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Job Number: **19NL098-TR5** **Date:** **5th August, 2021**

Traffic Management Report for

103-109 Laycock Street, Cranebrook, NSW

Prepared by

LOKA CONSULTING ENGINEERS PTY LTD

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Senior Civil Engineer

Accredited Certifier

Director

Table of Contents

1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Alvaro Architects to provide a Traffic Management Report for the site at 103-109 Laycock Street, Cranebrook, NSW (refer to Figure 1-1 and Figure 1-2).

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 road network in the vicinity of the site, and traffic conditions on that road network;
- 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)

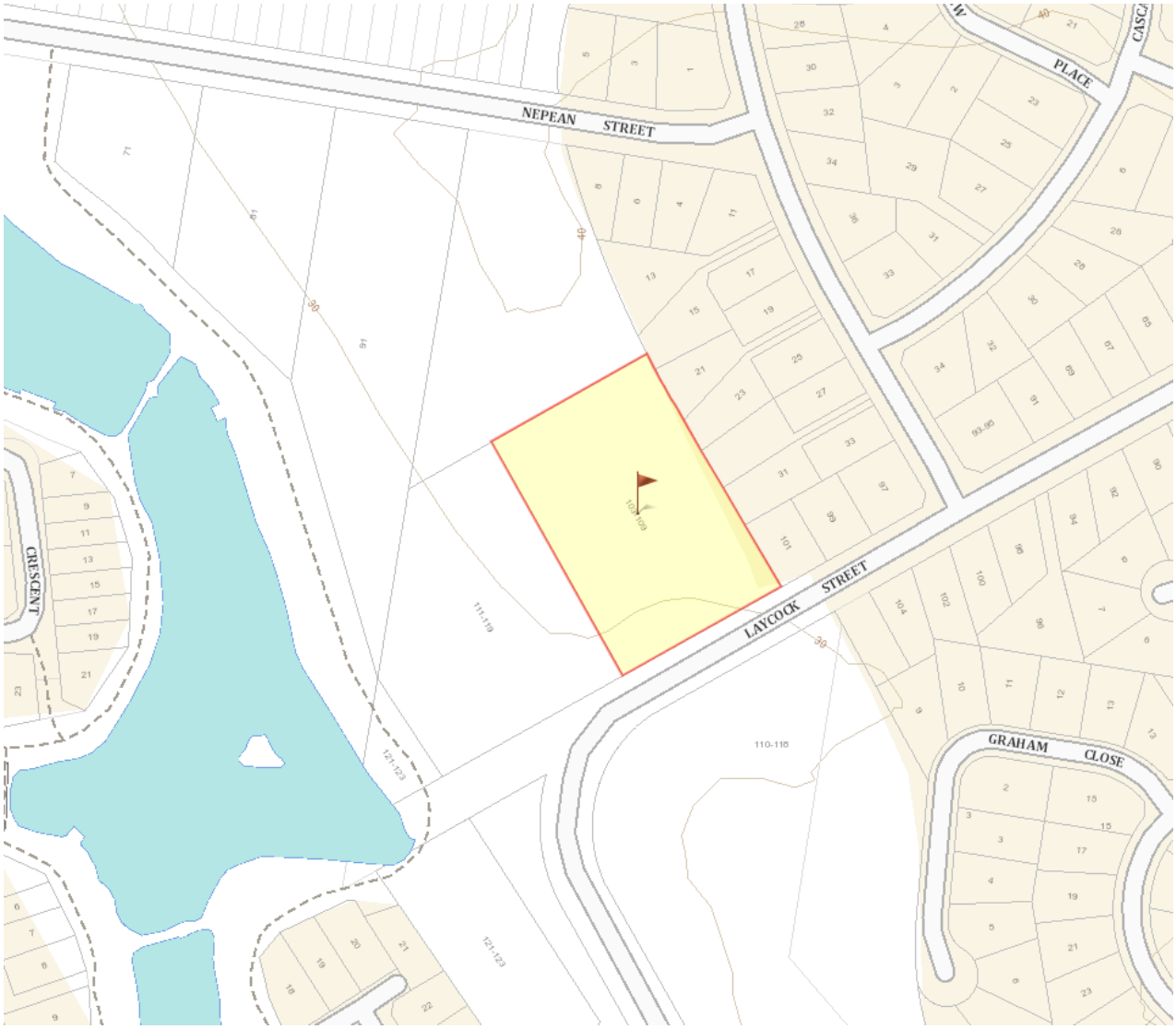


Figure 1-2 Site location (from SIX maps)

2. Proposed Development

The proposed development will facilitate the construction of a seniors housing development within a site area of approximately 7974m^2.

