

Proposed Residential Development

**26-30 Hope Street,
Penrith**

TRAFFIC AND PARKING ASSESSMENT REPORT

12 April 2018

Ref 17706

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants 

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1. INTRODUCTION

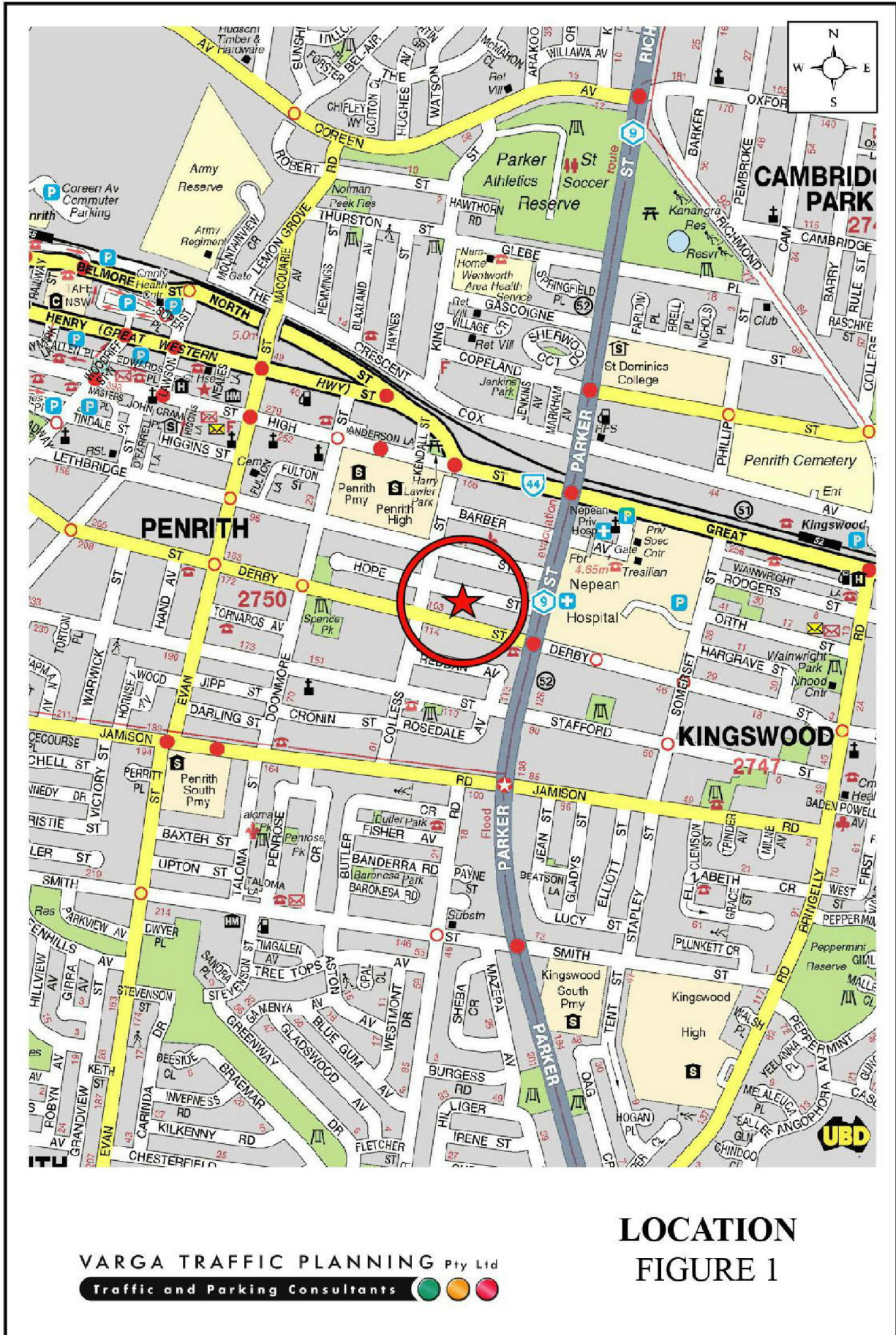
This report has been prepared to accompany a development application to Council for a residential development proposal to be located at 26-30 Hope Street, Penrith (Figures 1 and 2).

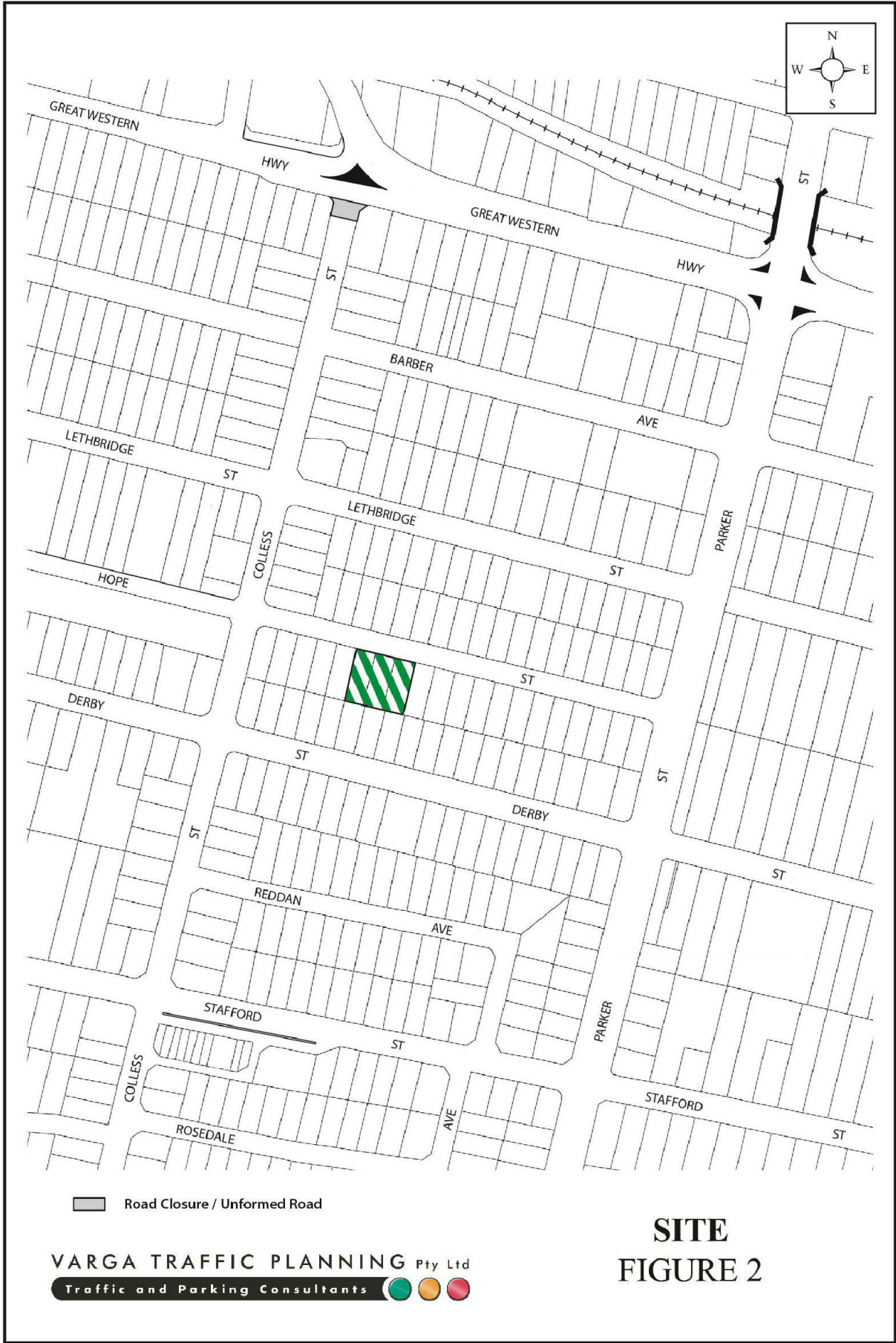
The proposed development involves the demolition of the three existing dwelling houses on the site to facilitate the construction of a new residential apartment development.

