LOKA CONSULTING ENGINEERS
www.lceng.com.au

LOKA CONSULTING ENGINEERS

OFFICE : SUITE 2, 55-59 PARRAMATTA ROAD, LIDCOMBE NSW 2141
PHONE: 02 8065 9689 FAX: 02 8065 9690
MOBILE: 0404 142 063
EMAIL: info@lceng.com.au
Web:www.lceng.com.au

Job Number: **18NL148-T4** **Date:** **13th May, 2020**

Traffic Management Report for

1 Station Lane, Penrith, NSW

Prepared by

LOKA CONSULTING ENGINEERS PTY LTD

Nermein Loka

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

Senior Civil Engineer

Accredited Certifier

Director

Table of Contents

1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Antoine J. Saouma Architect to provide a Traffic Management Plan for the site at 1 Station Lane, Penrith, 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 boarding house development with a site area of approximately 669 m^2.

The proposed development is bounded by

- Station Lane on the East,
- 28A Union Rd on the West,
- 20 Station Lane on the North, and
- Penrith War Memorial Swimming Pool on the South.

The development consists of a ground level will be used primarily for car parking with entry from Station Lane and 4 upper level.

2.1.Public Transportations

1. It takes 3 minutes walking (210m) from the site to Station St at Union Ln bus stop (refer to figure 2-1).
2. It takes 5 minutes walking (400m) from the site to Station St after Reserve Stat Marion St bus stop (refer to figure 2-2).
3. It takes 9 minutes walking (650m) from the site to Penrith train station (refer to figure 2-3).

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

No.	Line Name	Route	Interval
1	690P	Springwood to Penrith	60 min
	770	Mount Druitt to Penrith via St Marys	30 min
	774	Mount Druitt to Penrith via Nepean Hospital	30 min
	775	Mount Druitt to Penrith via Erskine Park	30 min
	776	Mount Druitt to Penrith via St Clair	30 min
	781	St Marys to Penrith via Glenmore Park	Time varies
	791	Penrith to Jamisontown via South Penrith	30 min
	794	Glenmore Park to Penrith via The Northern Rd	30 min
	795	Warragamba to Penrith	Time varies
	799	Glenmore Park to Penrith via Regentville	60 min
2	688	Penrith to Emu Heights	30 min
	689	Penrith to Leonay	60 min
	691	Mount Riverview to Penrith	Time varies
3	T1	Gordon via Central	15 min
	T1	Emu Plains via Parramatta	30 min
	Blue Mountains line	Mount Victoria	60 min

7Table 2-1 Bus line, route, and time

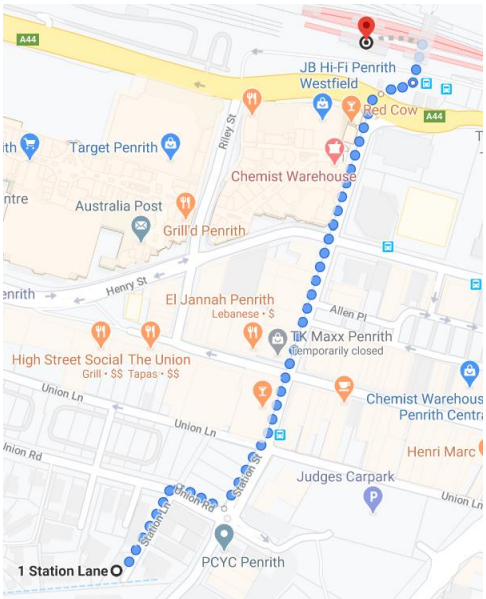


Figure 2-3 Site to train station (from Google maps)

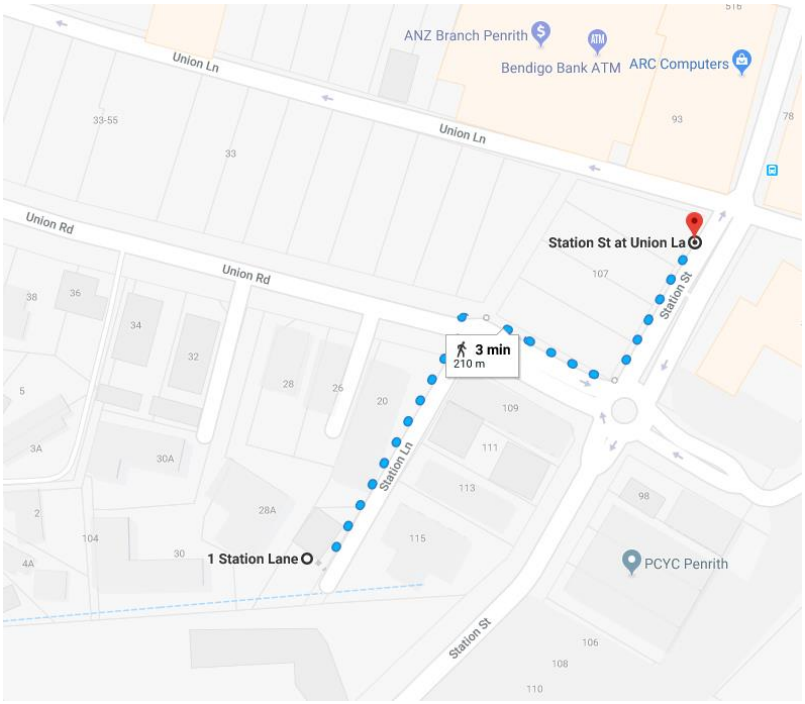


Figure 2-1 Site to bus stop 1 (from Google maps)

