# Development Application Report Proposed Showroom, Warehouse, Recreation Centre and Convenience Store Development

Lot 335 (79) Gnangara Road, Wangara



Prepared for Crestwood Pty Ltd

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#### 1 Preliminary

#### 1.1 Introduction

Planning Solutions acts on behalf of Crestwood Holdings Pty Ltd in relation to the proposed development of Lot 335 (79) Gnangara Road, Wangara (**subject site**). Planning Solutions has prepared the following report in support of an Application for Approval to Commence Development for a Showroom, Warehouse, Recreation Centre and Convenience Store development on the subject site.

This report will discuss various issues pertinent to the proposal, including:

- Site details.
- Proposed development.
- Town planning considerations.

#### 2 Site details

#### 2.1 Land description

Refer to Table 1 below for a description of the land subject to this development application.

Table 1 - Lot details

Lot	Plan/Diagram	Volume	Folio	Area (ha)
335	12228	1497	994	2.0882

Refer **Appendix 1** for a copy of the Certificate of Title.

#### 2.2 Location

#### 2.2.1 Regional context

The subject site is located approximately 17km north of the Perth Central Business District, within the locality of Wangara. The subject site is located on Gnangara Road, opposite its intersection with Klaraborg Drive to the south.

The subject site is located approximately 800m east of Wanneroo Road, which is a major north-south arterial road that provides access to the wider Perth metropolitan region. The subject site is approximately 4.1km east of the Whitfords Avenue access ramps to the Mitchell Freeway. Whitfords Train Station is located approximately 4.2km west of the subject site, with train services running between Perth City and Butler.

The subject site is within the municipality of the City of Wanneroo (City).

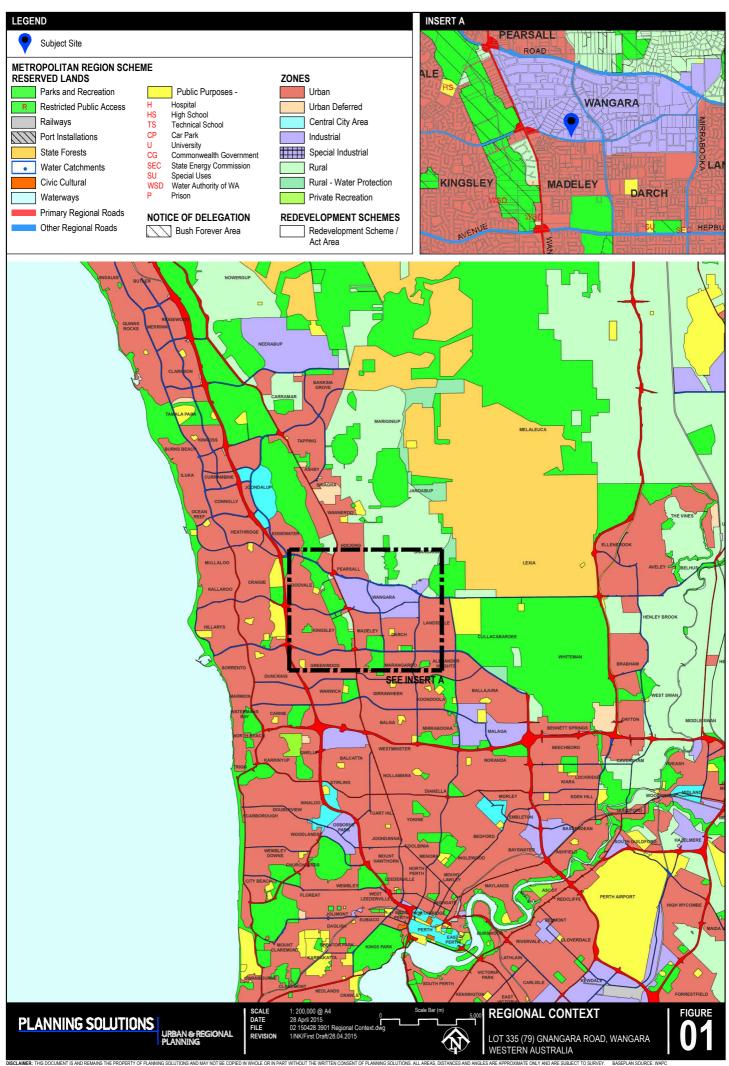
Refer **Figure 1**, regional context.

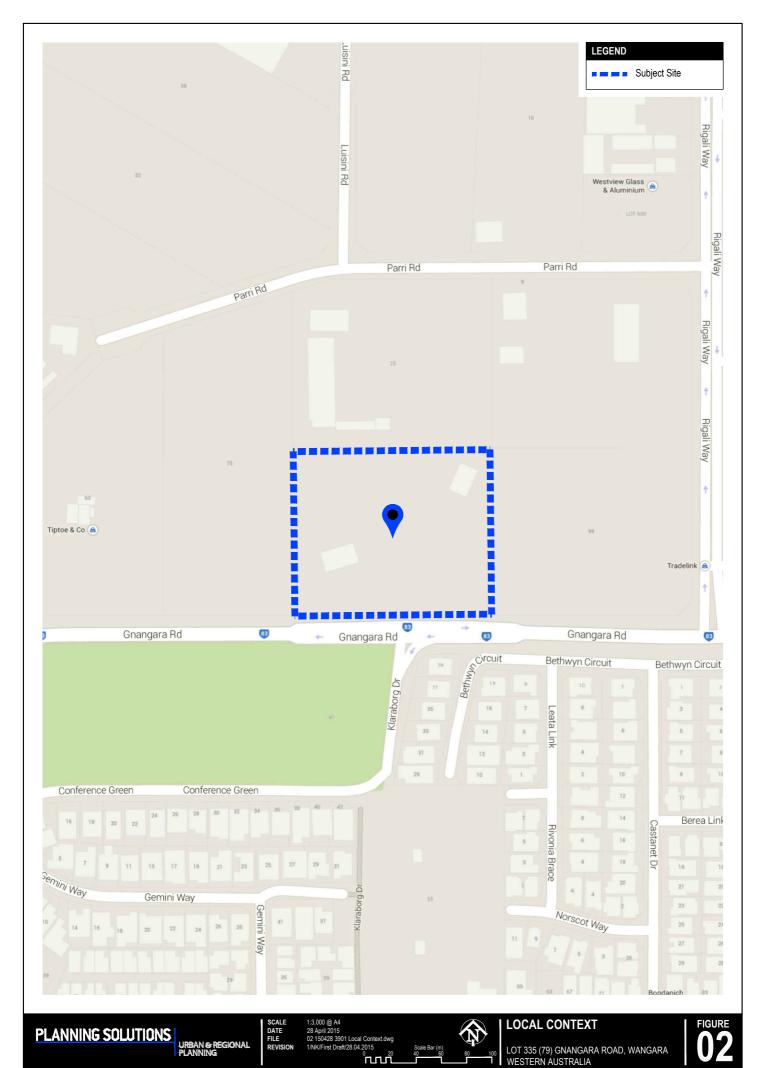
#### 2.2.2 Local context

The subject site fronts Gnangara Road and is generally surrounded by a mix of commercial and industrial development to the east and north, including warehouses, factories and showrooms. The subject site fronts residential development to the south of Gnangara Road.

The lots immediately adjacent to the subject site on the east and west are currently vacant. Susan Park is located diagonally opposite the subject site to the south-east.

Refer Figure 2, local context.





#### 2.3 Land use and topography

The subject site currently contains two disused buildings and a range of structures. It is proposed that all existing structures on the subject site be removed prior to development. The subject site has one shared single full-movement access crossover onto Gnangara Road abutting the western boundary of the lot.

Generally, the subject site is surrounded by a mix of commercial and industrial uses to the north of Gnangara Road, and R20 coded residential houses to the south of Gnangara Road. Residential houses to the south of Gnangara Road are oriented away from Gnangara Road toward the internal road network, with rear fencing providing a visual and noise barrier between properties and Gnangara Road.

The subject site slopes up gently to a high point towards the centre of the site, with the highest point being 65m AHD and the lowest point being 62.15m AHD. A small knoll in the north-west corner of the subject site rises from 64.39m AHD to 66.15m AHD.

Refer Figure 3, aerial photograph, and Photographs 1-8 which depict the subject site and surrounds.



Photograph 1 – Existing crossover from Gnangara Road to the subject site



Photograph 2 - View of the subject site from Klaraborg Drive



Photograph 3 – Existing double storey building within the subject site to be removed



Photograph 4 – Existing shed structures within the subject site to be removed



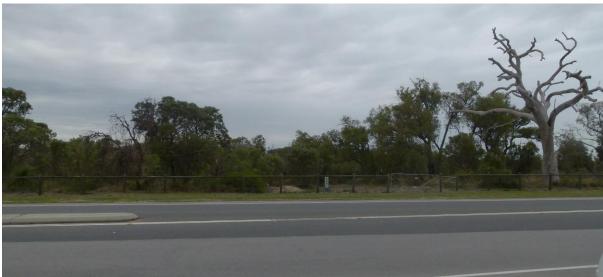
Photograph 5 – Service industrial development along the rear boundary of the subject site



Photograph 6 – View east of Gnangara Road along the frontage of the subject site



Photograph 7 – Residential development to the south of Gnangara Road opposite the subject site



Photograph 8 – View of Susan Park to the south-west of the subject site



#### 3 Proposed development

This application for Approval to Commence Development is for a mixed commercial 'Bulkyplex' development, comprising seven showrooms including one gymnasium, eight warehouses and a convenience store with a petrol filling station.

All existing buildings and structures will be removed as part of the proposed development.

#### 3.1 Bulkyplex development

The proposal seeks approval for a 'Bulkyplex' development on the subject site, comprising a mix showroom and warehouses. Specifically, the proposed development comprises:

- Seven showrooms ranging in size from 343m<sup>2</sup> to 688m<sup>2</sup> with ancillary rear warehouse areas ranging in size from 114m<sup>2</sup> to 229m<sup>2</sup>.
- Eight warehouses ranging in size from 220m<sup>2</sup> to 239m<sup>2</sup>, each with 41m<sup>2</sup> mezzanine levels.
- 187 car parking bays for customers and staff.
- Landscaping along the street frontage and car parking areas.

The proposed seven showrooms will front Gnangara Road, with car parking provided at the front of the lot. Each showroom tenancy will have a warehouse located to the rear of the tenancy for the storage of goods and materials associated with the showroom. It is expected that the showrooms will be occupied by a range of large format retailers suitable for this form of development and location.

The eight warehouses are proposed to be located along the rear boundary of the subject site. Each warehouse will have a mezzanine level which will likely comprise the ancillary office functions of the warehouses.

The majority of car parking will be located at the front of the lot, with convenient access and visibility from Gnangara Road. Car parking areas at the front of the lot will be landscaped with trees, generally at a rate of one tree for every four car parking bays. Additional car parking is provided to the rear of the lot, between the proposed showrooms and warehouses. Access to the rear car parking area will be via a 6.75m wide one way driveway travelling west to east through the site.

Landscaping along the front lot boundary will range from 18m to 30m in width prior to the widening of Gnangara Road. Following the widening of Gnangara Road, the landscaping along the front of the lot will be reduced to a width ranging from 2m to 8m.

Refer to **Appendix 2** for a copy of the Bulkplex Development Plans.

The impact of the proposed development on the surrounding transport network has been assessed and documented in the Transport Assessment prepared by Transcore, attached as **Appendix 4**.

#### 3.2 Convenience store and petrol station

The proposal also seeks to develop a convenience store and petrol station on the subject site. Specifically, the proposed development comprises:

- One 190m<sup>2</sup> 7-Eleven convenience store.
- One fuel canopy comprising a total height of 5.5m.
- 3 underground fuel tanks.
- Three fuel bowsers and six designated refuelling bays.
- 15 car parking bays for customers and staff.

The proposed convenience store and petrol station are proposed to be located at the front of the lot, with convenient and safe access to and from Gnangara Road via the proposed ingress and egress crossovers.

The gross floor area of the proposed convenience store is 190m<sup>2</sup>. The convenience store incorporates five shop front car parking bays, including one ACROD bay, as well as four parking bays located at the air/water point to the east of the fuel canopy.

The proposed layout and design of the convenience store and petrol station seeks to minimise the impact on residential development to the south of Gnangara Road. A significant area of landscaping is proposed to the ultimate verge (after Gnangara Road has been widened). The convenience store is oriented west, away from residential development.

The convenience store and petrol station will operate 24 hours per day, seven days per week.

Refer to **Appendix 3** for a copy of the 7-Eleven Development Plans.

#### 3.3 Gymnasium

The proposal seeks approval for a 24-hour gymnasium use on the subject site, comprising an area of 500m². The gymnasium will be open to the public and will be staffed at all hours of the day. At this stage, information regarding the number of staff is not available, however it is anticipated that the gymnasium would accommodate up to a maximum 50 people at any one time.

Refer to the Development Plans contained in **Appendix 2**.

#### 3.4 Signage

The proposal seeks approval for two pylon signs associated with the Bulkyplex and 7-Eleven advertising. The proposed Bulkyplex pylon sign will incorporate infill panels for each individual showroom tenancy on site and will extend to a height of 15m. The proposed 7-Eleven signage will reflect the company's corporate branding implemented throughout Australia and extends to 7m in height.

The pylon signs are proposed along the Gnangara Road frontage. The signs will initially be located abutting the existing road reserve (indicated as 'A' on the Development Plans at **Appendix 3**), and will later be relocated within the new lot boundary (indicated as 'B' on the Development Plans), once the Gnangara Road widening is completed. The signs will be separated by a distance of 40m from one

another. The signs are to be located so that they are visible on the eastbound approach to the subject site from Gnangara Road.

Given the proposed pylon signs are required to be relocated as Gnangara road widening is progressed, it is considered that additional approval for the relocated signs is unnecessary. As such, the following condition of approval is suggested:

The pylon signs are approved for the locations marked "A" on the approved plans. By this condition, the landowner agrees to the relocation of these pylon signs to the locations marked "B" on the approved plans when the land identified as Other Regional Road under the MRS is acquired for road widening purposes. No further planning approval will be required for the relocation of the signs referred to in this condition.

The above condition would allow for the signs to be relocated (when required) under an existing planning approval.

#### 4 Strategic planning framework

#### 4.1 Directions 2031 and Beyond

Directions 2031 and Beyond (**Directions 2031**) is the high-level strategic planning framework for the Perth and Peel region. The Directions 2031 framework proposes five strategic themes for a liveable, prosperous, accessible, sustainable and responsible city. The framework sets out a hierarchy of activity centres across the metropolitan region to equitably distribute services, amenities and employment opportunities.

Wangara is identified as an existing industrial site in Directions 2031. The document notes the importance of facilitating and retaining employment land to support economic growth and a balanced distribution of employment across the metropolitan Perth and Peel region. The proposed development will provide a range of warehousing and bulk goods handling and will cater to the employment needs of a growing community.

#### 4.2 Outer Metropolitan Perth and Peel Sub-Regional Strategy

The (draft) Outer Metropolitan Perth and Peel Sub-Regional Strategy (**Sub-Regional Strategy**) provides more in-depth strategic planning for the growth of the outer metropolitan region in order to deliver the outcomes sought by Directions 2031.

The Sub-Regional Strategy recognises that Perth's employment is concentrated in the inner and middle suburbs, while population growth continues to occur in the outer suburbs. The outer sub-regions comprise 51 percent of the employed residents but only 30 percent of the jobs. Employment self-sufficiency in the north-west sub-region is currently 41 percent. In order to achieve the Directions 2031 employment self-sufficiency target of 60 percent, an estimated 131,000 to 157,000 additional jobs will need to be provided in the north-west sub-region over the next 25 years.

The proposed development will deliver an important boost to employment in the north-west sub-region, which will contribute toward increasing the employment self-sufficiency of the area. Furthermore, by providing employment opportunities for the local population, it reduces the need for long journeys to work and alleviates pressure on the transport system.

#### 5 Statutory planning framework

#### 5.1 Metropolitan Region Scheme

The majority of the subject site is zoned Industrial under the provisions of the Metropolitan Region Scheme (MRS). A portion of the subject site along the frontage of the lot is reserved Other Regional Roads for future widening of Gnangara Road.

Refer **Appendix 5** for a copy of the MRS Clause 42 Certificate which confirms the extent of the reservation affecting the subject site.

