LOKA CONSULTING ENGINEERS PTY LTD
OFFICE: 14A, 8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
PHONE: 02 8065 9689 FAX: 02 8065 9690
MOBILE: 0404 142 063
EMAIL: info@Lceng.com.au
WEB: www.Lceng.com.au

Job Number: **17NL265-T4** **Date:** **7th April, 2021**

Traffic Management Report for 26 Moorefields Road, Kingsgrove, NSW

Prepared by

LOKA CONSULTING ENGINEERS

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 Morfosis architects to provide Traffic Management Plan for the site at 26 Moorefields Road, Kingsgrove NSW (refer to Figure 1 and Figure 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.

- Describes the site and provides details of the development proposal.
- Reviews the road network in the vicinity of the site, and traffic conditions on that road network.
- Reviews the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards.
- Assesses the adequacy and suitability of the quantum of off-street car parking provided on site.

Figure 1 - The Subject Site (from SIX Maps)

Figure 2 - Site location map (from SIX Maps)

2. Proposed Development

The proposed development will facilitate the construction of a Multi-Dwelling Housing with a site area of 1097.72m^2.

This project is bounded East by No. 24 Moorfields Road, North by Moorfields Road, South by No. 15 & 17 Oatley Street and West by No. 32 Moorfields Road.

The project consists of 4 two-bedroom units and 4 three-bedroom units in-fill affordable townhouses with a shared basement carpark.

2.1.Public transportations

According to Google Maps (Figure 3-4), it takes 1 minute (120m) walk to Moorefields Road after Kingsgrove Road Bus Stop & 4 minutes (300m) walk to Kingsgrove Road at Oatley Street Bus Stop.

There are no railway station, wharf or light rail station nearby.

Table Below show nearby bus route and service frequency:

Bus Route	Travel Route	Service Frequency
446	St George Hospital to Roselands	Every 30 minutes from 06:01am to 20:05pm weekdays, and every hour from 6:03am to 16:44pm Saturday and 09:14 to 17:14 on Sunday and public holidays
415	Muswellbrook to Scone via Denman	Once per day
423	Kingsgrove to City Martin Place	Every 30 minutes from 05:11am to 02:00am weekdays, and every hour from 6:03am to 02:58am Saturday
423X	Kingsgrove to City Martin Place (express service)	Every 10-3 minutes from 06:32 to 07:27 am weekdays and no service on weekends
490	Drummoyne to Hurstville	Every 30 minutes from 06:14am to 22:29pm weekdays, and every 30-minute from 7:42am to 22:29pm weekend & Public Holidays.
492	Drummoyne to Rockdale	Every 30 minutes from 05:114am to 23:59pm weekdays, and every 30 minutes from 5:26am to 22:29pm Saturday

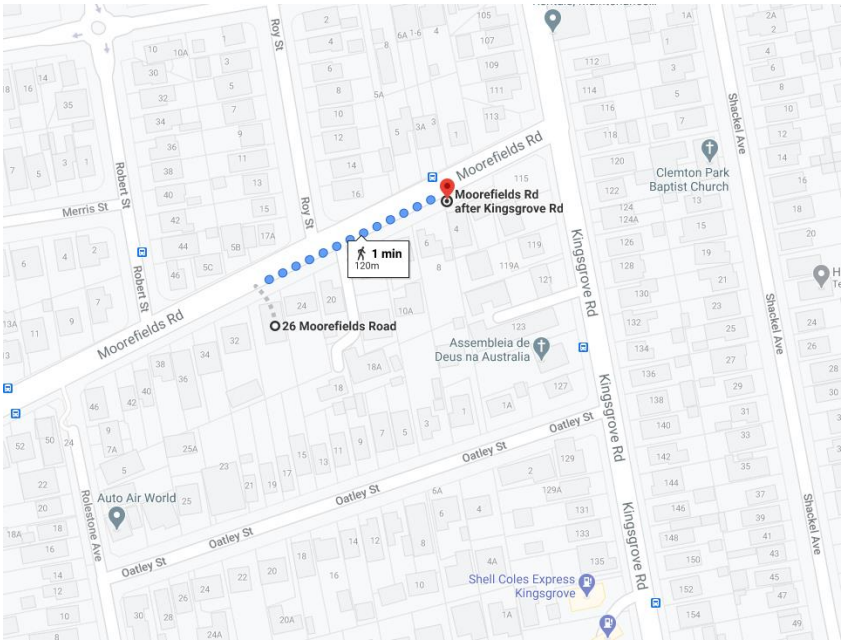


Figure 3 Subject Site to Bus Stop

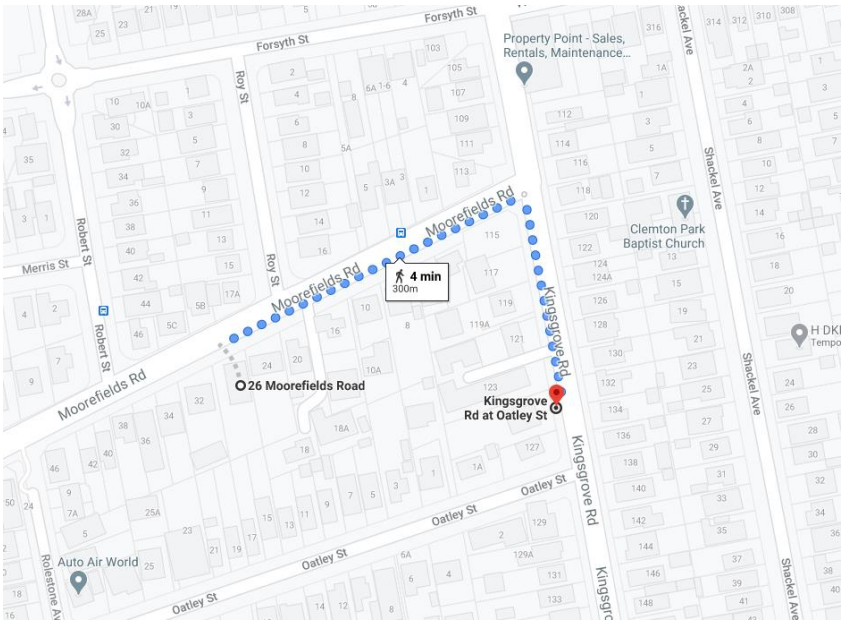


Figure 4 Subject Site to Bus Stop

2.2.Off Street Car Parking Provision

According to the latest architectural plan provided by Morfosis architects, the development consists of 4 two-bedroom units and 4 three-bedroom units in-fill affordable townhouses with a shared basement carpark.

