

Traffic Impact Assessment

17-21 Kimberley Street, Merrylands

T21355

Prepared for
Land And Housing Corporation

21 April 2023



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Document Information

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1 Introduction

1.1 Background

This report has been prepared on behalf of Land and Housing Corporation (LAHC) for the proposed Affordable Senior Housing development at 17-21 Kimberley Street, Merrylands (Figure 1-1).

Figure 1-1 Site



Source: Mecone

The proposed development involves a 16-unit complex with an associated at-grade car park.

1.2 Scope of Works

The purpose of this report is to:

- describe the site and the proposed development scheme
- describe the road network serving the site and the prevailing traffic conditions
- assess the adequacy of the proposed parking provision
- assess the potential traffic implications
- assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



1.3 Reference Documents

Reference has been made to the following documents when preparing this report:

- AS2890.1 (Australian/NZ Standards, 2004)
- AS2890.6 (Australian/NZ Standards, 2009)
- SEPP Housing 2021
- RMS Guide to Traffic Generating Developments, RTA, 2002
- RMS Updated Technical Direction (TDT 2013/04a)
- RMS Updated Seniors Housing Traffic Generation Studies (2009)



2 Existing Conditions

2.1 Site and Surrounding Context

The development site (Figure 2-1) is a consolidation of Lots 206, 207 and 208 in DP 926, located at 17-21 Kimberley Street, Merrylands. The site occupies a rectangular-shaped area of 2,134.5m² and is bounded by Kimberley Street to the south.

Figure 2-1 Site Context



Source: Nearmap

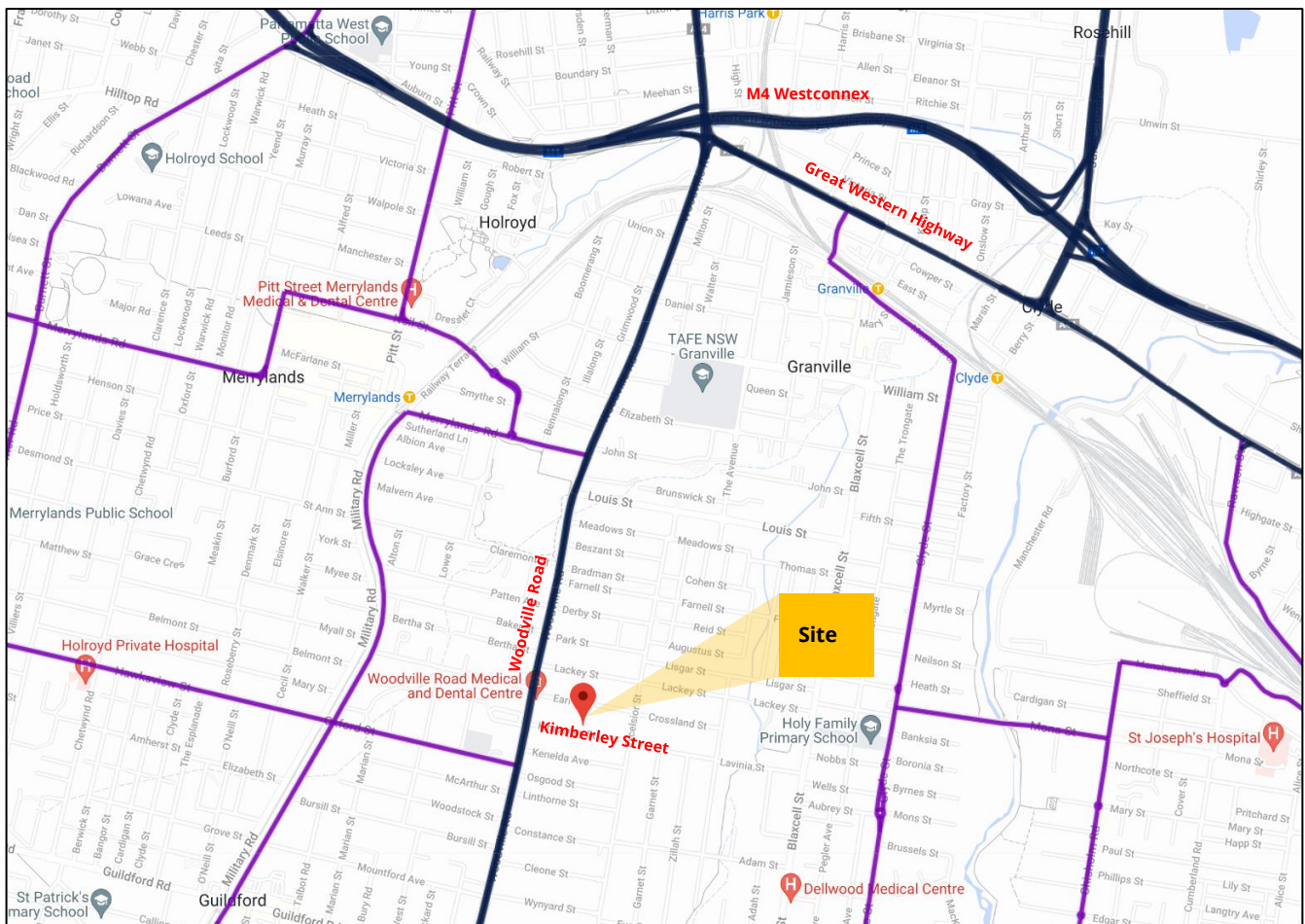
Existing development on the site comprises 2 dwellings and 1 vacant lot with vehicle accesses located at Kimberley Street. Low-density residential developments adjoin and surround the site generally, while some retail premises exist along Woodville Road approximately 150-200m to the west.

