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PROPOSED INDUSTRIAL DEVELOPMENT LOT 5 BARTON COURT,
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(1) TYPICAL TREE PLANTING DETAIL


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PROPOSED INDUSTRIAL DEVELOPMENT LOT 5 BARTON COURT,


## ROCKHAMPTON REGIONAL COUNCIL <br> APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/109-2022
Dated: 27 February 2023

# WIDELAND TRUCKS AND EQUIPMENT PTY <br> LTD 

# 2 Barton Court, Parkhurst <br> ENGINEERING INFRASTRUCTURE REPORT 

Report No: MIS-1045/R01
Rev: D
1 February 2023

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| :---: | :---: | :---: | :---: | :---: | :---: |
| Revision | Revision Date | Report Details |  |  |  |
| A | 26/07/22 | For DA Submission |  |  |  |
| B | 10/10/22 | Stormwater Amendments - For DA Submission |  |  |  |
| C | 14/12/22 | Stormwater Amendments - For DA Submission |  |  |  |
| D | 01/02/23 | Stormwater Amendments - For DA \& Op Works Submission |  |  |  |
| Prepared By |  | Reviewed By |  | Authorised By |  |
| Lawrence Mills | LM | Chris Shields | CS | Chris Shields |  |

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## 1. INTRODUCTION

Premise Australia Pty Ltd (here within referred to as "Premise") has been commissioned by Wideland Trucks and Equipment Pty Ltd C/- Nielsen Project Management to prepare an Engineering Infrastructure Report (EIR) in support of a DA and Operational Works Application to implement a truck sales and workshop business at 2 Barton Court, Parkhurst (Lot 5 on SP326319). The site is approx. 1ha in size, is located within the recently developed Lily Place Industrial Estate and is currently vacant. A two-way access / egress driveway crossover is currently proposed for the site from Barton Court.

This report intends to address the Civil Engineering Infrastructure for the proposed development including earthworks, sewer reticulation, water reticulation, stormwater management, electrical, and telecommunications for the project.

With respect to stormwater management, specific details are provided in Section 2.4 noting that should be considered in conjunction with the separate Stormwater Management Plan (Including Hydraulic Impact Assessment) that has previously been prepared by Knobel Engineers for the Lily Place Industrial Estate DA (D/52-2019).

Note that all traffic and transport matters pertaining to the site, including proposed access and egress, parking, sight distance and service vehicle access, are being addressed by a separate third party Consultant.

## Refer to Figure 1 below:



Figure 1 - Subject Site

### 1.1 Proposed Development

The proposed development will be classified as High Impact Industry as per the Rockhampton Regional Council (RRC) Planning Scheme. The site layout illustrated in Figure 2 consists of an Administration / Reception building, Workshop area and Truck Sales and Hardstand area, combining to generate a Gross Leasable Floor Area (GLFA) of 2,057 square metres.


Figure $\mathbf{2}$ - Indicative Proposed Site Layout
The proposed order of construction works is planned to generally following this summary below:

- Minor clearing and grubbing;
- Earthworks;
- Underground services installation;
- Construction of new buildings, parking and hardstand areas as per the Development Proposal;
- Final detailed works; and
- Landscaping establishment.

Refer to attached drawing C001 (Rev 5) for the generally proposed Civil Works Layout.

## 2. EXISTING SERVICES \& CONDITIONS

### 2.1 Terrain \& Earthworks

All sites within the recently constructed Lily Place Industrial Precinct are currently vacant and have been cleared of vegetation. The site is bordered by a neighbouring lot to the west, whilst a fully developed heavy industry precinct is located to the north. Access to the site is provided from Barton Court via the southern entrance.

Based on the survey provided by Capricorn Survey Group (CSG), the gradient across the site is relatively flat with an approximate slope of $0 \%-0.5 \%$. Elevations reach a maximum of 25.5 m AHD on the north-eastern corner of the site, however are otherwise consistent at an elevation of 25.25 m AHD. Refer to Figure $\mathbf{3}$ below for a photo of the existing terrain taken from Barton Court:


Figure 3 - General Site Terrain towards the northern site boundary


Figure 4 - General Site Terrain towards the western site boundary
In terms of the proposed earthworks for the site, it is expected that cut and fill would be minimal with the depth of cut or fill not exceeding 0.5 m for "slab on ground" type structures and pavement areas. It is likely that the majority of earthworks required for this site would be to get to a subgrade level for pavement and structural elements such as footings and slabs. The proposed finished floor level for the main building is RL25.500m AHD.

