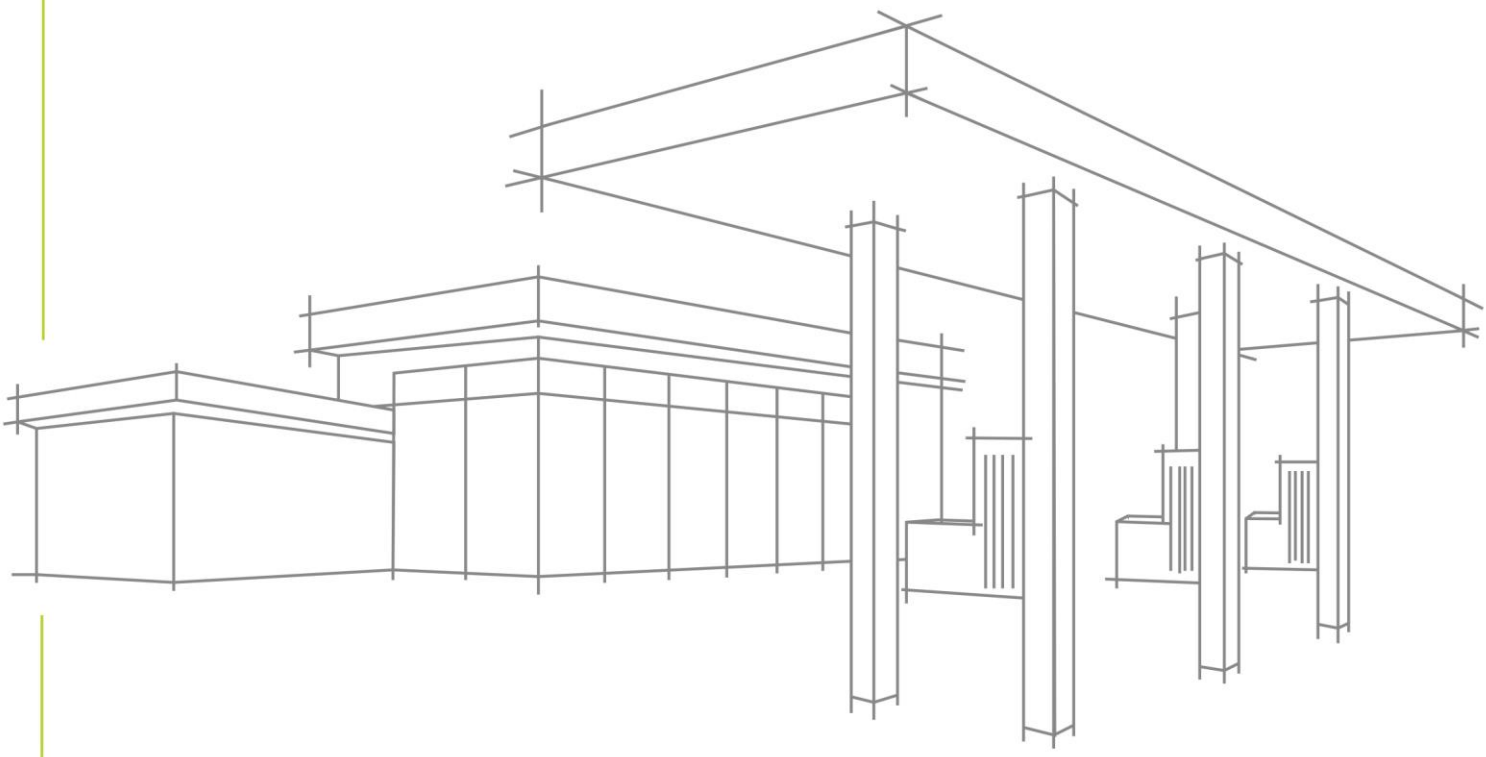
TOWN PLANNING REPORT

BATRA BROTHERS – BAYONET HEAD

DEVELOPMENT APPLICATION FOR NEW SERVICE STATION, FAST FOOD OUTLET AND ANCILLARY MOTOR VEHICLE WASH



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TOWN PLANNING REPORT

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DEVELOPMENT APPLICATION FOR NEW SERVICE STATION, FAST FOOD OUTLET AND ANCILLARY MOTOR VEHICLE WASH

CLIENT: Batra Brothers Pty Ltd (Batra Brothers)

ADDRESS: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330

TFA REFERENCE: 24255

TFA CONTACT: Damien Mackay

Document Control

REVISION	DATE	PREPARED BY	REVIEWED BY	COMMENTS
A	29 Aug 2024	D. Mackay	J. Rowell	Final

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EXECUTIVE SUMMARY

Applicant

Applicant Details	Batra Brothers Pty Ltd
Contact Details	C/- Damien Mackay (Senior Town Planner) TFA Project Group 166 Knapp Street FORTITUDE VALLEY QLD 4006

Site

Site Address/Details	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330
Site Description	Lot 70 on Deposited Plan 406170
Easements & Covenants	Drainage Easement, Sewer Easement, Right of Way Easement, Restricted Access Covenant on Deposited Plan 406170
Site Area	4,446 m^2
Current Land Use	Vacant commercial land & internal road carriageway
Current Landowners	Housing Authority & Lowe Pty Ltd

Proposal

Proposal Description	New commercial development including service station, fast food outlet tenant & ancillary motor vehicle wash – 24/7 hours of operation
Application Type	Development Application

Local Government & Policies

Assessing Authority	City of Albany
Local Planning Instrument	*City of Albany Local Planning Scheme No 2*
Zone	Neighbourhood Centre
Local Development Plan	LDP No. 14 – Village Centre
Local Planning Policy	LPP 1.9 – Waste Management Policy LPP 1.10 – Percent for Art Local Planning Policy: Interim Outline Development Plan – Bayonet Head Policy Local Planning Policy: Heritage Protection Policy Local Planning Policy: Signs Policy

State Policies

State Planning Policy	SPP 3.7 – Planning in Bushfire Prone Areas

1.0 INTRODUCTION

This Town Planning Report has been prepared by TFA Project Group on behalf of Batra Brothers Pty Ltd to accompany a development application for the development of a new commercial development including a service station with convenience shop and fuel canopy, a fast food outlet tenant and an ancillary motor vehicle wash facility at Lot 70 Stranmore Boulevard, Bayonet Head WA 6330, formally described as Lot 70 on Deposited Plan 406170.

The service station, fast food outlet tenant and motor vehicle wash is proposed to operate 24 hours, 7 days a week.

The proposed development is considered to be consistent with the intent of the Scheme and relevant local development plan by way of providing a commercial offer for food and motor vehicle refuelling and ancillary vehicle washing, it is taken that the proposed development is consistent with the Local Development Plan (LDP) No. 14 Village Centre for the Oyster Harbour generally which will service the emerging urban growth area to the east.

Services such as convenience store, vehicle refuelling / car wash and take-away fast food are all typical of those which support small neighbourhood centre type developments which service the local residential community.

This report, which is submitted in support of the application, provides details of the proposed development, and addresses relevant town planning and architectural matters associated with the proposal.

The application is accompanied by the following consultant reports / documentation:

- **Appendix A** Certificate of Title & Deposited Plan
- **Appendix B** Site Topography Surveys, prepared by John Kinnear & Associates
- **Appendix C** DA Drawings, prepared by TFA Project Group
- **Appendix D** Waste Management Plan, prepared by TFA Project Group
- **Appendix E** Traffic Impact Assessment, prepared by Transcore
- **Appendix F** Geotechnical Site Classification Assessment, prepared by Great Southern Geotechnics
- **Appendix G** Bushfire Attack Level Assessment, prepared by Integral Fire Protection

To assist in Council's determination of this development application, this planning report covers the following matters:

- **Section 2:** a site description including site characteristics and the context of the surrounding area.
- **Section 3:** a description of the proposed development.
- **Section 4:** a review of the relevant town planning matters.

2.0 THE SITE

2.1 Subject site

The proposed development is located at Lot 70 Stranmore Boulevard, Bayonet Head WA 6330, described as Lot 70 on Deposited Plan 406170. The site comprises an area of 4,446 m^2 with frontages to Lower King Street, Stranmore Boulevard, and an internal brick road carriage way of approximately 68m, 76m and 98m respectively. The site is currently vacant and largely cleared of vegetation. The site is sloped with a decline from the western corner at the roundabout towards the internal road carriageway. The southwest corner of the site on the roundabout frontage between Lower King Road and Stranmore Boulevard is dedicated to the existing Oyster Harbour estate entrance sign and public art into the wider subdivision estate development.

An aerial view of the subject site is illustrated within Figure 1 below.

Figure 1: Aerial of Subject Site (Nearmap, Accessed August 2024)

Refer to the site survey in **Appendix B** for further details of the existing site features and topography as well as *Figure 2* to *Figure 5* overleaf for an illustration of the site photographs.

Figure 2: Western View of Site from Lower King Road (Google, Accessed August 2024)

Figure 3: Southern View of Site from Stranmore Boulevard (Google, Accessed August 2024)

Figure 4: Northeastern View of Site from Stranmore Boulevard (Google, Accessed August 2024)

Figure 5: Southern View of Site from Internal Cul-De-Sac (Google, Accessed August 2024)

2.2 Easements and Covenants

The site is traversed by the following easements and covenants:

- Easement on Deposited Plan 406170 – for drainage purposes to local authority.
- Easement on Deposited Plan 406170 – for sewerage purposes to Water Corporation.
- Easement on Deposited Plan 406170 – for right of carriageway purposes.
- Covenant on Deposited Plan 406170 – restricting access to Lower King Road and Stranmore Boulevard to City of Albany.

The easements and covenants over the site have been considered as part of the layout design. Refer to the property searches including the certificate of title and deposited plan in **Appendix A** for further details.

2.3 Surrounding Area

An analysis of the surrounding locality is illustrated in Figure 6 overleaf. In summary, the site is located within an emerging and future growth area of the Oyster Harbour residential estate, with the land directly abutting the subject site zoned for residential and urban development purposes to the east. Directly adjacent to the site and to the south is further commercial zoned land forming part of the LDP Village Centre.

North

- Rural zoned land, rural dwellings.
- Environmental conservation reserve zoned vacant land.
- Residential zoned land with residential dwellings beyond (north-east).

East

- Residential zoned land with residential apartments directly adjoining site (nearest sensitive use).
- Urban development zoned vacant land and public open space & wetland directly behind.
- Residential zoned land with residential dwellings and emerging dwellings beyond.

South

- Stranmore Boulevard (Local Road).
- Commercial zoned vacant land immediately adjacent.
- Residential zoned land with residential dwellings.
- Rural zoned land beyond.

West

- Lower King Road (District Distributor Road, Local Authority).
- Environmental conservation reserve zoned land.

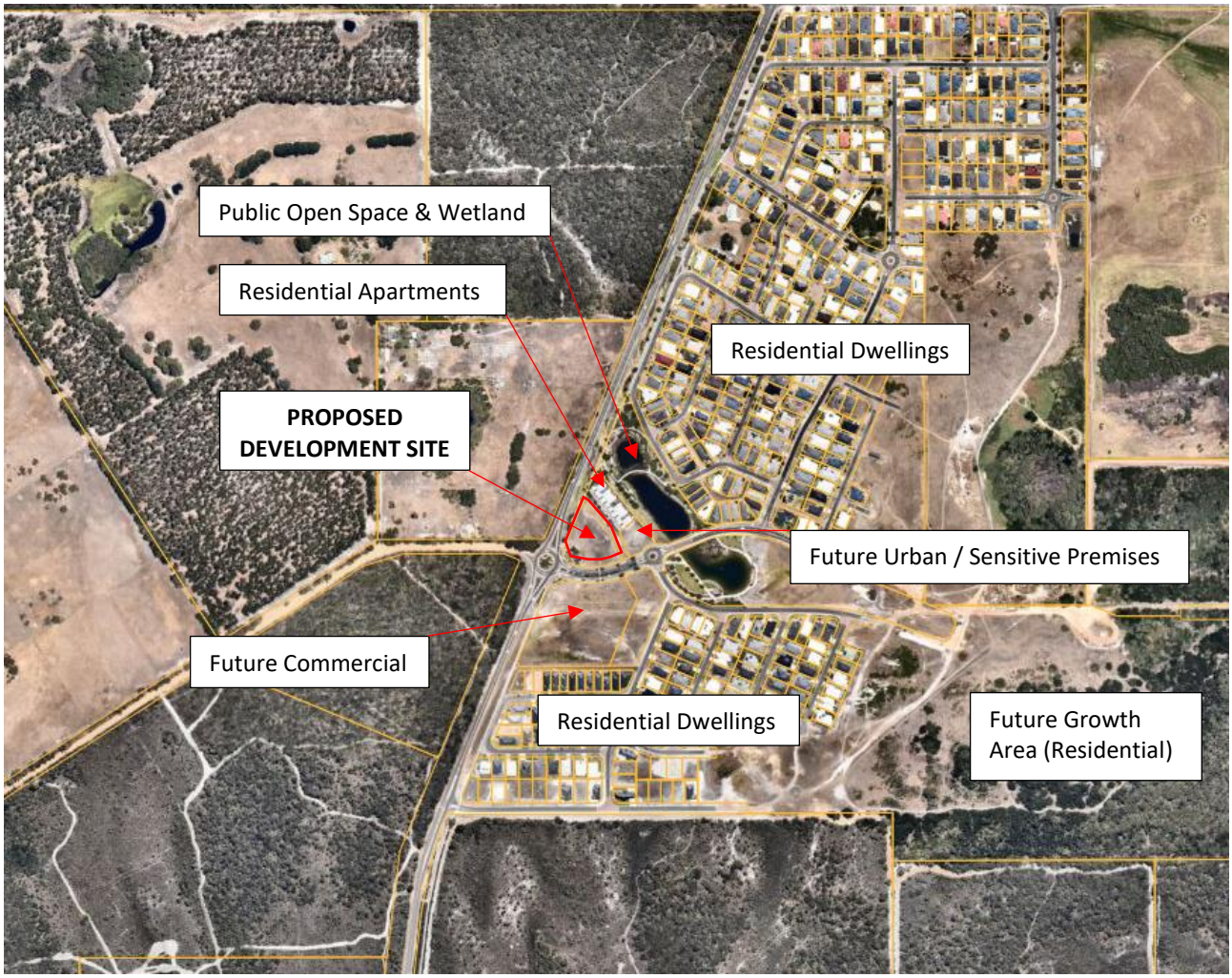


Figure 6: Preliminary Locality Analysis (Nearmap, Accessed August 2024)

The future urban growth area forms part of the Bayonet Head Oyster Harbour Urban Growth Area adopted by the City in 2007. This is further detailed in Section 2.3.1 below.

2.3.1 Bayonet Head Oyster Harbour Urban Growth Area

The wider Bayonet Head Oyster Harbour is identified as an emerging residential growth area as depicted in the interim outline development plan in Figure 7 overleaf which was endorsed by the City in October 2007. It is expected

that this increased population growth of residential dwellings and motorist within the growing urban area will require convenience needs and motor vehicle refuelling and wash services within the immediate vicinity.

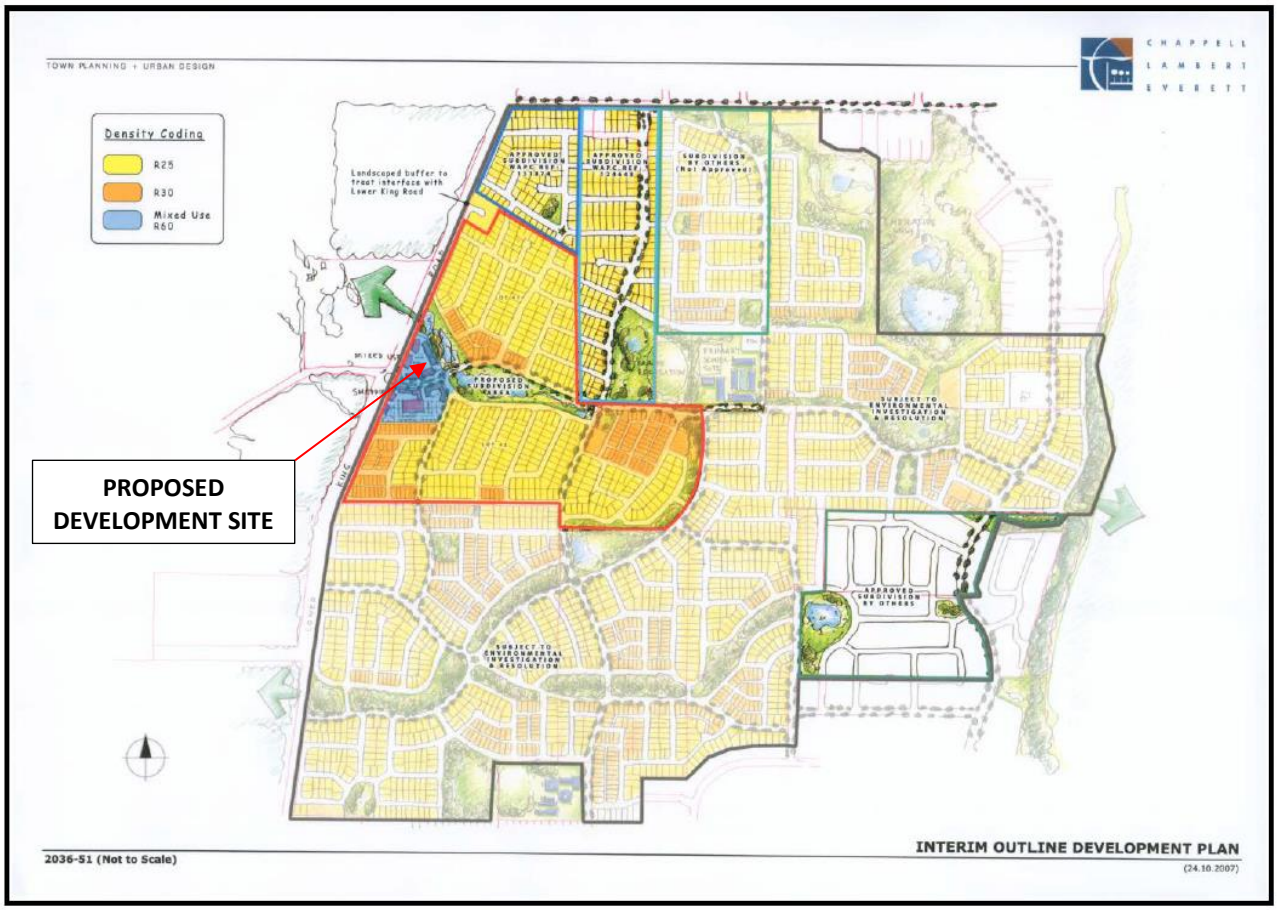


Figure 7: Bayonet Head Outline Development Plan (City of Albany)

2.4 Pre-lodgement Consultation with the City

Preliminary consultation and a pre-lodgement meeting were carried out with the City of Albany (City) with regards to the proposed development.

On 11 June 2024, TFA Project Group attended an online meeting with the planning officers of the City. The City provided 'in-principle' support for the subject site to be developed for commercial purposes. The City provided no 'in-principle' objection to the proposed development from a land use perspective for a service station use, subject to general compliance and assessment with the relevant standards and requirements of the Scheme and policies with consideration given to any adverse impacts to neighbouring sensitive uses. The City suggested locating the access crossover further away from the roundabout on Stranmore Boulevard to mitigate any traffic impacts to Lower King Road. The City advised no access would be supported from Lower King Road to the site.

The outcomes of the above meeting have informed refinement and finalisation of the development application and development plans. Further details of the proposed development are provided in Section 3.0 of this report.

3.0 PROPOSED DEVELOPMENT

The proposed development that is the subject of this development application is for the development of a new service station, fast food outlet and ancillary motor vehicle wash development at the subject site.

The proposed development is to comprise the following design elements:

- 300 m^2 service station pay-point convenience building which will incorporate a retail convenience area of 150m^2.
- 90 m^2 fast food outlet tenant adjoining the service station convenience building.
- 2 x 110kL underground doubled walled fuel storage tanks.
- Fuel canopy with 5.5m height clearance over 4 x multi-product fuel dispensers, with 8 x filling bay positions.
- Refuelling forecourt area under canopy to be bunded and drained to a class 1 oily water separator unit for treatment and on site stormwater management.
- Automatic motor vehicle wash facility, with 1 x enclosed roller door conveyor tunnel and enclosed plant room.
- 21 x on site car parking spaces, including 1 x disabled car space, 2 x air & water spaces, 2 x EV parking spaces, 2 x vacuum bays, and 2 x staff spaces.
- Up to 4 x off site car parking spaces, along Stranmore Boulevard frontage.
- Enclosed service yard / bin storage area screened from public view.
- Extensive landscaping areas on either side of the convenience store building and around the main frontage to the site on Lower King Road and Stranmore Boulevard roundabout.
- 2 x 6m high monolith signs and building fascia signage associated with the unbranded service station, fast food outlet tenant and ancillary motor vehicle wash.
- Relocation of existing bus stop on Stranmore Boulevard, slight widening of existing internal brick road, and shortened existing median island for 17m AV truck path exit onto Stranmore Boulevard.

The proposed hours of operation for the commercial uses are as follows:

- Service station – 24 hours, 7 days a week.
- Fast food outlet – 24 hours, 7 days a week.
- Motor vehicle wash – 24 hours, 7 days a week.

An extract of the proposed site elevation and proposed site layout is provided within Figure 8 and Figure 9 below for reference.

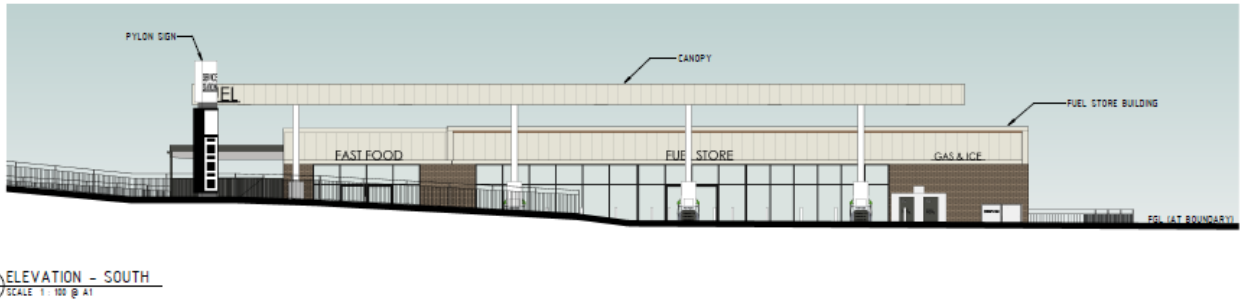


Figure 8: Proposed Site Elevation – South (TFA Project Group)

Figure 9: Proposed Site Layout (TFA Project Group)

3.1 Built Form

As indicated above, the proposed development is to comprise of new building to accommodate the service station and fast food outlet tenant. As a result, the premises is to support the primary retail space, comprising sales, back of house and amenities and external service yard. Overall, the building comprises a total GFA of 300m^2 for service station fuel tenant and 90m^2 for fast food tenant with a height of approximately 4.7m above ground level. The proposed building for the convenience shop and fast food tenant will be setback approximately 11m and 32m from Lower King Road and Stranmore Boulevard respectively.

Additionally, a new fuel canopy is proposed with a 5.5m height clearance for service vehicles. The proposed canopy is to comprise an area of approximately 322m^2, and will comprise a height of 6.4m above ground level. The canopy will provide weather protection to the vehicle refuelling area, which provides 4 refuelling dispenser with 8 refuelling bay positions. The canopy will be setback approximately 8.5m from Stranmore Boulevard.

To the rear of the site, behind the proposed building, will locate a new standalone motor vehicle wash building and will comprise an area of approximately 71m^2 including the enclosed plant room. The ancillary building to the rear will have a height of approximately 4.6m above ground level. The proposed motor vehicle wash building to the rear will be setback approximately 13.8m from Lower King Road.

3.2 Convenience

The proposed service station pay-point shop building will provide 300m^2 of GFA. The convenience sales area is 150m^2 and will include the customers' service area, office and amenities, storage and a retail area of 150m^2. The retail area will sell convenience goods such as pre-package food and drinks.

3.3 Motor Vehicle Wash

The ancillary motor vehicle wash component will dedicate 71m^2 in roof area for a drive through automatic indoor vehicle wash bay including 1 x conveyor tunnel. The indoor car wash will include automatic roller doors which will close during washing operations to reduce noise levels emitted from the use. The car wash facility will provide 1 x car space for queuing behind the automatic wash hall. A vacuum area with 2 x car spaces will be provided. The motor vehicle wash component will directly support the service station use and customers.

3.4 Traffic, Access and Parking

The proposed development will include new accesses crossovers onto Stranmore Boulevard and the internal brick road. No access is proposed via the Lower King Road.

The crossovers associated with the proposed development are summarised below for reference:

- Stranmore Boulevard – 10m wide crossover, supporting ingress left-in only access;
- Internal Brick Road (Southern Crossover) – 6.5m wide crossover, supporting ingress and egress access;
- Internal Brick Road (Centre Crossover) – 7m wide crossover, supporting egress only access; and
- Internal Brick Road (Northern Crossover) – 5m wide crossover, supporting egress only access.

In addition to the above, the proposed development is provided with a total of 21 x on-site parking spaces, including 1 x PWD space, 2 x air & water spaces, 2 x EV charging bays, 2 x staff parking, and 2 x vacuum bays. It is understood the proposed development, being commercial in nature, benefits from existing on-street parking along Stranmore Boulevard of up to 4 x spaces with an appropriate pedestrian link connecting the existing footpath to the building entrances. 1 x bicycle parking rail is provided directly next to proposed building entrances.

It is understood the design of the Stranmore Boulevard entry crossover should be reviewed and finalised during the detailed design stage of the project through liaison with the Local Authority.

It is proposed to shorten the median on Stranmore Boulevard to facilitate the right-out movements for largest anticipated vehicle (a 17m AV fuel tanker) from the internal road.

The traffic generation of the proposed development is relatively low (just over 100vph) and would not adversely impact the traffic operation of the surrounding roads and intersections.

Further details of the traffic impact assessment of the proposed development undertaken by Transcore is provided in **Appendix E**.

3.5 Landscaping

A total of 747m^2 of landscaping is proposed which is approximately 17% of total site area. The proposed landscaping is predominately focussed along the Lower King Road and Stranmore Boulevard frontages of the site, with some smaller beds along the internal brick road frontage of the site. The proposed landscaping is to comprise a mix of native ground covers and shrubs, suitable to the conditions of the locality. A mix of landscaping will be featured along the proposed retaining wall where possible to assist in screening blank walls and providing attractive scenery.

3.6 Street Activation

By nature of the proposed commercial development, the building and layout will be offset from the street frontages to provide surveillance over the forecourt area. The proposed building for the service station and fast food tenant will provide for an attractive facade and modern architectural design to both road frontages through the use of articulation, height variations, and a variety of modern materials, glazing and associated landscaping. The building entrances will face Stranmore Boulevard behind the fuel canopy forecourt area and parking spaces for surveillance.

The building comprises large expanses of openings to avoid blank walls. Building entrances have been recessed under the roof line for articulation and are easily identifiable from the street frontages.

The proposed development comprises fences, walls and retaining walls that have been designed to be visually attractive and contribute to and blend with the proposed landscaping treatment, provide visual interest to the streetscape, comprise materials and colours which are compatible with the buildings and landscaping on the site, assist in highlighting entrances and paths, as well as comprise effective screening to the adjacent residential property.

The proposal includes a pedestrian link to the site from existing footpath along Stranmore Boulevard.

3.7 Waste Management

The waste and recycling storage and serving point is appropriately located and designed for convenient and safe access by all users. The shared bin storage point is easily accessible by each tenant with direct unobstructed paths between the storage point and land uses. The shared bin storage point is also screened and gated, ensuring the amenity of the proposed development and surrounding uses is maintained. The servicing vehicle for the bulk bins will park in the loading bay, service the bins, and continue along the service route as presented in the Waste Management Plan in **Appendix D**.

3.8 Stormwater Management

The fuel dispensing area will be concrete surfaced and covered by a roofed canopy and will drain to a grated trench drain which in turn will drain to a class 1 oily water separator (10,000L spill containment tank). The tank will have a contents level probe to alert the site staff when the tank contents reach 2,000 litres. The tank will have its contents removed and legally disposed of by a licensed waste contractor. Use of a class 1 oily water separator is standard industry practice, and is generally implemented on all new fuel retailing sites across Australia.

Bulk fuel transfers from the 17m road tanker into underground tanks takes place within a bunded area, any runoff from the dispensing area will be directed to a 10,000L holding (spill) tank. At the fill points there is a spill containment box which captures any minor fuel spills that may occur during unloading, the spilt fuel then drains from the containment box into the fuel storage tanks. All driveways and car parking areas will be concrete surfaced.

Refer to **Appendix C** for further details of the conceptual stormwater management plan and stormwater management controls over the development site.

3.9 Sediment and Erosion Control

An Erosion and Sediment Control Plan has been prepared for the proposed development minimising unacceptable impacts during the construction phase, in accordance with City guidelines and standards aiming to minimise unacceptable impacts to occur during the construction phase.

Refer to **Appendix C** for further details of the conceptual sediment and erosion control plan.

3.10 Fuel Storage

The proposed underground petroleum Storage System (UPSS) will comprise of two (2) x 110,000L tanks which will be a mix of typical fuel products including:

- E10 Fuel (Class 3 Flammable);
- Unleaded 95 (Class 3 Flammable);
- Unleaded 98 (Class 3 Flammable); and
- Diesel (combustible).

The new UPSS will be designed and installed in accordance with AS 4897, the Australian Standards for the design, installation and operation of underground petroleum storage systems. These standards will ensure greater environmental controls – such as double walled tanks, double walled pressure pipework, automatic tank gauging, and electronic leak monitoring. Further, the tanks will be maintained to satisfy the requirements of AS1940-2004 The storage and handling of flammable and combustible liquids.

3.11 Miscellaneous

The air / water facility will include 2 car spaces, located on the Stranmore Boulevard frontage next to the entry only crossover. The electrical vehicle (EV) charging bays will include 2 car spaces, located at the corner of the between the entry crossover off Stranmore Boulevard and entry / exit from the internal brick road.

The vent pipes and breathers will be located in a landscaped area along the western boundary, in front of the retaining wall.

3.12 Utilities

The site includes all dedicated stormwater, sewer, water and electrical / communication utilities and service points to connect into. These service points to connect into are located on the eastern property boundary within the respective asset easement.

3.13 Signage

The development application proposes the following unbranded signage:

- 2 x Monolith Signs (illuminated) for site identification and fuel pricing for the unbranded service station, fast food outlet tenant and ancillary motor vehicle wash, comprising dimensions of 6m x 1.9m, with approximately 11.4m^2 per sign area.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded service station fuel canopy, comprising dimensions of 3m x 0.77m.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded fuel sales building, comprising dimensions of 3m x 0.95m.
- 1 x Veranda Sign – On Fascia (illuminated) for the fast food tenant, comprising dimensions of 3m x 0.95m.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded ancillary motor vehicle wash building entrance, comprising dimensions of 3m x 0.95m.
- 1 x Small-scale Pylon Sign for the air & water identification, comprising dimensions of 2.1m x 1.35m.
- 4 x Small-Scale Pylon Signs for unbranded fuel product leaderboards in front each fuel bowser under fuel canopy, comprising dimensions of 1.5m x 1m.
- Associated directional and wayfinding signs located across the development site and at crossover points.

For further details of the proposed unbranded signage, refer to the signage plan and signage elevations plan within the DA Drawings provided in **Appendix C**.

3.14 Environmental Considerations

The EPA's *Guidance for the Assessment of Environmental Factors No. 3* provides guidelines for separation distances between industrial and sensitive land uses in WA. The EPA guideline notes that 'industrial land uses' include some commercial activities (for example service station uses) that have potential to affect sensitive land uses from off-site emissions. It is acknowledged a proposed 24 hour a day operation has the potential for impacts on the amenity of nearby residential apartments and sensitive land uses within the vicinity of the development. It is understood the proposed development will be required to comply with the *Environmental Protection (Noise) Regulations 1997*.

The following acoustic management controls will be incorporated into the development to mitigate on site activity noise impacts:

- Air conditioning units are screened from neighbouring residences (apartments) to the northeast.
- Motor vehicle wash to include automatic roller doors which will close during washing operations to reduce noise levels emitted from the facility to surrounding sensitive uses.

It is noted that potential issues relating to vapours, odours and risk impacts from service station developments have been improved to a more acceptable level for the community as a result of improved technology and regulations associated with modern service station designs and operations generally. Examples include installation of Stage 1 (VR1) and Stage 2 (VR2) vapour recovery control equipment. VR1 captures displaced vapours from the underground fuel storage tanks when a fuel tanker delivers fuel to a service station and VR2 captures displaced vapours at the fuel bowser while a motorist refuels over the forecourt area. Modern ducts and vents on food and cooking arrangements have vastly improved to minimise odour impacts.

Notwithstanding, it is considered that a precedent has been established for several service stations which operate 24 hours a day in Albany and the wider Perth region being located immediately adjoining or within the 200m industrial setback EPA guideline of residential properties given they can co-exist effectively in mixed commercial / residential settings through effective acoustic mitigation and management controls as part of any relevant and reasonable conditions of approval.

3.15 Relocated Bus Stop

It is proposed that the existing bus stop on Stranmore Boulevard will be relocated to a new position within close proximity further east along Stranmore Boulevard in consultation with the Public Transport Authority and the City as required. This relocation is required for the proposed entry access crossover into the site via Stranmore Boulevard.

3.16 DA Drawings

Refer to Table 1 for the design development application drawing package of the proposal. For reference, the drawing titles and plan numbers are shown in the table below.

Table 1: DA Drawings

DRAWING TITLE	DRAWING REFERENCE
Locality Plan & Existing Site Views	24255 – DA01
Site Plan	24255 – DA02
Site Elevations	24255 – DA03
Building Floor Plan	24255 – DA04
Building Elevations	24255 – DA05
Canopy Plan	24255 – DA06
Canopy Elevations	24255 – DA07
Signage Plan	24255 – DA10
Signage Elevations	24255 – DA11
Landscaping Plan	24255 – DA12
Vehicle Swept Paths	24255 – DA13
Vehicle Swept Paths	24255 – DA14
Site Stormwater Concept Plan	24255 – DA20
Tank Farm Section	24255 – DA21
Retaining Wall Section	24255 – DA22
Site Based Sediment Control Plan	24255 – DA23

4.0 TOWN PLANNING CONSIDERATIONS

4.1 Planning and Development (Local Planning Schemes) Regulations 2015

Schedule 2, Clause 67 (2) of the *Planning and Development (Local Planning Schemes) Regulations 2015* sets out deemed provisions which must be considered in the granting of a development approval by the City. A review of the relevant sections of this clause is outlined below, with further review of these provisions being undertaken in further detail in subsequent sections of this report.

Table 2: Assessment of Schedule 2, Clause 67 (2)

SUB-CLAUSES	RESPONSE
(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;	The proposed development is considered to be generally consistent with the Scheme, as discussed in Section 4.2 of this report.
(b) the requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;	Not applicable.
(c) any approved State planning policy;	The proposed development is considered to address the relevant State Planning Policies. This is further addressed within Section 4.6.
(d) any environmental protection policy approved under the Environmental Protection Act 1986 section 31(d)	The proposed development is not considered to be subject to any environmental protection policies approved under the EPA 1986. Consideration of the EPA Guideline for Separation Distances for Industrial Development is addressed in Section 3.14.
(e) any policy of the Commission	Not applicable.
(f) any policy of the State;	As above per (a).
(fa) any local planning strategy for this Scheme endorsed by the Commission;	As the proposed development is considered to be consistent with the intent of the Scheme and relevant local development plan by way of providing a commercial offer for food and motor vehicle refuelling and ancillary vehicle washing, it is taken that the proposed development is consistent with the Local Development Plan (LDP) No. 14 for the Oyster Harbour Village Centre generally which will service the emerging urban growth area to the east.
(g) any local planning policy for the Scheme area;	The proposed development is considered to comply with any relevant local planning policies. This is further addressed within Section 4.6.
(h) any structure plan or local development plan that relates to the development;	The proposed development is considered to be consistent with the intent of the LDP 14 – Village Centre as the proposal is for commercial purposes and supports the future residential growth in the vicinity.
(i) any report of the review of the local planning scheme that has been published under the Planning and Development (Local Planning Schemes) Regulations 2015;	Not applicable.
(j) in the case of land reserved under this Scheme, the objectives for the reserve and the additional and permitted uses identified in this Scheme for the reserve;	Not applicable.

SUB-CLAUSES	RESPONSE
(k) the built heritage conservation of any place that is of cultural significance;	The subject site is identified as being located near an aboriginal cultural heritage place of significance (ID 22554) on the opposite side of Stranmore Boulevard. This is further detailed in Section 4.5.4 of this report. As part of a relevant and reasonable condition of approval, it is understood in the event that surface disturbance identifies an object of Aboriginal or cultural heritage significance, all works on site would be required to halt in the immediate area and to an outer radius of no less than twenty meters to prevent any further impacts of the object(s). A suitably qualified archaeologist and the relevant registered Aboriginal Land Council representatives would be contacted where required to determine the significance of the object(s). The site if required is to then be registered in the Aboriginal Cultural Heritage Inquiry System (ACHIS) accordingly.
(l) the effect of the proposal on the cultural heritage significance of the area in which the development is located;	As above.
(m) the compatibility of the development with its setting, including — *(i) the compatibility of the development with the desired future character of its setting; and* *(ii) the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation, and appearance of the development;*	The proposal will provide for a new commercial development with a modern architectural building design. The commercial development is considered to be generally consistent with the intent character of the locality. The compatibility of the proposed development with the character of the locality is addressed in greater detail within Sections 4.2 and 4.5.
(n) the amenity of the locality including the following — *(i) environmental impacts of the development;* *(ii) the character of the locality;* *(iii) social impacts of the development;*	In regard to this matter, the following is noted: • The proposed service station use, and in particular the fuel storage and distribution is to be designed in accordance with AS1940, with the potential spill areas intended to be graded to flow to a class 1 oily water separator unit for treatment as depicted in the conceptual stormwater management plan in **Appendix C**. • The proposed development will follow best practice standards and design to ensure environmental impacts are appropriately managed. • The proposed operations of the commercial uses will be carried out in accordance with best practice standards and in compliance with the *Environmental Protection (Noise) Regulations 1997*. • Effective acoustic management controls will be incorporated into the development to mitigate on site activity noise impacts as described in Section 3.14 of this report. • The proposed building has been designed to be visually appealing and interesting through the inclusion of a variety of materials and openings, adequate landscaping and street awnings. • The proposal will be of a scale and intensity considered reasonable for this type of development and not thought to have any adverse impacts to the density and character of the surrounding locality being a commercial development in the neighourhood

SUB-CLAUSES	RESPONSE
	centre zone and LDP No. 14 Village Centre.
(o) the likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;	As detailed previously, the proposed development is to be provided with an oily water separator unit, which is intended to treat any oily water generated on the site prior to discharge. The potential high risk spill areas are to be appropriately bunded and graded to ensure any oily water is captured.
(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	The relevant provision of landscaping in association with the proposed development is addressed within Section 3.0.
(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;	The proposed development is identified as being located within bushfire prone land. This is further detailed in Section 4.6.1 of this report. A bushfire attack level (BAL) assessment and contour map has been prepared by Integral Fire Protection and provided in **Appendix G** to assess the bushfire attack level of the site.
(r) the suitability of the land for the development taking into account the possible risk to human health or safety;	The proposed development layout has been designed and orientated to sure risks to land uses off site, particularly to the northeast, are minimised by locating the fuel tanker delivery and fuel vents on the western side away from neighbouring properties.
(s) the adequacy of — *(i) the proposed means of access to and egress from the site; and* *(ii) arrangements for the loading, unloading, manoeuvring, and parking of vehicles;*	The proposed development is designed to permit the access, manoeuvring, and loading for the largest anticipated vehicle (a 17m articulated heavy vehicle for bulk fuel deliveries).
(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;	The traffic generation of the proposed development and an analysis of the existing traffic network is addressed in the Traffic Impact Assessment in **Appendix E**.
(u) the availability and adequacy for the development of the following — *(i) public transport services;* *(ii) public utility services;* *(iii) storage, management and collection of waste;* *(iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);* *(v) access by older people and people with disability;*	Please make note of the following with regard to the proposal: • The existing bus stop on Stranmore Boulevard will be required to be relocated to a new position further east along Stranmore Boulevard in consultation with the Public Transport Authority and the City. This is detailed further in the Traffic Impact Assessment in **Appendix E**. • Access to public services is maintained for the premises and protected by the associated asset easements. • Waste management is addressed in Section 4.5.1. • New pedestrian link connecting the existing footpath to the building entrances within the site will be provided as well as 1 x bicycle parking rail directly next to proposed building entrances. • PWD parking is provided, and the site will ensure compliance with DDA as part of building certification.
(v) the potential loss of any community service or benefit resulting from the development other than potential loss that may result from economic competition between new and existing businesses;	The existing bus stop on Stranmore Boulevard will be required to be relocated to a new position further east along Stranmore Boulevard in consultation with the Public Transport Authority and the City as required.
(w) the history of the site where the development is to be located;	The site has historically been cleared of vegetation and vacant for future commercial business opportunities. A small portion

SUB-CLAUSES	RESPONSE
	of the site at the roundabout frontage has been developed as an entrance signage for the residential estate along Stranmore Boulevard.
(x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals;	The proposed development is not considered to result in any substantial impact to the locality as a result of traffic impacts, as addressed in the Traffic Impact Assessment provided in **Appendix E**. Noise impacts will be appropriately mitigated by incorporating acoustic management controls into the development as outlined in Section 3.14 of this report and in line with any relevant and reasonable conditions of approval by the City.
(y) any submissions received on the application;	Submissions will be addressed should any be received during the application process.
(za) the comments or submissions received from any authority consulted under clause 66;	Comments or submissions received from any referral authority will be addressed once received during the application process.

4.2 Regional Planning Scheme

There are no Regional Planning Schemes applicable to the subject site for this development application.

4.3 City of Albany Local Planning Strategy 2019

The *Albany Local Planning Strategy 2019* has been prepared under Clause 14 of the *Planning and Development (Local Planning Schemes) Regulation 2015* and revokes the previous *Albany Local Planning Strategy 2010*.

The Strategy was prepared in accordance with the State Planning Strategy and the Lower Great Southern Strategy. The Scheme is to be read in conjunction with the Albany Local Planning Strategy for the Scheme area.

The proposed development is considered to be consistent with the Strategy by providing a neighbourhood centre link to the emerged and future growth area of the Oyster Harbour local area. An assessment against the site and development requirements under the Scheme is provided in Section 4.4 of this report.

4.4 City of Albany Local Planning Scheme No. 2

The subject site is located within the Council of the City of Albany and is therefore subject to the *City of Albany Local Planning Scheme No. 2* (the Scheme). A review of the proposal in relation to the scheme has been undertaken below.

4.4.1 Defined Use

Under the Scheme, the proposed commercial development is determined to be defined as follows.

> ***service station*** *means premises other than premises used for a transport depot, panel beating, spray painting, major repairs or wrecking, that are used for –*
>
> *(a) the retail sale of petroleum products, motor vehicle accessories and goods of an incidental or convenience nature; or*
>
> *(b) the carrying out of greasing, tyre repairs and minor mechanical repairs to motor vehicles.*
>
> ***Fast food outlet*** *means premises, including premises with a facility for drive through service, used for the preparation, sale and serving of food to customers in a form ready to be eaten —*
>
> *(a) without further preparation; and*
>
> *(b) primarily off the premises;*

Motor vehicle wash *means premises primarily used to wash motor vehicles.*

4.4.2 Zoning

The subject site forms part of the neighbourhood centre zone and local road (Albany) under the Scheme. This is illustrated in Figure 10 below.

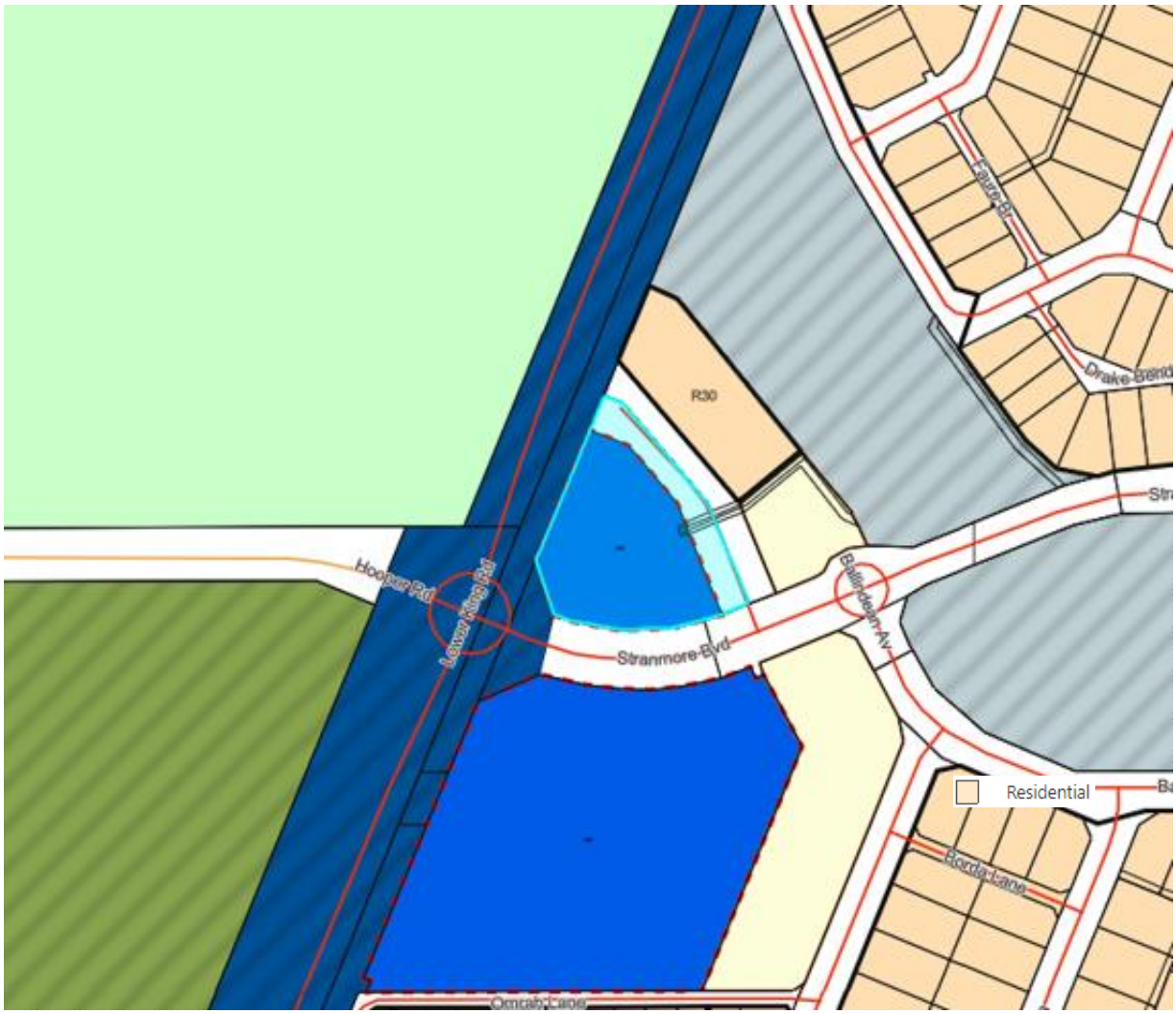


Figure 10: Subject Site Zoning (PlanWA, Accessed August 2024)

4.4.2.1 Zone Objectives

The subject site is located within the neighbourhood centre zone under the Scheme. An assessment of the relevant objectives of this zone is therefore undertaken within Table 3 below.

Table 3: Assessment of Neighbourhood Centre Zone Objectives

SUB-CLAUSES	RESPONSE
• *To provide services for the immediate neighbourhoods, that are easily accessible, which do not adversely impact on adjoining residential areas.*	The proposed development is considered to be consistent with the intent of the Scheme and relevant local development plan by way of providing a commercial offer for food and motor vehicle refuelling and ancillary vehicle washing, it is taken that the proposed development is consistent with the Local Development Plan (LDP) No. 14 Village Centre for the Oyster Harbour generally which will service the emerging urban growth area to the east.

SUB-CLAUSES	RESPONSE
	Services such as convenience store, vehicle refuelling / car wash and take-away fast food are all typical of those which support small neighbourhood centre type developments which service the local residential community.
• *To provide for neighbourhood and/or local centres to focus on the main daily household shopping and community needs.*	The proposed development will directly service the emerging and growing urban area of the wider Oyster Harbour estate by providing commercial uses consistent with the LDP No. 14 Village Centre. The proposal will provide a food offer and retail convenience for drivers within the growing urban area of the Oyster Harbour community.
• *To encourage high quality, pedestrian-friendly, street-orientated development*	The proposed building for the service station and fast food tenant will provide for an attractive facade to both road frontages through the use of articulation, height variations, and a variety of modern materials, glazing and associated landscaping. The building comprises large expanses of openings to avoid blank walls. Building entrances have been recessed under the roof line for articulation and are easily identifiable from the street frontages. The proposal will include a new pedestrian link connecting to the existing footpath along Stranmore Boulevard.
• *To provide a focus for medium density housing.*	The proposal will provide for commercial uses and does not include medium density housing.
• *To ensure the design and landscaping of development provides a high standard of safety, convenience and amenity and contributes towards a sense of place and community.*	A total of 747m^2 of landscaping is proposed which is approximately 17% of total site area. The proposed landscaping is predominately focussed along the Lower King Road and Stranmore Boulevard frontages of the site, with some smaller beds along the internal brick road frontage of the site. The proposed landscaping is to comprise a mix of native ground covers and shrubs, suitable to the conditions of the locality. For further details of the proposed landscaping over the site, refer to conceptual landscape plan in **Appendix C**.

4.4.2.2 Permissibility

Under the Scheme, the neighbourhood centre (Albany) zone identifies the proposed uses as follows:

- **Service station** use is designated as 'D', which *means that the use is not permitted unless the local government has exercised its discretion.*
- **Fast food outlet** use is designated as 'D'.
- **Motor vehicle wash** use is designated as 'D'.

4.4.3 General Development Requirements

4.4.3.1 R-Codes

In accordance with clause 25 of the Scheme, and the mapping for the subject site shown on Plan WA, the subject site is identified to be within the R-Code area R-20. However, given that the proposed development is not for a residential premises, as previously outlined, it is not considered that regard to the R-Codes is relevant to the proposed development.

4.4.3.2 Additional Site and Development Requirements

In accordance with clause 32 of the Scheme, there are additional site and development requirements which apply to the neighbourhood centre zone. An assessment against these additional development requirements is provided in Table 4 overleaf.

Table 4: Additional Requirements Commercial and Neighbourhood Centre Zone – Assessment Response

Additional Requirements	Response
(a) Setbacks *(i) Commercial* *1. Primary Street Setback: 3m* *2. Side and rear setbacks: Nil* *(ii) Neighbourhood Centre* *1. Primary Street Setback: 7.5m* *2. Side and rear setbacks: 5m*	The building setbacks for the proposed development are as follows: • Primary Street (Lower King Road) Setback: 11m • Side (Stranmore Boulevard) setbacks: 31m • Side (Internal Road) setback: 9m While it is considered that the proposal is consistent with the setback requirements under the neighbourhood centre zone of the Scheme, there are additional requirements for setbacks under the LDP No. 14 – Village Centre which prevail. An assessment against these requirements is provided in Section 4.4.3.3 of this report.
(b) Landscaping *(i) 10% of the site area is to be landscaped.* *(ii) Dense tree and under-storey planting is required at the boundary of a Commercial or Neighbourhood Centre zone, which adjoins residential development.*	A total of 747m2 of landscaping is proposed which is approximately 17% of total site area. The proposed landscaping is predominately focussed along the Lower King Road and Stranmore Boulevard frontages of the site, with some smaller beds along the internal brick road frontage of the site. The proposed landscaping is to comprise a mix of native ground covers and shrubs, suitable to the conditions of the locality. For further details of the proposed landscaping over the site, refer to conceptual landscape plan in **Appendix C**.
(c) Plot Ratio *(i) Max plot ratio of 0.6 for the Neighbourhood Centre zone.* *(ii) Max plot ratio of 0.8 for the Commercial zone.*	The proposed development provides a plot ratio of 0.18 with the following floorspace areas: • 300m^2 gross floor area for service station shop • 90m^2 for fast food outlet tenant • 322m^2 for fuel canopy area • 71m^2 for motor vehicle wash area
(d) Building Design *(i) Development in the Commercial and Neighbourhood Centre* *(ii) zones is to be considerate of the following:* *1. Landscape quality;* *2. Sustainability - energy efficient design measures;* *3. Appealing design and surveillance to the street and to open space areas;* *4. Mixture of material and design features for street and open space facades;* *5. Where residential and commercial is proposed within the one building, commercial is to be located at street level;* *6. Earthworks, including fill, excavation and retaining;* *7. Setting back from the street any third story.*	The proposed building for the service station and fast food tenant will provide for an attractive facade to both road frontages through the use of articulation, height variations, and a variety of modern materials, glazing and associated landscaping. The building entrances will face Stranmore Boulevard behind the fuel canopy forecourt area and parking spaces. The building comprises large expanses of openings to avoid blank walls. Building entrances have been recessed under the roof line for articulation and are easily identifiable from the street frontages. The proposed development comprises fences, walls and retaining walls that have been designed to be visually attractive and contribute to and blend with the proposed landscaping treatment, provide visual interest to the streetscape, comprise materials and colours which are compatible with the buildings and landscaping on the site, assist in highlighting entrances and paths, as well as comprise

Additional Requirements	Response
	effective screening to the adjacent residential property.
(e) Traffic Impact *(i) Traffic Impact Assessments may be required for applications that have the potential to substantially increase the amount of vehicular traffic in the local area.*	The traffic management and generation of the proposed development is assessed in the Traffic Impact Assessment provided within **Appendix E**.
(f) Noise *(i) Design measures such as parapet walls and or limitation on operating hours may be necessary for noisy activities adjacent to residential land use.*	It is acknowledged a proposed 24 hour a day operation has the potential for impacts on the amenity of nearby residential units and sensitive land uses within the vicinity. The following acoustic management controls will be incorporated into the development to mitigate on site activity noise impacts but not limited to: • Air conditioning units are screened from neighbouring residences (apartments) to the northeast. • Motor vehicle wash to include automatic roller doors which will close during washing operations to reduce noise levels emitted from the facility to surrounding sensitive uses.
(g) Shop Design *(i) Shopping centres shall provide amenity through provision of the following:* *1. Comfortable furniture;* *2. Artwork providing vitality, colour and interest and providing cultural enhancement;* *3. Pedestrian links with easy access from road and cycle networks and bus stops;* *4. Solar access and providing shade (trees or shade structure) in summer and sun penetration in winter;* *5. A heavily landscaped edge to access roads incorporating raised landscaped garden beds to create an attractive entrance;* *6. The creation of discrete parkland locations, occasionally incorporating water elements; and/or* *7. The creation of a well landscaped boulevard entrance as a central reference.* *8. The building façade of a shopping centre shall be designed to present visual interest by the inclusion of significant and robust detail utilising a variety of materials and method. The variety of materials and methods of articulating a façade may include:* *a. Extensive use of individual windows, (and doors at street level);* *b. Horizontal modulation of walls (for example but not limited to minor recesses);* *c. Architectural detailing of walls (including public art such as bas-relief);* *d. The diverse use of colour;* *e. The diverse use of materials; and/or*	The proposed building for the service station and fast food tenant will provide for an attractive facade to both road frontages through the use of articulation, height variations, and a variety of modern materials, glazing and associated landscaping. The building entrances will face Stranmore Boulevard behind the fuel canopy forecourt area and parking spaces for surveillance. The building comprises large expanses of openings to avoid blank walls. Building entrances have been recessed under the roof line for articulation and are easily identifiable from the street frontages. The proposed development comprises fences, walls and retaining walls that have been designed to be visually attractive and contribute to and blend with the proposed landscaping treatment, provide visual interest to the streetscape, comprise materials and colours which are compatible with the buildings and landscaping on the site, assist in highlighting entrances and paths, as well as comprise effective screening to the adjacent residential property.