According to the definition of *accessible area* in State Environmental Planning Policy Affordable Rental Housing (SEPP) 2009 (NSW) Part 1.1.4. (1). (c):

400 metres walking distance of a bus stop used by a regular bus service (within the meaning of the Passenger Transport Act 1990) that has at least one bus per hour servicing the bus stop between 06.00 and 21.00 each day from Monday to Friday (both days inclusive) and between 08.00 and 18.00 on each Saturday and Sunday.

The subject site is not located in an accessible area. Hence, parking rates are summarised in the table below for affordable housing in this area.

Table 2-2-1 Off-street parking space rates according to SEPP

Use	Dwelling type	Minimum number of parking spaces per Dwelling
In-fill Affordable Housing on land in an accessible area	1 bedroom	0.4 space
	2 bedrooms	0.5 space
	3 bedrooms	1 space
In-fill Affordable Housing on land not in an accessible area	1 bedroom	0.5 space
	2 bedrooms	1 space
	3 bedrooms	1.5 space

Table 2-2-2 Minimum number of off-street parking spaces

Use	Dwelling type	Number of Dwelling	Minimum number of parking spaces per Dwelling	Total minimum parking required
In-fill Affordable Housing on land not in an accessible area	2 bedrooms	4	1 space	4
	3 bedrooms	4	1.5 space	6
	4 bedrooms	0	1.5 space	0
Total min. off-street parking required				**10**

The proposed development provides a sum of **15** car parking spaces in shared basement carpark, included 1 disable parking space. Hence the design complies with the State Environmental Planning Policy Affordable Rental Housing (SEPP) 2009 (NSW).

The architectural plan of the basement floor of the proposed development have been prepared by Morfosis architects and are attached in Appendix A.

3. Car Park and Driveway Layout

The design of Car Park and Driveway (driveway, internal roadways & ramps, car parking spaces) will reference and comply with Australian Standard AS 2890.1 and AS 2890.3.

3.1. Driveway and Ramp Design

The design is shown in the ground floor and basement architectural plans. Indication gradients and dimension are provided for long sections as shown in ground floor architectural plan. The Table 3-1 shows the architectural Plan complies with the Australian Standard.

Table 3-1 Driveway Design Standard

Feature	Australian Standard 2890.1:2004	Architectural Plan	Compliancy
Internal Driveway Width	• 3.0 to 5.5 for Category 1 • 6.0 to 9.0 for Category 2	5.22m including one side 300mm kerb to the wall	The design is complying with AS2890.1.
Ramp Grades	• 1:20 (5%) for 1st 6m up to footpath OR 1:8 (12.5%) down to footpath. • >20m 1:5 (20%) maximum • <20m 1:4 (25%) max. Transition required if grade change in excess of 1:8 (12.5%)	• First 6m from boundary slope 1:20 down from footpath • Transition zone 1:8 for 2.00m • Maximum gradient 1:4 for 5.96m • Transition zone 1:8 for 2m	The design is complying with AS2890.1.
Ramp Widths	• One-way 3m wide with two 300mm kerbs on both sides.	• One-way ramp 3.1m width (include 2 kerbs 300mm width	The design is complying with AS2890.1.

	• Two ways 5.5m with 5.8m manoeuvring clearances (2 × 300 mm) Note: 300mm clearance on both side when there is a high kerb or barrier on both sides.	each on both sides of the driveway).	
Headroom Clearance	• 2.2m normal parking. • 2.5m disable parking. • 3.5m small rigid vehicle.	• The head clearance to be minimum 2.2m throughout basement and minimum 2.5 above disable parking space at C.C. Stage	The design complies with the AS2890.1.

3.2. Dimensions of Parking Spaces

Feature	Australian Standard 2890.1:2004/2890.6:2009	Architectural Plan	Compliancy
Parking Space for bays at 90˚	5.4m x 2.4m	5.5m x 2.4m	The design complies with AS2890.1
Parallel parking	5.9m x 2.1m Additional 300mm when adjacent a wall.	6.0m X 2.4m Additional 1500mm when adjacent a wall.	The design complies with AS2890.1
Obstructed Parallel parking	6.2m x 2.1m Additional 300mm when adjacent a wall.	6.2m X 2.4m Additional 1500mm when adjacent a wall.	The design complies with AS2890.1
Aisle Width	5.8m minimum	5.8m	The design complies with AS2890.1
Disabled parking space	5.4m x 2.4m with a shared zone 5.4m x 2.4m	5.5m x 3.8m	The design complies with AS2890.6
Blind Aisle	Minimum 1000mm	1450 mm	The design complies with AS2890.1

The ramp & driveway design is complying with Australian Standard AS2890.1 (2004).

3.3. Sight Clearance

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 (referring to Figure 3-3-1).