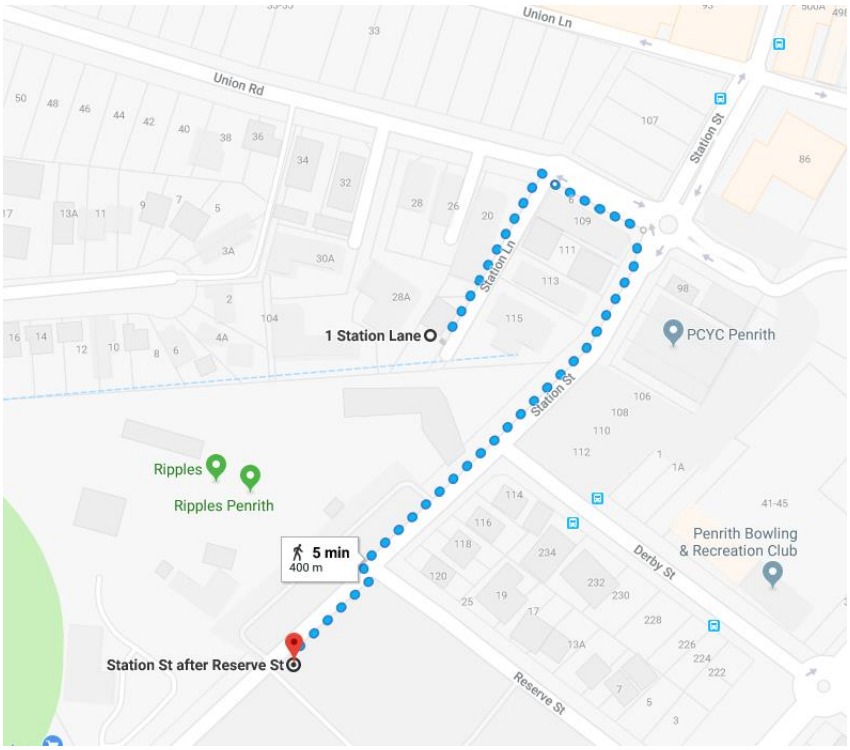


Figure 2-2 Site to bus stop 2 (from Google maps)

3. Off Street Car Parking Provision

3.1. Car parking

According to the latest architectural plan, the development contains 30 boarding houses in addition to manager unit. Parking rate as per state environmental planning policy (Affordable rental housing) 2009 as listed in Table 3-1,

Affordable rental housing:

i. *in the case of development carried out by or on behalf of a social housing provider in an accessible area—at least 0.2 parking spaces are provided for each boarding room, and*
ii. *in the case of development carried out by or on behalf of a social housing provider not in an accessible area—at least 0.4 parking spaces are provided for each boarding room, and*
iii. ***in the case of development not carried out by or on behalf of a social housing provider—at least 0.5 parking spaces are provided for each boarding room, and***
iv. ***in the case of any development—not more than 1 parking space is provided for each person employed in connection with the development and who is resident on site***
v. **Table 3-1 Minimum number of off-street parking spaces**

Type	No. of unit	Rate (spaces/room)	Parking required	Parking provided
Boarding-house	30	0.5	**15**	**15**
	Manager	1	**1**	**1**
Total			**16**	**16**

The design complies with state environmental planning policy (Affordable rental housing) 2009.

3.2. Motorcycle parking

As per state environmental planning policy (Affordable rental housing) 2009:

At least one parking space will be provided for a motorcycle for every five boarding rooms.

Table 3-2 Minimum number of motorcycle parking spaces required

Type	No. of unit	Rate (spaces/room)	Parking required	Parking provided
Boarding-house	30	0.2	6	**6**

The design complies with state environmental planning policy (Affordable rental housing) 2009.

3.3.Bicycle parking

As per state environmental planning policy (Affordable rental housing) 2009:

At least one parking space will be provided for a motorcycle for every five boarding rooms.

Table 3-3 Minimum number of bicycle parking spaces required

Type	No. of unit	Rate (spaces/room)	Parking required	Parking provided
Boarding-house	30	0.2	6	**8**

The design complies with state environmental planning policy (Affordable rental housing) 2009

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 Basement architectural plan. Table 4-1 and Table 4-2 assess the compliance of the site to Australian Standard and Penrith Council DCP.

FEATURE	AS 2890.1:2004	Penrith Council DCP	Architectural Plan	Compliance
Driveway width	• 3.0 to 5.5 for Category 1. • 6.0 to 9.0 for Category 2.	To comply with AS2890.1	Class 1A parking facility Category 1 access facility 5.5m one-way	The design is complied with AS 2890.1 and Penrith Council DCP
Ramp 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.	To comply with AS2890.1	5.5m with addition 300mm kerbs on both side of the ramp	The design is complied with council DCP and AS2890.1
Ramp grade	Longer than 20m – 1:5 maximum. Up to 20m long – 1:4 maximum. Transition grade no more than 1:8. First 6m no more than 1:20. Changes of grade	To comply with AS2890.1	The entry approximately flat The parking space entry 6m 1:20 upwards	The design is complied with AS 2890.1 and Penrith Council DCP

	no more than 1:8.			
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.	To comply with AS2890.1	Ensure min 2.2m general and 2.5 above accessible parking space after considering slab thickness and services.	The design is complied with AS 2890.1 and Penrith Council DCP

Table 4-1 Driveway and ramp design

Ground floor and basement architectural plan of the proposed development has been prepared by Antoine J. Saouma Architect and is attached in Appendix A.

4.2.Dimensions of Parking Spaces

The design of the car parking spaces should be in compliance with AS 2890.1 and AS 2890.6.

FEATURE	AS/NZS 2890.1 & 2890.6	Penrith Council DCP	Architectural Plan	Compliance
parking space	5.4m x 2.4m. Additional 300mm when adjacent a wall	To comply with AS2890.1	All parking spaces are 5.4m x 2.4m. With additional minimum 300mm when subjected to obstacle with height more than 150mm	The design is complied with AS 2890.1 and Penrith Council DCP
Disabled parking space	5.4m x 2.4m adjacent a 5.4m x 2.4m shared zone	To comply with AS2890.6	5.4m X 2.4m with a shared area of 5.4m X 2.4m	The design is complied with AS 2890.6 and Penrith Council DCP
Aisle Widths	5.8m minimum	To comply with AS2890.1	5.8m	The design is complied with AS 2890.1 and Penrith Council DCP
Blind aisle	1m extension beyond the last parking space	To comply with AS2890.1	720mm to open landscape area (with no obstruction) The design is not complying with AS2890.1, however, there is sufficient space for vehicle entry & exit. Please refer to T01 swept path analysis plans	The design is not complied with AS 2890.1 and Penrith Council DCP

Motorcycles	1200 X 2500	To comply with AS2890.1	1200 X 2500	The design is complied with AS 2890.1 and Penrith Council DCP
Vertical Bicycle parking	1200 X 500	To comply with AS2890.3	1000 X 500	The design is complied with AS 2890.3 and Penrith Council DCP
Bicycle aisle	1500mm	To comply with AS2890.3	5800mm	The design is complied with AS 2890.3 and Penrith 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).