It is recommended that a geotechnical investigation is undertaken on this to confirm the in-situ conditions, which will inform pavement, slab, driveway crossover and structural footings designs.

### 2.2 Water Reticulation

Council's Geographical Information System (GIS) illustrates that the site has sufficient access to existing water mains. There are existing 150 mm diameter mPVC water main which run adjacent to the southern and eastern boundaries. There is also a fire hydrant located on this main, located approx. 17 metres from the south-west site corner, as shown by the site photo in Figure 6.

Given that the water mains have likely been sized to meet the industrial demands of Lily Place, no external upgrades are anticipated to meet flow and pressure requirements.


Figure 5 - Existing Water Infrastructure


Figure 6 - Existing Fire Hydrant near southwest site corner

The internal water supply for the proposed development, including any necessary booster and metering arrangements if required, will be detailed by a suitably qualified person (Hydraulic Engineer) during the detailed design phase, and all appropriate approvals sought from Council.

### 2.3 Sewer Reticulation

Council's Geographical Information System (GIS) shows that there are currently two (2) access chambers along a 150 mm diameter uPVC sewer main located within an easement that runs along the eastern site boundary. Refer to Figure 7 below. Site inspection photographs showing the north-east access chamber and the southeast access chamber are illustrated in Figure 8 and Figure 9 respectively.


Figure 7 - Existing Sewer Infrastructure


Figure 8 - Existing Sewer Access Chamber - North-east Corner


Figure 9 - Existing Sewer Access Chamber - South-east Corner
All proposed internal sanitary drainage will be documented during the detailed design phase by a suitably qualified person (Hydraulic Engineer) during the detailed design phase, and all appropriate approvals sought from Council. This includes any first-flush diverters or grease/oil separators that are intended to discharge to the sewer network via a trade waste approval.

### 2.4 Stormwater

Knobel Engineers have previously prepared a Stormwater Management Plan (Including Hydraulic Impact Assessment) that was approved by Council as part of the DA for the Lily Place Industrial Estate ('D/52-2019' RRC Reference and '1907-12044 SRA' SARA Reference). The SMP / HIA quantified the peak stormwater discharge up to a $1 \%$ AEP flood event in a post-development scenario and provided measures for water quantity and quality management for the whole precinct. The post-development scenario in this case considered a fully developed industrial site with all building pads levelled to be above adjacent major flow channels, to maintain adequate freeboard. The adoption of conveyance channels and a basin located near the south-western corner of the site, was adopted to maintain a 'no worsening' case from pre- to postdevelopment states. Furthermore, a bioretention basin was also integrated within this basin to treat stormwater and meet reduction targets for Gross Pollutants (GP), Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) as per RRC requirements and the State Planning Policy (2017).
As both hydraulic modelling and water quality modelling were undertaken to account for the entire Lily place Industrial Estate being fully developed up to $90 \%$ impervious, Premise previously considered that any stormwater issues relevant to the site in question have already been resolved through measures outlined by Knobel Engineers. Therefore, no further investigation into stormwater management was considered necessary for the proposed development in the first iteration of this report.
This approach was further confirmed by Jamie McCaul from RRC at the time via email correspondence on 14 July 2022, whereby he stated:

I can confirm that the basin and water quality device that has been constructed/ designed is considering a fully developed (90\% impervious) site. Hence no site-specific detention or water quality improvements are needed.
Following further email correspondence with Jamie McCaul and Mohit Paudyal from Council between 6 September 2022 and 14 September 2022, we understand that there may be some inconsistencies between what was documented by Knobel Engineers in the DA phase of the Lily Place development, and what was subsequently documented by Siris Consulting Engineers in the detailed design / Operational Works phase,
approved by Council, and ultimately built and accepted On Maintenance by Council. In summary, it appears that some form of supplementary stormwater detention and quality improvement is now required within the site, and Council Officers were willing to agree a practical compromise that meets both parties' interests.

