



Metro Outer Joint Development Assessment Panel Agenda

Meeting Date and Time: Friday, 20 October 2023; 9:00am
Meeting Number: MOJDAP/280
Meeting Venue: Electronic Means

To connect to the meeting via your computer -
<https://us06web.zoom.us/j/82246279473>

To connect to the meeting via teleconference dial the following phone number -
+61 8 7150 1149

Insert Meeting ID followed by the hash (#) key when prompted - **822 4627 9473**

This DAP meeting will be conducted by electronic means (Zoom) open to the public rather than requiring attendance in person.

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Attendance

DAP Members

Eugene Koltasz (Presiding Member)
Karen Hyde (Deputy Presiding Member)
Neema Premji (A/Third Specialist Member)
Mayor Margaret Thomas (Local Government Member, City of Kalamunda)

Officers in attendance

Anjali Parmar (City of Kalamunda)

Minute Secretary

Claire Ortlepp (DAP Secretariat)

Applicants and Submitters

Jeff Malcolm (MGA Town Planners)
Luke Dujmovic

Members of the Public / Media

Nil.

1. Opening of Meeting, Welcome and Acknowledgement

The Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being conducted by electronic means (Zoom) open to the public. Members are reminded to announce their name and title prior to speaking.

2. Apologies

Jason Hick (Third Specialist Member)
Cr Sue Bilich (Local Government Member, City of Kalamunda)

3. Members on Leave of Absence

Nil.

4. Noting of Minutes

Signed minutes of previous meetings are available on the [DAP website](#).

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.



6. Disclosure of Interests

Nil.

7. Deputations and Presentations

7.1 Luke Dujmovic presenting in support of the recommendation for the application at Item 8.1. The presentation will address Conditions 7, 8, 9, 11, 18.

7.2 Jeff Malcolm (MGA Town Planners) presenting in support of the recommendation for the application at Item 8.1. The presentation will address Conditions 7, 8, 9, 11, 18.

The City of Kalamunda may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 Lot 14, 16, 17 & 1015 Berkshire Road, Forrestfield

Development Description: Warehouse and Transport Depot
Applicant: Jeff Malcolm (MGA Town Planners)
Owner: AP Dujmovic Pty Ltd, EI Dujmovic Pty Ltd, LM Dujmovic Pty Ltd, PJ Dujmovic Pty Ltd
Responsible Authority: City of Kalamunda
DAP File No: DAP/23/02520

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil.

10. State Administrative Tribunal Applications and Supreme Court Appeals

Current SAT Applications				
File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged
DR75/2022 DAP/18/01543	City of Joondalup	Portion of 9040 (34) Kallatina Drive, Iluka	Mixed Commercial Centre (Iluka Plaza)	02/05/2022
DR135/2023 DAP/23/02447	City of Rockingham	Lot 622 (No.2) Aurea Boulevard, Golden Bay	Proposed mixed commercial development (Golden Bay Neighbourhood Centre)	11/08/2023
DR98/2023 DAP/22/02379	City of Swan	Lot 31 (No.1487) Neaves Road, Bullsbrook	Proposed roadhouse	16/06/2023



11. General Business

In accordance with Section 7.3 of the DAP Standing Orders 2020 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12. Meeting Closure



Presentation Request Form

[Regulation 40\(3\)](#) and [DAP Standing Orders 2020](#) cl. 3.5

Must be submitted at least 72 hours (3 ordinary days) before the meeting

Presentation Request Guidelines

Persons interested in presenting to a DAP must first consider whether their concern has been adequately addressed in the responsible authority report or other submissions. Your request will be determined by the Presiding Member based on individual merit and likely contribution to assist the DAP's consideration and determination of the application.

Presentations are not to exceed **5 minutes**. It is important to note that the presentation content will be **published on the DAP website** as part of the meeting agenda.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Luke Dujmovic
Company (if applicable)	Landowner
Please identify if you have any special requirements:	YES ☐ NO ☒ If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	MOJDAP
Meeting Date	20 th October 9am
DAP Application Number	DAP/23/250
Property Location	Lot 14, 16, 17, 1015 Berkshire Road, Forrestfield
Agenda Item Number	8.1

Presentation Details

I have read the contents of the report contained in the Agenda and note that my presentation content will be published as part of the Agenda:	YES ☒
Is the presentation in support of or against the <u>report recommendation</u> ? (<i>contained within the Agenda</i>)	SUPPORT ☐ AGAINST ☒
Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT ☒ AGAINST ☐
Will the presentation require power-point facilities?	YES ☐ NO ☒ If yes, please attach



Presentation Content*

These details may be circulated to the local government and applicant if deemed necessary by the Presiding Member. Handouts or power points will not be accepted on the day.

Brief sentence summary for inclusion on the Agenda	<i>The presentation will address:</i> Conditions 7, 8, 9, 11, 18
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In accordance with Clause 3.5.2 of the [DAP Standing Orders](#), your presentation request must also be accompanied with a written document detailing the content of your presentation.

Please attach detailed content of presentation or provide below:

- Condition 7 (Deed of Agreement, cost imposition) Bonsor Road Design and Truncations are a result of council required acquisition. As has been in the past, we request that this is amended to require council to pay for the costs of documentation and the cost of purchasing truncations at current value. As has been in previous draft.
- Conditions 8 and 9 (These conditions might read 'prior to the issuing of a building permit', rather than prior to application for one).
- Condition 11 (Additional landscaping diamonds. The proposal includes a single row of car bays immediately adjoining vegetated landscaping strips, and the carpark manoeuvring areas are of a small width. This requirement would be reasonable if there were back-to-back parking bays in a larger carpark. The proximity and extent of the landscaping is sufficient, relative to the size and depth of the carpark,
- Condition 18 (Question whether we should be landscaping the verge (is this appropriate in terms of maintaining the function of the swale). We intend only to modify the area where crossovers laid + any associated modification required by the City or Peritas engineers design.



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Presenter Details

Name	Jeff Malcolm
Company (if applicable)	MGA Town Planners
Please identify if you have any special requirements:	YES ☐ NO ☒ If yes, please state any accessibility or special requirements: Click or tap here to enter text.

Meeting Details

DAP Name	MOJDAP
Meeting Date	20 th October 9am
DAP Application Number	DAP/23/250
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Is the presentation in support of or against the <u>proposed development</u> ?	SUPPORT ☒ AGAINST ☐
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- Condition 18 (Question whether we should be landscaping the verge (is this appropriate in terms of maintaining the function of the swale).

LOTS 14, 16, 17 AND 1015 (NO. 281, 285, 287, 283) BERKSHIRE ROAD, FORRESTFIELD – WAREHOUSE/STORAGE AND TRANSPORT DEPOT

Form 1 – Responsible Authority Report (Regulation 12)

DAP Name:	Metro Outer Joint Development Assessment Panel	
Local Government Area:	City of Kalamunda	
Applicant:	MGA Town Planners	
Owner:	P J Dujmovic Pty Ptd, L M Dujmovic Pty Ptd, A P Dujmovic Pty Ptd, E I Dujmovic Pty Ptd	
Value of Development:	\$13 million ☒ Mandatory (Regulation 5) ☐ Opt In (Regulation 6)	
Responsible Authority:	City of Kalamunda	
Authorising Officer:	Regan Travers, Manager Approval Services Anjali Parmar, Senior Statutory Planner	
LG Reference:	DA23/0241	
DAP File No:	DAP/23/02520	
Application Received Date:	23/06/2023	
Report Due Date:	11 October 2023	
Application Statutory Process Timeframe:	90 Days, with an additional 64 days agreed.	
Attachment(s):	1. Development Plans 2. Transport Impact Assessment 3. Stormwater Drainage Plan 4. Waste Management Plan 5. Design Review Panel Meeting Minutes	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	☐ Yes ☒ N/A	Complete Responsible Authority Recommendation section
	☐ No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Metro Outer Joint Development Assessment Panel resolves to:

- Accept** that the DAP Application reference DAP/23/02520 is appropriate for consideration as a “Warehouse/Storage” and “Transport Depot” land use and are compatible with the objectives of the zoning table in accordance with Clause 4.2.4 of the City of Kalamunda Local Planning Scheme No. 3;
- Approve** DAP Application reference DAP/23/02520 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning*

and Development (Local Planning Schemes) Regulations 2015, and the provisions of Clause 10.4 of the City of Kalamunda Local Planning Scheme No. 3, subject to the following conditions:

Conditions

1. Pursuant to clause 26 of the Metropolitan Region Scheme, this approval is deemed to be an approval under clause 24(1) of the Metropolitan Region Scheme.
2. This decision constitutes planning approval only and is valid for a period of 4 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
3. The development being carried out in accordance with the plan(s)/drawing(s) and document(s) (including any recommendations made) listed below, including any amendments to those plans as shown in red.

Rev.	Title	Date	Prepared by
-	Development Plans	6/10/2023	Jeff Freeman Architects
B	Transport Impact Assessment	17/08/2023	Stantec
1	Waste Management Plan	5/05/2023	Low Impact Development Consulting

4. Stormwater must be disposed of on-site, to the satisfaction of the City of Kalamunda.
5. For the duration of development, all car parking and landscaping areas located in the front setback area are not to be used for the storage of motor vehicles, machinery, equipment or materials which are being wrecked or repaired, or for the stacking or storing of fuel, raw materials, products or by-products or wastes of manufacture, in accordance with the City of Kalamunda Local Planning Scheme No. 3.
6. For the duration of development, the incidental use of office shall be restricted to use by the occupier of the warehouse and must not be made available for public use.
7. Prior to applying for a Building Permit, the applicant/landowner must enter into an agreement (Deed) to the satisfaction of the City of Kalamunda and the applicant/landowner to enable the City of Kalamunda to acquire the truncation at the intersection of Berkshire Road and Bonser Road and the intersection of Bosner Road and Nardine Close for road widening. Costs associated with the preparation and execution of the deed of agreement are to be borne by the applicant/landowner.
8. Prior to applying for a building permit, the applicant/landowner is to submit, and have approved by the City of Kalamunda, detailed information relating to external finishes and colour schemes. Prior to the occupation of the development, the

approved external finishes and colour schemes are to be implemented into the development, to the satisfaction of the City of Kalamunda and maintained for the duration of the development.

9. Prior to applying for a Building Permit, the applicant/landowner is to provide a Geotechnical Report in accordance with AS 1726 Geotechnical Site Investigations to inform designs such as earthworks, subsoil drainage, groundwater management, stormwater drainage, erosion control, slope stability, retaining walls, small structure footings, and road pavements, to the satisfaction of the City of Kalamunda.
10. Prior to applying for a building permit, a Construction Management Plan must be prepared by the landowner/applicant and approved by the City of Kalamunda. The Construction Management Plan shall detail how the construction of the development will be maintained including the following:
 - i. Public safety and security;
 - ii. Hours of construction;
 - iii. Traffic management plans during construction, including any proposed road closures;
 - iv. Dust management plan
 - iv. Toilet facilities for construction workers;
 - v. Protection of public infrastructure;
 - vi. How materials and equipment will be delivered, stored and removed from the site;
 - vii. Parking arrangements for staff, contractors and visitors;
 - viii. Construction Waste disposal strategy and location of waste disposal bins;
 - ix. Details of cranes, large trucks or similar equipment which may block public thoroughfares during construction, and how they are to be managed;
 - x. How dust, noise, erosion, lighting and environmental hazards and will be managed during the stages of construction;
 - xi. Complaint management procedure; and
 - xii. Other matters likely to impact on surrounding property owners.

The approved Construction Management Plan must be implemented prior to the commencement of works and thereafter maintained for the duration of works to the satisfaction of the City of Kalamunda.

11. Prior to applying for a building permit, an amended Landscape Plan must be submitted to the City of Kalamunda. The amended Landscape Plan must provide 1 tree per every 4 uncovered car parking bays in accordance with the City of Kalamunda Local Planning Policy 27 and 33, to the satisfaction of the City of Kalamunda.
12. Prior to occupation of the development, Lots 14, 16, 17 and 1015 Berkshire Road, Forrestfield must be legally amalgamated into a single lot on a Certificate of Title, with the new title issued and a copy of the new title provided to the satisfaction of the City of Kalamunda.
13. Prior to occupation of the development, all crossovers must be designed and constructed to the specifications of the City of Kalamunda and maintain the existing capacity of the verge swale, to the satisfaction of the City of Kalamunda.

14. Prior to the occupation of the development, the stormwater drainage is to be designed and constructed as per geotechnical report and in accordance with City's "Stormwater Design Guidelines for Subdivisional and Property Development" and to the satisfaction of the City of Kalamunda.
15. Prior to occupation of the development, the Warehouse and Transport Depot must be connected to the reticulated sewerage network.
16. Prior to occupation of the development, all landscaping noted in the approved Landscape Plan must be planted and maintained in perpetuity, to the satisfaction of the City of Kalamunda. Any species which fail to establish within the first two planting seasons following implementation must be replaced at the landowners cost to the satisfaction of the City of Kalamunda.
17. Prior to occupation of the development, landscaping of the verge shall be completed in accordance with City's "Verge Development Guidelines" and the verge swale must be protected at all times.
18. Prior to occupation of the development, all hardstand areas must be paved, sealed and drained to the satisfaction of the City of Kalamunda.
19. Prior to occupation of the development, the landowner must locate and screen the following components of the development so that they are not visible from any road to which the site has frontage, adjoining properties or otherwise on display from any public vantage point:
 - i. Refuse storage areas.
 - ii. Service equipment.
 - iii. Mechanical ventilation.
 - iv. Refrigeration units.
 - v. Storage areas for machinery, materials or the like.
20. Prior to occupation of the development, the landowner/applicant contributing towards public art, pursuant to City of Kalamunda Local Planning Policy 26.
21. Prior to occupation of the development, all car parking areas must meet the following requirements:
 - i. The provision and maintenance of a minimum of 68 car parking spaces for the Warehouse and a minimum of 17 car parking spaces for the Transport Depot, which are designed, constructed, sealed, kerbed, drained and marked in accordance with Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off street car parking;
 - ii. The provision and maintenance car parking space(s) dedicated to people with disabilities, which are designed, constructed, sealed, kerbed, drained and marked in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009, Parking facilities, Part 6: Off street parking for people with disabilities and which are linked to the main entrance of the development by a continuous accessible path of travel designed and constructed in accordance with Australian Standard AS 1428.1 2009, Design for access and mobility, Part 1: General Requirements for access New building work;

- iii. Vehicle parking, manoeuvring and circulation areas are to be suitably constructed, sealed, kerbed, line marked and drained to the specification and satisfaction of the City of Kalamunda and Australian Standard AS2890; and
 - iv. Comply with the above requirements and be maintained to the satisfaction of the City of Kalamunda for the duration of the development.
22. Prior to occupation of the development, bicycle facilities shall be provided in accordance with Australian Standard AS 2890.3 to the satisfaction of the City of Kalamunda. The facilities shall thereafter be retained for the duration of the development.

Advice Notes

1. In regard to condition 20, the City of Kalamunda's Local Planning Policy 26 (Public Art Contributions) provides a concise and documented procedure for public art contributions to provide for consistent management and transparent process by the City.
2. In regards to condition 20, the applicant/landowners are advised that a public art contribution of \$130,000 applies to this approval, which can be provided through either a public art contribution within the subject site or within a public area within the vicinity of the subject site equal to \$130,000, or alternatively the provision of a \$130,000 as in lieu payment to the City of Kalamunda's Public Art Fund.
3. Any damages to public assets arising during the course of the development activity are to be repaired and restored in accordance with the "Local Government Guidelines for Restoration and Reinstatement in WA" and to the satisfaction of the City of Kalamunda.
4. The applicant is advised to manage and minimise dust during the works and after completion in accordance with the Department of Environment and Conservation's "Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites Remediation and Other Related Activities".
5. The applicant is advised to manage and minimise erosion and sediment loss during the works and after completion in accordance with the Eastern Metropolitan Regional Council's policy 5.1.2 "Erosion and Sediment Control".
6. The applicant is required to manage noise and vibration during the works in accordance with Australian Standard AS 2436 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites".
7. A Traffic Management Plan (TMP) is required for any works in the road reserve or impacting the road reserve. Submit a TMP in accordance with Main Roads WA's Traffic Management for Works on Roads Code of Practice, to the City. For non-complex TMPs submit the TMP at least 14 calendar days before commencing work, and for complex TMPs a minimum of 21 days before commencing work. The Traffic Management Plan must be approved before work impacting the road reserve can commence.

8. The applicant is reminded of their obligations to comply with the “Land development sites and impacts on air quality: a guideline for the prevention of dust and smoke pollution from land development sites in Western Australia”, prepared by the Department of Water and Environment Regulation.
9. It is prohibited to clear endemic (native) vegetation unless the clearing is authorised by a clearing permit obtained from the Department of Water and Environmental Regulation (DWER) under the Clearing Regulations of Part V of the Environmental Protection Act (WA) 1986 or is of a kind exempt in accordance with Schedule 6 of the Environmental Protection Act 1986 or Regulation 5 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
10. This development approval does not authorise the erection of any signage not exempted by Schedule 5 (Exempted advertisements) of the City of Kalamunda Local Planning Scheme No. 3.

Details:

Region Scheme	Metropolitan Region Scheme
Region Scheme – Zone	Industrial
Local Planning Scheme	Local Planning Scheme No. 3
Local Planning Scheme – Zone	Industrial Development
Structure Plan/Precinct Plan	Forrestfield/High Wycombe Industrial Area Stage 1
Structure Plan/Precinct Plan - Land Use Designation	Industrial Development
Use Class and permissibility:	Warehouse/Storage – “D” (Discretionary) Use Transport Depot – “D” (Discretionary) Use
Lot Size:	Total lot area: 40,584sqm.
Existing Land Use:	281 and 287 Berkshire Road: existing transport depot 283 and 285 Berkshire Road: vacant
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☐ N/A ☒ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	No
Swan River Trust Area	No

Proposal:

The development application seeks approval for a Warehouse/Storage development with an incidental office across Lots 14 and 17 (No. 281 and No. 287) Berkshire Road, Forrestfield. The application also seeks approval for a Transport Depot at the rear on Lots 1015 and 16 (No. 283 and No. 285) Berkshire Road, Forrestfield.

The key components of the development are summarised below:

Proposed Land Use	Warehouse/Storage with an incidental Office Transport Depot
Proposed Net Lettable Area	9,790sqm
Proposed No. Storeys	Single storey Warehouse Two storey Office
Proposed No. Dwellings	n/a

- One warehouse totalling 9,790sqm.
- One incidental office totalling 500sqm.
- A hardstand area to accommodate vehicle movements.
- A total of 68 car parking bays for the warehouse.
- A total of 17 car parking bays for the transport depot.
- The transport depot at the rear of the site is serviced by modular buildings for an office, lunch area and bathrooms.
- A total of six crossovers are provided.
 - One crossover on Berkshire Road for access to the car parking area.
 - A second crossover on Berkshire Road for heavy vehicles.
 - One crossover on Bonser Road for access to the car parking area.
 - A second crossover on Bonser Road for heavy vehicles.
 - One crossover on Nardine Close for access to the transport depot.
 - A second crossover on Nardine Close for heavy vehicles.

Background:

Site Description

The subject site is located within the Forrestfield/High Wycombe Industrial Area. The Forrestfield/High Wycombe Industrial Area is generally bounded by Roe Highway to the east, Berkshire Road to the south, Milner Road to the west and Sultana Road West to the north. The area was historically used for rural living and orcharding pursuits, however since 2012 the area has transitioned with the development of a range of light industrial development land uses, particularly logistics and transport-based industries. The area has been developed under the Industrial Development zone, having due regard to the adopted Structure Plan, and taking into consideration the Design Guidelines.

This application spans four lots, with a total area of 40,584sqm. Refer to the below table for lot details subject to this development application.

ADDRESS	LANDOWNER	VOL.	FOLIO	AREA (sqm)
Lot 14 (No. 281) Berkshire Road, Forrestfield	E I Dujmovic Pty Ltd	1730	744	10,000sqm
Lot 16 (No. 285) Berkshire Road, Forrestfield	L M Dujmovic Pty Ltd	1730	748	10,296sqm
Lot 17 (No. 287) Berkshire Road, Forrestfield	P J Dujmovic Pty Ltd	1730	746	10,000sqm

Lot 1015 (No. 283) Berkshire Road, Forrestfield	A P Dujmovic Pty Ltd	2968	136	10,288sqm
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In summary, the subject site is described as follows:

1. Zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Industrial Development' under the City of Kalamunda Local Planning Scheme No.3 (LPS3).
2. Bound by Berkshire Road to the south, Bonser Road to the west and Nardine Close to the north. The adjoining sites to the east, west and north are also zoned Industrial Development. The properties across the street on Berkshire Road are not located within Forrestfield/High Wycombe Industrial Area and are zoned 'Light Industry' under LPS3.
3. Located within the Forrestfield/High Wycombe Industrial Area Stage 1 (FFHW Industrial Area).
4. Not identified on the Department of Fire and Emergency Services (DFES) OBRM mapping as being located within a Bushfire Prone Area (BPA) under the Fire and Emergency Services Act 1998 (as amended).



Figure 1 Scheme Map

Site History

The below table provides a summary of the planning history over the subject sites.

Pre April 2011	Zoned Rural and used for residential purposes.
April 2011	Rezoned under the MRS from Rural to Industrial.

December 2011	Rezoned (along with the wider Forrestfield/High Wycombe Industrial Area) from Special Rural to Industrial Development through Amendment No. 34 to LPS3 which was gazetted in December 2011.
August 2019	Modifications to the Forrestfield High Wycombe Industrial Area Design Guidelines adopted by Council 27 August 2019.
June 2023	Development Application lodged to the City of Kalamunda for consideration through the Development Assessment Panel.

Legislation and Policy:

Legislation

Planning and Development Act 2005

Planning and Development (Local Planning Schemes) Regulations 2015

Planning and Development (Development Assessment Panel) Regulations 2011

Metropolitan Region Scheme (MRS)

City of Kalamunda Local Planning Scheme No. 3 (LPS3)

Environmental Protection (Noise) Regulations 1997

State Government Policies

State Planning Policy 3.6 – Infrastructure Contributions

State Planning Policy 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 4.1 – State Industrial Interface

State Planning Policy 7.0 – Design of the Built Environment

Government Sewerage Policy 2019

Structure Plans/Activity Centre Plans

Forrestfield / High Wycombe Industrial Area Stage 1 Local Structure Plan

Local Policies

Local Planning Policy 2 – Advertising Signage (LPP2)

Local Planning Policy 14 – Car Parking (LPP14)

Local Planning Policy 16 – Design Review Panels (LPP16)

Local Planning Policy 24 – Development Contribution Arrangements (LPP24)

Local Planning Policy 26 – Public Art Contributions (LPP26)

Local Planning Policy 27 – Forrestfield/High Wycombe Industrial Area Design Guidelines (LPP27)

Local Planning Policy 33 – Tree Retention (LPP33)

Consultation:

Public Consultation

The application did not require public consultation.

Referrals/consultation with Government/Service Agencies

This application was referred to the Department of Health for comments in relation to the wastewater management. The proposal indicated an intention to connect the front two lots (Lots 281 and 287 Berkshire Road) to reticulated sewerage and to have one onsite wastewater treatment system and disposal area for the rear lots (Lots 283 and 285 Berkshire Road).

The City understands that the Department is generally not supportive of proposals which seek to connect to sewerage and also propose onsite wastewater treatment systems. As such, the proposal was referred to the Department of Health for comments.

Department of Health advised that they do not support Lots 283 and 285 Berkshire Road being serviced with an onsite wastewater treatment system as these lots are required to comply with the *Health (Miscellaneous Provisions) Act, 1911* and connect to reticulated sewerage. As such, condition 15 has been imposed to require the development to connect to reticulated sewerage.

Design Review Panel Advice

Pursuant to Clause 6.2 of LPP 16, the proposed development is a 'significant proposal' and therefore the advice of DRP was sought and considered during the assessment of this Development Application.

The City of Kalamunda's DRP comprises of independent experts in the field of architecture, urban design and urban planning. The Panel provides formal technical and professional advice and recommendations to the City and applicant on development proposals. The application was considered by the DRP on 6 September 2023 (refer attachment 5 for the minutes of the meeting).

Pursuant to Clause 10.3 of LPS3, the City is required to give due regard to any relevant recommendation of the DRP. The below table provides a summary of the proposals response to the recommendations made by the DRP.

DRP Comments	City Response
Landscaping: The site has a large impermeable footprint and therefore additional landscaping in the overall site is highly recommended. Recommend the provision of 1 tree for every 4 uncovered car parking bays to provide additional shade and canopy cover in the large paved car parking areas. Recommend combining the plant mixes for a more consistent approach to the overall site rather than having	The swale along Bonser Road has been shown with an indicative landscape scheme. The landscape mix has been rationalised to a mix of plants which is more consistent to the overall site. The applicant has not provided the recommended 1 tree for every 4 uncovered car parking bays. The City places high importance on the benefits of the additional shade and canopy cover within the car parking areas. As such, the City has conditioned for 1 tree to be provided for every 4 uncovered

two separate plant mixes on the Landscape Plan. Recommend providing landscaping buffer (6m strip) along Bonser Road which is in keeping with the requirements of the Structure Plan.	car parking bays through an amended Landscape Plan. For further details on landscaping, refer to the Officer Comment section of this report.
Consider providing sun shading along the northern and western elevations, which is going to be particularly important during the summer months	The application now proposes vertical sun shading to the Bonser Road and Berkshire Road elevations.
Consider screening of the modular buildings at the transport depot. Consider more landscaping and improved functionality around modular buildings.	The application now proposes screening to the modular buildings of the transport depot from Nardine Close. Additional landscaping has now also been provided around the modular buildings at the rear to improve the overall amenity and provide additional screening.
Sustainability: Consider providing sustainable materials for the ground surface materials specially in the storage area. Consider providing solar panels and solar shading.	The application now proposes 2x EV charging bays within the public car parking area. Recycled bitumen is being used within the transport depot area. Stormwater is being collected in a tank to irrigate the landscaped areas. The applicant has indicated that the building is being engineering to allow for a solar system installation on the roof.
Provision of public art for a proposal which gives back to the community.	The standard public art condition (condition 24) has been added. This will allow the applicant to either provide on-site or cash-in-lieu contribution. The applicant will be encouraged to provide / integrate public art into the streetscape elevations. The applicant has advised they intend to provide a public art component in lieu of a payment contribution.

Internal Departments

The application was referred to relevant internal departments for formal comment as part of the consideration process.

Bonsor Road is a new road providing a connection between Nardine Close and Berkshire Road. Stage 1 of Bonsor Road was completed in June 2020. The City's Strategic Department advised that Stage 2 of Bonsor road remains outstanding and is contingent upon the southern truncations being acquired from Lots 16 & 17 for road widening purposes. As such, condition 7 has been imposed to require the applicant/landowner to enter into an agreement (Deed) to enable the City of Kalamunda to acquire the truncation at the intersection of Berkshire Road and Bonsor Road and the intersection of Bosner Road and Nardine Close for road widening.

All departments are satisfied with the proposal subject to the recommended conditions and advice notes.

Planning Assessment:

The proposal has been assessed against all the relevant legislative requirements of the Scheme, State and Local Planning Policies outlined in the Legislation and Policy section of this report. The following matters have been identified as key planning considerations for the determination of this application:

1. Front Setback (LPP27)
2. Landscaping (LPP27 and LPP33)
3. Car Parking (Table 3 of LPS3)

Land Use Permissibility

The subject site is zoned 'Industrial Development' under LPS3. The application seeks approval for a 'Warehouse/Storage' land use which is a (D) discretionary land use in accordance with Clause 4.3 and Table 1 of LPS3. The 'Warehouse/Storage' use is defined in Schedule 1, Part 2 of LPS3 as:

'warehouse/storage' means premises including indoor or outdoor facilities used for –

- (a) the storage of goods, equipment, plant, or materials; or
- (b) the display or sale by wholesale of goods.

The proposed development also seeks approval for 'an incidental use' (Office) which is defined by Schedule 1, Part 1 of LPS3 as follows:

'incidental use' means a use of premises which is ancillary and subordinate to the predominant or primary use.

A related definition of LPS3 is the definition of 'predominant use', which is defined by Schedule 1, Part 1 of LPS3 as follows:

'predominant use' means the primary use of premises to which all other uses carried out of the premises are subordinate, incidental or ancillary.

When considering incidental uses, it is necessary to determine whether the uses are incidental to the predominant use of land or constitute an independent use. Pursuant to Clause 4.3.3 of LPS3, incidental uses are permitted if the change of use does not change the predominant use of the land. The City is satisfied the use of office does not change the predominant use of the land; being ancillary and subordinate to the predominant use of 'warehouse/storage'. Therefore, approval of the incidental use for an office is supported subject to recommended condition 6.

The application also seeks approval for a 'Transport Depot' land use which is also a (D) discretionary land use in accordance with Clause 4.3 and Table 1 of LPS3. The 'Transport Depot' use is defined in Schedule 1, Part 2 of LPS3 as:

***"transport depot"** means any land or buildings used for the garaging or parking of road motor vehicles or commercial vehicles used, or intended to be used, for carrying goods or persons for hire or reward or for any consideration, or for the transfer of goods or persons from one such motor vehicle to another of such motor vehicles, and including the maintenance and repair of such vehicles, but not other vehicles.*

Built Form

The City provides a framework to guide the assessment of the built form within the Forrestfield/High Wycombe Industrial Area through relevant LPS3 provisions and the Design Guidelines contained within LPP27.

The table below outlines the proposals compliance with the relevant built form requirements.

PROVISION		REQUIREMENT	PROPOSAL	COMPLIANCE
SETBACKS (Table 2 LPS3 – Cl 2.4 LPP 27)	FRONT (Berkshire Road)	20 metres	19m (warehouse) 12m (office)	NO
	MINOR STREET (Bonser Road)	10 metres	16m (warehouse) 12m (office)	YES
	MINOR STREET (Nardine Close)	10 metres	24m (modular buildings)	YES
	SIDE	At the discretion of the Council, recommended a minimum 3.0 metres from side	36m (warehouse) 11m (modular buildings)	YES

		and rear boundaries.		
BUILDING HEIGHT (CI 3.1, LPP 27)		At the discretion of the Council.	13.8m	YES
SITE COVERAGE (Table 2, LPS3)		60%	32%	YES
PLOT RATIO (Table 2, LPS3)		0.5	0.5	YES
BUILDING ORIENTATION (Clause 2.1, LPP 27)		Orientation to Berkshire Road.	The primary building entrance and façade are oriented to Berkshire Road, along with the secondary street (Bonser Road).	YES
BUILDING ORIENTATION (Clause 2.1, LPP 27)		Buildings oriented and designed to be energy efficient.	Building orientation and wall openings maximise northern exposure. Building orientation and wall openings maximise cross ventilation. Landscaping provided to create shade in summer.	YES

As noted in the above table, the development seeks variation to the front setback requirement of LPP27 in respect to the setbacks to Berkshire Road. This variation is discussed in the Officer Comment section of this report.

Landscaping:

The proposed development includes a variety of landscaping treatments. The table below outlines the proposals compliance with the landscaping requirements applicable to the site under LPS3, LPP27 and LPP33.

PROVISION	REQUIREMENT	PROPOSAL	COMPLIANCE
Landscaping Strip (CI 2.1 and 4.1 of LPP 27)	6.0m minimum to all frontages	Front Street (Berkshire Road): 6.0m. Minor Street (Bonser Road and Nardine Close): 3m.	NO

Shade Trees (CI 4.1 of LPP 27 and LPP33)	1 tree per 4 uncovered car bays	No trees are provided within the car parking bays for the warehouse. Some trees are provided within the car parking bays for the modular buildings. Note: trees within the landscaping strips are separate to the trees required within the parking area.	NO
CANOPY COVER (LPP33)	10% canopy cover at maturity	15% canopy cover at maturity within the site (6103sqm)	YES

As noted in the above table, the development seeks variation to the landscaping requirements of LPP27 and LPP33 in respect to landscaping strip along Bonser Road and Nardine Close. The development also seeks a variation to the requirement of 1 tree to be provided per 4 uncovered parking bays. The landscaping variations are discussed in the Officer Comment section of this report.

Vehicle Parking

The table below outlines the City's parking requirements in accordance with LPS3:

Land Use	LPS Standard	LPS Requirement	Provided	Shortfall
Warehouse/ Storage	3 bays for up to the first 200m ² of floor area and thereafter 1 bay for every 100m ² of NLA or part thereof.	9,790sqm NLA = 99 bays required	68 bays	31 bays

A 31-bay shortfall is proposed for the warehouse with a total of 68 car parking bays (including two accessible bays) proposed in lieu of 99 bays required under LPS3. The car parking variation is discussed in the Officer Comment section of this report.

There are no parking requirements for a Transport Depot under LPS3. This is due to the use, by its nature, is typically able to service parking needs due to large hardstand areas. In the absence of a LPS3 parking rate, to ensure a preferred planning outcome the focus is on ensuring the demand generated by the use can be accommodated within the site without the need to use verge areas or road pavement. The applicant has indicated that there will be a maximum of 10 staff for the Transport Depot. A total of 17 car parking bays are provided for the Transport Depot at the rear of the site,

resulting in a surplus of 7 bays which Officers consider to be sufficient to accommodate the staff and any visitors to the site.

Vehicle Access and Circulation

In accordance with LPP27, all vehicle access is contained within the site and all vehicles are able to exit the site in forward direction. Although a total of six crossovers are provided to the overall development, the number of access points to the site does not exceed 1 access point per 40m lot frontage.

Service and haulage vehicle parking areas are separated from staff and visitor parking to the warehouse. The service and haulage vehicle parking are also located to the sides and rear of the site whereas parking for staff and visitors is located adjacent to the office area with clear sight lines provided to the entrance of the building.

The applicant has provided a Transport Impact Assessment (TIA) to support the application which has been assessed and is supported by the City. The TIA concludes the daily traffic volume being generated as part of this development is 35 vehicular trips in the AM and 36 vehicular trips in the PM during peak hours.

The TIS concludes that the site is unlikely to cause any material impact to the traffic safety of the surrounding road network.

Façade Design & Materiality

For development within this industrial development zone, LPP 27 requires, the City, in addition to the advice sought from DRP to consider the design and materiality of the facades. LPP 27 requires buildings to be designed with facades divided up into contrasting smaller areas or panels through the inclusion of different materials, the use of colour and various forms.

The elevations on the street frontages comprise a mix of glazing to the office windows, vertical sun screening and contrasting colours and materials. The City is satisfied that the proposal can comply with the façade design and materiality requirements applicable to the site, subject to the approval of a detailed colour and materials palette (recommended condition 8).

End of Trip Facilities

Pursuant to Clause 2.6 of LPP 27, the proposed development is required to provide end of trip facilities to encourage users of the site to travel by active transport methods. End of trip facilities are provided within the proposed development, catering for pedestrians and cyclists. These facilities include bicycle parking, showers and storage compartments. To ensure end of trip facilities are provided, condition 22 has been recommended to require bicycle facilities to be provided in accordance with Australian Standard AS 2890.3.

Signage:

This application does not include any proposals for signage. The applicant has indicated that a separate application for signage will be submitted when a tenant for the business has been confirmed.

Boundary Fencing:

The City acknowledges that boundary fencing plays a role in providing security for businesses, however it must also contribute to the amenity of the streetscape. LPP27 guides the requirements for boundary fencing within the Forrestfield/High Wycombe Industrial Area. The application proposes 2.1m high black Garrison fencing to the northern, western and eastern boundaries. The open style back Garrison fencing is consistent with the fencing in the remainder of the industrial area.