Off-street parking is to be provided in a new two-level basement car parking area in accordance with Council's requirements. Vehicular access to the site is to be provided via a new entry/exit driveway located at the western end of the Hope Street site frontage.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





2. PROPOSED DEVELOPMENT

Site

The subject site is located on the southern side of Hope Street, approximately 100m east of Colless Street. The site has a street frontage approximately 47m in length to Hope Street and occupies an area of approximately 1,884m².

The subject site is currently occupied by three dwelling houses, each with a separate vehicular access driveway off Hope Street. A recent aerial image of the site and its surroundings is reproduced below.



Proposed Development

The proposed development involves the demolition of the three existing dwelling houses on the site to facilitate the construction of a new residential apartment development. A total of 45 residential apartments are proposed in the new building as follows:

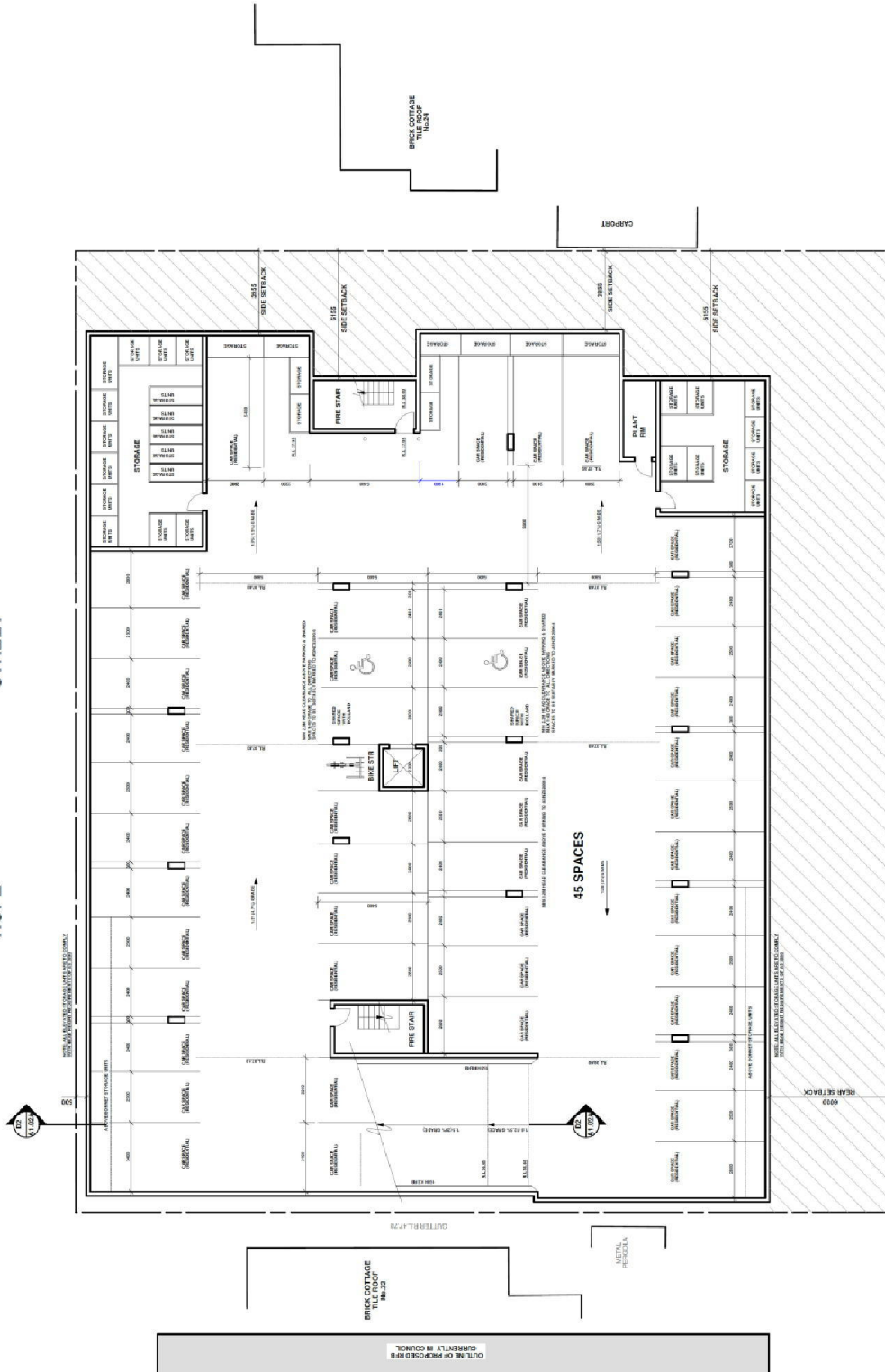
studio apartments:	1
1 bedroom apartments:	18
2 bedroom apartments:	24
3 bedroom apartments:	2
TOTAL APARTMENTS:	45

Off-street parking is proposed for a total of 71 cars, comprising 60 residential spaces and 11 visitor spaces, in a new two-level basement car parking area in accordance with Council's requirements. Vehicular access to the car parking facilities is to be provided via a new entry/exit driveway located towards the western end of the Hope Street site frontage.

Waste collection for the proposed development is expected to be undertaken by Council's 7.0m long rigid truck, with a dedicated loading area to be located in the south-eastern corner of the site. The proposed loading area includes a turntable, thereby allowing all trucks to enter and exit the site in a forward direction at all times. Vehicular access to the loading area is to be provided via a new dedicated service driveway located at the eastern end of the Hope Street site frontage.

Plans of the proposed development have been prepared by *Building Design & Technology* and are reproduced in the following pages.