With reference to the attached amended drawings C001 (now Rev 5) and C002 (Rev 3), the following approach for internal stormwater management has now been taken:

- The proposed interconnectivity of the internal piped stormwater system has been changed to send runoff from over half the site out to the existing grassed swale to the east, to assist with stormwater quality improvement. This approach also lengthens the Time of Concentration for these eastern subcatchments to assist in peak flow attenuation at the existing pit and pipe system immediately to the south of the site;
- SPEL Stormsacks (or approved equivalents) are now included within the six (6) pits noted with an asterisk, as part of the proposed piped system that connects to the existing stormwater pit at the bottom end of the grassed swale immediately to the south of the site, to further assist with stormwater quality improvement;
- Along with the change in proposed interconnectivity of the internal piped stormwater system, this system has been reassessed and sized in line with Table 7.13.4 from QUDM, being 'Level IV' drainage with a design storm of 5\% AEP (Q20 ARI) and we have applied a 5 min Time of Concentration to all internal catchments due to the high fraction impervious and desire to err on the conservative side. This has led to a number of proposed pipe sizes being amended from the previous iterations, to ensure runoff from the design storm is appropriately conveyed to the Legal Point(s) of Discharge in line with QUDM;
- $\quad 2 \times 5,000 \mathrm{~L}$ slimline tanks plumbed for detention (ie. not to hold water for re-use) have been nominated on the western end of the building to command approximately half of the proposed roof area via gutters and downpipes. This will provide peak flow attenuation (throttling) before that portion of the runoff enters the proposed piped system on the western side of the main building and ultimately discharges into existing downstream piped infrastructure;
- We have introduced a Class D grated strip drain across the access to reduce surface runoff to Barton Court itself to a practical minimum. It is only the minimum area of the proposed concrete driveway crossover (which is 'as of right') that is grading towards Barton Court, and cannot practically be reduced any further;
- We have assessed the gap flow and therefore depth-velocity ( dV ) product at 3 critical sections at the Barton Crt / Southern Service Rd intersection. The dV products at these 3 locations (see snips below) are within acceptable limits:


| Section <br> Location | Description | Depth <br> $(\mathbf{m m})$ | Velocity <br> $(\mathrm{m} / \mathrm{s})$ | $\mathbf{d}^{*} \mathbf{V}$ |
| :---: | :--- | :---: | :---: | :---: |
|  |  |  |  |  |
| 1 | Weir equation over top of kerb | 80 | 0.53 | 0.04 |
| 2 | Izzard equation gutter flow | 84 | 1.21 | 0.10 |
| 3 | Izzard equation gutter flow | 172 | 1.21 | 0.21 |

- As part of the gap flow and dV calculations, we identified that the existing stormwater pit and pipe system at the Barton Crt / Southern Service Rd intersection is not adequate to convey the minor flows from the existing road catchments plus the developed site, without unacceptable freeboard or surcharge. This appears to be the product of the aforementioned disconnect between the stormwater approach during the DA, Operational Works and construction phases of the subdivision itself. Following further recent consultation with Patricia Farrow and Jamie McCaul at RRC, Drawing C001 (now Rev 5) has therefore been updated to include direct piped connections from a portion of the site to the two (2) existing gully pits along the western side of the Southern Service Rd, with high flow dome grates within the existing grassed swale, to maximise flow capture and conveyance through existing pipes beneath this road to the open drainage reserve on the eastern side. These pits will also allow surcharge and bypass as required in larger rain events, if the capacity of the existing pipes beneath the Southern Service Rd is exceeded. A proposed piped connection to the existing high flow inlet pit near the corner of Barton Crt and the Southern Service Rd has been maintained to command a portion of the site, and the two (2) remaining portions of the site discharge into the existing grassed channel surface; and
- Proposed pit invert levels, pit surface levels, pipe sizes, pipe grades, pit sizes and site hardstand perimeter surface levels are all now documented on Drawing C001 (now Rev 5) for completeness to demonstrate that the site can effectively capture and manage all roofwater water and surface water to the agreed Legal Points of Discharge being the existing grassed swale and pipe infrastructure along the eastern side of the site.

All proposed internal roofwater management (downpipes, minor grated inlets and minor pipes) will be documented during by a suitably qualified person (Hydraulic Engineer) during the detailed design phase, and all appropriate approvals sought from Council.

