



3 Memory Ave, Crookwell Proposed Sub-Division and Childcare Centre

Traffic Assessment

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Client: Blue Sox Developments Pty Ltd

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1 Introduction

MLA Transport Planning (MLA) prepared this traffic impact assessment (TIA) on behalf of Blue Sox Developments Pty Ltd. The TIA accompanies a sub-division development application submission to Upper Lachlan Shire Council (Council). The application seeks approval to sub-divide the site at 3 Memory Avenue, Crookwell into 19 low density residential lots and an additional lot for a proposed childcare centre.

The application relates to the proposed sub-division of the land as well as the development and use of the proposed childcare centre on the resultant Lot 4. The design, construction and occupation of the residential dwellings on the proposed residential lots will be subject to future development applications for each individual lots following the approval of the sub-division development application.

The report assesses the traffic implications of the proposed sub-division and the proposed childcare centre. The remainder of the report is set out as follows:

- Chapter 2 outlines the existing conditions including a description of the subject site
- Chapter 3 provides a brief description of the proposed development
- Chapter 4 examines the traffic generation and its impact
- Chapter 5 discusses the parking requirements for the proposed childcare centre, and
- Chapter 6 presents the conclusions of the assessment.

2 Existing Conditions

2.1 Site Description

The subject site is located at 3 Memory Avenue, Crookwell and falls within Upper Lachlan Shire Council local government area. It is legally described as Lot 2 in DP702788. It is located near the Crookwell Town Centre.

The site is irregular in shape with frontages to McIntosh Road to the south, Prell Street and Pine Avenue to the east and Memory Road to the north. It is bounded by existing dwellings along its western boundary.

The site location and its surrounds are shown in Figure 2.1.

Figure 2.1: Site Locality Plan



The site is currently occupied by a single-level private dwelling, surrounded by sparse vegetation, and is otherwise a relatively open site.

Land use in the area is predominantly categorised by well established low density housing similar to that on the subject site. A small number of businesses are scattered throughout the area. To the immediate east of the site lies the Crookwell Cemetery, while the Crookwell High School is located further to the south west of the site. Additionally, Crookwell is located approximately 1.5m to the south west of the subject site providing additional retail, services and other amenities.

2.2 Road Network

The road network in the vicinity of the subject site includes Laggan Road, Memory Avenue, McIntosh Road, Prell Street and Pine Avenue. Below is a description of the local road network.

2.2.1 Laggan Rd

Laggan Road is a classified regional road under the jurisdiction of Upper Lachlan Shire Council and is responsible for the maintenance and management of the road with funding from the State Government. It is designated as MR248, linking Crookwell to the town of Taralga to the east.

In the vicinity of the site, Laggan Road is aligned in a generally north-south direction and is typically configured as a 2-lane, 2-way urban road with kerb and gutters on at least one side of the road. However, outside of the town centre area, the road is configured as a rural road with no shoulders.

Kerbside parking is generally permitted on Laggan Road.

Within the town centre of Crookwell, Laggan Road has a signposted speed limit of 50km/hr. The speed limit increases to 100km/hr outside of the town centre and as the road extends into more rural areas.

2.2.2 Memory Ave

Memory Avenue is a local road under the jurisdiction of Upper Lachlan Shire Council, which is responsible for its maintenance and management.

In the vicinity of site, the road is aligned in a generally east-west direction. It has a carriageway width less than 5.0m. The typical road cross section is a 2-lane, 2-way road with kerb and gutter formed on the southern side while the northern side has a grass verge. It connects to Laggan Road to form a priority controlled T-intersection at its western end and terminates at Prell Street at its eastern end to form a 4-way priority controlled intersection with a private road leading to the cemetery.

Memory Avenue has a default speed limit of 50 km/h.

2.2.3 Local Streets

In addition to the above roads, the site is located within a network of local roads including McIntosh Road, Prell Street and Pine Avenue which are under the administration of Council.

These local roads are generally configured as 2-lane, 2-way roads providing vehicular access to the abutting properties with kerbside parking permitted. It is noted that Prell Street and Pine Avenue adjacent to the site currently exist as gravel roads with grass verge on both sides of the road. The trafficable portion of these roads have a width of approximately 3.5m accommodating traffic movements in one direction at a time.

They have a default speed limit of 50km/hr.

3 Proposed Development

3.1 Development Description

3.1.1 Preamble

The proposed development involves the sub-division of the land to provide 19 residential lots and one additional lot for a proposed childcare centre. The design, construction and occupation of the residential dwellings on each future residential lots will be subject to separate development applications for each individual lot following the approval of the proposed sub-division.

