

Traffic Engineering Letter

To	Zone Planning QLD Pty Ltd	Date	31 October 2024
Prepared by	Bradley Fuller, Modus Traffic Engineer	Approved by	Harj Singh, Modus Executive Director (RPEQ 22364)
Location	222 MacArthur Avenue, Hamilton		
Subject	Proposed Interim Use – Material Change of Use for Warehouse (Outdoor Storage) Traffic Engineering Letter		
Status	Final	Attachments	Appendix A: Site Plan Appendix B: Swept Path Assessment

1 Introduction

1.1 Overview

Modus has been commissioned by Zone Planning QLD Pty Ltd to provide traffic and transport advice in relation to the proposed Interim Use – Material Change of Use for Warehouse (Outdoor Storage) development located at 222 MacArthur Avenue, Hamilton. This Traffic Engineering Letter has been produced by Modus to demonstrate the suitability of the proposed development from a traffic engineering perspective.

1.2 Subject Site Context

The subject site is located at 222 MacArthur Avenue, Hamilton and is bounded by MacArthur Avenue to the south, Cedar Road to the east and vacant land to the north and west. The subject site is illustrated on Figure 1 below.

Figure 1 Subject Site



1.3 Existing Site Access

The site currently achieves vehicular access onto MacArthur Parade via a shared 20.0m wide Type A crossover, of which also accommodated vehicle access to the adjacent site at 200 MacArthur Parade.

The shared access comprises a driveway width of approximately 10.0m along the site frontage.

1.4 Surrounding Road Network

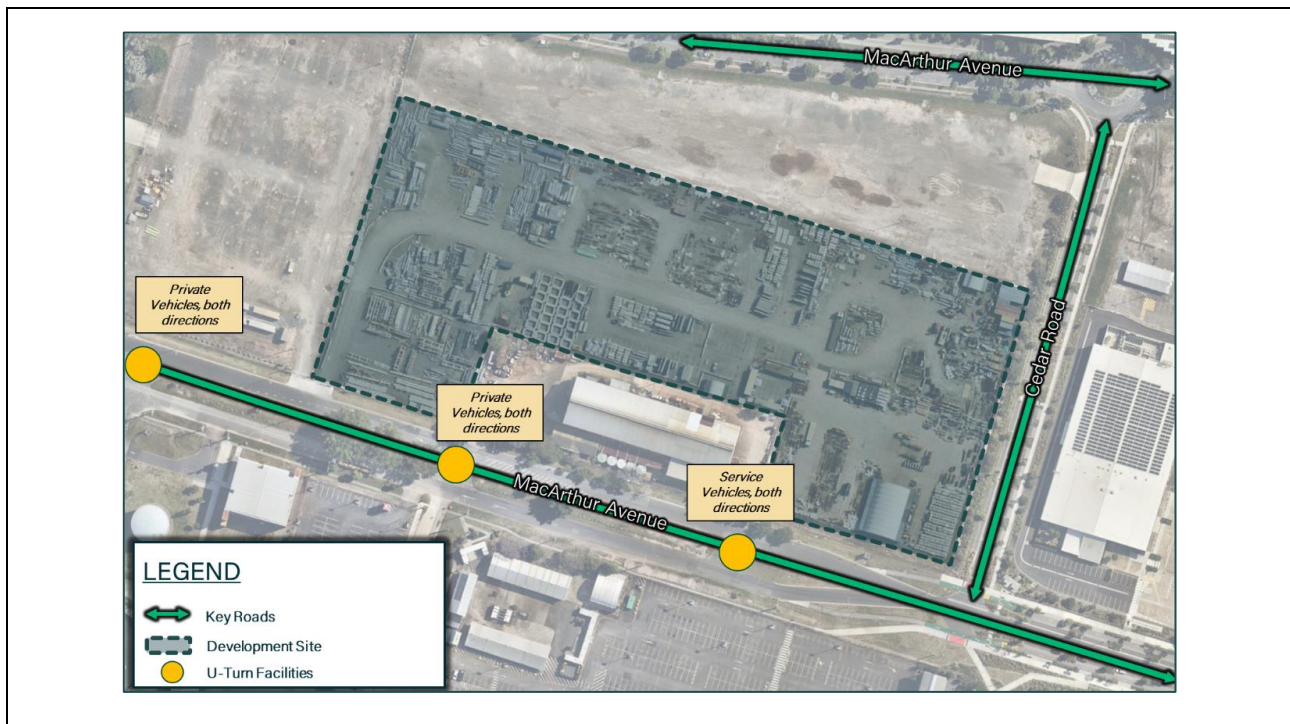
Table 1 outlines the characteristics of the surrounding road network.

Table 1 Surrounding Road Network

Road	Hierarchy	Authority	Speed Limit	Typical Form
MacArthur Parade	Neighbourhood Road	EDQ	60 km/hr	Two lanes, divided
Cedar Road	Neighbourhood Road	EDQ	60 km/hr	Two lanes, undivided

Provided that MacArthur Parade is median divided at the site frontage, various u-turn provisions are accommodated in close proximity to the site, as illustrated on Figure 2 below.