Behind the front setback line, the minimum standard for side and rear boundary fencing is black PVC galvanised link mesh fencing (barbed wire on top is permitted). Under the Design Guidelines, no link mesh fencing is permitted forward of the front setback line. As indicated in the plans, chain-link fencing with 2x rows of barbed wire is proposed behind the front setback line. This fencing will not be visible from the Berkshire Road, Bonser Road or Nardine Close elevations and is therefore, consistent with the provisions of the Design Guidelines.

The City and DRP raised concerns about the visual amenity of the modular buildings from the Nardine Close elevation. The application had been amended to include screening panels and increased landscaping which will assist in improving the streetscape amenity from Nardine Close and will reduce the visual impact of the modular buildings from the Nardine Close elevations. The City is satisfied the design results in a good planning outcome.

External Service & Storage Areas:

The application does not propose any storage of goods, materials, supplies or equipment within the car parking areas or landscaped areas. The external plant equipment is located at the rear of the lots. The bin storage area is screened from the front frontages. To ensure ongoing compliance with the Design Guidelines, condition 5 has been recommended to ensure that car parking and landscaping areas are not used for any other purpose.

Bushfire

The subject site is not identified on the Department of Fire and Emergency Services (DFES) mapping as being located within a Bushfire Prone Area (BPA) under the Fire and Emergency Services Act 1998 (as amended).

Development Contributions

The subject site is identified on the LPS3 Scheme Map as being located within a Development Contribution Area (DCA1). A Special Control Area (SCA) exists identifying the site's subject to a development contribution in accordance with Schedule 12 of LPS3. DCA1 was introduced into LPS3 following the rezoning of the area in 2011 to facilitate the coordinated and progressive upgrade of public infrastructure from a rural to industrial standard.

A development contribution has been paid for all four lots (Lots 14, 16, 17 and 1015 Berkshire Road, Forrestfield) which are subject to this application.

Public Art

The City's Local Planning Policy 26 (LPP26) for Public Art is applicable to development where the estimated cost of development exceeds \$500,000 with the exception of some residential based proposals. Public art plays an important role throughout the City of Kalamunda's built environment. The City encourages public art that contributes to creating a strong sense of place, promotes the local identity and responds to the culture and character of the community. Public art can attract people to work, live and recreate in a place and thereby encouraging associated cultural and economic activity.

As the proposed works of the development are estimated to be \$13 million, the provisions of LPP 26 are applicable to this development application. The provision of public art can be provided through a public art contribution within the subject site or within a public area within the locality of the subject site. Recommended condition 24 ensures compliance with LPP 26 through requiring a public art contribution equal to \$130,000 within the subject site, or alternatively a cash-in-lieu payment made to the City of Kalamunda's Public Art Fund.

The City has considered the individual merits of the proposed development and concluded that it generates a planning need for public art for the following reasons:

1. All four lots collectively are a prominent in their location in the context of the Forrestfield/High Wycombe Industrial Area and will be visible from Berkshire Road, Bonser Road and Nardine Close. As such, public art will provide a benefit to the whole development area.
2. As the site is encompassed by three main road frontages, there would be a benefit to passing traffic along Berkshire Road, Bonser Road and Nardine Close by incorporating artwork that is visually pleasing.
3. The development encompasses a large warehouse consisting of some colour design variations, and whilst there will be trees and landscaping provided along the lot boundaries, the area will not be entirely screened. Therefore, the development will benefit from public art.

Based on the above the City believes that there is sufficient need and nexus to warrant the application of LPP 26, and therefore condition 20 has been recommended.

Acoustic Requirements

Given that the closest residential property is approx. 100m away from Nardine Close, and the nature of the proposal, the City would not require a Noise management Plan for this application. The ongoing operation of the site would need to be in accordance with the Environmental Health (Noise) Regulations 1997.

Effluent Disposal

The proposal indicates an intention to connect the two front lots (Lots 281 and 287 Berkshire Road) to reticulated sewerage, and to have one onsite wastewater treatment system and disposal area for the rear lots (Lots 283 and 285).

The proposal was referred to the Department of Health by the City of Kalamunda due to part of the proposal seeking to connect the front lots to the sewer and the rear lots proposing on onsite wastewater treatment system.

The Department of Health advised that they do not support Lots 283 and 285 being serviced with an onsite wastewater treatment system as these lots are required to comply with the *Health (Miscellaneous Provisions) Act, 1911* and connect to reticulated sewerage. To ensure that the development can be serviced by reticulated sewerage, condition 15 has been recommended.

Officer Comments:

Front Setback Variation

A 20m setback is required to Berkshire Road and the application proposes a 19m setback from the warehouse and 12m from the office. The variation is considered acceptable for the following reasons:

- The office component of the building is setback forward from the remainder of the warehouse building to provide articulation to the building design. This will improve the overall appearance of the building from the streetscape by adding some visual interest through the articulation.
- The remainder of the building is setback at 19m, representing a variation of only 1m which is minor in nature and is not likely to create an undue impact to the streetscape of Berkshire Road.
- A 6m landscaping strip provided to Berkshire Road will assist in improving the streetscape amenity and reduce the impact of the building setback forward of the 20m requirement.

Having regard to above, the City is supportive of this variation as the proposal is considered to meet the Desing Guideline objective of a high-quality building with landscaped areas and streetscapes.

Landscaping Variation

The application proposes a 3m landscaping strip to Bonser Road and Nardine Close in lieu of 6m required under LPP27. The variation is acceptable because the application proposes landscaping within the swale in the verge, which in effect, leads to a 6m landscaping strip. The landscaping will be required to be maintained in perpetuity, in accordance with condition 16. Overall, the development also proposes 15% canopy cover within the site, which is considered to be a positive outcome for the development.

The application does not provide 1 tree for every 4 uncovered parking bays as required under LPP27 and LPP33. Some trees are provided within the car parking bays for the modular buildings; however, none are proposed for the parking areas allocated to the Warehouse. Although trees are proposed within the 'landscaping strip' adjacent to the parking areas, these trees do not contribute towards the trees required within the parking area itself.

The City places high importance on the benefits of trees being providing within the car parking bays to provide additional shade and canopy cover in the large paved car parking areas. Industrial areas are notorious for not providing a balance between the operational needs of the site and enhancing the shade and biodiversity which is lost when the sites are prepared for development. This is reflected by the DRP in its review of the proposal. Although trees are provided within the landscape strip, additional trees

within the car parking bays will provide environmental, ecological and amenity benefits to the proposed development and the locality.

The applicants have also highlighted that the Transport Depot at the rear will be replaced by an additional Warehouse in the future. Requiring trees within the car parking areas for this application will also set an expectation for the future warehouse to be held at the same standard for a better landscaping outcome.

The City has recommended condition 11 to require an amended Landscape Plan to be submitted prior to the lodgement of a Building Permit which provides 1 tree for every 4 uncovered parking bays.

Car Parking Variation

Land Use	LPS Standard	LPS Requirement	Provided	Shortfall
Warehouse/ Storage	3 bays for up to the first 200m ² of floor area and thereafter 1 bay for every 100m ² of NLA or part thereof.	9,790sqm NLA = 99 bays	68 bays	31 bays

The car parking proposes a 31-bay shortfall for the Warehouse, with a total of 68 car parking bays proposed in lieu of 99 bays required under LPS3. Given the development proposes a car parking variation, the City must refer to the Regulations for guidance, noting Clause 77D of the deemed provisions provides the City with the opportunity to vary the minimum on-site parking requirements provided the City is satisfied that reasonable efforts have been made to comply without adversely affecting the development. The City must consider whether provision of the additional bays would adversely affect the access arrangements, safety of pedestrians or persons in vehicles, open space, street trees or service infrastructure.

The City must also consider the if the lower number is adequate for the development and will not create parking issues. As outlined in the Transport Impact Assessment, the warehouse and transport depot are expected to have a daily maximum of 51 staff on-site; hence, the supplied parking bays will be sufficient to cater for the parking demands of the proposed development.

Discretion is also afforded through the City's LPS3, Clause 5.7.2 with due regard to be given to the proposals parking demand, the scale and nature of the intended use. The City is satisfied the parking shortfall is sufficient to accommodate the needs of the tenants and an expansion of the staffing needs, without having detrimental impacts on the amenity of the area.

To ensure the minimum of car parking bays are constructed in accordance with the Australian Standards, condition 21 has been recommended.

Conclusion:

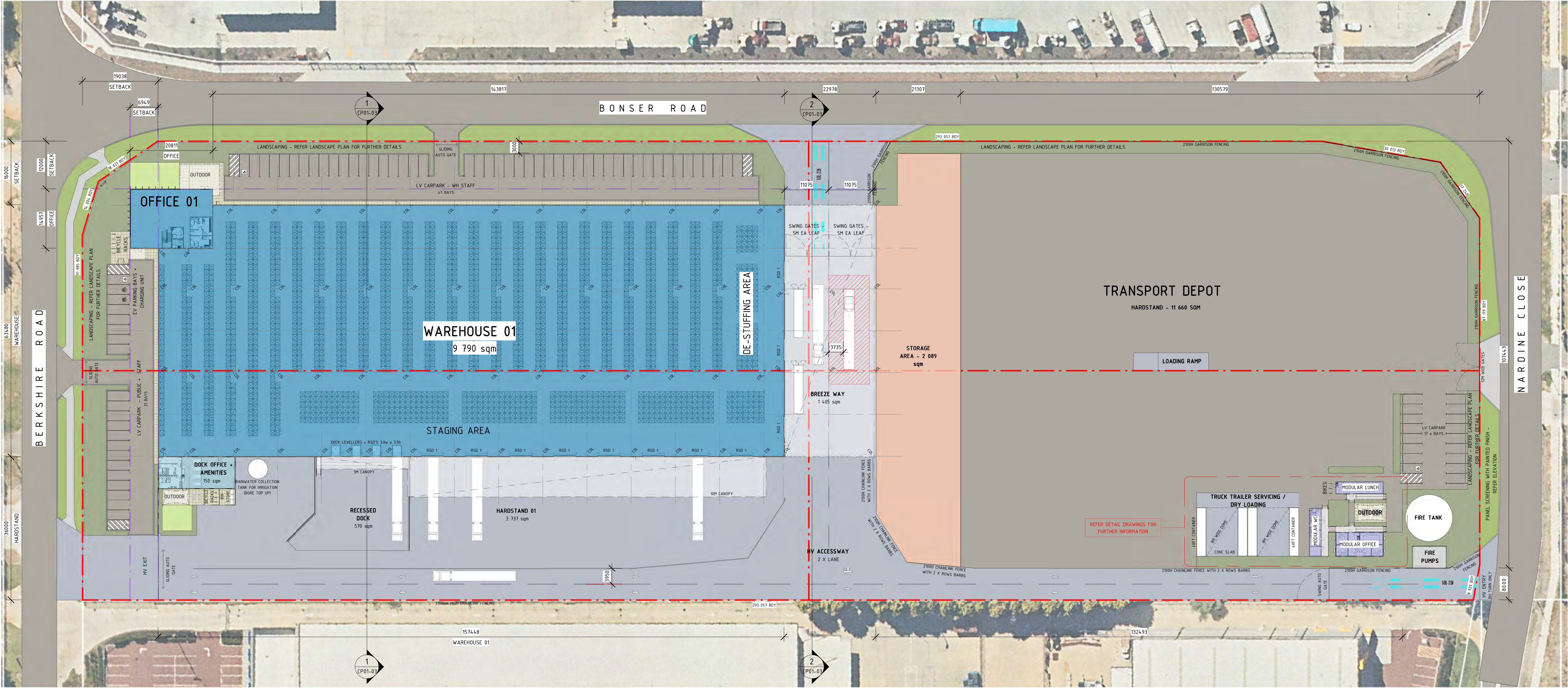
The proposed development is compatible with the industrial development zoning. Whilst the development seeks some minor variations to front setback, landscaping and car parking provision, the assessment demonstrates that the proposed development will not cause adverse amenity impacts on the adjoining properties, and additionally the nearby residential development. Having regard to the detailed assessment against the statutory planning framework, approval is recommended subject to appropriate conditions and advice notes.



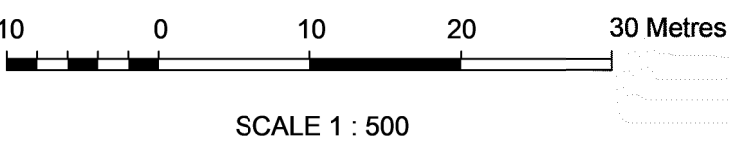
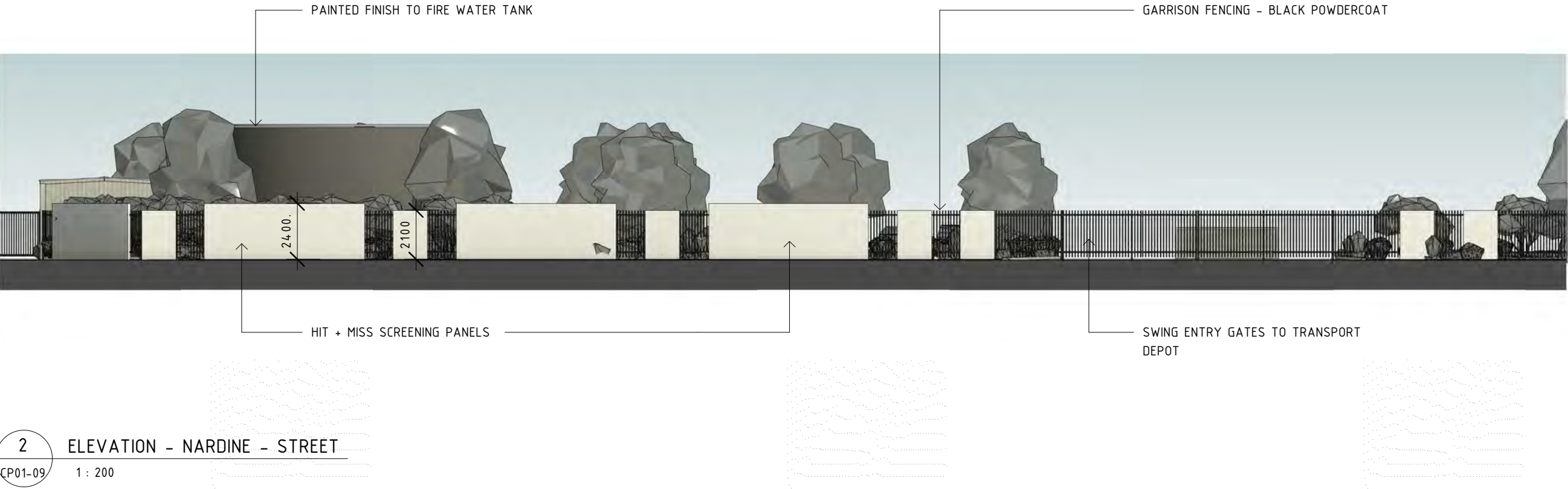
PROPOSED DEVELOPMENT BERKSHIRE ROAD FORRESTFIELD

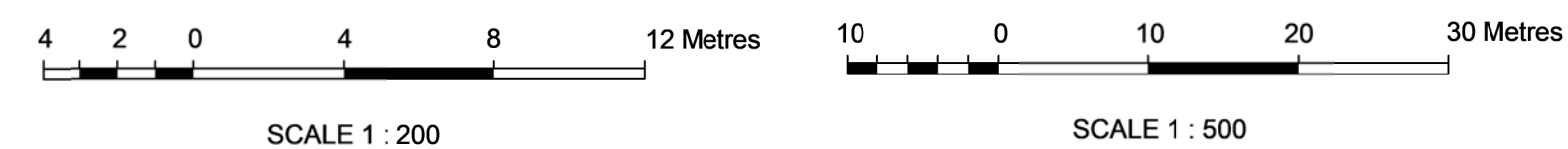
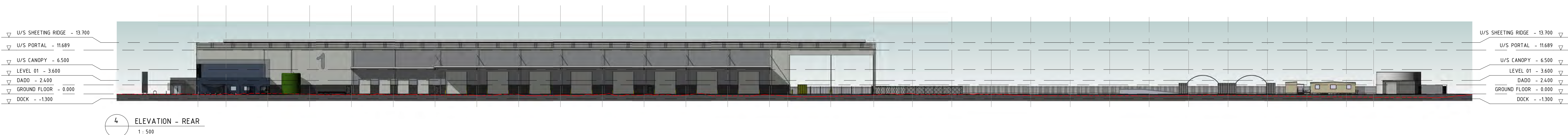
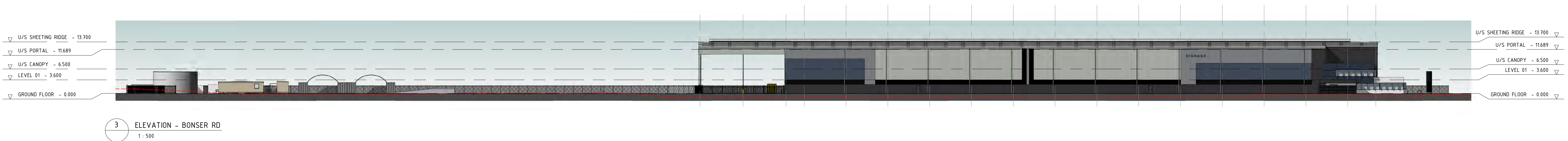
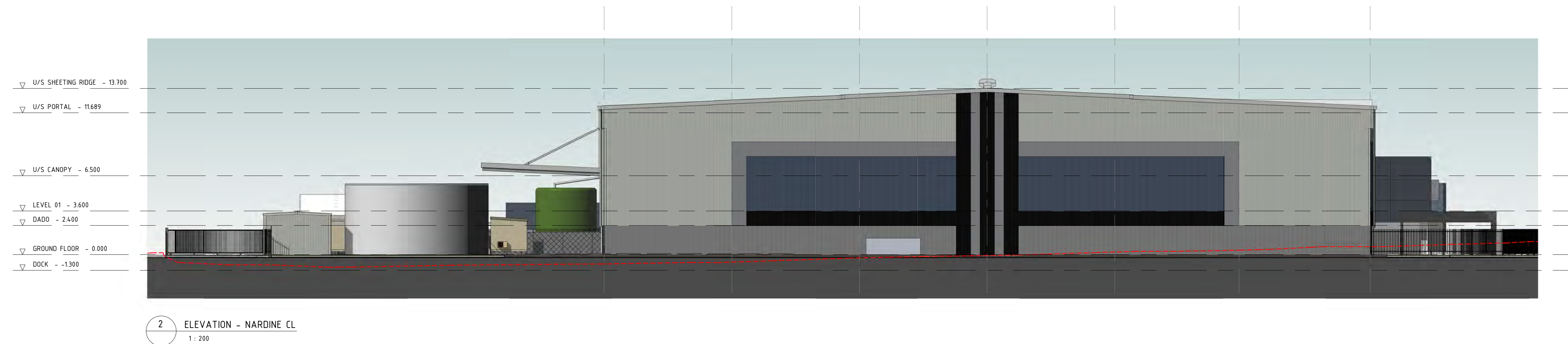
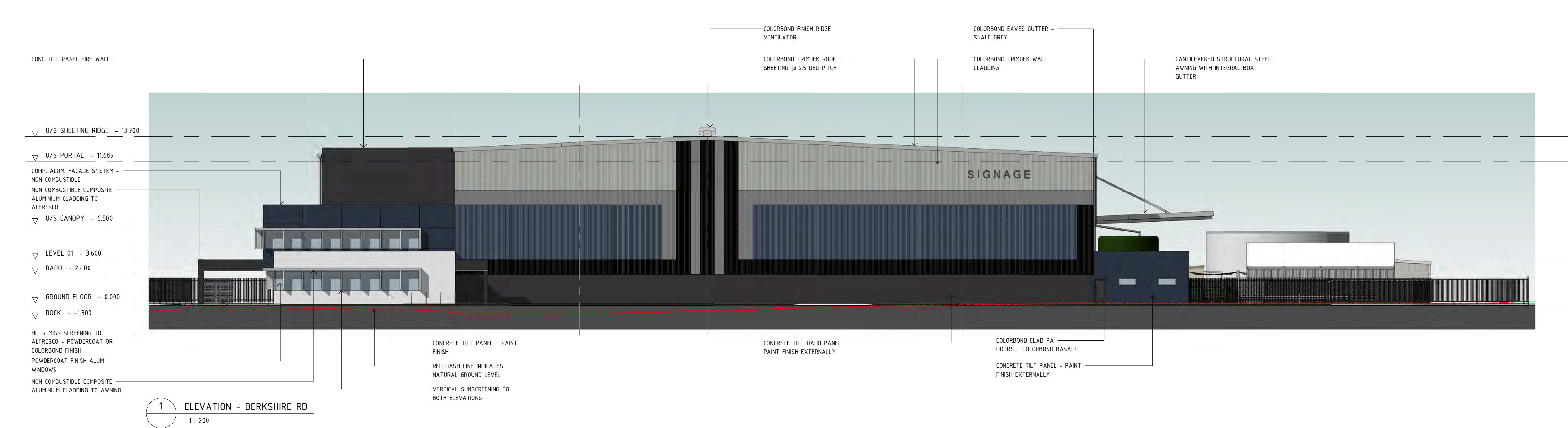
Sheet List	
Sheet Number	Sheet Name
CP01-01	SITE PLAN
CP01-02	ELEVATIONS
CP01-03	SECTIONS
CP01-04	ORTHOS
CP01-05	IMAGERY
CP01-06	IMAGERY
CP01-07	IMAGERY
CP01-08	IMAGERY
CP01-08A	CONTEXT IMAGERY
CP01-09	SWEPT PATH 27.5M B-DBL
CP01-10	SWEPT PATH 19M SEMI
CP01-11	SWEPT PATH 36m A-DBL
CP01-12	LANDSCAPING PLAN
CP01-13	SITE PLAN - SURVEY OVERLAY
CP01-14	LUNCHROOM (MODULAR)
CP01-15	WC BLOCK (MODULAR)
CP01-16	OFFICE (MODULAR)
CP01-17	DOVE WORKSHOP

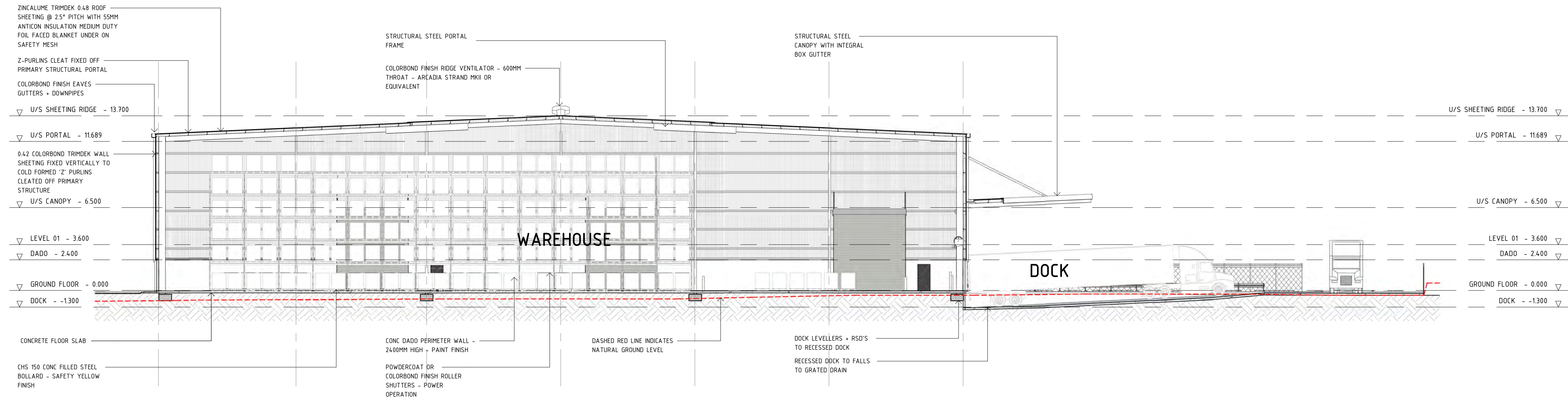




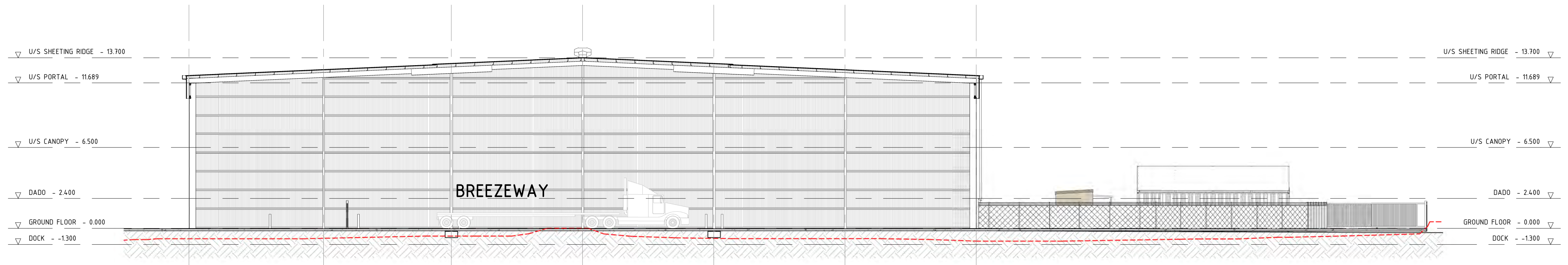
DATA					
SITE AREA	40 248 sqm	TENANCY 01		TRANSPORT DEPOT	
		ADMIN OFFICE		ADMIN OFFICE	
		GROUND		WC	
		UPPER		LUNCHROOM	
SITE COVERAGE	(32%)	OUTDOOR		DOCK WORKSHOP	
		DOCK OFFICE		STORAGE	
		WAREHOUSE		HARDSTAND	
		UNDER CANOPY		LV CARBAYS	
HV ACCESSWAY	3 845 sqm	WH OUTDOOR		17 BAYS	
		RECESSED DOCK			
		585 sqm			
		HARDSTAND			
LANDSCAPING		3 437 sqm			
		LV CARBAYS		68 BAYS	
		OFFICE + PUBLIC		21 BAYS	
		WAREHOUSE		47 BAYS	
WAREHOUSE 01	1 299 sqm				
TRANSPORT DEPOT	1 223 sqm				
TOTAL	2 522 sqm (6%)				
LV CARBAYS	85 BAYS				
RSD 1	5500w x 6000h				