The proposed sub-division will occur in two stages. Stage 1 involves the creation of four lots located off McIntosh Road. Lots 1 to 3 are proposed residential lots while Lot 4 will accommodate the new childcare centre. Stage 2 involves the creation of 16 residential roads located off Prell Street and Memory Avenue. As such, the overall proposed development will result in 19 low density residential dwelling lots and one lot for a proposed childcare centre.

As part of the of the proposed sub-division, it is proposed to upgrade Memory Avenue, Prell Street and Pine Avenue to a 7.0m wide carriageway with rolling top kerb and gutter on both sides of the road and a 1.2m wide footpath on one side of the road.

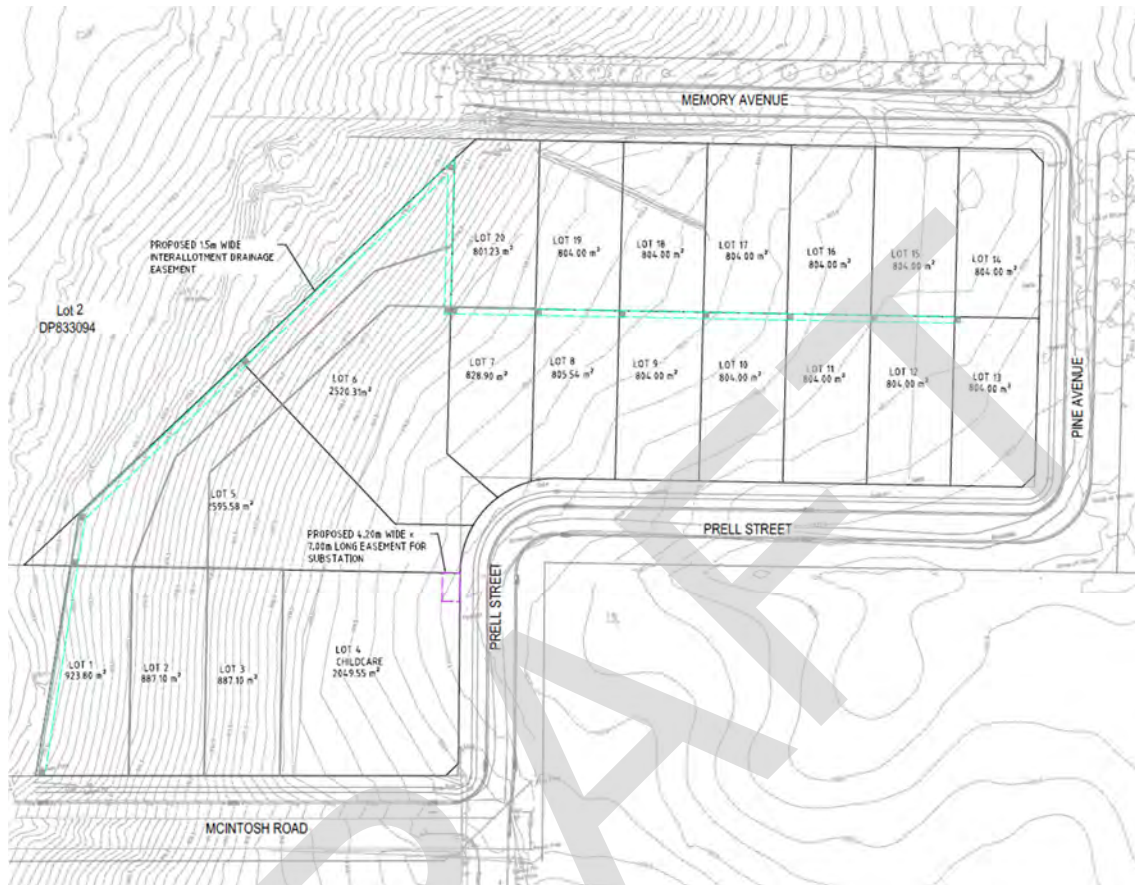
3.1.2 Land Sub-Division

The proposed sub-division layout extracted from the civil engineering plans is shown in Figure 3.1. Detailed plans of the proposed sub-division prepared by the Project Civil Engineer Martens & Associates are provided in Appendix A.

A total of 19 low density residential lots will be created with each lot having a minimum lot area of 801m² to a maximum of 921m².

