Proposed Residential Development

26-30 Hope Street, Penrith

TRAFFIC AND PARKING ASSESSMENT REPORT

12 June 2020

Ref 20305

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, comprising a total of 38 units.

Off-street parking is to be provided for a total of 61 cars in a new two-level basement car parking area, in accordance with Council's *DCP 2014* requirements.

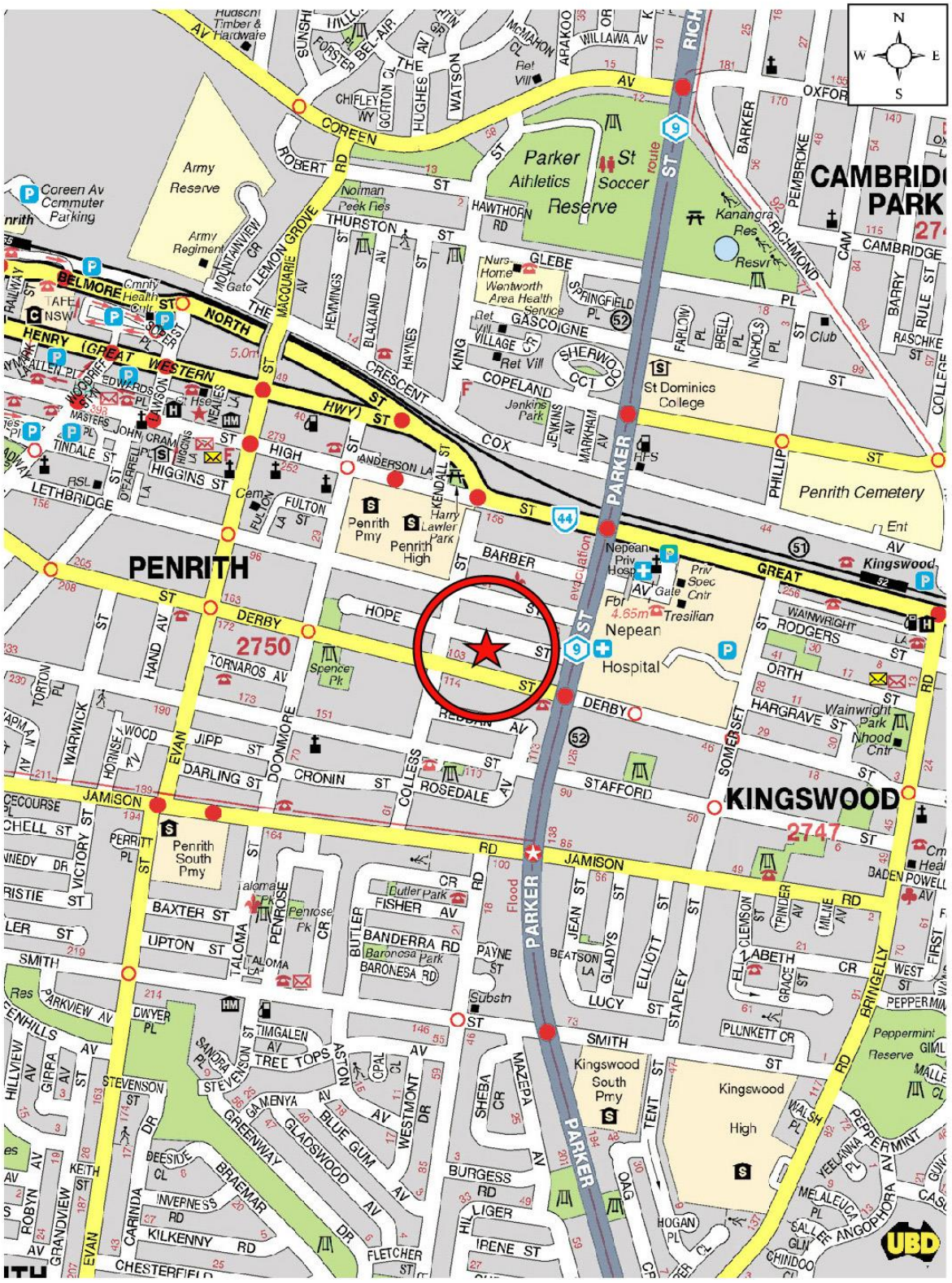
Waste collection is to be undertaken on site by Council's contractor, with a mechanical turntable provided within the loading area to ensure the truck can enter and exit the site in a forward direction at all times.

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 and
- 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.



LOCATION
FIGURE 1

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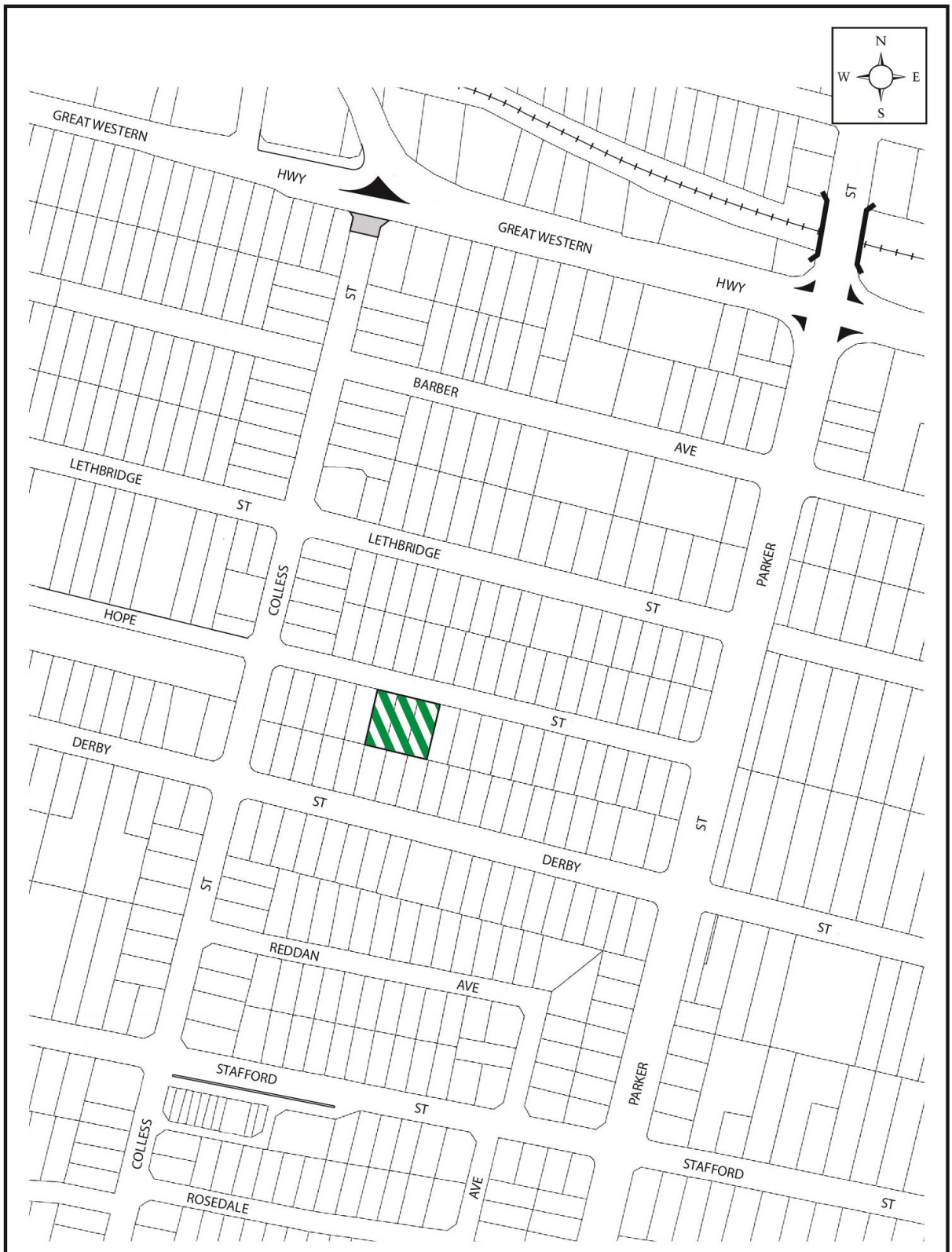

