



Form 1 - Responsible Authority Report

(Regulation 12)

Application Details:	Neighbourhood Shopping Centre - Harvest Lakes Village Centre
Property Location:	Lot 2176 Flourish Loop and Lots 2178 & 2179 Lyon Road, Atwell
DAP Name:	Metro South-West JDAP
Applicant:	MGA Town Planners
Owner:	Fabcot Pty Ltd
LG Reference:	6013953
Responsible Authority:	City of Cockburn
Authorising Officer:	Troy Cappellucci – Senior Statutory Planning Officer
Application No and File No:	DAP12/008, 6013953
Report Date:	8 February 2013
Application Receipt Date:	4 December 2012
Application Process Days:	66
Attachment(s):	<ol style="list-style-type: none">1. Location Plan2. Floor Plans and Elevations3. Public Interest Assessment for Liquor Store4. Schedule of Submissions received5. Riley Consulting Traffic and Parking Study

Recommendation:

That the Metro South-West Joint Development Assessment Panel resolves to:

Approve the Development Assessment Panel Application for the development of the Neighbourhood Shopping Centre - Harvest Lakes Village Centre and related land uses on Lot 2176 Flourish Loop and Lots 2178 & 2179 Lyon Road, Atwell, in accordance with Clause 10.3 of the City of Cockburn Town Planning Scheme No. 3, and the Metropolitan Region Scheme, as depicted on plans dated 4 December 2012, subject to the following conditions:

1. The submission of a schedule of materials, colours and finishes for assessment and approval by the City prior to lodgement of a Building Permit.
2. All off-street parking and access thereto shall comply with Australian Standard 2890.1 to the satisfaction of the City.
3. The construction of (36) on-street car parking bays as marked in RED on the approved plans in Lyon Road and Flourish Loop. Design details shall be provided for assessment and approval by the City prior to lodgement of a Building Permit.
4. The provision of on-site motorcycle parking in the vicinity of the supermarket and the buildings proposed to front Lyon Road. Details shall

be provided for assessment and approval by the City prior to lodgement of a Building Permit.

5. The loading dock shall be provided with suitable visual screening either by way of fabricated screening devices ' or the use of landscaping. The screening shall be in the vicinity of the loading dock for the supermarket, adjacent to Gibbs Road., Details of the screening method, placement and design shall be submitted to the City for approval prior to lodgement of a Building Permit.
6. Bicycle parking bays at the rate of 1 per 200m² GLA designed to comply with Australian Standard 2890.3 are to be provided on site clear of any vehicular carriageway. Details of the bicycle parking shall be submitted to the City for assessment and approval prior to lodgement of a Building Permit.
7. Staff bicycle parking shall be secured in a manner that does not impact on staff parking provision at the rear of the supermarket building. Details shall be submitted to the City for assessment and approval prior to lodgement of a Building Permit.
8. All paths extending around the perimeter of the site shall be a minimum of 2.0 metres wide.
9. All external services such as air conditioning equipment, hot water units, satellite dishes, exhaust vents etc. must be a similar colour to the roof and screened from view from adjacent streets and/or the public domain.
10. The installation of outdoor lighting shall be in accordance with the requirements of Australian Standard AS 4282-1997: 'Control of the Obtrusive of Outdoor Lighting'.
11. Earthworks over the site and batters shall be stabilised to prevent sand or dust blowing, with appropriate measures implemented within the time and in the manner directed by the City in the event that sand or dust is blown from the site.
12. No building or construction related activities associated with this approval causing noise and/or inconvenience to neighbours shall occur between the hours 7.00pm and 7.00am, Monday to Saturday, and shall not occur at all on Sundays or Public Holidays without the prior written consent of the City.

All waste and recycling must be contained within bins. These must be stored within the buildings or within an external enclosure located and constructed to the satisfaction of the City. This information should be submitted for approval by the City's Statutory Planning Department prior to submitting a Building Permit application.

13. Plans and descriptions of all signs for the proposed development (including signs painted on a building) **shall be submitted to and approved by the City as a separate application for development approval.** The application for signage (including detailed plans) and appropriate fee for a sign licence must be submitted to the City prior to

the erection or painting of any signage on the site/building.

14. A Construction Management Plan shall be submitted to and approved by the City prior to lodgement of a Building Permit. The CMP is to detail how the following matters are proposed to be managed:

- a) access to and from the site;
- b) the delivery of materials and equipment to the site;
- c) the storage of materials and equipment on the site;
- d) other matters likely to impact on surrounding properties;
- e) the parking arrangements for contractors and subcontractors; and
- f) management of construction waste.

Footnotes:

1. The application has been determined by the JDAP on the basis of the plans and information provided to the City for assessment.
2. Nothing in the approval or the above conditions shall excuse non-compliance with any and all other relevant written laws and/or legislation in the commencement and carrying out of the development.
3. In the event there are any questions regarding the requirements of this approval, or the planning controls applicable to the land and/or location, the City's Statutory Planning Services team should be consulted.
4. On-site stormwater retention is to be designed for a 1 in 100 year, 24 hour duration storm event.
5. The applicant is advised to liaise with the City's Statutory Planning Department in relation to complying with Condition Nos. 1, 3-7, and 10.
6. With respect to conditions 10-14 & 16, the City's objective is to ensure the construction of the development is undertaken in a manner that has minimal impact on adjoining and adjacent landowners, and the local community generally.
7. Landscaping of the site and surrounds shall be subject of a separate Development Application and approval by the City prior to lodgement of a Building Permit. The plan shall include the following: -
 - a. those areas to be reticulated or irrigated;
 - b. verge treatments;
 - c. specific species types and numbers; and
 - d. lighting to pathways, communal space and parking areas
8. Prior to the lodgement of a Building Permit, the applicant is advised to liaise with the City's Health Department to ensure noise emissions and impacts on nearby noise sensitive premises are addressed.
9. With respect to condition 12:

- a. All proposed clearance strategies, filling and dust suppression measures undertaken by the developer must be effective in controlling dust and sand drift from the site to ensure that adjacent properties are not adversely impacted upon. The burning of vegetation is not permitted on site.
 - b. The City of Cockburn Local Government Act Local Laws 2000 requires a detailed Dust Management Plan to be submitted to the City's Health team. The Dust Management Plan must comply with the City's "Guidelines for the Preparation of a Dust Management Plan for Development Sites within the City of Cockburn". The plan must be approved by an authorised officer prior to the commencement of any earthworks on site.
 - c. The developer is advised that the City's Health Service is unable to permit bulk earthworks on Class 3 and 4 development sites between 1 October and 31 March the following year.
10. If the development the subject of this approval is not substantially commenced within a period of two (2) years the approval shall lapse and be of no further effect.
11. Where an approval has so lapsed, no development shall be carried out without the further approval to commence development having first been sought and obtained.

Background:

Insert Property Address:	Lot 2176 Flourish Loop and Lots 2178 & 2179 Lyon Road, Atwell
Insert Zoning	MRS: Urban
	TPS: Development Zone (DA10) Local Centre Zone (under Local Structure Plan)
Insert Use Class:	Various – See Report
Insert Strategy Policy:	-
Insert Development Scheme:	City of Cockburn Town Planning Scheme No. 3
Insert Lot Size:	2.0625ha
Insert Existing Land Use:	Vacant Land
Value of Development:	\$10.5 million

Background:

The development application the subject site of this report is for a neighbourhood shopping centre on land abutting the northern side of Gibbs Road in Atwell, approximately 250 metres east of Kwinana Freeway.

The land is zoned 'Urban' under the Metropolitan Region Scheme and 'Development' under the City of Cockburn's Town Planning Scheme No. 3 (TPS).

the Development zone under the City's TPS provides for development in accordance with a structure plan prepared and adopted under the Scheme. The Harvest Lakes Local Structure Plan (LSP) which applies to the land was endorsed by the Western Australian Planning Commission (WAPC) in 2006. The Harvest Lakes Village Centre Design Guidelines were prepared in 2009. In May 2011, the City adopted a modified

Local Structure Plan (LSP) for the location referred to as 'Harvest Lakes Village Centre'.

Under the LSP, the land is identified as being within the Local Centre zone. This generally accords with the zone with the same name under the TPS. For assessment purposes, the land use classifications and provisions applicable to development within the TPS3 Local Centre zone have been applied. The adopted Detailed Area Plan (DAP) for the Harvest Lakes Village Centre (Local Centre) in March 2012 clarifies a maximum retail floor space potential of 5000m² as being permitted within the DAP area.

One of the requirements for such an application under the Harvest Lakes LSP and DAP is a comprehensive pre-lodgement process. A submission of the proposed development was provided to LandCorp during May 2012, in order to enable early consideration of site plans and likely variations to the planning framework, particularly the DAP. LandCorp (owner/vendor) has assessed the proposal and supported the application noting its compliance with the Design Guidelines applicable to the site.

In addition, officers of the City's Statutory Planning team have met numerous times with the project manager, architect and planning consultants prior to receipt of the application. At these meetings, the merits of the proposal, along with a range of matters have been discussed at length, with the plans and elevations evolving over that period resulting in the plans subject of the application.

Details:

The application received for the subject land is for a neighbourhood shopping centre development and related land uses. In detail, the proposal comprises the following:

- A supermarket ('full-line' Woolworths) addressing Gibbs Road;
- Office tenancies fronting Lyon Road;
- A commercial and retail tenancies adjoining the northern side of the Woolworths;
- Liquor store at the north western corner of the building;
- Commercial and retail tenancies fronting the eastern side of Lyon Road; and
- A passive recreational area at the corner of Flourish Loop and Lyon Road linking to the established open space area north of the Village Centre creating a civic space.

A total of 362 parking bays including 36 on-street bays are proposed in association with the development. Access to which will be gained via entry points from Flourish Loop and Alliance Entrance. Parking across the subject site is distributed at ground level and is sleeved at the rear of tenancies.

In support of the application, the applicant states the proposal will result in the following:

- *"The establishment of a legible public realm, featuring strong pedestrian connectivity with shop tenancies addressing all pedestrian connections;*
- *A design facilitating orderly traffic movement throughout the subject land, particularly deliveries;*

- *Parking provision generally consistent with rates accepted under the Village Centre Structure Plan and Detailed Area Plan;*
- *The provision of employment opportunities including office floor space able to be accessed conveniently by local residents improving local employment self-sufficiency;*
- *The subject land is located in close proximity to the Kwinana Freeway facilitating convenient access by private vehicles. The Cockburn Central Train Station is located 3.3km to the north and is accessible by bus transfer and a new train station is planned in Atwell in close proximity to the centre;*
- *The development of an attractive shopping precinct, including the establishment of a Woolworth's supermarket, enabling more convenient access to groceries in addition to other goods and services sourced on a day to day basis by local residents. The proposal will add to the range of amenities in a timely manner, for the benefit of local residents and visitors;*
- *A contemporary design that achieves a desirable sense of enclosure and definition of public spaces; and*
- *Public realm treatments and future landscaping that will result in an urban environment having a high standard of visual amenity and functionality”.*

Legislation & Policy:

The legislative framework providing for the assessment and determination of the subject application is as follows:

- The City of Cockburn Town Planning Scheme No. 3 (application to be assessed in accordance with the relevant Parts 4, 5, 6 and 9, and determined in accordance with the provisions of Part 10 of the Scheme – ‘Procedure for Dealing with Applications’);
- The Local Structure Plan applicable to the land and location. The LSP details planning considerations in the area of landuse (via the Local Centre classification); and
- The Detailed Area Plan required by the LSP applicable to the land and location. The DAP details planning considerations for the development such as nominated floor area, setbacks, heights, orientation and facades, awnings and screening of services.

Consultation:

Public Consultation

The application was advertised for public comment in accordance with the Scheme requirements as the development includes a use not listed in the Town Planning Scheme Zoning Table (Liquor Store). A liquor store is an unlisted use which automatically requires public consultation prior to determination.

The application was advertised the following ways:

- Two (2) signs advising of the proposal were erected on-site;
- A Public Notice advertisement was twice placed in the local newspaper (the Cockburn Gazette, appearing on Tuesday the 1st and 8th of January);
- The development application plans and accompanying information were placed at the front counter of the City's Administration building;

- The application and accompanying details were listed on the City's website under the Public Consultation 'QuickLink'; and
- A letter advising of the proposal was sent to properties within a 200 metre radius around the property boundary of the subject proposal due to the proposed liquor store (unlisted use) component.

The closing date for submissions in respect of the City's consultation was the 9th of January 2013. This provided a three (3) week submission period. The results of the public consultation are covered in greater detail below.

Consultation with other Agencies or Consultants

The application was referred to the WAPC for consideration and comment as it involves a proposal that abuts the Kwinana Freeway Metropolitan Region Scheme (MRS) road reservation. In response, the Department of Planning (DoP) in an email to the City dated 15 January 2013 confirmed that on the basis that the subject land abuts a 'Primary Regional Road' and therefore may require the comments of Main Roads Western Australia. As such, the DOP have no comments on the proposal.

Given the above, the application was referred to Main Roads for consideration and comment. In response, Main Roads advises that they have assessed the traffic impact report and have no objections to this development. They do note however that with the proposed PTA car parking being constructed on the western side of the Kwinana Freeway, it will add significant pressures to the surrounding road networks within this precinct, particularly the single land bridge at the intersection of the Freeway and Gibbs Road.

Planning assessment:

The following comments deal with the compliance of the proposal relative to the planning controls that apply to the subject land and location. The majority of planning considerations applicable in the assessment of the proposal are contained within the City's TPS.

TPS Considerations

Land Use

The subject land is positioned at the centre point of four suburban locations within the City of Cockburn. At present however, these suburbs (Atwell, Hammond Park, Aubin Grove and Success) are largely void of retail, service and 'lifestyle' land uses, with the exception of Gateways Shopping Centre located approximately 2.8 kilometres north of the subject site at the intersection of Beeliar Drive and the Kwinana Freeway. As a result, the mix of use and level of service to be provided to these suburbs by the proposed development accords with the City's expectations for the land and location. To be named 'Harvest Lakes Village Centre', the subject proposal is expected to develop as an important facility providing for the local needs of the surrounding community.

The proposed 'shop', 'restaurant (café)' and 'office' uses are listed as discretionary 'D' uses in the Scheme for the Local Centre Zone. Use classes that are not listed in the table include the 'liquor store', which is treated as a discretionary 'A' use. The application was advertised for public comment due to the proposed liquor store being considered an 'A' use in the Scheme.

The majority of the future tenancies associated with the supermarket and the liquor store are identified as 'retail' and 'commercial' however this is to allow for various potential uses which may have a range of different definitions under TPS3. It is considered that establishment of uses in those tenancies identified on the plans where they are a P use in the Scheme will not require subsequent and on-going change of use applications to be lodged with the City for development approval. The retail/commercial categories depicted on the tenancies in the land use plan are defined as follows, with reference to land uses identified under TPS3:

Retail: Shop, Fast Food Outlet, Café/Restaurant, Lunch Bar, and Convenience Store

Commercial: Office, Bank, Betting Agency, and Veterinary

The liquor store is identified separately, given that it will be a licensed premise and this use cannot be established in another tenancy without a further approval. The supermarket will not accommodate any of the commercial uses listed above and will remain as a 'shop' use. A Tavern tenancy was initially discussed for the subject site but has been removed from the application during the LandCorp approval process for the shopping centre. The result being that the tenancy previously considered for a tavern is now identified with a 'commercial' use annotation.

Considering the detailed planning for the facility already undertaken, the range of uses proposed are considered to be consistent with the objectives of the Local Centre Zone under the Scheme.

Liquor Store

Advertising of the application was required due to the liquor store component being included within the proposal. The City has recently adopted a Local Planning Policy titled Licensed Premises and a Position Statement similarly titled. The Policy and Position statement requirements have been addressed in the application. This involved the applicant submitting information relevant to the Public Interest Assessment process required by Liquor Licensing processes.

The applicant's supporting information forms Attachment 3. In reviewing this information the City's Health Manager raises no objection to the activity forming part of the development. The provision of a Liquor Store as part of the local centre development is entirely consistent with the purposes of a neighbourhood centre and there is an absence of outlets in this area.

Given the potential for adverse impacts associated with the proposed liquor store, a 400 metre walkable catchment has been applied for the development. As a result, no sensitive premises are within 400 metres of the subject site other than a small number of local parks. However, from these local parks, the liquor store will not be visible due to the concealed location of the liquor store within the Village Centre development.

The closest sensitive premise aside from three (3) local open spaces is located 800 metres to the northeast of the subject site, being the Harmony Primary School and Anglican Church. Given the proposed liquor store will not have its frontage to this

school, not be visible from the school as well as being separated from the school by an established residential neighbourhood, the impact of the liquor store on the school is minimal.

Design

The City's standards for commercial development and the "Village Centre" (Local Centre) Detailed Area Plan for the site, provide standards for:

- Setbacks;
- Building Height;
- Amenity;
- Orientation and Facades;
- Convenience and functionality;
- Signage and Advertising; and
- Landscaping.

As an alternative to addressing these items specifically, the following comments provide an appreciation of the principles and objectives agreed between the applicant, Landcorp and the City during the pre-lodgement process for the purposes of informing the layout and design of the development.

Site Orientation

It was agreed during the pre-lodgement discussions on the subject site that a pedestrian connection on the western side of the main street of Lyon Road, be incorporated to the north of the supermarket. The DAP identifies that those commercial premises adjoining the pedestrian connection should front Lyon Road. The proposal however is for commercial tenancies, including the liquor store, fronting the northern side of the supermarket to be fronting the pedestrian connection as they are not accessible from Lyon Road.

The benefit of the proposed layout toward the pedestrian connection is the potential to extend the distribution of activity from the main street in an continuous manner via the pedestrian connection north of the supermarket. Given all pedestrian linkages throughout the town centre will be activated by commercial tenancy frontages, the proposal will provide a more attractive and desirable space north of the supermarket as well as a sense of surveillance from the retail premises, while also activating the pedestrian access way. This improves the relationship of the centre to the street environment and addressing that aspect of Crime Prevention Through Environmental Design (CPTED)

A further benefit of the proposed layout is the liquor store location. Given the premises may operate after normal business hours, it will ensure that there is surveillance after hours as well as a high level of activation of the pedestrian access way. The liquor store will relate strongly to the entrance from the main car parking to the pedestrian access way.

A range of commercial uses along the main street will support the genuine activation of the main street environment. Ultimately there will be pedestrian attractors (commercial premises) either side of Lyon Road. The relationship of the open commercial built form will provide a sense of security in the public realm through casual surveillance from the commercial and retail outlets, to all pedestrian

connections. This will support walkability and maximise the potential for alternative modes of transport to the car.

Under the Detailed Area Plan, all buildings fronting Lyon Road are to have a nil setback. A shop (retail) tenancy addressing the western side of the main street and fronting the small pedestrian mall at the northern side of the supermarket is setback between 0.1 – 2.5 metres. This tenancy marks the entrance to the forecourt area external to the supermarket. This setback variation will however promote an improved visual connection for pedestrians to the central forecourt of the Village Centre. In addition, it will allow the forecourt area to spill onto the main street and mirrors the pedestrian access depicted on the DAP. This minor variation is supported as it achieves a superior design outcome.

Pedestrian Experience & Connectivity

The City is keen to ensure the various pedestrian environments in and around the development cater to a positive and safer experience for customers and therein, the development of a successful local centre. To achieve this objective the following initiatives have been incorporated into the plans:

- The development has been designed to not encourage pedestrian movement through the car park in a north-south alignment and avoids identifying any such pedestrian routes. Dedicated pedestrian links extend predominately east-west throughout the site. These east-west links provide for pedestrian movement, separate to and protected from vehicular movement in the large western car park. Additionally, the east-west pedestrian link is to provide an attractive, pedestrian experience, connecting the supermarket building with the retail tenancies to the east and north of the supermarket and ultimately to the future train station.
- Perimeter pedestrian paths, providing connectivity around, into and out of the site.
- All the pedestrian walkways on the main street have awnings/canopies providing weather protected environments for pedestrian refuge during inclement or hot weather.

During the pre-lodgement process, the particular detail about the architectural form/views to the shop facades was a major consideration. As a result, a bus shelter has not been provided due to the adverse effect a shelter would have along the main street. The adjacent awnings from the development will provide ample weather protection while people wait for the bus at this location.

Building Design

Supermarket buildings are difficult to disguise given their size, basic form and the use of pre-fabricated construction methods. In order to provide an aesthetically pleasing development, the designers have focused on ensuring the main building is sufficiently detailed and is to be finished to a high standard. These aspects to the built form and the co-ordinated use of colours and materials will result in an interesting and appropriate response to the local setting.

It is recommended that a condition requiring details of all external materials, finishes and colour details of the building are to be provided for approval by the City prior to

commencement of construction. This will ensure the built form is completed to the standards discussed and agreed during the pre-lodgement process. .

Interface with Adjoining Land

The proposed site adjoins three (3) other lots. The adjoining lot to the north of the supermarket car park is Lot 2177 (No. 60) Flourish Loop. The intention for this land is residential apartments. This site has its own Detailed Area Plan where the required setback to the car park (south from No. 60 Flourish Loop) is a minimum of 1.5 metres. Given this property only directly abuts the subject site by way of car parks, the impact of this development proposal on the adjoining northern lot is minimal.

Similarly, with the adjoining lots to the east of the subject site at Lots 2180 and 2181, these lots are adequately separated from the subject site area by means of car parking areas and a internal access ways. On 14 June 2012 a Child Care Centre development was approved on Lot 2181 while Lot 2180 is intended to be a medical centre site.

These adjoining sites and their intended/proposed uses along with the nature of their distribution will ensure the Harvest Lakes Village Centre will embody Main Street urban form principles. .

Signage

Signage is to be subject of future development applications prior to occupation.

Car Parking

The required car parking rates are listed under Part 5 of the Scheme. Based on the floor areas proposed a total of 369 car parking bays are required where 357 are proposed. Of the 357 36 bays are on-street car parking bays provided external to the site.

The raw car parking requirement contains no mitigating factors and assumes all tenancies will be open at the same time, and generating demand for parking at a consistent rate across the course of the day and evening. Centres do not trade in this fashion with there being a range of types of uses each with different operating characteristics including hours of trade. For this reason the Scheme provides reciprocal parking provisions for commercial developments.

In light of the above, the disparity in parking numbers proposed relative to the technical requirements of the TPS is considered acceptable. The amount of parking is supported for the following reasons. Some of the supporting reasons presented here in relation to the parking provision have been provided by the applicant and are supported by the City also:

- An analysis of peak parking demand has been undertaken by Riley Traffic and Transport Consultants. The results indicate that on a Thursday PM peak period; a parking attraction of 250 vehicles can be expected. When applied to the Saturday traffic profile, it can be seen that a demand for 353 bays can be expected (this is likely to reduce due to Sunday trading);

- The Saturday parking demands meet the proposed provision of parking in that part of the Village Centre included in the development application and one could suggest that no surplus is provided. However, this will not be the case as the Harvest Lakes local centre needs to be considered as a whole. There are other future land uses within the local centre that are not part of this application, being the approved child care premise on Lot 2181 and the intended medical centre on Lot 2180. The Harvest Lakes Village centre plan indicates that an additional 34 on-street bays will be provided on Alliance Entrance (12 are already provided), 34 bays can be provided adjacent to the child care centre and 26 bays for the medical centre;
- On the peak Thursday period, sufficient parking is provided to meet forecast demands and thus the child care and medical centres will feature sufficient parking based on TPS3 requirements to meet their own needs. It can be expected that on a Saturday, these two uses are unlikely to operate and thus an additional 94 parking bays will be available within the entire Village Centre;
- The level of parking will service the development for the majority of the time; and will serve to reduce the level of vehicle movement throughout the proposed main street. Any additional parking would encourage more undesired traffic generation on site. The proposed level of parking will result in a safer and more pedestrian orientated main street environment; and
- The development will provide legible and safe pedestrian and cycle access to the new local shopping facilities, encouraging a reduction in local traffic generation. Bicycle parking stations and end of trip facilities encourage patronage by alternative modes of transport.

The short fall of 12 bays represents a 3% variation. Section 5.6.1 of the Scheme allows for variation of any standard prescribed by the Scheme. There has been an announcement by the Government and alternative government that there will be a train station built at Success immediately adjacent to the proposed centre. It is also understood that the main bus route (No. 527) for the area will be altered to stop directly outside the centre on Lyon Road as opposed to within 100m of the centre. There is also a major bicycle route along the Kwinana Freeway which will provide direct access to the Centre and there is an extensive footpath network. Local residents will have a wide range of choice for access to the Centre and therefore a small parking variation raises no concerns as to whether the development meets the objectives of the Scheme with respect to parking.

In supporting this number of bays it is noted the parking standards contained within the City of Cockburn's TPS are considered high and generally more onerous than standards in a number of accepted traffic related documents, including: *Parking Generation 4th Edition, Institute of Transportation Engineers, 2010 (ITE)*, and the *Guide to Traffic Generating Developments, Version 2.2, Roads and Traffic Authority, 2002 (RTA)*. This advice is also contained in the attached Riley Consulting Traffic and Parking Study.

Traffic

The City's Transport Engineer considers the methodology, assumptions and findings of the Traffic and Parking Assessment to be generally sound, and supports the

conclusions that the proposed accesses to the local centre indicate excellent levels of service will be experienced during the peak period of road network and local centre activity. Only Lyon Road north of Gibbs Road is shown to experience a reduced level of service. However, as a pedestrian focussed street, this will provide a slow speed environment and stimulate vibrancy for the centre.

Conditions proposed by the Traffic Engineer and in the recommendation include:

- All off-street parking and access thereto complying with Australian Standard 2890.1;
- The provision of on-site motorcycle parking in the vicinity of the supermarket and the buildings proposed to front Lyon Road, the details in respect of which are to be provided for assessment and approval by the City prior to lodgement for a Building Permit;
- All paths extending around the perimeter of the site shall be a minimum of 2.0 metres wide.
- The requirement for the loading dock to be provided with suitable visual screening (either by way of fabricated screening devices 'built' or the use of in the form of landscaping.) The screening shall be in the vicinity of the loading dock for the supermarket, adjacent to Gibbs Road, the details in respect of which are to Detail the screening method, placement and design, shall be provided for assessment and approval by the submitted to the City for approval prior to lodgement for of a Building Permit; and
- Bicycle parking bays (at the rate of 1 per 200m² gross leasable area) not shown as part of this application, are to be positioned to enable user access clear of any vehicular carriageway, the details in respect of which are to be provided for assessment and approval by the City prior to lodgement for a Building Permit. All bicycle parking complying with Australian Standard 2890.3;

In addition, the site will obviously generate pedestrian traffic from local residential areas that needs to be able to get to the site safely and conveniently. The western leg of the roundabout at the Gibbs Road/Lyon Road intersection and the southern leg of the roundabout at the Lyon Road/Alliance Entrance intersection have not been provided with pedestrian crossing facilities.

In addition, the footpath adjacent to the site on the north side of Gibbs Road, between Lyon Road and Alliance Entrance, is only 1.5 metres wide and not consistent with the shared path standard of path that has been provided in either direction along Gibbs Road. This is important considering the District Distributor (B) road function that Gibbs Road has, as adopted by the Council in August.

The following is a list of recommendations to be implemented at the Building Permit stage:

Recommendation: Provide pedestrian crossing facilities on the west leg of the roundabout at the Gibbs Road/Lyon Road intersection and the south leg of the Lyon Road/Alliance Entrance intersection to the satisfaction of the City.

Recommendation: Install a 2.5 metre wide shared path on the north side of Gibbs Road, between Lyon Road and Alliance Entrance, to the satisfaction of the City.

To encourage residents to cycle to the village centre it is important that convenient bicycle parking is available in the road reserve and areas accessible to the public to securely park their bicycle.

Recommendation: Provide bicycle parking facilities on the adjacent roads and in publicly accessible areas, to the satisfaction of the City.

Considering the increased pedestrian and vehicle activity that should be generated by the development and the nil setback to buildings on Lyon Road there is an increased risk of a crash at the busy Gibbs Road/Lyon Road intersection. In the interests of safety it would be prudent to install crash protection on the north-west and north-east corners of the intersection to minimise the likelihood of an errant vehicle leaving the roundabout and colliding with a pedestrian or building. Omni Stop Energy Absorbing bollards would be the preferred treatment in this situation as they would be more aesthetically pleasing and maintain pedestrian access better than say W-beam type crash barriers.

Recommendation: Install crash attenuation bollards on the north-west and north-east corners of the Gibbs Road / Lyon Road intersection, to the satisfaction of the City.

The Landscape Layout (Drawing No. 2810 009 DA-001) indicates that vegetation is proposed on the north-east corner of the Lyon Road/Gibbs Road intersection and in the median/splitter islands on Lyon Road at Gibbs Road and Alliance Entrance. Planting in those locations is not supported as there is the potential for landscaping to restrict sight lines and they would be hazardous locations for City staff to perform maintenance on the plants.

Recommendation: No vegetation is to be planted on the north-west corner of the Gibbs Road/Lyon Road intersection or in the splitter islands at the roundabouts on Lyon Road.

The site plan (Drawing No 2810 002 DA-001) shows the turning path for a semi-trailer entering the site via Flourish Loop but the circulation path for a semi-trailer leaving the site through the roundabout is not shown. It is important that the vehicle is able to exit the site on the correct side of the road to avoid a crash. In addition, the geometry of the roundabouts on Lyon Road at Gibbs Road and Flourish Loop needs to be checked to confirm that semi-trailers can negotiate them within the existing traffic lanes.

Recommendation: The applicant shall demonstrate that semi-trailers entering and exiting the site onto Flourish Loop and at the roundabouts on Lyon Road can do so by circulating through the roundabouts within the existing traffic lane and on the correct side of the road.

The site plan (Drawing No 2810 002 DA-001) shows a traffic island at the easternmost entry to the site via Flourish Loop, which is intended to restrict vehicle movements to the driveway to left in/left out. Based on experience, that island is likely to have limited affect and there will be a reasonable amount of non-compliance by motorists wanting to exit the site. The design also restricts access to two adjacent parking bays and appears to obstruct pedestrian traffic along Flourish Loop.

Curiously, in the Access section of the Transport Assessment it states that access will be a simple tee intersection.

Recommendation: The design of the left in/left out treatment to the driveway on Flourish Loop is to be modified to maintain access to on-site car parking and maintain pedestrian movement along Flourish Loop and the applicant shall demonstrate that the treatment will effectively restrict turning movements to left in/left out.

