



Lot A, Burley Road, Horsley Park
Concept and First Stage Project
Application
Preferred Project Transport
Report

transportation planning, design and delivery

Lot A, Burley Road, Horsley Park

Concept and First Stage Project Application,

Preferred Project Transport Report

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1. Introduction

In December 2010 consultant Halcrow prepared a transport report in relation to a proposed concept plan for the development of Lot A, Burley Road in the Horsley Park Employment Precinct at Eastern Creek. The report also covered a Project Application for the first lot on the site. The location of Lot A within the Western Sydney employment lands is indicated in Figure 1.1 of this report.

At the time the preferred layout for proposed east-west arterial road between Wallgrove Road in the east and Mamre Road in the west south of the Sydney Water Pipeline had not been resolved. Accordingly certain assumptions were made about its alignment in the December 2010 transport assessment.

Since that time the Department of Planning and Infrastructure and Transport for NSW (through the Roads and Maritime Services [RMS]) has further investigated this proposed alignment and has adopted a different alignment for this road. Instead of passing along the northern and eastern sides of Lot A, it is now proposed to just pass the northern side, then continue to the west from the north west corner of the site. This relationship is indicated on Figure 1.2 of this report.

In determining this alignment, the RMS commissioned additional traffic modelling which covered conditions up until 2031. Where appropriate this modelling has been used to determine road capacity requirements for access to the site at ultimate development.

In recognition that the original application was publicly exhibited and for consistency with previous work, this report incorporates edits of the Halcrow report at appropriate locations.

In essence the current concept plan proposal (see Appendix C) is essentially the same as the previous one with the following differences:

- The Regional Road continues east west along the northern boundary of the site instead of turning south to pass through it then turn to the west.
- Instead a local road would follow this alignment south and westwards through the site to then connect through other employment land back to the Regional east-west road further to the west.
- As a local road would require less land than a regional road, the developable area on the site could increase from 93.5ha to 98ha.
- Minor changes to the lot layouts are proposed to reflect the changed road layout.
- As there would no longer be a north south section of regional road, through the site, driveway accesses to industrial lots adjoining the replacement local road would be direct to it, not via public roads. A public loop road system would still be provided to serve the southern, wider part of the site.

Figure 1.1: Site Location within Western Sydney Employment Lands

Figure 1.2: Regional Road System

Chapter 2 of this report addresses the proposed Concept Plan. It updates the transport planning background in the area, the expected traffic generation of the site and the proposed major internal road network.

Chapter 3 addresses the Project Application for development of the first lot on the site plus the road which would provide initial access to it.

Chapter 4 provides a summary of the investigation.

2. Horsley Park Lot A Concept Plan

2.1 Transport Planning Background

The location of the Horsley Park Lot A Site is indicated on Figure 1.1 which shows the whole Western Sydney Employment Hub west of Wallgrove Road. This is divided into three distinct sections as follows:

- West of Ropes Creek – Erskine Park within Penrith LGA;
- East of Ropes Creek, north of the water pipeline – Eastern Creek/Ropes Creek within the Blacktown LGA;
- South of the water pipeline – Horsley park within the Penrith and Holroyd LGAs.

Over recent years there have been a number of transport studies undertaken for the Hub area. The studies and plans of most relevance to this proposed Horsley Park Concept Plan are as follows:

- Eastern Creek Precinct Plan, Blacktown council, December 2005;
- Proposed Erskine Park Link Road Environmental Assessment, RTA, May 2007;
- Proposed Erskine Park Link Road Preferred Project Report, RTA, December 2008;
- RTA traffic modelling for Erskine Park Link Road design, June 2010, unpublished
- State Environmental Planning Policy (Western Sydney Employment Area) 2009;
- Oakdale Central Concept Plan;
- Western Sydney Employment Area Southern Link Road Strategic Transport Assessment, AECOM April 2011 for DOP.

Planning for the Erskine Park Link Road was undertaken by the RTA in conjunction with the formulation of a SEPP. The SEPP defines a corridor for the Erskine Park Link Road plus three north south connections to it as follows (See Figure 1.2):

- extension of Archbold Road from the M4 Motorway to the Link Road in a north-south direction;
- a new link across the Link Road as a prolongation of the Archbold Road extension diagonally across the Jacfin Ropes Creek site to cross the water pipeline and joins the southern section of Old Wallgrove Road to the south of the Transgrid site. This link is then shown to run southwards through land south of the pipeline to join an east west extension of Bakers Lane in Kemps Creek. That road connects to Mamre Road;
- a second north south link from the Link Road in Erskine Park across the water pipeline that would also connect to the Bakers Lane extension.

The two RTA Erskine Park Link Road assessment reports established that, when fully developed, the entire Hub area west of Wallgrove Road would need to be served by the Erskine Park Link Road and connections as described above plus by a major east west road south of the pipeline on an alignment that connected Bakers Lane in the west with the M7 Motorway in the east (Chandos Parkway).

The April 2011 AECOM study referred to above considered options for the southern east west Link Road and for north-south connections thereto. On the basis of this, the DOPI selected a preferred option which incorporated a north-south link across the Sydney Water Pipeline with an S shaped alignment through the Ropes Creek precinct which joined into the existing Old Wallgrove Road alignment south of the pipeline.

In the Preferred Project report for the Erskine Park Link Road, the RTA also investigated an interim arrangement that would provide access to the Horsley Park area prior to the completion of this east-west road south of the pipeline. This system would rely on:

- the Erskine Park Link Road such that traffic could access all of Erskine Park, Ropes Creek, Eastern Creek and initial parts of Horsley Park from either Mamre Road in the west or Wallgrove Road and the M7 Motorway in the east;
- a Y Link (RTA labelled "mini-Link") connection at the eastern end of Old Wallgrove Road to provide separate feeds of traffic across Wallgrove Road to the split interchange intersection with the M7 Motorway;
- the Archbold Road extension south to the Erskine Park Link Road including east facing ramps to/from the M4 Motorway.

The RTA plan has access provided to Horsley Park via Old Wallgrove Road until a north-south Regional Road replacement to it was completed.

This system would be similar to the required ultimate road system except that it would not have the major east-west road south of the water pipeline. The RTA modelling was based on Transport Data Centre (TDC) supplied employment forecasts. The following level of development corresponded to the interim access arrangement analysis:

- Erskine Park – fully developed (277 ha)
- Eastern Creek – 390 ha
- Ropes Creek – 182 ha
- Horsley Park (south of pipeline) – 165 ha.

Thus the interim plan would allow a total of 1,014 ha of employment land to be fully developed. In practice development sites tend to be built in stages with it being normal in many cases for full development potential to be taken up progressively. Thus to achieve the planned initial road capacity related employment potential more than 1,014 ha of land would need to be available for development.

2.2 Background Traffic Forecasts and Intersection Configurations

The AECOM April 2011 report provides RMS produced traffic forecasts for the regional road system for 2031. These effectively represent ultimate development in the area and thus are of use in checking on long term road capacity requirements. These are provided in **Appendix A**.

These RMS forecasts are used below in the formulation of ultimate traffic forecasts for the Jacfin proposed Horsley Park Concept Plan.

2.3 Design of Erskine Park Link Road

As indicated above, the Erskine Park Link Road/Old Wallgrove Road regional road system has been designed to accommodate over 1,000 ha of employment land development. The Link Road is presently under construction as a generally four lane divided road.

2.4 Oakdale Concept Plan

The Oakdale site occupies most of the remainder of the Horsley Park Hub area south of the water pipeline. It has about 261 ha of developable area in total. Of this about 40 hectares is located in its Central Precinct which is between the Jacfin land and the water pipeline. A Concept Plan has been approved for this 40 ha Central Precinct. The Project Application covered Sites 1A and 2A within the Central Precinct. It incorporated 54,350m² of warehouse and ancillary office space with 390 parking spaces. A copy of the Oakdale Concept Plan is provided in **Appendix B** of this report. Subsequently with the adoption of a preferred alignment for the regional road system the Oakdale Concept Plan was modified to accommodate the southern end of the north-south regional road and its intersection with Old Wallgrove Road. Appendix B also includes a copy of the approved subdivision plan for the Oakdale Central Precinct which was incorporated in a Voluntary Planning Agreement related to that precinct.

The Project Application indicates an expectation that this development would generate some 164 vehicle trips per peak hour. By way of comparison it is noted that the RTA has adopted a traffic generation rate of 15 vehicle trips per ha per peak hour in its traffic analysis. Application of this rate to the 18 ha of developable area as covered by the first Oakdale Project Application would produce about 270 vehicle trip per peak hour. This higher traffic generation was adopted in the Oakdale transport report. This difference in traffic generation rates for the purposes of future traffic estimation is discussed further below.

2.5 Assumed Traffic Generation Rates

In relation to these forecasts it is noted that the RTA used a traffic generation rate of 15 vehicle trips per hectare of developable land per peak hour during peak periods for land within Blacktown and Horsley Park. This rate was established by Blacktown Council from surveys of the traffic generation of the established Huntingwood Estate.

Penrith Council found that the nature of development in the Erskine Park industrial area was different such that completed developments tend to generate considerably less than 15 vehicle trips per hectare per hour in peak periods.

As a check on this the traffic generation of two Coles distribution warehouses in Eastern Creek was surveyed in June 2008. The two sites are occupied by the first stages of development on these sites with a total occupied area of about 30.2 ha for both sites.

The survey found that these sites generated 161 two way vehicle movements in the morning peak hour and 190 in the evening. These equate to traffic generation rates of 5.3 and 6.3 vehicles per hectare per hour. When applying these rates to an undeveloped concept plan area it would be appropriate to scale them up to take into account roads and other elements that could not be built on. Applying a scale up factor of say 25% (i.e. assuming say 80% development potential within gross developable area) this suggests that large format distribution warehouses would only generate in the order of 6.6 to 7.9 vehicle trips per hectare of developable area per hour.

In our traffic forecasts for the proposed Jacfin Concept Plans for Horsley Park we have adhered to the original planning traffic generation rate of 15 vehicle trips per hectare per peak hour. However the recent Eastern Creek distribution warehouse survey plus Penrith Council's experience suggest that the

traffic planning based on this rate may be conservatively high. If so the road system for the area as planned may have the capacity to accommodate more development than the initial expectation.

2.6 Lot A Concept Plan

The proposed Lot A Horsley Park Concept Plan is attached at **Appendix C**. This shows the Regional Road passing along the northern boundary of the site and the proposed local road passing through the northern part of the site.

Within the Jacfin site property access would be provided directly off the main local road or via a public loop road system in the southern part of the site.

Lot A will have about 98 ha of developable area and thus for assessment purposes would generate about 1,470 vehicle trips per peak hour at full development based on the RMS traffic generation rates.

2.7 Road Cross Sections

The Regional Road is proposed to have a 40m wide reservation. It is expected that ultimately it would have two 7m wide carriageways and a 5-7m wide median. Localised widening to the road carriageway would be made at intersections as appropriate.

The Local Roads within the site are proposed to have 21.5m wide reservations with 13.5m wide carriageways. A 4.2m wide verge suitable for a cycle pedestrian path would be provided on one side and a 3.8m wide verge on the other. This cross section would allow either two traffic lanes each way or one kerbside parking and one traffic lane each way.

2.8 Intersection Controls

It is proposed that the intersection of the Regional Road with the main internal local road be controlled by traffic signals. These would be provided when the Regional Road was constructed as a regional road and traffic levels on it reached a point at which a formal warrant for signalisation was met.

The intersection of the main internal local road with the loop road system would be controlled by stop signs with traffic on the loop road system having to yield.

2.9 Traffic Implications

RMS traffic modelling referred to in Section 2.2 above (See Appendix A) allowed it to determine the key elements of the regional road system. On the basis of this, DOPI has adopted a regional road system structure that will afford appropriate capacity for the area at ultimate development including traffic generated within the subject concept plan.

In due course the RMS and local councils will take this analysis further to prepare concept plans for the vertical and horizontal alignments of the identified regional roads. There is the potential to stage these roadworks and that will also be a matter for these authorities.