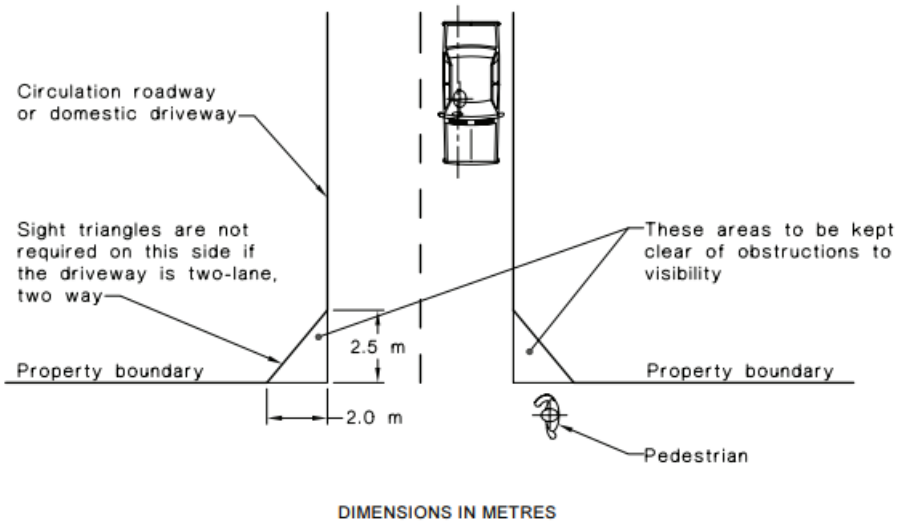


Figure 4-1 AS 2890.1:2004 requirement

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

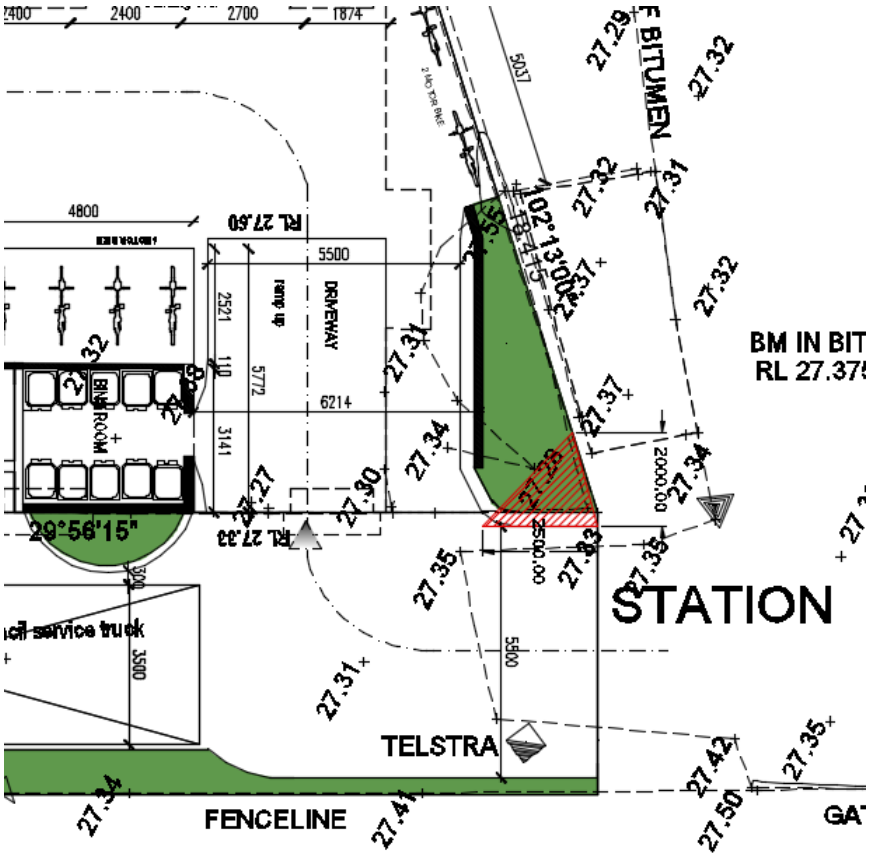


Figure 4-2 Sight triangle

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 2002'.

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

The existing site contains 1 single houses. Based on RMS guidelines, the existing site is identified as 1 dwelling. Hence, the following is expected:

- Daily vehicle trips = 9.0 per dwelling; and
- Weekday peak hour vehicle trips = 0.85 per dwelling.

The subject site is identified as a boarding house. However, there are not enough research done for this type of development. For the subject site, there are 15 car parking spaces. Therefore, there is a traffic generation potential of maximum 15 vehicles per hour during peak periods. 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.

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

Traffic Generation Potential	Peak Hour Vehicle Trips
Future	15
Existing	1
Net increase	14

According to the Table above, it is likely that the proposed development will result in an increase in the traffic generated, by maximum 14 vehicle trips during peak hour.