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SITE
FIGURE 2

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 1,894m^2.

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

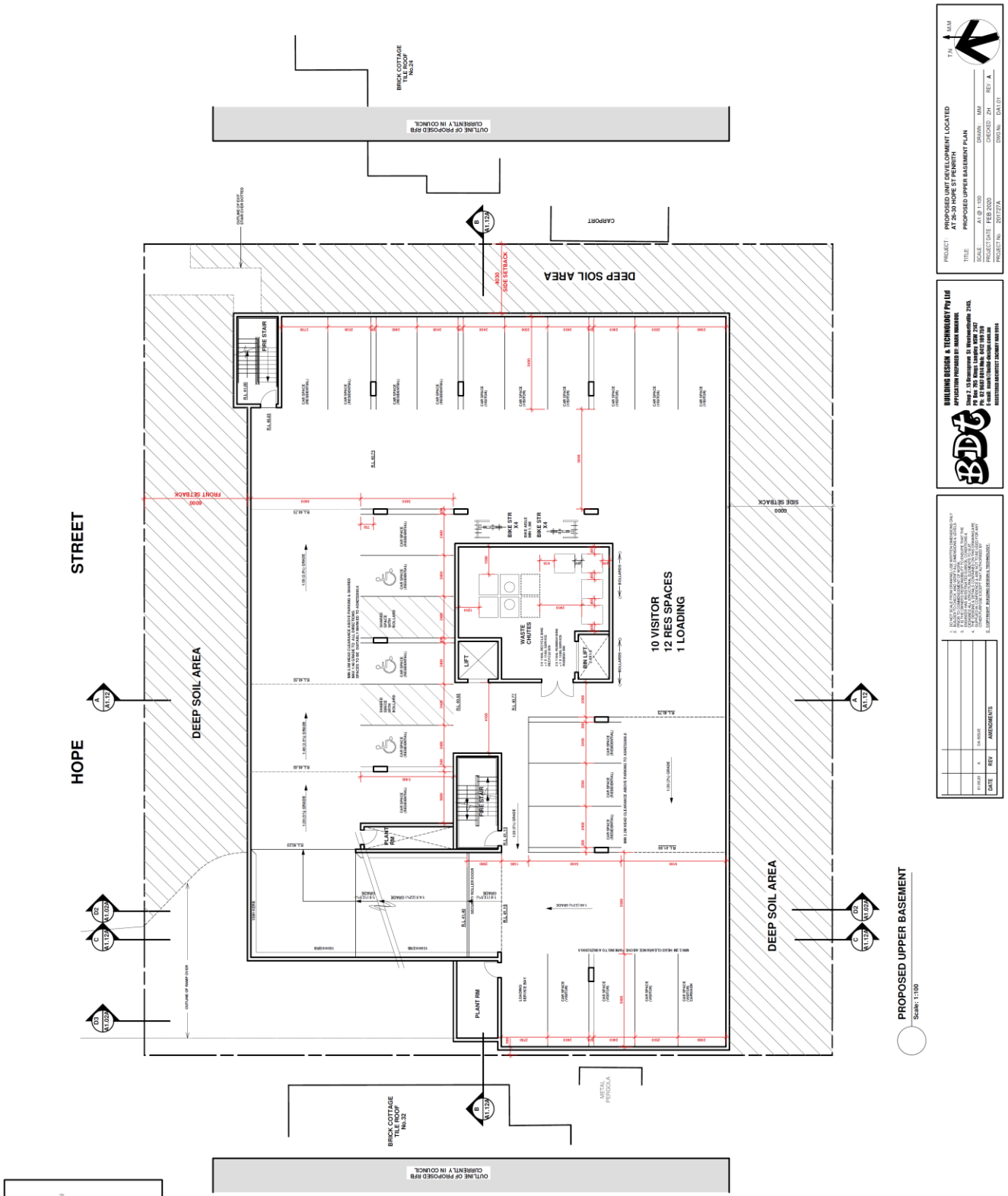
The proposed development involves the demolition of the three existing dwelling houses on the site to facilitate the construction of a new residential apartment development. A total of 38 residential apartments are proposed in the new building as follows:

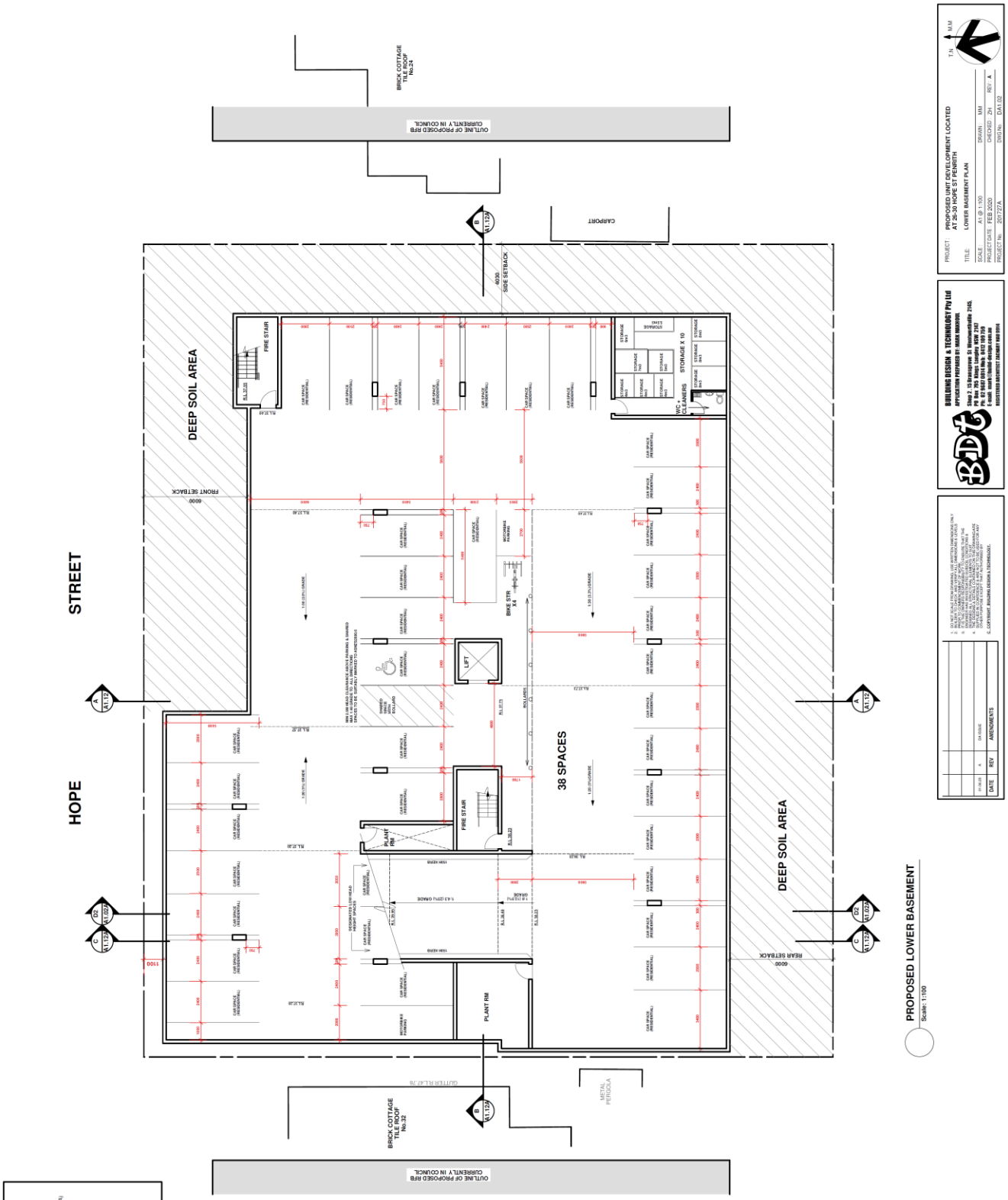
1 bedroom apartments:	13
2 bedroom apartments:	19
3 bedroom apartments:	6
TOTAL APARTMENTS:	**38**

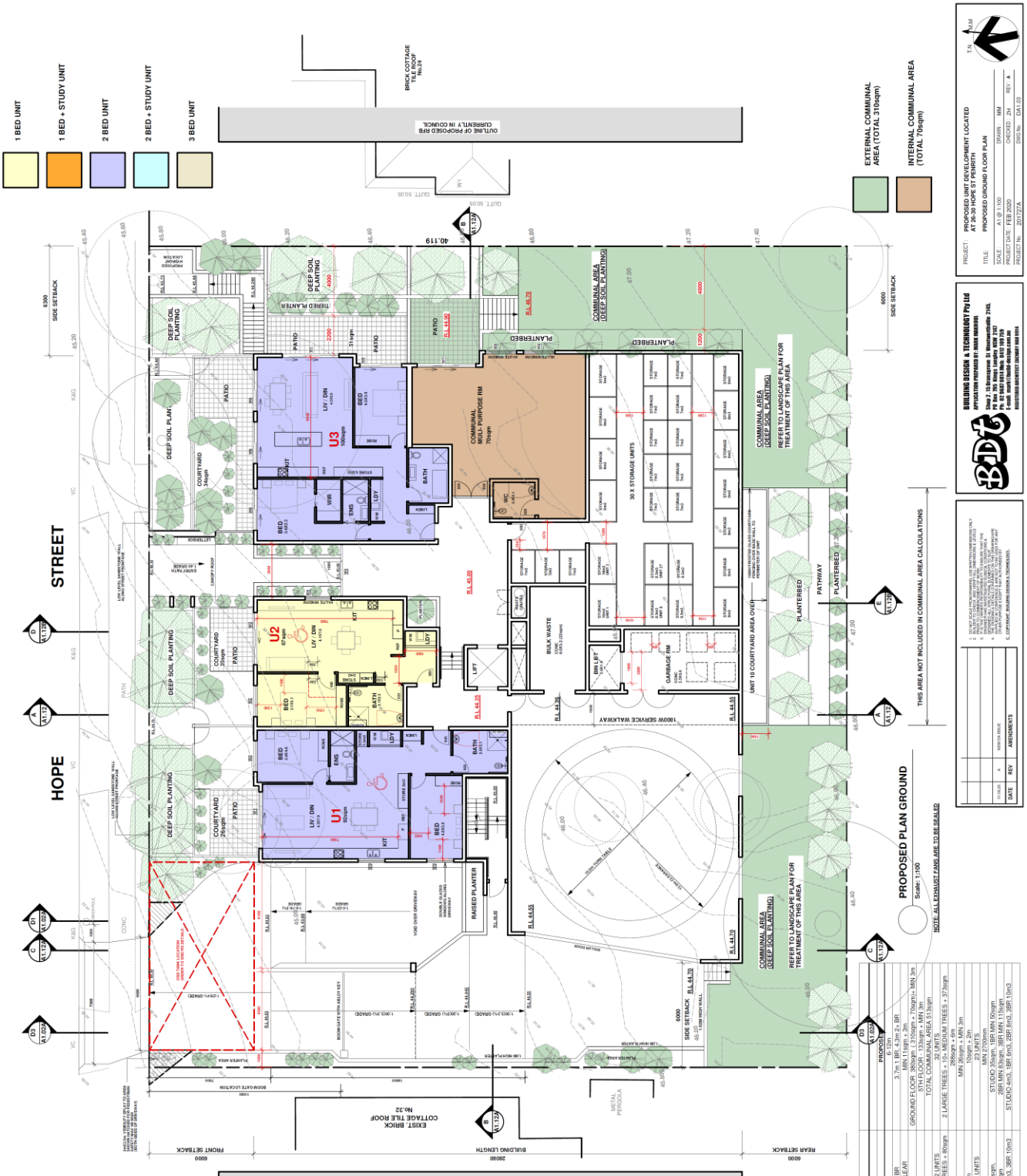
Off-street parking is proposed for a total of 61 cars, comprising 50 residential spaces, 10 visitor spaces (including a shared car wash bay) and a dedicated service bay, in a new two-level basement car parking area in accordance with Council's requirements. Vehicular access to the car parking facilities is to be provided via a new entry/exit driveway located towards the western end of the Hope Street site frontage.