2.2 Road Network

The road network serving the site area (Figure 2-2) comprises:



Figure 2-2 Road Network



Source: RMS

- **M4 / Westconnex:** An east-west oriented State Road and Motorway that connects the City in the east and the Penrith region in the west, and subsequently continues as the Great Western Highway. The Motorway is generally subject to a 90 km/h speed restriction and has 6 lanes in a divided carriageway.
- **Great Western Highway:** A State Road and arterial road (A44) and an arterial road that connects Parramatta in the east and Bathurst in the west. Near Woodville Road, it is subject to a 60km/h speed restriction and generally consists of 2 traffic lanes in a divided carriageway.
- **Woodville Road:** A north-south oriented State Road and arterial road that connects to Great Western Highway in the north and Hume Highway in the south. It is subject to a 70km/h speed restriction and generally consists of 2 traffic lanes of traffic in a divided carriageway. Clearway restrictions apply along the outer lanes between 6:00am-7:00pm Monday to Friday and 9:00am to 6:00pm Saturday, Sunday and public holidays.
- **Kimberley Street:** An east-west oriented Local Road connecting to Excelsior Street in the east and Woodville Road in the west. A standard local road speed restriction of 50km/h applies and there is 1 traffic lane in each direction in an undivided carriageway. On-street parking is permitted along either side of the street.



2.3 Traffic Controls

The traffic controls on the road system in the vicinity of the site comprise:

- the Give Way priority control at the intersections
 - from Kimberley Street to Woodville Road
 - from Kimberley Street to Excelsior Street
- the Left Turn Only restriction at the intersection from Kimberley Street to Woodville Road
- the traffic control signals along Woodville Road

2.4 Public Transport Services

The subject site is located within walking distance (250m to the nearest bus stop) of several bus services operating in the locality. The local bus services are tabulated in Table 2-1.

Table 2-1 Local Bus Service

| Bus Line | Bus Route |
|----------|--|
| 906 | Fairfield to Parramatta |
| 907 | Bankstown to Parramatta via Bass Hill |
| 908 | Merrylands to Bankstown via Birrong & Auburn |

2.5 Existing Traffic Conditions

An indication of traffic conditions on the site's road system is provided by data published by the Roads and Maritime Services (RMS). The RMS data is expressed in Average Annual Daily Traffic (AADT), and the most recently recorded traffic flows in the site's vicinity are shown in Table 2-2 below.

Table 2-2 AADT

| Location | Northbound | Southbound |
|---|------------|------------|
| Woodville Road, 10m south of River Avenue | 24,377 vpd | 23,228 vpd |

The assessment notes that the development site is situated adjacent to a State Road which carries beyond 20,000 vehicles a day (on AADT basis). This will trigger further acoustic assessment and consideration in respect of road noise/vibration management. These elements shall be considered by the relevant subject matter experts.

Notwithstanding, observations made in the site's locality reveal significant traffic volumes on Woodville Road during peak commuting periods; however, there were relatively low traffic activities on Kimberley Street, being comprised of largely local access movements.

Local traffic counts conducted onsite as part of this assessment reveal approximately 70 vph in the morning peak from 7.30am to 8.30am and 86 vph from 5.00pm to 6.00pm. The local traffic movements are consistent



with Level of Service (LOS) A as described in the RMS Guide to Traffic Generating Developments, reproduced in Figure 2-3 below.

Figure 2-3 RMS Guide to Urban Road Level of Service (LOS)

Urban road peak hour flows per direction

| Level of Service | One Lane (veh/hr) | Two Lanes (veh/hr) |
|------------------|-------------------|--------------------|
| A | 200 | 900 |
| B | 380 | 1400 |
| C | 600 | 1800 |
| D | 900 | 2200 |
| E | 1400 | 2800 |

Source: RMS



3 Proposed Development

It is proposed to demolish the existing buildings on the site and construct a new residential complex that comprises:

- 8 x one-bedroom dwellings
- 8 x two-bedroom dwellings
- 8 x at-grade car parking spaces

Vehicle access will be provided at Kimberley Street.