### 2.5 Electrical and Telecommunications

There does not appear to be any existing overhead electrical infrastructure within the vicinity of the site. Ergon Energy maintains an underground asset (below 33 kV ) which runs along the Southern Service Road adjacent the eastern boundary (Refer Figure 10), and underground LV electrical reticulation is evident through the existence of an electrical turret near the south-east corner of the site, and a nearby street light.


Figure 10 - Ergon DBYD Extract


Figure 11 - Existing Street Light on Barton Court

Any electrical reticulation design for the proposed internal works will be completed by a qualified Electrical Engineer during the detailed design phase, and all appropriate approvals sought from the relevant authority.

Existing telecommunications infrastructure is also located within the vicinity of the subject site in the road reserves of Barton Court and the Southern Service Road. There are also a number of pits located close to the site including one adjacent the south-east site corner. Refer to Figure 12 below:


Figure 12 - Telstra DBYD Extract
Any telecommunications reticulation design for the proposed internal works will be completed by a qualified Telecommunications Engineer during the detailed design phase, and all appropriate approvals sought from the relevant authority.

### 2.6 Gas

There does not appear to be any existing gas services immediately adjacent to the subject site.

## 3. CONCLUSION

There appears to be no insurmountable engineering infrastructure difficulties with the proposed development on the subject site at 2 Barton Court, Parkhurst (Lot 5 on SP326319). A review of the services proposed for this development and their impact on surrounding services, indicates that there is no impediment to development. The development can be adequately serviced by the existing water and sewer networks and electrical and telecommunications services are also available immediately adjacent to the site. The management of stormwater quantity and quality for a fully developed site has also been addressed in Section 2.4, to be read in conjunction with the previous modelling and reporting tied into the DA Approval for the Lily Place Industrial Estate itself (D/52-2019).

Minor alterations in the design may eventuate from future applications, however the fundamentals of the design strategy ensure that service provisions will not pose a serious constraint to development.

If you should have any questions regarding this report, please do not hesitate to contact the Premise Office in Rockhampton.



# PROPOSED INDUSTRIAL DEVELOPMENT 777 YAMMBA ROAD, PARKHURST TRAFFIC ENGINEERING ASSESSMENT 

## 3 AUGUST 2022

PREPARED FOR
WIDELAND GROUP TRUCKS

## ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS


Dated: 27 February 2023
Document Set ID: 37718900
Version: 1, Version Date: 09/08/2022

DOCUMENT CONTROL RECORD

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| Report Title: |  | 777 Yaamba Road, Parkhurst - Traffic Engineering Assessment |  |  |  |  |
| Client: |  | Wideland Group Trucks |  |  |  |  |
| Project Number: |  | 22-701 |  |  |  |  |
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### 1.0 INTRODUCTION

### 1.1 BACKGROUND

In July 2022, Pekol Traffic and Transport (PTT) was commissioned by Nielsen Project Management on behalf of Wideland Group Trucks to undertake a traffic engineering assessment for a proposed industrial development at 777 Yaamba Road, Parkhurst. The location of the subject site is shown in Figure 1.1.

Figure 1.1: SITE LOCALITY

1.2 AIM

The aim of this assessment is to evaluate the proposed development in terms of its access, parking and servicing arrangements, pedestrian / cyclist facilities, peak hour traffic generation and impact on the surrounding road network.
1.3 SCOPE OF REPORT

This report begins by summarising the characteristics of the existing road network (Chapter 2), followed by a description of the scope and scale of the development, including a consideration of the site access, parking provision and design, servicing arrangements and pedestrian / cyclist facilities (Chapter 3). The report concludes with a summary of key findings (Chapter 4).

### 2.0 EXISTING CONDITIONS

### 2.1 SUBJECT SITE

The subject site is located at 777 Yaamba Road, Parkhurst and is formally identified as Lot 5 SP326319. According to the Rockhampton Regional Council (Council) Planning Scheme, the site is zoned as high impact industry. The subject site is currently vacant with a total site area of $10,015 \mathrm{~m}^{2}$, as shown in Figure 2.1.