Additional Requirements	Response
f. The inclusion of shade structures, awnings and discrete roof elements. *(ii) Long, relatively blank building facades to any public building space are not acceptable.* *(iii) A minimum of 50% of the area of a building façade at ground level facing a street or public space including a car park shall be comprised of windows or glazed doors.* *Note: The term 'at ground level' shall mean the lowest 2 m of building façade measured above the footpath level.*	
(h) Net Lettable Area *(i) The maximum net lettable area for a shopping centre development in Neighbourhood Centre zone areas shall be in accordance with the Table 17 as follows:* *1. "The maximum net lettable area for a development in the Bayonet Head (North) Neighbourhood Centre zone is as follows:* *(a) 5,000 m²"*	The proposal will provide a maximum net lettable area of 390m² for the service station convenience shop and fast food tenant building which is consistent with the Neighbourhood Centre maximum net lettable area of 5,000m².

4.4.3.3 Additional Site and Development Requirements for Structure Plan or Local Development Plan

In accordance with clause 33 of the Scheme, there are additional site and development requirements for the Local Development Plan No. 14 – Village Centre which apply to the subject site. An assessment against these additional development requirements is provided in below.

Table 5: Additional Requirements Local Development Plan (LDP No. 14) – Assessment Response

Additional Requirements	Response
Land Use	
The maximum retail floorspace permitted in the Centre shall be in accordance with the City's Activity Centres Strategy and the Oyster Harbour Centre Design Guidelines to be adopted as Policy by Council. *The 'Commercial' land is to be developed in accordance with the 'Neighbourhood Centre' zone in the City of Albany Local Planning Scheme No. 1.*	The proposed commercial development is considered to comply with the 5,000m² maximum retail floorspace by providing the following areas: • 300m² gross floor area for service station convenience shop building with 150 m² of retail floorspace The following additional floorspace areas are noted: • 90m² for fast food outlet tenant • 322m² for fuel canopy area • 71m² for motor vehicle wash area
Setbacks and Building Envelope	
Buildings shall orient to and address the street or public open space they abut, and shall provide surveillance of all such spaces through the location of doors and windows. Surveillance of parking areas shall also be provided. *A maximum building height of 2 storeys (plus roof space) shall apply except at 'Landmark Element' locations where a maximum building height of 3 storeys (plus roof space) shall apply.*	The proposed building for the convenience shop and fast food tenant will have a height of approximately 4.7m above ground level and will be setback approximately 11m and 32m from Lower King Road and Stranmore Boulevard respectively. Additionally, the open structure fuel canopy is proposed with a height of 6.4m and setback approximately 8.5m from Stranmore Boulevard. The motor vehicle wash ancillary building will have a height of approximately 4.6m with a setback approximately 13.8m from Lower King Road.

Additional Requirements	Response
	The proposed commercial development will provide effective built design and orientation by providing a modern design with appropriate articulation and entrances facing Stranmore Boulevard with surveillance over the forecourt area and car parking areas.
Vehicular & Pedestrian Access	
Vehicular access points and cross easements are indicative only and shall be subject to detailed design and approval. *Any development shall also be required to demonstrate how access and easement provisions facilitate implementation of the plan and coordinated access for abutting sites.* *Pedestrian access shall generally be provided in accordance with the DAP. Exact location and design shall be subject to detailed design and approval. External pedestrian access shall be provided to all buildings and tenancies from the street.*	The proposed vehicular access point crossovers are: • Stranmore Boulevard crossover supporting ingress left-in only access; • Internal Brick Road crossover (southern) supporting ingress and egress access; • Internal Brick Road crossover (centre) supporting egress only access; and • Internal Brick Road crossover (norther) supporting egress only access. It is proposed to shorten the median on Stranmore Boulevard to facilitate the right-out movements for largest anticipated vehicle (a 17m AV fuel tanker) from the internal road. For further details, refer to the Traffic Impact Assessment prepared by Transcore in **Appendix E**.
Built Form & Services	
Buildings fronting the street, Public Open Space and built within 1.5m of this boundary shall provide a canopy or verandah of a minimum depth of 2.5m along that frontage. *For secondary street boundaries, fencing shall be visually permeable above 1.2m behind the primary street setback, for a minimum length of 5m behind the dwelling alignment.* *Service areas, bin enclosures, storage areas and drying courts are screened from view from the adjacent street.* *Any development on the 'Commercial' land shall be supported by an Environmental Noise Assessment to demonstrate acoustic implications to the adjacent residential areas, along with identifying possible mitigation measures.* *Landmark features may include towers, additional storey heights, raised parapet features, projecting wall planes, projecting roof elements, double height fenestration or other architectural elements to mark the corner.*	The proposed development will require the City to use its discretion with the nil setback requirement for Stranmore Boulevard frontage for buildings. Further justification is provided in Section 4.4.3.4 of this report. The bin storage point will be screened and gated, ensuring the amenity of the proposed development is maintained and screened from the public view including the residential property to the northeast. It is acknowledged a proposed 24 hour a day operation has the potential for impacts on the amenity of nearby residential units and sensitive land uses within the vicinity. The following acoustic management controls will be incorporated into the development to mitigate on site activity noise impacts but not limited to: • Air conditioning units are screened from neighbouring residences (apartments) to the northeast. • Motor vehicle wash to include automatic roller doors which will close during washing operations to reduce noise levels emitted from the facility to surrounding sensitive uses.

4.4.3.4 Variations to Site and Development Requirements

In accordance with clause 34 of the Scheme, the applicant would be seeking approval from the City for following variations to the site and development requirements with appropriate justification provided in Table 6 below.

Table 6: Variations to Site and Development Requirements – Justification Response

Variation	Justification
Local Development Plan (LPP) No. 14 – Village Centre	
Mandatory Nil Setback *'to street or green space where provided, requires surveillance primary access, articulated, continuous façade, awning over footpath.'*	It is requested that the City excise its discretion in approving the variation to the nil setback requirement under the LDP No. 14 – Village Centre for the following reasons: • The proposed development complies with the setback requirements of the neighbourhood centre zone under the Scheme. • By nature of the proposed commercial development, the building and layout will be offset from the street frontages to provide surveillance over the forecourt area and allow appropriate access for the largest anticipated vehicle swept paths based off the layout confines of the site and no access via Lower King Road. • The proposed building will provide for an attractive facade and modern architectural design to both road frontages through the use of articulation, height variations, and a variety of modern materials, glazing and associated landscaping. The building entrances will face Stranmore Boulevard behind the fuel canopy forecourt area and parking areas. • The proposed building location will provide screening to the existing residential apartments to the northeast with regards to noise and other on-site impacts.
Preferred Access Point (Internal Road) & Restricted Covenant (Stranmore Boulevard)	It is requested that the City excise its discretion in approving the variation to the nil setback requirement under the LDP No. 14 – Village Centre for the following reasons: • By nature of the proposed commercial development, the building and layout will be offset from the street frontages to provide surveillance over the forecourt area and allow appropriate access for the largest anticipated vehicle swept paths based off the layout confines of the site and no access via Lower King Road. • Providing entry access from Stranmore Boulevard will assist in reducing the amount of vehicles entering the internal brick road for other land uses within the vicinity including the existing residential apartment to the northeast. • The proposed swept paths for the largest anticipated vehicle and service vehicles demonstrates the existing road network will not be adversely impacted by traffic generation and on-site queuing. This is further supported in the Traffic Impact Assessment prepared by Transcore in **Appendix E**.

4.4.3.5 Restrictive Covenants

While the proposed development is not affected by a restrictive covenant affecting land in the Scheme area that would have the effect of limiting the number of residential dwellings, there is a restrictive covenant over Lot 70 on Deposited Plan 406170 that has the effect of restricting access to Lower King Road and Stranmore Boulevard. The restricted covenant was created under Section 150 of the *Planning and Development Act 2005* by the City of Albany.

It is understood as part of this development application, the applicant would be seeking approval from the City to vary the restricted covenant over Lot 70 on Deposited Plan 406170 to allow for access to Stranmore Boulevard. No access will be proposed to Lower King Road accordingly.

4.5 Local Planning Policies

In consideration of the Local Planning Policies (LPP's) applied by the City of Albany, it is determined that the following LPP's are applicable to the proposed development:

- LPP 1.9 – Waste Management Policy
- LPP 1.10 – Percent for Art
- Local Planning Policy: Interim Outline Development Plan – Bayonet Head Policy
- Local Planning Policy: Heritage Protection Policy
- Local Planning Policy: Signs Policy

An assessment of these LPP's is undertaken within subsequent sections of this report.

4.5.1 LPP 1.9 – Waste Management Policy

In accordance with LPP1.9, a waste management plan has been provided in **Appendix D** in order to address the requirements of this LPP. Refer to Table 7 below which provides a waste generation and service requirement estimate for the proposed commercial development.

It is noted that a service station use is not explicitly outlined within the waste policy and given the nature of the use including pre-package food, it is considered that the waste generation of the service station use is largely consistent with that of a 'Takeaway' premises type as opposed to 'Shop more than 100m2 floor area'.

It is further noted that the motor vehicle wash use is not readily defined under the waste policy and considered to be more aligned as an ancillary component to the service station use with only minor waste generated from the vacuum bays.

Table 7: Waste Generation Estimation

Type	Premises Type	PFA	Rate	Generation	Service Requirement
Service Station (with ancillary motor vehicle wash)					
Waste	Takeaway (pre-package)	300m²	80L per 100m² GFA per day the premises is open per week	240L/Day or 1680L/Week	1 x 1,100L Receptacle serviced 1 time a week
Recycling	Takeaway (pre-package)	300m²	80L per 100m² GFA per day the premises is open per week	240L/Day or 1680L/Week	1 x 1,100L Receptacle serviced 1 time a week
Fast Food Outlet					
Waste	Takeaway	90m²	80L per 100m² GFA per day the premises is open per week	72L/Day or 504L/Week	1 x 1,100L Receptacle serviced 1 time a week
Recycling	Takeaway	90m²	80L per 100m² GFA per day the premises is open per week	72L/Day or 504L/Week	1 x 1,100L Receptacle serviced 1 time a week

Per the above, the waste receptacles are to be stored within the proposed service yard adjoining the fast food tenant and service station shop building. This service yard comprises an internal irregular shaped area of approximately 4.9m

x 6.8m at its longest points, providing a total useable area of approximately 32m^2, which is considered sufficient to house the required receptacles, as well as all other plant equipment housed within this area.

As noted above, dependant on the receptacle utilised by each tenant, waste will be serviced once a week as required via the loading bay within proximity to the service yard. The loading bay is located as to permit safe and efficient access for waste vehicles, as shown by the turning swept paths provided within **Appendix C.**

4.5.2 LPP 1.10 – Percent for Art

In accordance with LPP 1.10, commercial developments over the value of $1,500,000 are required to allocate 1% of the estimated project cost for public art.

The estimated cost of works will be valued over $1,500,000 thereby it is considered that a 1% portion of the project costs would be applied in accordance with the policy.

4.5.3 LPP – Interim Outline Development Plan – Bayonet Head Policy

In accordance with LPP 1.10, commercial developments over the value of $1,500,000 are required to allocate 1% of the estimated project cost for public art.

It is noted that 'Outline Development Plans' previously adopted by the City are now referred to as Structure Plans due to regulatory changes. Similarly, plans that were formerly referred to as 'Detailed Area Plans' by the City are now referred to as Local Development Plans.

In this regard, the proposed development is considered to be generally consistent with the Interim Outline Development Plan – Bayonet Head Policy by providing a commercial development offer for the wider Oyster Harbour growth area. An assessment of the proposal against the LDP No. 14 – Village Centre has been carried out in Section 4.4.3.3 of this report.

4.5.4 LPP – Heritage Protection Policy

The subject site is identified as being located near an aboriginal cultural heritage place of significance (ID 22554) on the opposite side of Stranmore Boulevard, as shown in Figure 11 below.

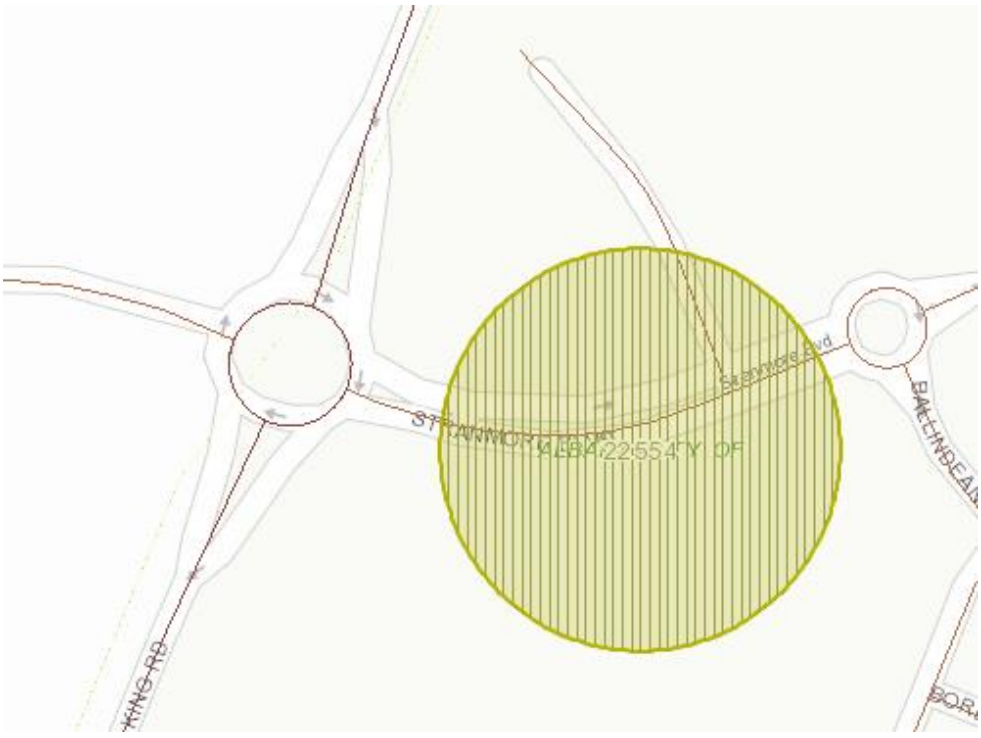


Figure 11: Aboriginal Cultural Heritage Extract (PlanWA, Accessed March 2024)

As part of a relevant and reasonable condition of approval, it is understood in the event that surface disturbance identifies an object of Aboriginal or cultural heritage significance, all works on site would be required to halt in the immediate area and to an outer radius of no less than twenty meters to prevent any further impacts of the object(s). A suitably qualified archaeologist and the relevant registered Aboriginal Land Council representatives would be contacted where required to determine the significance of the object(s). The site if required is to then be registered in the Aboriginal Cultural Heritage Inquiry System (ACHIS) accordingly.

4.5.5 LPP – Signs Policy

This application comprises the establishment of new signage on the subject site as part of the proposed development works. As previously specified, the following signage works are being undertaken as a result of the subject works:

- 2 x Monolith Signs (illuminated) for site identification and fuel pricing for the unbranded service station, fast food outlet tenant and ancillary motor vehicle wash, comprising dimensions of 6m x 1.9m, with approximately 11.4m^2 per sign area.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded service station fuel canopy, comprising dimensions of 3m x 0.77m.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded fuel sales building, comprising dimensions of 3m x 0.95m.
- 1 x Veranda Sign – On Fascia (illuminated) for the fast food tenant, comprising dimensions of 3m x 0.95m.
- 1 x Veranda Sign – On Fascia (illuminated) for the unbranded ancillary motor vehicle wash building entrance, comprising dimensions of 3m x 0.95m.
- 1 x Small-scale Pylon Sign for the air & water identification, comprising dimensions of 2.1m x 1.35m.
- 4 x Small-Scale Pylon Signs for unbranded fuel product leaderboards in front each fuel bowser under fuel canopy, comprising dimensions of 1.5m x 1m.
- Associated directional and wayfinding signs located across the development site and at crossover points.

4.5.5.1 Sign Specifications

An assessment of the relevant sign specification requirements under table 1 of the LLP Signs Policy against the proposed signage is undertaken in Table 9 below for consideration.

Table 8: LPP – Signs Policy – Sign Specifications Statement Assessment Response

Sign Specifications	RESPONSE
Monolith Sign	
Sign specifications: • *Max height of device (m) – sign face only: 6.0* • *Max width of device (m) – sign face only: 3.0* • *Max area of sign face (sqm): 15.0* • *Min distance to bottom of sign (m): Nil* • *Max height above NGL (m): 6.0* • *Max projection from building (m): Nil* • *Min Setbacks to front boundary (m): 0.5* • *Setbacks to side boundary (m): 1.0* • *Other Requirements: Only 1 monolith/pylon per lot*	The proposed monolith signs specifications are as follows: • Height of device (m): 6.0 • Width of device (m): 1.9 • Area of sign face (sqm): 11.4 • Distance to bottom of sign (m): 0 • Height above NGL (m): 6.0 • Projection from building (m): N/A • Setbacks to front boundary (m): 3.6 & 1.5 • Setbacks to side boundary (m): >1.0 • 2 monolith signs (1 per road frontage) We request the City exercises its discretion with approving an additional monolith sign for 1 per primary and secondary road frontage. This will provide greater visibility for patrons accessing the site.
Pylon Sign	
Sign specifications:	The proposed pylon signs specifications are as follows:

Sign Specifications	RESPONSE
• *Max height of device (m) – sign face only: 4.0* • *Max width of device (m) – sign face only: 3.0* • *Max area of sign face (sqm): 10.0* • *Min distance to bottom of sign (m): 2.75 (*)* • *Max height above NGL (m): 6.0* • *Max projection from building (m): 0.9 into Public place* • *Min Setbacks to front boundary (m): 0.5 to post/s* • *Setbacks to side boundary (m): 1.0* • *Other Requirements: Only 1 pylon /monolith sign per lot & (*) Min. distance to bottom of sign can be reduced if sign located wholly within landscaped area.*	• Height of device (m): 2.1 & 1.0 • Width of device (m): 1.9 • Area of sign face (sqm): 2.84 & 0.64 • Distance to bottom of sign (m): N/A • Height above NGL (m): 2.84 & 0.64 • Projection from building (m): N/A • Setbacks to front boundary (m): 0.6 • Setbacks to side boundary (m): >1.0 • 4 pylon signs (small-scale, not readily defined) We request the City exercises its discretion with approving the additional 4 x pylon signs given the signs are not clearly defined under the signs policy and are typical of the service station use by providing necessary information.
Verandah signs (On Fascia)	
Sign specifications: • *Max height of device (m) – sign face only: 0.8* • *Max width of device (m) – sign face only: 2.5* • *Max area of sign face (sqm): 3* • *Min distance to bottom of sign (m): Nil* • *Max height above NGL (m): 5.0* • *Max projection from building (m): Nil* • *Min Setbacks to front boundary (m): Nil* • *Setbacks to side boundary (m): Nil* • *Other Requirements: Nil*	The proposed verandah signs are generally as follows: • Height of device (m): 0.95 • Width of device (m): 3.0 • Area of sign face (sqm): 2.85 • Distance to bottom of sign (m): N/A • Height above NGL (m): 6.4 (canopy height) • Projection from building (m): N/A • Setbacks to front boundary (m): N/A • Setbacks to side boundary (m): N/A • N/A We request the City exercises its discretion with approving the verandah signs are they are generally typical of a commercial development.

4.5.5.2 Policy Statement & General Policy Provisions

In addition to the specifications contained in table 1 of the Signs Policy, an assessment of the specifications and requirements for each category against the proposed signage is undertaken in Table 9 below for further consideration.

Table 9: LPP – Signs Policy – Additional Specifications Statement Assessment Response

SPECIFICATIONS AND REQUIREMENTS	RESPONSE
Policy Statement	
Illuminated Signs	
An illuminated sign shall – *1) have any boxing or casing in which it is enclosed constructed of combustible material;* *2) not have a light of such intensity or colour as to cause annoyance to the general public or to owners and patrons of adjacent land;* *3) not comprise flashing, intermittent or running lights.* *4) have a minimum clearance of 2.75 metres from finished ground level.* *5) not be located in a heritage precinct, if stipulated by*	All illuminated signage will be internally lit by static means. Signage is located as to not impact traffic or pedestrian safety.

SPECIFICATIONS AND REQUIREMENTS	RESPONSE
a more specific planning policy, where illuminated signage is prohibited.	
Monolith Sign	
All monolith signs shall have infills, either translucent or opaque, filling the complete width and height of the sign. The monolith sign on a lot with multiple tenancies should be designed to allow all tenants to advertise in compliance with this Policy, and should not incorporate 'brand' advertising.	The proposed 2 monolith signs will provide necessary site identification for the tenancies over the development site. The signs are strategically located on the primary and secondary road frontages, suitably separated apart and orientated, to not create a distraction or nuisance to passing motorist or pedestrians. The proposed signs will not impact traffic or pedestrian safety with the illuminated components to be internally lit by static means.
Pylon Sign	
The pylon sign on a lot with multiple tenancies should be designed to allow all tenants to advertise in compliance with this Policy, and should not incorporate 'brand' advertising.	While ordinarily there is no clear sign definition for the air & water identification sign and fuel product sign (under canopy), the closest definition under the signs policy would be a pylon sign. Accordingly, the proposed pylon signs would be small-scale in nature and would not distract nor create nuisance to motorist or pedestrians from the street frontages.
Verandah Sign – Verandah Fascia	
A verandah sign fixed to the outer or facia of a verandah shall not project beyond the outer frame or surround of the fascia.	The proposed verandah signs for the service station, fast food tenant and motor vehicle car wash will be appropriately located on the building fascia and will not project beyond the outer frame of the fascia.
General Policy Provisions	
Overall Signage	

No more than four (4) signs shall be located on each building, or in the case of a multitenant building no more than three (3) signs per tenancy up to an overall maximum of twelve (12) signs, inclusive of signage attached to a building's roof, verandah or other architectural feature (does not include pylon signs or any other sign not attached to building).	The proposed development will include the following primary signs for each tenant:
	• Service station sign
	  ○ 1 monolith sign, 2 verandah signs (fascia)
	• Fast Food Outlet
	  ○ 1 monolith sign, 1 verandah sign (fascia)
	• Motor Vehicle Car Wash
	  ○ 1 verandah sign (fascia)
	• Miscellaneous Signs
	  ○ 1 pylon sign (air & water)
	  ○ 4 pylon signs (fuel products under canopy)
	  ○ Directional signs

Acceptable deviation	
Council may exercise its discretion to approve a deviation from the specific standards subject to the applicant demonstrating that the likely affect of the location, height, bulk, scale, orientation and appearance of the advertisement will not: *1) conflict with or detrimentally affect the amenity of the locality;* *2) interfere with traffic safety.*	Under table 1 of the LPP Signs Policy, one of the sign specifications for a monolith sign is to have 1 sign per lot. We request the City excises its discretion with approving a second monolith sign so that there is 1 monolith sign per the primary and secondary road frontages (Lower King Road and Stranmore Boulevard respectfully). While ordinarily there is no clear sign definition for the air & water identification sign and fuel product sign (under canopy), the closest definition under the signs policy would be a pylon

SPECIFICATIONS AND REQUIREMENTS	RESPONSE
	sign. Overall, the proposed signs are placed so as to not comprise vehicle or pedestrian sight lines, obstruct other properties or constitute a hazard to people using adjoining spaces and provide necessary information to potential customers whilst not unduly compromising the amenity of the surroundings. It is noted no signs that will include static illumination will be direct or located facing the existing residential apartments to avoid adverse effects to surrounding amenity.
Signs Not Permitted	
The following signs shall not be permitted, where: 1) *it would detract from the aesthetic environment of a park or other land used by the public for recreation;* 2) *in the case of an internally illuminated advertisement, its display would cause glare or dazzle or would otherwise distract the driver of a vehicle;* 3) *in the case of an externally illuminated advertisement, the light would not be directed solely onto the device and its structural surround and the light source be so shielded that glare would not occur or extend beyond the advertisement and cause the driver of any vehicle to be distracted;* 4) *it would be likely to interfere with, or cause risk or danger to traffic on a thoroughfare by virtue of the fact that it:* a) *may be mistaken or confused with, or obstruct or reduce the effectiveness of any traffic control device;* b) *would invite traffic to turn and would be sited so close to the turning point that there would not be reasonable time for a driver of a vehicle* to signal and turn *safely;* c) *would invite traffic to move contrary to any traffic control device;* d) *would invite traffic to turn where there is fast moving traffic and no turning lane;* e) *may obscure the vision of a person driving a vehicle;* 5) *in the case of an illuminated advertisement, it may confuse with or mistaken for the stop or tail light of a vehicle or vehicles;* 6) *it significantly obstructs or obscures the view of a river, the sea or any other natural feature of beauty; or* 7) *any sign which, in the opinion of Council is objectionable, dangerous or offensive* 8) *any sign painted the roof of any building;* 9) *any sign is sited within a road reserve during normal business hours (except signage approved in accordance with Council's Activities in Thoroughfares and Public Places and Trading Local Law).* 10) *any sign is located in the centre of any roundabout;*	The signs are generally consistent with the size, scale and design of the proposed works on site under the Signs Policy and generally consistent with commercial development of this scale and type. The proposed signs will be designed to integrate and compliment the overall design and layout of the proposed service station, fast food tenancy and motor vehicle wash facility. While the signs are currently unbranded, the colouring, lettering styles and materials of the signs will be specifically designed and built as part of the corporate branding and marketing strategy of each tenant. Overall, the proposed signs are placed so as to not comprise vehicle or pedestrian sight lines, obstruct other properties or constitute a hazard to people using adjoining spaces and provide necessary information to potential customers whilst not unduly compromising the amenity of the surroundings.

SPECIFICATIONS AND REQUIREMENTS	RESPONSE
11) it is Fly Posting; *12) it is Third Party Signage, notwithstanding the placement of a such a sign in a public place where the advertisement in the absolute discretion of Council, is for the benefit or credit of the municipality.* *13) it would detrimentally affect the amenity of the area.* 14) *it would detrimentally affect the significance and aesthetics of a Heritage Area or a place on the Heritage List.*	
Contents of Signage	
A sign shall generally not contain any information other than:- *1) The name of any occupiers;* *2) Details of the business name or business carried-out on the land;* *3) Telephone or contact details;* *4) Details of the goods sold or services provided;* *The trademark or logo of the business or products for sale;*	The proposed signage identifies the name of the business trading on-site, with logos and detail of goods sold on-site.
Exempted Signage	
… *4) a sign used solely for the direction and control of people, animals or vehicles or to indicate the name or street number of a premises, if the area of the sign does not exceed 0.2m2* *…*	There are several directional and wayfinding signs across the development site and at the proposed crossovers which include a sign face area of approximately 0.27m^2. Final design and dimensions of these directional signs would be subject to change upon confirmation of the relevant business standards the fuel tenant and relevant City guidelines, thereby it considered the directional signs would be exempted for the purposes of this LPP Signs Policy.

4.6 State Planning Policies

In consideration of the State Planning Policies (SPP's) applied by the State of Western Australia, it is determined that the following SPP's are applicable to the proposed development.

- SPP 3.7 – Planning in Bushfire Prone Areas

An assessment of these SPP's is undertaken within subsequent sections of this report.

4.6.1 SPP 3.7 – Planning in Bushfire Prone Areas

In accordance with the mapping for SPP 3.7 – Planning in Bushfire Prone Areas the subject site is identified as being located within the bushfire area, as indicated by Figure 12 below.

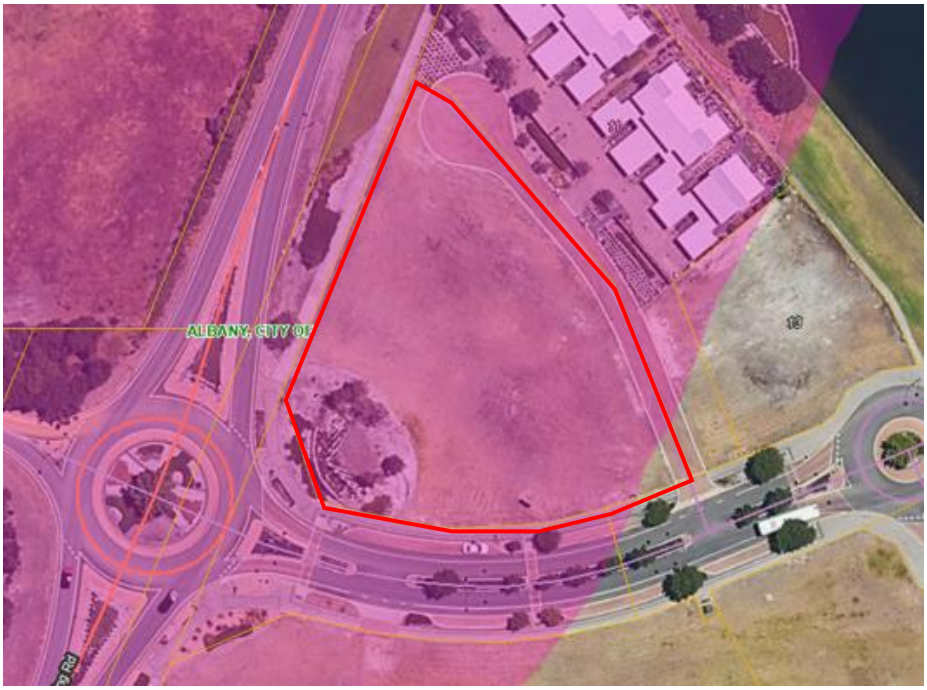


Figure 12: Planning in Bushfire Prone Areas (PlanWA, Accessed March 2024)

It is understood the purpose of the guideline for planning in bushfire prone areas is to improve the level of protection to life and property in the event of a bushfire. This will be achieved through appropriate building design and construction standards to reduce the risk of ignition guided by the bushfire attack level of the site.

Accordingly, a bushfire attack level (BAL) assessment and contour map has been prepared by Integral Fire Protection and provided in **Appendix G** to assess the bushfire attack level of the site.

5.0 CONCLUSION

This Town Planning Report has been prepared by TFA Project Group on behalf of Batra Brothers Pty Ltd to accompany a development application for the development of a new commercial development including a service station with convenience shop and fuel canopy, a fast food outlet tenant and an ancillary motor vehicle wash facility at Lot 70 Stranmore Boulevard, Bayonet Head WA 6330, formally described as Lot 70 on Deposited Plan 406170.

The service station, fast food outlet tenant and motor vehicle wash is proposed to operate 24 hours, 7 days a week.

The proposed development is considered to be consistent with the intent of the Scheme and relevant local development plan by way of providing a commercial offer for food and motor vehicle refuelling and ancillary vehicle washing, it is taken that the proposed development is consistent with the Local Development Plan (LDP) No. 14 Village Centre for the Oyster Harbour generally which will service the emerging urban growth area to the east.

Services such as convenience store, vehicle refuelling / car wash and take-away fast food are all typical of those which support small neighbourhood centre type developments which service the local residential community.

The proposal has been assessed against the relevant local and state provisions, and from this assessment, the following conclusions are formed:

- The proposed development is considered to be generally consistent with the objectives of the neighbourhood centre zone under the Scheme, and the relevant local and state planning policies.
- The proposed development will provide a commercial offer for food, motor vehicle refuelling and ancillary vehicle washing, consistent with the intent of the Local Development Plan (LDP) No. 14 Village Centre.
- It is expected that potential traffic generation would be within acceptable levels, as indicated by the Traffic Impact Assessment provided within **Appendix E**.
- Any potential spill areas are to be designed and graded to ensure that any potential spills are captured and treated prior to discharge,
- The expected waste generation of the site is capable of being stored within appropriately sized containers for regular collection with the proposed loading bay.
- The signage is considered to be consistent with the proposed use of the subject site and is not considered to cause any impact to the locality.

On the basis of the above, it is considered sufficient planning grounds exist to warrant the proposal and the application is recommended for approval by the City.

APPENDIX B – SITE TOPOGRAPHY SURVEYS

N

73

72

70
4446m²

Concrete path
1.8m Colourbond fence - Good Cond.
Path
Crossover
No mark found
Easement
Paint mark on ground
Peg found ('Offset')
Grate
DGE MH
Paving
Sign
Entrance statement
Ground lights
Limestone wall (TOW 35.92)
Set of lights - low
Steel feature wall
Retic. valve
Telstra pits
Sewer MH
Mark found on paving
Line marking - Solid
Line marking - Broken
STRANMORE
BOULEVARD
Street light
Footpath
Monitoring Bore
Bus Stop
PVC conduit
Earth node
Pole
Power dome
TBM
Spike in bitumen
RL 32.05m
Hydrant
Gas valve
Valve
Footpath

NOTE:
This is a site survey only. The boundaries shown should be used as a reference only as they have NOT been re-established as part of this survey.

Areas & dimensions are subject to final survey.

Station heights are AHD from RTK GPS from Standard Survey Mark AL 4

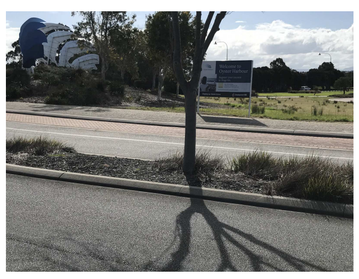
Sewer/Water information is as supplied by the Water Corporation of W.A. and has not been confirmed on site.

Utilities and Underground services are shown as a reference only and have not been confirmed on site. This should be confirmed with the relevant Service Provider.

SEWER - yes (connection not sighted)
WATER - No (meter not sighted)
POWER - yes (mini pillar located)
TELSTRA/NBN - yes (pit's sighted)

LEGEND

- Fence
- Top of bank
- Bottom of bank
- Overhead powerline
- Line marking - Broken
- Edge of concrete
- Edge of wall
- Entrance Statement signage
- Steel Entrance banner
- Water meter/connection
- Power dome
- S — Sewer connection
- Survey control

CLIENT: TFA PROJECT GROUP
LOT: 70 STRANMORE BOULEVARD, BAYONET HEAD

PLAN: DP 406170
C/T Vol/Fol: 2892/8
AUTHORITY: CITY OF ALBANY
SHEET 1 OF 1
SCALE: 1:200 (A1)
MAP REF: SEE SMARTPLAN
JOB NUMBER: I450-01
SHEET SIZE A1
SURVEY DATE: 13-08-2024

0 2 4 6 8 10
Scale 1:200 (A1)

JOHN KINNEAR & ASSOCIATES
Consulting Surveyors
45 COLLIE STREET
PO BOX 293
ALBANY WA 6331
PHONE (08) 9842 1353 FAX (08) 9842 1570
JKA REF. I450 - 01

N

70
4446m²

73

72

13

Concrete path
1.8m Colourbond fence - Good Cond.
Path
No mark found
Crossover
Easement
Paint mark on ground
DGE MH
Peg found ('Offset')
Grate
Paving
Sign
Entrance statement
Ground lights
Limestone wall (TOW 35.92)
Set of lights - low
Steel feature wall
Telstra pits
Sewer MH
Mark found on paving
Line marking - Solid
Line marking - Broken
Footpath
Monitoring Bore
Retic. valve
Street light
Hydrant
Gas valve
PVC conduit
Earth node
Pole
Power dome
Bus Stop
TBM
Spike in bitumen
RL 32.05m
Valve
Telstra pits
STRANMORE
BOULEVARD
Stranmore Byd
Dome
Sewer
Water
Electrical

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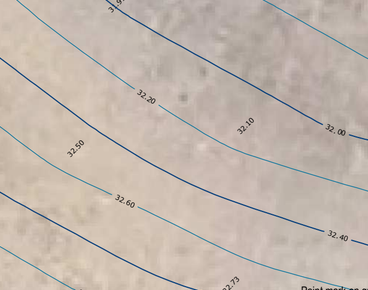
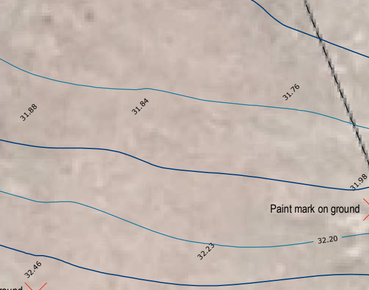
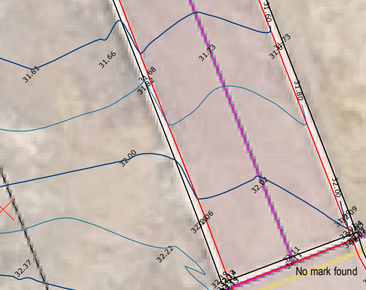
- Power dome
- Sewer connection
- Survey control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C/T Vol/Fol: 2892/8
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SHEET 1 OF 1
SCALE: 1:200 (A1)
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Scale 1:200 (A1)

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PHONE (08) 9842 1353 FAX (08) 9842 1570
JKA REF. I450 - 01

APPENDIX C – DEVELOPMENT APPLICATION DRAWINGS

PROPOSED SERVICE STATION, FAST FOOD, & CAR WASH

BATRA BROTHERS PTY LTD

BAYONET HEAD, WA

70 STRANMORE BOULEVARD

Drg No.	Drawing Title
1450-01	SURVEY
18306-ALB-C-3 / D1	DRAINAGE LAYOUT PLAN

Drg No.	Drawing Title
DA00	COVER SHEET
DA01	LOCALITY PLAN & EXISTING SITE VIEWS
DA02	SITE PLAN
DA03	SITE ELEVATIONS
DA04	BUILDING FLOORPLAN
DA05	BUILDING ELEVATIONS
DA06	CANOPY PLAN
DA07	CANOPY ELEVATIONS
DA10	SIGNAGE PLAN
DA11	SIGNAGE ELEVATIONS
DA12	LANDSCAPING PLAN
DA13	VEHICLE SWEPT PATH - AV TANKER (17m) & MRV (8m)
DA14	VEHICLE SWEPT PATH - HRV (12.5m)
DA15	PEDESTRIAN SITE ACCESS PLAN
DA20	SITE STORMWATER CONCEPT PLAN
DA21	TANK FARM SECTION
DA22	RETAINING WALL SECTION
DA23	SEDIMENT & EROSION CONTROL PLAN

TFA Project Group

CREATE · PLAN · DELIVER

DRAWING NO	DATE	REV
24255-DA00	05.03.25	B

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

N

73

72

70
4446m²

Concrete path
1.8m Colourbond fence - Good Cond.
Path
Crossover
No mark found
Easement
Paint mark on ground
Peg found ('Offset')
Grate
DGE MH
Paving
Sign
Entrance statement
Ground lights
Limestone wall (TOW 35.92)
Set of lights - low
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Line marking - Broken
STRANMORE
BOULEVARD
Street light
Footpath
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Spike in bitumen
RL 32.05m
Hydrant
Gas valve
Valve
Footpath

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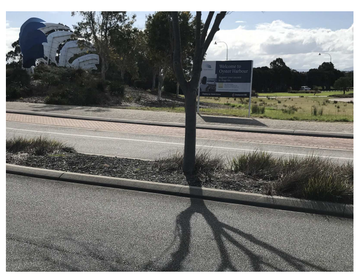
- Steel Entrance banner
- Water meter/connection
- Power dome
- S — Sewer connection
- Survey control

CLIENT: TFA PROJECT GROUP
LOT: 70 STRANMORE BOULEVARD, BAYONET HEAD

PLAN: DP 406170
C/T Vol/Fol: 2892/8
AUTHORITY: CITY OF ALBANY
SHEET 1 OF 1
SCALE: 1:200 (A1)
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0 2 4 6 8 10
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JOHN KINNEAR & ASSOCIATES
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PO BOX 293
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PHONE (08) 9842 1353 FAX (08) 9842 1570
JKA REF. I450 - 01

RPD:
LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

N

PLAN VIEW

VIEW A

VIEW B

VIEW C

VIEW D

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TfA Project Group

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ACN 612 192 233

Head office - Brisbane Ph: 61 7 3854 2900
166 Knapp Street, Fortitude Valley QLD 4006 Australia
Email: enquiry@tfa.com.au Aust Wide: 1300 794 300

DRAWING ISSUE APPROVAL
NAME: DATE:
PROFESSIONAL QUALIFICATION:
SIGNATURE:

REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
LOCALITY PLAN & EXISTING SITE VIEWS

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
08.08.24	As indicated	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

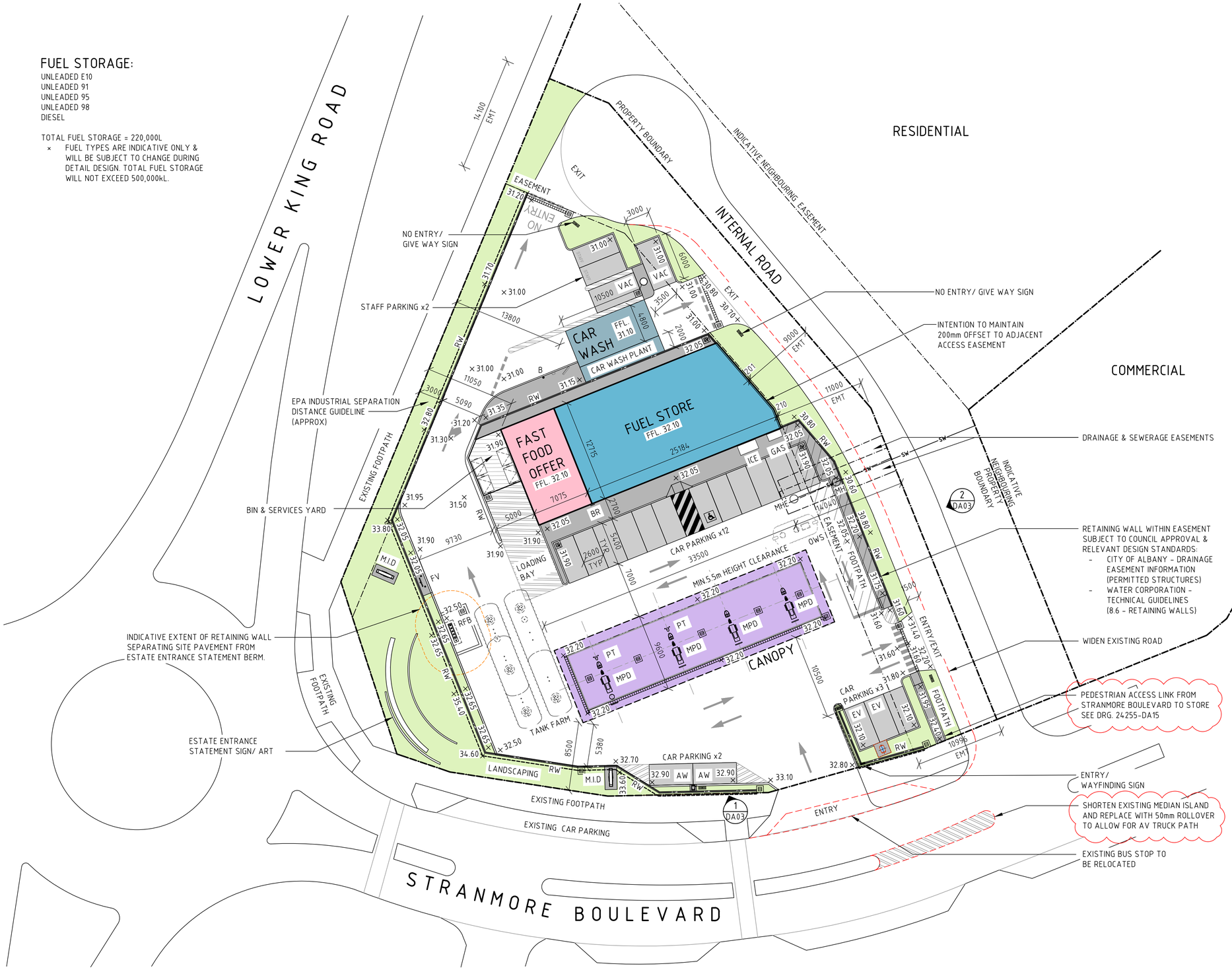
DRAWING NO	REV
24255-DA01	A

FUEL STORAGE:

UNLEADED E10
UNLEADED 91
UNLEADED 95
UNLEADED 98
DIESEL

TOTAL FUEL STORAGE = 220,000L

× FUEL TYPES ARE INDICATIVE ONLY & WILL BE SUBJECT TO CHANGE DURING DETAIL DESIGN. TOTAL FUEL STORAGE WILL NOT EXCEED 500,000kL.



RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:

1. DEVELOPMENT APPLICATION PURPOSE ONLY - NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES (INCLUDING LOCATION) ARE SUBJECT TO SURVEY.
3. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TFA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS. HOWEVER, TFA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT'S COMPLIANCE. IN THE CASE OF THIS DRAWING IS UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.
4. REFER TO DA12 FOR EXISTING AND PROPOSED LANDSCAPING.

SITE AREA / LEGEND

- FUEL BUILDING AREA: 300m²
- FAST FOOD OFFER AREA: 90m²
- CAR WASH (INCL. PLANT) AREA: 71m²
- SERVICE YARD AREA: 32m²
- CANOPY AREA: 322m²
- PATHWAYS AREA: 208m²
- LANDSCAPING AREA: 747m²

SITE COVER (INCL. SERVICE YARD):
820m² (18.4%)

LEGEND:

AW	AIR & WATER POINT
B	BOLLARD
BR	BICYCLE RAIL
EV	ELECTRIC VEHICLE CHARGING
FV	FUEL VENT STACK
FFL.	FINISHED FLOOR LEVEL
GAS	LPG BOTTLE CAGE
ICE	ICE BOX
M.I.D	MAIN IDENTIFICATION PYLON SIGN
MHE	EXISTING MANHOLE
MH	MANHOLE
MPD	MULTI-PRODUCT FUEL DISPENSER
OWS	OILY WATER SEPERATOR
PT	24 HOUR PAYMENT TERMINAL
RFB	REMOTE FILL BOX
RW	RETAINING WALL
VAC	VACUUM CLEANER BAY
—"—	FENCE/ BALUSTRADE
----------	RETAINING WALL SPOON DRAIN (TOP OF WALL) & SUBSOIL DRAINAGE. WHOLLY CONTAINED WITHIN PROPERTY BOUNDARY.
	GULLY PIT
	TRENCH DRAIN

CAR PARKING:

REQUIRED:
- 9x SERVICE STATION RETAIL (1 PER 20% of RETAIL AREA=170m²)
- 2x SERVICE STATION STAFF (BASED ON 2 STAFF WORKING)
- 5x FAST FOOD OFFER (4min. QUEUING + 1 PER 5m2 EATING)
- 1x FAST FOOD OFFER BICYCLE

TOTAL = 17

ACHIEVED:
- 12x STANDARD
- 2x STAFF
- 1x ACCESSIBLE
- 2x EV BAYS
- 2x AIR & WATER BAYS
- 2x VACUUM BAYS
- 1x BICYCLE RAIL
- 4x EXISTING ON STREET CAR PARKING

TOTAL = 26

0 5 10 15 20 25m

SCALE 1:250

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SIGNATURE:

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166 Knapp Street, Fortitude Valley QLD 4006 Australia
Email: enquiry@tfa.com.au Aust Wide: 1300 794 300

REV	DATE	BY	DESCRIPTION	CHK	APP
A	22.05.24	CTD	PRELIMINARY FOR DISCUSSION	PDS	
B	03.06.24	CTD	AMENDS	PDS	TD
C	13.08.24	CTD	FOR INFORMATION	PDS	
D	22.08.24	CTD	PRELIMINARY FOR INFORMATION	PDS	
E	23.08.24	CTD	DA ISSUE	SLM	PDS
F	05.03.25	CTD	RFP AMENDS	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

PROPOSED SITE PLAN

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
17.05.24	1:250	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA02	F

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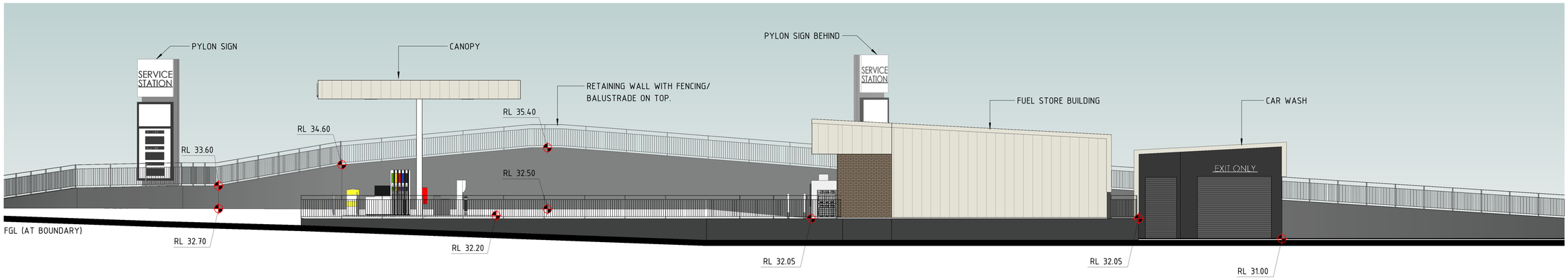
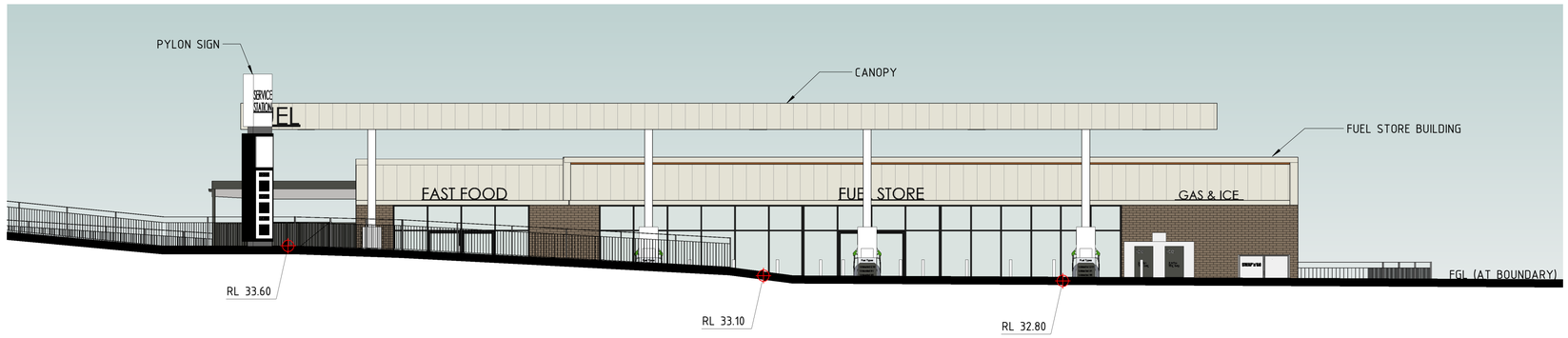
4. COLOURS & FINISHES SHOWN INDICATIVE ONLY, TO BE CONFIRMED AT DETAIL DESIGN STAGE.
5. EXISTING AND PROPOSED LANDSCAPING OMITTED FOR CLARITY.
6. COLOURS & FINISHES SHOWN INDICATIVE ONLY, TO BE CONFIRMED AT DETAIL DESIGN STAGE.