Figure 2 MacArthur Parade U-Turn Provisions



2 Proposed Development

2.1 Overview

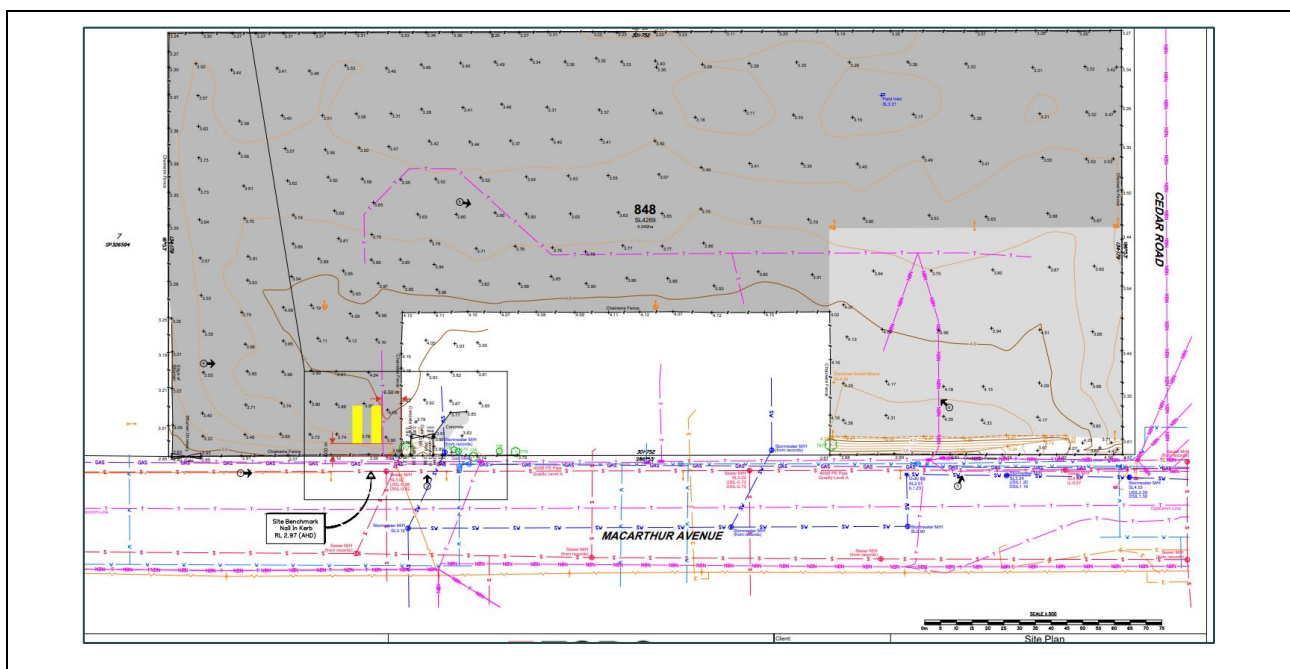
The proposed development will comprise a Interim Use – Material Change of Use for Warehouse (Outdoor Storage) use to accommodate the storage of large commercial products (i.e. pipes, valves and associated fittings).

Utilisation of the site for the proposed development will occur on a temporary basis, where it is anticipated that the client will lease the site for a duration of up to five (5) years.

As part of the proposed development, administrative operations on-site will be undertaken via a demountable site office and ancillary amenities demountable building, totalling an area of approximately 72 sq.m GFA.

Figure 3 below illustrates the proposed development site plan, where a copy of the site plan is also provided at **Appendix A**.

Figure 3 Proposed Development Site Plan



2.2 Service Vehicle Arrangements

Furthermore, it is noted that there are no B-Double approved routes along the surrounding external road network to accommodate B-Double access to and from the site. On this basis, the client has confirmed that the largest design vehicle that will service the proposed development will be a 20.0m long Articulated Vehicle (AV).

3 Traffic and Transport Advice

3.1 Access Arrangements

Based on the intended use of the site, Modus is of the professional opinion that the existing shared crossover onto MacArthur Avenue will be sufficient in accommodating all vehicle movements to and from the site.

Provided that the proposed development will lease the site on a temporary basis, in addition MacArthur Avenue currently accommodated limited on-street parking capabilities, Modus considers providing an additional vehicle crossover onto MacArthur Avenue to be impractical.

The following report sections outline Modus' review of the proposed access arrangements.

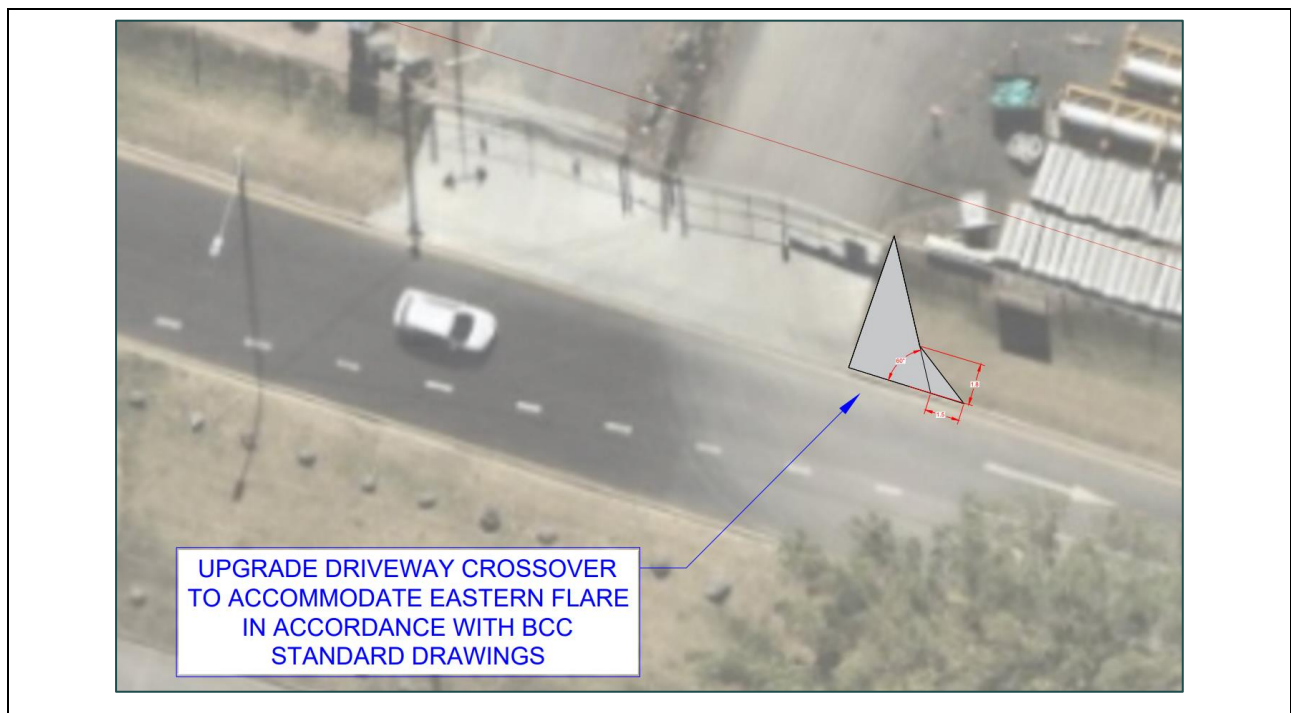
3.2 Crossover Design

In accordance with the BCC TAPS PSP, the minimum crossover design standard for a Minor Road frontage when utilised by an AV is a 9.0m wide Type B2 crossover.