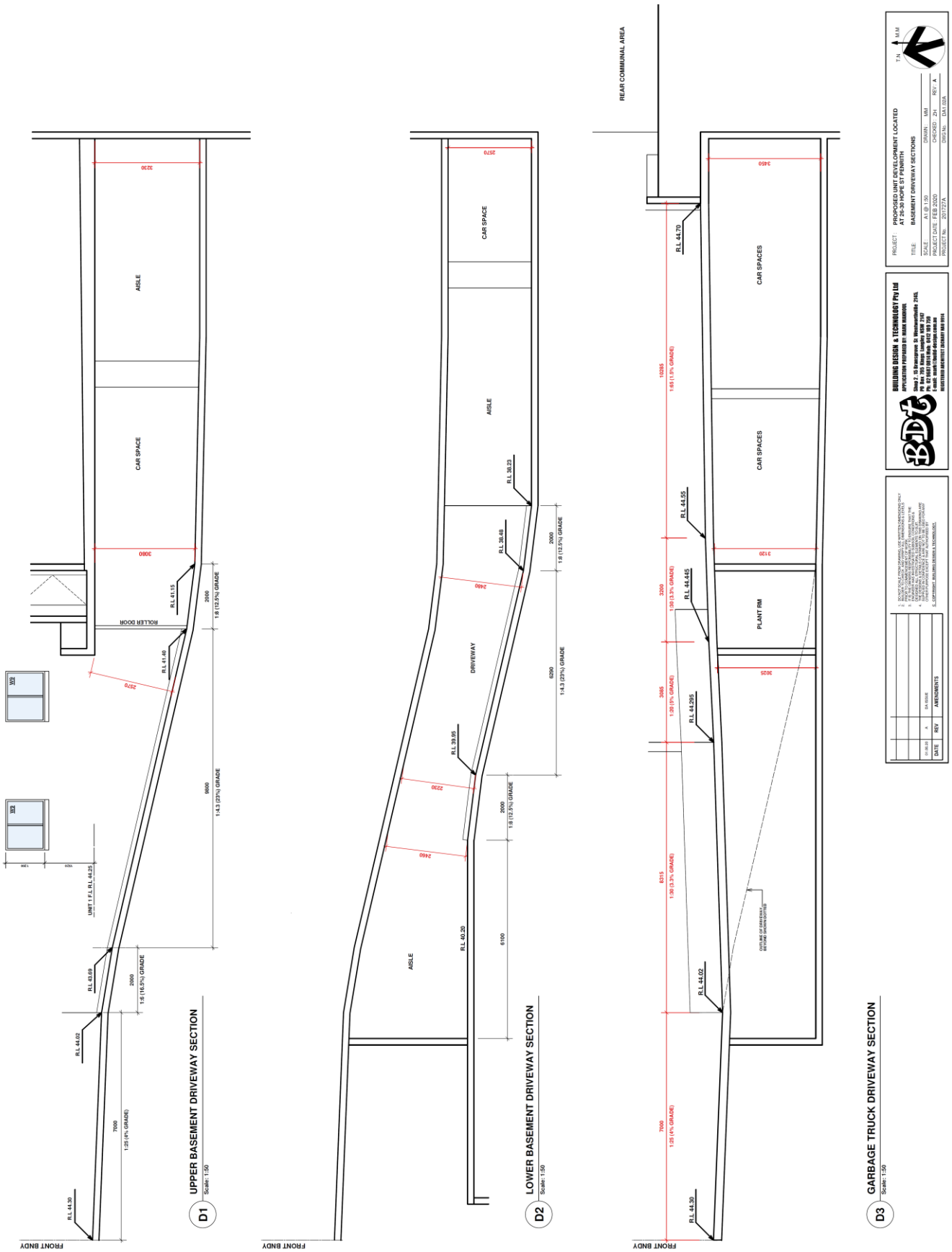
Waste collection for the proposed development is to be undertaken by Council's 9.7m long garbage truck, with a dedicated loading area to be located in the south-western corner of the ground floor level. The proposed loading area includes a mechanical turntable, thereby allowing all trucks to enter and exit the site in a forward direction at all times. Vehicular access to the loading area is to be provided via the abovementioned entry/exit driveway located at the western 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.









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.

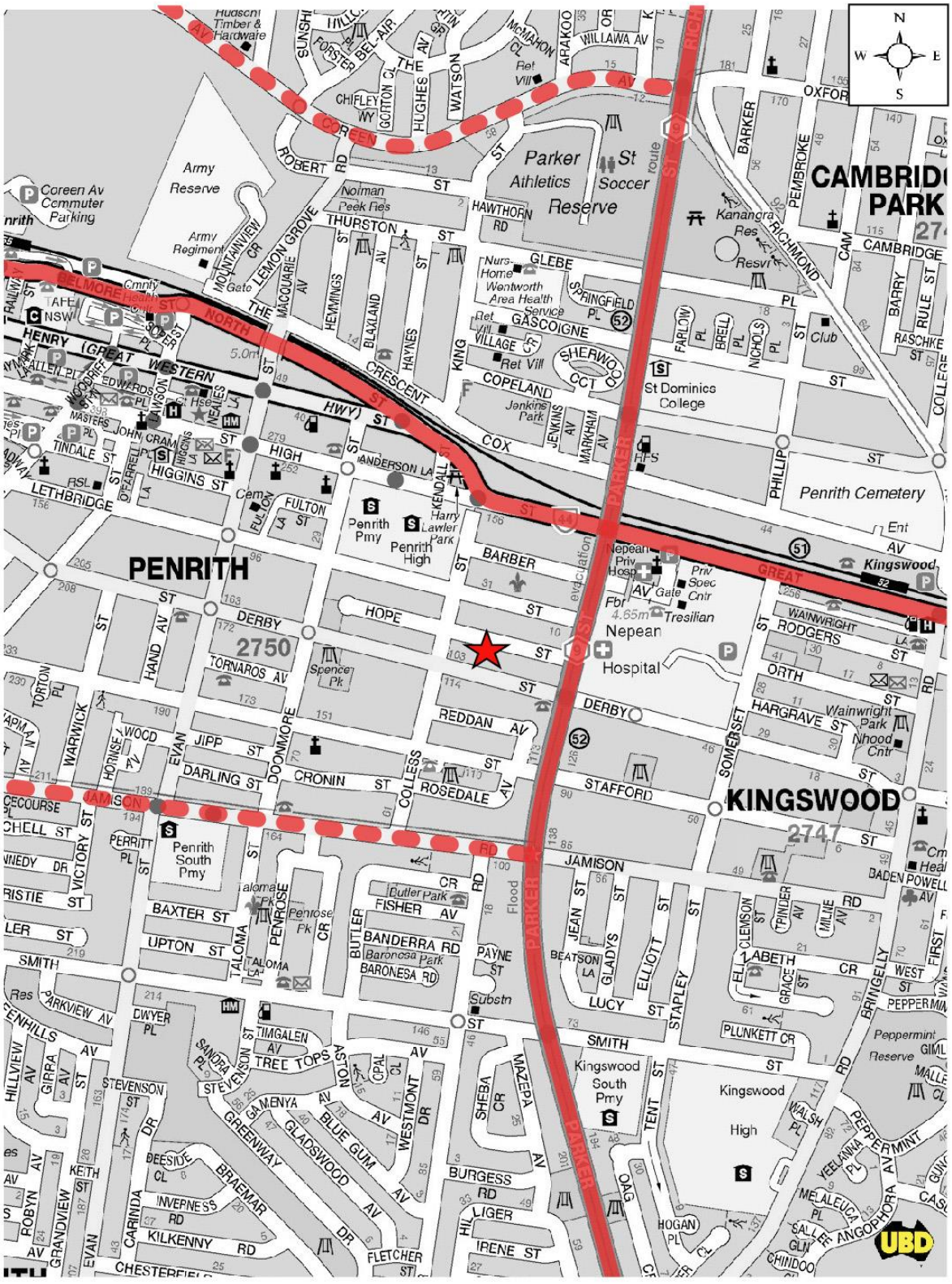
Jamison Road (west of Parker Street) is classified by the RMS as a *Regional Road* and provides a secondary east-west road link through the local area between Parker Street and Mulgoa Road. It typically carries two traffic lanes in each direction in the vicinity of the site with kerbside parking permitted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