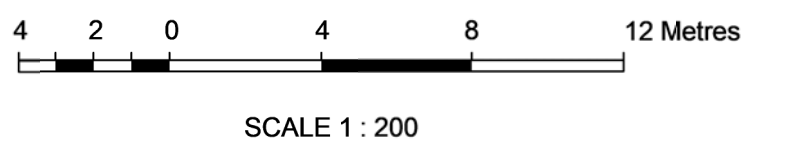


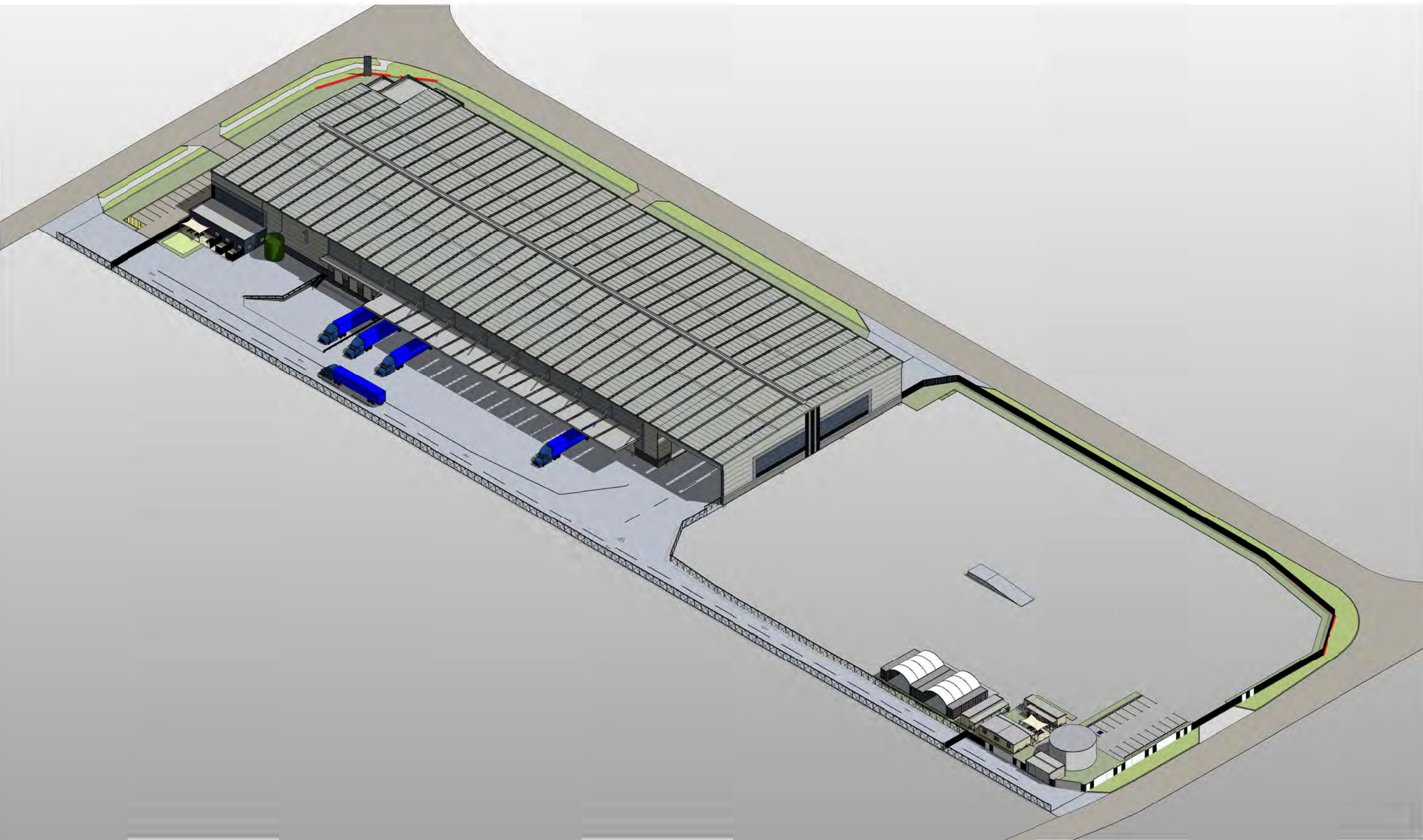


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CP01-01 1 : 200

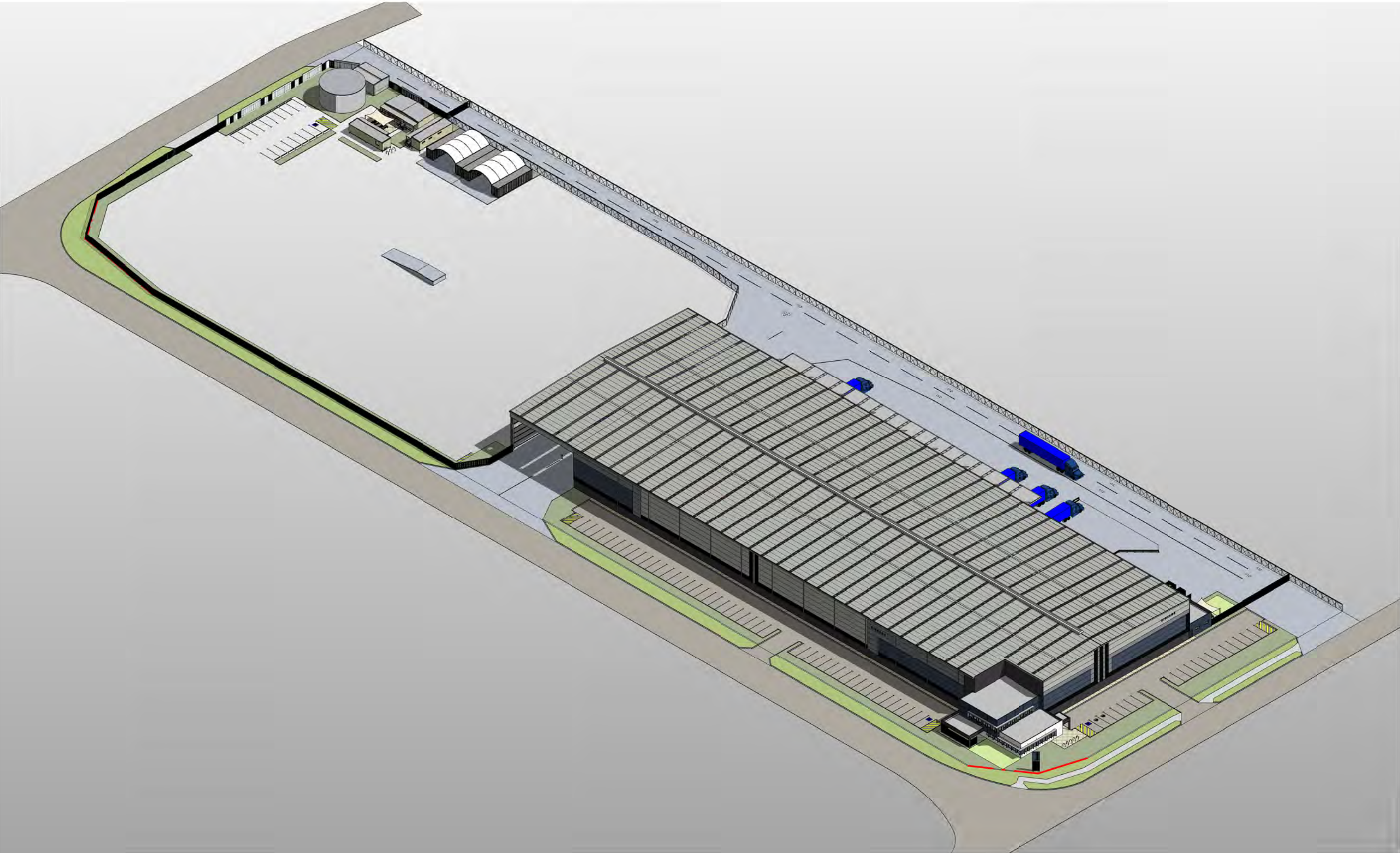


2 SECTION - CROSS 02
CP01-01 1 : 200

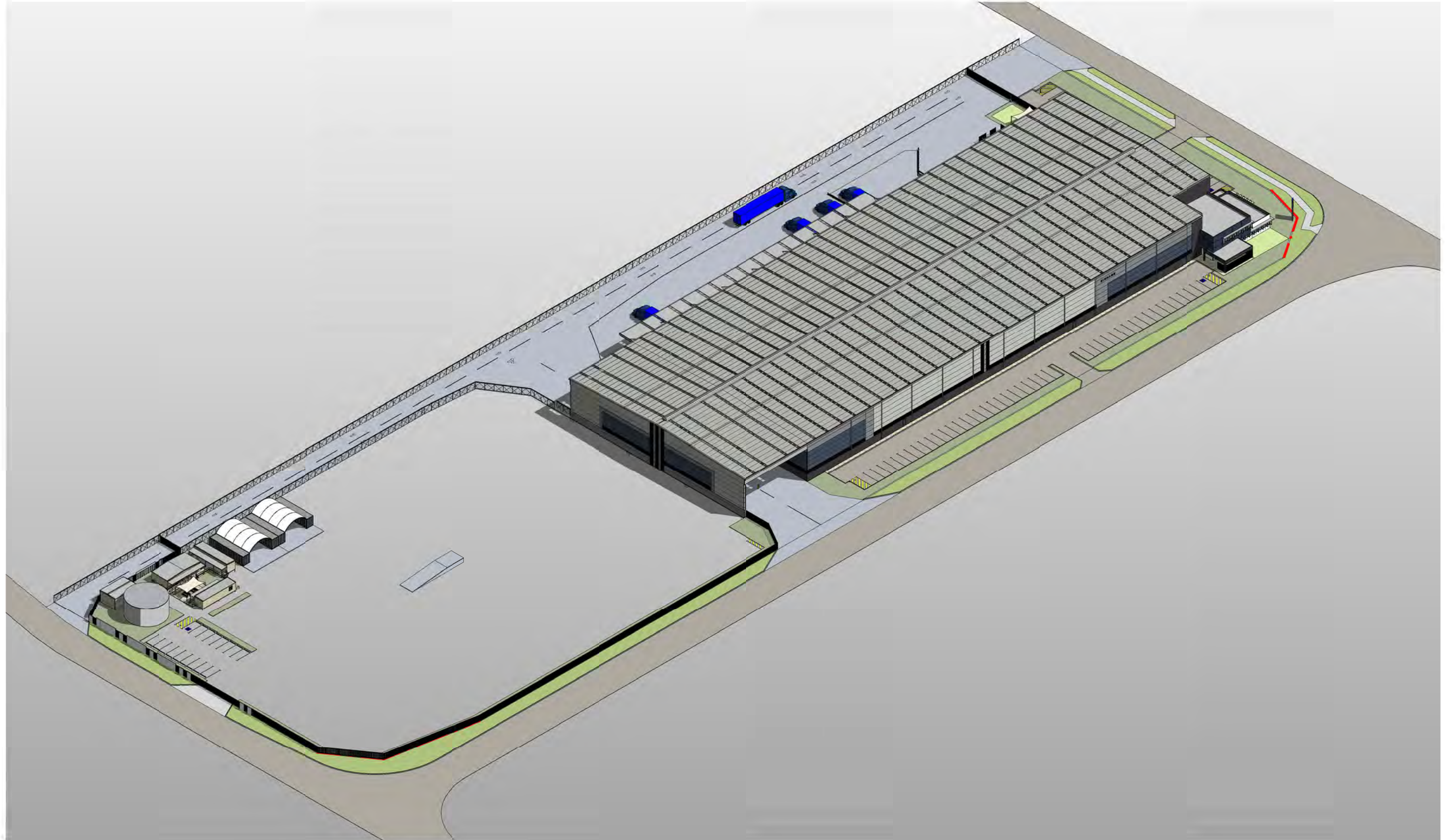




1 ORTHO - EAST



3 ORTHO - WEST



2 ORTHO - NORTH



BERKSHIRE ROAD - EAST



CORNER BERKSHIRE + BONSER ROADS



BREEZEWAY – NORTH



WAREHOUSE – NORTH EAST



NARDINE CLOSE



HARDSTAND - EAST



TRANSPORT DEPOT



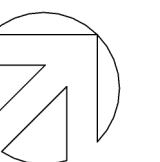
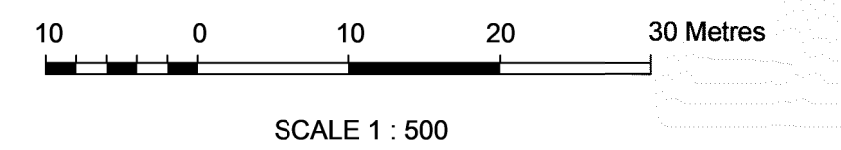
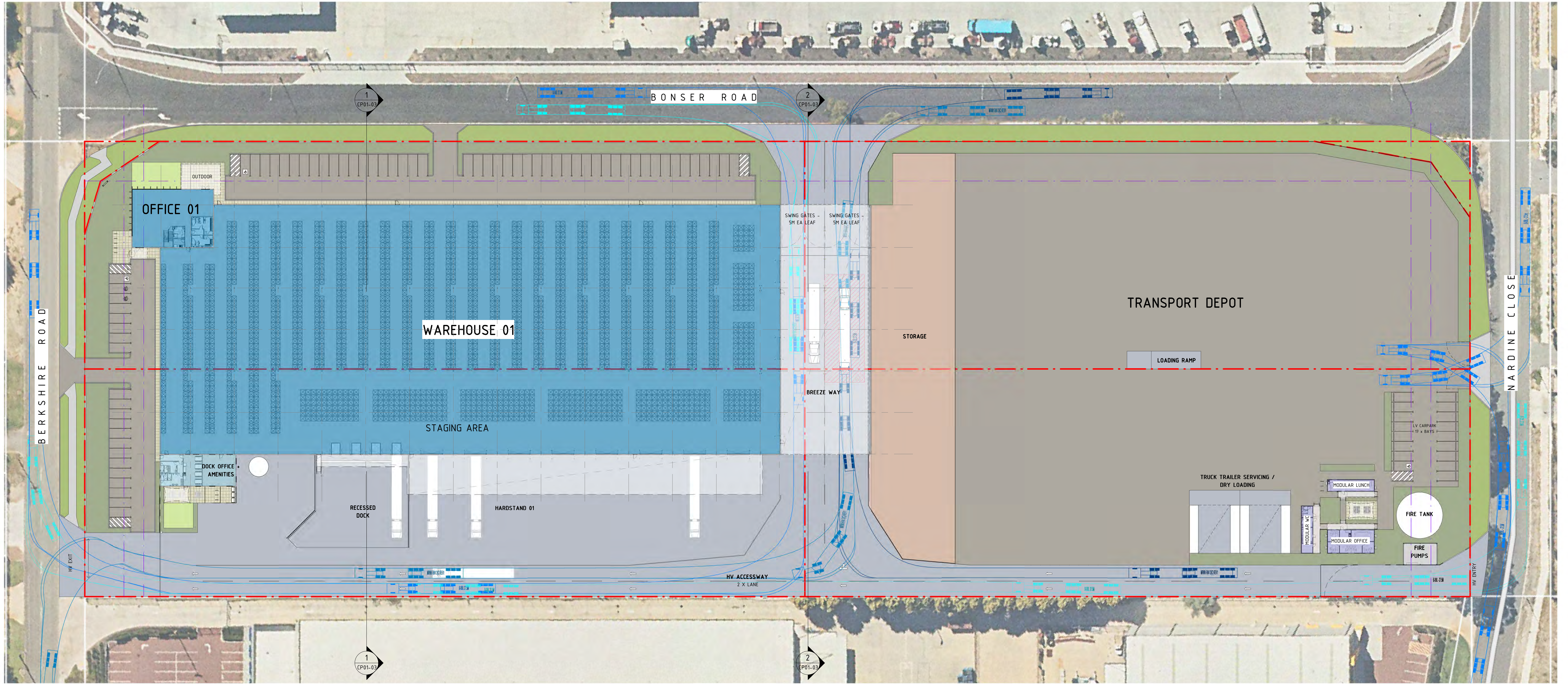
TRANSPORT DEPOT

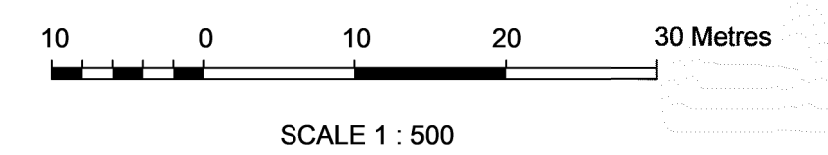
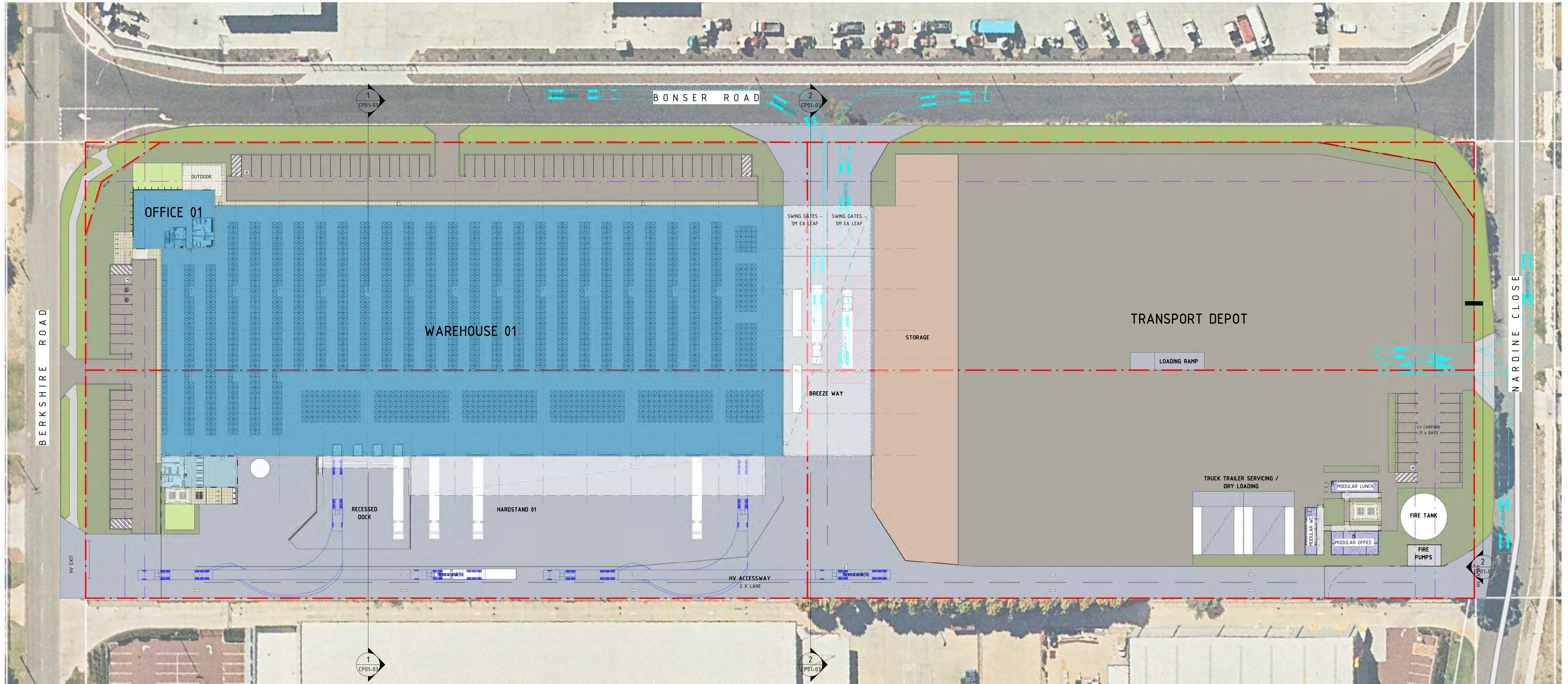


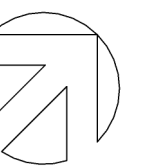
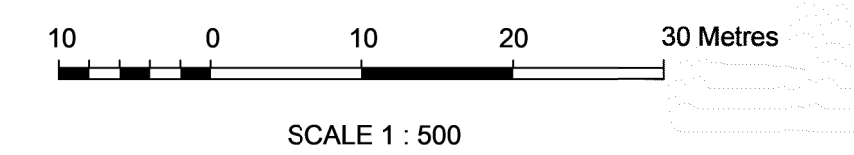
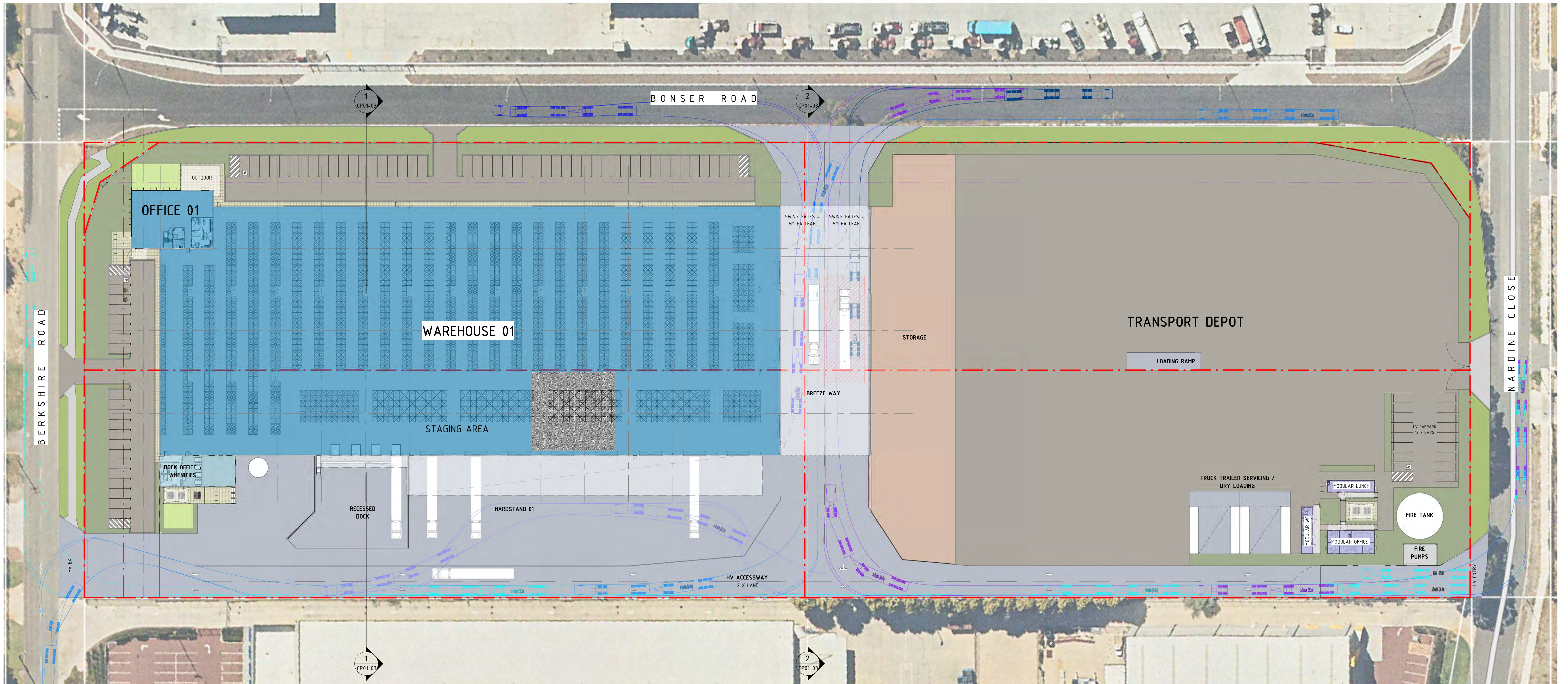
AERIAL - SOUTH WEST



BERKSHIRE ROAD SOUTH







LANDSCAPING NOTES

ALL GARDEN BEDS TO BE MULCHED (PINE BARK MULCH) TO A MINIMUM DEPTH OF 100mm WITH 50mm BREATHING SPACE AROUND STEMS AND TRUNKS OF PLANTS
ALL TREES TO BE STAKED AND TIED
WHERE FERTILISER IS REQUIRED - SLOW RELEASE FERTILISER SHOULD BE APPLIED
ALL SHRUBS & TREES TO HAVE AN AUTOMATIC TRICKLE SYSTEM
LAWN - WINTERGREEN COUCH
IRRIGATION SHALL BE SUBSOIL DRIP TYPE WITH MOISTURE SENSORS
ALL GARDEN BEDS + TURF SHALL BE IRRIGATED VIA MAINS CONNECTION

PLANT LEGEND - PLANT MIX 01

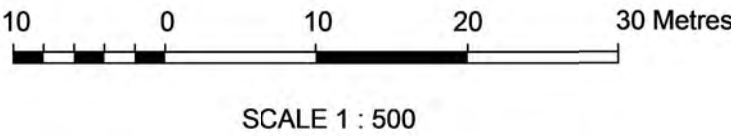
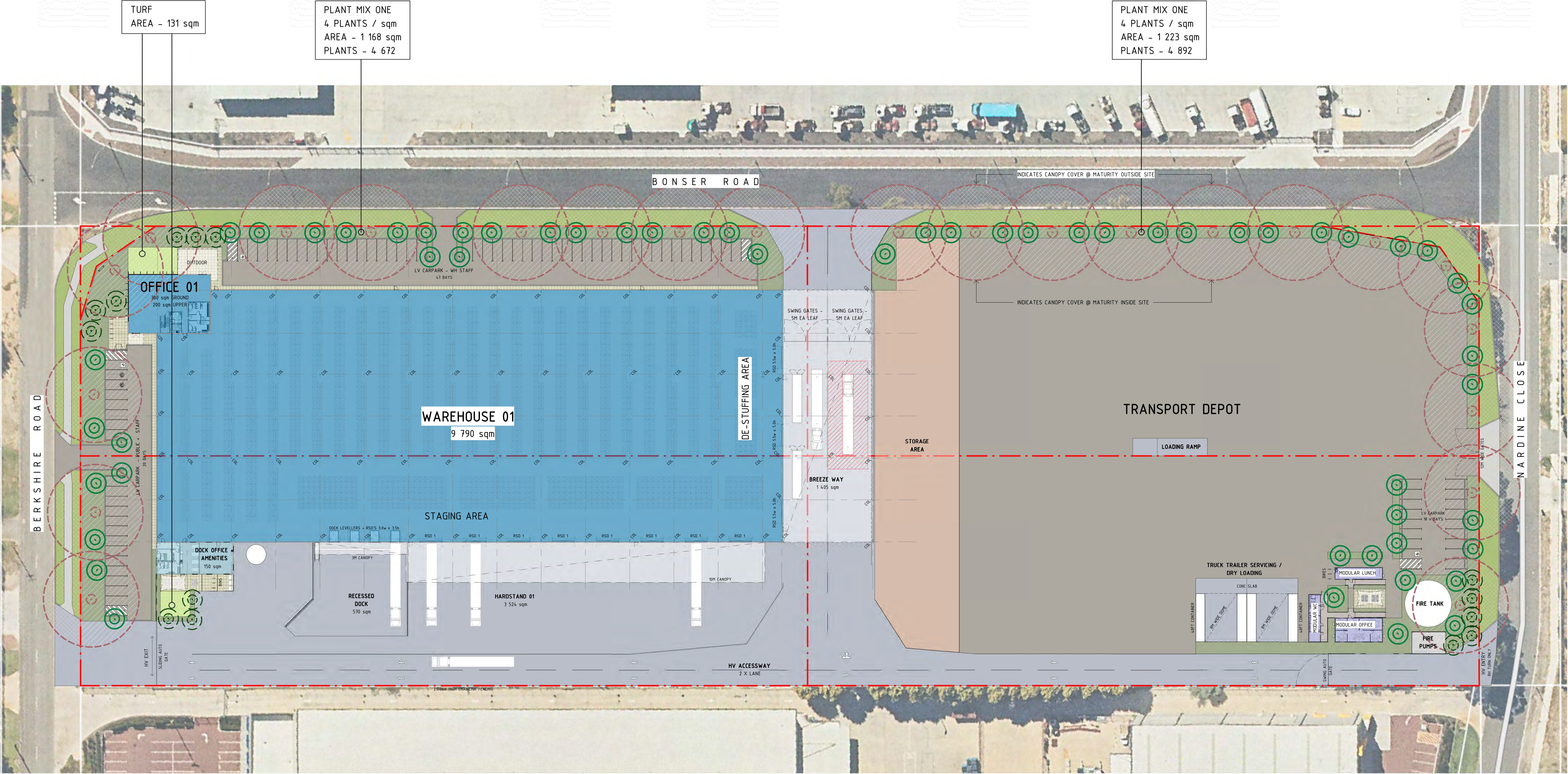
TYPE	SIZE	NAME		NO. OFF
TYPE 01	140MM	ANIGOZANTHOS FLAVIDUS 'BIG RED'		2 391
TYPE 02	140MM	BANKSIA NIVEA COUCH HONEYPOT		2 391
TYPE 03	140MM	CHORIZEMA CORDATA HEART LEAF FLAMEPEA		2 391
TYPE 04	140MM	PIMELEA FERRUGINEA 'PINK SOLITAIRE'		2 391
TOTAL AREA		2 391 SQM	TOTAL PLANTS	9 564

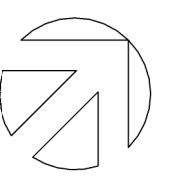
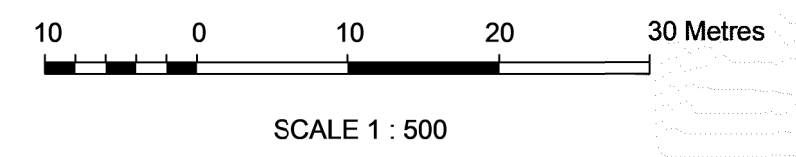
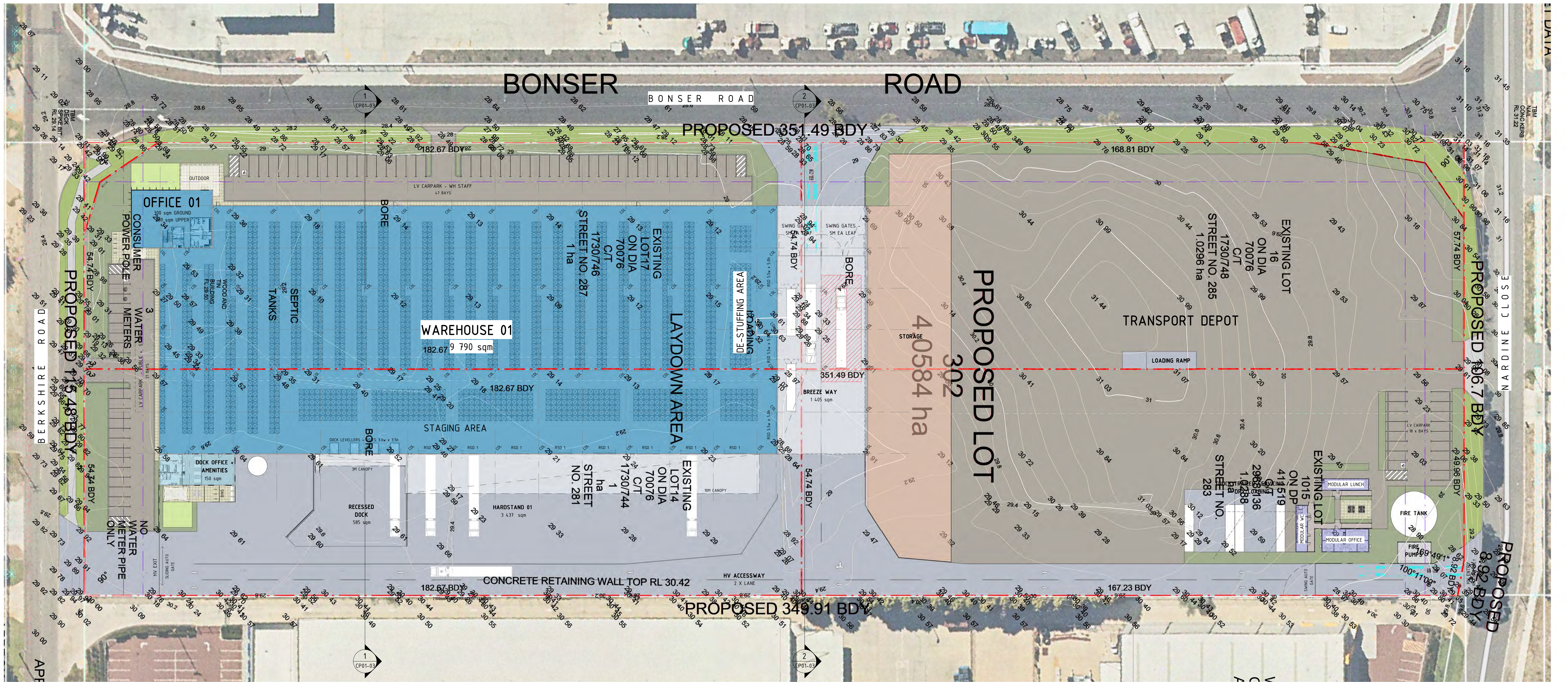
PLANT LEGEND - TURF

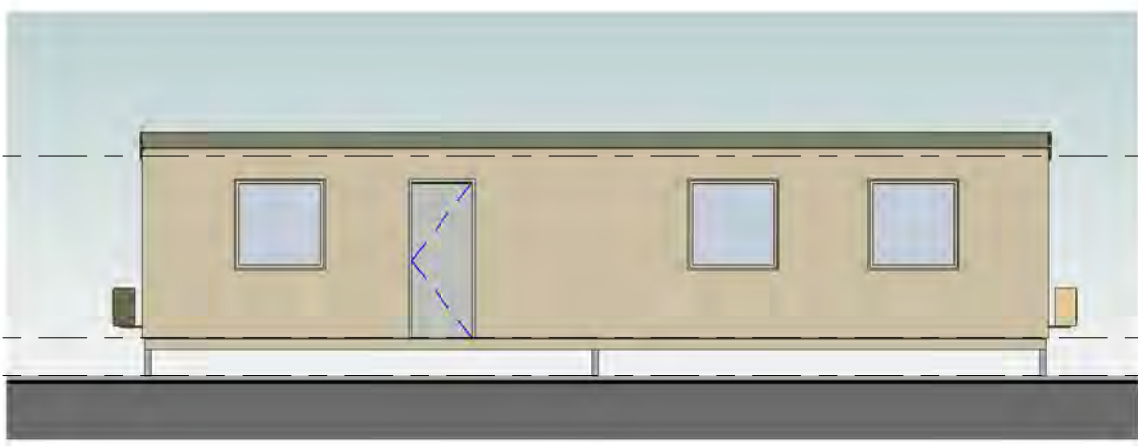
TYPE		SQM
WINTERGREEN COUCH		131 SQM
REMOVE ANY SURFACE RUBBLE OR ROCK WITH DIA > 25mm FROM EXISTING SUB GRADE PROVIDE 100mm DEPTH WEED FREE CULTIVATE SUBGRADE ON TOP OF EXISTING SUB-GRADE PROVIDE 100mm DEPTH WEED FREE IMPORTED SANDY LOAM TOPSOIL PROVIDE AUTOMATIC RETICULATION / SPRINKLER SYSTEM TO TURFED AREA WITH DISTANCE + ROTATION CONTROLLABLE HEADS PROVIDE 150mm WIDE FLUSH CONC KERB BETWEEN ALL TURF + GARDEN BED AREAS		

PLANT LEGEND - TREES

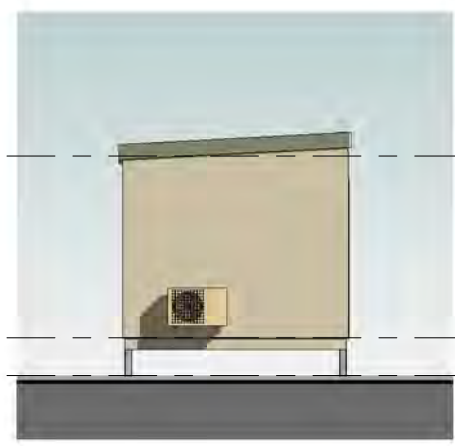
TYPE		NAME		NO. OFF	CANOPY @ MATURITY
TREE 01 FEATURE		EUCALYPTUS CITRIODORA LEMON SCENTED GUM		23	24 MTS
TREE 02 CARPARK		TRISTANIAOPSIS 'LUSCIOUS' WATER GUM TREE		56	5 MTS
TREE 03 SCREEN		HAKEA LAURINA PINCUSHION HAKEA		14	5 MTS
TOTAL AREA		N/A	TOTAL TREES	93	
CANOPY @ MATURITY - % COVER					
CANOPY COVER WITHIN SITE		6 103 SQM	15.2% OF SITE AREA		
CANOPY COVER OUTSIDE SITE		3 973 SQM	9.8% OF SITE AREA		
TOTAL CANOPY COVER		10 076 SQM	25% OF SITE AREA		



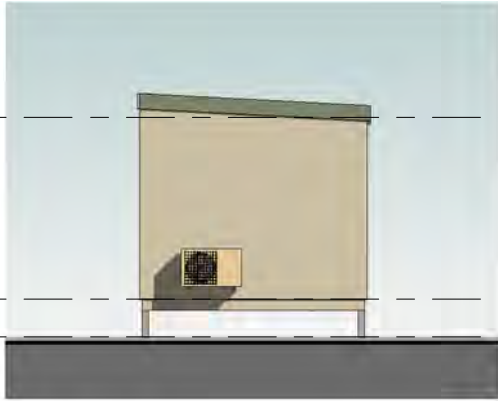




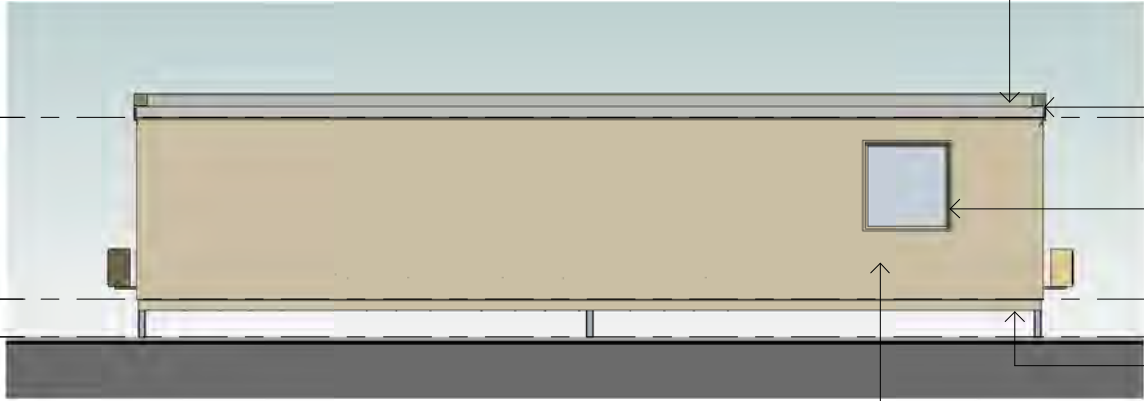
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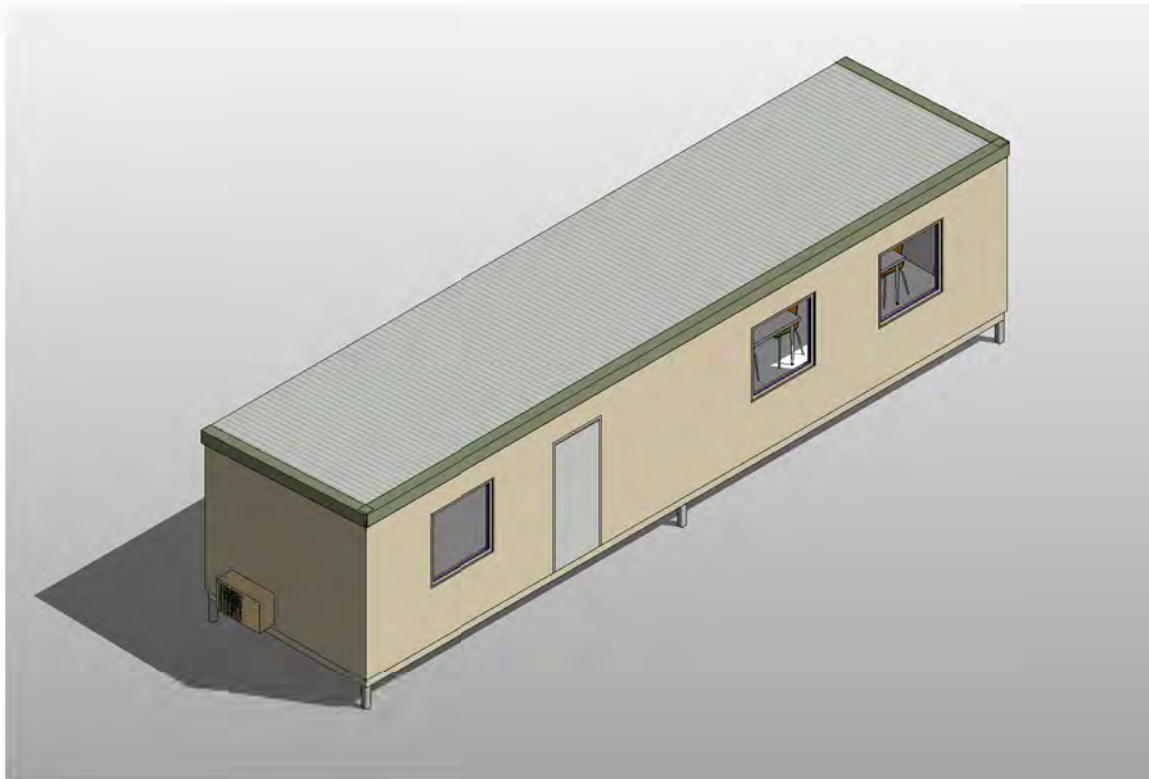


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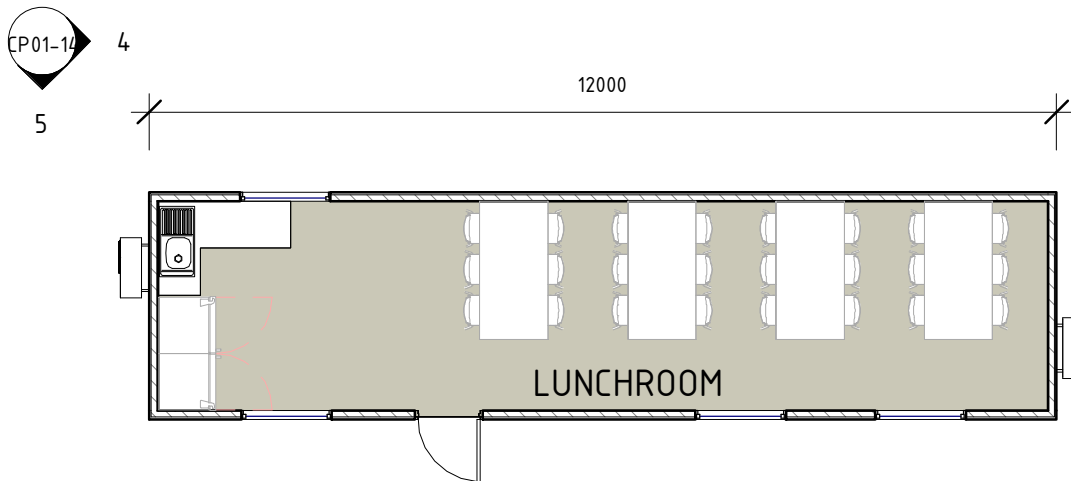


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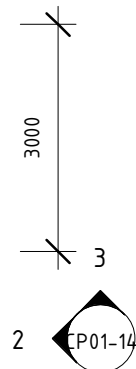
- TRIMDEK ZINCALUME ROOF SHEETING
- COLORBOND BARGE CAPPING - PALE EUCALYPT
- POWDERCOATED ALUM WINDOWS - PAPERBARK
- STRUCTURAL STEEL CHASSIS - PAINT FINISH
- COLORBOND PAPERBARK INSULATED PANELS