#### 5.2 Local planning scheme

#### **5.2.1 Zoning**

The subject site is zoned Service Industrial under the provisions of the City of Wanneroo District Planning Scheme No. 2 (**DPS2**). The subject site is also affected by the provisions of Agreed Structure Plan No. 9 – East Wanneroo Cell 7 – Wangara (South) (**ASP9**). Clause 3.12 of DPS2 states the objectives of the Service Industrial zone, which are to:

- a) Accommodate a range of light industries, showrooms and warehouses, entertainment and recreational activities, and complementary business services which, by their nature, would not detrimentally affect the amenity of surrounding areas;
- b) Ensure that development within this zone creates an attractive façade to the street for the visual amenity of surrounding areas.

The proposed development includes a mix of showroom, warehouse, gymnasium and convenience store uses which are appropriately located in the Service Industrial zone. The proposed uses will not detrimentally affect the amenity of the surrounding area and will present an attractive façade to the street with quality landscaping provided along the frontage of the lot. The proposal is therefore consistent with the objectives of the Service Industrial zone under DPS2.

#### **5.2.2** Land use

The proposed land uses are classified as Showroom, Warehouse, Recreation Centre and Convenience Store under DPS2. Schedule 1 of DPS2 provides the following land use definitions for the proposed uses:

**Showroom:** means premises wherein goods are displayed and may be offered for sale or hire excluding the sale of foodstuffs, liquor or beverages, items of clothing apparel (except hereinafter stipulated in this definition) or personal adornment, magazines, books, newspapers or paper products, and medicinal or pharmaceutical products unless assembled or manufactured on the premises. The term includes the sale of second-hand clothing or apparel by welfare and charitable agencies with the approval of Council.

**Warehouse:** means premises used for the storage of goods and may include the carrying out of commercial transactions involving the sale of such goods by wholesale.

**Recreation Centre:** means any premises used for physical exercise or sports including swimming, ice skating, ten pin bowling, cricket, tennis, squash, soccer, billiards and similar activities.

**Convenience store:** means any land and or buildings used for the retail sale of convenience goods being those goods commonly sold in supermarkets, delicatessens and newsagents but including the sale of petrol and petroleum products and motor vehicle accessories and operated during hours which include but which may extend beyond normal trading hours and providing associated parking. The buildings associated with a convenience store shall not exceed 300m<sup>2</sup> gross leasable area.

Table 1 (Clause 3.2) of DPS2 – Zoning Table indicates the following permissibility for the proposed uses:

- Showroom and Warehouse are both 'P' land uses, meaning "a use class that is permitted but which may be subject to any conditions that the Council may which to impose in granting its approval"
- Recreation Centre and Convenience store are both 'D' land use, meaning "a use class that is not permitted, unless Council grants its approval after following the procedures laid down by subclause 6.6.2"

The proposed uses are considered appropriately located within the Service Industrial zone. The proposed uses are compatible with the surrounding commercial and light industrial land uses, and will not have any detrimental impact on the amenity of nearby residential areas. The proposed development is consistent with the provisions of ASP9 in terms of access and egress to the subject site. The proposal provides adequate car parking for the proposed land uses and the site has been designed to allow the safe manoeuvring and parking of vehicles. The site will be appropriately landscaped to ensure an attractive frontage when viewed from the street.

Owing to the above, the proposed development is consistent with the provisions of DPS2 (with discretion) and may be approved accordingly.

#### **5.2.3** Development standards

#### 5.2.3.1 Setbacks

Clause 4.7 of DPS2 sets out the minimum setback requirements for non-rural and non-residential development. An assessment of the proposed setbacks against the requirements of DPS2 is provided in **Table 2**.

Table 2 – Setback assessment

Boundary	Minimum required (m)	Provided (m)	Compliance
Street boundary	6	31 (existing) 11.8 (future)	Yes
West side boundary	Nil	Nil – 6.5	Yes
East side boundary	Nil	Nil – 6.5	Yes
Rear boundary	Nil	Nil	Yes

In addition to the above setback requirements, DPS2 requires the portion of the lot within 3m of street alignment to be used for the means of access and landscaping only. The entire setback area between the street and convenience store at the front of the lot is used for the purposes of car parking, vehicular access and landscaping.

Furthermore, all development on land abutting a road which is proposed to be widened is to be setback from the street alignment of the road as if the road had been widened as proposed. The proposed street boundary setback to the convenience store is reduced to 11.8m once Gnangara Road has been widened, which is compliant with the required 6m setback.

The proposed setbacks are compliant with the requirements of DPS2.

#### 5.2.3.2 Building facades

Clause 4.8 of DPS2 requires the façade of non-rural and non-residential development to be of a high standard of architectural design and constructed in brick, masonry and/or plate glass, or other approved material which would not adversely impact on the amenity or streetscape of the area. Additionally, façades are to have advertising signage panels incorporated into their design.

The proposed convenience store, showrooms and gymnasium incorporate large glazed windows, with automatic sliding doors at the entrances for each tenancy. Buildings will be constructed in brick or masonry materials, to be determined at the detailed design stage. The proposed signage is incorporated into the design of the buildings, with wall signs integrated into the front façade of each tenancy.

#### 5.2.3.3 Traffic entrances

Clause 4.9 of DPS2 allows Council to direct the owner of any lot to limit access and egress to a lot where it considers desirable. The proposed access to the subject site comprises a left-in crossover from Gnangara Road near the western boundary of the lot, and egress is via a left-out crossover to Gnangara Road toward the eastern side of the lot. The two proposed crossovers are generally located in accordance with the ASP9 Structure Plan Map.

Upon the recommendation of the City, a Road Safety Audit (**RSA**) has been undertaken. The RSA has been undertaken by Traffic and Transport Solutions senior road safety auditor Mr. Garry Mason and City of Joondalup senior transport engineer Mr Avi Barua. The purpose of the RSA is to identify potential safety problems for a particular design or section of road project, and to ensure that measures to eliminate or reduce the problems are considered fully by the asset owner. In particular, the RSA assesses the possible road safety issues resulting from vehicle access and egress from the subject site to Gnangara Road. The findings and recommendations of the RSA relate to existing and ultimate Gnangara Road configuration and restricting illegal U-Turns by way of signage, ensuring roadway lighting is compliant with the relevant Australian Standards, and ensuring adequate stormwater drainage for the crossovers and the Gnangara Road pavement.

Attached to the RSA is a Corrective Action Report (**CAR**), which includes the audit recommendations and formalised response to the auditor from the designer, detailing actions for adopting the particular recommendations. All of the audit recommendations are agreed with and can be addressed during the detailed design stage, and do not impact on the proposed development the subject of this application.

Refer **Appendix 6** for a copy of the RSA and CAR.

#### 5.2.3.4 Service areas and access

Clause 4.12 of DPS2 requires service access to the rear of showroom and commercial uses for the purpose of loading and unloading goods. A 6.75m wide one-way driveway is provided along the western side of the showrooms to provide service access to the rear of the site. Service vehicles are able to load

and unload goods from the warehouses located to the rear of the subject site, before exiting via the 6.75m wide one-way driveway along the eastern side of the lot.

The proposal therefore meets the requirements for service areas and access as set out in DPS2.

#### 5.2.3.5 Storage and rubbish accumulation

Clause 4.13 of DPS2 requires rubbish to be stored within the building or within a suitable enclosure screened from its surrounds. Three dedicated bin stores are located to the rear of the showrooms for the use of the showroom and warehouse component of the development. The convenience store is provided with an enclosed bin yard, also located to the rear of the building. All bin stores are screened from view from the street and located away from vehicular access routes and car parking areas.

#### 5.2.3.6 Car Parking

Car parking is required to be provided on the subject site in accordance with Table 2 of DPS2, pursuant to clause 4.14 of DPS2. A parking assessment for the proposed development is provided in **Table 3** below.

Table 3 – Car Parking

Land use	Parking standard	Required car bays	Provided
Warehouse	1 car bay / 50m² of GFA	3,043m <sup>2</sup> GFA = 60.9	
Showroom	1 car bay / 30m² of GFA	2,812m <sup>2</sup> GFA = 93.7	178
Recreation Centre	1 car bay / 4 people accommodated	Max. 50 people = 12.5	
Convenience store	7 car bays / 100m² of NLA. Up to 50% of bays may be located in refuelling positions.	190m <sup>2</sup> NLA = 13 .3 Up to 6 may be located in refuelling positions.	15
		182 bays	193 bays
		Total Surplus	11 bays

The parking of all vehicles is accommodated onsite and parking areas are designed to allow manoeuvring within the site. Car parking will be constructed, marked, drained and maintained to the satisfaction of Council.

The car parking requirements of DPS2 have therefore been achieved.

#### 5.2.3.7 Landscaping

Clause 4.17 of DPS2 outlines a landscaping requirement for non-residential development of a minimum 8% of the development site area. In addition, the road verge adjacent to the lot is to be landscaped and maintained to the satisfaction of the Council. Where a proposed development includes a car parking area abutting a street, an area no less than 3m wide within the lot along the street alignment is to be landscaped. This is included in the 8% minimum landscaping requirement. Furthermore, shade trees are to be planted and maintained in car parking areas at a rate of one tree for every four car parking bays.

The proposed development incorporates a significant area of landscaping at the front of the lot in the interim until Gnangara Road is widened, at a width ranging from approximately 18m to 30m from the street boundary. The front car parking area is provided with shade trees in accordance with the requirements of DPS2. The total landscaping provided onsite prior to the widening of Gnangara Road is 17.1%, comprising a mix of 3,346m² of soft landscaping (16.7%) and 84m² of hard landscaping (0.4%) totalling an area of 3,430m². Additionally, 633m² of landscaping to the Gnangara Road verge is provided.

Following the widening of Gnangara Road, the landscaped area at the front of the lot will be removed, and the landscaping along the street alignment will be reduced to a width ranging from 2m to 8m. The only portion of the frontage where the landscaping is reduced to 2m in width is along the front of the convenience store, where vehicular access is provided through the site. Due to the alignment of the access-way and the need for trucks to enter and exit the site without interrupting the circulation of vehicles through the car parking areas, the remaining portion of land at the front of the lot available for landscaping is restricted to 2m. Given the landscaping along the frontage of the lot is increased in other areas, the proposed reduction along the front of the convenience store is considered acceptable. Furthermore, it is understood the ultimate verge following widening of Gnangara Road will be in the order of 8m wide, providing an additional area of landscaping along the frontage of the lot. Following the widening of Gnangara Road, approximately 909m² (equating to 5.3%) of the site will be provided with landscaping, which is increased to nearly 12% when combined with the approximately 1,114m² of landscaping of the ultimate verge.

All of the proposed landscaping is located toward the front of the lot, to ensure an attractive frontage when viewed from the street. The reduced landscaping onsite once Gnangara Road is widened will not have any negative impact on the streetscape, and will improve the visual appeal of the development from the street. The proposed landscaping is considered to achieve the objective of clause 4.17 of DPS2.

#### 5.3 Agreed Structure Plan No. 9 – East Wanneroo Cell 7 – Wangara (South)

ASP9 has been prepared for the purpose of facilitating subdivision and development of the East Wanneroo Cell 7 area. As per the provisions of DPS2, subdivision and development within the Cell will attract a developer contribution for infrastructure and works.

ASP9 indicates the crossover locations from Gnangara Road to the subject site. The proposed crossover locations are consistent with the ASP9 structure plan map.

The environmental provisions of ASP9 require a Soil Contamination Assessment be undertaken on the land prior to any earthworks or development of the land, to determine the presence of soil contamination. A soil contamination assessment will be undertaken prior to earthworks and development of the subject site.

#### 5.4 Local planning policies

#### 5.4.1 Local Planning Policy 4.6 – Signs Local Planning Policy

The City's Local Planning Policy 4.6 – Signs Local Planning Policy (**LPP4.6**) provides the development standards applicable to advertising signs. The development plans include indicative details of signage, including:

One 15m high Bulkyplex pylon sign.

- One 7m high 7-Eleven pylon sign.
- Wall signs for individual showroom tenancies and gymnasium.
- Wall signs for the 7-Eleven convenience store.

**Table 4** outlines the design requirements of LPP4.6 applicable for all signs.

Table 4 - Design requirements for signs

De	sign Requirements	Provided	Compliant
In g	general advertising signs shall:		
•	not contain any offensive material;	No offensive material proposed.	✓
•	not be affixed to boundary fences or walls;	No signs affixed to boundary fences or walls.	✓
•	not extend beyond the boundary of the lot on which they are situated, except as otherwise provided by this policy;	All signage will be contained within the boundaries of the subject site.	<b>√</b>
•	bear relevance to the site on which they are located, except as otherwise provided for in this policy; and	All signage relates directly to the showroom tenancies and 7-Eleven convenience store on the subject site.	<b>√</b>
•	integrate with the building design, particularly through the provision of signage panels within the building facades, wherever possible.	The signage has been designed to integrate with the proposed development, with individual showroom tenancies having signage of an equal size and shape on the building façade. The pylon signs will integrate the relevant advertising information for individual tenancies and the convenience store to reduce the proliferation of signage along the frontage of the lot.	<b>√</b>

LPP4.6 includes requirements specific for certain types of signage. The provisions relating to wall signs and pylon signs are relevant to the proposed development.

A wall sign is defined by LPP4.6 as follows:

**Wall sign** – A wall sign means a sign that is painted or affixed on the front, side or rear elevation of a building or structure but does not project more than 300mm out from the wall.

The proposed signs on the individual showroom tenancies and the convenience store are considered to be wall signs under LPP4.6. **Table 5** outlines the requirements of LPP4.6 applicable to a wall sign.

Table 5 - Wall sign development standards

Wall Sign Requirements	Provided	Compliant
Wall signs shall:		
be limited to a maximum of one sign per tenancy, per street frontage	<b>7-Eleven</b> Two wall signs proposed on the west elevation.	×
	<ul> <li>One wall sign proposed on the south wall of showroom tenancies 2-6.</li> <li>Two wall signs proposed on the south wall of showroom tenancies 1 and 7.</li> <li>One wall sign proposed on the west wall of showroom tenancy 1.</li> <li>One wall sign proposed on the east wall of showroom tenancy 7.</li> <li>Eight wall signs proposed on the west facing walls extending between each tenancy.</li> <li>Eight wall signs proposed on the east facing walls extending between each tenancy.</li> </ul>	*  *  *  *  *  *  *  *  *  *  *  *  *

#### 7-Eleven

The proposed signage is consistent with 7-Eleven's corporate branding and imagery implemented on sites across Australia. The proposed wall signs for the 7-Eleven tenancy are integrated into the design of the building and display as a continuous fascia design along the front of the building rather than individual signs. The proposed signage has been designed to ensure customers are able to easily identify the service station when approaching from Gnangara Road.

#### **Bulkyplex**

The proposed wall signs for the showroom tenancies are generally compliant with the requirement for a maximum one sign per tenancy, per street frontage. Additional signage has been incorporated into the design of the building for tenancies 1 and 7, as these tenancies are larger and have a greater frontage (approximately 30m each). The additional signage is considered appropriate given the size of the tenancies, and is likely to have a negligible impact on the streetscape when considered in the overall context of the 2 hectare site. Furthermore, the showroom tenancies are setback 80m from Gnangara Road, further reducing the impact on the streetscape.

Additional wall signs are proposed on the east and west elevations of tenancies 1 and 7 respectively, and on the extended walls between each tenancy. These signs will not impact on the streetscape given they are oriented away from Gnangara Road. The impact of these signs on the streetscape is further negated due to the setback of the showrooms from the street.

not extend laterally beyond either end of the wall or protrude above the top of the wall	All proposed signs are contained within the extent of the wall.	✓
not exceed 25% in aggregate area on any one wall to a maximum of 8m²	<b>7-Eleven</b> Wall signs comprise a total area of 18.64m², equating to approximately 20% of the wall area.	×
	<ul> <li>Bulkyplex</li> <li>Two wall signs on south walls of tenancies 1 and 7 comprise an area of 35m² each (70m² per tenancy), equating to approximately 26% and 27% of the wall area.</li> <li>Wall signs on south wall of tenancies 2-6 comprise an area of 38.75m², equating to approximately 29% of the wall area for tenancy 2 and 26% of the wall area for tenancies 3-6.</li> <li>Wall signs on the east and west facing walls of tenancies 1 and 7 comprise an area of 27m², equating to 9.8% of the side wall area.</li> <li>Signage on inter-tenancy walls comprise an area of 5.4m² each, equating to approximately 34% of the extended portion of the wall.</li> </ul>	x × ×

#### 7-Eleven

The proposed signage is consistent with 7-Eleven's corporate branding and imagery implemented on sites across Australia. It is noted that the proposed wall signs comprise a total aggregate area of 20% of the wall, which is below be maximum 25%. The proposed wall signs are integrated into the design of the building and located on the west facing wall of the building. Due to the location of the signs on the west elevation and their integrated design, the increased size of the proposed wall signs will not have any negative impact on the Gnangara Road transport corridor. The signage will assist passing motorists with identifying the convenience store and refuelling services available on the subject site.