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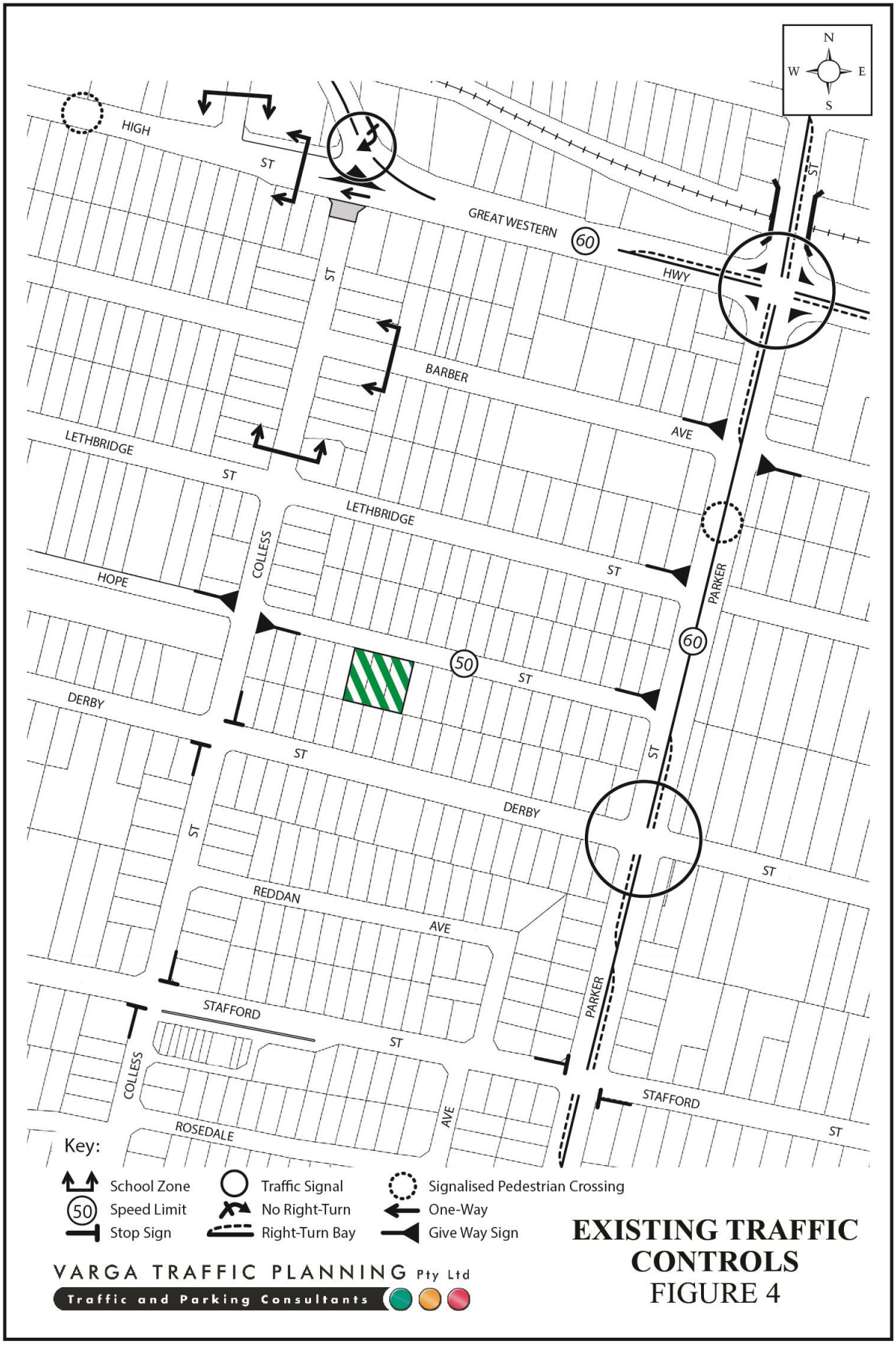
ROAD HIERARCHY
FIGURE 3



- 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, particularly 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.

Notwithstanding, it is noted that the site is located outside the 800m radius to both Penrith and Kingswood railway stations. As such, the more conservative traffic generation rate nominated in the RMS *Guidelines* has been adopted in this instance, as follows:

High Density Residential Flat Buildings in Sub-Regional Centres

0.29 peak hour vehicle trips/dwelling

Application of the above traffic generation rates to the 38 apartments outlined in the development proposal yields a traffic generation potential of approximately 11 vehicle trips per hour (vph) during the weekday morning and afternoon commuter peak periods.

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 RMS *Guidelines* nominates the following traffic generation rate which is applicable to the existing development on the site:

Dwelling House
0.85 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 8 vph as set out below:

Projected Nett Increase in Peak Hour Traffic Generation Potential of the Site as a consequence of the development proposal

Projected Future Traffic Generation Potential:	11.0 vehicle trips per hour
Less Existing Traffic Generation Potential:	2.7 vehicle trips per hour
NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:	**8.3 vehicle trips per hour**

That projected *nett 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

The off-street car parking requirements applicable to the development proposal are specified in *Penrith Development Control Plan 2014, C10 Transport Access and Parking* document in the following terms:

Residential Flat Buildings	
1 bedroom apartment:	1 space per dwelling
2 bedroom apartment:	1 space per dwelling
3 bedroom apartment:	2 spaces per dwelling
Visitors:	1 space per 5 dwellings
Service Bay:	1 space for every 40 dwellings
Carwash Bay:	1 space for every 50 dwellings

Application of the above parking requirements to the 38 residential apartments outlined in the development proposal yields an off-street parking requirement of 53 parking spaces as set out below:

Residents (38 apartments):	44.0 spaces
Visitors:	7.6 spaces
Service bay:	1.0 spaces
Car wash bay:	0.8 spaces
TOTAL:	**53.4 spaces**

The proposed development makes provision for a total of 61 off-street parking spaces, comprising 50 residential spaces, 10 visitor spaces (including a shared car wash bay) and a dedicated service bay, 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.