Details of the proposal are indicated in the architectural plans prepared by Brewster Murray which accompany the submission and are reproduced in part in Attachment 1.





4 Parking Assessment

4.1 Car Parking Requirement

It is advised that the SEPP Housing 2021 provides the relevant car parking criteria for this development. Reference is made to the non-discretionary requirements documented in Division 7, Part 5 of the SEPP (Housing for Seniors and People with a Disability), as follows:

"for a development application made by, or made by a person jointly with, a social housing provider—at least 1 parking space for every 5 dwellings"

Having regard to the above, the proposal of 16 dwellings indicates a minimum requirement of 4 parking spaces.

The proposal to provide 8 parking spaces satisfies the SEPP requirement. Of the provided car parking spaces, 4 are to be accessible as per the AS2890.6:2009 design standards.

4.2 Access

A 5.5m wide two-way driveway will be provided at Kimberley Street. The proposed driveway which incorporates a 6m long passing area tapering to a 3m wide, single lane, two-way driveway accords with the AS2890.1 criteria. Details of a swept path analysis demonstrating satisfactory vehicle movement provisions are provided in Attachment 2.

4.3 Internal Circulation

A detailed review of the car parking facility has been undertaken to assess its conformance with the AS2890.1 design criteria. The assessment findings are tabulated in Table 4-1 for reference.

Table 4-1 Parking Arrangement Requirement

| Features | Requirement | Provision | Compliance | Notes |
|--|-------------------------------|-----------|------------|-------|
| Parking Modules (AS2890.1:2004) – User Class 1A | | | | |
| Space Length | 5.4m | 5.4m | Yes | |
| Space Width | 2.4m | 2.4m | Yes | |
| Obstructions Adjacent to Spaces (>150mm high) | Add 300mm width if applicable | N/A | Yes | |
| Aisle | 5.8m | 6.2m | Yes | |
| Blind Aisle Extension | 1.0m Extension if Applicable | 1.3m | Yes | |
| Accessible Parking (AS2890.6:2009) | | | | |
| Space Length | 5.4m | 5.4m | Yes | |



| | | | | |
|--|-------------------------------|---------------|-----|--|
| Space Width | 2.4m | 2.4m | Yes | |
| Shared Area Length | 5.4m | 5.4m | Yes | |
| Shared Area Width | 2.4m | 2.4m | Yes | |
| Shared Area Bollard | 800-850mm offset | Provided | Yes | |
| Parking Gradient | Max 2.5% (1 in 40) | 1 in 40 | Yes | |
| Driveway / Ramp (AS2890.1:2004) | | | | |
| Ramp Grade | Max 25% (1 in 4) | 1 in 30 (~3%) | Yes | |
| Width (One-way) | 3.0m | 3.0m | Yes | |
| Width (Two-way) | 5.5m | 5.5m | Yes | |
| Vertical Obstruction(s) | 300mm clearance if applicable | N/A | Yes | |
| Sight Triangle | 2.5m x 2.0m | | Yes | |
| Gradient for First 6m of Driveway | Max 5% (1 in 20) | 1 in 30 (~3%) | Yes | |



5 Servicing Arrangement

Consistent with the current local arrangements, refuse collection will occur along the northern kerb frontage of Kimberley Street. Other infrequent loading activities related to deliveries, courier activity, maintenance etc., can rely on the ample on-street parking in the vicinity of the site.





6 Traffic Assessment

6.1 Existing Traffic Generation

The updated Technical Direction TDT 2013/04a¹ provides revised average trip generation rates for low-density residential dwellings. The relevant trip rates are as follows:

- 0.71 vtpd per unit during the morning peak hour
- 0.78 vtpd per unit during the evening peak hour

Application of the above rate would indicate a morning and evening peak hour trip generation of 2 vtpd.

6.2 Development Traffic Generation

Residential

Reference is made to the RMS' updated Traffic Generation Study for Seniors Housing. The Study reveals the Seniors Housing traffic movements do not overlap with the morning peak period. However, in the evening peak, it established an average traffic generation rate of (0.17) 0.2 vtpd per dwelling in the metropolitan area. Therefore, applying this rate to the proposal would indicate an evening peak hour traffic generation outcome of 3 vtpd.

6.3 Overall Traffic Generation and Distribution

Having regard to the above, the development's net traffic generation outcome is calculated as follows:

$$\begin{aligned}\text{Net Traffic Generation} &= \text{Development Traffic Generation} - \text{Existing Traffic Generation} \\ &= 3 \text{ vtpd} - 2 \text{ vtpd} \\ &= 1 \text{ vtpd}\end{aligned}$$

Based on the above, the assessment projects that the proposal will result in the addition of 1 vehicle movement per hour on average on the existing road network in the busier afternoon peak. Traffic generation of this order of magnitude is not perceptible in the context of the existing road network. As a result of this finding, the assessment concludes that the development traffic will not impact the existing local road network in an adverse manner.