#### **Bulkyplex**

It is acknowledged that the proposed wall signs significantly exceed the maximum 8m² requirement, however the majority of wall signs only marginally exceed the maximum aggregate area. It is considered the proposed wall signs are of a scale which is suitable for the size and location of the subject site on a District Distributor road within the service industrial zone. The showroom tenancies are setback 70m from Gnangara Road, therefore the signage does not have any significant impact on the existing streetscape. The visual impact of the signage is minor when considered in the context of the entire site, which comprises a total area of 2 hectares. All signage is relevant to the individual showroom tenancies, and have been designed so as to minimise the perception of clutter, with a standard sign size and shape proposed for each tenancy. The proposed signage is commensurate with the realistic need for advertising for the businesses which will likely populate the showroom tenancies.

be integrated with the building design	<b>7-Eleven</b> The 7-Eleven signage is integrated with the building, with the signage designed to coordinate with the colours and materials proposed for the convenience store building.	<b>√</b>
	Bulkyplex The proposed signage is integrated with the building design, with each showroom having a sign of the same size and location on the wall of each tenancy.	<b>√</b>

A pylon sign is defined by LPP4.6 as follows:

**Pylon sign** – A pylon sign means a sign supported on one or more poles and not attached to a building and includes a detached sign framework, supported on one or more poles to which infills may be added.

The proposed off-building signs for the showroom development and convenience store are considered to be pylon signs under LPP4.6. **Table 6** outlines the requirements of LPP4.6 applicable to a pylon sign.

Table 6 - Pylon sign development standards

Pylon Sign Requirements	Provided	Compliant
Pylon signs shall:		
be limited to a maximum of one per street frontage or one for every 40 metres of linear street frontage	The proposed Bulkyplex and 7-Eleven pylon signs are separated from one another by a distance of 40m.	<b>√</b>
• not exceed 6.0 metres in height Note: the pylon sign/s shall be designed to provide	<b>7-Eleven</b> The 7-Eleven pylon sign is 7m in height.	×
one infill panel for each unit on the lot and may be increased in height to 8 metres	Bulkyplex The Bulkyplex pylon sign is 15m in height.	×
not exceed 2.5 metres measured horizontally across the face of the sign	<b>7-Eleven</b> The 7-Eleven sign measures 1.8m horizontally across the face of the sign.	✓

Bulkyplex	×
The Bulkyplex pylon sign measures 4.79m horizontally across the face of the sign at its widest part.	

#### 7-Eleven

The increased size of the proposed 7-Eleven pylon sign is necessary for brand advertising purposes and to display fuel prices. The proposed pylon sign is suitable advertisement for the 'car-based' area to ensure the necessary business exposure to vehicles travelling at 70km/hr along Gnangara Road. The proposed pylon sign is considered to be suitable for the car based service industrial area. The proposed sign is consistent with signage commonly found on petrol filling station sites. The imagery and signage content/information is consistent with 7-Eleven's corporate imagery implemented on sites across Australia.

#### **Bulkyplex**

The increased height and width of the proposed Bulkyplex pylon sign is considered appropriate when considered in the context of the proportions with the size of the subject site, which comprises an area of 2 hectares with a frontage of 155m. The extensive street frontage of the lot allows for up to four pylon signs to be provided, therefore the two proposed pylon signs, albeit greater than the maximum size requirements specified in LPP4.6, represents a better signage outcome which reduces the potential proliferation of signage along the street frontage.

The proposed development comprises 7 individual showroom tenancies, each requiring adequate advertising signage. The proposed pylon sign will provide infill panels for each tenancy, which will reduce the clutter of signage that would result if each tenancy were to propose individual pylon signs. The proposed signage does not diminish the visual quality or existing character of the locality, and it is considered the proposed signage is appropriate in the service industrial zone and located along a District Distributor road. The speed limit of Gnangara Road in this vicinity is 70km/hr, and the increased size of the pylon sign allows for improved visibility of the site from an appropriate distance to allow customers to locate the site entrance.

The proposed pylon sign is of a high standard of design and presentation and will ensure the visual quality and character of Gnangara Road is not eroded.

be located centrally within the lot and no closer than 3.0m to a side boundary	<b>7-Eleven</b> 7-Elevent pylon sign located 40.75m from the western side boundary.	<b>√</b>
	Bulkyplex Bulkyplex pylon sign located 2.8m from the western side boundary.	×

#### **Bulkyplex**

The Bulkyplex pylon sign is located 2.8m from the western side boundary, which represents a minor variation of 0.2m from the required 3m setback. Due to the location and alignment of the left-in crossover from Gnangara Road, the area remaining between the side lot boundary and crossover is restricted. The pylon sign has been appropriately located to ensure adequate sightlines to the crossover from Gnangara Road and to ensure the safe and unimpeded movement of vehicles into the subject site. The minor reduced setback will not have any negative impact on the streetscape or on the amenity of the adjoining lot to the west.

#### **Directional Signs**

The proposed 7-Eleven service station development includes three directional signs around the fuel canopy. The proposed signs provide direction for refuelling vehicles to enter and exit the site in a safe and coordinated manner. The directional signs are consistent with 7-Eleven's corporate imagery implemented on sites across Australia. The signs provide an essential service and are considered to provide little to no impact on the wider streetscape, due to the setback and orientation of the signs away from Gnangara Road. Therefore, the proposed directional signs are consistent with the objectives of LPP4.6.

The proposed signage is considered to be appropriate to the scale and location of the proposed development. The signage addresses the requirements and objectives of LPP4.6, and warrants approval accordingly.

#### 6 Conclusion

It is considered the proposal should be favourably determined, on individual merit, recognising the proposal seeks to provide a quality showroom and warehouse development and a convenience store within an existing service industrial area. The proposed development will positively contribute towards and enhance the existing Gnangara Road streetscape.

In summary, the proposal is justified and considered appropriate for the following reasons:

- 1. The proposal is consistent with the provisions of the Metropolitan Region Scheme.
- 2. The proposal is consistent with the provisions and requirements of the City of Wanneroo District Planning Scheme No. 2.
- 3. The proposal is consistent with the provisions and requirements of Agreed Structure Plan No. 9 East Wanneroo Cell 7 Wangara (South).
- 4. The proposal is consistent with the objectives of the City of Wanneroo Local Planning Policies.
- 5. The proposed development will not have significant detrimental impacts on the existing amenity of the locality.

In light of the above, we consider the proposed development is worthy of approval.

# Appendix 1 Certificate of Title

WESTERN



AUSTRALIA

REGISTER NUMBER 335/P12228

DUPLICATE DATE DUPLICATE ISSUED EDITION

4/7/2006

### RECORD OF CERTIFICATE OF TITLE UNDER THE TRANSFER OF LAND ACT 1893

1497

994

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

2

E TAN AUSTRIA

#### LAND DESCRIPTION:

LOT 335 ON PLAN 12228

#### REGISTERED PROPRIETOR:

(FIRST SCHEDULE)

CRESTWOOD HOLDINGS PTY LTD OF SUITE 5, 193 MAIN STREET, OSBORNE PARK
(T J671359) REGISTERED 23 MARCH 2006

#### LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS: (SECOND SCHEDULE)

1. \*M757989 MORTGAGE TO NATIONAL AUSTRALIA BANK LTD REGISTERED 4.9.2014.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.

\* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.

Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

#### **STATEMENTS:**

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 1497-994 (335/P12228).

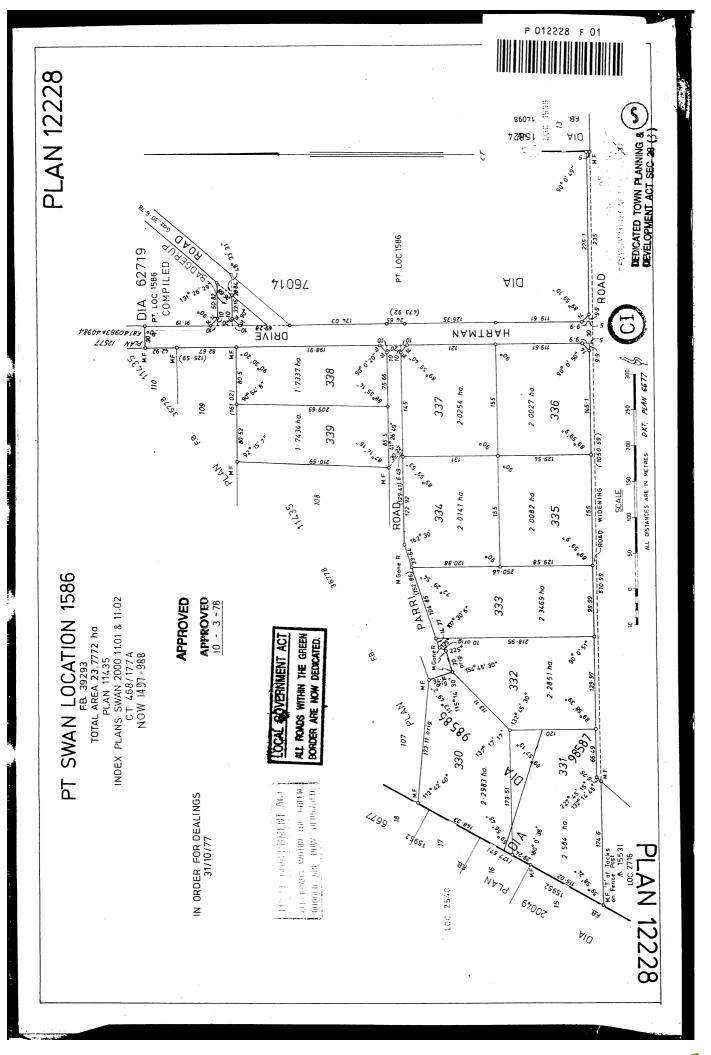
PREVIOUS TITLE: 1497-988.

PROPERTY STREET ADDRESS: 79 GNANGARA RD, WANGARA.

LOCAL GOVERNMENT AREA: CITY OF WANNEROO.

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING

M757989



# Appendix 2 Bulkyplex Development Plans



# PROJECT NUMBER

15.006

# CLIENT

CRESTWOOD HOLDINGS PTY LTD

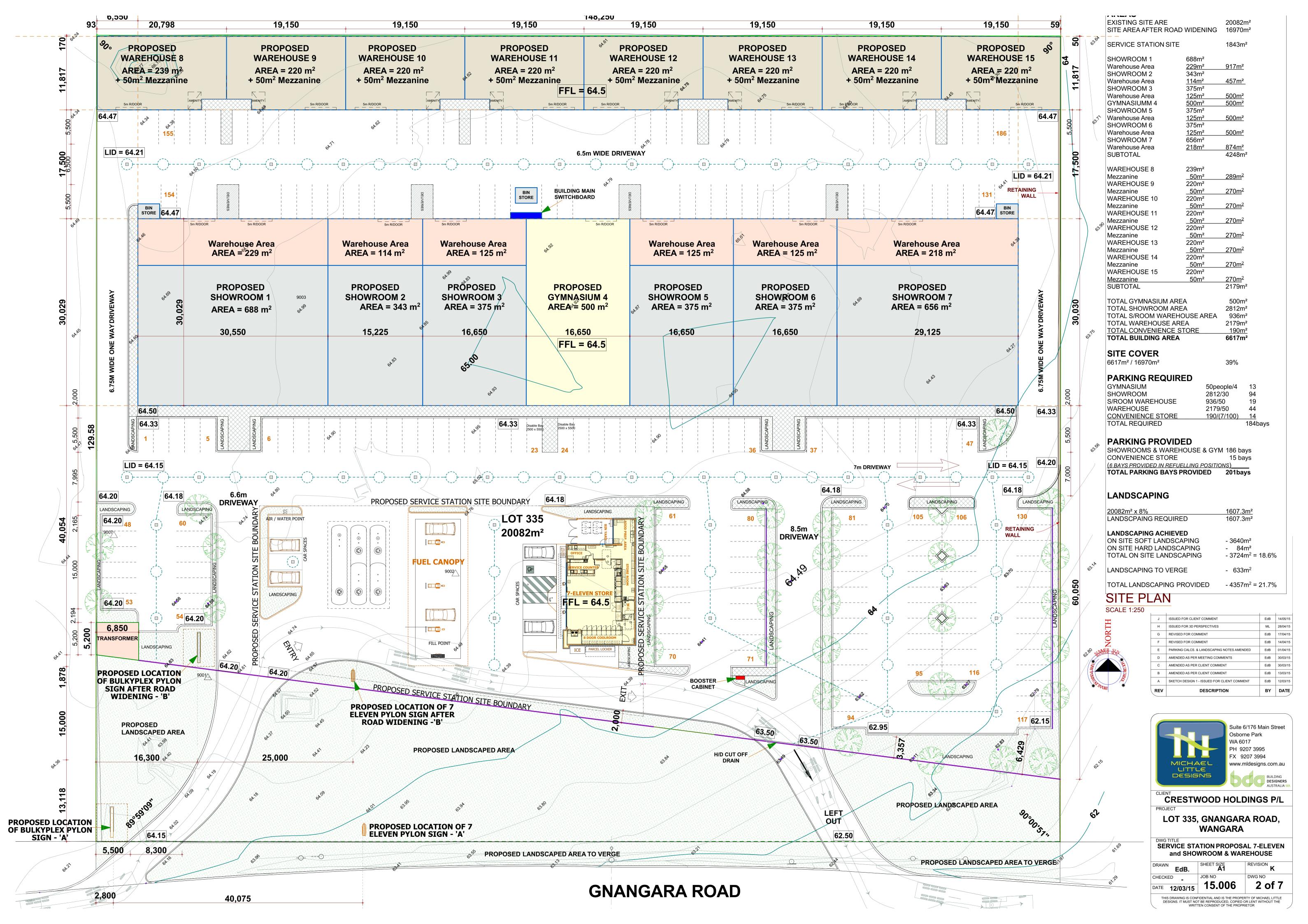
# PROJECT ADDRESS

Lot 335, # 79 GNANGARA ROAD, WANGARA

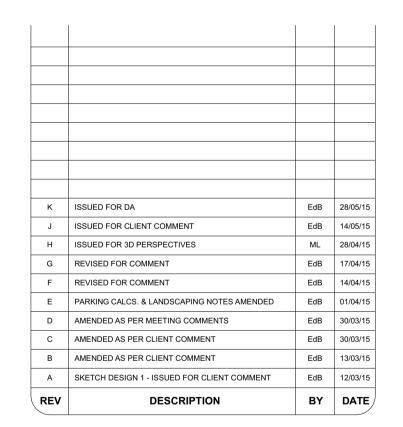




Suite 6/176 Main Street Osborne Park WA 6017 Telephone: 08 9207 3995 www.mldesigns.com.au