The proposed development is bounded by

- 101 Laycock St, 15, 21, 23, 29, 31 Camelot Dr on the East;
- 111-119 Laycock St on the West;
- 22 Nepean St on the North; and
- Laycock Street on the South.

2.1.Public Transportations

The area is well connected to public transport, with bus stations located in close proximity to the site.

1. It takes 1-minute walking (3m) from the site to 103 Laycock St before Camelot Dr bus stop (refer to Figure 2-1).
2. It takes 2-minutes walking (130m) from the site to Laycock St Across From Camelot Dr 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.

Location	Line Name	Route	Interval
Bus stop 1	673	Penrith to Windsor via Cranebrook	4 hrs
	783	Penrith to Jordan Springs	1 hr
Bus stop 2	673	Windsor to Penrith via Cranebrook	4 hrs
	783	Jordan Springs to Penrith	1 hr

Table 2-1 Bus line, route, and time

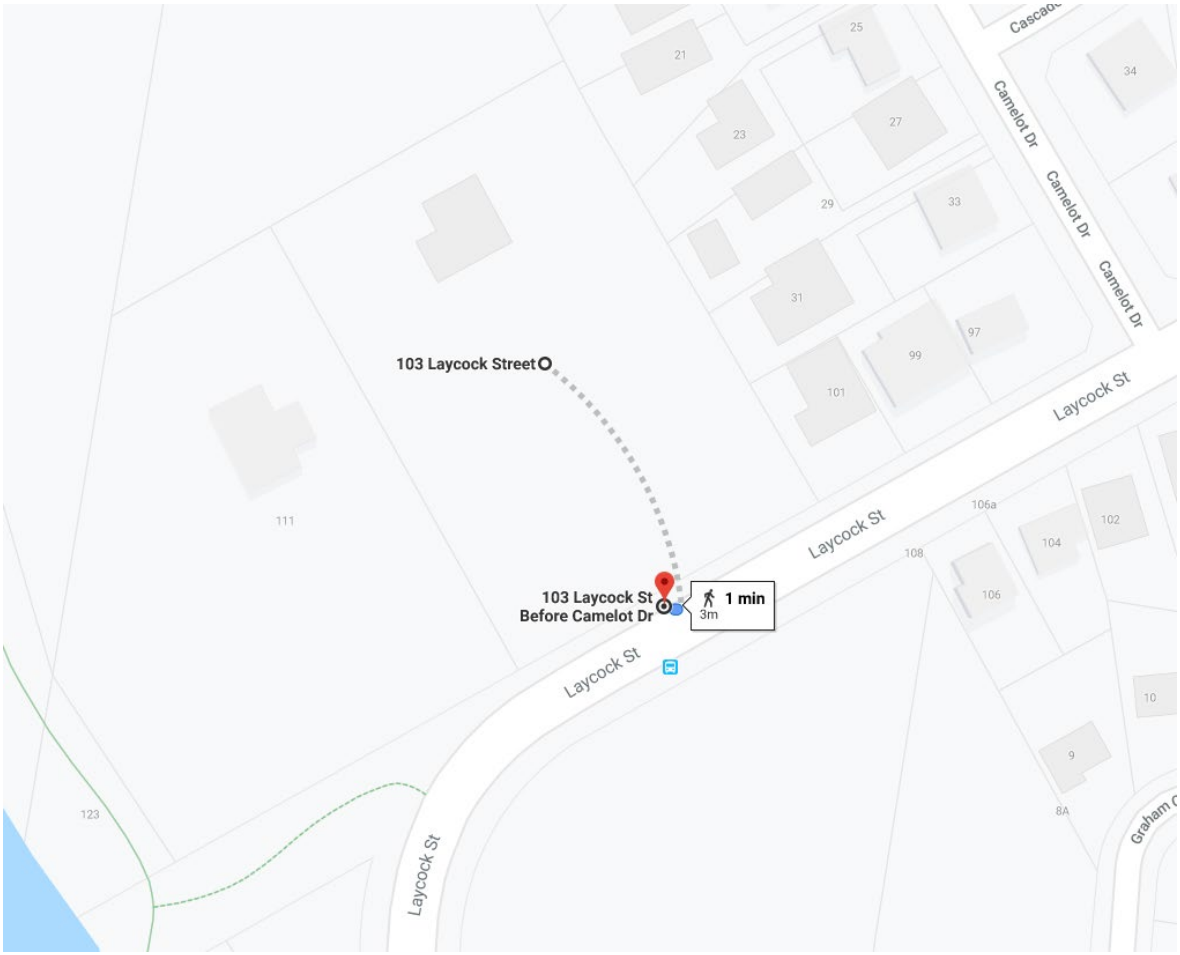


Figure 2-1 Subject Site to bus stop 1

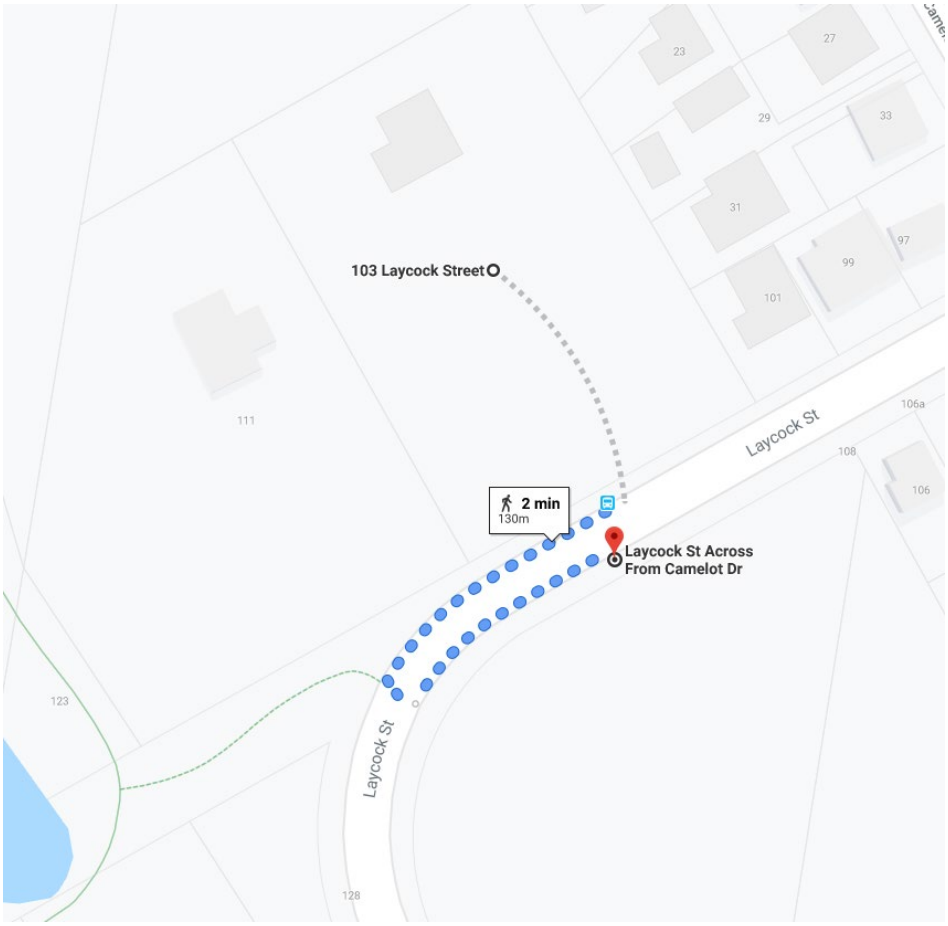


Figure 2-2 Subject Site to bus stop 2

3. Off Street Parking Provision

3.1. Car parking

According to State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, the car parking requirement and summary are shown in Table 3-1 to 3-3.

Land use	Minimum number of car parking spaces
Self-contained dwellings	0.5 car space for each bedroom if made by a person other than a social housing provider 1 space for each 5 dwellings if made by a person jointly with, a social housing provider

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

Units and bedrooms provided are summarized in Table 3-2.

Bedroom	Quantity
2-bed	0
3-bed	16
Total bedrooms	48

Table 3-2 Bedroom summary

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

Parking type	Amount	Parking rate	Required	Proposed
Residential	48	0.5	**24**	**35**
Visitor	-	-	**-**	**-**