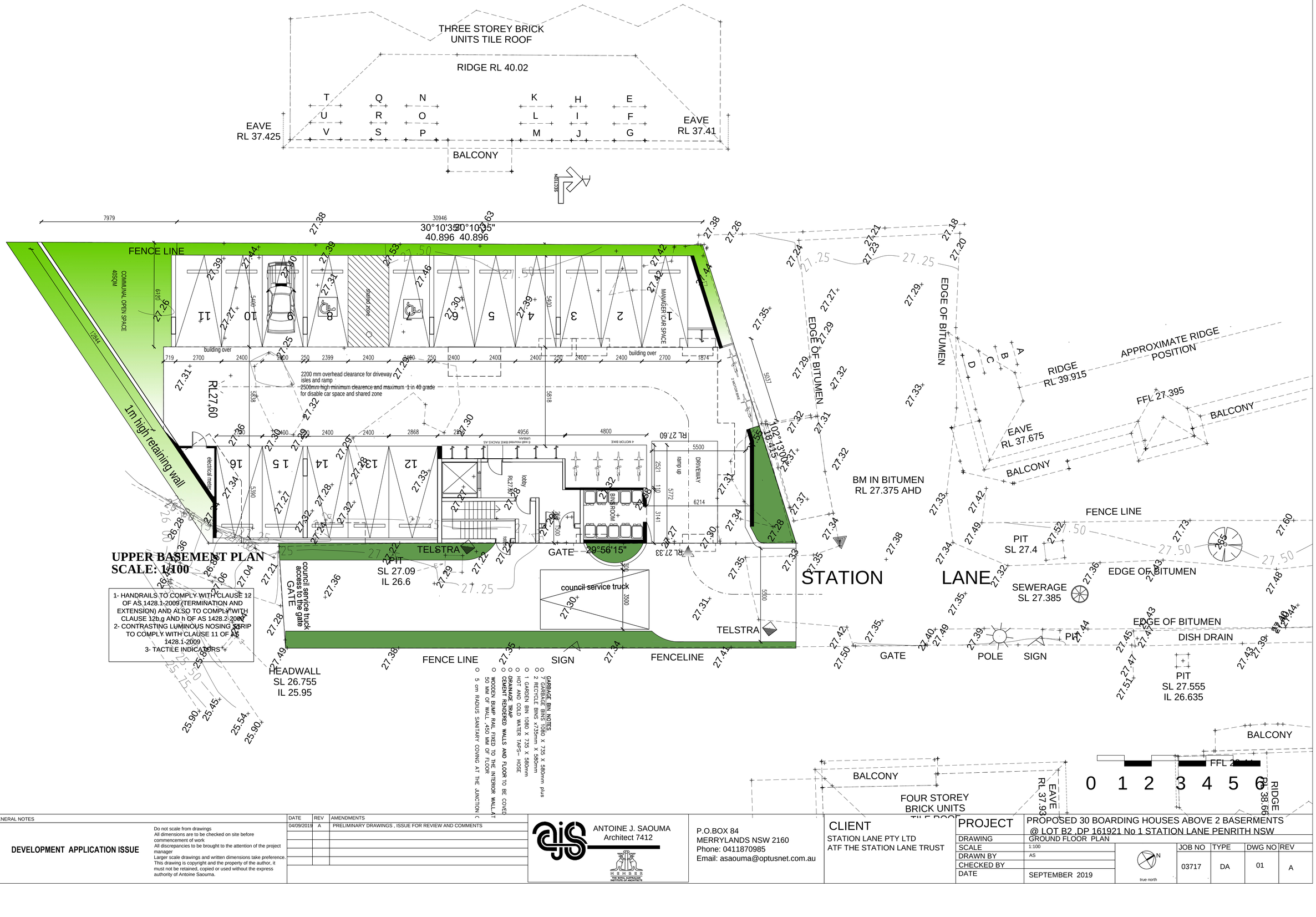
6. Swept Path Analysis

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.

APPENDIX **A**

Architectural Plan



UPPER BASEMENT PLAN
SCALE: 1:100

1- HANDRAILS TO COMPLY WITH CLAUSE 12 OF AS 1428.1-2009 (TERMINATION AND EXTENSION) AND ALSO TO COMPLY WITH CLAUSE 12b,g AND h OF AS 1428.2-2009
2- CONTRASTING LUMINOUS NOSING STRIP TO COMPLY WITH CLAUSE 11 OF AS 1428.1-2009
3- TACTILE INDICATORS

GARBAGE BIN NOTES
- 7 GARBAGE BINS 1080 X 735 X 580mm plus
- 2 RECYCLE BINS x735mm X 580mm
- 1 GARDEN BIN 1080 X 735 X 580mm
- HOT AND COLD WATER TAPS– HOSE
- DRAINAGE TRAP
- CEMENT RENDERED WALLS AND FLOOR TO BE COVED
- WOODEN BUMP RAIL FIXED TO THE INTERIOR WALL AT 50 MM OF WALL +450 MM OF FLOOR
- 5 cm RADIUS SANITARY COVING AT THE JUNCTION O

GENERAL NOTES

DEVELOPMENT APPLICATION ISSUE

Do not scale from drawings
All dimensions are to be checked on site before commencement of work
All discrepancies to be brought to the attention of the project manager
Larger scale drawings and written dimensions take preference.
This drawing is copyright and the property of the author, it must not be retained, copied or used without the express authority of Antoine Saouma.

DATE	REV	AMENDMENTS
04/09/2019	A	PRELIMINARY DRAWINGS , ISSUE FOR REVIEW AND COMMENTS

ANTOINE J. SAOUMA
Architect 7412
THE ROYAL AUSTRALIAN INSTITUTE OF ARCHITECTS
P.O.BOX 84
MERRYLANDS NSW 2160
Phone: 0411870985
Email: asaouma@optusnet.com.au

