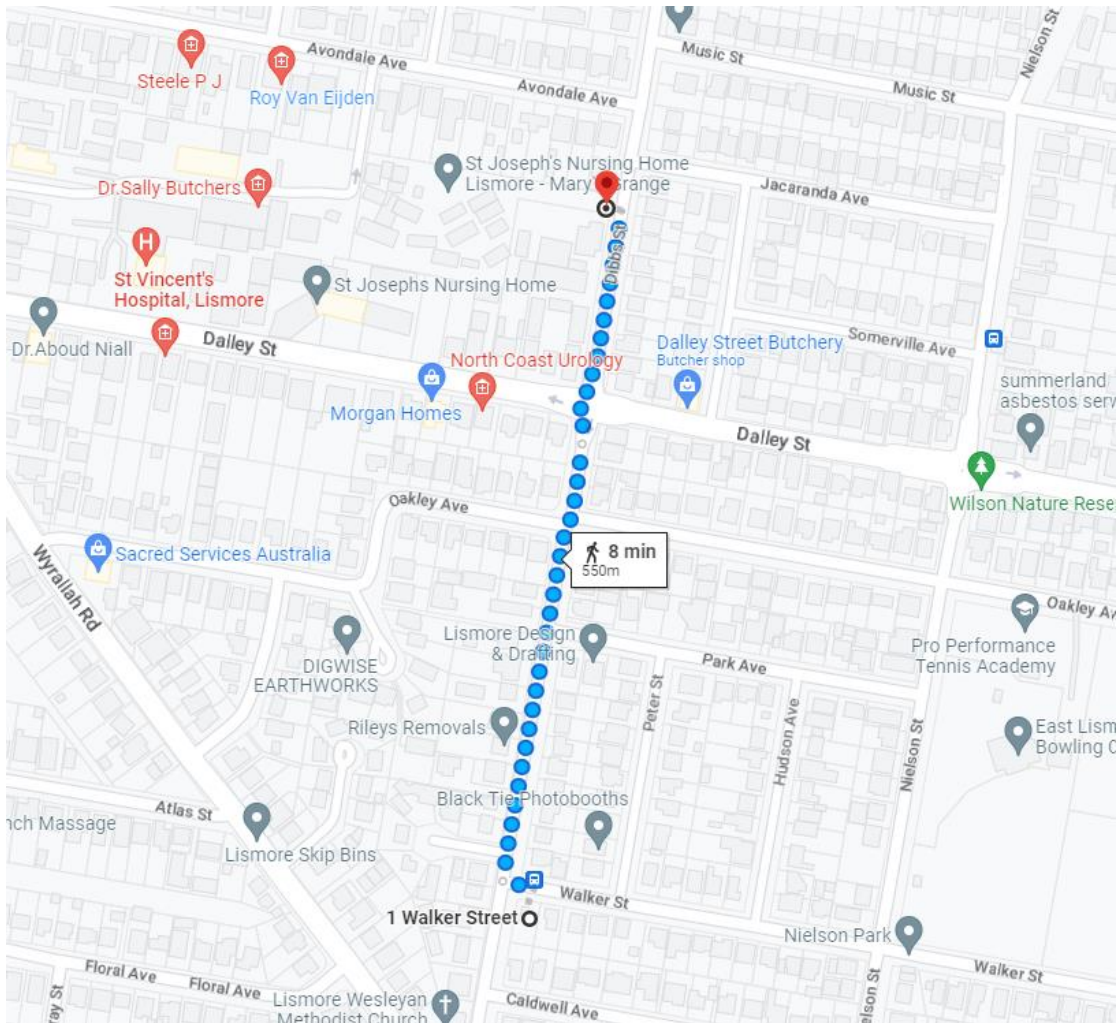


Figure 2-2 Site to St Carthage's Primary School, Dibbs St bus stop (from Google maps)

3. Off Street Parking Provision

3.1. Car parking

The subject development is proposed to be under Housing SEPP 2021 “State Environmental Planning Policy”. Since the development is proposed by a social housing provider, the car parking requirement and summary are shown in Table 3-1 to 3-3.

Table 3-1 Off-street car parking space provision rate

Land use	Minimum number of car parking spaces
Residential flat building	(i) for each dwelling containing 1 bedroom—at least 0.5 parking spaces, or (ii) for each dwelling containing 2 bedrooms—at least 1 parking spaces, or

(iii) for each dwelling containing at least 3 bedrooms— at least 1.5 parking space,

Required minimum parking spaces for the proposed development is shown in Table 3-2.