As noted above, the proposed subdivision includes road upgrades to Memory Avenue, Prell Street, and Pine Avenue. The proposed road cross-section will provide a 7.0m wide carriageway and a 1.2m wide footpath on one side of the road. As the various stages of the sub-division progress, the footpath will connect to existing pedestrian facilities in the immediate vicinity of the site

Figure 3.1: Proposed Sub-division Layout



Source: Martens & Associates

3.1.3 Proposed Childcare Centre

The future childcare centre is proposed to accommodate 92 children with 20-22 staff (including carers, administrator, secretary, receptionist, cooks and cleaning staff). The proposed childcare centre includes an at-grade car park containing 23 car parking spaces comprising 10 staff car parking spaces and 13 parent car parking spaces. The proposed car park can be accessed via separate entry and exit driveways located off McIntosh Road.

It is proposed that waste collection for the future childcare centre will be conducted from the street. Waste collection is expected to occur twice per week. Bins will be moved to a designated area on to the street the day prior to collection.

The proposed waste collection procedure is not expected to create any pedestrian conflict as this will be conducted in an area away from where pedestrians will be milling around.

The proposed car park plan for the future childcare centre is contained in Appendix B.

3.2 Proposed Access Arrangement

Vehicular access to the proposed residential lots is anticipated to be provided via the respective frontage road. The specific access arrangements will be addressed as part of the individual development applications for each respective lot in the future.

Vehicular access for the future childcare centre is proposed to be provided off McIntosh Road with separate entry and exit driveways. The entry driveway connects to the western end of the internal car park aisle while the eastern end of the car park aisle connects to the exit driveway. The entry driveway is proposed to be located near the site's western boundary, while the exit driveway is proposed near the site's eastern boundary. In addition, the exit access is located approximately 8.7m from the tangent point of the kerb return at the McIntosh Road intersection with Prell Street outside of the Australian Standard prohibited locations of access driveways.

Both driveways are proposed to be 3.6m wide and as noted previously will connect to the internal parking aisle at the either end. The driveways are proposed to be designed in accordance with the Australian Standard, namely AS2890.1:2004 as a Category 1 driveway.

4 Traffic Assessment

4.1 Traffic Generation

As noted previously, the proposed sub-division will take place over two stages. Stage 1 involves the sub-division to create three residential lots plus a childcare lot catering for 92 children. Stage 2 will result in 16 residential lots. The traffic assessment has been conducted on the ultimate development scenario, accounting for all proposed lots i.e. 19 residential lots and a childcare centre with 92 licensed childcare places.

The traffic generation potential of the proposed development has been assessed using suggested traffic generation rates sourced from the *Guide to Transport Impact Assessment* (GTIA), published by Transport for NSW (TfNSW) in September 2024, which supersedes all previously relevant guidelines.

The relevant suggested traffic generation rates from the *Guide to Transport Impact Assessment* is presented in Table 4.1.

Table 4.1: Traffic Generation Rates

Land Use	Morning Peak Hour	Evening Peak Hour
Low Density Dwellings	0.83 vehicle trips per peak hour per dwelling	0.84 vehicle trips per peak hour per dwelling
Childcare Centre	0.81 vehicle trips per peak hour per childcare place	0.80 vehicle trips per peak hour per childcare place

Source: TfNSW *Guide to Transport Impact Assessment*

Based on the above, the proposed sub-division to create 19 low density dwelling lots and one childcare centre lot accommodating 92 children can be expected to generate up to 90 vehicles per hour (vph) during the morning and evening peak periods.

The estimated development traffic of 90 vph equates to less two vehicles every minute on average. This level of development is considered to be low. It is unlikely to create any noticeable traffic impacts especially considering that the additional traffic arising from the proposed development would be distributed across the road network. Additionally, as noted previously the proposed development includes the upgrading of Memory Avenue, Prell Street and Pine Avenue to a 7.0m wide carriageway to cater for independent two way traffic flows along these roads. The local road network is expected to continue to operate as originally planned following the completion of the proposed development.

From the above assessment, it is thus concluded that the traffic aspect of the proposed development is satisfactory.

4.2 Swept Path Analysis

Swept path analysis has been conducted at the access driveways serving the proposed childcare centre. The analysis includes an Australian Standard 5.2m long B99 large passenger vehicle turning to and from the site. The swept path diagrams are provided in Appendix C. These demonstrate that a B99 vehicle can access and exit the proposed driveways without any issues, including not encroaching into the proposed building or other obstructions.

In relation to swept path analysis for the individual residential dwelling lots, it is noted that this development application relates to the sub-division of the land and the proposed use of the childcare centre. It does not seek approval for the construction of individual dwellings on the residential lots. As such, no building or garage designs are available at this stage. As noted previously, the design, construction and occupation of the dwellings will be subject to future development applications. Swept path diagrams demonstrating access to the garages will be provided at that time.