Total			**24**	**35**

Table 3-3 Required minimum car parking spaces

The design complies with the requirement from State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

The architectural plan of the proposed development has been prepared by Alvaro Architects and is attached in Appendix A.

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 HSPD (Housing for Seniors or People with a Disability) 2004.

FEATURE	AS 2890.1:2004	HSPD 2004	Architectural Plan	Compliance
Driveway width	• 3.0 to 5.5 for Category 1. • 6.0 to 9.0 for Category 2.	According to AS2890.1	5.8m two-way with 150mm kerb on one side and 200mm kerb on other side	The design is complied with AS2890.1 and council DCP
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.	According to AS2890.1	5.8m with 150mm kerb on both sides	The design is complied with AS2890.1 and council DCP
Internal driveway grade	Longer than 20m – 1:5 maximum. Up to 20m long – 1:4 maximum.	According to AS2890.1	from Boundary: 5.54% @ 14.685m 5.15% @ 7.47m 7.85% @ 16.760m 2.89% @ 7.47m	The design is complied with AS2890.1 and council DCP

	Transition grade no more than 1:8. First 6m no more than 1:20. Changes of grade no more than 1:8.		3.17% @ 24.690m 8.86% @ 7.470m 4.97% @ 17.22m 4.3% @ 7.470m Confirming all the driveway levels are complying with AS2890.1 at CC stage.	
Headroom	2.2m min between the floor and an overhead obstruction. Headroom above each dedicated space and adjacent shared area should be a minimum of 2.5m.	According to AS2890.1	All the garages: 2.730m Ensure the garage door and internal head clearance is min. 2.5m at CC stage	The design is complied with AS2890.1 and council DCP

Table 4-1 Driveway and ramp design

4.2.Dimensions of Parking Spaces

The design of the car parking spaces should be in compliance with AS 2890.1, 3 & 6.