HOPE STREET



PROPOSED LOWER BASEMENT
Scale: 1:100

PROJECT: PROPOSED UNIT DEVELOPMENT LOCATED AT 25-30 HOPE ST PERMIT

TITLE: LOWER BASEMENT PLAN

DATE: 20/05/2018

SCALE: A1 @ 1:100

DRAWN: BM

CHECKED: RM

REV: 1

PROJECT NO: 201221

DATE: 20/05/2018

BTD

BUILDING DESIGN & TECHNOLOGY PTY LTD

REGISTERED PROVIDER OF BUILDING DESIGN

Level 2, 250 Bourke St West, Melbourne VIC 3000

Ph: 03 9397 9170 Fax: 03 9397 9170

Email: info@bdt.com.au

1. I HAVE READ AND UNDERSTAND THE CONTENTS OF THIS PLAN.

2. I AGREE TO THE PROVISIONS OF THE BUILDING ACT 1993 AND THE BUILDING REGULATIONS 2006.

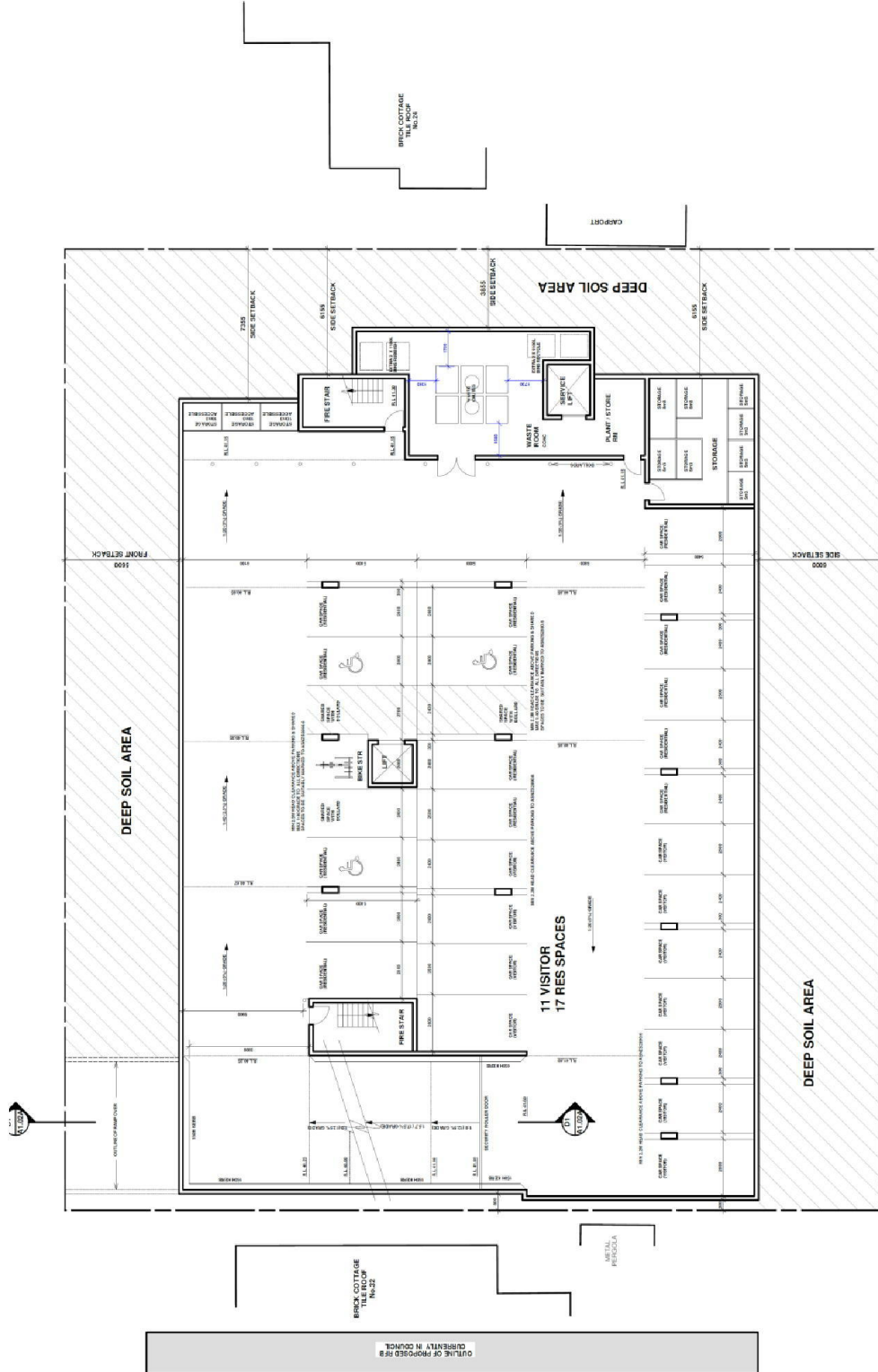
3. I AGREE TO THE PROVISIONS OF THE BUILDING ACT 1993 AND THE BUILDING REGULATIONS 2006.

4. I AGREE TO THE PROVISIONS OF THE BUILDING ACT 1993 AND THE BUILDING REGULATIONS 2006.

5. I AGREE TO THE PROVISIONS OF THE BUILDING ACT 1993 AND THE BUILDING REGULATIONS 2006.

6. I AGREE TO THE PROVISIONS OF THE BUILDING ACT 1993 AND THE BUILDING REGULATIONS 2006.

DATE	BY	APPROVED



PROPOSED UPPER BASEMENT
Scale: 1:100

PROJECT: PROPOSED UNIT DEVELOPMENT LOCATED AT 25-29 MAPLE ST PERMIT 1

TITLE: PROPOSED UPPER BASEMENT PLAN

SCALE: A3:8 1:100

DATE: AUG 2017

PROJECT NO.: 201727

DRAWN: AM

CHECKED: REV: 1

DATE: A3:8

BDT

BRIDGING DESIGN & TECHNOLOGY PTY LTD
ARCHITECTURAL DESIGN & MANAGEMENT

Level 2, 150 Macquarie St, Macquarie NSW
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Email: info@bdtdesign.com.au

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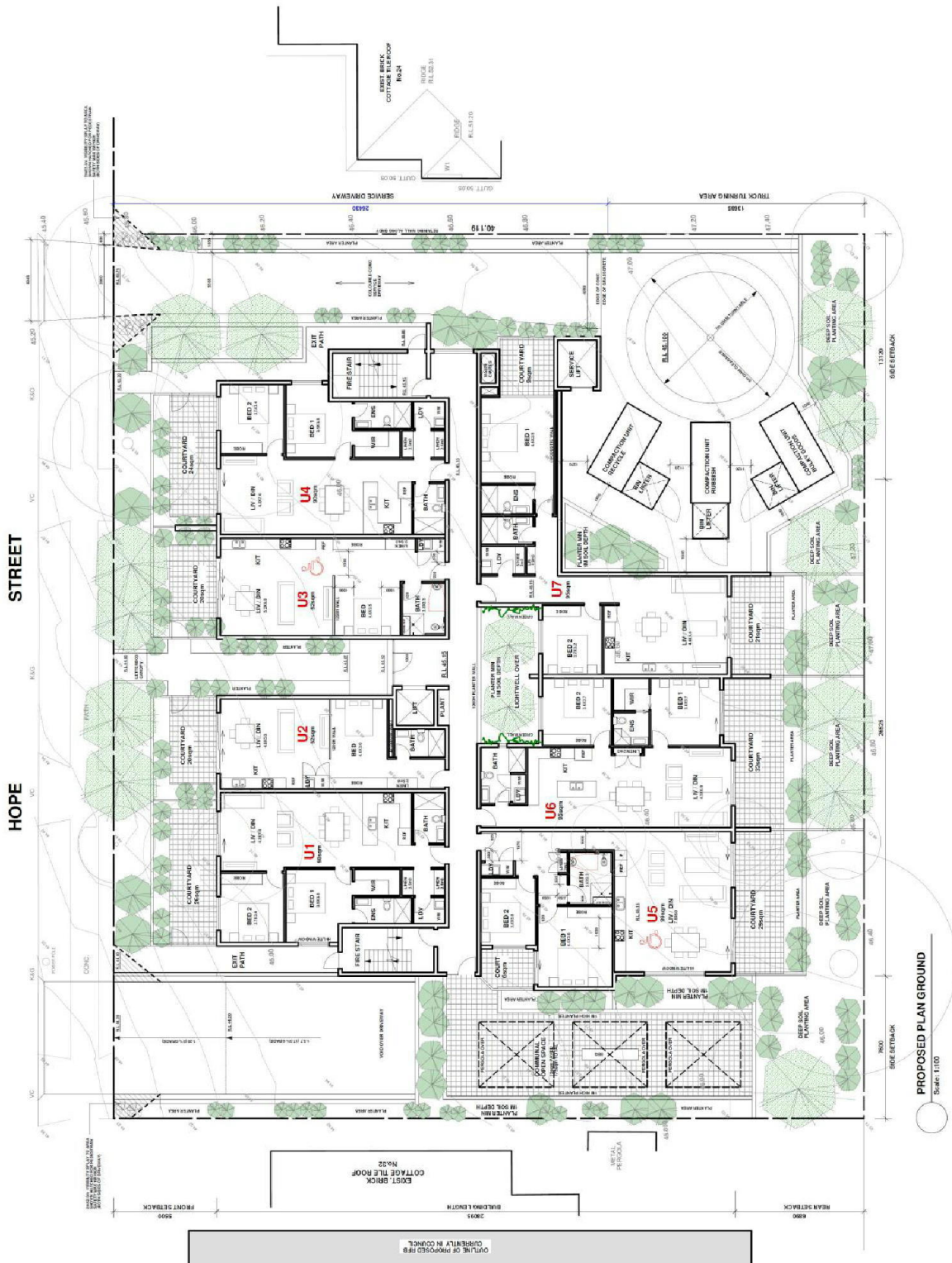
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DATE	REV	REVISIONS