5 Parking Assessment

5.1 Parking Assessment Overview

This section addresses the parking assessment for the proposed childcare centre only. As noted previously, this application does not include the design, construction, or occupation of the residential dwellings within the proposed sub-division. Therefore, parking assessment has not been carried out for the residential component.

5.2 Car Parking Requirements

Car parking requirements for the proposed development have been assessed against Council's Upper Lachlan Development Control Plan 2010 (DCP), specifically 4.6 Traffic and Car Parking.

For childcare centres, the DCP prescribes a parking rate of one space per two employees plus on-site set down/drop off area.

On this basis, the proposed childcare centre (with 20-22 staff) is required to provide 11 car parking spaces for staff plus additional car parking spaces for parents.

The DCP does not stipulate the quantity of parent parking spaces.

However, it is noted that the previous *Guide to Traffic Generating Developments* suggested a childcare centre parking rate of one car space for every four children in attendance. This includes parking for both staff and parents.

On this basis, the proposed childcare centre (with 92 children) is required to provide 23 car parking spaces for staff and parents.

In light of this, it is proposed to provide 23 car parking spaces comprising 10 staff spaces and 13 parent spaces.

5.3 Adequacy of Car Parking Spaces

The proposed development includes 23 car parking spaces as shown on the architectural car park plans. The proposed 23 car parking spaces comprise 10 staff parking spaces and 13 parent car parking spaces.

As such, the proposed car parking provision for the proposed development is considered to be satisfactory.

5.4 Accessible Car Parking Spaces

The DCP states that accessible car parking "*for most land uses*" will be applied at a rate of one space per 50 spaces or part therefore. The DCP also references the Building Code of Australia, which prescribes the same rate, at one space per 50 spaces for Class 9b buildings which includes childcare centres.

Based on a proposed provision of 33 car parking spaces, the proposed childcare centre is required to provide one accessible car parking spaces.

The architectural car park plans indicate that one accessible car parking spaces have been provided.

Therefore, accessible car parking for the proposed development is satisfactory.

5.5 Bicycle Parking

The DCP has no specific requirements for bicycle parking for proposed childcare centres.

5.6 Motorcycle Parking

The DCP also has no specific requirements for motorcycle parking for proposed childcare centres.

5.7 Car Park Layout Design

The proposed development includes an at-grade car park containing a total of 23 car parking spaces. The car park is accessed via a separate entry and exit driveways off McIntosh Road.

The driveways are proposed to have a width of 3.6m. Based on the number of available car parking spaces and the frontage road from which access is gained to the car park is a local road, Australian Standard considers this to be a Category 1 driveway. The Australian Standard requires Category 1 driveway to have a combined entry/exit driveway width of 5.5m, but if separate entry and exit driveways are proposed then a minimum driveway width of 3.0m is required. Therefore, a width of 3.6m for the proposed development complies with the Australian Standard requirement.

The access driveway is connected directly to the aisle from which car parking spaces are arranged 90 degrees on both sides to the parking aisle.

A review of the architectural car park plan indicates that the 13 car parking spaces have dimensions of 2.6m wide by 5.4m long with an aisle width of 5.8m. The remaining 10 car parking spaces have a minimum width of 2.4m.

The car spaces with 2.6m width comply as a Class 3 car parking facility which in accordance with the Australian Standard is suitable for a childcare centre. The car spaces with 2.4m width comply as a Class 1A car parking facility and will be suitable for use as staff parking. Therefore, the design of these car parking spaces complies with AS2890.1:2004.

The accessible car parking space including the shared area have minimum dimensions of 2.4m wide by 5.4m long. As such, they have been designed to comply with AS2890.6:2009.

As noted previously, relevant swept path diagrams demonstrating the accessibility of the design vehicles are provided in Appendix C.

From the above, the design of the car park complies with the design requirements and/or meets the design intents set out in the relevant Australian Standard for car parking facilities, namely AS2890.1:2004 and AS2890.6:2009. Therefore, the design of the car park is satisfactory.

6 Summary and Conclusion

This report examines the traffic implications of the proposed sub-division of the land and a proposed childcare centre at 3 Memory Avenue, Crookwell. The salient findings of this assessment are presented below.