¹ NSW Government Roads and Maritime Services 2013, Guide to Traffic Generating Developments: Updated traffic surveys



7 Conclusion

The traffic and parking assessment undertaken for the proposed Affordable Senior Housing development at 17-21 Kimberley Street, Merrylands has concluded that:

- the traffic generation of the proposed development will not present any adverse traffic implications
- the proposed parking provision complies with the SEPP criteria and will adequately serve the development
- the proposed access, internal circulation and parking arrangements complies with the AS2890 design criteria





Attachment 1

Architectural Plans

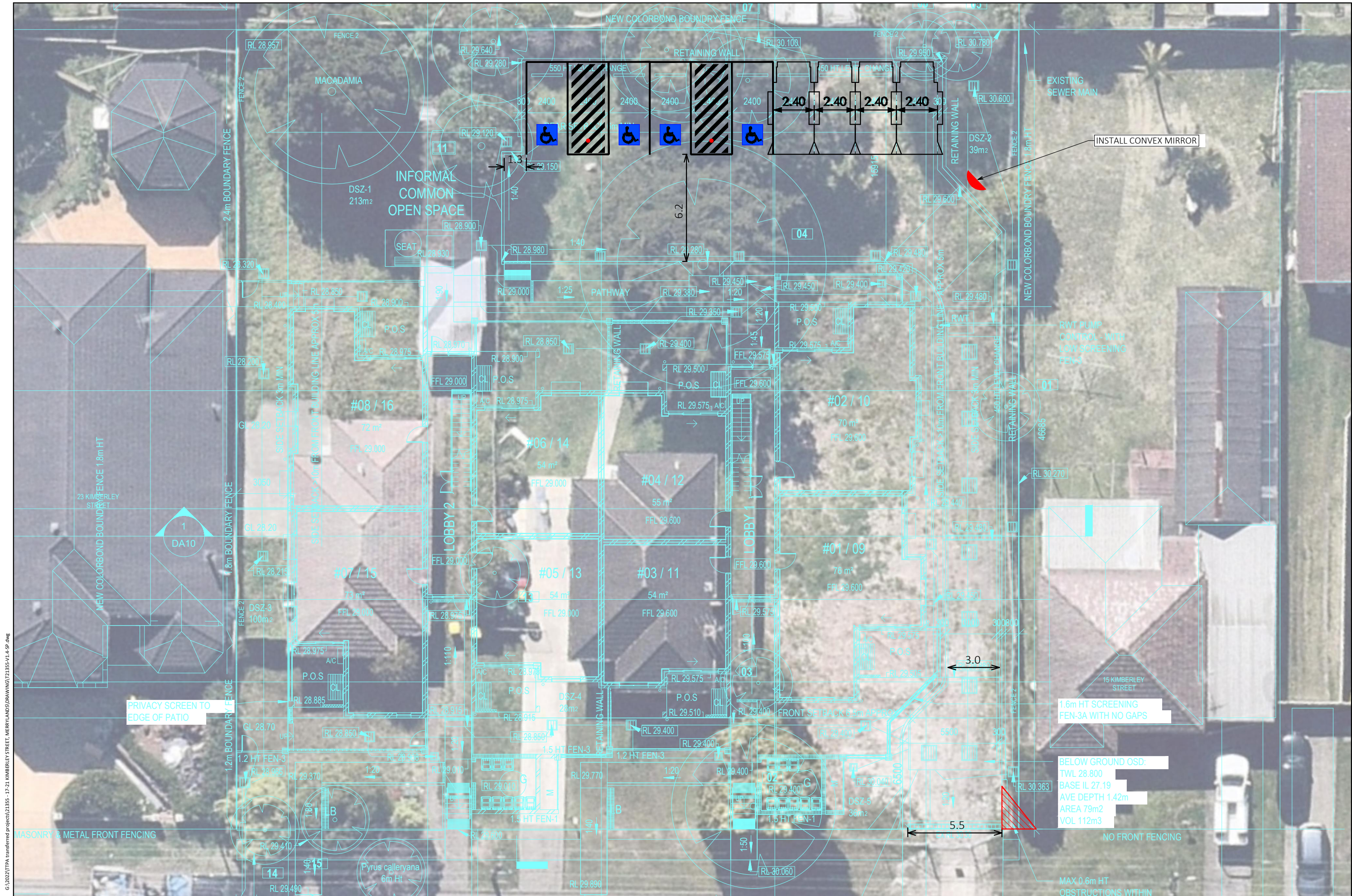




Attachment 2

Turning Path Assessments





G:\2022\TPA transferred projects\21355 - 17-21 KIMBERLEY STREET, MERRYLANDS\DRAWING\T21355-V1.4-SP.dwg
Plotted by Genesis