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²



1 DA02 ELEVATION - EAST
SCALE 1 : 100 @ A1



2 DA02 ELEVATION - SOUTH
SCALE 1 : 100 @ A1

0 2 4 6 8 10m
SCALE 1:100

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	CTD	DA ISSUE	SLM	PDS
B	05.03.25	CTD	RFP AMENDS	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
SITE ELEVATIONS

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
03/17/16	1 : 100	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA03	B

CODE	DESCRIPTION
DP	DOWNPIPE - REFER HYD DRAWINGS
B	BOLLARD
COL	COLUMN - REFER STRUCTURAL ENG. DRAWINGS
CSU	CUSTOMER SERVICE UNIT
FE	FIRE EXTINGUISHER AS PER AS2444 BY OTHERS
GAS	LPG BOTTLE CAGE
ICE	ICE BOX
KR	KERB RAMP
LDB	ENTRY PRODUCT LEADERBOARD BOLLARD
MPD	MULTI-PRODUCT DISPENSER
TB	TRUCK BOLLARD

NOTE:

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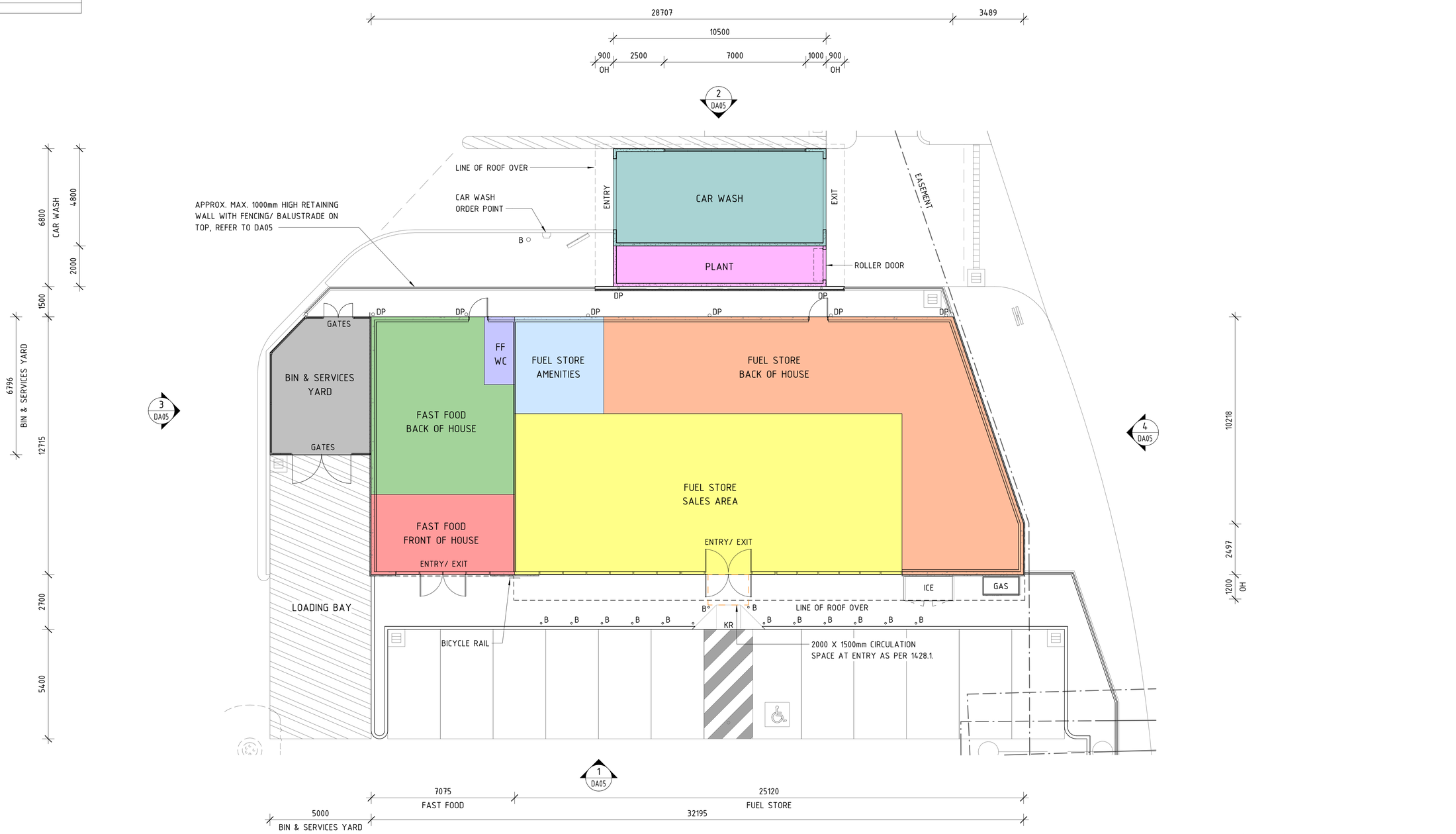
AREA LEGEND:

FAST FOOD BACK OF HOUSE:	57m²	FUEL STORE BACK OF HOUSE:	130m²	CAR WASH:	50m²
FAST FOOD FRONT OF HOUSE:	28m²	FUEL STORE FRONT OF HOUSE:	150m²	PLANT:	21m²
FAST FOOD WC:	5m²	FUEL STORE AMENITIES:	20m²	BIN & SERVICES YARD:	32m²
				TOTAL AREA:	493m²

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²



0 2 4 6 8 10m
SCALE 1:100

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A	23.08.24	CTD	DA ISSUE	SLM	PDS
B	26.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

BUILDING FLOORPLAN

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
8.08.24	1 : 100	A1

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DRAWING NO	REV
24255-DA04	B

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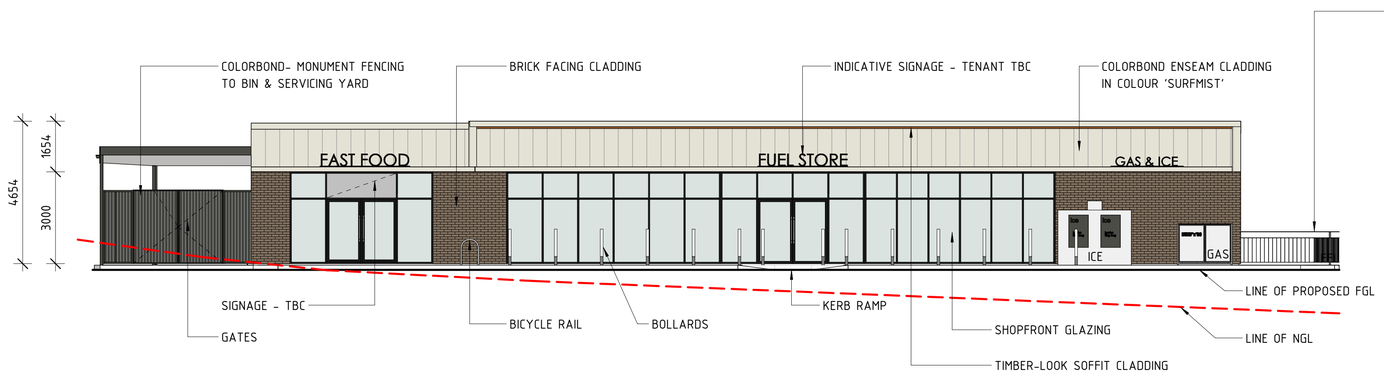
LEGEND:

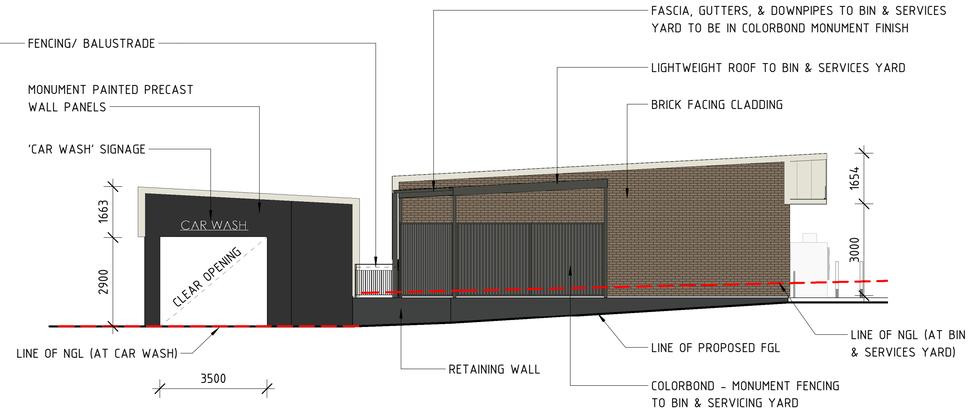
NGL NATURAL GROUND LINE
FGL FINISH GROUND LINE

RPD:

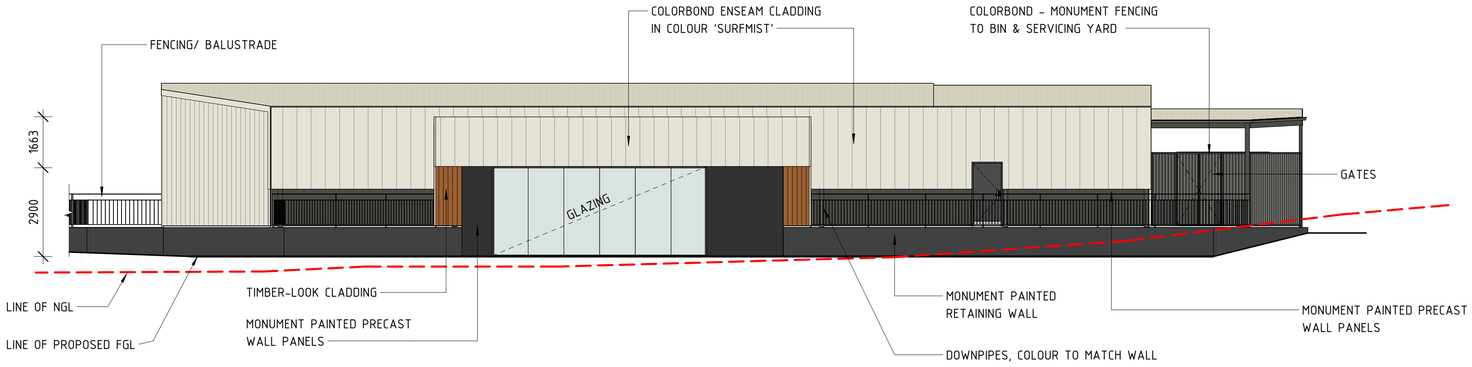
LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m^2



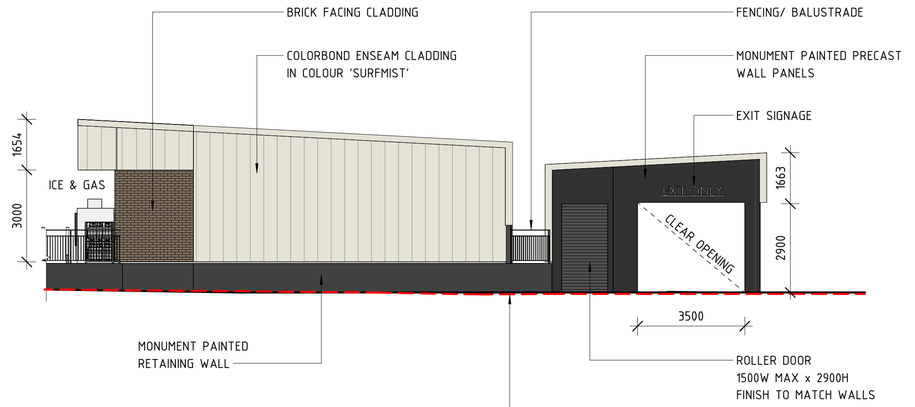
1 DA02 ELEVATION - SOUTH
SCALE 1 : 100 @ A1



3 DA02 ELEVATION - WEST
SCALE 1 : 100 @ A1



2 DA02 ELEVATION - NORTH
SCALE 1 : 100 @ A1



4 DA02 ELEVATION - EAST
SCALE 1 : 100 @ A1

0 2 4 6 8 10m
SCALE 1:100

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
BUILDING ELEVATIONS

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
8.08.24	1 : 100	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255 - DA05	A

CODE	DESCRIPTION
B	BOLLARD
COL	COLUMN - REFER STRUCTURAL ENG. DRAWINGS
CSU	CUSTOMER SERVICE UNIT
DP	DOWNPIPE - REFER HYD DRAWINGS
FE	FIRE EXTINGUISHER AS PER AS2444 BY OTHERS
GP	GULLY PIT
MPD	MULTI-PRODUCT DISPENSER
PT	PAYMENT TERMINAL
TB	TRUCK BOLLARD - CONCRETE 600Ø
TD	TRENCH DRAIN

NOTE:

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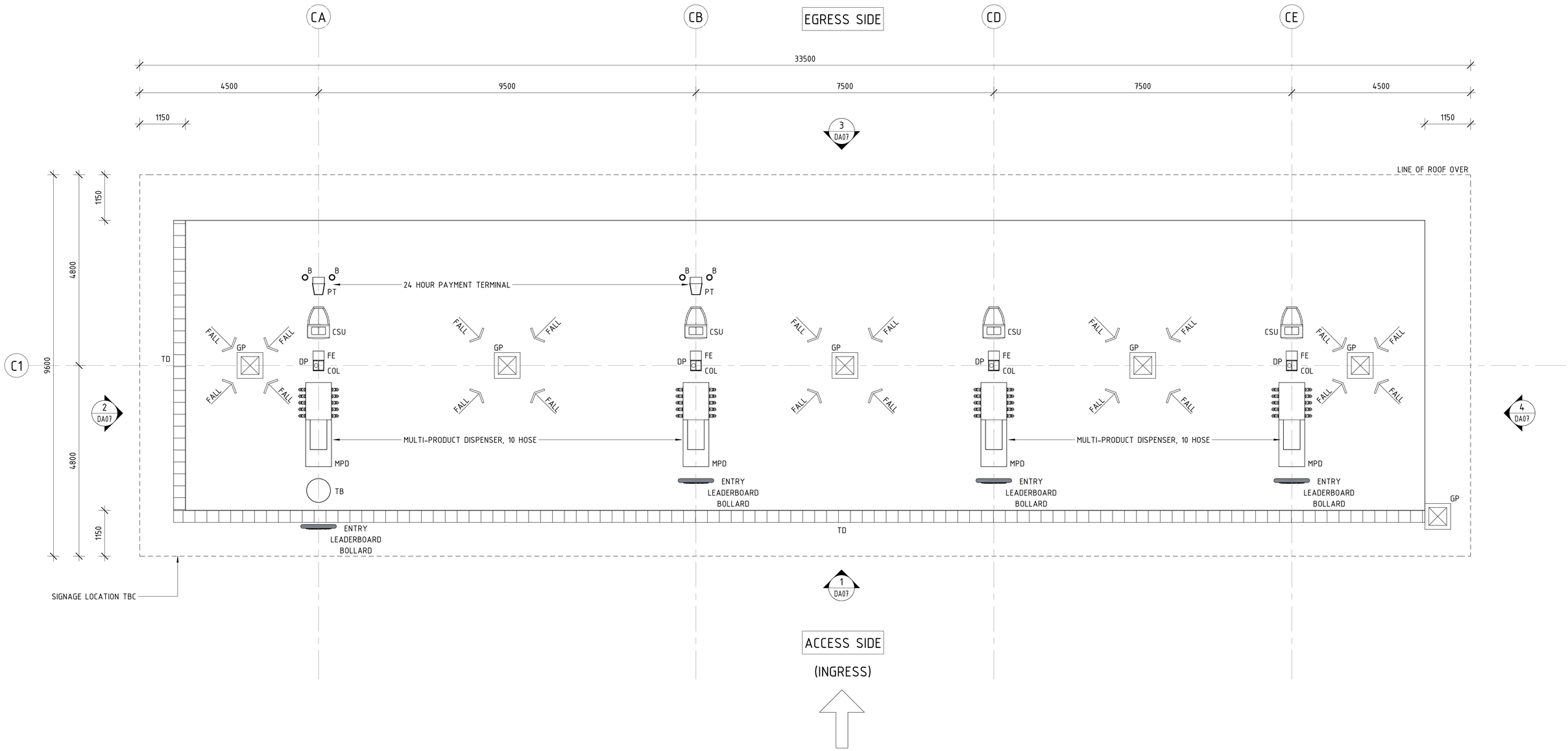
RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

N



0 1000 2000 3000 4000 5000mm

SCALE 1:50

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A	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
CANOPY PLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
8.08.24	1 : 50	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA06	A

CODE	DESCRIPTION
B	BOLLARD
COL	COLUMN - REFER STRUCTURAL ENG. DRAWINGS
CSU	CUSTOMER SERVICE UNIT
DP	DOWNPIPE - REFER HYD DRAWINGS
FE	FIRE EXTINGUISHER AS PER AS2444 BY OTHERS
LDB	ENTRY PRODUCT LEADERBOARD BOLLARD
MPD	MULTI-PRODUCT DISPENSER
PT	PAYMENT TERMINAL
TB	TRUCK BOLLARD

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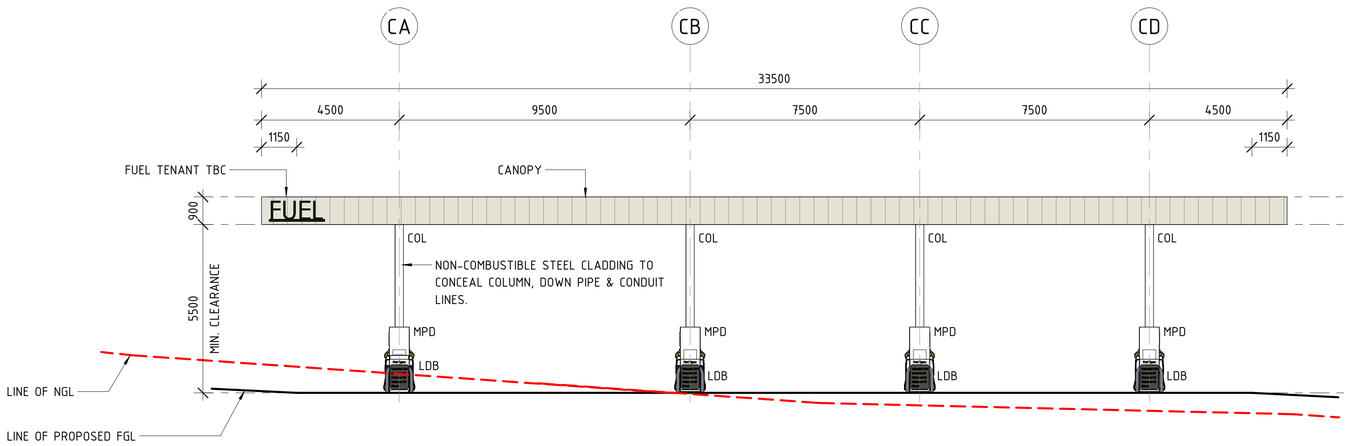
LEGEND:

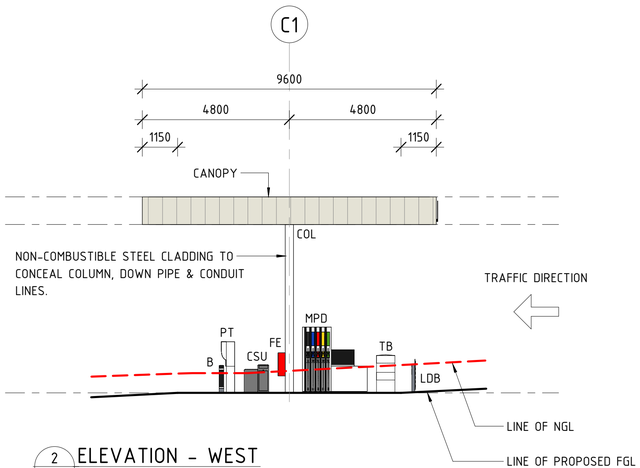
NGL NATURAL GROUND LINE
FGL FINISH GROUND LINE

RPD:

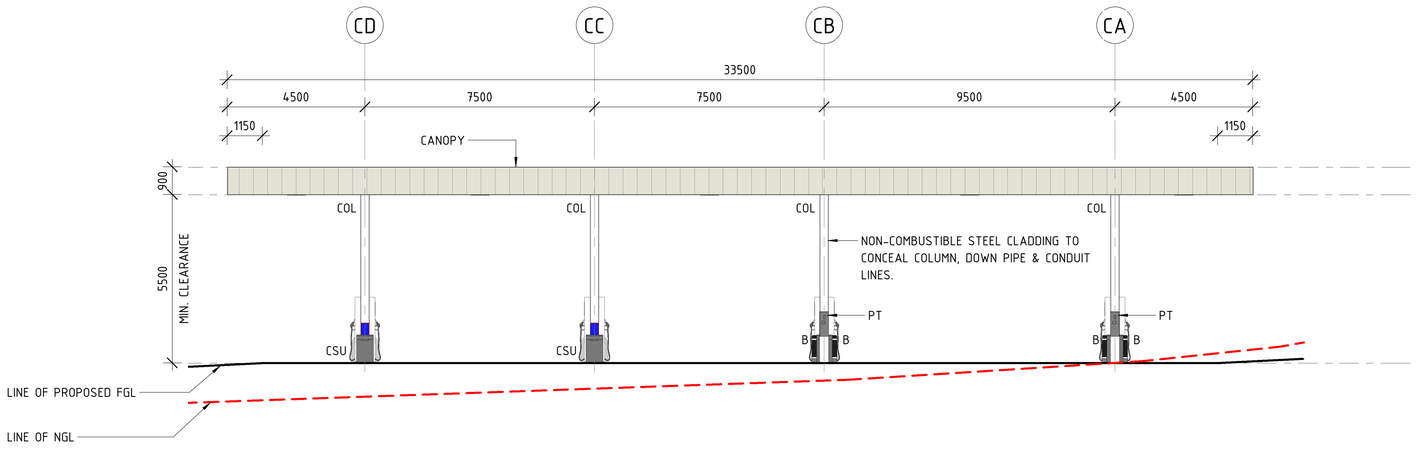
LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²



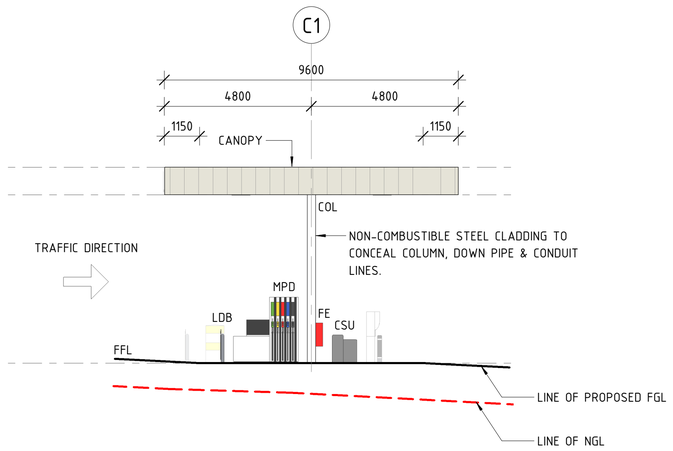
1 DA02 ELEVATION - SOUTH
SCALE 1 : 100 @ A1



2 DA02 ELEVATION - WEST
SCALE 1 : 100 @ A1



3 DA02 ELEVATION - NORTH
SCALE 1 : 100 @ A1



4 DA02 ELEVATION - EAST
SCALE 1 : 100 @ A1

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A	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
CANOPY ELEVATIONS

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
8.08.24	1 : 100	A1

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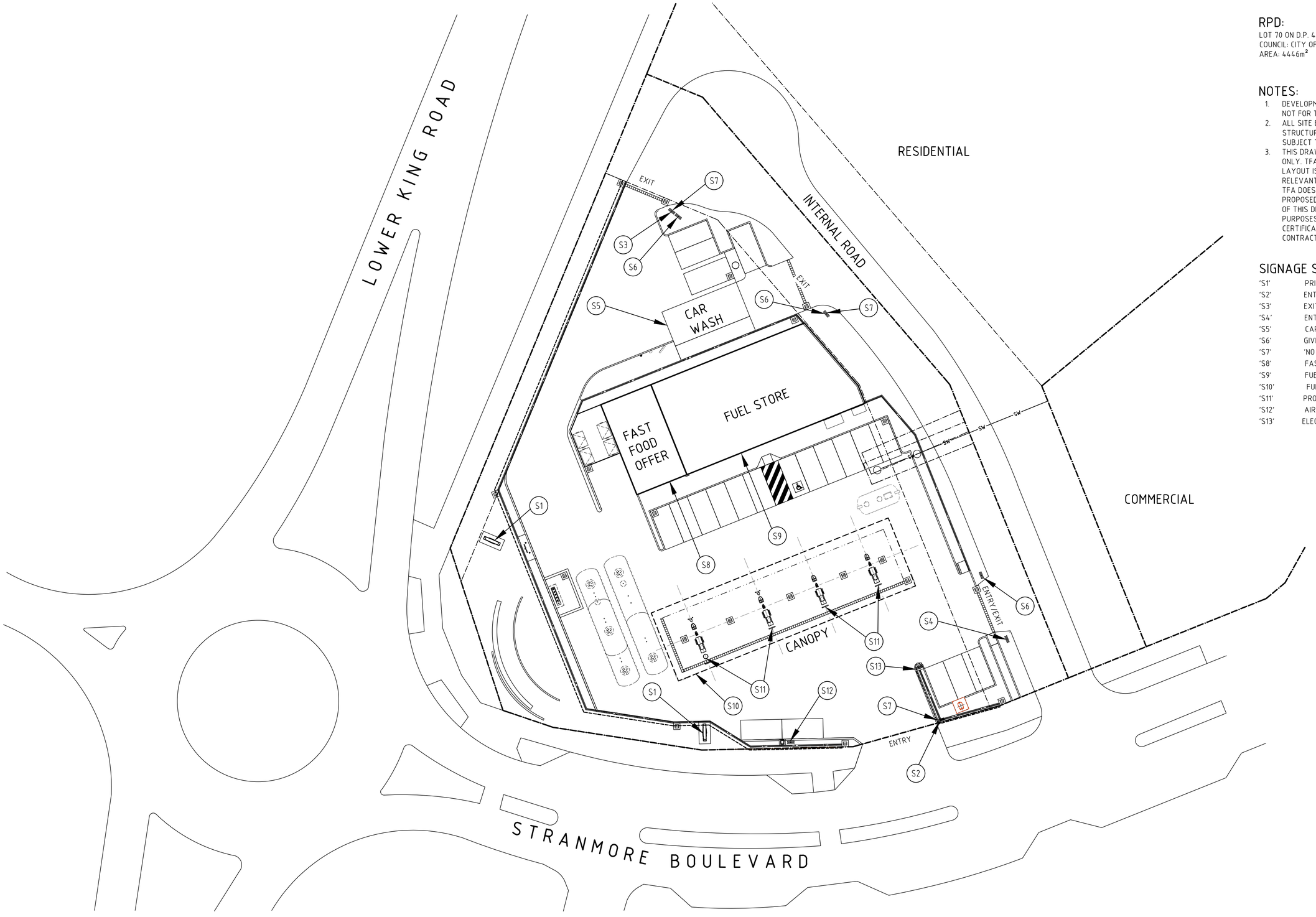
DRAWING NO	REV
24255-DA07	A



RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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SIGNAGE SCHEDULE:

'S1'	PRIMARY 6m SITE ID PRICE SIGN
'S2'	ENTRY DIRECTIONAL SIGNAGE
'S3'	EXIT DIRECTIONAL SIGNAGE
'S4'	ENTRY/EXIT DIRECTIONAL SIGNAGE
'S5'	CARWASH ENTRY SIGNAGE
'S6'	GIVEWAY SIGN TO LOCAL AUTHORITY REQUIREMENTS
'S7'	'NO ENTRY' SIGNAGE
'S8'	FAST FOOD OFFER SIGNAGE
'S9'	FUEL SALES SHOP SIGNAGE (TO BE CONFIRMED)
'S10'	FUEL CANOPY SIGNAGE (TO BE CONFIRMED)
'S11'	PRODUCT LEADERBOARDS WITH BOLLARD SUPPORT
'S12'	AIR & WATER STATION SIGNAGE
'S13'	ELECTRIC VEHICLE CHARGING STATION SIGNAGE

0 5 10 15 20 25m

SCALE 1:250

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	BF	DA ISSUE	SLM	PS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

PROPOSED SITE SIGNAGE PLAN

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
22.08.24	1:250	A1

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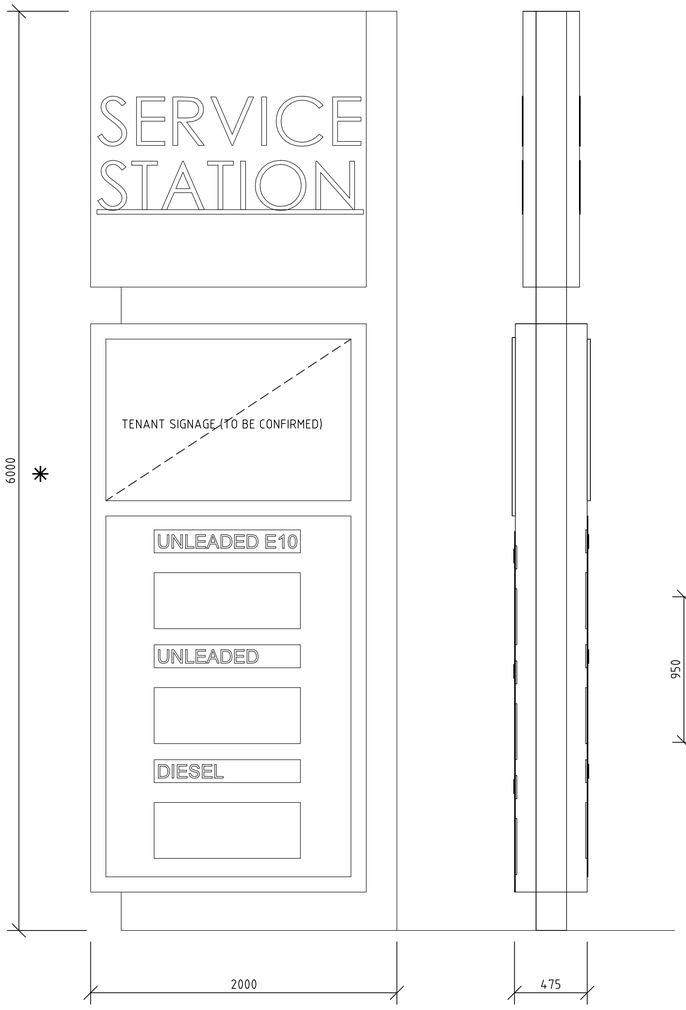
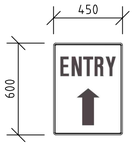
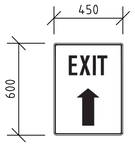
DRAWING NO	REV
24255-DA10	A



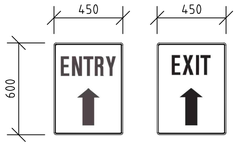
S1 PRIMARY 6M SITE ID SIGN



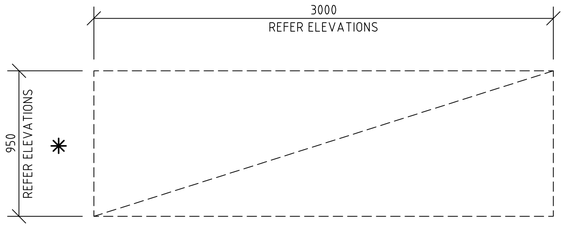
S2 ENTRY DIRECTIONAL SIGNAGE
MOUNTED ON 2M HIGH POLE



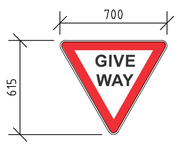
S3 EXIT DIRECTIONAL SIGNAGE
MOUNTED ON 2M HIGH POLE



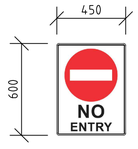
S4 ENTRY/EXIT DIRECTIONAL SIGNAGE
MOUNTED ON 2M HIGH POLE



S5 CARWASH ENTRY SIGNAGE (TO BE CONFIRMED)

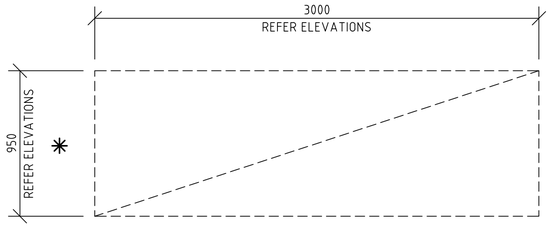


S6 GIVEWAY SIGNAGE
MOUNTED ON 2M HIGH POLE

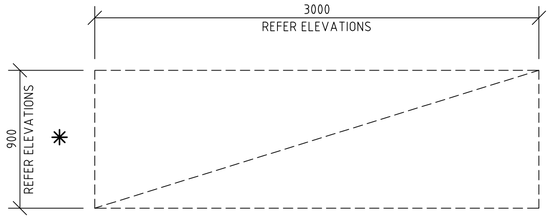


S7 'NO ENTRY' SIGNAGE
MOUNTED ON 2M HIGH POLE

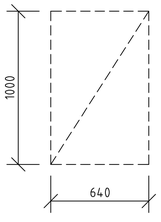
S8 FAST FOOD OFFER SIGNAGE (TO BE CONFIRMED)



S9 FUEL SALES SHOP SIGNAGE (TO BE CONFIRMED)



S10 FUEL CANOPY SIGNAGE (TO BE CONFIRMED)

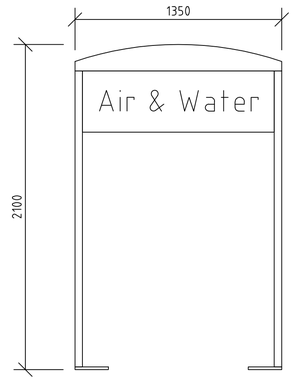


S11 PRODUCT LEADERBOARDS (TO BE CONFIRMED)
ATTACHED TO BOLLARDS

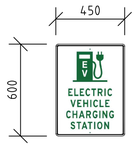
NOTES:

1. DEVELOPMENT APPLICATION ONLY.
2. ALL DIMENSIONS TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION & FABRICATION OF SIGNAGE.
3. TENANCY SIGNAGE GRAPHICS ARE TO BE CONFIRMED AT DETAIL DESIGN.
4. THESE DRAWINGS ARE TO SHOW DETAIL, INTENDED SIGNAGE SIZES AND ILLUMINATION STATUS ONLY AND ARE SUBJECT TO CHANGE ACCORDING TO TENANT'S REQUIREMENTS.
5. OTHER COMPLIANT SIGNAGE MAY BE USED THROUGHOUT SITE AS REQUIRED FOR SAFE VEHICLE MOVEMENT, DIRECTION, WARNING AND TRAFFIC GUIDANCE.

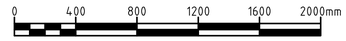
* INTERNALLY ILLUMINATED



S12 AIR & WATER STATION SIGNAGE



S13 ELECTRIC VEHICLE CHARGING STATION SIGNAGE
MOUNTED ON 2M HIGH POLE



SCALE 1:20

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	26.08.24	BF	DA ISSUE	SLM	PS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
PROPOSED SITE SIGNAGE ELEVATIONS

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
22.08.24	1:20	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA11	A

0 5 10 15 20 25m

SCALE 1:250

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:

1. DEVELOPMENT APPLICATION PURPOSE ONLY - NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES (INCLUDING LOCATION) ARE SUBJECT TO SURVEY.
3. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TFA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS. HOWEVER, TFA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT'S COMPLIANCE. IN THE CASE OF THIS DRAWING IS UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.
2. ENSURE ADEQUATE PROVISIONS ARE ALLOWED FOR IRRIGATION (BOTH WATER AND ELECTRICAL CONTROL) TO SITE. THIS INCLUDES UNDER CONCRETE PAVEMENTS TO REACH LANDSCAPE AREAS.
3. FINAL PLANT SELECTIONS AND PLANTING SETOUT TO BE CONFIRMED AT DETAIL DESIGN STAGE. SELECTIONS SHOWN ON THIS DRAWING IS A GUIDE ONLY.

AREA:

PROPOSED LANDSCAPING AREA: 723m²

LEGEND:

MULCHED GARDEN BEDS

GROUND COVER PLANTING

TREE & SHRUB PLANTS

EXISTING TREE TO BE RETAINED

PLANT PALETTE/SCHEDULE:

SYZYGUIM 'RESILIENCE'

LILLIPILLY
5.0m H x 3m W
200mm ☼ ◍ 50%

WESTRINGA FRUTICOSA

NATIVE ROSEMARY
1.5m H x 1.5m W
200mm ☼ ◍ 50%

LOMANDRA LONGIFOLIA

MAT RUSH
0.6m H x 0.6m W
140mm ☼ ◍ 50%

DIANELLA CAERULEA

LITTLE JESS
0.4m H x 0.4m W
140mm ☼ ◍ 50%

GREVILLEA JUNIPERINA

CARPET QUEEN
0.5m H x 2m W
200mm ☼ ◍ 50%

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	BF	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
LANDSCAPE
CONCEPT SITE PLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
22.08.24	1:250	A1

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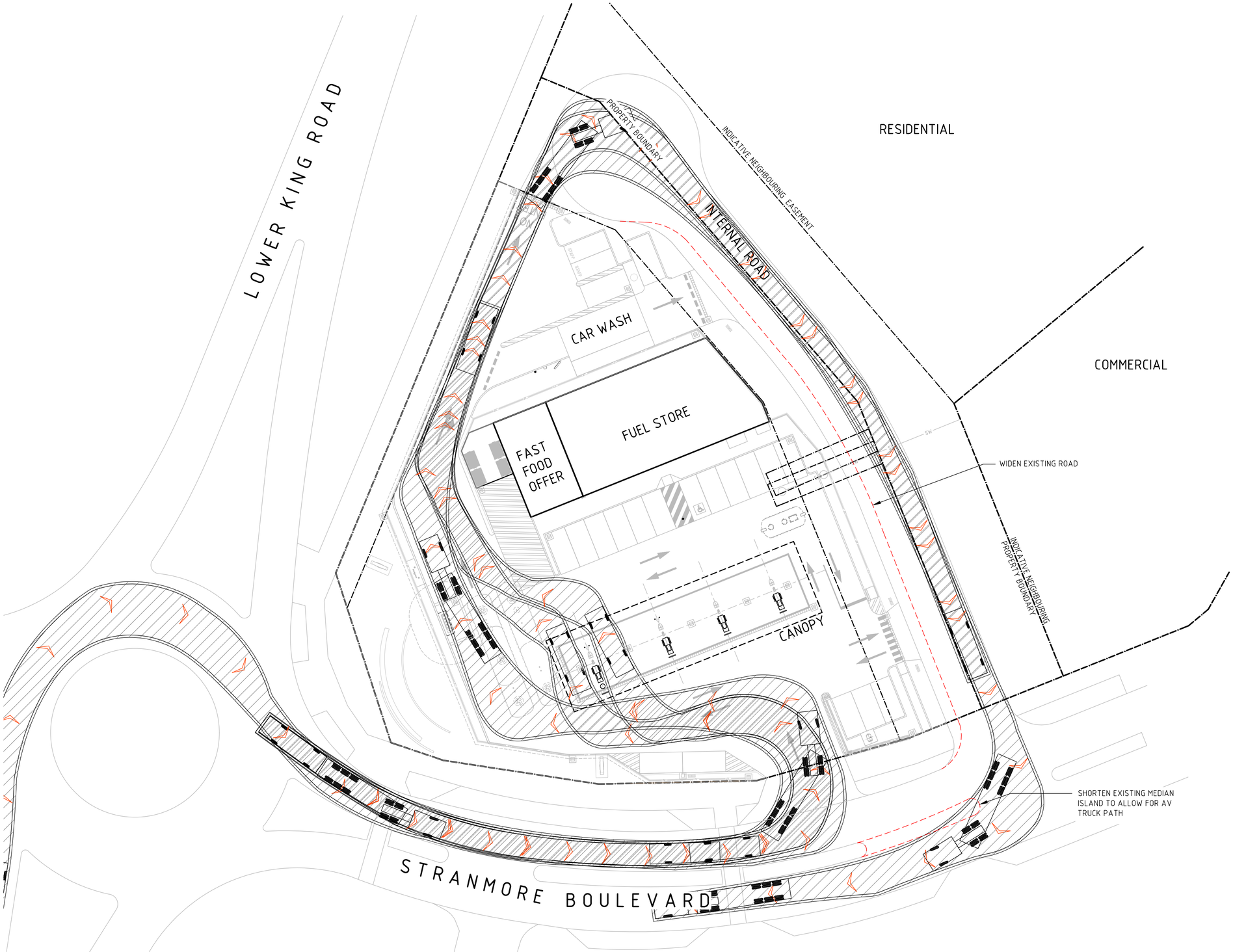
DRAWING NO	REV
24255-DA12	A



RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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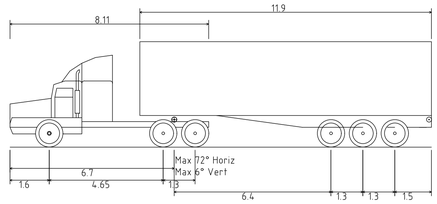
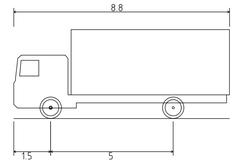


NTS

Single Artic (17.2 m) – Tri axel	
Overall Length	17.200m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.000m



NTS

MRV – Medium Rigid Vehicle	
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

0 5 10 15 20 25m

SCALE 1:250

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	22.05.24	CTD	PRELIMINARY FOR DISCUSSION	PDS	
B	03.06.24	CTD	AMENDS	PDS	TD
C	13.08.24	CTD	FOR INFORMATION	PDS	
D	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

SITE LAYOUT PLAN
VEHICLE SWEPT PATH
AV TANKER (17m) &
MRV (8m)

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
17.05.24	1:250	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

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24255-DA13	D

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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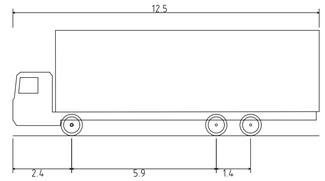

NTS

HRV – Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

0 5 10 15 20 25m

SCALE 1:250

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A	03.06.24	CTD	PRELIMINARY FOR DISCUSSION	PDS	TN
B	13.08.24	CTD	FOR INFORMATION	PDS	
C	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

SITE LAYOUT PLAN
VEHICLE SWEPT PATH
HRV (12.5m)

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
03.06.24	1:250	A1

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DRAWING NO	REV
24255-DA14	C

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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4. REFER TO DA12 FOR EXISTING AND PROPOSED LANDSCAPING.

SITE AREA / LEGEND

- PATHWAYS
- FENCE/ BALUSTRADE
- RETAINING WALL SPOON DRAIN (TOP OF WALL) & SUBSOIL DRAINAGE. WHOLLY CONTAINED WITHIN PROPERTY BOUNDARY.
- PEDESTRIAN ACCESS PATH FROM STRANMORE BOULEVARD TO STORE.
- GULLY PIT
- TRENCH DRAIN

0 5 10 15 20 25m

SCALE 1:250

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	05.03.25	CTD	RFA AMENDS	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

PROPOSED PEDESTRIAN SITE ACCESS PLAN

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
04.03.25	1:250	A1

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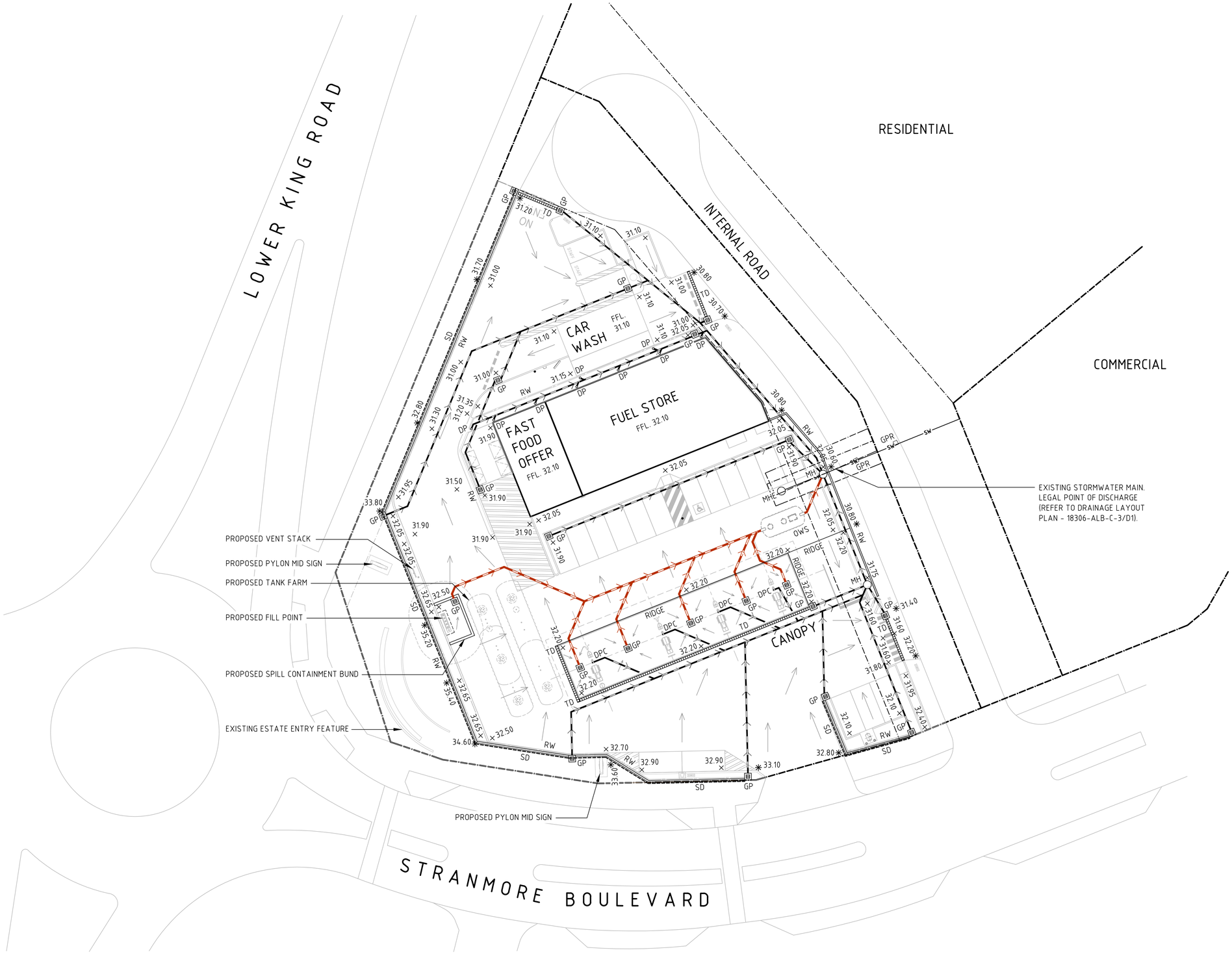
DRAWING NO	REV
24255-DA15	A



RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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LEGEND:

	PROPERTY BOUNDARY
SW	EXISTING STORMWATER MAIN
	PROPOSED STORMWARTER DRAIN (PVC-U)
	PROPOSED OILY WATER DRAIN (HDPE)
SD	PROPOSED RETAINING WALL SPOON DRAIN (TOP OF WALL) & SUBSOIL DRAINAGE. WHOLLY CONTAINED WITHIN PROPERTY BOUNDARY.
	PROPOSED SURFACE FLOW DIRECTION
FFL.	PROPOSED FINISHED FLOOR LEVEL
GPR	EXISTING INTERNAL ROAD GULLY PIT
GP	PROPOSED STORMWATER GULLY PIT
RW	PROPOSED RETAINING WALL
OWS	PROPOSED OILY WATER SEPARATOR
DP	PROPOSED DOWNPIPE
DPC	PROPOSED DOWNPIPE (WITHIN COLUMN)
TD	PROPOSED TRENCH DRAIN
MH	PROPOSED MAINTENANCE HOLE
MHE	EXISTING MAINTENANCE HOLE
× 6.25	PROPOSED SPOT HEIGHT
✳ 6.64	EXISTING SPOT HEIGHT

0 5 10 15 20 25m

SCALE 1:250

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A	23.08.24	MMC	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for RAHUL BATRA

DRAWING TITLE
SITE STORMWATER CONCEPT PLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
21.08.24	1:250	A1

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DRAWING NO	REV
24255-DA20	A

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

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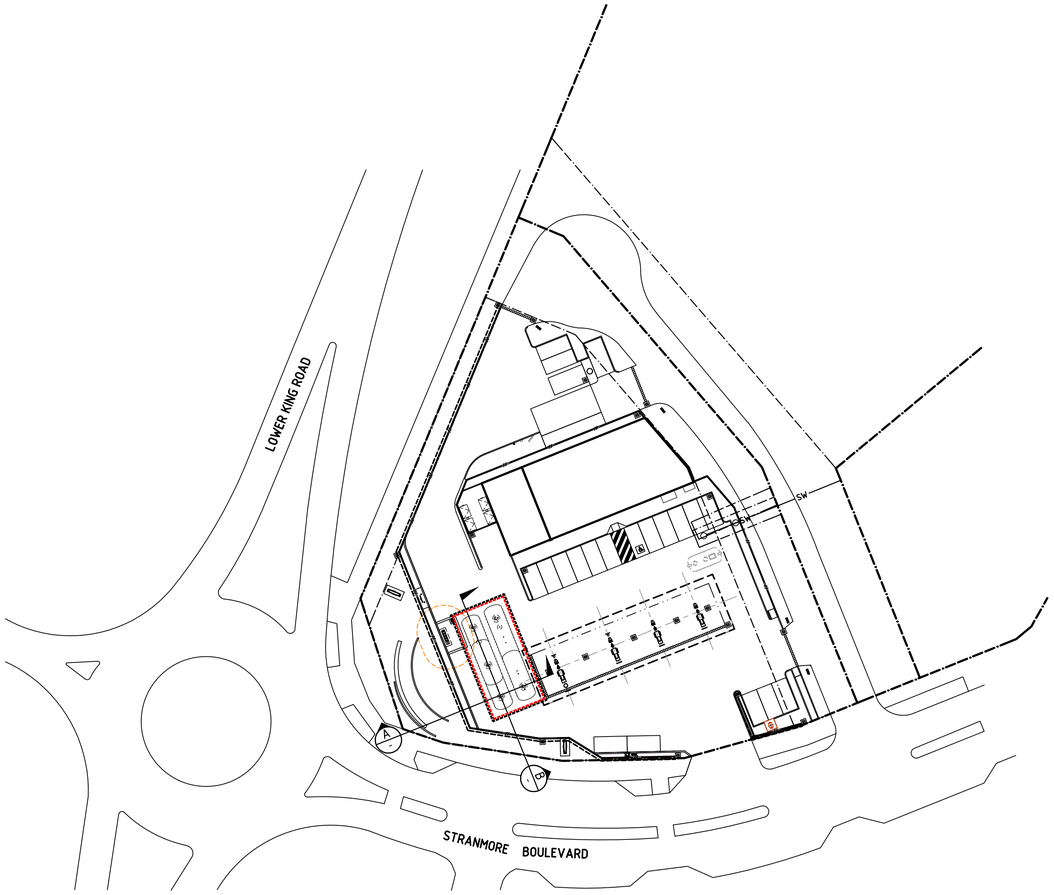
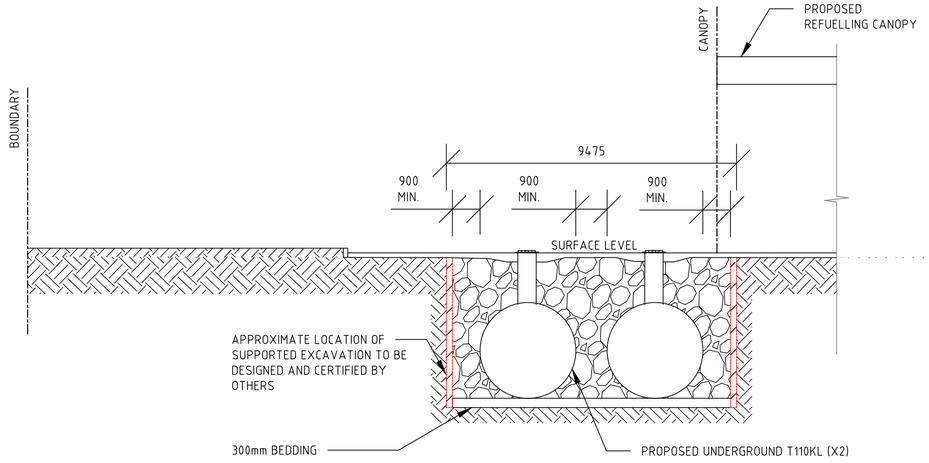
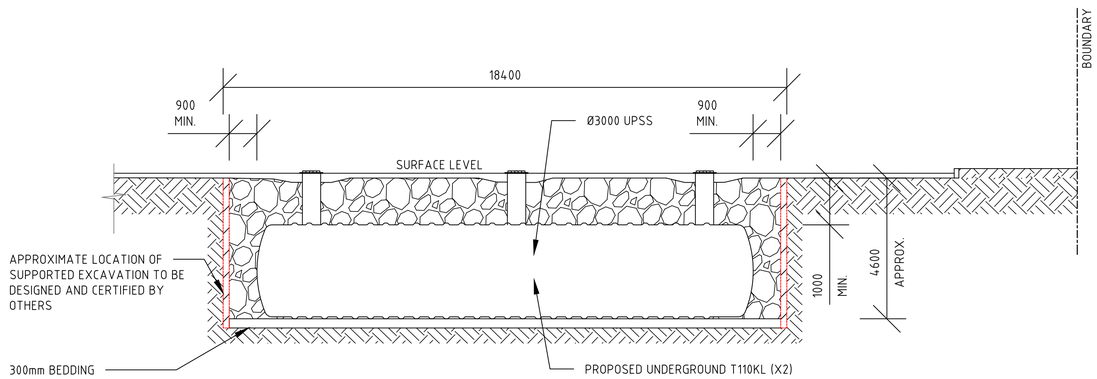
2. ROAD AND KERB FEATURES SHOWN ARE INDICATIVE ONLY AND MUST BE VERIFIED AT DETAILED DESIGN.
3. DESIGN OF EXCAVATION AND SUPPORT STRUCTURE TO BE DESIGNED BY OTHERS AND SUBJECT TO GEOTECH REPORT.





A SECTION
1 : 100



B SECTION
1 : 100

0 10 20 30 40 50m
SCALE 1:500

0 2 4 6 8 10m
SCALE 1:100

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REV	DATE	BY	DESCRIPTION	CHK	APP
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PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for RAHUL BATRA

DRAWING TITLE
TYPICAL UNDERGROUND FUEL TANK FARM - CROSS SECTION

STATUS
D.A. ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
21.08.24	AS SHOWN	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA21	A

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:

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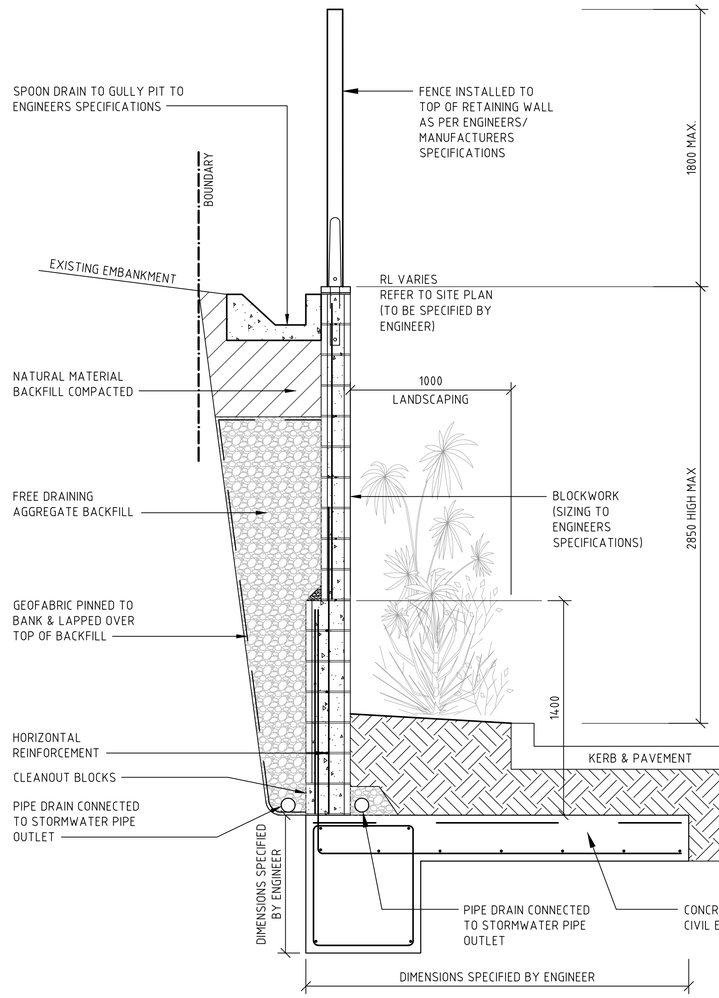
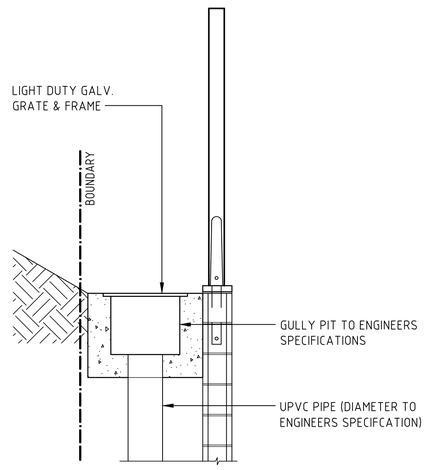
4. REFER TO DA12 FOR EXISTING AND PROPOSED LANDSCAPING.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & DETERMINE THE DEPTH OF THE EXISTING INFRASTRUCTURE PRIOR TO COMMENCING CONSTRUCTION WORKS.
6. CONCRETE SLEEPER WALLS TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.
7. RETAINING WALL, INCLUDING DRAINAGE (SURFACE, GULLY PITS, SUB-SOIL DRAINAGE) AND FOOTINGS TO BE WHOLLY CONTAINED WITHIN THE PROPERTY BOUNDARIES.
8. HEIGHT OF RETAINING WALL VARIES.