FEATURE	AS/NZS 2890.1, 2890.6 & 4299	HSPD 2004	Architectural Plan	Compliance
Residential garage	6.0m x 3.8m (AS4299)	According to AS4299	Min. 6.120m x 3.805m	The design is complied with AS4299 and council DCP
carport	5.4m x 2.4m	According to AS2890.1	Min 5.4m x 2.4m	The design is complied with AS2890.1
Garage door width	Min. 2.4m	According to AS2890.1	2.5m	The design is complied with AS2890.1 and council DCP
Garage apron width	7.0m for 2.4m door 6.3m for 2.7m door 5.6m for 3.0m door	According to AS2890.1	More than 7m	The design is complied with AS2890.1 and council DCP
Aisle Widths	5.8m minimum	According to AS2890.1	5.8m with 150mm kerb on both sides	The design is complied with AS2890.1 and council DCP

Table 4-2 Dimensions of parking spaces

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).

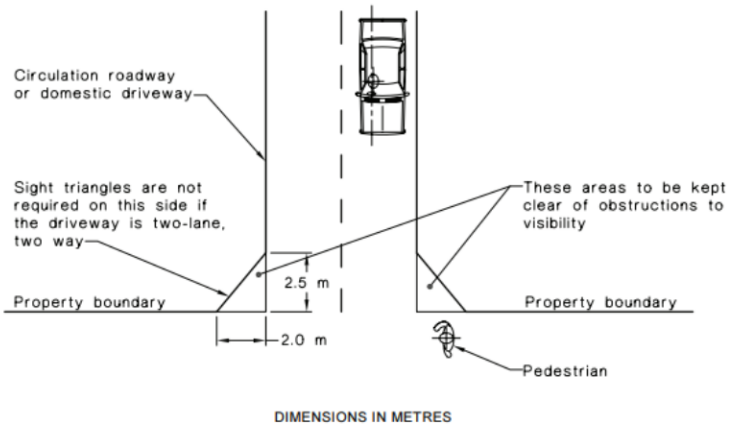


Figure 4-1 AS 2890.1:2004 requirement

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.

The design complies with sight triangle requirement.

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 – Updated traffic surveys (August 2013)'.

RMS guidelines are based on an extensive survey of a wide range of land uses.

The existing site is identified as dwelling house.

Dwelling houses
Daily vehicle trips = 9.0 per dwelling
Weekday peak hour vehicle trips = 0.85 per dwelling

The subject site is identified as medium density residential flat building.

Medium density residential flat building
Larger units and town houses (three or more bedrooms)
Daily vehicle trips = 5.0 - 6.5 per dwelling
Weekday peak hour vehicle trips = 0.5 - 0.65 per dwelling = 0.65 x 16 = 9.3

This value should be discounted by the expected existing volume of traffic, to determine the net increase (or decrease) in future expected traffic. This is shown in Table 5-1 below.

Traffic Generation Potential	Land Use	Peak hour vehicle trips
Future	Residential	+10
Existing	Residential	1
Net increase		**+9**

Table 5-1 Project Net Increase in Peak Hour Traffic Generation Potential

According to the Table above, it is likely that the proposed development will result in a change in the traffic generation by approximately **9 additional** peak hour vehicle trips.

6. Additional requirements

the construction of DDA compliant bus shelters at the adjacent bus stops is required (at the developer's cost) to service elderly residents/pedestrians generated by the development, as was raised in the in the pre-lodgement meeting.

One is to be constructed at the existing bus stop and boarding pad located directly opposite the development site on (the southern side of) Laycock Street, to service residents and their visitors waiting for buses to Penrith Station and shops.

The other is to be constructed at the existing bus stop and boarding pad located immediately fronting the development on (the northern side of) Laycock Street, to service residents and their visitors waiting to catch buses to Jordan Springs Shopping Centre in the opposite direction.