Landscaping

The extent of landscaping proposed for the site has only been shown indicatively as a landscaping layout plan identifying the areas intended to be landscaped. During the pre-lodgement process, it was agreed that a condition would be placed requiring a landscaping plan being submitted to the City and approved prior to the lodgement of a Building Permit. As part of the required landscaping plan the City's Landscape Architect has advised the specific species to be used, establishment of landscaping process, irrigation and maintenance programs need to be detailed.

From the plan provided, the car park is provided with soft landscaping including garden beds, turf and shade trees, with trees provided at a rate of 1 per 7 car bays. The Officer's recommendation lists appropriate conditions to address the landscaping requirements.

Other

Public Consultation

Twenty-eight (28) submissions were received in response to the advertising of the proposal as a result of the liquor store component of the proposal. Of these, seven (7) object to the proposal and twenty-one (21) are in support. Of the seven (7) objections, five (5) specifically relate to the liquor store component of the development with the other two (2) objections being not based on the liquor store. Of the twenty-one (21) support submissions received, almost all offer qualified support for the development.

Support for the proposal is based on the following:

- Shopping facilities required in the area;
- Development needed to take some of the congestion from Gateways Shopping Centre;
- Since the liquor store is managed by Woolworths and has the same trading hours as other adjacent shops, problems, if any will be minimised; and
- Great for the community in terms of employment and activating the area.

Objection to the proposal is based on the following:

- Risk of an increase in crime;
- Another supermarket and liquor store when there are already sufficient shops in the area;
- The intersection on Gibbs Road is already busy and noisy so potential increase in traffic congestion;
- With the proposed railway station nearby, unruly people with alcohol influences may harass commuters leaving or arriving at stations and also shopping areas and nearby residences.

Officer's Comments on Submissions:

- The development will serve the local community as it continues to grow. This includes the remaining and currently undeveloped residentially zoned land in Atwell, Hammond Park, Aubin Grove and Success. The centre is required to provide local shopping needs to a growing population.
- Given the size of the local centre under the Structure Plan, further development is going to take place. This will include a child care and medical centres plus it will adjoin apartment and townhouse style development. These activities and higher residential densities will further contribute to the level of service expected to be offered by the local centre.
- The provision of a convenience liquor store in a neighbourhood activity centre is common throughout the Perth Metropolitan Region and facilitates the purchase of packaged liquor in conjunction with grocery shopping. The provision of a liquor store in local neighbourhood shopping centres is a convenience desired by a significant proportion of shoppers. The applicant has provided a range of additional information addressing these matters and the justification for a liquor store in this location is supported by the City. Management of anti social behaviour will be more effectively managed by the Centre Management and the operators of the Centre will be required by Liquor Licensing to have detailed management plans if granted a license.

Currently, a number of residents north of Gibbs Road and south of Bartram Road must travel approximately 1.5km – 2.5km in order to access a packaged liquor outlet located in conjunction with a supermarket in Atwell, Aubin Grove or Hammond Park (on the opposite side of the Freeway). Generally, neighbourhood centres serve a catchment radius of approximately 1km as described in State Planning Policy 4.2 – Activity Centres for Perth and Peel. In this respect the City considers that the local area is not oversupplied with packaged liquor outlets.

- Traffic on Gibbs Road, as a result of the proposed local centre, is in accordance with forecasts for the expected long term volumes. Gibbs Road as a connection to the freeway has been appropriately classified in the road hierarchy and is constructed to cater for the forecast volumes. The regional planning of the locality has not identified the use of local side street streets as an alternative route for regional movements. However, it can be expected that local residents will use local streets to access their local shopping facilities.

Conclusion:

The proposed development is consistent with the Structure Plan. Detailed Area Plan and the objectives for the Local Centre zone under Town Planning Scheme No.3. The development will fill the void that currently exists by way of local services in the areas of daily shopping, commercial and entertainment activities – the demand for which continues to grow as the location transitions towards complete residential build-out. The development will also contribute to the greater sustainability of the local environment via the proposed mix of landuse, providing the area with its own local indemnity which as a result will create a stronger sense of community.

To conclude, subject to the conditions contained in the recommendation, it is recommended the Metropolitan South West Joint Development Assessment Panel resolve to conditionally approve the development application in accordance with the Clause 10.3 of the City's Town Planning Scheme No. 3.

WOOLWORTHS HARVEST LAKES



Brownfalconer



ARCHITECTURAL DRAWING SCHEDULE

001	COVER SHEET
002	SITE PLAN
003	FLOOR PLAN - WEST
004	FLOOR PLAN - EAST
005	ELEVATIONS
006	STREET ELEVATIONS / SECTIONS
007	SECTIONS
008	ROOF PLAN
009	LANDSCAPE LAYOUT
010	AREAS PLAN
011	ARTISTS IMPRESSIONS
012	ARTISTS IMPRESSIONS
013	ARTISTS IMPRESSIONS

DA-001	ISSUED FOR COUNCIL LODGEMENT	15.11.12
ISSUE	REVISION	DATE

ARCHITECTURE
INTERIOR DESIGN
BUILDING SERVICES

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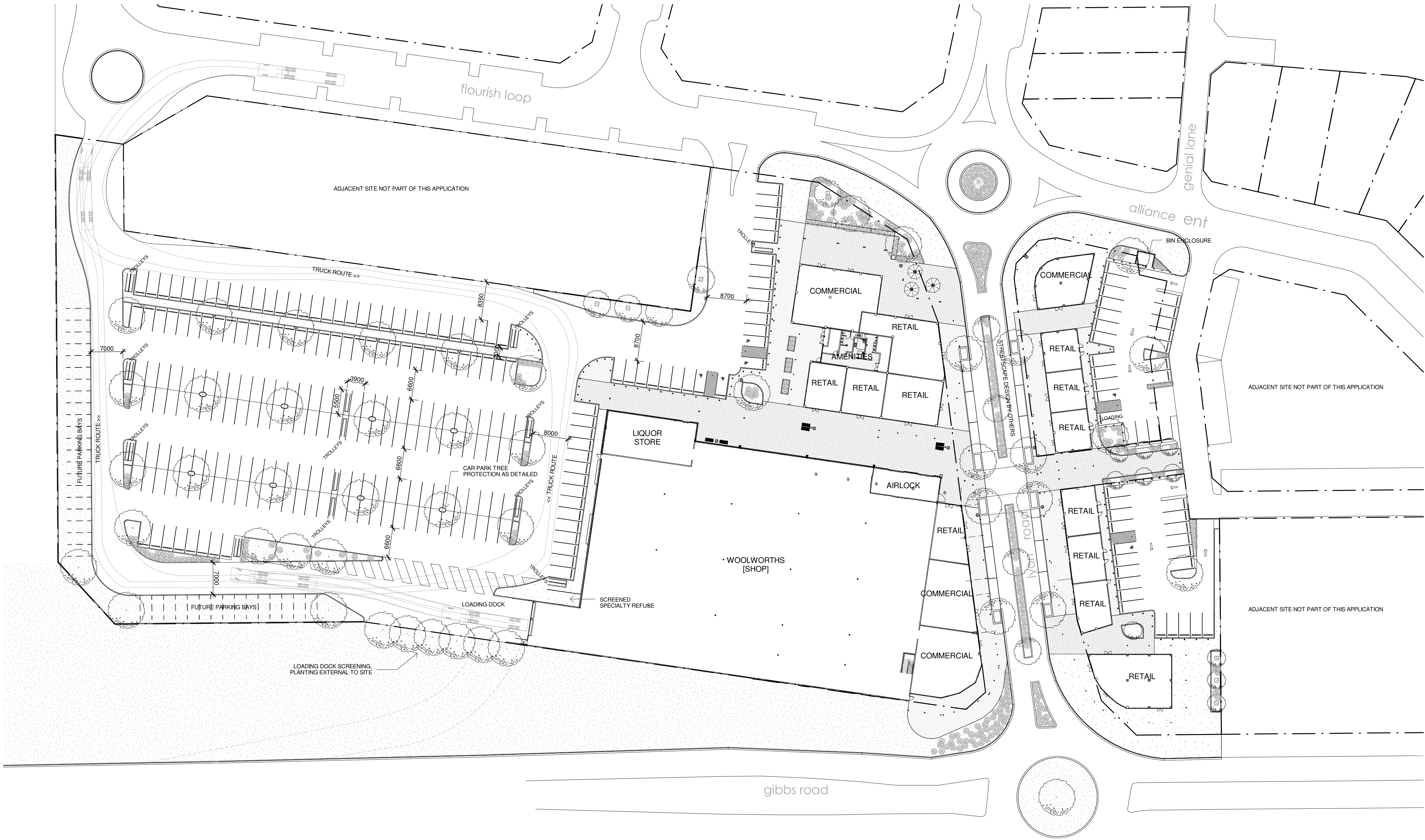
Woolworths Harvest Lakes

COVER SHEET

SCALE	
DRAWN	WK
DATE	15 NOV 2012
JOB N°	2012 036
DWG N°	2810 001

A1 SHEET

DA-001



SITE AREA SCHEDULE

SITE - NORTH EAST	1281 m²
SITE - SOUTH EAST	1644 m²
SITE - WEST	17767 m²
	20692 m²

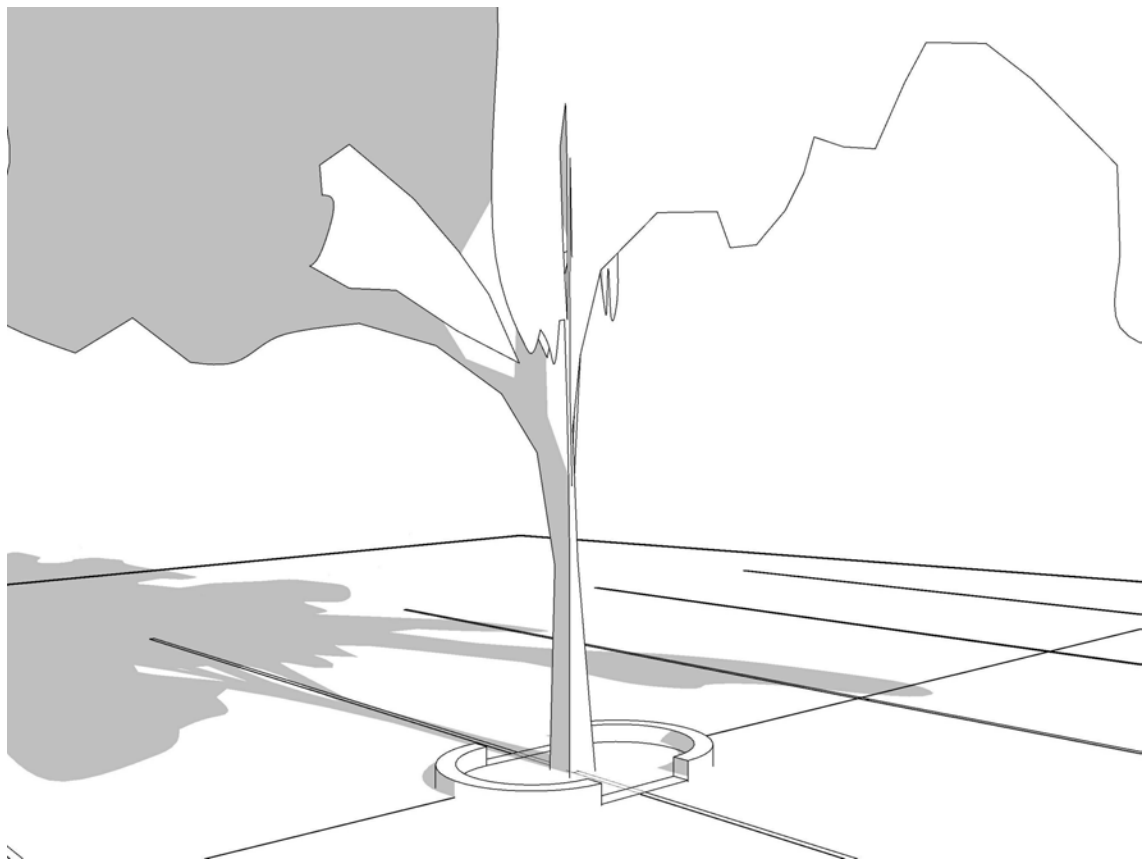
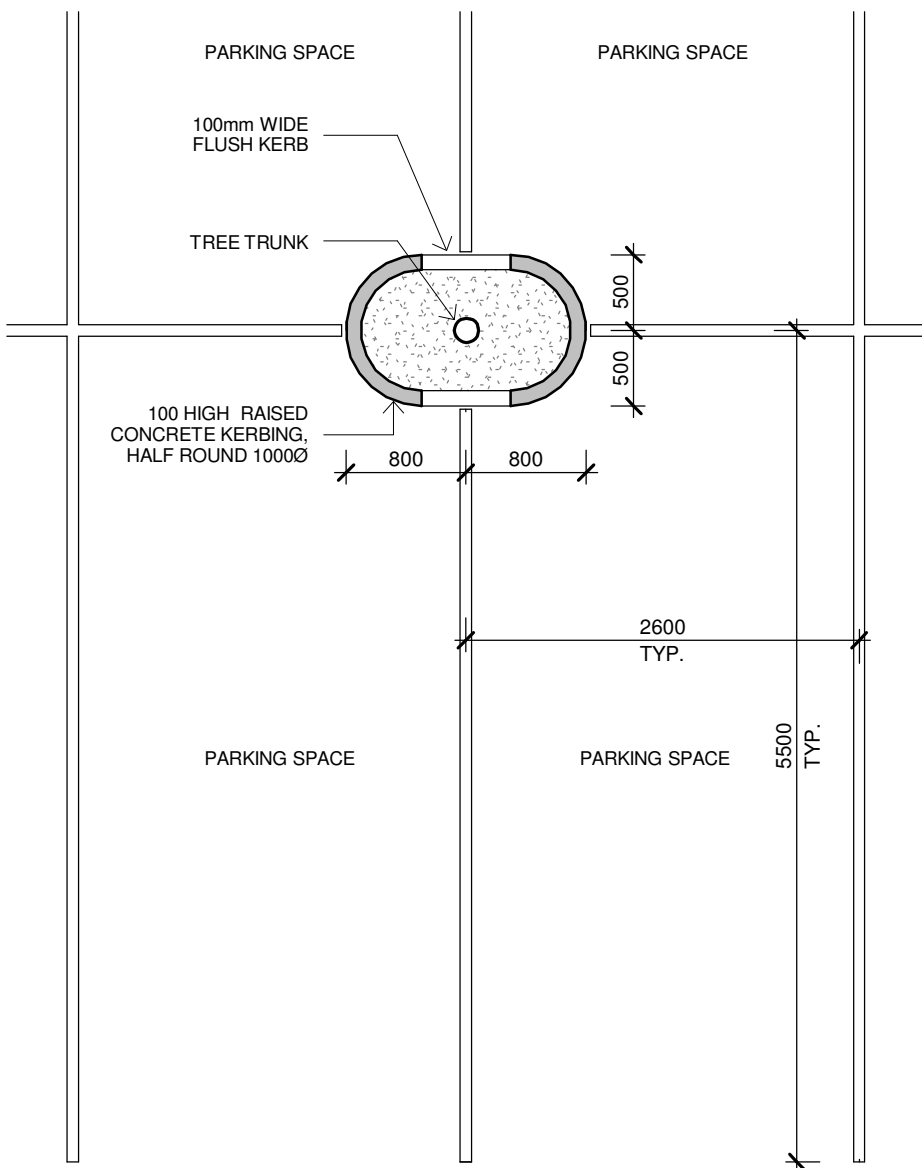
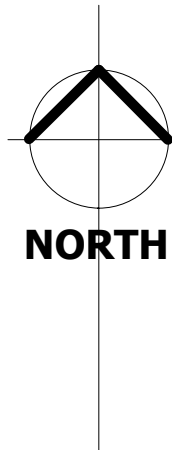
BUILDING AREA SCHEDULE

AMENITIES	116 m²
COMMERCIAL	714 m²
DOCK	101 m²
LIQUOR STORE	188 m²
RETAIL	1216 m²
WOOLWORTHS [SHOP]	3596 m²
	5931 m²

NOTE : TENANCY AND USE
LAYOUT IS INDICATIVE ONLY

PARKING SCHEDULE

EAST	42
EAST - DISABLED	1
EAST - DISABLED	1
WEST	237
WEST - DISABLED	4
WEST - FUTURE	36
	321



Car Park Tree Detail
1 : 50

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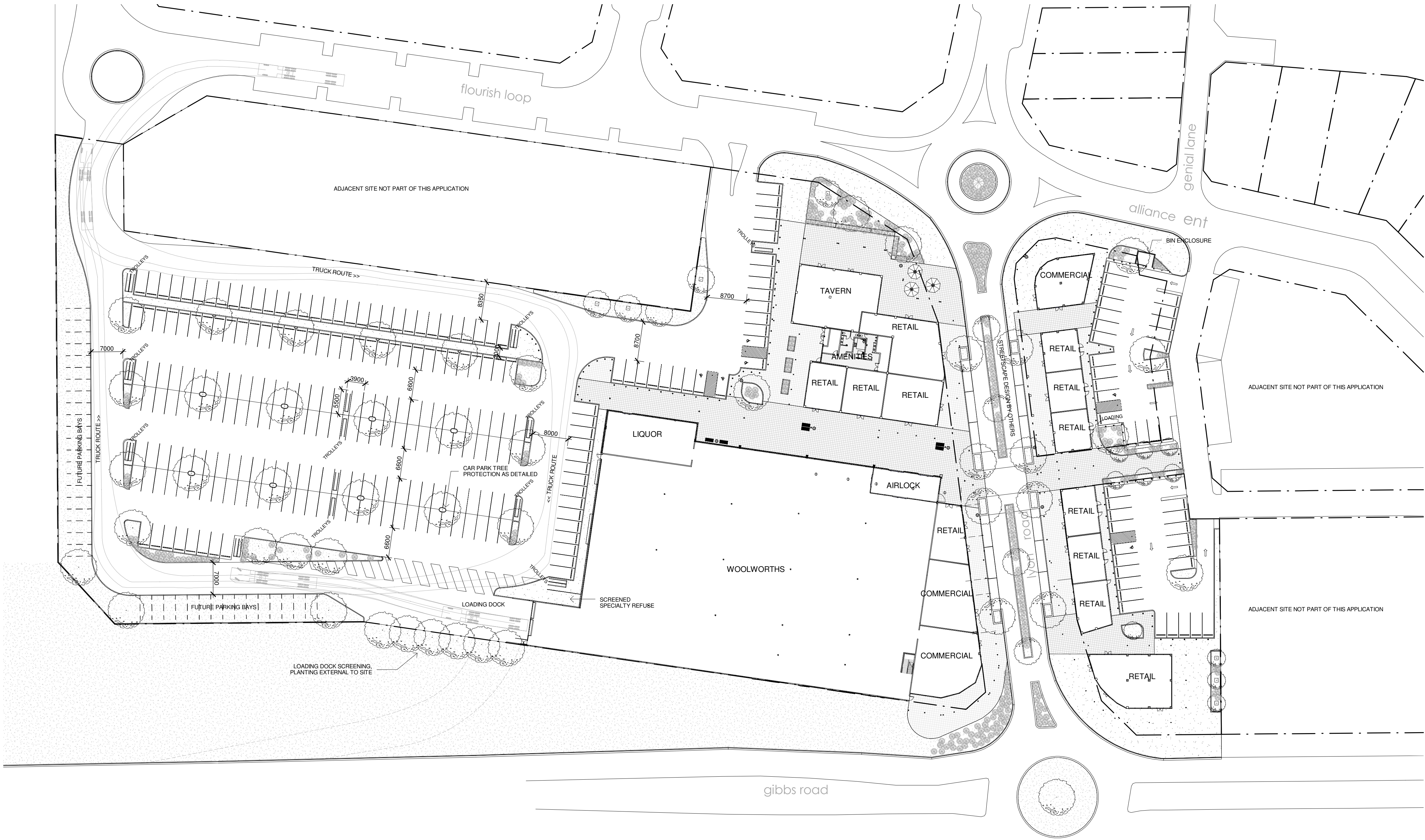
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Woolworths Harvest Lakes

SITE PLAN

SCALE As indicated A1 SHEET
DRAWN WK
DATE 15 NOV 2012
JOB N° 2012 036
DWG N° 2810 002 DA-001



SITE AREA SCHEDULE

SITE - NORTH EAST	1281 m²
SITE - SOUTH EAST	1644 m²
SITE - WEST	17767 m²
	20692 m²

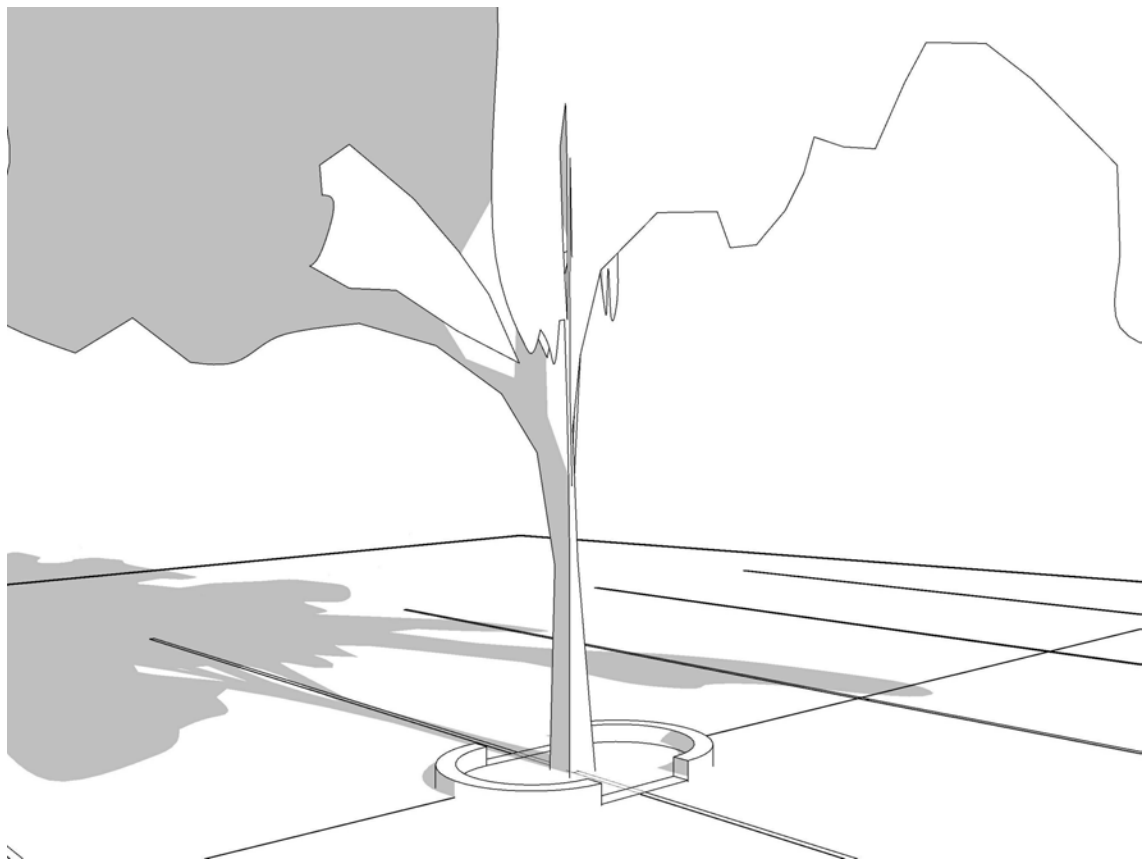
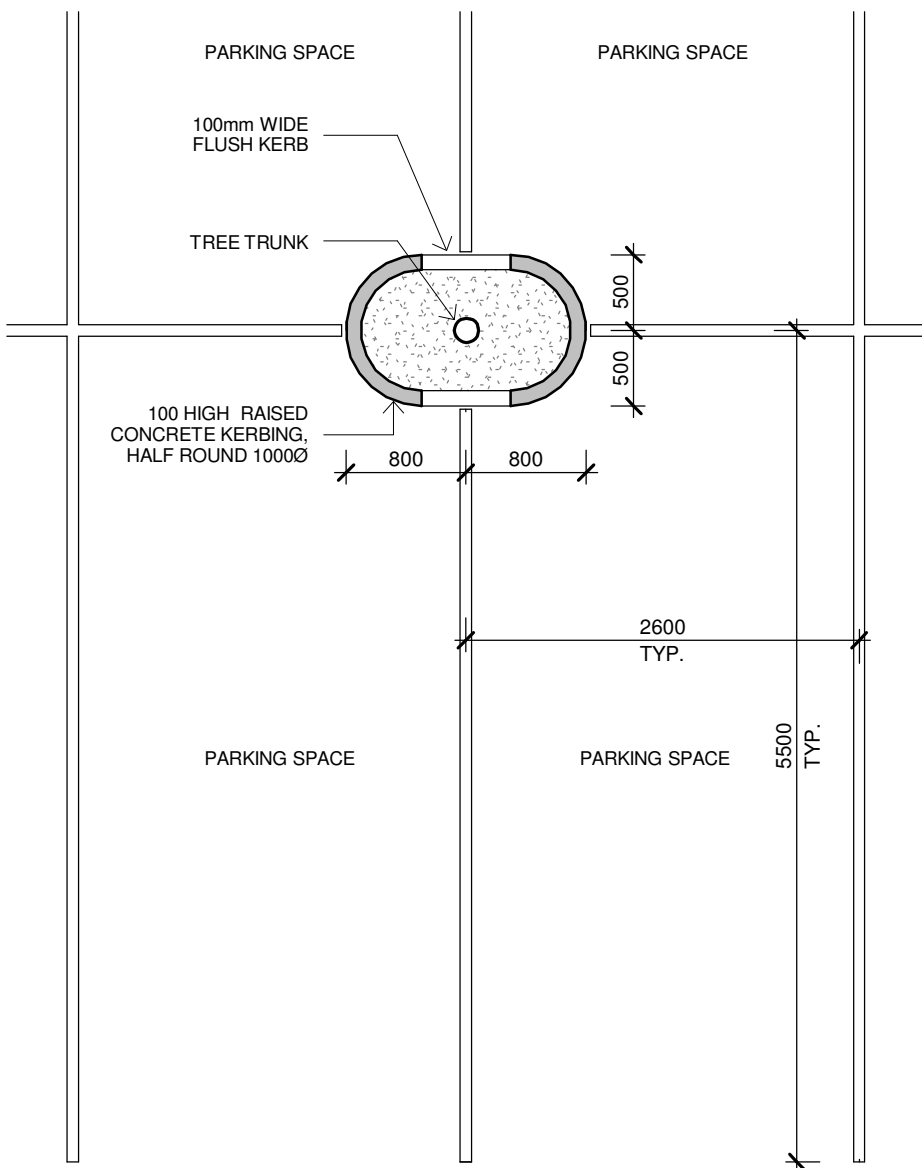
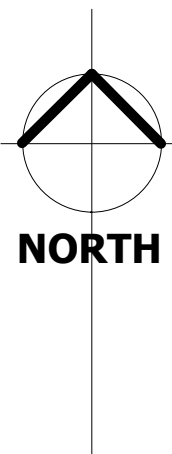
BUILDING AREA SCHEDULE

AMENITIES	116 m²
COMMERCIAL	487 m²
DOCK	101 m²
LIQUOR	188 m²
RETAIL	1216 m²
TAVERN	228 m²
WOOLWORTHS	3596 m²
	5931 m²

NOTE : TENANCY AND USE LAYOUT IS INDICATIVE ONLY

PARKING SCHEDULE

EAST	42
EAST - DISABLED	1
EAST - DISABLED	1
WEST	237
WEST - DISABLED	4
WEST - FUTURE	36
	321



Car Park Tree Detail

1 : 50

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SITE PLAN

SCALE

As indicated

A1 SHEET

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JOB N°

2012 036

DWG N°

2810 002

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NOTE : WOOLWORTHS INTERNAL LAYOUT IS SCHEMATIC ONLY. WOOLWORTHS TO PROVIDE ACTUAL LAYOUT



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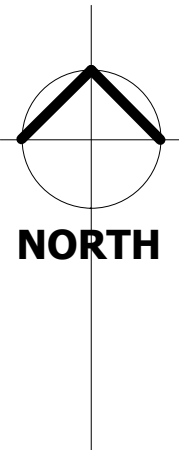
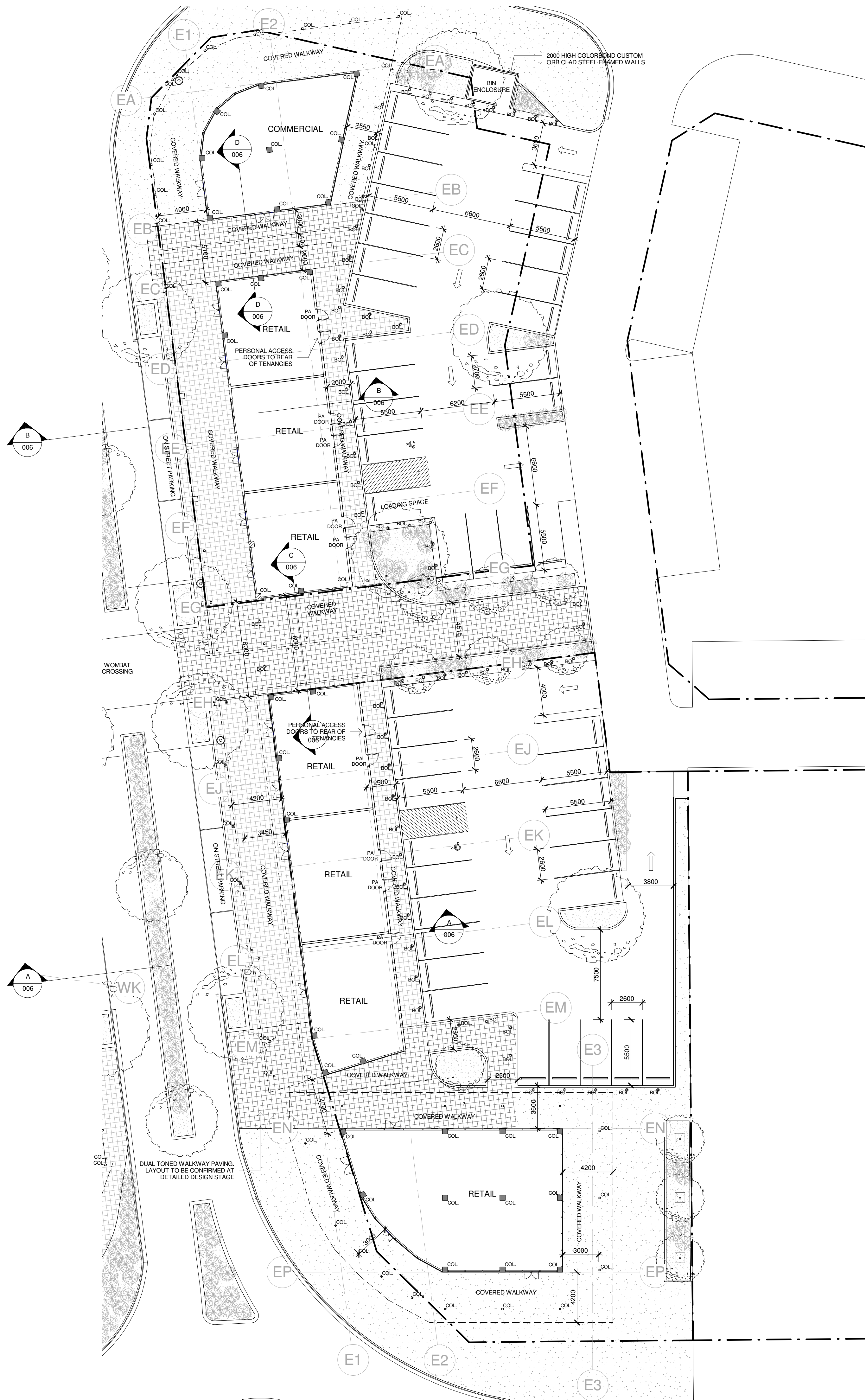
FLOOR PLAN - WEST