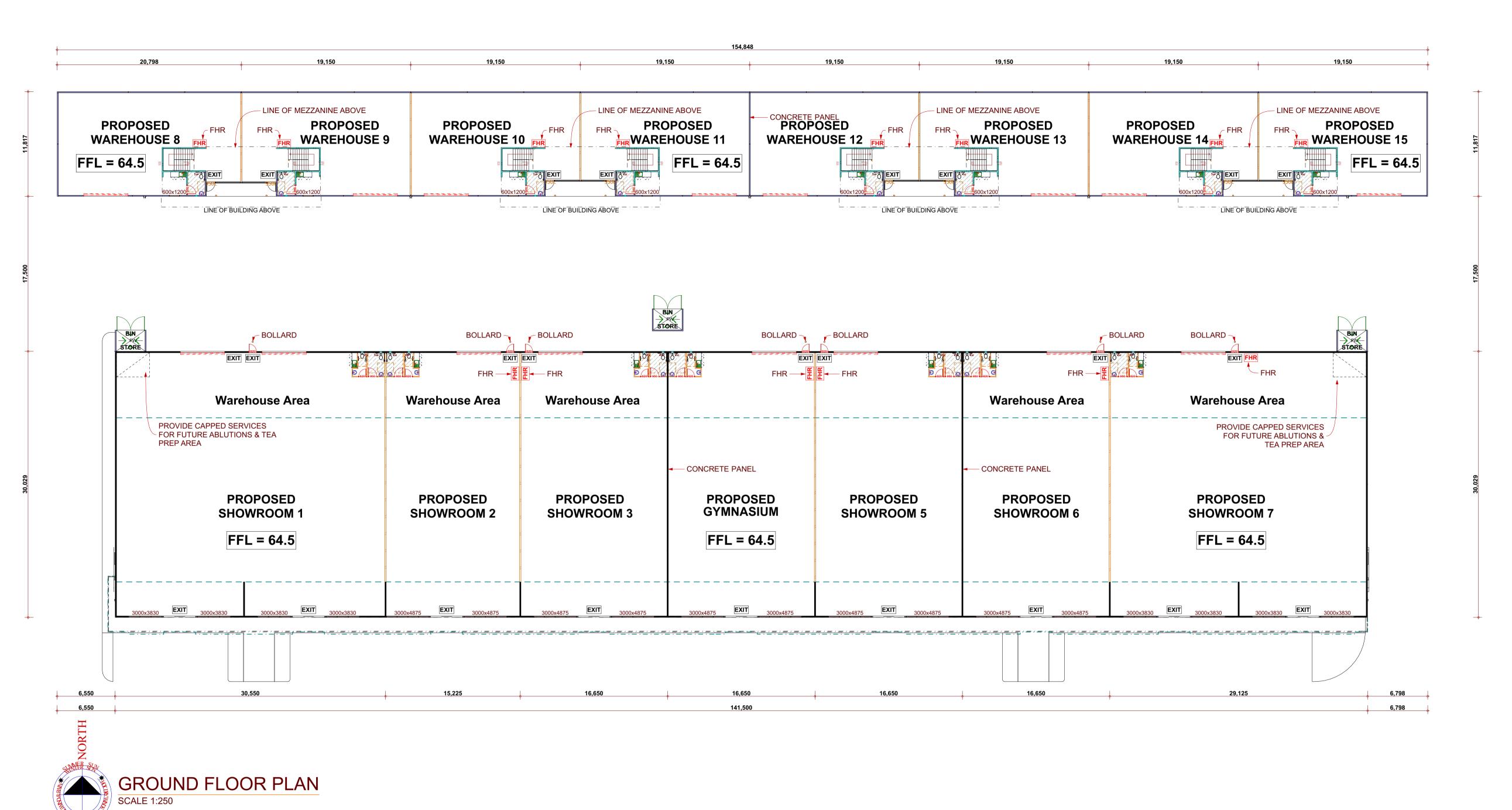
CRESTWOOD HOLDINGS P/L
PROJECT

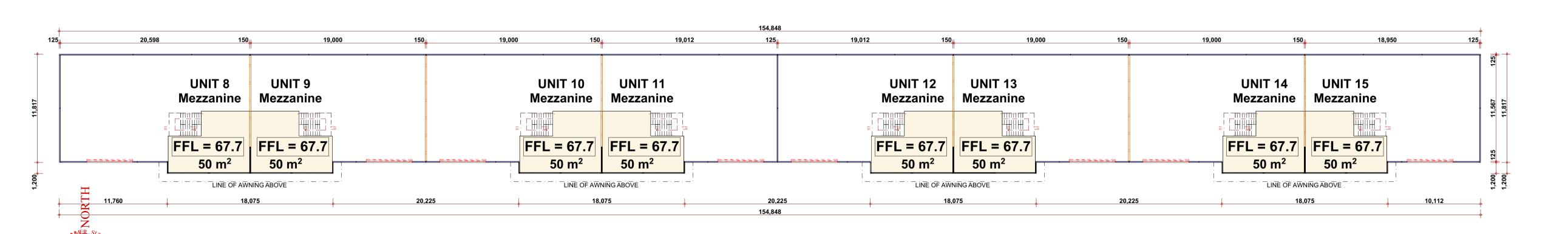
LOT 335, GNANGARA ROAD, WANGARA

SERVICE STATION PROPOSAL 7-ELEVEN and SHOWROOM & WAREHOUSE

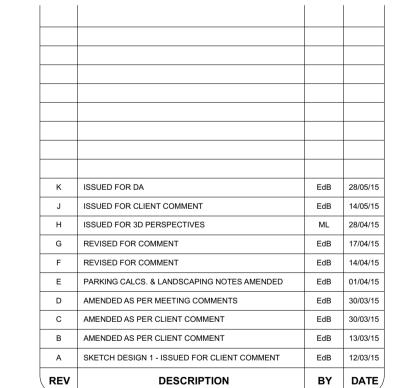
EdB.	<b>A1</b>	REVISION K		
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DATE <b>12/03/15</b>	15.006	3 of 7		
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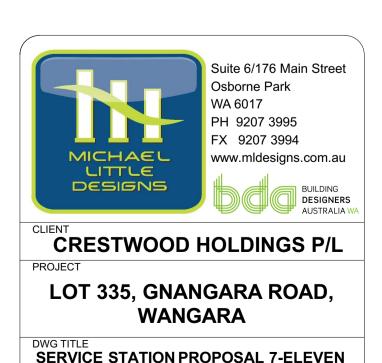
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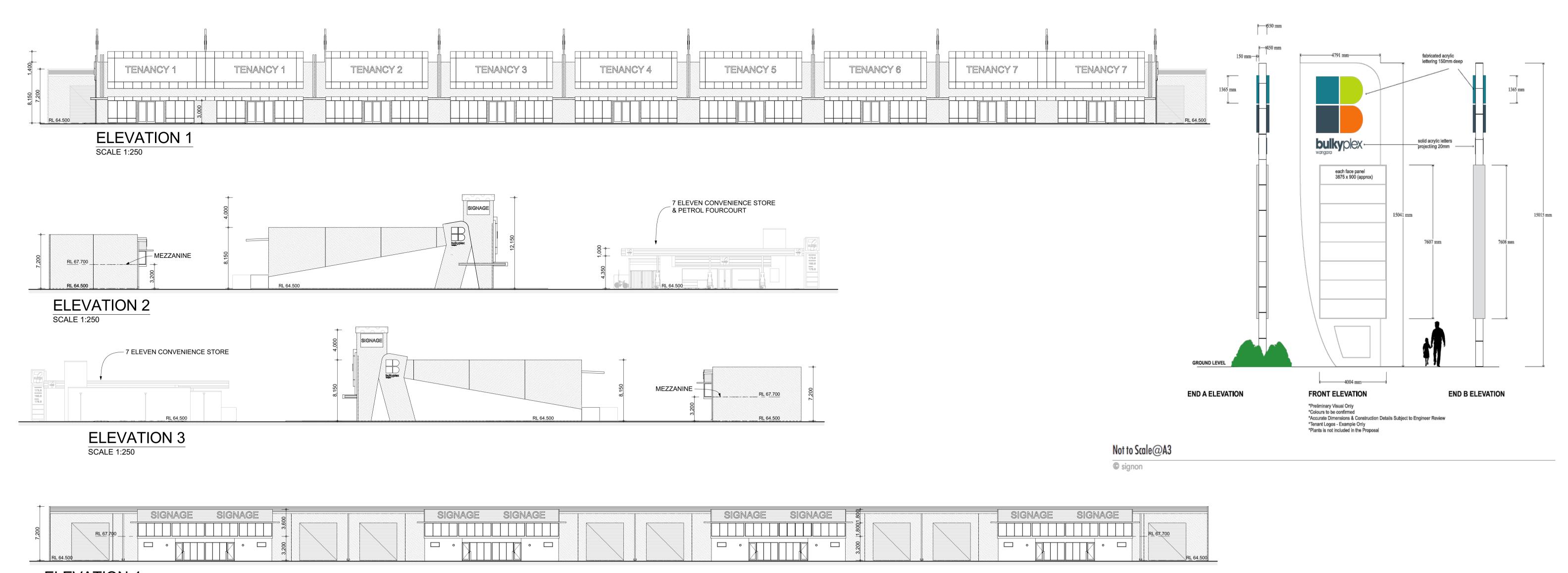
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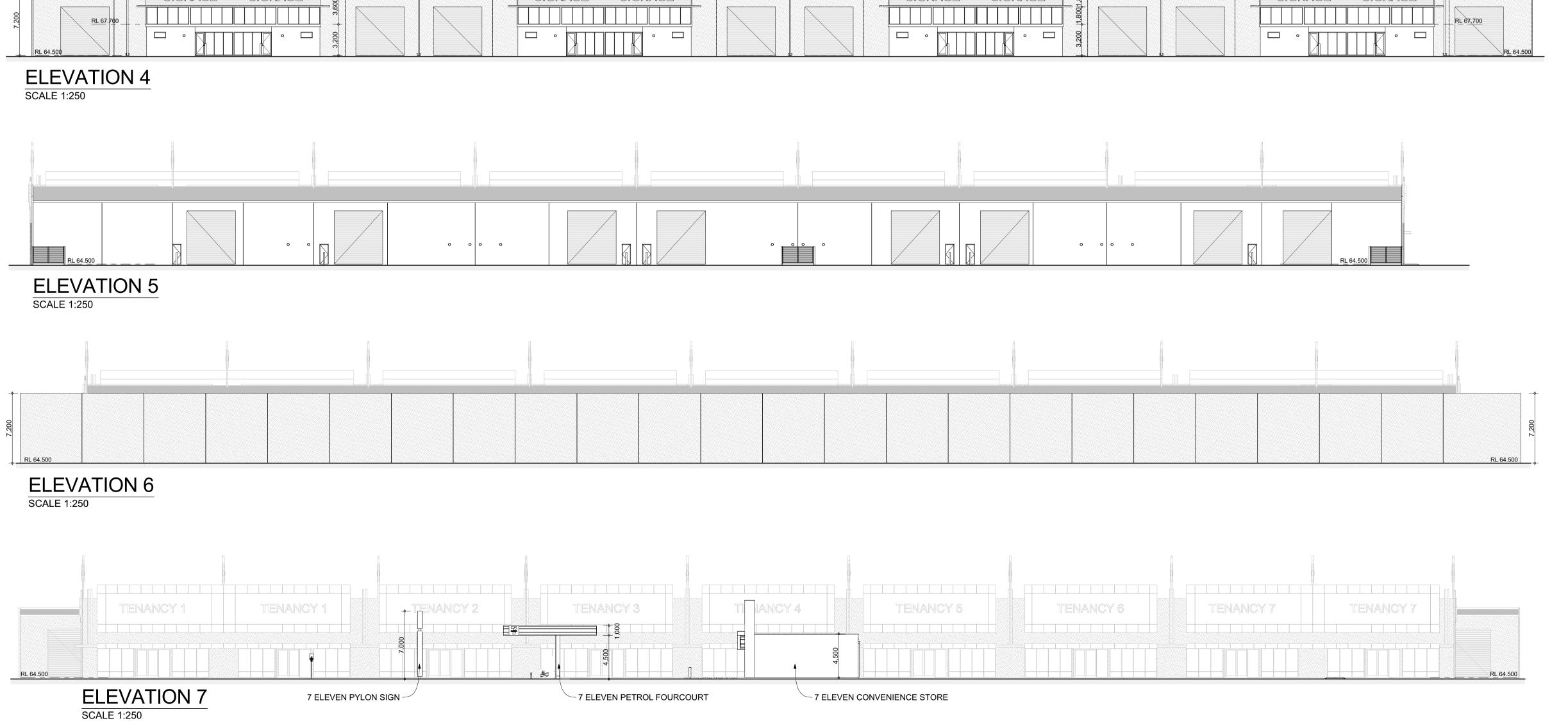


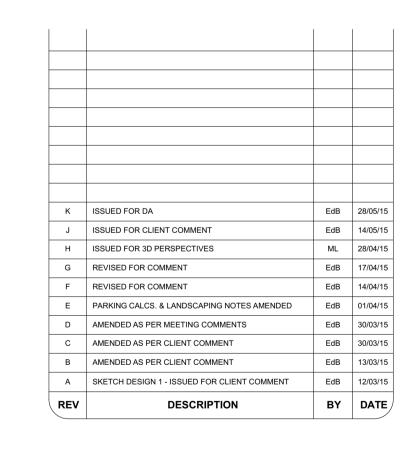


and SHOWROOM & WAREHOUSE			
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DATE 12/03/15	15.006	4 of 7	

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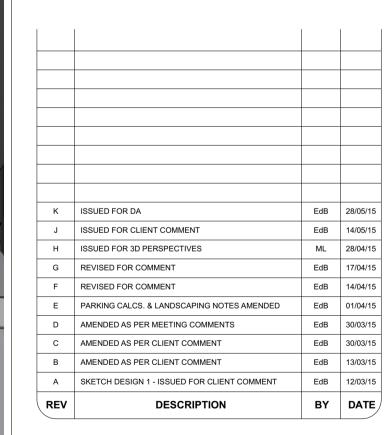














DWG TITLE
SERVICE STATION PROPOSAL 7-ELEVEN
and SHOWROOM & WAREHOUSE

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 EdB.
 SHEET SIZE A1
 REVISION K

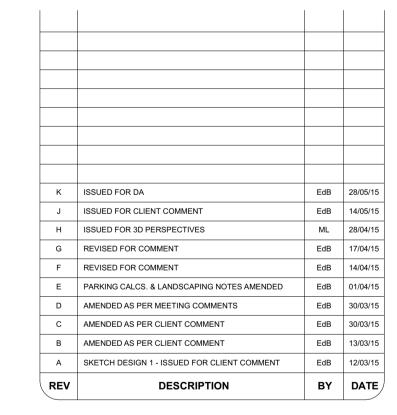
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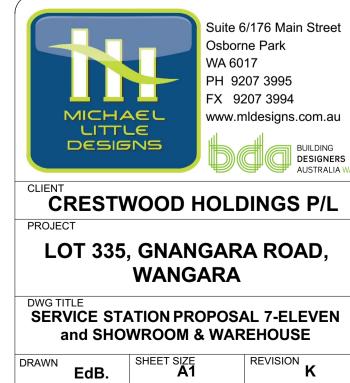
 DATE 12/03/15
 15.006
 6 of 7

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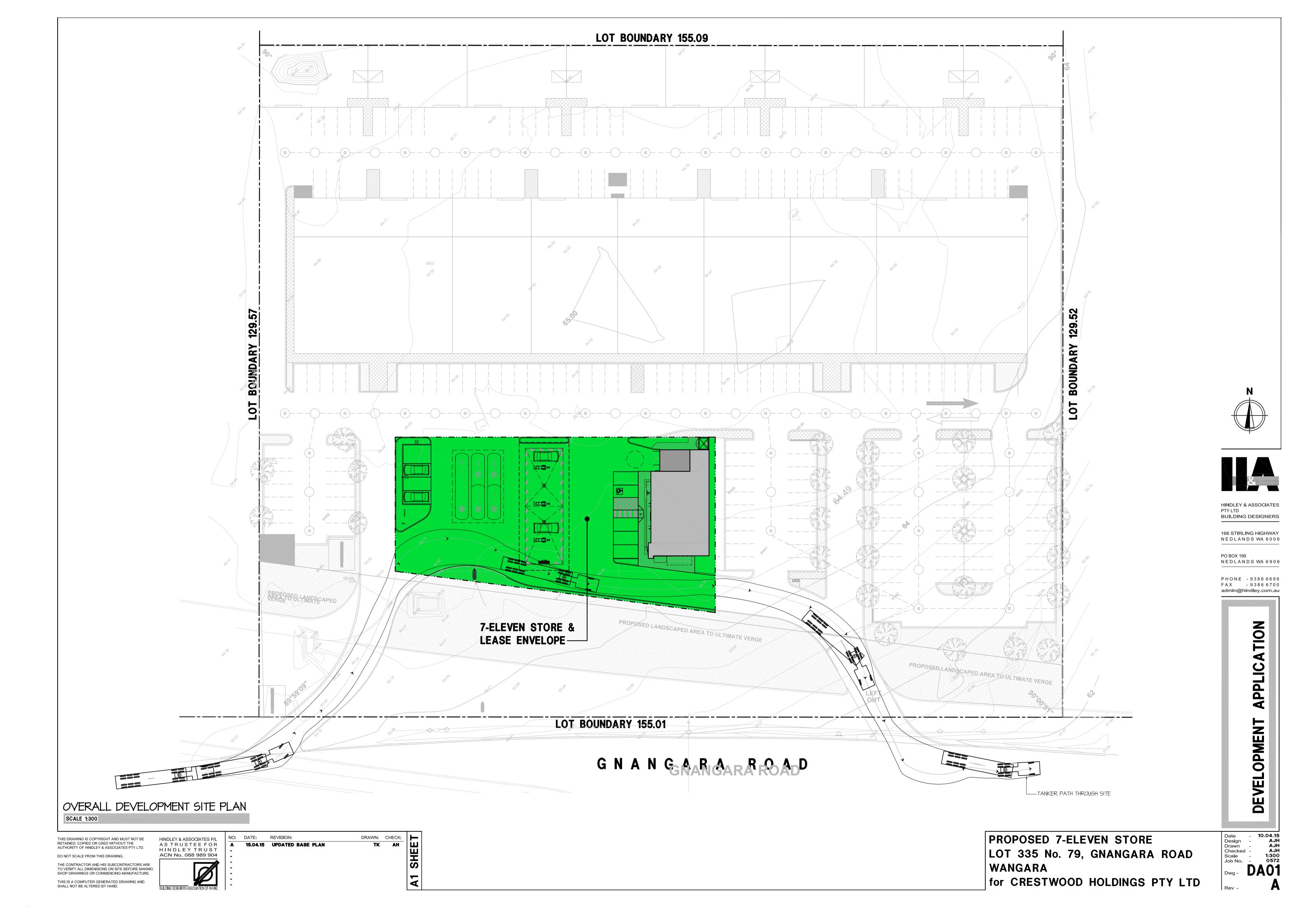