Swept turning path diagrams illustrating the site entry and exit paths of two large B99 vehicles are 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 driver 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, a visibility splay is provided on the exit side of the site access driveway at the western end of the front boundary, thereby satisfying the pedestrian sight line requirement.

Waste Collection Arrangement

Waste collection for the proposed development is to be undertaken on site by Council's 9.7m long garbage truck, as detailed on the following page. In this regard, a dedicated loading area is to be located in the south-western corner of the ground floor level.

2.3 DESIGN SPECIFICATIONS REAR LOAD WASTE COLLECTION VEHICLES

The following dimensions are provided for a standard heavy rigid vehicle as identified in Australian Standard 2890.2:

2.3.1 Low Entry Heavy Rigid Waste Collection Vehicle

Vehicle Classifications	Heavy Rigid Vehicle Dimensions
Overall Length (m)	9.7
Operational Length (m)	11.7
Design Width (m)	2.8
Design Height (m)	3.1
Swept Circle (m)	17.0
Clearance (travel height) (m)	3.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:12 (8.3%) in 4.0m of travel
Gross Weight (max tonnes)	28.0
Front Chassis Clearance	13º
Rear Chassis Clearance	16º

Table 1: Standard dimensions in accordance with AS 2890.2

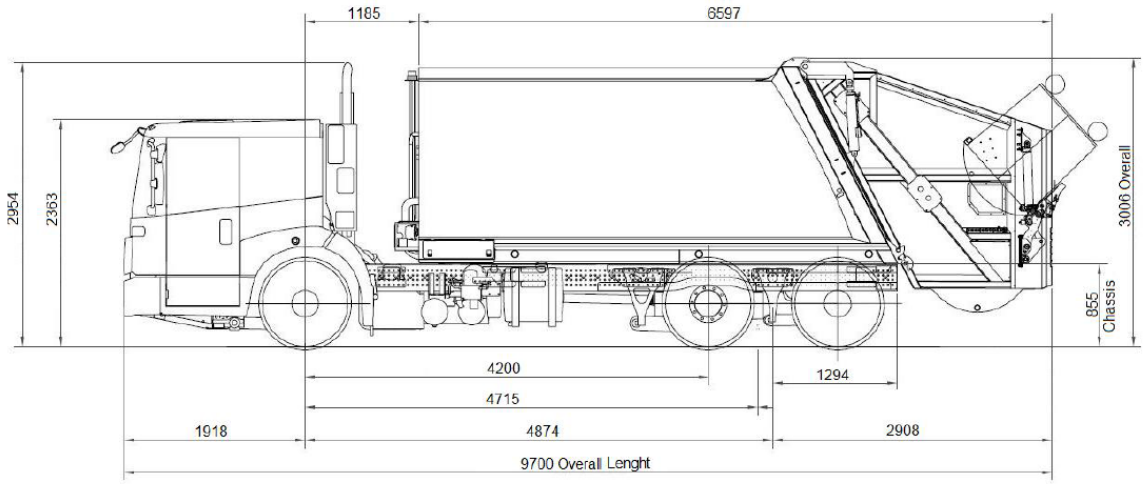
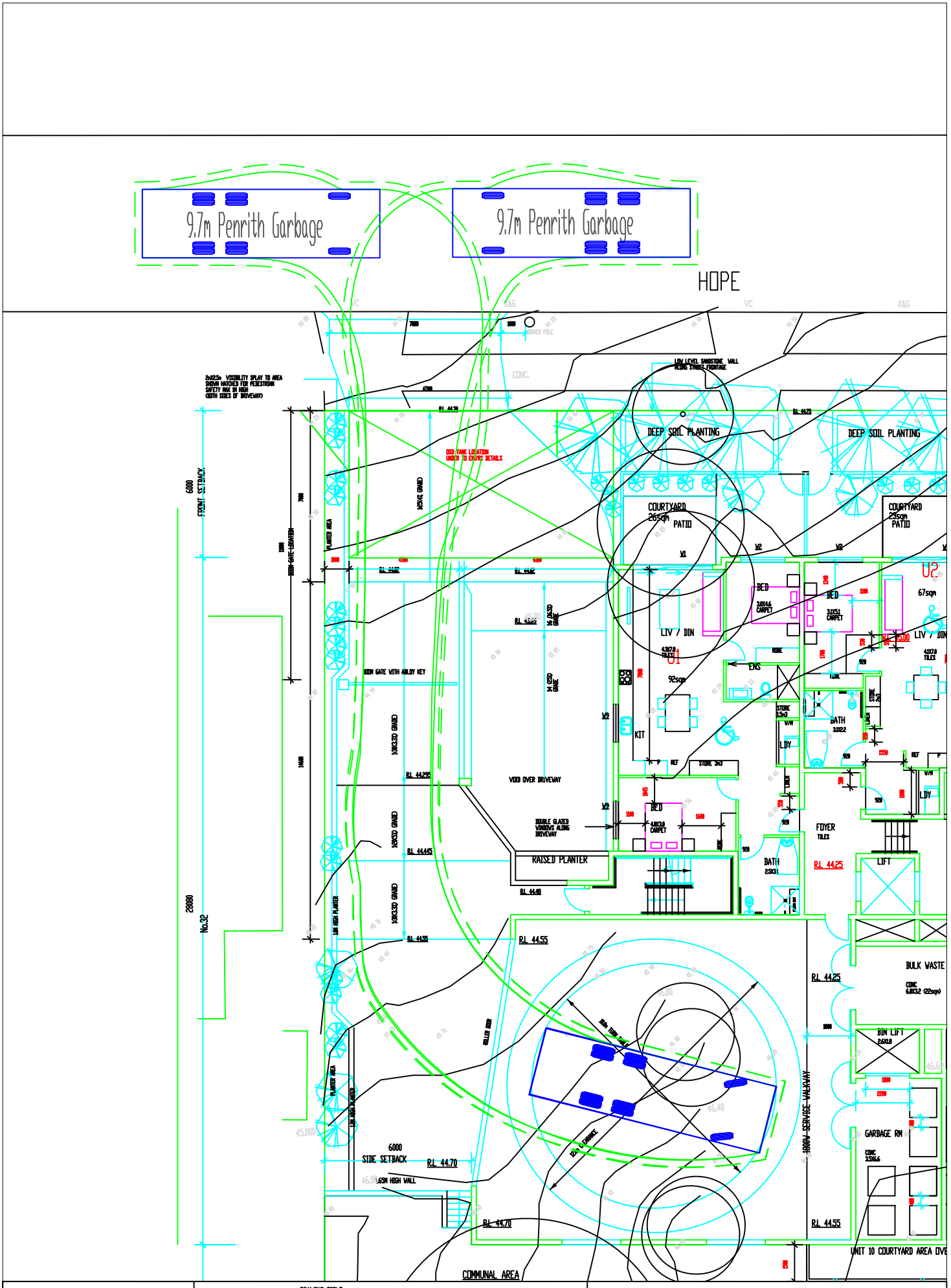


Figure 1: 9.7m Heavy Rigid Rear Load Waste Collection Vehicle specifications

The proposed loading area includes a mechanical turntable, thereby allowing all trucks to enter and exit the site in a forward direction at all times, as demonstrated on the swept turn path diagram.