Provided that the current shared access onto MacArthur Parade comprises a 10.0m width at the site frontage and accommodates a Type A crossover design, Modus recommends the existing crossover be upgraded to accommodate a Type B2 crossover design on the eastern side of the driveway.

The recommended crossover design is illustrated on Figure 4.

Figure 4 Recommended Crossover Design



To confirm the suitability of the proposed crossover design, Modus has undertaken a swept path assessment (provided at **Appendix B**) which confirms the following:

- ▶ The proposed crossover design is able to accommodate an inbound and outbound B99 design vehicle simultaneously, with a minimum clearance of 1.2m between both vehicles,
- ▶ The proposed crossover design is able to accommodate an AV design vehicle in both the inbound and outbound direction, with a minimum 0.6m clearance to any permanent obstructions.

On this basis, the proposed crossover design is considered acceptable.

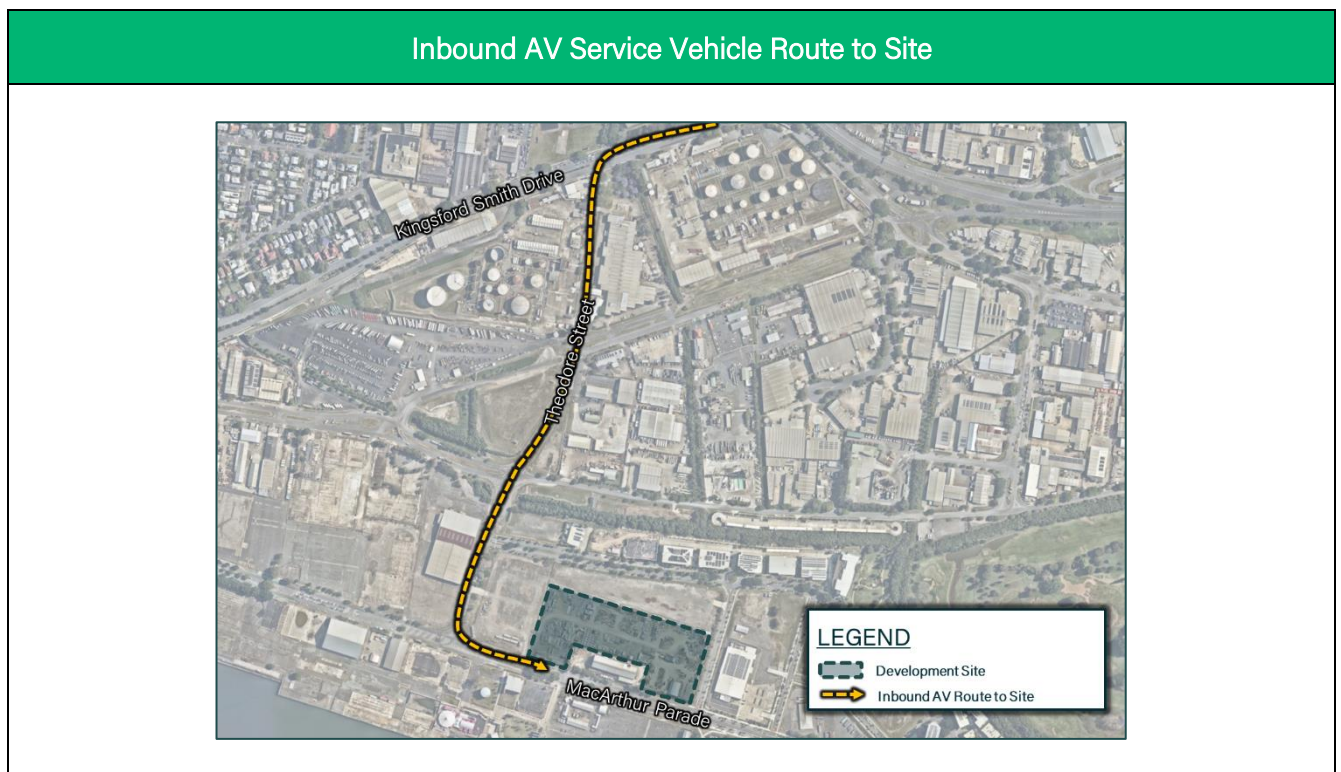
3.3 AV Service Vehicle Route to and From the Site

Based on the site context, it is envisioned that AV movements will travel to and from the site via Kingsford Smith Drive.

On this basis, and to ensure that AV movements do not occur on minor roads that accommodate a higher degree of pedestrians / cyclists, Modus recommends that AV movements to and from the site occur via Theodore Street and MacArthur Avenue.

Therefore, the recommended inbound / outbound AV service vehicle routes to and from the site are outlined in Table 2 below.

Table 2 AV Service Vehicle Routes to and From The Site



Outbound AV Service Vehicle Route to Site



Modus has undertaken a swept path assessment (provided at **Appendix B**), which confirms that an AV design vehicle is able to safely and efficiently access traverse along the travel routes outlined in Table 2, where no intersection mitigation works are considered necessary.

It is noted that the outbound AV service vehicle route will utilise the u-turn facility approximately 200m west of the site access along MacArthur Parade. As demonstrated on the swept path assessment (provided at **Appendix B**), the AV undertaking a u-turn manoeuvre will obstruct a portion of the throughbound lane along MacArthur Avenue.

However, Modus considers this to be acceptable on the following basis:

- ▶ A B99 design vehicle is able to safely pass the AV design vehicle with a minimum 0.6m clearance between both vehicles,
- ▶ MacArthur Avenue has an incredibly straight alignment, where substantial visibility is able for a throughbound vehicle to observe and react to an AV design vehicle undertaking a u-turn manoeuvre.