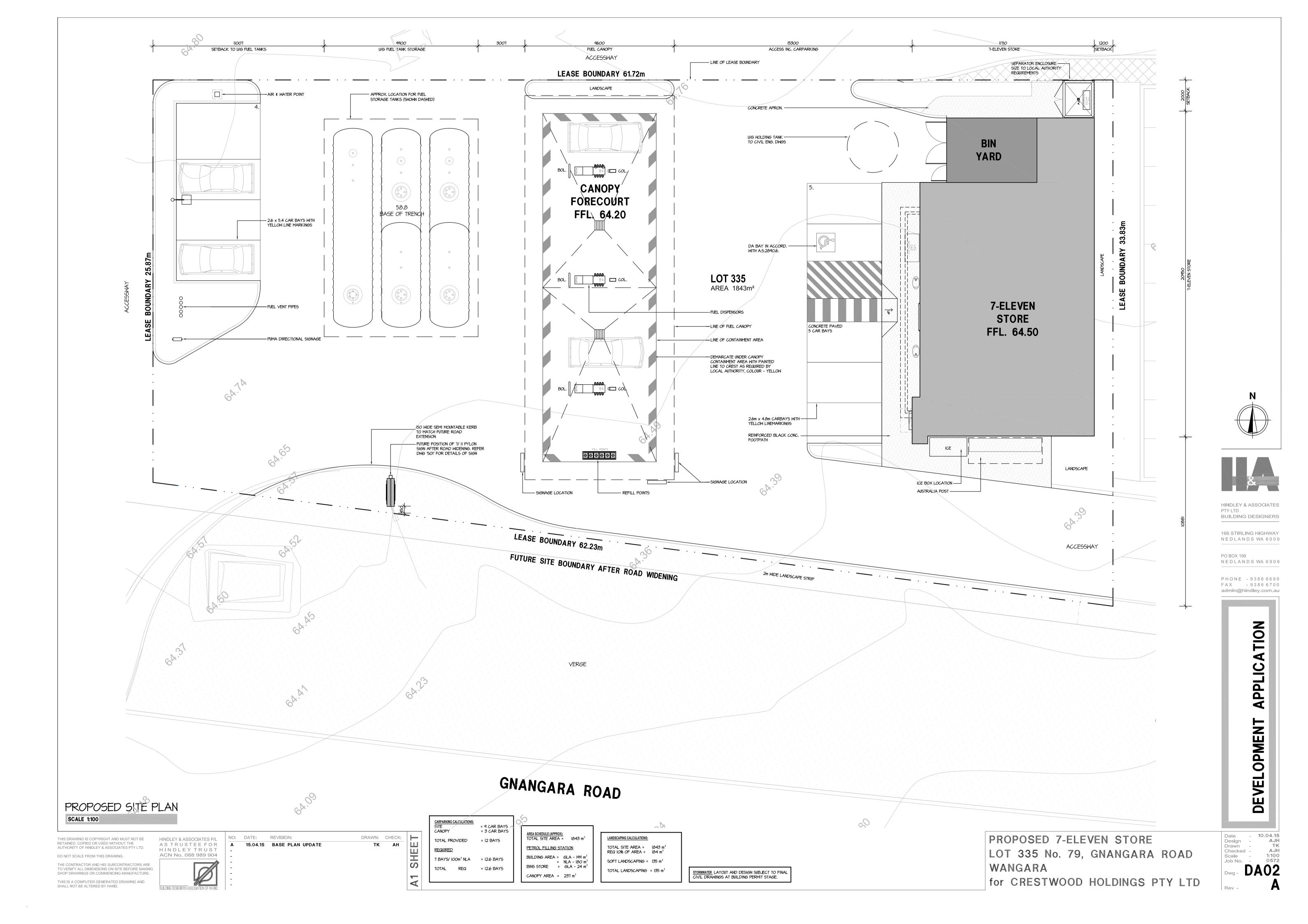
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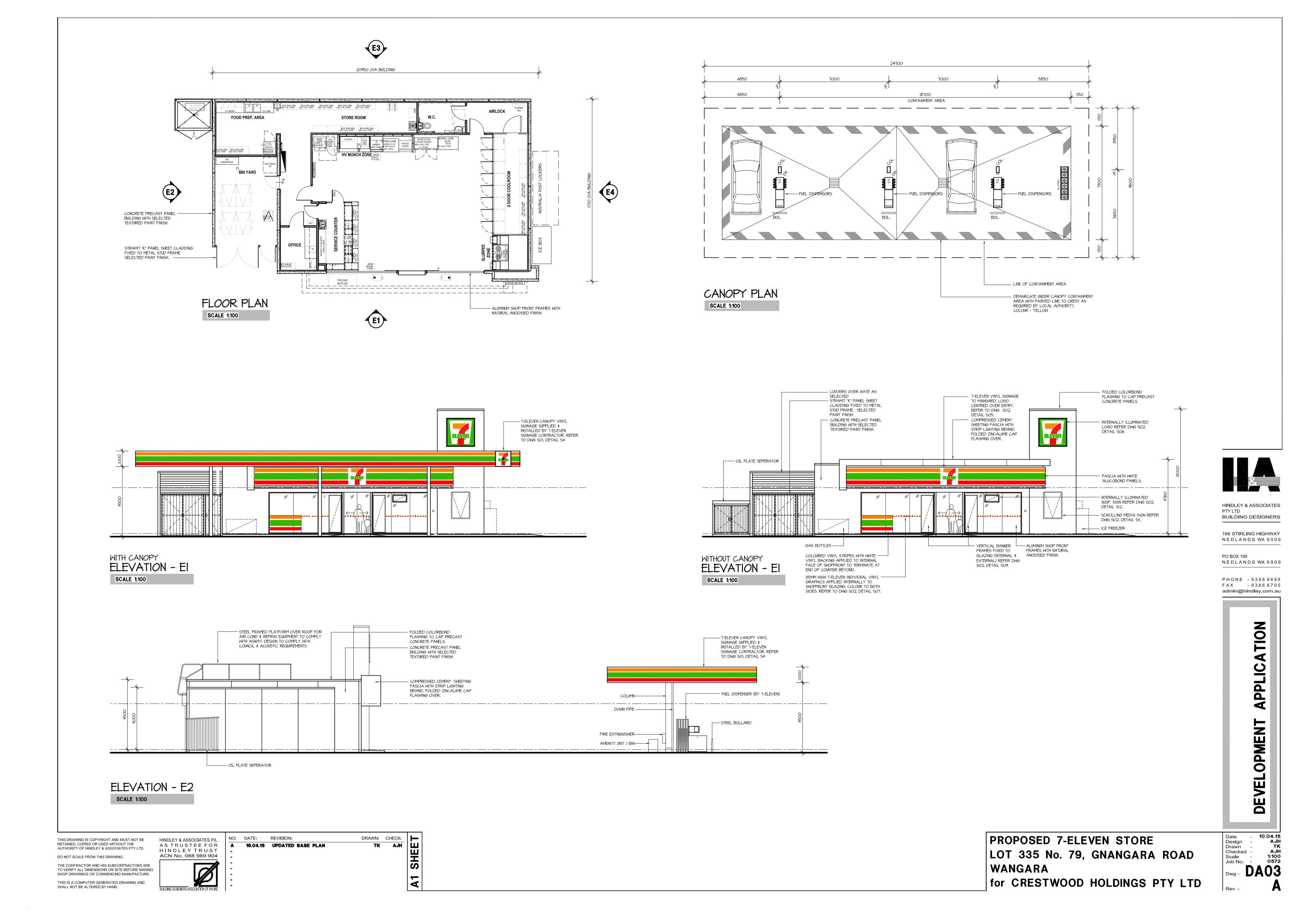
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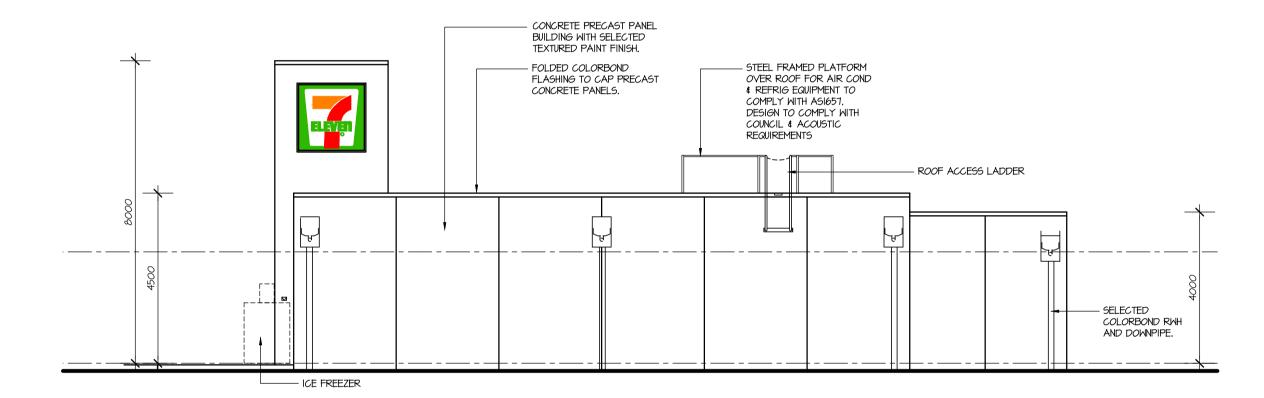
# Appendix 3 7-Eleven Development Plans







# ELEVATION - E3 SCALE 1:100



ELEVATION - E4 SCALE 1:100 &

HINDLEY & ASSOCIATES PTY LTD BUILDING DESIGNERS

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DEVELOPMENT APPLICATION

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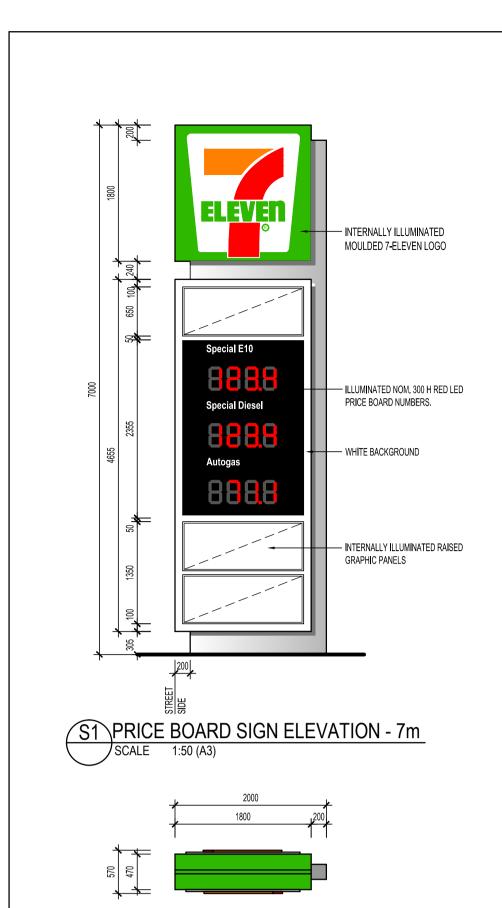
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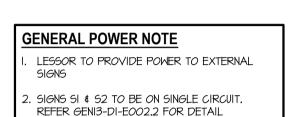
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LOT 335 No. 79, GNANGARA ROAD
WANGARA
for CRESTWOOD HOLDINGS PTY LTD

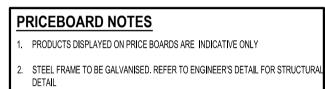
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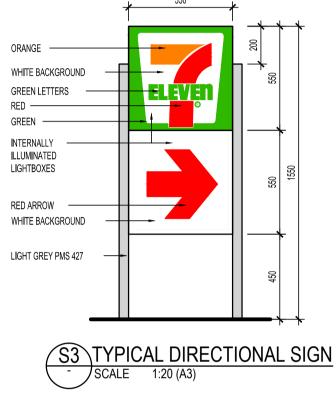


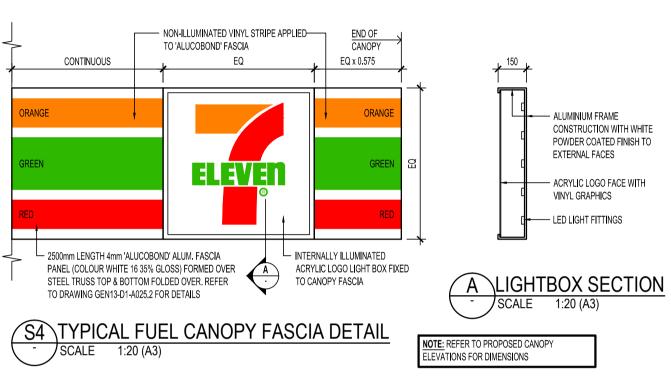
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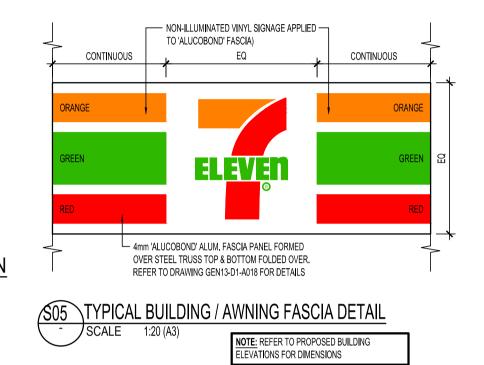




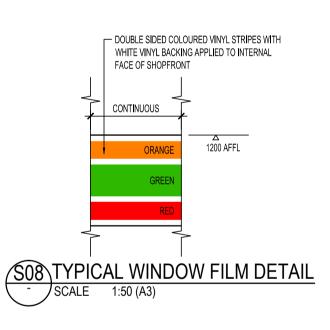


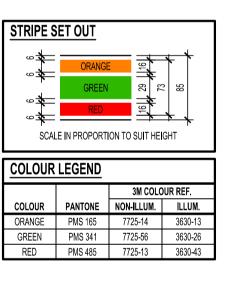














HINDLEY & ASSOCIATES PTY LTD BUILDING DESIGNERS

166 STIRLING HIGHWAY NEDLANDS WA 6009

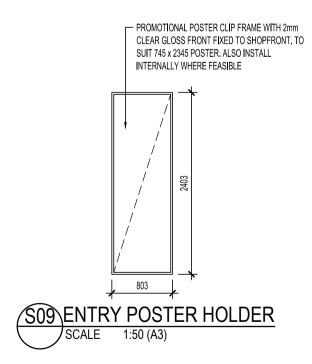
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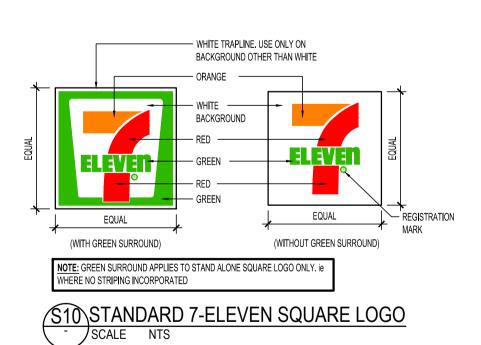
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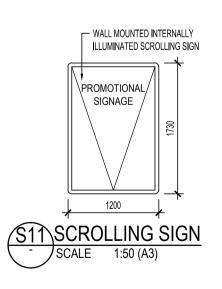
PHONE - 9386 6699 FAX - 9386 6700 admin@hindley.com.au