6 ORTHO

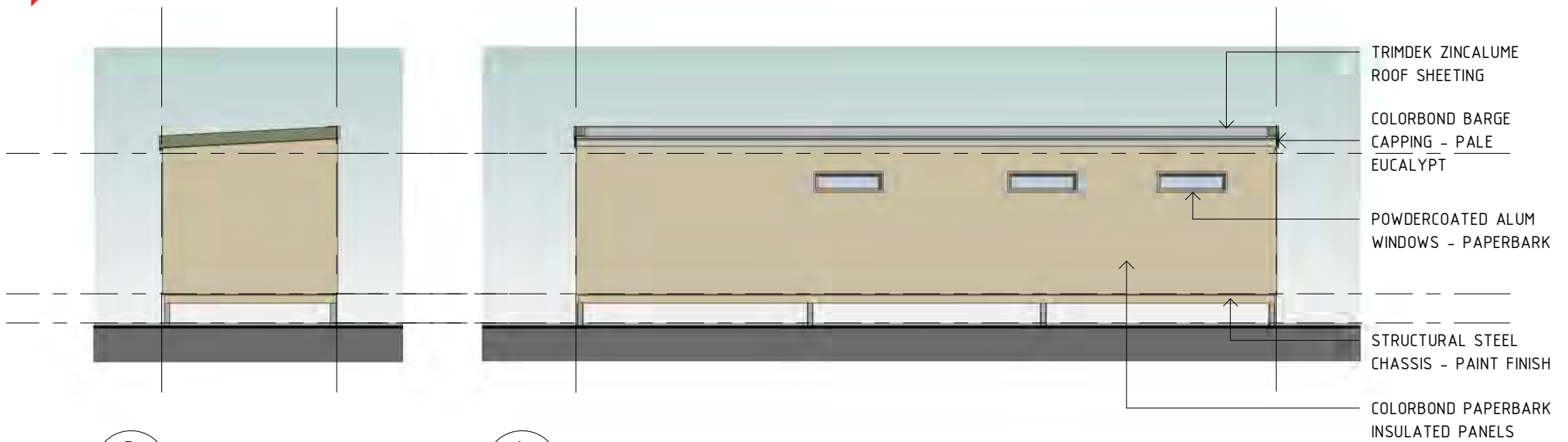


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SCALE 1 : 100





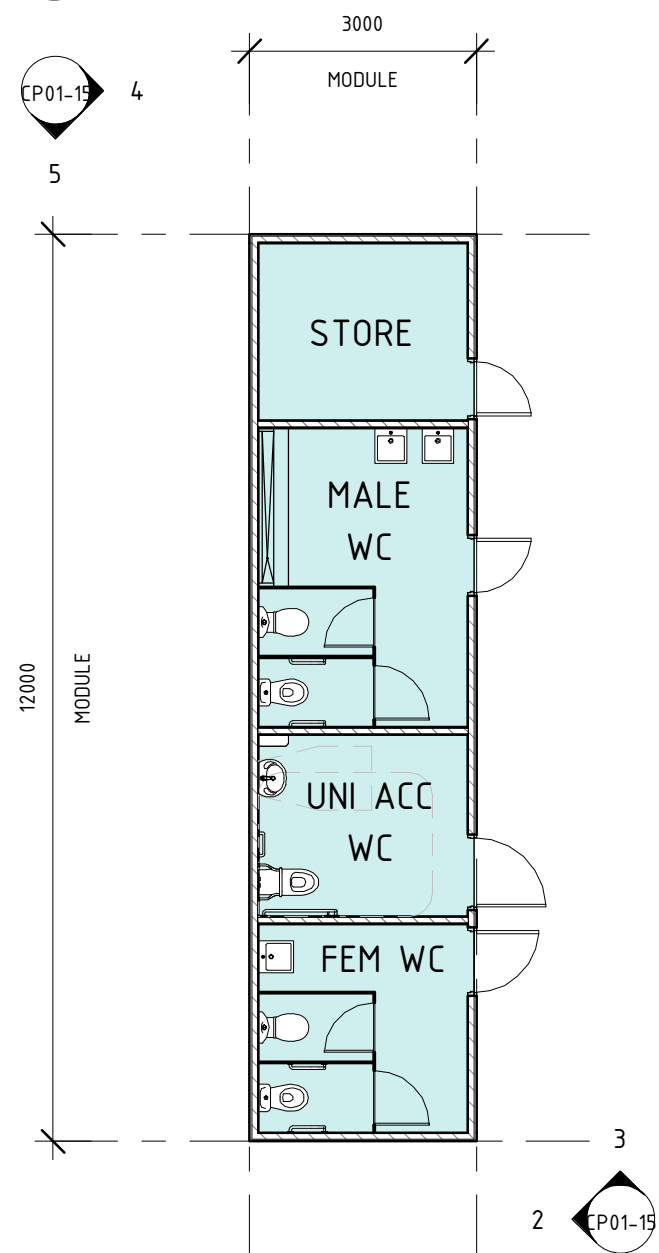
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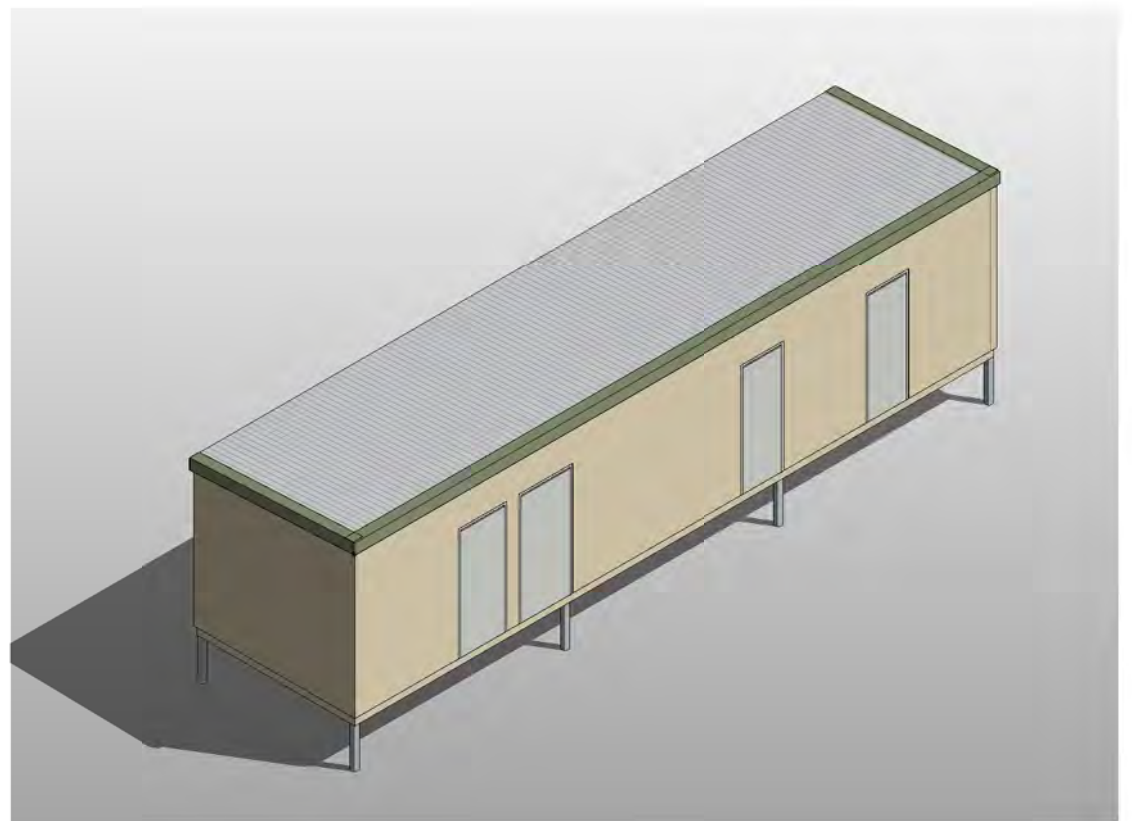


2 ELEVATION 01
CP01-15 1 : 100

5 ELEVATION 04
CP01-15 1 : 100



1 FLOOR PLAN
CP01-15 1 : 100



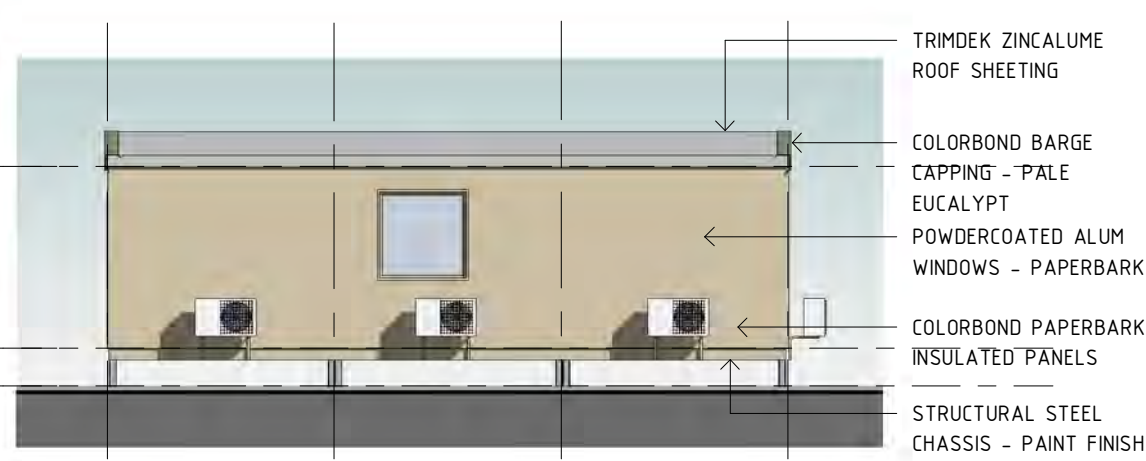
6 ORTHO



SCALE 1 : 100



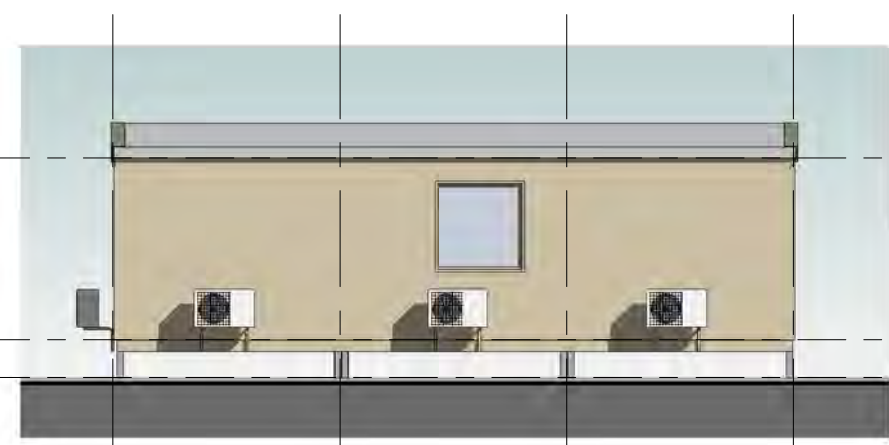
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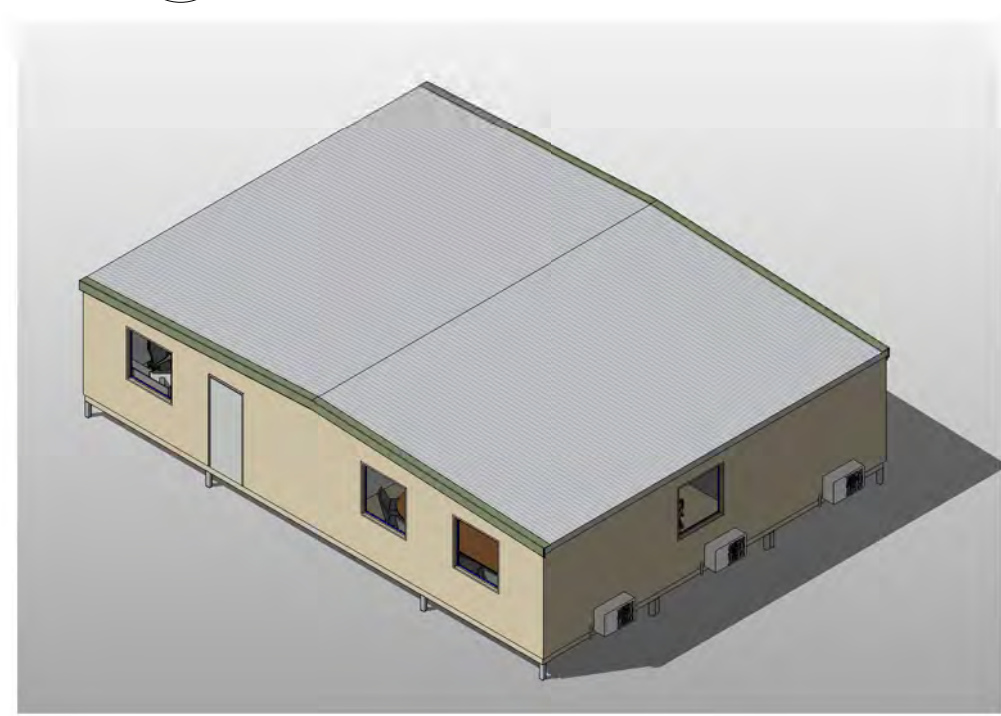
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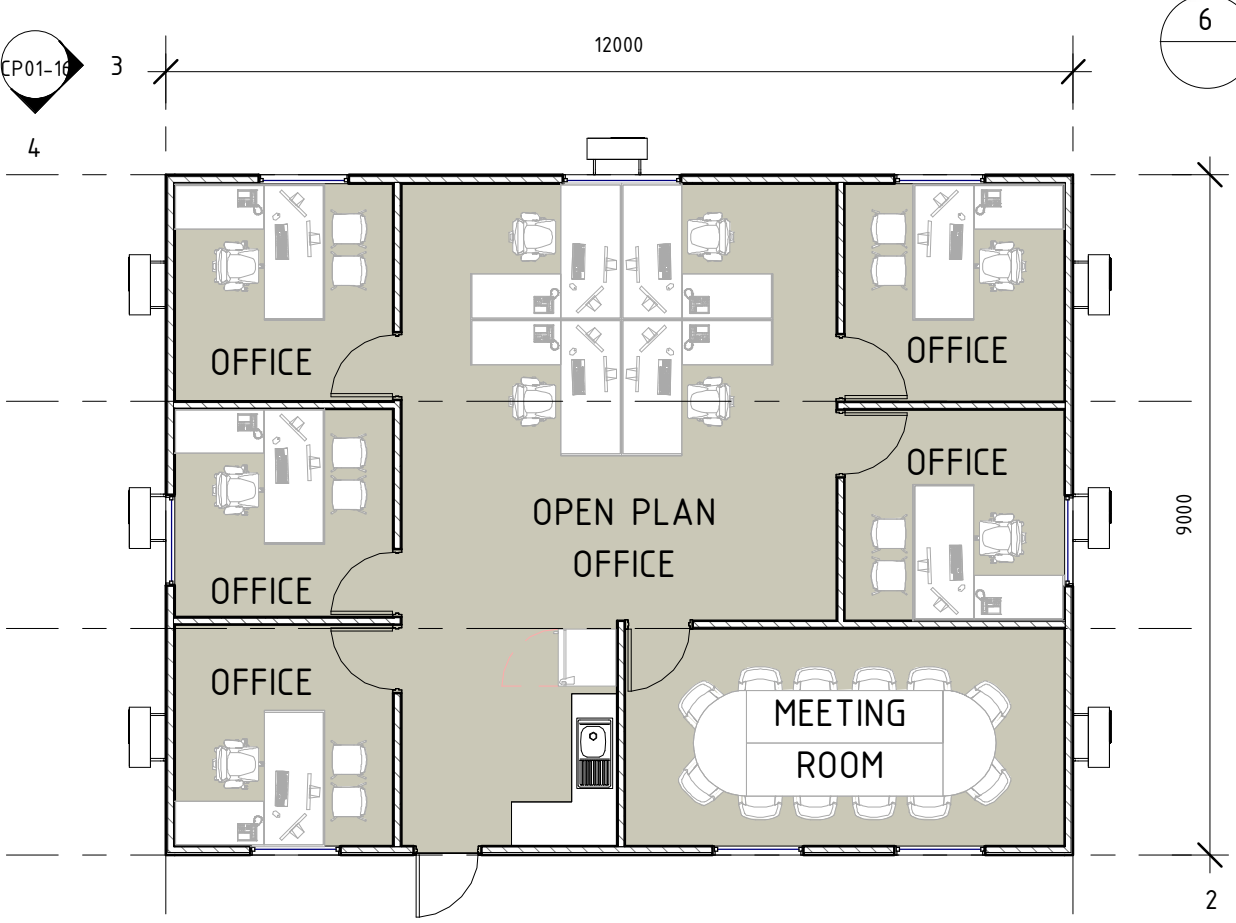
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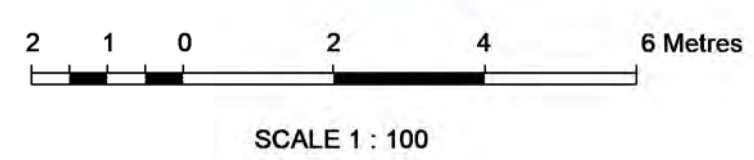
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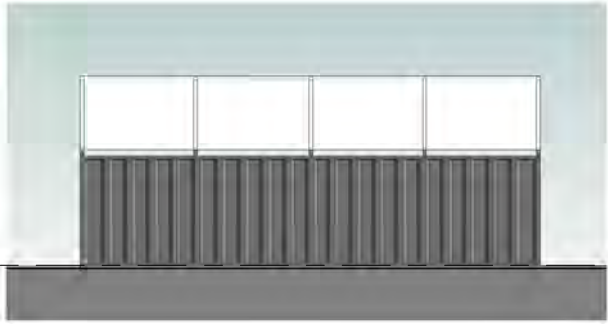


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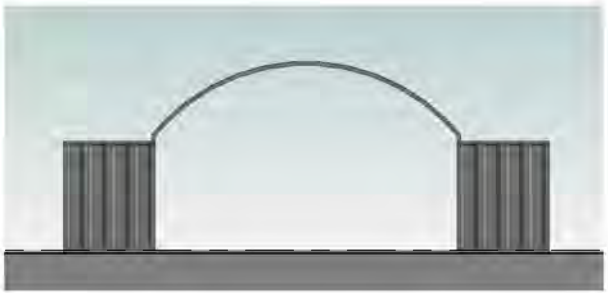


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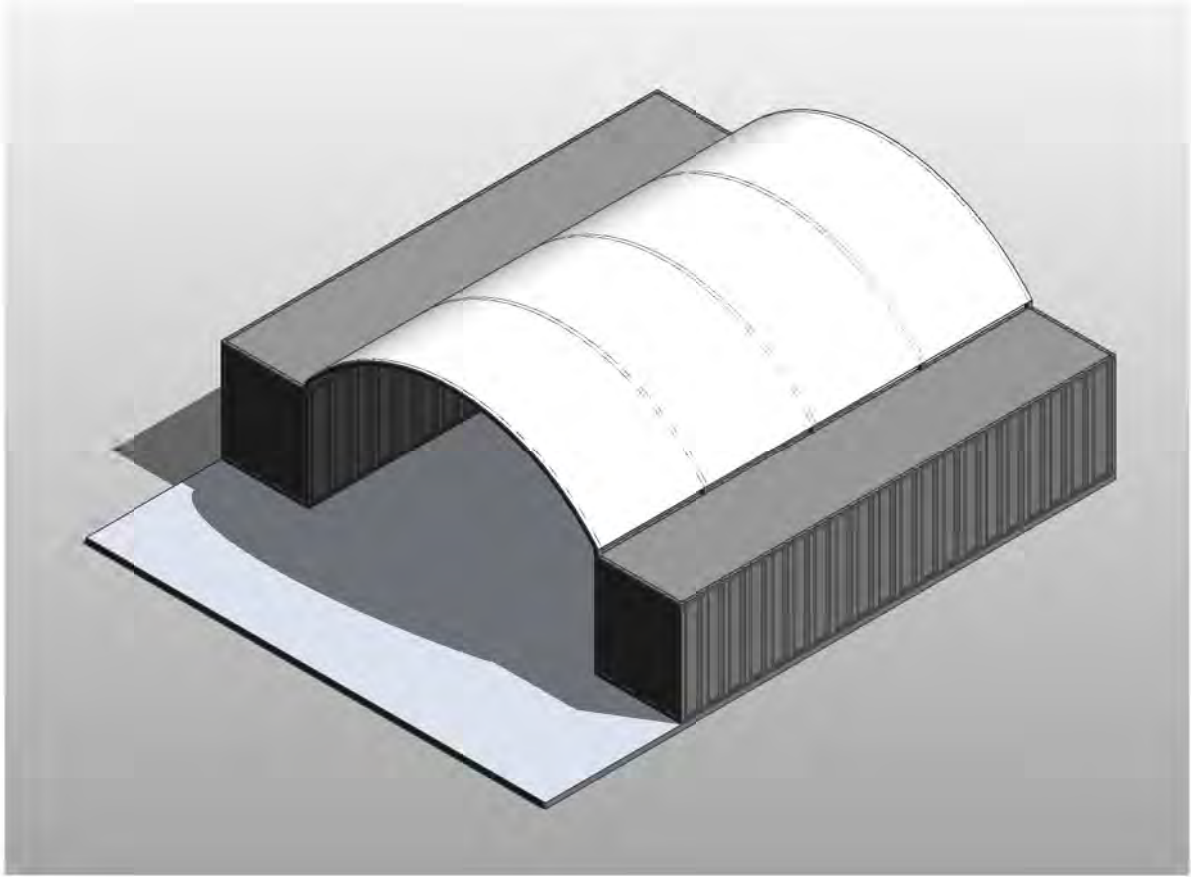




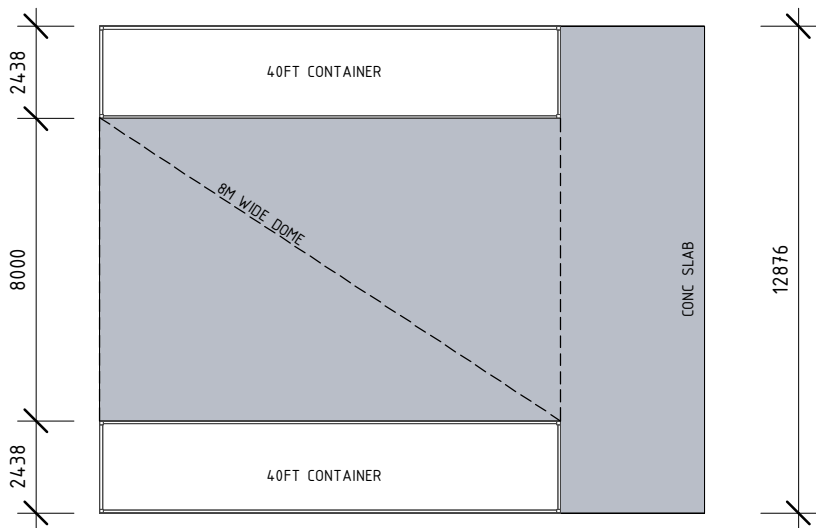
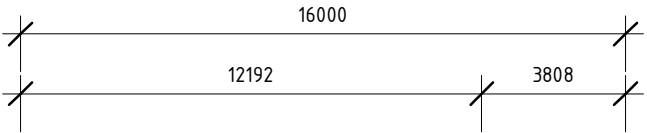
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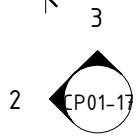
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CP01-17 1 : 200



4 ORTHO



1 FLOOR PLAN
CP01-17 1 : 200



SCALE 1 : 200



PROPOSED DEVELOPMENT
BERKSHIRE RD FORRESTFIELD

DOME WORKSHOP

CP01-17 - A

1 : 200 @ A3
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Transport Impact Assessment

Proposed Warehouse – Lot 281, 283,
285, 287 Berkshire Road

Revision: B
Report Date 21/03/2023

Prepared for:

DTMT Construction

Prepared by:

Stantec Australia Pty Ltd



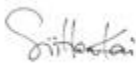
REPORT TITLE

Revision	Date	Description	Author		Quality Check		Independent Review	
A	21/03/23	For Issue		BS		SJL		RJC
B	17/08/23	Minor Amendment		BS		SJL		RJC



REPORT TITLE

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Prepared by 
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Approved by 
(signature)

Ray Cook



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1.0 INTRODUCTION

1.1 BACKGROUND

Stantec has been commissioned by DTMT Construction to prepare a Transport Impact Assessment (TIA) for the proposed warehouse development located at warehouse district at Forrestfield within the City of Kalamunda, WA (the “Site”).

This report aims to assess the impacts of the proposed development upon the adjacent road network, focusing on traffic operations, circulation, and safety requirements.

This TIA has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016).

1.2 SITE LOCATION

The Site is located in the City of Kalamunda as shown in **Figure 1-1**. The Site is enclosed by Berkshire Road the west, Bonser Road to the north, Nardine Close to the east and Heavy Vehicle access road to the south. Roe Highway, which travels north-south on Perth's eastern side, is connected to Berkshire Road. Good vehicular access to the project site is available via the existing road network.



PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

Figure 1-1 Aerial Image of Site



Source: MetroMap



2.0 EXISTING CONDITIONS

2.1 EXISTING LAND USES

The Site is currently partially undeveloped, with half of the Site utilised as a storage space for various construction equipment and materials. Existing access is located on Berkshire Road as shown in the in **Figure 2-1** below.

Figure 2-1 Existing Site



2.2 SITE CONTEXT

The Site is currently located within the Forrestfield / High Wycombe Industrial Area Structure Plan as shown in **Figure 2-2**. The Site is zoned as 'Industrial Development' zone.

The immediate area surrounding the Site is industrial developments with urban and rural residential land uses located further east and north of the Site.

Figure 2-2 Site Zoning



Source: City of Kalamunda



2.3 EXISTING ROAD NETWORK

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

- **Primary Distributors (light blue):** Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State Roads WA.
- **Regional Distributors (red):** Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government
- **District Distributor A (green):** These carry traffic between industrial, commercial, and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining properties. They are managed by Local Government.
- **Distributor B (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local Government.
- **Access Roads (grey):** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local Government.

The site is surrounded by Berkshire Road to the southwest, Bonser Road to the northwest, and Nardine Close to the northeast. Berkshire Road provides connection to Roe Highway to the southeast and Dundas Road to the northwest. The surrounding road network is further described in **Table 2-1** and shows **Figure 2-3** the hierarchy as per the Main Roads WA Road Information Mapping System.

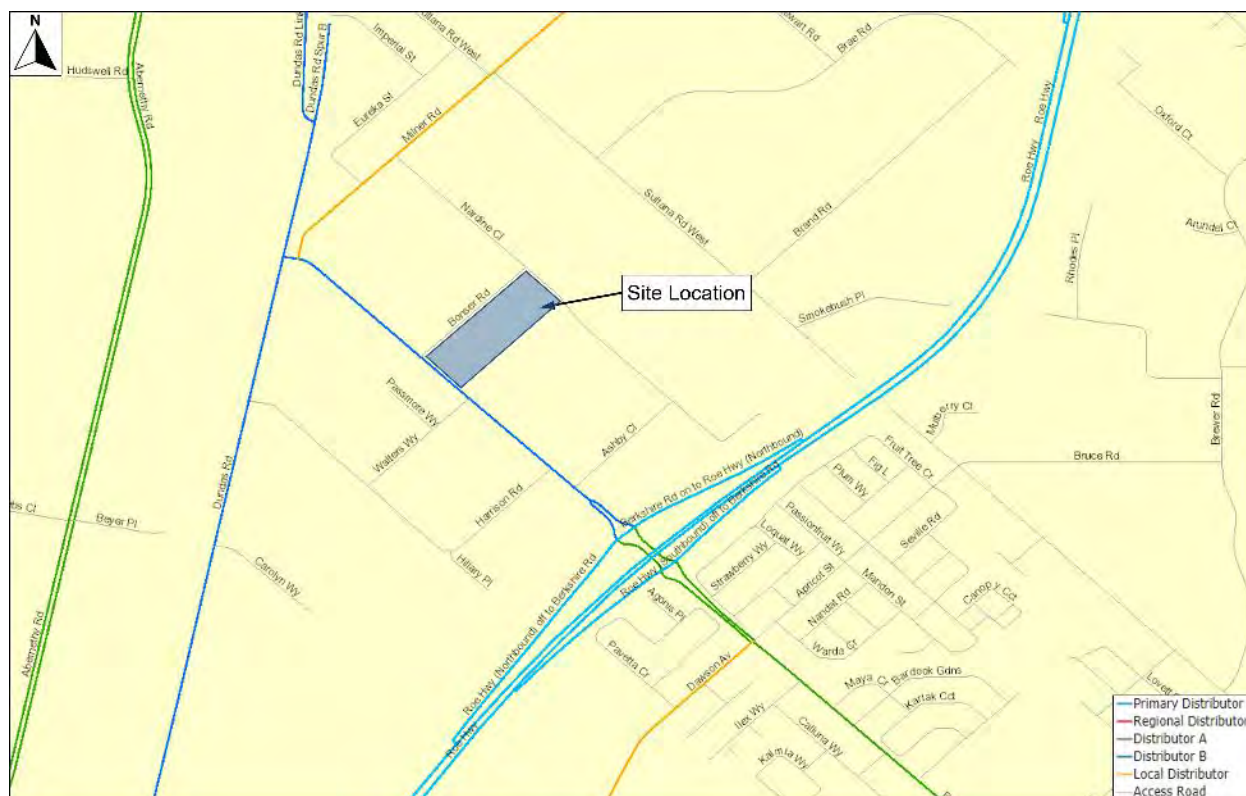


PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

Table 2-1 Road Network Classification

Road Names	Road Hierarchy			Road Network		
	Road Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Width (m)	Speed Limit (km/h)
Berkshire Road	Distributor B	Local Government	2	1	9	70
Bonser Road	Access Road	Local Government	2	1	9.8	50
Nardine Close	Access Road	Local Government	2	1	10	50

Figure 2-3 Road Hierarchy



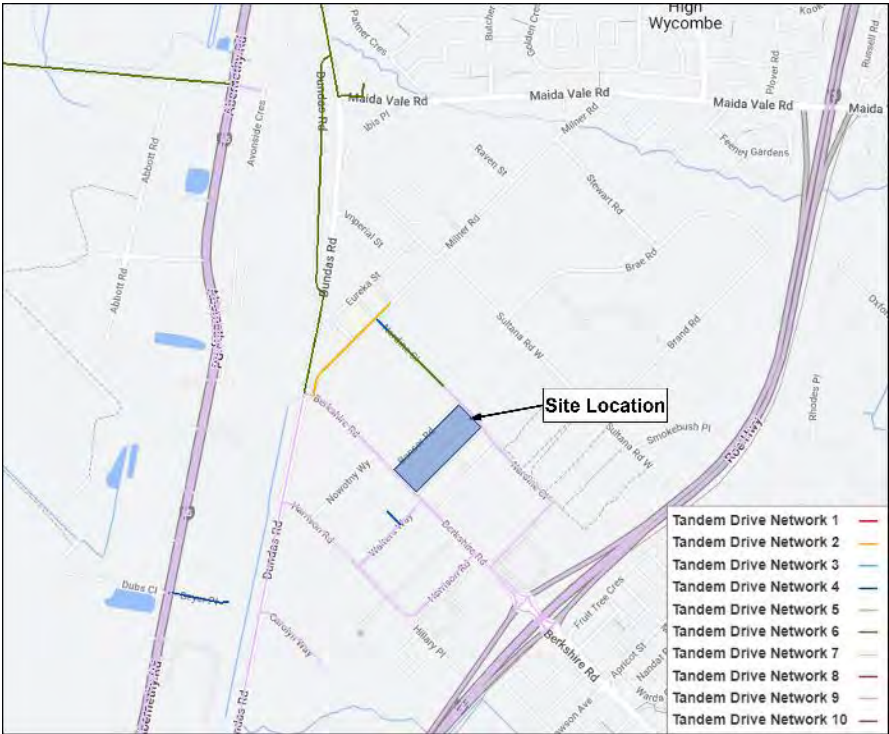
Source: Main Roads Road Information Mapping System (2022)



2.4 EXISTING RESTRICTED ACCESS VEHICLE (RAV) NETWORK

The existing RAV network is shown in **Figure 2-4** and this indicates that the proposed site has access to the RAV 7 network. It is noted that Bonser Road is not currently included in the HVS network. A RAV network application will be required for future RAV access.

Figure 2-4 RAV Network



Source: Main Roads HVS Network Map

2.5 EXISTING TRAFFIC VOLUME

Existing traffic volumes were obtained from Main Roads WA Traffic Map and summarised in **Table 2-2**. Morning peak hour was observed at 7 to 8 AM and evening peak hour was observed between 4 to 5 PM.

Table 2-2 Existing Traffic Volumes

Road Name	Year	Daily Volumes	AM Peak	PM Peak	HV%
Berkshire Road (West of Roe Highway)	2020/21	7,569	644	708	23.1%



2.6 EXISTING PUBLIC TRANSPORT FACILITIES

The nearest bus service are routes 271 and 280, which runs along Berkshire Road as shown in **Figure 2-5**. Details of these bus routes are provided in **Table 2-3** below. The nearest bus stops are shown in **Figure 2-6**.

Figure 2-5 Existing Bus Routes

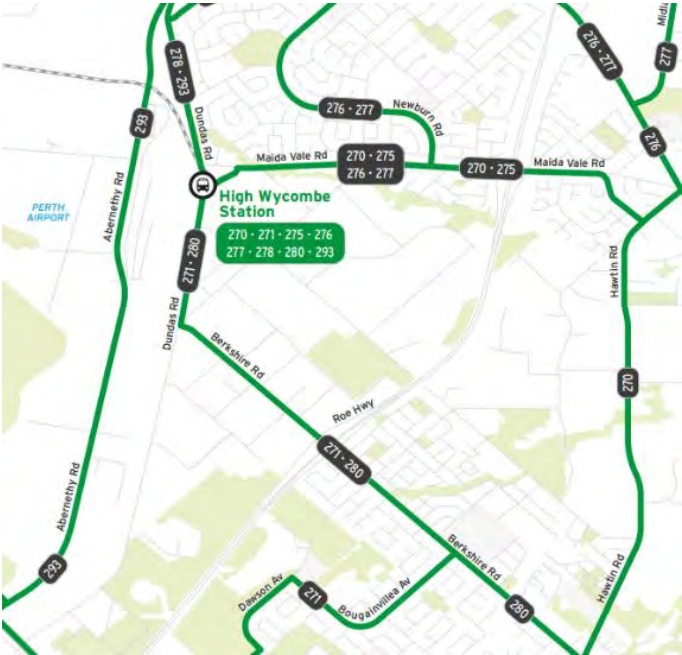


Table 2-3 Bus Routes Information

Route No.	Route Description	Service Frequency (at the nearest bus stop)		
		Weekdays	Saturday	Sunday/Public Holiday
271	High Wycombe Station – Forrestfield Forum Shopping Centre	Every 12 minutes at peak hours towards High Wycombe Station (AM peak) and Forrestfield Shopping Centre in PM peak	Every 30 minutes	Every 60 minutes
280	High Wycombe Station - Carousel Shopping Centre	Every 15 – 25 minutes in peak hours	Every 60 minutes	Every 60 minutes



Figure 2-6 Nearest Bus Stop Location



2.7 EXISTING PEDESTRIAN / CYCLING NETWORK

Paths are present on all street frontages of the Site. A 2m path is available on the northern side of Berkshire Road, which provides link into the Principal Shared Path (PSP) along Roe Highway. There is also a new shared path on the southern side of Berkshire Road that provides connection between Roe Highway PSP and High Wycombe Station.