Therefore, the proposed AV service vehicle routes to and from the site are considered acceptable.

3.4 Service Vehicle Management

To ensure that AV service vehicle movements to and from the site do not compromise the safety or efficiency of the external road network, Modus recommends a service vehicle management plan be implemented to ensure the following:

- ▶ AV service vehicle movements to and from the site do not occur during the AM and PM peak hour periods of the external road network,
- ▶ AV service vehicle movements are coordinated such that an inbound AV design vehicle and outbound AV design vehicle do not utilise the site access at the same time,
- ▶ AV service vehicles are coordinated such that any staff / site operators are aware of when AV design vehicle movements on-site will occur.

3.5 Car Parking

Modus recommends that sufficient car parking provisions are accommodated on-site to accommodate the peak parking demand for staff / site operators on-site. Furthermore, it is recommended that the car parking supply is provided in a location on-site that is separated from the primary AV service vehicle movement routes on-site.

4 Summary

Therefore, Modus is of the opinion that the proposed development is acceptable from a traffic engineering perspective and will not have a substantial impact on the safety or efficiency of the external road network.

Should there be any issue with the above, please contact the undersigned.

Yours sincerely,

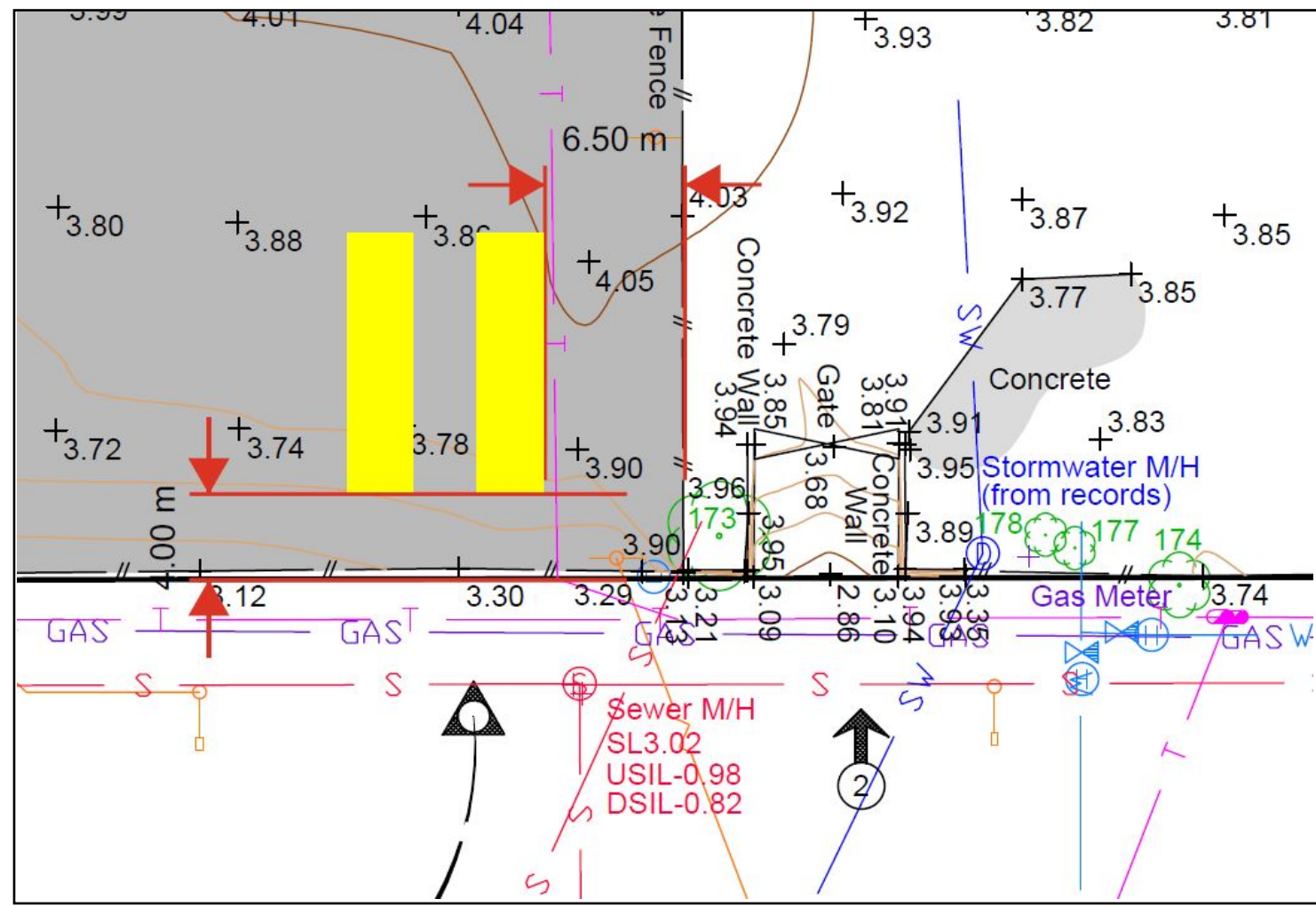


MODUS TRANSPORT AND TRAFFIC ENGINEERING

Harj Singh
Executive Director (RPEQ 22364)