17-21 KIMBERLEY STREET, MERRYLANDS
PROPOSED AFFORDABLE SENIOR HOUSING
CAR PARK LAYOUT AND RECOMMENDATION

DRAWING REF NO. T21355-V1.4-SP

SHEET NO. 01 OF 04

ISSUE DATE 14 March 2023

DESIGNED BY
L.N.G.
REVIEWED BY
B.L.O.
SCALE
A3
0 20 40
1:200



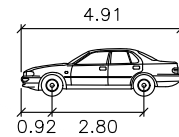
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES
ONLY SUBJECT TO CHANGE
WITHOUT NOTIFICATION

WARNING
THE LOCATION OF UNDERGROUND SERVICES
ARE APPROXIMATE ONLY
THE EXACT LOCATIONS SHALL BE VERIFIED ON SITE
ALL EXISTING SERVICES SHOWN ARE NOT GUARANTEED

GenesisTraffic

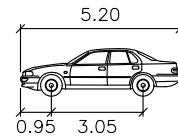
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- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



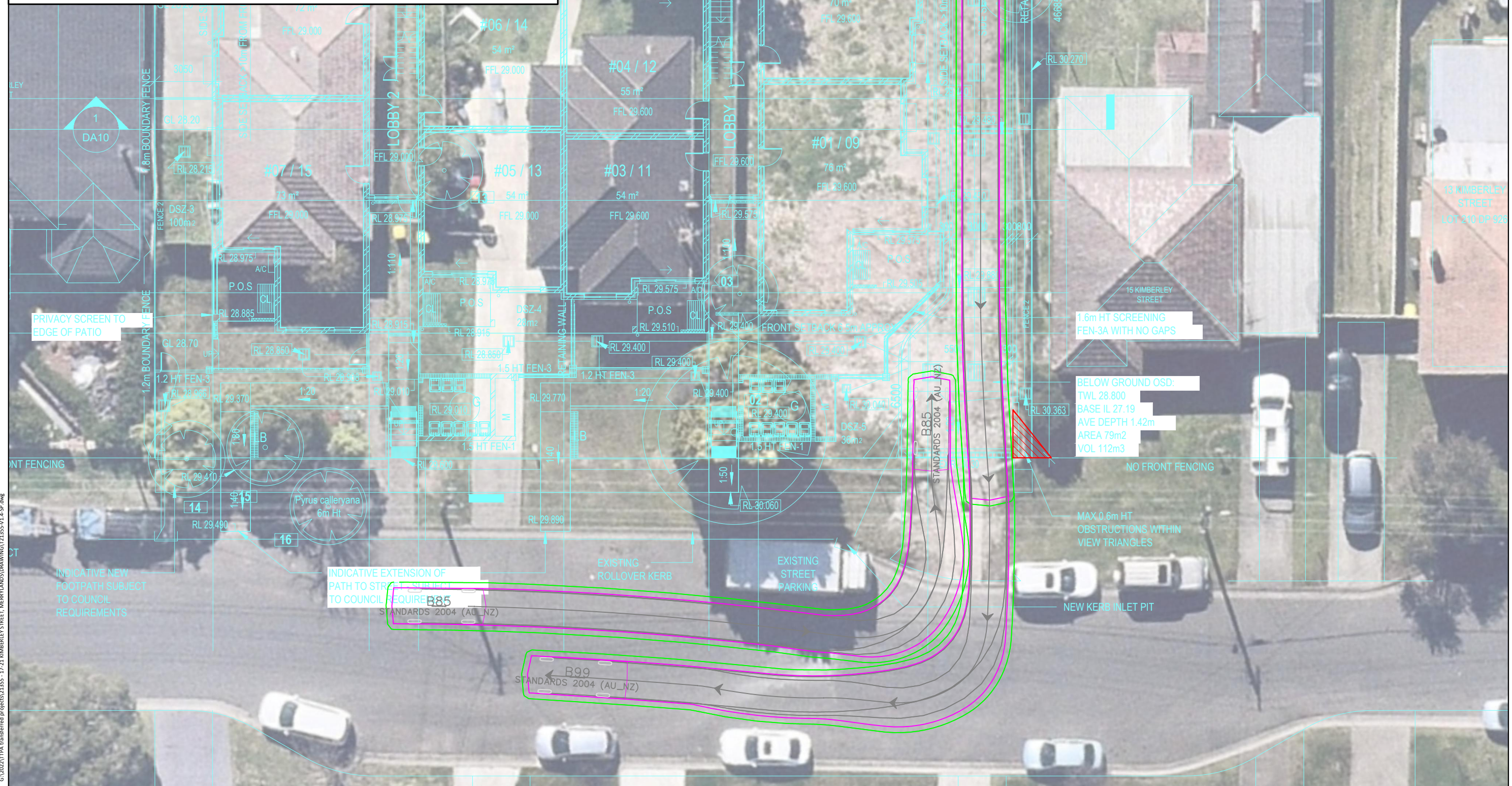
B85

Width : 1.87 meters
Track : 1.77 meters
Lock to Lock Time : 6.0
Steering Angle : 34.1