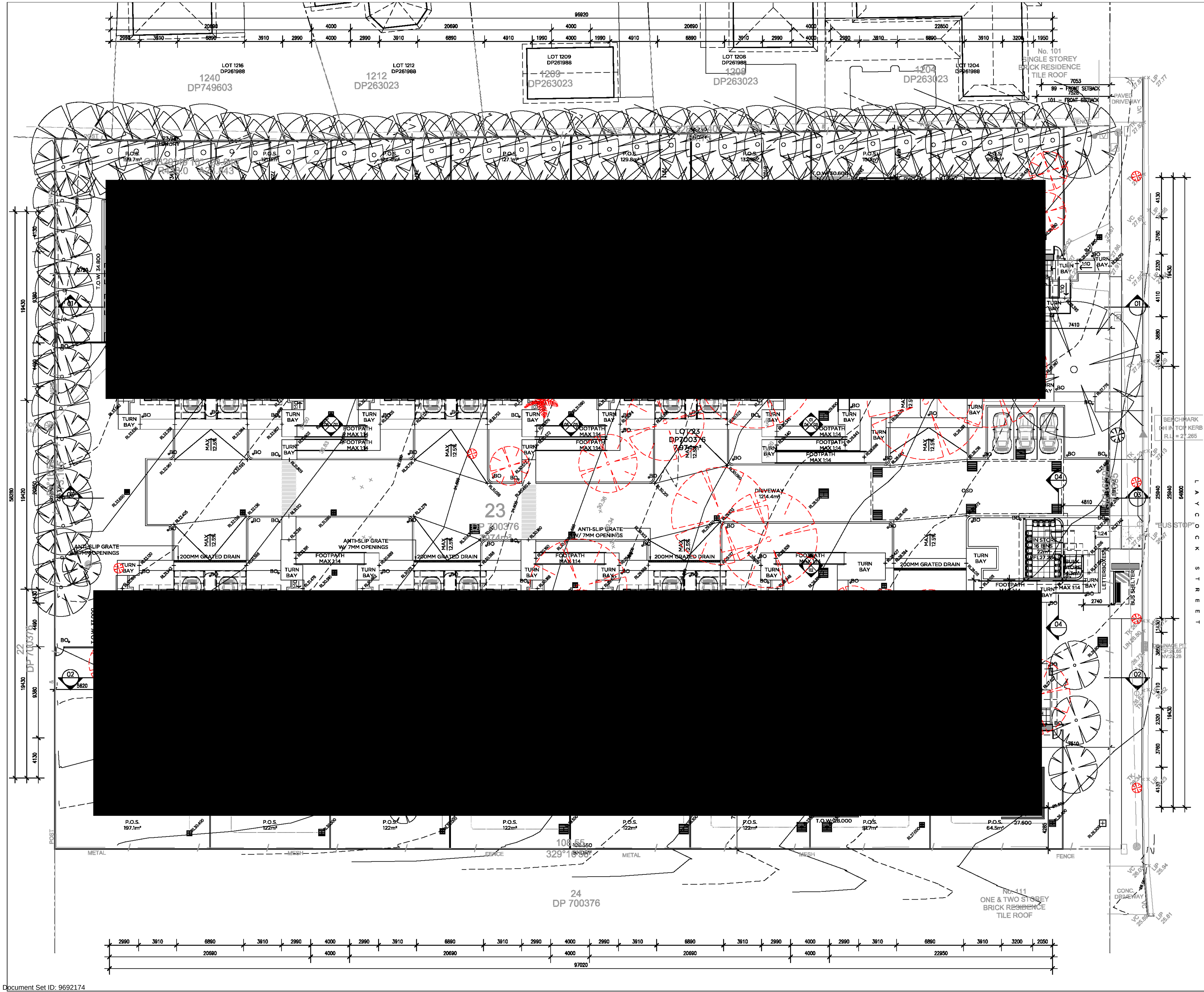
7. Swept Path Analysis

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.

APPENDIX A

Architectural Plan



REV	DATE	DESCRIPTION	BY
00	18.12.20	DA ISSUE	EF
01	02.07.21	ISSUE TO CONSULTANTS FOR REVIEW	EF
02	14.07.21	ISSUE TO CONSULTANTS FOR REVIEW	EF

