

3 Commercial Circuit Flagstone

Revised Traffic Impact Assessment

Centre Store Properties Trust

16 March 2023

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2023/1388

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1. INTRODUCTION

1.1 Background

Bitzios Consulting (Bitzios) has been engaged to prepare a Traffic Impact Assessment (TIA) for a proposed self-storage development to be located at 3 Commercial Circuit, Flagstone (subject site). The subject site is formally described as Lot 25024 on SP311389 and is located within the Logan City Council (Council) LGA and within the Greater Flagstone Priority Development Area (PDA).

1.2 Development Details

An existing development approval is present on the subject site for warehouse (self-storage), retail (showroom) and business (office) land uses (DEV/2021/1226). Proposed development yields in comparison to the existing approval are detailed in Table 1.1.

Table 1.1: Existing Approval and Proposed Development Yields

Land Use	Existing Approval (DEV/2021/1226)	Proposed Development	Change
Self-Storage	6,974m ² GFA	9,377m ² GFA (643 Units)	+2,403m ² GFA
Office	126m ² GFA	140m ² GFA	+14m ² GFA
Showroom	589m ² GFA	-	-589m ² GFA

As shown, the proposal includes the removal of the showroom space and an expansion of the self-storage facility.

Key traffic engineering related elements of the proposed development are outlined below:

- **Access:** Via proposed all movements driveway off Commercial Circuit
- **Parking:** 18 car parking bays including one (1) PWD bay
- **Servicing:** On-site serving for Heavy Rigid Vehicle (HRV) and Refuse Collection Vehicles (RCV).

A copy of the development plans is provided at **Appendix A**.

1.3 Scope of Works

The scope of this Traffic Impact Assessment (TIA) included the following tasks:

- Reviewing the proposed site access arrangement against Council's 'Servicing, Access and Parking Code' (SAP Code) and relevant Australian Standards (AS2890)
- Reviewing the car parking provisions Council's SAP Code and relevant industry research regarding typical parking demand at self-storage developments
- Reviewing the proposed site layout against Council's SAP Code and AS2890
- Reviewing the ability for the proposed design vehicle to access and manoeuvre within the site, including preparing swept paths using AutoTURN software
- Estimating potential peak hour traffic demands generated by the development and undertaking a qualitative assessment of potential development related traffic impacts.

2. EXISTING CONDITIONS

2.1 Road Network

Figure 2.1 identifies the key roads surrounding the subject site.



Source: Nearmap (edited by Bitzios)

Figure 2.1: Road Network

Details of the road network surrounding the subject site are outlined in Table 2.1.

Table 2.1: Key Roads

Road Name	Jurisdiction	No. of Lanes	Hierarchy	Posted Speed
Homestead Drive	Council	4	Arterial	60km/h
Commercial Circuit	Council	2	Local Street	50km/h
Branson Street	Council	2	Local Street	50km/h

The surrounding key intersections are shown in Table 2.2.

Table 2.2: Key Intersections

ID	Intersection	Jurisdiction	Type	Comments
1	Commercial Circuit / Branson Street	Council	Roundabout	All Movements

2.2 Alternative Transport

2.2.1 Existing

The subject site is located within 300m walking distance of the nearest bus stop pair, located along Homestead Drive to the north. The site benefits from a well-connected path network with a number of local neighbourhoods paths as well as high quality paths along Homestead Drive. Figure 2.2 shows the location of relevant bus stops and the desired pedestrian route to these routes using formalised paths and crossings.



SOURCE: Nearmap (edited by Bitzios)

Figure 2.2: Active Transport Connectivity

Table 2.3 summarises the bus services and their frequencies during peak periods.

Table 2.3: Public Transport Services

Service	Route	Peak Frequency
535	Flagstone to Browns Plains via Greenbank RSL	30 minutes

The subject site is considered well serviced by the existing active and public transport network.

2.2.2 Future

The subject site is also located within the Greater Flagstone Priority Development Area which is anticipated to provide approximately 50,000 dwellings to house a population of up to 120,000 people. The Greater Flagstone PDA is to include further active and public transport provisions in the vicinity of the subject site. Namely, the subject site is located within walking distance of the future Flagstone Central train station, which will form a transit interchange with passenger rail and bus services available.

3. TRAFFIC ASSESSMENT

The Self-Storage Facility Traffic and Parking Study (2009) undertaken by Aurecon was used to source trip generation rates for the proposed development.

Table 3.1 provides a summary of the 95th percentile trip generation rates for the proposed self-storage and office size, and net change in trips for the proposed development

Table 3.1: Development Traffic Generation

Land Use	Quantity	AM Trips (veh/h)	PM Trips (veh/h)
Previous Approval			
Office	0 - 3,000m ² GFA	7	8
Storage	6,000m ² – 9,500m ² GFA	21	22
Showroom	589m ² GFA	23	23
Total		51	53
Proposed Development			
Office	0 - 3,000m ² GFA	7	8
Storage	3,000m ² – 6,000m ² GFA	21	22
Total		28	30
Net Change		-23	-23

Based on the traffic generation rates specified in the Aurecon parking study, and as per the rates adopted for the approved development, the removal of the showroom floor area from the proposed development yield results in net reduction in development traffic compared to the previous approval.