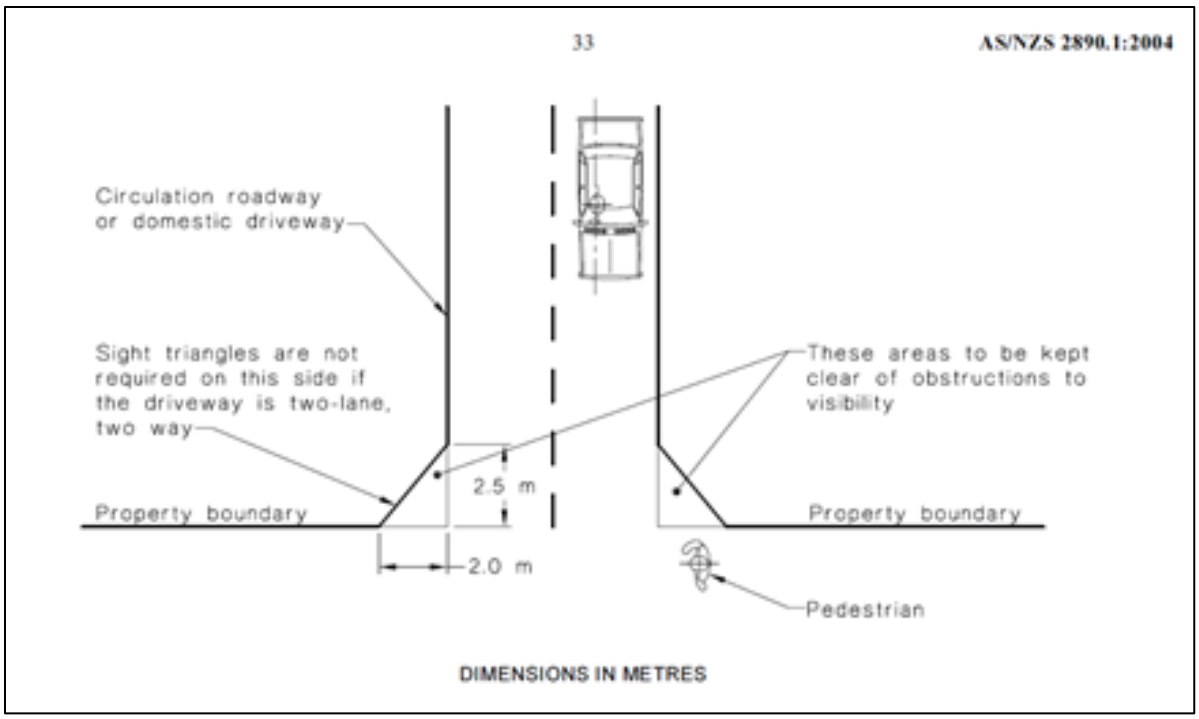


Figure 3-3-1 AS 2890.1:2004 Requirement

In accordant to AS 2890.1:2004 requirements, sight triangle is hatched in red and shown in the following (referring to Figure 3-3-2) as well as in the 1st floor architectural plan the proposed driveway is at least 1 meter away from any structure including power poles, street lightings, signs, road furniture etc. and 3 meters away from any street trees.

Adjacent fence and plants are to be kept lower than 1.15m for sight clearance purpose.

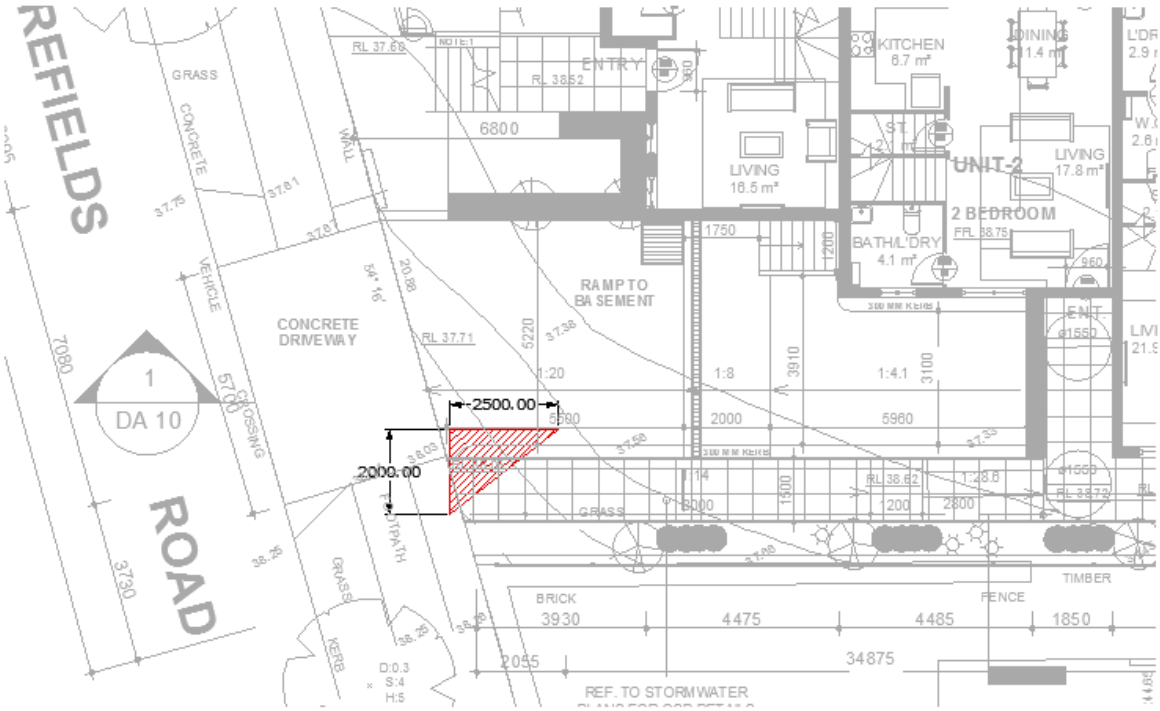


Figure 3-3-2 Sight Triangle

4. 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 subject site is identified as a medium density residential flat building.

Rates.

Larger units and town houses (three or more bedrooms):

Daily vehicle trips = 5.0 - 6.5 per dwelling

Peak Hour Vehicle Trips = 0.5-0.65 trips per dwelling.