NOTES

BASIX NOTES

FIXTURES

ALL SHOWER HEADS 3 STAR (>4.5 BUT <=6L/MIN) TO ALL DWELLINGS

ALL TOILET FLUSHING SYSTEMS 4 STAR TO ALL DWELLINGS

ALL KITCHEN & BATHROOM TAPS 5 STAR TO ALL DWELLINGS

ALTERNATIVE WATER

2200L RAIN WATER TANK TO ALL DWELLINGS

COLLECT RUN-OFF FROM AT LEAST 100m² OF ROOF AREA TO ALL DWELLINGS

CONNECT RAIN WATER TANK TO OUTDOOR TAP & LAUNDRY TO ALL DWELLINGS

HOT WATER

4 STAR GAS INSTANTANEOUS HOT WATER SYSTEM TO ALL DWELLINGS

VENTILATION

BATHROOM, KITCHEN & LAUNDRY VENTILATION INDIVIDUAL FAN DUCTED W/MANUAL SWITCH ON/OFF TO ALL DWELLINGS

HEATING/COOLING

3.5 STAR 1-PHASE AIRCONDITIONING 1 STAR TO LIVING AREAS & BEDROOMS TO ALL DWELLINGS

ARTIFICIAL LIGHTING

LED/FLOURESCENT LIGHTING TO ALL BEDROOMS/LIVING AREAS/BATHROOMS/HALLWAYS/KITCHENS/LAUNDRIES TO ALL DWELLINGS

NATURAL LIGHTING

UNITS 1 & 16: 1 BATHROOM & KITCHEN TO BE NATURALLY LIT

UNIT 2-15: KITCHEN TO BE NATURALLY LIT

APPLIANCES

GAS COOKTOP & ELECTRIC OVEN TO ALL DWELLINGS

OUTDOOR CLOTHES DRYING LINE TO ALL DWELLINGS

COMMON AREAS

GARBAGE ROOM NATURAL VENTILATION EXHAUST ONLY

GARBAGE ROOM COMPACT FLOURESCENT LIGHTING WITH MANUAL ON/OFF

LEGEND

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PROJECT
Proposed Seniors Housing Cranebrook

Use figured dimesnions only. Verify all levels and dimensions on site before commenceing construction, fabrication, or shop drawings.

DA ISSUE

NORTH	DRAWN	DRAWING TITLE	
	EF	SITE PLAN	
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	APPROVED	DRAWING NO.	REV
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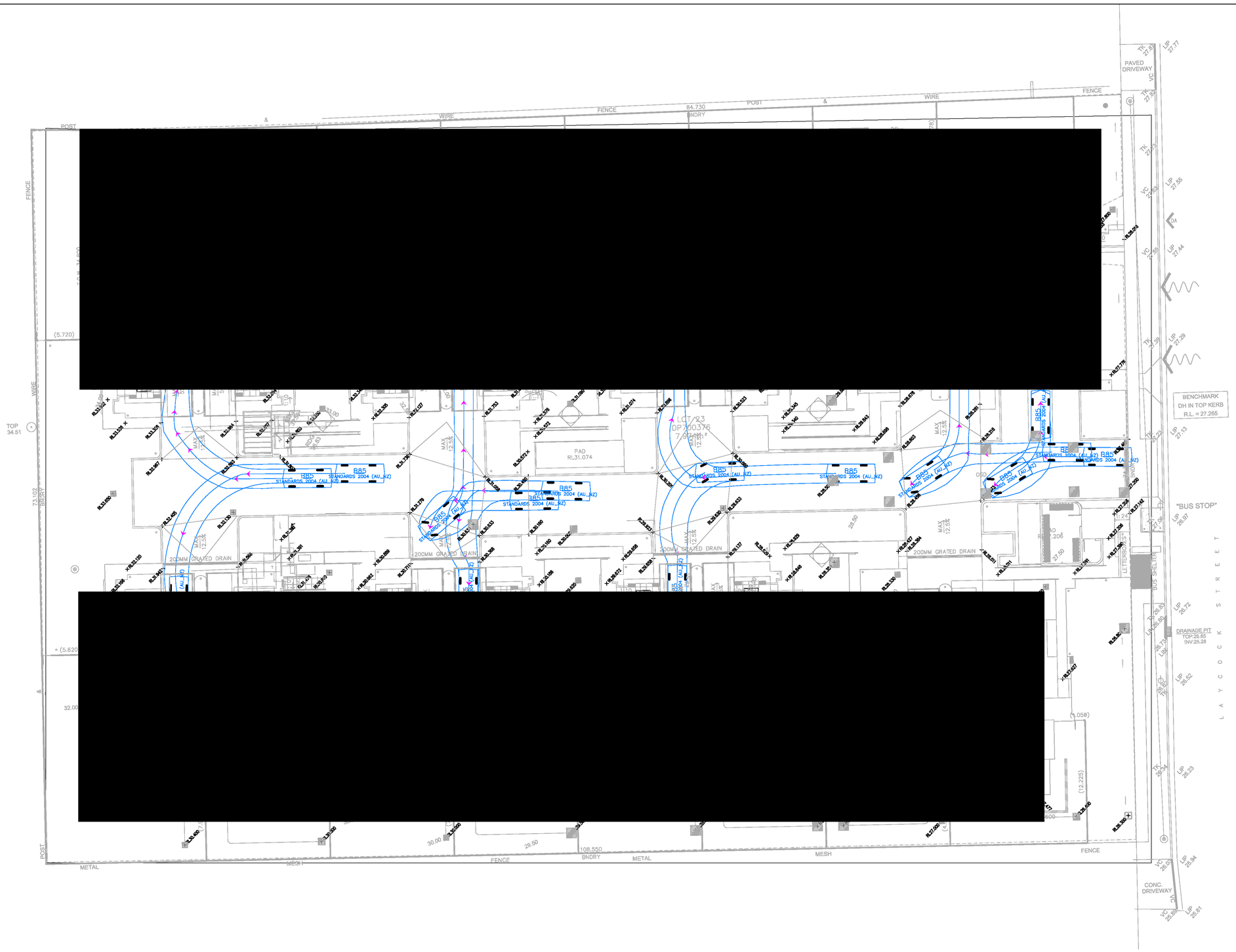
APPENDIX **B**