**APPLICATION** 

**DEVELOPMENT** 







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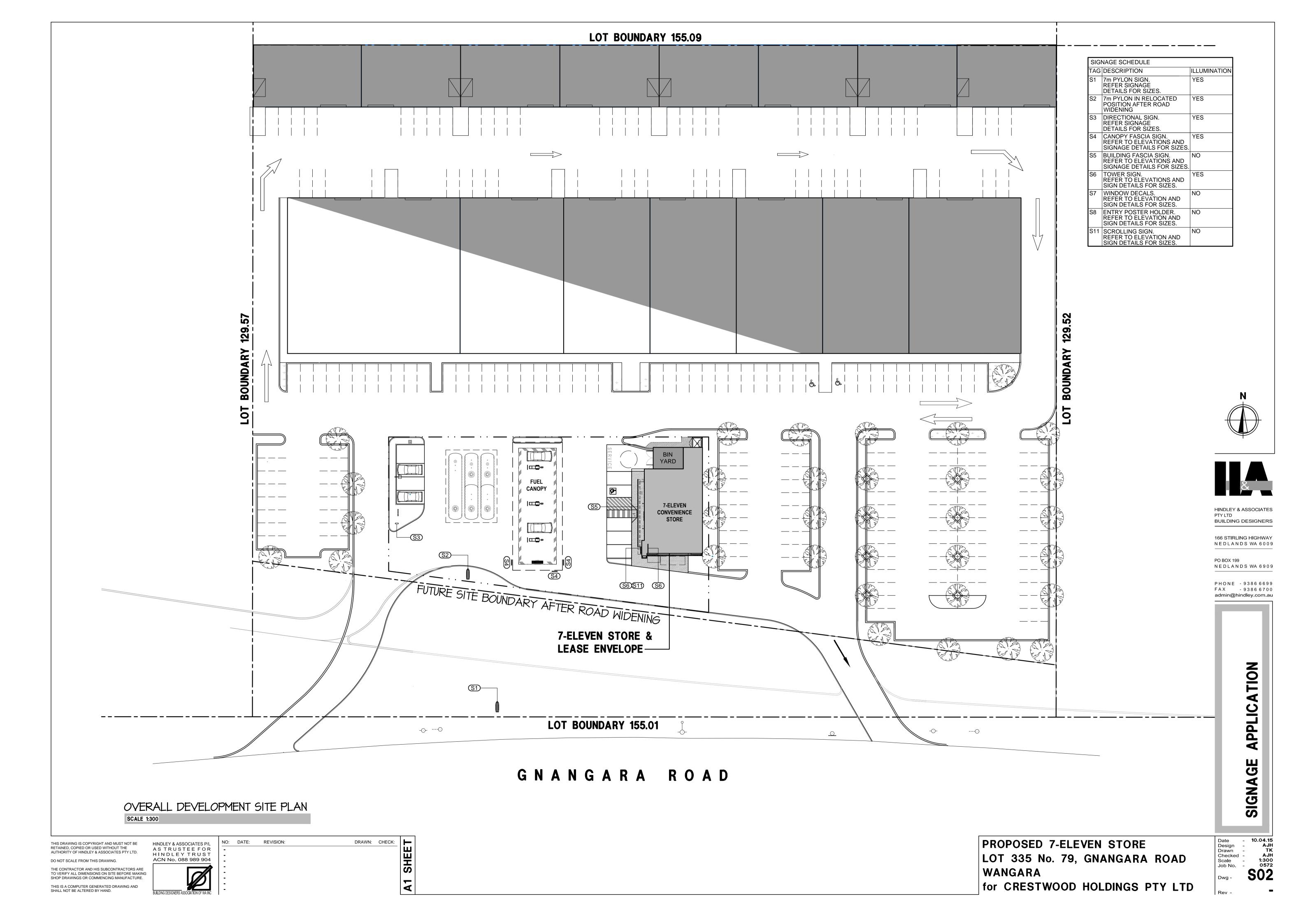
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HINDLEY & ASSOCIATES P/L AS TRUSTEE FOR HINDLEY TRUST ACN No. 088 989 904 NO: DATE: REVISION: DRAWN: CHECK:

A1 SHEET

PROPOSED 7-ELEVEN STORE
LOT 335 No. 79, GNANGARA ROAD
WANGARA
for CRESTWOOD HOLDINGS PTY LTD

Date - 10.04.15
Design - SJH
Drawn - TK
Checked - SJH
Scale AS SHOWN
Job No. 
Dwg - S01



# Appendix 4 Transport Assessment



# Proposed Commercial Development Lot 335 Gnangara Road, Wangara Transport Assessment

PREPARED FOR: Crestwood Holdings Pty Ltd

**April 2015** 

## **Document history and status**

Author	Revision	Approved by	Date approved	Revision type
Vladimir Baltic	r01	B Bordbar	27/02/2015	Draft
Vladimir Baltic	r01a	B Bordbar	2/04/2015	2 <sup>nd</sup> Draft
Vladimir Baltic	r01b	B Bordbar	7/04/2015	Final
				_

**File name:** t12.125.vb.r02b.docx

**Author:** Vladimir Baltic

**Project manager:** Behnam Bordbar

Client: Crestwood Holdings Pty Ltd

Project: Lot 335 Gnangara Road, Wangara

**Document revision:** r02b

**Project number:** t12.125

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#### 1.0 Summary

This Transport Assessment report (TA) has been prepared with respect to the proposed commercial development at Lot 335 Gnangara Road in Wangara in City of Wanneroo (subject site). The subject site is located at the northern side of Gnangara Road immediately north of the Gnangara Road/Klaraborg Drive intersection.

The proposed development comprises a "7-Eleven" service station with ancillary convenience store at the Gnangara Road frontage with several showroom and warehouse tenancies at the rear of the property. Total parking provision for the development is about 190 bays. The access system for the proposed development is proposed only off Gnangara Road.

In accordance with the WAPC document "Transport Assessment Guidelines for Developments, Volume 4 – Individual Developments" a Transport Assessment is required for developments that are likely to generate high volumes of traffic and, therefore, would have a high overall impact on the surrounding land uses and transport networks. A Transport Assessment is a full assessment outlining the transport aspects of the proposed development. The intent of the Assessment is to provide the approving authority with detailed transport information to confirm that the proponent has adequately considered the transport aspects of the development and that it would not have an adverse transport impact on the surrounding area.

The aim of this TA is to assess the impact of the development proposal by estimating the traffic which will be generated by the development and the resultant traffic pattern on the surrounding road network. This traffic assessment will include the capacity analysis of the development's crossovers and the potential impact of the development traffic on the local intersection of Gnangara Road/Klaraborg Drive.

#### 2.0 Introduction

This TA has been prepared by Transcore on behalf of Crestwood Holdings Pty Ltd. The subject of this report is a commercial development comprising a service station with ancillary retail shop and several showroom and warehouse tenancies proposed at Lot 335 Gnangara Road in Wangara in City of Wanneroo. The subject site is located immediately north of Gnangara Road as shown in **Figure 1**.



Figure 1: Location of the subject site

The subject site is presently occupied by two single-storey structures with shared single full-movement access crossover onto Gnangara Road.

#### 3.0 Development Proposal

The development proposal entails replacement of the existing structures at the subject site with a commercial development comprising a "7-Eleven" service station fronting Gnangara Road with several showrooms and warehouses at the back of the property. The proposed land uses are listed as follows:

- ♣ A "7-Eleven" service station with six bowsers (filling points) and a convenience store of about 250m² GFA;
- ♣ A total of seven single-storey showroom units with a combined floor area of about 4,250m² GFA;
- ♣ A total of eight warehouse tenancies with a combined floor area of about 2,230m² GFA;

The proposed parking supply for the entire development of 190 bays consists of several designated parking areas; however, all parking is interconnected via internal driveway system.

The service station parking is located close to the service station site and entails nine parking bays inclusive of one ACROD bay and one air/water point. Additional six parking bays are available at refuelling positions.

Both showrooms and warehouses have their own parking areas located adjacent to the respective tenancies plus additional parking zone at the Gnangara Road frontage. The total parking supply for the showroom and warehouse component of the development is about 181 parking bays.

As part of the proposed development the two existing crossovers for the subject site are being removed and the new vehicular access/egress system for the proposed development entail two access points on Gnangara Road as follows:

- **Western Gnangara Road left-in only crossover** proposed as entry-only crossover located close to the western site boundary;
- **Eastern Gnangara Road left-out only crossover** proposed as exit-only crossover located approximately 100m east of the western site boundary;

The existing centre median on Gnangara Road will assist to enforce the proposed nature of the development access/egress system. The proposed access system has already been approved as part of a structure plan amendment for the subject site and as such is designed to allow efficient access and egress for all vehicles including service vehicles with minimum amount of conflicting paths.

Refer to **Appendix A** for plans of the proposed development. The site plan allows for the future integration of the proposed development access and egress system into future upgraded Gnangara Road.

#### 4.0 Existing Situation

The subject site is located at the northern side of the Gnangara Road immediately north of Gnangara Road/Klaraborg Drive intersection in Wangara. It is situated within the Wangara Trade Centre zone which occupies an area between Wanneroo Road to the west, Mirrabooka Avenue to the east, Ocean Reef Road to the north and Gnangara Road to the south. The site is bound by Gnangara Road to the south and the existing light industrial developments to the immediate north. Vacant land is located to immediate west and east of the subject site.

The subject site is presently occupied by two single-storey structures, each with separate crossovers on Gnangara Road (refer **Figure 2** for more details).



Figure 2: Aerial view of the subject site

Gnangara Road forms a priority-controlled T-intersection with Klaraborg Drive immediately south of the subject site. At this location Gnangara Road is locally widened to four lanes with a solid median to allow for safe passing of vehicles turning into Klaraborg Drive from Gnangara Road, although Klaraborg Drive does not service any properties or connect to any other roads at present.

**Gnangara Road,** in the vicinity of the subject site, is a 7.2m wide, single carriageway road with a 0.5m wide sealed shoulder. There are no pedestrian or cycling facilities

on either side of the road at this locality. Gnangara Road operates under a speed limit of 70km/h in this vicinity.

According to the Main Roads WA Perth Metropolitan Area – Functional Road Hierarchy document, Gnangara Road is classified as a Distributor A. It is also covered by Other Regional Roads reservation (i.e. Blue Roads) in the Metropolitan Region Scheme document. Accordingly, this road is vested to local government for care, control and maintenance.

According to the latest available traffic counts sourced from Main Roads WA Gnangara Road (east of Wanneroo Road) carried approximately 13,550vpd in Jan 2015 with AM peak and PM peak hours recording 1,056vph and 1,173vph, respectively.

**Klaraborg Drive** is constructed only to about 100m to the south of Gnangara Road and at present does not serve any no properties or connect to any other road. It is constructed to a two-lane, single carriageway standard with a shared path along the western side.

According to the Main Roads WA Perth Metropolitan Area – Functional Road Hierarchy document, Klaraborg Drive is classified as an Access Road operating under a default built-up area speed limit of 50km/h.

Klaraborg Drive forms a priority-controlled T-intersection with Gnangara Road terminating on its northbound approach to the intersection. Gnangara Road entails localised widening in the vicinity of this intersection enabling free-flow of through traffic and passing of vehicles turning into Klaraborg Drive.

#### 5.0 Changes to the Surrounding Road Network

Gnangara Road is planned to be ultimately upgraded to dual-carriageway, four-lane standard; however, the timing of this project is not known at present.

Klaraborg Drive is presently cul-de-saced about 100m south of Gnangara Road. Presently it serves no properties and carries no traffic. It is anticipated that ultimately, Klaraborg Drive will extend further south to connect to the existing road network serving the residential areas to the southern side of Gnangara Road. However, the timing for this connectivity is not known at this stage.

As part of the future upgrading of Gnangara Road, the T-intersection with Klaraborg Drive is proposed to be maintained.

## 6.0 Integration with Surrounding Area

Based on the information provided to Transcore, the proposed development is in line with the zoning for the subject site. It is of a commercial character and is expected to address the existing and future demand for these types of services.

#### 7.0 Traffic Assessment

#### 7.1 Assessment Period

In order to assess the traffic impact of the proposed development, a traffic generation and distribution exercise is undertaken. The aim of this exercise is to estimate the traffic generation of the proposed 7-Eleven development and to quantify the effect of this traffic upon the operations of the surrounding road network.

Due to the nature of the proposal and the constituent land uses the subject development is expected to experience a distinct peak activity period during typical weekday afternoon peak hour.

A review of the existing traffic counts for the adjacent road network and other available information, suggests that the combination of the traffic expected to be generated by the development and the peak road network traffic period is likely to result in the greatest demand on the road network during the typical weekday afternoon peak hour between 4:00-5:00PM. As such, trip generation is estimated and traffic analysis is undertaken for this period.

In line with the requirements of the document "Transport Assessment Guidelines for Developments, Volume 4 – Individual Developments" additional assessment is generally undertaken for 10 year post-development scenario. Hence, a capacity assessment of the development's access system is also undertaken for the 10 year post development time horizon.

#### 7.2 Trip Generation and Distribution

Traffic generation rates for the proposed showroom and warehouse components of the development were sourced from the "Director-General of Transport South Australia - Land Use Traffic Generation Guidelines (March 1987)".

For estimating the daily and typical weekday afternoon peak hour trips for the 7-Eleven service station reference was made to historical sales data of comparable outlets currently operating in eastern states and other relevant trip generation documents.

The estimated trip generation allows for 20% adjustment for multi-purpose trips<sup>1</sup> between the development components (i.e. cross-trade); however, this discount was applied only to the showroom traffic component.

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<sup>&</sup>lt;sup>1</sup> Multi-purpose trips are incidences where more than one shop/outlet are visited within the development (also referred to as "cross-trade")

Accordingly, it is estimated that the proposed development would generate approximately **3,224** total daily trips (both inbound and outbound) with approximately **308** trips (both inbound and outbound) during a typical weekday PM road network peak hour.

Trips associated with the proposed 7 – Eleven and to a lesser extent the showrooms comprise a large portion of passing-trade trips (i.e. trips already on the road network and not specifically generated by the proposed development). Arguably, in some instances the passing trade component for service stations can be as high as 75% of the total generated traffic. However, a conservative overall passing trade component of 60% is assumed for the service station and 20% for the showrooms.

Therefore, it is conservatively estimated that the proposed development would generate approximately **2,150** additional daily trips on the local road network including additional **236** trips during the typical weekday PM peak hour.

The directional split of inbound and outbound trips for the proposed development is estimated to be 50/50 during the typical weekday PM peak period.

With respect to the distribution and assignment of the development-generated traffic, due to the access system restrictions all ingress and egress is undertaken via Gnangara Road.

#### 7.3 Traffic Flows

Access into the development and egress from the development are available only via Gnangara Road through two separate entry-only and exit-only crossovers. The resulting distribution of development-generated traffic during the typical weekday PM peak hour is illustrated in **Figure 3.** 

The location of the egress only crossover has been selected carefully so that the existing central median on Gnangara Road prohibits any right-turn movements onto Gnangara Road. Westbound traffic from the development can easily turn around at the nearby Gnangara Road/Hartman Drive roundabout intersection.



Figure 3: Estimated development-generated PM peak hour traffic volumes

#### 7.4 Analysis of Development Accesses

The proposed access system for the commercial development comprises separate access-only and egress-only crossovers on Gnangara Road. As such, capacity assessment is pertinent only to the egress-only crossover as inbound traffic has no opposing movements.

In order to establish the traffic operation of the egress-only crossovers on Gnangara Road during the critical weekday afternoon peak period a capacity analysis using SIDRA computer package was undertaken. This package is a commonly used intersection-modelling tool by traffic engineers for all types of intersections. SIDRA outputs are presented in the form of Degree of Saturation, Level of Service, Average Delay and 95% Queue. These items are defined as following:

- **Degree of Saturation:** is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow up to one for saturated flow or capacity.
- **Level of Service:** is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. In general, there are 6 levels of services, designated from A to F, with Level of Service A representing the best operating condition (i.e. free flow) and Level of Service F the worst (i.e. forced or breakdown flow).

- **Average Delay:** is the average of all travel time delays for vehicles through the intersection.
- **95% Queue:** is the queue length below which 95% of all observed queue lengths fall.

The results of the SIDRA analysis for the eastern Gnangara Road crossover during the typical PM peak period for the post-development stage and the future (10-year post development) horizon are illustrated in **Table 1** and **Table 2**.