RETAINING WALL SCHEMATIC (TYPICAL)
NOT TO SCALE



GULLY PIT DETAIL
NOT TO SCALE

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TfA Project Group

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DRAWING ISSUE APPROVAL

NAME: DATE:
PROFESSIONAL QUALIFICATION:
SIGNATURE:

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.08.24	MMC	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for RAHUL BATRA

DRAWING TITLE
RETAINING WALL SECTION (TYPICAL)

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
23.08.24	NTS	A1

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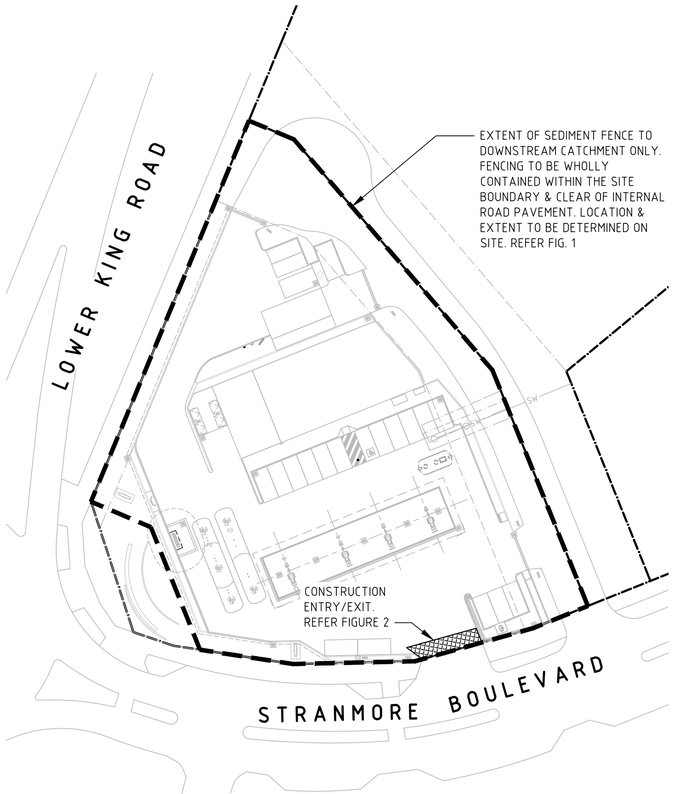
DRAWING NO	REV
24255-DA22	A



A SITE PLAN
1 : 500

SEDIMENT AND EROSION CONTROL NOTES:

GENERAL
1. ALL SEDIMENT & EROSION CONTROL MEASURES TO BE IN ACCORDANCE WITH LOCAL COUNCIL'S GUIDE LINES.

PRIOR TO THE COMMENCEMENT OF CONSTRUCTION
1. AVOID STRIPPING & EXCAVATING UNTIL READY TO BUILD.
2. INSTALL SEDIMENT FENCES.

BULK EARTHWORKS
1. AVOID STRIPPING & EXCAVATING UNTIL READY TO BUILD.
2. CONSTRUCTION OF AN ENTRY/EXIT POINT TO THE SITE SHALL BE MANAGED SO THAT SEDIMENT IS NOT TRACKED OFF THE SITE.
3. TOPSOIL SHALL BE STOCKPILED ON SITE FOR LATER USE.
4. WHERE PRACTICABLE MAINTAIN KERB VEGETATION IN A HEALTHY STATE DURING THE CONSTRUCTION PROCESS.
5. WHEN UP SLOPE WATER IS DIVERTED AROUND A WORK SITE IT SHALL BE DISCHARGED AS SHEET FLOW THROUGH AN UNDISTURBED AREA BESIDE THE WORKS.

SERVICES TRENCHES
1. TO AVOID UNNECESSARY SOIL EROSION, SERVICE TRENCHES SHOULD BE BACK FILLED, CAPPED AND COMPACTED TO A LEVEL AT LEAST 75-100mm ABOVE THE ADJOINING GROUND LEVEL.

BUILDING OPERATIONS
1. ERODABLE MATERIAL MISTAKENLY PLACED WITHIN THE ROAD RESERVE (INCLUDING ACCIDENTAL SPILLAGE AND TRACKING OF SUCH MATERIALS ONTO THE ROAD) THAT CANNOT BE PREVENTED THROUGH REASONABLE MEANS, MUST BE:
   (a) REMOVED IMMEDIATELY IF RAINFALL IS IMMINENT OR OCCURRING.
   (b) REMOVED PRIOR TO THE END OF THE DAY'S WORK IF RAINFALL IS NOT EXPECTED.
2. MATERIALS SHOULD BE SWEPT FROM THE ROAD, NOT WASHED DOWN THE GUTTER.
3. ALL SOLID WASTE SHALL BE STORED ON SITE IN SUCH A MANNER THAT IT IS PREVENTED FROM LEAVING THE SITE EITHER BY THE ACTION OF WIND OR WATER.
4. SMALLER MATERIALS, SUCH AS LITTER, SHOULD BE CONTAINED IN COVERED BINS OR LITTER TRAPS FORMED ON THREE SIDES BY A GEOTEXTILE WIND BREAK.
5. CONCRETE WASTE WASHED FROM TRUCKS AND MIXERS UNITS SHALL BE CONTAINED ON SITE AND SHALL NOT BE PLACED IN A POSITION WHERE IT COULD REASONABLY BE EXPECTED TO WASH FROM THE SITE AND HARM THE ENVIRONMENT.

SITE REHABILITATION
1. ALL GROUND DISTURBED BY THE CONSTRUCTION ACTIVITY SHOULD BE PROMPTLY AND PROGRESSIVELY STABILISED SO IT CAN NO LONGER ACT AS A SOURCE OF SEDIMENT.

STOCKPILES
1. STOCKPILES ARE NOT TO BE STORED ON THE FOOTPATH OR THE ROAD RESERVE, UNLESS APPROVED BY COUNCIL.
2. WHERE NECESSARY STOCKPILE LOSSES CAN BE MINIMISED WITH THE USE OF COVERS.
3. ALL STOCKPILES AND BUILDING MATERIAL SHOULD BE LOCATED WITHIN THE SEDIMENT CONTROL ZONE.
4. TO MINIMISE EROSION AND THE LOSS OF SAND AND SOIL, STOCKPILES SHALL NOT BE LOCATED WITHIN AN OVERLAND FLOW PATH. IF IT IS IMPRACTICAL TO AVOID STORMWATER RUNOFF BEING DIRECTED TO A STOCKPILE, THEN A PERIMETER BANK SHALL BE CONSTRUCTED UP SLOPE OF THE STOCKPILE TO DIRECT RUNOFF IN A CONTROLLED MANNER AROUND THE STOCKPILE.

SEDIMENT BARRIERS

SEDIMENT FENCE
- INSTALL SEDIMENT FENCE(S) ALONG THE LOW SIDE OF THE SITE, AND IDEALLY ALONG A LINE OF CONSTANT LAND LEVEL TO PREVENT THE CONCENTRATION OF STORMWATER RUNOFF.
  IN AREAS WHERE IT IS EITHER UNDESIRABLE OR IMPRACTICAL TO BURY THE LOWER EDGE OF THE SEDIMENT FENCE, THE LOWER 200mm (MIN) PORTION OF THE FABRIC SHOULD BE PLACED ON THE GROUND UP SLOPE OF THE FENCE AND BURIED UNDER A 100mm (MIN) LAYER OF AGGREGATE.
  SEDIMENT FENCES ON BUILDING SITES CAN BE STAPLED TO APPROXIMATELY 40mm SQUARE HARDWOOD POSTS OR WIRE TIED TO STEEL POSTS.

FIELD INLET GULLIES
- SEDIMENT CONTROLS FOR STORMWATER INLETS LOCATED WITHIN THE PROPERTY BOUNDARIES MAY CONSIST OF GEOTEXTILE FABRIC PLACED EITHER DIRECTLY OVER THE GRATED INLET OR AROUND THE INLET SUPPORTED BY A TIMBER FRAME. FIELD INLET PROTECTION IS NECESSARY WHERE INLETS DRAIN AREAS OF BARE AND UNPROTECTED SOIL. DURING STORMS, PONDING SHALL BE ALLOWED TO OCCUR AROUND THE STORMWATER INLET TO ASSIST IN THE SETTLING OUT OF SEDIMENTS.

PAVEMENT INLET GULLY
- A ROADSIDE INLET BARRIER IS TO BE INSTALLED, SO THAT IT SHALL NOT BE ALLOWED TO FULLY BLOCK THE INLET STRUCTURE.
  ON A HILLSIDE, SEDIMENT BARRIERS MAY CONSIST OF A TEMPORARY DAM CONSTRUCTED FROM SAND AND GRAVEL BAGS AT LEAST 4 METRES UP SLOPE FROM THE GULLY INLET.

MAINTENANCE
1. SEDIMENT FENCES SHOULD BE REPLACED IF THE FABRIC IS RIPPED OR OTHERWISE DAMAGED. THE MAINTENANCE OF THE SEDIMENT FENCES INCLUDES THE REMOVAL OF SEDIMENT DEPOSITED UP SLOPE OF THE FENCE AND RETRENCHING THE FABRIC WHEN THE FENCE IS 25% FULL.
2. FOLLOWING STORM EVENTS, THE ROAD RESERVE AND ALL SEDIMENT BARRIERS SHALL BE INSPECTED AND ANY EXCESSIVE SEDIMENT RESIDUE SHALL BE APPROPRIATELY REMOVED.

RPD:
LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

N

NOTES:
1. DEVELOPMENT APPLICATION PURPOSE ONLY – NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES (INCLUDING LOCATION) ARE SUBJECT TO SURVEY.
3. SITE LAYOUT SUBJECT TO IDENTIFICATION SURVEY AT DETAIL DESIGN STAGE.
4. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TFA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS. HOWEVER, TFA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT'S COMPLIANCE. IN THE CASE OF THIS DRAWING IS UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & DETERMINE THE DEPTH OF THE EXISTING INFRASTRUCTURE PRIOR TO COMMENCING CONSTRUCTION WORKS.
6. BUNDING TO BE POSITIONED AS REQUIRED TO SUIT WORKING & COUNCIL REQUIREMENTS SO AS NOT TO CAUSE NUISANCE & POLLUTION TO COUNCIL FOOTWAYS & ASSOCIATED AREAS.
7. SECURE & CLEAN ALL WORK AREAS AT COMPLETION OF EACH DAY.
8. SITE ACCESS POINTS ARE TO BE CONTROLLED BY THE BUILDER WHO IS TO ENSURE TEMPORARY REMOVAL & REPLACEMENT OF SILTATION CONTROL METHODS AREA SUFFICIENT TO ENSURE COMPLIANCE WITH THESE CONTROLS.
9. SILT FENCE SHALL NOT BE REMOVED UNTIL SITE HAS BEEN PAVED & SURFACED. BUNDWALLS SHALL BE LOCATED AROUND ALL PITS & MAINTAINED UNTIL THE CATCHMENT AREA HAS BEEN PAVED.
10. KERB DRAIN EXCLUDER SHALL INCORPORATE TRAFFIC CONTROL BARRICADES IN ACCORDANCE WITH AS1742.3, & SHALL NOT BE PLACED UNTIL WORKS ARE BEING CARRIED OUT ON THE FOOTPATH AREA, OR AS OTHERWISE DIRECTED BY COUNCIL.
11. ALL SEDIMENT TRAPS, EXCLUDERS, BUNDWALLS SHALL BE INSPECTED & CLEANED AFTER EACH STORM EVENT. DAMAGED OR CLOGGED BUNDING ARE TO BE REMOVED AND REPLACED.
12. THE BUILDER SHALL CARRY OUT ANY ADDITIONAL WORKS DEEMED NECESSARY AND DIRECTED BY COUNCIL TO BE CARRIED OUT.
13. THE SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED PRIOR TO ANY WORKS BEING CARRIED OUT ON SITE.

LEGEND:

AREA DEFINING EXTENT OF WORKS TO HAVE SEDIMENT AND EROSION CONTROLS INSTALLED

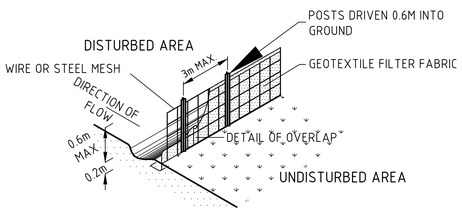


FIG. 1. – SEDIMENT FENCE

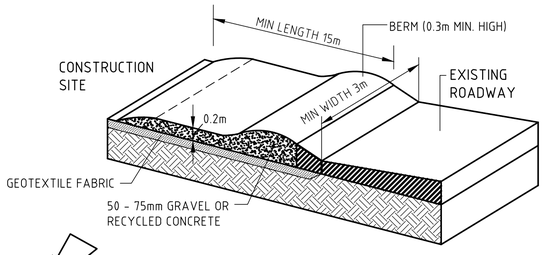
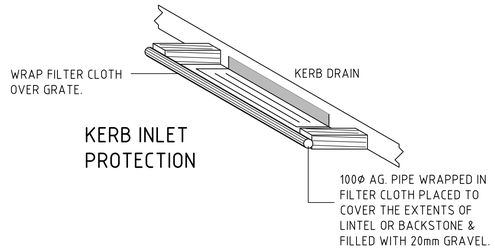


FIG. 2. – CONSTRUCTION EXIT/ENTRY

MAINTENANCE:
1. THE ENTRANCE SHOULD BE MAINTAINED SO THAT IT PREVENTS TYRES FROM TRACKING.
2. DRESSING WITH ADDITIONAL AGGREGATE IF REQUIRED.
3. REGULARLY REMOVE SEDIMENT FROM ROADWAY.



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REV	DATE	BY	DESCRIPTION	CHK	APP
A	26.08.24	MMC	DA ISSUE	SLM	PDS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for RAHUL BATRA

DRAWING TITLE
SEDIMENT & EROSION CONTROL PLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
26.08.24	1:500	A1

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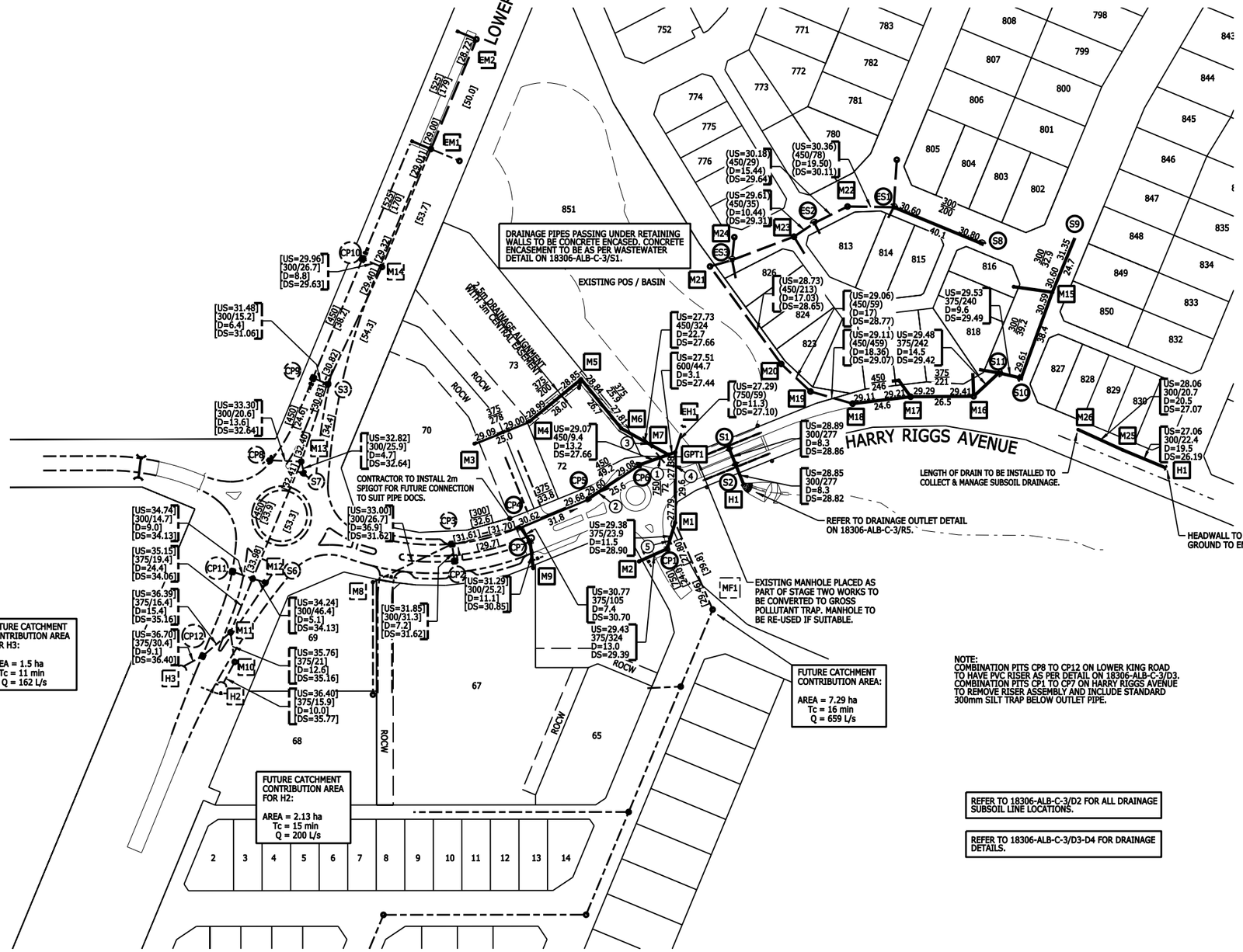
DRAWING NO	REV
24255-DA23	A

REV.	DESCRIPTION	DRAWN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	RFF	DAE	GKB 16 / 12 / 09
0	APPROVED FOR CONSTRUCTION - MINIMUM PIPE SIZE 300 DIA IN ROAD RESERVES, STAGE BOUNDARY REVISED - PIPES & DOCS CHANGED TO FUTURE AS NECESSARY	RFF	RFF	GKB 05 / 03 / 10
1	MINOR PIPE DOCUMENTATION AMENDMENTS	RFF	RFF	GKB 17 / 03 / 10



PLAN
SCALE 1:1000 @ A1

TABLE 1

POINT NUMBER	SEWER PIPE Ø	DRAINAGE PIPE Ø	SIL (m, AHD)	DIL (m, AHD)	CLEAR (mm)
1	225	450	27.14	28.07	700
2	225	450	28.34	29.52	950
3	225	450	27.20	27.69	260
4	225	750	27.08	27.46	150
5	225	375	27.51	29.22	1710

NOTES

1. GENERAL

1.1. LEVELS ARE REDUCED FROM A.H.D.
1.2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL DRAWINGS 18306-ALB-C-3 AND THE SPECIFICATION.
1.3. THE CONTRACTOR SHALL LIMIT THE MOVEMENT OF EQUIPMENT AND MANPOWER TO THE MINIMUM AREA NECESSARY AND PROTECT ALL VEGETATION ON SITE.

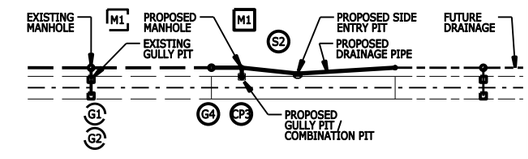
2. STORMWATER DRAINAGE

2.1. ALL DRAINAGE PIPES IN THE ROAD RESERVE SHALL BE REINFORCED CONCRETE CLASS 2 AND ALL LOT DRAINAGE AND Ø150 PIPEWORK SHALL BE PVC CLASS HD STORMWATER.
2.2. PIPE ALIGNMENT SHALL BE 2.0m INSIDE LOTS AND 0.9m BEHIND THE FACE OF KERB UNLESS OTHERWISE INDICATED. ALIGNMENTS OF MH'S AND SEP'S BEHIND KERB WILL VARY DEPENDING ON THE SIZE OF THE LINER BEING USED. THESE SHALL BE SET OUT APPROPRIATELY.
2.3. MANHOLE AND GULLY PITS SHALL BE LOCATED AT THE POSITIONS SHOWN IRRESPECTIVE OF THE PIPE LENGTHS SHOWN. WHERE PROPOSED MANHOLES ARE WITHIN PAVEMENTS, SURROUNDING ROAD BASECOURSE IS TO BE CEMENT STABILISED.
2.4. FOR CONSTRUCTION PURPOSES THE TENDERER SHALL MAKE HIS OWN ASSESSMENT OF GROUND WATER AND ROCKS AND THEIR LIKELY AFFECT ON THE WORKS AND MAKE ALL DUE ALLOWANCE IN THE LUMP SUM TENDER.
2.5. ALL UNDOCUMENTED DRAINAGE PIPES CONNECTING A PROPOSED Ø900 HOUSE PIT TO BE Ø150 PVC WITH A GRADE OF 1:150 INSTALLED OBVERT TO OBVERT.
2.6. ALL UNDOCUMENTED ROAD DRAINAGE TO BE Ø300 RCP AND LAID AT 1:180 GRADE WITH A MINIMUM COVER OF 600mm INSTALLED OBVERT TO OBVERT.
2.7. ALL UNDOCUMENTED SIDE ENTRY PIT CONNECTIONS ACROSS ROADS TO BE Ø300 RC AT 1:180 GRADE INSTALLED AT OBVERT OF UPSTREAM PIPE.
2.8. CONTRACTOR TO ENSURE MINIMUM OF 300mm CLEARANCE BETWEEN BASE OF RETAINING WALLS AND TOP OF PIPE, WHERE DRAINAGE PIPE INTERSECTS.

3. SERVICE INSTALLATION

3.1. CONTRACTOR TO LOCATE EXISTING SERVICES AND PROTECT DURING CONSTRUCTION. IF A CLASH OCCURS THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY.

NOTATION



LEGEND

——S——	PROPOSED GRAVITY SEWER
	DIRECTION OF FLOW
—1	SIL AND DIL TABLE POINT NUMBER, REFER TO TABLE 1.
	PROPOSED ROCLA PRECAST HEADWALL OR SIMILAR APPROVED
•	Ø900 HOUSE CONNECTION PIT (REFER DETAILS ON 18306-ALB-C-2/D2, D5 & D6)
	PROPOSED 3m COUNCIL EASEMENT
LP	LOW POINT ALONG CENTRELINE
HP	HIGH POINT ALONG CENTRELINE

SCALE BAR 1:1000 @ ORIGINAL SHEET SIZE A1

CITY OF Albany
WORKS AND SERVICES
FILE NUMBER: ——— JOB NUMBER: ———
VERIFIED: MANAGER CITY ASSETS
APPROVED: DIRECTOR WORKS & SERVICES

WOOD & GRIEVE ENGINEERS
Wood & Grieve Pty Ltd
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ALBANY
PERTH
MELBOURNE
SYDNEY
BRISBANE
BUSSELTON

CLIENT: OYSTER HARBOUR JOINT VENTURE
PROJECT: OYSTER HARBOUR STAGE 3
TITLE: DRAINAGE LAYOUT PLAN

DESIGNED:	G.BASDEN / R.FIANDER		DRAWN:	R.FIANDER	
VERIFIED:	G.BASDEN	16 / 12 / 09	WAPC No.: 134711	DATUM: A.H.D.	
APPROVED FOR TENDER:	G.BASDEN	05 / 03 / 10	DRAWING No.	18306-ALB-C-3 / D1	REV. 1
APPROVED FOR CONSTRUCTION:	G.BASDEN	05 / 03 / 10			

INDICATIVE RELOCATED BUS STOP MAP

Figure 1: Aerial view of site and existing / indicative relocated bus stop locations (Source: Nearmap, 2025)

Figure 2: View of existing bus stop location from Stranmore Bvd (Source: Google, 2025)

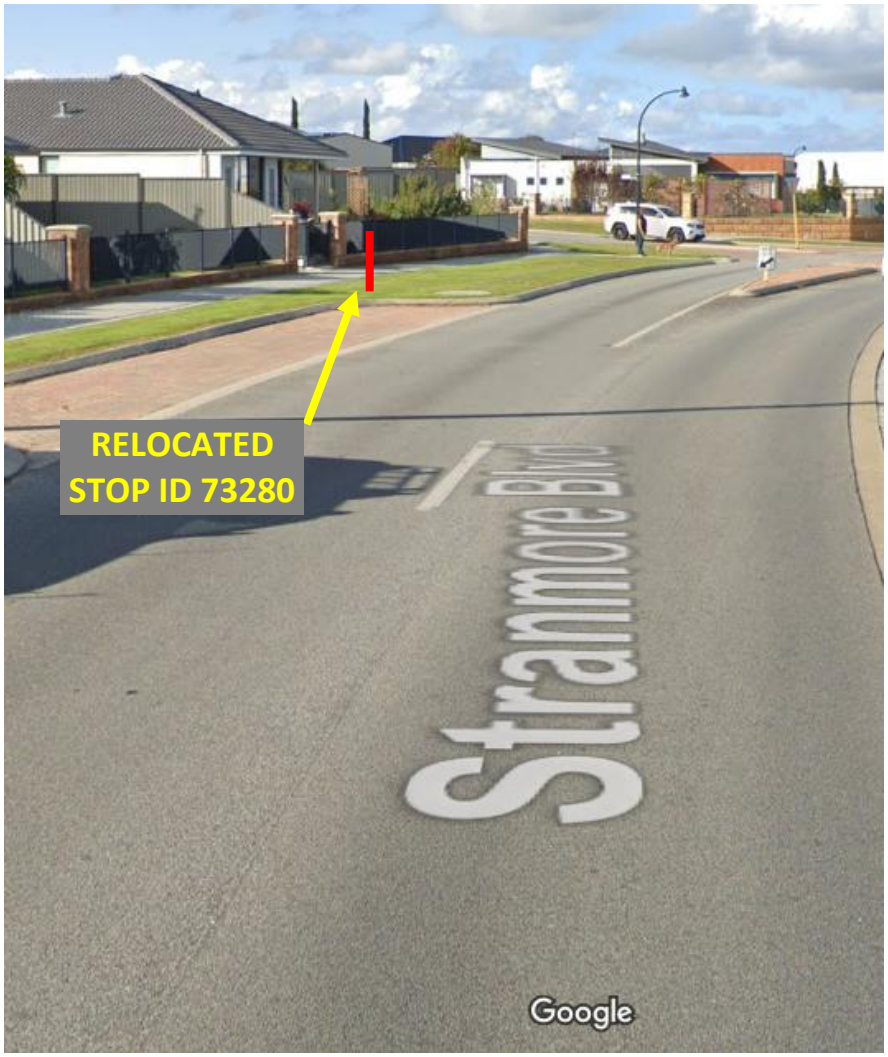

Figure 3: View of indicative relocated bus stop from Stranmore Bvd (Source: Google, 2025)

APPENDIX D – WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN

BATRA BROTHERS – BAYONET HEAD

WASTE MANAGEMENT PLAN TO SUPPORT A COMMERCIAL DEVELOPMENT

TFA Project Group

CREATE · PLAN · DELIVER

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

WASTE MANAGEMENT PLAN

Batra Brothers – Bayonet Head

Waste Management Plan to Support a Commercial Development

CLIENT: Batra Brothers Pty Ltd (Batra Brothers)

ADDRESS: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330

TFA REFERENCE: 24255

TFA CONTACT: Damien Mackay

Document Control

REVISION	DATE	PREPARED BY	REVIEWED BY	COMMENTS
A	28 Aug 2024	D. Mackay	A. Coleman	Final

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FIGURES

TABLES

1.0 INTRODUCTION

TFA Project Group (TFA) was engaged by Batra Brothers Pty Ltd (the Applicant) to prepare a conceptual waste management plan to support a commercial development including service station, fast food outlet tenant and ancillary motor vehicle wash at Lot 70 Stranmore Boulevard, Bayonet Head WA 6330, described as Lot 70 on Deposited Plan 406170. The plan has been prepared to achieve compliance with the LPP 1.9 Waste Management Policy under the *City of Albany Local Planning Scheme No 2*.

A private contractor will service the proposed development, directly from the bin storage area depicted on the service vehicle swept path plan. The private contractors' waste collection vehicle (a 12.5m heavy ridge vehicle) will enter and exit the proposed development in forward gear entering from Stranmore Boulevard and exiting onto Stranmore Boulevard via the internal road.

This report, which is submitted in support of the application, provides details of the proposed development and methods for addressing the solid waste management methods associated with the development. The report is accompanied by the following supporting documentation:

- **Appendix A** Service Vehicle Swept Path, prepared by TFA

To assist in Council's review of the waste management, this report covers the following matters:

- **Section 2:** A description of the expected waste generated by the development;
- **Section 3:** A description of the method of waste storage for the development; and
- **Section 4:** A description of the waste servicing method for the development.

2.0 WASTE AND RECYCLING GENERATION

2.1 Tenancy and Waste Types

The proposal is for a new commercial development including a service station use comprising a refuelling canopy and convenience pay-point shop, a fast food outlet tenant (no drive-through) and an ancillary automatic motor vehicle wash. A summary of the proposed uses and expected waste generation of the premises is detailed in Table 1 below.

Table 1: Tenancy and Anticipated Waste

Tenancy/Use	Floor Area	Waste Generated
Service Station	300 m^2	General, recycling, hydrocarbons oily water (under canopy)
Fast Food Outlet	90 m^2	General, recycling, grease & cooking oil waste
Ancillary Motor Vehicle Wash	71 m^2	General (vacuum bays)

2.2 Waste Generation Volumes

Table 2 below provides estimated waste generation quantities for the proposed use forming part of the development application. These estimates are calculated with reference to LPP 1.9 Waste Management Policy. It is noted that a service station use is not explicitly outlined within the waste policy and given the nature of the use including pre-package food, it is considered that the waste generation of the service station use is largely consistent with that of a 'Takeaway' premises type as opposed to 'Shop more than 100m^2 floor area'. It is further noted that the motor vehicle wash use is not clearly defined under the waste policy and considered to be more aligned as an ancillary component to the service station use with only minor waste generated from the vacuum bays.

In lieu of the recycling waste generation information not being available for the takeaway premises type under the waste policy, the general waste generation rates were used for estimating purposes.

Table 2: Estimated Waste Generation

Tenancy/Use	Floor Area	Premises Type	General Waste Generation	Recycling Waste Generation
Service Station	300 m^2	Takeaway (pre-package)	*80L/100m^2/Day* **240L/Day**	*80L/100m^2/Day* **240L/Day**
Fast Food Outlet	90 m^2	Takeaway	*80L/100m^2/Day* **72L/Day**	*80L/100m^2/Day* **72L/Day**
Motor Vehicle Wash	71 m^2	Ancillary to Service Station	*Information not available*	*Information not available*

2.2.1 Hydrocarbon waste

Hydrocarbon waste generated on the site is largely associated with the expected operation of the service station premises. The hydrocarbon generated on the site will largely be managed through the stormwater management system (class 1 oily water separator) proposed on the site. Further details are provided in the conceptual stormwater management plan prepared for this development application.

2.2.2 Grease trap waste

Cooking oil and grease from the fast food outlet tenant will be appropriately managed onsite through the use of grease trap, reducing the amount of substances flowing into the existing wastewater system where they may cause blockages. Cooking oil will be appropriately recycled onsite via a large container for storing the oil before collection.

3.0 WASTE STORAGE

3.1 Waste Bin types

The potential waste generation for the site has been assessed against the LPP 1.9 Waste Management Policy to determine the weekly waste generation and the minimum waste capacity to service the waste demand of the proposed service station (with ancillary motor vehicle wash) and fast food outlet. As outlined in Table 3 below, the waste generation is determined to be sufficiently serviced through the use of two (2) x 1,100L bulk bins for general waste and two (2) x 1,100L bulk bins recycling within the shared bin storage area.

Table 3: Bin and Servicing Requirements

Uses	Waste Type	Weekly Waste Generation	Bin Type	Bins Required	Servicing Frequency
Service Station (incl. ancillary motor vehicle wash)	General Waste	1680L	Bulk Bin – 1,100L	1	1 / week
	Recycling	1680L	Bulk bin – 1,100L	1	1 / week
Fast Food Outlet	General Waste	504L	Bulk Bin – 1,100L	1	1 / week
	Recycling	504L	Bulk bin – 1,100L	1	1 / week

3.2 Waste Storage Point

To appropriately service the subject site, the proposed development is provided with a shared bin store within the proposed service yard, which is connected to the proposed building and located directly adjacent to the loading bay. The waste storage area is indicated in Figure 1 below (outlined in red) and the provided drawings package.

Figure 1: Proposed Site Plan (Source: TFA)

The proposed waste storage area is currently indicated as approximately 32m^2 in area, comprises dimensions of approximately 3.3m x 4.6m. In accordance with the LPP 1.9 Waste Management Policy, the 1,110L bulk bin comprises dimensions of 1.245m x 1.37m, of which four (4) of these bins are considered to be capable of being housed within the bin store.

The waste store is designed to comprises a built form that is consistent with the proposed building. It is setback approximately 8.7m and 33.3m from the Lower King Road and Stranmore Boulevard frontages respectfully, within an enclosed facility, behind the proposed landscaping, minimising visibility from the public view.

3.3 Wash Down Facilities

The waste storage point will be provided with wash-down facilities generally in accordance with the LPP 1.9 Waste Management Policy for the City of Albany. Notably, the waste storage areas will be provided with the following facilities but not limited to:

- Provided with a hosecock;
- Constructed of a solid base, with appropriate grading to fall towards gulley pits;
- Gulley pit to be connected to the sewer in accordance with trade waste requirements; and
- Storage area will be rooved to prevent stormwater access.

4.0 WASTE COLLECTION/SERVICING DETAILS

4.1 General Waste/Recycling

4.1.1 Collection Frequency

As identified in Table 3 of this report, the proposed development is to be provided with a waste and recycling storage capacity to support a collection of once per week. It is understood that waste collection will be carried out by a private contractor.

4.1.2 Service Vehicle and Access

Waste collection within the site is to be generally supported within the dedicated loading bay located adjacent to the waste storage point. Waste receptacles will be able to be temporarily removed from the storage point to be temporarily located within the loading area, as to permit collection.

A swept path for a 12.5m heavy rigid vehicle has been provided within **Appendix A** of this report.

5.0 CONCLUSION

TFA Project Group (TFA) was engaged by Batra Brothers Pty Ltd (the Applicant) to prepare a conceptual waste management plan to support a commercial development including service station, fast food outlet tenant and ancillary motor vehicle wash at Lot 70 Stranmore Boulevard, Bayonet Head WA 6330, described as Lot 70 on Deposited Plan 406170. The plan has been prepared to achieve compliance with the LPP 1.9 Waste Management Policy under the City of Albany Local Planning Scheme No 2.

A private contractor will service the proposed development, directly from the bin storage area depicted on the service vehicle swept path plan. The private contractors' waste collection vehicle (a 12.5m heavy ridge vehicle) will enter and exit the proposed development in forward gear entering from Stranmore Boulevard and exiting onto Stranmore Boulevard via the internal road.

As is demonstrated by the report, the proposed development is determined to achieve sufficient waste management outcome to enable the proper and efficient servicing of the proposed development.

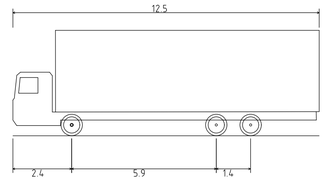
APPENDIX A – SERVICE VEHICLE SWEPT PATH

RPD:

LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:

1. DEVELOPMENT APPLICATION PURPOSE ONLY – NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES (INCLUDING LOCATION) ARE SUBJECT TO SURVEY.
3. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TFA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS. HOWEVER, TFA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT'S COMPLIANCE. IN THE CASE OF THIS DRAWING IS UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.



NTS

HRV – Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

0 5 10 15 20 25m

SCALE 1:250

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TfA Project Group

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DRAWING ISSUE APPROVAL

NAME: DATE:

PROFESSIONAL QUALIFICATION:

SIGNATURE:

REV	DATE	BY	DESCRIPTION	CHK	APP
A	03.06.24	CTD	PRELIMINARY FOR DISCUSSION	PDS	TN
B	13.08.24	CTD	FOR INFORMATION	PDS	
C	23.08.24	CTD	DA ISSUE	SLM	PDS

PROJECT DETAILS

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE

SITE LAYOUT PLAN
VEHICLE SWEPT PATH
HRV (12.5m)

STATUS

DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
03.06.24	1:250	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA14	C

RISK ASSESSMENT

Persons involved in this risk assessment
TFA Project Group – Tien Do

1. SITE DETAILS

Landowner name: Batra Brothers Pty Ltd	
Site address: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	
Property description Lot 70 on Deposited Plan 406170	

2. APPLICATION DETAILS

Applicant name: Batra Brothers Pty Ltd	**Development application no.** EF24331238 – A233059 – P2240360
Site address: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	
Proposed description Development Application for Proposed Service Station, Motor Vehicle Wash & Fast Food Outlet P2240360	**Description of dangerous goods storage or handling system** Two (2) x 90,000L underground double wall fiberglass tanks: • 1 x 90,000L multi-compartment storing Petrol, Diesel, and Premium Petrol • 1 x 90kL single compartment storing Petrol One (1) x LPG Cylinder exchange cage storing up to 528L

3. DG HAZARD IDENTIFICATION

3.1 Product details

Product Name	Diesel	Petrol (CTX 91/ 95/ 98)	Liquefied Petroleum Gas (LPG)
Manufacturer	TBC	TBC	TBC
Active constituents	Gas Oils	Gasoline	Petroleum Product > 99% Ethyl Mercaptan <0.1%
Physical state	Liquid	Liquid	Gas
Physical appearance, odour, other characteristics	Varies depending on specification Petroleum Odor	Varies depending on specification Petroleum Odor	Colourless LPG Odorless Mercaptan Rotten Cabbage Odur

3.2 Details of dangerous goods storage or handling

UN No.	Class or Division	Subsidiary hazard	Packing Group	Name of dangerous good	Indicative Quantity (kL)
1203	3	-	II	Petrol	89.1
1203	3	-	II	Petrol	23.1
1203	3	-	II	Petrol	23.1
-	CL	-	-	Diesel (Combustible Liquid)	43.3
1075	2.1	-	-	LP Gas	0.528

3.3 Overview of DG hazards arising from property

Diesel – HAZARDS IDENTIFICATION	**Petrol – HAZARDS IDENTIFICATION**	**LPG – HAZARDS IDENTIFICATION**
CLASSIFICATION (GHS) • Flammable liquid: Category 4 • Acute inhalation toxicant: Category 4. • Aspiration toxicant: Category 1. • Carcinogen: Category 1B. • Skin irritation: Category 2. • Target organ toxicant (central nervous system): Category 3. • Target organ toxicant (repeated exposure): Category 2. • Acute aquatic toxicant: Category 2. • Chronic aquatic toxicant: Category 2. Signal Word: Danger	CLASSIFICATION (GHS) • Flammable liquid: Category 2 • Aspiration toxicant: Category 1. • Carcinogen: Category 2 • Reproductive toxicant (developmental): Category 2. • Skin irritation: Category 2. • Target organ toxicant (central nervous system): Category 3. • Acute aquatic toxicant: Category 2. • Chronic aquatic toxicant: Category 2. Signal Word: Danger	CLASSIFICATION (GHS) • Flammable gas: Category 1 • Gas under pressure: Liquefied gas. • Target organ toxicant (central nervous system): Category 3. Signal Word: Danger

3.4 Details of Australian Standards and Code of Practice

NUMBER	TITLE OF MANDATORY CODES OF PRACTICE	EDITION	APPLIED? (Y/N)
Australian Standard			
AS 4897	The design, installation, and operation of underground petroleum storage systems	2008	Y

NUMBER	TITLE OF APPROVED CODES OF PRACTICE	EDITION	APPLIED? (Y/N)
Australian or Australian/New Zealand Standard			
AS/NZS 1596	The storage and handling of LP Gas	2014	Y
AS 1940	The storage and handling of flammable and combustible liquids	2017	Y

4. DEMONSTRATION OF COMPLIANCE AGAINST DANGEROUS GOODS SAFETY (STORAGE AND HANDLING OF NON-EXPLOSIVES) REGULATIONS 2007

RISK CONTROL MEASURE	COMPLIES?	DESCRIPTION AND REFERENCE
Spill containment [r. 51]	Yes	The storage tanks are underground and made of double-walled fiberglass. They will be constructed and installed according to the requirements of AS1940 and AS4897. The fill line and product lines to be underground and made of double-walled HDPE piping. The aboveground fuel system piping is vent pipes that will be welded and made of galvanized steel. The underground Atlan Spillceptor Stormwater and Oily Water Class 1 Separator system will be connected to the forecourt and tanker fill point drainage sumps. Clean and treated water will be discharge to the site's lawful point of discharge. The tanker fill points are designed to locate in belowground fill boxes with watertight chambers, galvanized steel fittings, and inner spill sump boxes. The sump is fitted with a drain (Fuel Plunger Recovery Valve) back to the fill line. The areas around the tank fill point and the tanker hose connection point are impervious (concrete hardstand) to the product. The tank fill point area is graded to drainage sump connected to the oily water separator system. The vehicle refuelling area is designed to contain the spill, and runoff is directed to the forecourt drainage sump, which is connected to the oily water separator system. LPG exchange cylinders to be stored in an aboveground purpose-built cage away from the forecourt area.
Segregation of dangerous goods [r. 52]	Yes	On site, incompatible DGs will be separated in accordance with applicable standard. Only class 3, 2.1 and CL will be stored on this site. The Petrol & Combustible liquid will be stored in underground double walled multi-compartment tanks. The LPG exchange cylinders will be kept in a purpose-built cage, which will be separated by 20m from the nearest petrol/diesel dispensers. The requirement for separation distance is 1.5 m.

RISK CONTROL MEASURE	COMPLIES?	DESCRIPTION AND REFERENCE
Stability [r. 53]	Yes	All dangerous goods (DG) stored on the proposed site will be in a stable condition during normal operating conditions. The site has been designed in accordance with AS 4897 and AS 1940 to monitor and maintain it, ensuring that uncontrolled dangerous reactions do not occur. The proposed DGs will not require stabilizing ingredients and temperature control.
Protection from impact [r. 54]	Yes	To ensure the safety of fuel dispensers, bollards will be installed on both sides of each dispenser to protect them from any potential impacts. The fuel tanks will be placed underground, and the fill and dip points will have trafficable covers installed to protect them from any vehicle impact. All fill and pressure system piping will be placed underground. The vent stack will be protected by bollards and kerb and will be located away from the vehicle path. Additionally, the LPG cylinders will be kept in a cage that is located away from traffic and will be protected by bollards and kerb.
Transferring dangerous goods [r. 55]	Yes	The transfer hoses and fittings used at each dispenser for vehicle refuelling to be designed, inspected, and maintained in accordance with AS 2683 and ADG Code. In case of spills, a containment system will be utilized to control and contain spill in the forecourt area. Fuel delivery area and canopy refuelling areas are captured and treated via oily water treatment system. The fuel operator will implement administrative controls such as having Standard Operating Procedures (SoP) and site supervision in place, as well as ensuring periodic maintenance. The site design includes a VR1 and VR2 vapour recovery system at the tanker unloading and vehicle refuelling point (dispensers), respectively. No product transfer of the LPG, only storage and cylinder exchange.
Ignition sources in hazardous areas [r. 56]	Yes	No fixed ignition sources are allowed within hazardous areas. All hazardous area zones will be within the facility site boundary away from fixed ignition sources.

RISK CONTROL MEASURE	COMPLIES?	DESCRIPTION AND REFERENCE
Ventilation (hazardous atmospheres) [r. 57]	Yes	Ventilation is a primary means of minimising the presence of a hazardous atmosphere. The tanks are placed underground and equipped with vent terminals that extend 4 meters above the ground level. The DG handling facility, including dispensers, fill points, vent terminals, and LPG exchange cylinder, is located outside with adequate airflow capacity for natural ventilation to prevent atmospheric contamination and vapor build-up.
Separation distance [r. 58] and design and installation of storage or handling systems	Yes	Underground tanks are separated more than 2m to the site boundary. The LPG exchange cylinder cage placed at least 3 meters away from protected and public areas. Additionally, it is at least 1 meter away from any building openings, such as windows and doorways, and at least 1.5 meters away from pits, drains, and fuel dispensers. No fixed ignition sources are allowed within hazardous areas as indicated in the project's hazardous area drawings.
Containers for bulk dangerous goods and pipework [rr. 60 and 61]	Yes	The facility has two (2) x 90,000L underground double wall fiberglass tanks: storing Petrol (Unleaded 91, Unleaded 95 and Unleaded 98), Diesel. Tanks are design in accordance with AS 1940 and AS 4897 requirements. The tanks to be constructed and installed in accordance with AS 1940, AS4897 and tank manufacturer`s requirements. LPG exchange cylinder and cage to be constructed and install in accordance with AS 1596 and applicable Australian standards.
Underground storage or handling systems for Class 3 dangerous goods and petroleum products [r. 62]	Yes	The primary requirement under this regulation is that the operator of the dangerous goods site must ensure the underground storage and handling system (underground tank) is designed, installed, operated, and maintained so that it does not leak. Tanks and underground fuel system are design in accordance with AS 1940 and AS4897 requirements and to be constructed and installed in accordance with AS 1940, AS4897 and tank manufacturer`s requirements. Site will develop operational and maintenance procedures and retain records of inventory control, leak monitoring, tests, inspections, maintenance, and repairs.
Lighting [r. 64]	Yes	The site has allowed for adequate lighting to underside of canopy and other areas to enable safe storage and handling of dangerous goods and to move safely around the DG site. Lighting and electrical installations to be suitable within hazardous areas. The site has allowed for Emergency backup power supply such as UPS.

RISK CONTROL MEASURE	COMPLIES?	DESCRIPTION AND REFERENCE
Entrances and exits [r. 65]	Yes	Adequate, safe entrances and exits for people, tankers and refuelling vehicles provided. Safe access to and location for risk control equipment such spill kits, emergency stops and fire Extinguishers.
Security [r. 66]		The DG site has adequate security measures in place. The site is supervised 24/7, and the shop attendant will have full view of the dispensing operations. They will also have the authority to stop any fuel transfers using an emergency stop, if required. Additionally, cameras will be installed on the site to provide constant surveillance. The LPG exchange cylinder will be locked inside a purpose-built cage to prevent any unauthorized access.
Fire Hazards [r. 67]	Yes	The site has no fire hazards that may affect a storage and handling system, within three (3) metres. Minimum separation distances maintained in accordance with AS 1940 and applicable standards.
Placarding and pipework labelling [r. 60 and 68-72]	Yes	Placards are not required for underground storage at service stations. Warning signage is proposed to install at dispenser. - A DANGER—NO SMOKING, NO NAKED FLAMES sign Safety signage is proposed to install on the site to assist in protecting workers as well as visitors from risks associated with the dangerous goods on the premises.
Fire control equipment [r. 73]	Yes	Each fuel dispenser is provided with one powder-type fire extinguisher. Fire extinguisher is located within 10m from the fill point. One extinguisher is provided near console. Extinguishers are accessible without undue danger in an emergency. Site maintenance procedure will ensure that fire extinguishers to be inspected every six months or less.
Other risk control equipment [r. 74]	Yes	The site has provided with following risk control equipment: - Leak detection systems and alarms - Emergency Stops - Spill kit with absorbent material - First aid box - PPE
Emergency plan [r. 75]	**Yes, by future fuel operator**	**Compliance subject to future fuel operator DG licence.** An Emergency Management Plan (EMP) or Emergency Response Plan (ERP) will be prepared by the fuel operator. This plan will contain a set of procedures, actions, and necessary information to be followed in case of an emergency or a dangerous situation on the site. It will be easily accessible to the site operator and emergency services and to be kept onsite at all times.

RISK CONTROL MEASURE	COMPLIES?	DESCRIPTION AND REFERENCE
Information for occupier of site adjacent to dangerous goods sites [r.76A]	**Yes, by future fuel operator**	To the north-east of the proposed service station, there are existing residential housing and a future child-care centre to east. **The future fuel operator will be required to take measures to ensure that the occupier of the adjacent sites will be provided with information about the dangerous goods stored on the site, the risks associated with them, what might happen in the case of an incident, what to do, and what the site operator will do. Additionally, the occupier will be informed about how to contact the fuel site operator.**
Measures to contain DG incidents [r. 76]	**Yes, by future fuel operator**	**Compliance subject to future fuel operator DG licence.** An Emergency Management Plan (EMP) or Emergency Response Plan (ERP) will be prepared by the fuel operator. This plan will contain a set of procedures, actions, and necessary information to be followed in case of a DG incident, or an emergency situation on the site.

5. RISK ASSESSMENT SUMMARY

The risks from this **proposed** dangerous goods storage or handling system have been minimised to as low as reasonably practicable to people, property, and the environment.

Name of assessor:	Tien Do, TFA Project Group
Name of applicant:	Rahul Batra Pty Ltd
Name of fuel operator:	TBA
Signature of suitably qualified person:	
Date	14.04.2025

APPENDIX E – TRAFFIC IMPACT ASSESSMENT

Engineering a better future for over 20 years!

Lot 70 Stranmore Boulevard, Bayonet Head

Proposed Service Station, Fast Food and Carwash

Transport Impact Assessment

PREPARED FOR:
TFA Group Pty Ltd

August 2024

Document history and status

Author	Revision	Approved by	Date approved	Revision type
M Rasouli	r01	B Bordbar	27/08/2024	Draft
M Rasouli	r01a	B Bordbar	28/08/2024	Final

File name: t24.168.mr.r01.docx

Author: Mohammad Rasouli

Project manager: Mohammad Rasouli

Client: TFA Group Pty Ltd

Project: Proposed Service Station Fast Food and Carwash

Document revision: r01a

Project number: t24.168

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REPORT FIGURES

REPORT TABLES

1 Introduction

This Transport Impact Assessment (TIA) has been prepared by Transcore on behalf of TFA Group Pty Ltd with regards to the Proposed Service Station, Fast Food and Carwash to be located at Lot 70 Stranmore Boulevard Bayonet Head in the City of Albany.

The site forms part of the City of Albany's Town Planning Scheme 1 Local Development Plan No. 14 - Village Centre. The site is located at the northeast corner of the roundabout intersection of Stranmore Boulevard and Lower King Road in Bayonet Head. The subject site is currently vacant (refer **Figure 1**).

This TIA will establish the traffic generation and distribution of the proposed development. The operation of the existing service road on the eastern boundary of the subject site with Stranmore Boulevard will be investigated for post development and 10-year post development scenarios in this TIA. The TIA also will review the development plan with respect parking supply and demand, access, egress, circulation and fuel tanker and service vehicle movements.

Figure 1: Location of the subject site

2 Development Proposal

The development proposal is for a commercial development comprising the following elements:

- A Service Station with eight filling points;
- A Convenience Store with Fast Food offer;
- An auto carwash tenancy with 1 conveyor tunnel; and,
- A designated loading bay for the proposed service station and fast food offer.

Parking provision shown in the development plan (**Appendix A**) is a total of 26 bays including four on-street bays, one ACROD Bay, 2 EV, 2 air and water and 2 vacuum bays.

The proposed access/egress system intended to serve the development is shown in **Figure 2** and comprises the following elements:

- A left in entry only crossover on Stranmore Blvd (crossover 1);
- Two exit only crossovers (crossover 2 and 3) on the eastern boundary road; and,
- A full movement crossover on the eastern boundary road (crossover 4).

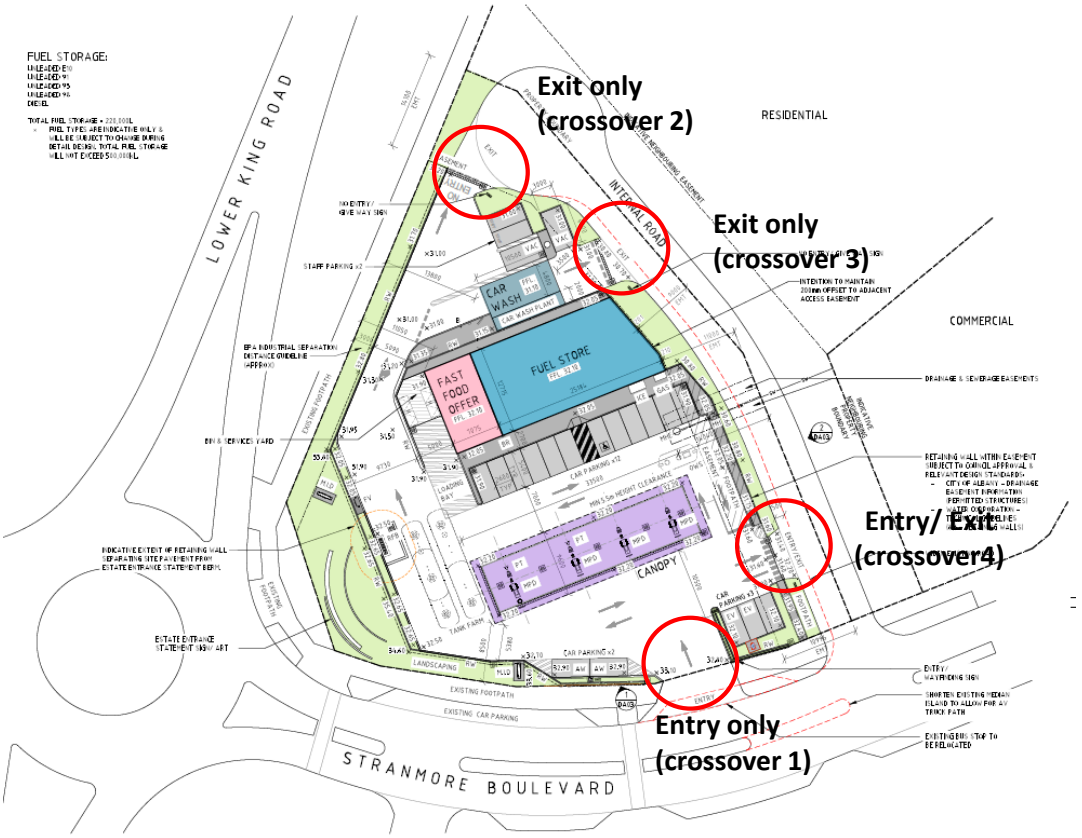


Figure 2. Proposed access/egress system

The proposed Stranmore Blvd crossover is proposed to be located away from the Stranmore Blvd/Lower King Rd roundabout intersection. This is to reduce traffic disruption at the roundabout and along Lower King Road.

Currently, there is a bus stop at the planned location of the crossover. This bus stop will need to be relocated in consultation with the Public Transport Authority (PTA)relevant authority.

The design of the entry only crossover on Stranmore Blvd should be reviewed during the detailed design of the project through liaison with the Local Authority.

The proposed development would offer fast food at the fuel store. However, this fast-food tenancy would not have a drive-through facility and would primarily serve the patrons of the service station.

The proposed car wash facility is a fully automated 24/7 operation, with 1 auto wash bay. The busiest days for the auto wash are expected to be Fridays, Saturdays, and Sundays, with peak hours from 9 AM to 12 PM and 2 PM to 6 PM, subject to favourable weather conditions.

The car wash is also anticipated to be used predominantly by the service station's patrons.

The stacking capacity of the proposed service station have been assessed in more detail in the next section of the report.