For the purposes of this report there are three traffic considerations that need examination within this context. These are:

- The adequacy of the provision for the connection of the proposed internal local road with the future southern east-west regional road (Chandos / Burley Road alignment). This particularly relates to the sufficiency of the width of the local road locally at the intersection such that an appropriate number of lanes could be provided on its approach to the regional road for ultimate development in the area.
- The sufficiency of the north-south section of Old Wallgrove Road, south of Erskine Park Link Road to accommodate traffic generated by development south of the Sydney Water Pipeline prior to the completion of the future regional north south link road from Erskine Park Link Road to the Chandos –Burley east –west regional road. This interim arrangement is discussed above in Section 2.1 of this report.
- The design of an interim connection from the main internal local road with Lot A to Old Wallgrove Road along the alignment of the Chandos – Burley regional road.

2.9.1 Local Road/ East West Regional Road Intersection

To examine requirements for this intersection RMS strategic traffic modelling as reported in the AECOM 2010 report was used to estimate future traffic flows for the Chandos-Burley east-west regional road. The AECOM report traffic flows plus estimates for this intersection including traffic to /from Lot A on the local road are presented in Appendix D.

Appendix D also includes SIDRA intersection analysis and a sketch of an intersection configuration that would satisfactorily accommodate the forecast traffic flows at the intersection. The required lane configuration would be:

- Two through lanes each way on the Regional Road
- Separate right turn lane on the Regional Road
- Separate left turn lane with a free left turn facility on the Regional Road
- Two right plus one left turn lanes approaching the intersection on the local road; and
- Two lanes away from the intersection on the local road.

The sketch of the intersection in Appendix D indicates the required lengths of auxiliary turning lanes.

The 40m wide reservation for the Regional Road would easily be able to accommodate the six lanes required through the intersection.

The local road would need the following cross section on the approach to the intersection:

- 4.2m wide verge one side
- 3 x 3.25m wide lanes on the approach to the intersection = 9.75m
- 1.75m wide median
- 2 x 3.25m wide lanes on the departure from the intersection = 6.5m
- 3.8m wide verge on the other side
- Total reservation width of 26m.

This configuration would taper back to the standard road cross section of a 21.5m wide reservation with a 13.5m wide single carriageway 50m back from the Regional Road's section alignment.

With this configuration the intersection would operate at a level of service C which is satisfactory.

2.9.2 Access Prior to north –south Link Road completion

As indicated above in Section 2.2 of this report, RTA traffic modelling for the land south of the pipeline conducted as part of the Erskine Link Road investigation incorporated the traffic generation of the equivalent of 165 ha of development onto Old Wallgrove Road and then to the M4/M7. The developable area included Concept Approval for Goodman (40 ha) and Jacfin (98 ha), a total of 138 ha which can be catered for by the Erskine Park Link Road and Old Wallgrove Road as modelled by the RTA.

It is estimated that the total developable area south of the pipeline totals about 400 ha as follows:

Goodman	260 ha
Jacfin	98 ha
Jacona	<u>48.0 ha</u>
	406 ha

Thus any development beyond 165 ha south of the pipeline (around 241 ha) may need additional road upgrades.

2.9.3 Interim use of Old Wallgrove Road

It is noted that the RTA Erskine Park Link Road traffic modelling indicated that Old Wallgrove Road south of the Erskine Park Link Road would carry around 1650 vehicles per hour in one direction once 165 ha of development was occupied south of the water pipeline if no other points of access were provided to that area. The nominal capacity of a single traffic lane with minimal midblock function is 1200 vehicles per hour. Thus Old Wallgrove Road would need to be widened to two traffic lanes each way once the equivalent of about 120 hectares of land south of the pipeline.

This threshold of capacity depends on the relative split of north-south traffic travelling on Old Wallgrove Road and on whether the actual traffic generation of future developments was as high as that assumed for the purposes of analysis. The situation would thus need to be monitored as development proceeded south of the water pipeline to reassess if/when Old Wallgrove Road should be widened to four traffic lanes.

2.9.4 Contribution towards Regional Road System

The Applicant has offered to enter into a Voluntary Planning Agreement in respect of a Strategic Infrastructure contribution. This will be a matter for discussion and agreement with the Department of Planning and Infrastructure.

2.10 Provisions for Public Transport

The Southern east-west Regional Road and the local roads within the site would all be suitable for buses. These would provide a suitable bus route until such time as the road connections to adjoining development sites were developed.

Bus shelters will be provided at suitable locations.

2.11 Provisions for Pedestrians and Cyclists

It is proposed to provide a shared cycle/pedestrian path on the verge on one side of the Regional Road and of the local road system within the Lot A site.

2.12 Car Parking

Parking requirements for each site will be highly dependent on the number of employees and on the nature of the operation of the occupier. In view of this it is proposed to allow the provision of a proportion of spaces as sealed parking and designate an undeveloped area of the site in which additional parking could be provided if there was a demonstrated need.

In relation to parking provision requirements, the RTA, Penrith and Blacktown Councils suggest the rates presented on Table 2.1.

Table 2.1: Relevant Parking Rates

	Warehouse	Factories/Industrial	Offices
RTA	1/300m ² GFA	1.3/100m ² GFA	1/40m ² GFA
Penrith Council	1/100m ² GFA	1/75m ² GFA or 1/2 employees	1/40m ² GFA
Blacktown Council	Not specified	1 st 7500m ² – 1/100m ² GFA	1/40m ² GFA

The differences between the three sets of guidelines reflect the wide variety of parking demands that industrial/warehouse development can exhibit.

For the Jacfin Horsley Park site it is proposed that:

- Sealed formal parking be provided at the following rates:
 - office: 1/40m² GFA
 - factory: 1/100m² GFA first 100m² then 1/200m² GFA. Includes office component
 - warehouse: 1/300m² GFA + 1/40m² for office
- Potential overflow parking capacity be identified such that the parking supply can be brought up to the following:
 - factory: 1.3 spaces/100m² GFA
 - warehouse: 1/200m² GFA + 1/40m² for office

- Parking provision rates may be varied if detailed requirements of an occupier are known.

2.13 Conclusions in Relation to the Horsley Park Concept Plan

The proposed road system is compatible with the SEPP (Western Sydney Employment Area) road plan as adopted by DOPI and with RTA design planning for the Erskine Park Link Road. It provides for satisfactory access to all parts of Lot A and provides for future connection to other development areas to the west should such be approved.

Satisfactory arrangements are also proposed for pedestrians and cyclists. The system will also allow good bus coverage.

3. Project Application

3.1 Description of Proposed Development

A detailed description of the proposed development is provided in the Project Application Report prepared by JBA Planning on behalf of Jacfin. Appendix E shows relevant Project Application Plans.

The development proposed by this project application can be summarised as follows:

- Warehouse floor area: 25,300m² GFA
- Office floor area: 2,030m² GFA
- Car Parking: 135 spaces
- Loading Dock Facility accommodating articulated vehicles
- Partial construction of parts of the east-west regional road and of the main internal local road to connect the project application site with the southern end of Old Wallgrove Road.

Vehicular access to the site is proposed via a driveway off the main local road located about 400m south of the proposed east-west Regional Road alignment.

3.2 Traffic Generation

As outlined above in relation to the proposed Horsley Park Concept Plan, the road system for the Jacfin Horsley Park site proposes a road system that will accommodate all future development.

As per RTA advice, the area has been planned to accommodate traffic generated at a rate of 15 vehicle trips per hectare per peak hour. By applying this rate to the proposed site area, the following trips can be calculated:

Building 1 approx. 8 ha @ 15 trips/ha = 120 trips per hour

The proposed access road that will serve the site will easily be able to accommodate this relatively low traffic volume.

3.3 Interim Road Provisions

The following works are proposed to connect the site to the southern end of Old Wallgrove Road:

- Construct the main local road through Lot A site from a point just south of the first development stage driveway to the east-west Regional Road. This local road will have a temporary cul-de-sac head for turning at its southern end.
- Construct the southern carriageway of the future divided east-west Regional Road between the southern end of Old Wallgrove Road and the proposed local road. This would have two traffic lanes and operate as a two way single carriageway road.
- Construct temporary intersections at either end of this section of the east-west Regional Road.

Other short term road improvements would include:

- Construction of a new intersection on Old Wallgrove Road south of the water pipeline by Goodman to provide access to the first stage of its Oakdale Central development. This would

include localised improvements to Old Wallgrove Road appropriate to this first stage development.

- Construction of a signalised intersection between Old Wallgrove Road and Wallgrove Road/Erskine Park Link Road. This is currently underway by the Roads and Maritime Services and, as mentioned above, would have the capacity to accommodate up to 165 ha of development in the area south of the water pipeline.

3.4 Site Access and Internal Road Layout

The access and internal road layout arrangements comply with all relevant standards. The following factors are noted:

- A 7m wide two way driveway is proposed along the southern boundary of the site. It will be belled out to 12.5m at its intersection with the local road. These widths comply with AS 2890.2, Off Street Commercial Vehicle Facilities for two way truck flow.
- Three road off takes are proposed from this main driveway. The eastern and western ones would be for trucks and would provide for one way truck flow around the warehouse. This road system would be designed to accommodate B-double trucks.
- The central one would be two way and serve a segregated staff and visitor car park.
- Extensive internal queuing capacity is provided.
- In accordance with AS 2890.2, cars and trucks are provided with separate access driveways and are separated internally, providing maximum safety for both car drivers and pedestrians.
- Available sight distances at all driveways will be satisfactory, subject to the road verge being landscaped with appropriate species.
- The parking bays and aisles comply with the requirements of AS 2890.1 and 2890.6, Off-street parking for people with disabilities.

In summary the proposed site access and internal road layout is considered appropriate for the proposed development.

3.5 Parking Provision

It is proposed to provide parking in accordance with the parking provision rates discussed above in the Concept Plan assessment. The following presents the parking requirement for the development site:

Formal parking provision

Warehouse 25,300m² GFA @ 1 space/300m² = 84.3 spaces

Office 2,030m² GFA @ 1 space/40m² = 50.8 spaces

Car Parking Requirement: = 135.1 spaces

Formal + Overflow parking provision

Warehouse 25,300m² GFA @ 1 space/200m² = 126.5 spaces

Office 2,030m² GFA @ 1 space/40m² = 50.8 spaces

Total Car Parking Requirement (with overflow) = 177.3 spaces

Therefore, net overflow parking requirement = 42.2 spaces

The proposal includes 135 spaces in front of the office component of the building and a designated unformed areas where about 45 additional parking spaces could be provided if needed in the future.

3.5.1 Parking summary

The proposed parking provision including overflow parking would be more than adequate to accommodate the parking demands of the proposed development for both staff and visitors.

The proposed parking layouts would accord with the design requirements of AS 2890.1-2004 and 1-2% of the total formal parking spaces would be designed and designated as disabled parking spaces in accordance with AS 2890.6-2009.

3.6 Service Vehicle (Loading) Facilities

As noted above, the proposed loading area will be separated from the car parking area.

The loading provision and layout is considered to be appropriate for the proposed warehouse use on the site. The layout provides significant vehicle manoeuvring area and would facilitate efficient access to and from individual loading docks. The loading and manoeuvring area would adequately accommodate access requirements of articulated vehicles, including B-Double vehicles.

3.7 Bicycles

It is proposed to provide secure bicycle parking at a rate of 1 bicycle space for each 10 car spaces. Showers and change facilities will also be provided in each building.

Initially while traffic volumes on the access road are low, bicycles will share the road carriageway with other traffic. In future a shared cycleway could be constructed along the verge once peak hourly traffic volumes reach about 300 vehicles per hour.

3.8 Construction Traffic

Separate formal Construction Traffic Management Plans will be submitted for the site prior to the issue of a Construction Certificate as per a normal project approval conditions.

It is anticipated that typical daily flows during construction would be lower than the operational traffic generation of the proposed development.