Table 1: SIDRA results for the eastern (egress only) crossover on Gnangara Road – PM peak period (post development stage)

Movement Performance - Vehicles										
OD Mov	Total	HV	Deg. Satn	Average Delay	Level of Service	Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed km/h
East: Gnangara Road									per ven	KILLI
T1	691	5.0	0.126	0.0	LOSA	0.0	0.0	0.00	0.00	69.9
1	691	5.0	0.240	0.0	NA	0.0	0.0	0.00	0.00	69.9
st: Exit Cr	rossover									
L1	154	5.0	0.131	1.2	LOSA	0.5	3.7	0.22	0.30	55.7
1	154	5.0	0.131	1.2	LOSA	0.5	3.7	0.22	0.30	55.7
nangara R	load									
T1	410	5.0	0.055	0.0	LOSA	0.0	0.0	0.00	0.00	70.0
1	410	5.0	0.162	0.0	NA	0.0	0.0	0.00	0.00	70.0
les	1255	5.0	0.240	0.2	NA	0.5	3.7	0.03	0.04	68.8
	OD Mov angara Ri T1 1 st: Exit Ci L1 1 1 nangara Ri T1	OD Demand Mov Total vehih angara Road  T1 691 n 691 st: Exit Crossover L1 154 n 154	OD Demand Flows Mov Total HV veh/h % angara Road  T1 691 5.0 h 691 5.0 st: Exit Crossover L1 154 5.0 h 154 5.0 hangara Road  T1 410 5.0 h 410 5.0	OD Demand Flows Deg. Mov Total HV Satn veh/h % V/c angara Road  T1 691 5.0 0.126 h 691 5.0 0.240 st: Exit Crossover L1 154 5.0 0.131 h 154 5.0 0.131 hangara Road  T1 410 5.0 0.055 h 410 5.0 0.162	OD Demand Flows Nov Total HV Safn Delay veh/h % V/c sec angara Road T1 691 5.0 0.126 0.0 0.126 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.126 0.0 0.0 0.126 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Demand Flows   Deg.   Average   Level of	Demand Flows   Deg.   Average   Level of   95% Back of   November   Novembe	Demand Flows   Deg.   Average   Level of   95% Back of Queue   November   N	Demand Flows   Deg.   Average   Level of   95% Back of Queue   Prop.	Demand Flows   Deg.   Average   Level of   95% Back of Queue   Prop.   Effective   Satin   Vic   Sec   Vehicles   Distance   Queued   Stop Rate   Delay   Service   Vehicles   Distance   Queued   Stop Rate   Delay   Delay

The result of the capacity analysis for the egress-only Gnangara Road crossover indicates that a very good overall LoS A with minimum delays and queues can be expected during the peak weekday PM period. No practical impact on the operation of Gnangara Road is anticipated and ample spare capacity remains available for future.

Table 2: SIDRA results for the eastern (egress only) crossover on Gnangara Road – PM peak period (10-year post-development horizon)

			Pour	P 0 0 c.	(-0 / 000				,		
Move	ment Perf	ormance - V	ehicles/								
Mov	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back ( Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/t
East: 0	Gnangara R		_^	VIC	000		VEII			per veri	KIIDI
5	T1	830	5.0	0.151	0.0	LOSA	0.0	0.0	0.00	0.00	69.9
Approa	ach	830	5.0	0.288	0.0	NA	0.0	0.0	0.00	0.00	69.9
NorthV	Vest: Exit C	rossover									
27a	L1	154	5.0	0.134	1.3	LOSA	0.5	3.8	0.25	0.32	55.6
Approa	ach	154	5.0	0.134	1.3	LOSA	0.5	3.8	0.25	0.32	55.6
West:	Gnangara F	Road									
11	T1	506	5.0	0.068	0.0	LOSA	0.0	0.0	0.00	0.00	69.9
Approa	ach	506	5.0	0.200	0.0	NA	0.0	0.0	0.00	0.00	69.9
All Veh	ilcles	1490	5.0	0.288	0.2	NA	0.5	3.8	0.03	0.03	68.9

Similarly to the post-development stage capacity assessment outcome the result of the SIDRA assessment for the ultimate stage (10-year post development horizon) renders overall LoS A for the weekday afternoon peak period with minimal delays and queues and no impact on Gnangara Road traffic operations.

Accordingly, it is concluded that the proposed development has no adverse impact on the traffic operation of Gnangara Road.

#### 7.5 Impact on Surrounding Roads

Due to the nature of the proposed land uses, which largely rely on passing trade from the abutting road network, the net traffic impact of the proposed development on the surrounding road network will be limited.

Considering the location of the development, restrictive access/egress routes to and from the site the only impact on the adjacent road network will be experienced on the eastbound flow of Gnangara Road traffic. An increase in daily traffic on eastbound Gnangara Road traffic is expected to be in order of just over 7%, bringing the total (combined) traffic volumes on this road to about 14,760vpd.

The anticipated level of daily traffic increase on Gnangara Road would have a moderate impact on the operation of this road. This level of additional traffic can be accommodated within the physical capacity of the road.

Hence, it is concluded that the adjacent road network has the capacity to accommodate the anticipated additional traffic from the proposed development without adverse impact on its operation.

#### 7.6 Impact on Neighbouring Areas

Due to the nature of the proposed land use, which mostly relies on passing trade, at least 60% of the traffic attracted to the 7 - Eleven and at least 20% of the traffic associated with the showrooms would have already been on the road network therefore minimising the overall traffic footprint of the development and reducing any impact on the surrounding areas.

#### 7.7 Traffic Noise and Vibration

It generally requires a doubling of traffic volumes on a road to produce a perceptible 3dB(A) increase in road noise. The proposed development will not increase traffic volumes or noise on surrounding roads anywhere near this level.

#### 7.8 Road Safety

The proximity of the Gnangara Road/Klaraborg Drive intersection to the development's access and egress crossovers on Gnangara Road, for both existing and future standards of Gnangara Road has been identified as a potential issue by City of Wanneroo with respect to the likelihood of vehicles exiting the development making an illegal or hazardous movements attempting to turn into Klaraborg Drive.

The passing trade component of the development is from the traffic in the eastbound direction of Gnangara Road. This will use the proposed access/egress system of the development as designed. With respect to the residential areas to the south of Gnangara Road, for both the interim and ultimate Gnangara Road standards these residents cannot access the development due to the nature of the crossovers and the existing and future central medians on Gnangara Road. However as discussed in Section 7.3 of this report, eastbound traffic on Gnangara Road that wishes to access the Klaraborg Drive after visiting the development can do so safely and legally by turning left onto Gnangara Road and then turning around at the Hartman Drive roundabout intersection.

As a result, City of Wanneroo has requested that an independent Road Safety Audit should be undertaken for the proposed development with a particular focus on the proximity of the development egress only crossover and Gnangara Road/Klaraborg Drive intersection. Hence, this traffic report should be read in conjunction with the Road Safety Audit report.

#### 8.0 Parking

Total car parking provision for the proposed development comprises 9 parking bays associated with the proposed 7-Eleven service station and additional 181 bays allocated to the employees, visitors and patrons of the showroom and warehouse components.

The nine service station bays include one ACROD bay and one bay at the air/water station but exclude all the waiting bays at the bowsers.

The parking component for the showrooms and warehouses includes two ACROD bays which are located at a convenient location.

According to the advice provided to Transcore the proposed parking supply exceeds the City of Wanneroo TPS requirements for this type of development.

# 9.0 Public Transport Access

Public transport access is not relevant considering the type and nature of the proposed development.

# 10.0 Pedestrian and Cyclist Access

Pedestrian and cyclist patronage to the proposed development is not expected to be significant due to the nature of the proposed land uses.

#### 11.0 Conclusions

This TA has been prepared with respect to the proposed commercial development at Lot 335 Gnangara Road in Wangara, City of Wanneroo. The subject site is located at the northern side of Gnangara Road adjacent to Klaraborg Drive intersection.

The development proposal includes a "7-Eleven" service station with ancillary convenience store and several showrooms and warehouses including about 190 parking bays on site. The proposed access system comprises two crossovers on Gnangara Road of which the western one is an entry-only and the eastern one is an exit-only crossover.

The location of the egress only crossover has been selected carefully so that the existing central median on Gnangara Road prohibits any right turn movements onto Gnangara Road. West bound traffic from the development can easily turn around at the nearby Gnangara Road/Hartman Drive roundabout intersection. The access and egress system can be integrated into the future upgrade of Gnangara Road.

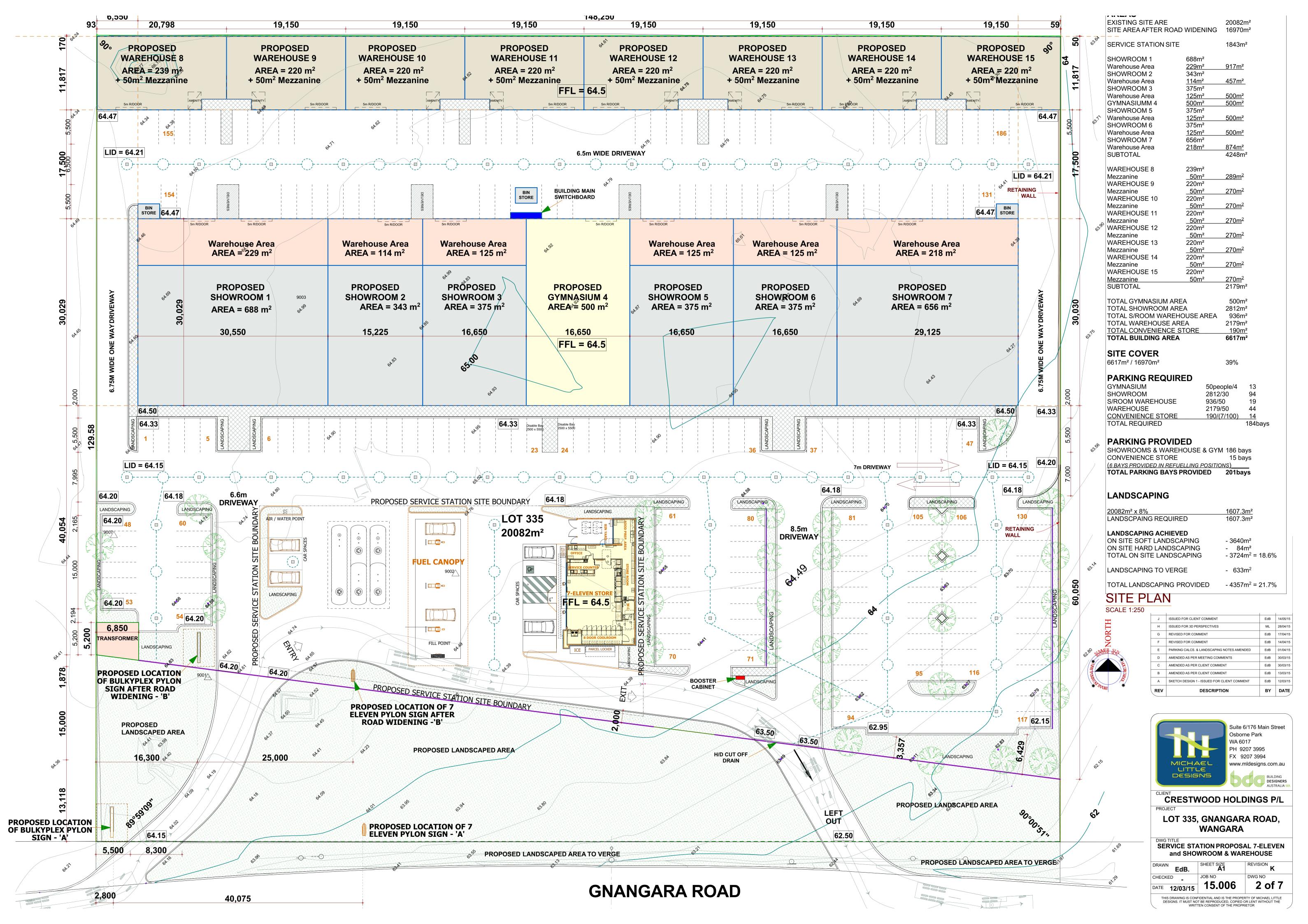
The capacity assessment of the eastern Gnangara Road crossover demonstrates that this crossover is capable of accommodating the development-generated traffic with ample spare capacity and no practical impact on Gnangara Road traffic operations in both short and medium-term.

The assessment undertaken in this report indicates that the traffic from this development can be accommodated by the surrounding road network without impacting on traffic operations and safety.

This TA report should be read in conjunction with the Road Safety Audit Report also prepared for this development focusing on the proposed access and egress system.

# **Appendix A**

#### **PROPOSED SITE PLAN**



# Appendix 5 MRS Clause 42 Certificate



Enquiries: Trevor Servaas (08) 655 19110

Our Ref: 42/46722863 Your Ref: 3901 CLAUSE 42

PLANNING SOLUTIONS (AUST) PTY LTD

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296 FITZGERALD STREET PERTH WA 6000

Dear Sir/Madam

# CERTIFICATE UNDER CLAUSE 42 OF THE METROPOLITAN REGION SCHEME ISSUED BY THE WESTERN AUSTRALIAN PLANNING COMMISSION

In Reply to your request, please find enclosed Certificate number 46722863.

It is advised that the enclosed Certificate has been prepared to conform with the current Statutory requirements of the Metropolitan Region Scheme as at the date of signature.

The following documents are forwarded for your retention. NO DOCUMENTS ENCLOSED

Yours faithfully

Tim Hillyard Secretary

Western Australian Planning Commission

4 February 2015

Enc.





Form 5

#### **Scheme Certificate**

In accordance with clause 42 of the *Metropolitan Region Scheme* the following information relates to:

Location: Gnangara Road, Wangara

Western

Australian Planning Commission

Lot: 335 Plan: 12228

Certificate of Title Vol: 1497 Folio: 994

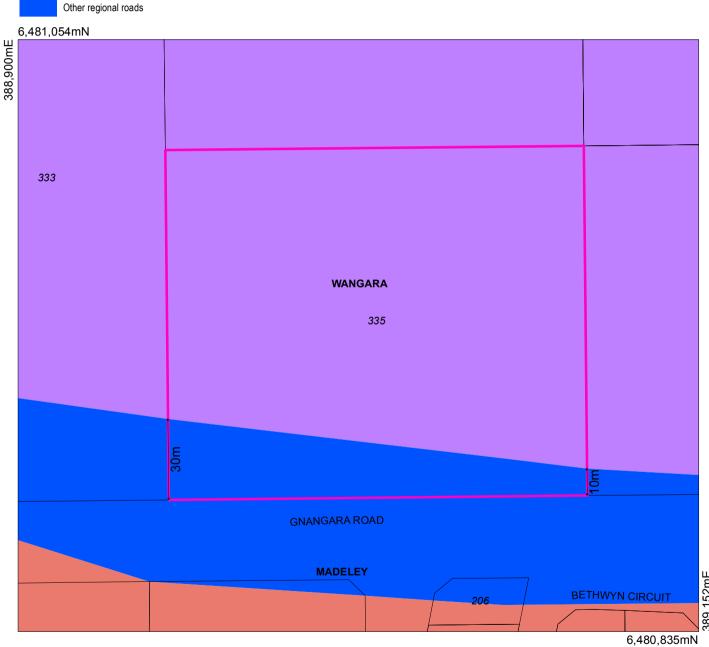
Legend for reserved land and zones

Industrial Urban

Certificate: 46722863

Receipt:

Date: 3/02/2015

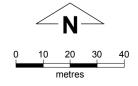


This certificate relates only to the provisions of the Metropolitan Region Scheme and does not claim to indicate the land use allocation under any local government provision.

The intent of this sketch is to show dimensions of the relevant land parcel.

Produced by GeoSpatial Planning Support, Department of Planning, Perth - Western Australia.

Base information supplied by: Western Australian Land Information Authority LI 646-2014-3



Coordinates based on MGA Zone 50 (GDA 94) All dimensions are in metres Subject to survey T. Hillyon

Tim Hillyard Secretary Western Australian Planning Commission

# Appendix 6 Road Safety Audit

Traffic and Transport Solutions ABN 73 027 520 993 PO Box 169 Applecross, WA 6953

Telephone: +61 8 9315 2125 Email: garry.mason4@bigpond.com

PROPOSED SERVICE STATION AND SHOWROOM / WAREHOUSE DEVELOPMENT, LOT 335, GNANGARA ROAD, WANGARA,

FEASIBILITY STAGE, ROAD SAFETY AUDIT

**CRESTWOOD HOLDINGS PTY LTD** 

15 April 2015

Revision 3

#### **Document Control**

#### TRAFFIC & TRANSPORT SOLUTIONS

Document ID:

Rev No	Date	Revision Details	Typist	Author	Verifier	Approver
0	31 Jan 2015	Draft	GM	GM	AB	GM
1	2 February 2015	Revised Draft	GM	GM	AB	GM
2	13 April 2015	Transport Assessment provided for use in this Audit Report	GM	GM	AB	GM
3	15 April 2015	Minor revision	GM	GM	AB	GM

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# **Appendix A**Preliminary Plans

### Appendix B

Corrective Action Report

### 1. Introduction

#### 1.1 Background

Traffic and Transport Solutions was commissioned by Crestwood Holdings Pty Ltd via Transcore Pty Ltd to undertake a Road Safety Audit of the feasibility plan for a proposed development including a 7-Eleven service station and 15 showrooms / warehouses with at least 191 car parking bays on the north side of Gnangara Road adjacent to the Klaraborg Drive intersection at Lot 335 Gnangara Road, Wangara.