For the subject site, there are 8 dwellings in total, which are 4 two-bedroom and 4 three-bedroom units. Therefore, there is a traffic generation potential of approximately 4 - 5.2 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.

The existing site contains two houses. Based on RMS guidelines, the existing site is identified as two dwellings. Hence, the following is expected:

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

For the existing site which contains 2 dwellings, there is a traffic generation potential of approximately 1.7 vehicles per hour during peak periods. This is shown in Table 4-1 below.

Table 4-1 Project Net Increase in Peak Hour Traffic Generation Potential.

Traffic Generation Potential	Vehicle Trips
Future	6
Existing	2
Net	**+ 4**

According to the table above, it is likely that the proposed development will result in an increase in the traffic generated, by approximately additional four vehicle trips during peak hour (1 trip per 15 minutes).

It is our opinion that this increase in traffic activity is manageable and will not have any unacceptable traffic implications in terms of road network capacity.

5. Other Facility

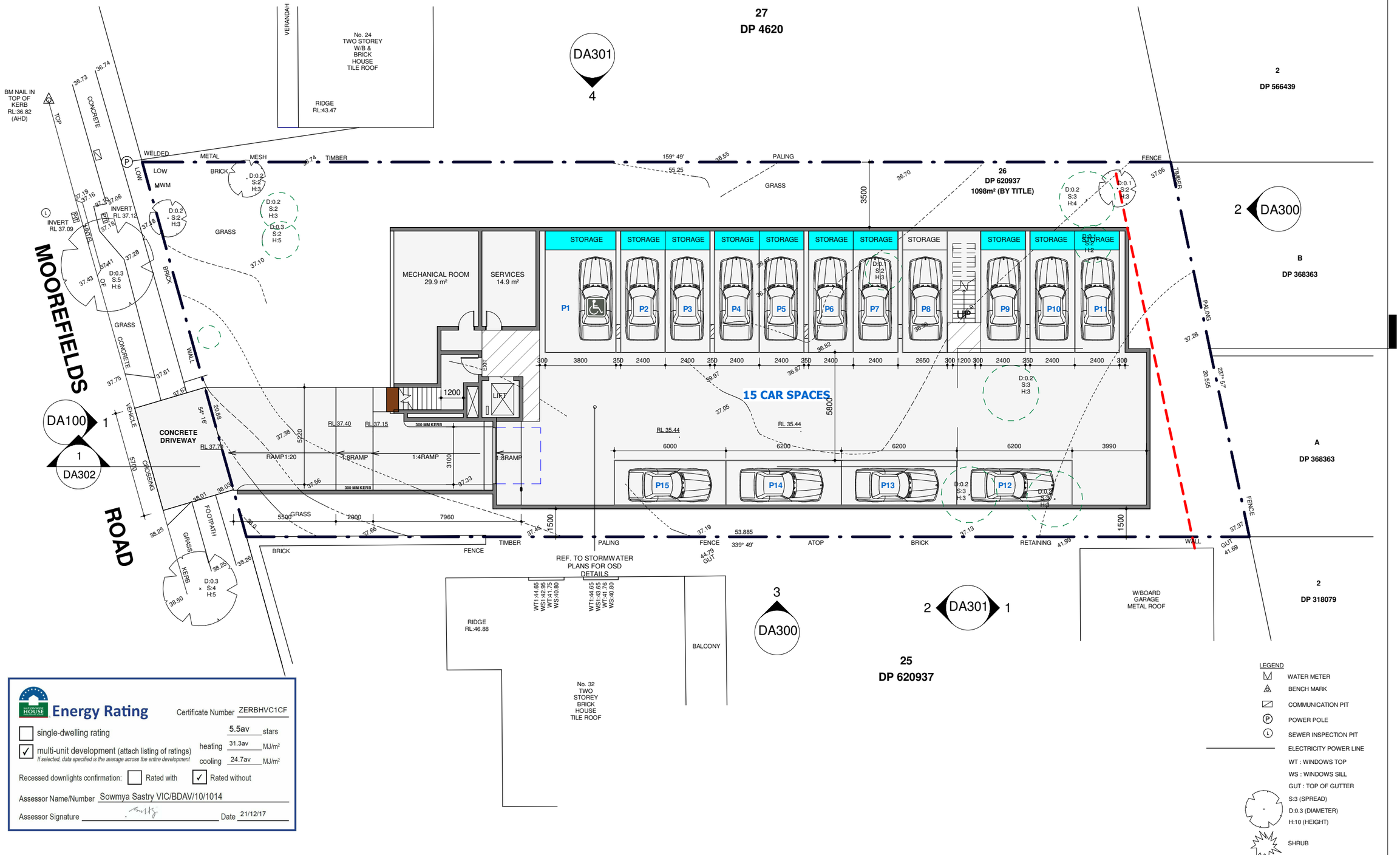
- Convex mirrors are required at the top and bottom of each driveway ramp to ensure there is sufficient a sight distance for drivers.
- Provide stop signs at the entrance/exit to avoid traffic hazard
- Clearance Indicating board is attached on top of the entrance
- 10 km/hr sign is attached on the column of the basement to limit the chance of traffic hazard

6. Swept Path Analysis

To ensure all vehicles enter and exit the site in a forward direction, swept path analysis have been conducted (See Appendix “B”).