Peak construction traffic generation will occur during concrete pours and bulk earthworks should material be required to be removed or imported to the site. At these periods it is anticipated that some 20 trips per hour (10 in / 10 out) would occur. These details would be confirmed and assessed as part of a CTMP.

The following principles would be incorporated into the CTMP:

- The Construction Traffic Management Plan will include proposed truck parking areas, construction zones, crane usage, truck routes, etc.
- Trucks must enter and leave the site in a forward direction unless accredited flag persons are in place to control traffic and pedestrians.
- The Building Contractor will maintain strict traffic management procedures to ensure the safety of the public road users utilising traffic wardens.

- All vehicles carrying materials to, or from the site must have their loads covered with tarpaulins or similar covers.
- Openings in the construction fencing at the construction access driveways will be managed and controlled by qualified site personnel.
- Temporary warning signs and flashing lights will be erected adjacent to construction access driveways where appropriate.

4. Summary

This report presents the findings of an updated transport assessment of a proposed Concept Plan for Lot A, Burley Road in the Horsley Park Employment Precinct in the Western Sydney Employment Hub. It also provides an assessment of a Project Application for the development of the first lot within the site.

The following are the key findings of the Concept Plan Assessment:

- The Concept Plan envisages development on about 98 ha within the site for a range of industrial and warehouse uses.
- The Concept Plan area is proposed to be subdivided to include a generally north south local road through it that in future could be extended at its southern end to link up with other future development to its west.
- A public loop road system off this main internal local road would serve the southern, wider part of the site.
- The Regional Road system for the area has been specified by the DOPI following extensive investigations by the RMS.
- It will incorporate a new major east-west regional road generally on the alignment of Chandos Street, Burley Road that would then follow a gentle S form to connect to Bakers Lane to the west. Via these roads the east-west Regional Road would connect from Wallgrove Road in the east to Mamre Road in the west.
- In addition two new north south Regional Roads would connect the Erskine Park Link Road with this new east-west Regional Road across the Sydney Water pipeline.
- Traffic requirements for the road system were determined having regard to RMS's traffic forecasts prepared for the Erskine Park Link Road and for the DOPI's adopted Regional Road system.
- These found that around 165 hectares of development could be served by the arterial road system north of the water pipeline.
- Old Wallgrove Road south of the water pipeline may need widening to four traffic lanes once occupied development reached about 120 hectares.
- This would depend on actual traffic generation rates that were realized and thus traffic levels would need to be monitored as development proceeded.
- Local roads within Lot A are proposed to have 21.5m reservations and 13.5m wide undivided carriageways.
- Cycle and pedestrian paths are proposed along the major roads. These will connect to the shared cycle/pedestrian way proposed along the Erskine Park Link Road.
- The road system will allow buses to traverse and loop through the site satisfactorily.
- Overall it is concluded that the proposed Concept Plan accords with previous traffic and transport planning for the area and that transport aspects of it will be satisfactory.

The following are the key findings of the Project Application assessment of proposed development on the first lot:

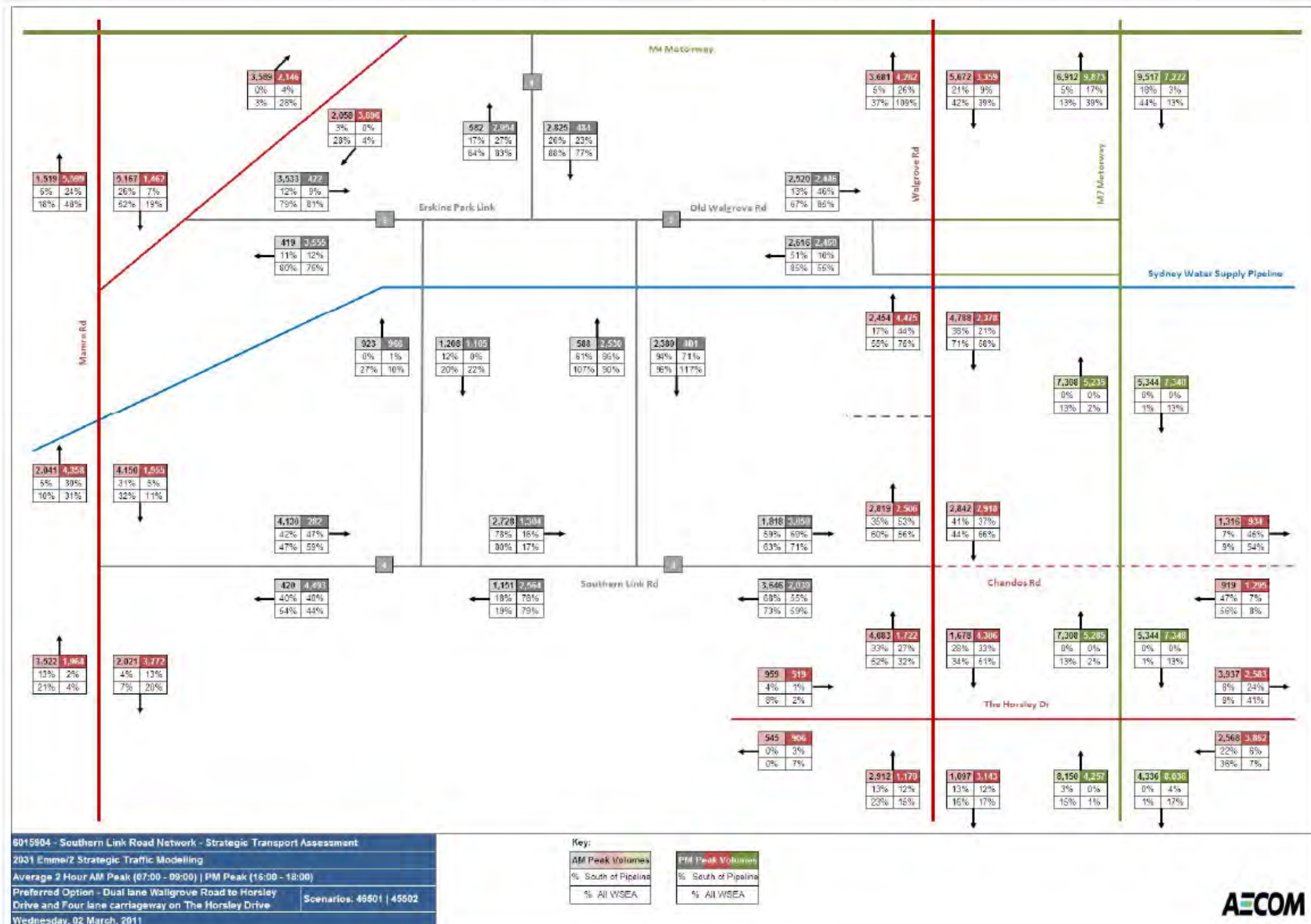
- A north-south local road is proposed off the alignment of the future southern east-west Regional Road.

- A temporary cul-de-sac head will be provided at the interim termination point of the local road.
- Development on the site is proposed to comprise a distribution warehouse with generous truck manoeuvring and loading and unloading areas.
- Separate car parking is proposed on the site with an appropriate provision.
- Site access, internal roads and car and truck parking and loading areas are proposed to comply with the relevant Australian Standard.
- Bicycle parking and shower facilities are also proposed.
- Interim internal access is proposed through the construction of the southern carriageway of the future east-west Regional Road along the northern border of Lot A to connect the proposed north south local road through Lot A with the southern end of existing Old Wallgrove Road.
- The Project Application site will have access off the north-south local road.
- Overall it is considered that transport aspects of the Project Application development will be satisfactory.