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DATE
JOB N°

1 : 200
WK
15 NOV 2012
2012 036

DWG N° 2810 003

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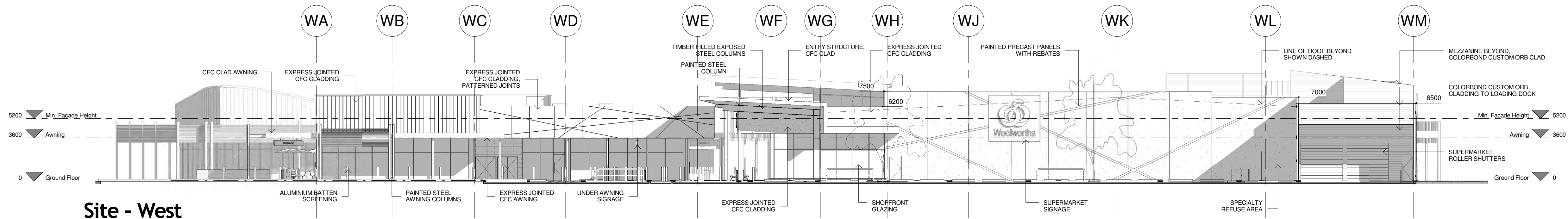
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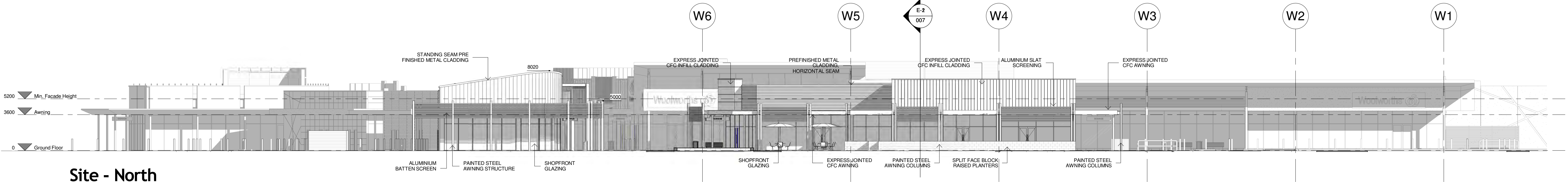
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FLOOR PLAN - EAST

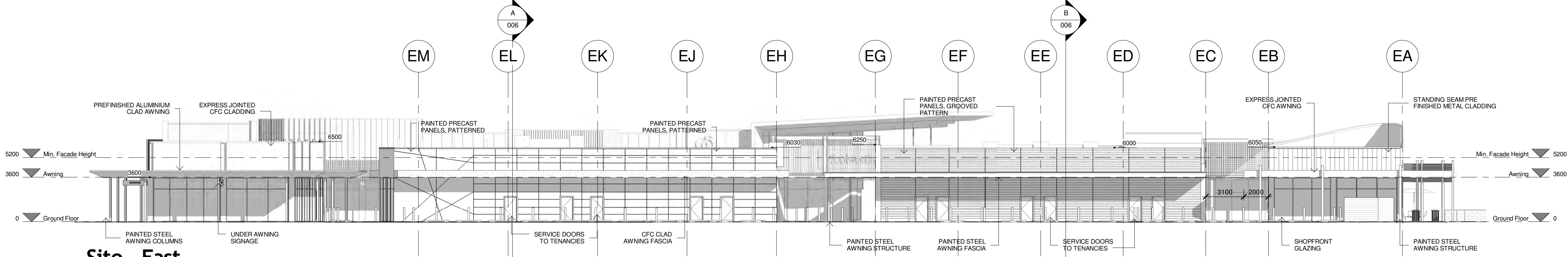
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JOB N°	2012 036	
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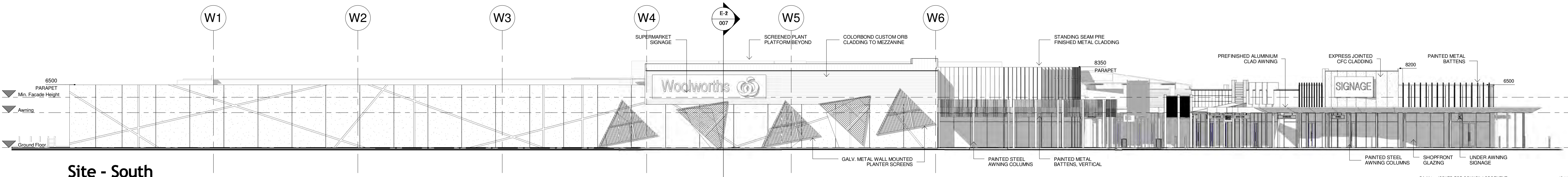
Site - West
1 : 200



Site - North
1 : 200



Site - East
1 : 200



Site - South
1 : 200

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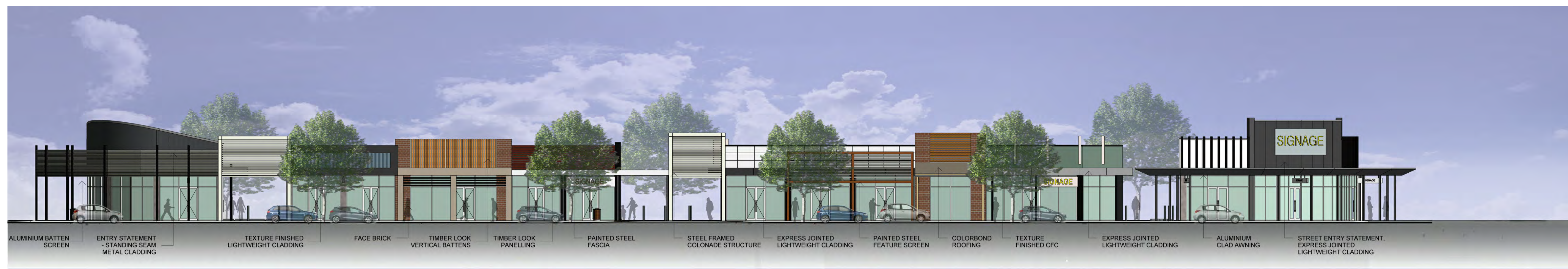
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ELEVATIONS

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DWG N°
1 : 200
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15 NOV 2012
2012 036
2810 005
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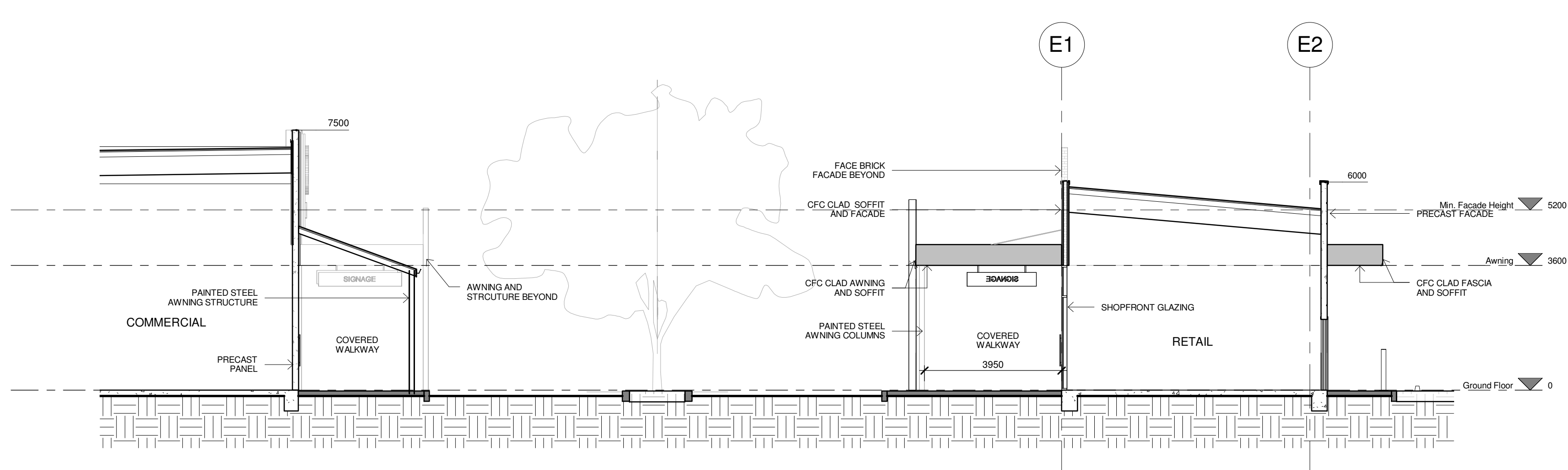
LYON ROAD - EAST ELEVATION

NTS.



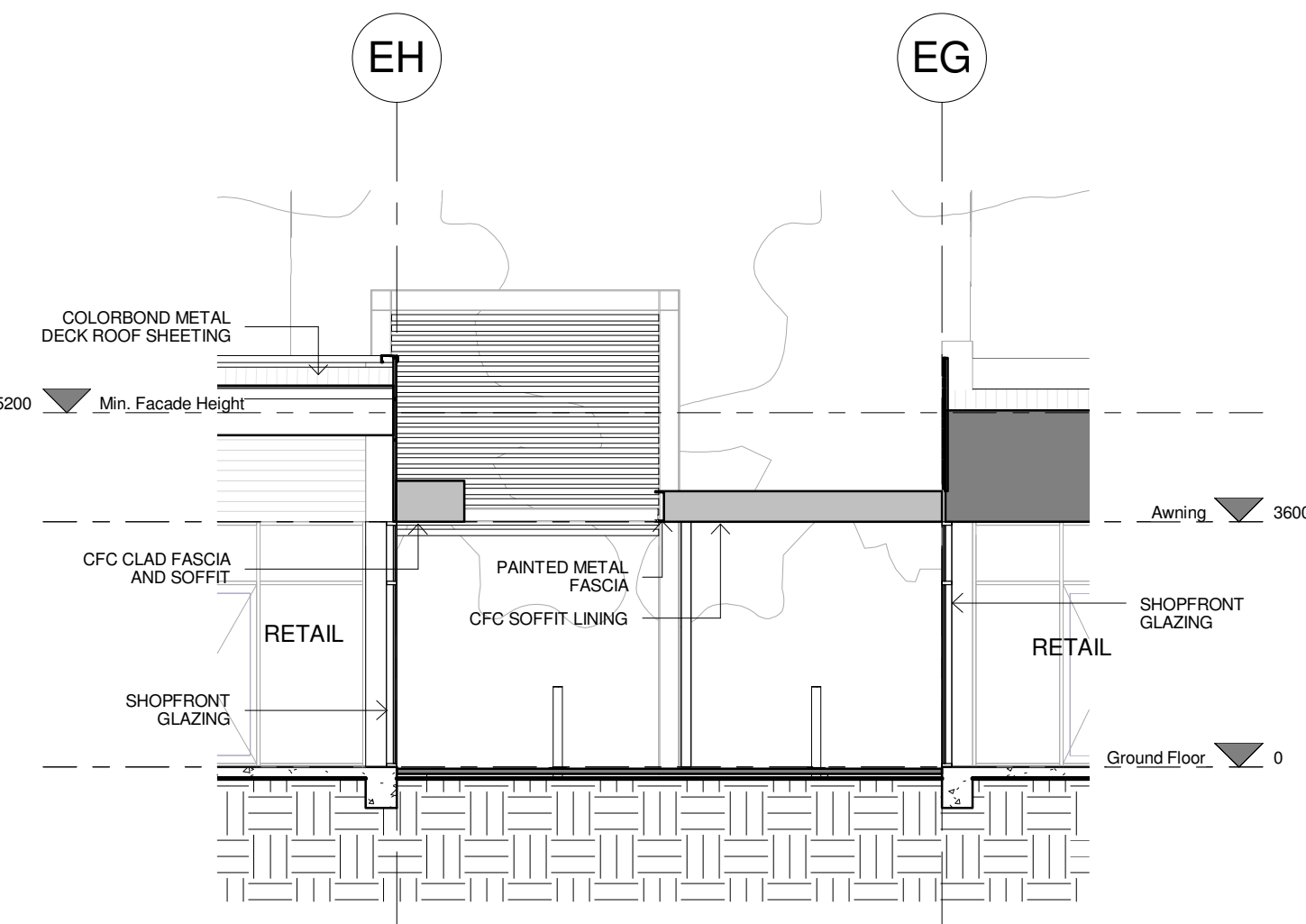
LYON ROAD - WEST ELEVATION

NTS.



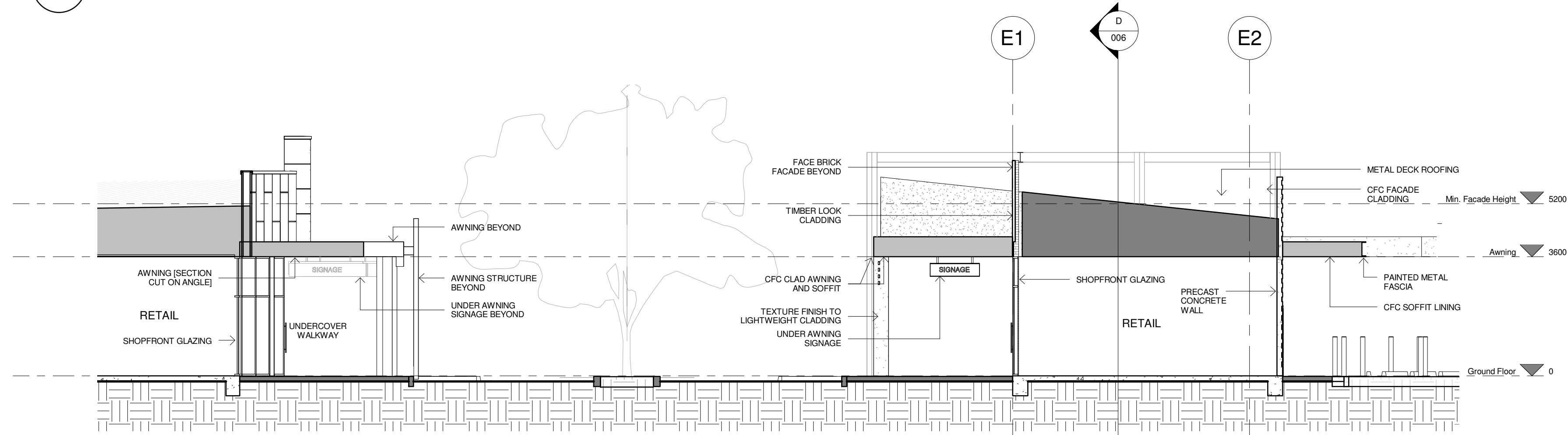
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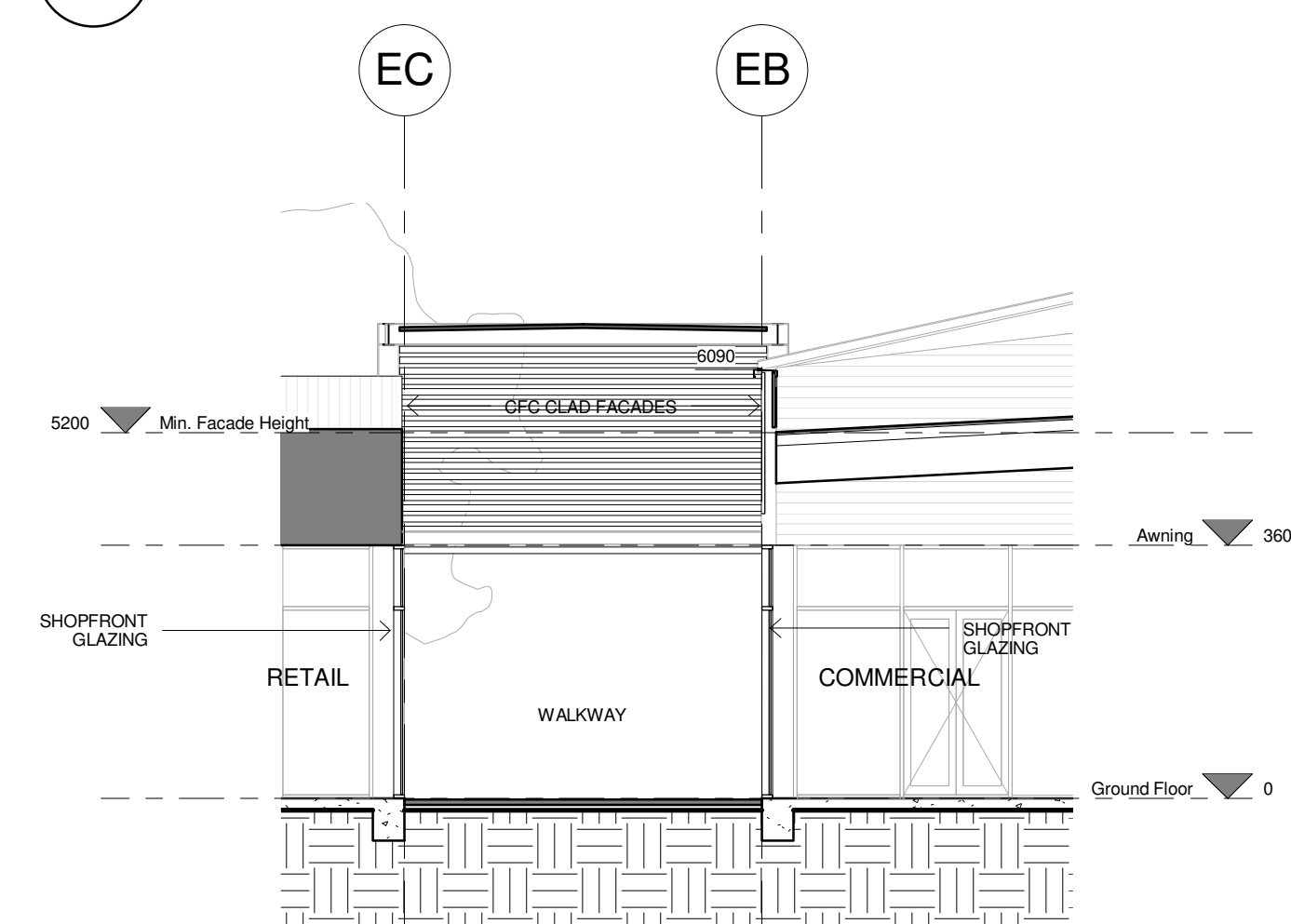
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004



SECTION 1 : 100

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SECTION 1 : 100

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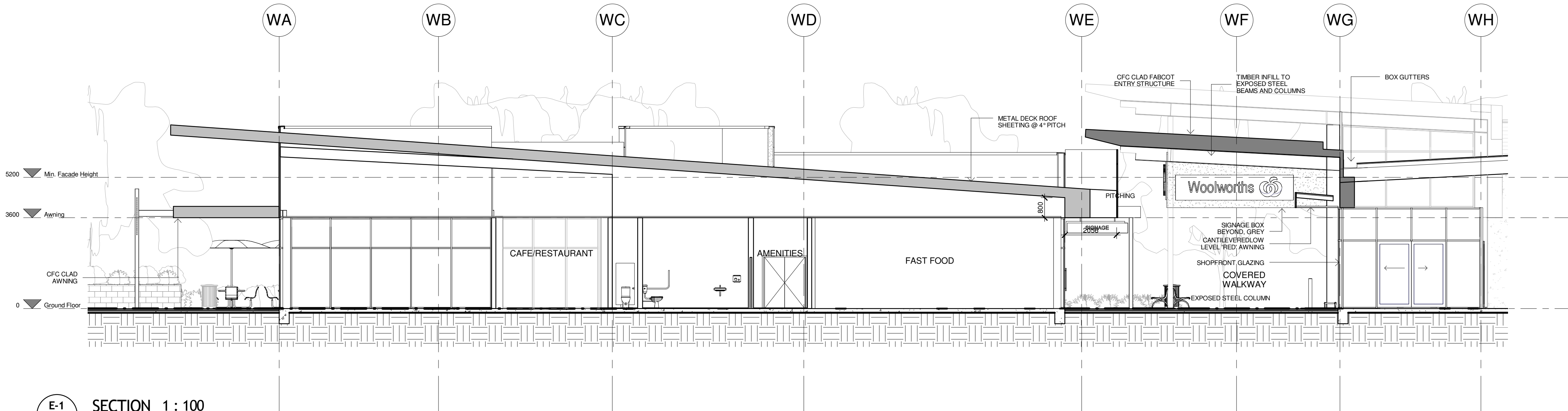
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STREET ELEVATIONS / SECTIONS

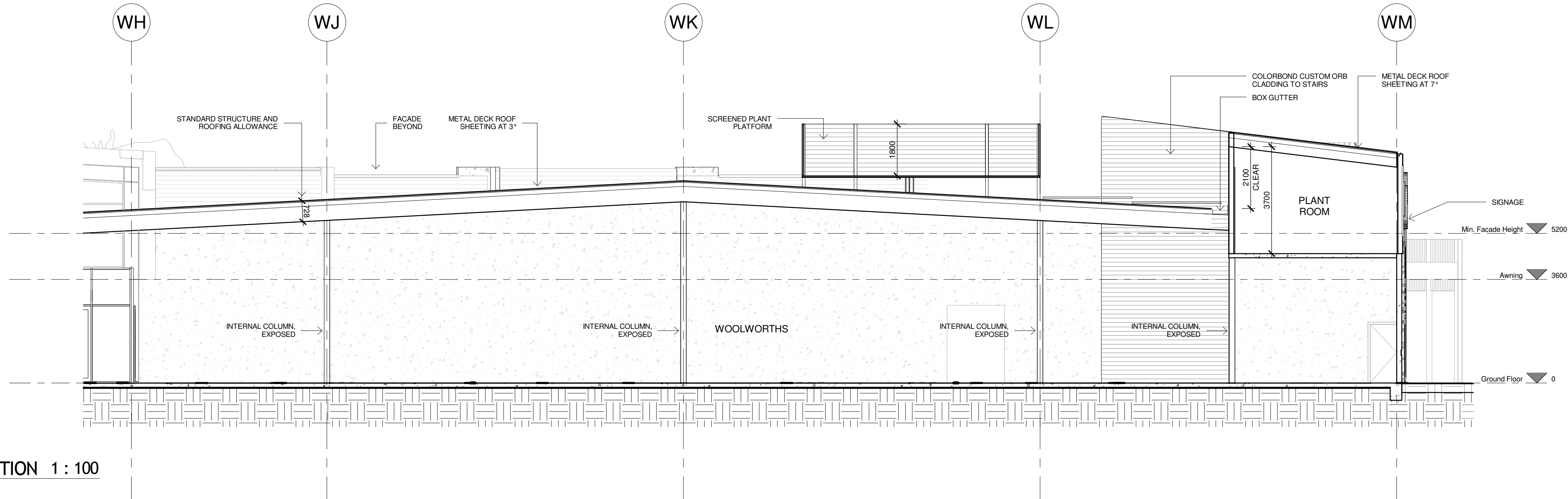
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DATE 15 NOV 2012
JOB N° 2012 036
DWG N° 2810 006

A1 SHEET

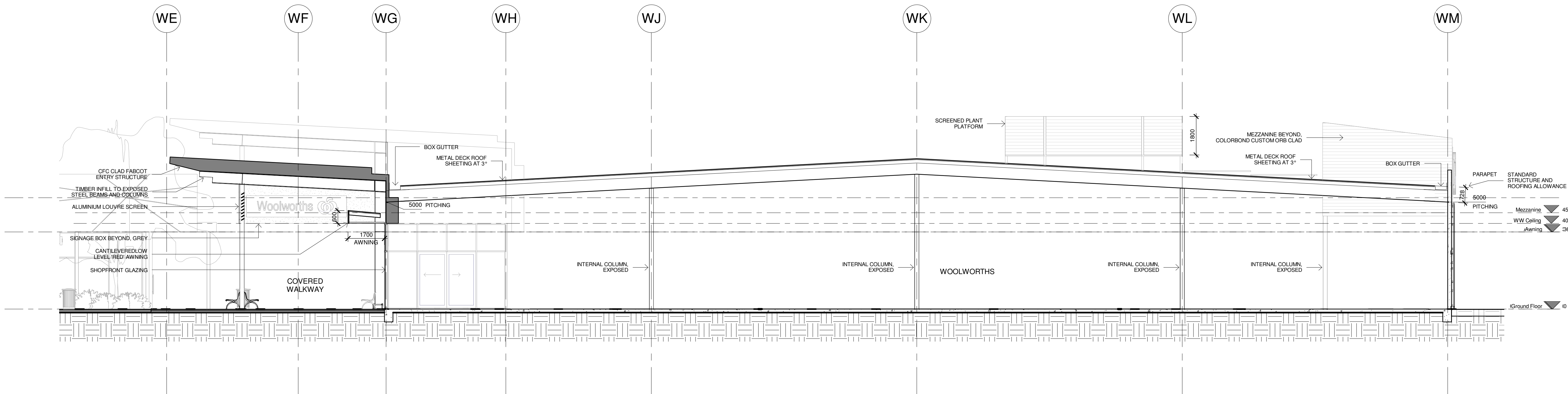
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E-1 SECTION 1 : 100



E-2 SECTION 1 : 100



F SECTION 1 : 100

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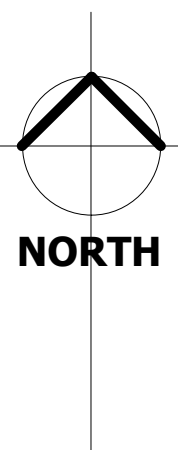
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SECTIONS

SCALE
DRAWN
DATE
JOB N°
DWG N°1 : 100
Author
15 NOV 2012
2012 036

A1 SHEET

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ROOF PLAN

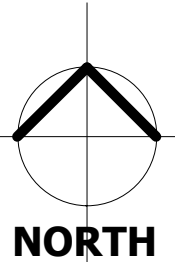
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 JOB N°
 DWG N°

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 15 NOV 2012
 2012 036

2810 008

DA-001



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LANDSCAPE LAYOUT

SCALE	1 : 750	A3 SHEET
DRAWN	WK	
DATE	15 NOV 2012	
JOB N°	2012 036	
DWG N°	2810 009	DA-001

SITE AREA SCHEDULE	
SITE - NORTH EAST	1281 m²
SITE - SOUTH EAST	1644 m²
SITE - WEST	17767 m²
	20692 m²

LANDSCAPE AREA SCHEDULE	
LANDSCAPE	1606 m²
LANDSCAPE - STREET	194 m²
	1800 m²

SITE AREA SCHEDULE	
SITE - NORTH EAST	1281 m ²
SITE - SOUTH EAST	1644 m ²
SITE - WEST	17767 m ²
	20692 m ²

PARKING SCHEDULE	
EAST	42
EAST - DISABLED	1
EAST - DISABLED	1
WEST	237
WEST - DISABLED	4
WEST - FUTURE	36
	321

BUILDING AREA SCHEDULE	
AMENITIES	116 m ²
COMMERCIAL	714 m ²
DOCK	101 m ²
LIQUOR STORE	188 m ²
RETAIL	1216 m ²
WOOLWORTHS [SHOP]	3596 m ²
	5931 m ²

TENANCY LAYOUTS ARE INDICATIVE ONLY,THE LOCATION AND DISTRIBUTION OF USES ARE SUBJECT TO CHANGE AT DETAILED DESIGN AND LEASING STAGE

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Woolworths Harvest Lakes

AREAS PLAN

SCALE	As indicated	A3 SHEET
DRAWN	WK	
DATE	15 NOV 2012	
JOB N°	2012 036	
DWG N°	2810 010	DA-001

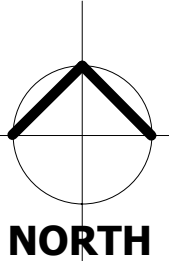
PERMITTED USES

COMMERCIAL

- OFFICE
- BANK
- BETTING AGENCY
- CONSULTING ROOMS
- VETERINARY CONSULTING ROOMS

RETAIL

- FAST FOOD OUTLET
- CAFE/RESTAURANT
- SHOP
- LUNCH BAR
- CONCENIENCE STORE



SITE AREA SCHEDULE

SITE - NORTH EAST	1281 m²
SITE - SOUTH EAST	1644 m²
SITE - WEST	17767 m²
	20692 m²

PARKING SCHEDULE

EAST	42
EAST - DISABLED	1
EAST - DISABLED	1
WEST	237
WEST - DISABLED	4
WEST - FUTURE	36
	321

BUILDING AREA SCHEDULE

AMENITIES	116 m²
COMMERCIAL	487 m²
DOCK	101 m²
LIQUOR	188 m²
RETAIL	1216 m²
TAVERN	228 m²
WOOLWORTHS	3596 m²
	5931 m²

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AREAS PLAN

SCALE	As indicated	A3 SHEET
DRAWN	WK	
DATE	15 NOV 2012	
JOB N°	2012 036	
DWG N°	2810 010	DA-001

PERMITTED USES

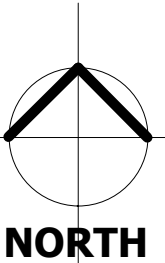
COMMERCIAL

- OFFICE
- BANK
- BETTING AGENCY
- CONSULTANCY
- VETERINARY

RETAIL

- FAST FOOD OUTLET
- CAFE/RESTAURANT
- SHOP
- LUNCH BAR
- CONCENIENCE STORE
- LIQUOR STORE

TAVERN





STREET VIEW - SOUTH



STREET VIEW - NORTH

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Woolworths Harvest Lakes

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SCALE		A3 SHEET
DRAWN	WK	
DATE	15 NOV 2012	
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STREET VIEW



STREET VIEW - SUPERMARKET ENTRY

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WOOLWORTHS - OPEN MALL



NORTH WEST - VIEW TO OPEN MALL

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DRAWN	WK	
DATE	15 NOV 2012	
JOB N°	2012 036	
DWG N°	2810 013	DA-001

SCHEDULE OF SUBMISSIONS

PROPOSED HARVEST LAKES NEIGHBOURHOOD ACTIVITY CENTRE – NO. 80 FLOURISH LOOP AND NOS. 79 & 89 LYON ROAD, ATWELL

NO.	NAME/ADDRESS	SUBMISSION	COUNCIL'S RECOMMENDATION
1	G Straugham 13 Eupheny Way ATWELL WA 6164	SUPPORT No comments.	Noted.
2	D Palmer 23 Harvest Lakes ATWELL WA 6164	OBJECTION Object to another liquor outlet being allowed to open in this area. The Atwell area is already well over-serviced by liquor outlets – one at Gateways Shopping Centre, one at Aubin Grove (Atwell Cellars), one at The Hive in Hammond Park and finally one at Foodtown in Lydon Bvd. I really do have to question why there is any need for an additional liquor outlet in this area considering how well this area is already covered with existing outlets. How many do we require within such close proximity? This adds nothing to the neighbourhood or community area, and I feel it is totally unnecessary and undesirable. I have no objection to liquor outlets in general however I feel that there are simply too many in the area already.	
3	L & R Curtis 20 Vetiver Link ATWELL WA 6164	OBJECTION Traffic along Gibbs Road is horrific. The amount of cars coming along Gibbs Road would only increase as people would then go 'backstreets' home after accessing the proposed buildings.	