CLIENT
STATION LANE PTY LTD
ATF THE STATION LANE TRUST

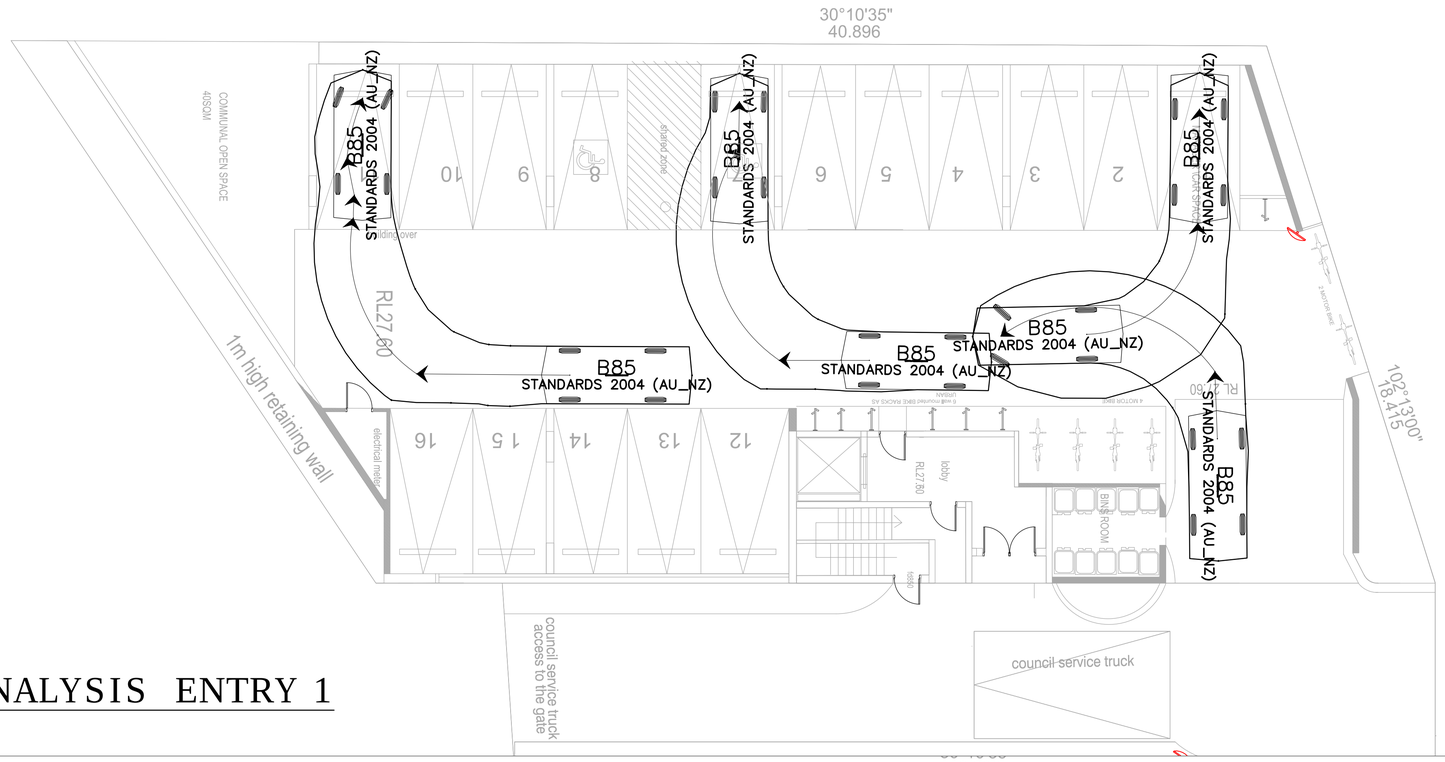
PROJECT	PROPOSED 30 BOARDING HOUSES ABOVE 2 BASERMENTS @ LOT B2 ,DP 161921 No 1 STATION LANE PENRITH NSW
DRAWING	GROUND FLOOR PLAN
SCALE	1:100
DRAWN BY	AS
CHECKED BY	
DATE	SEPTEMBER 2019

N true north

JOB NO	TYPE	DWG NO	REV
03717	DA	01	A

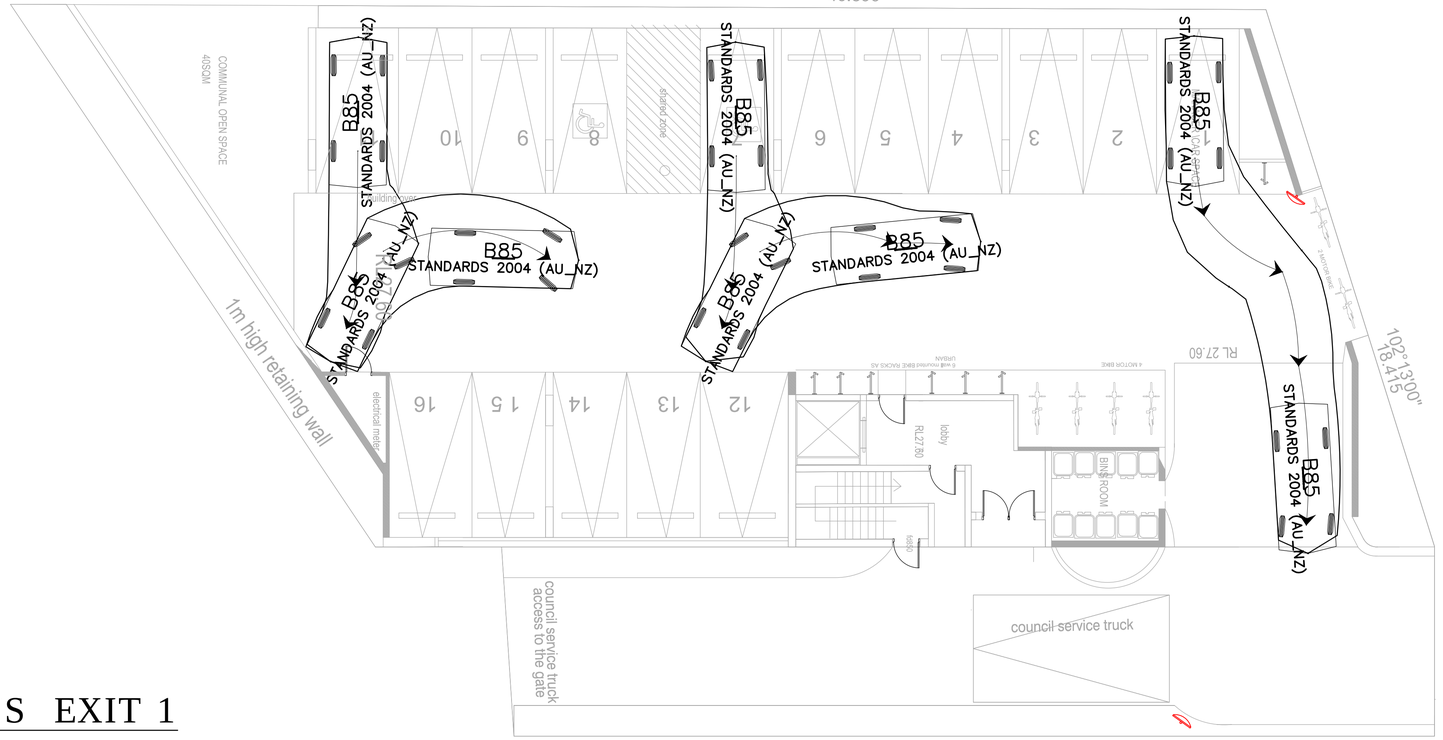
APPENDIX **B**

Swept Path Analysis



SWEPT PATH ANALYSIS ENTRY 1

SCALE 1:100



SWEPT PATH ANALYSIS EXIT 1

SCALE 1:100

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

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
E	FOR D.A. APPROVAL	N.L.	A.E.	13-05-20					
D	FOR D.A. APPROVAL	N.L.	A.E.	15-04-20					
C	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18					
B	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18					
A	FOR D.A. APPROVAL	N.L.	C.K.	04-07-18					