Appendix A

Appendix A

RTA Traffic Forecasts

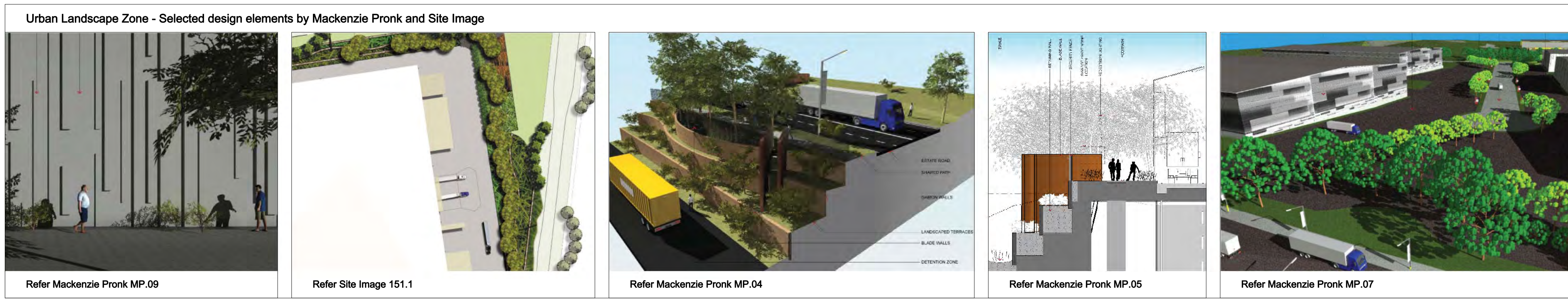
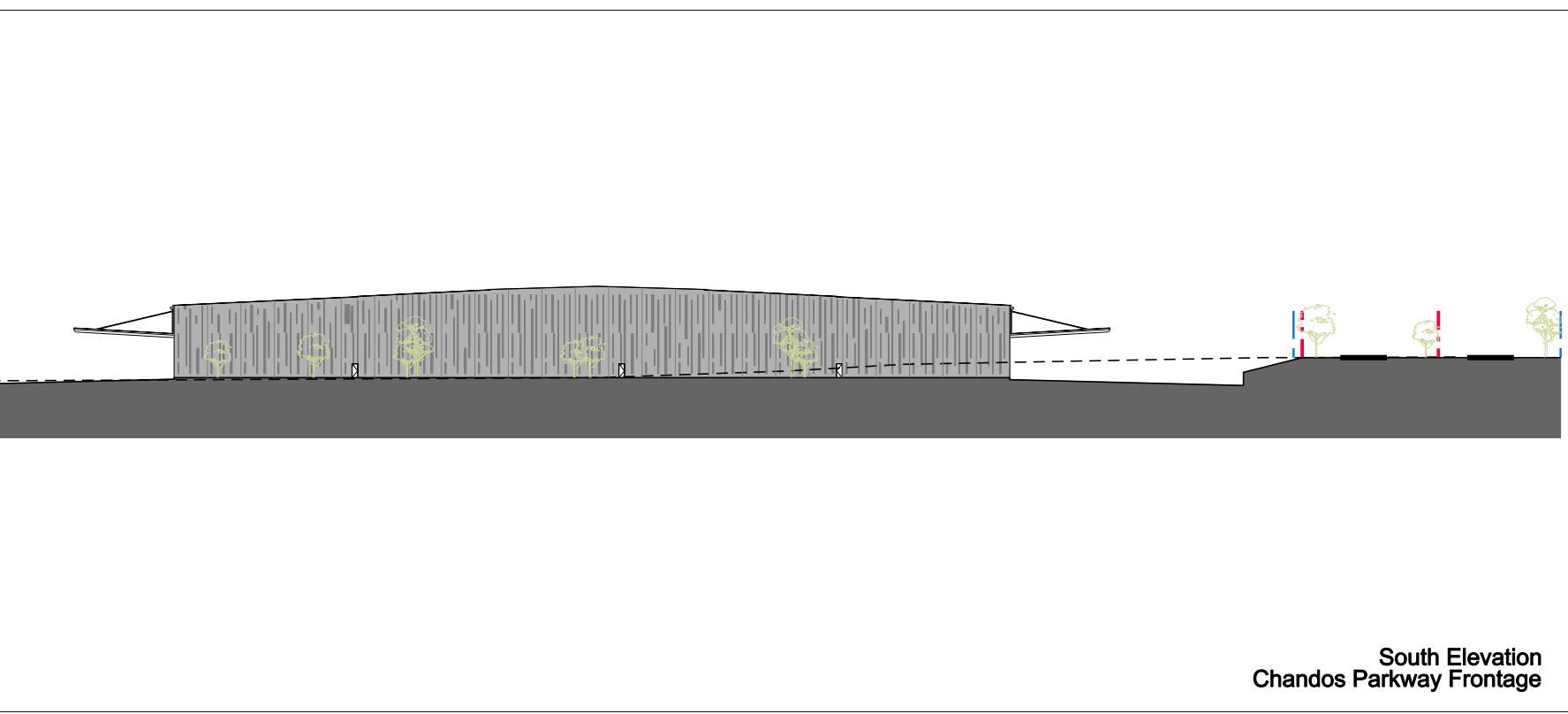
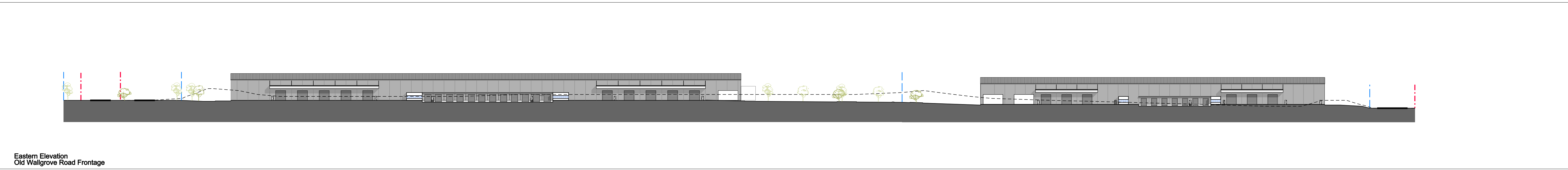
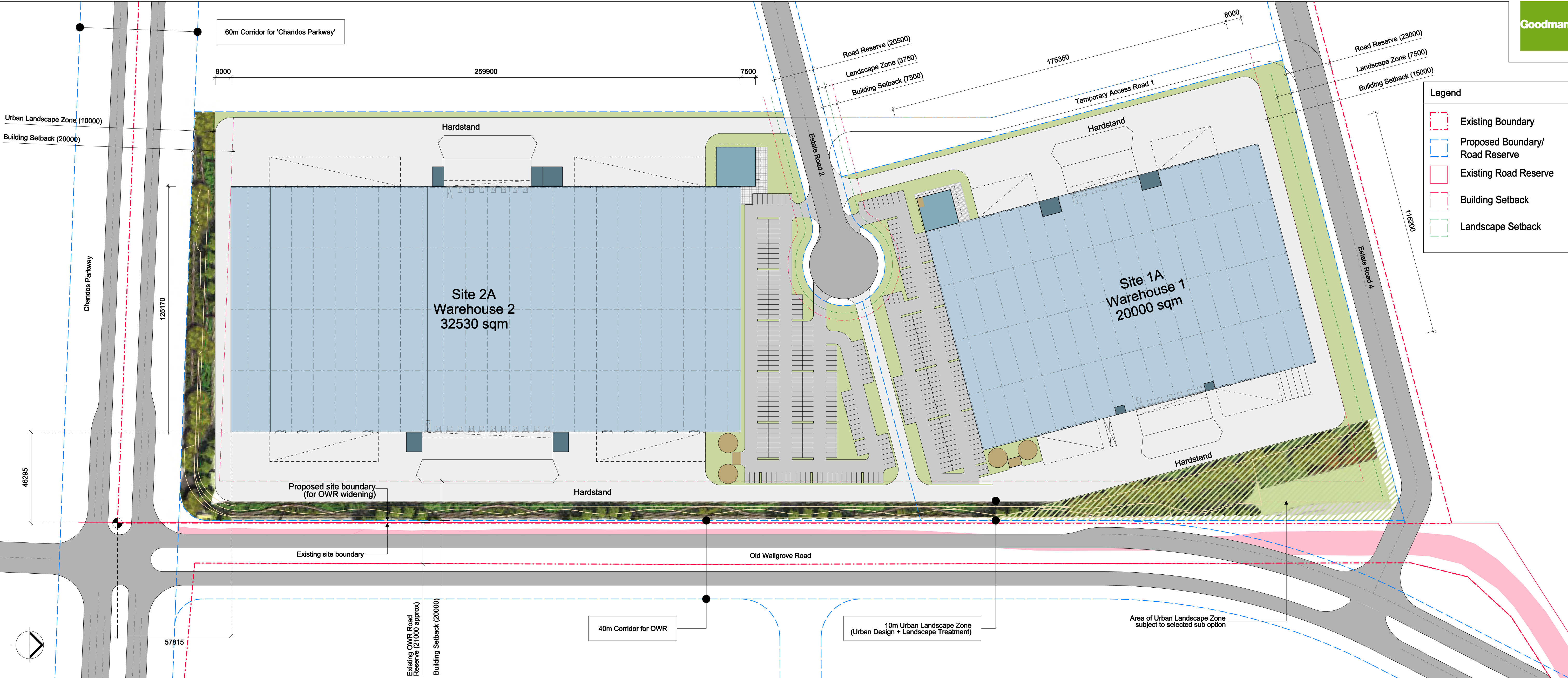


Appendix A
 RMS Strategic Traffic Forecast

Appendix B

Oakdale Project Plan and Initial Subdivision Plan

Appendix B

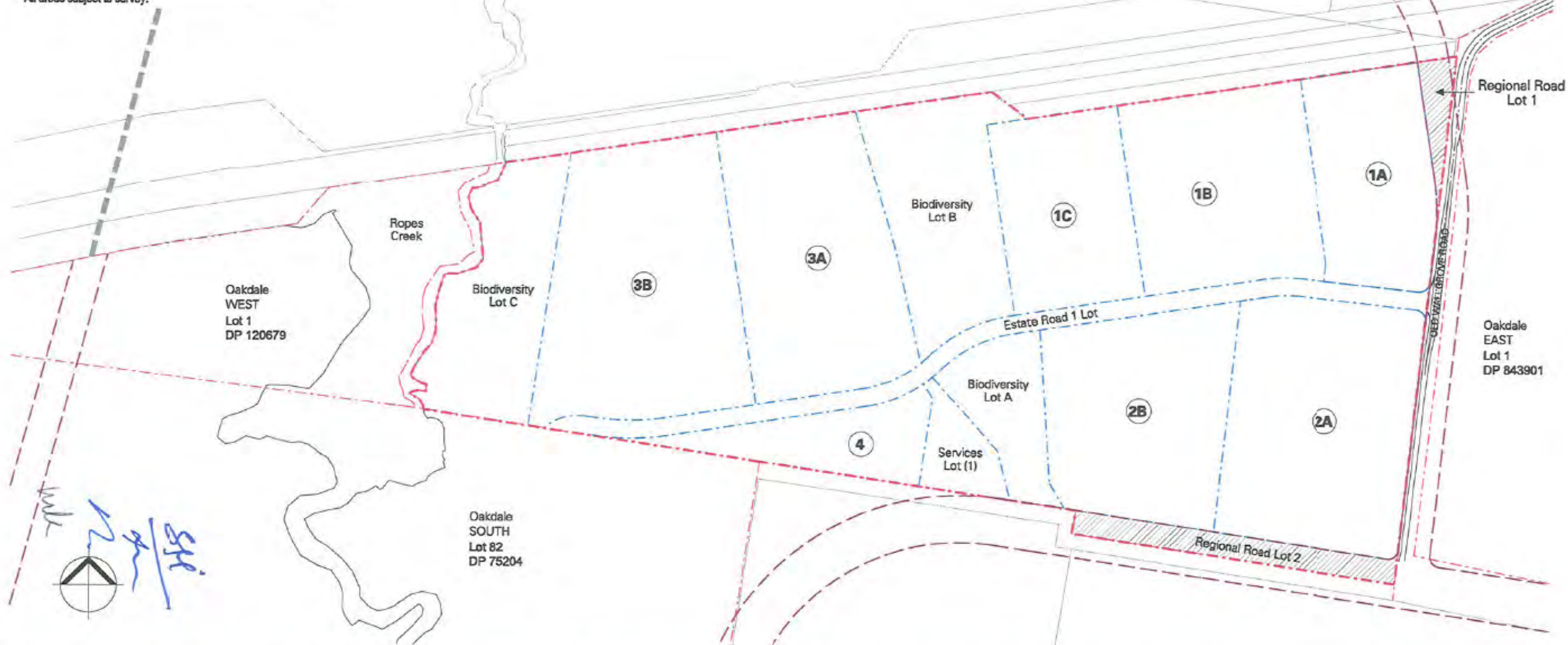


Lot 2 DP 120673		Sub Total
Total Land Area	CENTRAL	61.21 ha
Biodiversity Lot A	1.92 ha	10.56 ha
Biodiversity Lot B	4.49 ha	
Biodiversity Lot C	4.15 ha	
Regional Road Lot 1	0.48 ha	1.74 ha
Regional Road Lot 2	1.26 ha	
Services Lot (1)	1.00 ha	1.00 ha
Estate Road 1 Lot	2.64 ha	2.64 ha
Development Lot 1A	4.14 ha	45.27 ha
Development Lot 1B	5.88 ha	
Development Lot 1C	4.14 ha	
Development Lot 2A	7.47 ha	
Development Lot 2B	6.00 ha	
Development Lot 3A	7.05 ha	
Development Lot 3B	8.36 ha	
Development Lot 4	2.23 ha	

Legend

- Oakdale CENTRAL Concept Plan (CP #1)
- Existing Boundary
- Proposed Boundary/ Road Reserve
- Provision for Future Regional Road
- ① Development Lot

*All areas subject to survey.



design+

Oakdale CENTRAL
Horsley Park

Estate Works + DHL Project (PA #1)
(Lot2 DP120673) Proposed S75W Modification to PA #1

Subdivision of Lot 2 DP 120673

1:2500 @ A1
1:5000 @ A3
28 Oct 10 MO

OAK PA1 12 (D)

Appendix C

Jacfin Lot A Horsley Park Concept Plan



- Key
- Site Boundary
 - E2 Environmental Conservation Zone
 - 10m Bushfire Setback
 - Potential Service Centre Location (Subject to Road and E2 Alignment)
 - Stage I Project Application
 - Indicative Building Footprint
 - Regional Road One: 40m Reserve
 - Local Road One: 21.5m Reserve
 - Local Road Two: 21.5m Reserve
 - Indicative Lot Boundary
 - Developable Area
 - Earth Mound
 - Stormwater
 - Culvert