4	A Prattent 5 Clarity Elbow ATWELL WA 6164	OBJECTION No need for another supermarket shopping facility in such close proximity to Gateways, the Hive and Stargate Shopping Centers. Increased disruptive traffic and noise pollution. No need for proposed retail outlets given existing facilities in Aubin Grove, Success, Cockburn Central and Jandakt. Increased crime and graffiti.	
5	D Ferraris 17 Aromatic Crescent ATWELL WA 6164	OBJECTION Objection based on liquor store only. There are several liquor stores already in close range to the proposed building. With many young families in this area I do not feel that another liquor store is required or needed as it could encourage unruly behavior leading to violence.	
6	M & A Colliver 3 Euphony Way ATWELL WA 6164	OBJECTION The number of liquor outlets within a 5 kilometer radius of the proposed liquor store is more than enough. Also with the proposed railway station nearby, unruly people with alcohol influences may harass commuters leaving or arriving at stations and also shopping areas and nearby residences. Strong object.	
7	F Heatley 16/2 Twilight Mews	SUPPORT	

	AUBIN GROVE	<p>Don't mind the shopping precinct development but I have a few concerns. The increase of traffic and noise. This intersection is very busy and noisy already so it is only going to get worse once the centre is built. I have looked at the plans but want to know what kind of buffer zones will be put into place to cut back on the noise. Also what traffic control will be in place on the corner of Lyon & Gibbs. This is a very busy intersection and traffic can bank up and I can only imagine it being worse once the centre is built. Also with the building of the railway station will there be a pedestrian overpass linking to the shopping precinct. Also I have concerns regarding social impact. At night shopping centres can be a haven for the young at night. Will there be patrols to this area at night. I do like the concept of the centre but as I have said the above concerns I would like addressed</p>	
8	M & P Zverk 4 Elemi Bend ATWELL WA 6164	SUPPORT Shopping facilities required.	Noted.
9	C Evans 8 Vetiver Link ATWELL WA 6164	SUPPORT Great idea, can't wait until it's built.	Noted.
10	D Oteri 56 Lyon Road ATWELL WA 6164	SUPPORT Look forward to this development, it is needed to take some of the congestion from Gateways shopping Centre and will be a welcomed option to surrounding residences.	
11	R McCallum 9 Justice Link	SUPPORT	

	ATWELL WA 6164	Please proceed urgently. Please allow coffee shops as well as supermarket to be constructed and operated. Please do not allow a Tavern.	
12	N & D Evans 12 Bondi Way AUBIN GROVE WA 6164	SUPPORT Keen for this infrastructure.	
13	D Tralano 2/12 Twilight Mews AUBIN GROVE WA 6164	SUPPORT A good proposal for the community. No objection.	
14	M Cummings 7/2 Twilight Mews AUBIN GROVE WA 6164	SUPPORT No comments.	
15	R Overs 7 Observatory Avenue AUBIN GROVE WA 6164	SUPPORT No comments.	
16	A & S Stewart 14 Essence Bend ATWELL WA 6164	SUPPORT Do not object proposal including liquor store as long as it's a usage in keeping with the village style of the development. Agree the Tavern should not be allowed as there is already the Quarry Tavern less than a 1km from this development.	
17	L & H Smith 13/2 Twilight Mews AUBIN GROVE	SUPPORT Feel need to do something about Gibbs and Lyon Road roundabout before any more traffic uses this intersection. It is at a standstill in the morning and afternoon because of the three (3) schools in the area and is a race track from 8pm every night. There needs to be Bartram Road opened up for crossover of the freeway before anymore activity can be handled on these roads.	

18	Nina 12 Aromatic Crescent ATWELL WA 6164	SUPPORT <p>Since the liquor store is managed by Woolworth and has the same trading hours as other adjacent shops, I don't think that there will be a problem. The bigger problem that I'm thinking of is the Woolworth trolleys which are left in the adjacent streets and not returned to Woolworth and this makes a lot of problems for the families living close to Woolworth. It's highly appreciated if something could be done for this issue. For instance, in Subiaco Woolworth, they have done something that you cannot take the trolley away further than a determined distance and if you want to do so, the wheels of the trolley get locked and you can't take them further. It could be applied to the new Woolworth trolleys here in Harvest Lakes. Regards,</p>	
19	S Krothapally 7 Aromatic Crescent ATWELL WA 6164	OBJECT <p>We oppose the proposal to set up a liquor store in this area. The area is predominately residential with many young children. In addition, there is a proposal to establish some medical and childcare facilities in this area. At this stage, establishment of any liquor outlet will adversely affect the development of this area. As indicated in the proposal, there are already a large number of liquor outlets and bars in the surrounding area. There is no need to add another one. Starting a liquor shop in close proximity to freeway and the proposed train station will attract undesirable outside elements into the residential area and will add to crime and violence. We are not</p>	

		clear whether any betting outlets will be started in the proposed commercial area. If such an event is a possibility, please consider the impact of this. Betting and liquor shops in close proximity are not desirable and should not be permitted in this residential area.	
20	K Tuan & L Sii 52 Lyon Road ATWELL WA 6164	SUPPORT No comments.	
21	L Rice sosages@optusnet.com.au	OBJECT I object to the development of the Harvest Lakes Neighbourhood Activity Centre for the following reasons: As a new resident I would not have purchased in the area had I known this development was being planned. Due to the increase in residential development, the area in question is already busy with traffic and the Harvest Lakes development will only add to the amount of traffic and hence more delays. There is the risk of an increase in crime due to the number of people passing through the area. I have only been living here since the end of October 2012 and have already had items stolen off my front porch. Given that there are two IGA Express supermarkets, liquor stores and other shops already in the area on Lyons Road, Aubin Grove and Russell Road, I fail to see why there is a need to have yet another supermarket and liquor store when there are already sufficient shops etc., in the area.	

22	Nima 12 Aromatic Crescent ATWELL WA 6164	SUPPORT Since the liquor store is managed by Woolworth and has the same trading hours as other adjacent shops, I don't think that there will be a problem. The bigger problem that I'm thinking of is the Woolworth trolleys which are left in the adjacent streets and not returned to Woolworth and this makes a lot of problems for the families living close to Woolworth. It's highly appreciated if something could be done for this issue. For instance, in Subiaco Woolworth, they have done something that you can not take the trolley away further than a determined distance and if you want to do so, the wheels of the trolley get locked and you can't take them further. It could be applied to the new Woolworth trolleys here in Harvest Lakes. Regards,	
23	Nicole Howard 21 Essence Bend ATWELL WA 6164	SUPPORT I like the design. I think this will be great for our community.	
24	N Nicholas & S Roberts 45 Harvest Lakes Boulevard ATWELL WA 6164	SUPPORT No comments	
25	C Hynd 2 Flourish Loop ATWELL WA 6164	SUPPORT No comments	
26	L Phillips 39 Harvest Lakes Boulevard ATWELL WA 6164	SUPPORT Please hurry up and build it.	
27	R Colledge 70 Congenial Loop	SUPPORT	

	ATWELL WA 6164	No comments.	
28	S Dama 10 Alliance Entrance ATWELL WA 6164	SUPPORT No comment.	

WOOLWORTHS

HARVEST LAKES SHOPPING CENTRE

TRAFFIC AND PARKING ASSESSMENT

December 2012



PO Box Z5578
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Issued on	03-12-2012	Amendments
Version	V3	V2 23-11-12 Land use changes
Reference	674	V3 03-12-12 Land use changes

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- 2.0 THE SITE AND SURROUNDING ROAD NETWORK
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- 5.0 ACCESS
- 6.0 PARKING
- 7.0 PEDESTRIANS, CYCLISTS AND PUBLIC TRANSPORT
- 8.0 SERVICING

1.0 EXECUTIVE SUMMARY

Riley Consulting has been commissioned by Woolworths to consider the traffic issues associated with the proposed development of the Harvest Lakes Shopping Centre. The analysis undertaken in this report indicates the following:

- Harvest Lakes local centre is the heart of a well-planned local community. Structure planning of the area is cognisant of the local centre and the road network has been designed accordingly. Regional traffic modelling prepared for the City of Cockburn also includes the local centre.
- It is anticipated that the local centre will generate 6,580 vehicle movements per day. Assessment of the current road network indicates that present Levels of Service will be maintained.
- Analysis of the built intersections and the proposed accesses to the local centre indicate excellent Levels of Service will be experienced during the peak period of road network and local centre activity. Only Lyon Road north of Gibbs Road is shown to experience a reduced Level of Service of D. However, as a pedestrian focussed street, this will provide a slow speed environment and stimulate vibrancy to the street scape.
- In the longer term, it is forecast that Gibbs Road may operate poorly during peak periods. However, traffic using Gibbs Road will be restricted by the capacity of the Kwinana Freeway interchange. It is considered that with the current interchange, the PM peak hour flow on Gibbs Road affecting the local centre will be restrained to levels considered in the analysis until such time that an additional bridge is provided to the Freeway.
- Parking for the proposed local centre is considered to have a minor shortfall to the requirements of the TPS (which is considered to be significantly higher than other local government requirements of 5 bays per 100m²). It is considered that acceptable levels of parking are provided for the local centre.
- Future changes to local land uses are not expected to significantly impact car parking.

2.0 THE SITE AND SURROUNDING ROAD NETWORK

The site is located to the north side of Gibbs Road, in the suburb of Harvest Lakes (Atwell). The location of the site is shown in Figure 1.

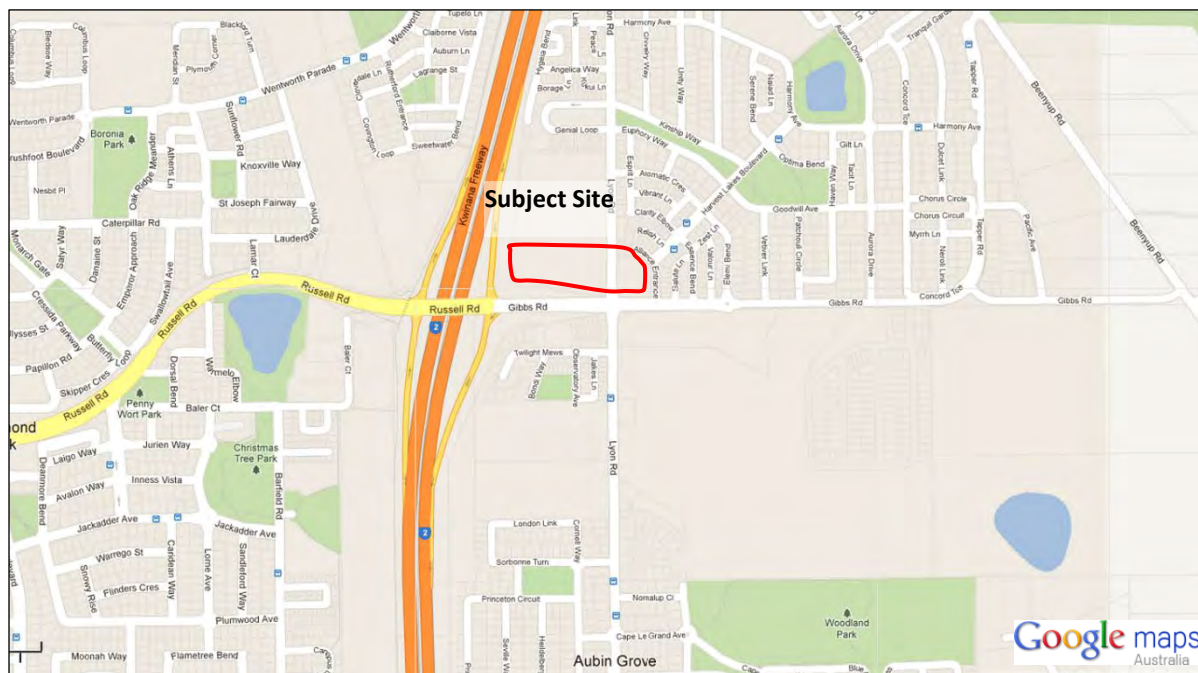


Figure 1 Site Location

Roads of significance to the development site are considered below.

Gibbs Road

Gibbs Road is classified as a local distributor road in the Main Roads *Functional Road Hierarchy*. It is constructed as a boulevard style road between Eleni Boulevard and the



Photograph 1 Gibbs Road

Kwinana Freeway access. As a boulevard style road, capacity for about 25,000 vehicles per day (vpd) exists before unacceptable Levels of Service (F) would be present. However, with this daily volume, congestion during the peak hours may be experienced. The capacity of Gibbs Road is constrained by the available capacity of the traffic signals controlling the Kwinana Freeway access ramps.

Photograph 1 shows Gibbs Road approaching the Kwinana Freeway.

East of Eleni Boulevard Gibbs Road is constructed as a single 7.2 metre carriageway road.

Traffic data for the current road network is not available and is not expected to be counted due to continued development growth of the locality. A peak hour traffic count has been undertaken at Gibbs Road / Lyon Road to determine the turning movements at this key intersection. Scats traffic signal data is also available at the Kwinana Freeway interchange which indicates that the peak period is about 8.4% of the total daily traffic flow. Applying this percentage to the intersection traffic count indicates the following:

- West of Lyon Road 8,800vpd
- East of Lyon Road 4,800vpd

A study has been undertaken by Uloth and Associates for the City of Cockburn to predict the future traffic volumes on regional roads in the area. Based on this study, it is expected that Gibbs Road will carry:

- West of Lyon Road 22,720vpd (2016) reducing to 17,210vpd (2031)
- East of Lyon Road 7,970vpd (2016) reducing to 4,630vpd (2031)

Extracts of the traffic forecasts are attached as Appendix A. The reduction to traffic using Gibbs Road is due to the bridging of the Kwinana Freeway by Bartram Road, about 1.2km north of Gibbs Road.

Lyon Road

Lyon Road is also classified as a local distributor road in the Main Roads *Functional Road Hierarchy*. It is constructed as a single 7.2 metre carriageway road for the majority of its length. North of Gibbs Road it is constructed as the main street for Harvest Lakes town centre.



Photograph 2 shows the streetscape that has been created.

Current traffic flows have been derived and suggest:

- Lyon Road south of Gibbs Road 5,500vpd
- Lyon Road north of Gibbs Road 1,000vpd

The City of Cockburn's traffic modelling of the locality indicates a forecast daily volume on Lyon Road as follows:

- Lyon Road south of Gibbs Road 8,910vpd in 2016, increasing to 9,810vpd in 2031
- Lyon Road north of Gibbs Road 7,880vpd in 2016, reducing to 4,271vpd in 2031

The reduction on Lyon Road north is due to the bridging of the Kwinana Freeway by Bartram Road, about 1.2km north of Gibbs Road. However, a daily volume of 7,000vpd is ideal for a main street as it provides sufficient activity to stimulate a vibrant centre.

The concept layout for the proposed shopping centre is shown in Figure 2.

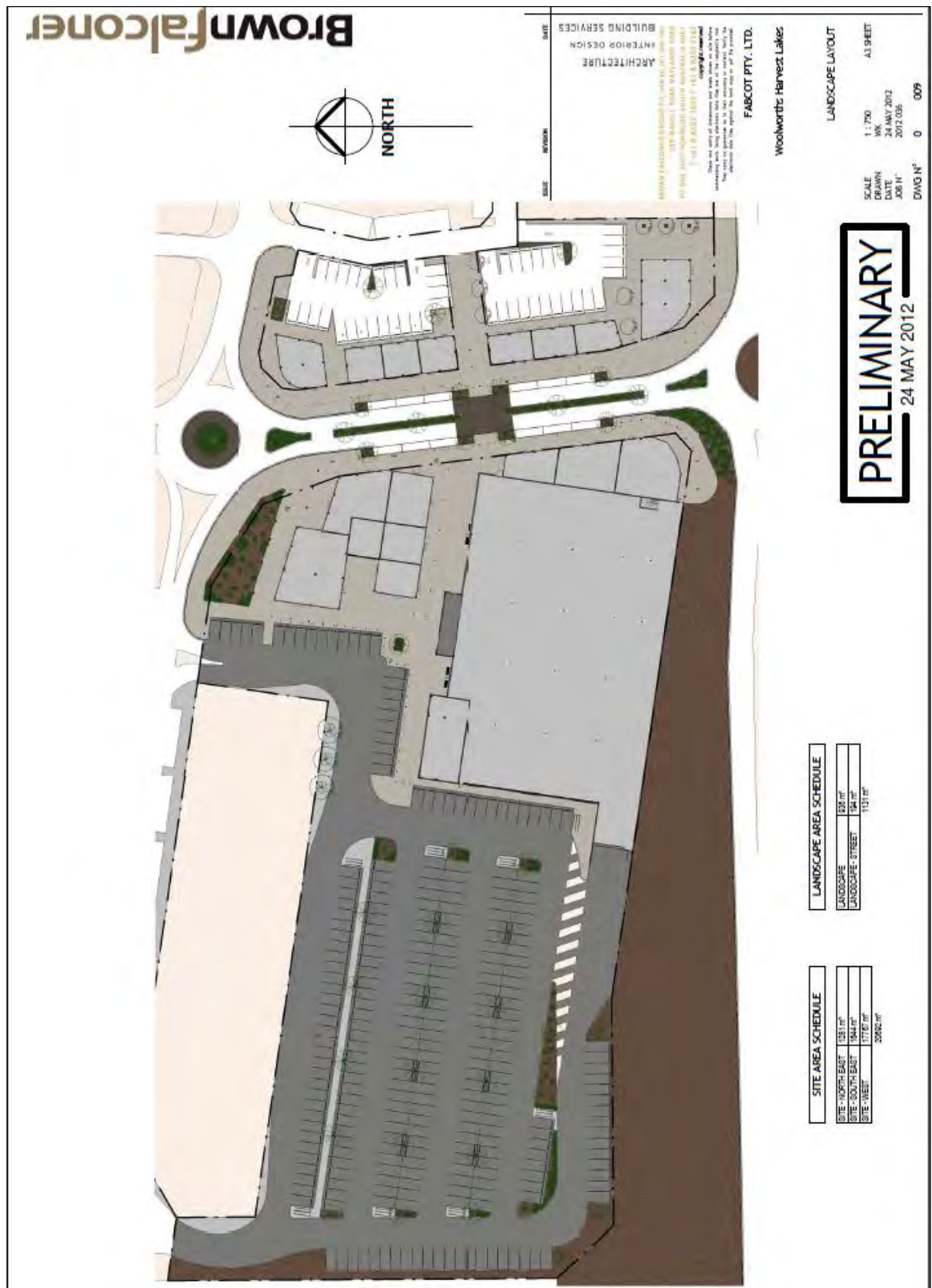


Figure 2 Outline Development Plan (refer to Architect for detail)

3.0 TRAFFIC GENERATION AND DISTRIBUTION

As discussed, the City of Cockburn has undertaken traffic modelling of the locality for the years 2016 and 2031. It is noted that Harvest Lakes local centre is included in the model¹. From a road network perspective the local centre has already been assessed in terms of long term impacts. The traffic generation set out below is used to review the local road network operation and local intersections.

Harvest Lakes Town Centre Traffic Generation

It is proposed to develop Harvest Lakes local centre to provide 5,931m² of local centre retail / commercial opportunity, with a Woolworths supermarket as the anchor. The floor area will comprise of:

• Supermarket	3,596m ²
• Liquor store	188m ²
• Associated shops	1,216m ²
• Commercial	714m ²
• Amenities and dock	217m ²

The development outlined above is the current expectations of land uses, which may over time change. However, from a traffic generating perspective, any possible changes in use would have minimal impact to local traffic movements.

Within the town centre precinct, current planning indicates a medical centre and child care centre located to the east of Lyon Road. Normally these uses would be included in the assessment of the local centre road network operation, but both uses are accessed from Alliance Entrance. With separate access from the shopping activity, the cross-visitation between the land uses will be predominantly pedestrian based. With easy access between all land uses and an aesthetically pleasing main street, it is considered that traffic movement between car parks will be very low.

The most recent research on the traffic generation of shopping centres has been undertaken by the Road Traffic Authority of New South Wales in their publication *Guide to Traffic Generating Developments*. The RTA undertook surveys in the 1980s and found that the traffic generation was more accurately assessed by considering the different types of

¹ Zone 775-3 shown to have 6,000m² GFA shopping centre

retail premises. To determine the peak generation of a local centre, a formula was derived to consider: major department stores; discount stores; supermarkets; speciality stores and other associated uses, such as a medical centre and fast food outlets. The *Guide to Traffic Generating Developments* can be seen to appropriately assess the expected mix of uses within the centre proposed for Harvest Lakes. The liquor store could be considered as an 'other' related use, but is considered as supermarket in this study to ensure robustness of the report.

Applying the RTA *Guide to Traffic Generating Developments* formulae to Harvest Lakes produces the estimation of the Thursday PM peak hour traffic demands shown in Table 1.

Table 1 Thursday PM Peak Traffic Generation

Land Use	Category	Rate	Area	Peak trips
Supermarket (+liquor)	ASM	155	3,784	587
Speciality	ASS	46	1,216	56
Other related	AOM	22	714	16
			5,714	658

Harvest Lakes local centre is expected to generate 658 peak hour trips.

It is common that a shopping centre will generate between 9% and 12% of its daily traffic flow in the peak hour. The higher level can be expected at larger centres with entertainment facilities. For the purpose of this assessment a level of 10% is used. Thus, Harvest Lakes local centre can be expected to generate 6,580 vehicle movements per day.

Harvest Lakes local centre is expected to generate 6,580 trips per day.

Adjacent to the subject site are two sites identified for a future medical centre and childcare centre. These two developments are not part of this application and will need to be assessed when the actual land use is the subject of a development application.

Distribution

It can be expected that traffic attracted to the proposed local centre will be generated from the surrounding residential areas. Based on the modelling data used in the City of Cockburn's study, the attraction shown in Table 2 would be expected:

Table 2 Anticipated Traffic Distribution Based on Population

Locality	Population	%
Atwell (north)	3,067	31.03%
Aubin Grove (south)	2,260	22.86%
Hammond Park (west)	4,100	41.48%
Eastern suburbs	458	4.63%

To the north lies Cockburn Central district centre that will capture traffic to the north of Harvest Lakes. Based on the distribution indicated in Table 2, Figure 3 shows the anticipated traffic increases to the local road network.

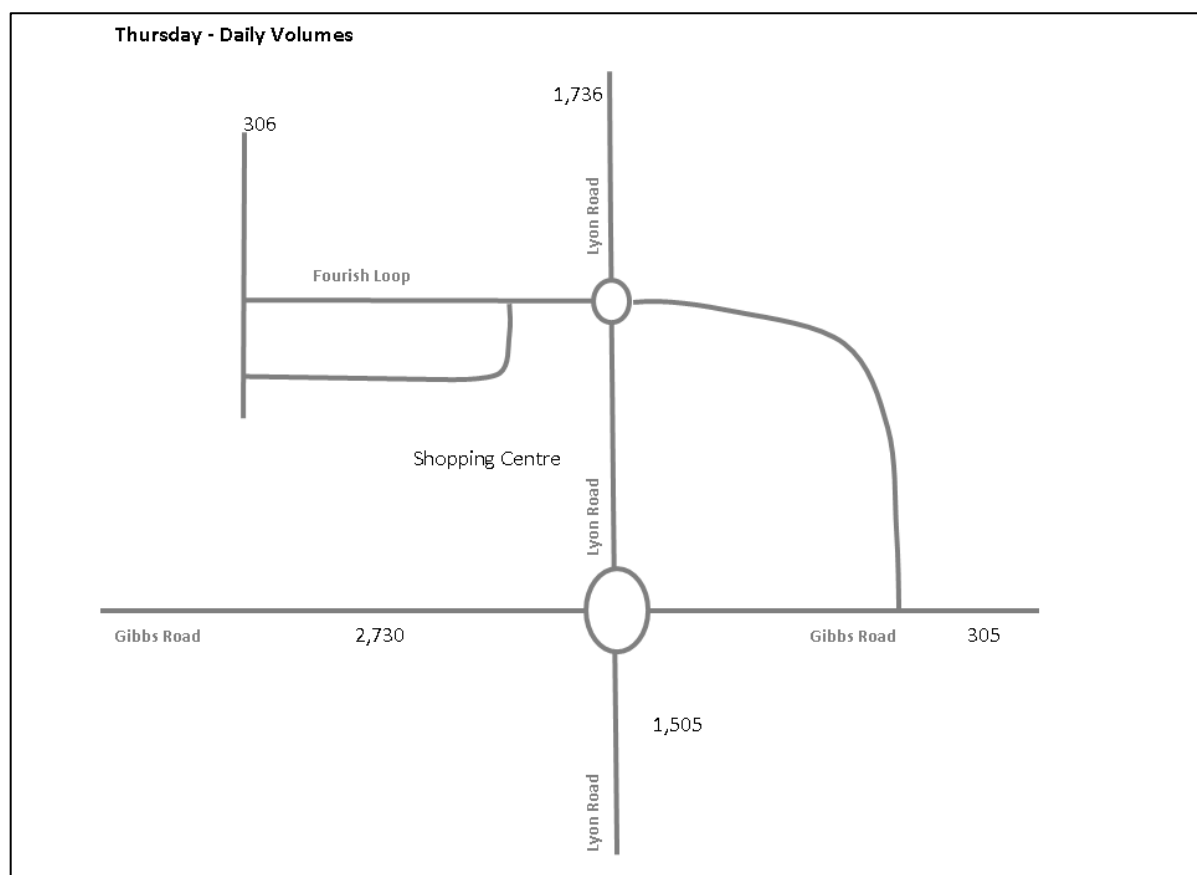


Figure 3 Anticipated Local Centre Daily Traffic Movements

Pass-by Trade

Customers attracted to a retail precinct will obviously already be making similar trips at the present time, and it is expected that the proposed new stores at Harvest Lakes will capture a reasonable proportion of that trade. The re-distribution of traffic to a new retail outlet is referred to as pass-by trips.

Reference to the ITE *Trip Generation* manual indicates that the pass-by attraction to a local centre like Harvest Lakes could be as high as 35%. Although this has not been studied in Australia, it is evident that existing and future local residents will choose to use local major supermarkets for weekly supplies, rather than travel to centres such as Cockburn.

4.0 TRAFFIC IMPACT

The development of Harvest Lakes local centre has been included in previous structure planning for the locality. As discussed, traffic modelling of the district has been undertaken for the City of Cockburn that includes the full development of Harvest Lakes local centre. Planning of the future road network is therefore cognisant of the development proposal and analysis of future impacts is not required.

The development of Harvest Lakes is included in future road planning.

Whilst future planning is cognisant of the development of Harvest Lakes local centre, an assessment is provided to consider the development impact upon existing road conditions. Table 3 considers the expected traffic increases of the proposed shopping centre in regard to current traffic movements.

Table 3 Traffic Impacts Based on Daily Traffic Flows

Road	Volume	Los	Development	Pass-by	Increase	%	Volume	LoS
Gibbs Road west	8,800	D	2,730	955	1,774	20.16%	10,574	D
Gibbs Road east	4,800	B	305	107	198	4.13%	4,998	B
Lyon Road north	1,000	A	1,736	608	1,128	112.82%	2,128	A
Lyon Road south	5,500	C	1,505	527	978	17.78%	6,478	C

Where daily traffic volumes are shown to change by +/-5% they are considered to have no demonstrable impact in traffic engineering terms, as everyday traffic flows generally vary by this amount. In these instances, Austroads suggests that no further assessment is warranted. Where an increase is greater than +5%, an impact may arise and further investigation may be warranted.

It can be seen from Table 1 that only Gibbs Road east of Harvest Lakes has an increase of less than 5% and can be considered to have no demonstrable harm as a result of the proposed development. However, all roads are shown to maintain current Levels of Service.

The development of Harvest Lakes will not affect current road network Levels of Service.