ARCHITECT
ANTOINE J. SAOUMA
Architect 7412
NSW REGISTERED
THE ROYAL AUSTRALIAN INSTITUTE OF ARCHITECTS

LOKA CONSULTING ENGINEERS PTY LTD
14A/8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
T: +61 2 8065 9689 F: +61 2 8065 9690
MOBILE: 0404 142 063 EMAIL: info@loeng.com.au

PROJECT
PROPOSED RFB
1 STATION LANE,
PENRITH, NSW

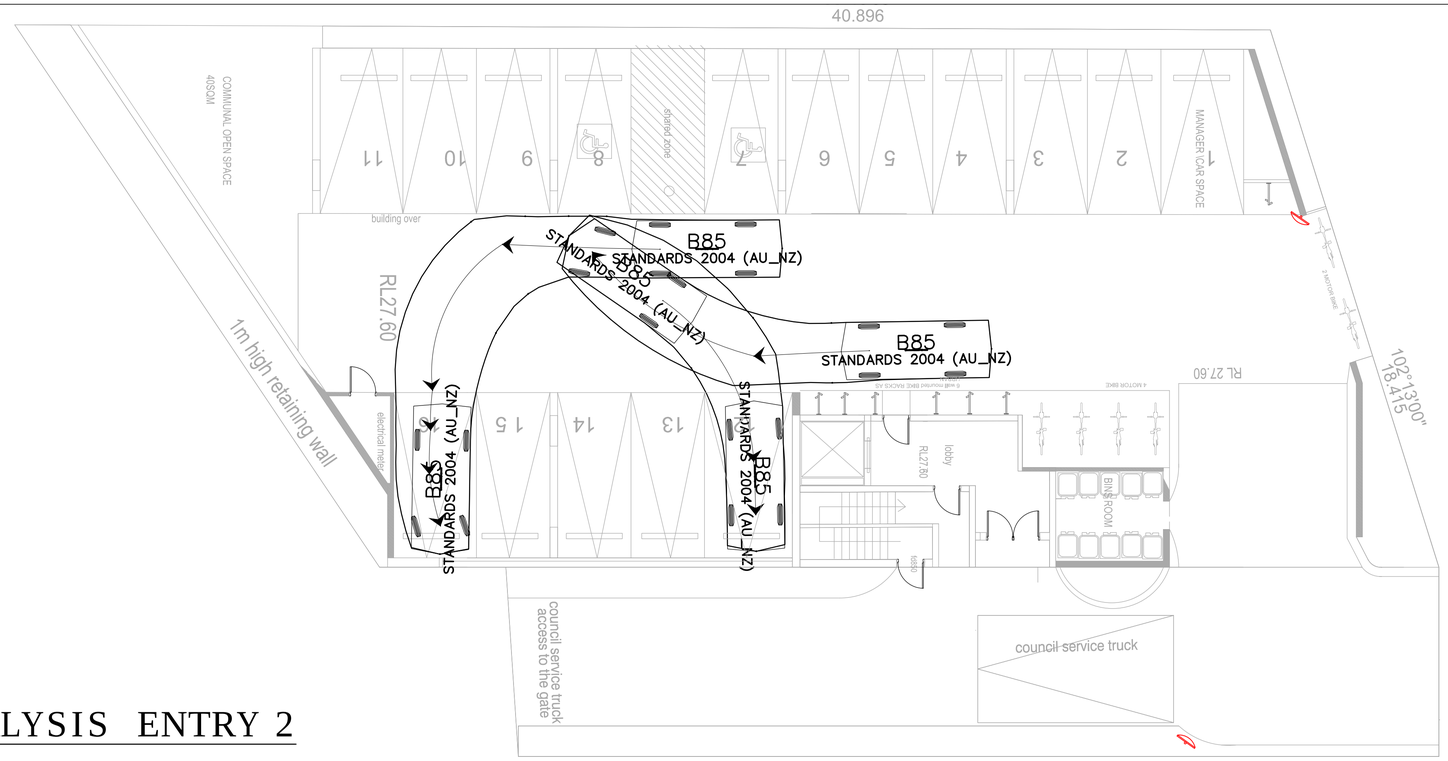
SHEET SUBJECT
SWEPT PATH ANALYSIS
ENTRY & EXIT 1

PROJECT 1 Station Lane, Penrith, NSW

DATE	DRAWN	DESIGNED	CHECKED
JUL 18	C.K.	N.L.	N.L.