CP009 Concept Plan



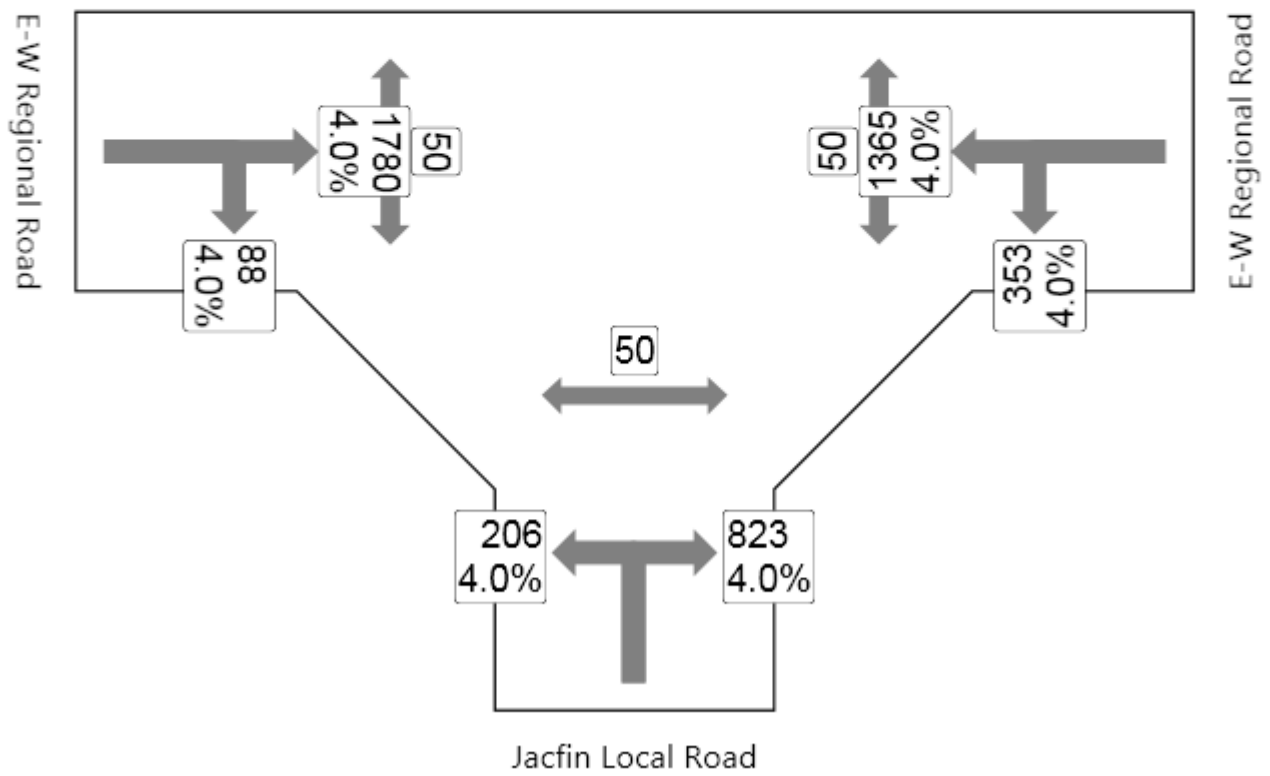
Lot A Burley Road, Horsley Park Employment Precinct - Concept Plan

Prepared for Jacfin Pty Ltd
 15 August 2012
 1:5000 @ A3



Appendix D

Local/Regional Road Intersection Traffic Forecasts and Operational Analysis



PM Peak Hour Flows

MOVEMENT SUMMARY

Site: Intersection of Local & Regional Road - AM Peak Hour

12S1277000- Jacfin Horsely Park

AM Peak Hour

Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jacfin Local Road											
1	L	93	4.0	0.139	22.0	LOS C	2.1	15.1	0.61	0.75	37.5
3	R	372	4.0	0.433	36.8	LOS D	6.3	45.7	0.90	0.80	29.9
Approach		464	4.0	0.433	33.9	LOS C	6.3	45.7	0.84	0.79	31.1
East: E-W Regional Road											
4	L	866	4.0	0.480	7.8	X	X	X	X	0.60	49.7
5	T	1340	4.0	0.881	34.6	LOS C	29.8	215.4	1.00	1.07	29.3
Approach		2206	4.0	0.881	24.1	LOS C	29.8	215.4	0.61	0.88	35.0
West: E-W Regional Road											
11	T	1553	4.0	0.667	10.9	LOS B	19.8	143.1	0.71	0.64	43.9
12	R	217	4.0	0.873	54.6	LOS D	9.9	71.7	1.00	1.01	24.0
Approach		1769	4.0	0.873	16.2	LOS B	19.8	143.1	0.74	0.69	39.8
All Vehicles		4440	4.0	0.881	22.0	LOS C	29.8	215.4	0.69	0.80	36.3

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	23.3	LOS C	0.1	0.1	0.76	0.76
P3	Across E approach	53	31.5	LOS D	0.1	0.1	0.89	0.89
P7	Across W approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		159	29.7	LOS C			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

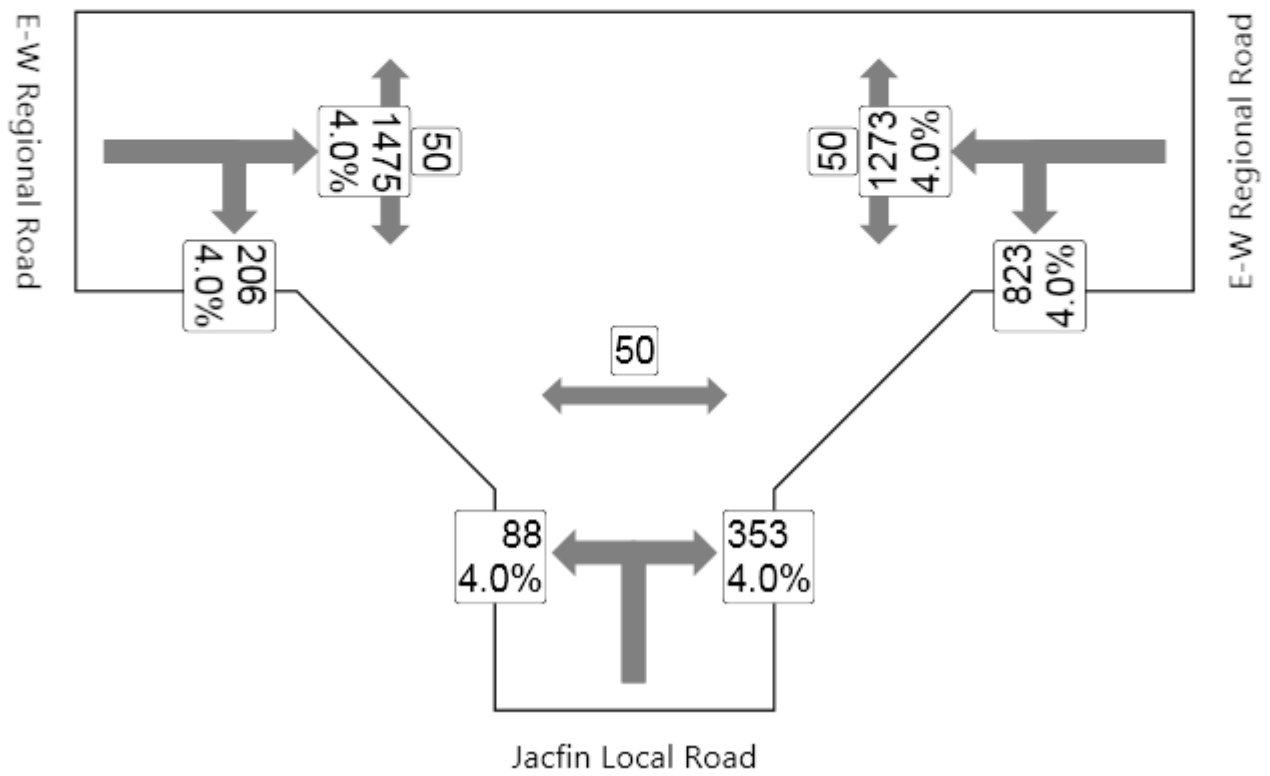
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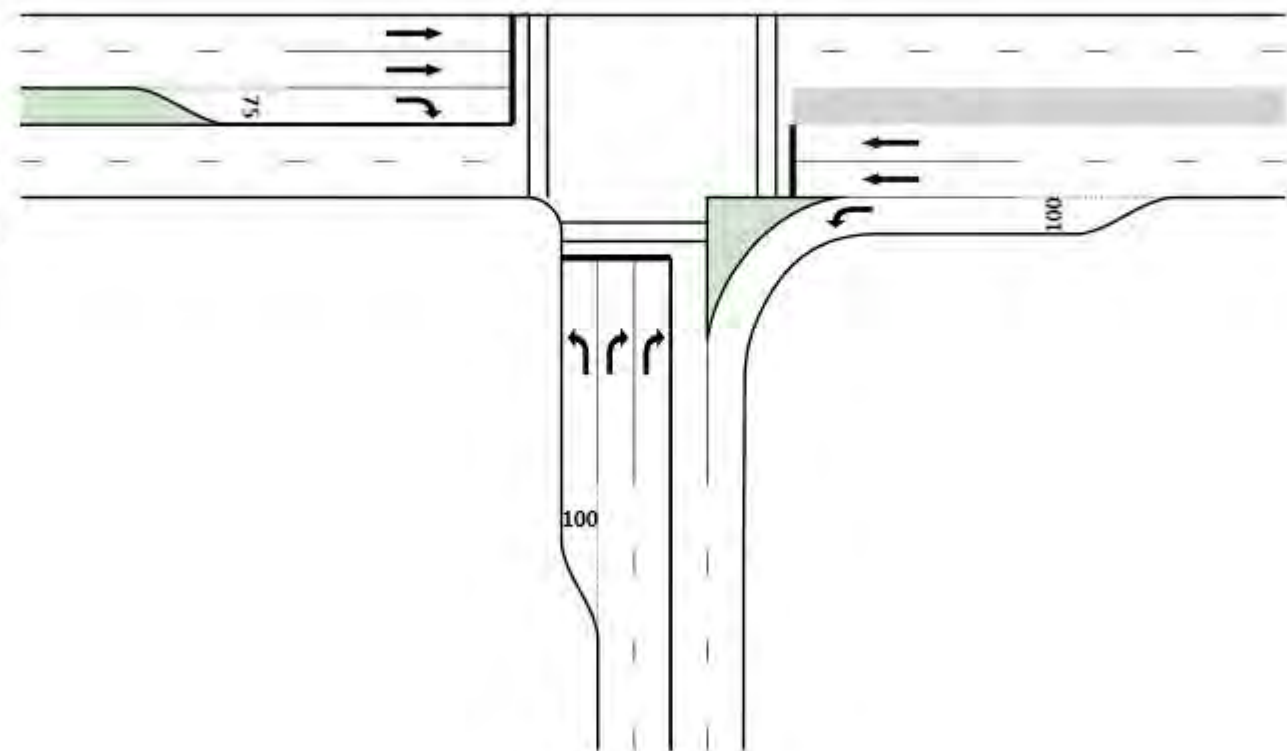
SIDRA
INTERSECTION