Paths are also available along the western side Bonser Road and northern side Nardine Close, providing pedestrian links to the surrounding area.

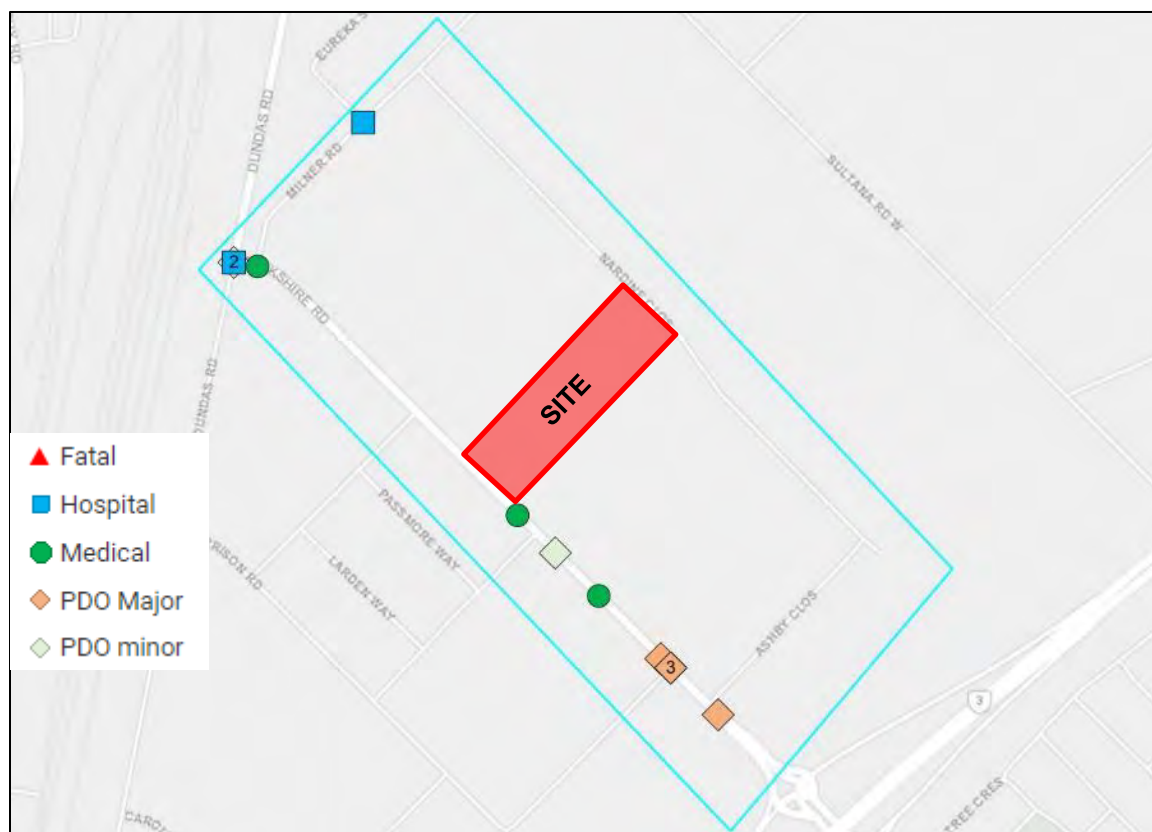
Overall, the pedestrian and cycle infrastructure within the surrounding area is good, with existing paths providing access to bus stops as well as train station and PSP.



2.8 CRASH HISTORY

A search of the *Main Roads WA Reporting Centre* for crash data was undertaken for all recorded traffic accidents between 1 January 2017 and 31 December 2021 within the surrounding area of the subject Site. **Figure 2-7** shows the locations of the recorded crashes and **Table 2-4** provides a summary of the crash type and severity.

Figure 2-7 Crash Location



PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

Table 2-4 Crash Data

Type of Crash	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Right Angle	-	2	-	2	1	5
Right turn thru	-	-	1	-	-	1
Rear End	-	-	2	1	2	5
Sideswipe Same Direction	-	-	-	1	-	1
Total	-	2	3	4	3	12

A summary of the crash data are as follows:

- A total of 12 crashes were recorded within the surrounding area of the Site.
- No fatal crashes were recorded near to the Site.
- 12 crashes occurred along Berkshire Road, and 1 crash on Milner Road.
- Most crash types are right angle and rear end crashes. Right angle crashes recorded all occurred at intersections, and none occurred at driveways. All rear end crashes except 1 crash occurred at midblock.
- Only two crashes required hospital admission. 1 hospital crash is a right-angle crash that occurred at the intersection of Berkshire Road and Dundas Road. The other hospital crash is also a right-angle crash that occurred at the intersection of Milner Road and Eureka Street.



3.0 PROPOSED DEVELOPMENT

3.1 PROPOSED LAND USE (STAGE 1)

The proposed development comprises of:

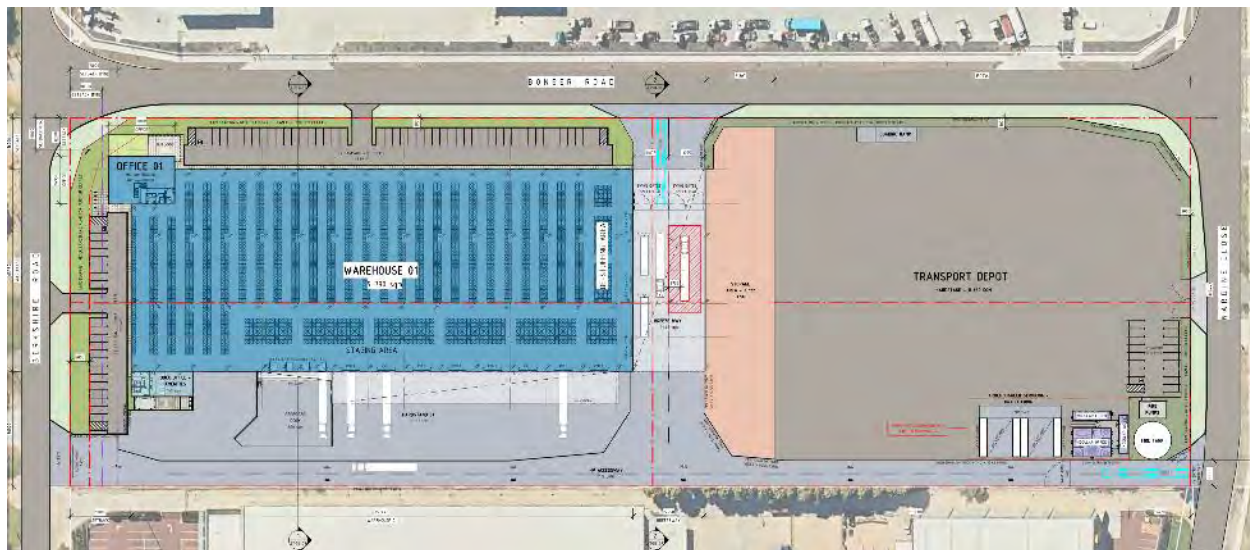
- Warehouse
 - o Warehouse + Dock Office - 9,940m²
 - o Office - 500m²
 - o Hardstand – 3,437m²
 - o Recessed Dock – 585m²
 - o Carpark Bays (light vehicles) – 68 bays
- Transport Depot
 - o Office – 108 m²
 - o Storage – 2,122m²
 - o Hardstand – 11,660m²
 - o Dome Workshop - 412m²
 - o Carpark Bays (light vehicles) – 17 bays

The layout of the proposed development is shown in **Figure 3-1**. The site plan for the proposed development is included in Appendix A.

It is noted that the proponent plans to redevelop the Site to include two warehouses (Stage 2) in the future, which will be further discussed in **Section 7.0**.



Figure 3-1 Site Plan – Proposed Development



Source: DTMT Construction

3.2 ACCESS ARRANGEMENT

The Site is served by multiple access points as shown below in **Figure 3-2**. Details of these arrangements are listed below and are summarised in **Table 3-1**.

- Heavy Vehicle Access
 - Access A – Heavy vehicle exit only access onto Berkshire Road
 - Access B - Heavy vehicle entry and exit access onto Bonser Road
 - Access C - Heavy vehicle entry only access from Nardine Close. Note that only right turn entry movement is allowed.
- Light Vehicle Access
 - Access 1 – Warehouse 1 car park access to/from Berkshire Road
 - Access 2 - Warehouse 1 car park access to/from Bonser Road
 - Access 3 – Transport Depot main access to/from Nardine Close

Table 3-1 summarises the access arrangements of the Site between the proposed and potential developments.



PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

Table 3-1 Access Arrangement Summary

<i>Proposed Development</i>	
<i>Heavy Vehicle (HV) Access</i>	
Access A	HV Exit-only to Berkshire Rd
Access B	HV Access to/from Bonser Rd
Access C	HV Entry-only from Nardine Cl
<i>Light Vehicle (LV) Access</i>	
Access 1	LV Access to/from Berkshire Rd
Access 2	LV Access to/from Bonser Rd
Access 3	LV Access to/from Nardine Cl

Figure 3-2 Access Arrangement – Proposed Development



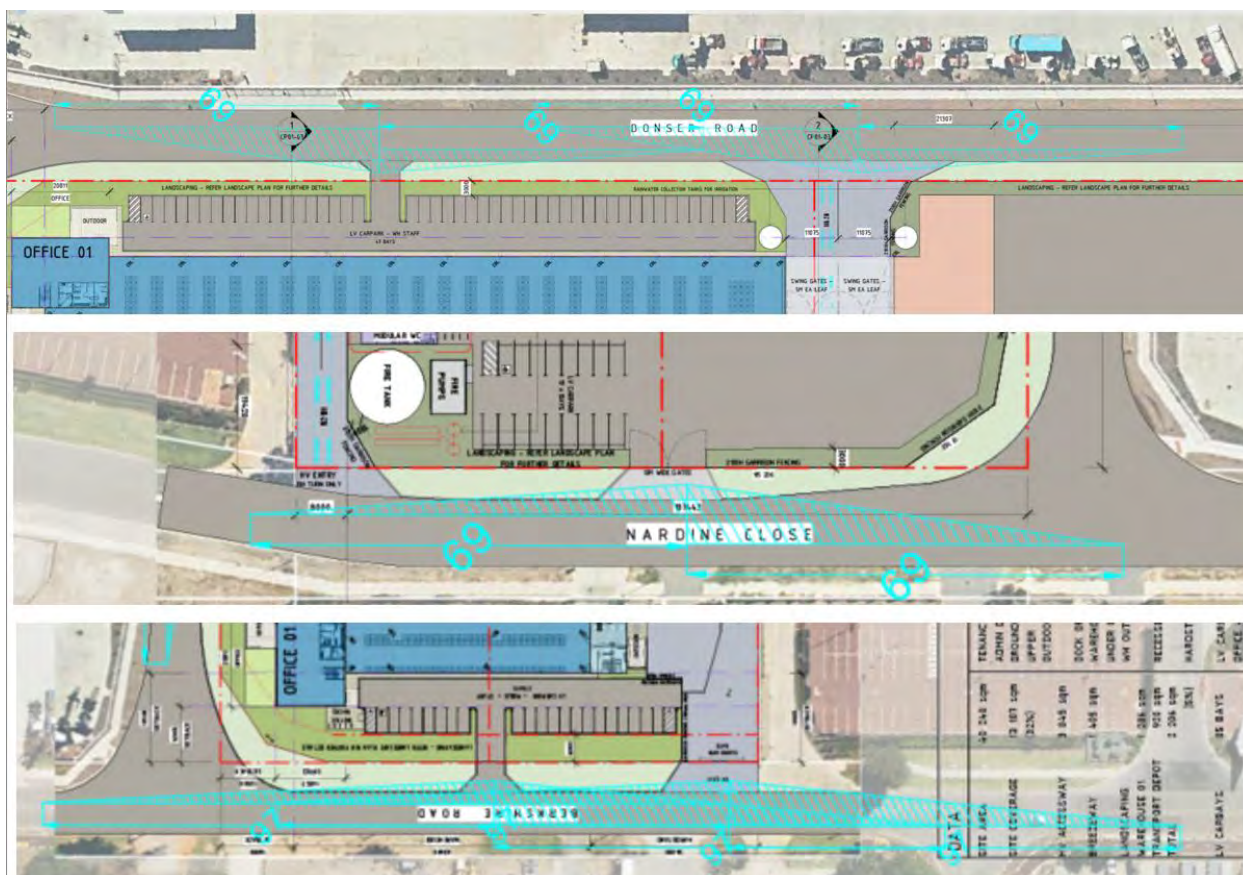
3.3 ACCESS SIGHTLINE ASSESSMENT

A sightline assessment has been conducted for the proposed accesses against *AS2890.1 Clause 3.2.4*. It was noted that Berkshire Road has a posted speed of 70km/h along the site frontage, while Bonser Road and Nardine Close are subject to default speed of 50km/h for built-up area.

According to *AS2890.1 Figure 3.2*, the sight distance at accesses along Berkshire Road and Bonser Road (and Nardine Close) are 97m and 69m respectively.

The outcome of the sightline assessment suggests that sufficient sightline could be achieved at all proposed accesses as shown in **Figure 3-3**.

Figure 3-3 Access Sightline Assessment



3.4 SWEPT PATH ANALYSIS

A swept path analysis was conducted to verify manoeuvrability of transport and service trucks along the hardstand areas and internal driveways of the proposed development. Swept path diagrams are also provided in the Appendix section.

3.4.1 B-Double 27.5m Transport Truck

Figure 3-4 Swept Path for B-Double (Ingress)

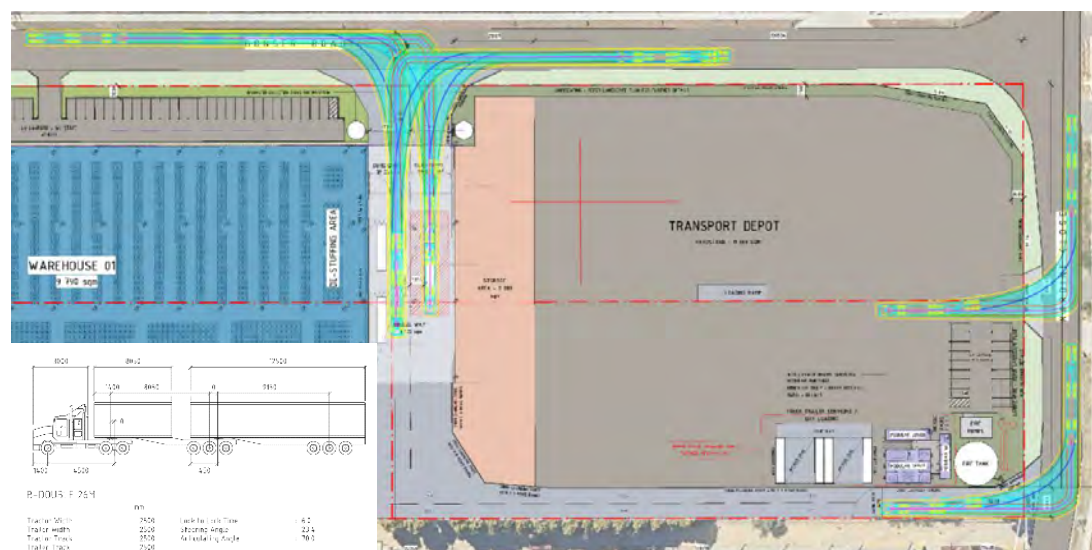
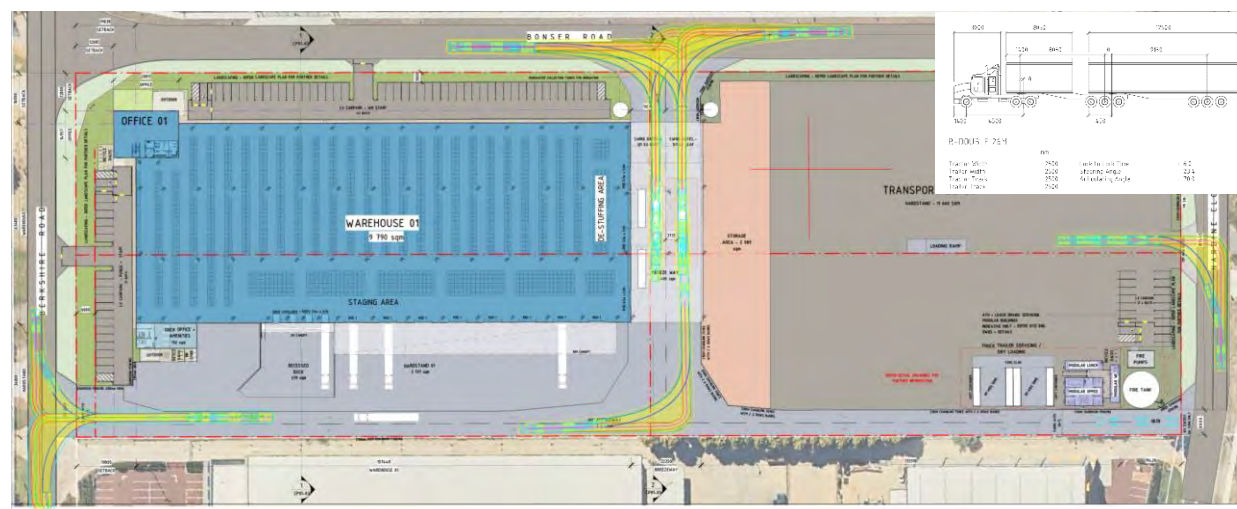


Figure 3-5 Swept Path for B-Double (Egress)



PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

3.4.2 Prime Mover – Semi Trailer 19m Truck

Figure 3-6 Swept Path for Semi Trailer (Ingress)

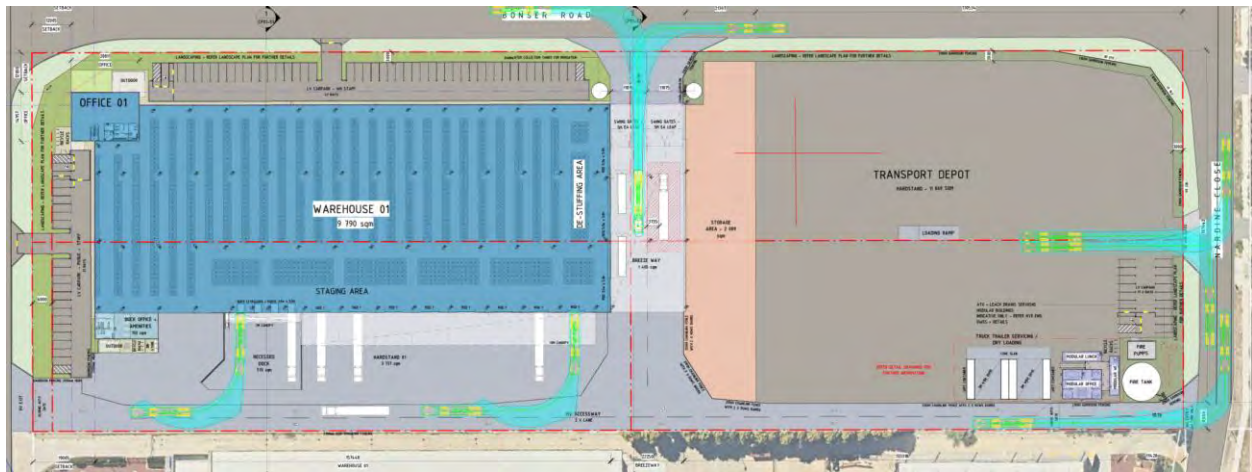
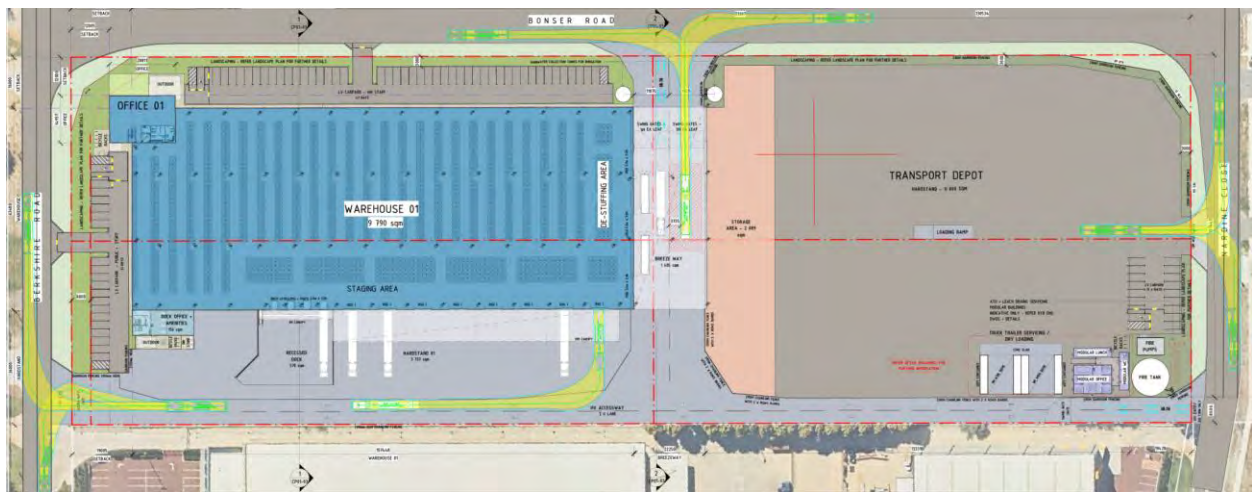


Figure 3-7 Swept Path for Semi Trailer (Egress)



PROPOSED WAREHOUSE – LOT 281, 283, 285, 287 BERKSHIRE ROAD

3.4.3 Waste Vehicle – Veolia (10.1m)

Figure 3-8 Swept Path for Waste Vehicle (Ingress)

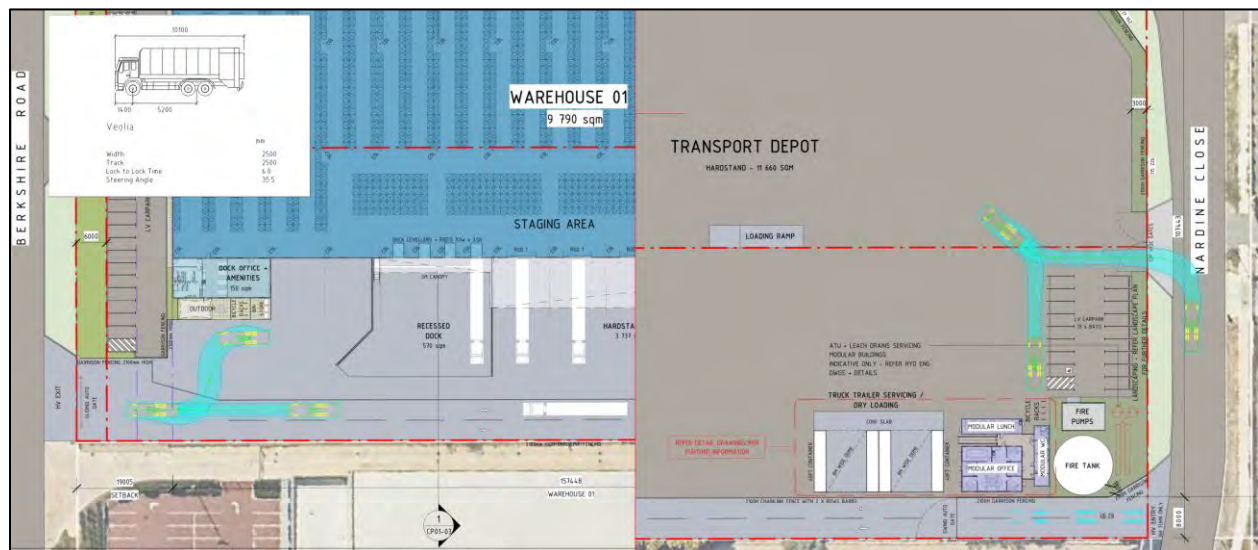
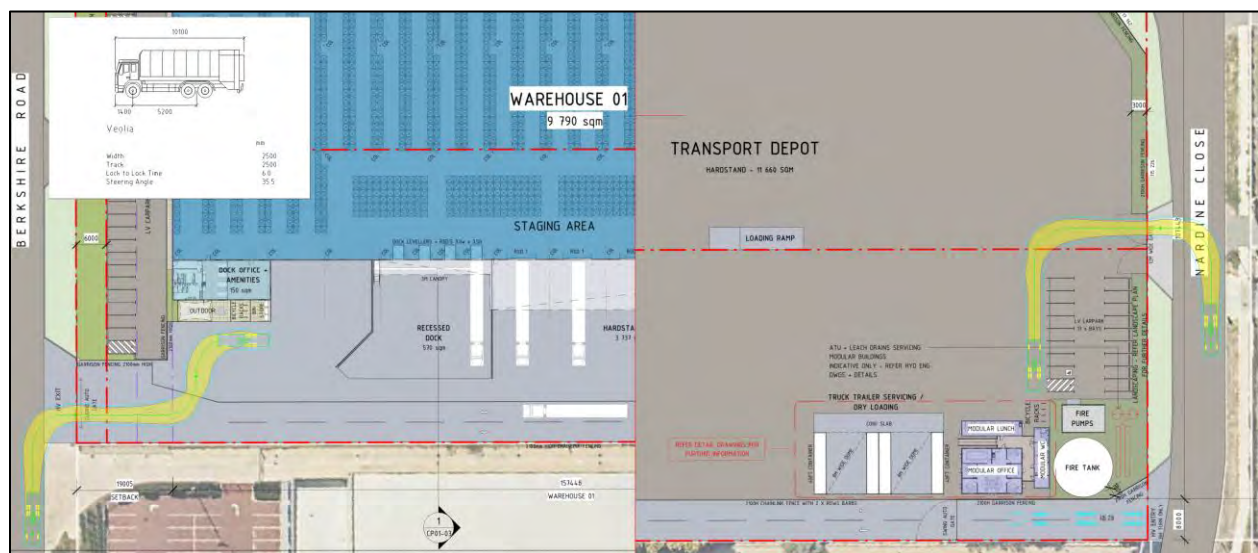


Figure 3-9 Swept Path for Waste Vehicle (Egress)



3.5 CAR PARKING

3.5.1 Car Parking Demand and Provision

The statutory parking requirements, in accordance with the *City of Kalamunda Local Planning Scheme No. 3* have been considered in the context of the proposed development and are summarised below in **Table 3-2**.

Table 3-2 Car Parking Requirements

Proposed Land Use	Parking Requirements	Development Yield	Parking Required	Parking Provided	Shortfall / surplus
Warehouse	3 bays for up to the first 200m ² and thereafter 1 bay for every 100m ² of NLA or part thereof	9,790m ²	99 bays	68 bays	- 31 bays
Transport Depot	1 bay per employee plus 2 visitor bays	11,660m ² (10 staff)	12 bays	17 bays	+ 5 bays
Total			111 bays	85 bays	- 26 bays (Shortfall)

As outlined above in **Table 3-2**, 85 car parking bays are proposed on the Site across one warehouse and the transport depot. Whilst this identifies a shortfall of 26 bays across both lots, the supplied parking bays is expected to be able to cater for the maximum number of staff on-site. The warehouse and transport depot are expected to have a daily maximum of 51 staff on-site; hence, the supplied parking bays will be sufficient to cater for the parking demands of the proposed development.



3.5.2 Parking Geometry Requirements

Car parking bays were compared against the prescribed geometry requirements of AS2890.1 (2004) – *Off-Street Car Parking* and AS2890.6 (2009) – *Off-Street Parking for People with Disabilities*. A total of 85 car parking bays are available within the proposed development. Parking bay dimensions are similar across the three carpark areas within the proposed development. Results of the geometry assessments are presented in Table 3-3.

Table 3-3 Parking Geometry Compliance

Parameter	User Class 1A ¹			User Class 4 ²		
	Minimum Requirement	Provided	Remarks	Minimum Requirement	Provided	Remarks
Bay Width, m	2.4	2.5	<i>Compliant</i>	2.4	2.5	<i>Compliant</i>
Bay Length, m	5.4	5.5	<i>Compliant</i>	5.4	5.5	<i>Compliant</i>
Shared Area: Width, m Length, m				2.4 5.4	2.5 5.5	<i>Compliant</i> <i>Compliant</i>
Aisle Width, m	5.8	6.0	<i>Compliant</i>			
Circulation Roadway Width, m	5.5 (two-way)	6.0	<i>Compliant</i>			
Access Width, m (Category 1)	3.0 to 5.5	6.0	<i>Compliant</i>			

¹ Sourced from AS2890.1:2004 - *Off-Street Car Parking*

² Sourced from AS2890.6:2009 - *Off-Street Parking for People with Disabilities*

As shown in the table above, parking bays dimensions or parameters of the proposed development are compliant with the prescribed parking geometry requirements. The access width category is assumed to be at Category 2 due to the following Site presumptions:

- Under Class 1A parking user
- Number of development's parking bays is 85 (within 25 to 100 column)
- Frontage road type is assumed as 'Local'

3.6 BICYCLE PARKING

The City of Kalamunda Local Planning Scheme No. 3 does not have any requirements for bicycle parking facilities for the proposed land use at the Site, however bike racks are provided next to the entrance of the offices adjacent to the warehouse to encourage the use of active transport and potentially reducing the car parking demand on site.



4.0 CHANGES TO SURROUNDING TRANSPORT NETWORK

4.1 ROAD NETWORK

As part of the Forrestfield / High Wycombe Industrial Area Structure Plan, additional roads have been constructed and/or upgraded in the vicinity of the Site. These include a new road, Bonser Road, which bounded the Site on the northwest side, extension, and upgrade of Ashby Close and Nardine Close.

Further north, an Activity Centre Plan to the area in the vicinity of High Wycombe train station (**Figure 4-1**) is currently being prepared by City of Kalamunda and Development WA. As part of this, significant road network changes can be expected within the project area.

Figure 4-1 High Wycombe Project Area



Source: Development WA

4.2 PUBLIC TRANSPORT NETWORK

The Airport Line and High Wycombe Station have become operational since October 2022, which resulted in changes to the bus routes. No additional changes are expected in the foreseeable future.

4.3 PEDESTRIAN/CYCLE NETWORK

The City of Kalamunda has recently constructed a new shared path on the southern side of Berkshire Road and Dundas Road. This new shared path will connect High Wycombe Station and the PSP along Roe Highway.



5.0 INTEGRATION WITH SURROUNDING AREA

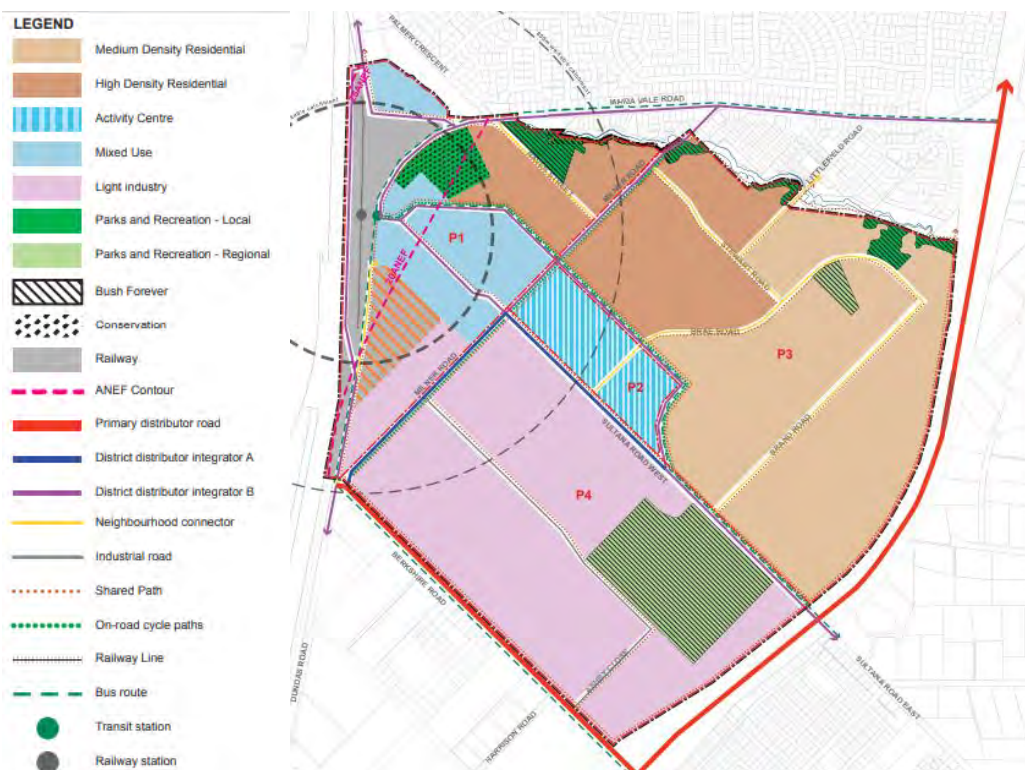
5.1 SURROUNDING ATTRACTORS/GENERATORS

The Site is located within an industrial area, and as such it will not generate significant traffic from the surrounding area. Employees working at the Site may be attracted to nearby amenities such as the service station located at the corner of Milner Road and Berkshire Road to buy food and/or fuel.

5.2 PROPOSED CHANGES TO SURROUNDING LAND USES

According to the Forrestfield District Structure Plan (**Figure 5-1**), the area immediately adjacent to the Site will continue to be industrial, while the area to the north of Sultana Road West, which is currently rural residential, would undergo redevelopment into higher density residential. The area west of Milner Road will likely be redeveloped into a mixed-use area consisting of residential and commercial.

Figure 5-1 Forrestfield North District Structure Plan



Source: City of Kalamunda (2016)



6.0 ANALYSIS OF TRANSPORT NETWORK

6.1 DEVELOPMENT TRAFFIC GENERATION

Trip generation for the proposed development is based on staff and truck movement information provided by the future tenant. For this assessment, trip generation for the Site will be estimated based on a typical warehouse operation and the operations proposed by the transport depot tenant.

6.1.1 Warehouse

The traffic generation of the warehouse has been calculated utilising the trip generation rates obtained from the *Institute of Transportation Engineers (ITE) "Trip Generation" 10th Edition*.

Table 6-1 Warehouse Traffic Generation

Land Use	Yield	Source	AM Peak	PM Peak	AM Peak		PM Peak		AM Peak		PM Peak	
					In	Out	In	Out	In	Out	In	Out
Warehouse	9,790m ²	ITE 150	0.235 trips per 100m ²	0.258 trips per 100m ²	65%	35%	24%	76%	16	8	6	19
Total									24		25	

As shown in **Table 6-1**, the proposed warehouse is expected to generate approximately **24 and 25 passenger vehicle trips** in the AM and PM peak respectively.

The large trucks accessing the Warehouse is generally scheduled outside of the typical road network peak hours. For the robust assumption of peak hour trip generation, it is assumed up to one truck will enter and one truck will exit the site, resulted in two large vehicle trips. This results in a sum of **25 and 26 total vehicle trips for the AM and PM peak respectively for the warehouse**.

6.1.2 Transport Depot

The proposed Transport Depot is expected to cater for up to 20 trucks per day, between the operation hours of 6am to 6pm. The depot will be used infrequently after the operation hours. This equates to approximately 20 daily trips and approximately 2 trips per hour.