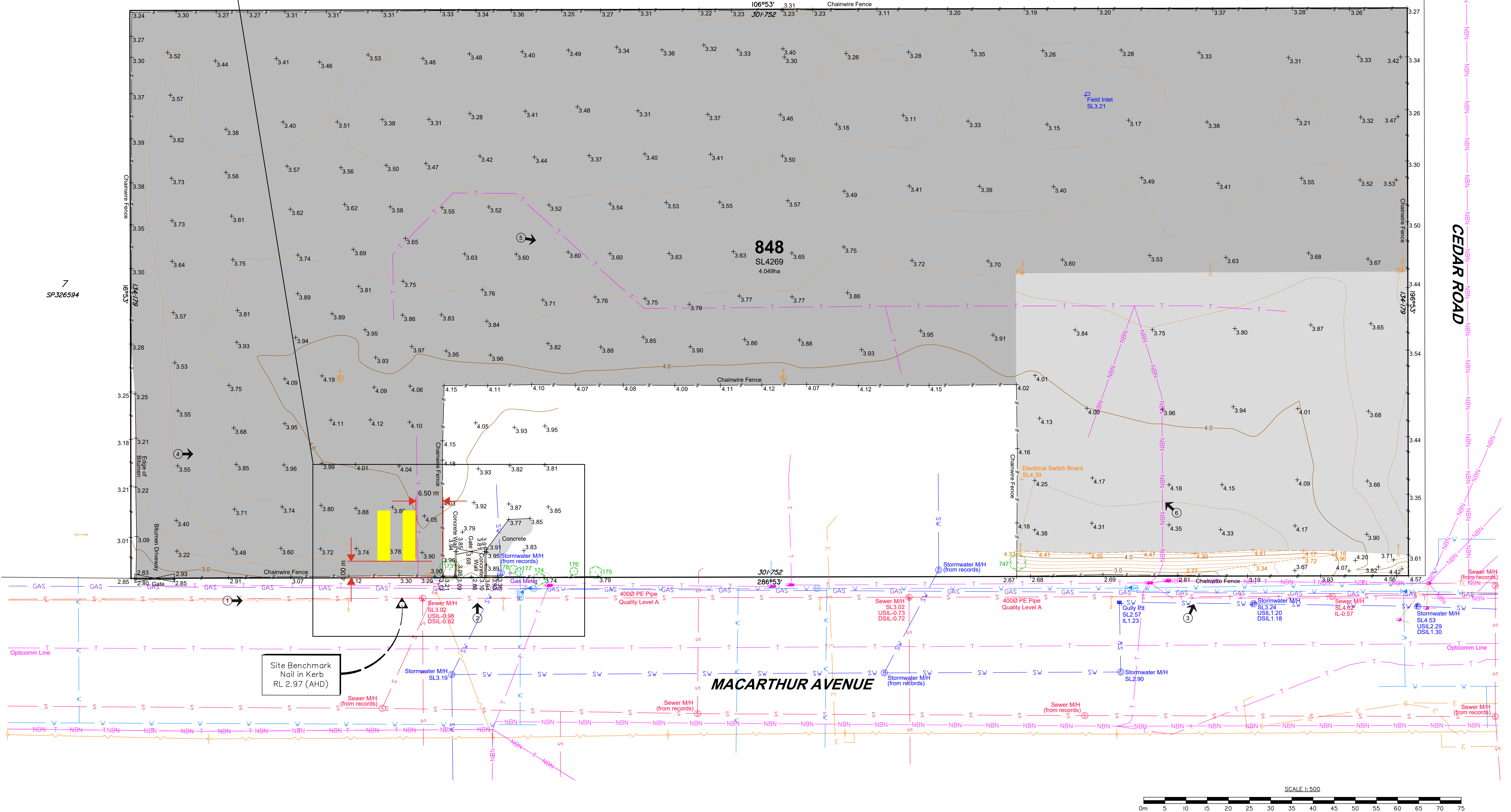
APPENDIX A

Site Plan



INSET

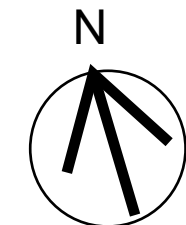
- Site Office 12M X 3M
- Amenities 12M x 3M



GENERAL NOTES

1. Drawn to scale on an A1 sheet.
2. Property boundaries and dimensions shown on this plan has been compiled from SP326594 and subject to confirmation by survey.
3. All levels shown are in metres on Australian Height Datum as derived by GNSS using OPM53929 RL2.972 (AHD), situated on MacArthur Avenue.
4. Features and services shown on this plan are shown by a combination of survey and supplied records. The exact nature and location of these services must be confirmed by relevant authorities prior to any operational works.
5. This plan has been produced for client information purposes only, for additional site detail and existing surface model, refer to digital documentation of this plan.
6. Sonto accepts no responsibility for any damages or loss in contravention to the above.
7. This plan cannot be copied unless these notes are included.

Source: Plan of Detail Survey dated 04/10/2024 prepared by Sonto



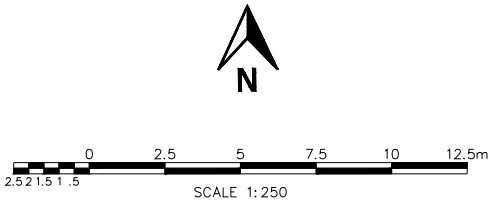
Client:
Reece Australia Pty Ltd

Site Plan
Site Office and Amenities Block
Lot 848 on SL4269
"222 MacArthur Avenue, Hamilton"