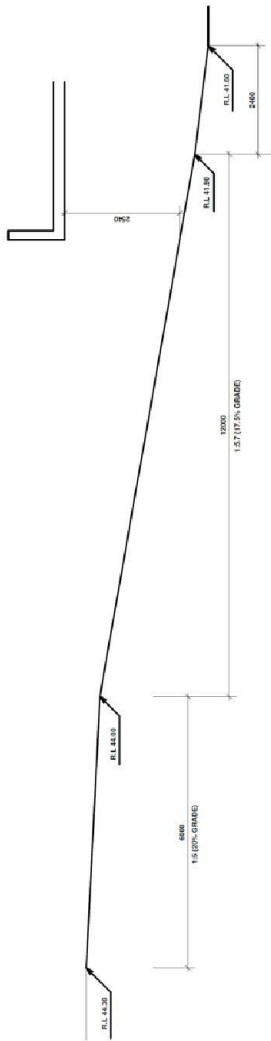
PROPOSED PLAN GROUND
Scale: 1:100

PROJECT: PROPOSED NEW RESIDENTIAL DEVELOPMENT LOCATED AT 25-31 HOPE ST PALMERSTON NORTH
 TITLE: PROPOSED DRIVING FLOOR PLAN
 SCALE: A1 @ 1:100
 DATE: AUG 2017
 PROJECT NO: 201722

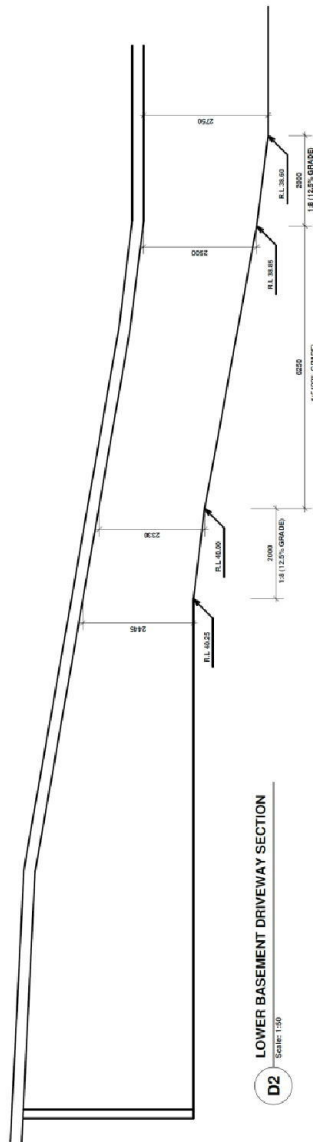
LANDING DESIGN & DOCUMENTATION FOR U1
 DATE: 23 November 2016
 BY: [Name] FOR: [Name]
 CHECKED: [Name]
 DRAWN: [Name]
 PROJECT NO: 201722

NO	DATE	BY	REV	REASON

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D1 UPPER BASEMENT DRIVEWAY SECTION
Scale: 1:50



D2 LOWER BASEMENT DRIVEWAY SECTION
Scale: 1:50

PROJECT: PROPOSED UNIT DEVELOPMENT LOCATED AT 25-29 PEPE ST PERMIT

TITLE: BASEMENT DRIVEWAY SECTIONS

SCALE: A3:8.00

DATE: AUG 2017

PROJECT NO.: 2017Z

DRAWN: AM

CHECKED: REV: /

DESIGN: A/DA

BDD

BUILDING DESIGN & TECHNOLOGY P/L

10/100 WILSON STREET, SYDNEY NSW 1570

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1. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS 2011

2. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS 2011

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4. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS 2011

5. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS 2011

6. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS 2011

REVISED	DATE	BY	REASON

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

Great Western Highway is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Parramatta to Emu Plains. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island and turning bays provided at key locations.

Parker Street/The Northern Road are also classified by the RMS as a *State Roads* and provide the key north-south road link in the area, linking Bligh Park to Narellan. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island and turning bays provided at key locations.

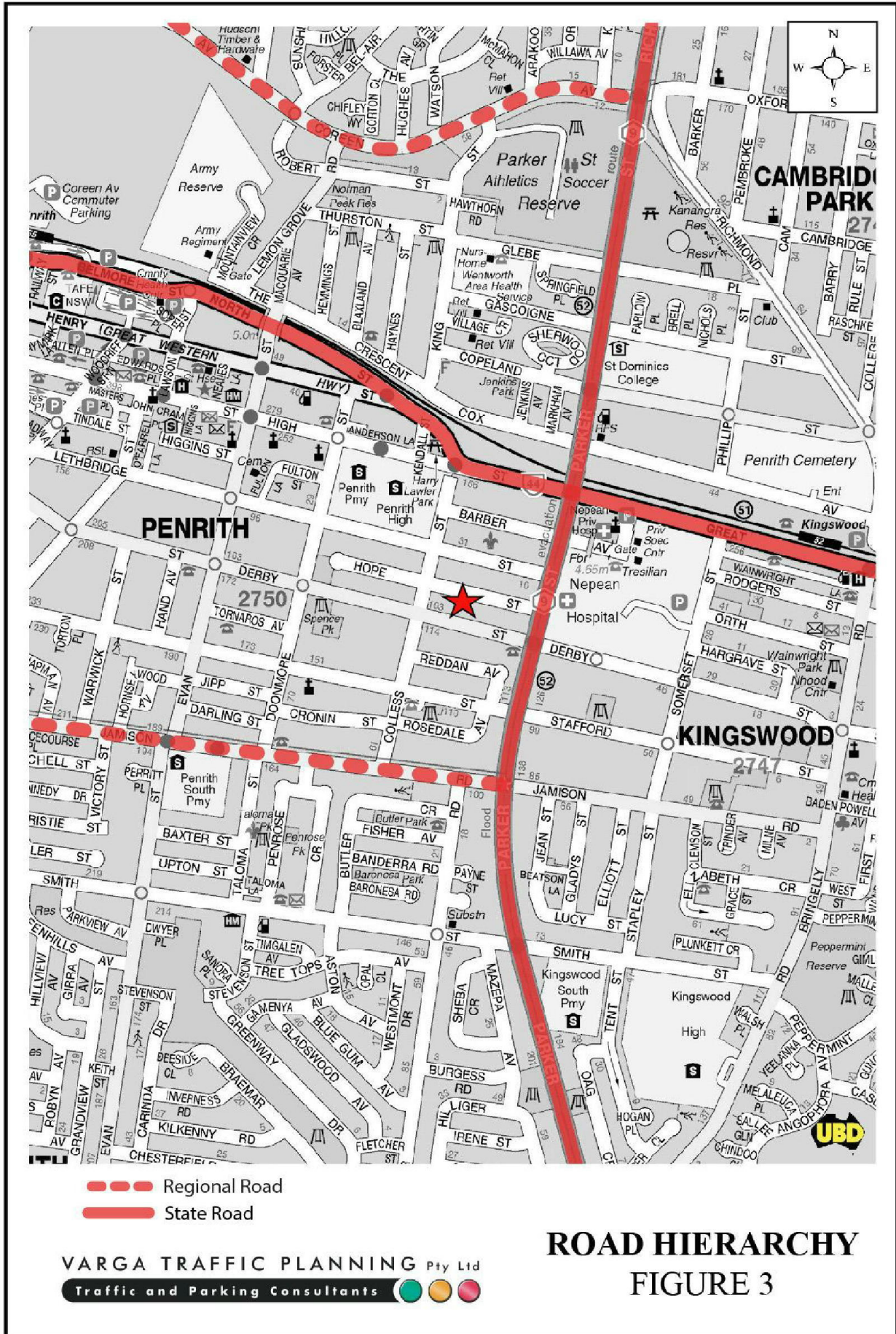
Jamison Road (west of Parker Street) is classified by the RMS as a *Regional Road* and provides a secondary east-west road link through the local area between Parker Street and Mulgoa Road. It typically carries two traffic lanes in each direction in the vicinity of the site with kerbside parking permitted at selected locations.