Longer Term Impacts

As indicated, Harvest Lakes is considered in the regional traffic modelling of the locality and thus future roads are cognisant of the traffic generated by the local centre. Table 4 considers the forecast traffic movement shown for 2031 (Appendix B)

Table 4 Traffic Impacts Based on Daily Traffic Flows

Road	Volume	LoS	Comment
Gibbs Road west	17,210	E	Capacity constrained by traffic signals
Gibbs Road east	4,630	B	Very good operation
Lyon Road north	4,271	B	Very good operation
Lyon Road south	9,810	D	Acceptable operation

The only road indicated in future years to require some attention is Gibbs Road between the Kwinana Freeway interchange and Lyon Road. Whilst the forecast traffic volume would suggest that a four-lane divided road should be provided (and an appropriate road reservation exists), it is doubtful whether a four-lane road would actually achieve any benefit. The capacity of this link will be controlled by the traffic lanes at the Kwinana Freeway interchange. At present the Gibbs Road / Freeway interchange is provided with a single lane bridge with supplementary turn lanes. It can be concluded that widening of Gibbs Road will be reliant upon the construction of a second bridge to the Kwinana Freeway.

It can be expected that as local traffic increases, longer peak hour delays will be experienced. However, this will result in traffic finding alternative routes during the peak hours. During the day and at weekends it can be expected that acceptable operation of the local road network will exist with the current road infrastructure.

5.0 ACCESS

Access to the main car park will be taken at 2 locations to Flourish Loop, as shown in Figure 2. An assessment of the expected traffic movements on local roads has been undertaken to determine how accesses and local intersections can be expected to operate. Appendix C shows the derivation of the peak hour movements used for the analysis.

The traffic movements shown in Appendix C reflect the anticipated traffic flows in the forecast year of 2031. This is achieved by using the current turning proportions applied to the 2031 traffic forecasts. The local centre traffic is then added to these forecasts. This results in a level of double counting as the 2031 forecasts are cognisant of the proposed local centre. The traffic forecasts do not make any deductions for the expected pass-by trips and thus reflects a worst case scenario.

Main Access to Flourish Loop

The main access to Flourish Loop is proposed as a simple tee intersection. The access should be constructed as more of a cross-over to maintain a slow speed environment at the pedestrian footpath. Appendix D shows the analysis of the Thursday peak period operation of this access. Table 5 shows a summary of the operation.

Table 5 Main Access to Flourish Loop Thursday PM Peak Analysis

Approach	Saturation	Delay	LoS
Flourish Loop east	0.18	3s	A
Site Access	0.342	8.7s	A
Flourish Loop west	0.026	2.5s	A

The main access can be expected to operate with excellent Levels of Service during the Thursday PM peak period. As this period will be the busiest period of operation, excellent operation can be expected at all times.

Western Access to Flourish Loop

The western access to the site has already been constructed as a small roundabout, although a simple tee intersection would have been suitable. Appendix E shows the analysis of the Thursday peak period operation of this access. Table 6 shows a summary of the operation.

Table 6 Western Access to Flourish Loop Thursday PM Peak Analysis

Approach	Saturation	Delay	LoS
Site Access	0.072	10.3s	A
Flourish Loop	0.074	8.3s	A
Northern link road	0.039	7.6s	A

The western access can be expected to operate with excellent Levels of Service during the Thursday PM peak period. As this period will be the busiest period of operation, excellent operation can be expected at all times.

All accesses to the local centre car park are shown to operate with excellent Levels of Service.

Lyon Road / Flourish Loop Roundabout

The intersection of Lyon Road with Flourish Loop has already been constructed as a small roundabout. The intersection is a very appropriate treatment at this location to ensure a slow speed environment on the main street. Appendix F shows the analysis of the Thursday peak period operation of this access. Table 7 shows a summary of the operation.

Table 7 Lyon Road / Flourish Loop Thursday PM Peak Analysis

Approach	Saturation	Delay	LoS
Lyon Road south	0.252	7.8s	A
Alliance Entrance	0.062	10.2s	A
Lyon Road north	0.205	9.7s	A
Flourish Loop	0.257	10.4s	A

The intersection of Lyon Road / Flourish Loop can be expected to operate with excellent Levels of Service during the Thursday PM peak period. As with the accesses to the site, the Thursday PM peak can be expected to be the busiest period and therefore, excellent operation can be expected at all times.

Gibbs Road / Lyon Road

The intersection of Gibbs Road / Lyon Road has already been constructed as a single lane roundabout. Current Thursday PM peak operation is good, with no unreasonable delays to any movements. Analysis of this key intersection has been undertaken using the traffic forecasts provided by the City of Cockburn's modelling for 2031. Appendix G shows the

analysis of the Thursday peak period operation of this access. Table 8 shows a summary of the operation.

Table 8 Gibbs Road / Lyon Road Thursday PM Peak Analysis (2031 forecast)

Approach	Saturation	Delay	LoS
Lyon Road south	0.578	11.1s	B
Gibbs Road east	0.284	12.2	B
Lyon Road north	0.867	47.3	D
Gibbs Road west	0.910	17.9s	B

The existing roundabout at the intersection of Gibbs Road / Lyon Road is shown to operate during the busiest peak period with good Levels of Service. Due to the high traffic demands on Gibbs Road from the Freeway, the Level of Service on the main street is much lower than any other approach. However, Level of Service D is considered to be an acceptable Level of Service for peak period operation.

Depending upon the timing of infrastructure in the locality, this roundabout may start to operate more poorly than reflected in the analysis. However, it should be borne in mind that the peak demand shown on Gibbs Road of 1,005 vehicles in the Thursday PM Peak will be constrained by the traffic signals at the Kwinana Freeway. It is unlikely that this traffic demand can increase much more than shown for the 2031 forecast, unless a new bridge is constructed over the Kwinana Freeway.

All local intersection will operate in an acceptable manner based on the 2031 traffic forecasts.

Analysis of the local area is undertaken for the Thursday PM peak period. The local centre will also experience a period of peak activity on Saturday between 11am and 12pm. However, traffic volumes on the local road network are indicated from the scats data at the Freeway interchange to be 13% lower. Given the good operation of the local road network during the busy Thursday PM peak period; it is considered that good operation will also occur during the Saturday peak.

6.0 PARKING

Car parking at Harvest Lakes local centre is an important element to the viability of the centre. However, the cost of providing car parking can be excessive and a balance needs to be made between planning requirements and parking demands. Further, large empty car parks detract from the amenity of the centre, creating a visually unattractive blight for the community. For Harvest Lakes, car parking is well located adjacent to the Freeway and Gibbs Road and will be screened from the community by future development to the south of Flourish Loop.

The City of Cockburn's TPS indicates the following car parking requirements:

- | | |
|---|---|
| • Shops (5,000m ² – 10,000m ²) | 1 bay per 14m ² |
| • Banks | 1 bay per 20m ² |
| • Office | 1 bay per 50m ² |
| • Café | 1 per 4 persons (= 1 per 5m ² public area) |

Harvest Lakes has supermarket and shop uses of 5,000m². It can be expected that one of the retail units would be a bank of about 100m². The commercial floor space totals 714m².

- | | |
|---|----------|
| • Shops 4,900m ² @ 1 bay per 14m ² | 350 bays |
| • Bank 100m ² @ 1 bay per 20m ² | 5 bays |
| • Commercial 714m ² @ 1 bay per 50m ² | 14 bays |

A total of 369 bays would be required to satisfy the parking requirements set out in the City of Cockburn's TPS.

The site plan shows that the supermarket car park can accommodate 241 bays (includes 4 disabled bays) plus an expansion for an additional 36 bays. Parking to the east at the rear of the Main street retail units provides an additional 44 bays. In total, 321 off-street parking bays are provided.

321 off-street parking bays are provided.

Lyon Road (the main street) provides for 12 on-street parking bays and Flourish Loop provides a further 24 bays. In total 36 on-street parking bays have been constructed. Combined with the off-street parking bays, Harvest Lakes provides a total of 357 bays.

Harvest Lakes local centre has 357 parking bays.

In terms of off-street car parking, Harvest Lakes centre could be considered to have a shortfall of (369 - 321) 48 bays. However, Harvest Lakes is not a stand-alone supermarket development, it is to be a local centre and on that basis, parking on-street within the study area needs to be considered as part of the parking supply. Including the on-street car parking, the local centre would be considered to have a shortfall of 12 bays to the City of Cockburn's TPS parking requirements.

It is considered that the shopping centre has a shortfall of 12 bays to the TPS requirements.

Other Local Government Town Planning Schemes

The City of Cockburn's TPS parking requirement of 1 bay per 14m² (7.14 bays per 100m²) is considered very high in comparison to many other local governments. A car parking ratio of 5 bays per 100m² is common and would reduce the overall car parking requirement. In established town centre localities, many local governments have adopted 5 bays per 100m² for shopping centres. It is considered therefore that a departure by the City of Cockburn from the current parking requirements of the TPS would not be a departure from current planning requirements. Local government TPS's that support this reduction are:

- The City of Fremantle TPS 3 has a requirement for 5 bays per 100m² for retailing.
- The City of Bunbury's TPS 7 has a requirement for shops of 1 bay for each 20m² (5 per 100m²).
- The City of Mandurah's TPS 3 has a requirement for shops of 1 bay for each 20m² (5 per 100m²).
- The City of Stirling' TPS 2 has a requirement for shops of 1 bay for each 20m² (5 per 100m²).
- The City of Subiaco's TPS 4 has a requirement for shops of 1 bay for each 20m² (5 per 100m²).

Applying a car parking requirement of 5 bays per 100m² to the local centre would result in a parking requirement of (5,000/100 x 5) 250 bays, or a reduction of 100 bays to that required by the City of Cockburn's TPS.

It is considered that ample parking is provided for the shopping centre.

Land Use Changes

The shopping centre is owned by one entity, so there is the ability to control future land uses in terms of possible changes in use. This report has considered the parking based on shops and commercial land uses. As the local centre grows it can be expected that cafes and restaurants will want to open up. Based on the City of Cockburn's TPS, a café or restaurant would require a parking provision of about 1 bay for every 5m² of public floor area.

This raises a question – will a change in use require additional parking to be provided?

To assess the possible impacts, an assessment of the parking requirements of a 200m² tenancy is undertaken.

Based on retail uses a 200m² tenancy would require (@ 1 per 14m²) 14 bays. The bays would be required between 9am to 5pm on most days (assuming Sunday trading). If the same tenancy is used as a café or restaurant then the public floor area would be about 70% of the GFA to allow for kitchen, toilets. At 1 bay per 5m² the tenancy would require 28 bays. However the peak attraction would be expected after 5pm and the full requirement assumes 100% occupancy.

It can be seen therefore that changing shops to restaurants could result in double the parking requirements under the TPS. However, due to the times of peak attraction an issue with parking would not be anticipated until some 50% of the local centre floor area was converted. This suggests that encroachment of restaurant type uses into the supermarket floor space would be required to result in a serious impact to car parking requirements. This is highly unlikely to occur.

Parking issues would only be expected with a change of use to the supermarket floor space.

The demand for parking during the day for café and restaurant uses is further diminished when the level of pass-by trade is considered.

Pass-by Attraction

The application of the TPS parking requirement is based on all land uses being considered in isolation. In a shopping centre, many of the land uses will have reciprocal customers (and is the basis behind small business locating inside a shopping centre). Supermarket customers can be expected to use other shops and any cafés that develop over time. New restaurants will have cross-visitation with the tavern.

Reference to the ITE *Trip Generation* document considers the pass-by attraction of land uses for traffic and these rates could equally apply to pedestrian traffic. Although it would be expected that the level of pass-by trade from pedestrians would be substantially higher.

Pass-by attraction rates suggested by the ITE are as follows:

- Supermarket 20%
- Convenience store 40%
- Fast food restaurant 40%
- Sit down restaurant 15%

If land uses change to provide restaurants and cafes, it can be expected that 15% of trade will already be in the local centre. In the case of a fast food restaurant, up to 40% of trade will already be in the local centre. Thus, during the day the example 200m² tenancy would experience a 15% to 40% reduction in the parking demand. Thus the derived 28 bays could be reduced to 17 bays, or 3 more bays than would be required for retail uses.

It is concluded that future land use changes will not significantly affect car parking demands.

Forecast Parking Demand

Based on surveys of shopping centres it is possible to determine the anticipated level of parking based on the traffic arrivals and departures. Obviously within an hour period, there can be some variations, but Figure 4 shows the level of parking demand by hour based on the daily traffic generation of the local centre applied to average shopping centre traffic

profiles. It should be noted that profiles may have changed as a result of recent changes to trading.

Figure 4 indicates that on a Thursday PM peak period; a parking attraction of about 250 vehicles can be expected. This is well below the level of parking to be provided and significantly lower than the requirements of the TPS.

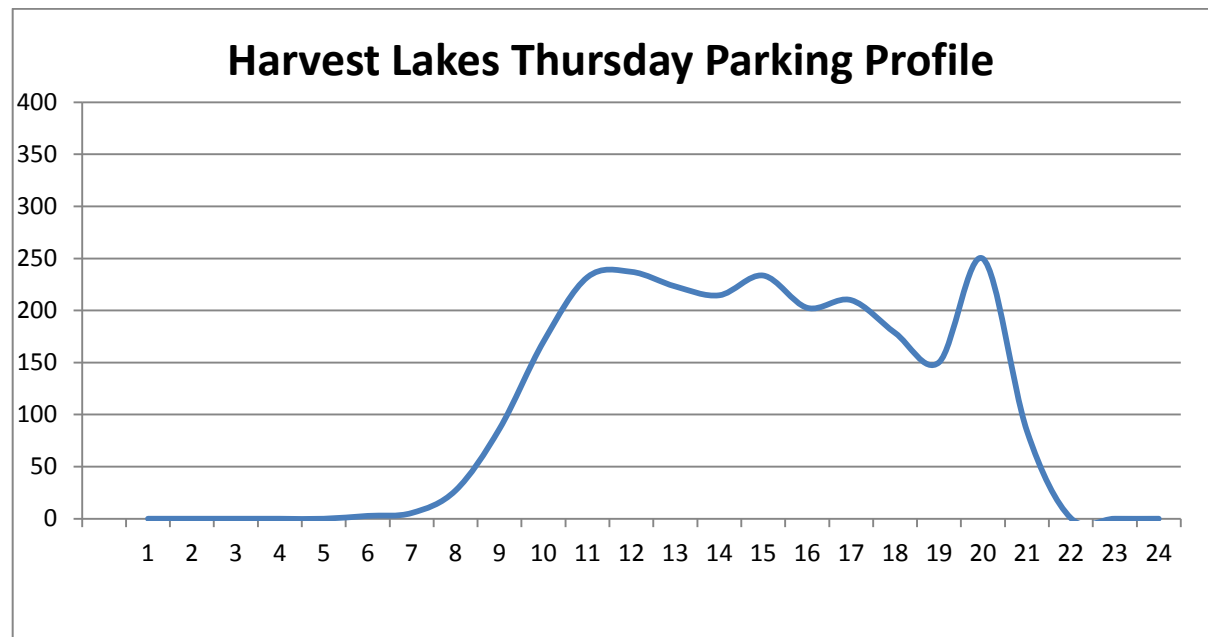


Figure 4 Harvest Lakes Thursday Parking Demand Profile

Figure 5 shows the same profile applied to the Saturday traffic profile and it can be seen that a demand for less than 350 bays could be expected. It should be noted that the profile used for Saturday is prior to Sunday trading. It is likely that peak periods on a Saturday will have reduced slightly.

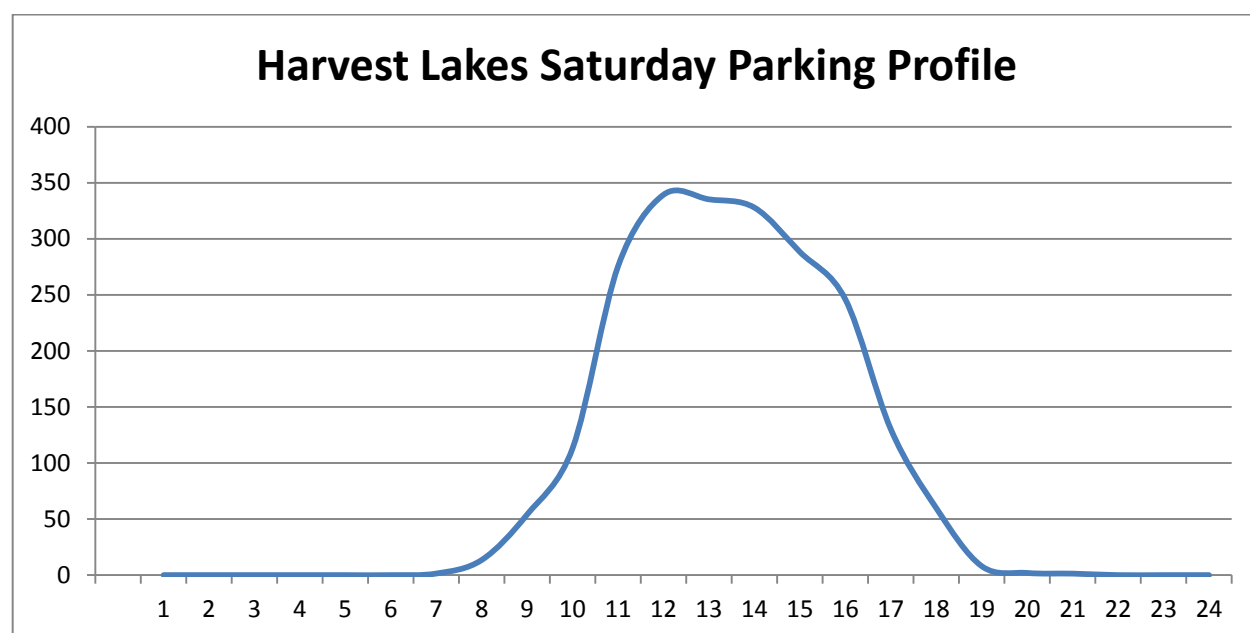


Figure 5 Harvest Lakes Saturday Parking Demand Profile

It is acknowledged that the Saturday parking demands meet the proposed provision of parking in that part of the local centre included in the development application and one could suggest that no surplus is provided. However, this will not be the case as the Harvest Lakes local centre needs to be considered as a whole.

There are other land uses within the local centre that are not part of this application, being a child care centre and a medical centre.

The Harvest Lakes Village centre plan indicates that an additional 34 on-street bays will be provided on Alliance Entrance (12 are already provided), 34 bays can be provided adjacent to the child care centre and 26 bays for the medical centre. These two land uses are the subject of future applications, but the planning for Harvest Lakes sets out that parking within the local centre is to be reciprocal.

On the peak Thursday, it can be seen that sufficient parking is provided to meet the forecast demands and thus the child care and medical centres would provide sufficient parking through the TPS to meet their needs. It can be expected that on a Saturday, these two uses are unlikely to operate and thus an additional 94 parking bays will be available within Harvest Lakes local centre.

As a local centre, Harvest Lakes has ample parking to meet the expected peak demands.

Some may raise an argument that each development should provide the parking requirements upon its own landholding. However, this is contrary to the good functioning of a local centre. It is extremely important that car parking is spread over the centre to provide pedestrian activity on Lyon Road (the main street) so that a lively and vibrant centre develops. Locating all parking in one area away from the main street will result in a vacant focal street that will not be attractive to retailers and therefore will cease to operate.

Parking for Harvest Lakes is appropriately located to stimulate a vibrant local centre.

7.0 PEDESTRIANS, CYCLISTS AND PUBLIC TRANSPORT

Harvest Lakes town centre has been designed to enhance the pedestrian environment to provide a vibrant and rich meeting place. Lyon Road through the town centre has already been developed to provide a slow speed environment and promote pedestrian activity. Photograph 3 shows the current layout of Lyon Road passing through the town centre.



Photograph 3 Lyon Road

Footpaths are provided to all local streets and are to an appropriate standard. A good pedestrian environment has been created for Harvest Lakes.

The local centre is well located to provide a good walkable catchment as shown in Figure 6.



Figure 6 400m Walkable Catchment

Cycle Facilities

The design of the local road network has included for cycle lanes and, as a new development, appropriate facilities have already been constructed. The Harvest Lakes design expectations document makes the following comment regarding cycles:

In order to promote the use of bicycles as an alternative form of transportation, generous facilities for the parking and storage of bicycles should be provided. Secure bicycle parking should be provided at a minimum rate of 1 space per 200m² GLA for commercial and retail development. Secure bicycle parking includes fully enclosed lockable storage facilities as well as outdoor bicycle racks.

Indicatively, the concept plan sets out to provide 20 cycles racks appropriately located for the local centre. This level of cycle parking is based on experience of similar centres in South Australia.

Public Transport

A bus service is already provided through Harvest Lakes that links the residential areas to the south through Lyon Road to Cockburn railway station and the regional shopping centre. Figure 7 shows the current route. Route 527 operates on a half hourly basis throughout the day with a 20 minute frequency in the morning peak period.

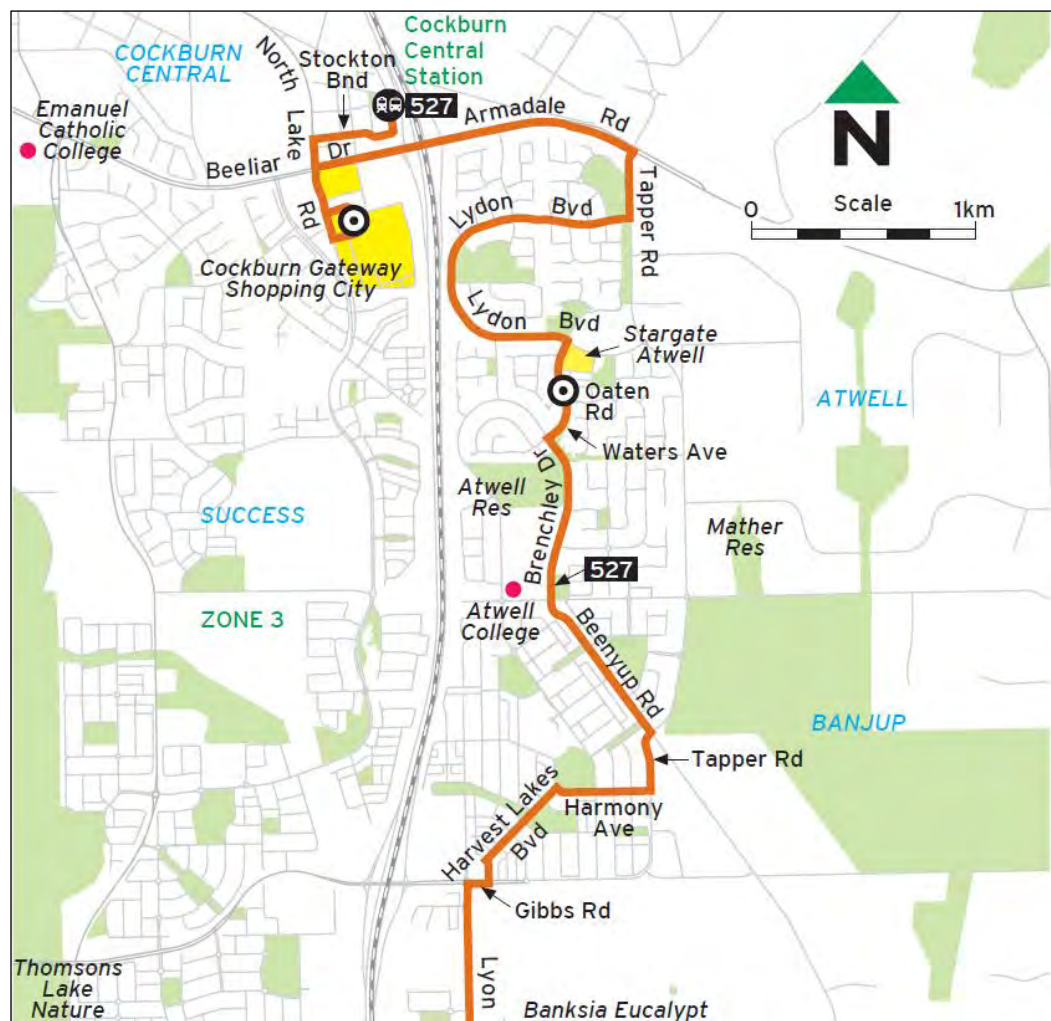


Figure 7 Local Bus Routes

8.0 SERVICING

Figure 8 shows the swept path of a standard delivery vehicle passing through the site. Adequate space is provided to safely accommodate truck movement through the car park to access the loading dock. The western access has been designated for delivery vehicles to reduce conflict with pedestrians and the majority of vehicles accessing the car park.

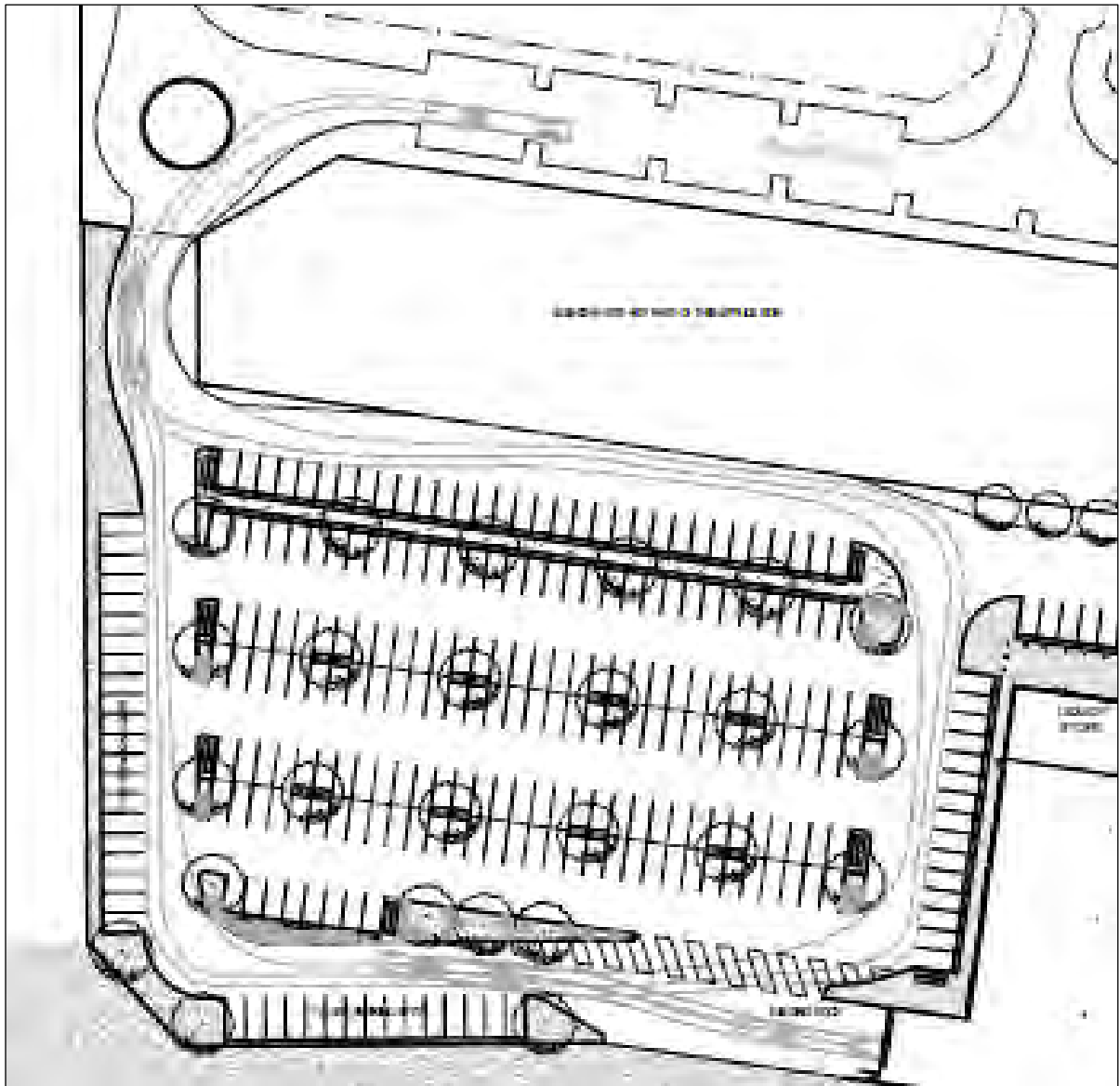
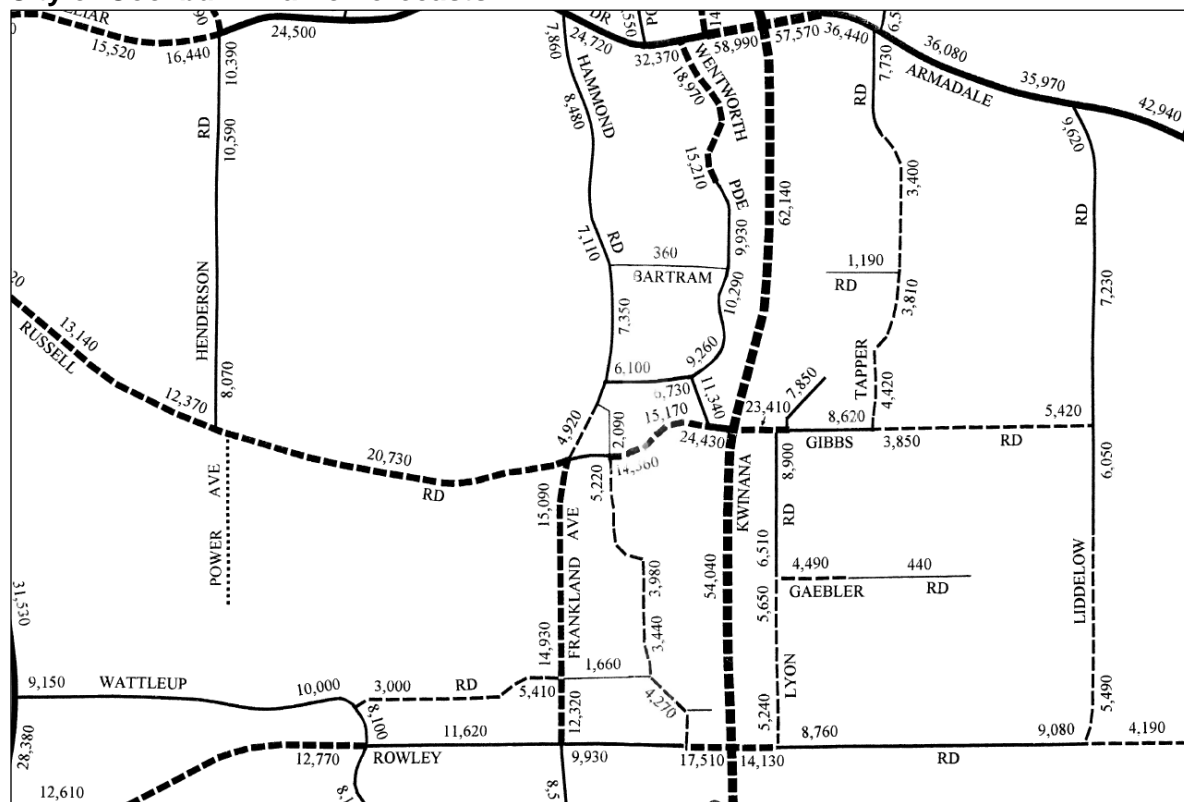


Figure 8 Delivery Vehicles Swept Path

Ample width is provided through the car park that would allow easy access by refuse vehicles.