Swept Path Analysis



SWEPT PATH ANALYSIS ENTRY

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B	FOR COORDINATION	N.L.	A.E.	26-07-2021					
A	FOR COORDINATION	N.L.	A.E.	10-09-2020					

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103-109 LAYCOCK STREET,
CRANEBROOK, NSW

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SHEET SUBJECT
SWEPT PATH ANALYSIS ENTRY

PROJECT 103-109 LAYCOCK STREET, CRANEBROOK, NSW

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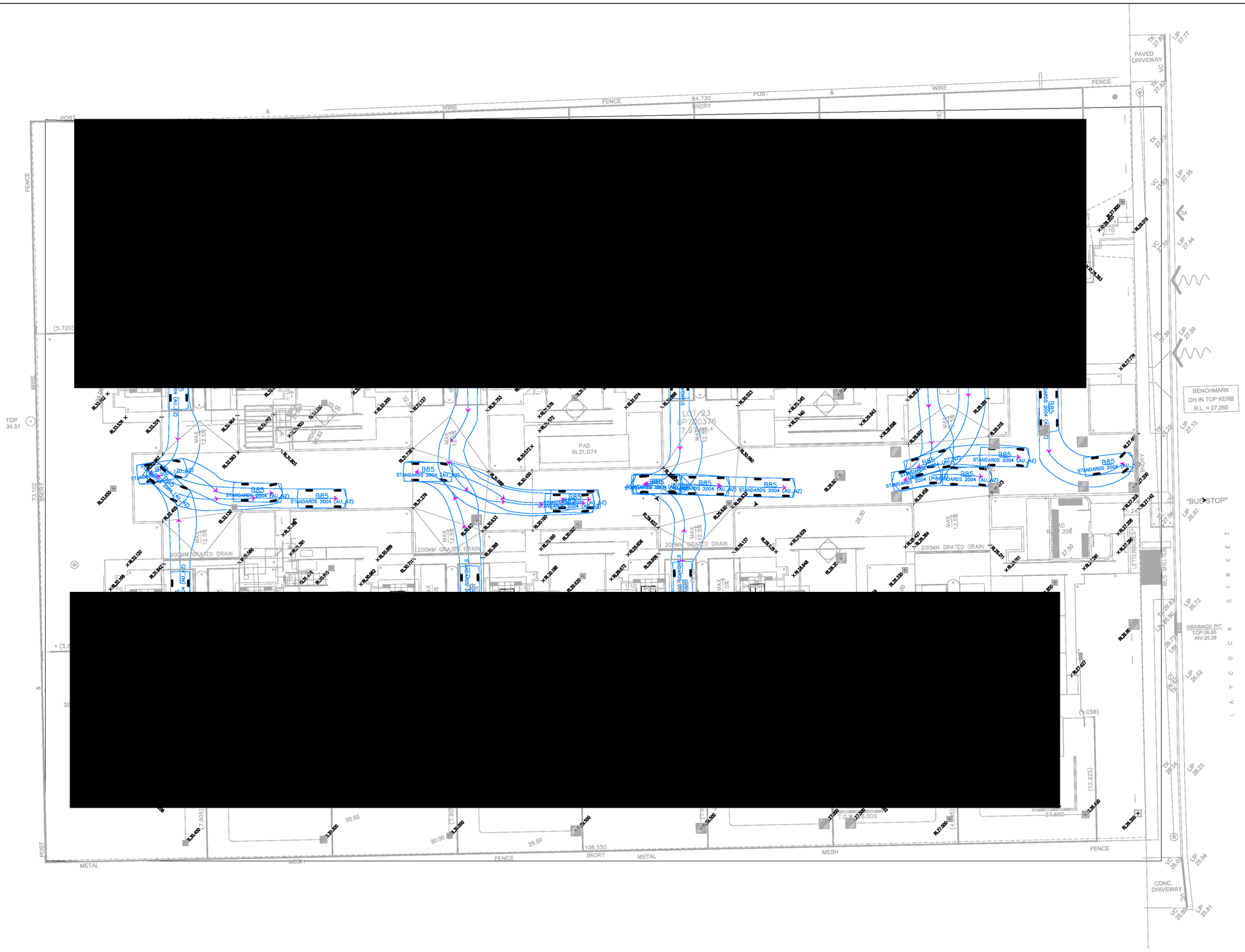