2.1 Stacking Capacity for service station

The stacking capacity of the service station component of the proposed development and detailed queue analysis at the filling points have been assessed in more detail to investigate the impacts of the higher than average site patronage during peak weekday operational periods. This analysis was undertaken to investigate the capacity of the service station to operate satisfactory under amplified traffic activity conditions (i.e. “cheap fuel” day).

Based on the estimated peak hour trip generation for the service station outlined in this report, it is estimated that the subject service station would attract up to 45 inbound vehicles during the regular weekday PM peak hour (busiest peak hour). In order to ensure a robust assessment, it is assumed that the trade on “cheap fuel” day would be 50% higher than the typical peak weekday PM hour. Accordingly, it is conservatively assumed that the proposed service station would attract about 68 cars per hour on this occasion.

Experience indicates that, under normal circumstances, the rate of service per fill point (time taken for a vehicle to arrive, park at a fill point, get fuel, pay for fuel and leave the fill point and service station site) is usually between 2-3 minutes. In some circumstances refuelling time may extend to about 5 minutes when window washing or other similar activities are practiced. However, during the “cheap fuel” day periods and due to high turnover of vehicles and “pressure” from the patrons waiting behind

the parked vehicle to access the bowser, the refuelling activity is always shortened and typically in order of up to 3min maximum. In this case, and in order to allow for a robust assessment, the service time is assumed to be conservatively 4 minutes. Accordingly, a service rate of 240sec (15 vehicles per hour) was assumed for weekday PM peak "cheap fuel" peak hour.

A queue length analysis was undertaken to assess the provision of storage for vehicles within the service channels. For this purpose, an M/M/1 queuing model was adopted for each bowser. The M/M/1 is a single-server queue model that can be used to approximate simple systems.

The queuing model adopts the following assumptions:

- Vehicles arrive unevenly following Poisson's probability distribution;
- Service time is exponentially distributed;
- There is one server per queue, i.e. there are 8 queues, one for each bowser;
- The capacity of the queue in which arriving users wait before being served is infinite (for the purposes of identifying queue space requirements);
- The population of users (i.e. the pool of users) available to join the system is infinite; and,
- The queue is serviced on a first come, first served basis.

The results of the queuing analysis are detailed in **Figure 3**. In summary, critical "cheap fuel" hour queuing analysis of the service station established the following for the worst-case scenario:

- The system utilisation is at 57% during the "cheap fuel" hour;
- The expected number in the system (refuelling) is 5 vehicles;
- The expected time in the queue is 7.4 seconds; and,
- The 95th percentile queue within the whole system is 9 cars (8 cars refuelling and 1 car waiting).

The queue length usually adopted for robust analysis is the 95th percentile queue. Assuming equal queue distribution it is estimated that in the worst-case scenario there will be one vehicle waiting behind one of the refuelling vehicles. The service station layout can accommodate this level of queuing without any queue back to the adjacent crossovers.

M/M/s - Drive Through Queuing Analysis (Poisson Arrival and Service Rates)

M/M/s	vph	vps
Arrival rate	68	0.0188889
Service rate	15	0.0041667
Number of servers	8	8

Utilization	56.67%		56.67%	
P(0), probability that the system is empty	0.0105		0.0105	
Lq, expected queue length	0.1406	(cars)	6.0000	(metres)
L, expected number in system	4.6739	(cars)	30.0000	(metres)
Wq, expected time in queue	0.0021	(hours)	7.4431	(seconds)
W, expected total time in system	0.0687	(hours)	247.4431	(seconds)
Probability that a customer waits	0.1075		0.1075	
95% Queue	9.0000	(cars)	54.0000	(metres)

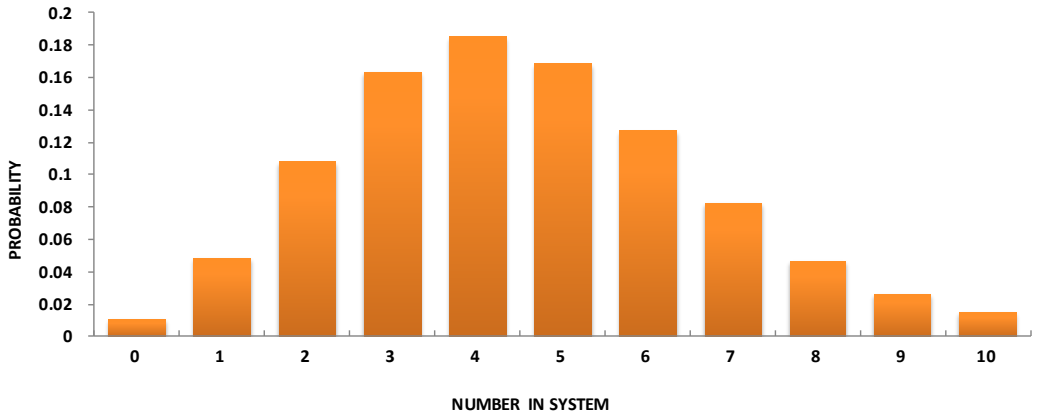


Figure 3. Peak "cheap fuel" hour queuing analysis

3 Existing Situation

3.1 Existing Road Network

The City of Albany Local Planning Scheme Zones is illustrated in **Figure 4**. As evident Lower King Road is classified as District Distributor Road while Stranmore Blvd is classified as a Local Road.

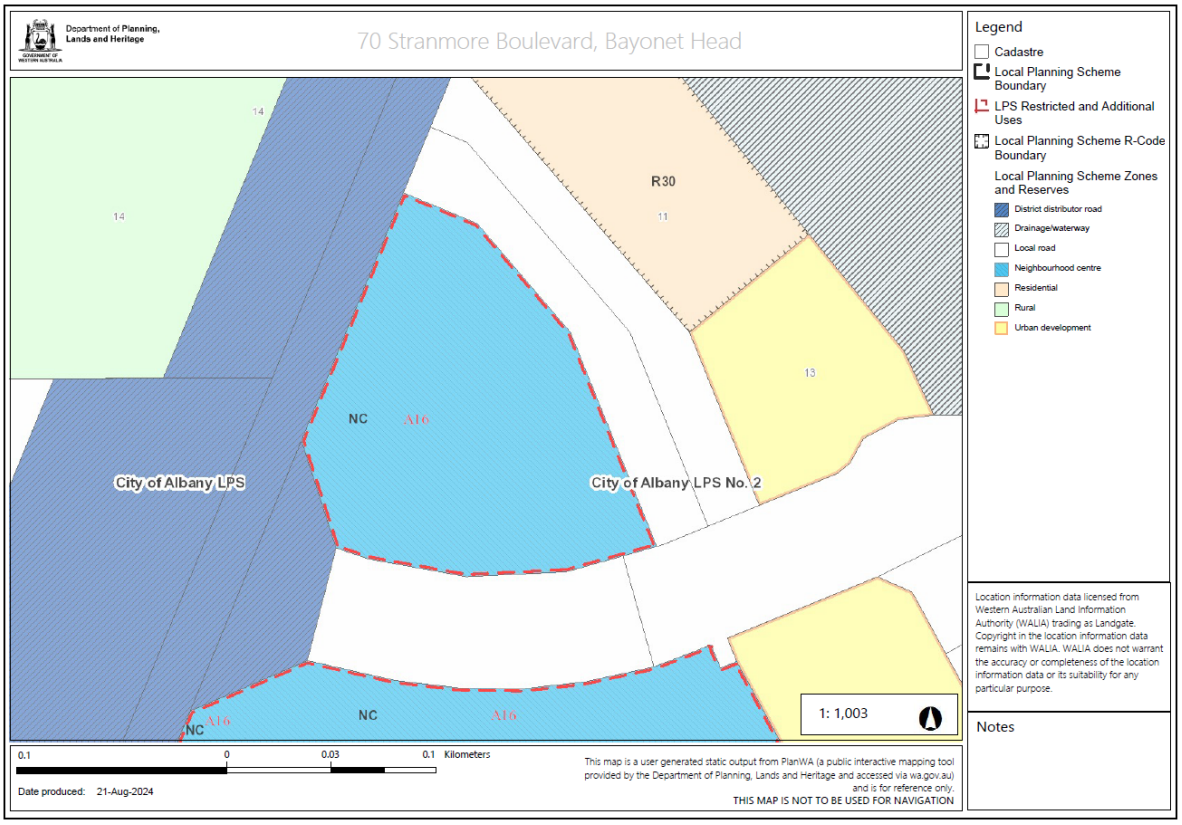


Figure 4: Existing road hierarchy

Lower King Road in the vicinity of the subject site is currently a single-lane, two-way road with a posted speed limit of 60 km/h (refer to **Figure 5**). A shared path is present along the eastern side of the road. Lower King Road is not part of the Main Roads WA RAV network, but it can accommodate heavy vehicles up to 19 meters in length.

Stranmore Boulevard forms the southern boundary of the subject site. It is currently a single-lane, two-way road with a 2-meter solid median along the frontage of the subject site as shown in **Figure 6**. On-street parking bays and shared paths are present on both sides of Stranmore Boulevard. The intersection of Stranmore Boulevard and Lower King Road is a roundabout.

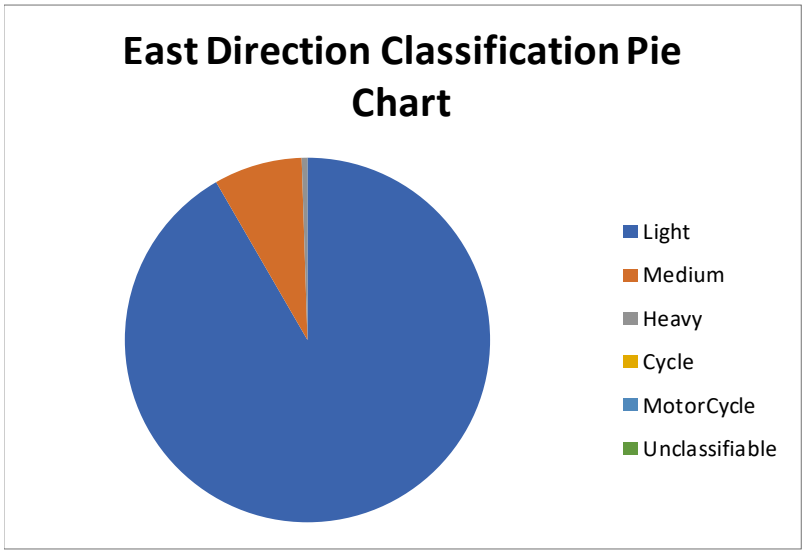
Figure 5: Lower King Road (looking south)

Figure 6: Stranmore Blvd (looking east)

3.2 Existing Traffic Volumes on Roads

The existing traffic counts on the surrounding roads were sourced from the City of Albany. According to this information, Lower King Road to the south of Elizabeth Street carried approximately 3,226 vehicles per day (vpd) in 2023. Stranmore Boulevard in the vicinity of the subject site carried around 761 vpd in 2019. **Figure 7** and **Figure 8** show the existing vehicle classification for Lower King Road and Stranmore Boulevard, respectively.

Classification (2023)							
	Light	Medium	Heavy	Cycle	MotorCycle	Unclassifiable	Total
West	92.62%	6.97%	0.39%	0.00%	0.00%	0.02%	43538
East	91.67%	7.83%	0.51%	0.00%	0.00%	0.00%	42570



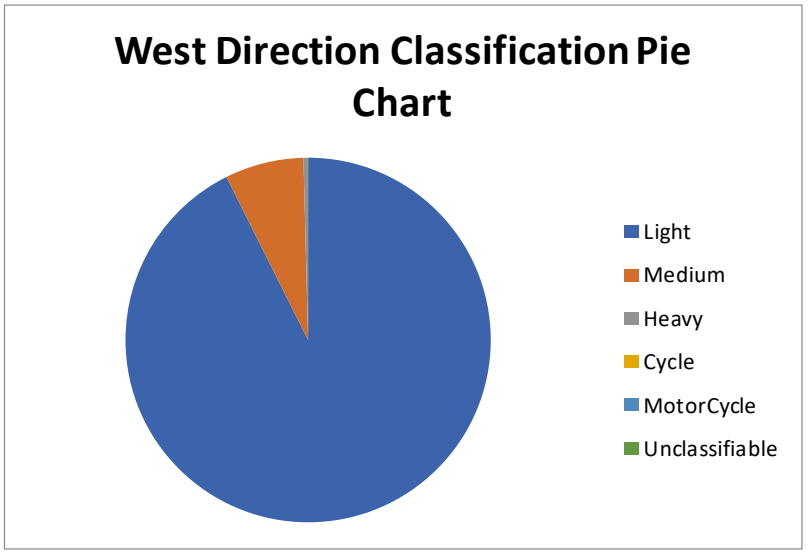
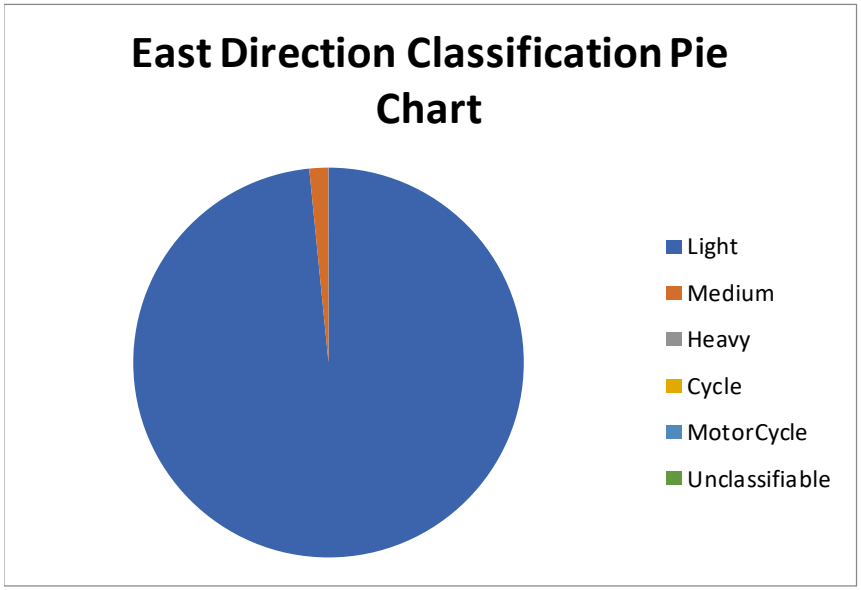


Figure 7: Existing vehicle classification for Lower King Road, 15 days, From 2023-03-08 to 2023-03-22

Classification (2019)

	Light	Medium	Heavy	Cycle	MotorCycle	Unclassifiable	Total
West	97.34%	2.57%	0.08%	0.00%	0.00%	0.01%	13568
East	98.42%	1.55%	0.03%	0.00%	0.00%	0.00%	13813



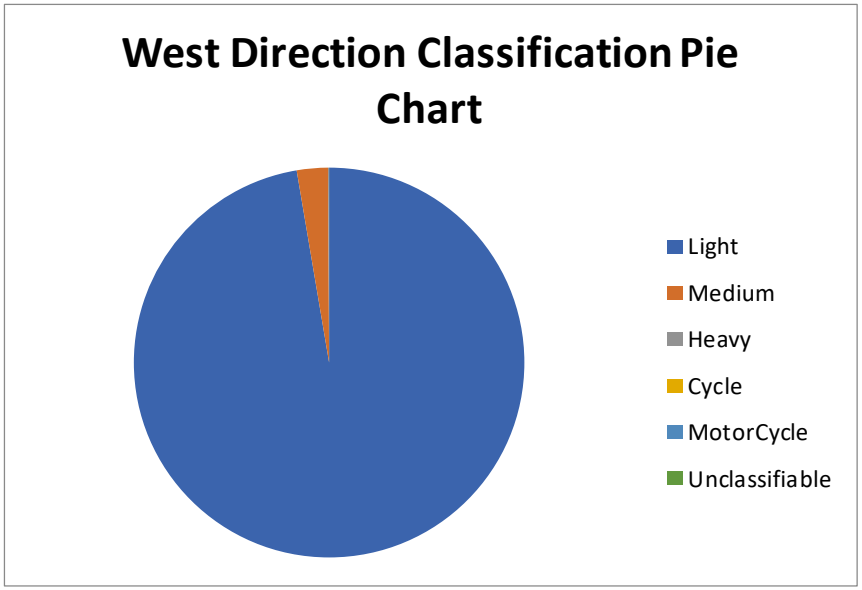


Figure 8: Existing vehicle classification for Stranmore Blvd, 20 days, From 2019-02-22 to 2019-03-13

3.3 Heavy Vehicles

Restricted Access Vehicle (RAV) Network routes are designated for access by large heavy vehicle combinations, which is managed by Main Roads WA.

As shown in **Figure 9**, the adjacent roads are not part of the RAV network and would be able to accommodate" as of right" vehicles (up to 19m semi-trailers).

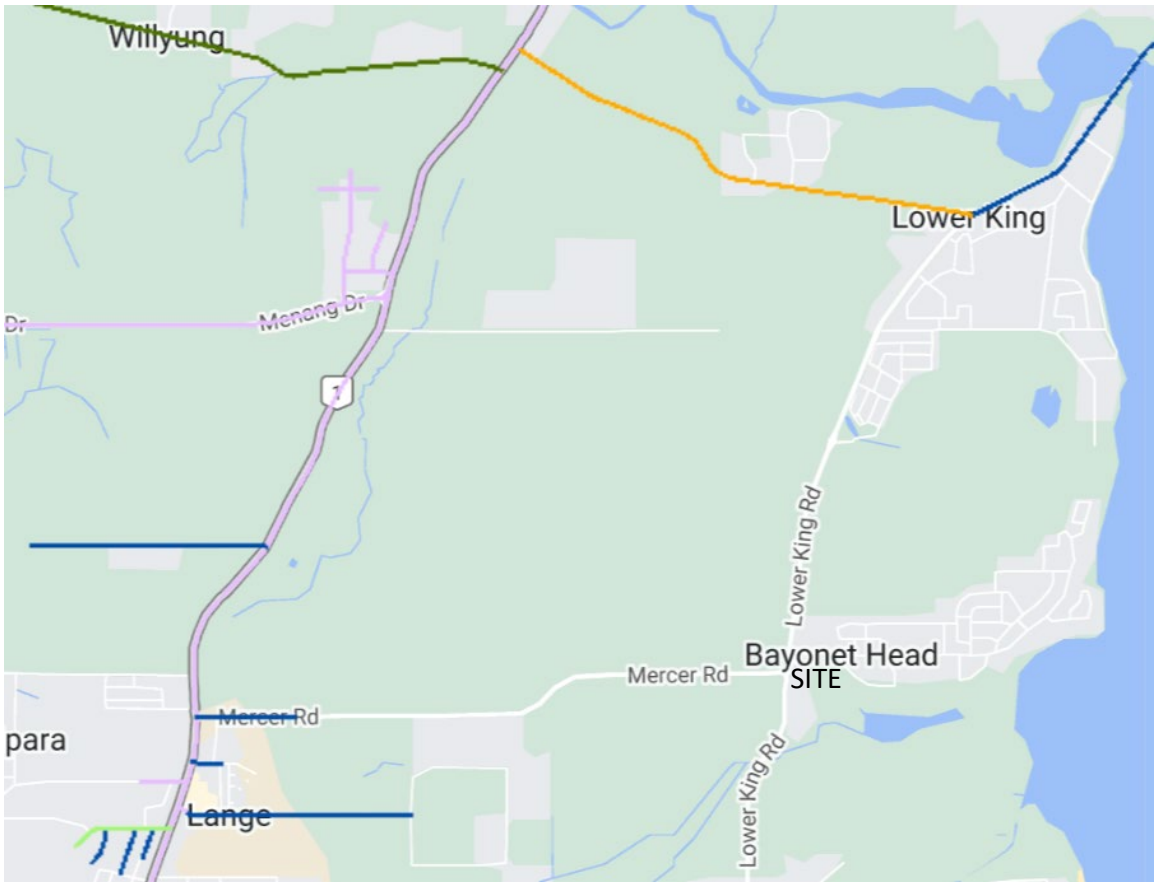


Figure 9. Existing heavy vehicle road network classification (RAV)

3.4 Public Transport Access

Available nearby public transport services are present in **Figure 10**. Bus route 804 provides a circular service to Albany (via Bayonet Head, Spencer Park and Lower King Road) and have bus stops on Stranmore Blvd fronting the subject site.

Figure 10: Existing bus routes

3.5 Pedestrian and Cyclist Facilities

Pedestrians will have direct access to the proposed development via the existing external path network along the surrounding roads.

3.6 Crash Data

Information available on the Main Roads WA website indicates only one crash for the existing roundabout intersection of Lower King Road/ Stranmore Blvd during the last five-year period ending in December 2023. This crash entailed no casualty and was a rear end crash.

4 Changes to Surrounding Transport Networks

There are no changes to the surrounding road network as part of the proposed development, other than shortening the median on Stranmore Boulevard to facilitate the right-out movements for Fuel Tankers from the adjacent service road.

A left in only crossover is proposed on Stranmore Blvd fronting the site as part of this proposal with three more crossovers on the eastern boundary service road. As a result of the proposed crossover on Stranmore Boulevard the existing bus stop will need to be relocated.

5 Integration with Surrounding Area

The proposed development entails a commercial development which is in line with the Local Development Plan No.14 Village Centre for the immediate area.

6 Traffic Assessment

6.1 Assessment Period

Due to the nature of the proposed development, it is expected that distinct peak activity periods will be experienced during weekday morning and afternoon peak road network periods.

It is therefore anticipated that the combination of the traffic to be generated by the proposed development and the peak road network traffic periods is likely to result in the greatest demand on the road network during the typical weekday morning and afternoon peak hours between 08:00AM-09:00AM and 04:00PM-05:00PM. As such, trip generation is estimated and traffic analysis is undertaken for these periods.

It is assumed that the proposed development would be fully constructed and activated by the end of 2025, so post-development analysis has been undertaken for 2025 and 10-year post development for 2035.

6.2 Trip Generation and Distribution

6.2.1 Proposed service station trip generation

Based on the feedback received from a number of Western Australia service station operators that the trip rates published in the *Institute of Transportation Engineers 11th Edition Trip Generation Guidelines* (a US trip generation source) significantly overestimate the actual patronage numbers, Transcore undertook extensive traffic surveys during 2022. As part of this survey, a total of 15 service stations were surveyed, in order to establish more accurate local traffic generation rates for this type of land use in Western Australia. All of the sites selected entailed different operators in order to ensure robust data with a high level of confidence. The surveys were undertaken on Mondays, Tuesdays and Wednesdays in order to include trade activity during the discounted fuel days as well and to ensure a conservative approach.

The following sites were surveyed for the purpose of the study:

- 7-Eleven, 194 Great Eastern Hwy, Ascot WA
- Ampol, 204 Great Eastern Hwy, Ascot WA
- BP, 1 Canham Way, Greenwood WA
- BP, 88 Gilbertson Road, Kardinya WA
- BP, 848 Canning Hwy, Applecross WA
- Coles Express, 73A Frobisher Street, Osborne Park WA
- Puma, 58 Montana Crescent, Alkimos WA
- Ampol 3, Morwell Street, Yanchep WA
- Liberty, 2341 Albany Highway, Gosnells WA
- 7-Eleven, 931 Wanneroo Road, Wanneroo WA
- 7-Eleven, 13 Lakes Road, Greenfield WA

- Shell, 582 Stirling Highway, Mosman WA
- Puma, Cnr Johnson Street & Helena Street, Guildford WA
- United, 2 Feilman Drive, Leda WA
- United, 101 Terrier Place, Southern River WA

Even though all the service stations surveyed were in Perth metro area, the result of these surveys are considered to be more appropriate for this application that trip rates from overseas.

Based on the result from above surveys, the trip rates used to estimate traffic generation for the service station components of the proposed development are as follows:

Service Station with Convenience Store – Regular Fuelling Points:

- Weekday daily: 162.20vpd per filling point;
- Weekday AM peak hour: 9.49vph per filling point; and,
- Weekday PM peak hour: 11.27vph per filling point.

Accordingly, it is estimated that the traffic generations for the service station facility of the proposed development are:

- Weekday daily: 162.20 x 8 = 1,298 vehicles;
- Weekday AM peak hour: 9.49 x 8 = 76vph; and,
- Weekday PM peak hour: 11.27 x 8 = 90vph.

6.2.2 Proposed fast-food trip generation

Review of the ITE 11 trip rates for the stand-alone fast-food outlets with no drive through facility, provide the following trip rates.

- Weekday daily: 485vpd per 100sqm GFA;
- Weekday AM peak hour: 46.5vph per 100sqm GFA; and,
- Weekday PM peak hour: 35.7vph per filling point.

With respect to the proposal, the proposed fast-food outlet is not a standalone tenancy and it is expected that the majority of the customers of the fast-food outlet would be those who are using the service station as their primary trips. Therefore, it is conservatively assumed that the trip generation of the proposed fast-food outlet (with 28m^2 GFA) would be about 50% of a stand-alone facility which translated to:

- Total of 136 daily vehicle trips (both ins and outs);
- Approximately 13 trips during the critical peak AM hour (both ins and outs);
- Approximately 10 trips during the critical peak PM hour (both ins and outs)

6.2.3 Proposed carwash trip generation

The traffic volumes likely to be generated by the automated car wash have been estimated based on Transcore's experience, information available to Transcore and observations of similar businesses within the Perth Metro area.

The peak patronage to carwashes occurs during the weekends which doesn't coincide with the peak hour of the road network. However, for a robust assessment, it is assumed that the road network peak trip generation for the proposed car wash would be 50% of the peak hour trip generation during a weekend. Similarly, the typical weekday visitation to the car wash is assumed to be about 50% of the weekends. However, as the proposed car wash will be open 24/7, the weekday patronage is assumed to be 12 times the peak hour patronage.

Automated Car Wash – Per Wash Bay:

- Weekday, daily: 72vpd per wash bay;
- Weekday, AM peak hour: 95vph per wash bay; and,
- Weekday, PM peak hour: 6vph per wash bay.

Accordingly, it is estimated that the traffic generations for the automated car wash facility are:

- Weekday, daily: 72 x 1 = 72vpd;
- Weekday, AM peak hour: 6 x 1 = 6vph; and,
- Weekday, PM peak hour: 6 x 1 = 6vph.

6.2.4 Total trip generation

The total trip generation of the proposed development is estimated to be:

- Weekday, daily: 693vpd;
- Weekday, AM peak hour: 114vph; and,
- Weekday, PM peak hour: 106vph.

The distribution of traffic to and from the proposed developments was evaluated by considering the catchment area of the proposed development as well as the available access and egress routes to and from the site. Accordingly, total development traffic is shown in **Figure 11**.

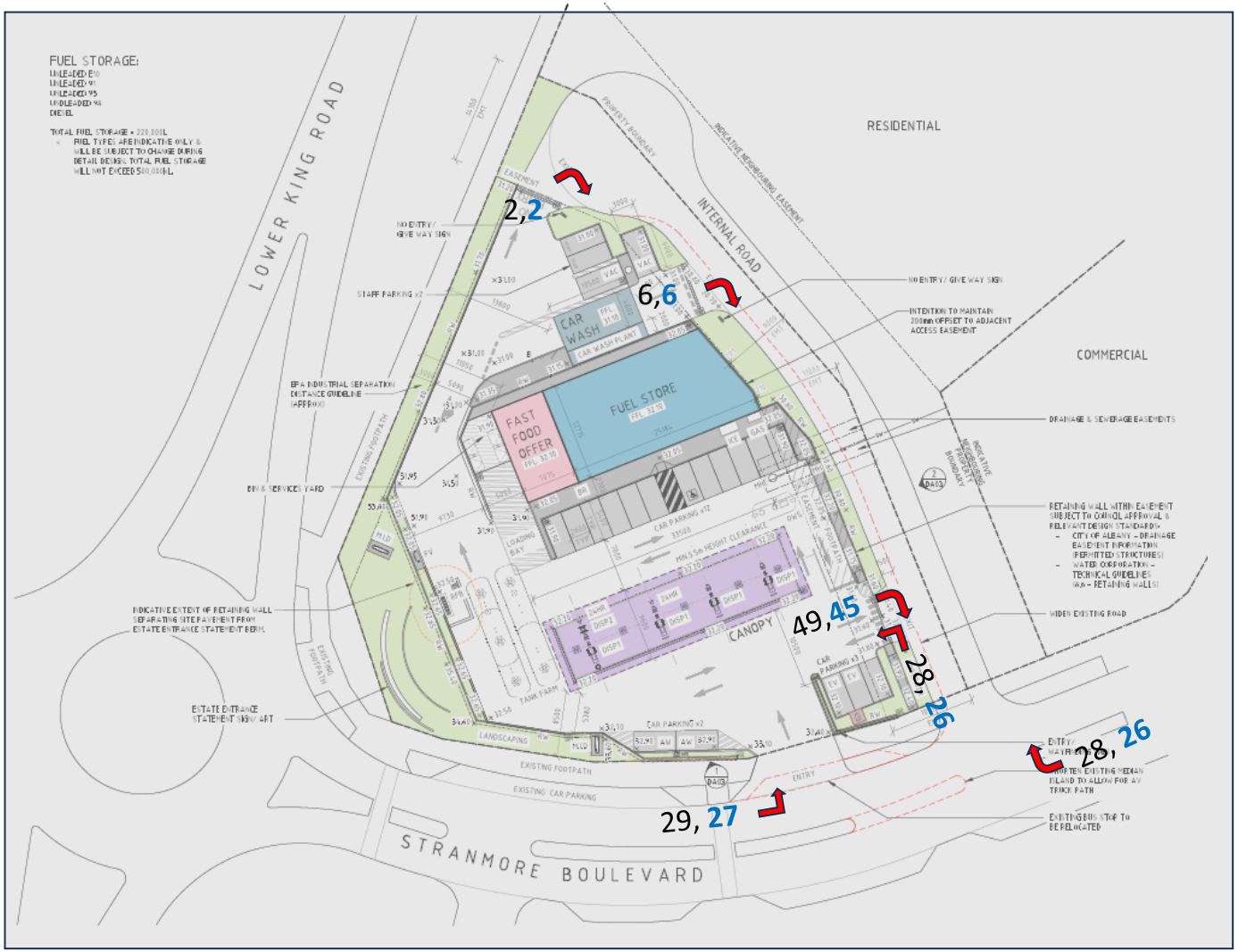


Figure 11: Proposed development traffic – AM Weekday, PM Weekday

6.3 Traffic Flow Forecasts

The existing traffic counts were established by review of the traffic counts provided by the City of Albany. The total post development traffic for the assessment year of 2025 and 2035 was calculated with the existing background traffic plus the development traffic. For both year 2035 a 2% annual traffic growth was applied to the Stranmore Blvd traffic.

The total projected traffic volumes for year 2023 and 2033 are presented in **Figure 13** and **Figure 14**.

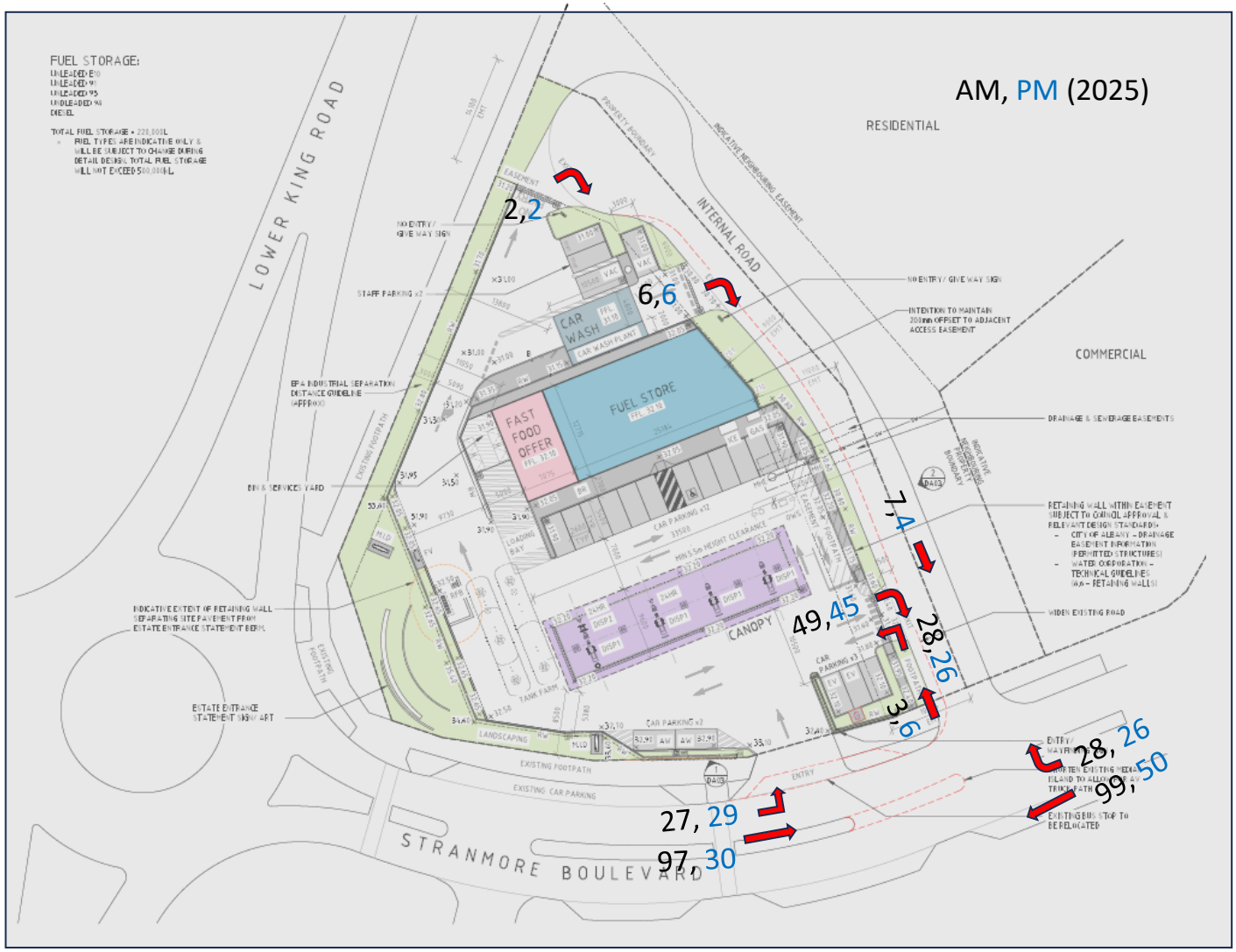


Figure 12: Total (2025) traffic – AM Weekday, PM Weekday

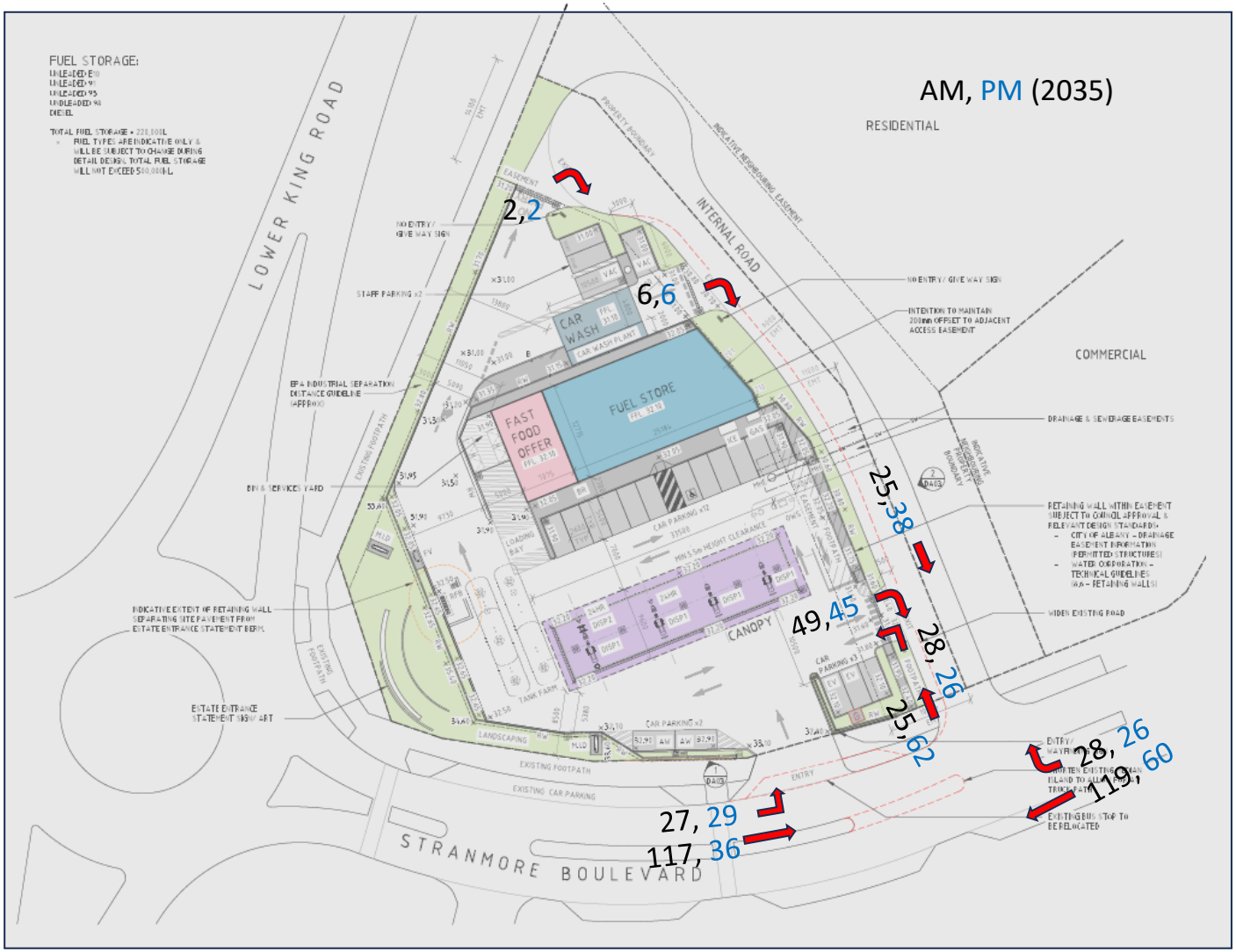


Figure 13: Total (2035) traffic – AM Weekday, PM Weekday

6.4 Analysis of Local Intersections

Capacity network analysis was undertaken using the SIDRA computer software package for year 2025 and 2035 for the full movement crossover on the eastern boundary road. All the other crossovers are left in only, or right out only crossovers with minimal traffic flow and are expected to operate satisfactorily during the peak hours.

SIDRA is an intersection modelling tool commonly used 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 characteristics are defined as follows:

- 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 infrequent 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 service, 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 intersection of the service road and Stranmore Boulevard are summarised in **Appendix B**. The SIDRA intersection model were coded with reference to Main Roads WA Operation Modelling Guidelines. All relevant parameters such as heavy vehicle groups, PCU factors etc. were coded as per the Main Roads WA Guidelines.

The SIDRA analysis results indicates that the intersection of the service road and Stranmore Blvd would operates satisfactorily with LoS A and with minimal queues and delays during both weekday peak hours for 2035 modelling scenario.

6.5 Impact on Surrounding Roads

The WAPC *Transport Impact Assessment Guidelines* (2016) provides the following guidance on the assessment of traffic impacts:

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road, but increases over 10 percent may. All sections of road with an increase greater than 10

percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

The proposed development will not increase traffic on any lanes on the surrounding road network by more than 100vph, therefore, impact of the proposed development traffic is considered to be insignificant.

6.6 Impact on Neighbouring Areas

Due to the location of the subject site, its accessibility via a major district distributor road, significant passing trade component and limited number of residential dwellings within the immediate vicinity, the traffic impact from the development in the area will be limited.

6.7 Traffic Noise and Vibration

Due to the location of the subject site, its accessibility via major district distributor road, significant passing trade component, the traffic impact from the development in the area will be limited.

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 Parking

The proposed development would provide 26 parking bays including four on-street bays. It is our understanding that the proposed parking provision is sufficient to address the parking requirement of the proposed development.

8 Provision of Heavy Vehicles

The largest fuel tanker and a service vehicle which are expected to use the subject site are 17m fuel tankers and 12.5m service trucks.

17m fuel tanker

Turn path analysis has been undertaken for a 17m fuel tanker to enter the site from Stranmore Blvd crossover, access the refuelling point and exit the site and turn right onto the eastern boundary service road and Stranmore Blvd in forward gear. As evident, The Stranmore Boulevard central median will need to be shortened to facilitate the right turn out movements of the fuel tanker.

service trucks

12.5m service trucks are expected to service the proposed loading bay to the west of the proposed fuel store. The service truck would enter the site from Stranmore Blvd crossover and would exit the site via the proposed northern exit crossover on the eastern boundary service road.

Turn path analysis undertaken for fuel tanker and service vehicles confirm satisfactory access, egress and circulation. The turn path analysis plans are included in **Appendix C**.

9 Conclusions

This Transport Impact Assessment (TIA) has been prepared by Transcore on behalf of TFA Group Pty Ltd with regards to the Proposed Service Station, Fast Food and Carwash to be located at Lot 70 Stranmore Boulevard Bayonet Head in the City of Albany.

The proposed access and egress system for the development includes a left-in only entry crossover on Stranmore Boulevard, two exit-only crossovers on the eastern boundary road, and a full-movement crossover on the eastern boundary road.

The Stranmore Boulevard crossover is planned to be located away from the Stranmore Boulevard/Lower King Road roundabout intersection to reduce traffic disruption. There is currently a bus stop at the planned location of the Stranmore Boulevard crossover, which will need to be relocated in consultation with the relevant authority.

The design of the Stranmore Boulevard entry crossover should be reviewed and finalised during the detailed design stage of the project through liaison with the Local Authority.

The proposed development would offer fast food at the fuel store. However, this fast-food tenancy would not have a drive-through facility and would primarily serve the patrons of the service station.

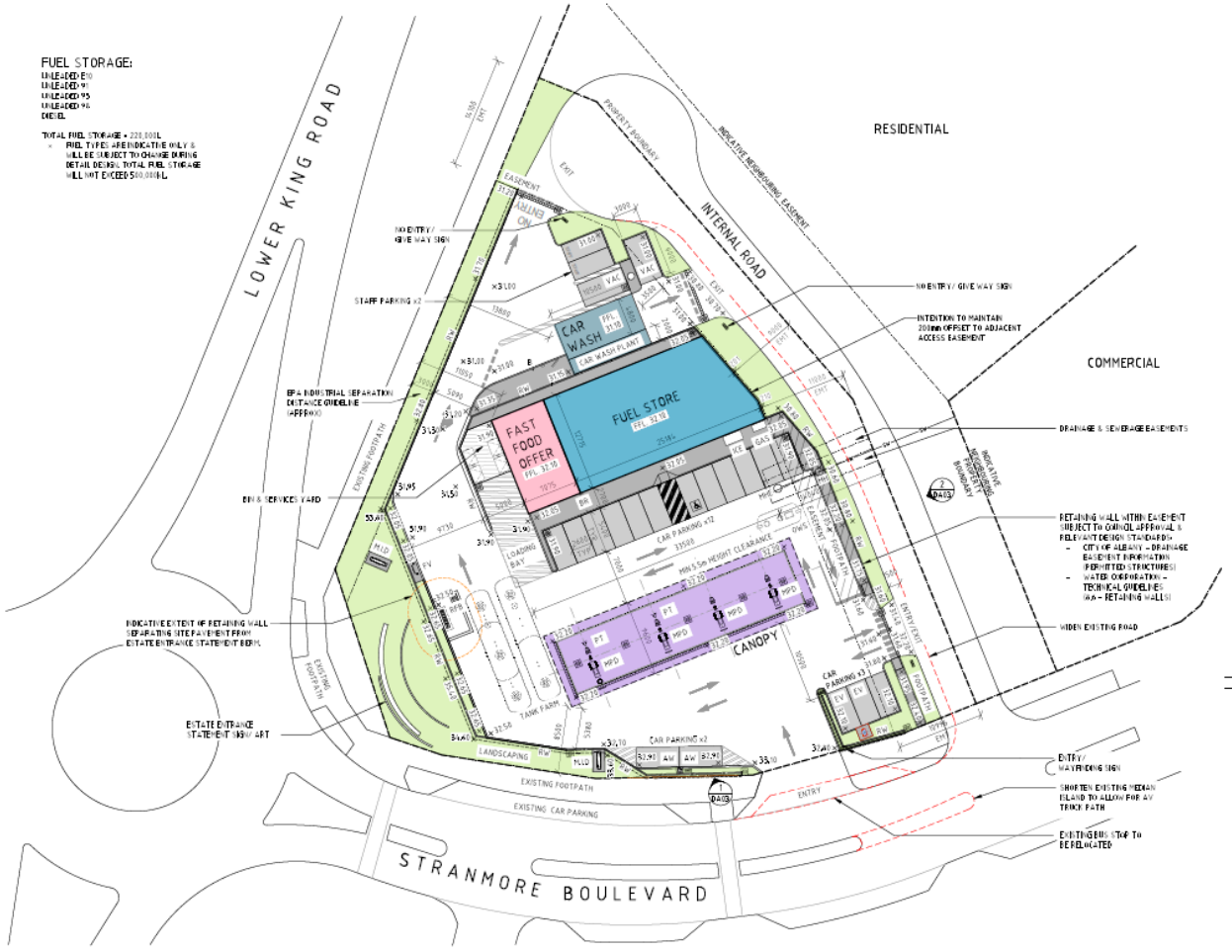
The traffic generation of the proposed development is relatively low (just over 100vph) and would not adversely impact the traffic operation of the surrounding roads and intersections.

Queue analysis undertaken for the proposed service station indicated that under typical “cheap fuel day” peak conditions the queuing associated with the service station will be accommodated within the site without impacting the internal driveways and development crossovers.

In conclusion, the findings of this Transport Impact Assessment are supportive of the proposed development.

Appendix A

PROPOSED DEVELOPMENT PLAN



FUEL STORAGE:

UNLEADED 91
UNLEADED 95
UNLEADED 98
DIESEL

TOTAL FUEL STORAGE = 220,000L
- FUEL TYPES ARE INDICATIVE ONLY & WILL BE SUBJECT TO CHANGE DURING DETAIL DESIGN. TOTAL FUEL STORAGE WILL NOT EXCEED 540,000L.

RPD:

LOT 70 ON D.P. 406720
COUNCIL: CITY OF ALBANY
AREA: 4.1ha

NOTES:

1. DEVELOPMENT APPLICATION PURPOSE ONLY – NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES INCLUDING LANDSCAPING ARE SUBJECT TO SURVEY.
3. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TFA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS, HOWEVER TFA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT'S COMPLIANCE. IN THE CASE OF THIS DRAWING UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.
4. REFER TO DA12 FOR EXISTING AND PROPOSED LANDSCAPING.

SITE AREA / LEGEND

- FUEL BUILDING AREA: 30m²
- FAST FOOD OFFER AREA: 90m²
- CAR WASH (INCL PLANT) AREA: 70m²
- SERVICE YARD AREA: 32m²
- CANOPY AREA: 320m²
- PATHWAYS AREA: 280m²
- LANDSCAPING AREA: 9,767m²

SITE COVER INCL. SERVICE YARD:
620m² (15.1%)

LEGEND:

AW	AIR & WATER POINT
B	BOLLARD
BR	BICYCLE RAIL
EV	ELECTRIC VEHICLE CHARGING
FV	FUEL VENT STACK
FFL	FINISHED FLOOR LEVEL
GAS	LPG BOTTLE CAGE
ICE	ICE BOX
MID	MAIN IDENTIFICATION PYLON SIGN
MHE	EXISTING MAINHOLE
MH	MANHOLE
MPD	MULTI-PRODUCT FUEL DISPENSER
MWS	MILK WATER SEPERATOR
PT	24 HOUR PAYMENT TERMINAL
RPD	REMOTE FILL BOX
RW	RETAINING WALL
VAC	VACUUM CLEANER BAY
	FENCE/ BALUSTRADE
	RETAINING WALL (FROM DRAIN (TOP OF WALL) & UNSEALED AREA WHOLLY CONTAINED WITHIN PROPERTY BOUNDARY.
	GULLY PIT
	TRENCH DRAIN

CAR PARKING:

REQUIRED:
- 9x SERVICE STATION RETAIL (1 PER 20% of RETAIL AREA=170m²)
- 2x SERVICE STATION STAFF (BASED ON 2 STAFF WORKING)
- 5x FAST FOOD OFFER (1/4m² DINING = 1 PER 5m² EATING)
- 1x FAST FOOD OFFER BICYCLE

TOTAL = 17

ACHIEVED:
- 12x STANDARD
- 2x STAFF
- 1x ACCESSIBLE
- 2x EV BAYS
- 2x AIR & WATER BAYS
- 2x VACUUM BAYS
- 1x BICYCLE RAIL
- 1x EXISTING ON STREET CAR PARKING

TOTAL = 26

0 5 10 15 20 25m
SCALE 1:250

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TFA Project Group

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DRAWING ISSUE APPROVAL

NAME: DATE:
PROFESSIONAL QUALIFICATION:
SIGNATURE:

REV	DATE	BY	DESCRIPTION	CHK	APP
A	22.05.24	CTD	PRELIMINARY FOR DISCUSSION	FDS	
B	03.06.24	CTD	AMENDS	FDS	TD
C	11.06.24	CTD	RFI INFORMATION	FDS	
D	23.06.24	CTD	PRELIMINARY FOR INFORMATION	FDS	
E	28.08.24	CTD	DA ISSUE	SLH	FDS

PROJECT DETAILS:
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE:
PROPOSED SITE PLAN

STATUS: DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
17.05.24	1:250	A1

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DRAWING NO	REV
24255-DA02	E

CODE	DESCRIPTION
DP	DOWNPIPE - REFER HYD. DRAWINGS
B	BOLLARD
COL	COLUMN - REFER STRUCTURAL ENG. DRAWINGS
CSU	CUSTOMER SERVICE UNIT
FE	FIRE EXTINGUISHER AS PER AS2444 BY OTHERS
GAS	LPG BOTTLE CAGE
ICE	ICE BOX
KR	KERB RAMP
LDB	ENTRY PRODUCT LEADERBOARD BOLLARD
MPD	MULTI-PRODUCT DISPENSER
TB	TRUCK BOLLARD

NOTE:

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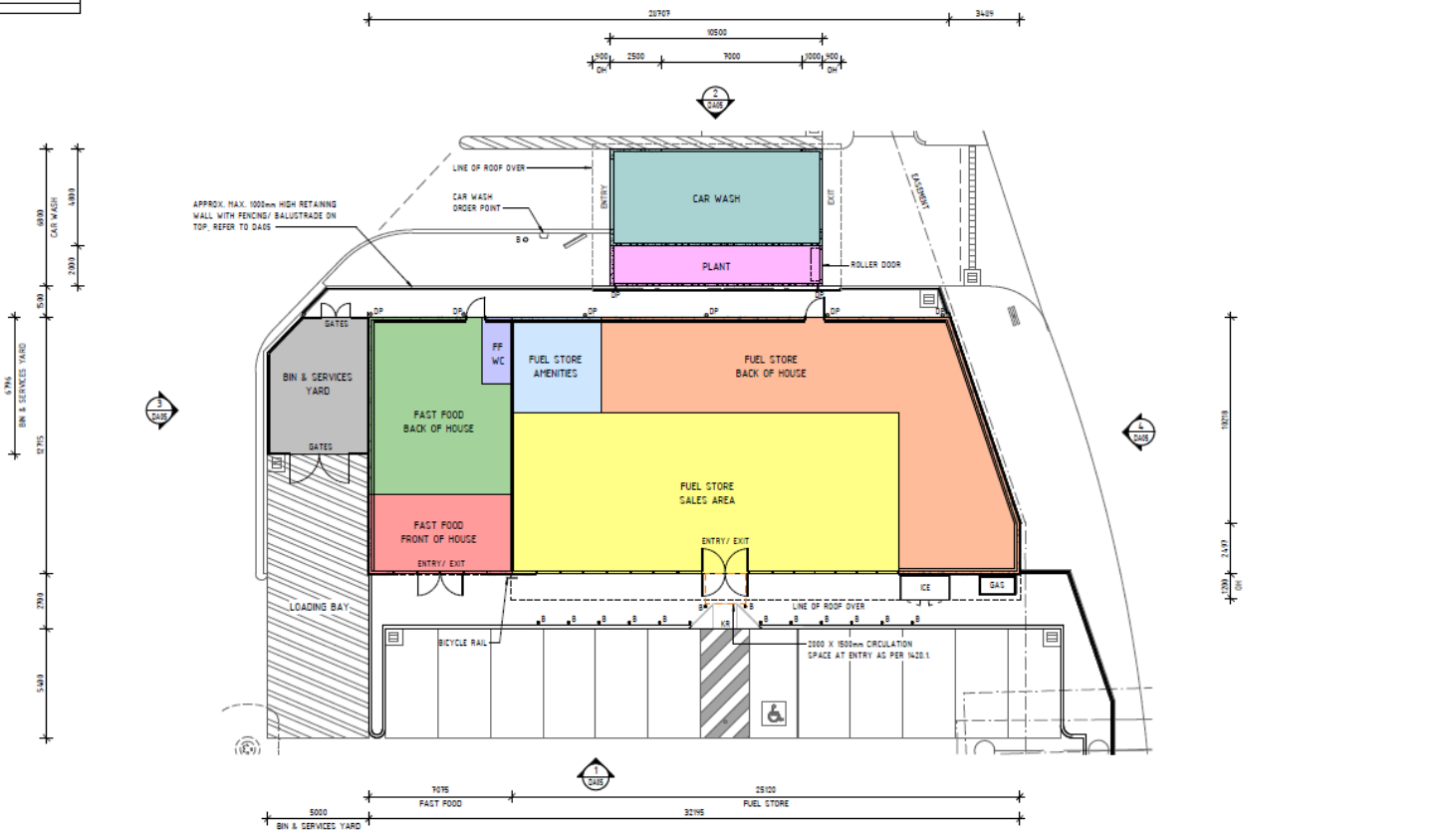
4. COLOURS & FINISHES SHOWN INDICATIVE ONLY, TO BE CONFIRMED AT DETAIL DESIGN STAGE.
5. EXISTING AND PROPOSED LANDSCAPING OMITTED FOR CLARITY.