AM Peak Hour Flows



E-W Regional Road



E-W Regional Road

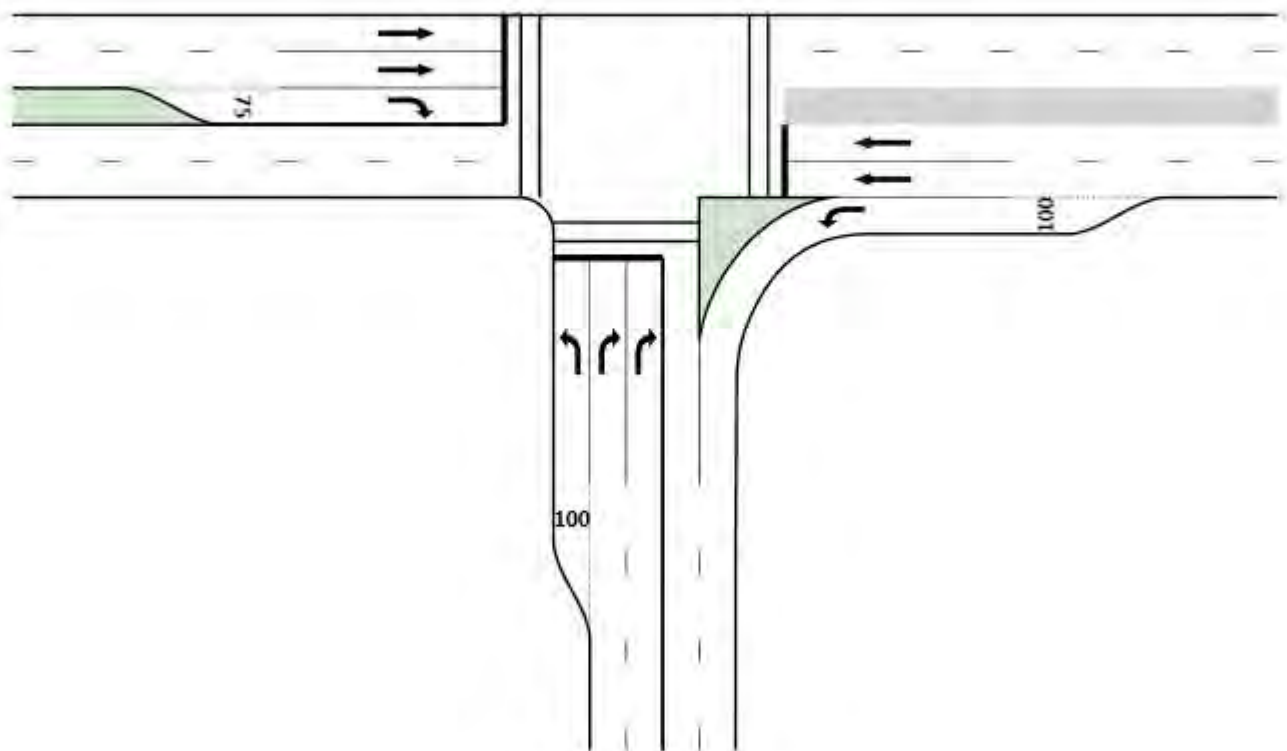
Jacfin Local Road

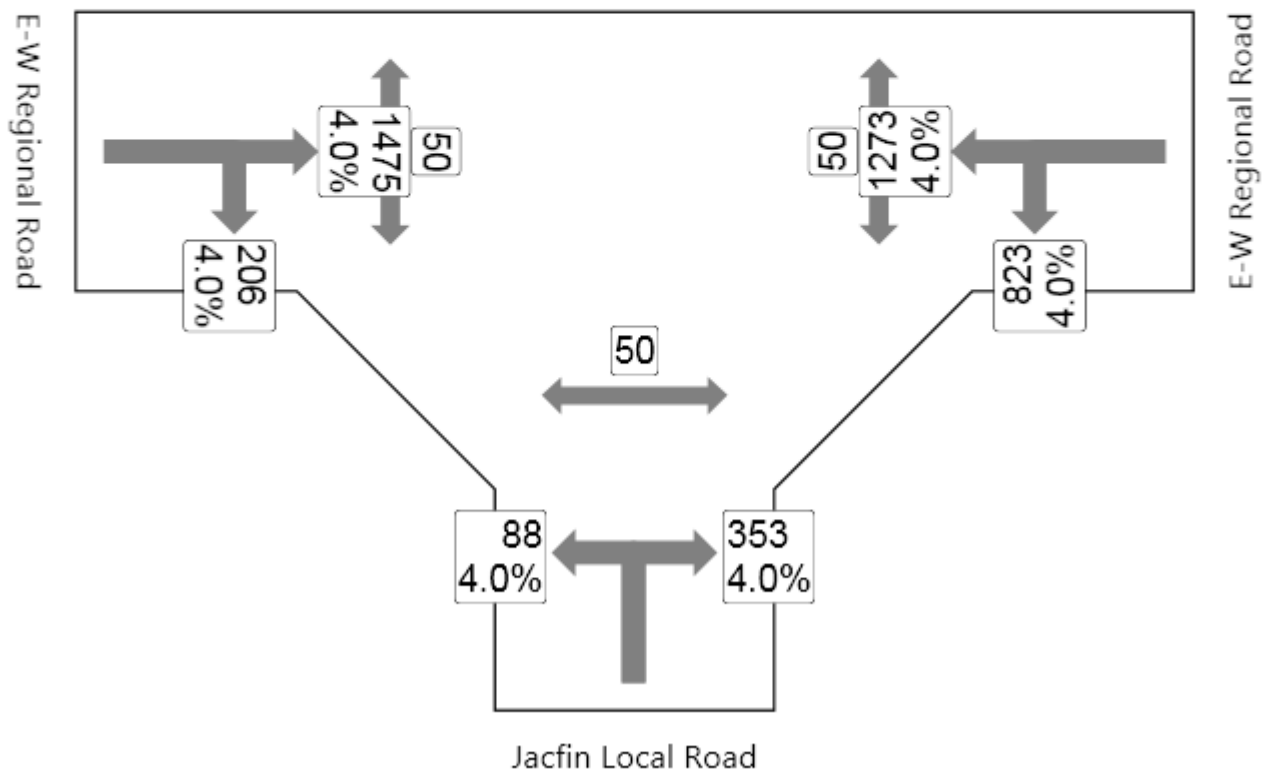


E-W Regional Road

E-W Regional Road

Jacfin Local Road





AM Peak Hour Flows

MOVEMENT SUMMARY

Site: Intersection of Local & Regional Road - AM Peak Hour

12S1277000- Jacfin Horsely Park

AM Peak Hour

Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jacfin Local Road											
1	L	93	4.0	0.139	22.0	LOS C	2.1	15.1	0.61	0.75	37.5
3	R	372	4.0	0.433	36.8	LOS D	6.3	45.7	0.90	0.80	29.9
Approach		464	4.0	0.433	33.9	LOS C	6.3	45.7	0.84	0.79	31.1
East: E-W Regional Road											
4	L	866	4.0	0.480	7.8	X	X	X	X	0.60	49.7
5	T	1340	4.0	0.881	34.6	LOS C	29.8	215.4	1.00	1.07	29.3
Approach		2206	4.0	0.881	24.1	LOS C	29.8	215.4	0.61	0.88	35.0
West: E-W Regional Road											
11	T	1553	4.0	0.667	10.9	LOS B	19.8	143.1	0.71	0.64	43.9
12	R	217	4.0	0.873	54.6	LOS D	9.9	71.7	1.00	1.01	24.0
Approach		1769	4.0	0.873	16.2	LOS B	19.8	143.1	0.74	0.69	39.8
All Vehicles		4440	4.0	0.881	22.0	LOS C	29.8	215.4	0.69	0.80	36.3

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	23.3	LOS C	0.1	0.1	0.76	0.76
P3	Across E approach	53	31.5	LOS D	0.1	0.1	0.89	0.89
P7	Across W approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		159	29.7	LOS C			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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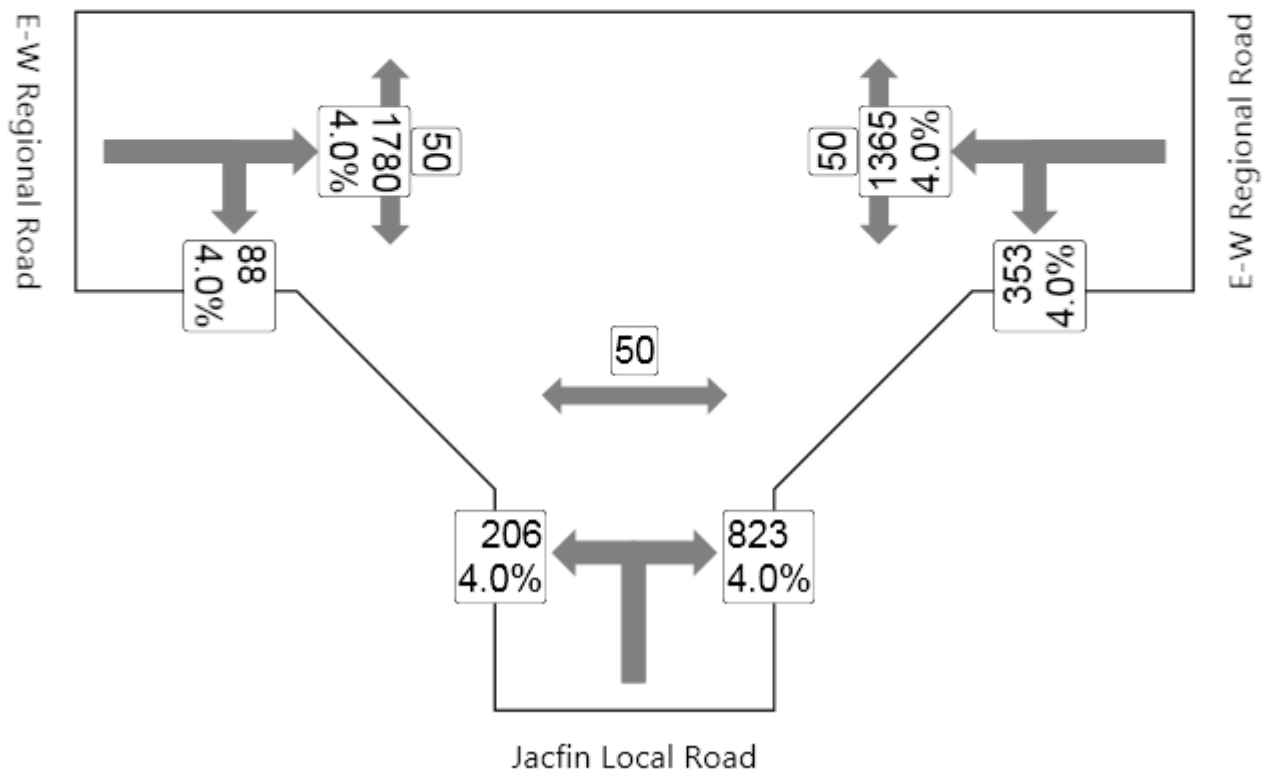
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SIDRA
INTERSECTION



PM Peak Hour Flows

MOVEMENT SUMMARY

Site: Intersection of Local & Regional Road - PM Peak Hour

12S1277000- Jacfin Horsely Park

PM Peak Hour

Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jacfin Local Road											
1	L	217	4.0	0.336	24.5	LOS C	5.5	40.1	0.69	0.78	35.9
3	R	866	4.0	0.872	48.2	LOS D	19.5	141.3	1.00	0.99	25.8
Approach		1083	4.0	0.872	43.5	LOS D	19.5	141.3	0.94	0.95	27.4
East: E-W Regional Road											
4	L	372	4.0	0.206	7.7	X	X	X	X	0.60	49.8
5	T	1437	4.0	0.889	34.7	LOS C	32.4	234.4	1.00	1.08	29.3
Approach		1808	4.0	0.889	29.1	LOS C	32.4	234.4	0.79	0.98	32.0
West: E-W Regional Road											
11	T	1874	4.0	0.857	21.9	LOS C	35.7	258.5	0.91	0.92	35.5
12	R	93	4.0	0.684	51.5	LOS D	3.9	28.3	1.00	0.84	24.9
Approach		1966	4.0	0.857	23.2	LOS C	35.7	258.5	0.91	0.92	34.8
All Vehicles		4858	4.0	0.889	29.9	LOS C	35.7	258.5	0.87	0.95	31.8

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	21.8	LOS C	0.1	0.1	0.74	0.74
P3	Across E approach	53	28.9	LOS C	0.1	0.1	0.85	0.85
P7	Across W approach	53	31.5	LOS D	0.1	0.1	0.89	0.89
All Pedestrians		159	27.4	LOS C			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: Intersection of Local & Regional Road - PM Peak Hour

12S1277000- Jacfin Horsely Park
PM Peak Hour
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jacfin Local Road											
1	L	217	4.0	0.336	24.5	LOS C	5.5	40.1	0.69	0.78	35.9
3	R	866	4.0	0.872	48.2	LOS D	19.5	141.3	1.00	0.99	25.8
Approach		1083	4.0	0.872	43.5	LOS D	19.5	141.3	0.94	0.95	27.4
East: E-W Regional Road											
4	L	372	4.0	0.206	7.7	X	X	X	X	0.60	49.8
5	T	1437	4.0	0.889	34.7	LOS C	32.4	234.4	1.00	1.08	29.3
Approach		1808	4.0	0.889	29.1	LOS C	32.4	234.4	0.79	0.98	32.0
West: E-W Regional Road											
11	T	1874	4.0	0.857	21.9	LOS C	35.7	258.5	0.91	0.92	35.5
12	R	93	4.0	0.684	51.5	LOS D	3.9	28.3	1.00	0.84	24.9
Approach		1966	4.0	0.857	23.2	LOS C	35.7	258.5	0.91	0.92	34.8
All Vehicles		4858	4.0	0.889	29.9	LOS C	35.7	258.5	0.87	0.95	31.8

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	21.8	LOS C	0.1	0.1	0.74	0.74
P3	Across E approach	53	28.9	LOS C	0.1	0.1	0.85	0.85
P7	Across W approach	53	31.5	LOS D	0.1	0.1	0.89	0.89
All Pedestrians		159	27.4	LOS C			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Appendix E