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.



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PROJECT
RESIDENTIAL DEVELOPMENT

N

DRAWING TITLE
9.7m Rigid Truck Entry
Swept Turning Paths

1:250 @ A4

ADDRESS
26-30 Hope Street,
Penrith

PROJECT NO.
20305

DATE DRAWN
2020-6-5

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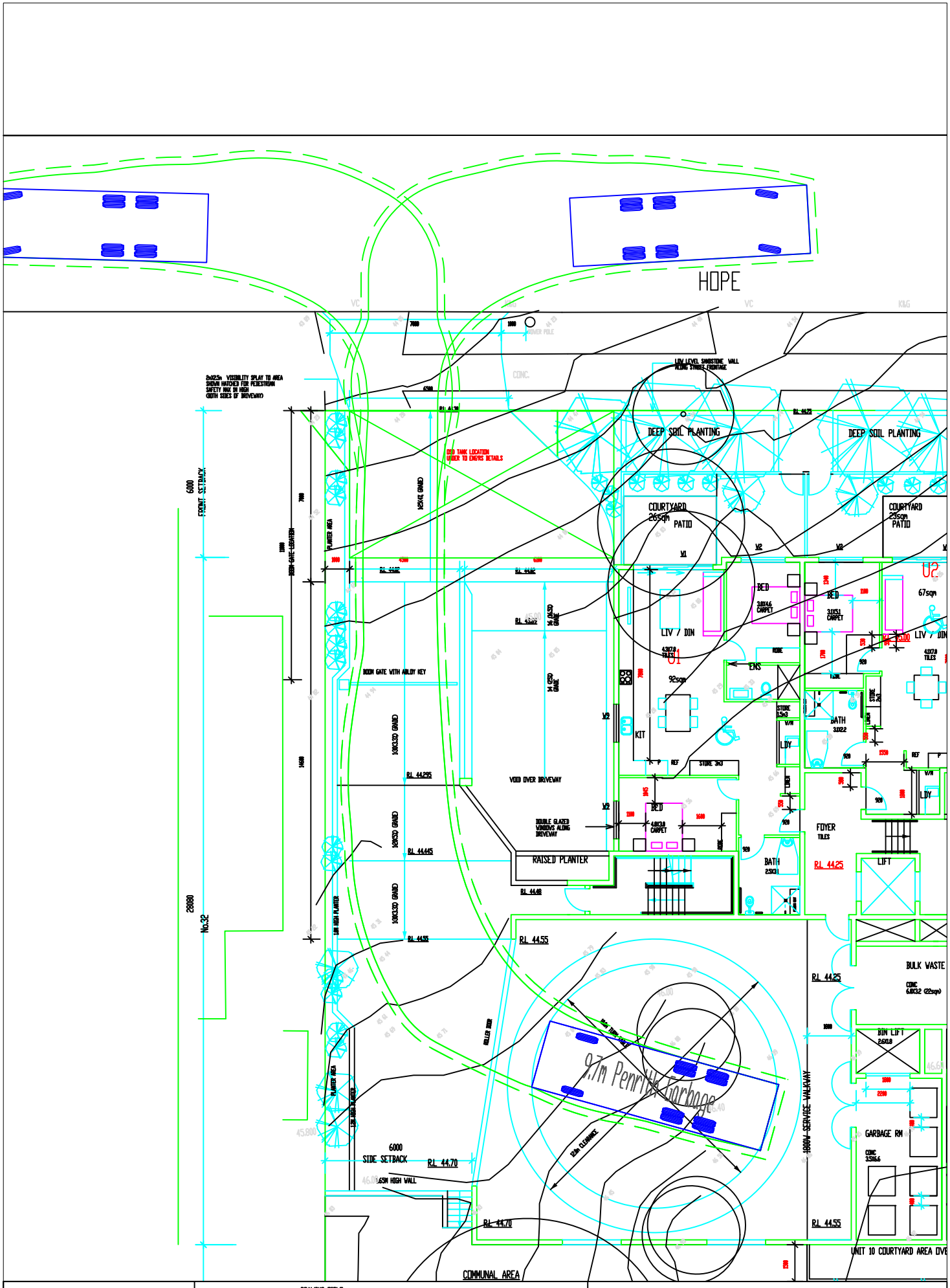

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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
9.7m Rigid Truck Exit
Swept Turning Paths