Table 3-2 Required minimum car parking spaces

Parking type	Unit type	Unit amount	Parking rate	Required spaces	Proposed spaces
Residential flat building	1-bed	8	0.5	4	12
	2-bed	8	1	8	
total		16		12	

The design complies with the requirement from SEPP (2021).

Ground floor architectural plan of the proposed development has been prepared by Kennedy Associates Architects and is attached in Appendix B.

4. Car Park and Driveway Layout

4.1. Driveway and Ramp Design

The design of the driveway, internal roadways & ramps, and car parking spaces must comply with relevant Australian Standards; details are shown in the architectural plan. Table 4-1 and Table 4-2 assess the compliance of the site to Australian Standard and Lismore Council DCP.

Table 4-1 Driveway and ramp design

FEATURE	AS 2890.1:2004	Architectural Plan	Compliance
Driveway width	• 3.0 to 5.5 for Category 1. • 6.0 to 9.0 for Category 2.	5.56m at boundary between two 300mm kerbs	The design complies with AS 2890.1
Internal driveway width	• One-way – 3.0m minimum between kerbs • Two- way – 5.5m minimum between kerbs • Note: 300mm clearance on both side when there is a high kerb or barrier on both sides.	5.8m two way between two 300mm kerbs	The design complies with AS 2890.1
Ramp grade	Longer than 20m – 1:5 maximum. Up to 20m long – 1:4 maximum. Transition grade no more than 1:8.	2.63% @ 10m 1% @ 21.19m	The design complies with AS 2890.1

	First 6m no more than 1:20. Changes of grade no more than 1:8. For The grade of the first 6 m into the car park may be increased to 1 in 8 (12.5%) if the grade is a downgrade for traffic leaving the property and entering the frontage road.		
Headroom	2.2m min between the floor and an overhead obstruction.	Open car parking spaces	The design complies with AS 2890.1

4.2.Dimensions of Parking Spaces

The design of the car parking spaces should be in compliance with AS 2890.1.

Table 4-2 Dimensions of parking spaces

FEATURE	AS/NZS 2890.1	Architectural Plan	Compliance
Residential parking space	5.4m x 2.4m. Additional 300mm when adjacent a wall	5.45m x 2.4m	The design complies with AS 2890.1
Aisle Widths	5.8m minimum	5.8m	The design complies with AS 2890.1
Blind aisle	1m extension beyond the last parking space	1.05m	The design complies with AS 2890.1
Parking envelope	According to AS2890.1 Figure 5.2	Complies with AS 2890.1	The design complies with AS 2890.1

As required in AS 2890.1:2004, a triangular area with 2.5m (face to driveway) by 2.0m (face to street) will be kept clear of obstructions to visibility (Refer to Figure 4-1).