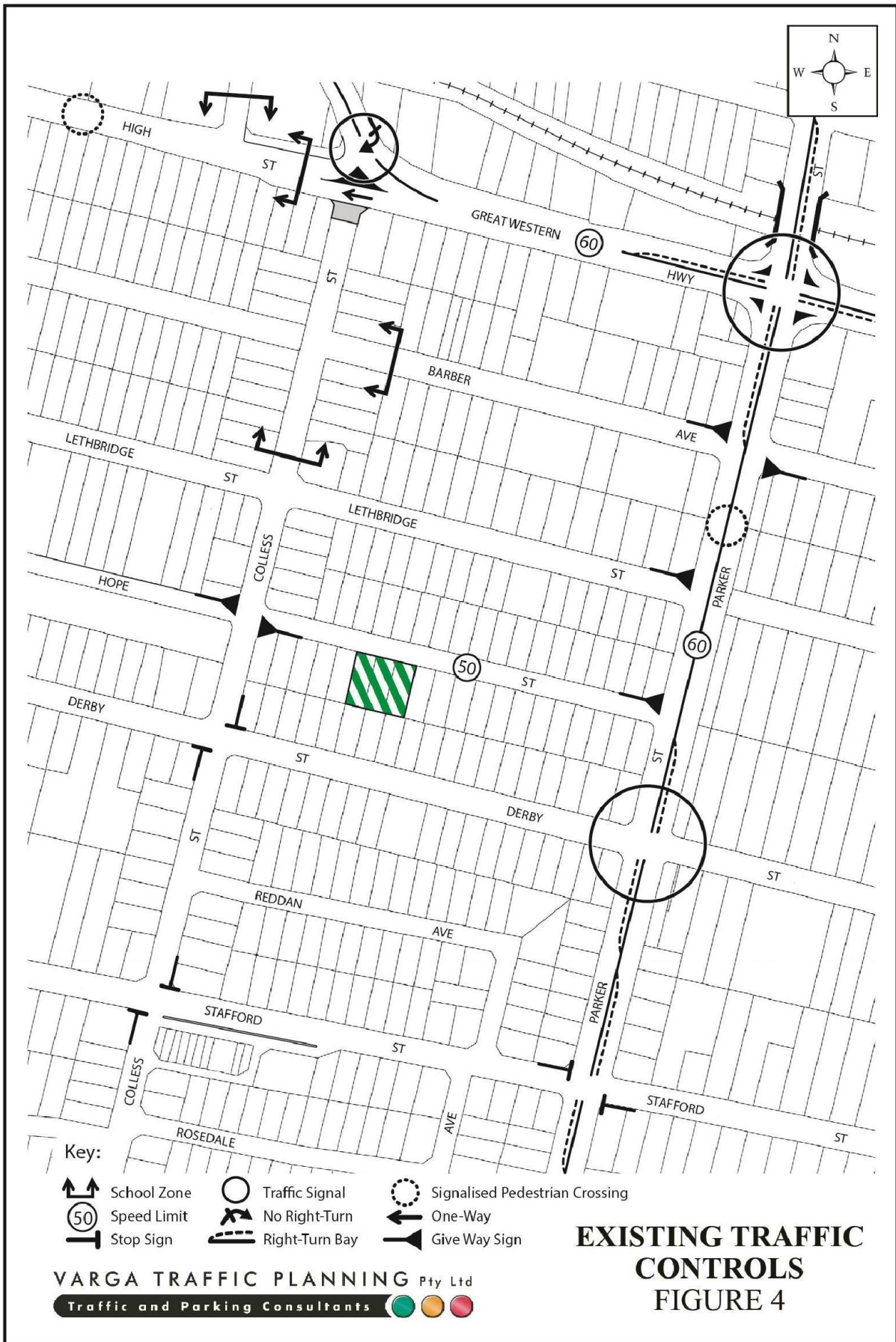
Hope Street is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of the road.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to the Great Western Highway and Parker Street





- a 50 km/h SPEED LIMIT which applies to Hope Street and all other local roads in the area
- a 40 km/h SCHOOL SPEED ZONE which applies within the vicinity of Penrith Public School and Penrith High School
- GIVE WAY SIGNS in Hope Street where it intersects with Parker Street and Colless Street
- TRAFFIC SIGNALS in Parker Street where it intersects with the Great Western Highway and Derby Street
- a CENTRAL MEDIAN ISLAND in Parker Street which precludes right turn movements into and out of Hope Street.

Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network during the weekday commuter peak periods.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services' publication *Guide to Traffic Generating Developments, Section 3 – Land Use Traffic Generation (October 2002)* and the updated traffic generation rates in the recently published RMS *Technical Direction (TDT 2013/04a)* document.

The TDT 2013/04a document specifies that it replaces those sections of the RMS *Guidelines* indicated, and must be followed when RMS is undertaken trip generation and/or parking demand assessments.

The RMS *Guidelines* and the updated TDT 2013/04a are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

High Density Residential Flat Dwellings

AM: 0.19 peak hour vehicle trips per unit

PM: 0.15 peak hour vehicle trips per unit

The RMS *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

Application of the above traffic generation rates to the 45 apartments outlined in the development proposal yields a traffic generation potential of approximately 9 vehicle trips per hour (vph) during the AM commuter peak period and approximately 7 vph during the PM commuter peak period.

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential expected to occur as a consequence of the development proposal.

The TDT 2013/04a nominates the following traffic generation rates which are applicable to the existing development:

Low Density Residential Dwellings

AM: 0.95 peak hour vehicle trips per dwelling

PM: 0.99 peak hour vehicle trips per dwelling

Application of the above traffic generation rates to the three existing dwelling houses on the site yields a traffic generation potential of approximately 3 vph during both the AM and PM commuter peak periods.

Accordingly, it is likely that the proposed development will result in a *nett increase* in the traffic generation potential of the site of approximately 6 vph during the AM commuter peak period and approximately 4 vph during the PM commuter peak period, as set out below:

Projected Nett Increase in Peak Hour Traffic Generation Potential of the site as a consequence of the development proposal		
	AM	PM
Projected Future Traffic Generation Potential:	8.6 vph	6.8 vph
Less Existing Traffic Generation Potential:	-2.9 vph	-3.0 vph
NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:	5.7 vph	3.8 vph

That projected increase in traffic activity as a consequence of the development proposal is minimal, consistent with the R4 zoning objectives of the site and will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site comprise:

- NO STOPPING restrictions along the western side of Parker Street
- generally UNRESTRICTED kerbside parking along both sides of Hope Street, including along the site frontage, and throughout the local area
- BUS ZONES located at regular intervals along both sides of Derby Street and also High Street.