Additionally, the Transport Depot will also cater for approximately 8 staff members and will expect up to 4 visitors per day. In the worst case scenario, this will translate to approximately **10 trips during the peak hours**, with the majority of the trip entering the Site during the AM peak, and the opposite during the PM peak.



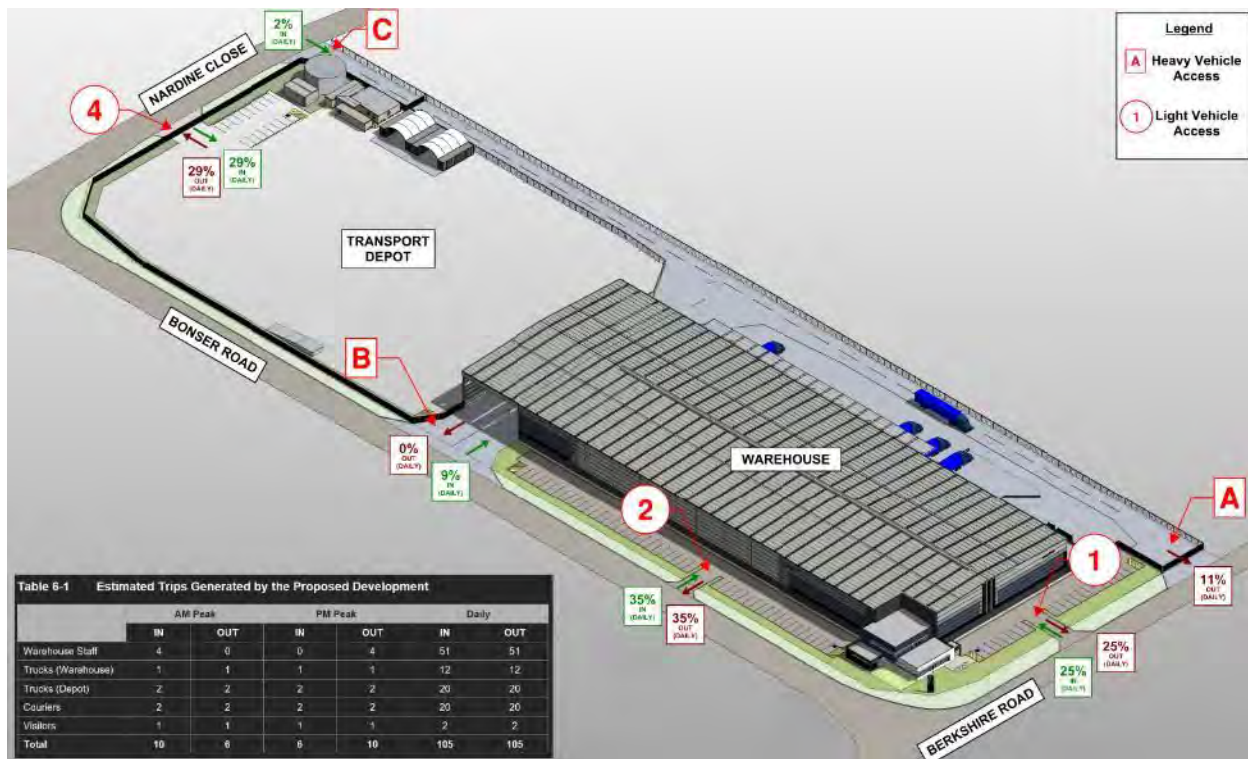
6.2 DEVELOPMENT TRAFFIC DISTRIBUTION

Trips to and from the Site is expected to arrive either from Roe Highway or Dundas Road. As Roe Highway has higher capacity and is connected to other major arterial roads, most traffic is expected to arrive via Roe Highway, particularly for heavy vehicles. Therefore, for the purpose of this assessment, the adopted trip distribution for the Site is per the following:

- Dundas Road – 20%
- Roe Highway – 80%

Based on the estimated trips of the proposed development, an approximation of the trip distribution around the Site can be provided. Figure 6-1 provides a perspective of the trip distribution around the Site's access points. Note that these values are estimates only and were proportioned according to the number of daily trips generated by the Site. As an example, warehouse staff generated the greatest number of daily trips, and since Access 2 will primarily be utilised by employees, it can be estimated that 35% of the daily in and out trips on the Site will occur here.

Figure 6-1 Estimated Trip Distribution of development-generated traffic



Source: DTMT Construction (base map)



6.3 TRAFFIC ANALYSIS

As calculated in Section 6.1, the site is expected to generate up to 35 and 36 vehicular trips during the AM and PM peak respectively.

The Western Australian Planning Commission's (WAPC) *Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)* specify that if the proposed development generates less than *100 trips in the peak hour*, intersection capacity analysis is no longer required.

Therefore, based on the calculated trip generation of the Site, it can be inferred that that the proposed development may not have any significant impact on the surrounding roadway network and may not require substantial improvements.

6.4 PUBLIC TRANSPORT ACCESS

The Site is located adjacent to bus routes 271 and 280 on Berkshire Road, with the nearest bus stops located just north of Berkshire Road / Bonser Road intersection. Paths are available along Bonser Road and Berkshire Road, providing access to these bus stops. Additionally, the Airport Rail Line can also be accessible via High Wycombe Station. Path along Berkshire Road and Dundas Road would allow employees to walk or cycle to the station.

6.5 PEDESTRIAN / CYCLING ACCESS

Paths are available on all roads adjacent the Site. The paths provide pedestrian and cycling access to the Site from the wider path network such as the Roe Highway PSP, as well connections to nearby bus stops and High Wycombe Station.



7.0 POTENTIAL FUTURE DEVELOPMENT

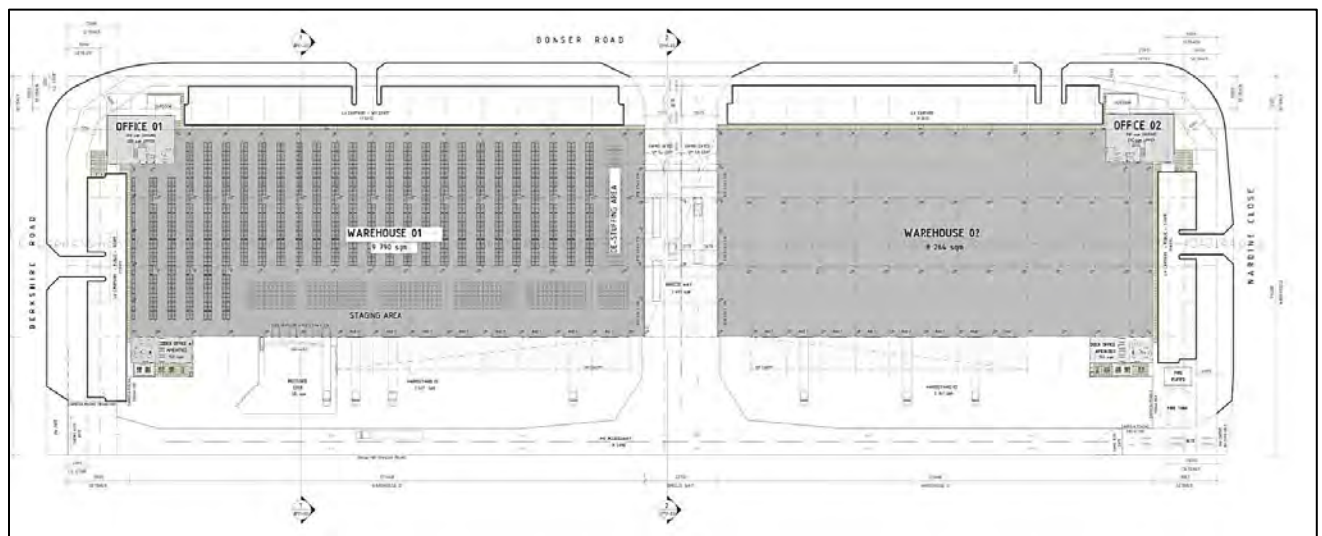
7.1 FUTURE DEVELOPMENT LAND USE (TWO WAREHOUSES)

It is the proponent's intention to redevelop the proposed transport depot into a second warehouse in the future. While the design has not been finalised, a potential design of the second warehouse is likely to comprises of:

- Warehouse + dock office - 8,414m²
- Office - 500m²
- 56 car parking bays

The layout of this future potential development is shown in **Figure 7-1**.

Figure 7-1 Site Plan – Future Potential Development



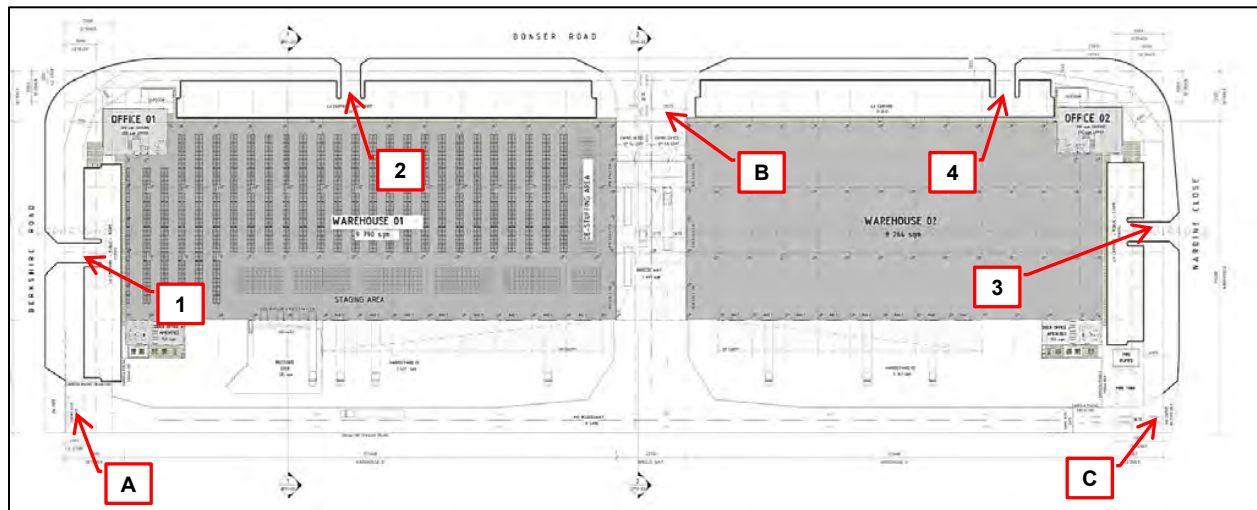
Source: DTMT Construction



7.2 ACCESS ARRANGEMENT

The vehicular accesses are likely to remain similar to the currently proposal with an additional access (Access 4) be constructed off Bonser Road to service the vehicle movements of the second Warehouse. This additional access is unlikely to result in any significant impact as this access will likely be used to service light vehicles only while the heavy vehicle movements will be kept to Access A, B and C only, similar to the proposed warehouse.

Figure 7-2 Access Arrangement – Future Potential Development



A summary of the future access arrangements is shown in **Table 7-1**.

Table 7-1 Access Arrangement Summary – Future Development

	<i>Proposed Development</i>	<i>Future Potential Development</i>
Heavy Vehicle (HV) Access		
Access A	HV Exit-only to Berkshire Rd	HV Exit-only to Berkshire Rd
Access B	HV Access to/from Bonser Rd	HV Access to/from Bonser Rd
Access C	HV Entry-only from Nardine Cl	HV Entry-only from Nardine Cl
Light Vehicle (LV) Access		
Access 1	LV Access to/from Berkshire Rd	LV Access to/from Berkshire Rd
Access 2	LV Access to/from Bonser Rd	LV Access to/from Bonser Rd
Access 3	LV Access to/from Nardine Cl	LV Access to/from Nardine Cl
Access 4	N/A	LV Access to/from Bonser Rd



7.3 FUTURE CAR PARKING DEMAND AND PROVISION

The statutory parking requirements for the potential future development has been calculated in accordance with the *City of Kalamunda Local Planning Scheme No. 3* and are summarised below in **Table 7-2**.

Table 7-2 Future Car Parking Requirements

Proposed Land Use	Parking Requirements	Development Yield	Parking Required	Parking Provided	Shortfall / surplus
Warehouse	3 bays for up to the first 200m ² and thereafter 1 bay for every 100m ² of NLA or part thereof	9,790m ²	99 bays	68 bays	- 31 bays
	3 bays for up to the first 200m ² and thereafter 1 bay for every 100m ² of NLA or part thereof	8,914m ²	90 bays	56 bays	- 34 bays
Total			184 bays	TBD	TBD

As calculated, the two warehouses are required to provide a statutory car parking supply of 184 bays across the Site. It is noted that the car parking requirement rate within the *City of Kalamunda Local Planning Scheme No.3* is likely to overestimate the parking demand for the warehouse development. The warehouse development as proposed are likely to attract minimal visitor / customer trips and parking demand would mainly constitute staff parking only. Therefore, the parking provision is likely to be sufficient to cater for staff members and low volume of visitor car parking demand of the Site.

7.4 TRAFFIC GENERATION FOR FUTURE POTENTIAL DEVELOPMENT

As mentioned earlier, the Site will ultimately accommodate two warehouses to service industry demands in the future. As a robust assessment, it is assumed that the future warehouse will have a similar behaviour and traffic generation to the current proposal. In reference to **Section 6.1**, two warehouses on the Site are expected to generate less than 50 trips during the PM peak hour under a worst-case scenario as shown in **Table 7-3**. The traffic impact of such proposal is considered to be reasonable low and could be accommodated within the surrounding road network with minimal impact.

Table 7-3 Future Traffic Generation

Land Use	Yield	Source	AM Peak	PM Peak	AM Peak		PM Peak		AM Peak		PM Peak	
					In	Out	In	Out	In	Out	In	Out
Warehouse	18,204m ²	ITE 150	0.235 trips per 100m ²	0.258 trips per 100m ²	65%	35%	24%	76%	28	15	11	36
Total									43		47	



8.0 SUMMARY

This Transport Impact Assessment outlines the transport aspects of the proposed development focusing on traffic operations, loading vehicle operations, vehicular access, provision of car parking and pedestrian, cycle, and public transport.

This statement has been prepared in accordance with the WAPC *Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016)*.

The following are conclusions about the proposed development:

- > The proposed development includes a warehouse and a transport depot, with the plan to redevelop the transport depot into a second warehouse in the future.
- > The Site benefits from good footpath connections with some cycling facilities in the vicinity of the Site.
- > The proposed development benefits from great public transport access with bus routes travelling along Berkshire Road and bus stops located next to the Site.
- > The proposed accesses between the light and heavy vehicles are separated to reduce the risk of conflict. Accesses are proposed off all three roads abutting the Site.
- > The proposed development of a warehouse and a transport depot is calculated to generate approximately 35 and 36 vehicular trips in the AM and PM peak hours respectively. The potential future development of two warehouses on the Site is likely to generate up to 50 vehicular trips, which are still considered as “moderate impact” in reference to WAPC TIA guideline.
- > The proposed car parking provision does not strictly meet the statutory car parking requirements set out in the *City of Kalamunda Local Planning Scheme No. 3*. However, the parking provision of the Site is likely to be sufficient to cater for the staff members and still provide ample parking for the visitors.
- > Overall, given the small scale of the development, the Site is unlikely to cause any material impact to traffic safety of the surrounding road network. This statement also applies to when the Site is redeveloped into two warehouses as the traffic generation during the peak hours will remain reasonably low.



APPENDICES

TRANSPORT IMPACT ASSESSMENT

Appendix A WAPC Checklist

Appendix A WAPC CHECKLIST

Item	Provided	Comments/Proposals
Proposed Development		
Proposed Land Use	Section 4	
Existing Land Uses	Section 1	
Context with Surrounds	Section 1	
Vehicular Access and Parking		
Access Arrangements	Section 4	
Public, Private, Disabled Parking Set Down / Pick-up	<i>WIP</i>	
Service Vehicles (non-residential)		
Access Arrangements	Section 4	
On/off-site loading Facilities	Section 4	
Service Vehicles (residential)	N/A	
Rubbish collection and emergency vehicle access	Section 4	
Hours of Operation (non-residential)	N/A	
Traffic Volumes		
Daily or Peak traffic Volumes	Section 1	
Type of Vehicles (e.g., cars, trucks)	<i>WIP</i>	
Traffic Management on Frontage Streets	N/A	
Public Transport Access		
Nearest bus/train routes	Section 2	
Nearest bus/train stations	Section 2	
Pedestrian/cycle links to bus stops/train station	Section 2	
Pedestrian access/facilities		
existing pedestrian facilities within the development (if any)	Section 3	
proposed pedestrian facilities within development	Section 3	
existing pedestrian facilities on surrounding roads	Section 3	
proposals to improve pedestrian access	Section 3	
Cycle access/facilities		
existing cycle facilities within the development (if any)	Section 3	
proposed cycle facilities within the development	Section 3	
existing cycle facilities on surrounding roads	Section 3	
proposals to improve cycle access	Section 3	
Site specific issues	<i>WIP</i>	
Safety issues	<i>WIP</i>	
Identify issues	<i>WIP</i>	
remedial measures	<i>WIP</i>	
Conclusions	<i>WIP</i>	



TRANSPORT IMPACT ASSESSMENT

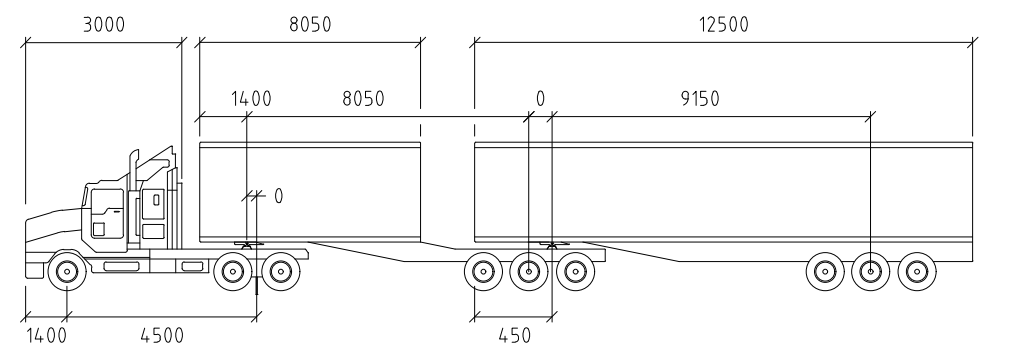
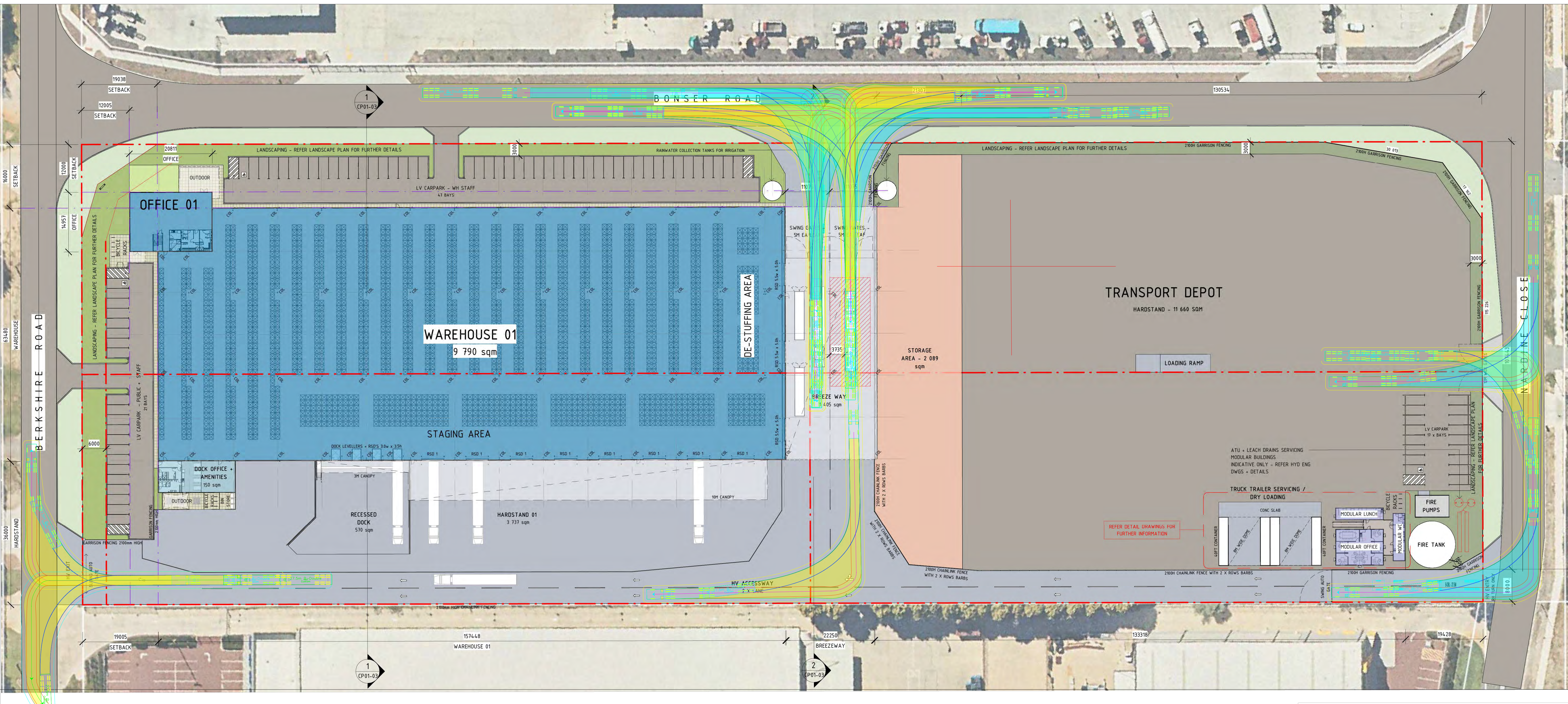
Appendix B Site Plan

Appendix B SITE PLAN

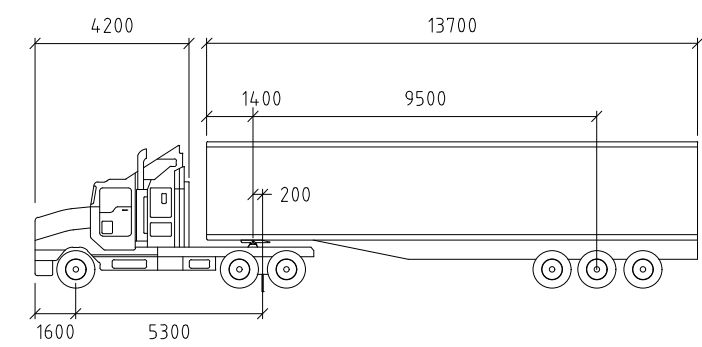
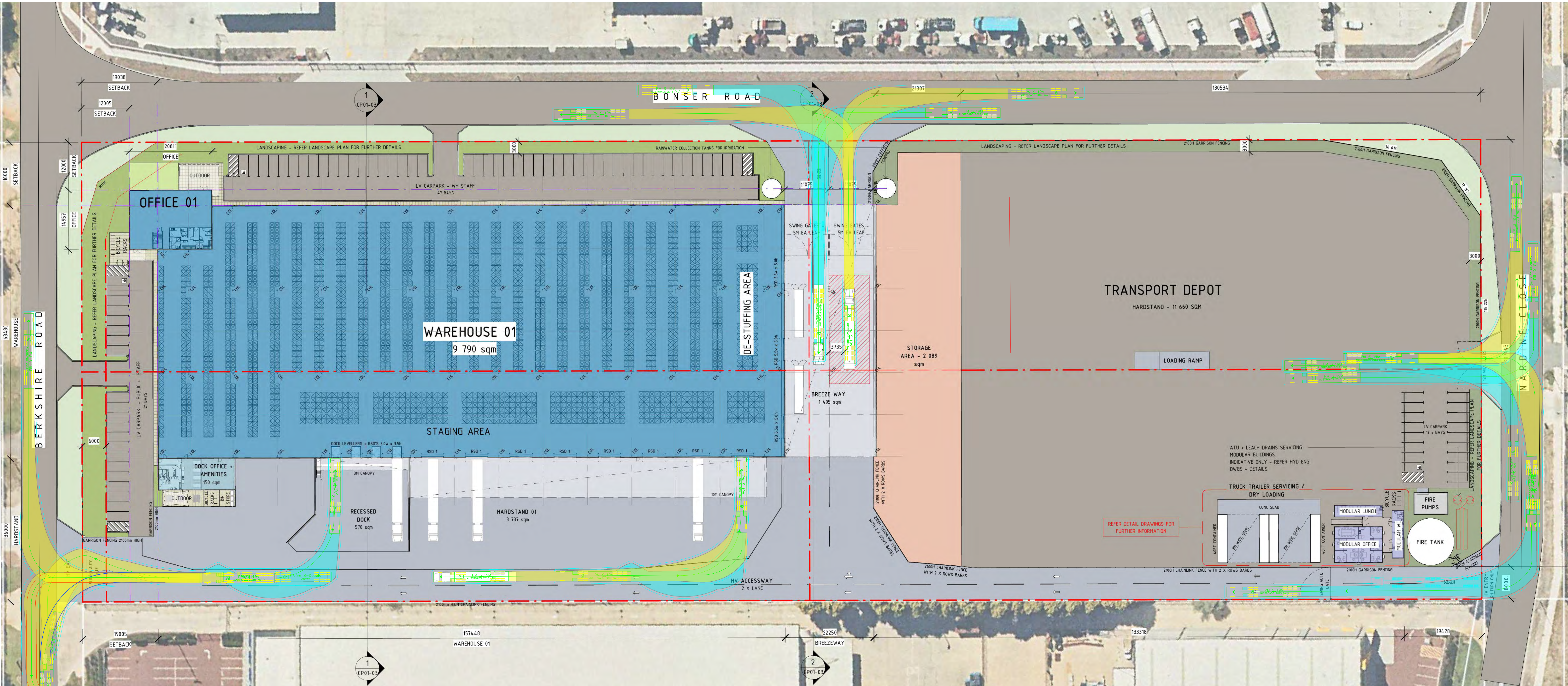


Appendix C SWEPT PATH DIAGRAMS

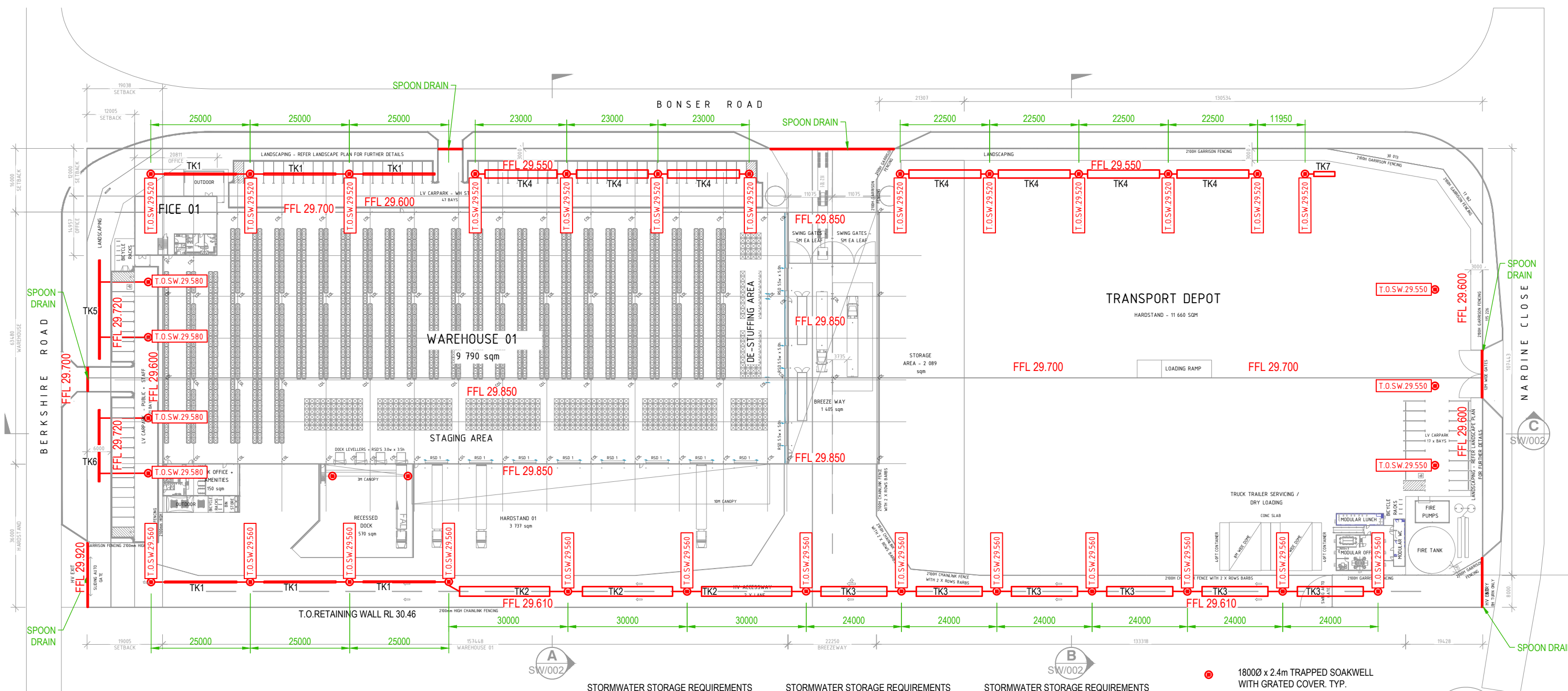




B-DOUBLE 26M



PM S 19M			
Tractor Width	2500	Lock to Lock Time	6.0
Trailer Width	2500	Steering Angle	27.8
Tractor Track	2500	Articulating Angle	70.0
Trailer Track	2500		



- NOTE:**
1. ALL SOAKWELLS ARE 1.8m DIA. X 2.4m TALL.
 2. DRAINWELL MODULE DW1592 ARE USED. INDIVIDUAL DIMENSIONS ARE 0.44m(H) X 0.755m(L) X 0.4m(W)
 3. SYSTEM IS TO DISCHARGE THROUGH INFILTRATION ONLY.
 4. INFILTRATION RATE OF 5M/DAY IS USED FOR THE DESIGN.