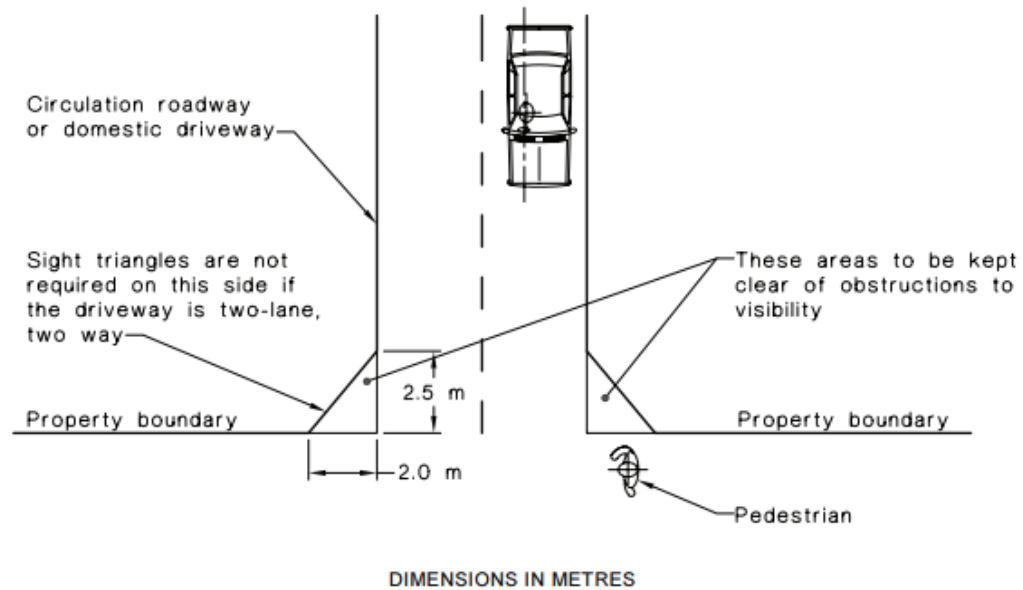


Figure 4-1 AS 2890.1:2004 requirement

In accordance with AS 2890.1:2004, sight triangle is hatched in red and shown in the following Figure 4-2.

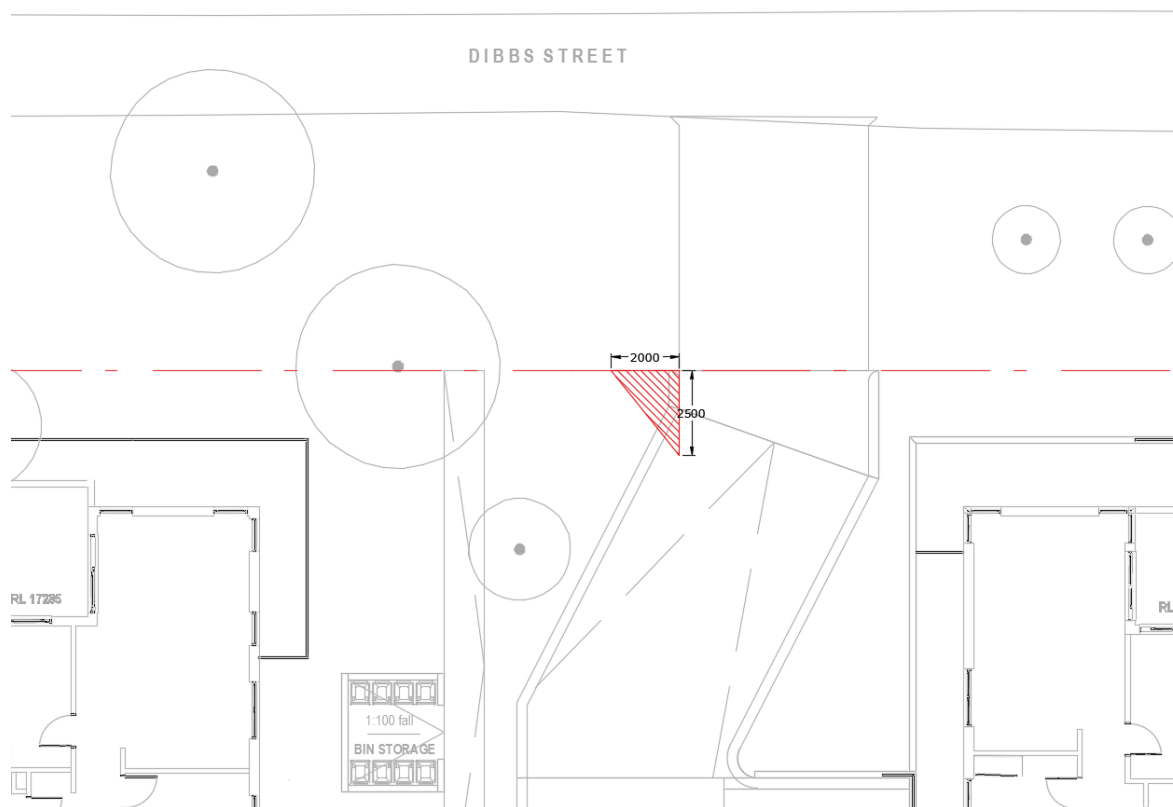


Figure 4-2 Sight triangle

Ensure any object within the sight triangle is max. 1.15m high or 50% transparent above 0.9m if higher than 1.15m.

5. Traffic Generation

An indication of the traffic generation potential of the development proposal is provided in accordance with Roads and Maritime Services (RMS) publication 'Guide to Traffic Generating Developments 2002'. RMS guidelines are based on an extensive survey of a wide range of land uses.