Figure 2.1: SUBJECT SITE


The subject site is bounded as follows:

- an industrial property to the north
- Yaamba Road service road to the east
- Barton Court to the South
- Vacant land to the west

The surrounding area consists primarily of commercial / industrial uses.
2.2 ACCESS

No formal access is currently provided to the subject site.

### 2.3 ROAD NETWORK

Key attributes of the surrounding road network are summarised in Table 2.1.
Table 2.1: ROAD NETWORK ATTRIBUTES

| ATTRIBUTE | YAAMBA | YAAMBA ROAD | BOUNDARY | BARTON |
| :--- | :---: | :---: | :---: | :---: |
| ROAD | (SERVICE ROAD) | ROAD | COURT |  |
| Road Hierarchy | Highway | - | Urban Arterial | Industrial Access |
| Jurisdiction | TMR | TMR | Council | Council |
| Speed Limit <br> (km/h) | 60 | - | 60 | 50 |
| Predominant <br> Land Uses | Industrial | Industrial | Industrial | Industrial |
| On-Street <br> Parking | No | No | No | No |
| Footpaths | Yes | No | No | No |
| Bicycle Lanes | Yes | No | Yes | No |
| Bus Route | Yes | No | No | No |

Yaamba Road and the Yaamba Road service road form part of the state-controlled road network.
2.4 ACTIVE AND PUBLIC TRANSPORT

### 2.6.1 Pedestrians and Cyclists

There is a pedestrian footpath on the eastern side of Yaamba Road and parts of the western side. No pedestrian footpaths are provided on the Yaamba Road service road, Boundary Road or Barton Court in the vicinity of the site.

Bicycle lanes are provided on parts of Yaamba Road and Boundary Road in the vicinity of the site.

### 2.6.2 Public Transport

A public bus stop is located on the western side of Yaamba Road approximately 340 m east of the site. The stop is served by SunBus route 410, which provides access to the Rockhampton CBD. Accordingly, the site is served by public transport.

### 3.0 PROPOSED DEVELOPMENT

## $3.1 \quad$ SITE LAYOUT

The proposed development comprises a $1,460 \mathrm{~m}^{2}$ GFA workshop and an associated $585 \mathrm{~m}^{2}$ GFA administration / office area, supported by 25 car parking spaces and 10 Heavy Rigid Vehicle (HRV) parking bays. The proposed layout is attached in Appendix A and shown in Figure 3.1.

Figure 3.1: PROPOSED SITE LAYOUT


### 3.2 ACCESS

### 3.2.1 Location

As shown in Figure 3.1, vehicular access to the development is proposed via an 11.2 m wide allmovements crossover on Barton Court.

The Capricorn Municipal Development Guidelines (CMDG) requires that crossovers be located a minimum of 20 m from the centre point of any adjacent intersection or roundabout and 2 m from the property boundary. The proposed crossover is located greater than 20 m from the adjacent Yaamba Road service road / Barton Court intersection (measured centre to centre) or 2 m from the property boundary. Therefore, the proposed driveway crossover complies with CMDG requirements for location.

Additionally, Australian Standard AS2890.1:2004 Parking Facilities Part 1: Off-Street Car Parking (AS2890.1) requires access driveways to be located a minimum 6.0m from the tangent point of adjacent intersections. The proposed crossover is located approximately 7.2 m from the tangent point of the adjacent intersection, as shown in Figure 3.2 and complies with AS2890. 1 requirements for location.

Also, as shown in Figure 3.2, the proposed crossover is located such that a 20.0 m long Articulated Vehicle (AV) would not impact traffic at the Yaamba Road service road / Barton Court intersection while turning into the site.

### 3.2.2 Design

The crossover has been designed to accommodate the largest vehicle anticipated to visit the site, which is a 20.0 m AV. The crossover splays have been designed generally in accordance with the Institute of Public Works Engineering Australia's (IPWEA) Standard Drawing RS-051 and Australian Standard AS2890.2:2018 Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities (AS2890.2), as shown in Figure 3.2.

### 3.2.3 Sight Distance

On a $50 \mathrm{~km} / \mathrm{h}$ road (ie Barton Court), AS2890.1 requires an absolute minimum sight distance of 45 m , with a desirable sight distance of 69 m . The proposed crossover on Barton Court achieves approximately 22 m sight distance to the east (ie to the Yaamba Road service road / Barton Court priority-controlled intersection) and in excess of 100 m sight distance to the west. The reduced sight distance to the east is considered acceptable, as vehicles exiting the adjacent intersection are expected to be travelling at significantly slower speeds to perform turn movements. Therefore, the available sight distance at the proposed crossover complies with AS2890.1 requirements.