B99

Width : 1.94 meters
Track : 1.84 meters
Lock to Lock Time : 6.0
Steering Angle : 33.9



17-21 KIMBERLEY STREET, MERRYLANDS
PROPOSED AFFORDABLE SENIOR HOUSING
SWEPT PATH ASSESSMENT - B85 AND B99 PASSING OPPORTUNITY

DRAWING REF NO. T21355-V1.4-SP

SHEET NO. 02 OF 04

ISSUE DATE 14 March 2023

DESIGNED BY
L.NG

REVIEWED BY
B.LO

SCALE A3 0 20 40 1:200



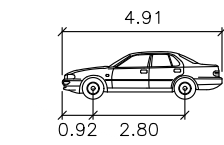
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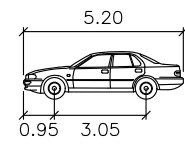
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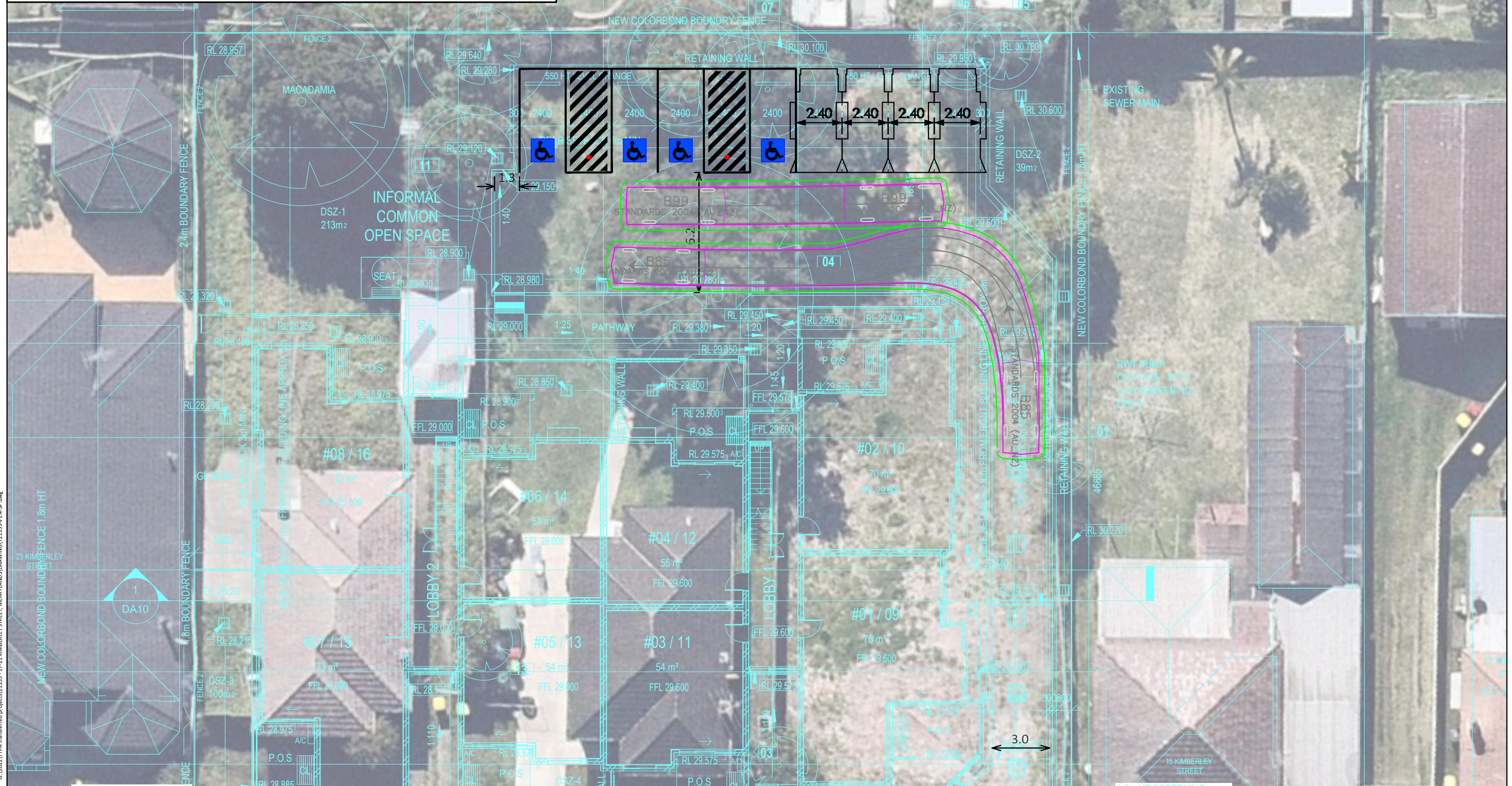
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85
Width : 1.87 meters
Track : 1.77 meters
Lock to Lock Time : 6.0
Steering Angle : 34.1