AREA LEGEND:

FAST FOOD BACK OF HOUSE:	57m²	FUEL STORE BACK OF HOUSE:	130m²	CAR WASH:	50m²
FAST FOOD FRONT OF HOUSE:	20m²	FUEL STORE FRONT OF HOUSE:	150m²	PLANT:	21m²
FAST FOOD WC:	5m²	FUEL STORE AMENITIES:	20m²	BIN & SERVICES YARD:	32m²
				TOTAL AREA:	493m²

RPD:
LOT 70 ON D.P. 406170
COUNCIL: CITY OF ALBANY
AREA: 4446m²



PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TFA Project Group

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REV	DATE	BY	DESCRIPTION	CHK	APP
A	23.06.24	CTD	DA ISSUE	SLH	POS
B	26.06.24	CTD	DA ISSUE	SLH	POS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
BUILDING FLOORPLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
0.06.24	1 : 100	A1

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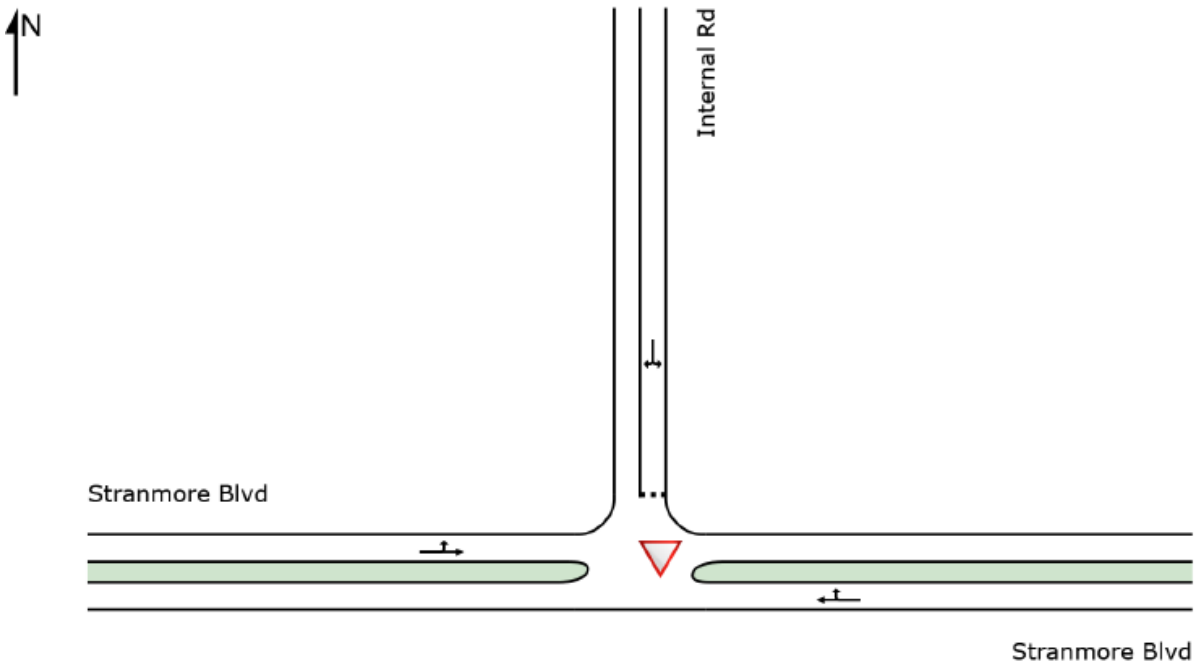
DRAWING NO: 24255 - DA04
REV: B

Appendix B

INTERSECTION ANALYSIS – SIDRA RESULTS


N
Internal Rd
Stranmore Blvd
Stranmore Blvd

MOVEMENT SUMMARY

Site: [Stranmore Blv & Internal Rd - 2035 - AM (Site Folder: 2035)]

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h]	INPUT VOLUMES HV] %	DEMAND FLOWS [Total veh/h]	DEMAND FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh]	95% BACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Stranmore Blvd														
11	T1	119	9.1	125	9.1	0.090	0.1	LOS A	0.2	1.6	0.11	0.10	0.11	46.0
12	R2	28	2.0	29	2.0	0.090	3.2	LOS A	0.2	1.6	0.11	0.10	0.11	28.9
Approach		147	7.7	155	7.7	0.090	0.7	NA	0.2	1.6	0.11	0.10	0.11	42.5
North: Internal Rd														
1	L2	22	2.0	23	2.0	0.053	0.4	LOS A	0.2	1.4	0.26	0.23	0.26	19.8
3	R2	34	2.0	36	2.0	0.053	1.9	LOS A	0.2	1.4	0.26	0.23	0.26	26.4
Approach		56	2.0	59	2.0	0.053	1.3	LOS A	0.2	1.4	0.26	0.23	0.26	24.2
West: Stranmore Blvd														
4	L2	27	2.0	28	2.0	0.087	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	35.1
5	T1	117	10.4	123	10.4	0.087	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	45.3
Approach		144	8.8	152	8.8	0.087	0.9	NA	0.0	0.0	0.00	0.10	0.00	42.7
All Vehicles		347	7.3	365	7.3	0.090	0.9	NA	0.2	1.6	0.09	0.12	0.09	37.9

MOVEMENT SUMMARY

Site: [Stranmore Blv & Internal Rd - 2035 - PM (Site Folder: 2035)]

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h]	INPUT VOLUMES HV] %	DEMAND FLOWS [Total veh/h]	DEMAND FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh]	95% BACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Stranmore Blvd														
11	T1	60	9.1	63	9.1	0.052	0.1	LOS A	0.2	1.2	0.10	0.16	0.10	44.7
12	R2	26	2.0	27	2.0	0.052	2.9	LOS A	0.2	1.2	0.10	0.16	0.10	28.2
Approach		86	7.0	91	7.0	0.052	0.9	NA	0.2	1.2	0.10	0.16	0.10	39.4
North: Internal Rd														
1	L2	20	2.0	21	2.0	0.041	0.1	LOS A	0.1	1.1	0.13	0.14	0.13	20.4
3	R2	29	2.0	31	2.0	0.041	1.3	LOS A	0.1	1.1	0.13	0.14	0.13	27.0
Approach		49	2.0	52	2.0	0.041	0.8	LOS A	0.1	1.1	0.13	0.14	0.13	24.8
West: Stranmore Blvd														
4	L2	29	2.0	31	2.0	0.039	4.6	LOS A	0.0	0.0	0.00	0.24	0.00	32.7
5	T1	36	10.4	38	10.4	0.039	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	40.5
Approach		65	6.7	68	6.7	0.039	2.1	NA	0.0	0.0	0.00	0.24	0.00	36.2
All Vehicles		200	5.6	211	5.6	0.052	1.3	NA	0.2	1.2	0.07	0.18	0.07	33.5

Appendix C

TURN PATH ANALYSIS

70 Stranmore Boulevard, Bayonet Head

17m Fuel Tanker

Fuel Tanker entry

LEGEND

Vehicle Body

Wheel Path

500mm Clearance

t24.168.sk02a

27/08/2024

Scale: 1:500 @ A3

70 Stranmore Boulevard, Bayonet Head
17m Fuel Tanker
Fuel Tanker exit

LEGEND
Vehicle Body
Wheel Path
500mm Clearance

t24.168.sk03a
27/08/2024
Scale: 1:500 @ A3

70 Stranmore Boulevard, Bayonet Head

B99 Passenger Car

B99 Site Circulation

LEGEND

Vehicle Body

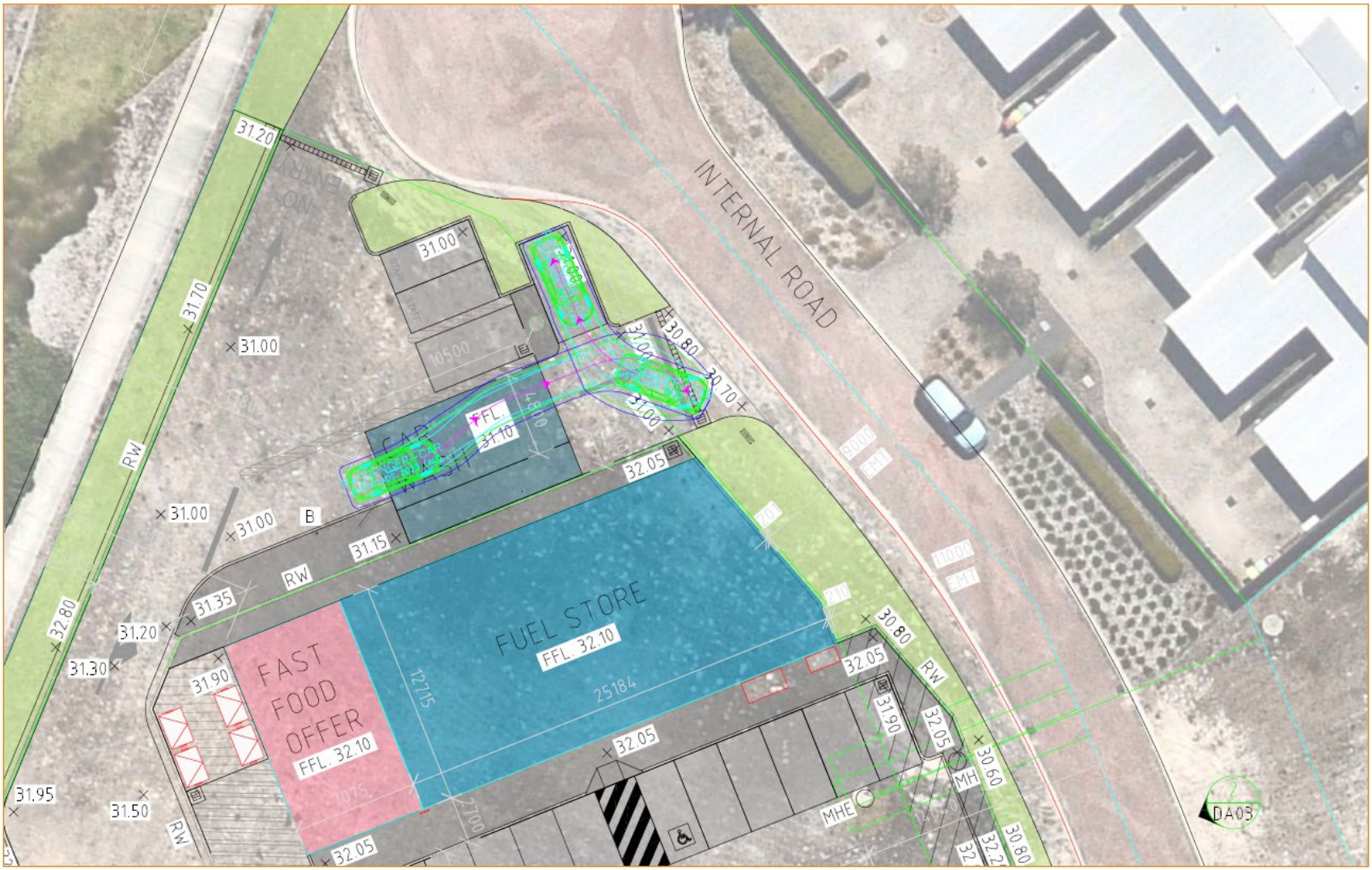
Wheel Path

300mm Clearance

t24.168.sk04a

27/08/2024

Scale: 1:400 @ A3



70 Stranmore Boulevard, Bayonet Head

B99 Passenger Car

Vacuum Bays

LEGEND

Vehicle Body

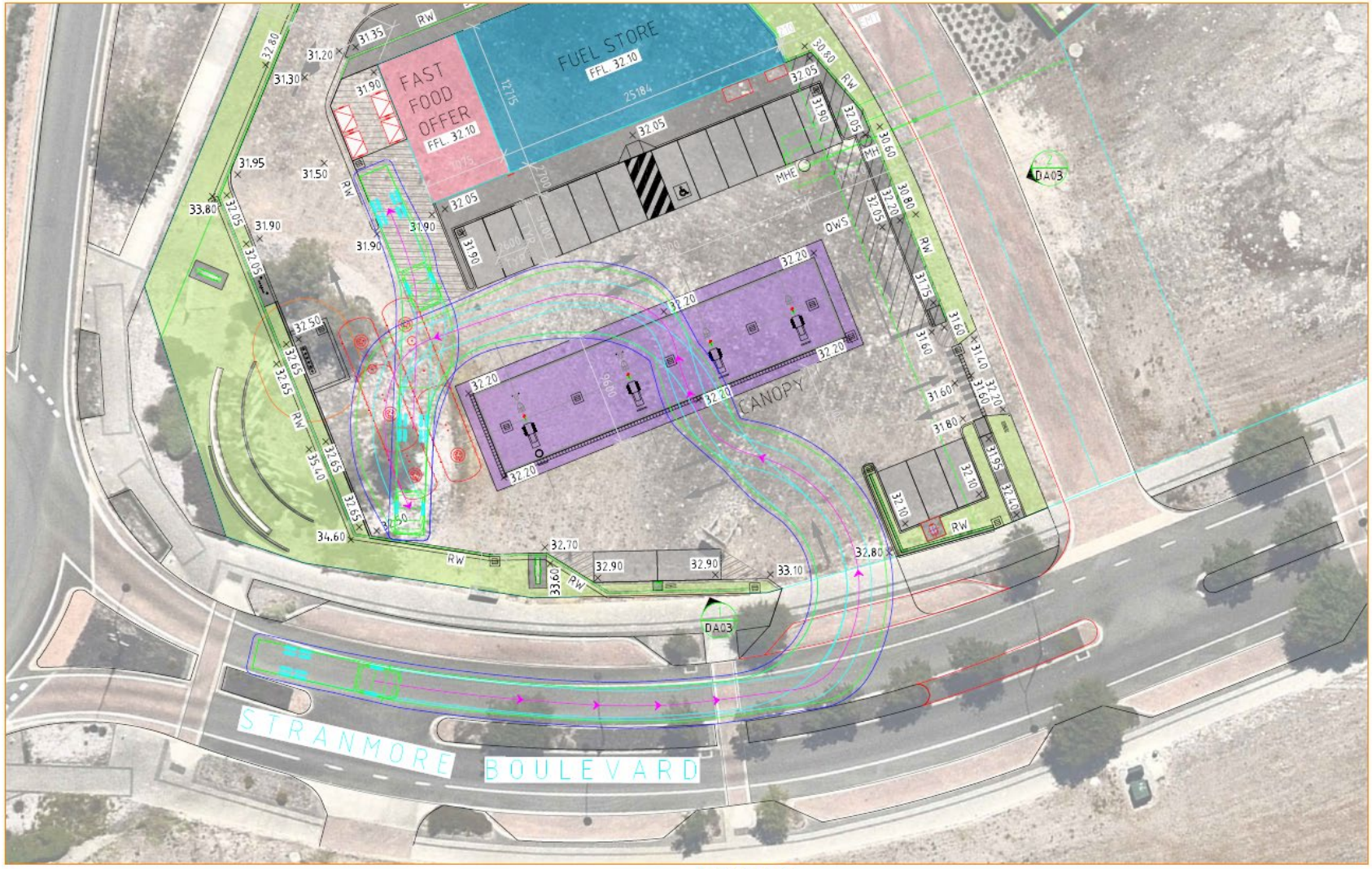
Wheel Path

300mm Clearance

t24.168.sk05a

27/08/2024

Scale: 1:200 @ A3



70 Stranmore Boulevard, Bayonet Head

12.5m HRV

Service Vehicle entry

LEGEND

Vehicle Body

Wheel Path

500mm Clearance

t24.168.sk06a

27/08/2024

Scale: 1:400 @ A3

70 Stranmore Boulevard, Bayonet Head

12.5m HRV

Service Vehicle entry

LEGEND

Vehicle Body

Wheel Path

500mm Clearance

t24.168.sk07a

27/08/2024

Scale: 1:400 @ A3

HERRING STORER ACOUSTICS

PROPOSED COMMERCIAL DEVELOPMENT

70 STRANMORE BOULEVARD BAYONET HEAD

ENVIRONMENTAL ACOUSTIC ASSESSMENT

MARCH 2025

OUR REFERENCE: 34327-1-25053

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
P.O. Box 219, Como, W.A. 6952
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DOCUMENT CONTROL PAGE

ENVIRONMENTAL ACOUSTIC ASSESSMENT

70 STRANMORE BOULEVARD
BAYONET HEAD

Job No: 25053

Document Reference: 34327-1-25053

FOR

TFA PROJECT GROUP

DOCUMENT INFORMATION			
Author:	Paul Daly	**Checked By:**	George Watts
Date of Issue :	21 March 2025		

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1	1	TFA Project Group Attn : Damien Mackay Email : Damien.Mackay@tfa.com.au		✓

This report has been prepared in accordance with the scope of services and on the basis of information and documents provided to Herring Storer Acoustics by the client. To the extent that this report relies on data and measurements taken at or under the times and conditions specified within the report and any findings, conclusions or recommendations only apply to those circumstances and no greater reliance should be assumed. The client acknowledges and agrees that the reports or presentations are provided by Herring Storer Acoustics to assist the client to conduct its own independent assessment.

CONTENTS

APPENDICIES

1. INTRODUCTION

Herring Storer Acoustics were commissioned by TFA Project Group to undertake an acoustic assessment of noise emissions associated with the development of 70 Stranmore Boulevard, Bayonet Head.

This report assesses noise emissions from the premises with regards to compliance with the requirements of the *Environmental Protection (Noise) Regulations 1997*. It is understood that the development is likely to consist of a service station, food outlet, and carwash, therefore noise sources considered as part of this assessment include:

- Plant by way of the air conditioning, exhaust systems and refrigeration;
- Car movements on site;
- Car and Truck engine starts and doors closing;
- Truck movements on site using the service station and the refuelling truck;
- Truck mounted refrigeration units
- Auto Carwash: and
- Vacuum Units.

We note that from information received from DWER, the bitumised area would be considered as a road, thus noise relating to motor vehicles is exempt from the *Environmental Protection (Noise) Regulations 1997*. We note that these noise sources are rarely critical in the determination of compliance. However, as requested by council and for completeness, they have been included in the assessment, for information purposes only.

For information, the site plan for the proposed development is attached in Appendix A.

2. SUMMARY

The closest neighbouring residences to this development are located to the north east (existing residence), and to the south side of the development (potential future residence). As the service station would be potentially open 24 hours per day, noise received at the neighbouring noise (highly) sensitive premises from these noise sources needs to comply with the appropriate assigned noise levels for the night period.

The noise associated with car and truck movements on site would be of short term duration and compliance with the assigned L_{A1} noise levels, are required. Noise from the mechanical services would occur for more than 10% of the time, hence noise received at the neighbouring premises needs to comply with the assigned L_{A10} noise levels.

It is noted that as the development would be considered as a public place, noise emissions associated with the vehicles on site need to be considered individually.

Noise emissions from car and truck doors closing and engines starting, need to comply with the assigned L_{Amax} noise levels.

Finally, noise emissions from the car wash and vacuum units have also been assessed to marginally exceed with the assigned night period noise level hence the following is required:

1 The mechanical services would be located on the roof, which would be around 5.7 metres above ground. The mechanical services would be screened from the neighbouring premises, (hence has been included in the assessment).

2 The refrigeration condensing units to be "Quiet" series / type condensing units.

3 The car wash and vacuum units are not to operate during the (2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday)

4 The auto wash contains speed doors which are closed during the wash cycle.

5 The vacuum units are acoustically hooded.

Based on the design provided, noise received at the neighbouring premises from the development would be deemed to comply with the Regulatory requirements at all times with noise mitigation further outlined in this report.

3. CRITERIA

The allowable noise level at the surrounding locales is prescribed by the *Environmental Protection (Noise) Regulations 1997*. Regulations 7 & 8 stipulate maximum allowable external noise levels determined by the calculation of an influencing factor, which is then added to the base levels shown below. The influencing factor is calculated for the usage of land within two circles, having radii of 100m and 450m from the premises of concern.

TABLE 3.1 - BASELINE ASSIGNED OUTDOOR NOISE LEVEL

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area	0700 - 1900 hours Monday to Saturday (Day)	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays (Sunday / Public Holiday Day)	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days (Evening)	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays (Night)	35 + IF	45 + IF	55 + IF
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.
IF is the influencing factor.

It is a requirement that received noise be free of annoying characteristics (tonality, modulation and impulsiveness), defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{Amax(Slow)}$ is more than 15 dB when determined for a single representative event;

"modulation" means a variation in the emission of noise that –

(a) is more than 3 dB L_{AFast} or is more than 3 dB L_{AFast} in any one-third octave band;

(b) is present for more at least 10% of the representative assessment period; and

(c) is regular, cyclic and audible;

"tonality" means the presence in the noise emission of tonal characteristics where the difference between –

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as L_{ASlow} levels.

Where the noise emission is not music, if the above characteristics exist and cannot be practicably removed, then any measured level is adjusted according to Table 3.2 below.

TABLE 3.2 - ADJUSTMENTS TO MEASURED LEVELS

Where **tonality** is present	Where **modulation** is present	Where **impulsiveness** is present
+5 dB(A)	+5 dB(A)	+10 dB(A)

Note: These adjustments are cumulative to a maximum of 15 dB.

For this development, the closest residential premises of concern are located:

- To the north east, existing (as indicated on Figure 3.1); and
- To the south of the site, being the possible future development of residential premises.

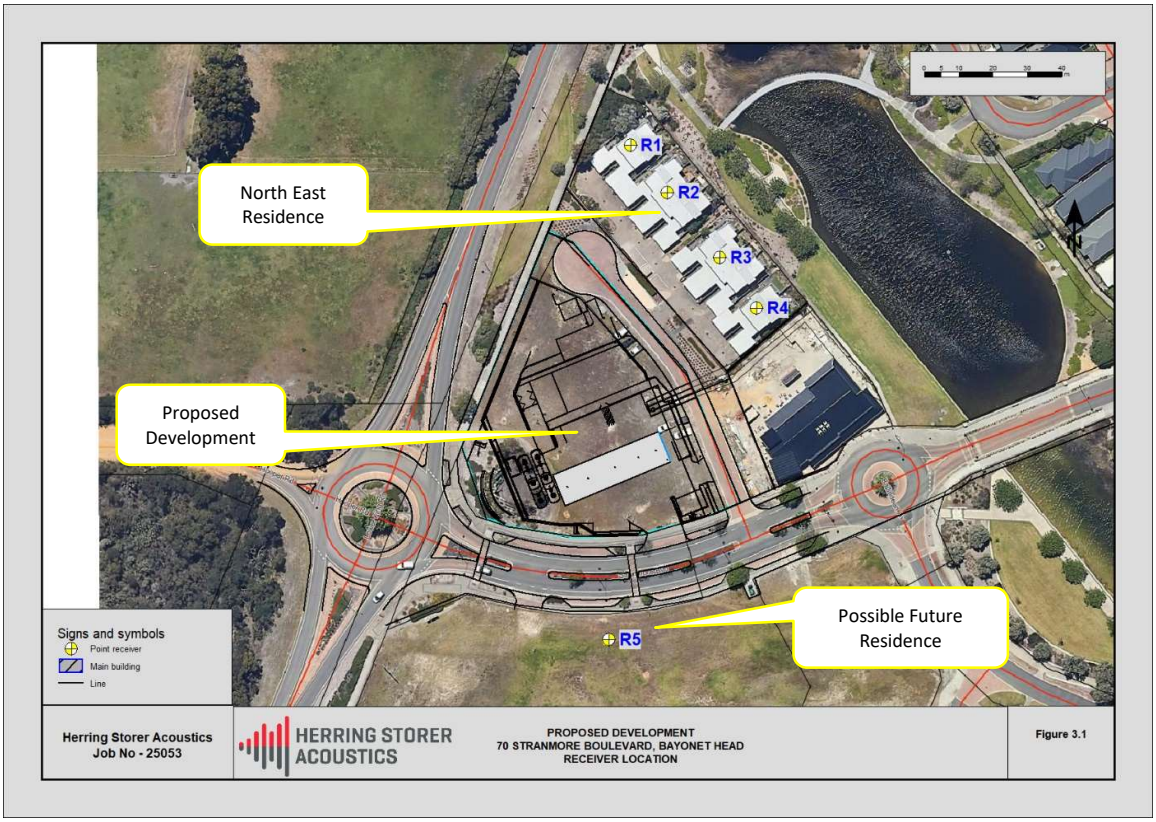


FIGURE 3.1 – AREA AROUND PROPOSED FACILITY

Based on the results of the noise modelling, the influencing factor (IF) at the worst case locations, as indicated on Figure 3.1 (with regards to noise received from the proposed facility) neighbouring residential premises has been conservatively estimated as listed in Table 3.3.

TABLE 3.3 – INFLUENCING FACTORS

IF Factor Parameter	IF Factor (dB)
Major Road within inner circle	-
Major Road within outer circle	-
Secondary Road within inner circle	-
Commercial Premises within the inner circle	+1.25 (25%)
Commercial Premises within the outer circle	+0.5 (10%)
Industrial Premises within the inner circle	-
Industrial Premises within the outer circle	-
TOTAL IF	+1.75 (round up to +2)

Based on the above influencing factor, the assigned outdoor noise levels for the neighbouring residential locations are listed in Table 3.4.

TABLE 3.4 - ASSIGNED OUTDOOR NOISE LEVEL

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises : Highly sensitive area	0700 - 1900 hours Monday to Saturday	47	57	67
	0900 - 1900 hours Sunday and Public Holidays	42	52	67
	1900 - 2200 hours all days	42	52	57
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	47	57

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.

Additional to the above, with regards to vehicles accessing the site, we note that as anyone can access the site and the operators of the premises have no control on who can enter the car park these areas would be designated as public places. Regulation 6 of the *Environmental Protection (Noise) Regulations 1997* relates to noise emissions from public places and under this Regulation, "*the person who is causing or permitting that noise to be emitted is to be treated as the occupier…*". Therefore, noise emissions from each individual vehicle using the car park needs to comply with the assigned noise levels.

4. MODELLING

Modelling of the noise propagation from the proposed development was carried out using an environmental noise modelling computer program, "SoundPlan". Calculations were carried out using the EPA standard weather conditions as stated in the Environmental Protection Authority's *"Draft Guidance for Assessment of Environmental Factors No.8 - Environmental Noise"*.

Noise emissions from the development include:

- Plant by way of the air conditioning, exhaust systems and refrigeration plant.
- Car movements on site;
- Cars starting and doors closing;
- Truck movements on site, including refuelling tanker;
- Trucks starting and doors closing; and
- Auto Carwash.
- Vacuum Unit.

To determine the noise received at the neighbouring premises, noise modelling was undertaken for the following scenarios:

1 Plant; air conditioning, exhaust systems, auto wash, vacuum units and refrigeration plant (including truck mounted refrigeration units).

2 Car movements on site.

3 Cars starting and doors closing.

4 Truck movements on site, including the refuelling tanker.

5 Trucks starting and doors closing.

With regards to noise emissions, the following are noted:

1 For the modelling of cars, the noise sources (ie cars) were located not only at the petrol bowsers, parking bays, but also at the entry crossover point to the development. Thus, ensuring noise modelling was undertaken for the worst-case locations.

2 The trucks have been located at the petrol bowsers, entry and exit routes and at the crossovers. Additionally, the truck mounted refrigeration unit has been located at the truck bowser area. Thus, ensuring noise modelling was undertaken for the worst-case locations.

3 Noise associated with the mechanical services does not take into account any diversity of operation. Such diversity would occur during the night period. Thus, this is a conservative assessment. At this stage of the project, the mechanical service has not been design. Therefore, the noise sources have been based on designs used for the same or similar tenancies.

4 The mechanical services would be located on the roof, which would be around 5.7 metres above ground. The mechanical services would be screened from the neighbouring premises, hence has been included in the assessment.

5 The refrigeration condensing units to be "Quiet" series / type condensing units.

6 The auto wash contains speed doors which are closed during the wash cycle.

7 Vacuum units have hooded acoustic enclosures.

The calculations were based in the sound power levels listed in Tables 4.1 to 4.3.

TABLE 4.1 – GENERAL SOUND POWER LEVELS

Item of Equipment	Sound Power Level, (dB(A))
Cars moving	79
Truck moving	89
Car Start	85
Car Door	87
Truck Start	94
Truck Door	95
Truck Mounted Refrigeration Unit	86

TABLE 4.2 – MECHANICAL SERVICES NOISE LEVELS

Tenancy	Plant Item	Noise Level dB(A)
Petrol Station Convenience Store	Air Conditioning Condensing Units Refrigeration Condenser	2 at 52 dB(A) @ 1m 1 at 61 dB(A) @ 1m
Tenancy 2 (Food Outlet)	Air Conditioning Condensing Units Exhaust Fan	2 at 57 dB(A) @ 1m 1 at 60 dB(A) @ 1m

TABLE 4.3 – CARWASH / VACUUM UNITS SOUND POWER LEVELS

Tenancy	Quantity	Sound Power Level dB(A)
Auto wash (Doors Closed)	1	87
Vacuums	2	88

The above noise sources need to comply with the following assigned noise levels:

L_{A10} - Mechanical services, Car wash, Vacuum Units and truck mounted refrigeration unit.
L_{A1} - Car and truck movements.
L_{AMax} - Car and truck engine starts and doors closing.

5. RESULTS

Calculations were undertaken to all the premises located around the development, however, to simplify the analysis, the assessments have only been undertaken for the following worst case locations :

- A. Residence to the north east (R1 to R4).
- B. Possible future residence to the south (R5).

The resultant noise levels listed in Table 5.1 for the residential locations are for the worst case operating conditions.

TABLE 5.1 – WORST CASE CALCULATED NOISE LEVELS

Item	Calculated Noise Levels (dB(A))				
	Residence 1	Residence 2	Residence 3	Residence 4	Residence 5
Mechanical services (including truck mounted refrigeration unit) + Carwash + Vacuum Units	36	38	38	37	28
Cars (Movement)	36	37	36	36	38
Trucks (Movement)	46	47	46	46	48
Car Start	40	44	44	45	40
Car Door Slam	42	46	46	47	42
Truck Start	34	36	39	41	43
Truck Door Slam	35	37	40	42	44

6. ASSESSMENT

Given the above possible noise sources, we believe that assessments of the following scenarios are required.

6.1 L_{A10} NOISE EMISSIONS

Noise emissions from the mechanical services, vacuum units and car wash would be steady state and would operate for the majority of time. Hence noise received from these items need to comply with the assigned L_{A10} noise level.

As noise emissions from the refrigeration condensers could be considered tonal however in isolation from other sources, i.e., without the car wash facility, they would be greater than 10 dB below the assigned noise level due to screening, hence unlikely to be audible above background. For the car wash, which is the dominant noise source, previous noise level measurements show that it is a broadband noise and does not contain tonal characteristics.

Tables 6.1 to 6.3 summarises the applicable Assigned Noise Levels, and assessable noise level emissions for each identified case that needed to be considered.

TABLE 6.1 – ASSESSMENT OF L_{A10} NOISE LEVEL EMISSIONS MECHANICAL SERVICES AND CAR WASH / VACUUM UNITS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{A10} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	36	0700 - 1900 hours Monday to Saturday	47	Complies
		0900 - 1900 hours Sunday and Public Holidays, and 1900 - 2200 hours all days	42	Complies
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	Complies
Residence 2	38	0700 - 1900 hours Monday to Saturday	47	Complies
		0900 - 1900 hours Sunday and Public Holidays, and 1900 - 2200 hours all days	42	Complies
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	+1
Residence 3	38	0700 - 1900 hours Monday to Saturday	47	Complies
		0900 - 1900 hours Sunday and Public Holidays, and 1900 - 2200 hours all days	42	Complies
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	+1
Residence 4	37	0700 - 1900 hours Monday to Saturday	47	Complies
		0900 - 1900 hours Sunday and Public Holidays, and 1900 - 2200 hours all days	42	Complies
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	Complies
Residence 5	28	0700 - 1900 hours Monday to Saturday	47	Complies
		0900 - 1900 hours Sunday and Public Holidays, and 1900 - 2200 hours all days	42	Complies
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	37	Complies

6.2 L_{A1} NOISE EMISSIONS

Noise emissions from car and truck movements on site need to comply with the assigned L_{A1} noise level. As the critical period for compliance for this source is the night period, this scenario includes noise emissions from the sources associated with L_{A1} noise levels. However, as under the Regulations, each of these sources needs to be considered individually, it is the highest calculated noise levels used for assessment, rather than the cumulative overall noise levels.

Based on the definitions of tonality, noise emissions from car and truck movements, being an L_{A1}, being present for less than 10% of the time, would not be considered tonal. Thus, no penalties would be applicable, and the assessment would be as listed in Table 5.1.
Tables 6.2 to 6.3 summarise the applicable Assigned Noise Levels for the most stringent time period i.e night., and assessable noise level emissions for each identified noise.

TABLE 6.2 – ASSESSMENT OF L_{A1} NOISE LEVEL EMISSIONS FROM CARS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{A1} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	36	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	47	Complies
Residence 2	37			Complies
Residence 3	36			Complies
Residence 4	36			Complies
Residence 5	38			Complies

TABLE 6.3 – ASSESSMENT OF L_{A1} NOISE LEVEL EMISSIONS FROM TRUCKS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{A1} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	46	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	47	Complies
Residence 2	47			Complies
Residence 3	46			Complies
Residence 4	46			Complies
Residence 5	48			Complies

6.3 L_{AMAX} NOISE EMISSIONS

Noise emissions from car and truck engine starts and doors closing on site need to comply with the assigned L_{AMax} noise level. As the critical period for compliance for this source is the night period, this scenario includes noise emissions from the sources associated with L_{AMax} noise levels. However, as under the Regulations, each of these sources needs to be considered individually, it is the highest calculated noise levels used for assessment, rather than the cumulative overall noise levels.

Based on the definitions of tonality, noise emissions from a car and truck starting, being an L_{AMax}, being present for less than 10% of the time, would not be considered tonal. Thus, no adjustments would be applicable, and the assessment would be as listed in Table 5.1. However, noise associated with the closing of car and truck doors could be impulsive and to be conservative, a +10 dB(A) adjustment for impulsiveness would be applied. Additionally, car and truck starts could be impulsive, hence a + 10 dB adjustment has also been applied to these levels.

Tables 6.4 to 6.7 summarise the applicable Assigned Noise Levels, and assessable noise level emissions for each identified noise.

TABLE 6.5 – ASSESSMENT OF L_{AMAX} NOISE LEVEL EMISSIONS FROM CAR STARTS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{Amax} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	50	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	57	Complies
Residence 2	54			Complies
Residence 3	54			Complies
Residence 4	55			Complies
Residence 5	50			

TABLE 6.6 – ASSESSMENT OF L_{AMAX} NOISE LEVEL EMISSIONS FROM CAR DOORS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{Amax} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	52	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	57	Complies
Residence 2	56			Complies
Residence 3	56			Complies
Residence 4	57			Complies
Residence 5	52			

TABLE 6.7 – ASSESSMENT OF L_{AMAX} NOISE LEVEL EMISSIONS FROM TRUCK STARTS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{Amax} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	44	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	57	Complies
Residence 2	46			Complies
Residence 3	49			Complies
Residence 4	51			Complies
Residence 5	53			

TABLE 6.8 – ASSESSMENT OF L_{AMAX} NOISE LEVEL EMISSIONS FROM TRUCK DOORS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable Assigned L_{Amax} Noise Level (dB)	Exceedance to Assigned Noise Level (dB)
Residence 1	45	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday	57	Complies
Residence 2	47			Complies
Residence 3	50			Complies
Residence 4	52			Complies
Residence 5	54			

Based on the above, there is a marginal exceedance for the night period (2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holiday) for the use of the car wash and vacuum units.

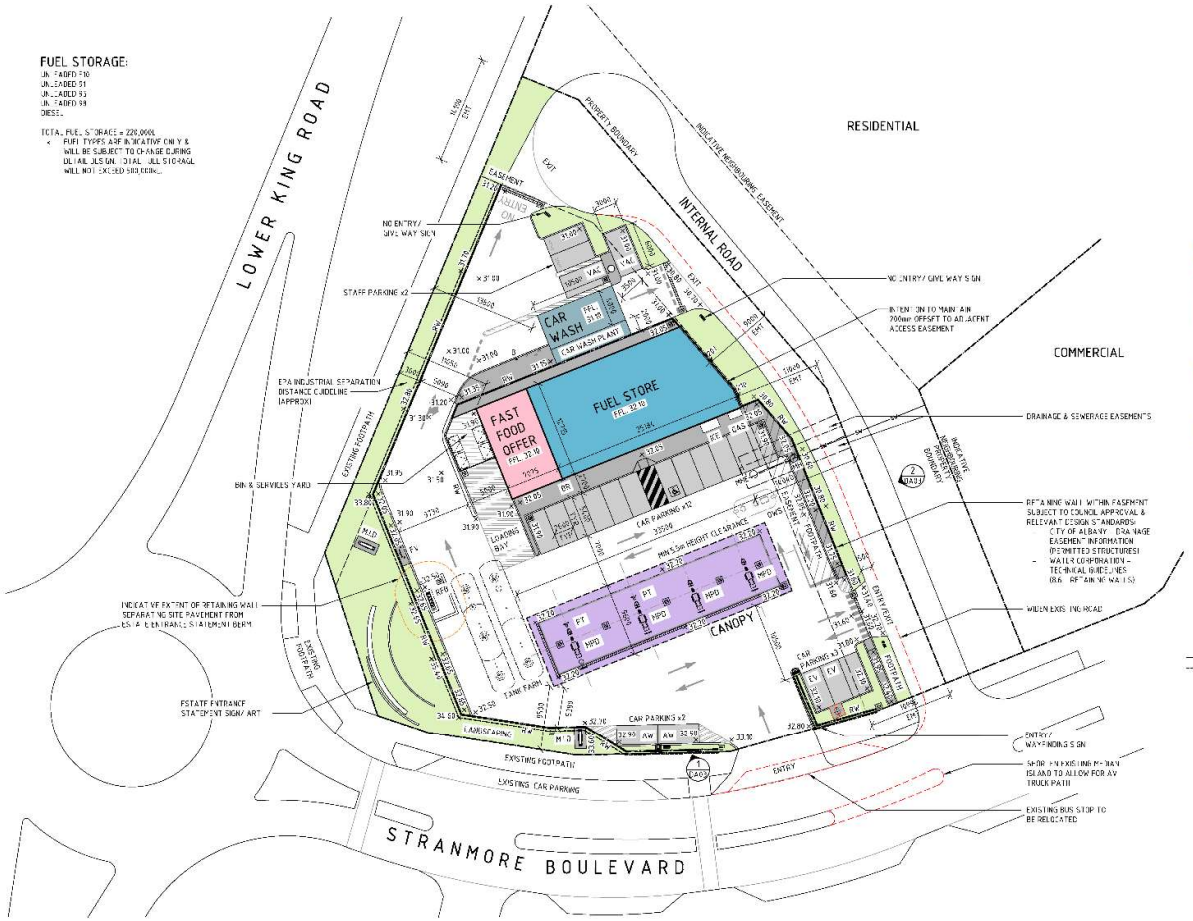
From the above assessments, it can be seen that noise received at the neighbouring residence, with the exception of the car wash and vacuum units, complies with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

Therefore, it is recommended that the car wash and vacuum units are not available for the night period.

Additionally, as the mechanical services would only be design as part of the next design phase, it is recommended that an acoustic review of the mechanical services be undertaken once the design has been finalised, to ensure compliance is achieved.

APPENDIX A

PLANS



FUEL STORAGE:

UNLEADED 98
UNLEADED 91
UNLEADED 93
UNLEADED 98
DIESEL

TOTAL FUEL STORAGE = 220,000L

- FUEL TYPES ARE INDICATIVE ONLY & WILL BE SUBJECT TO CHANGE DURING DETAILED DESIGN. TOTAL FUEL STORAGE WILL NOT EXCEED 220,000L.

RPD:

LOT 10 ON DP 406723
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:

1. DEVELOPMENT APPLICATION PURPOSE ONLY - NOT FOR TENDER OR CONSTRUCTION.
2. ALL SITE BOUNDARIES, DIMENSIONS, & STRUCTURES (INCLUDING LOCATIONS) ARE SUBJECT TO SURVEY.
3. THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. TTA UNDERSTANDS THE PROPOSED LAYOUT IS GENERALLY COMPLIANT WITH RELEVANT CODES & STANDARDS. HOWEVER, TTA DOES NOT FORMALLY CERTIFY THE PROPOSED LAYOUT IS COMPLIANT. IN THE CASE OF IFS DRAWINGS UTILISED FOR THE PURPOSES OF CONSTRUCTION, FORMAL CERTIFICATION RESTS WITH THE PRINCIPAL CONTRACTOR.
4. REFER TO DATA FOR EXISTING AND PROPOSED LANDSCAPING.

SITE AREA / LEGEND

- FULL SERVICE: AREA 1906m²
- FAST FOOD OFFER: AREA 90m²
- CAR WASH (INCL. PLANT): AREA 77m²
- SERVICE YARD: AREA 97m²
- CANOPY: AREA 322m²
- PATHWAYS: AREA 208m²
- LANDSCAPING: AREA 747m²

SITE COVERAGE (INCL. SERVICE YARD): 828m² / 18.6%

LEGEND:

AW	AIR & WATER POINT
B	BOLLARD
BR	BICYCLE RAIL
EV	ELECTRIC VEHICLE CHARGING
FV	FUEL VENT STACK
FFL	FINISHED FLOOR LEVEL
GAS	LPG/ 9KG TILE CAGE
ICP	ICP SICK
MID	MAIN IDENTIFICATION PYLON SIGN
MH	EXISTING MANHOLE
MH	MANHOLE
MPD	MULTI-PRODUCT FUEL DISPENSER
OWS	OILY WATER SEPARATOR
PT	24 HOUR PAYMENT TERMINAL
RFB	REMOTE FILL BOX
RW	RETAINING WALL
VAC	VACUUM TRAINER BAY
	FENCE/ BALUSTRADE
	RETAINING WALL SPOON DRAIN (TOP OF WALL) & SUBSOIL DRAINAGE. WHOLLY CONTAINED WITHIN PROPERTY BOUNDARY.
	GULLY PIT
	TRENCH DRAIN

CAR PARKING:

REQUIRED

- 9x SERVICE STATION RETAIL (1 PER 20% OF RETAIL AREA=170m²)
- 2x SERVICE STATION STAFF (BASED ON 2 STAFF WORKING)
- 5x FAST FOOD OFFER (1 PER 3 DINING + 1 PER 5m2 EATING)
- 1x FAST FOOD OFFER BICYCLE

TOTAL = 17

ACHIEVED

- 12x STANDARD
- 2x STAFF
- 1x ACCESSIBLE
- 2x EV BAYS
- 2x AIR & WATER BAYS
- 2x VACUUM BAYS
- 1x BICYCLE RAIL
- 4x EXISTING ON STREET CAR PARKING

TOTAL = 26

SCALE 1:250

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS	DRAWING ISSUE APPROVAL	REV	DATE	BY	DESCRIPTION	CHK	APP	PROJECT DETAILS	DRAWING TITLE	STATUS
TTA Project Group	NAME: DATE:	A	22.05.24	CTD	PRELIMINARY FOR DISCUSSION	PDS		70 STRANMORE BOULEVARD	PROPOSED SITE PLAN	DA ISSUE
	PROFESSIONAL QUALIFICATION:	B	03.06.24	CTD	COMMENTS	PDS	LD	BAYONET HEAD		DATE CREATED: 17.05.24 / ORIGINAL SCALE: 1:250 / SHEET: A1
	SIGNATURE:	C	12.08.24	CTD	FOR INFORMATION	PDS		WA 6330		DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.
		D	22.08.24	CTD	PRELIMINARY FOR INFORMATION	PDS		for BATRA BROTHERS PTY LTD		DRAWING NO: 24255-DA02 / REV: E
		E	23.08.24	CTD	DA ISSUE	SLM	PDS			

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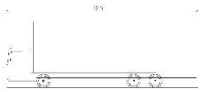
66 Knapp Street, Fortitude Valley QLD 4006 Australia
Email: enquiry@ttagroup.com.au Australia Wide: 396 759 360
A.C.N. 612 132 133

RPD:
LOT 70 ON D.P. 406178
COUNCIL: CITY OF ALBANY
AREA: 4446m²

NOTES:
1. SITE LAYOUT SUBJECT TO IDENTIFICATION SURVEY AT DETAIL DESIGN STAGE.
2. MEASUREMENTS ARE APPROXIMATE ONLY AND ARE SUBJECT TO IDENTIFICATION SURVEY AT DETAIL DESIGN STAGE.
3. PRELIMINARY ONLY - NOT FOR TENDER OR CONSTRUCTION
4. CONCEPT TO BE ADVISED BY TOWN PLANNING AND TRAFFIC ADVICE.



NTS

HRV = Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.292m
Minimum Ground Clearance	0.275m
Track Width	2.500m
Lock-to-Lock time	6.00s
Curb to Curb Turning Radius	12.500m

0 5 10 15 20 25m
SCALE 1:250

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TFA Project Group

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A C N 6 1 2 1 3 2 2 3 3

NAME: DATE:
PROFESSIONAL QUALIFICATION:
SIGNATURE:
Head office - Brisbane Ph: 617 3854 2900
166 Knapp Street, Fortitude Valley QLD 4006 Australia
Email: enquiry@tfa.com.au Aust Wide: 1300 794 300

A	03.06.24	CTD	PRELIMINARY FOR DISCUSSION	PS	TN
B	13.08.24	CTD	FOR INFORMATION	PS	

70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for RAHUL BATRA

DRAWING TITLE
SITE LAYOUT PLAN
VEHICLE SWEPT PATH
HRV (12.5m)

STATUS
FOR INFORMATION

DATE CREATED	ORIGINAL SCALE	SHEET
03.06.24	1:250	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE.

DRAWING NO	REV
24255-DA03	B

CODE	DESCRIPTION
DP	DOWNPIPE – REFER HYD DRAWINGS
B	BOLLARD
COL	COLUMN – REFER STRUCTURAL ENG DRAWINGS
CSU	CLOTHES LINE SERVICE UNIT
FE	FIRE EXTINGUISHER AS PER AS2444 BY OTHERS
GAS	LPG BOTTLE CAGE
ICE	ICE BOX
KR	KERB RAMP
LDB	ENTRY PRODUCT LEADER BOARD BOLLARD
MPD	MULTI-PRODUCT DISPENSER
TB	TRUCK BOLLARD

NOTE:
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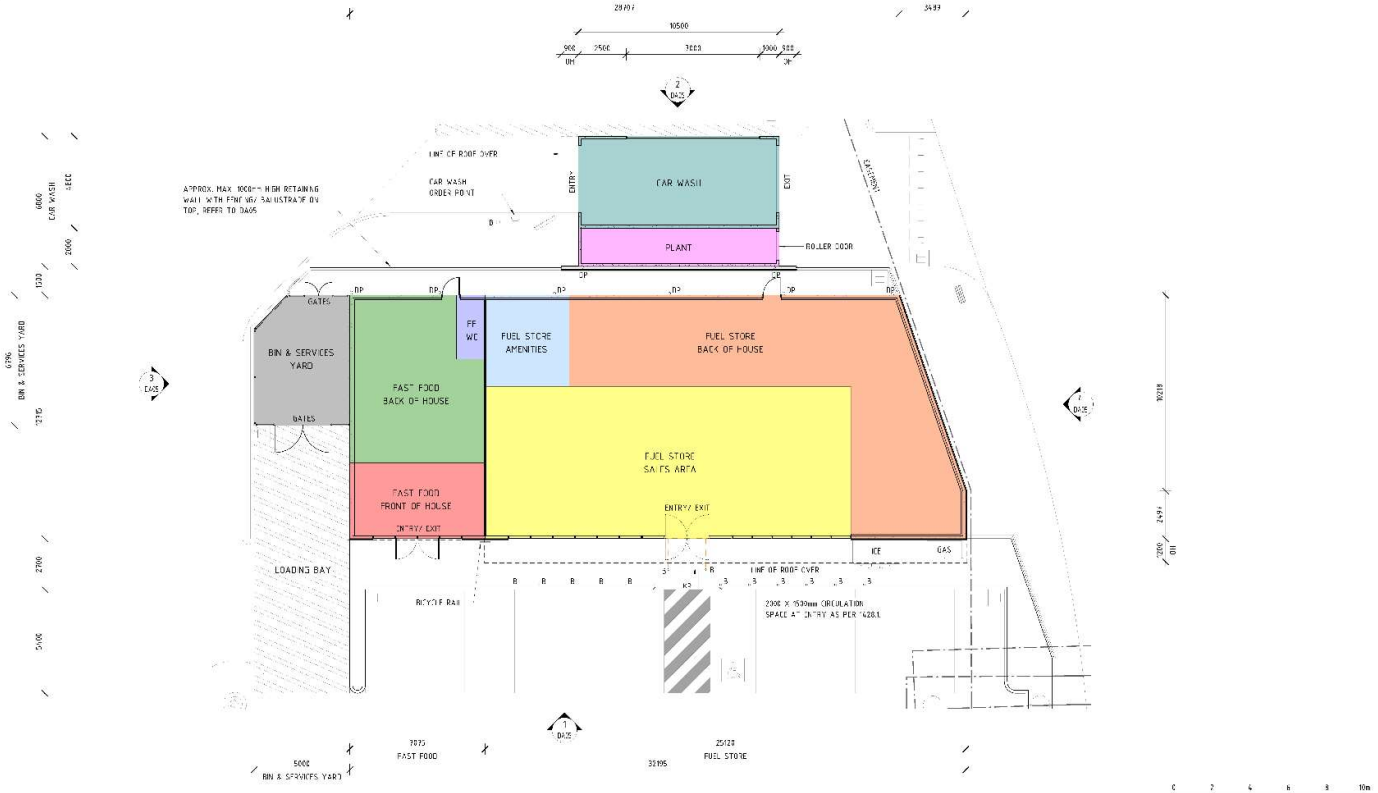
4. COLOURS & FINISHES SHOWN INDICATIVE ONLY, TO BE CONFIRMED AT DETAIL DESIGN STAGE.
5. EXISTING AND PROPOSED LANDSCAPING OMITTED FOR CLARITY.

AREA LEGEND:

FAST FOOD BACK OF HOUSE:	57m²	FUEL STORE BACK OF HOUSE:	190m²	CAR WASH:	50m²
FAST FOOD FRONT OF HOUSE:	28m²	FUEL STORE FRONT OF HOUSE:	156m²	PLANT:	21m²
FAST FOOD WC:	5m²	FUEL STORE AMENITIES:	20m²	BIN & SERVICES YARD:	32m²
				TOTAL AREA:	493m²

RPD:
LOT 70 ON DP. 436179
COUNCIL: CITY OF ALBANY
AREA: 4.44ha²



SCALE 1:100

PROJECT MANAGERS | PLANNERS | DESIGNERS | ENGINEERS

TFA Project Group

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Email: enquiry@tfa.com.au Aust Wide 1300 794 300

DRAWING ISSUE APPROVAL

REV	DATE	BY	DESCRIPTION	CHK	APP
A	22.08.24	CTC	DA ISSUE	SLW	MCS
B	28.08.24	CTC	DA ISSUE	SLW	MCS

PROJECT DETAILS
70 STRANMORE BOULEVARD
BAYONET HEAD
WA 6330
for BATRA BROTHERS PTY LTD

DRAWING TITLE
BUILDING FLOORPLAN

STATUS
DA ISSUE

DATE CREATED	ORIGINAL SCALE	SHEET
8.08.24	1 : 100	A1

DO NOT SCALE THIS DRAWING. CONFIRM ALL DIMENSIONS ON SITE

DRAWING NO	REV
24255 – DA04	B

Luminaire Schedule

Symbol	Qty	Label	Description	LLF	Arrangement	Mounting Height	Outreach Arm	Watts	Lumens	UWLR	BUG Rating	Product Code
	16	CL-01	ADLT CREE DOT 77W PETROLEUM SYMMETRIC 4000K CANOPY LUMINAIRE	1.000	Single	4.5	0	77	11795	0.00	B3-U0-G1	KTFA-45-PS-12L-407_77W
	5	PL-01	ADLT CREE ENRGY DUE 106W TYPE 150 4000K ON A 6 METRE POLE	1.000	Single	6	0.3	106	15273	0.00	B2-U0-G2	TRMA-02-15015L407106
	5	WL-01	ADLT CREE OSQW 27W TYPE 150 4000K WALL MOUNT	1.000	Single	3.5	0	27	4071	0.00	B1-U0-G1	OSQW-C-4L-40K7-3M-UL-WM

Calculation Summary

												Fixed Meter Aiming	
Label	CalcType	Units	Avg	Max	Min	Max/Avg	Min/Avg	Min/Max	PtSpcLr	PtSpcTb	Grid Z	Orient	Tilt
ACCESS AREA EH	Illuminance	Lux	72.61	259.9	3.9	3.58	N.A.	N.A.	2	2	0	N.A.	N.A.
BIN AREA EH	Illuminance	Lux	51.92	77.4	33.1	1.49	N.A.	N.A.	2	2	0	N.A.	N.A.
CANOPY EH	Illuminance	Lux	378.28	465.5	200.9	N.A.	0.53	N.A.	1	1	0	N.A.	N.A.
CARWASH ENTRY EH	Illuminance	Lux	24.45	48.9	5.8	2.00	N.A.	N.A.	2	2	0	N.A.	N.A.
CARWASH EXIT EH	Illuminance	Lux	23.22	61.1	3.4	2.63	N.A.	N.A.	2	2	0	N.A.	N.A.
CP IN FRONT OF SHOP DIS PCD	Illuminance	Lux	N.A.	109.0	59.3	N.A.	N.A.	N.A.	1	1	0	N.A.	N.A.
CP IN FRONT OF SHOP EH	Illuminance	Lux	43.77	101.9	4.8	2.33	N.A.	N.A.	2	2	0	N.A.	N.A.
CP IN FRONT OF SHOP EV1 90	Illuminance	Lux	N.A.	61.1	9.6	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP IN FRONT OF SHOP EV2 -90	Illuminance	Lux	N.A.	13.2	11.1	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP1 AWAY FROM SHOP EH	Illuminance	Lux	67.34	102.6	43.2	1.52	N.A.	N.A.	2	2	0	N.A.	N.A.
CP1 AWAY FROM SHOP EV1 90	Illuminance	Lux	N.A.	97.5	74.9	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP1 AWAY FROM SHOP EV2 -90	Illuminance	Lux	N.A.	8.9	4.9	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP2 AWAY FROM SHOP EV1 90	Illuminance	Lux	N.A.	6.3	3.9	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP2 AWAY FROM SHOP EV2 -90	Illuminance	Lux	N.A.	63.7	11.5	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP2 AWAY FROM SHOP EH	Illuminance	Lux	48.45	95.7	12.7	1.98	N.A.	N.A.	2	2	0	N.A.	N.A.
CP3 AWAY FROM SHOP EH	Illuminance	Lux	28.63	85.2	8.1	2.98	N.A.	N.A.	2	2	0	N.A.	N.A.
CP3 AWAY FROM SHOP EV1 90	Illuminance	Lux	N.A.	88.4	4.3	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
CP3 AWAY FROM SHOP EV2 -90	Illuminance	Lux	N.A.	77.3	62.3	N.A.	N.A.	N.A.	2	N.A.	N.A.	Variable	90
LOADING ZONE EH	Illuminance	Lux	42.20	87.0	17.4	2.06	N.A.	N.A.	2	2	0	N.A.	N.A.
ObtrusiveLight_TI_1	Obtrusive - TI	%	N.A.	1	0	N.A.	N.A.	N.A.	2	0	N.A.	Variable	90
RESIDENCE_Cd_Seg1	Obtrusive - Cd	N.A.	N.A.	229	3	N.A.	N.A.	N.A.	1.5	1.5	N.A.	Variable	90
RESIDENCE_Cd_Seg2	Obtrusive - Cd	N.A.	N.A.	206	6	N.A.	N.A.	N.A.	1.5	1.5	N.A.	Variable	90
RESIDENCE_Ill_Seg1	Obtrusive - Ill	Lux	N.A.	0.1	0.0	N.A.	N.A.	N.A.	1.5	1.5	N.A.	Variable	90
RESIDENCE_Ill_Seg2	Obtrusive - Ill	Lux	N.A.	0.5	0.0	N.A.	N.A.	N.A.	1.5	1.5	N.A.	Variable	90

NOTES:

THE LIGHTING DETAILED IS BASED ON THE INFORMATION CONTAINED IN AUTOCAD DWG FILE x24255-Site.DWG.