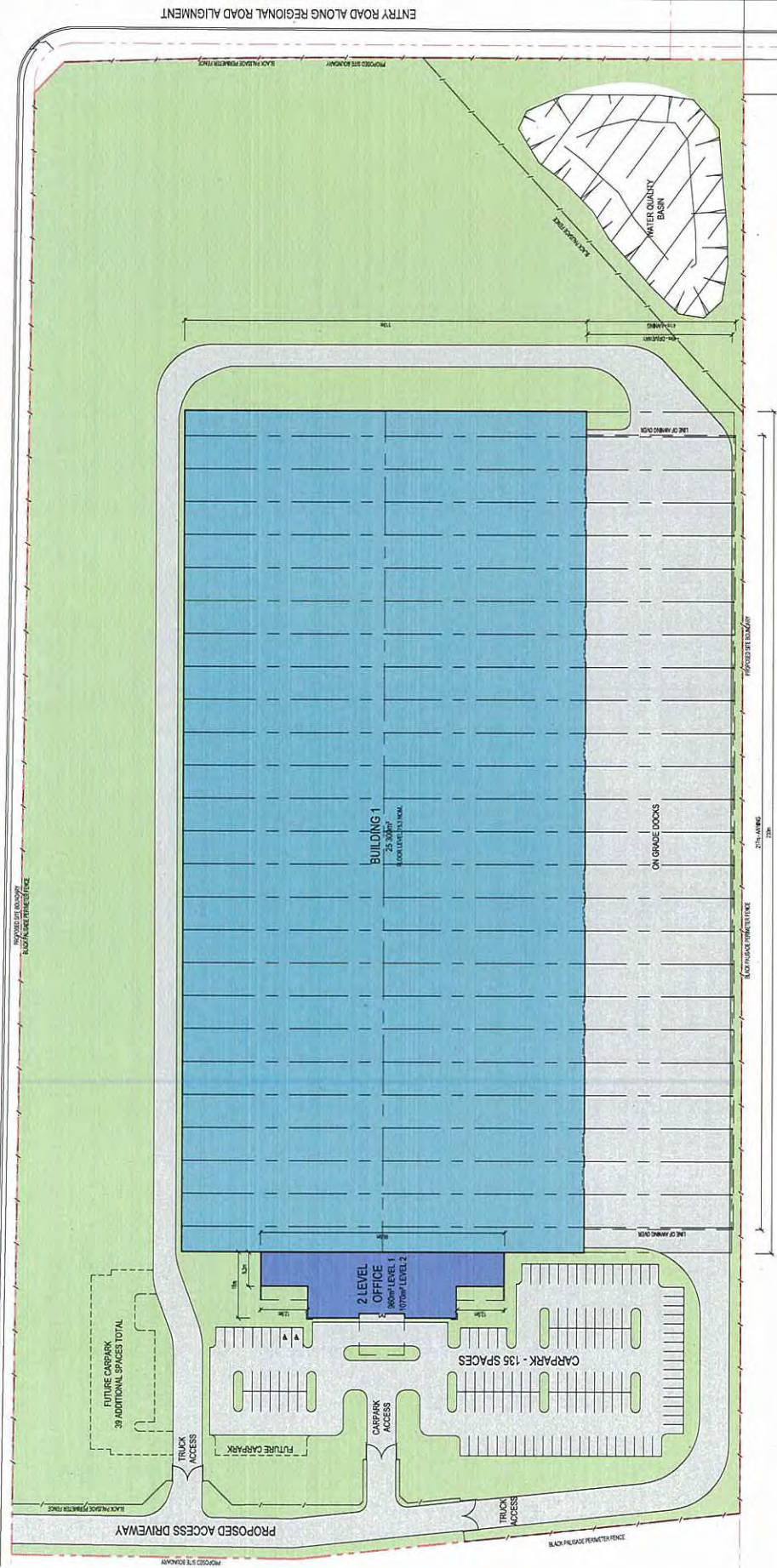
Project Application Plans



KEY PLAN

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PROPOSED LOCAL ROAD



AREAS	25 300m ²
WAREHOUSE	8 900m ²
DOCK AWNING	2 030m ²
OFFICES	
• LEVEL 1 - 900m ²	
• LEVEL 2 - 1070m ²	
SITE AREA	8 HA

1. SITE	1. SITE
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JACFIN PTY LTD

HORSLEY PARK
EMPLOYMENT PRECINCT
LOT 1 BURLEY ROAD

MIA ARCHITECTS
Level 1, 5 High Street
Sydney NSW 2000
02 9550 1234
mia@miarchitects.com.au

HORSLEY PARK BUILDING 1
MASTER SITE PLAN

DATE	20/01/2023	PROJECT NO.	1024	CLIENT	ARDA
SCALE	1:500	DRAWN BY	JAC	CHECKED BY	DA 01
APPROVED BY		DATE		DATE	



LOT A BURLEY ROAD, HORSLEY PARK EMPLOYMENT PRECINCT

CIVIL ENGINEERING WORKS FOR DEVELOPMENT APPLICATION



LOCALITY PLAN
N.T.S.

LGA PENRITH COUNCIL
DP 392643

JACFIN PTY LTD

DRAWING LIST

GENERAL	
000	COVER SHEET
001	GENERAL LAYOUT PLAN
ENGINEERING PLANS	
101	ENGINEERING PLAN SHEET 1 OF 2
102	ENGINEERING PLAN SHEET 2 OF 2
ROADWORKS	
201	ROAD No.01 LONGITUDINAL SECTION
202	ROAD No.02 LONGITUDINAL SECTION
SITE REGRADING	
301	SITE REGRADING SECTIONS
SEDIMENT & EROSION CONTROL	
401	SEDIMENT & EROSION CONTROL PLAN
402	SEDIMENT & EROSION CONTROL STANDARD NOTES AND DETAILS

Brown Consulting (NSW) Pty Ltd

Level 2, 2 Burbank Place, Norwest Business Park
Baulkham Hills NSW Australia 2153
Telephone: 02 8808 5000 Facsimile: 02 8808 5099

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LOT A BURLEY ROAD, HORSLEY PARK EMPLOYMENT PRECINCT
CIVIL ENGINEERING WORKS FOR DEVELOPMENT APPLICATION
JOB No: X10135

DRAWING	REVISION
000	06



LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
STORMWATER PIPELINE			
STORMWATER DRAINAGE PITS			
DRAINAGE LINE No. 3 DRAINAGE PIT No. 10			
CONCRETE HEADWALL			
SUBSOIL DRAIN			
STANDARD 150mm KERB AND GUTTER			
STANDARD ROLL KERB AND GUTTER			
STANDARD KERB ONLY			
STANDARD EDGE STRIP			
STANDARD MOUNTABLE KERB			
STANDARD DISH CROSSING			
VEHICULAR CROSSING			
PEDESTRIAN RAMP			
EDGE OF BITUMEN			
ROAD PAVEMENT			
BENCHMARK			
BATTERS			
CONCRETE PATHWAY			
CONTOURS			
SITE REGRADING AREA			
SERVICE LINES SEWER, GAS, WATER, ELECTRICITY			
COMMUNICATION LINES TELSTRA, FIBRE OPTIC			
OVER HEAD LINES AND POLES			
SERVICE PITS TELECOM PIT, ACCESS CHAMBER, HYDRANT, STOP VALVE, AIR VALVE			
LIMIT OF CONSTRUCTION			
LIMIT OF STAGE			
FENCE POST AND RAIL FENCE SECURITY FENCE			
LOT NUMBERS			
TREES TO RETAIN TREES TO REMOVE			
RETAINING WALL			
ROCK WALL			
SITE BOUNDARY			
EXISTING PUBLIC ROAD BOUNDARY			
FUTURE REGIONAL ROAD ALIGNMENT AS SHOWN ON OAKDALE CENTRAL APPROVAL			
ROAD CORRIDOR AS PER DPT's PREFERRED ALIGNMENT - 40m WIDE			
EXTENT OF STAGE 1 CONSTRUCTION			

DEVELOPMENT APPLICATION

0A8/12/2010PROJECT PLAN DESIGN

0007/12/2010AMENDED LAYOUT

0121/05/2012ISSUE FOR CLIENT REVIEW

0222/05/2012ISSUE FOR DEVELOPMENT APPLICATION

0324/05/2012ISSUE FOR DEVELOPMENT APPLICATION

0429/05/2012ISSUE FOR DEVELOPMENT APPLICATION

0506/06/2012AMENDMENTS TO SUIT CLIENT COMMENTS

0627/07/2012ROAD 01-ROAD 02 INTERSECTION AMENDED

DATE

DESCRIPTION

BY

VER

APP

REVISIONS

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ACEA

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Endorsed
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BY: TOBY TAMES
BE (Hons) GradDipMgt CPESC CPEng MIEAust.
Business Unit Manager

SIGN:

DATE:

Client:

JACFIN PTY LTD

Project:

LOT A BURLEY ROAD, HORSLEY PARK EMPLOYMENT PRECINCT
CIVIL ENGINEERING WORKS FOR DEVELOPMENT APPLICATION

Drawing:

GENERAL LAYOUT PLAN

Drawn by:
VP

Design by:
MP

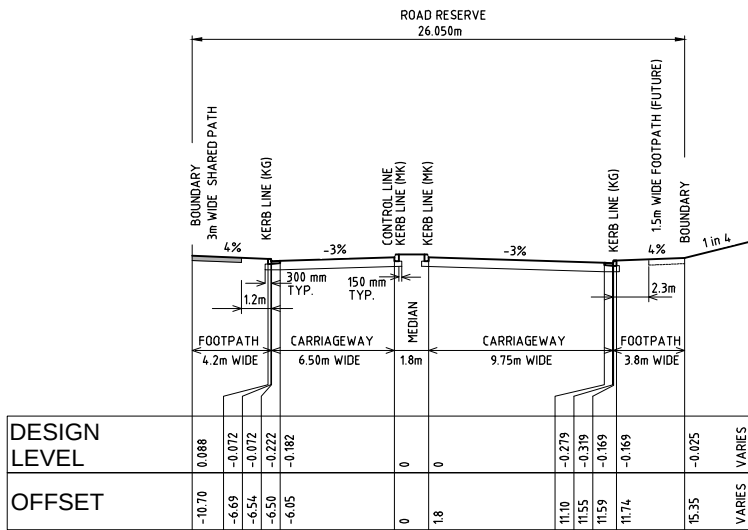
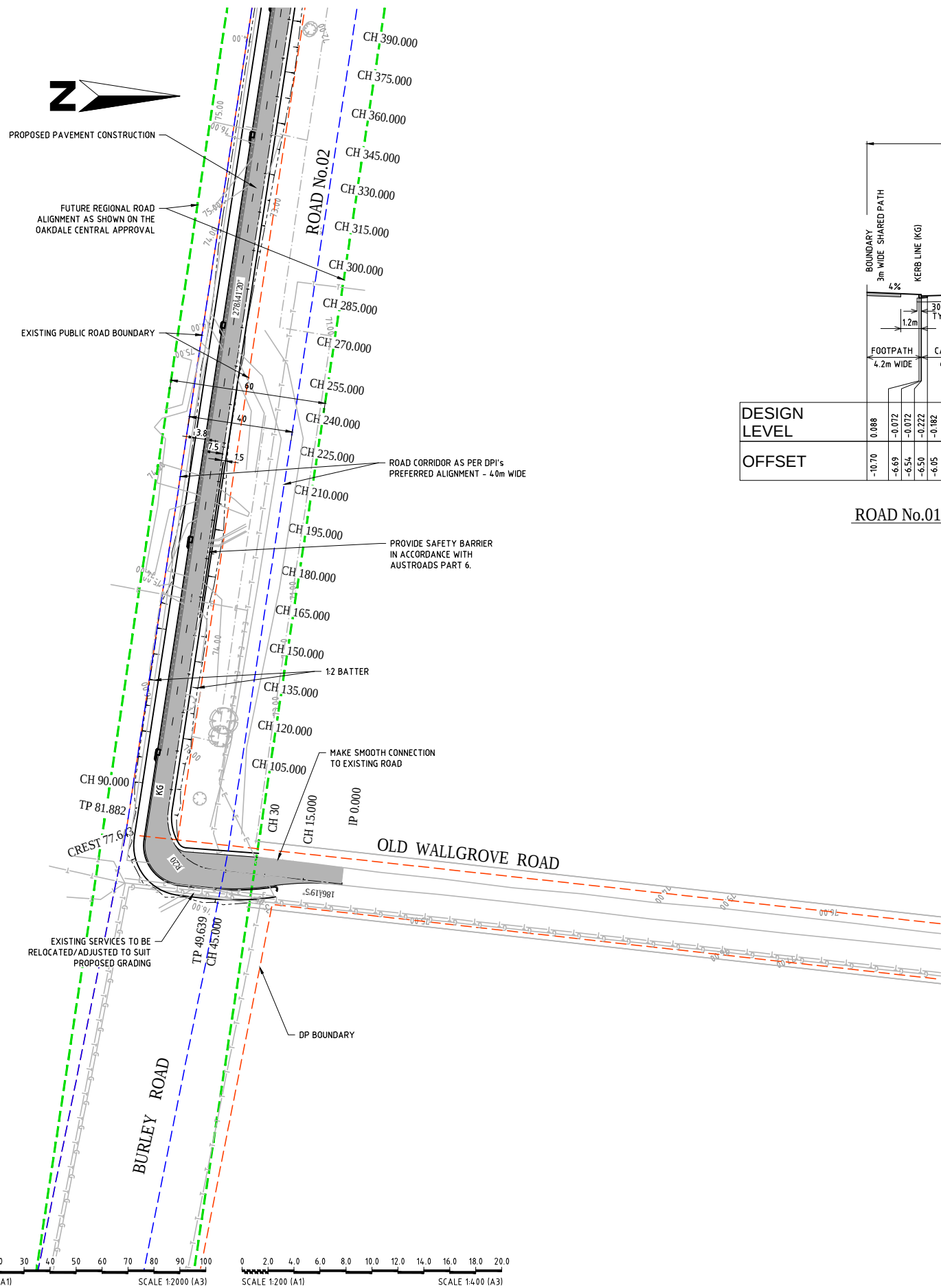
Project No:
X10135