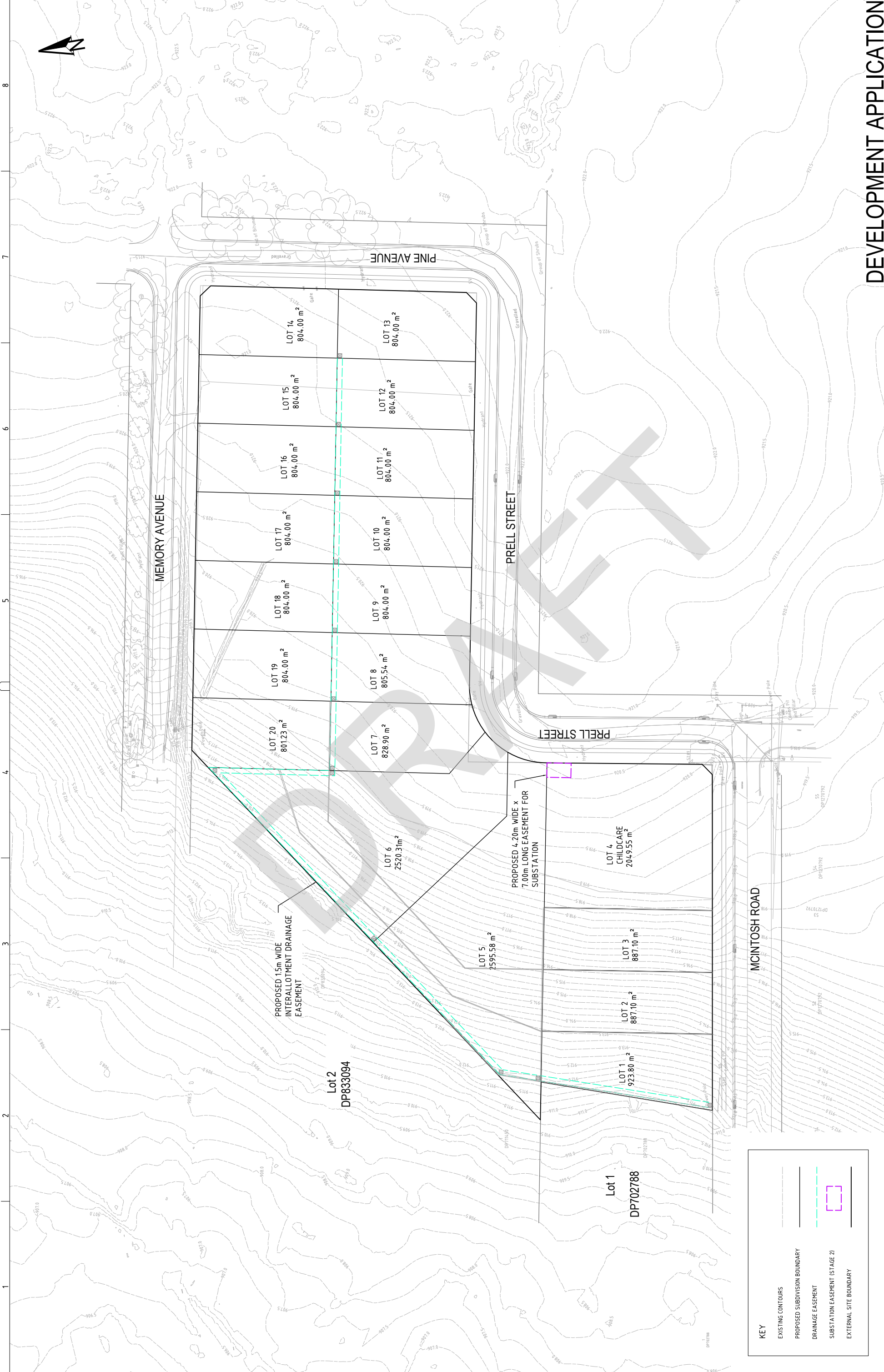
- The proposed development involves the sub-division of the land to provide 19 residential lots and a proposed childcare centre over two stages.
- The proposed sub-division includes upgrade of Memory Avenue, Prell Street and Pine Avenue to have a 7.0m wide carriageway.
- The proposed development is expected to generate 90 vph during the peak period. This equates to less two vehicles every minute on average.
- This level of development traffic arising from the proposed development is considered to be low and is unlikely to create any noticeable traffic impacts to the surrounding road network.
- The proposed development provides a total of 23 car parking spaces including 10 car parking spaces and 13 parent car parking spaces. The proposed car parking provision is considered to be satisfactory.
- The design of the car park complies and/or meets the design intents stipulated in the relevant Australian Standard for car parking facilities, namely AS2890.1:2004 and AS2890.6:2009.

Overall, from a traffic perspective the proposed development is considered to be satisfactory.