STORMWATER STORAGE REQUIREMENTS
WESTERN CATCHMENT
GROSS CATCHMENT AREA = 1620 m²
1 IN 20 ARI STORAGE REQUIRED = 26 m³
1 IN 100 ARI STORAGE REQUIRED = 40 m³
UNDERGROUND STORAGE PROVIDED = 40 m³
SURFACE STORAGE PROVIDED = 2 m³
TOTAL STORAGE PROVIDED = 42 m³

RECESSED DOCK CATCHMENT
GROSS CATCHMENT AREA = 585 m²
1 IN 20 ARI STORAGE REQUIRED = 5 m³
1 IN 100 ARI STORAGE REQUIRED = 7 m³
UNDERGROUND STORAGE PROVIDED = 12 m³
SURFACE STORAGE PROVIDED = 0 m³
TOTAL STORAGE PROVIDED = 12 m³

STORMWATER STORAGE REQUIREMENTS
NORTH WESTERN CATCHMENT
GROSS CATCHMENT AREA = 16189 m²
1 IN 20 ARI STORAGE REQUIRED = 287 m³
1 IN 100 ARI STORAGE REQUIRED = 466 m³
UNDERGROUND STORAGE PROVIDED = 441 m³
SURFACE STORAGE PROVIDED = 45 m³
TOTAL STORAGE PROVIDED = 486 m³

EASTERN CATCHMENT
GROSS CATCHMENT AREA = 685 m²
1 IN 20 ARI STORAGE REQUIRED = 6 m³
1 IN 100 ARI STORAGE REQUIRED = 10 m³
UNDERGROUND STORAGE PROVIDED = 18 m³
SURFACE STORAGE PROVIDED = 5 m³
TOTAL STORAGE PROVIDED = 23 m³

STORMWATER STORAGE REQUIREMENTS
SOUTH EASTERN CATCHMENT
GROSS CATCHMENT AREA = 21514 m²
1 IN 20 ARI STORAGE REQUIRED = 437 m³
1 IN 100 ARI STORAGE REQUIRED = 717 m³
UNDERGROUND STORAGE PROVIDED = 687 m³
SURFACE STORAGE PROVIDED = 65 m³
TOTAL STORAGE PROVIDED = 752 m³

- 1800Ø x 2.4m TRAPPED SOAKWELL WITH GRATED COVER. TYP.
- TK1 STORMWATER INFILTRATION TANK SIZE 6 x 18.1m LONG x 0.4m WIDE x 0.86m HIGH
- TK2 STORMWATER INFILTRATION TANK SIZE 3 x 22.7m LONG x 2.4m WIDE x 1.32m HIGH
- TK3 STORMWATER INFILTRATION TANK SIZE 6 x 19.6m LONG x 2.4m WIDE x 1.32m HIGH
- TK4 STORMWATER INFILTRATION TANK SIZE 7 x 18.1m LONG x 2.0m WIDE x 1.32m HIGH
- TK5 STORMWATER INFILTRATION TANK SIZE 1 x 24.9m LONG x 0.4m WIDE x 0.86m HIGH
- TK6 STORMWATER INFILTRATION TANK SIZE 1 x 24.9m LONG x 0.4m WIDE x 0.86m HIGH
- TK7 STORMWATER INFILTRATION TANK SIZE 1 x 5.3m LONG x 1.2m WIDE x 1.32m HIGH

Rev	Description	Date	App.
0	FOR PLANNING APPROVAL	15.12.22	-
1	FOR PLANNING APPROVAL	16.03.23	-

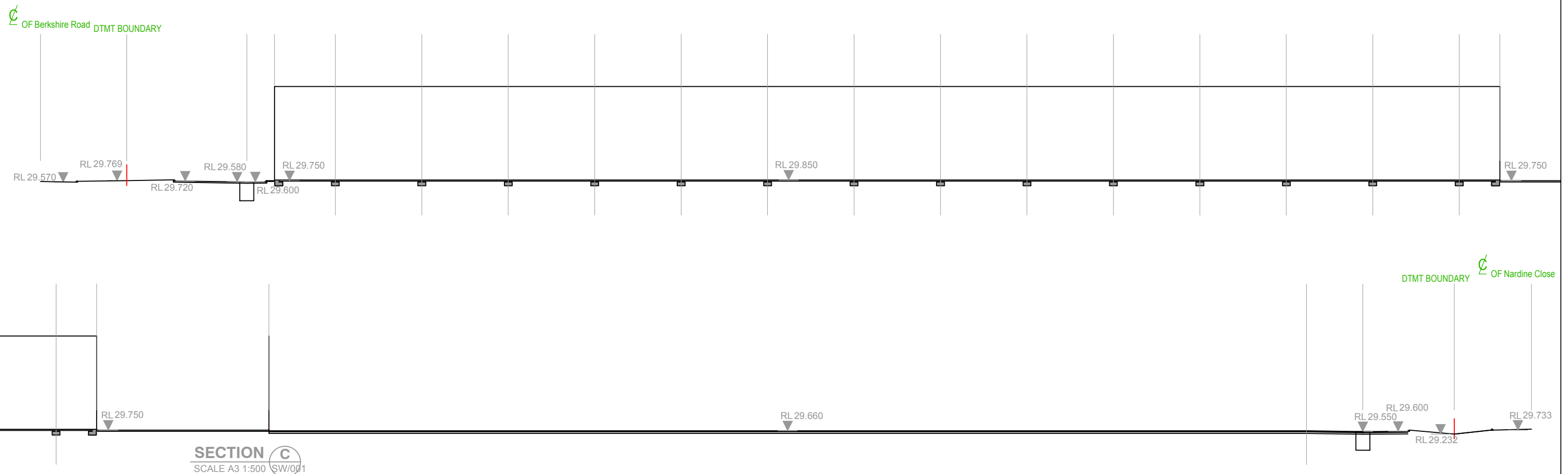
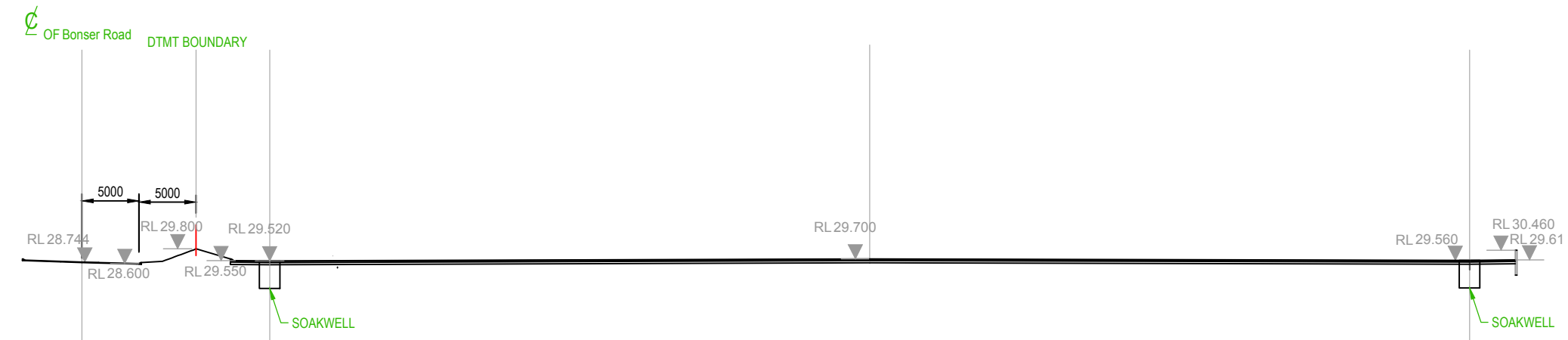
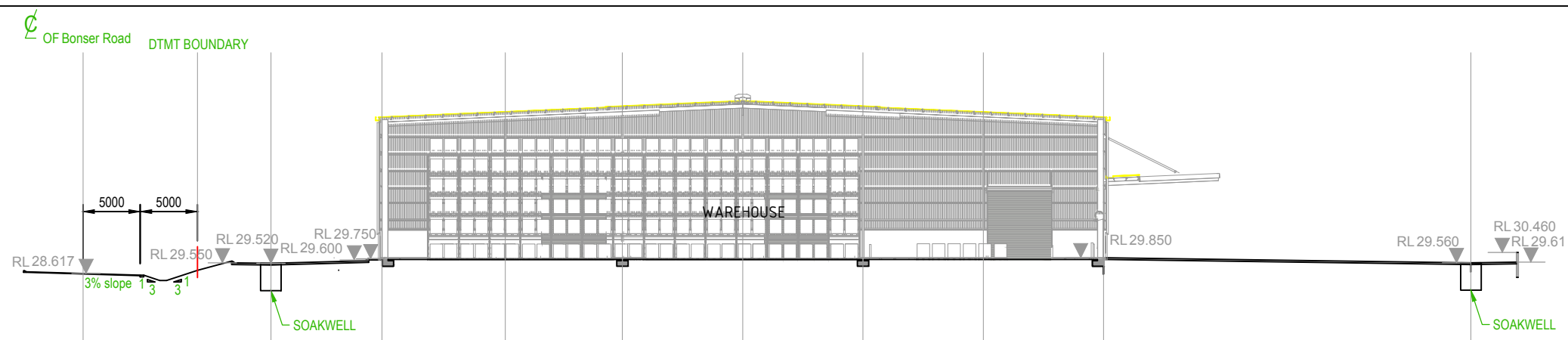


DTMT CONSTRUCTION CO.
29 Wellard Street Bibra Lake WA 6163
Tel : 08 9494 4000 Fax : 08 9494 4999
A.B.N. 46 960 821 956

Drawing Title:
STORMWATER DRAINAGE PLAN

Address:
**281,283,285,287 BERKSHIRE RD
FORRESTFIELD**

FOR CONSTRUCTION			
Reviewed :			
Scale (A3) : 1: 1000		Date : 23.11.2022	
Designed By :		Checked by :	
Drawing No: J 2283 / FF/SW/ 001		Revision: 1	



Rev	Description	Date	App.
0	FOR PLANNING APPROVAL	08.02.23	-
1	FOR PLANNING APPROVAL	16.03.23	-

dtmt
construction

DTMT CONSTRUCTION CO.
29 Wellard Street Bibra Lake WA 6163
Tel : 08 9494 4000 Fax : 08 9494 4999
A.B.N. 46 960 821 956

Drawing Title:
STORMWATER DRAINAGE
SECTION A,B & C

Address:
281,283,285,287 BERKSHIRE RD
FORRESTFIELD

FOR CONSTRUCTION			
Reviewed :			
Scale (A3) : 1: 500		Date : 12.12.2022	
Designed By :		Checked by :	
Drawing No: J 2283 / FF/SW/ 002		Revision: 1	



Low Impact Development
Consulting

Waste Management Plan & Operations Guide

Warehouse Development

Berkshire Rd Forrestfield WA

Prepared for: DTMT Constructions

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The content of this document represents the entirety of work output or recommendations offered by LID Consulting for this particular project. This content supersedes all other verbal discussions undertaken by LID Consulting representatives in relation to this project.

Commercial waste calculations are based on rates provided by government organisations and adopted and used as an industry standard. Bin numbers and spatial requirements have been calculated in accordance with these guidelines. The end user requirements may vary from this depending on the business use, type and operational practice.

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 LID acknowledges and pays respect to the Australian Aboriginal and Torres Strait Islander people, to their ancestors and elders, past, present and emerging, as the traditional custodians of the lands upon which we work and live. We recognise Aboriginal and Torres Strait Islander people's deep cultural and spiritual relationships to the water, land and sea, and their rich contribution to society.

1 Waste Summary

1.1 Proposed Development

Address:	Berkshire Rd Forrestfield WA
Type:	Warehouse Development
Stages:	Stage 1: Warehouse 1 & Transport Depot Stage 2: Warehouse 1 & Warehouse 2

The proposed site will be developed in two stages. Stage 1 will comprise of Warehouse 1 and a Transport Depot. Stage 2 will comprise of redeveloping the depot site into a second warehouse, Warehouse 2. There will be separate tenants in each Warehouse and Transport depot. Warehouse tenants are currently undetermined.

A central internal roadway connects all of the garaging with vehicular access from Berkshire Road, Bonser Road and Nardine Close. Each warehouse and the transport depot has an individual proposed bin storage area with direct access to the internal roadway or Nardine Close.

DTMT Constructions currently have a transport depot operating that has been used as an example to calculate expected waste streams and waste volumes. As the warehouse tenants are currently unknown, specific waste requirements will be informed once the tenant is confirmed and the site is operational.

Space for the collection, separation and storage of waste and recyclables has been provided, including opportunities for on-site management of comingled recycling, cardboard/paper, e-waste and landfill, along with the future provision of food waste and glass recycling as appropriate. Space for speciality waste streams have also been incorporated into the waste management plan.

There is space for additional bins should waste generation rates require these.

1.2 Waste Collection Summary

1.2.1 Stage 1: Warehouse 1 and Transport Depot

A private waste collection service is proposed to collect the following bins at the indicated frequency. The bins will be collected onsite from within the bin store area.

Commercial Waste	Private Collection Service – collection onsite	
Warehouse 1		
Waste streams	No. of bins and capacity	Collection frequency
Co-mingled Recycling	1 x 4.5m³	Weekly collection
Cardboard and paper	1 x 4.5m³	Weekly collection
Glass*	1 x 120L	(future provision)
Organic Food Waste*	1 x 120L	(future provision)
Landfill	1 x 3m³ & 1 x 4.5m³	Weekly collection
Green Garden waste	N/A	N/A

Hardwaste	Stored within specialty waste area	As often as required to maintain space
E-waste	1 x 240L	As often as required to maintain bin
Specialty Waste [^]	As required to suit generation in each individual warehouse.	As often as required to maintain bin(s)
Smaller consumable recyclables: - Batteries - Light globes - Soft plastics - Printer cartridges	Optional but recommended that a space be allowed for additional 40L bins or a stack of tubs to allow separate storage of these other waste streams.	When bin/tub is full –building management is to arrange items to be collected or set to recycling facility.

Transport Depot		
Waste streams	No. of bins and capacity	Collection frequency
Co-mingled Recycling	1 x 240L	Fortnightly collection
Cardboard and paper	1 x 240L	Fortnightly collection
Glass*	1 x 120L	(future provision)
Organic Food Waste*	1 x 120L	(future provision)
Metal Recycling	1 x 9m ³	Monthly
Landfill	1 x 9m ³	Monthly
Green Garden waste	N/A	N/A
Hardwaste	Stored within specialty waste area	As often as required to maintain space
E-waste	1 x 240L	As often as required to maintain bin
Specialty Waste [^]	As required to suit generation in each individual warehouse.	As often as required to maintain bin(s)
Smaller consumable recyclables: - Batteries - Light globes - Soft plastics - Printer cartridges	Optional but recommended that a space be allowed for additional 40L bins or a stack of tubs to allow separate storage of these other waste streams.	When bin/tub is full –building management is to arrange items to be collected or set to recycling facility.

* While currently not required, collections of all streams will be required once the municipality's regulations are introduced as discussed in [Section 2.1](#). Each tenement has space available to store 4 bins.

[^] Individual warehouse units may generate larger quantities of different waste types. These are to be separated and recycled where possible.

1.2.2 Stage 2: Warehouse 1 and Warehouse 2

A private waste collection service is proposed to collect the following bins at the indicated frequency. The bins will be collected onsite from within the bin store area.

Commercial Waste Private Collection Service – collection onsite		
Warehouse 1		
Waste streams	No. of bins and capacity	Collection frequency
Co-mingled Recycling	1 x 4.5m ³	Weekly collection
Cardboard and paper	1 x 4.5m ³	Weekly collection
Glass*	1 x 120L	(future provision)
Organic Food Waste*	1 x 120L	(future provision)
Landfill	1 x 3m ³ & 1 x 4.5m ³	Weekly collection
Green Garden waste	N/A	N/A
Hardwaste	Stored within specialty waste area	As often as required to maintain space
E-waste	1 x 240L	As often as required to maintain bin
Specialty Waste^	As required to suit generation in each individual warehouse.	As often as required to maintain bin(s)
Smaller consumable recyclables:	Optional but recommended that a space be allowed for additional 40L bins or a stack of tubs to allow separate storage of these other waste streams.	When bin/tub is full –building management is to arrange items to be collected or set to recycling facility.
- Batteries - Light globes - Soft plastics - Printer cartridges		
Warehouse 2		
Waste streams	No. of bins and capacity	Collection frequency
Co-mingled Recycling	1 x 4.5m ³	Weekly collection
Cardboard and paper	1 x 4.5m ³	Weekly collection
Glass*	1 x 120L	(future provision)
Organic Food Waste*	1 x 120L	(future provision)
Landfill	1 x 3m ³ & 1 x 4.5m ³	Weekly collection
Green Garden waste	N/A	N/A
Hardwaste	Stored within specialty waste area	As often as required to maintain space
E-waste	1 x 240L	As often as required to maintain bin
Specialty Waste^	As required to suit generation in each individual warehouse.	As often as required to maintain bin(s)

Smaller consumable recyclables:	Optional but recommended	
- Batteries - Light globes - Soft plastics - Printer cartridges	that a space be allowed for additional 40L bins or a stack of tubs to allow separate storage of these other waste streams.	When bin/tub is full –building management is to arrange items to be collected or set to recycling facility.

* While currently not required, collections of all streams will be required once the municipality's regulations are introduced as discussed in [Section 2.2](#). Each tenement has space available to store 4 bins.

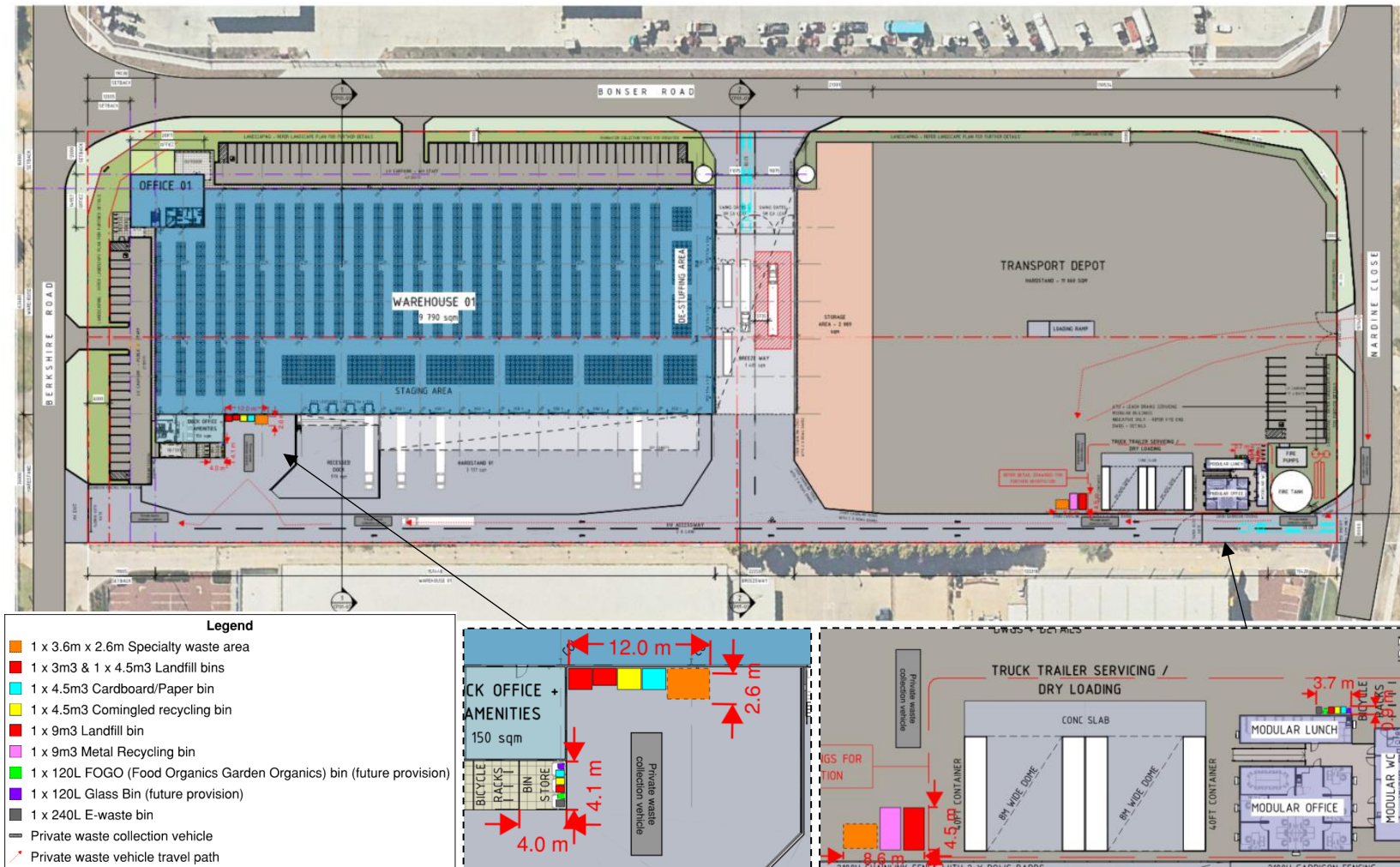
^ Individual warehouse units may generate larger quantities of different waste types. These are to be separated and recycled where possible.

The approved Waste Management Plan (WMP) will be the model to be adopted for this development. Detailed design and as-built installation must incorporate the design proposed and approved under this WMP. Any revisions of the WMP or changes to the approved waste system of the development may require Council approval and may require a re-submitted Waste Management Plan. More detail is contained within this report.

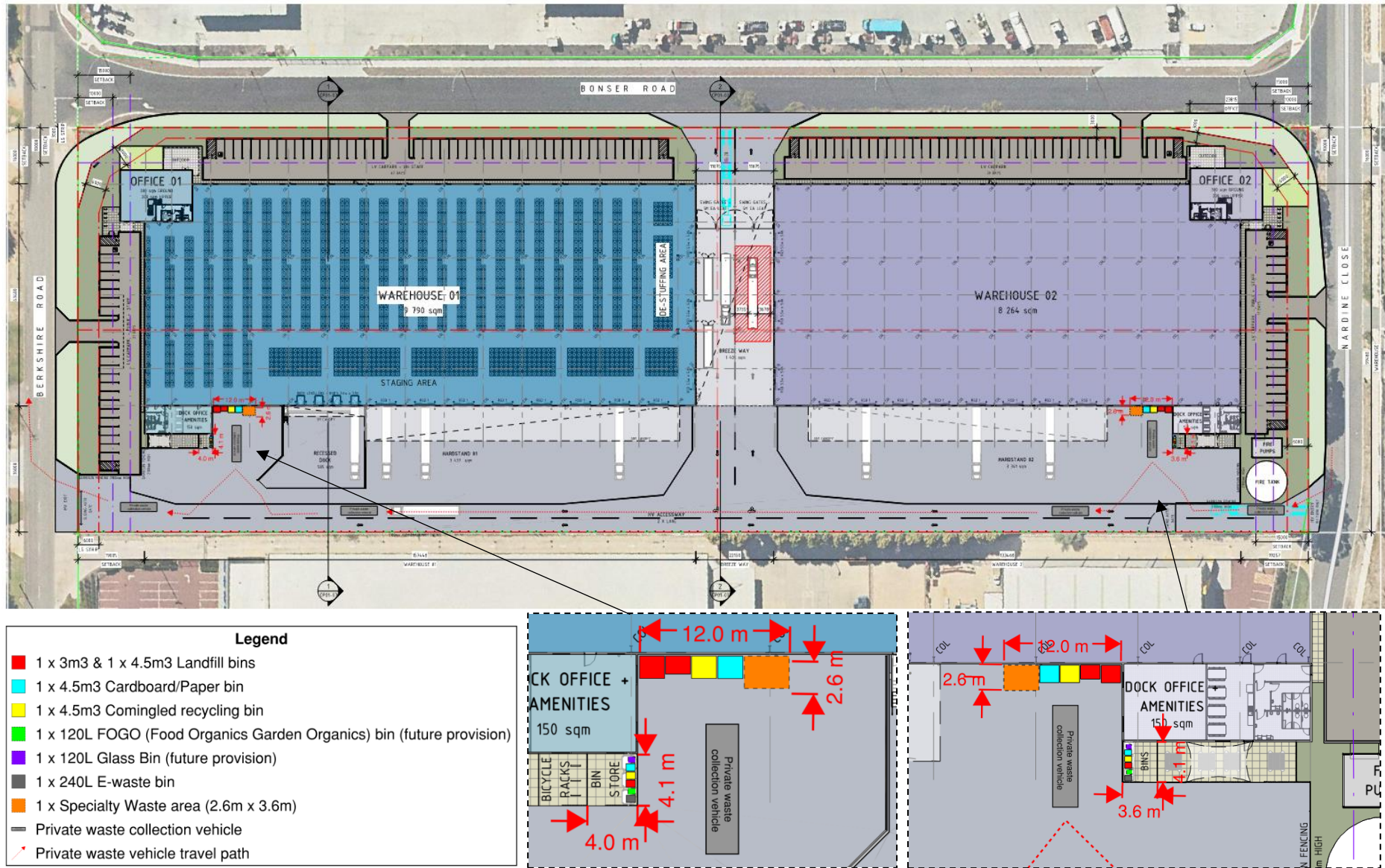
1.3 Bin Store(s) & Collection Plan

Proposal of the bin storage areas accommodating cardboard and comingled recycling, landfill, e-waste and specialty waste (including metal recycling), along with the future provision of food waste and glass recycling as required. Private waste contractors will be responsible for collecting, emptying and returning bins to the bin storage areas.

Stage 1: Warehouse 1 and Transport depot



Stage 2: Warehouse 1 and Warehouse 2



2 Waste Management Plan

Low Impact Development (LID) Consulting was engaged by Client Name to assess the proposed development at Berkshire Rd Forrestfield WA to provide a Waste Management Plan (as required by Statutory Planning).

A waste management analysis has been undertaken based on the following documents:

- a) Local Government Waste Plan City of Kalamunda
- b) WALGA Commercial and Industrial Waste Management Plan Guidelines: A resource for Western Australian Local Government, Developers, Building Managers and Business Owners
- c) Email correspondence with Lizzie Curtis (Supervisor Waste Services) 19th April 2023

This report is based on the drawing sets:

- Stage 1: CP-01-01, Revision C, dated JFA 2022 prepared by Jeff Freeman Architects
- Stage 2: CP-01-01, Revision G, dated JFA 2022 prepared by Jeff Freeman Architects

2.1 Future Waste Streaming

A headline commitment in Western Australia's *Waste avoidance and resource recovery strategy 2030* is to roll out a consistent three-bin kerbside collection system. This includes separation of food organics and garden organics (FOGO) from other waste categories, by all local governments in the Perth and Peel regions by 2025.

The City of Kalamunda will plan to implement a residential Food Organic and Garden Organic (FOGO) kerbside collection in 2024.

The separation of glass collection services is also being adopted in some states across Australia, including Victoria and New South Wales. Best practice is to incorporate the future provision of these new waste streams, giving the site capacity for additional waste streams in the future.

Generally, all new developments will look to incorporate space for these waste streams now in the planning phase. **Non-residential developments are also to implement these waste streams to ensure as much waste to landfill is diverted into recycling streams.**

2.2 Council Collection Constraints

The following issues / constraints were key considerations in preparing this waste collection strategy:

- a) Council has a limited commercial service only supplying landfill and comingled recycling bins. A private waste contractor is proposed to manage the volume of anticipated waste onsite.
- b) The combination of a Council collection service and a Private contractor service has not been proposed as this is less cost effective and less efficient.
- c) Onsite collection is the most feasible option with waste trucks able to enter and exit the site in a forward direction traversing along the internal driveway.

2.3 Proposed Commercial Waste Solution

2.3.1 Stage 1: Warehouse 1 and Transport Depot

Tenancy/space	Area
Transport Depot	
Office	184m ²
Site	11660m ²

Warehouse 1	
Office	650m ²
Warehouse	9790m ²

Site Layout: Refer Bin Store & Collection Plan - **Section 1.3.**

Collection Type: Private collection service to collect all waste streams.

Collection Location: From within the development.

Bin Store Location: Refer Bin Store & Collection Plan - **Section 1.3.**

Base Rates: Refer WALGA Commercial and Industrial Waste Management Plan Guidelines: A resource for Western Australian Local Government, Developers, Building Managers and Business Owners

Warehouse 1					
Commercial	Private collection service		Proposed solution		
	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency
Co-mingled Recycling	Refer Appendix 2 - Waste rates & Calculation	7308L of recycling	1	4.5m ³	Once weekly
Cardboard / Paper			1	4.5m ³	Once weekly
Organic Food Waste		Future provision	1	120L*	Future provision
Glass		Future provision	1	120L*	Future provision
Landfill		7308L to landfill	1 1	3m ³ 4.5m ³	Once weekly
Green Garden Waste			NA	NA	As required
Hard Waste	Stored within Specialty waste area See <u>Section 2.6</u> & <u>Appendix 4</u> for Bulky Hardwaste Collections & Recycling.		NA	NA	As often as required to maintain space
E-waste	See <u>Section 2.7</u> & <u>Appendix 4</u> for E-Waste Collections & Recycling.		1	240L	As often as required to maintain bin
Specialty Waste	3.6 x 2.6m space in each warehouse				

	• Soft plastics • Scrap metal • Timber pallets • Styrene See Section 2.9 & Appendix 4 for Bulky Hardwaste Collections & Recycling.	As required to suit generation in each individual warehouse.		As often as required to maintain bin(s)
Consumable Recyclables	1 bin per waste stream or a stack or tubs for: • Batteries • light bulbs • soft plastics • printer cartridges • other recyclable item See Appendix 4 for more information.	4	40L	As often as required to maintain bins

Transport Depot					
Commercial	Private collection service		Proposed solution		
	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency
Co-mingled Recycling	Refer Appendix 2 - Waste rates & Calculation	129L of recycling per week	1	240L	Once fortnightly
Cardboard / Paper			1	240L	Once fortnightly
Organic Food Waste		Future provision	1	120L*	Future provision
Glass		Future provision	1	120L*	Future provision
Metal recycling		2250L of recycling	1	9m ³	Monthly
Landfill		2250L to landfill	1	9m ³	Monthly
Green Garden Waste			NA	NA	As required
Hard Waste	Stored within Specialty waste area See Section 2.6 & Appendix 4 for Bulky Hardwaste Collections & Recycling.		NA	NA	As often as required to maintain space
E-waste	See Section 7 & Appendix 4 for E-Waste Collections & Recycling.		1	240L	As often as required to maintain bin

Specialty Waste	3.6 x 2.6m space in each warehouse • Soft plastics • Scrap metal • Timber pallets • Styrene See Section 2.9 & Appendix 4 for Bulky Hardwaste Collections & Recycling.	As required to suit generation in each individual warehouse.		As often as required to maintain bin(s)
Consumable Recyclables	1 bin per waste stream or a stack or tubs for: • Batteries • light bulbs • soft plastics • printer cartridges • other recyclable item See Appendix 4 for more information.	4	40L	As often as required to maintain bins

NOTE: Streaming of waste into dedicated bins is encouraged where possible. The type of recycling bins nominated above may be swapped to suit the type of recyclable commercial waste generated (while not altering the number of bins overall). Possible additional separate waste streams include:

- hard plastics
- soft plastics
- cardboard / paper (especially for retail and office tenancies)

2.3.2 Stage 2: Warehouse 1 and Warehouse 2

Tenancy/space	Area
Warehouse 1	
Office	650m ²
Site	9790m ²
Warehouse 2	
Office	650m ²
Warehouse	8264m ²

Site Layout: Refer Bin Store & Collection Plan - **Section 1.3**.

Collection Type: Private collection service to collect all waste streams.

Collection Location: From within the development.

Bin Store Location: Refer Bin Store & Collection Plan - **Section 1.3**.

Base Rates: Refer WALGA Commercial and Industrial Waste Management Plan Guidelines: A resource for Western Australian Local Government, Developers, Building Managers and Business Owners

Warehouse 1					
Commercial	Private collection service		Proposed solution		
	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency
Co-mingled Recycling	Refer Appendix 2 - Waste rates & Calculation	7308L of recycling	1	4.5m ³	Once weekly
Cardboard / Paper			1	4.5m ³	Once weekly
Organic Food Waste		Future provision	1	120L*	Future provision
Glass		Future provision	1	120L*	Future provision
Landfill		7308L to landfill	1 1	3m ³ 4.5m ³	Once weekly
Green Garden Waste			NA	NA	As required
Hard Waste	Stored within Specialty waste area See Section 2.6 & Appendix 4 for Bulky Hardwaste Collections & Recycling.		NA	NA	As often as required to maintain space
E-waste	See Section 2.7 & Appendix 4 for E-Waste Collections & Recycling.		1	240L	As often as required to maintain bin
Specialty Waste	3.6 x 2.6m space in each warehouse • Soft plastics • Scrap metal • Timber pallets • Styrene See Section 2.9 & Appendix 4 for Bulky Hardwaste Collections & Recycling.		As required to suit generation in each individual warehouse.		As often as required to maintain bin(s)
Consumable Recyclables	1 bin per waste stream or a stack or tubs for: • Batteries • light bulbs • soft plastics • printer cartridges • other recyclable item See Appendix 4 for more information.		4	40L	As often as required to maintain bins

Warehouse 2					
Commercial	Private collection service		Proposed solution		
	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency
Co-mingled Recycling	Refer Appendix 2 - Waste rates & Calculation	6240L of recycling	1	4.5m ³	Once weekly
Cardboard / Paper			1	4.5m ³	Once weekly
Organic Food Waste		Future provision	1	120L*	Future provision
Glass		Future provision	1	120L*	Future provision
Landfill		6240L to landfill	1 1	3m ³ 4.5m ³	Once weekly
Green Garden Waste			NA	NA	As required
Hard Waste	Stored within Specialty waste area See Section 2.6 & Appendix 4 for Bulky Hardwaste Collections & Recycling.		NA	NA	As often as required to maintain space
E-waste	See Section 2.7 & Appendix 4 for E-Waste Collections & Recycling.		1	240L	As often as required to maintain bin
Specialty Waste	3.6 x 2.6m space in each warehouse • Soft plastics • Scrap metal • Timber pallets • Styrene See Section 2.94 & Appendix 4 for Bulky Hardwaste Collections & Recycling.		As required to suit generation in each individual warehouse.		As often as required to maintain bin(s)
Consumable Recyclables	1 bin per waste stream or a stack or tubs for: • Batteries • light bulbs • soft plastics • printer cartridges • other recyclable item See Appendix 4 for more information.		4	40L	As often as required to maintain bins

NOTE: Streaming of waste into dedicated bins is encouraged where possible. The type of recycling bins nominated above may be swapped to suit the type of recyclable commercial waste

generated (while not altering the number of bins overall). Possible additional separate waste streams include:

- hard plastics
- soft plastics
- cardboard / paper (especially for retail and office tenancies)

2.4 Food Waste Collections

Food waste is increasingly being collected and treated as a circular economy resource rather than a linear waste item that goes to landfill. In a country such as Australia with a very shallow soil profile, composted food waste provides valuable vegetative matter that re-invigorates soil fertility. The previous alternative was to landfill food waste where it decomposes underground and produces harmful greenhouse gases.

Diverting food from landfill waste. This can be achieved in a number of ways including on site composting or treatment – refer **Appendix 4** below.

Commercial collection of dedicated food waste is provided by a number of private waste collection contractors for larger multi-unit, mixed-use and commercial developments. **An organics food collection service is recommended for this type of development when required in the future.**

- a) Consideration should also be given to end of trip / processing of this waste by the engaged waste contractor to ensure this waste stream is appropriately treated and does not end up in landfill.
- b) Some current contractors using smaller waste collection vehicles that also collect organics include:
 - Waste Wise Environmental www.wastewise.com.au
 - Speedie Waste <http://www.speediewaste.com.au/index.php>
- c) Other current contractors that also collect organics include:
 - Sita – 1.5m³, 3m³ & 4.5m³ bin options (via Cleanaway) <http://www.sita.com.au/commercial-solutions/resource-recovery-recycling/organic-material/>
 - KS Environmental – 120L bins (inner metro only) <https://ksenvironmental.com.au/services/recycling-services/food-organics/>
 - Veolia – using 1.5m³ bins only (front lift) <https://www.veolia.com/anz/our-services/our-services/recycling-waste-services/recycling/organics>

2.5 Green Garden Waste

Green garden waste does not apply to this development as there is no garden area.

2.6 Bulky Hard Waste Collection

In the first instance, unwanted bulky items, clothes and other consumables should be donated to charities, sold on online or at second-hand market places if in good condition. If repairs are required, seek out repair community centres for re-purposing – Refer **Appendix 4** for more details.

- a) Hardwaste items can be taken directly to local waste recovery centres.
- b) A private waste contractor can be engaged to collect all bulky hard waste and eWaste items at a frequency to maintain the storage space.
- c) Local information regarding the disposal and recycling of common items for each Council can be found at www.recyclingnearyou.com.au

2.7 E-Waste & Battery Recycling

- a) The WA State Government is traducing a statewide ban on e-waste disposal to landfill by 2024. E-waste can contain precious metals, such as gold, copper and nickel, and rare materials of strategic value, such as indium and palladium. These precious metals could be recovered, recycled and used as valuable source of secondary raw materials.

E-waste can also contain hazardous materials and should be collected and recycled correctly to prevent harm to the environment and human health.

- a) Authorised electrical and battery waste disposal locations can be found at most council depots. A private commercial contractor can also be engaged to collect these items.



- o <https://recyclingnearyou.com.au/electrical>
- o <https://www.mobilemuster.com.au>

- o Collection stand and collection service providers also exist for batteries. See the **EcoBatt** and **Envirostream** schemes. Collection locations are provided on their websites or you can arrange to have your own onsite stand. (Ecobatt include most Woolworths stores, EnviroStream most Bunnings and Officeworks stores.)



2.8 Glass Collections

Glass is increasingly being removed from co-mingled recycling as crushed glass gets embedded in paper, cardboard and plastics and contaminates these waste streams, reducing their recycling value.

Space for additional glass bins is to be provided in all residential and commercial developments in line with potential 4-bin future systems. These bins are to be maximum 120L due to the potential weight of full bins.

2.9 Specialty Waste

Each warehouse may generate differing waste types depending on their use. 3.6 x 2.6m of dedicated waste space has been provided in each warehouse for the storage of any potential waste.

Individual warehouse occupants are to arrange for the appropriate separation, bin storage (MGB or skip bins) and collection of this waste. Preference is for each type of waste be recycled where appropriate in accordance with **Section 4** below.

Types of specialty waste may include:

- Cardboard
- Soft plastics
- Hard Plastics
- Scrap metal
- Timber pallets
- Styrene
- Oils
- Other

3 Waste Management Details

3.1 Waste Streaming & Contamination

Managing waste contamination requires the correct separation of products that are recycled differently. This is called waste streaming. Correct streaming requires consideration by stakeholders that generate, dispose of or manage waste.

Good waste streaming reduces contamination to ensure more effective recycling. Refer to **Section 3.2 below** and **Appendix 4** for Better Practice Waste Management links.

3.2 Preliminary Waste Streaming

The development will include space in kitchens or central hubs for the initial separation/streaming of waste. These cupboards or spaces are to be readily accessible to all occupants are to accommodate separate bins or drawers for the following major waste streams:

1. Co-mingled plastic and paper
2. Glass
3. Food organics
4. Soft plastics
5. Batteries / eWaste
6. Bulky hard waste
7. Landfill

3.3 Management Responsibilities

Building management is responsible for all aspects of waste management including implementing adequate safe operating procedures. Items to be addressed by the Building Management include:

- a) Requesting a copy of the endorsed Waste Management Plan from Council if they do not have it
- b) Ensuring minimal contamination occurs between waste streams to maximise recycling. This is to be achieved by:
 - o Providing separate bins for each waste stream (including recycling, glass, food organics & landfill) in all work areas for staff to appropriately stream waste. See **Section 4.1**
 - o Routine inspection of bins in bin stores to ensure their appropriate use.
 - o Providing information to staff with guides of how to using the various bin systems e.g. boxes to be flattened, containers for recycling washed, bins to not be over-full. See **Section 3.10** for further information about Signage, Education & Safety.
 - o Ensuring staff are aware of good recycling practices per **Section 4.1** of this report.
 - o Providing feedback to staff if the system is not working properly. Undertaking a waste audit should it be suspected waste is not being placed in the correct bins.
- c) Ensuring all staff are aware of their responsibility with regard to waste & bin management.