Drawing No:
001

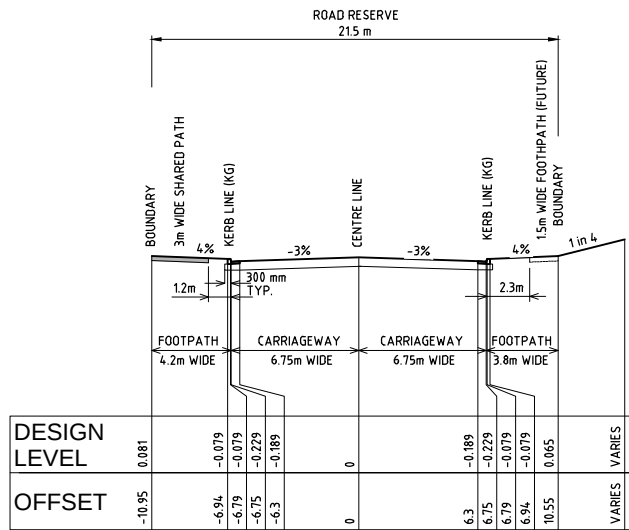
Scale(A1):
1:5000

Revision:
06

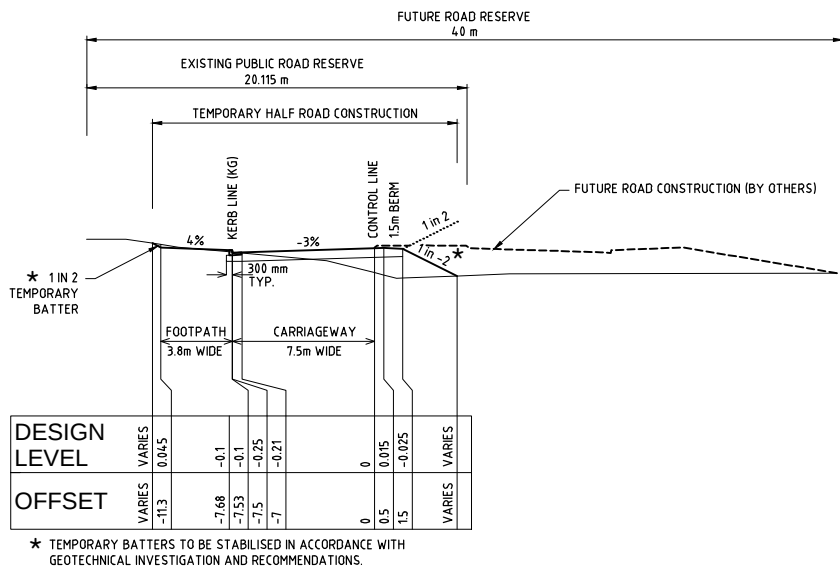
FOR CONTINUATION REFER TO DRAWING No. 102



ROAD No.01 TYPICAL SECTION (CH0-180)
Scale: 1:200



ROAD No.01 TYPICAL SECTION (CH180-450)
Scale: 1:200



ROAD No.02 TYPICAL SECTION
Scale: 1:200

DEVELOPMENT APPLICATION

REV	DATE	DESCRIPTION	BY	VER	APP
0A	8/12/2010	PROJECT PLAN DESIGN	MN	PF	TT
00	07/12/2010	AMENDED LAYOUT	MP	PF	TT
01	21/05/2012	ISSUE FOR CLIENT REVIEW	MP	CB	TT
02	22/05/2012	ISSUE FOR DEVELOPMENT APPLICATION	MP	CB	TT
03	24/05/2012	ISSUE FOR DEVELOPMENT APPLICATION	MP	CB	TT
04	29/05/2012	ISSUE FOR DEVELOPMENT APPLICATION	MP	CB	TT
05	6/06/2012	AMENDMENTS TO SUIT CLIENT COMMENTS	MP	CB	TT
06	27/07/2012	ROAD 01-ROAD 02 INTERSECTION AMENDED	MP	CB	TT

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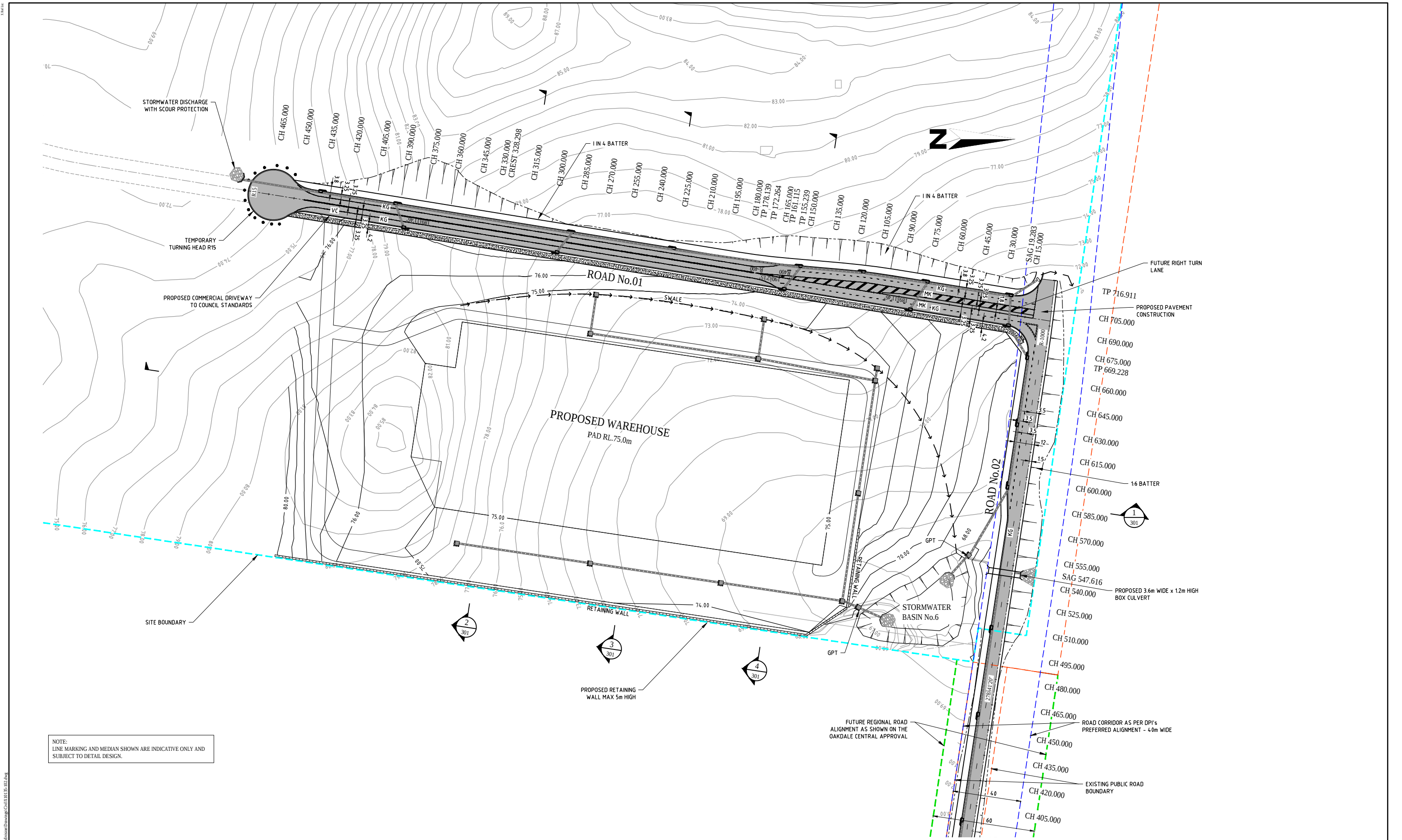


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JACFIN PTY LTD
Project:
LOT A BURLEY ROAD, HORSLEY PARK EMPLOYMENT PRECINCT
CIVIL ENGINEERING WORKS FOR DEVELOPMENT APPLICATION

Drawing:
ENGINEERING PLAN
SHEET 1 OF 2
Drawn by: VP
Design by: MP
Project No: X10135
Drawing No: 101
Revision: 06
Scale(A1):
1:1000
1:200



NOTE:
LINE MARKING AND MEDIAN SHOWN ARE INDICATIVE ONLY AND
SUBJECT TO DETAIL DESIGN.

0 10 20 30 40 50 60 70 80 90 100
SCALE 1:1000 (A1)
SCALE 1:2000 (A3)

0A	8/12/2010	PROJECT PLAN DESIGN	MN	PF	TT
00	07/12/2010	AMENDED LAYOUT	MP	PF	TT
01	21/05/2012	ISSUE FOR CLIENT REVIEW	MP	CB	TT
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03	24/05/2012	ISSUE FOR DEVELOPMENT APPLICATION	MP	CB	TT
04	29/05/2012	ISSUE FOR DEVELOPMENT APPLICATION	MP	CB	TT
05	6/06/2012	AMENDMENTS TO SUIT CLIENT COMMENTS	MP	CB	TT
06	27/07/2012	ROAD 01-ROAD 02 INTERSECTION AMENDED	MP	CB	TT
REV	DATE	DESCRIPTION	BY	VER	APP
REVISIONS					

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Business Unit Manager
SIGN:
DATE:

Client:
JACFIN PTY LTD
Project:
**LOT A BURLEY ROAD, HORSLEY PARK EMPLOYMENT PRECINCT
CIVIL ENGINEERING WORKS FOR DEVELOPMENT APPLICATION**

Drawing:
ENGINEERING PLAN SHEET 2 OF 2
Drawn by: VP
Design by: MP
Project No: **X10135**
Drawing No: **102**
Revision: **06**
Scale(A1): **1:1000**

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