Off-Street Parking Provisions

Advice received from Council in the pre-DA meeting held in October 2017 indicated that off-street parking should be assessed using the “multi dwelling housing” rates specified in Council’s *Development Control Plan 2014 – Table C10.2: Car Parking Rates* document, as follows:

Multi Dwelling Housing

1 bedroom dwelling:	1 space per dwelling
2 bedroom dwelling:	1.5 spaces per dwelling
3 bedroom dwelling:	2 spaces per dwelling
Visitors:	1 space per 5 dwellings

Application of the above parking requirements to the 45 residential apartments outlined in the development proposal yields an off-street parking requirement of 68 parking spaces as set out below:

Residents (45 apartments):	59 spaces
Visitors:	9 spaces
TOTAL:	68 spaces

The proposed development makes provision for a total of 71 off-street parking spaces, comprising 60 residential spaces and 11 visitor spaces, thereby satisfying Council's *DCP 2014* parking requirements.

The geometric design layout of the proposed parking facilities has been designed to comply with the relevant requirements specified in the Standards Australia publications *AS2890.1*, *AS2890.2*, *AS2890.3* & *AS2890.6* in respect of parking bay dimensions, ramp gradients, overhead clearances and aisle widths.

A *swept turning path* diagram illustrating the manoeuvring requirements of two large B99 vehicles accessing the site is reproduced in the following pages, confirming that these vehicles will be able to enter and exit the site whilst travelling in a forward direction at all times.

Driver Sight Distance/Visibility

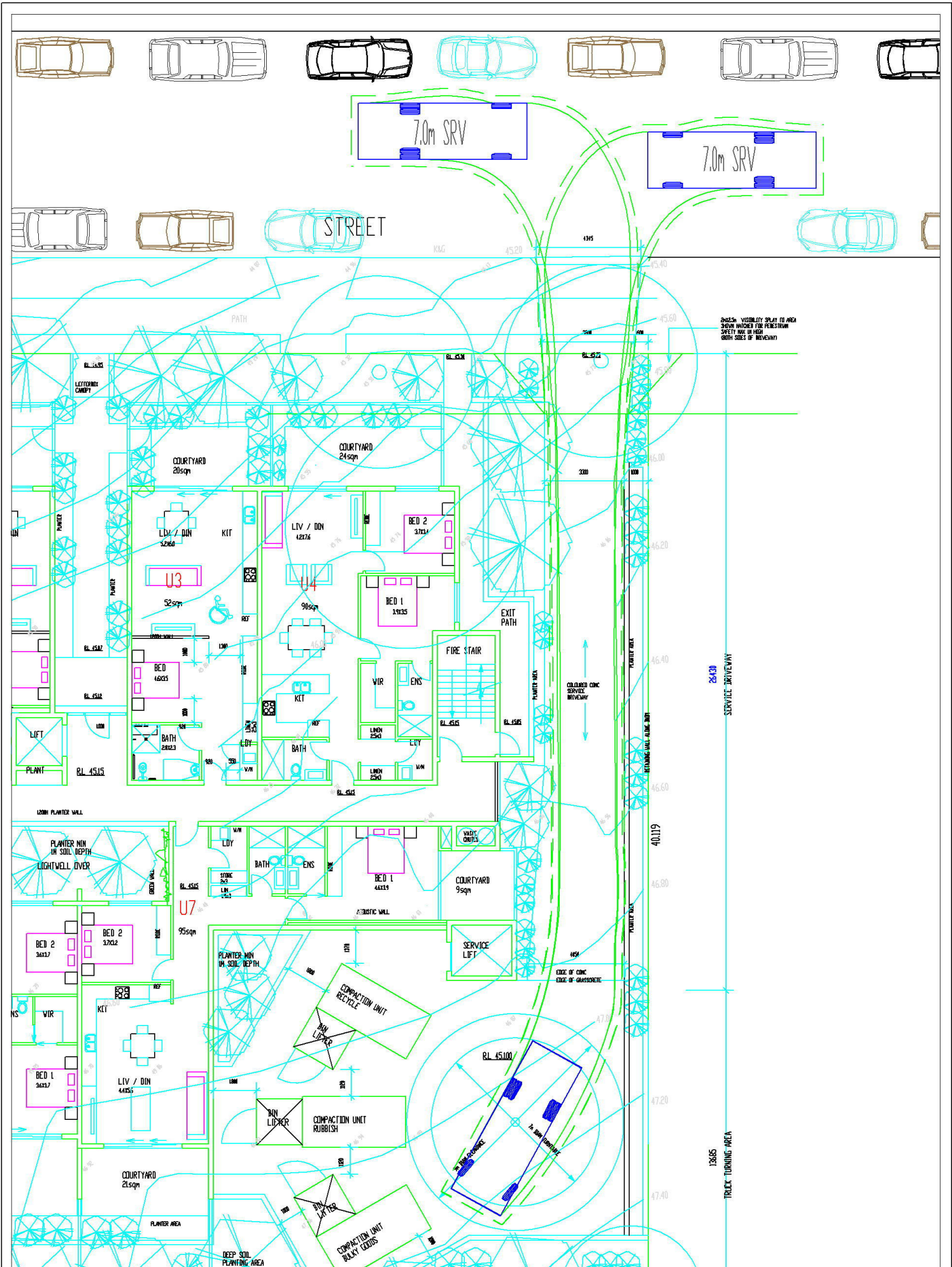
The drive sight distance/visibility requirements applicable to the proposed vehicular access driveway have been designed to comply with *Figure 3.2 – Sight Distance requirements at Access Driveways* and also *Figure 3.3 – Minimum Sight Lines for Pedestrian Safety in AS2890.1*.

In this regard, 2.5m x 2.0m visibility splays are provided on the exit side of the site entry/exit ramp at the western end of the front boundary, and on the entry and exit side of the service driveway at the eastern end of the front boundary.

Waste Collection Provisions

Discussions with Council's waste department indicate that garbage collection for the proposed development is expected to be undertaken by Council's 7.0m long small rigid truck, with a loading area to be located in the south-eastern corner of the site. The manoeuvring area has been designed with a turntable to accommodate the swept turning path requirements of these small rigid trucks, allowing them to enter and exit the site in a forward direction at all times, as reproduced in the following pages.

In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in both Council's *DCP 2014* as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications.



20025m VISIBILITY SPOT TO AREA SHOWN INDICATE FIRE PERIMETER SAFETY RING OR FROM BOTH SIDES OF MOVEMENT

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 Suite 6, Level 1
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 Fax +61 2 9904 5224
 Neutral Bay, NSW 2066
 www.varga.com.au
 Sydney, Australia