- d) Ensuring the waste contractor has access to the site and bin store area on the days of collection and for also providing information to make building occupants aware that waste vehicles enter the site.
- e) Allocation of responsibility to the contractor to retrieve bins directly from the bin store area and return emptied bins at the time of collection. Responsibility should include ensuring the contractor collects any waste that spills from the bins during emptying.
- f) Cleaners & staff are responsible for placing waste in the appropriate colour coded bins in provided in work areas and then transferring them to corresponding bin in the bulk bin store to ensure all waste types are collected and recycled where possible.
- g) That bins and bins store areas are monitored regularly with regular cleaning of the bins and bin store spaces and clean-up after collection if necessary.
- h) Management and coordination of bulky hard waste, e-Waste and other waste collections.
- i) Managing communal composting areas (if applicable).

3.4 Individual Occupants Responsibilities

The staff are responsible for their own waste. Items to be addressed in maintaining the system include:

- a) Facility staff are responsible for placing their waste in the appropriate colour coded bins. This is to ensure all waste types are collected and recycled where possible and contamination of waste streams is minimised.
- b) That bins and bins store areas are monitored regularly operational with regular cleaning of the bins and bin store spaces and clean-up after collection if necessary.
- c) Management and coordination bulky hard waste, eWaste and other waste collections.
- d) Managing communal composting areas (if applicable).
- e) **Ensuring landfill placed in plastic bags** before placement into bins
- f) **Ensuring recycling materials are not bagged** and are to be placed loosely into the recycling bins. (Items in plastic bags in recycling bins are not recycled). Recyclable items in bin collections include:
 - o Rigid plastic containers
 - o Paper, cardboard
 - o Glass bottles and jars
 - o Steel cans, aluminium cans and aluminium foil are among items that can be recycled.

But exclude:

 - o Soft plastic bags
- g) As of 1 January 2022 there has been be a Stage 1 regulation ban on single-use or disposable plastics from sale or supply across Western Australia. These products include:
 - o Plastic drinking straws and drink stirrers
 - o Plastic cutlery, plates and bowls
 - o Unlidded takeaway food containers and cups for cold beverages
 - o Expanded polystyrene food containers
 - o Thin plastic shopping bags

State Government information relating to Stage 1 can be found at:
<https://www.wa.gov.au/organisation/departments-of-water-and-environmental-regulation/western-australias-plan-plastics-stage-1>

- h) Stage 2 of the WA Plan for Plastics came into effect on 27 February 2023. It includes a second set of single-use or disposable plastic items and materials that will be phased out between 1 September 2023 and 1 July 2025. The Stage 2 regulations ban the sale and supply of:
- Loose and moulded expanded polystyrene packaging
 - Degradable plastics
 - Produce bags
 - Coffee cups and lids
 - Lids for cups, bowls, trays, plates and takeaway containers
 - Cotton buds with plastic stems
 - Microbeads

State Government information relating to Stage 2 can be found at:
<https://www.wa.gov.au/organisation/departments-of-water-and-environmental-regulation/western-australias-plan-plastics-stage-2>

3.5 What Goes in Each Bin

This information can be found at:
<https://www.kalamunda.wa.gov.au/residents/waste-recycling/bins-collections>

3.6 Occupational Health & Safety

A preliminary OHS risk assessment has been included to identify potential OHS issues, however this risk assessment does not replace the need for the Management and collection contractors to complete their own OHS assessment for the bin collection process. See **Appendix 1** for further detail.

3.7 Bin Store Area Design

The Bin store area design/location must include the following:

- a) All screening should be suitably designed for durability and to blend in with the development. Floor and wall surfaces are to be appropriately durable and easily cleaned.
- b) Doors located in the allocated storage areas should be designed for easy access of larger bins sizes and hard waste.
- c) Space suitable for bin wash down is to be available. If this is the bin store then the floor is to be graded to a waste outlet with a litter trap. Alternately, a private contractor can be arranged to swap dirty bins for clean ones on a regular basis.
- d) If a bin wash is installed, a water tap and hose installed in or near the bin wash areas and correct drainage to sewer (never direct waste to storm water drains) should be designed in accordance with the relevant EPA Bunding Guidelines. Drains to the sewer to be located undercover to prevent rainwater infiltration.
- e) Bin stores or bins should be vermin proof - particularly where food waste is included. Ensure bin lids are closed and lockable if needed or the bin store is an enclosed space and considered to be largely vermin proof.

- f) A waterproof power point in or near the bin store.
- g) Adequate mechanical or natural ventilation if not outdoors.
- h) Ensure adequate lighting is provided in accordance with National Construction Code (NCC) guidelines if to be accessed after hours.
- i) Space for a tug or bin lifter if required by the waste contractor(s) / facility management.
- j) Meter boxes should not be included in bin store areas.

3.8 Bin Store Area Access

A layout that allows access to all of the bins with adequate size to allow easy movement/transfer of the required number of bins.

- a) Manoeuvrability within the bin store area is open, with 1m minimum to walk beside bins.
- b) There is to be no significant step at any threshold between the bin store area and the point of collection.

3.9 Bin Types & Bin Sizes

3.9.1 Mobile Wheelie Bins (MGBs)

The following sizes are indicative bin sizes based on the Sustainability Victoria Better Practice Guide specified sizes (Appendix 9). These sizes are the size allowances required by most Councils in bin store areas. Allow 100mm between 4 wheel bins and 50mm between 2 wheel bins for movement.



Size	Width	Depth	Height	Footprint
120L	485mm	560mm	940mm	0.27m ²
240L	580mm	735mm	1080mm	0.43m ²

Standard bin colours (refer AS4123.7)	
Landfill	Red
Co-mingled recycling	Yellow
Green organics	Light Green
Glass	Purple
Paper and cardboard	Light Blue
E-waste	Light Grey

* NOTE: size may vary between Councils and contract suppliers

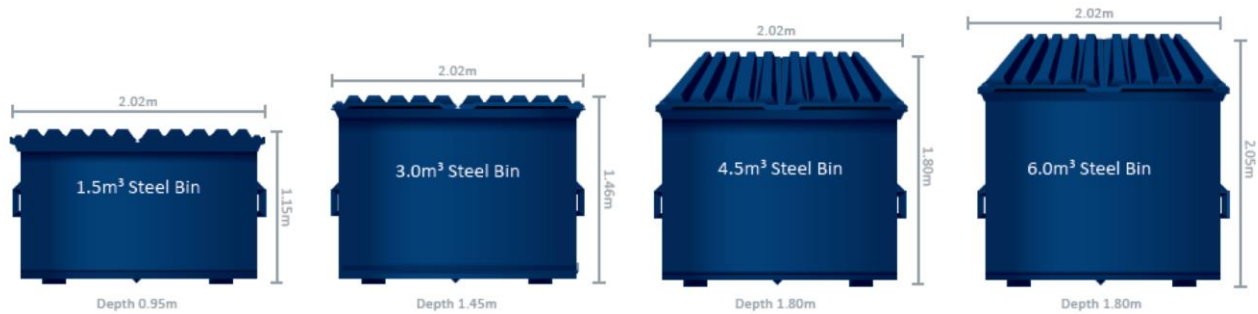
Alternative bin sizes - Different bin suppliers provide different size bins, although these should only be used exceptional cases and may cause issues with Councils.

	Best Practice Guide – Vic – mm D x W x H	Sulo bins	Waste Wise bins	Sita bins
120L bins	580D x 485W x 940H	545D x 480W x 930H	561D x 481W x 920H	-
240L bins	735D x 580W x 1080H	730D x 585W x 1060H	740D x 582W x 1072H	-

3.9.2 Skip Bins

Larger metal steel bins may be used for larger commercial developments. These require larger front fork lift waste collection vehicles with up to 6m head clearance. As full bins are heavy, careful consideration is required for the placement and collection of these bins within the waste storage area.

Sizes & clearances may vary between different collection contractors.



3.9.3 Internal Bins – Commercial

Correct streaming in commercial developments requires consideration by staff, cleaners and visitors. It needs to be clear for all users as to where and how they dispose of their waste.

- Correct streaming in these areas in the first instance reduces contamination to ensure more effective recycling occurs.
- Separation of landfill and recyclables is to initially occur in all work areas and kitchenettes and then in bin stores. For this reason, the site will include streamed waste bins on each floor or work area. Cleaners and/or staff would then transfer already streamed waste to the corresponding bin in the main storage area.
- Commercial waste is to be transferred to the bin store with minimal manual handling. The warehouses may include a trolley to cart bags of waste or wheeled bins to transfer waste.



Examples of streamed commercial waste bins. Larger sizes may be required to suit development



Example of trolley used for moving commercial waste to bulk bin storage location



Example of smaller 60L wheeled bins allow for easier transfer of waste

All bins are to be placed alongside each other to ensure recycling is easy.

- d) Outdoor areas where people congregate, where possible should be smoke free zones. Locations where smokers congregate should include an ash box installed on the litter bins or a wall. This will help reduce cigarette butts being left on the ground and entering the stormwater system and creeks.



Example of cigarette ash bin



Examples of a stack of tubs for small recyclable waste streams such as batteries, light globes and printer cartridges.

3.10 Signage, Education & Safety

It will be the responsibility of the Building Management to ensure all staff and cleaners have all of the material available to them and that they adhere to the required practices regarding waste management, sustainability and promoting waste minimisation.

- All education material will be in accordance with Council requirements
- Ensure permanent "No Standing" sign / text and line markings are visible in the car park area, indicating the parameters of the rubbish collection zone to ensure access for the collection vehicle.
- Directional signage should be installed to direct staff and bin collectors to the bin storage areas.
- Instructional signage within bin stores is to indicate which bin is for landfill and which is for recyclables or other waste streams.



Simple, brightly coloured signs to quickly communicate what items are acceptable for each bin.

3.11 Waste Vehicle Requirements

- a) The same contractor will be used for each warehouse and transport depot.
- b) Berkshire Road, Bonser Road and Nardine Close are typical roads and no vehicle size limitation should apply. The waste contractor will confirm if MRV or HRV vehicles are used for this site.
- c) The waste contractor will be responsible for retrieving, emptying and returning bins to/from the bin store at the time of collection.
- d) The waste vehicle is to enter the transport depot and/or internal roadway from Nardine Close to service the bin storage areas before exiting the site via the one way internal roadway onto Berkshire Road in a forward direction.
- e) Building Management is responsible for ensuring the waste contractor has access to the site and bin store on the days of collection. If there is a security code or key required for access, the contractor should be provided with these so they may access the bin store on the specified collection days.

Vehicle	Typical size
Rear Loading	8.8m – 10m long x 2.6m wide truck – 4.0m head clearance (Medium Rigid Vehicles)
Side loading automated arm	Sizes vary from MRV to HRV
Front Fork Loading automated arm	10.4m – 12m long x 2.6m wide – 5.5m head clearance (Heavy Rigid Vehicles)
Rear Hook Loading (compactors)	9.7m long x 2.6m wide – 5.5m head clearance
NOTE: Larger vehicles may need to be assessed for clearances prior to entering the site.	

3.12 Traffic Management

- a) Traffic management along Berkshire Road, Bonser Road and Nardine Close should not be an issue with collection occurring within the property boundary. The roads are considered local industrial roads and traffic volumes would not be expected to be high.
- b) Appropriate engineering standards will need to be addressed in the detailed design stage to ensure adequate pavement depths and clearance height.

3.13 Collection Times

Collection times will be in coordination with the building management.

Collection times: Commercial waste – bin collection shall be in accordance with Council and Environmental noise in Western Australia EPA Act 1986, through the Environmental Protections (noise) Regulations 1997, that includes:

- Collections be restricted to the hours of 7am — 7pm Monday to Saturday, or 9am – 7pm Sundays and public holidays.

Waste collection from private services are best suited on an alternate day to the Council service and completed at times of least interference/inconvenience to the local amenity and traffic conditions.

3.14 Noise management

Minimizing noise associated with waste movement and collections include:

- a) Locating bin stores and collection points at an appropriate distance from adjoining properties;
- b) Minimising the need for the waste vehicle to reverse;
- c) Collections occurring during the stipulated collection times restrict the hours of noise from collections.
- d) Collection vehicles should not break up bottles at the point of collection, only once off site. Compaction of waste should only be carried out whilst waste vehicles are on the move and off-site.

3.15 Response to Increasing Waste

- a) A waste audit can be undertaken to understand the content of the waste bins. Audits provide feedback to clients of good or poor recycling practices. Images can be helpful to convey feedback.
- b) If landfill bins consistently overflow, then staff or cleaners are to be directed to educational material as to the appropriate streaming of waste including food and other recyclables. (see **Section 4** below).
- c) If recycling bins continue to overflow, staff or cleaners should be reminded to crush and flatten all cardboard boxes before placing these in the recycling bin(s). It may also be appropriate to obtain an additional recycling bin.
- d) The bin store area has spare space to accommodate additional bins if required.
- e) The last choice option is for more regular collections to occur.

3.16 Reducing Odour

Odour from waste primarily emanates from bin store areas. Control of odour must occur in the bin store area with the provision of suitable natural or mechanical ventilation. If installed the mechanical ventilation system for the bin storage area must not cause a public health nuisance (noise and odour generation) and comply with EPA requirements and in accordance with the ventilation requirements of the Building Code of Australia and AS 1668.2.

- a) As the large bin storage area is located outdoors and open to the air, it will be naturally well ventilated.
- b) The bin store area and bins are to be monitored and cleaned on a regular basis to remove sources of smells.

3.17 Litter Spread

- a) Litter spread is to be managed by ensuring bins are not overloaded, and lids are always closed.
- b) Litter spread is to be managed by the system of contractors collecting bins from within the property.
- c) The private collection contractor's agreement should require their pickup of any waste that spills from the bins during collections.

4 Minimising Waste to Landfill

A circular economy is a system where products and services are designed to be reused or ideally be regenerative i.e. to repair the environment. This differs from the predominantly linear model of “take, make and waste” that we have seen in the last few decades.

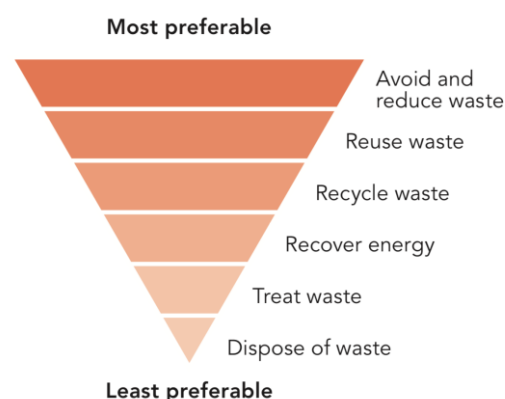
Food organics is an example of where waste can be regenerative. Food waste is now being actively used via composting to improve the quality of soils.

While occupants of buildings are generally limited in how they can impact on the design of products to make them re-useable, they can change their own and others behaviour to minimise waste.

Where possible building occupants should practice the waste reduction hierarchy.

Avoidance of landfill waste by building occupants might involve

- a) Purchase only what you will consume
- b) Purchase items of quality that can be re-used, sold on donated or up-cycled.
- c) Use re-usable drink bottles, lunch containers, shopping bags
- d) Avoid single use plastics
- e) Compost anything that once was alive



The **2025 National Packaging Targets** are supported by Australian industry and government to deliver a new and sustainable approach to packaging. They apply to all packaging that is made, used and sold in Australia.

The 2025 Targets are:

- 100% reusable, recyclable or compostable packaging.
- 70% of plastic packaging being recycled or composted.
- 50% of average recycled content included in packaging (revised from 30% in 2020).
- The phase out of problematic and unnecessary single-use plastics packaging.

In March 2020, The Australian Packaging Covenant Organisation (APCO) also released a series of material-specific sub-targets relating to the uptake of recycled content in packaging

The Australian Packaging Covenant Organisation (APCO) is a not for profit organisation leading the development of a circular economy for packaging in Australia. ¹.

¹ <https://apco.org.au/national-packaging-targets>

4.1 Good recycling practices

The following actions improve recycling outcomes.

- Empty containers and bottles of any leftover food or liquid. Ideally rinse them out.
- Generally, keep lids on all bottles even when made from another product or plastic type (as is the case with most plastic drink bottles).
- Don't put anything inside plastic bottles or containers
- Paper – if it can't be ripped, it can't be recycled due to the plastic coating.
- Ensure awareness of the **Australasian Recycling Label (ARL)** which is on an increasing number of products. The ARL indicates which components of packaging are recyclable and helps ensure better recycling of packaging waste.



- Be aware that if they are not sure whether an item is recyclable, then it should be placed in the landfill bin(s). Placing incorrect items in recycling is to be avoided as it leads to contamination of recycling streams, and complexity in recycling.
- Understand not all plastic resin codes can be recycled in all states, cities or councils. Many Council areas or waste collection contractors can only recycle a number of the plastics codes. Check with Council publications.
- Plastic resin codes 1, 2 and 5 are readily recycled and collected by most councils,
- Be aware of whether compostable packaging is home/garden compostable or requires higher temperatures as is available in commercial composting.
- Ensure compostable packaging is not placed in recycling streams. Compostable packaging is not useful as a recycled plastic as it breaks down.
- Check local waste collection / contractor requirements – some recycle all plastic resin codes, some are more restricted. Some want lids on bottles, some want them separate and in landfill.

Symbol	Description
 PETE	Clear tough plastic such as soft drink, juice and water bottles.
 HDPE	Common white or coloured plastic such as milk containers and shampoo bottles.
 V	Hard rigid clear plastic such as cordial bottles.
 LDPE	Soft flexible plastic e.g. squeezable bottles such as sauce bottles.
 PP	Hard but flexible plastic such as microwave ware, takeaway containers, some yoghurt/ice cream/jam containers, hinged lunch boxes.
 PS	Rigid, brittle plastic such as small tubs and margarine/butter containers.
 OTHER	All other plastics, including acrylic and nylon. Examples include some sports drink bottles, sunglasses, large water cooler bottles.

5 Supplementary information

5.1 Council Recycling Centre

City of Kalamunda Council Waste Directory:

<https://www.kalamunda.wa.gov.au/residents/waste-recycling>

5.2 Waste Contractors

Waste collection companies in Perth, Western Australia:

- Suez (incl Sita) www.suez.com.au/en-au
- Transpacific-Cleanaway (Ph 08 9449 3333)
- Instant Waste (Ph 08 9379 2111) <http://www.instantwaste.com.au>
- Veolia (Ph 08 9418 9300)

5.3 Other Useful Links

- PlanetARK <https://recyclingnearyou.com.au>
- Redcycle <https://redcycle.net.au>
- Sustainable Procurement Guide (for Commonwealth entities)
<https://www.awe.gov.au/sites/default/files/documents/sustainable-procurement-guide.pdf>
- Wastech www.wastech.com.au
- Western Australian Plan for Plastics Stage 2
<https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation/western-australias-plan-plastics-stage-2>

Appendix 1 - Preliminary Risk Review

Class 1 Risk = Potential to cause death or permanent injury.	Class 2 Risk = Potential to cause injury requiring medical attention.	Class 3 Risk = Potential to cause an injury treatable with first aid.
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Activity	Steps involved in completing activity & risk	Risk level	Risk mitigating measures	Implementation responsibility
Vehicle comes on site for collection	Large vehicle entering site, and reversing before exiting site. Major risk is hitting young children, the elderly or unaware people, particularly when reversing,	1 1	Vehicle driver entering site is to survey carpark for activity and proceed at 10km per hour within the site. Vehicle driver entering site is to survey the area for activity. If there is no activity near reversing location, driver to execute reverse move immediately before the situation can change. If there is activity, the driver should ensure the person/persons moving in the area are aware of the pending reversing action, and have time to stay away from the reversing zone or ensure children are away from the reversing zone. Reversing should be at very slow speed. There should be no children/elderly people in the carpark area. Reversing buzzers to be applied to all trucks.	Waste collection contractor / Building Management
Movement of waste onsite	Carting waste from the warehouse or the office to the bin store. Risk of manual handling injuries.	2-1	Tenants should ensure their bin sizes are not excessive and cannot carry too much weight to safely negotiate to the bin store. Building owner to include clause in tenants contract to ensure bin sizes are not excessive due to this risk.	Building owner/manager
Note this assessment is for consideration during the design phase of the project. It is <u>not</u> to replace a risk assessment / Safe Work Method Statement being completed by the contractor and persons undertaking the waste removal process.				

Appendix 2 - Waste rates & calculations

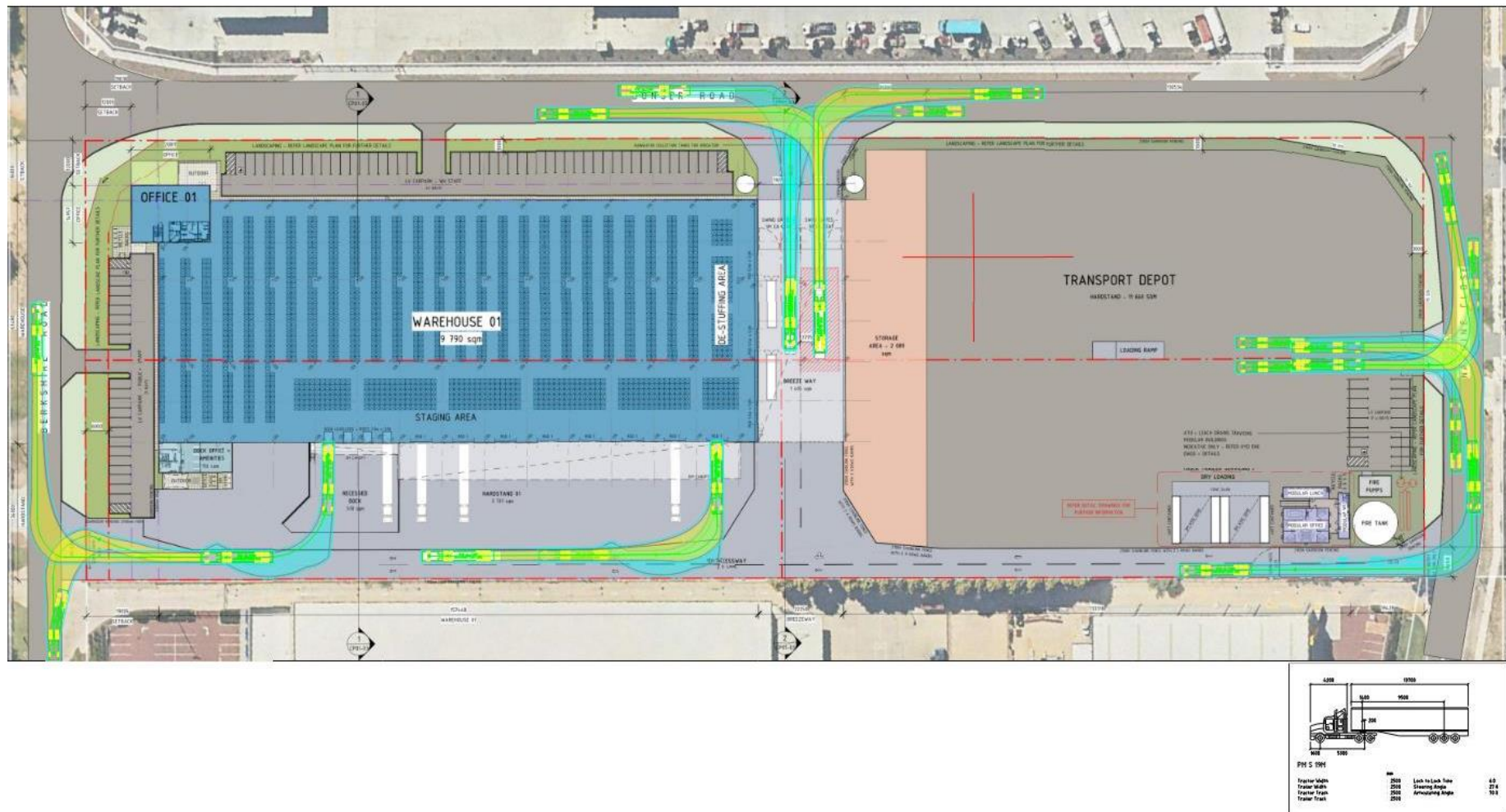
Appendix 2 - Waste Generations Calculations Berkshire Rd, Forrestfield WA



Base Calculations

	Commercial Tenancy Type	AREA (m2)	Days open	Waste Generation Rates (L/100m2/day)		Source	Waste Generated (L/Week)	
				Landfill	Recycling		Landfill	Recycling
Warehouse 1	Warehouse 1 - office space	650	7	10	10	WALGA Commercial and Industrial Waste Management Plan Guidelines	455	455
	Warehouse 1 - warehouse space	9790	7	10	10		6853	6853
		Total						7308
Transport Depot	Transport Depot - office space	184	7	10	10	Based on current DTMT Construction operations	129	129
	Transport Depot - dept area	11660	7	9m3 per month	9m3 per month		2121	2121
		Total						2250
Warehouse 2	Warehouse 2 office space	650	7	10	10	WALGA Commercial and Industrial Waste Management Plan Guidelines	455	455
	Warehouse 2 - warehouse space	8264	7	10	10		5785	5785
		Total						6240

Appendix 3 - Swept path diagrams



Appendix 4 - Better Practice Waste Recycling

Below is a range of practical information and resources to better manage &/or divert many waste types from landfill into recycling streams.

Food Organics & Garden Organics

Tips for Organic Food Waste Bins (future provision)

- Keep the food organics bins in a shady spot or well ventilated bin store
- A mix of garden, food waste & paper/cardboard (such as shredded cereal boxes, toilet rolls) which helps keep bin odours under control
- Sprinkle vinegar, baking soda, charcoal or eucalyptus oil in your organics bin to combat odours
- Purchase a Bin Kill tag that can be attached to the inside of your organics bin. The tag emits a vapour that kills flies and maggots. The product is available from Bunnings, Coles or Woolworths supermarkets.

Plastics, Glass & Aluminium

The WA Single Use Plastics ban

Western Australia have already started to phase out single-use plastics, enforceable from 1 July 2022. For WA businesses, they can no longer supply plastic shopping bags, paper shopping bags with plastic laminate, plastic straws and stirrers, cutlery, plates, bowls, food containers and expanded polystyrene food containers and trays.

From 1 October 2022, WA businesses can no longer supply disposable cups for cold drinks. For more information go to <https://plasticsbanwa.com.au>

Hard Plastics

Hard plastic containers not collected in comingled recycling coded 1-7 (excluding polystyrene) can generally be recycled. This should be checked with each council or private collection contractor. ie toys, tubs etc

Soft Plastic Recycling

Eliminating or reducing the use of single-use plastics can greatly reduce waste volumes both in residential and commercial settings. This includes straws, plastic bags and plastic wraps. Many private waste contractors can commercially collect soft Plastic.

Polystyrene

Expanded Polystyrene (EPS) is a problematic material that takes hundreds of years to breakdown in landfill. Despite 98% of the plastic packaging being air, EPS takes up large amounts of space in landfills where it can easily be blown away and enter our natural environment.

For commercial businesses, private collections should be arranged to collect and recycle this product. The following links may assist further:

- o <https://www.foamex.com.au/news/polystyrene-recycling-what-you-can-do>

Appendix 5 - Equipment

Business Recycling Equipment Catalogue

70% or more of general waste placed in commercial Landfill Bins can be recycled or diverted. The quantity and type of waste will vary from business to business. Planet Arc has developed the following catalogue for businesses to access to encourage recycling where possible.

<https://equipment.businessrecycling.com.au>.

Further links and information of commonly used equipment to aid easy waste management is provided below.

Mechanical Tug and Bin Trolley Details

Multiple options exist for tugs that can move both two wheel and four wheel bins at the same time.

The Sitecraft Logistec tug above is a tug/trailer combined, that can tow 660L and 1100L bins while also moving 120L or 240L bins.



Alternatively two-wheel bins can be loaded onto a trailer/dolly for transportation. Space is required for storage of the tug unit plus trailer, but bins can be stored on the tug/trailer while it is stored. Trailers can vary in size – allow space larger than the bin footprint.



Four-wheel bins can be towed directly by the tug and require less space as only the tug is required to be stored, not a trailer. Towing brackets and directional wheel locks are available from Sulo www.sulo.com.au and can readily be retrofitted to 660-1100L bins for towing. Towing brackets and wheel locks do not project outside of the bin footprint area.



Mechanical tug systems will usually cost in the range of \$10,000 - \$15,000, with trailer possibly extra. Tugs can be 1-1.5m long x 0.8m wide.

Suppliers include

- www.electrodrive.com.au
- <http://www.mastermover.com.au>
- www.sitecraft.net.au
- <http://www.hercules.com.au/index.php?tug2>.

Manual wheelie bin handling trolleys provide assistance with the manual handling of 120L to 360L bins. Various models are available with standard manual trolley as well as an electric boosted trolley to carry up to four 2-wheelie bins. They should be included in case of a longer bin movement distance or for the less abled people to safely move the bins if required.

Suppliers include

- <https://www.materialshandling.com.au>
- <https://www.wheeliesafe.com.au/>



Bin Lifters

Electro Hydraulic Bin-Lifters should be provided in each bin room to help staff safely to empty the internal 120L/240L bins into the main 1100L bins placed in the bin store.

Suppliers for Bin-Lifter are as follows:

- LiftMaster <http://www.liftmastermh.com.au/>
- WasteTech <http://www.wastech.com.au/Bin-Lifters/bin-lifters.html>
- SPACEPAC Industries Pty Ltd.
http://www.spacepac.com.au/Brochures/Lifters/LiftMaster/Bin-Lifters_2pg_np.pdf
- SiteCraft <http://www.sitecraft.net.au/materials-handling/recycling-waste-management/wheelie-bin-lifters-bin-tippers/#>
- Easylift
http://www.easylift.com.au/a/Materials_Handling_Equipment/Wheelie_Bin_Lifters
- Active lifting equipment co. pty ltd.
<http://www.activelifting.com.au/MaterialsHandling/Binlifters/powered150.htm>



City of Kalamunda Design Review Panel

Minutes

Wednesday 6 September 2023

Meeting Date and Time:	Wednesday 6 September 2023 – 4pm Meeting opened at – 4:15PM Meeting concluded at – 5:55PM	
Meeting Number:	DRP2023/4	
Meeting Venue:	City of Kalamunda Administration Centre 2 Railway Road, Kalamunda	
Meeting Items:	Item 5.1	Warehouse and Transport Depot – No. 281, 285, 287, 283 Berkshire Road, Forrestfield
<u>Attendance</u>		
DAC Members:	David Barr	Design Advisory Committee Member (Chair)
	Jurg Hunziker	Design Advisory Committee Member
	Walter Van Der Loo	Design Advisory Committee Member
Officers in attendance:	Regan Travers	Manager Approval Services
	Anjali Parmar	A/Principal Statutory Planner
Apologies	Susie Zuber	Design Advisory Committee Member
Declarations of Interest	n/a	
Applicants:	Item 5.1	Jeffrey Malcolm Simin Freeman Paul Dujmovic Luke Dujmovic

Item 5.1 – Warehouse and Transport Depot – No. 281, 285, 287, 283 Berkshire Road,
Forrestfield

DAC Recommendations:	• The site has a large impermeable footprint and therefore additional landscaping in the overall site is highly recommended. • Due to the impermeable footprint, the landscaping proposal has to work harder to improve the overall outcome of the site, especially along Bonser Road. • Highly recommend increasing the landscaping strip along Bonser Road from 3m to 6m, which is in keeping with the overall intent of the City's Local Planning Policies and Structure Plan. • There are large width crossovers proposed. Consider landscaping around these areas. • Consider a reduction in crossover widths where possible. • Consider landscaping around the breezeway and adding in large trees at the end of the breezeway. • Consider providing sun shading along the northern and western elevations, which is going to be particularly important during the summer months. • Include details of the footpaths on Berkshire Road on the plans. • Include details of the truncations on the intersections on the plans.		
General Comments	• The panel commends the applicant on a well presented and well put together presentation. • The panel commends the applicant for addressing each of the 10 design principles of SPP7.0 in the presentation. • The heavy vehicles and storage areas are well screened from the main frontages. • There is good provision of end of trip facilities for the business. • The development provides good amenity for the office staff for the Warehouse with the courtyard, lawn and passive surveillance. • The panel commends the applicant on the sustainability principles relating to collecting rainwater on site. Consider providing further details on what the rainwater will be used for within the site.		
Design Principle Assessment:	MATRIX		Supported
			Pending further attention
			Not supported
			Not considered / discussed

			Not addressed as further information required
	DESIGN PRINCIPLE	EVALUATION	DAC COMMENT
	CONTEXT & CHARACTER		- Consider providing a streetscape elevation showing contextuality of the site in comparison to the adjoining properties on Berkshire Road and Bonser Road. - Recommend providing landscaping buffer (6m strip) along Bonser Road which is in keeping with the requirements of the Structure Plan.
	LANDSCAPE QUALITY		- Highly recommend the provision of 1 tree for every 4 uncovered car parking bays to provide additional shade and canopy cover in the large paved car parking areas. - Recommend combining the plant mixes for a more consistent approach to the overall site rather than having two separate plant mixes on the Landscape Plan. - Consider bigger scale of trees and native trees for the species to provide more canopy cover and shade to the parking area and the building. - Consider providing more granularity and a garden landscape around the office and amenity areas. - Highly recommend providing better landscaping

			around the rear amenity areas with good shading.
	BUILT FORM & SCALE	Warehouse	- Panel commends applicant on built form and scale of the warehouse. - Consider an additional two or three articulations along the Bonser Road elevation to break up the wall lengths
		Transport Depot	- Concerns relating to the modular buildings and how the finish of the buildings is not in keeping with the intent of the Design Guidelines for this locality. - Modular buildings require additional thought on the built form and materiality.
	FUNCTIONALITY & BUILD QUALITY	Warehouse	Good functionality and build quality for the Warehouse.
		Transport Depot	- The modular buildings are not well shaded and will get hot during the summer months. - Consider more landscaping and improved functionality around this area. - Consider cladding / alternate building materials for the modular buildings to improve the build quality. - Consider landscaping around these areas to reduce heat impact, increase functionality and allow for better use of this space.
	SUSTAINABILITY		- Recommend providing an Ecologically Sustainable Development (ESD) report. - Consider what sustainable materials are being used for the ground surface materials – especially the storage area. Could the materials be

			recycled or low energy products? • Provide further details on the scale and size of the PV panels and other sustainable measures which can be incorporated into the development. • Consider more sustainable materials such as recycled bitumen. • Provide more solar shading.
	AMENITY	Warehouse	• Consider improvements to the amenity for the dock office amenities which are near parking and circulation areas. • Consider improvements to outlook for staff in the dock office and amenities area for better outlook to greenery and landscaping.
		Transport Depot	• Poor amenity provided for staff at the transport depot and modular buildings. • There is no outdoor amenity area. • There is no landscaping and in combination with all the air-conditioners, it will create a heat sink. • Recommend improvements through landscaping, better built form quality and better building materials which can improve the amenity.
	LEGIBILITY		• Good separation of uses. • Good vehicular movement. • Good wayfinding for the office.
	SAFETY		• Consider lighting for nighttime for office users. • Provision of lighting in the car parking areas is recommended.

	COMMUNITY		Panel recommends considering public art proposal which gives back to the community and is accessible to the community.
	AESTHETICS	Warehouse	Consider further articulation of the warehouse along the Bonser Road elevation.
		Transport Depot	- Consider painting or screening the fire tank to the rear. - Consider higher levels of landscaping at the rear to blend the modular buildings and services for better aesthetics. - Consider moving the location of the modular buildings and increasing the landscape buffer.

Chair
Approval:

DAVID BARR

Chair
Signature:



City of
Kalamunda
Contact:

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