The existing site is comprised of 4 single dwellings with the following rate expected:

Dwelling houses

Daily vehicle trips = 9.0 per dwelling

Weekday peak hour vehicle trips = 0.85 per dwelling

The subject site is proposed to be general housing with the following rate expected:

Residential

Smaller units and flats (up to two bedrooms):

Daily vehicle trips = 4-5 per dwelling

Weekday peak hour vehicle trips = 0.4-0.5 per dwelling.

The corresponding peak hour vehicle trips are given in Table 6-1 below.

Table 6-1 Traffic generation for future and existing development

Condition	Land use	Rate	Unit	Weekday peak hour vehicle trips
Future	General housing	0.5 per dwelling	16 proposed	8
Existing	Single dwelling	0.85 per dwelling	4 existing	3.4

The future trips should be discounted by the existing trips, which is shown in Table 6-2 below.

Table 6-2 Project net Increase in peak hour traffic generation potential

Traffic Generation Potential	Weekday peak hour vehicle trips
Future	8
Existing	3.4
Net	+4.6

According to the Table above, it is likely that the proposed development will result in an increase in the traffic generation potential by approximately **5 additional** vehicle trips/hr during weekday peak hour from Monday to Friday.

6. Swept Path Analysis

To ensure all vehicles enter and exit the site in a forward direction, swept path analysis has been conducted in the Appendix B.

It is our opinion that the proposed car parking and driveway comply with Australia Standard.

7. Conclusion

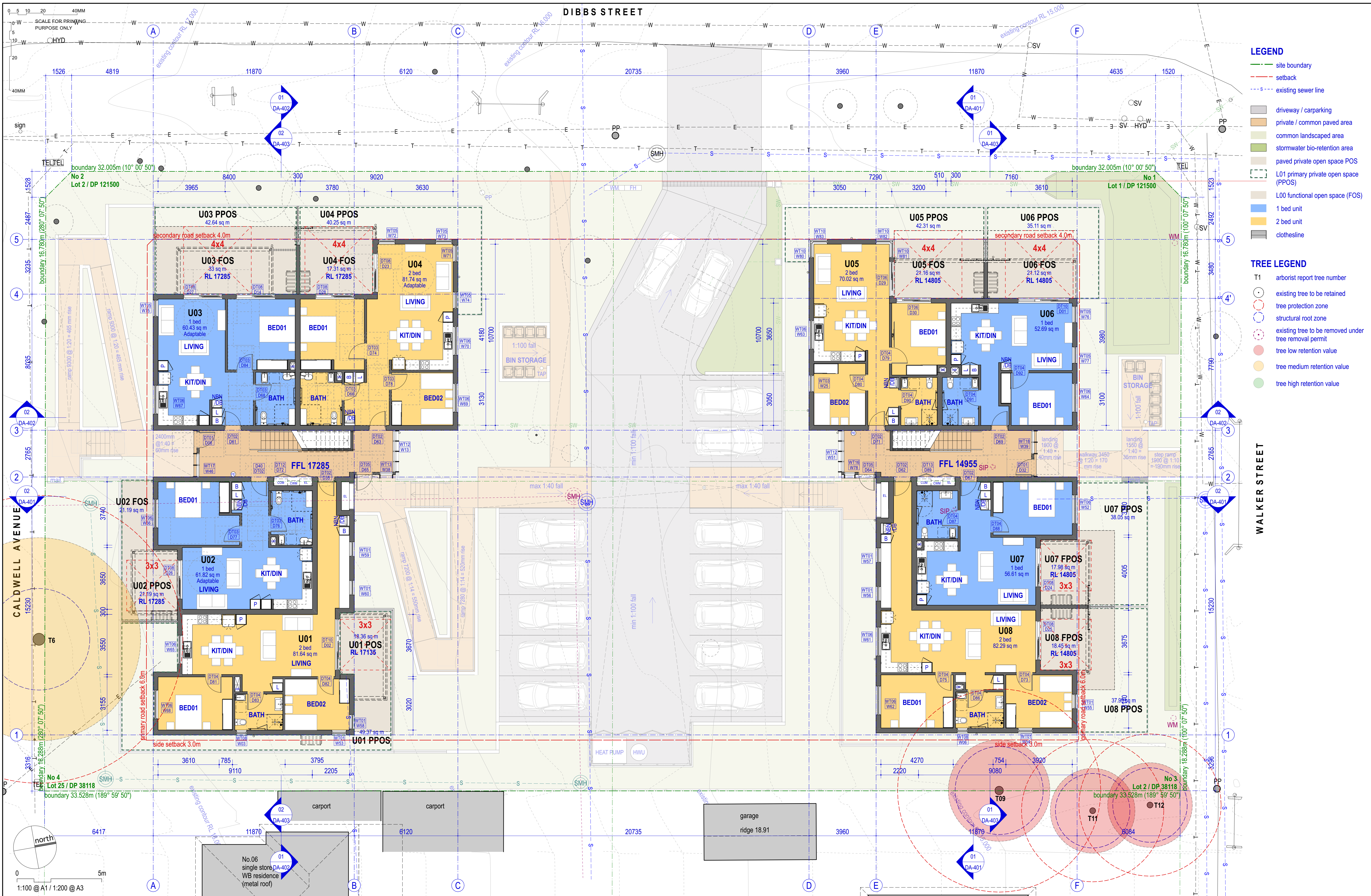
Traffic Generation by the development does not affect the level of service at all intersections.