PROJECT
 RESIDENTIAL DEVELOPMENT

DRAWING TITLE
 7m Rigid Truck
 Entry Swept Turning Paths

1:200 @ A4

DATE DRAWN
 2018-4-6

PREPARED
 TN

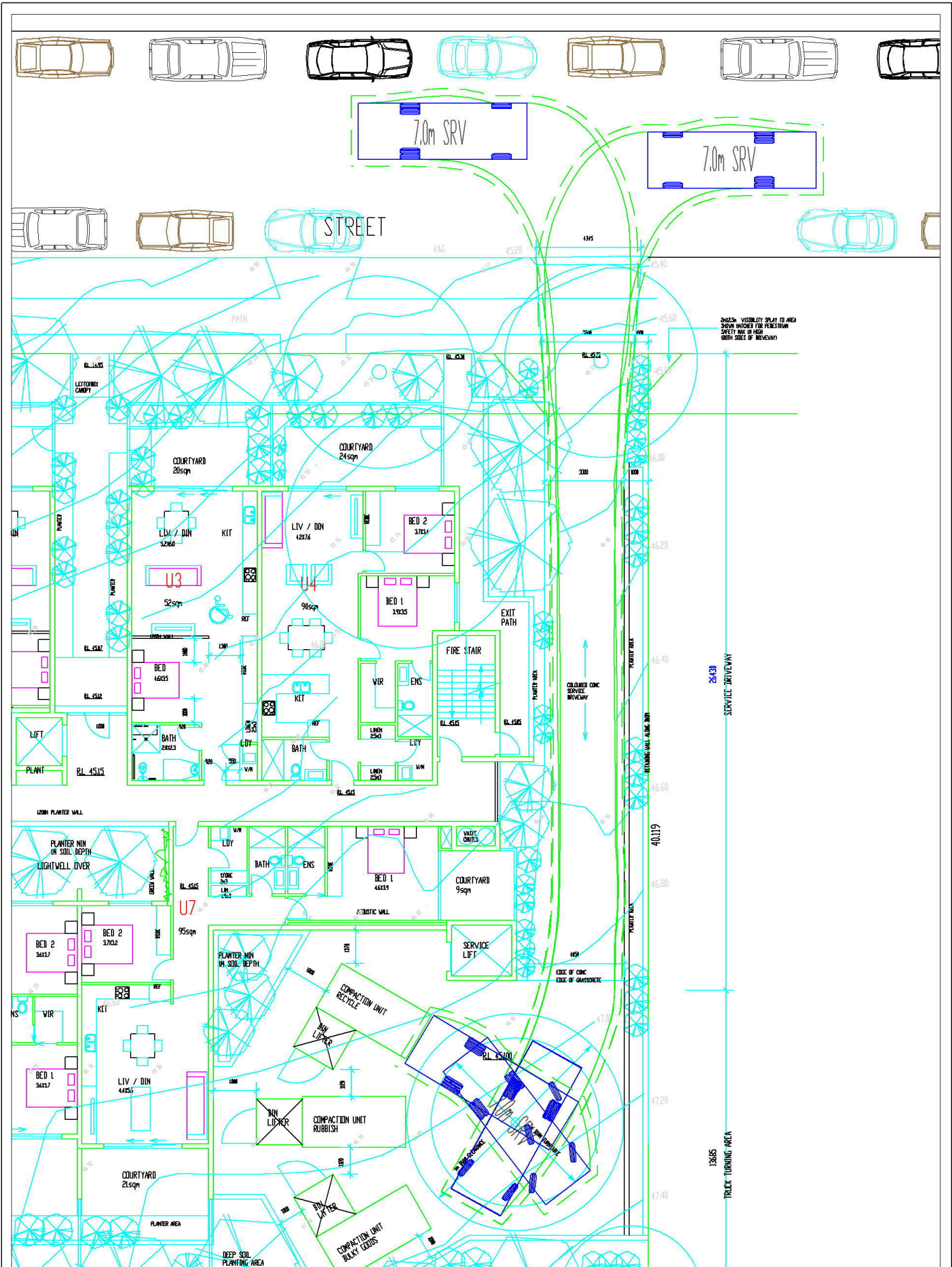
PROJECT NO.
 17706

REVIEWER
 CP

ADDRESS
 26-30 Hope Street,
 Penrith

13685 TRUCK TURNING AREA

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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
**7m Rigid Truck
 Entry Swept Turning Paths**

1:200 @ A4

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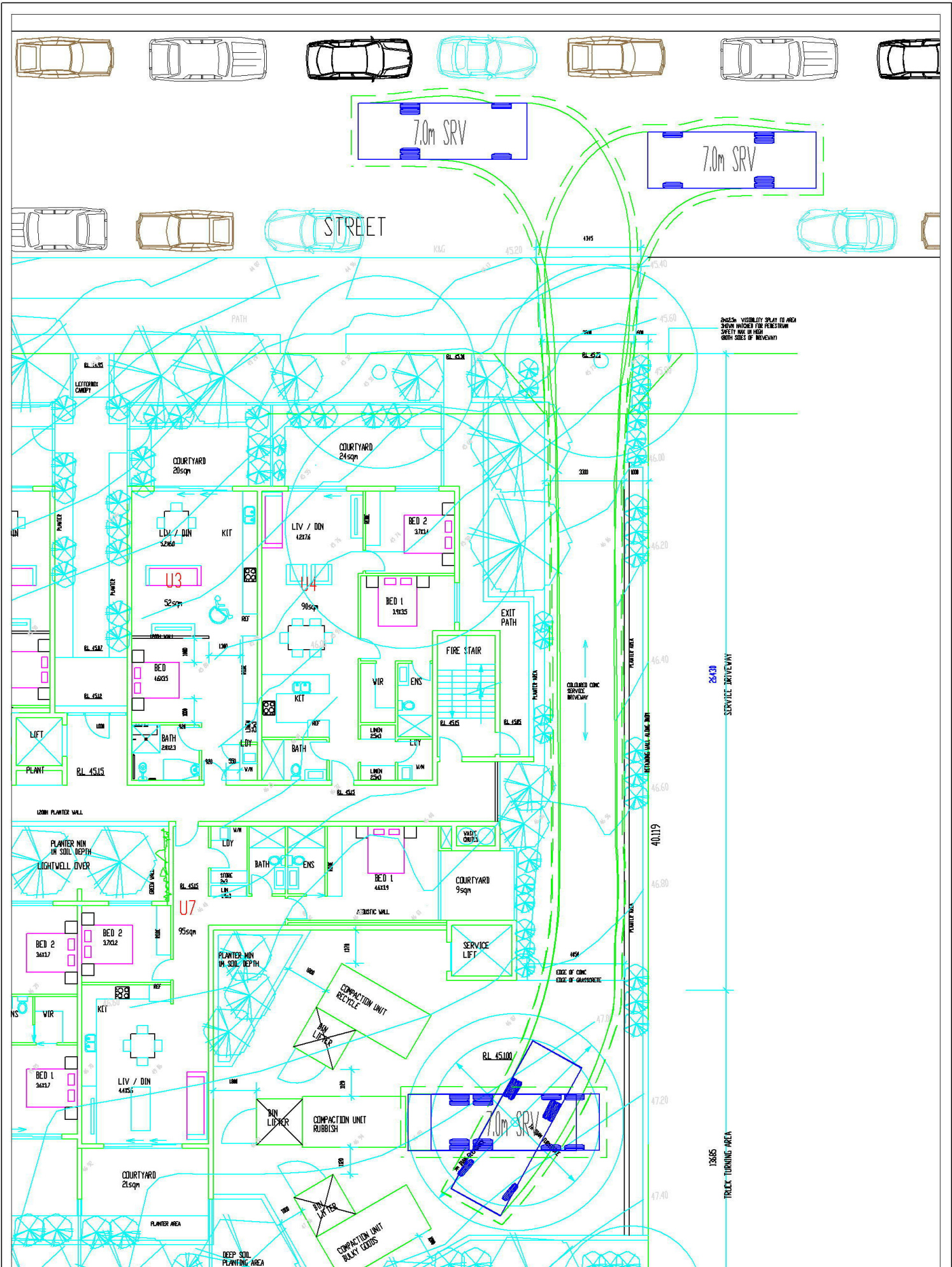
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20025m VISIBILITY SPOT TO AREA SHOWN INDICATES FIRE PERIMETER SAFETY RING OR FROM BOTH SIDES OF MOVEMENT