APPENDIX **A**

Architectural Plan



Energy Rating

Certificate Number: ZERBHVC1CF

- [ ] single-dwelling rating — 5.5av stars
- [x] multi-unit development (attach listing of ratings) — heating 31.3av MJ/m² — cooling 24.7av MJ/m²

If selected, data specified is the average across the entire development

Recessed downlights confirmation: [ ] Rated with [x] Rated without

Assessor Name/Number: Sowmya Sastry VIC/BDAV/10/1014

Assessor Signature: _____ Date: 21/12/17

LEGEND

- WATER METER
- BENCH MARK
- COMMUNICATION PIT
- POWER POLE
- SEWER INSPECTION PIT
- ELECTRICITY POWER LINE
- WT : WINDOWS TOP
- WS : WINDOWS SILL
- GUT : TOP OF GUTTER
- S:3 (SPREAD)
- D:0.3 (DIAMETER)
- H:10 (HEIGHT)
- SHRUB

MORFOSIS ARCHITECTS
PTY LTD
Suite 8 695 The Horsley Drive, Smithfield NSW 2164
ABN 44 609 593 473
P (02) 8712 5606 / F (02) 8712 5606 / M 0423777623

GENERAL NOTES

1. ALL DIMENSIONS AND FLOOR AREAS TO BE VERIFIED BUILDIER PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.
2. ANY DESCREPANCIESW ARE TO BE CONFIRMEND BY THE DESIGNER.
3. LEVELS SHOWN ARE APPROXIMATE UNLESS ACCOMPANIED BY REDUCED LEVELS BY A REGISTERED SURVEYOR.
4. FIGURED DIMENSIONS ARE TO BE TAKEN IN PREFERENCE TO SCALING.
5. ALL BOUNDARY CLEARANCE MUST BE VERIFIED BY THE SURVEYOR PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.
6. WHERE ENGINEERING OR HYDRAULIC DRAWINGS ARE REQUIRED , SUCH MUST TAKE PREFERENCE TO THIS DRAWING.
7. STORMWATER TO BE CONNECTED AND DISCHARGED TO COUNCIL'S REQUIREMENTS AND TO AS 3500.3
8. ALL SERVICES TO BE LOCATED AND VERIFIED BY THE BUILDER WITH THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMNET OF ANY BUILDING.

ISSUE	AMENDMENTS	DATE
I	AMENDMENTS	10/03/2021
H	AMENDMENTS	01/03/2021
G	AMENDMENTS	14/09/2020
F	AMENDMENTS	26/08/2020
E	DA LODGEMENT	19/12/2017
D	FACADES	17/11/2017
C	FACADES	15/11/2017
B	AMENDMENTS	1/11/2017
A	INITIAL DESIGN	12/10/2017

ISSUE: I

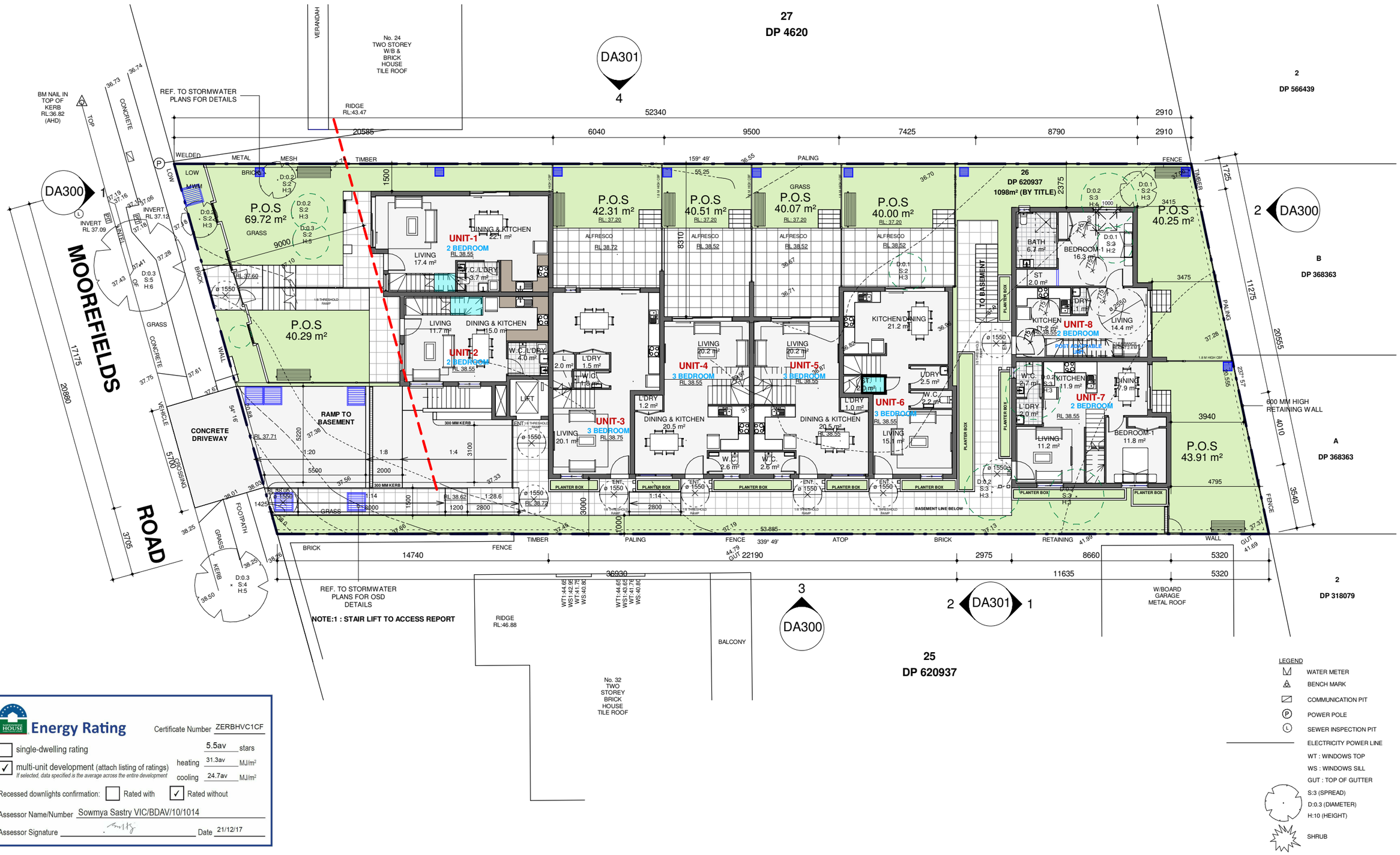
CLIENT

DRAWING NUMBER: DA201

DRAWING TITLE: BASEMENT PLAN

SCALE: As indicated

PROJECT: 26 MOORFIELDS STREET KINGSGROVE



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  If selected, data specified is the average across the entire development