Appendix A

Proposed Sub-Division Plans

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EXISTING CONTOURS

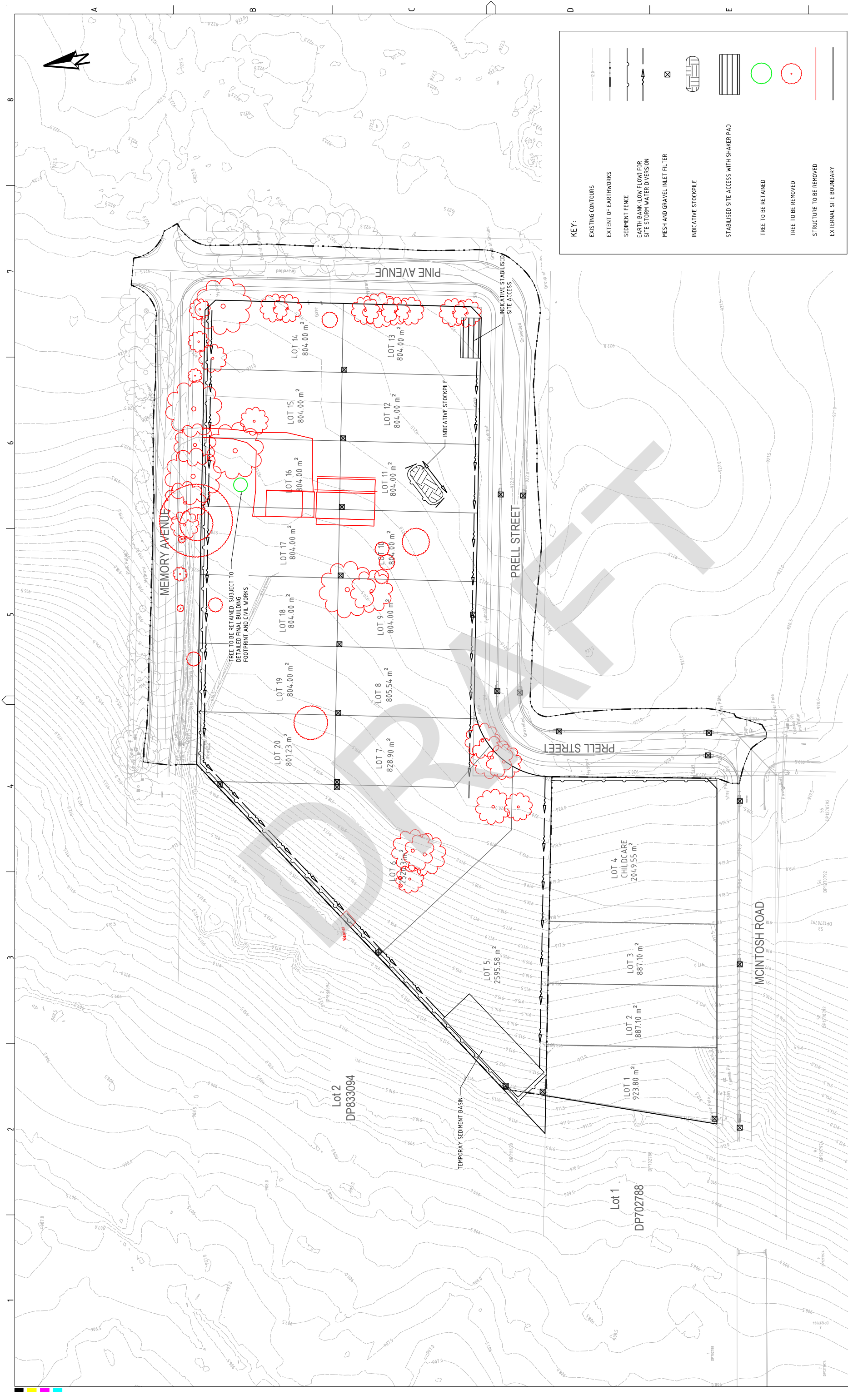
PROPOSED SUBDIVISION BOUNDARY

DRAINAGE EASEMENT

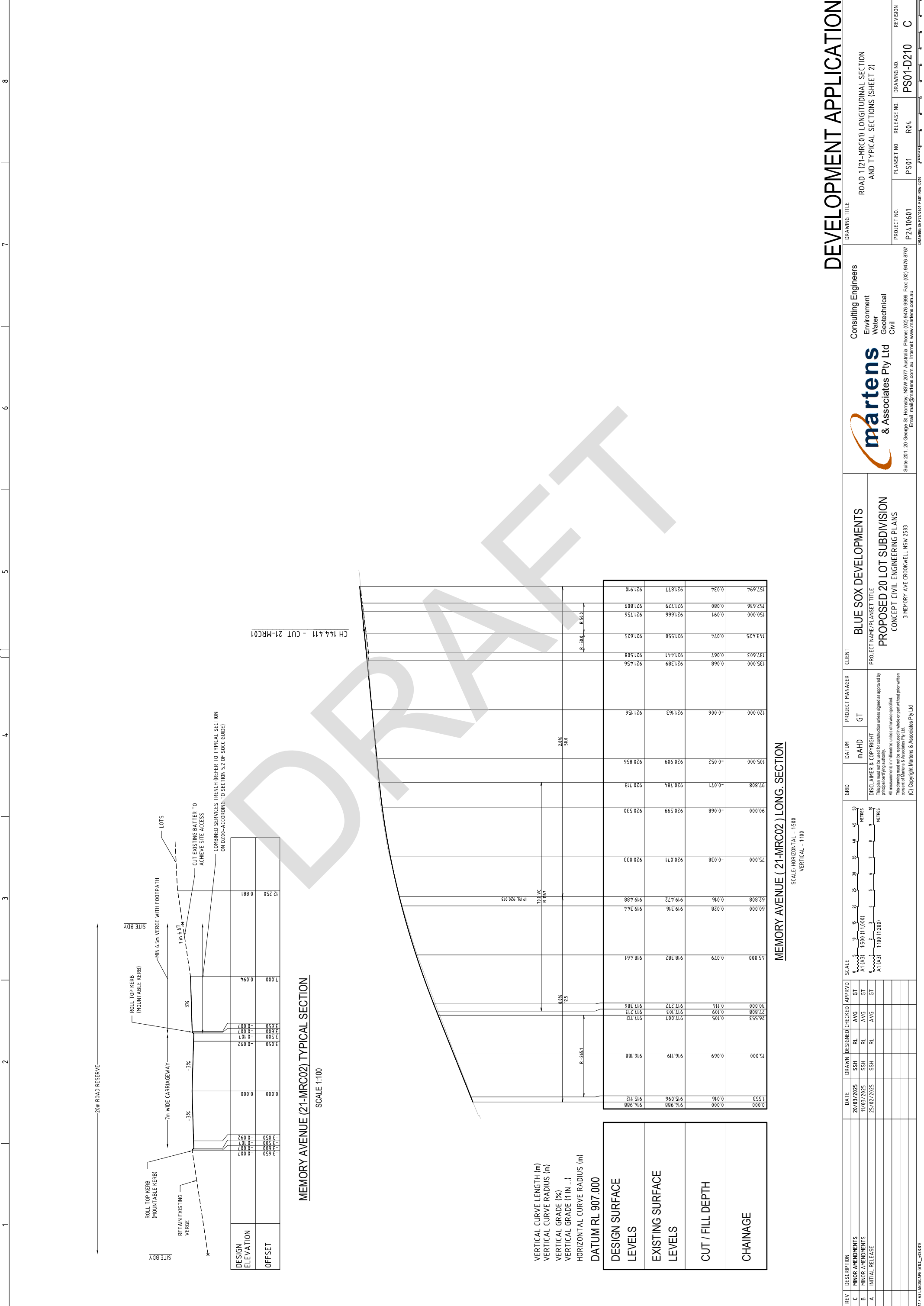
SUBSTATION EASEMENT (STAGE 2)

EXTERNAL SITE BOUNDARY

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DRAWING TITLE

ROAD 1 (21-MRC01) LONGITUDINAL SECTION AND TYPICAL SECTIONS (SHEET 2)

PROJECT NO.

P2410601

PLANSET NO.

PS01

RELEASE NO.

R04

DRAWING NO.

PS01-D210

REVISION

C

PROJECT NO.

P2410601

PLANSET NO.

PS01

RELEASE NO.

R04

DRAWING NO.