B99
Width : 1.94 meters
Track : 1.84 meters
Lock to Lock Time : 6.0
Steering Angle : 33.9



17-21 KIMBERLEY STREET, MERRYLANDS
PROPOSED AFFORDABLE SENIOR HOUSING
SWEPT PATH ASSESSMENT - B85 AND B99 PASSING OPPORTUNITY

DRAWING REF NO. T21355-V1.4-SP

SHEET NO. 03 OF 04

ISSUE DATE 14 March 2023

DESIGNED BY
L.N.G

REVIEWED BY
B.L.O

SCALE
A3 0 20 40 1:200



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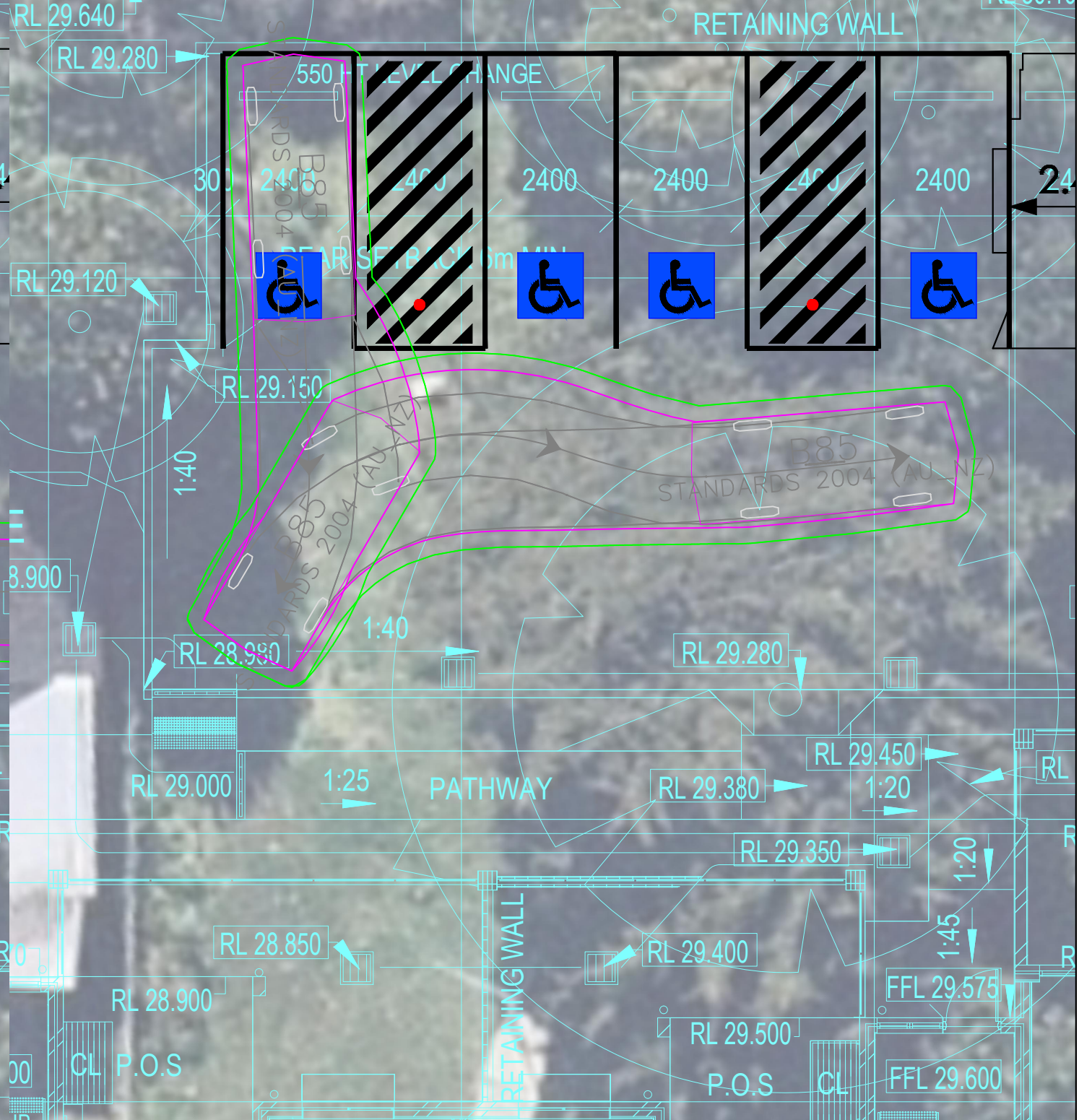
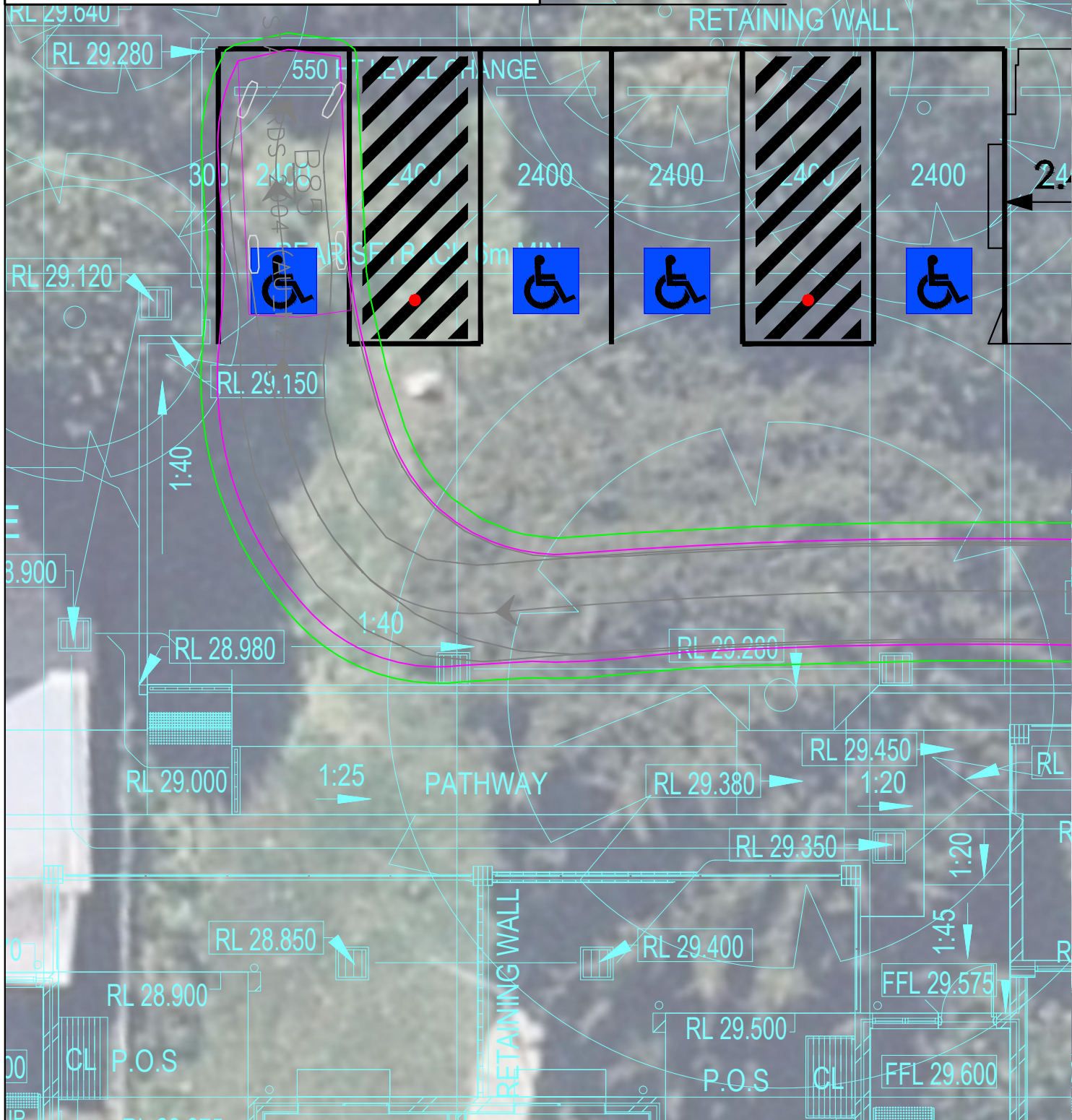
GenesisTraffic

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

B85

Width : 1.87 meters
Track : 1.77
Lock to Lock Time : 6.0
Steering Angle : 34.1



17-21 KIMBERLEY STREET, MERRYLANDS
PROPOSED AFFORDABLE SENIOR HOUSING
B85 ENTERS AND EXITS THE CAR SPACE

DRAWING REF NO. T21355-V1.4-SP

SHEET NO. 04 OF 04

ISSUE DATE 14 March 2023

DESIGNED BY
L.N.G

REVIEWED BY
B.L.O

SCALE
A3 0 1.0 2.0 1:100



PRELIMINARY PLAN
FOR DISCUSSION PURPOSES
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Better Developments with
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