Recessed downlights confirmation: ☐ Rated with ☑ Rated without

Assessor Name/Number Sowmya Sastry VIC/BDAV/10/1014

Assessor Signature _____ Date 21/12/17

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PTY LTD
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ABN 44 609 593 473
P (02) 8712 5606 / F (02) 8712 5606 / M 0423777623

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C	FACADES	15/11/2017
B	AMENDMENTS	1/11/2017
A	INITIAL DESIGN	12/10/2017

ISSUE I

CLIENT

DRAWING NUMBER: DA202

DRAWING TITLE: SITE/GROUND FLOOR PLAN

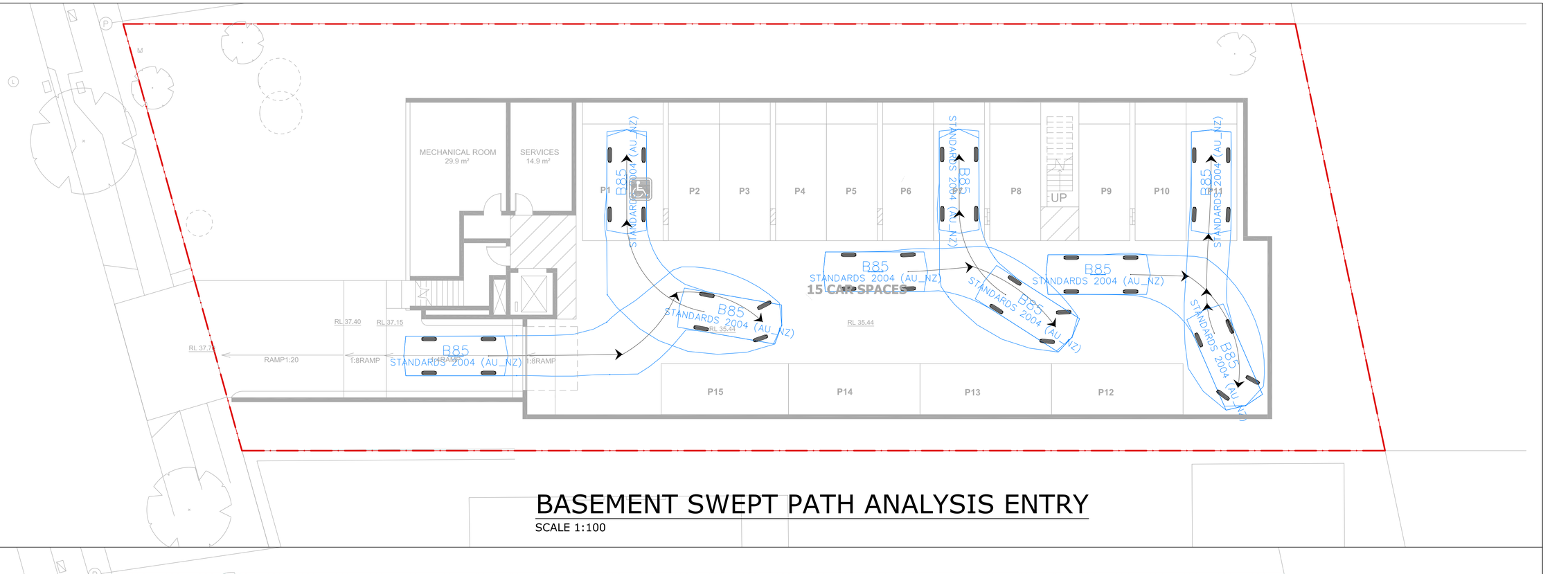
SCALE As indicated

PROJECT

26 MOORFIELDS STREET
KINGSGROVE

APPENDIX **B**

Swept Path Analysis



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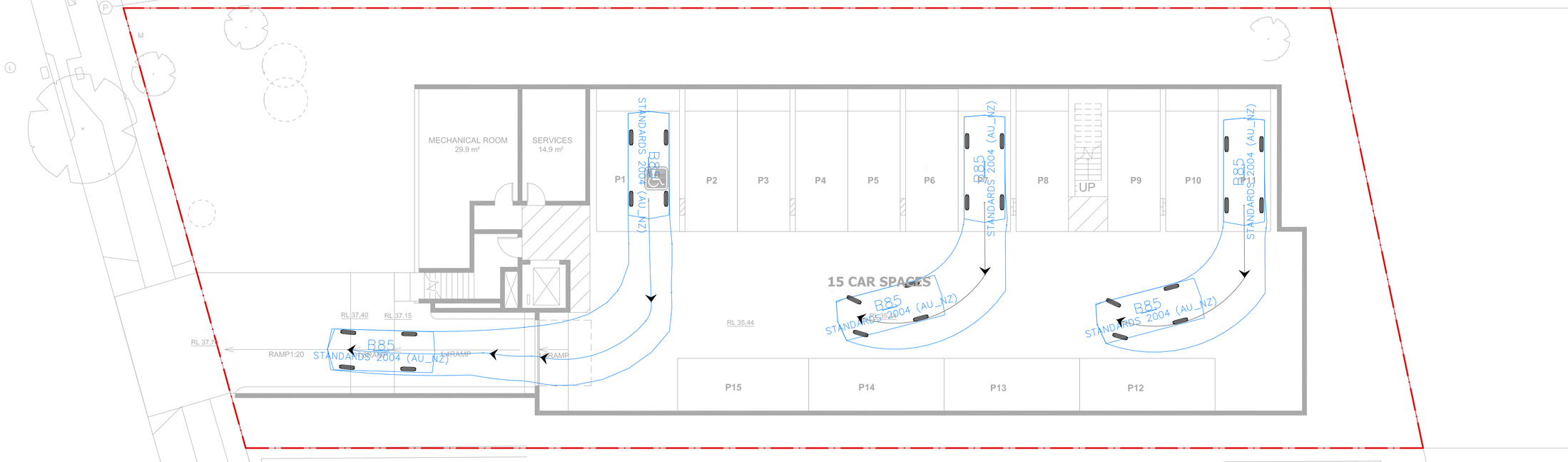