The plans provided, are to be lodged with the City of Wanneroo for approval to develop Lot 335 and will be supported by a Transport Assessment which has been undertaken by Transcore Pty Ltd for the proposed concept.

Gnangara Road is a 2 lane undivided carriageway either side of the Gnangara Road / Klaraborg Drive intersection but widens to a four lane divided carriageway at the intersection and is under the care and control of the City of Wanneroo. Klaraborg Drive is also under the care and control of the City of Wanneroo but is only constructed for a distance of approximately 100m and it is not currently connected into the residential area to the south nor does it have any properties directly accessing it. The constructed pavement section of Klaraborg Drive is approximately 7m in width with a concrete footpath on the western side. Lot 335 is located on a slight crest in Gnangara Road.

The land on the northern side of Gnangara Road has commercial uses whilst to the south-east it is residential and on the south-western side it has Susan Park and then residential.

The speed limit on Gnangara Road is 70Km/hr, whilst that on Klaraborg Drive is the General Urban Speed Limit of 50Km/hr.

The Main Roads WA Metropolitan Traffic Digest 2008/09 to 2013/14 shows that in 2013/14 the average weekday traffic volume on Gnangara Road east of Wanneroo Road was 13750 vehicles per day with 11% heavy vehicles.

It is understood from Transcore that the City of Wanneroo has approved the provision of two crossovers for the development site but that Council officers have raised concerns regarding the proposed location of the eastern crossover in relation to the Gnangara Rd / Klaraborg Dr intersection.

The western crossover is proposed to be entry only and the eastern crossover is proposed to be exit only.

The distance between the centre of the Klaraborg Drive intersection and centre of the eastern exit from the proposed development is approximately 37 metres and the distance from the centre of the proposed eastern development exit to the Hartman Dr roundabout is approximately 615 metres.

The intersection of Rigali Way located approximately 245m to the east along Gnangara Road is a left in – left out intersection with a central concrete median island in Gnangara Road and No U Turn signs located at each end of this median island.



#### The location of the site is shown below:

Source: City of Wanneroo



Gnangara Road / Klaraborg Drive intersection – Lot 335 is located to the left side of Gnangara Road

#### 1.2 Reported Crash History

The MRWA Reported Crash website indicated that there were no reported crashes for the Gnangara Road / Klaraborg Drive intersection in the 5 years to 31 December 2013 intersection.

#### 1.3 Road Safety Audit

Road Safety Auditing is a formalised procedure, which can be applied to all phases of a road project development and to an unsafe feature of an existing road system. A Road Safety Audit is structured to review the safety performance of a road project, but is not intended as a redesign process – the reporting procedure is intended to outline potential or existing road safety issues and establish a basis upon which a design could then produce an acceptable solution to the potential safety problems.

The objectives of a road safety audit are:

- To identify potential safety problems for a particular design or section of road project; and,
- To ensure that measures to eliminate or reduce the problems are considered fully by the asset owner

The audit work undertaken for this project will be conducted in compliance with the Austroads Guide to Road Safety, 2009.

It is intended that the audit recommendations be discussed with the designer and if any of the recommendations are rejected, the reasons should be fully documented. This mechanism should be formalised through the completion of the Corrective Action Report (CAR) form, included in this RSA Report (Appendix B). The CAR is intended as a formalised response to the auditor from the designer, detailing actions or reasons for not adopting particular recommendations.

#### 1.4 Auditors and Audit Process Details

This audit represents a Feasibility Design Stage Road Safety Audit of the proposed Crestwood Holdings development and was carried out on Friday 30 January 2015.

The Road Safety Audit has been commissioned by Crestwood Holdings Pty Ltd via Transcore Pty Ltd and was undertaken by:

- Senior Road Safety Auditor Mr Garry Mason (Traffic and Transport Solutions).
- Mr Avi Barua (Senior Transportation Engineer City of Joondalup).

The audit has been undertaken in accordance with the procedures set out in the Austroads Guide to Road Safety – Part 6 (Road Safety Audit) 2009 Checklist 1 (Feasibility Stage).

### 2. Feasibility Stage Audit

The auditor's general observations are detailed below, outlining possible road safety issues and providing recommendations to overcome any problems identified.

#### 2.1 Vehicle access and egress from the proposed development to Gnangara Road

The entry crossover to the site off Gnangara Road for the interim situation is proposed to be connected directly to the left hand lane on Gnangara Road whereas in the ultimate situation the entry lane is proposed to be connected to Gnangara Road via a left turn deceleration lane.

The exit crossover is shown located toward the eastern side of the site. The drawings supplied do not show the existing kerbed median islands in Gnangara Road however comparing the drawing to the site boundary during the audit inspection it appears the proposed exit crossover is located opposite the existing kerbed central median east of Klaraborg Drive.

The Transport Assessment undertaken for the proposed development by Transcore estimated that the proposed development would add approximately 2150 vehicle trips daily to the local road network including an additional 236 vehicle trips during a typical weekday PM peak hour. The Transport Assessment also estimated the directional split of inbound and outbound trips for the proposed development would be 50/50 during a typical weekday PM period.

Whilst there was no estimation of vehicle trips between the proposed development and a future connected Klaraborg Drive it is unlikely to be significant compared to the trips generated off Gnangara Road.

There are service stations located on Gnangara Road to the east at the intersection of Gnangara Rd / Mosey Street and on Wanneroo Road near Hepburn Avenue to the west.

The proposed eastern exit is located at the point of the merging of the two eastbound traffic lanes on Gnangara Road past the Klaraborg Drive intersection. The two lane section (shown below) only corresponds to approximately the frontage of lot 335 (approx. 110m). Whilst there is the potential for a vehicle to use the right hand lane for overtaking a slower moving vehicle, it is considered that this would be a rare event due to the short distance available.



Source:City of Wanneroo



Two lanes merging to one at the eastern end of Lot 335

Moving the exit crossover closer to the eastern boundary of Lot 335 would mean the exiting vehicles would be doing so at approximately the end of the existing central traffic island and it would be likely that motorists would be tempted to turn right around the end of the island on Gnangara Road and therefore such a location is not recommended.

It is understood that City of Wanneroo officers have raised a concern that some motorists exiting the site with the ultimate 4 lane-divided Gnangara Road configuration, could turn right into the eastbound Gnangara Road carriageway and then turn left through the median break into Klaraborg Drive against oncoming traffic, a longitudinal distance of approximately 37 metres. This is an illegal and unsafe manoeuvre. In addition, consideration could be given to the installation of a left turn directional arrow in the central median to reinforce to exiting motorists that they need to travel eastbound on Gnangara Road.

The ultimate design for Gnangara Road supplied by the City of Wanneroo shows a continuous median between the Klaraborg Drive intersection and the new Rigali Way (all movements) intersection. It is not considered a likely occurrence and a more likely scenario would be for people wanting to access Klaraborg Drive from the Lot 335 development site would be to turn left onto Gnangara Road and to then undertake a U-turn at the new median break at the Rigali Way intersection to the east or travel to the roundabout at the Hartman Drive intersection.



**Existing Gnangara Road / Rigali Way intersection** 

Should this become an issue after the development of Lot 335 with the existing Gnangara Road configuration, then possible options that could be considered are installation of "No U-Turn" signs (as per the existing Rigali Way / Gnangara Rd intersection to the east) or extending the central median islands to the east to encourage motorists to travel further east and use the roundabout at the Hartman Drive intersection.

#### Recommendation

Existing Gnangara Road configuration

There is the potential for motorists using the eastern exit to then attempt a U Turn at the end of the existing Gnangara Road central concrete median. Consideration should be given to the installation of No-U-Turn signs at both ends of the existing central median to preclude this unsafe manoeuvre.

#### • Ultimate Gnangara Road configuration

With the ultimate configuration of Gnangara Road as a 4 lane divided carriageway the potential for motorists to turn right out of the proposed development against the east bound traffic flow to travel against that traffic and to then turn left into Klaraborg Drive is considered low as well as being an illegal manoeuvre. It is considered that some motorists may attempt a U-Turn manoeuvre at the Rigali Way median break or use the safer option at the roundabout at the Gnangara Rd / Hartman Dr intersection. Installation of No-U-Turn signs in the Gnangara Road median at the proposed Rigali Way intersection for both directions of traffic should be considered as part of the future duplication of Gnangara Road.

#### 2.2 Roadway Lighting

The existing roadway lighting along Gnangara Road is limited and it is not clear if this complies with AS 1158 (Road Lighting).

#### Recommendation

 As part of the detailed design of the access and egress to the proposed development it is important to ensure the roadway lighting on this section of Gnangara Road complies with Australian standard AS1158 (Road Lighting).

#### 2.3 Roadway Drainage

With the design of the proposed development and tie-in of the entry and exit crossovers to Gnangara Road it is important to ensure the road drainage and road profiles are designed to ensure stormwater does not pool on the road pavement, creating a hazard for road users.

#### Recommendation

 Ensure the road drainage for the connection between the site entry and exit crossovers and the Gnangara Road pavement is such that pooling of stormwater does not occur.

### 3. Conclusion

Several safety issues associated with the proposed Crestwood Holdings Pty Ltd development on Lot 335, Gnangara Road, Wangara have been identified and these should be reviewed by Crestwood Holdings and if appropriate, discussed with the Road Safety Audit Team Leader.

#### **Audit Team Statement**

The Road Safety Auditor certifies that he has examined all available information in compiling this Road Safety Audit Report. The examination of the documentation and site conditions have been carried out with the sole purpose of identifying any features of the existing road and intersection layouts that could be modified in order to improve safety within the study area. The problems identified have been noted in this report, together with associated safety improvements suggestions. It is recommended these suggestions should be used as a guide for the review of safety management within the study area. The recommendations are not intended as a design solution, but are proposed as potential solutions that could be considered by the nominated designer.

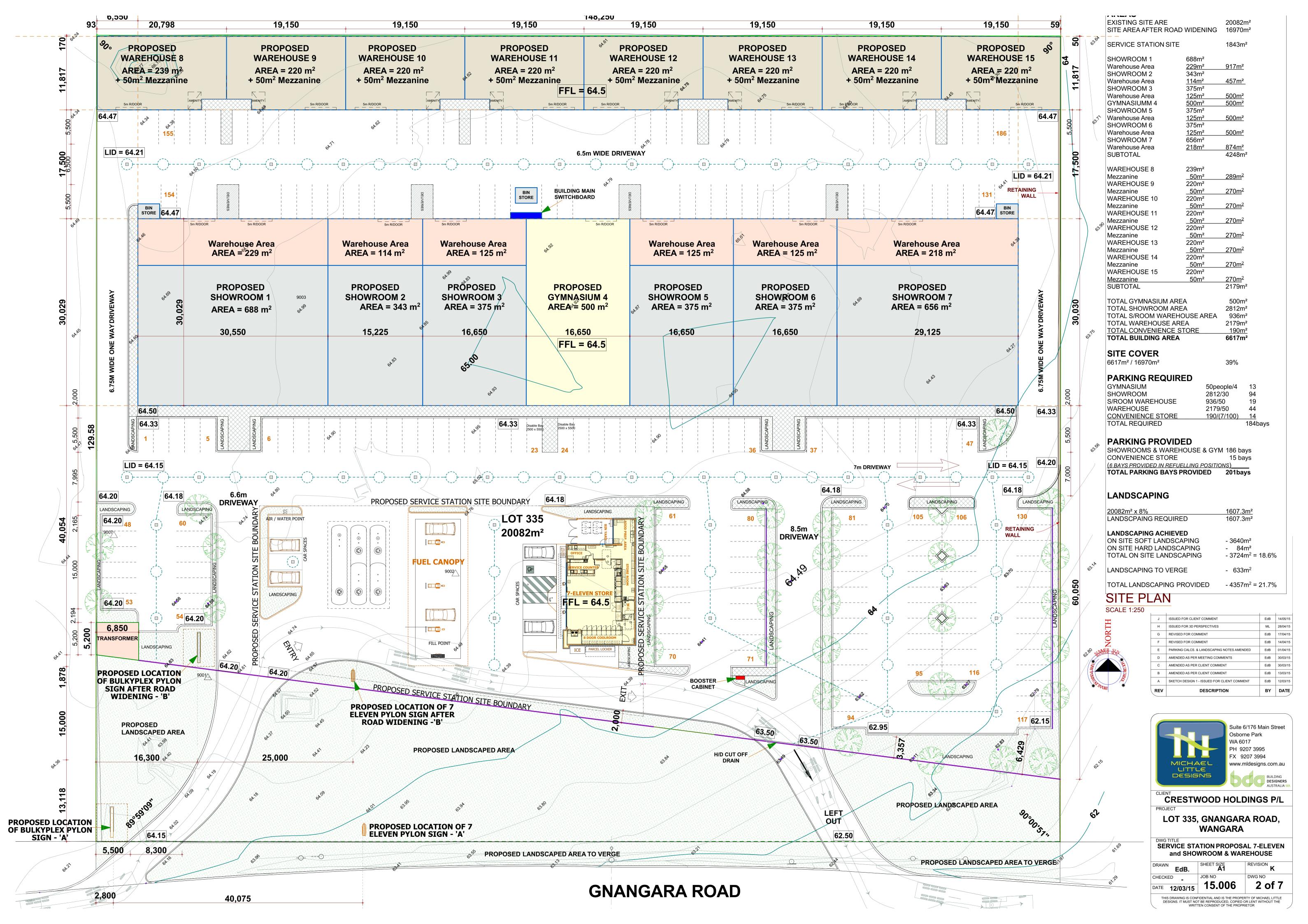
A Corrective Action Report form (CAR) has been included in this report as Appendix B. It is recommended that the designer complete this form and return it to the clients representative for endorsement prior to forwarding to the Road Safety Audit Team Leader to provide feedback on the audit recommendations to the Audit Leader and to finalise the auditing documentation.

The Audit Leader's contact details are as follows:

Mr Garry Mason	Signed
Senior Road Safety Auditor	•
Traffic & Transport Solutions	Date
PO Box 169	
Applecross, WA 6953	

# Appendix A

Preliminary Plans



# Appendix B

**Corrective Action Report** 

Feasibility Stage, Road Safety Audit - Corrective Action Report (Proposed Crestwood Holdings development - Wangara)

Audit Recommendation	Agree/Disagree	Reason	Action & Comments
2.1 Vehicle access and egress from the proposed development to Gnangara Road			
<ul> <li>Existing Gnangara Road configuration:         There is the potential for motorists using the eastern exit to then attempt a U-Turn at the end of the existing Gnangara Road central concrete median. Consideration should be given to the installation of No-U-Turn signs at both ends of the existing central median to preclude this unsafe manoeuvre.     </li> </ul>	Agree		To be addressed during the detailed design stage.
<ul> <li>Ultimate Gnangara Road configuration: With the ultimate configuration of Gnangara Road as a 4 lane divided carriageway the potential for motorists to turn right out of the proposed development against the east bound traffic flow to travel against that traffic and to then turn left into Klaraborg Drive is considered low as well as being an illegal manoeuvre. It is considered that some motorists may attempt a U-Turn manoeuvre at the Rigali Way median break or use the safer option at the roundabout</li> </ul>	Agree		To be addressed during the detailed design stage.

Audit Recommendation	Agree/Disagree	Reason	Action & Comments
at the Gnangara Rd / Hartman Dr intersection. Installation of No-U-Turn signs in the Gnangara Road median at the proposed Rigali Way intersection for both directions of traffic should be considered as part of the future duplication of Gnangara Road.			
As part of the detailed design of the access and egress to the proposed development it is important to ensure the roadway lighting on this section of Gnangara Road complies with Australian standard AS1158 (Road Lighting).	Agree		The street lighting requirements to be investigated during the detailed design stage.
Roadway Drainage     Ensure the road drainage for the connection between the site entry and exit crossovers and the Gnangara Road pavement is such that pooling of stormwater does not occur.	Agree		To be addressed during the detailed design stage.

Project Manager	