Project Number: Q24366.1 Scale: 1:500 on A1 Sheet No. 1 OF 1 Revision A

APPENDIX B

Swept Path Assessment



PROJECT
222 MACARTHUR PARADE

CLIENT
ZONE PLANNING GROUP

DRAWING TITLE
MODUS TRAFFIC COMMENTS

DRAWING NUMBER
MOD24157QLD - SK01

DATE	REVISION
21 OCT 2024	A

REV	DRAWN BY	APPROVED	DATE	AMENDMENT DETAILS



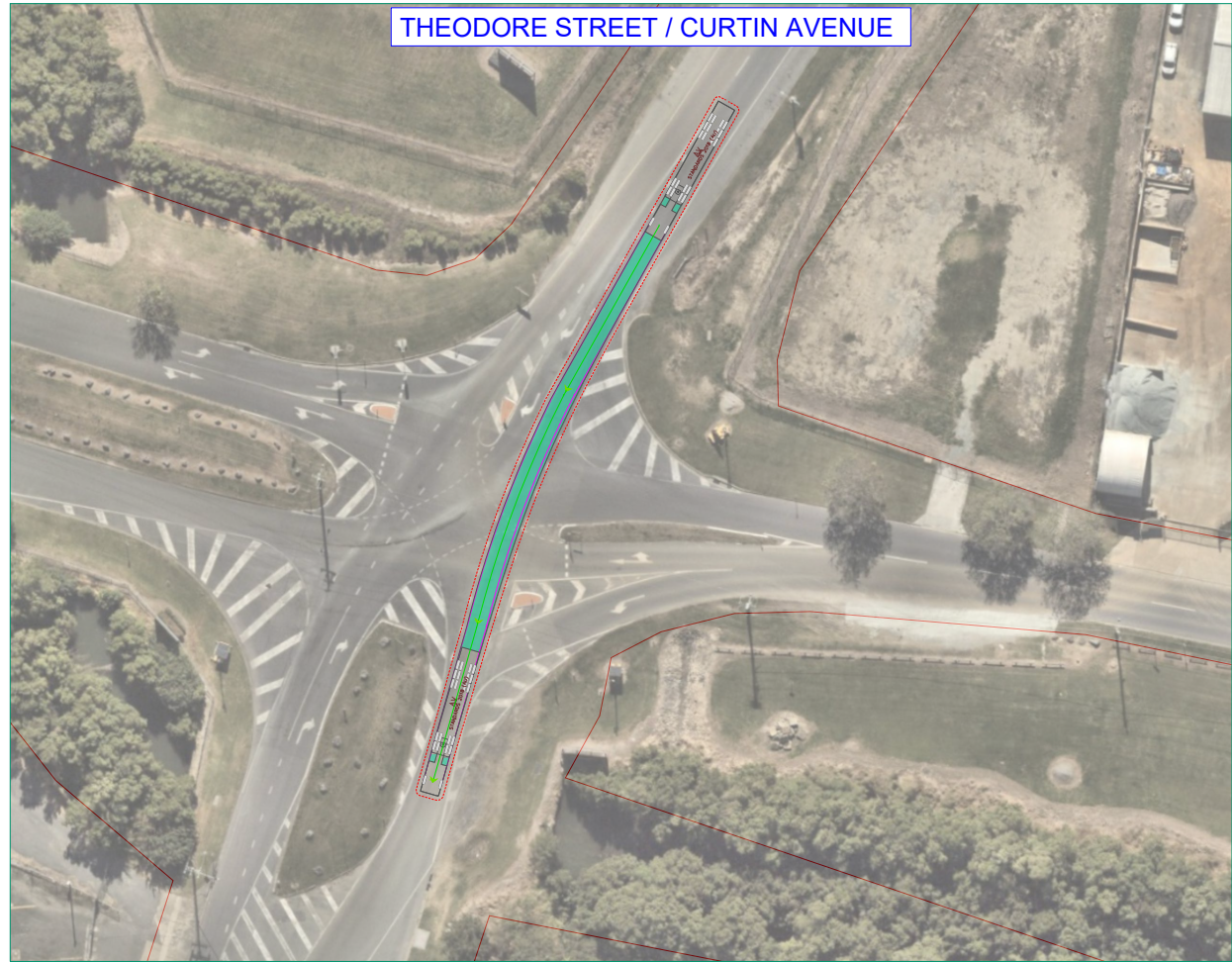
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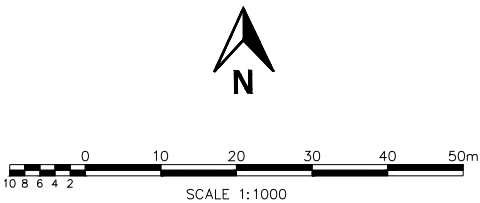
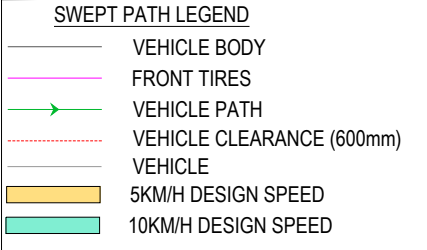
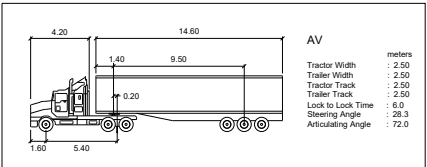
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RPEQ Certified
Harj Singh