The site is located within public bus transportation. This would minimize the need for occupants and visitors of the proposed development to drive their own vehicles to and from their various activities.

The Traffic Report concludes that the proposed residential development is suitable in relation to internal traffic according to AS2890 and is suitable for the subject location in relation to the impact of traffic.

APPENDIX A

Architectural Plan



LEGEND

- site boundary
- setback
- existing sewer line
- driveway / carparking
- private / common paved area
- common landscaped area
- stormwater bio-retention area
- paved private open space POS
- L01 primary private open space (PPOS)
- L00 functional open space (FOS)
- 1 bed unit
- 2 bed unit
- clothesline

TREE LEGEND

- T1 arborist report tree number
- existing tree to be retained
- tree protection zone
- structural root zone
- existing tree to be removed under tree removal permit
- tree low retention value
- tree medium retention value
- tree high retention value

 Planning, Industry & Environment	LOCKED BAG 5112 PARRAMATTA NSW 2124 PHONE No (02) 8753 8000 FAX No (02) 8753 8888 www.facs.nsw.gov.au	NOMINATED ARCHITECT:		PROJECT ARCHITECT	ARCHITECT	STORMWATER CONSULTANT	PROJECT:	TITLE:	SUBMIT:	
		anthony nolan 6773		KENNEDY ASSOCIATES ARCHITECTS	KREIS GRENNAN ARCHITECTURE	ARDILL PAYNE & PARTNERS	GENERAL HOUSING	GENERAL ARRANGEMENT -	PART 5 APPLICATION	
				PH (02) 9587 8466	PH (02) 9560 0888	PH (02) 6686 3280	at	GROUND FLOOR		
				PROJECT MANAGER	MECHANICAL / HYDRAULIC / ELECTRICAL CONSULTANT	LANDSCAPE CONSULTANT	1-3 WALKER STREET, 2-4 CALDWELL AVENUE, EAST LISMORE			
				LAND & HOUSING CORPORATION	ADP CONSULTING	ALDERON & ASSOCIATES LANDSCAPE ARCHITECTS				
		PH (02) 9765 3620	PH (02) 8203 5447	PH: 0409 915 853	Total Site Area: 2425.8m2 (By Survey)		FILE:			
		DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.		LOT 1, LOT 2 in DP 121500, and LOT 25 in DP 38118		LOT 1, LOT 2 in DP 121500, and LOT 25 in DP 38118		2250 - 01 SD PLANS MASTER.vmx		
								SCALE:	PROJ:	PROJECT No:
								1:100 @A1	BBYYD	2250
								DRAWN:	CHECKED:	APPROVED:
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								TYPE:	SHEET:	REV:
								AR	DA-202	A

APPENDIX B

Swept Path Analysis

5200

950 3050

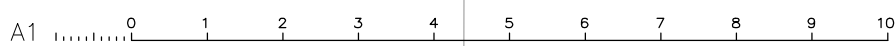
B99

mm	
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

Technical drawing of a car showing dimensions in mm:

- Overall length: 4910
- Front wheel offset: 920
- Rear wheel offset: 2800

B85	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

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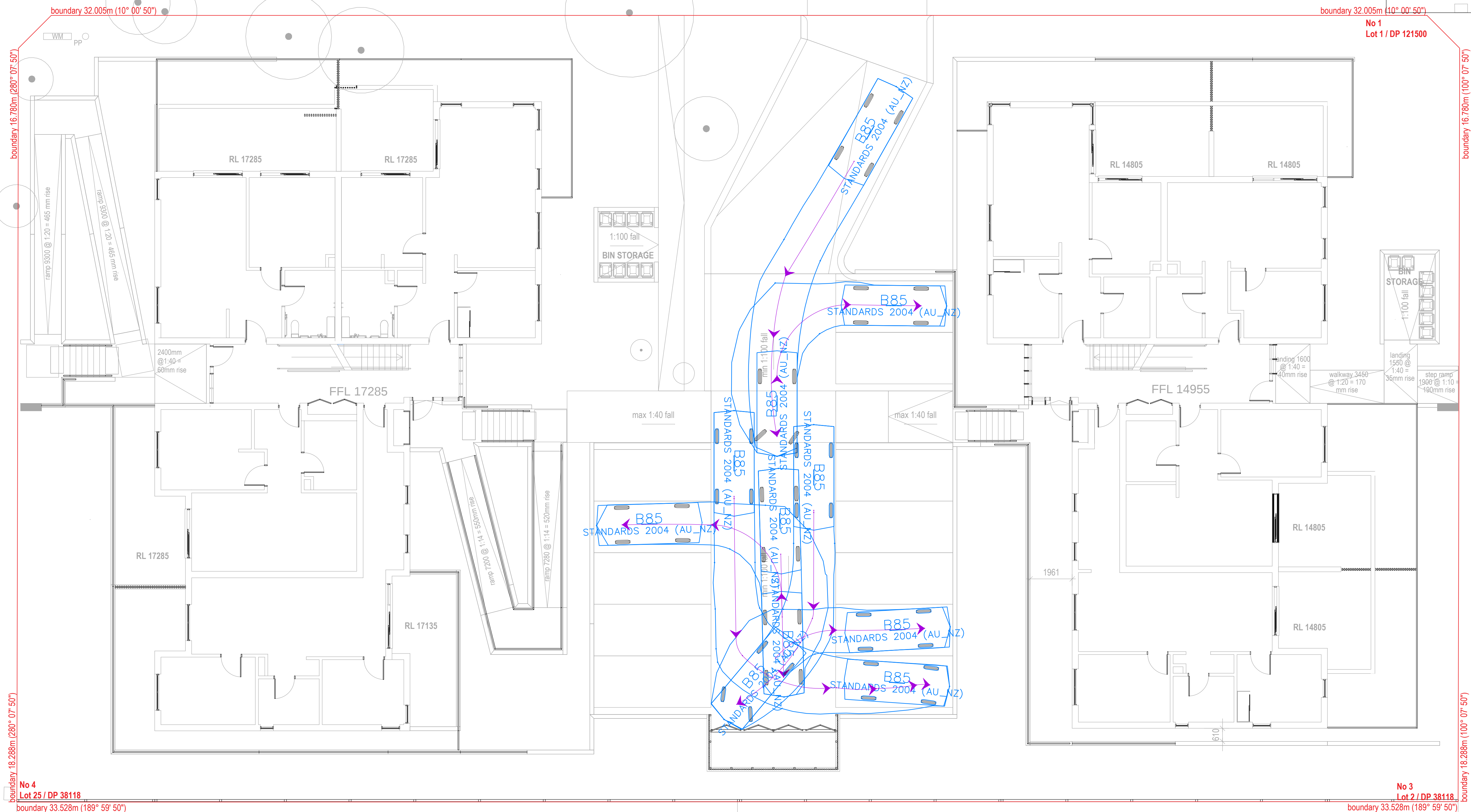
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SCALE @ A1 1 : 100 U.N.O		JOB No 22NLI120	
AUTHORISED NERMEIN LOKA		DWG No T01	REV C

Technical drawing of a car with dimensions:

- Overall length: 4910
- Front overhang: 920
- Wheelbase: 2800
- Rear overhang: 1870
- Wheelbase: 1770
- Steering angle: 6.0
- Steering angle: 34.1



A1 0 1 2 3 4 5 6 7 8 9 10

C	FOR DA APPROVAL	A.R.	A.R.	28-04-23					
B	FOR COORDINATION	A.R.	A.R.	14-03-23					
A	FOR COORDINATION	A.R.	A.R.	23-02-23					
No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE

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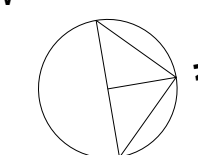
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PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
AT 1-3 WALKER STREET, 2-4 CALDWELL
AVENUE, EAST LISMORE, NSW

CONSENT AUTHORITY:
LISMORE CITY COUNCIL



SHEET SUBJECT
SWEPT PATH ANALYSIS
BASEMENT ENTRY 1

PROJECT 1-3 WALKER STREET, 2-4 CALDWELL AVENUE, EAST LISHMORE, NSW			
DATE FEB 23	DRAWN A.R.	DESIGNED A.R.	CHECKED N.L.
SCALE @ 1:100 U.N.O		JOB No 22NL120	
AUTHORISED NERMEIN LOKA		DWG No T02	REV C

Technical drawing of a car showing dimensions in mm:

- Overall length: 4910
- Front wheelbase: 920
- Rear wheelbase: 2800

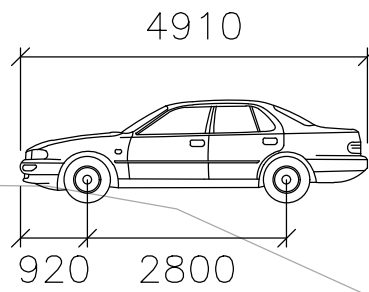
Table of specifications:

B85	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

00° 50°

[illegible]

B-85 VEHICLE PROFILE



B85
Width : 1870
Track : 1770
Lock to Lock Time : 6.0
Steering Angle : 34.1

No 1
Lot 1 / DP 121500

No 3
Lot 2 / DP 38118

boundary 32.005m (10° 00' 50")

boundary 32.005m (10° 00' 50")

boundary 16.780m (280° 07' 50")

boundary 16.780m (100° 07' 50")

boundary 18.288m (280° 07' 50")

boundary 18.288m (100° 07' 50")

No 4
Lot 25 / DP 38118

boundary 33.528m (189° 59' 50")

CALDWELL AVENUE

DIBBS STREET

WM PP

ramp 9300 @ 1:20 = 465 mm rise

ramp 9300 @ 1:20 = 465 mm rise

2400mm
@ 1:40 =
60mm rise

RL 17285

RL 17285

FFL 17285

RL 17285

RL 17135

ramp 7200 @ 1:14 = 520mm rise

ramp 7200 @ 1:14 = 520mm rise

1:100 fall
BIN STORAGE

max 1:40 fall

max 1:40 fall

RL 14805

RL 14805

FFL 14955

RL 14805

RL 14805

1:100 fall
BIN STORAGE

landing 1600
@ 1:40 =
40mm rise

walkway 3450
@ 1:20 = 170
mm rise

landing 1520
@ 1:40 =
36mm rise

step ramp
1900 @ 1:10 =
190mm rise

PP

SWEPT PATH ANALYSIS ENTRY 2

A1 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
C	FOR DA APPROVAL	A.R.	A.R.	28-04-23					
B	FOR COORDINATION	A.R.	A.R.	14-03-23					
A	FOR COORDINATION	A.R.	A.R.	23-02-23					

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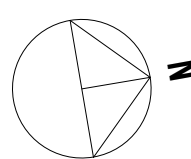
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SHEET SUBJECT
SWEPT PATH ANALYSIS
BASEMENT ENTRY 2

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AUTHORISED NERMEIN LOKA	DWG No T04	REV C		

Technical drawing of a car chassis showing dimensions: wheelbase 2800, front overhang 920, total length 4910, and a side profile view.

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



A1 0 1 2 3 4 5 6 7 8 9 10

C	FOR DA APPROVAL	A.R.	A.R.	28-04-23					
B	FOR COORDINATION	A.R.	A.R.	14-03-23					
A	FOR COORDINATION	A.R.	A.R.	23-02-23					
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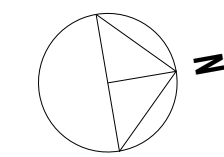
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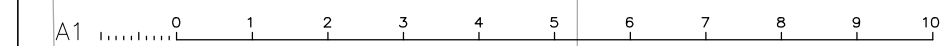


SHEET SUBJECT
SWEPT PATH ANALYSIS
BASEMENT ENTRY 3

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AUTHORISED NERMEIN LOKA		DWG No T06	REV C

Technical drawing of a car chassis showing dimensions:

- Wheelbase: 2800
- Front overhang: 920
- Total length: 4910

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