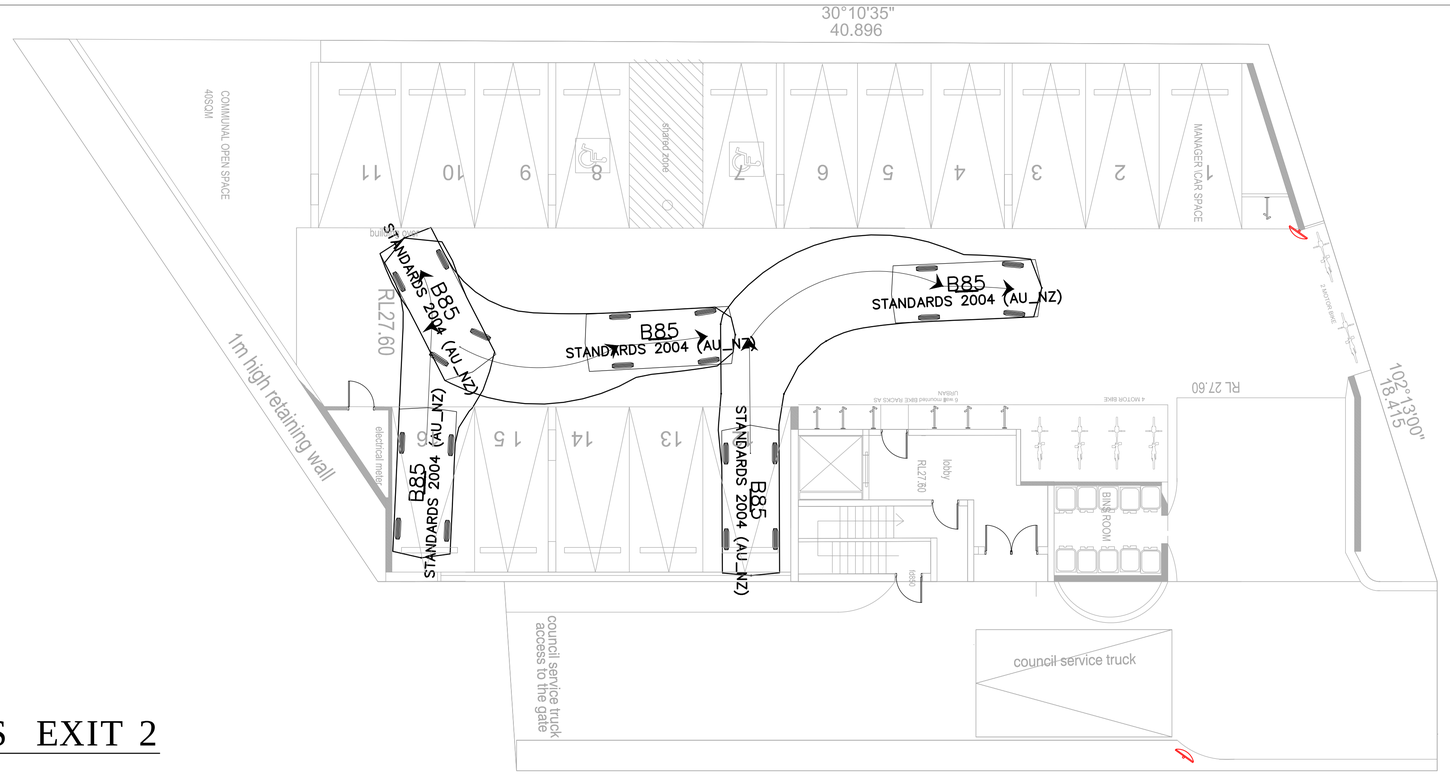
SCALE @ A1	JOB No	
1 : 100 U.N.O	18NL148	
AUTHORISED	DWG No	REV
NERMEIN LOKA	T01	E

CONVEX MIRROR
DIA300/500/600/800/1000
ODI POST
60/76/76/76/76mm



SWEPT PATH ANALYSIS ENTRY 2

SCALE 1:100



SWEPT PATH ANALYSIS EXIT 2

SCALE 1:100

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

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
E	FOR D.A. APPROVAL	N.L.	A.E.	13-05-20					
D	FOR D.A. APPROVAL	N.L.	A.E.	15-04-20					
C	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18					
B	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18					
A	FOR D.A. APPROVAL	N.L.	C.K.	04-07-18					

ARCHITECT
ANTOINE J. SAOUMA
Architect 7412
NSW REG. & ARCHITECTS
REGISTERED ARCHITECTS
INSTITUTE OF ARCHITECTS

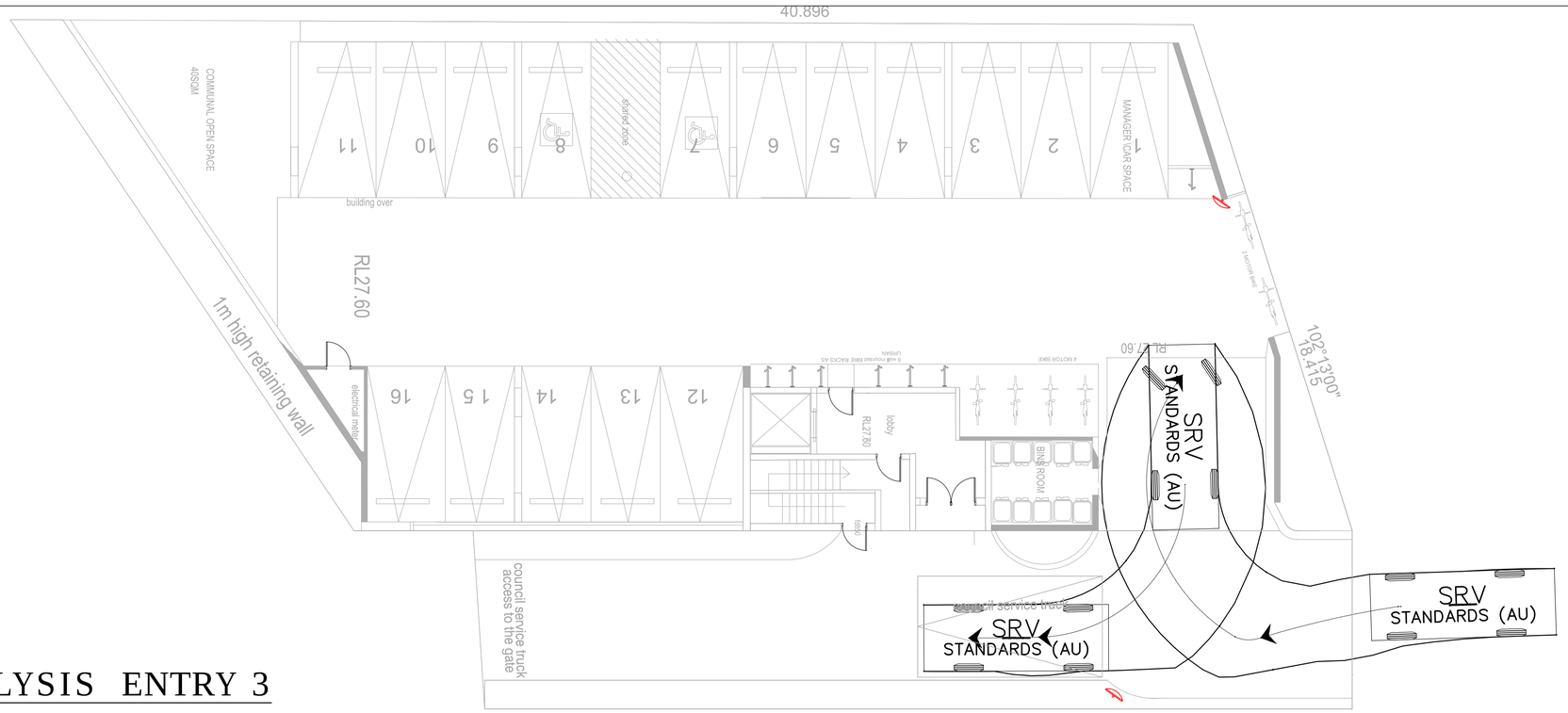
LOKA CONSULTING ENGINEERS
www.loceng.com.au
LOKA
CONSULTING
ENGINEERS PTY LTD
14A/8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
T: +61 2 8065 9689 F: +61 2 8065 9690
MOBILE: 0404 142 063 EMAIL: info@loceng.com.au