BASEMENT SWEPT PATH ANALYSIS EXIT

SCALE 1:100

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C	FOR D.A. APPROVAL	N.L.	J.P.	03-03-21
B	FOR D.A. APPROVAL	N.L.	A.E.	13-12-17
A	FOR D.A. APPROVAL	N.L.	A.E.	11-12-17

ARCHITECT
MORFOSIS ARCHITECTS
Suite 8 695 The Horsley Drive,
Smithfield NSW 2164
ABN 44 609 593 473
P (02) 8712 5606 / F (02) 8712 5606
/ M 0423777623

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

PROJECT
MULTI—DWELLING HOUSING
26 MOORFIELDS STREET
KINGSGROVE, NSW

SHEET SUBJECT
BASEMENT SWEPT PATH ANALYSIS ENTRY / EXIT 1

PROJECT 26 MOORFIELDS, KINGSGROVE, NSW			
DATE DEC 17	DRAWN A.E.	DESIGNED N.L.	CHECKED N.L.
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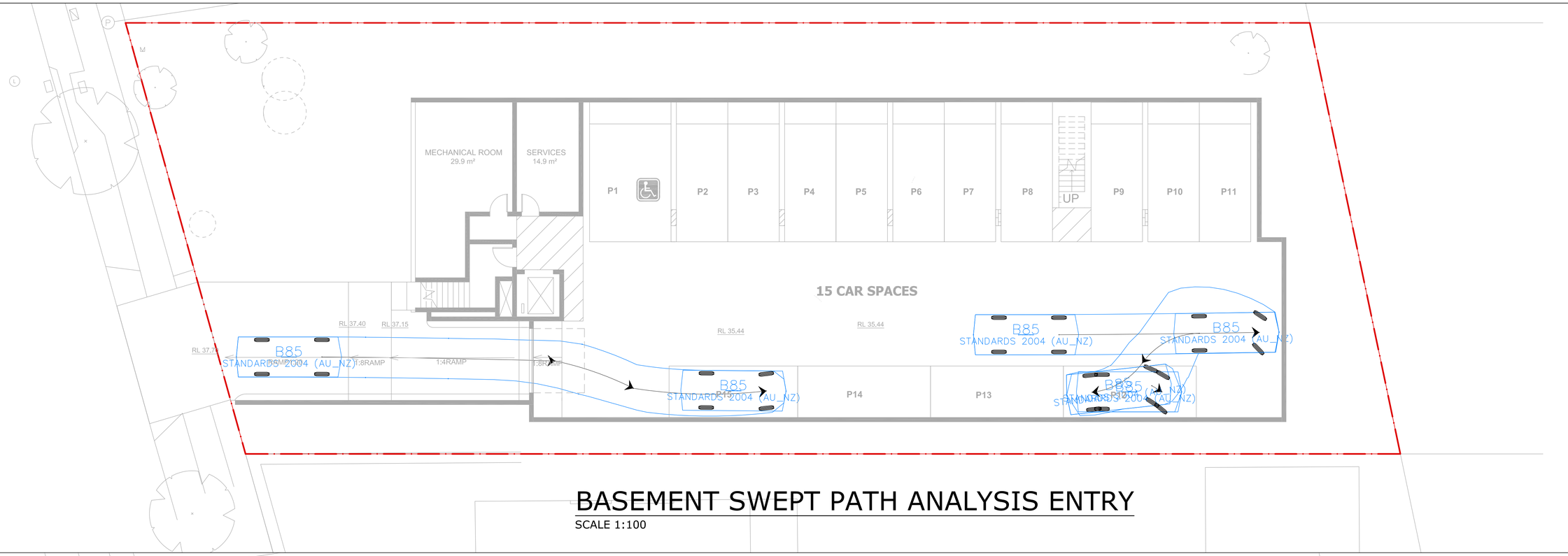

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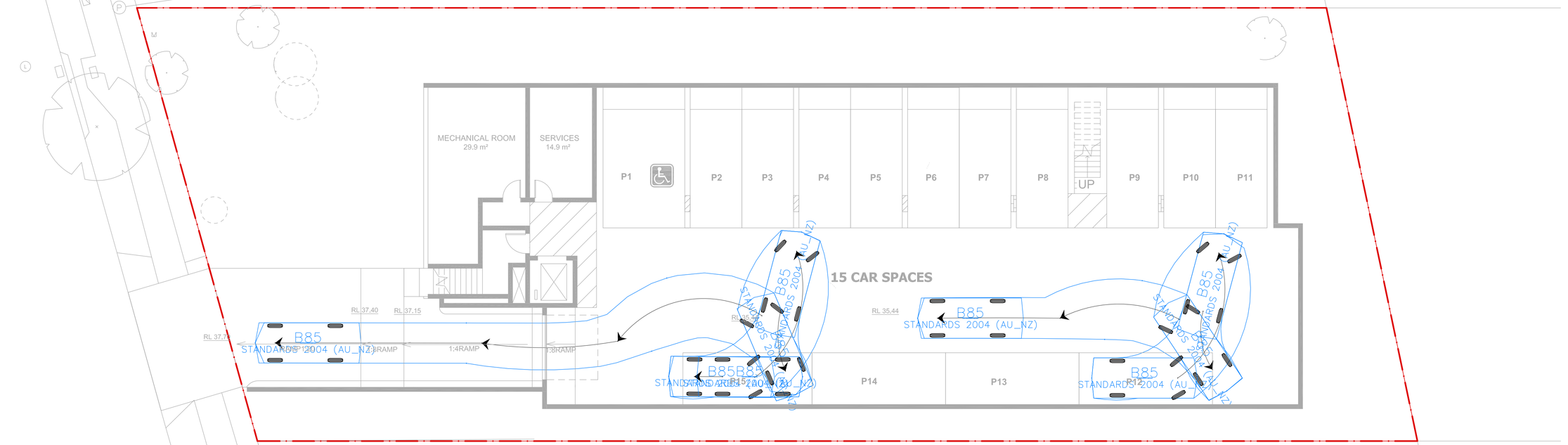