SWEPT PATH ANALYSIS EXIT

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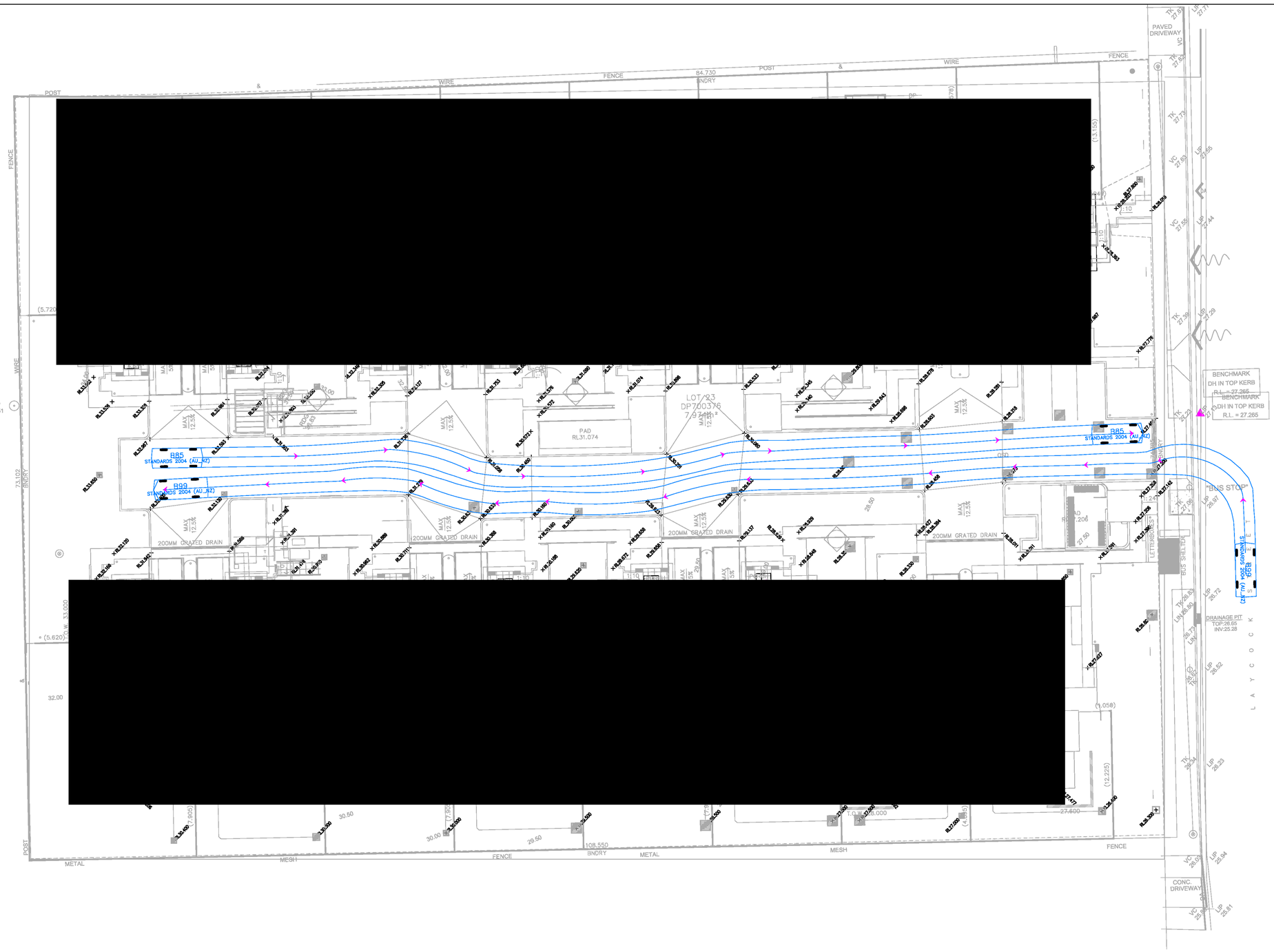

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SHEET SUBJECT
SWEPT PATH ANALYSIS
B85 PASSING B99

PROJECT	103-109 LAYCOCK STREET, CRANEBROOK, NSW
DATE	SEP 20
DRAWN	A.E.
DESIGNED	A.E.
CHECKED	N.L.
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DWG No	T03
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