1:250 @ A4

ADDRESS
26-30 Hope Street,
Penrith

PROJECT NO.
20305

DATE DRAWN
2020-6-5

REVIEWED
CP

PREPARED
TN

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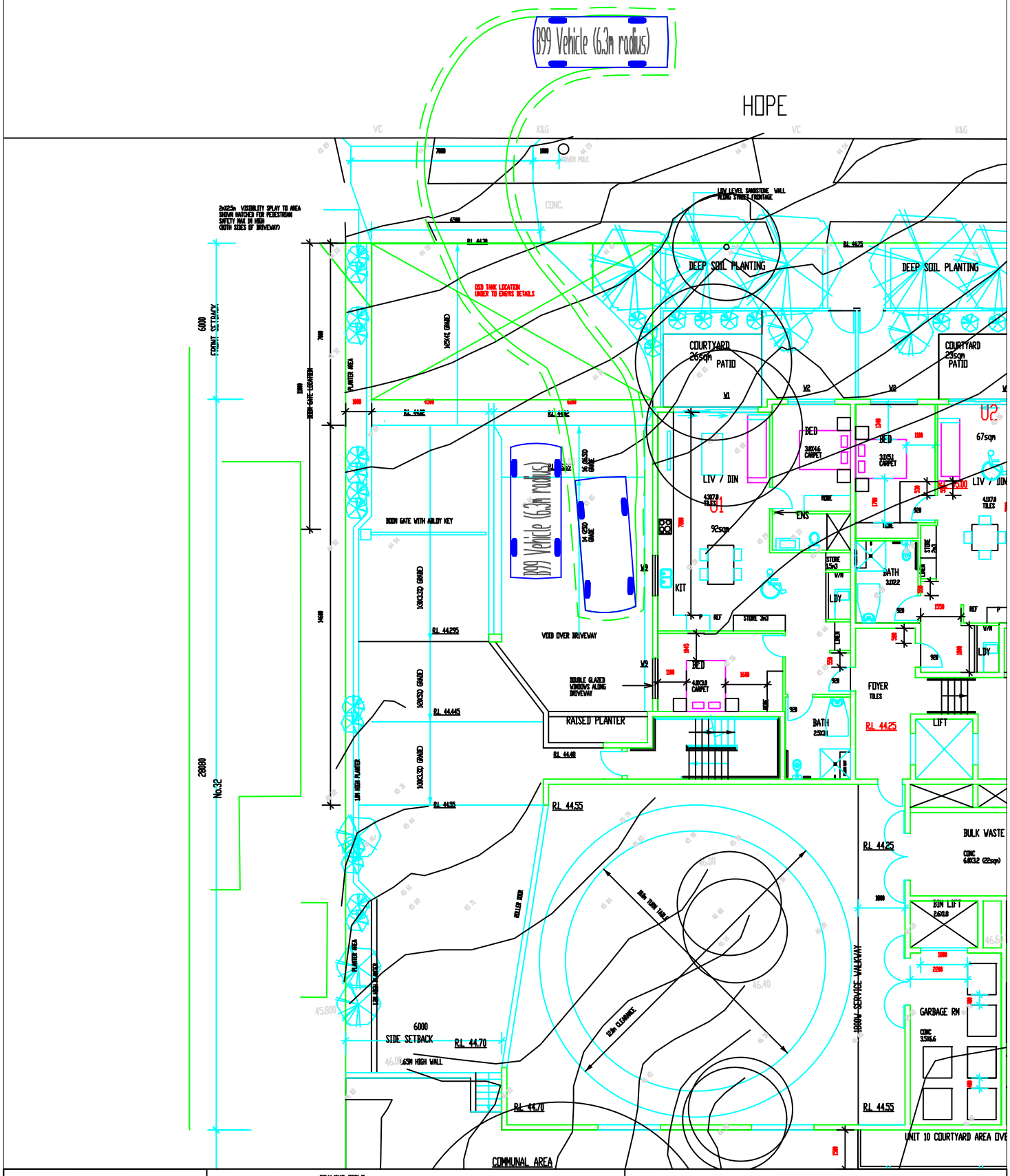

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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
B99 Vehicle Entry & Exit
Swept Turning Paths - Stage 1

1:250 @ A4

ADDRESS
26-30 Hope Street,
Penrith

PROJECT NO.
20305

DATE DRAWN
2020-6-3

REVIEWED
CP

PREPARED
TN

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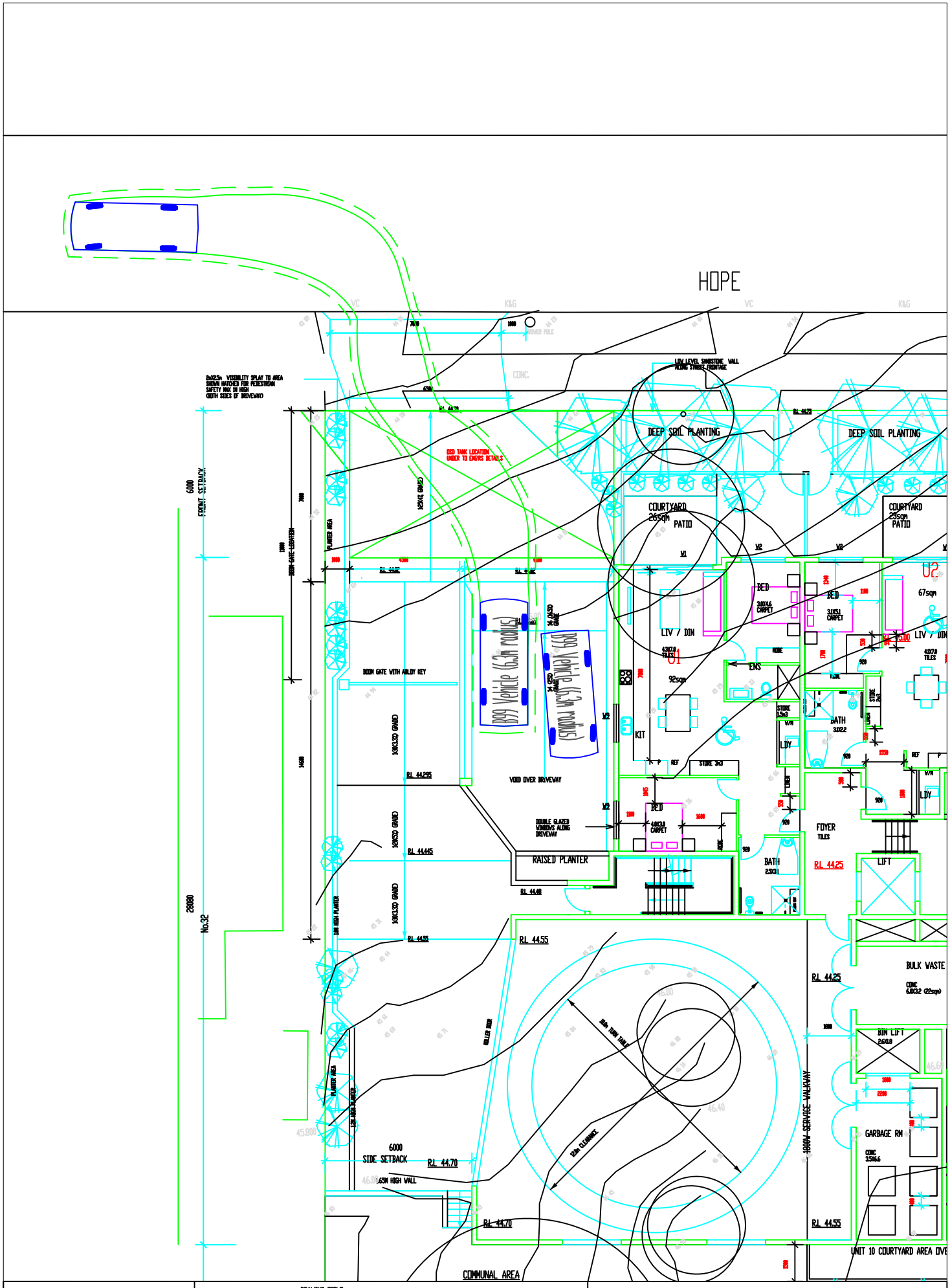

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PROJECT
RESIDENTIAL DEVELOPMENT

DRAWING TITLE
B99 Vehicle Entry & Exit
Swept Turning Paths - Stage 2

1:250 @ A4

ADDRESS
26-30 Hope Street,
Penrith

PROJECT NO.
20305

DATE DRAWN
2020-6-3

REVIEWED
CP

PREPARED
TN

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