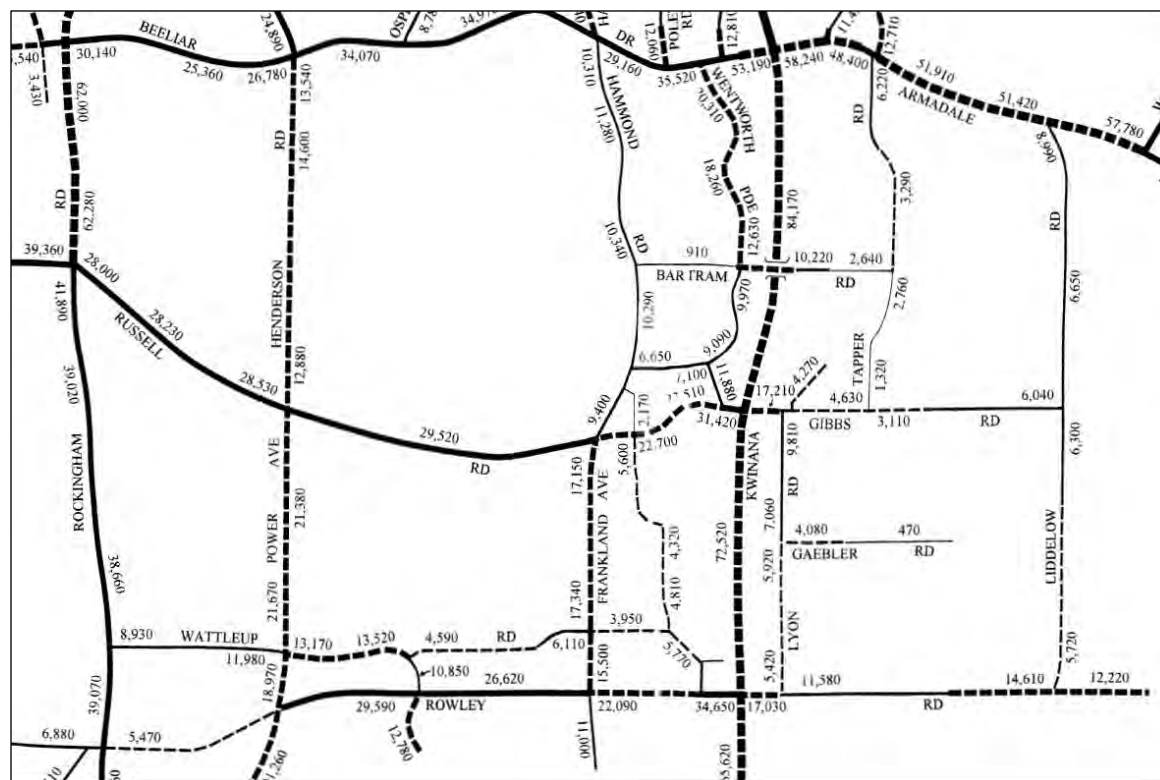
APPENDIX A

City of Cockburn Traffic Forecasts



2016 Weekday Traffic flows without Roe Highway (Figure 5)

Note: with Roe Highway the Gibbs Road volume decreases by 3,320vpd



2031 Weekday Traffic flows without Roe Highway (Figure 10)

Note: with Roe Highway the Gibbs Road volume increases by 260vpd

APPENDIX B

Levels of Service by Road Type

LOS	Single Carriageway ¹	2-Lane Boulevard ²	Dual Carriageway (4-Lanes) ³	Dual Carriageway (4-lane Clearway) ³
A	2,400vpd	2,600vpd	24,000vpd	27,000vpd
B	4,800vpd	5,300vpd	28,000vpd	31,500vpd
C	7,900vpd	8,700vpd	32,000vpd	36,000vpd
D	13,500vpd	15,000vpd	36,000vpd	40,500vpd
E	22,900vpd	25,200vpd ⁴	40,000vpd	45,000vpd
F	>22,900vpd	>25,200vpd ⁴	>40,000vpd	>45,000vpd

¹ Based on Table 3.9 Austroads - Guide to Traffic Engineering Practice Part 2

² Based on single carriageway +10% (supported by Table 3.1 Austroads - Guide to Traffic Engineering Practice Part 3) – Boulevard or division by medians.

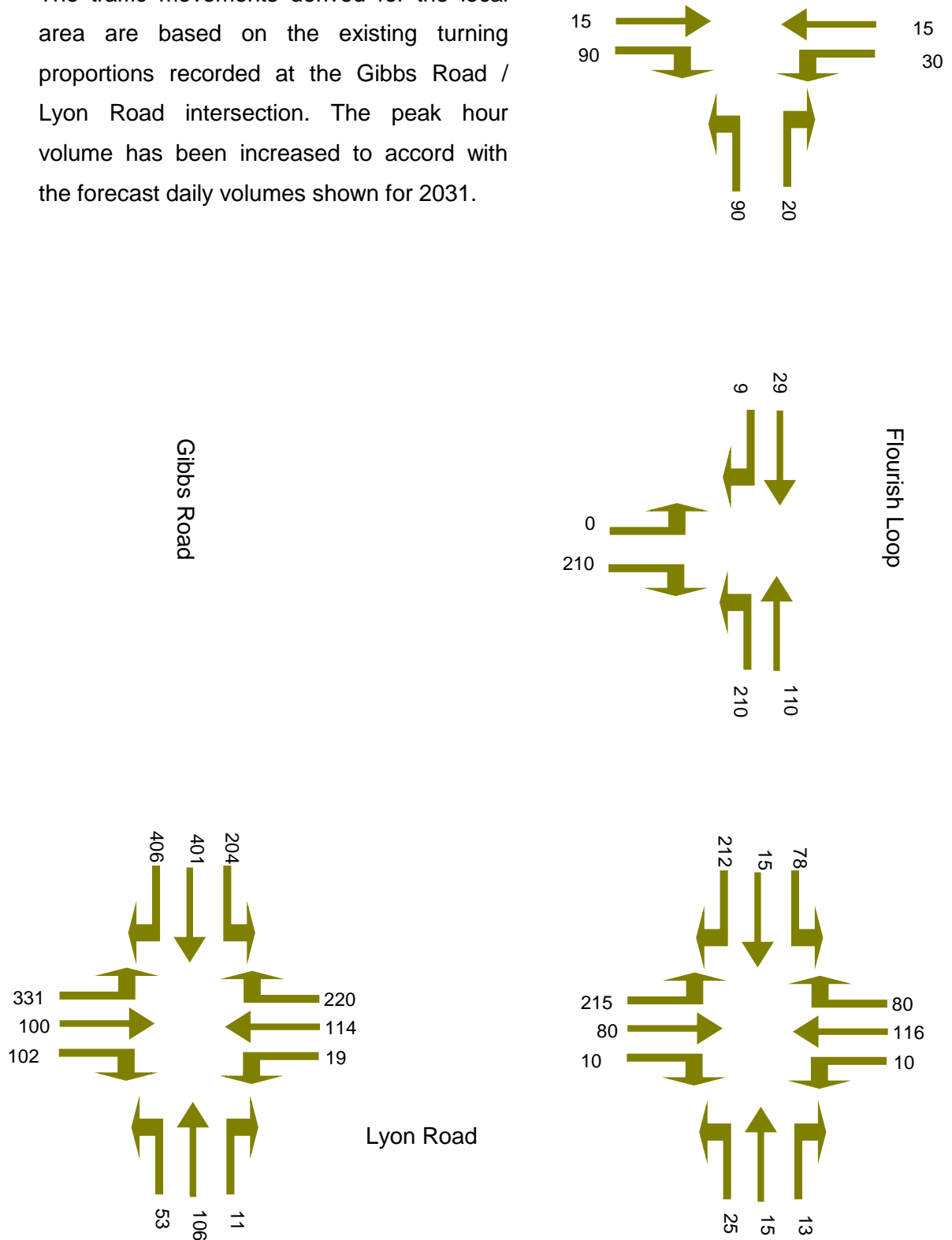
³ Based on RRR Table 3.5 - mid-block service flow rates (SF.) for urban arterial roads with interrupted flow. Using 60/40 peak split.

⁴ Note James Street Guildford passes 28,000vpd.

APPENDIX C

DERIVED THURSDAY PM PEAK FLOWS

The traffic movements derived for the local area are based on the existing turning proportions recorded at the Gibbs Road / Lyon Road intersection. The peak hour volume has been increased to accord with the forecast daily volumes shown for 2031.



APPENDIX D**MOVEMENT SUMMARY****Site: Flourish Loop Access**

Harvest Lakes Local Centre
Main Access to Flourish Loop
Thursday PM Peak
Giveaway / Yield (Two-Way)

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Site Access											
1	L	1	3.0	0.351	8.2	LOS A	2.2	15.6	0.52	0.64	29.1
3	R	211	3.0	0.342	8.7	LOS A	2.2	15.6	0.52	0.74	28.9
Approach		212	3.0	0.342	8.7	LOS A	2.2	15.6	0.52	0.74	28.9
East: Flourish Loop east											
4	L	211	3.0	0.180	4.5	LOS A	0.0	0.0	0.00	0.57	33.4
5	T	105	3.0	0.180	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
Approach		316	3.0	0.180	3.0	LOS A	0.0	0.0	0.00	0.38	35.3
West: Flourish Loop west											
11	T	31	3.0	0.026	1.3	LOS A	0.2	1.3	0.40	0.00	34.1
12	R	9	3.0	0.026	6.3	LOS A	0.2	1.3	0.40	0.70	32.1
Approach		40	3.0	0.026	2.5	LOS A	0.2	1.3	0.40	0.17	33.6
All Vehicles		567	3.0	0.342	5.1	NA	2.2	15.6	0.22	0.50	32.5

APPENDIX E**MOVEMENT SUMMARY****Site: New Site - 2**

Harvest Lakes
 Western Access to Flourish Loop
 Thursday PM Peak
 Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Site Access											
2	T	16	3.0	0.072	6.7	LOS A	0.4	2.7	0.09	0.48	50.2
3	R	84	3.0	0.072	11.0	LOS A	0.4	2.7	0.09	0.72	46.2
Approach		100	3.0	0.072	10.3	LOS A	0.4	2.7	0.09	0.68	46.8
East: Flourish Loop											
4	L	84	3.0	0.074	7.6	LOS A	0.4	2.9	0.08	0.59	49.4
6	R	21	3.0	0.074	11.0	LOS A	0.4	2.9	0.08	0.75	46.3
Approach		105	3.0	0.074	8.3	LOS A	0.4	2.9	0.08	0.63	48.7
North: Northern link road											
7	L	32	3.0	0.039	7.9	LOS A	0.2	1.5	0.20	0.60	48.8
8	T	16	3.0	0.039	7.0	LOS A	0.2	1.5	0.20	0.51	49.5
Approach		47	3.0	0.039	7.6	LOS A	0.2	1.5	0.20	0.57	49.1
All Vehicles		253	3.0	0.074	9.0	LOS A	0.4	2.9	0.10	0.64	48.0

APPENDIX F

MOVEMENT SUMMARY

Site: Lyon Road - Flourish
Loop PM Peak

Harvest Lakes
Lyon Road / Flourish Loop
Thursday PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance		per veh	km/h
South: Lyon Road south											
1	L	218	3.0	0.252	8.0	LOS A	1.9	13.4	0.32	0.59	48.5
2	T	84	3.0	0.252	7.1	LOS A	1.9	13.4	0.32	0.52	48.9
3	R	11	3.0	0.251	11.6	LOS A	1.9	13.4	0.32	0.74	45.8
Approach		313	3.0	0.252	7.8	LOS A	1.9	13.4	0.32	0.58	48.5
East: Alliance Entrance											
4	L	26	3.0	0.062	9.6	LOS A	0.4	2.8	0.52	0.66	47.4
5	T	16	3.0	0.062	8.7	LOS A	0.4	2.8	0.52	0.61	47.5
6	R	14	3.0	0.062	13.2	LOS A	0.4	2.8	0.52	0.76	44.7
Approach		56	3.0	0.062	10.2	LOS A	0.4	2.8	0.52	0.67	46.7
North: Lyon Road north											
7	L	11	3.0	0.206	8.8	LOS A	1.4	10.2	0.46	0.65	47.8
8	T	122	3.0	0.205	7.9	LOS A	1.4	10.2	0.46	0.59	48.0
9	R	80	3.0	0.205	12.5	LOS A	1.4	10.2	0.46	0.77	45.4
Approach		213	3.0	0.205	9.7	LOS A	1.4	10.2	0.46	0.66	47.0
West: Flourish Loop											
10	L	82	3.0	0.257	8.0	LOS A	1.9	13.6	0.31	0.57	48.3
11	T	16	3.0	0.259	7.1	LOS A	1.9	13.6	0.31	0.50	48.7
12	R	223	3.0	0.257	11.6	LOS A	1.9	13.6	0.31	0.69	45.5
Approach		321	3.0	0.257	10.4	LOS A	1.9	13.6	0.31	0.65	46.3
All Vehicles		902	3.0	0.257	9.3	LOS A	1.9	13.6	0.36	0.63	47.2

APPENDIX G**MOVEMENT SUMMARY**

**Site: Gibbs Road - Lyon Road
PM Peak**

Gibbs Road / Lyon Road
Thursday PM Peak
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand	HV	Deg.	Satn	Average	Level of	95% Back of Queue		Prop.	Effective	Average
		Flow							Vehicles			
		veh/h		%	v/c	sec		veh	m		per veh	km/h
South: Lyon Road south												
1	L	348	3.0	0.578	10.4	LOS A	6.3	45.1	0.76	0.79	46.5	
2	T	103	3.0	0.580	9.5	LOS A	6.3	45.1	0.76	0.77	46.3	
3	R	107	3.0	0.577	14.6	LOS B	6.3	45.1	0.76	0.85	43.8	
Approach		559	3.0	0.578	11.1	LOS B	6.3	45.1	0.76	0.80	45.9	
East: Gibbs Road east												
4	L	56	3.0	0.285	12.5	LOS A	2.3	16.8	0.83	0.87	45.1	
5	T	112	3.0	0.285	11.6	LOS A	2.3	16.8	0.83	0.85	45.3	
6	R	12	3.0	0.282	16.7	LOS B	2.3	16.8	0.83	0.92	42.5	
Approach		179	3.0	0.284	12.2	LOS B	2.3	16.8	0.83	0.86	45.0	
North: Lyon Road north												
7	L	20	3.0	0.870	45.0	LOS D	15.7	112.7	1.00	1.45	26.7	
8	T	120	3.0	0.870	44.1	LOS D	15.7	112.7	1.00	1.45	26.8	
9	R	232	3.0	0.867	49.2	LOS D	15.7	112.7	1.00	1.45	26.2	
Approach		372	3.0	0.867	47.3	LOS D	15.7	112.7	1.00	1.45	26.4	
West: Gibbs Road west												
10	L	208	3.0	0.910	16.5	LOS B	25.3	181.8	1.00	0.91	41.2	
11	T	422	3.0	0.910	15.6	LOS B	25.3	181.8	1.00	0.91	41.3	
12	R	427	3.0	0.909	20.8	LOS B	25.3	181.8	1.00	0.91	39.3	
Approach		1058	3.0	0.910	17.9	LOS B	25.3	181.8	1.00	0.91	40.5	
All Vehicles		2167	3.0	0.910	20.7	LOS B	25.3	181.8	0.92	0.97	38.4	



Form 1 - Responsible Authority Report (Regulation 12)

Application Details:	Proposed Hazardous Industry – Air Separation Plant
Property Location:	Lot 201 Mason Road, Kwinana Beach
DAP Name:	Metro South-West JDAP
Applicant:	BOC limited
Owner of Property:	BOC limited
LG Reference:	DA7640
Reporting Agency:	City of Kwinana
Authorising Officer:	Brenton Scambler - Coordinator Statutory Planning Paul Neilson Manager - Planning and Development
Application No and File No:	DP/13/0001
Report Date:	19 February 2013
Application Receipt Date:	6 December 2012
Application Process Days:	76 DAYS
Attachment(s):	1 – Aerial Photograph and Location Plan 2 – Development Plan – Location Plan 3 – Development Plan – Elevation Plan 4 – Development Plan – Drainage Plan
Tables and Figures	Table 1 – Local Planning Scheme Summary Figure 1 – Noise Contour Map Figure 2 – Cumulative Risk Contours

Recommendation:

That the Metro South-West JDAP resolves to:

Approve DAP Application reference DP/13/0001 and accompanying plans C224-XX6, C224-XX7, WME120703 in accordance with Clause 6.1 of the City of Kwinana Town Planning Scheme No.2, subject to the following conditions and advice notes:

Conditions

1. The use, management and development of the land being in accordance with the terms and provisions of Town Planning Scheme No 2
2. The premises being kept in a neat and tidy condition at all times by the owner/occupier to the satisfaction of the City of Kwinana.
3. Stormwater drainage from roofed and paved areas being disposed of on-site or as may otherwise be approved under Environmental Protection Authority (EPA) Licence conditions or approved Stormwater Management Plan.
4. The applicant shall implement dust control measures for the duration of the Site and Construction Works and for the ongoing operation of site to the satisfaction of the City of Kwinana.
5. Vehicle crossovers shall be constructed to the specifications and satisfaction of the City of Kwinana.
6. The provision of 20 car parking bays of the dimensions 5.5 X 2.5 metres, to be clearly marked on the ground and constructed of bitumen, brick or concrete and drained to the satisfaction of the City of Kwinana.

7. All vehicle parking to be accommodated within the boundaries of the subject lot.
8. All trafficable and vehicle parking areas are to be sealed and drained as per the City of Kwinana 'Trafficable Areas' Specifications to the satisfaction of the City of Kwinana.
9. All non-trafficable and lay-down areas as shown on the development plans within the subject lot being sealed and drained to comply with the City of Kwinana non-trafficable and lay-down area specifications.
10. 1745 square metres (5%) of the subject site is to be landscaped and maintained to a high standard thereafter to the satisfaction of the City of Kwinana
11. Vehicle parking spaces, accessways, and all other details specified on the development plans are to be installed prior to occupying the proposed development and maintained thereafter by the owner / occupier to the satisfaction of the City of Kwinana.
12. The provision of an adequate water supply for fire fighting purposes to the satisfaction of the City of Kwinana.
13. On-site effluent disposal systems shall be nutrient retentive. Use of conventional septic systems is not permitted.
14. All plant and vehicle wash down facilities shall be connected to an appropriate wastewater treatment system to the satisfaction of the City of Kwinana.
15. The development shall be connected to an adequate potable water supply in accordance with the standards required by the National Health and Medical Research Council Australian Drinking Water Guidelines, 2004.
16. The development shall comply with the requirements of the current Western Australian Government Sewerage Policy.
17. Storage of chemicals and liquids shall be within bunded impervious areas capable of containing any spillages and be connected to an appropriate disposal system.
18. All cooling systems used in the plant which utilise evaporative water handling systems shall be registered with the City of Kwinana under the provisions of the Health (Air and Water Handling Systems) regulations.
19. The applicant shall provide an updated acoustic report and implement any recommendations to the satisfaction of the City of Kwinana which demonstrates the following:
 - (a) Address cumulative noise assessments in a format that is compatible with the current Kwinana Industrial Council (KIC) assessment methodology (Cumulative noise assessments should also include a comparison of sound level emitting from BOC in comparison to findings of the 2005 Cumulative noise study carried out by the KIC which indicated total sound power for the existing BOC plant was 113dB(A);
 - (b) Amended assessment to adopt the modelling criteria stated in EPA Guidance No 8 which specifies the worst case night time & day time conditions for the CONCAWE algorithm, and ground absorption parameters used, actual elevations used when modelling.
20. This approval is valid for 24 months only. If development is not substantially commenced or completed within this period a fresh approval must be obtained before commencing or continuing with the development.

Note that the following advice will be provided to the applicant as footnotes on the approval.

1. The applicant is advised that all future development must be submitted to the City of Kwinana prior to the commencement of works or alteration of land use.
2. Should the applicant be aggrieved by the decision or any condition imposed, then a right of review should be lodged with the State Administrative Tribunal within 28 days of the date of this decision.
3. The applicant is further advised that this is not a building licence to enable construction to commence. A building licence is a separate City of Kwinana requirement and construction cannot be commenced until a building licence is obtained.
4. The applicant should ensure that the proposed development complies with all other relevant legislation, including but not limited to, the Environmental Protection Act 1986 and Regulations, Dangerous Goods Safety Act 2004 and Regulations and Contaminated Sites Act 2003.
5. The proponent is advised to liaise with the Kwinana Industries Council (KIC) to include the noise emissions from the development into the KIC cumulative noise model.

Background:

Property Address:	Lot 201 Mason Road, Kwinana Beach
Zoning	MRS: Industry
	TPS: General Industry
Use Class:	Hazardous Industry – Air Separation Plant
Strategy Policy:	City of Kwinana Local Planning Policy (LPP) 3.3.29 Development within Industrial Zones City of Kwinana Draft Industrial Strategy
Development Scheme:	City of Kwinana Town Planning Scheme No.2
Lot Size:	3.49ha
Existing Land Use:	Hazardous Industry (Industrial Gas Processing) / Vacant
Value of Development:	\$59 million

BOC Limited proposes to construct and operate a new 120 tonne per day (tpd) Air Separation Unit and Nitrogen Liquefaction Unit within their existing industrial gas processing plant facility on Lot 201 Mason Road, Kwinana Beach.

BOC Limited currently operates the existing Kwinana facility which was opened in 1984. The production operations on-site currently consist of a 40 tpd Air Separation Unit with associated Nitrogen Liquefaction Unit, a 70tpd CO₂ Liquefaction Unit, a 220 tpd CO₂ pipeline compression and purification Unit and a 200m³/hr Hydrogen Purification Unit. The site manufactures gaseous nitrogen for existing pipelines to BP, CSBP, Nufarm, gaseous CO₂ for a pipeline to Alcoa, as well as merchant liquid oxygen, liquid nitrogen, hydrogen and liquid carbon dioxide.

It has been stated by the proponent that due to the existing plant reaching its end of life capabilities, a new plant is proposed rather than retrofit the existing plant as many parts cannot be economically or safely refurbished. The proposed development consists of the construction and/or relocation of the following:

- i. 120 tpd Air Separation Unit and Associated Nitrogen Liquefaction Unit;
- ii. Electrical transformers and high voltage switchgear;
- iii. Control room
- iv. Cooling Water systems;
- v. 1350 Kilo Litre (kL) Liquid Oxygen Storage – 3 x 450kL horizontal tanks and 1 x 100kL vertical tank;
- vi. 200kL Liquid Nitrogen Storage
- vii. 100kL Liquid Argon Storage

The proposed new plant will be located within a vacant portion of the north corner of the lot. Upon completion and commissioning of the proposed new plant much of the existing plant on-site will be decommissioned and removed. The decommissioning and removal of the existing plant from the property will however be subject to a separate planning application.

Legislation & Policy:

Legislation

The proposed Hazardous Industry – Air Separation Plant is subject to a range of licences and regulations applying to industry in Western Australia. A summary of the key legislation, regulations or local laws relevant to the application is listed below:

- *Contaminated Sites Act 2003*
- *Dangerous Goods Safety Act 2004* and Regulations
- *Environmental Protection Act 1986* and relevant Regulations
- *Health Act 1911*
- Kwinana Environmental Protection (Atmospheric Waste) Policy 1992 including 1999 Amendment Regulations
- *Local Government Act 1995*
- *Main Roads Act 1930*
- *Occupational Health and Safety Act 1984* and Regulations
- *Rights in Water and Irrigation Act 1914*
- State Environmental (Cockburn Sound) Policy 2005
- *Planning and Development Act 2005*
- City of Kwinana, Town Planning Scheme No. 2 (TPS2) and Local Planning Policies
- *Water and Rivers Commission Act 1995*

State Government Policies

State Planning Policy 4.1 – State Industrial Buffer Policy

State Planning Policy 2.6 – State Coastal Planning Policy and associated Position Statement

State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning

Local Policies

Local Planning Policy 3.3.25 – Development within the Cockburn Sound Catchment

Local Planning Policy 3.3.29 – Development within Industrial Zones.

The proposed development complies with the requirements of both the abovementioned local planning policies.

With respect to Local Planning Policy 3.3.25 (LPP), the proposal is unlikely to generate large volumes of waste water from the processes carried out within the facility. In this regard however, the proponent is required to capture all stormwater and dispose of it within the boundaries of the site, and all wastewater from ablution and plant / vehicle washdown facilities will be required to be connected to an appropriate treatment system.

With regard to the provisions of LPP 3.3.29, the proposed development complies with all relevant requirements of the policy. The development is required to be connected to a nutrient retentive effluent disposal system which limits the amount of nutrient run-off from effluent disposal. In this regard, the above requirement ensures that the development meets the objectives of the policy.

Consultation:

Consultation with other Agencies and Neighbouring Properties

The proposal represents an “SA” use within the context of the requirements of the TPS 2 and therefore is subject to the advertising requirements within the context of the Scheme. The application was advertised for a period of 21 days in accordance with TPS2 requirements and referred to neighbouring properties within 300m of the subject site, to the Department of Environment and Conservation (Noise Branch) and Dampier Bunbury Pipeline (DBP) for their comments. Given the location of the development in respect to the Dampier to Bunbury Natural Gas Pipeline, the application was referred to DBP who responded with no objections to the proposal. A total of three responses were received during the advertising period in support of the application.

Schedule of Submissions		
Submitter	Comments	City Response
Tronox Pigment Plant	No objection to proposal	Noted
Fremantle Port Authority	No objection to proposal	Noted
Dampier Bunbury Pipeline (DBP)	No objection to proposal	Noted

As the development is within a Clause 32 resolution area, under the provisions of the Metropolitan Region Scheme (MRS), the application was also forwarded to the Western Australian Planning Commission for its consideration and recommendation to the Joint Development Assessment Panel (JDAP).

Planning assessment:

BOC Limited have submitted plans and supporting documentation of proposed development (Refer Attachments 1 – 4).

Town Planning Scheme No. 2 Implications

Hazardous Industry is described under Appendix 4 (Interpretations) of TPS2 as: “an industry which by reason of the processes involved or the method of manufacture, or the nature of the materials used or produced requires isolation from other buildings.” In the context of the General Industrial Zone, a Hazardous Industry represents an “SA” use, where the JDAP, after consideration of public submissions, is able to exercise its discretion to approve or refuse to approve the proposal.

The City's Draft Industrial Strategy has been prepared as a supporting document to the City's draft Local Planning Strategy. The draft Local Planning Strategy was advertised for comment in 2005 and the Draft Industrial Strategy in 2006 with both documents now subject to further review for likely re-advertising. That draft strategy proposed a series of industrial classes according to the intensity and nature of the industrial use. It is useful as a guiding document for proposals of this type. Under this draft strategy, the proposal represents a Class II Industry. Class II industry under the draft strategy requires a 1000 metre separation distance from the nearest residential areas. The land holding is 1.9 km from the nearest residential zone in Kwinana as such, the development meets the separation objectives of the draft industrial strategy.

It is worth noting that the proposal is located within an area suitable for Class I (High impact industries) under the draft strategy and represents a lower industry class for the area.

Development Requirements under Town Planning Scheme No.2

The following Table lists the relevant provisions under TPS 2 which apply to this application. Other elements of the application relevant to the determination of applications under Part 2.4 of the Scheme are also detailed following.

Table 1 – City Planning Scheme Summary

City Planning Scheme No.2 Clause	Requirements	Planning Comment
6.8.1 – Outline Development Plans	Not Applicable	The Development is not subject to an outline development plan.
6.8.2, 6.8.3 – Minor Works not requiring planning approval	Not Applicable	The works proposed are substantial and do not fall within the works not requiring approval clauses of the Scheme.
6.8.4 – Plot Ratio and Site Coverage	0.8 Plot Ratio 65% Site Cover	The plot ratio and site coverage of the lot is within the scheme requirements with approximately 61% site cover in total and a plot ratio of 0.2. In this regard, the site coverage calculations are based on the existing plant remaining on-site. Upon removal of the existing plant, the site coverage will be reduced significantly.
6.8.5 – Minimum Setbacks from Boundaries	Side – 6 metres Rear – 9 metres Front - 15 metres	Setbacks to the proposed development comply with the scheme requirements with a front setback to the plant area of 110 metres, a rear setback of 11 metres and side setback of 45 metres. All other development on-site is well setback from all other boundaries.
6.8.6 – Appearance of Buildings	Buildings located, constructed and finished so as to not cause detriment to the locality	The proposed development is considered appropriate for the General Industrial Zone and should not detrimentally affect the amenity of the locality.