THE LIGHT TECHNICAL PARAMETERS COMPLY WITH THE RECOMMENDATIONS OF
- 250 LUX EH.
- AS/NZS 1158.3.1 2023 - CAT PC1 & PCD FOR THE CARPARKS & ACCESS AREA.
- AS PER AS4282:2023 COMPLIANCE IN A A3 ZONE AREA FOR CURFEW HOURS IS ACHIEVED. VALUES SHOWN FOR AS4282 & ON THE ADJACENT RESIDENTIAL BOUNDARY AREA AT INITIAL LAMP LUMENS.

FOR CLARITY THE HORIZONTAL ILLUMINANCE LEVELS ARE ONLY SHOWN. TO VIEW THE VERTICAL CALCULATIONS SIMPLY ACTIVATED THE AUTOCAD LAYER.

PHOTOMETRIC DATA WAS PROVIDED BY MANUFACTURER. SOFTWARE USED FOR CALCULATIONS IS AGI32.

CALCULATIONS ARE SUBJECT TO ACCURACIES AND TOLERANCES NOMINATED IN AUSTRALIAN AND NEW ZEALAND STANDARDS AS/NZS 3827.1:1998 AND AS/NZS 3827.2:1998.

Obtrusive Light - Compliance Report
AS/NZS 4282:2003, A3 - Medium District Brightness, Curfew
Filename: 9630-1_AS4282
14/02/2025 12:30:20 PM

Illuminance
Maximum Allowable Value: 2 Lux

Calculations Tested (2):

Calculation Label	Test Results	Max. Illum.
RESIDENCE_Ill_Seg1	PASS	0.1
RESIDENCE_Ill_Seg2	PASS	0.5

Luminous Intensity (Cd) At Vertical Planes
Maximum Allowable Value: 2500 Cd

Calculations Tested (2):

Calculation Label	Test Results
RESIDENCE_Cd_Seg1	PASS
RESIDENCE_Cd_Seg2	PASS

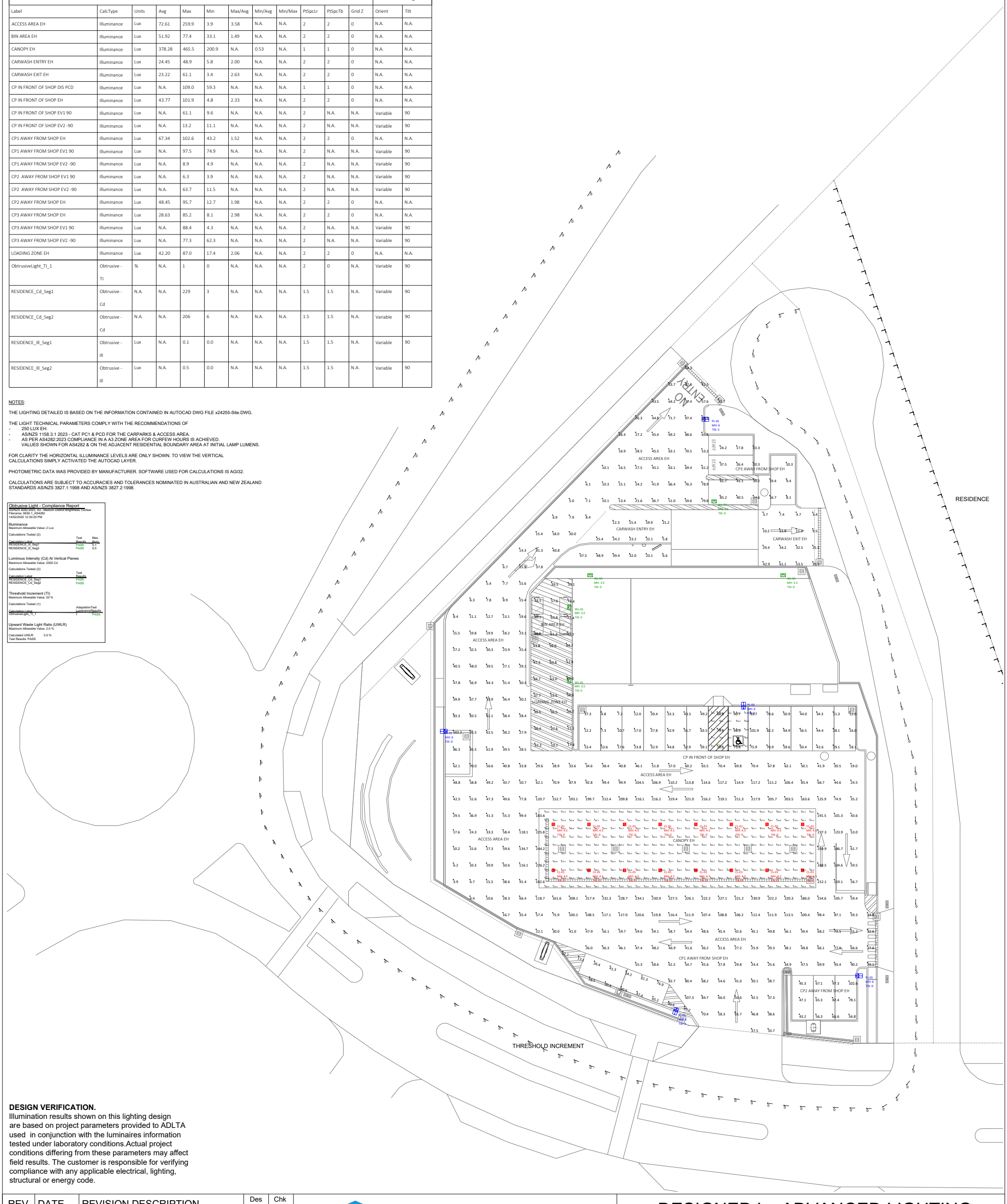
Threshold Increment (TI)
Maximum Allowable Value: 20 %

Calculations Tested (1):

Calculation Label	Adaptation Luminance	Test Results
ObtrusiveLight_TI_1	1	PASS

Upward Waste Light Ratio (UWLR)
Maximum Allowable Value: 2.0 %

Calculated UWLR: 0.0 %
Test Results: PASS



DESIGN VERIFICATION.
Illumination results shown on this lighting design are based on project parameters provided to ADLTA used in conjunction with the luminaires information tested under laboratory conditions.Actual project conditions differing from these parameters may affect field results. The customer is responsible for verifying compliance with any applicable electrical, lighting, structural or energy code.

REV	DATE	REVISION DESCRIPTION	Des By	Chk By
-	-	-	-	-

Advanced
LIGHTING TECHNOLOGIES

DESIGNED by ADVANCED LIGHTING

SERVICE STATION BAYONET HEAD - WA

PROPOSED LIGHTING DESIGN

DATE	SCALE	DESIGN No	DWG No	SHEET	Des By	Chk By
14/02/25	N.T.S	9630-1	9630-1	1/1	DP	NS

APPENDIX F – GEOTECHNICAL SITE CLASSIFICATION ASSESSMENT

Report No
10295/1

Great Southern
GEOTECHNICS

Site Classification Report

TFA Project Group
Lot 70 Stranmore Boulevard, Bayonet Head WA 6330

Thursday, 22 August 2024

Presented By: M.Snow
Great Southern Geotechnics Pty Ltd
5a 209 Chester Pass Rd, Albany WA

1.0 INTRODUCTION

As authorised by ***TFA Project Group***
a site classification for the proposed building envelope at ***Lot 70 Stranmore Boulevard, Bayonet Head WA 6330***
was performed on the ***13/08/2024***

2.0 GENERAL

This site investigation was carried out to determine the:
- Surface site conditions
- Subsurface soil profile
- Subsurface soil characteristics/parameters

This information is gathered to establish the swell/shrink characteristics of the underlying soils due to soil moisture changes under normal climatic conditions, and the probable amount of surface movement that may occur.

To allow for the determination of the site classification, the scope included:
- Observations of site conditions that may impact on the site classification,
- Sufficient test pits drilled and sampled to an appropriate depth, and
- Laboratory testing of samples.

3.0 SITE INVESTIGATION

Site conditions and test pit locations were recorded and are shown in Appendix 1 .
The field investigation consisted of **9** boreholes excavated on-site to depths of up to **1.6** m
using a Kubota KX41-3V mini excavator with a 300mm Auger.
These test holes were located across the proposed building envelope.

All soil layers encountered were visually assessed and classified on-site.

IMPORTANT NOTE: We have endeavoured to locate the test holes so that they are representative of the subsurface materials across the intended building site. However, soil conditions may change dramatically over short distances and our investigations may not locate all soil variations across the site.

4.0 LABORATORY TESTING

Results of any relevant laboratory testing performed are shown in **Appendix 2**. (Test Results)

5.0 SITE CLASSIFICATION

In accordance with Australian Standard 2870 (2011) Residential slabs and footings, the area shown on the accompanying site plan of Lot 70 Stranmore Boulevard, Bayonet Head WA 6330 is classified as class S

S Class: The Characteristic Surface Movement (Ys) that the site may experience due to variations in subsurface moisture conditions during normal climatic changes was calculated to be 0mm to 20mm - (refer to AS2870 – Section 2).
This Ys value indicates that the underlying soil profile has potential to experience slight swell/shrink movement under normal climatic changes. This swelling &/or shrinking of the soils, particularly clay soils, is attributed to the absorption &/or loss of moisture.

The site classification was determined by visual assessment of relevant site conditions, analysis of the soil profiles revealed by the Test Pit logs, and laboratory testing of samples taken from the boreholes.

Comments. The building envelope should be stripped of all vegetation and topsoil, to a depth of at least 100mm, with any areas of soft, loose or wet material selectively excavated to provide a firm, working base.

All test pit profiles noted are recorded from existing ground levels as on the day of investigation and any removal or addition of imported material will alter the results found. The Site classification is valid only in the state of which the investigation was conducted on the day.

This report and associated documentation was undertaken for the specific purpose described in the report and shall not be relied on for other purposes. This report was prepared solely for the use by **TFA Project Group** and any reliance assumed by other parties on this report shall be at such parties own risk.

6.0 EXPLANATION

Clay-based soils have the potential to change volume and shift when a change in moisture occurs. These types of materials are called 'reactive soils' with the amount that the soil is likely to shift defining how 'reactive' it's considered to be.

Some soils have a greater potential to change volume than others, and this amount of potential needs to be measured to ensure footings are designed in a way that helps protect structures from any soil surface movement.

Site Class	Foundation	Characteristic Surface Movement
A	Most sand and rock sites with little or no ground movement from moisture changes.	
S	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes.	**0mm to 20mm**
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes.	**20mm to 40mm**
H_1	Highly reactive clay sites, which may experience high ground movement from moisture changes.	**40mm to 60mm**
H_2	Highly reactive clay sites, which may experience very high ground movement from moisture changes.	**60mm to 75mm**
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes.	**> 75mm**
P	Sites which include filled sites, soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise.	

5a 209 Chester Pass Road Albany WA 6330
ACN: 613 485 644 ABN: 77 613 485 644
Email: Info@gsgeotechnics.com
Mobile: 0407 903 297

Appendix 1

Test Pit Logs

5a 209 Chester Pass Road Albany WA 6330
ACN: 613 485 644 ABN: 77 613 485 644

Email: Info@gsgeotechnics.com
Mobile: 0407 903 297

Figure 1 - Lot 70 Stranmore Boulevard, Bayonet Head WA 6330

Figure 2 - Approximate Test Pit Locations

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No: 10295
Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330

5a 209 Chester Pass Road Albany WA 6330
ACN: 613 485 644 ABN: 77 613 485 644

Email: Info@gsgeotechnics.com
Mobile: 0407 903 297

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 7 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP1** Sample No. **10295G1**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						Perched water table encountered at 1330mm below existing ground level.		
0 - 190	**190**	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD				
		Fine to medium, sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
190 - 580	**390**	**SAND with silt:** Light brown, fine to medium grained	M	MD				
580 - 850	**270**	**SAND with silt:** Light grey, fine to medium grained.	M	MD				
850 - 1550	**700**	**SAND with silt:** Dark brown / grey, fine to medium grained.	M	D	PC-MC			
1550 - 1600	**50**	**SAND with Silt:** Brown, fine to medium grained.	M	D	PC-MC			

Comments

Pit Terminated at: ✓ or ×		(mm) below ground level
Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength		**Rock**	**Cementation**
Cohesive	**Non-Cohesive**		
VS - Very Soft	VL - Very Loose	EL - Extremely Low	
S - Soft	L - Loose	VL - Very Low	IN - Indurated
F - Firm	MD - Medium Dense	L - Low	PC - Poorly Cemented
St - Stiff	D - Dense	M - Medium	MC - Moderately Cemented
VSt - Very Stiff	VD - Very Dense	H - High	WC - Well Cemented
H - Hard	CO - Compact	VH - Very High	
		EH - Extremely High	

▼ Water
Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

5a 209 Chester Pass Road Albany WA 6330
ACN: 613 485 644 ABN: 77 613 485 644

Email: Info@gsgeotechnics.com
Mobile: 0407 903 297

Test Pit No. 1 - Excavation

Test Pit No. 1 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP1**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 9 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP2** Sample No. **10295G2**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
0 - 80	80	**(Topsoil) SAND with silt:** Dark grey, fine to medium grained.	M	MD		No water table encountered.		
		Contains roots and root fibres.						
80 - 120	40	**SAND with silt:** Light grey, fine to medium grained.	M	MD				
120 - 160	40	**SAND with silt:** Dark grey, fine to medium grained.	M	MD				
160 - 200	40	**SAND with silt:** Light grey, fine to medium grained.	M	MD				
200 - 790	590	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
790 - 940	150	**SAND with silt:** Light grey, fine to medium grained.	M	MD				
940 - 1600	660	**SAND with silt:** Dark brown, fine to medium grained.	M	D	MC			

Comments

Pit Terminated at: ✓ or ×		(mm) below ground level
Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength

Cohesive	Non-Cohesive
VS - Very Soft	VL - Very Loose
S - Soft	L - Loose
F - Firm	MD - Medium Dense
St - Stiff	D - Dense
VSt - Very Stiff	VD - Very Dense
H - Hard	CO - Compact

Rock

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Cementation

IN - Indurated
PC - Poorly Cemented
MC - Moderately Cemented
WC - Well Cemented

Water
▼ Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 2 - Excavation

Test Pit No. 2 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP2**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 11 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP3** Sample No. **10295G3**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						No water table encountered.		
0 - 130	**130**	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD				
		Fine to medium, sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
130 - 1500	**1370**	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
1500 - 1600	**100**	**SAND with silt:** Light grey, fine to medium grained.	M	MD				

Comments

Pit Terminated at: ✓ or × (mm) below ground level

Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength

Cohesive	Non-Cohesive
VS - Very Soft	VL - Very Loose
S - Soft	L - Loose
F - Firm	MD - Medium Dense
St - Stiff	D - Dense
VSt - Very Stiff	VD - Very Dense
H - Hard	CO - Compact

Rock

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Cementation

IN - Indurated
PC - Poorly Cemented
MC - Moderately Cemented
WC - Well Cemented

Water
▼ Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 3 - Excavation

Test Pit No. 3 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP3**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 13 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP4** Sample No. **10295G4**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt	Excavation Dimensions: Depth 1.6 (m)	Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						Perched water table encountered at 1500mm		
0 - 140	**140**	**(Topsoil) SAND with silt:** Dark grey, fine to medium grained.	M	MD				
		Contains roots and root fibres.						
140 - 430	**290**	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
430 - 630	**200**	**Gravelly SAND:** Light grey, fine to medium grained.	M	MD				
		Fine to coarse, sub-rounded to sub-angular gravel.						
630 - 1490	**860**	**Sandy GRAVEL:** Brown, fine to coarse, sub-rounded to sub-angular.	M	D - VD				
		Fine to medium grained sand.						
		(Comment #1)						
1490 - 1600	**110**	**Sandy CLAY:** Medium plasticity, light brown.	W	F/St				
		Fine to medium grained sand.						

Comments

Comment #1): *Layer excavates as Sandy GRAVEL, however consists of a medium to high strength conglomerate layer*

Pit Terminated at: (mm) below ground level
✓ or ×

Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength

Cohesive	Non-Cohesive
VS - Very Soft	VL - Very Loose
S - Soft	L - Loose
F - Firm	MD - Medium Dense
St - Stiff	D - Dense
VSt - Very Stiff	VD - Very Dense
H - Hard	CO - Compact

Rock

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Cementation

IN - Indurated
PC - Poorly Cemented
MC - Moderately Cemented
WC - Well Cemented

Water
▼ Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 4 - Excavation

Test Pit No. 4 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP4**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 15 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP5** Sample No. **10295G5**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						No water table encountered.		
0 - 190	190	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD				
		Fine to medium, Sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
190 - 670	480	**SAND with silt:** Light brown, fine tomedium grained.	M	MD				
670 - 1420	750	**SAND:** Light grey / white, fine to medium grained.	M	MD				
1420 - 1600	180	**SAND with silt:** Dark brown, fine to medium grained.	M	D	PC-MC			

Comments

Pit Terminated at: ✓ or ×		(mm) below ground level
Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength		**Rock**	**Cementation**
Cohesive	**Non-Cohesive**		
VS - Very Soft	VL - Very Loose	EL - Extremely Low	
S - Soft	L - Loose	VL - Very Low	IN - Indurated
F - Firm	MD - Medium Dense	L - Low	PC - Poorly Cemented
St - Stiff	D - Dense	M - Medium	MC - Moderately Cemented
VSt - Very Stiff	VD - Very Dense	H - High	WC - Well Cemented
H - Hard	CO - Compact	VH - Very High	
		EH - Extremely High	

▼ Water
Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 5 - Excavation

Test Pit No. 5 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP5**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 17 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP6** Sample No. **10295G6**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						No water table encountered.		
0 - 100	100	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD				
		Fine to medium, sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
100 - 330	230	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
330 - 690	360	**Gravelly SAND with silt:** Light grey, fine to medium grained.	M	MD				
		Fine to medium, sub-rounded to sub-angular gravel.						
690 - 1250	560	**SAND with silt:** Light grey, fine to medium grained.	M	MD				
1250 - 1600	350	**SAND with silt:** Brown / Dark brown, fine to medium grained.	M	D	PC-MC			

Comments

Pit Terminated at: ✓ or ×		(mm) below ground level
Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength		**Rock**	**Cementation**
Cohesive	**Non-Cohesive**		
VS - Very Soft	VL - Very Loose	EL - Extremely Low	
S - Soft	L - Loose	VL - Very Low	IN - Indurated
F - Firm	MD - Medium Dense	L - Low	PC - Poorly Cemented
St - Stiff	D - Dense	M - Medium	MC - Moderately Cemented
VSt - Very Stiff	VD - Very Dense	H - High	WC - Well Cemented
H - Hard	CO - Compact	VH - Very High	
		EH - Extremely High	

▼ Water
Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 6 - Excavation

Test Pit No. 6 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP6**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 19 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP7** Sample No. **10295G7**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
0 - 110	**110**	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD		No water table encountered.		
		Fine to medium, sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
110 - 710	**600**	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
710 - 930	**220**	**SAND with silt:** Grey, fine to medium grained.	M	MD				
930 - 1600	**670**	**SAND:** White, fine to medium grained.	M	MD				

Comments

Pit Terminated at: ✓ or ×		(mm) below ground level
Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength		**Rock**	**Cementation**
Cohesive	**Non-Cohesive**		
VS - Very Soft	VL - Very Loose	EL - Extremely Low	
S - Soft	L - Loose	VL - Very Low	IN - Indurated
F - Firm	MD - Medium Dense	L - Low	PC - Poorly Cemented
St - Stiff	D - Dense	M - Medium	MC - Moderately Cemented
VSt - Very Stiff	VD - Very Dense	H - High	WC - Well Cemented
H - Hard	CO - Compact	VH - Very High	
		EH - Extremely High	

▼ Water
Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 7 - Excavation

Test Pit No. 7 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP7**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 21 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP8** Sample No. **10295G8**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
						No water table encountered.		
0 - 100	**100**	**(Topsoil) SAND with silt and gravel:** Dark grey, fine to medium grained.	M	MD				
		Fine to medium, sub-rounded to sub-angular gravel.						
		Contains roots and root fibres.						
100 - 400	**300**	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
400 - 480	**80**	**SAND with silt:** Grey, fine to medium grained.	M	MD				
480 - 1160	**680**	**Gravelly SAND:** Light brown, fine to medium grained.	M	MD				
		Fine to coarse, sub-rounded to sub-angular gravel.						
1160 - 1600	**440**	**Sandy CLAY:** Low plasticity, light brown and pink mottle.	M	St				#
		Fine to medium grained sand.						

Comments

Pit Terminated at: ✓ or × (mm) below ground level

Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength

Cohesive	Non-Cohesive
VS - Very Soft	VL - Very Loose
S - Soft	L - Loose
F - Firm	MD - Medium Dense
St - Stiff	D - Dense
VSt - Very Stiff	VD - Very Dense
H - Hard	CO - Compact

Rock

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Cementation

IN - Indurated
PC - Poorly Cemented
MC - Moderately Cemented
WC - Well Cemented

▼ Water
Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 8 - Excavation

Test Pit No. 8 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP8**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No 10295	**Report** 10295/1	**Sheet** 23 **of** 25

Client:	TFA Project Group	Operator/Contractor:	GSG
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330	Equipment type:	Kubota KX41-3V
Project No.	QU-1292 / PO-0001138	Excavation Method :	300mm Auger
Location:	Proposed Building Envelope	Position:	See site plan
Test Pit No.:	**TP9** Sample No. **10295G9**	Elevation:	n/a

Date Commenced:	13/08/2024	Logged By:	T.Barradeen / J.Kernutt

Excavation Dimensions: Depth 1.6 (m) Width 0.3 (m)

Depth Below Surface (mm)	Layer Depth (mm)	Material Description SOIL TYPE, Plasticity, Colour, Particle characteristics, Secondary and other minor components	Moist. Condition	Consistency / Strength	Cementation	Water Table	Classification Symbol	Sample/Test
0 - 180	**180**	**(Topsoil) SAND with silt:** Dark grey, fine to medium grained.	M	MD		No water table encountered.		
		Contains roots and root fibres.						
180 - 320	**140**	**SAND with silt:** Light brown, fine to medium grained.	M	MD				
320 - 490	**170**	**CLAY with sand:** High plasticity, brown.	M	St				#
		Fine to medium grained sand.						
490 - 1600	**1110**	**Sandy CLAY:** Medium plasticity, brown and white mottle.	M	St				#
		Fine to medium grained sand.						

Comments

Pit Terminated at: ✓ or × (mm) below ground level

Target Depth	✓	1600
Cave In		
Refusal		
Near Refusal		
Flooding		
Lack of Reach		

Materials Consistency/Strength

Cohesive	Non-Cohesive
VS - Very Soft	VL - Very Loose
S - Soft	L - Loose
F - Firm	MD - Medium Dense
St - Stiff	D - Dense
VSt - Very Stiff	VD - Very Dense
H - Hard	CO - Compact

Rock

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

Cementation

IN - Indurated
PC - Poorly Cemented
MC - Moderately Cemented
WC - Well Cemented

Water
▼ Water first Encountered

Moisture
D - Dry M - Moist W - Wet

General
N/A - Not Applicable
N/D - Not Determined

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Test Pit No. 9 - Excavation

Test Pit No. 9 - Spoil

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

Job No:	10295	**Test Pit No:**	**TP9**
Client:	TFA Project Group		
Project:	Lot 70 Stranmore Boulevard, Bayonet Head WA 6330		

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Appendix 2

Test Results

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

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Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330
Section: Proposed Building Envelope

Client Number: QU-1292 / PO-0001138
Date Sampled: 13/08/2024
Date Received: 13/08/2024

Soil Classification Test Report

Test Method - AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1,3.6.1
Date of Test - PSD - N/A Limits - 15/08/2024

Location	Test Pit 8 (Refer to report 10295/1)	Test Depth (mm)	1160-1600	Preparation Method	AS1289.1.1
Layer Type	In Situ	Layer Depth (mm)	1160-1600	Sampling Method	AS1289.1.2.1 C6.5

Sample No.	10295G10
Material Description	Sandy CLAY

Sieve Size (mm)	% Passing	% Retained
100.0		
75.0		
63.0		
53.0		
37.5		
26.5		
19.0		
9.5		
4.75		
2.36		
1.18		
0.600		
0.425		
0.300		
0.150		
0.075		

AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1	
Method of Preparation	Dry Sieved
History of Sample	Oven-Dried

Liquid Limit	%	30
Plastic Limit	%	16
Plasticity Index	%	14
Linear Shrinkage	%	4.5
Linear Shrinkage Condition		Normal

Particle Size Distribution Chart

N/A

GROUP SYMBOL	N/A

AS 1726 - Tables 9 & 10 (Laboratory classification elements only)

NATA
WORLD RECOGNISED ACCREDITATION

Comments:

Distribution: Laboratory File / Aaron Coleman
Document ID: WS_AS_PSD/C.L_Rev8_Aug2024
Accredited for compliance with ISO/IEC 17025 - Testing - Accreditation No. 20092

Name: M.Coffey
Function: Quality Manager
Date: 19/08/2024

Approved Signatory:

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

5a 209 Chester Pass Rd, Milpara WA 6330
Phone: 0407 903 297
Email: Info@gsgeotechnics.com
WWW.GSGEOTECHNICS.COM

Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard, Bayonet Head WA 6330
Section: Proposed Building Envelope

Client Number: QU-1292 / PO-0001138
Date Sampled: 13/08/2024
Date Received: 13/08/2024

Soil Classification Test Report

Test Method - AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1,3.6.1
Date of Test - PSD - N/A Limits - 15/08/2024

Location	Test Pit 9 (Refer to report 10295/1)	Test Depth (mm)	320-490	Preparation Method	AS1289.1.1
Layer Type	In Situ	Layer Depth (mm)	320-490	Sampling Method	AS1289.1.2.1 C6.5

Sample No.	10295G11
Material Description	CLAY with sand

Sieve Size (mm)	% Passing	% Retained
100.0		
75.0		
63.0		
53.0		
37.5		
26.5		
19.0		
9.5		
4.75		
2.36		
1.18		
0.600		
0.425		
0.300		
0.150		
0.075		

AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1	
Method of Preparation	Dry Sieved
History of Sample	Oven-Dried

Liquid Limit	%	69
Plastic Limit	%	29
Plasticity Index	%	40
Linear Shrinkage	%	12.0
Linear Shrinkage Condition		Curling

Particle Size Distribution Chart

N/A

GROUP SYMBOL	N/A

AS 1726 - Tables 9 & 10 (Laboratory classification elements only)

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Client Number: QU-1292 / PO-0001138
Date Sampled: 13/08/2024
Date Received: 13/08/2024

Soil Classification Test Report

Test Method - AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1,3.6.1
Date of Test - PSD - N/A Limits - 15/08/2024

Location	Test Pit 9 (Refer to report 10295/1)	Test Depth (mm)	490-1600	Preparation Method	AS1289.1.1
Layer Type	In Situ	Layer Depth (mm)	490-1600	Sampling Method	AS1289.1.2.1 C6.5

Sample No.	10295G10
Material Description	Sandy CLAY

Sieve Size (mm)	% Passing	% Retained
100.0		
75.0		
63.0		
53.0		
37.5		
26.5		
19.0		
9.5		
4.75		
2.36		
1.18		
0.600		
0.425		
0.300		
0.150		
0.075		

AS 1289.3.1.2 ,3.2.1,3.3.1,3.4.1	
Method of Preparation	Dry Sieved
History of Sample	Oven-Dried

Liquid Limit	%	46
Plastic Limit	%	21
Plasticity Index	%	24
Linear Shrinkage	%	8.5
Linear Shrinkage Condition		Normal

Particle Size Distribution Chart

N/A

GROUP SYMBOL	N/A

AS 1726 - Tables 9 & 10 (Laboratory classification elements only)

NATA
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Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard Bayonet Head
Section: Proposed Building Envelope

Client Number: PO 0001138
Date Sampled: -
Date Received: -

Determination of the Penetration Resistance of Soil Test Report

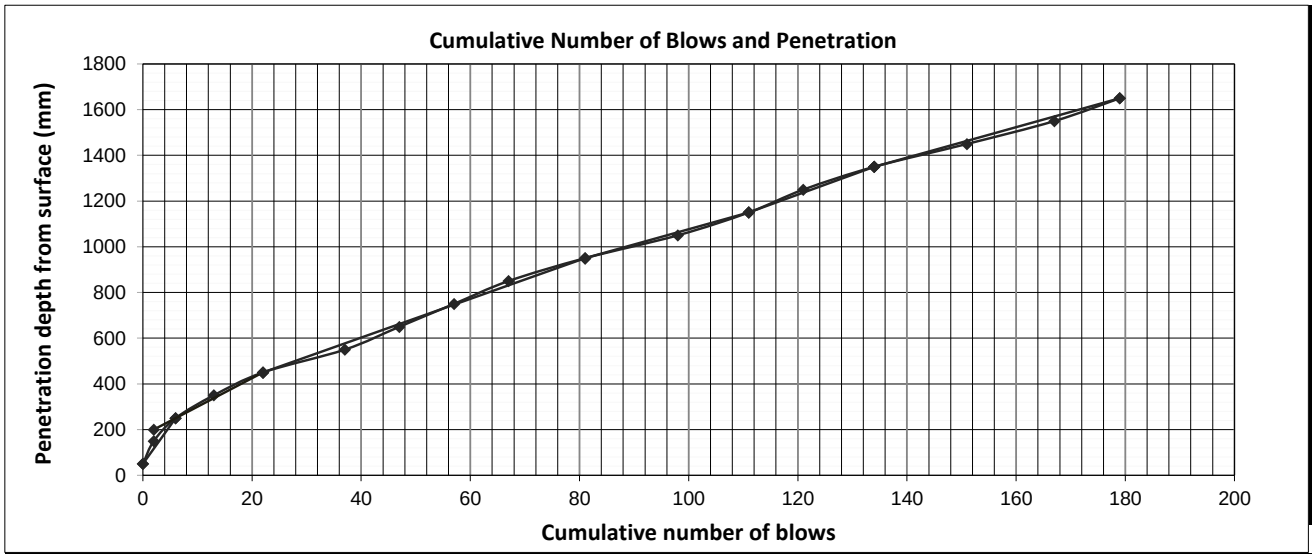
Test Method - AS 1289.6.3.2
Date of Test - 13/08/2024

Sample No.	10295G13	Material Description	In-Situ

Location	Test Pit 3 (Refer to Report 10295/1)	Preparation Method	AS1289.1.1
Layer Type	In Situ	Sampling Method	AS 1289.1.2.1 Proc 6.5

Depth below surface at the commencement of penetration (mm)	Reduced level of ground surface at test site (R.L)	Location of ground water table, if intersected or known (mm)	Depth from surface for moisture condition of soil determination (mm)	Moisture Content (%)
			- to -	Test Pit 3 (Refer to Report 10295/1)
			- to -	
50	0	Unknown	- to -	
			- to -	
			- to -	

Penetration depth from surface (mm) Start	Finish	Penetration (mm)	Average number of blows per 100mm over this depth	Calculated CBR (%)
50	250	200	3	5
200	450	250	8	17
450	950	500	12	27
950	1150	200	15	36
1150	1350	200	12	27
1350	1650	300	15	36



Comments: Calculated CBR is not NATA accredited.

Name: M.Coffey
Function: Quality Manager
Date: 19/08/2024

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Approved Signatory:

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WORLD RECOGNISED ACCREDITATION

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CONSTRUCTION MATERIALS TESTING

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Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard Bayonet Head
Section: Proposed Building Envelope

Client Number: PO 0001138
Date Sampled: -
Date Received: -

Determination of the Penetration Resistance of Soil Test Report

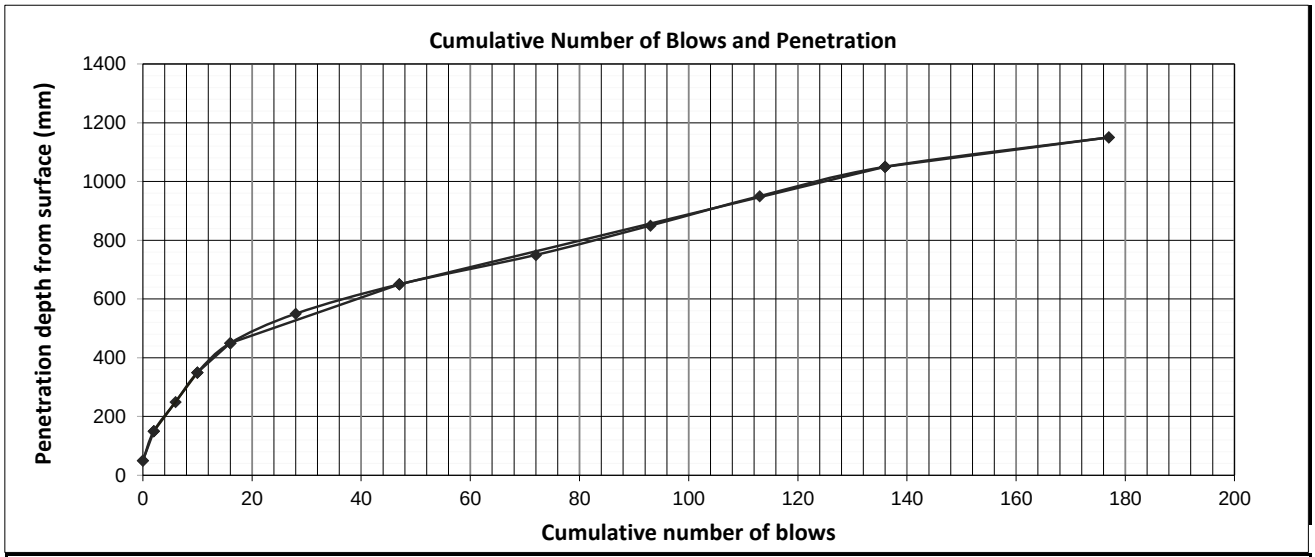
Test Method - AS 1289.6.3.2
Date of Test - 13/08/2024

Sample No.	10295G14	Material Description	In-Situ

Location	Test Pit 5 (Refer to Report 10295/1)	Preparation Method	AS1289.1.1
Layer Type	In Situ	Sampling Method	AS 1289.1.2.1 Proc 6.5

Depth below surface at the commencement of penetration (mm)	Reduced level of ground surface at test site (R.L)	Location of ground water table, if intersected or known (mm)	Depth from surface for moisture condition of soil determination (mm)	Moisture Content (%)
			- to -	Test Pit 5 (Refer to Report 10295/1)
			- to -	
50	0	Unknown	- to -	
			- to -	
			- to -	

Penetration depth from surface (mm) Start	Finish	Penetration (mm)	Average number of blows per 100mm over this depth	Calculated CBR (%)
50	150	100	2	3
150	350	200	4	8
350	450	100	6	12
450	650	200	16	38
650	1050	400	22	58
1050	1150	100	41	118



Comments: Calculated CBR is not NATA accredited.

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Accredited for compliance with ISO/IEC 17025 - Testing - Accreditation No. 20092

Name: M.Coffey
Function: Quality Manager
Date: 19/08/2024

Approved Signatory:

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CONSTRUCTION MATERIALS TESTING

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Client: TFA Project Group
Project: Lot 70 Stranmore Boulevard Bayonet Head
Section: Proposed Building Envelope

Client Number: PO 0001138
Date Sampled: -
Date Received: -

Determination of the Penetration Resistance of Soil Test Report

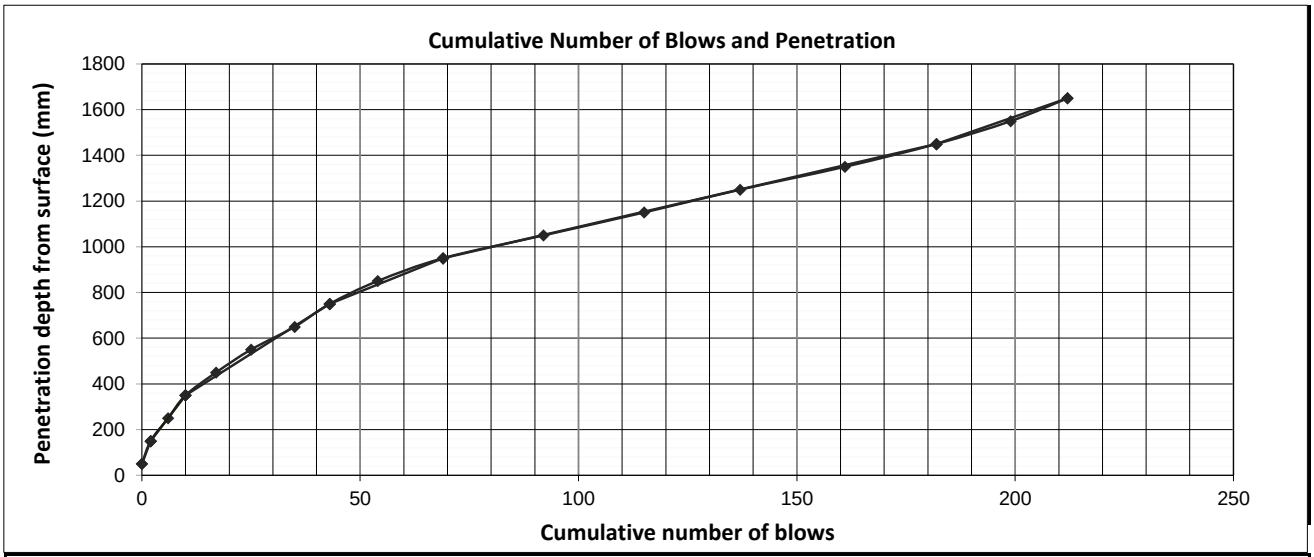
Test Method - AS 1289.6.3.2
Date of Test - 13/08/2024

Sample No.	10295G15	Material Description	IN-Situ

Location	Test Pit 7 (Refer to Report 10295/1)	Preparation Method	AS1289.1.1
Layer Type	In Situ	Sampling Method	AS 1289.1.2.1 Proc 6.5

Depth below surface at the commencement of penetration (mm)	Reduced level of ground surface at test site (R.L)	Location of ground water table, if intersected or known (mm)	Depth from surface for moisture condition of soil determination (mm)			Moisture Content (%)
			-	to	-	Test Pit 7 (Refer to Report 10295/1)
			-	to	-	
50	0	Unknown	-	to	-	
			-	to	-	
			-	to	-	

Penetration depth from surface (mm) Start	Finish	Penetration (mm)	Average number of blows per 100mm over this depth	Calculated CBR (%)
50	150	100	2	3
150	350	200	4	8
350	750	400	8	18
750	950	200	13	31
950	1450	500	23	59
1450	1650	200	15	36



Comments: Calculated CBR is not NATA accredited.

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Name: M.Coffey
Function: Quality Manager
Date: 19/08/2024

Approved Signatory:

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

COLOURS

BLACK - BROWN (bk)	BLUE (bl)	ORANGE (or)
BROWN (br)	BLUE - GREEN (bl/gr)	RED (rd)
GREY - BROWN (gy/br)	GREEN (gr)	RED - BROWN (rd/br)
GREY (gy)	YELLOW (yl)	PINK (pk)
BLUE - GREY (bl/gy)	YELLOW - BROWN (yl/br)	PURPLE (pr)

MOISTURE CONDITION OF SOIL

TERM	DESCRIPTION
Dry	Cohesive soils; hard and friable or powdery, well dry of plastic limit. Granular soils; cohesionless and free-running.
Moist	Soil feels cool, darkened in colour. Cohesive soils can be moulded. Granular soils tend to cohere.
Wet	Soil feels cool, darkened in colour. Cohesive soils usually weakened and free water forms on hands when handling. Granular soils tend to cohere and free water forms on hands when handling.

PARTICLE SHAPES

ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED




PARTICLE SIZES

BOULDERS	COBBLES	COARSE GRAVEL	MEDIUM GRAVEL	FINE GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY
>200mm	63-200mm	20-63mm	6-20mm	2.36-6mm	0.6-2.36mm	0.2-0.6mm	0.075-0.2mm	0.002-0.075mm	<0.002mm

GRAIN SIZE

SOIL TYPE (ABBREV.)	CLAY (CL)	SILT (SI)	←	SAND (SA)	→	←	GRAVEL (GR)	→	COBBLES (CO)
SIZE	< 2µm	2-75µm	Fine 0.075-0.2mm	Medium 0.2-0.6mm	Coarse 0.6-2.36mm	Fine 2.36-6mm	Medium 6-20mm	Coarse 20-63mm	63-200mm
SHAPE & TEXTURE	Shiny	Dull	← angular or sub angular or sub rounded or rounded →						
FIELD GUIDE	Not visible under 10x	Visible under 10x	Visible by eye	Visible at < 1m	Visible at < 3m	Visible at < 5m	Road gravel	Rail ballast	Beaching

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

CLASSIFICATION CHART

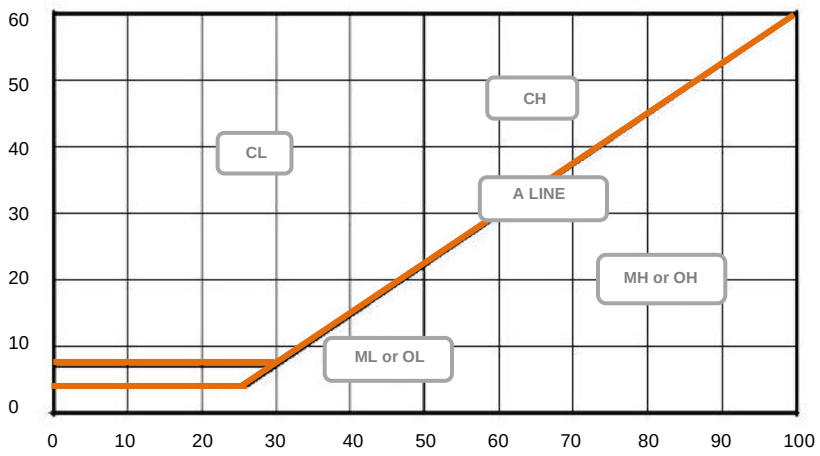
FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 60mm and basing fractions on estimated mass)				GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than 50% of material less than 63 mm is larger than 0.075 mm	GRAVELS More than 50% of coarse fraction is larger than 2.36mm	CLEAN GRAVELS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	GP	Poorly Graded gravels and gravel-sand mixtures, little or no fines, uniform gravels
		GRAVELS WITH FINES (Appreciable amount of fines)	Dirty' materials with excess of non-plastic fines, zero to medium dry strength	GM	Silty gravels, gravel-sand-silt mixtures
			'Dirty' materials with excess of plastic fines, medium to high dry strength	GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction is smaller than 2.36mm	CLEAN SANDS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	SW	Well graded sands, gravelly sands, little or no fines
			Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength '	SP	Poorly graded sands and gravelly sands; little or no fines, uniform sands
		SANDS WITH FINES (Appreciable amount of fines)	Dirty' materials with excess of non-plastic fines, zero to medium dry strength	SM	Silty sands, sand-silt mixtures
			'Dirty' materials with excess of plastic fines, medium to high dry strength	SC	Clayey sands, sand-clay mixtures

FINE GRAINED SOILS More than 50% of material less than 63 mm is smaller than 0.075 mm	IDENTIFICATION PROCEDURES ON FRACTIONS <0.2mm					
		DRY STRENGTH	DILATANCY	TOUGHNESS		
	SILTS AND CLAYS Liquid limit less than 50	None to low	Quick to slow	None	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with low plasticity. Silts of low to medium Liquid Limit.
		Medium to high	None to very slow	Medium	CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays.
		Low to medium	Slow	Low	OL	Organic silts and organic silt-clays of low to medium plasticity.
	SILTS AND CLAYS Liquid limit greater than 50	Low to medium	Slow to none	Low to medium	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, silts of high Liquid Limit.
		High to very high	None	High	CH	Inorganic clays of high plasticity.
		Medium to high	None to very slow	Low to medium	OH	Organic clays of high plasticity

HIGHLY ORGANIC SOILS	Readily identified by colour, odour, spongy feel and frequently by fibrous texture	Pt	Peat and other highly organic soils

PLASTICITY CHART

For laboratory classification of fine grained soils



GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

PLASTICITY

DESCRIPTIVE TERM	OF LOW PLASTICITY	OF MEDIUM PLASTICITY	OF HIGH PLASTICITY
Range Of Liquid Limit (%)	≤ 35	> 35 ≤ 50	> 50

DESCRIPTION OF ORGANIC OR ARTIFICIAL MATERIALS

PREFERRED TERMS	SECONDARY DESCRIPTION
Organic Matter	Fibrous Peat/ Charcoal/ Wood Fragments/ Roots (greater than approximately 2mm diameter)/ Root Fibres (less than approximately 2mm diameter)
Waste Fill	Domestic Refuse/ Oil/ Bitumen/ Brickbats/ Concrete Rubble/ Fibrous Plaster/ Wood Pieces/ Wood Shavings/ Sawdust/ Iron Filings/ Drums/ Steel Bars/ Steel Scrap/ Bottles/ Broken Glass/ Leather

CONSISTENCY - Cohesive soils

TERM	VERY SOFT	SOFT	FIRM	STIFF	VERY STIFF	HARD
Symbol	VS	S	F	St	VSt	H
Undrained Shear Strength (kPa)	< 12	12 - 25	25 - 50	50 - 100	100 - 200	> 200
SPT (N) Blowcount	0 - 2	2 - 4	4 - 8	8 - 15	15 - 30	> 30
Field Guide	Exudes between the fingers when squeezed	Can be moulded by light finger pressure	Can be moulded by strong finger pressure	Cannot be moulded by fingers. Can be indented by thumb nail	Can be indented by thumb nail	Can be indented with difficulty with thumb nail

CONSISTENCY - Non-cohesive soils

TERM	VERY LOOSE	LOOSE	MEDIUM DENSE	DENSE	VERY DENSE	COMPACT
Symbol	VL	L	MD	D	VD	CO
SPT (N) Blowcount	0 - 4	4 - 10	10 - 30	30 - 50	50 - 100	> 50/150 mm
Density Index (%)	< 15	15 - 35	35 - 65	65 - 85	85 - 95	> 95
Field Guide	Ravels	Shovels easily	Shovelling very difficult	Pick required	Pick difficult	Cannot be picked

MINOR COMPONENTS

TERM	TRACE	WITH
% Minor Component	Coarse grained soils: < 5% Fine grained soils: <15%	Coarse grained soils: 5 – 12% Fine grained soils: 15 – 30%
Field Guide	Presence just detectable by feel or eye, but soil properties little or no different to general properties of primary components	Presence easily detectable by feel or eye, soil properties little different to general properties of primary component

GREAT SOUTHERN GEOTECHNICS
CONSTRUCTION MATERIALS TESTING

GEOLOGICAL ORIGIN

	TYPE	DETAILS
TRANSPORTED SOILS	Aeolian Soils	Deposited by wind
	Alluvial Soils	Deposited by streams and rivers
	Colluvial Soils	Deposited on slopes
	Lacustrine Soils	Deposited by lakes
	Marine Soils	Deposited in ocean, bays, beaches and estuaries
FILL MATERIALS	Soil Fill	Describe soil type, UCS symbol and add 'FILL'
	Rock Fill	Rock type, degree of weathering, and word 'FILL'.
	Domestic Fill	Percent soil or rock, whether pretrucible or not.
	Industrial Fill	Percent soil, whether contaminated, particle size & type of waste product, ie brick, concrete, metal

STRENGTH OF ROCK MATERIAL

TERM	SYMBOL	IS(50)	(MPA)	FIELD GUIDE TO STRENGTH
Extremely Low	EL	≤0.03		Easily remoulded by hand to a material with soil properties.
Very Low	VL	>0.03	≤0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxle sample by hand. Pieces up to 3 cm thick can be broken by finger pressure.
Low	L	>0.1	≤0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150 mm long by 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium	M	>0.3	≤1.0	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.
High	H	>1	≤3	A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High	VH	>3	≤10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High	EH	>10		Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

ROCK MATERIAL WEATHERING CLASSIFICATION

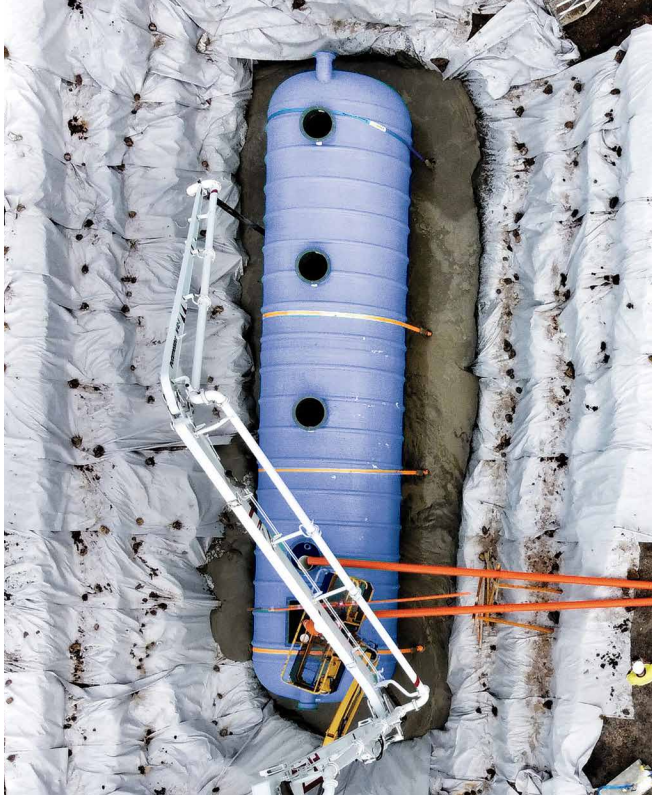
TERM	SYMBOL	DEFINITION
Residual Soil	RS	Soil developed on extremely weathered rock; the mass structure and substance fabric are no longer evident; there is a large change in volume but the soil has not been significantly transported
Extremely Weathered Rock	XW	Rock is weathered to such an extent that it has 'soil' properties, i.e. it either disintegrates or can be remoulded, in water.
Distinctly Weathered Rock	DW	Rock strength usually changed by weathering. Rock may be highly discoloured, usually be iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathering products in pores.
Slightly Weathered Rock	SW	Rock is slightly discoloured but shows little or no change of strength from fresh rock.
Fresh Rock	FR	Rock shows no sign of decomposition or staining.

Spillceptor

Oil water separation & high risk hydrocarbon capture

atlan.com.au

Atlan
STORMWATER



APPLICATIONS

- Power stations, substations and switchyards
- Mining and heavy vehicle
- Windfarms
- Waste transfer depots
- Service stations and re-fuelling areas
- Asphalt plants

Tested Treatment Efficiencies*

POLLUTANT	EFFICIENCY
Gross Pollutants (GP)	100%
Total Suspended Solids (TSS)	87%
Total Phosphorus (TP)	11%
Total Nitrogen (TN)	23%
Petroleum Hydrocarbon	99.99%
Spill capture (Site specific volume)	100%

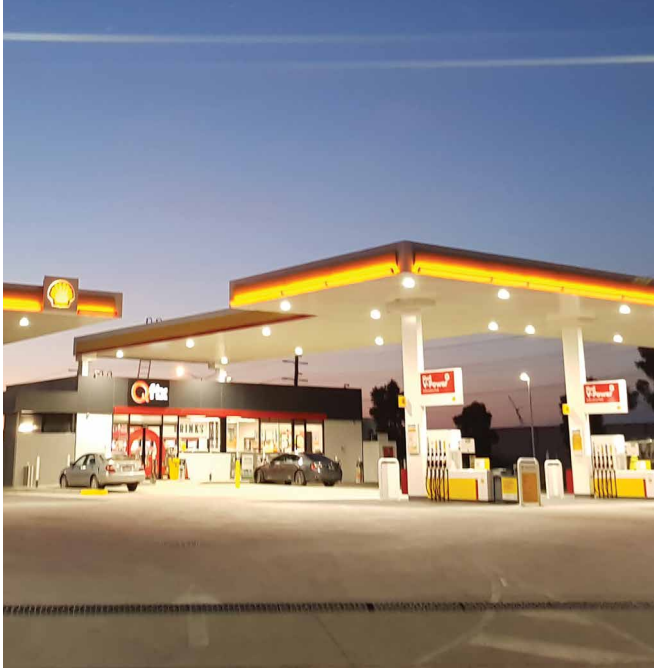
*Contact Atlan to confirm approved performance for the project LGA

Guaranteed hydrocarbon spill capture in all flow and spill conditions. Spillceptor is a full retention separator that treats all flows.

These secondary treatment devices are sized to contain more than the anticipated maximum oil spillage — enabling it to be fully operational in treating stormwater runoff at all times.

It has two chambers, a coalescer and an automatic closure device specifically designed to contain major oil spills, thereby making it suitable for high-risk applications. It achieves a water discharge quality of less than 5ppm of oils and hydrocarbons, complying with European Standard BS EN 858.1. 2006.

Treatable flow rates range from 2LPS to 200LPS. Pipe sizes range from 100mm to 450mm (larger sizes on request).



STORMWATER TREATMENT

Atlan Spillceptor Class 1 stormwater treatment separators cater for potential hazards to the environment, particularly at sites where there is a risk of oil and fuel spills.

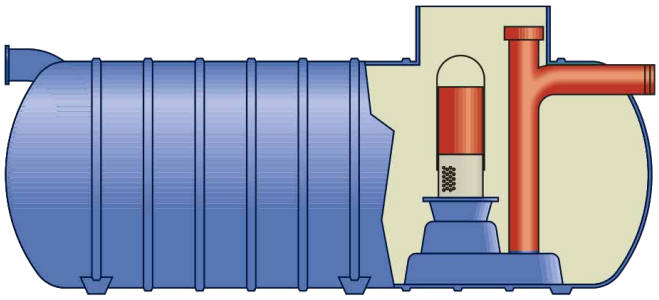
Oils and all petroleum hydrocarbons are treated to the highest discharge quality exceeding EPA standards ensuring it safe for stormwater discharge.

Major oil spills from a petrol tanker or a transformer rupture are captured and contained preventing any stormwater discharge.

- Independently tested (laboratory) and certified to discharge < 1.86ppm petroleum hydrocarbons (TPH),from 5,000ppm ingress
- Independently field tested to discharge ‘no detection’ from >33,000.0ppm

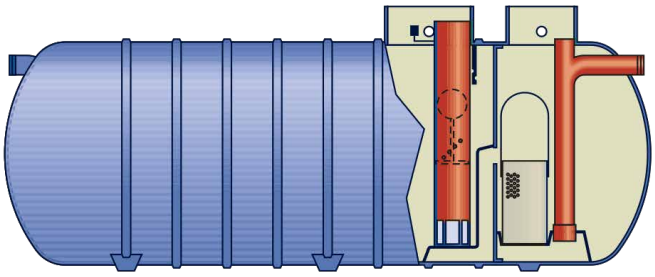
The results obtained at HR Wallingford, U.K. are certified to European Standard EN BS858.1 (2006) and are in line with the designed performance criteria for high performance and long service life between maintenance periods, achieving results averaging between 0.1 - 1.86mg/L.