COLOURED CONC SERVICE DRIVEWAY

EDGE OF CONC EDGE OF GRANITE/STONE

VARGA TRAFFIC PLANNING Pty Ltd
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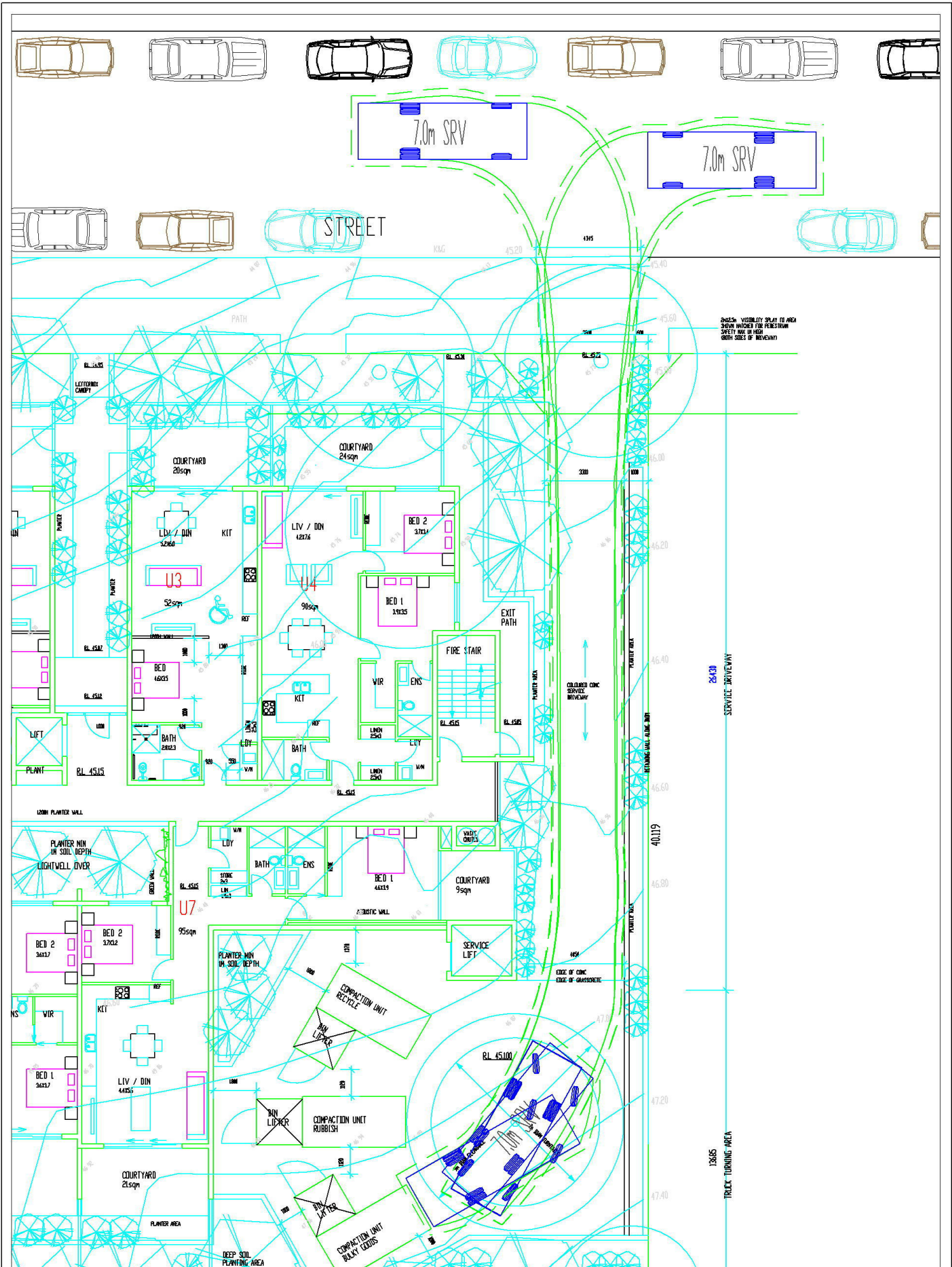
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 www.vargatraffic.com.au
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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
**7m Rigid Truck
 Entry Swept Turning Paths**

ADDRESS
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 Penrith

PROJECT NO.
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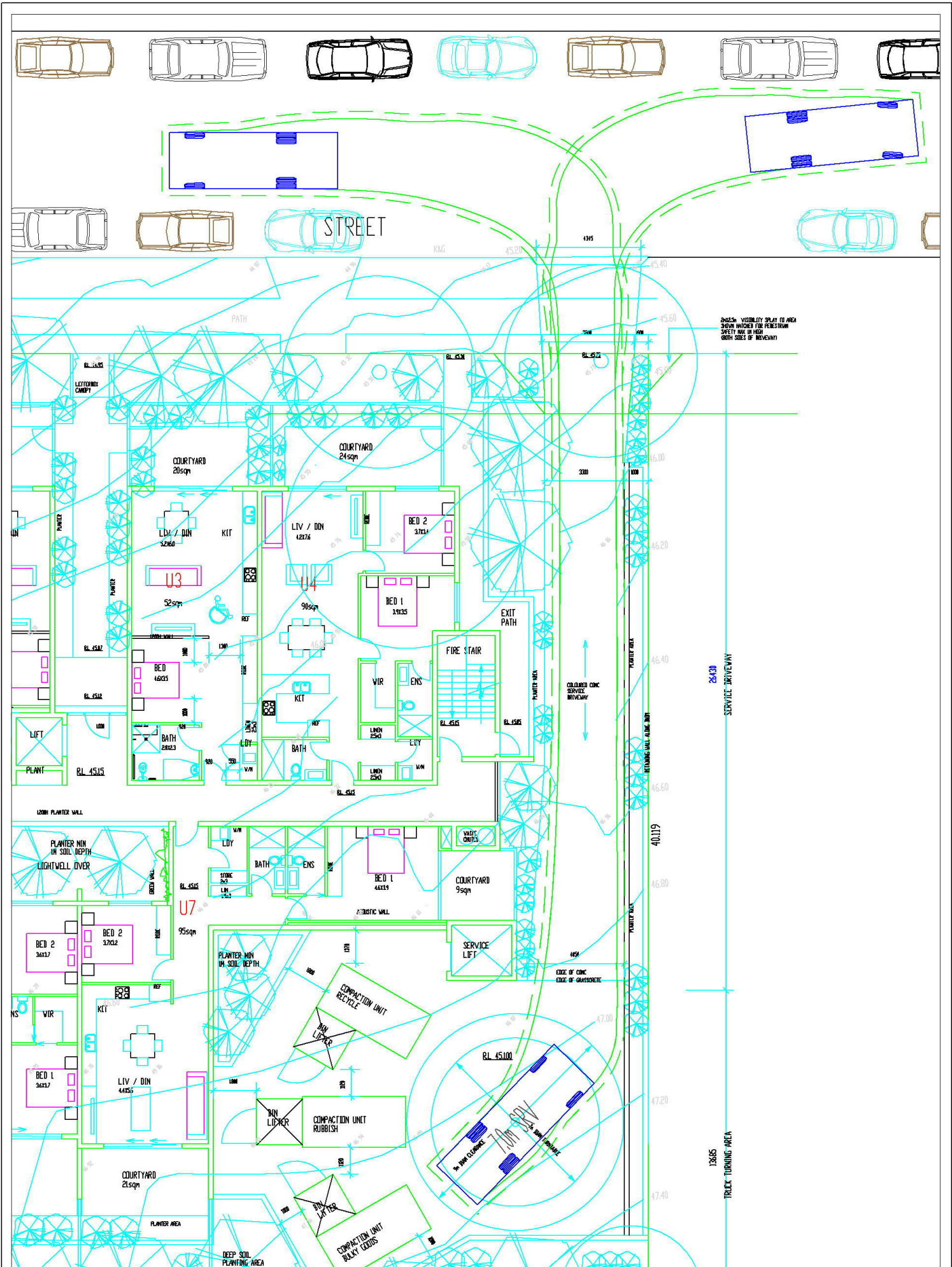
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1:200 @ A4



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2000m VISIBILITY SPREAD AREA SHOWN INDICATES FIRE PERIMETER SAFETY AND IS FROM BOTH SIDES OF MOVEMENT

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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
**7m Rigid Truck
 Exit Swept Turning Paths**

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 Penrith

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