6.8.7 – Landscaping Areas	5% of site area to be landscaped and maintained	The current nature of landscaping on the site is compliant with the requirements of the Scheme. No further landscaping is proposed or required as part of this development. A condition has been placed on the approval requiring the maintenance of the existing landscaping on-site.
6.8.8 – Car Parking and Crossovers	Car Parking Spaces to be provided in accordance with Table III of the Scheme	Overall, the development requires the provision of 20 vehicle parking bays under Table III of the Scheme. Existing parking facilities are provided at the front of the development with additional truck tanker parking located within the plant area. A condition has been placed on the approval to ensure that the parking provided complies with the Scheme requirements.
6.8.9 – Loading and Unloading	Loading / Unloading areas to be maintained in good order	The proposed loading / unloading areas of the development are proposed to be provided in an appropriate location and manner.
6.8.10 – Waste Water and Effluent Disposal	Waste water to be managed in appropriately to preserve the environment and groundwater	Waste effluent water generated on-site is proposed and required to be disposed of through a nutrient retentive effluent disposal system. Stormwater collected on site is proposed to be piped and accommodated through the use of soakwells.
6.8.11 – Recycled Water	Council shall have regard to the ability to recycle water in industrial processes	The development on-site does not require the use of large volumes of water in the processes and therefore does not create the need to recycle process water.
6.8.12 – Fencing	Not Applicable	There is no boundary fencing proposed as part of this development. In the event that boundary fencing is erected, then it will need to comply with the requirements of TPS.2 and the City of Kwinana Fencing Local Law
6.8.13 – Private Utility	Not Applicable	Not applicable.

The proposed development complies with the requirements of TPS2 and its Policies.

Traffic and Transport Considerations

The proposed traffic modelling for the development has indicated that under normal operating conditions the total number of vehicular movements to and from the site will increase from 40 heavy vehicle movements to 52 heavy vehicle movements per week. The increase in heavy vehicle traffic to and from the site represents an increase of 12.5% (an additional 2 heavy vehicles per day). Whilst heavy vehicle movements are expected to marginally increase from site, BOC Limited has advised that their total vehicle movements across the state will reduce as a result of the

development. Currently BOC import material for their operations interstate to enable the company to supply the current Western Australian demand for their product. In this regard once the new plant is operational it will meet the current market demands and as a result interstate importing of products will cease.

Noise

In respect to noise emissions associated with the proposal, the noise report prepared for the proposal indicates that the development will comply with the assigned day and night time noise levels at the nearest noise sensitive location as prescribed under the requirements of the Environmental Protection Act (EP Act).

Upon assessment and referring the proposed Acoustic Report to the DEC Noise Branch, it was recommended that aspects of the noise report require further clarification by the proponent and amendments to the report. This is specifically to include cumulative noise assessment in regards to the development in the context of the broader Kwinana Industrial Area (KIA), and modeling using Environmental Protection Authority (EPA) Guidance Statement No 8 which specifies the worst case night time & day time conditions for the CONCAWE algorithm, and ground absorption parameters used, actual elevations used when modelling.

The City and the Kwinana Industries Council have an agreement that noise levels generated from the KIA will continue to be improved upon redevelopment and upgrade to existing industry and new industry will be encouraged to reduce noise levels as far as possible. This is being monitored by the City in assessing new applications for development and by the KIC through their cumulative noise model for the industrial area. It has also been advised that the proponent liaise with the Kwinana Industries Council for inclusion of their noise report into the KIA cumulative noise model.

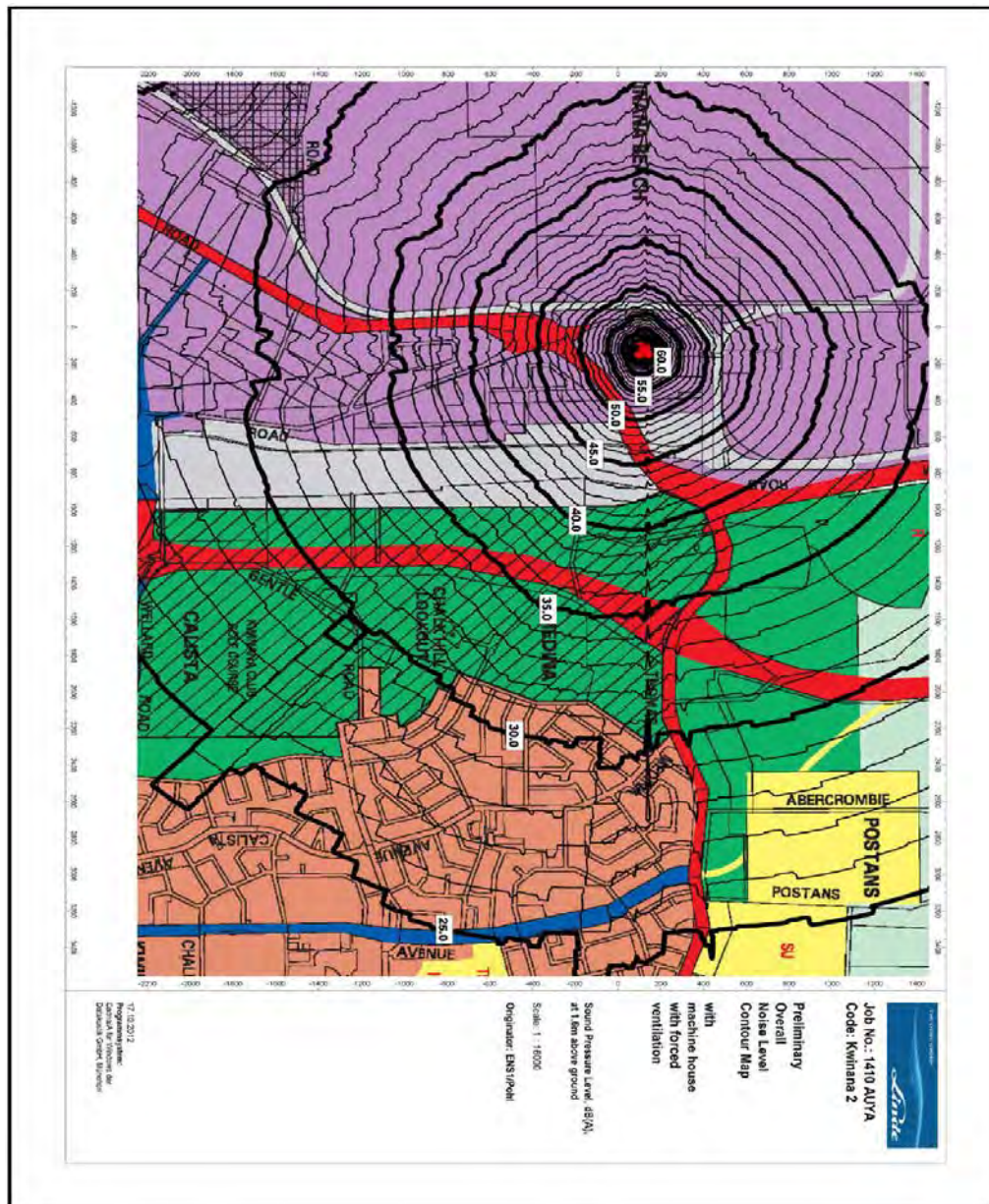


FIGURE 1 – Noise Contour Map

Air Emissions

Whilst there was no detailed air emission modeling undertaken as part of the proposal, it is expected that the air emissions from the development will be within the requirements of the EP Act. The development produces materials which are considered to be of low toxicity levels and the process does not create any atmospheric wastes.

Waste Disposal

The effluent generated on the site is required to be treated via a nutrient retentive effluent disposal system. It has been proposed and also required via a condition of approval that the development be connected to such a system.

It is required and detailed that all stormwater collected from the building and across the site will be collected and handled through stormwater drains.

Climate Change and Sea Level Rise

The objectives of the WAPC State Planning Policy 2.6 State Coastal Planning and associated Position Statement requires that the location of coastal facilities and development takes into account coastal processes including erosion and sea level change and biophysical criteria.

The Department of Transport's Sea Level Change in Western Australia – Application to Coastal Planning Report (February 2010) recommends for planning timeframes beyond 100 years that a vertical sea level rise of 0.01 m/year be added to 0.9m for every year beyond 2010. Under the WAPC Position Statement, for new development on a sandy coast the impact of this increase in vertical sea level rise value from 0.38 to 0.9m will result in an increased horizontal setback of 52m, increasing the total setback for the general guide from 100m to 150m.

The proposed development has a horizontal separation from the water mark of approximately 2 kilometres. Given the significant separation distance from the high water mark, it is not considered that sea level rise will significantly impact on this proposal.

Cumulative Risk

A quantitative risk assessment was undertaken for the development by independent consultants Bow-tie consulting. The risk assessment identified that the development complies with the EPA risk criteria for off site societal risk impacts. This is primarily due to the low toxicity of the products being produced on site. The risk modelling demonstrates that the level of risk produced at the boundary is far less than that allocated for an industrial use with the plant meeting the risk level allocated for a sporting ground or open playing field at the boundary.

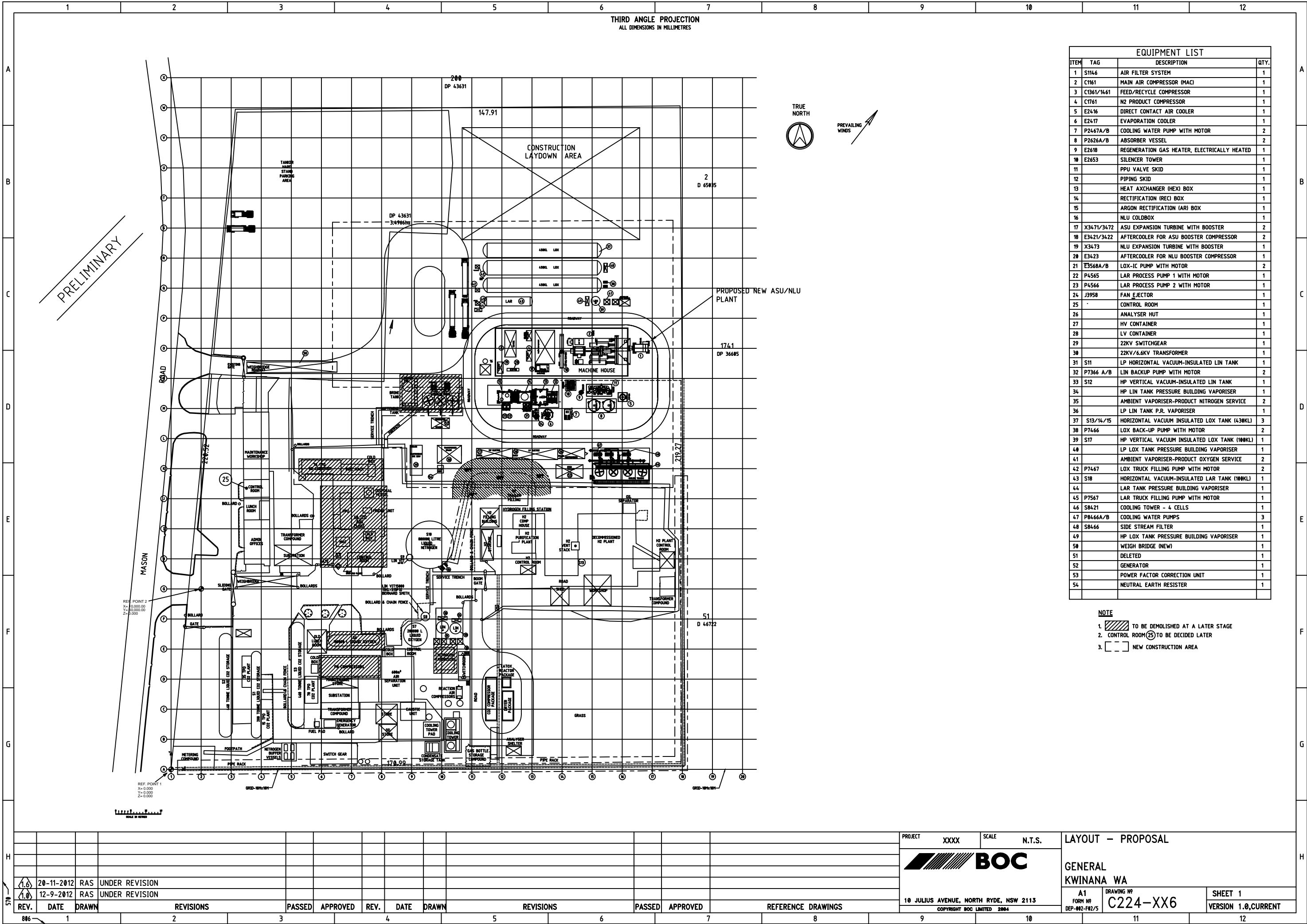


Figure 3 – Cumulative Risk Contour

Conclusion:

Upon assessment of the development against the objectives and requirements of Town Planning Scheme No.2, it is considered that the application can be approved subject to conditions. The development complies with the requirements of TPS2 and represents effective use of currently underutilised industrial land within KIA. Whilst the noise levels predicted to be produced by the development indicate compliance with the assigned levels, the report will require modification to include a cumulative noise model to ensure that there are no negative impacts on the nearest noise sensitive premises, as such it is appropriate that a condition be placed on the approval requiring this to be undertaken.

The image is an aerial photograph of a coastal area with various roads and property boundaries. A red box highlights a specific area, and a red arrow points to it from a label 'Subject Site'. The map includes labels for several roads: WESTON RD, BARTER RD, ROSELEY RD, DONALDSON RD, THOMAS RD, MOUNSEY RD, RICHARDSON ST, BUNCHER ST, BEAD H ST, OFFICE RD, PASKER RD, GENTLE RD, and WELLYARD RD. There are also labels for specific lots: Lot 1741, Lot 1742, Lot 1743, Lot 1744, Lot 1745, Lot 1746, Lot 1747, Lot 1748, Lot 1749, Lot 1750, Lot 1751, Lot 1752, Lot 1753, Lot 1754, Lot 1755, Lot 1756, Lot 1757, Lot 1758, Lot 1759, Lot 1760, Lot 1761, Lot 1762, Lot 1763, Lot 1764, Lot 1765, Lot 1766, Lot 1767, Lot 1768, Lot 1769, Lot 1770, Lot 1771, Lot 1772, Lot 1773, Lot 1774, Lot 1775, Lot 1776, Lot 1777, Lot 1778, Lot 1779, Lot 1780, Lot 1781, Lot 1782, Lot 1783, Lot 1784, Lot 1785, Lot 1786, Lot 1787, Lot 1788, Lot 1789, Lot 1790, Lot 1791, Lot 1792, Lot 1793, Lot 1794, Lot 1795, Lot 1796, Lot 1797, Lot 1798, Lot 1799, Lot 1800, Lot 1801, Lot 1802, Lot 1803, Lot 1804, Lot 1805, Lot 1806, Lot 1807, Lot 1808, Lot 1809, Lot 1810, Lot 1811, Lot 1812, Lot 1813, Lot 1814, Lot 1815, Lot 1816, Lot 1817, Lot 1818, Lot 1819, Lot 1820, Lot 1821, Lot 1822, Lot 1823, Lot 1824, Lot 1825, Lot 1826, Lot 1827, Lot 1828, Lot 1829, Lot 1830, Lot 1831, Lot 1832, Lot 1833, Lot 1834, Lot 1835, Lot 1836, 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EQUIPMENT LIST			
ITEM	TAG	DESCRIPTION	QTY.
1	S1146	AIR FILTER SYSTEM	1
2	C1161	MAIN AIR COMPRESSOR (MAC)	1
3	C1361/1461	FEED/RECYCLE COMPRESSOR	1
4	C1761	N2 PRODUCT COMPRESSOR	1
5	E2416	DIRECT CONTACT AIR COOLER	1
6	E2417	EVAPORATION COOLER	1
7	P2467A/B	COOLING WATER PUMP WITH MOTOR	2
8	P2626A/B	ABSORBER VESSEL	2
9	E2618	REGENERATION GAS HEATER, ELECTRICALLY HEATED	1
10	E2653	SILENCER TOWER	1
11		PPU VALVE SKID	1
12		PIPING SKID	1
13		HEAT EXCHANGER (HEX) BOX	1
14		RECTIFICATION (REC) BOX	1
15		ARGON RECTIFICATION (AR) BOX	1
16		NLU COLDBOX	1
17	X3471/3472	ASU EXPANSION TURBINE WITH BOOSTER	2
18	E3421/3422	AFTERCOOLER FOR ASU BOOSTER COMPRESSOR	2
19	X3473	NLU EXPANSION TURBINE WITH BOOSTER	1
20	E3423	AFTERCOOLER FOR NLU BOOSTER COMPRESSOR	1
21	E3568A/B	LOX-IC PUMP WITH MOTOR	2
22	P4565	LAR PROCESS PUMP 1 WITH MOTOR	1
23	P4566	LAR PROCESS PUMP 2 WITH MOTOR	1
24	J3958	FAN EJECTOR	1
25		CONTROL ROOM	1
26		ANALYSER HUT	1
27		HV CONTAINER	1
28		LV CONTAINER	1
29		22KV SWITCHGEAR	1
30		22KV/6.6KV TRANSFORMER	1
31	S11	LP HORIZONTAL VACUUM-INSULATED LIN TANK	1
32	P7366 A/B	LIN BACKUP PUMP WITH MOTOR	2
33	S12	HP VERTICAL VACUUM-INSULATED LIN TANK	1
34		HP LIN TANK PRESSURE BUILDING VAPORISER	1
35		AMBIENT VAPORISER-PRODUCT NITROGEN SERVICE	2
36		LP LIN TANK P.R. VAPORISER	1
37	S13/14/15	HORIZONTAL VACUUM INSULATED LOX TANK (430KL)	3
38	P7466	LOX BACK-UP PUMP WITH MOTOR	2
39	S17	HP VERTICAL VACUUM INSULATED LOX TANK (100KL)	1
40		LP LOX TANK PRESSURE BUILDING VAPORISER	1
41		AMBIENT VAPORISER-PRODUCT OXYGEN SERVICE	2
42	P7467	LOX TRUCK FILLING PUMP WITH MOTOR	2
43	S18	HORIZONTAL VACUUM-INSULATED LAR TANK (100KL)	1
44		LAR TANK PRESSURE BUILDING VAPORISER	1
45	P7567	LAR TRUCK FILLING PUMP WITH MOTOR	1
46	S8421	COOLING TOWER - 4 CELLS	1
47	P8466A/B	COOLING WATER PUMPS	3
48	S8466	SIDE STREAM FILTER	1
49		HP LOX TANK PRESSURE BUILDING VAPORISER	1
50		WEIGH BRIDGE (NEW)	1
51		DELETED	1
52		GENERATOR	1
53		POWER FACTOR CORRECTION UNIT	1
54		NEUTRAL EARTH RESISTOR	1

NOTE

1.  TO BE DEMOLISHED AT A LATER STAGE
2. CONTROL ROOM(25) TO BE DECIDED LATER
3.  NEW CONSTRUCTION AREA

1 2 3 4 5 6 7 8 9 10 11 12

A

B

C

D

E

F

G

THIRD ANGLE PROJECTION
ALL DIMENSIONS IN MILLIMETRES

NEW PLANT

EXISTING PLANT

38 METRES

35 METRES

COLD BOX

COLD BOX

S18 LIQUID NITROGEN STORAGE

S7 LIQUID OXYGEN STORAGE

S2 - 460 TONS CO2 STORAGE

COLD BOX

ADMIN. OFFICES

S11

S8

SOFT TANK

NLU COLD BOX

TANKER PARKING AREA

FENCE

SECONDARY ENTRANCE

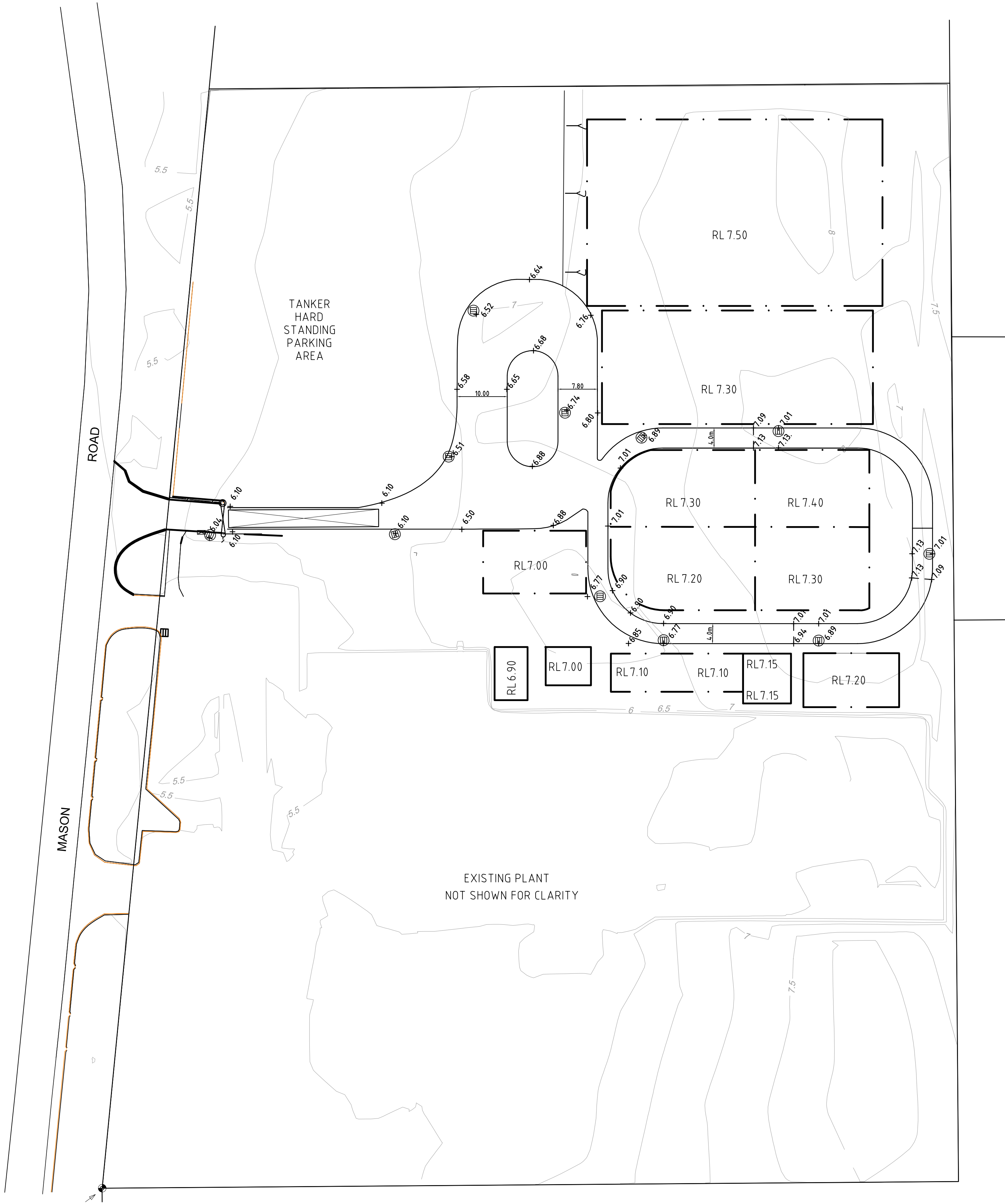
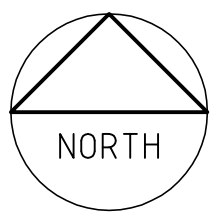
MAIN ENTRANCE

0 1 2 3 4 5 10 15 20
SCALE IN METRES

ELEVATION LOOKING EAST FROM MASON ROAD

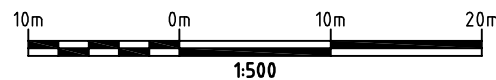
UNDER REVISION

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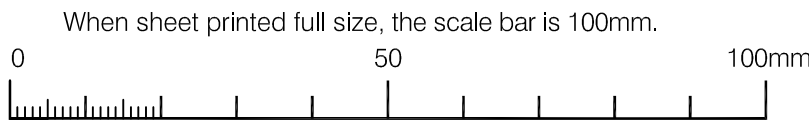


LEGEND:

- PROPOSED ROAD LEVEL
- PROPOSED SOAKWELL
- PROPOSED KERB OR EDGE OF BITUMEN
- CATCHMENT CREST
- PROPOSED PAD LEVEL
- EXISTING CONTOUR LEVEL
- EARTHWORKED PAD EXTENT
- BATTER FROM PAD TO ROAD



L:\2012\01\WME\120703 - BOC AS Separation Plant - WALCOWME\120703 C01.dwg Layout1 2011/2012 4:23 PM casalis@wms



B	20.11.12	REVISED LAYOUT	CS	CP	
A	19.09.12	PRELIMINARY ISSUE	CS	CP	
REV.	DATE	DESCRIPTION	DRAFT	ENG.	APP'D
<div>W&G WALLBRIDGE & GILBERT Consulting Engineers 20 Market Street, South Melbourne, Victoria 3205 Telephone (03) 9696 9522 Facsimile (03) 9696 9577 Email: wgmelb@wgmelb.com W&G Engineers Victoria Pty Ltd ACN 127 466 997</div>					
BOC LIMITED					
PROPOSED NEW ASU/NLU LOT 201 MASON ROAD KWINANA, WA. CIVIL LEVEL & DRAINAGE STRATEGY PLAN					
A1		Scale 1:500	DRAWING NUMBER		
Design C.P.		Drawn W.S.	Job Number WME120703 C01	Sheet No. B	Rev.

PRELIMINARY ISSUE
NOT FOR CONSTRUCTION



Form 1 - Responsible Authority Report (Regulation 12)

Application Details:	Construction of new air separation plant (to replace existing ageing plant) and nitrogen liquefaction unit, miscellaneous auxiliary works, and additional gas storage
Property Location:	Lot 201 Mason Road, Kwinana Beach
DAP Name:	Metro South-West Joint Development Assessment Panel
Applicant:	BOC Ltd
Owner:	BOC Ltd
LG Reference:	City of Kwinana DA7640
Responsible Authority:	Western Australian Planning Commission
Authorising Officer:	Executive Director Perth and Peel Planning
Application No. and File No:	DoP Ref 26-50183-1, DAP Ref DP/13/0001
Report Date:	5 February 2013
Application Receipt Date:	2 January 2013
Application Process Days:	48
Attachment(s):	1 Development Plans 2 Location Plans 3 Location of Liquid Gas Storages 4 Clause 32 Area

Recommendation:

That the Metro South-West Joint Development Assessment Panel resolves to:

Approve DAP Application reference DP/13/0001 and accompanying plans date stamped 2 January 2013 by the Department of Planning in accordance with the provisions of the Metropolitan Region Scheme (MRS), subject to the following condition and advice note:

Condition

1. The new pipeline referred in the development application report at Section 4.4 (to be installed in the existing BOC pipeline easement from the fence line of Lot 201 Mason Road, passing through Lot 172 and terminating at Lot 650) is excluded from this development approval.

Advice note

- a) ATCO Gas Australia has High Pressure gas infrastructure adjacent to the subject land. ATCO Gas should be notified of any works within 15 metres of High Pressure gas infrastructure before those works begin. The applicant is advised that construction, excavation and other activities may be restricted in this zone, and that no pavements (including crossovers) should be constructed over the pipeline without consent from ATCO Gas Australia.

The applicant is advised to contact ATCO Gas on Ph: 08 9499 5272 in the above regard. Anyone proposing to carry out construction or excavation works should contact 'Dial Before You Dig' (Ph 1100) to determine the location of buried gas infrastructure.

Background:

Property Address:	Lot 201 Mason Road, Kwinana
Zoning	MRS: Industrial
	TPS: General Industry
Use Class:	Extractive Industry (SA use), General Industry (P use), Office (IP use)
Lot Size:	Approximately 3.5 hectares
Existing Land Use:	BOC Kwinana facility
Value of Development:	\$59 million

The BOC Kwinana facility at Lot 201 Mason Road, Kwinana commenced operation in 1984. It employs 12 people directly, with a range of other local suppliers employed indirectly. Product operations consist of a 40 tonne per day (tpd) air separation unit with associated nitrogen liquefaction unit, a 70tpd carbon dioxide liquefaction unit, a 220tpd carbon dioxide pipeline compression and purification unit, a 200 cubed metres per hour hydrogen pressure swing adsorption (PSA) unit, and associated car parking.

BOC Kwinana produces and distributes industrial gases, including oxygen, nitrogen, argon, carbon dioxide and compressed hydrogen. The site manufactures gaseous nitrogen for pipelines to BP, CSBP and Nufarm; gaseous carbon dioxide for pipeline to Alcoa; as well as merchant liquid oxygen, liquid nitrogen, hydrogen and liquid carbon dioxide.

BOC advises that many areas of existing plant are old and ageing and cannot be economically or safely refurbished. For these, BOC proposes replacement with new, more efficient technology.

Details: Outline of Development Application (Attachment 1: Development Plans)

The development application proposes the investment of approximately 60 million dollars to construct a new air separation plant to replace the ageing 40tpd air separation unit (with associated nitrogen liquefaction unit), replace miscellaneous existing auxiliary facilities, increase gas storage onsite, and construct a new pipeline as a back-up for supply to existing/new customers.

BOC has since requested that the pipeline component of the development application be excluded, on the basis that detailed design has not been undertaken for the new pipeline and there are no confirmed customers the new pipeline would supply.

BOC advises that if it has new pipeline customers in the future it will complete related spatial design, easement requirements and approvals before it submits a separate development application for the works.

The proposal therefore comprises construction of:

- the new air separation unit and associated nitrogen liquefaction unit;
- replacement electrical transformers and high voltage switchgear, control room, and cooling water system;
- 1,450 kilolitres (kL) liquid oxygen storage (three low pressure 450kL horizontal tanks and one high pressure 100kL vertical tank);

- 300kL liquid nitrogen storage (one low pressure 200kL vertical tank and one high pressure 100kL vertical tank); and
- one 100kL horizontal tank for liquid argon storage,

and

- decommissioning of one existing 200kL liquid oxygen tank (Tank ID 'S7' in Attachment 4).

The new air separation plant and associated nitrogen liquefaction unit will cover an area of approximately 2,400 square metres and will be located within an area of open lawn on the eastern boundary of the subject land (**Attachment 2: Location Plans**). BOC advises that no native vegetation is required to be removed as a result of the development proposal.

The location of both existing and proposed liquid gas storage within the subject land is detailed at **Attachment 3**.

The demolition of the existing air separation unit plant and nitrogen liquefaction unit will not form a part of this development application, as to sustain BOC's business the new infrastructure will need to be constructed whilst the existing infrastructure is still in operation.

BOC advises that as there isn't enough power available to run both the existing and new infrastructure, once the new infrastructure is operational (estimated to be approximately 12 months after start up) the existing infrastructure will be left in a safe, static state with subsequent demolition subject to board approval of funds to do so.

Site Access and Car Parking

Access to the subject land is provided via Mason Road. BOC has undertaken a Traffic Report to support the development application, which identifies that there will only be an increase in vehicle movement of 12 tankers per week (which will utilise existing routes). The traffic impact of the proposed development on the road network is accordingly very minor.