VEHICLE USED IN SIMULATION



PROJECT

222 MACARTHUR PARADE

CLIENT

ZONE PLANNING GROUP

DRAWING TITLE

INBOUND AV ACCESS
ROUTE

DRAWING NUMBER

MOD24157QLD - SK02

DATE

21 OCT 2024

REVISION

A

REV	DRAWN BY	APPROVED	DATE	AMENDMENT DETAILS

MODUS
Transport and Traffic Engineering

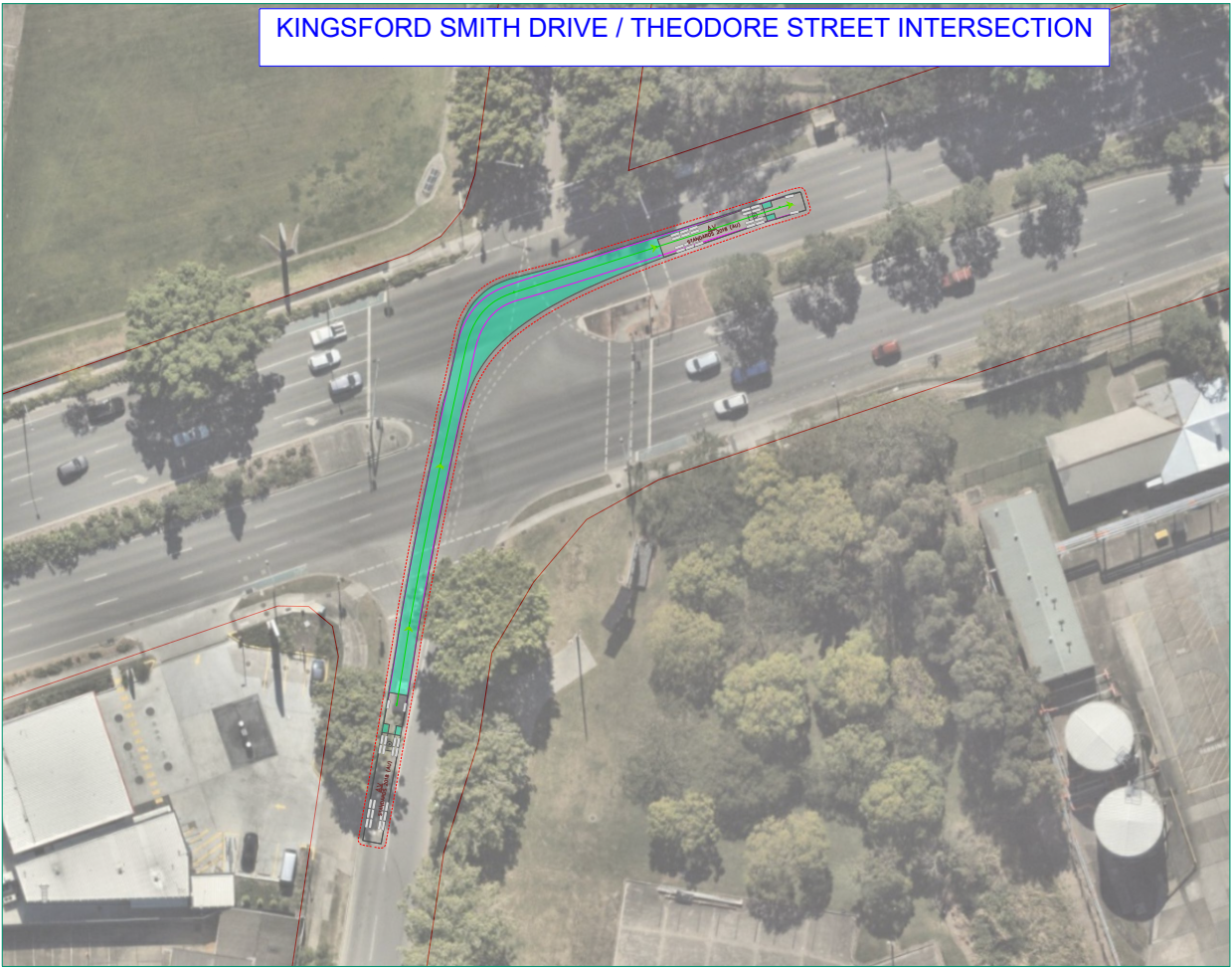
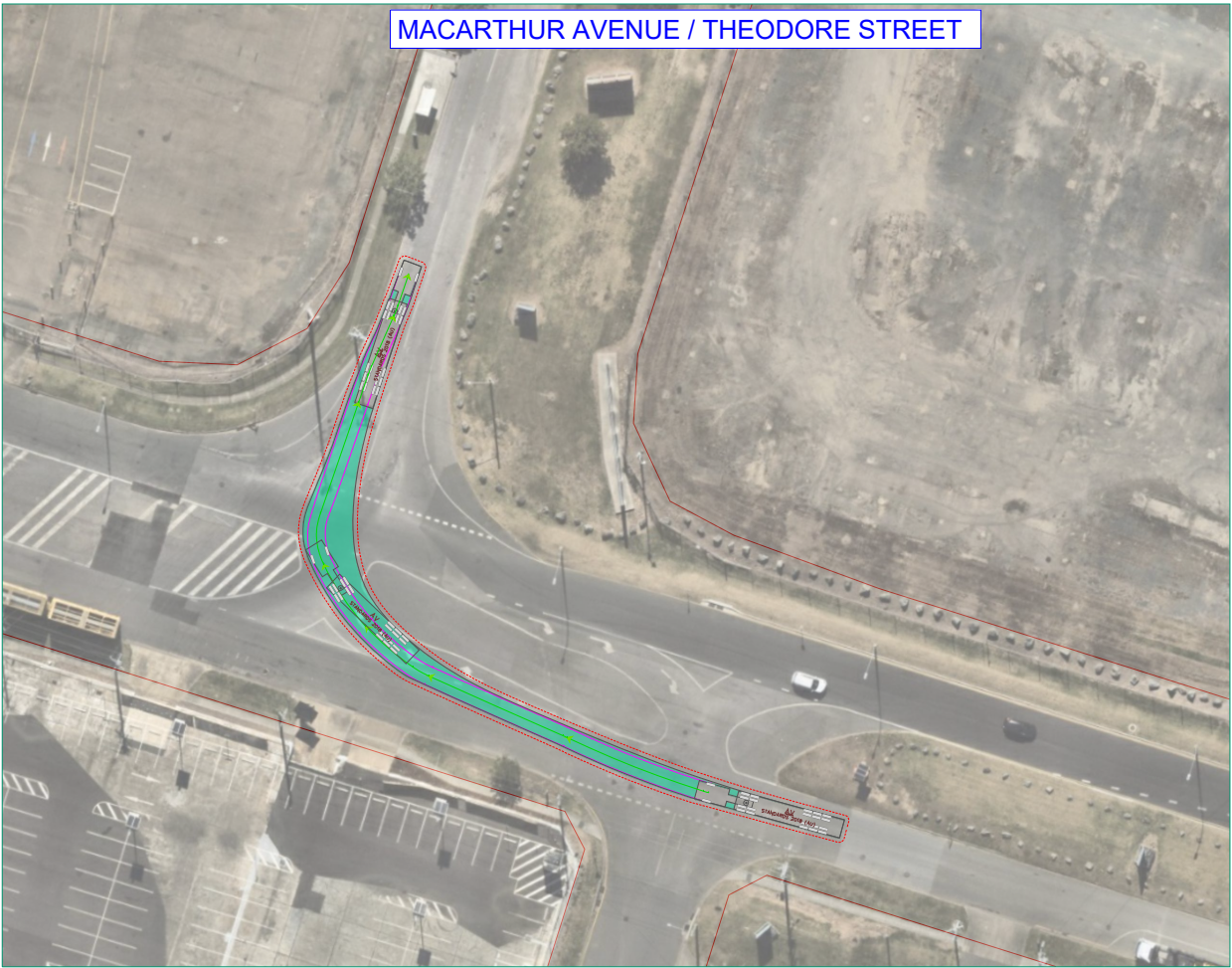
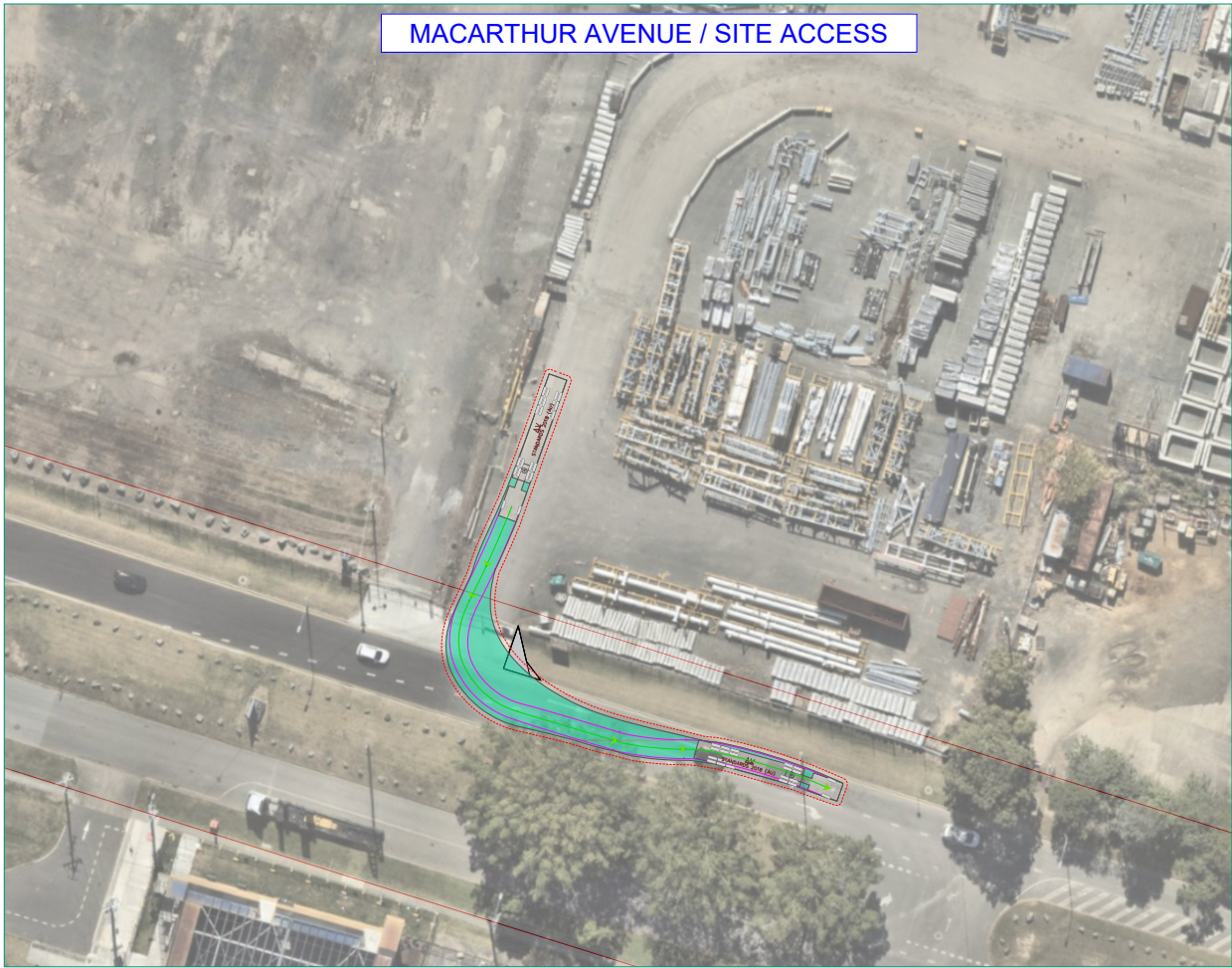
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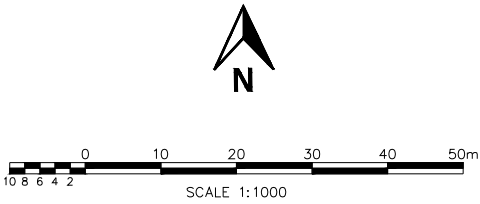
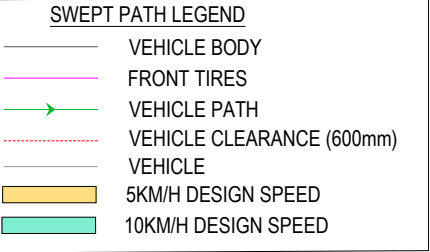
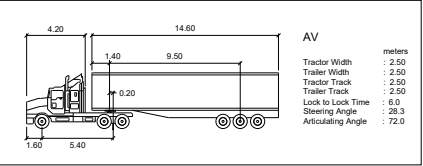
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VEHICLE USED IN SIMULATION



PROJECT

222 MACARTHUR PARADE

CLIENT

ZONE PLANNING GROUP

DRAWING TITLE

OUTBOUND AV ACCESS ROUTE

DRAWING NUMBER

MOD24157QLD - SK03

DATE

21 OCT 2024

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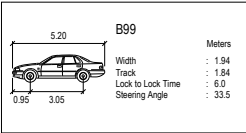
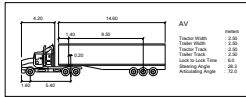
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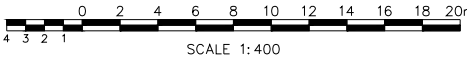


VEHICLE USED IN SIMULATION



SWEPT PATH LEGEND

- VEHICLE BODY
- FRONT TIRES
- VEHICLE PATH
- VEHICLE CLEARANCE (600mm)
- VEHICLE
- 5KM/H DESIGN SPEED
- 10KM/H DESIGN SPEED



PROJECT

222 MACARTHUR PARADE

CLIENT

ZONE PLANNING GROUP

DRAWING TITLE

AV U-TURN FACILITY B99
DESIGN VEHICLE SWEEP PATH

DRAWING NUMBER

MOD24157QLD - SK04

DATE

21 OCT 2024

REVISION

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