PS01-D210

REVISION

C

Appendix B

Childcare Centre Car Park Plans

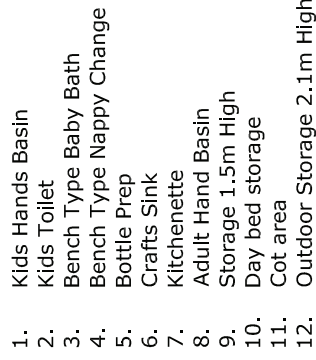
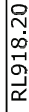
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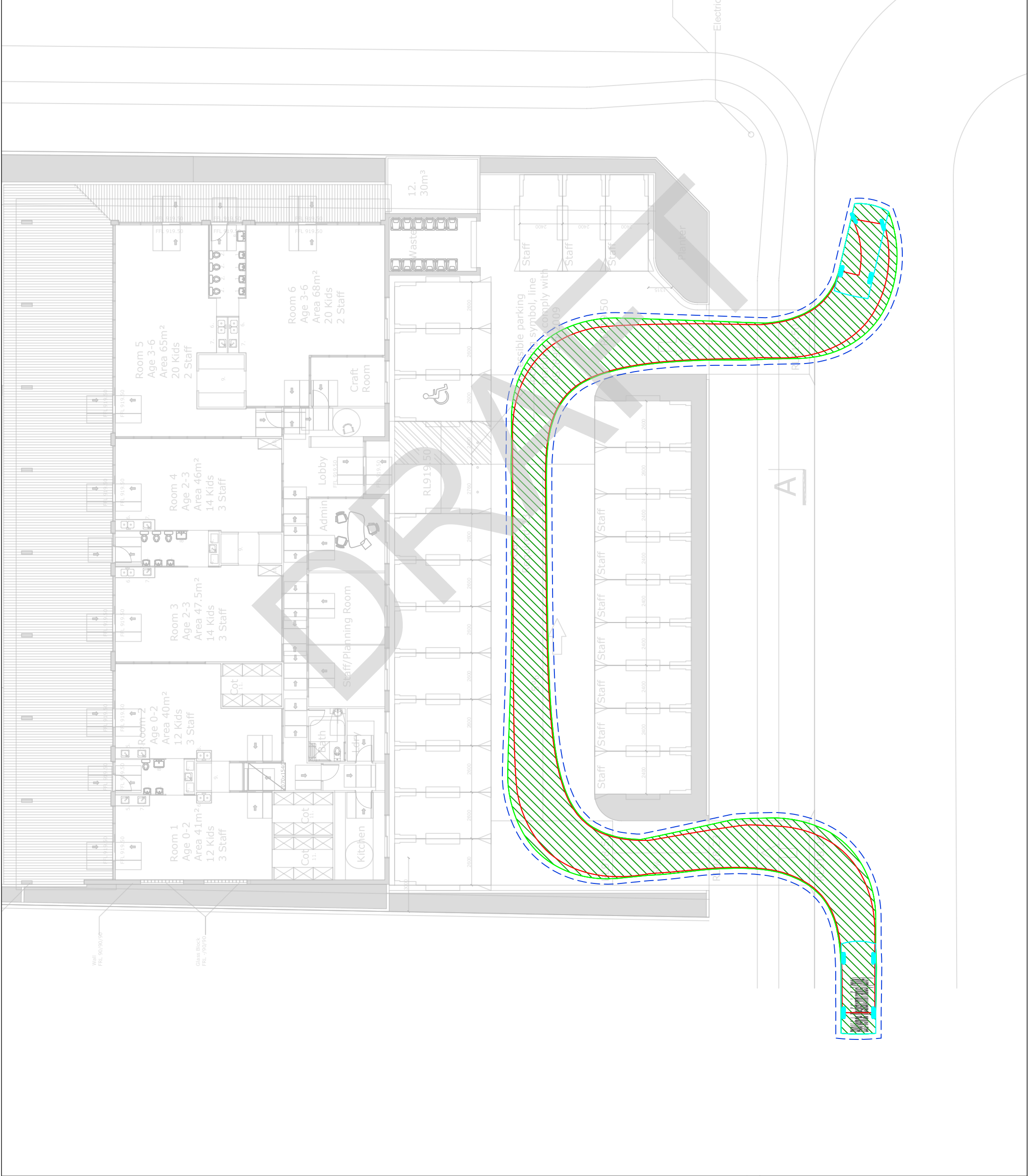
Scale 1:200



Appendix C

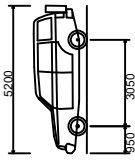
Swept Path Diagrams

DRAFT



KEY:

Wheel Path	Forward	Reverse
Body Envelope		
Clearance (300mm)		



B99 Vehicle (Realistic min radius) (2004)
Overall Length 5200mm
Overall Width 1940mm
Overall Body Height 1878mm
Min Body Ground Clearance 272mm
Track Width 1840mm
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 6250mm

DATE:	17 APRIL 2025	SCALE:	1:200@A3
DRAWING NO.:	24038CAD001A-001	REV:	A

DRAWING TITLE:
SWEPT PATH ANALYSIS -
AS2890.1 5.2M B99 VEHICLE
ENTERING AND EXITING

PROJECT:
3 MEMORY AVE, CROOKWELL
PROPOSED SUB-DIVISION AND
CHILDCARE CENTRE



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