The existing car parking area onsite (accommodating 17 car parking bays) is to be maintained as is, as the new proposed facilities will not require any additional support or maintenance staff.

Legislation & Policy:

Legislation

Planning and Development Act 2005

Metropolitan Region Scheme 1963

Contaminated Sites Act 2003

Planning Guidelines and Manuals

The Western Australian Planning Commission's (WAPC) Planning Bulletin 87 *High Pressure Gas Transmission Pipelines in the Perth Metropolitan Region* (October 2007)

Consultation:

The proposal was referred to Department of Water (DoW), Department of Environment and Conservation (DEC), APA Group, Department of Mines and Petroleum (DMP), Department of Transport (DoT), and ATCO Gas.

DoW, DEC, APA Group, DMP and DoT raise no objections to the development proposal.

ATCO Gas advises it has existing High Pressure gas mains in Mason Road and provides advice to the applicant in this regard.

Planning assessment:

The proposed development would ordinarily require the determination of the WAPC under the MRS by virtue of the application of Clause 32 Resolution No.46 dated 24 December 2004. (**Attachment 4:** Clause 32 Area)

The purpose of Clause 32 Resolution No.46 is to enable the State to retain an overview of development in the subject area to ensure that new developments do not compromise existing and planned regional infrastructure for example the Fremantle Ports Outer Harbour project at Kwinana and associated transportation routes.

Clause 30 (1) of the MRS sets out the following factors when determining a development application:-

1. the purpose for which the land is zoned or reserved under the MRS;
2. the orderly and proper planning of the locality; and
3. the preservation of amenities of the locality.

Assessment against Clause 30 (1) is informed by the following:

- The proposal is consistent with the site's Industrial zoning under the MRS;
- The proposed development does not impact nor is it impacted by planned regional infrastructure.
- Site Contamination

Under the *Contaminated Sites Act 2003* Lot 201 is classified as 'possibly contaminated - investigation required' and a memorial has been placed on the Certificate of Title. This is due to the use of the southern adjacent site, Lot 51 Mason Road, for production of herbicides, pesticides and agricultural chemicals and for the disposal of liquid wastes from the 1960s to present day. Several groundwater investigations have been conducted on both Lots 201 and 51 between 1989 and 2007, and the results indicate that phenol and chloro-phenol impacted groundwater has migrated from Lot 51 to Lot 201.

Section 58(6) of the *Contaminated Sites Act 2003* requires the WAPC to seek and take into account advice of the DEC as to the suitability of the land for development.

DEC's Contaminated Sites Branch advises that as the proposed development is not for a more sensitive land use it does not pose a significant risk to human health or to the environment. On this basis, DEC has no objection to the proposed development and no planning approval conditions relating to contamination are considered necessary.

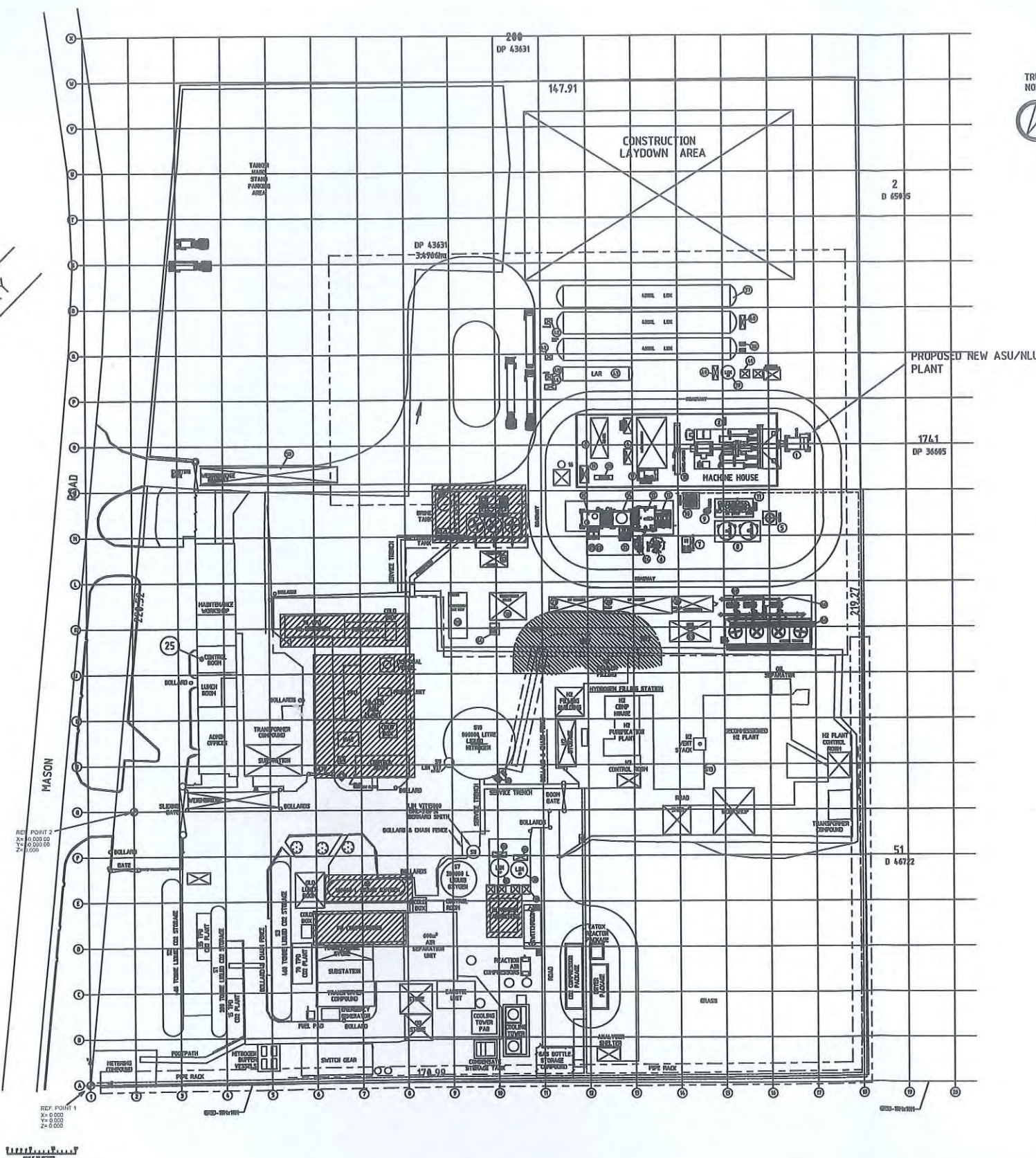
Conclusion:

The proposed development is consistent with the planning framework for the area. Conditional approval is recommended.

THIRD ANGLE PROJECTION
ALL DIMENSIONS IN MILLIMETRES



PRELIMINARY



EQUIPMENT LIST

ITEM	TAG	DESCRIPTION	QTY.
1	S1144	AIR FILTER SYSTEM	1
2	C1161	MAIN AIR COMPRESSOR (HAC)	1
3	C1361/1461	FEED/RECYCLE COMPRESSOR	1
4	C1761	N2 PRODUCT COMPRESSOR	1
5	E2416	DIRECT CONTACT AIR COOLER	1
6	E2417	EVAPORATION COOLER	1
7	P2467A/B	COOLING WATER PUMP WITH MOTOR	2
8	P2626A/B	ABSORBER VESSEL	2
9	E2618	REGENERATION GAS HEATER, ELECTRICALLY HEATED	1
10	E2653	SILENCER TOWER	1
11		PPU VALVE SKID	1
12		PIPING SKID	1
13		HEAT EXCHANGER (HEX) BOX	1
14		RECTIFICATION (REC) BOX	1
15		ARGON RECTIFICATION (AR) BOX	1
16		NLU COLDBOX	1
17	X3471/3472	ASU EXPANSION TURBINE WITH BOOSTER	2
18	E3421/3422	AFTERCOOLER FOR ASU BOOSTER COMPRESSOR	2
19	X3473	NLU EXPANSION TURBINE WITH BOOSTER	1
20	E3423	AFTERCOOLER FOR NLU BOOSTER COMPRESSOR	1
21	E3568A/B	LOX-IC PUMP WITH MOTOR	2
22	P4565	LAR PROCESS PUMP 1 WITH MOTOR	1
23	P4566	LAR PROCESS PUMP 2 WITH MOTOR	1
24	J3958	FAN EJECTOR	1
25		CONTROL ROOM	1
26		ANALYSER HUT	1
27		HV CONTAINER	1
28		LV CONTAINER	1
29		22KV SWITCHGEAR	1
30		22KV/6.6KV TRANSFORMER	1
31	S11	LP HORIZONTAL VACUUM-INSULATED LIN TANK	1
32	P7366 A/B	LIN BACKUP PUMP WITH MOTOR	2
33	S12	HP VERTICAL VACUUM-INSULATED LIN TANK	1
34		HP LIN TANK PRESSURE BUILDING VAPORISER	1
35		AMBIENT VAPORISER-PRODUCT NITROGEN SERVICE	2
36		LP LIN TANK P.R. VAPORISER	1
37	S13/14/15	HORIZONTAL VACUUM INSULATED LOX TANK (430KL)	3
38	P7466	LOX BACK-UP PUMP WITH MOTOR	2
39	S17	HP VERTICAL VACUUM INSULATED LOX TANK (100KL)	1
40		LP LOX TANK PRESSURE BUILDING VAPORISER	1
41		AMBIENT VAPORISER-PRODUCT OXYGEN SERVICE	2
42	P7467	LOX TRUCK FILLING PUMP WITH MOTOR	2
43	S18	HORIZONTAL VACUUM-INSULATED LAR TANK (100KL)	1
44		LAR TANK PRESSURE BUILDING VAPORISER	1
45	P7567	LAR TRUCK FILLING PUMP WITH MOTOR	1
46	S8421	COOLING TOWER - 4 CELLS	1
47	P8466A/B	COOLING WATER PUMPS	3
48	S8466	SIDE STREAM FILTER	1
49		HP LOX TANK PRESSURE BUILDING VAPORISER	1
50		WEIGH BRIDGE (NEW)	1
51		DELETED	1
52		GENERATOR	1
53		POWER FACTOR CORRECTION UNIT	1
54		NEUTRAL EARTH RESISTOR	1


NOTE

1. TO BE DEMOLISHED AT A LATER STAGE
2. CONTROL ROOM TO BE DECIDED LATER
3. NEW CONSTRUCTION AREA

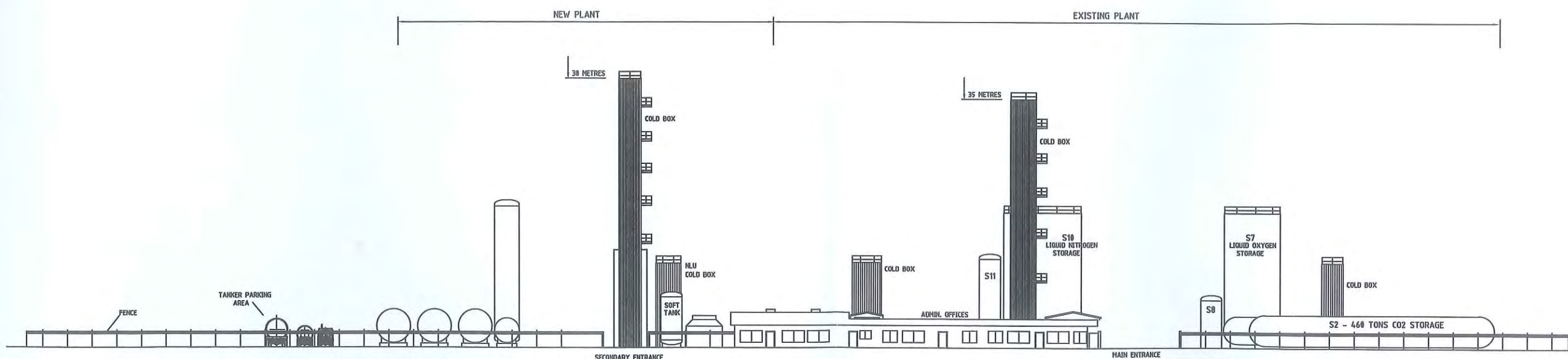
DEPARTMENT OF PLANNING

2 JAN 2013

FILE 26-50183-1

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														GENERAL KWINANA WA			
										18 JULIUS AVENUE, NORTH RYDE, NSW 2113		A1 FORM NO C224-XX6		SHEET 1			
										COPYRIGHT BOC LIMITED 2004		DEF-002-F02/5		VERSION 1.0,CURRENT			
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THIRD ANGLE PROJECTION
ALL DIMENSIONS IN MILLIMETRES



ELEVATION LOOKING EAST FROM MASON ROAD

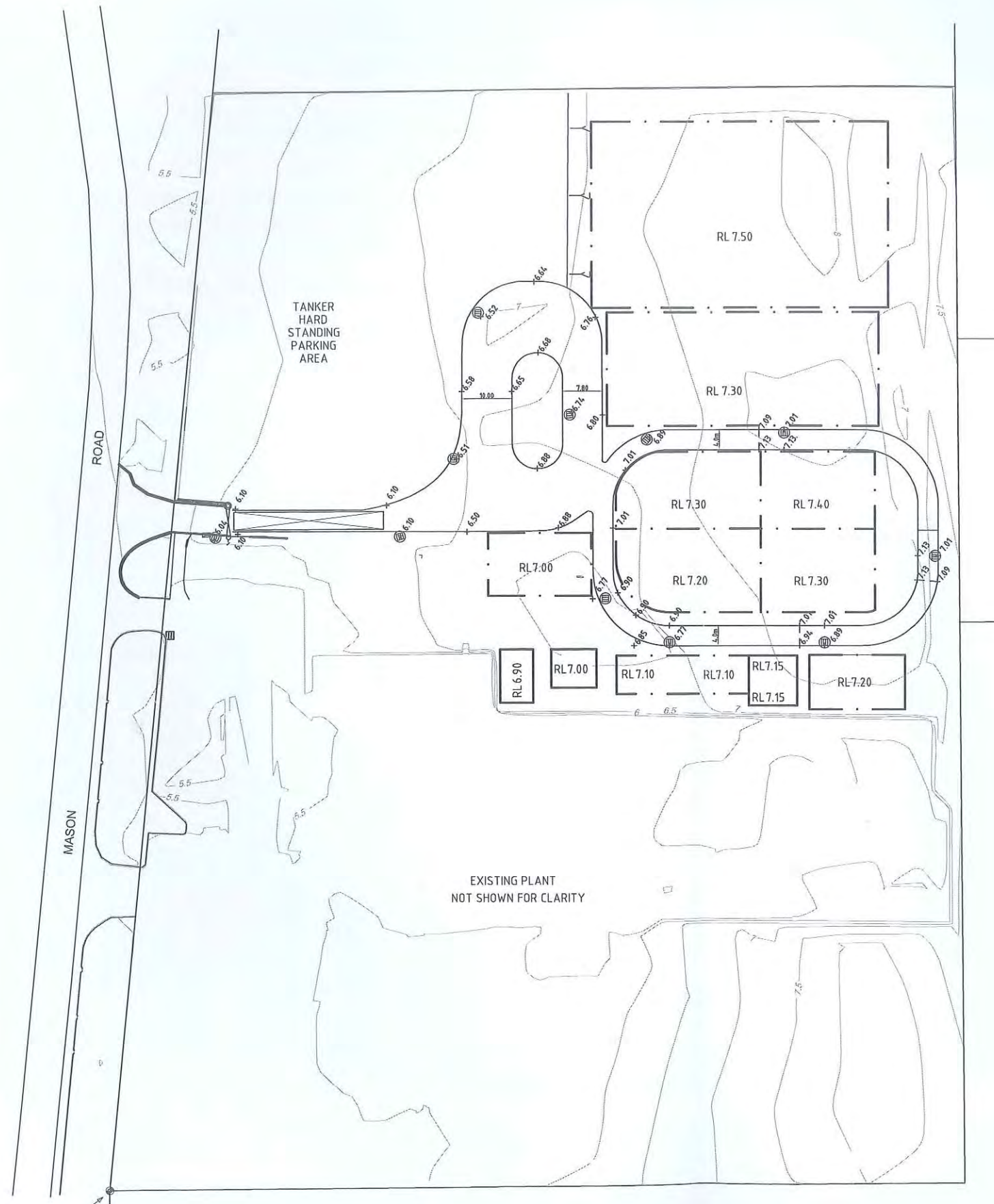
DEPARTMENT OF PLANNING

2 JAN 2013

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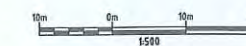
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LEGEND:

- PROPOSED ROAD LEVEL
- PROPOSED SOAKWELL
- PROPOSED KERB OR EDGE OF BITUMEN
- CATCHMENT CREST
- PROPOSED PAD LEVEL
- EXISTING CONTOUR LEVEL
- EARTHWORKED PAD EXTENT
- BATTER FROM PAD TO ROAD



DEPARTMENT OF PLANNING	
2 JAN 2013	
FILE	26-50183-1

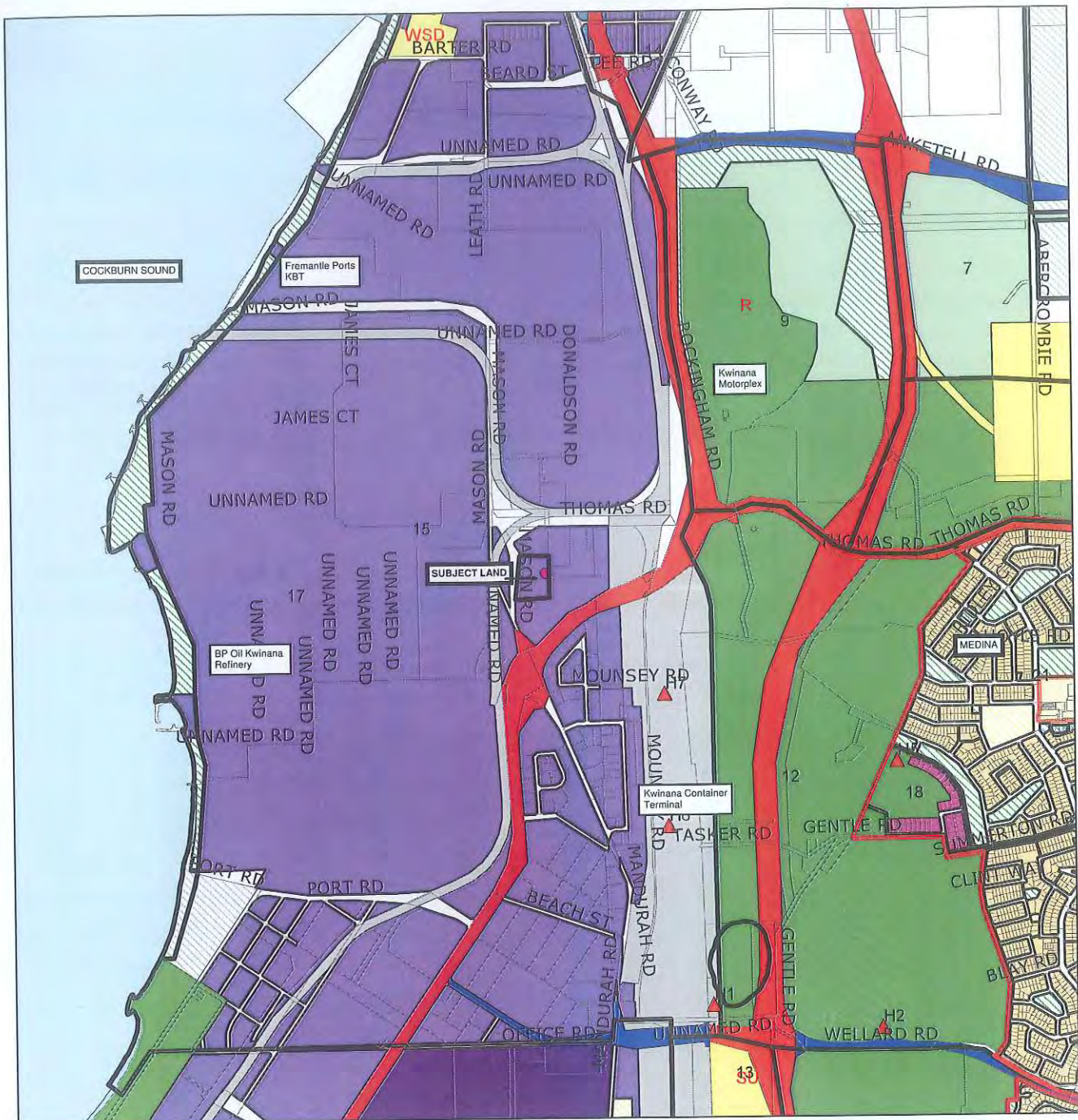
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W&G
WALLBRIDGE & GILBERT
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Email: wgm@wgm.com.au
W&G Engineers Victoria Pty Ltd ACN 127 466 997

BOC LIMITED			
PROPOSED NEW ASU/NLU			
LOT 201 MASON ROAD			
KWINANA, WA.			
CIVIL LEVEL & DRAINAGE STRATEGY PLAN			
A1	Scale 1:500	DRAWING NUMBER Job Number	Sheet No. Rev.
Design C.P.	Drawn W.S.	WME120703 C01	B

PRELIMINARY ISSUE
NOT FOR CONSTRUCTION



Cadastre with Lot Numbers	PRIMARY REGIONAL ROADS	PP - WATER AUTHORITY OF W A	PUBLIC PURPOSES
TPS Special Points	OTHER REGIONAL ROADS	COMMERCIAL	RESIDENTIAL
SPECIAL POLYGONS	WATERWAYS	DEVELOPMENT	RURAL A
SPECIAL 10	PARKS & RECREATION	GENERAL INDUSTRY	RURAL B
DEVELOPMENT CONTRIBUTION AREA	PARKS & RECREATION RESTRICTED	LIGHT INDUSTRY	SERVICE COMMERCIAL
POLICY AREAS	RAILWAYS	LOCAL ROADS	SPECIAL INDUSTRY
AREA OF LANDSCAPE PROTECTION	PORT INSTALLATIONS	NO ZONE	
TPS - Scheme Boundaries	PP - SPECIAL USES	PARK RECREATION & DRAINAGE	

Scale 1:29,925
0 0.5 km

Prepared by: achhabra
Prepared for: Achhabra
Date: Monday, February 11, 2013 16:38
Plot identifier: P20130211_1638

DP INTERNAL USE ONLY



Government of Western Australia
Department of Planning

Location Plan MRS
(Lot 201 Mason Road, Kwinana)

1. Introduction

BOC is part of the Linde group of companies, the leading global producer of Industrial Gases.

The BOC "Kwinana" facility, located at 52 Mason Road, Kwinana, was opened in 1984, and employs approximately 12 people directly, and a range of other local suppliers indirectly. The production operations on site consist of a 40 tonne per day (tpd) Air Separation Unit with associated Nitrogen Liquefaction Unit, a 70tpd CO₂ Liquefaction Unit, a 220tpd CO₂ pipeline compression and purification Unit and a 200m³/hr H₂ PSA Unit. The site manufactures gaseous nitrogen for pipelines to BP, CSBP, Nufarm, and gaseous CO₂ for pipeline to Alcoa, as well as merchant liquid oxygen, liquid nitrogen, hydrogen and liquid carbon dioxide. The land of this site is owned by BOC Limited.

BOC is proposing to invest approximately \$60m to build new Air Separation Plant to replace the aging and unreliable Air Separation Unit, Nitrogen Liquefaction Unit and miscellaneous auxiliary works mentioned. The site location and new plant location are shown in Figure 1.①



Figure 1: New Project Location①



QRA for Kwinana Plant

4.2. Dangerous Goods Storage and Filling Facilities

The Kwinana plant is a storage and filling facility for five materials: hydrogen, carbon dioxide, nitrogen, oxygen and argon. Minor quantities of other DGs will also be held on-site for water treatment (e.g. sulphuric acid and caustic soda).

Compressed hydrogen, liquefied nitrogen, liquefied oxygen, liquefied argon and liquefied carbon dioxide will be stored in bulk quantities and hydrogen will also be stored in cylinders. These products will be dispensed into tankers or dispatched to customers via pipelines.

These storage and filling facilities will be located in the main operational area (Refer to Table 1 and Figure 5).

Table 1 Storage Tanks and Depots

Existing Storage				
UN number	Quantity kL/t	Proper Shipping Name	Depot / Tank ID	Figure Label
1049	7 kL	Hydrogen, compressed		A
1049	2.4 kL	Hydrogen, compressed		A
1049	2.4 kL	Hydrogen, compressed		A
1049	29.7 kL	Hydrogen, compressed	CP12	A
1049	29.7 kL	Hydrogen, compressed	CP12	A
1049	0.31 kL	Hydrogen, compressed	D501	B
1049	2.55 kL	Hydrogen, compressed	D505	C
1049	0.4 kL	Hydrogen, compressed	D50A	C
1049	0.4 kL	Hydrogen, compressed	D50B	C
1049	0.4 kL	Hydrogen, compressed	D50C	C
1049	0.4 kL	Hydrogen, compressed	D50D	C
1049	0.01 kL	Hydrogen, compressed	F504	C
2187	204.83 kL	Carbon Dioxide, refrigerated liquid	S1	-
1977	800 kL	Nitrogen, refrigerated liquid	S10	F
1951	44kL	Argon, refrigerated liquid	S11	G
2187	471.1 kL	Carbon Dioxide, refrigerated liquid	S2	D
2187	471.1 kL	Carbon Dioxide, refrigerated liquid	S3	E
1073	100 kL	Oxygen refrigerated liquid	S6	H
1073	200 kL	Nitrogen refrigerated liquid	S7	I
1977	15 kL	Nitrogen, refrigerated liquid	S8	J
1977	7 kL	Nitrogen, refrigerated liquid	S9	K
Proposed New Storage				
1073	3 x 450 kL	Liquid Oxygen	New	L
1977	200 kL	Liquid Nitrogen	New	M
1951	100 kL	Liquid Argon	New	N
1073	100 kL	Liquid Oxygen	New	L1
1977	100 kL	Liquid Nitrogen	New	M

Note: Shading means that the storage is or will be decommissioned

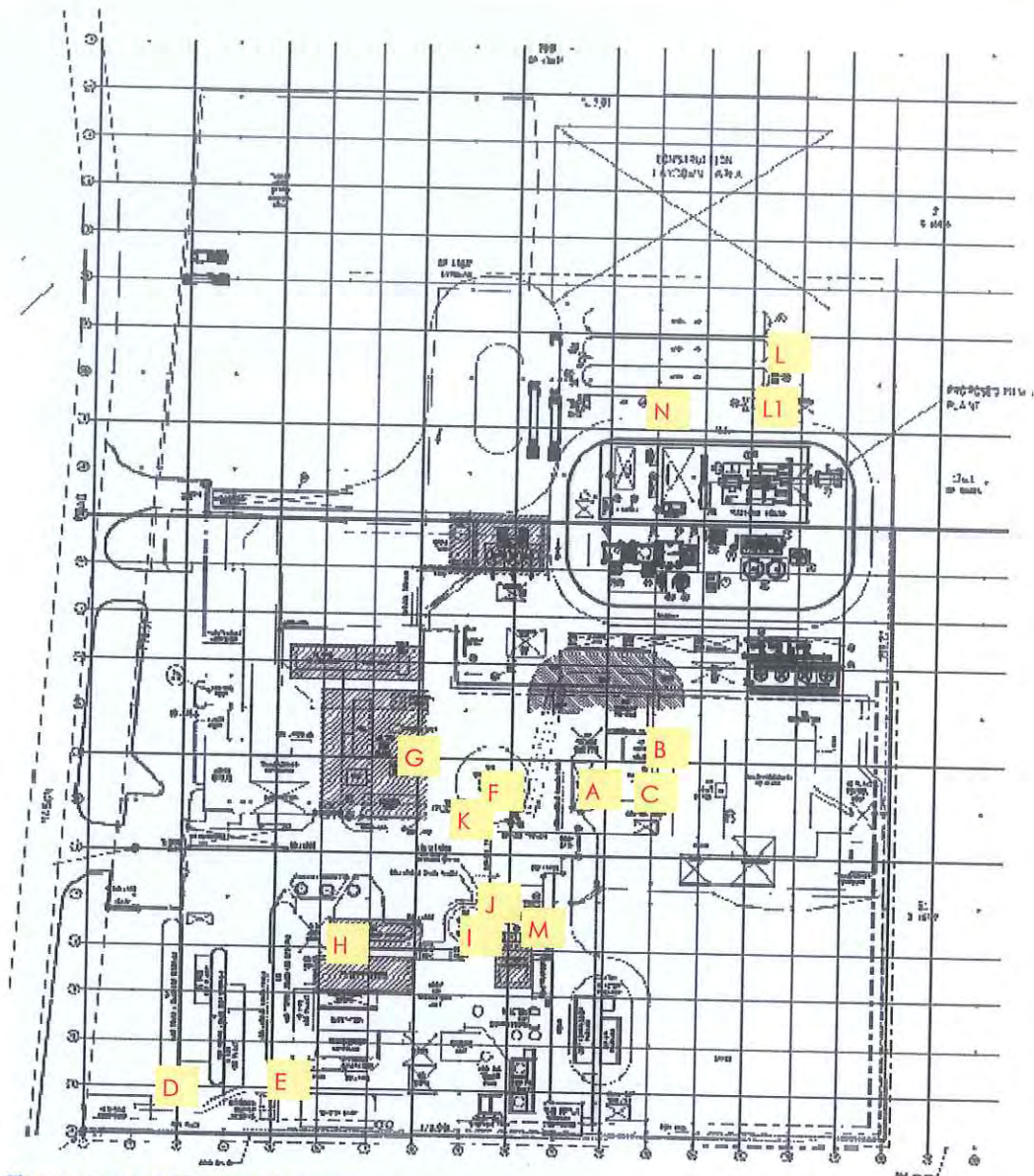


Figure 5: Location of Storages

4.3. Populations

The populations around the site vary from location to location. The undeveloped land to the east has no significant populations but further east are located residences. The industrial land, to the west, is occupied by Tronox. To the south is Nufarm, on the east is Sims Metal and to the north is ACCENI. These sites will have numerous people present during the day and a small



CLAUSE 32 No. 46 - MODIFIED AREA



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