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LOKA CONSULTING ENGINEERS www.lokaeng.com.au
14A/8 AVENUE OF AMERICAS, NEWINGTON, NSW
T: +61 2 8065 9689 F: +61 2 8065 9690
MOBILE: 0404 142 063 EMAIL: info@loaeng.com.au

PROJECT
MULTI—DWELLING HOUSING
26 MOORFIELDS STREET
KINGSGROVE, NSW

SHEET SUBJECT
BASEMENT SWEPT PATH ANALYSIS ENTRY / EXIT 2

PROJECT 26 MOORFIELDS, KINGSGROVE, NSW

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DEC 17	A.E.	N.L.	N.L.

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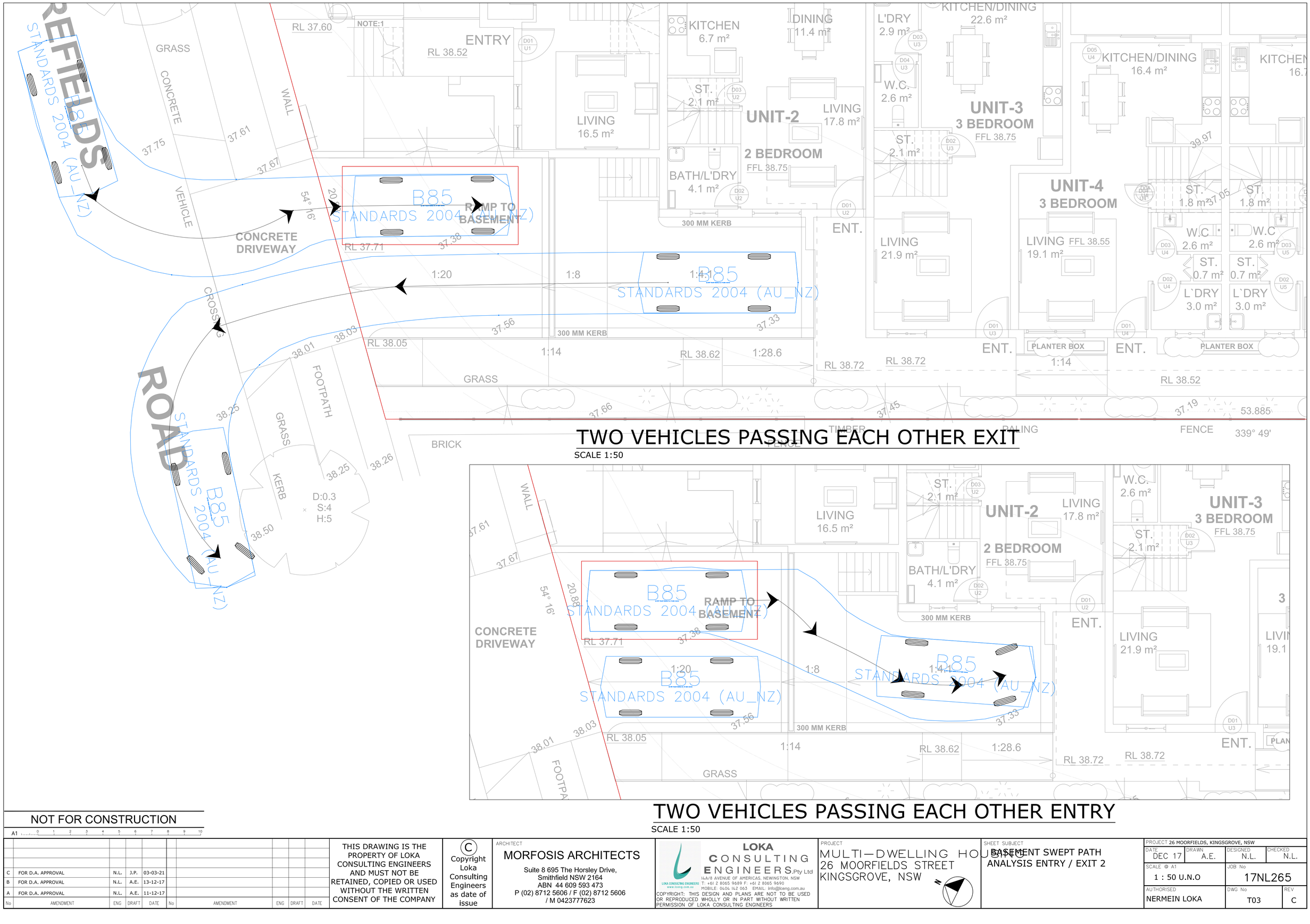

TWO VEHICLES PASSING EACH OTHER EXIT

SCALE 1:50

TWO VEHICLES PASSING EACH OTHER ENTRY

SCALE 1:50

NOT FOR CONSTRUCTION

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

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DEC 17	A.E.	N.L.	N.L.

SCALE @ A1	JOB No
1 : 50 U.N.O	17NL265

AUTHORISED	DWG No	REV
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