### 3.3 PARKING

### 3.3.1 Council Requirement

The car parking requirement for the site has been determined based on the parking provision rates outlined in Council's Planning Scheme. As shown in Table 3.1, 21 car parking spaces are required to support the proposed development.

Table 3.1: COUNCIL PARKING REQUIREMENT

| USE SCALE | PARKING RATE | REQUIREMENT |
| :--- | :--- | :--- | :--- |


| High Impact | $2,045 \mathrm{~m}^{2}$ | 1 space per $100 \mathrm{~m}^{2}$ GFA | 21 spaces |
| :--- | :--- | :--- | :--- |
| Industry |  |  |  |

### 3.3.2 Provision

The proposed layout provides 25 car parking spaces on-site, including a Persons with Disability (PWD) bay. Therefore, the proposed parking provision complies with Council's Planning Scheme requirements.

### 3.3.3 Design

The proposed on-site parking facilities have been designed consistent with the requirements of AS2890.1 and Australian Standards AS2890.6 Parking Facilities Part 6: Off-Street Parking for People with Disabilities (AS2890.6), in terms of minimum parking space and aisle dimensions, and are typified by:

- parking spaces dimensioned 2.6 m wide by 5.4 m long
- PWD space dimensioned 2.6 m wide by 5.4 m long, with an adjacent 2.6 m wide shared area
- $\quad 0.3 \mathrm{~m}$ additional width provided for parking spaces located adjacent to a wall or structure greater than 0.15 m in height
- parking aisles dimensioned a minimum 6.5 m wide


### 3.4 QUEUING

AS2890.1 identifies a minimum queuing length of two cars for a car parking area with 25 spaces. The proposed access arrangement provides clear queuing space for at least two cars. Therefore, the proposed site layout provides sufficient on-site queuing.

### 3.5 SERVICING

The largest vehicle expected to access the site would be a 20.0 m long AV. A total of 21 HRV parking / workshop bays dimensioned a minimum of 14.0 m long by 4.5 m wide are proposed on-site, as shown in Figure 3.1. A Refuse Collection Vehicle (RCV) will also require access to the site. A swept path drawing of a 20.0 m long $A V$ accessing and egressing the subject site is shown in Figure 3.2 and attached in Appendix B.

Swept path drawings showing a HRV accessing the parking bays and workshop bays are shown in Figure 3.3 and attached in Appendix B.

Figure 3.2: AV MANOEUVRING


Figure 3.3: HRV MANOEUVRING


A swept path drawing showing an RCV accessing the refuse store is shown in Figure 3.4 and attached in Appendix B.

Figure 3.4: RCV MANOEUVRING


### 3.6 ACTIVE TRANSPORT

Considering the nature and location of the development no external pedestrian access or footpaths are proposed nor considered to be required. The internal pedestrian facilities are expected to facilitate safe and convenient movement for pedestrians throughout the site.
4.0 CONCLUSIONS

The proposed development has been evaluated in terms of the site access arrangements, parking provision and design, servicing arrangements, pedestrian / cyclist facilities and likely traffic impact. The main points to note are:

- the proposal involves a $1,460 \mathrm{~m}^{2}$ GFA workshop and an associated $585 \mathrm{~m}^{2}$ GFA administration / office area
- access is proposed via an 11.2 m wide all-movements crossover on Barton Court designed generally in accordance with the Institute of Public Works Engineering Australia's (IPWEA) Standard Drawing RS-051 and AS2890.2
- sight distance and queuing at the proposed crossover is consistent with AS2890.1 requirements
- the parking provision of 25 spaces is consistent with Council's minimum parking requirements
- the development can accommodate on-site servicing of a 20.0 m long AV and HRV
- the internal pedestrian facilities are expected to facilitate safe and convenient movement for pedestrians throughout the site

APPENDIX A
PLANS OF DEVELOPMENT


[^0]APPENDIX B SWEPT PATH DRAWINGS


[^1]

[^2]

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