FEATURES



SINGLE CHAMBER

- Medium risk oil/fuel storage and handling areas.
- Service stations with full canopy protection.
- Commercial vehicle/plant maintenance yards and contaminated industrial areas.



TWO CHAMBER

- High risk oil/fuel storage and handling areas where maximum protection is required.
- Suitable for service stations exposed to rainfall runoff.
- Continues to treat stormwater even after the maximum designed spill has occurred.
- Heavily contaminated industrial areas, power/sub stations, fire training grounds, railway maintenance and fuelling depots.
- The second chamber provides protection to the coalescer foam inserts from silt and fuel/ oil contamination, resulting in less frequent maintenance and easier cleaning of the coalescer foam inserts.
- A large silt capacity is incorporated in the first chamber greatly reduces the frequency of tank cleaning on highly polluted sites.

HOW IT WORKS

The Spillceptor is a FULL RETENTION separator that treats all flows and is sized to contain more than the anticipated maximum oil spillage enabling it to be fully operational at all times.

It has two chambers, a coalescer and is fitted with an automatic closure device specifically designed to contain major oil spills thereby making it suitable for high risk applications.

It achieves a water discharge quality of less than 5ppm of oils and hydrocarbons complying to European Standard BS EN 858.1. 2006. Treatable flow rates range from 2LPS to 200LPS. Pipe sizes range from 100mm to 450mm (larger sizes and flows on request).

1. AUTOMATIC CLOSURE DEVICE

The AUTOMATIC CLOSURE DEVICE (A.C.D.) is a precisely engineered device comprising a water-buoyant ball that is sensitive to any change in the water density as a consequence of light liquids build up, thereby automatically activating a process of depressing the A.C.D. to SHUT OFF the separator, preventing pollutants from discharging to drains and waterways.

2. FULL RETENTION

All liquid is treated. There is no by-pass operation.

3. COALESCER EQUIPPED

Provides a coalescing process for the separation of smaller globular of light liquid pollutants to reduce the light liquid content in the outlet to 5mg/litre or less.

4. INLET DIP PIPE - FLAME TRAP

For minimum turbulence and to prevent fire and inflammable vapours passing through to the drainage system.

5. TWO CHAMBER

A non-turbulent flow through two horizontal treatment chambers, utilising the underflow principle to retain light liquids in all flow conditions.

A. CONTAINMENT CHAMBER: Where Total Suspended Solids (TSS) silt, sediments, sludge and gross pollutants are trapped and settle on the chamber floor and where light liquids are contained.

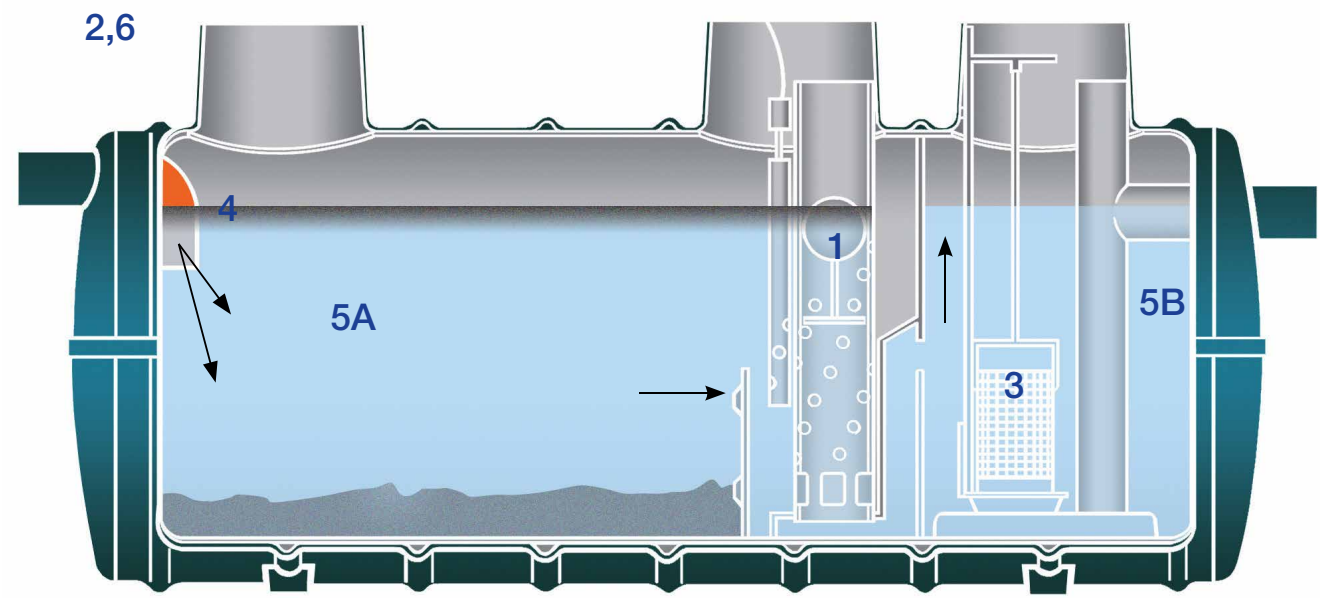
B. COALESCER CHAMBER: Where light liquids separation is enhanced reducing it to 5mg/litre or less prior to discharge.

6. GRAVITY OPERATED

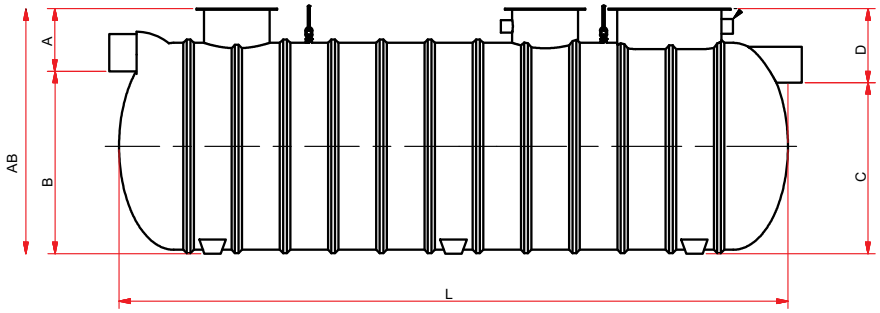
Will function in the event of power failure and fits into existing pipe drainage systems or new sites.

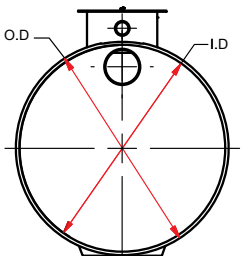
7. MAINTENANCE

Easy and safe with no entering of the tank required.



SPECIFICATIONS





Models	Treatment Flow Rate	Weight (KG)	Dimensions (mm)								Maximum Inlet & Outlet Pipe Size (mm) Configuration*	Manholes				Max. Spill at Shut Off	Max. Working Capacity
			A	B	A&B	C	D	L	OD	ID		Qty	Size	Qty	Size		
100 Series Tanks - 900 mm Internal Diameter																	
P.002.C1.2C	2 LPS	120	400	820	1220	800	420	1700	930	900	100	2	450 ID	-	-	250	800
200 Series Tanks - 1200 mm Internal Diameter																	
P.004.C1.2C	4 LPS	330	460	1100	1560	1080	480	2600	1350	1200	150	2	600 ID	-	-	1,000	2,050
P.006.C1.2C	6 LPS	400	425	1135	1560	1095	465	3035	1350	1200	150	2	600 ID	-	-	1,300	2,550
P.008.C1,2C	8 LPS	450	460	1100	1560	1060	500	3800	1350	1200	150	2	600 ID	-	-	1,900	3,200
P.010.C1.2C	10 LPS	500	450	1110	1560	1060	500	4600	1350	1200	150	2	600 ID	-	-	2,500	3,900
P.013.C1.2C	13 LPS	550	446	1114	1560	1040	520	5800	1350	1200	150	3	600 ID	-	-	3,000	4,800
P.015.L.C1.2C	15 LPS	600	425	1135	1560	1065	495	6500	1350	1200	150	3	600 ID	-	-	3,400	5,400
300 Series Tanks - 1850 mm Internal Diameter																	
P.015.S.C1.2C	15 LPS	650	620	1630	2250	1600	650	3000	1950	1850	300	1	600 ID	1	900 x 600	3,500	5,500
P.020.C1.2C	20 LPS	850	625	1625	2250	1585	665	4000	1950	1850	300	1	600 ID	1	900 x 600	3,900	7,300
P.030.C1.2C	30 LPS	1100	660	1590	2250	1575	675	4860	1950	1850	300	1	600 ID	1	900 x 600	5,500	10,800
P.040.8.C1.2C	40 LPS	1180	550	1600	2150	1500	650	5900	1950	1800	300	1	600 ID	1	900 x 600	8,000	13,400
P.040.C1.2C	40 LPS	1240	650	1600	2250	1550	700	6540	1950	1850	300	2	600 ID	1	900 x 600	9,000	14,400
P.050.L.C1.2C	50 LPS	1400	650	1600	2250	1520	730	8500	1950	1850	300	2	600 ID	1	900 x 600	10,000	18,000
P.060.L.C1.2C	60 LPS	1550	650	1600	2250	1500	750	10,000	1950	1850	300	2	600 ID	1	900 x 600	11,200	21,600
P.070.L.C1.2C.	70 LPS	1700	650	1600	2250	1500	750	11,600	1950	1850	300	2	600 ID	1	900 x 600	12,400	25,200
400 Series Tanks - 2480 mm Internal Diameter																	
P.050.S.C1.2C	50 LPS	1400	720	2230	2950	2150	800	4680	2600	2480	375	1	600 ID	1	900 x 600	9,000	18,000
P.060.S.C1.2C	60 LPS	1560	550	2400	2950	2220	730	5500	2600	2480	375	1	600 ID	1	900 x 600	10,700	21,600
P.070.S.C1.2C	70 LPS	1710	750	2200	2950	2150	800	6550	2600	2480	375	3	600 ID	1	900 x 600	12,400	25,200
P.080.C1.2C	080 LPS	2000	600	2350	2950	2250	700	7500	2600	2480	375	3	600 ID	1	900 x 600	14,900	29,600
P.090.C1.2C	090 LPS	2300	715	2235	2950	2150	800	8400	2600	2480	375	3	600 ID	1	1200 x 600	16,200	32,400
P.100.C1.2C	100 LPS	2550	710	2240	2950	2150	800	9000	2600	2480	375	3	600 ID	1	1200 x 600	17,700	35,700
P.110.C1.2C	110 LPS	2650	700	2250	2950	2150	800	9600	2600	2480	375	3	600 ID	1	1200 x 600	18,300	38,200
P.120.C1.2C	120 LPS	2750	570	2400	2970	2300	670	10,230	2600	2480	375	3	600 ID	1	1200 x 600	21,700	43,200
P.150.C1.2C	150 LPS	3360	670	2280	2950	2150	800	13,420	2600	2480	375	4	600 ID	1	1200 x 600	27,700	54,000
P.180.C1.2C	180 LPS	3580	650	2300	2950	2150	800	15,400	2600	2480	375	5	600 ID	1	1200 x 600	32,500	64,800
P.200.C1.2C	200 LPS	4150	555	2395	2950	2230	720	16,500	2600	2480	375	5	600 ID	1	1200 x 600	36,200	72,000

# Key to Main Dimensions & Notes	
A	Invert Level - Depth from top of manhole to base of inlet pipe.
B	Depth from base of inlet pipe to base of tank feet.
A&B	Overall depth of tank, from top of manhole to base of tank feet.
C	Depth from base of outlet pipe to base of tank feet.
D	Invert Level - Depth from top of manhole to base of outlet pipe.
L	Overall length tank.
OD	Overall outside diameter of tank including ribs.
ID	Internal diameter of tank.
S&L	"S" is Short Series Tank & "L" is Long Series Tank.

Spillceptor

Oil water separation & high risk hydrocarbon capture

NSW HEAD OFFICE 100 Silverwater Rd, Silverwater NSW 2128 PO Box 7138, Silverwater NSW 1811 P: +61 2 8705 0255 P: 1300 773 500 nsw.sales@atlan.com.au	**QLD MAIN OFFICE** 130 Sandstone Pl, Parkinson QLD 4115 P: +61 7 3271 6960 P: 1300 773 500 qld.sales@atlan.com.au	**VIC & TAS OFFICE** 897 Wellington Rd Rowville VIC 3178 P: +61 3 5274 1336 P: 1800 810 139 sales@atlan.com.au **VIC GEELONG BRANCH** 70 Technology Close, Corio VIC
SA OFFICE 9 Hampden Road, Mount Barker SA 5251 P: 1300 773 500 sales@atlan.com.au	**QLD SUNSHINE COAST BRANCH** 19-27 Fred Chaplin Cct, Bells Creek, QLD 4551 P: 1300 773 500 qld.sales@atlan.com.au	**WA OFFICE** 2 Modal Cres Canning Vale WA 6155 P: +61 8 9350 1000 P: 1800 335 550 sales@atlan.com.au
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Joy in water

'We believe clean waterways are a right not a privilege and we work to ensure a joy in water experience for you and future generations.'

Andy Hornbuckle

Atlan STORMWATER

P 02 8705 0255 | sales@atlan.com.au
100 Silverwater Rd, Silverwater NSW 2128 Australia
atlan.com.au

APPENDIX G – BUSHFIRE ATTACK LEVEL ASSESSMENT

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report prepared by the Accredited Practitioner.

Property Details and Description of Works

Address Details	**Lot**		**No.**	70	**Street name**	Stranmore Boulevard	
	Suburb	Bayonet Head			**State**	Western Australia	
Local government area	City of Albany						
Main BCA class of the building	Class 6		**Use(s) of the building**	Fuel Dispensers			
Description of the building or works	Commercial						

Determination of the Highest Bushfire Attack Level

Assessment Date 30 August 2024	**AS3959 Assessment Procedure**	**Vegetation Classification**	**Slope**	**Separation Distance**	**Determined BAL**
Report/Certificate Date 5 September 2024	Method 1	Class G Grassland	0/Upslope	36m	BAL – 12.5

BPAD Accredited Practitioner Details

Assessor Name:
Kieran Geal BPAD48157 (Level 1)

Company Details:

Email – sw@integralfireprotection.com.au
Mobile – 0429 594 973

BUSHFIRE PLANNING AND DESIGN
Certified Practitioner

Certification No.: BPAD58405

Signature:

Authorised Practitioner Stamp

Reliance on the assessment and determination of the Bushfire Attack Level contained in this certificate should not extend beyond a period of 12 months from the date of issue of the certificate. If this certificate was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated certificate issued.

Fire Protection Association Australia Life Property Environment

Bushfire Attack Level Assessment Report

AS 3959 BAL Assessment Report

This report has been prepared by an Accredited BPAD Practitioner using the Simplified Procedure (Method 1) as detailed in Section 2 of AS 3959 – 2018. FPA Australia makes no warranties as to the accuracy of the information provided in the report. All enquiries related to the information and conclusions presented in this report must be made to the BPAD Accredited Practitioner – Kieran Geal BPAD58405.

Property Details and Description of Works

Address Details	**Lot**		**No.**	70	**Street name**	Stranmore Boulevard	
	Suburb	Bayonet Head			**State**	Western Australia	
Local government area	City of Albany						
Main BCA class of the building	Class 6		**Use(s) of the building**	Fast food offer, fuel store, fuel dispensers and car wash			
Description of the building or works	Commercial				1. Fast food offer, fuels store & car wash 2. Fuel Dispensers		

Report Details

Report / Job Number	Report Version	Assessment Date	Report Date
EMC22105	1.0	30 August 2024	5 September 2024

BPAD Accredited Practitioner Details

Assessor Name:
Kieran Geal BPAD58405 (Level 1)

Company Details:

Email – sw@integralfireprotection.com.au
Mobile – 0429 594 973

INTEGRAL FIRE PROTECTION

BUSHFIRE PLANNING AND DESIGN
Certified Practitioner

Certification No.: BPAD58405

Signature:

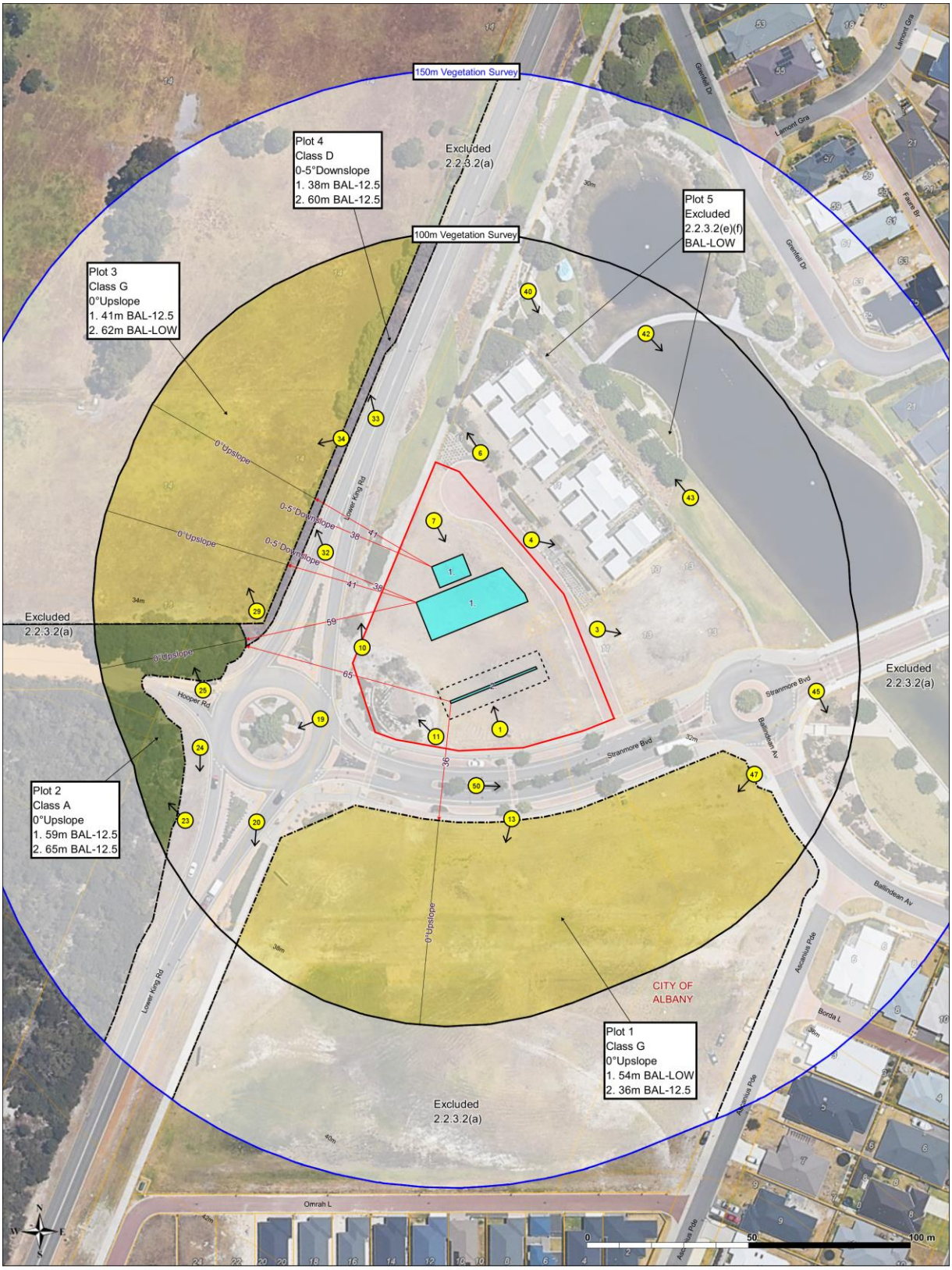
BPAD Bushfire Planning & Design Accredited Practitioner Level 1

Authorised Practitioner Stamp

Reliance on the assessment and determination of the Bushfire Attack Level contained in this report should not extend beyond a period of 12 months from the date of issue of the report. If this report was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated report issued.

Site Assessment & Site Plans

The assessment of this site / development was undertaken on 30 August 2024 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018 Simplified Procedure (Method 1).



Legend

Photo points
150m survey
150m Vegetation Survey
100m survey
100m Vegetation Survey
Dimensions
Effective Slope(°)
Separation Distance(m)
Buildings
1. Fast Food Offer, Fuel Store & Car Wash
2. Fuel Dispensers
Canopy for Fuel Dispensers
Property Boundary
Boundary (4446m2)
Vegetation 0-100m
A. Forest, 0
D. Scrub, -5
Excluded, ef, 0
G. Grassland, 0
Veg. 100-150m Excluded(a)
Excluded, a, 0
Local Government Authority
State Roads
Other Roads
DPIRD 2m Contours

Vegetation Classification

All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Photo ID:	13	**Plot:**	1
Vegetation Classification or Exclusion Clause			
Class G Grassland			
Description / Justification for Classification			
Vacant lot >1100m² Grassland of >100mm in height Canopy cover of less than 10% Minimal surface fuel loads			

Photo ID:	47	**Plot:**	1
Vegetation Classification or Exclusion Clause			
Class G Grassland			
Description / Justification for Classification			
Vacant lot >1100m² Grassland of >100mm in height Canopy cover of less than 10% Minimal surface fuel loads			

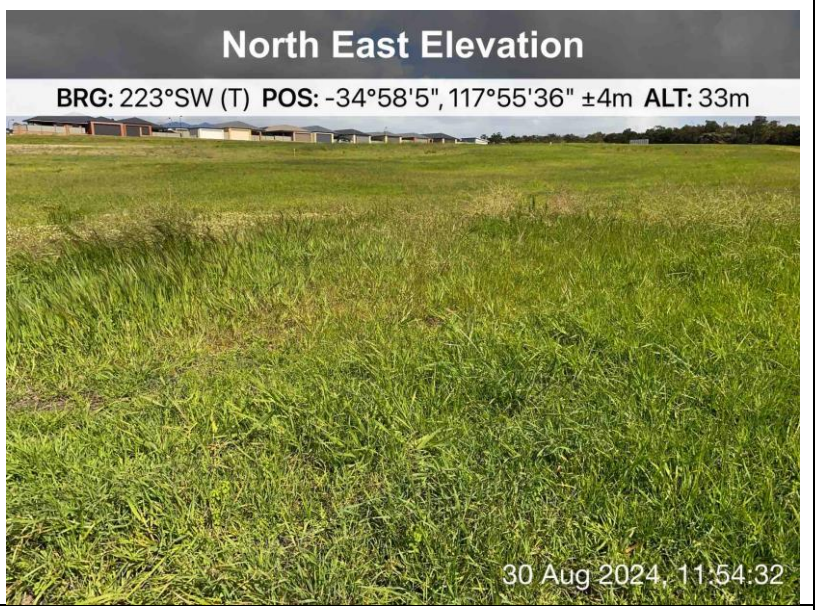


Photo ID:	23	**Plot:**	2
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			

Overstorey up to 30m in height
Canopy Cover of 70-90%
Understorey of Scrub, Shrub and Grasses
High surface, near surface and intermediate fuel loads

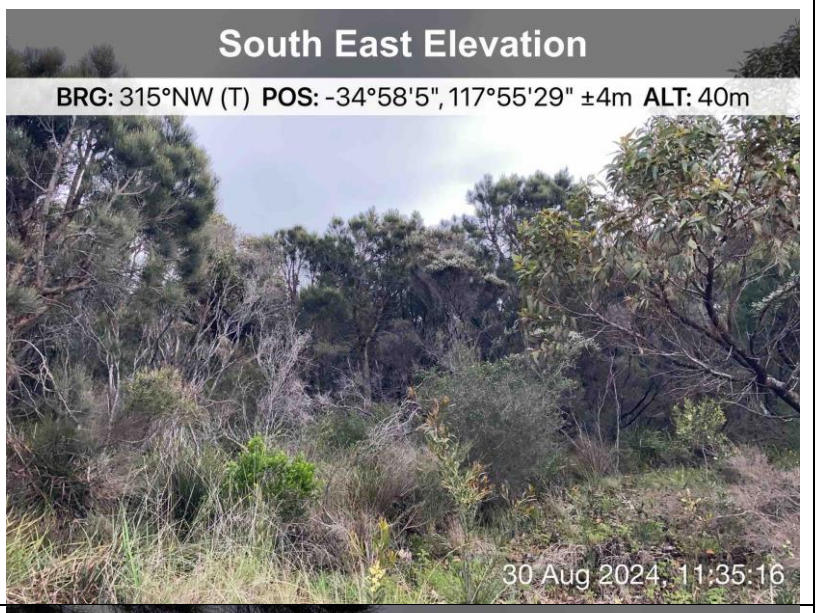


Photo ID:	25	Plot:	2

Vegetation Classification or Exclusion Clause

Class A Forest

Description / Justification for Classification

Overstorey up to 30m in height
Canopy Cover of 70-90%
Understorey of Scrub, Shrub and Grasses
High surface, near surface and intermediate fuel loads

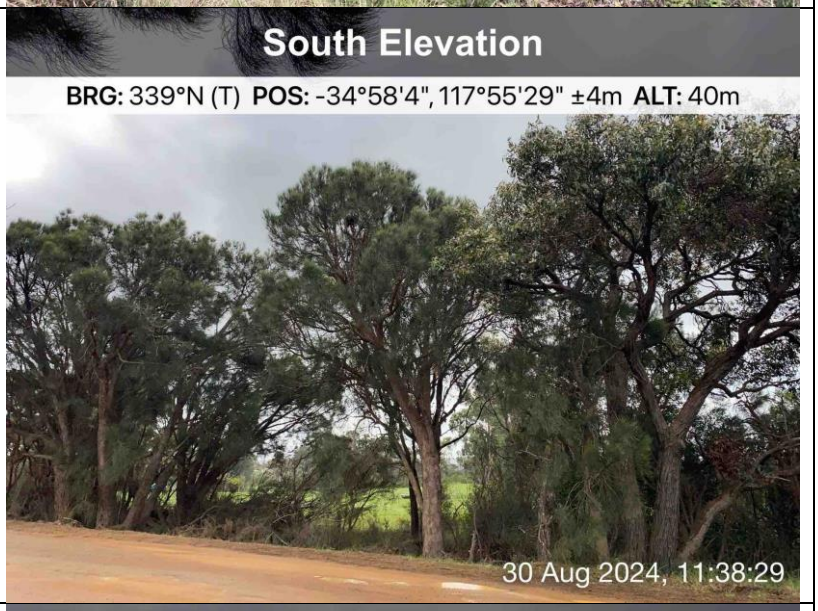


Photo ID:	29	Plot:	3

Vegetation Classification or Exclusion Clause

Class G Grassland

Description / Justification for Classification

Rural Lot >1100m²
Grassland of >100mm in height
Contains isolated trees and shrubs
Canopy cover of less than 10%
Minimal surface, near surface and inermediate fuel loads

Photo ID:	34	Plot:	3

Vegetation Classification or Exclusion Clause

Class G Grassland

Description / Justification for Classification

Rural Lot >1100m²
Grassland of >100mm in height
Contains isolated trees and shrubs
Canopy cover of less than 10%
Minimal surface, near surface and intermediate fuel loads

Photo ID:	30	Plot:	4

Vegetation Classification or Exclusion Clause

Class D Scrub

Description / Justification for Classification

More than 2m in height, less than 6m
Canopy cover of 30-70%
Understorey of Shrubs and Grasses
Moderate surface, near surface and intermediate fuel loads

Photo ID:	33	Plot:	4

Vegetation Classification or Exclusion Clause

Class D Scrub

Description / Justification for Classification

More than 2m in height, less than 6m
Canopy cover of 30-70%
Understorey of Shrubs and Grasses
Moderate surface, near surface and intermediate fuel loads

Photo ID:	1	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Subject Lot
Grasses <100mm in height with occasional weed grass >100mm in height
Canopy cover of less than 10%
Insufficient fuels to increase the risk from bushfire

Photo ID:	7	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Subject Lot
Grasses <100mm in height with occasional weed grass >100mm in height
Canopy cover of less than 10%
Insufficient fuels to increase the risk from bushfire

Photo ID:	10	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Roadside revegetation of isolated peppermint trees with canopy cover less than 10% and low threat ground cover of landscape mulch.
Contains also irrigated grass areas <100mm in height
Insufficient Fuels to increase the risk from bushfire

Photo ID:	11	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Landscaped area within subject lot of isolated low trees with canopy cover less than 10% and low threat ground cover of landscape mulch. Contains also isolated clusters of grass plants and occasional dry grass >100mm in height. Insufficient Fuels to increase the risk from bushfire

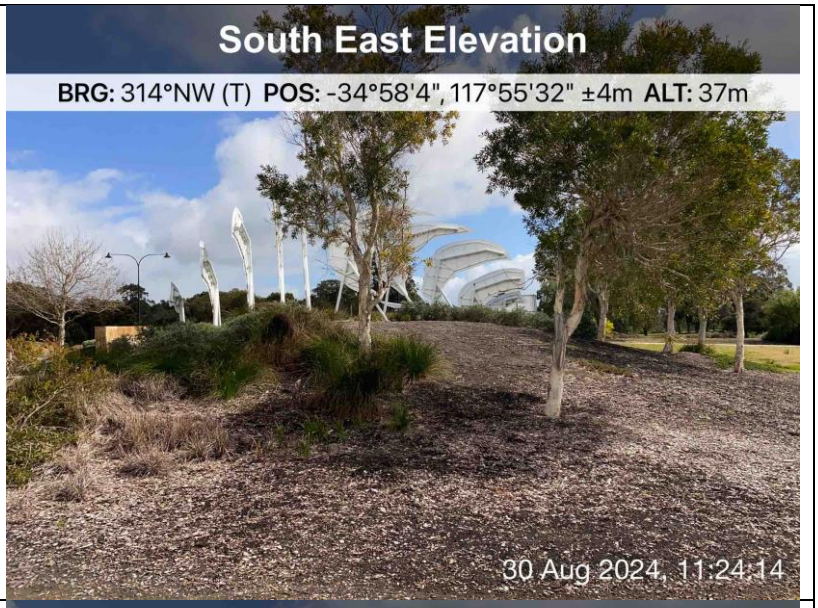


Photo ID:	3	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non Vegetated Areas

Description / Justification for Classification

Lot in construction for commercial development.
Construction sand with poor soil fertility
Occasional weed grasses <100mm in height
Insufficient fuels to increase the risk from bushfire

Photo ID:	4	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non-Vegetated Areas
Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Landscaped garden beds of grass plants and hedges primarily <1m in height with low threat ground cover of landscape mulch
Canopy cover less than 10%
Enclosed by paved driveways and roads
Insufficient Fuels to increase the risk from bushfire

Photo ID:	6	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non-Vegetated Areas
Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Landscaped garden beds of ground cover and grass type plants <.5m in height with low threat ground cover of landscape mulch
Isolated peppermint trees with canopy cover less than 10%
Irrigated grass <100mm in height
Enclosed by paved walkways and roads
Insufficient Fuels to increase the risk from bushfire

Photo ID:	19	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non-Vegetated Areas
Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Landscaped area of isolated low tree with canopy cover less than 10% and low threat ground cover of landscape mulch.
Contains also isolated clusters of shrubs 1m in height and occasional dry grasses >100mm in height.
Insufficient Fuels to increase the risk from bushfire

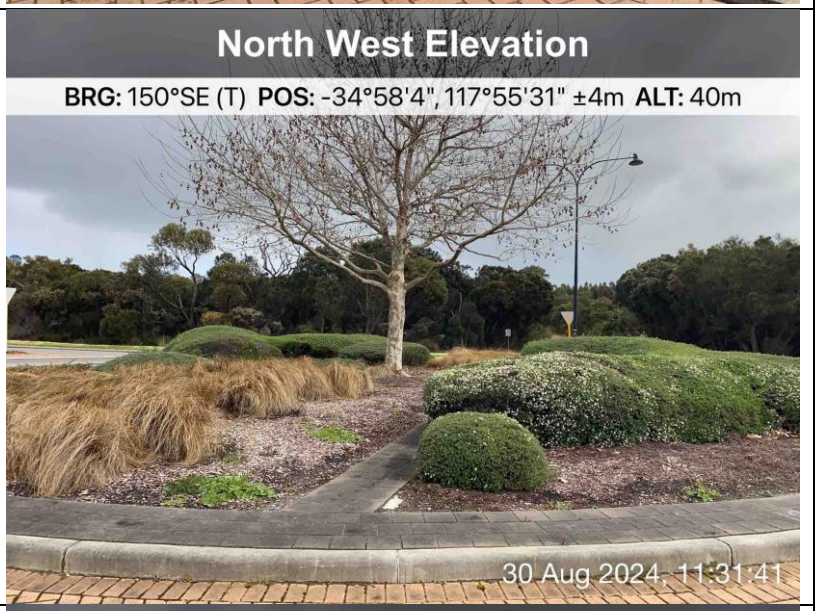


Photo ID:	20	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non-Vegetated Areas
Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Landscaped area of shrubs 1m in height with low threat ground cover of landscape mulch.
Canopy cover of less than 10%
Enclosed by paved footpaths and asphalt roads
Insufficient Fuels to increase the risk from bushfire

Photo ID:	24	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

City of Albany maintained verge
Grasses <100mm in height
Canopy cover of less than 10%
Insufficient fuels to increase the risk from bushfire

Photo ID:	40	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Public Open Space
Irrigated grass <100mm in height
Garden Beds of isolated grass plants <.5m and occasional Shrubs of 1m with low threat ground cover of landscape mulch.
Contains also fringing vegetation of grasses >100mm in height bordering the area's lake.
Canopy Cover of less than 10%
Insufficient Fuels to increase the risk from bushfire

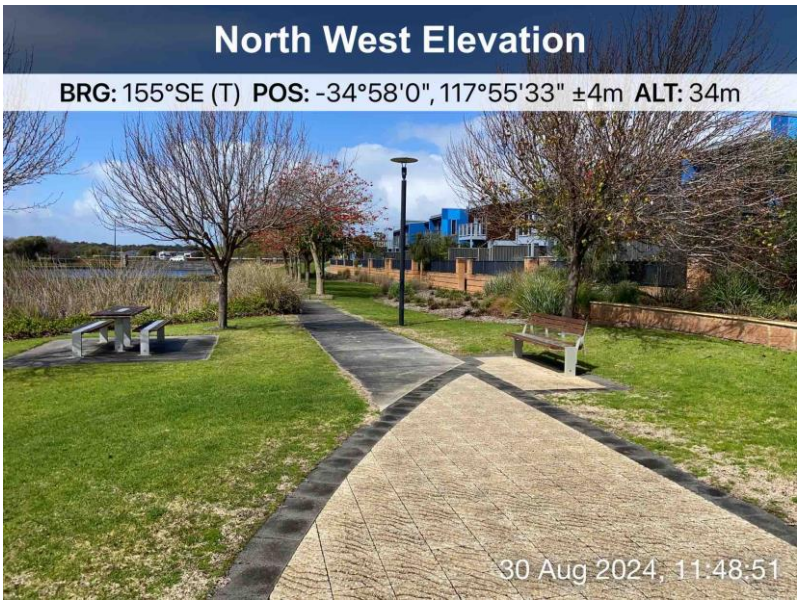


Photo ID:	42	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(e) Non Vegetated Areas

Description / Justification for Classification

Zoned Waterway/Drainage
Insufficient fuels to increase the risk from bushfire

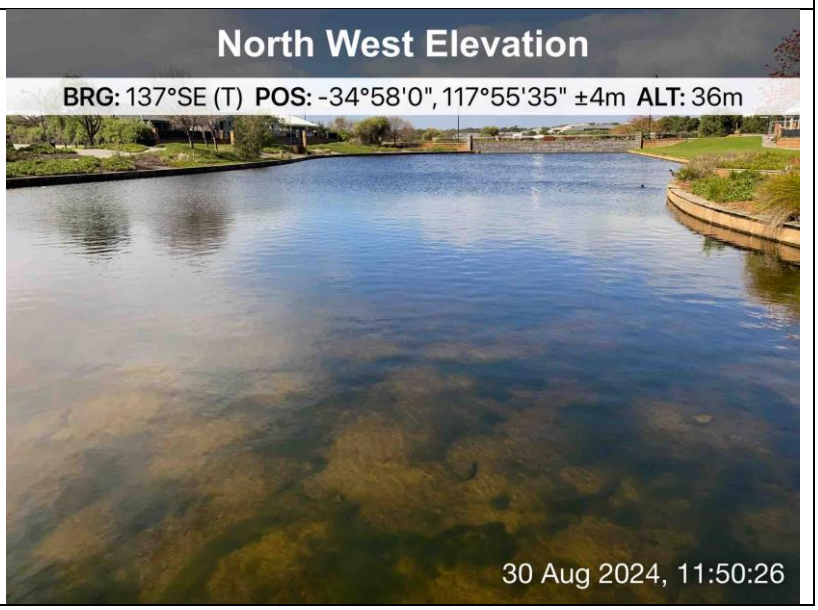


Photo ID:	43	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Public Open Space
Irrigated grass <100mm in height
Garden Beds of isolated grass plants and ground cover <.5m with low threat ground cover of landscape mulch.
Contains also fringing vegetation of grasses >100mm in height bordering the area's lake.
Canopy Cover of less than 10%
Insufficient Fuels to increase the risk from bushfire

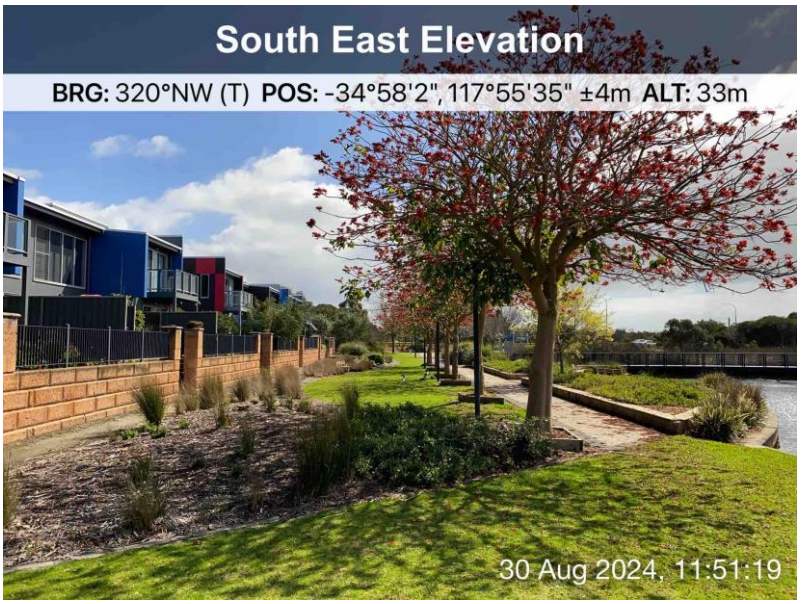


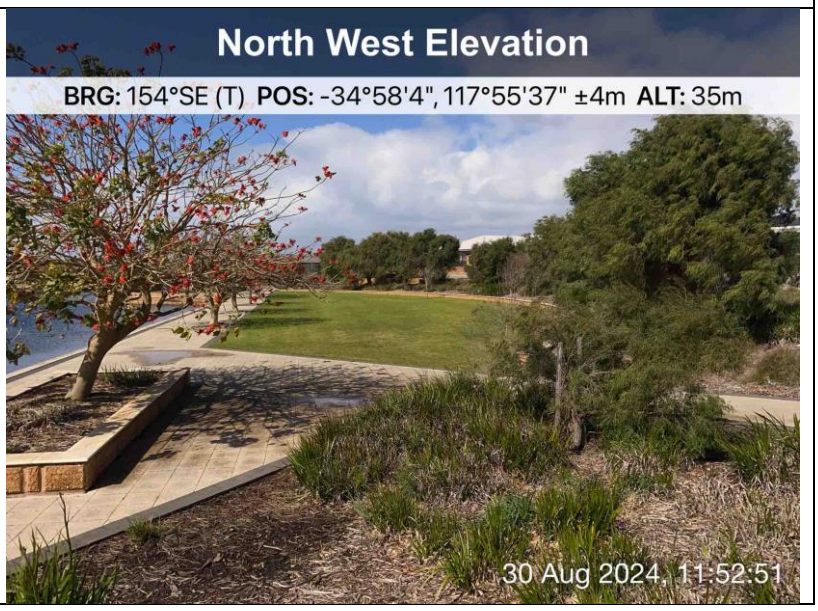
Photo ID:	45	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Public Open Space
Irrigated grass <100mm in height
Garden beds of clustered grass plants and isolated shrubs with low threat ground cover of landscape mulch.
Contains also isolated trees with canopy cover of less than 10%
Insufficient Fuels to increase the risk from bushfire



Relevant Fire Danger Index

The fire danger index for this site has been determined in accordance with Table 2.1 or otherwise determined in accordance with a jurisdictional variation applicable to the site.

Fire Danger Index (WA is FDI of 80)			
FDI 40 ☐	FDI 50 ☐	FDI 80 ☒	FDI 100 ☐
Table 2.4.5	*Table 2.4.4*	*Table 2.4.3*	*Table 2.4.2*

Potential Determined Bushfire Impacts

Table 1a and 1b show the potential bushfire impact to the site / proposed development from each of the identified vegetation plots identified below.

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
1	Class G Grassland	0/Upslope	54	BAL – LOW
2	Class A - Forest	0/Upslope	59	BAL – 12.5
3	Class G Grassland	0/Upslope	41	BAL – 12.5
4	Class D Scrub	0-5 Downslope	38	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 1a: Fast Food Offer, Fuel Store & Car Wash BAL Analysis

Determined Bushfire Attack Level (BAL)

The Determined Bushfire Attack Level (highest BAL) for the site / proposed development has been determined in accordance with clause 2.2.6 of AS 3959-2018 using the above analysis.

Determined Bushfire Attack Level	**BAL – 12.5**

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
1	Class G Grassland	0/Upslope	36	BAL – 12.5
2	Class A - Forest	0/Upslope	65	BAL – 12.5
3	Class G Grassland	0/Upslope	62	BAL – LOW
4	Class D Scrub	0-5 Downslope	60	BAL – 12.5
5	Excludable – Clause 2.2.3.2 (e) & (f)	-	-	BAL – LOW

Table 1b: Fuel Dispensers

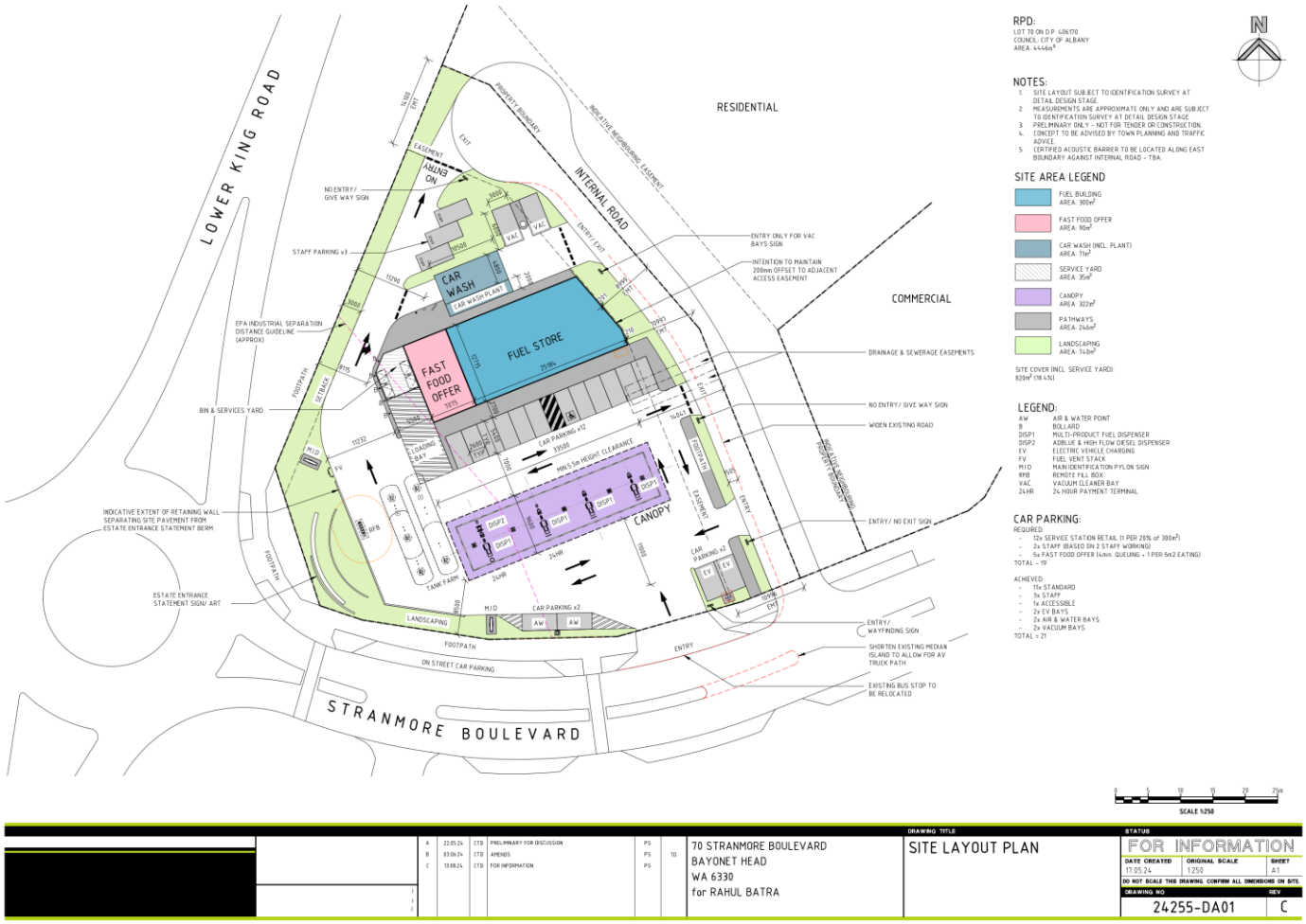
Determined Bushfire Attack Level (BAL)

The Determined Bushfire Attack Level (highest BAL) for the site / proposed development has been determined in accordance with clause 2.2.6 of AS 3959-2018 using the above analysis.

Determined Bushfire Attack Level	**BAL – 12.5**

Appendix 1: Plans and Drawings: Plans and drawings relied on to determine the bushfire attack level

Commercial Development	Drawing / Plan Description: Site Plan



Appendix 2: Application of Shielding Provisions

The proposed Class 6 Structures are BAL-12.5 in entirety on the day of Assessment.

Shielding not applicable as the modified APZ BAL rating cannot be reduced below that of BAL-12.5. As stated in AS3959-2018 c3.5.

Appendix 3: Additional Information and Advisory Notes

Excluded Vegetation (as3959 Clause 2.2.3.2):
Area contains plots that are maintained being excludable (e) - non-vegetated areas and (f) – low-threat vegetation. These low-risk areas have been assessed and plotted on the map in white (plot 5).

Construction Requirements Advisory Statement:
All information given regarding construction requirements for the appropriate BAL Level from AS3959, within and outside this report is advisory only.

Statement:
I, Kieran Geal of Integral Fire Protection, have taken the appropriate steps to ensure that all the information provided in this Bushfire Attack Level Report is accurate and the correct determination of the site has been given on the date of this assessment.

This report does not guarantee that the assessed structure, existing or proposed, will not incur damage, or be destroyed due to the event of bushfire. This assessment and its outcome are based upon the information that has been provided and available on the day of the assessment. The Bushfire Attack Level Assessor conducting this assessment will not be liable for loss or other consequences following a fire, whether due to negligence arising from the services conducted by the consultant, local government authority, the agent and/or owner/occupier requesting the assessment.

Any further vegetation planted after the date of this BAL Assessment or a failure to maintain the site area to the same standards outlined within this BAL Report can dramatically change the BAL rating. This will put any structures located on the property, existing and proposed, at a higher risk in the event of extreme bushfire behaviour in the area.

Very important information for landowner:
It is the responsibility of the landowner/proponent to maintain their APZ in accordance with Schedule 1 ‘Standards for Asset Protection Zones’. It is further recommended that maintenance of the APZ and Property is addressed through the local government firebreak notice (LGA firebreak and fuel notice), issued under s33 of the Bushfires Act 1954.

Appendix 4: Local Government Authority Fire Notice

FIRST AND FINAL NOTICE IS HEREBY SERVED TO OWNERS AND OCCUPIERS OF LAND IN THE CITY OF ALBANY

This Notice constitutes the City of Albany Fire Management Notice pursuant to Section 33 of the *Bush Fires Act 1954*.

You are required to prepare and maintain your property for the fire season. This Notice sets out the actions you must take.

All fire mitigation measures must be in place by and maintained for the following periods:

NORTHEAST SECTOR	01 October 2023 to 30 April 2024
SOUTHWEST SECTOR	01 November 2023 to 14 May 2024

City of Albany officers are authorised to enter private property, without notice to the owner, to inspect and confirm compliance with this notice. If you fail to comply with the requirements contained within this Notice, penalties under the *Bush Fire Act 1954* may apply.

City of Albany

The owner or occupier of land who has received notice under Section 33(1) of the Bush Fires Act 1954 and who fails or neglects in any respect duly to comply with the requirements of the notice is guilty of an offence and liable to a fine of $5000.

Properties up to 4000m2

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Maintaining *fine fuel load** over whole property to an average of two (2) tonnes per hectare
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

Properties 4000m2 to 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Maintaining *fine fuel load** over whole property to an average of eight (8) tonnes per hectare
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

2

Non-Agricultural Non-Cropping Non-Stock Properties over 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks**
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**

*SEE DEFINITIONS

Agricultural Cropping and/or Stock Properties over 50 Hectares

The owner or occupier must reduce any fire hazard on their land by:

- Creating and maintaining *perimeter fire breaks** are not compulsory but recommended
- Creating and maintaining *hazard specific fire breaks**
- Creating and maintaining *building protection zones**
- Cropping paddocks must be broken into compartments not exceeding 250 hectares in area, each separated by internal trafficable breaks.

*SEE DEFINITIONS

Definitions

Perimeter Fire Breaks - are a continuous *trafficable* access track that has standard dimensions of 3 metres wide with 4 metres vertical clearance, located within 20 metres of the property boundary. It can be created by ploughing, cultivating, scarifying, burning or otherwise clearing including slashing and maintaining vegetation length below 50mm.

Hazard Specific Fire Breaks - are a 3 metre low fuel area around inflammable hazards with vegetation maintained below 50mm. Includes but is not limited to; haystacks, non-dwelling sheds, green electricity power domes, electricity power poles and fuel storage areas.

Fine Fuel Load - are grasses and dead combustible vegetation matter less than 6mm in thickness. It does not include processed mulch below an average depth of 50mm.

Building Protection Zone - is a defendable space immediately adjacent to a building *no less* than three metres wide, clear of inflammable vegetation and material. Further, combustible objects, plants, garden supplies such as mulches should be avoided within 10 metres of the building and vegetation kept to a minimum and kept in a low fuel state. The *building protection zone* may reduce the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings in the event of a bushfire.

Inflammable - means a substance or material easily ignited and capable of bursting into flames without the need of an ignition source.

Trafficable - means the capacity to allow a firefighting truck or other firefighting vehicle to safely navigate the interior perimeter of the property safely without impediment.

Information Subsidiary to the Fire Management Notice

Variation to the requirements of the Fire Management Notice:

If you cannot meet these fire management notice requirements, you must apply for a variation or submit an approved Bush Fire Management Plan (BFMP).

Applications for variations must be submitted to the City of Albany by the 01 November 2023.

The City will only accept a BFMP completed by an accredited Bush Fire Planning and Design Practitioner. A BFMP can encompass single or multiple properties. All properties covered by a BFMP must comply with the conditions of the BFMP.

Please contact the City of Albany on 6820 3000 or visit the City's website www.albany.wa.gov.au.

Conservation, Special Residential, Rural Residential and Special Rural Zones:

Properties located in these zones approved under subdivision plans in the Albany Local Planning Scheme Number 1 where required are to comply with fire mitigation requirement conditions under the subdivision plan. If an owner or occupier of a property in one of these zones fails to maintain the mitigation requirements under the subdivision plan, then they will be subject to the requirements of this Fire Management Notice.

To check your property zone and subdivision mitigation requirements please contact City of Albany Planning Services on 6820 3000 or email planning@albany.wa.gov.au

Information Subsidiary to the Fire Management Notice

Plantation Lots:

Owners and lessees of plantation lots must comply with the Department of Fire and Emergency Services (DFES) *Guidelines for Plantation Fire Protection (the guidelines)* in addition to this fire management notice. The guidelines are available from the DFES website https://publications.dfes.wa.gov.au/.

Significant Dates:

NORTH EAST SECTOR FIRE SEASON	
1 October 2023 – 14 November 2023	Restricted Burning permits required
1 October 2023	Requirements of Fire Notice MUST be in place and
15 November 2023 – 15 February 2024	BURNING PROHIBITED
16 February 2024 – 30 April 2024	Restricted Burning permits required

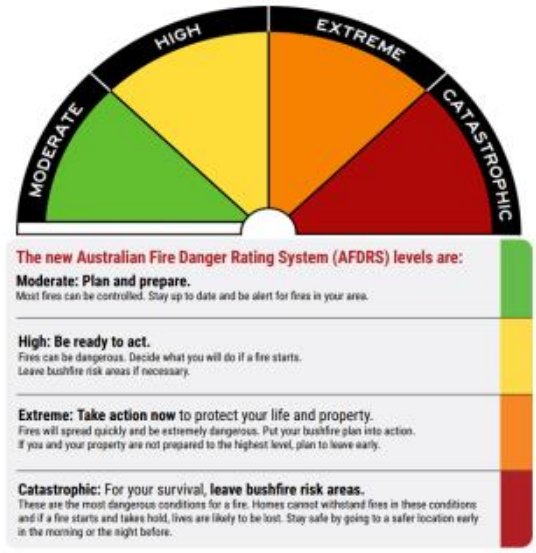
SOUTH WEST SECTOR FIRE SEASON	
1 November 2023 – 14 December 2023	Restricted Burning permits required
1 November 2023	Requirements of Fire Notice MUST be in place and
15 December 2023 – 14 March 2024	BURNING PROHIBITED
15 March 2024 – 14 May 2024	Restricted Burning permits required

These dates are subject to change. Any changes will be published in the local newspapers and on the City of Albany website at www.albany.wa.gov.au

City of Albany Sector Map

Fire Danger Rating

Fire Danger Ratings (FDRs) tell you how dangerous a fire would be if one started. The higher the FDR, the more severe the bushfire will be. They are based on weather conditions forecast by the Bureau of Meteorology.



Disclaimer:

The requirement to clear a fire break exempts an owner or occupier from needing a permit to clear native vegetation under the Environmental Protection Act 1986 however it does not authorise an owner or occupier to carry out excessive clearing. Clearing or removal of native vegetation beyond the requirements of this notice will require permission from other State Legislative Authorities.

The City of Albany, or a contractor engaged by the City, may enter your land to install fire breaks or reduce fuel loads with any expenses incurred charged to the owner or occupier.

The City may vary a requirement or condition of this Notice at its discretion.

Any 'variation to requirements' approval you hold may be declared void at any time by the City.

This notice is issued and authorised by:

Andrew Sharpe
Chief Executive Officer

CITY OF Albany

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Phone 6820 3000
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