PROJECT
PROPOSED RFB
1 STATION LANE,
PENRITH, NSW

N

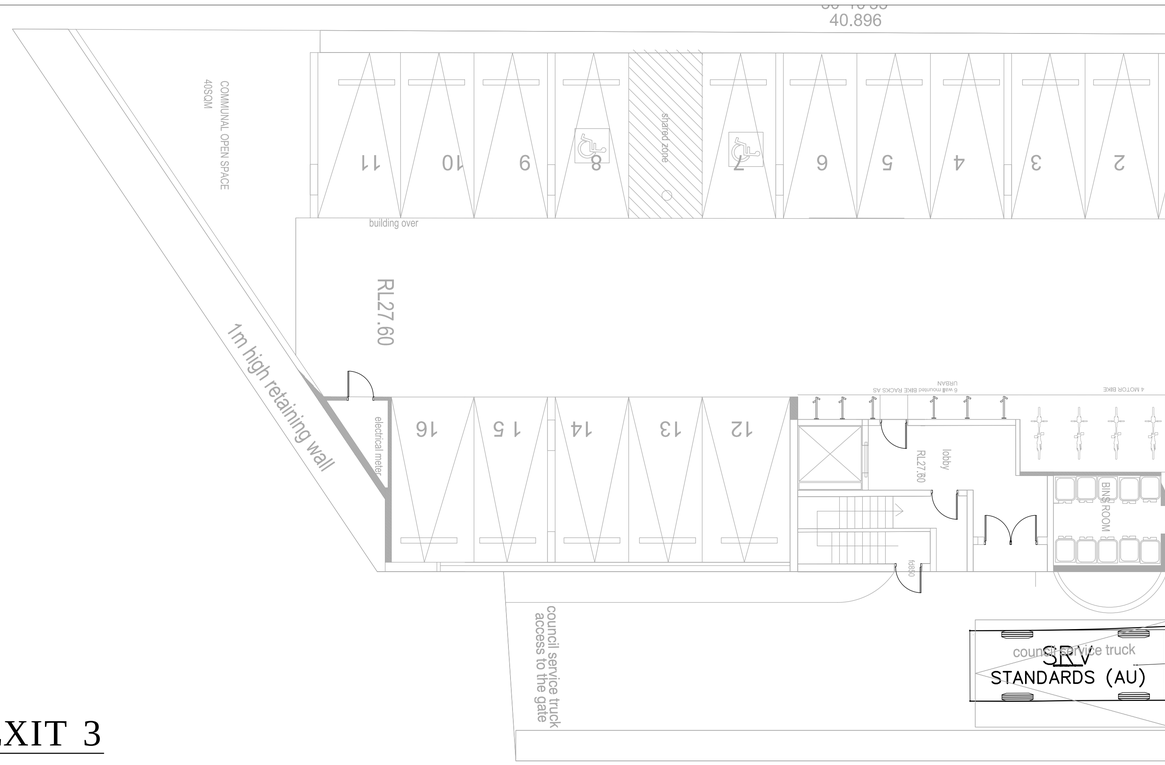
SHEET SUBJECT
SWEPT PATH ANALYSIS
ENTRY & EXIT 2

PROJECT	1 Station Lane, Penrith, NSW
DATE	JUL 18
DRAWN	C.K.
DESIGNED	N.L.
CHECKED	N.L.
SCALE @ A1	1 : 100 U.N.O
JOB No	18NL148
AUTHORISED	NERMEIN LOKA
DWG No	T02
REV	E



SWEPT PATH ANALYSIS ENTRY 3

SCALE 1:100



SWEPT PATH ANALYSIS EXIT 3

SCALE 1:100

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

No	AMENDMENT	ENG	DRAFT	DATE
E	FOR D.A. APPROVAL	N.L.	A.E.	13-05-20
D	FOR D.A. APPROVAL	N.L.	A.E.	15-04-20
C	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18
B	FOR D.A. APPROVAL	N.L.	A.E.	04-07-18
A	FOR D.A. APPROVAL	N.L.	C.K.	04-07-18

ARCHITECT
ANTOINE J. SAOUMA
Architect 7412
MEMBER
THE ROYAL AUSTRALIAN INSTITUTE OF ARCHITECTS

LOKA CONSULTING ENGINEERS PTY LTD
14A/8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
T: +61 2 8065 9689 F: +61 2 8065 9690
MOBILE: 0404 142 063 EMAIL: info@lceng.com.au
www.lceng.com.au

PROJECT
PROPOSED RFB
1 STATION LANE,
PENRITH, NSW

SHEET SUBJECT
SWEPT PATH ANALYSIS
ENTRY & EXIT SRV TRUCK

PROJECT 1 Station Lane, Penrith, NSW

DATE	DRAWN	DESIGNED	CHECKED
JUL 18	C.K.	N.L.	N.L.

SCALE @ A1	JOB No
1 : 100 U.N.O	18NL148

AUTHORISED	DWG No	REV
NERMEIN LOKA	T03	E