Noting the reduced number of development trips, any impacts to the surrounding road network are expected to be comparatively less than any impacts associated with the approved development. As such no further detailed traffic analysis (e.g. SIDRA) or upgrades to the external network are warranted as a part of the proposed development.

4. PARKING ASSESSMENT

4.1 Car Parking Provision

4.1.1 Overview

Council's *SAP Code* (version 9) was used to source car parking rates for the proposed development. Table 4.1 details the car parking requirement and provision.

Table 4.1: Car Parking Provision Review

Land Use	Quantity	Type Parking Rate	Required	Proposed
Self-Storage	643 Units & 2 Employees On-site	1 per 100 storage units + 1 per employee	9	18
Office	140m ² GFA	1 per 20m ² GFA + 2 for visitors	9	
Total			18 spaces	18 spaces

As shown, the proposed car parking provisions comply with minimum parking requirements as per Table 9.4.7.3.2 of Council's *SAP Code*.

4.2 Site Layout

The on-site parking geometric layout has been assessed in accordance with the relevant requirements of AS2890. The outcomes of the assessment are summarised in Table 4.2.

Table 4.2: Site Layout Review

Design Element	AS2890 Requirement	Proposed	Compliant
Staff Car Parking (User Class 1)	2.4m x 5.4m	2.6m x 5.4m	Yes
Visitor Car Parking (User Class 3)	2.6m x 5.4m		Yes
PWD Car Parking Bay	2.4m x 5.4m with shared zone	2.4m x 5.4m with shared zone	Yes
Parking Aisle Width (Two-way)	5.8m	Minimum 6.4m	Yes
Blind Aisle Extension	1.0m	1.0m	Yes
Grades (Entry)	Max 1:20 for first 6m inside property boundary	Not Annotated	Shall Comply
Grades (Parking Module)	1:20 parallel to the angle of parking and 1:16 in any other direction	Not Annotated	Shall Comply

As shown above, the on-site parking geometric layout complies with the relevant requirements of the Australian Standards AS2890.

5. ACCESS & SERVICING ASSESSMENT

5.1 Vehicular Access

The proposed vehicular access is consistent with the approved access arrangement for the proposed development as detailed in Table 5.1.

Table 5.1: Vehicular Access

Design Vehicle	Required Configuration	Proposed Configuration
Heavy Rigid Vehicle (HRV)	6.5m Type B2	8m Type B2

The proposed vehicular access complies with the relevant requirements of Council's *SAP Code* (version 9) and IPWEAQ Standard Drawing RS-051.

5.2 Location

The proposed driveway is located ~41m west of the nearby Commercial Circuit / Branson Street roundabout which exceeds the requirements of AS2890.

It is noted that three (3) street parking spaces are located between the proposed access driveway and the roundabout along the site boundary. The proposed driveway will not impact on the existing parking and vegetation along the site's frontage.

In summary, the proposed access location complies with AS2890 requirements.

5.3 Servicing

Council's *SAP Code* (version 9) prescribes a 12.5m Heavy Rigid Vehicle (HRV) for the self-storage land use and a 8.8m Medium Rigid Vehicle (MRV) for the office land use. Servicing is proposed to take place on-site under the supervision of management via a forward-in / forward-out manoeuvre using the parking aisle for manoeuvring.

The proposed development includes two (2) loading areas, located at the front and rear of the building. The front servicing bay is designed to cater for HRV servicing whereas the rear servicing bay can only service vehicles up to an MRV.

Refuse collection is expected to be undertaken by a front-loading refuse collection vehicle (RCV). Swept path diagrams are provided at **Appendix B** demonstrating the HRV, MRV and RCV manoeuvring can occur wholly on-site with service vehicles entering and exiting the site in a forward gear.

6. SUMMARY AND CONCLUSION

The key findings of the TIA for the proposed self-storage development at 3 Commercial Circuit, Flagstone are as follows:

- The proposal is for a self-storage and office development comprising:
 - Self-Storage: 643 self-storage units totalling 9,377m² Gross Floor Area (GFA)
 - Office: 140m² GFA
- The development does not trigger the need for additional public transport or active transport facilities or services
- A total of 18 car parking spaces have been proposed as part of the development. This provision meets Council's *SAP Code* (version 9) requirements
- The parking geometric layout is provided in accordance with the relevant requirements Council's *SAP Code* (version 9) and Australian Standards AS2890
- The proposed vehicular access complies with the relevant requirements of Council's *SAP Code* (version 9) and IPWEAQ Standard Drawing RS-051
- HRV, MRV and RCV manoeuvring can occur wholly on-site with service vehicles entering and exiting the site in a forward gear as per the requirements of Council's *SAP Code* (version 9).

Based on the above assessment, it is concluded that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds.

Appendix A: Development Plans





2 PERSPECTIVE 1



1 PERSPECTIVE 2

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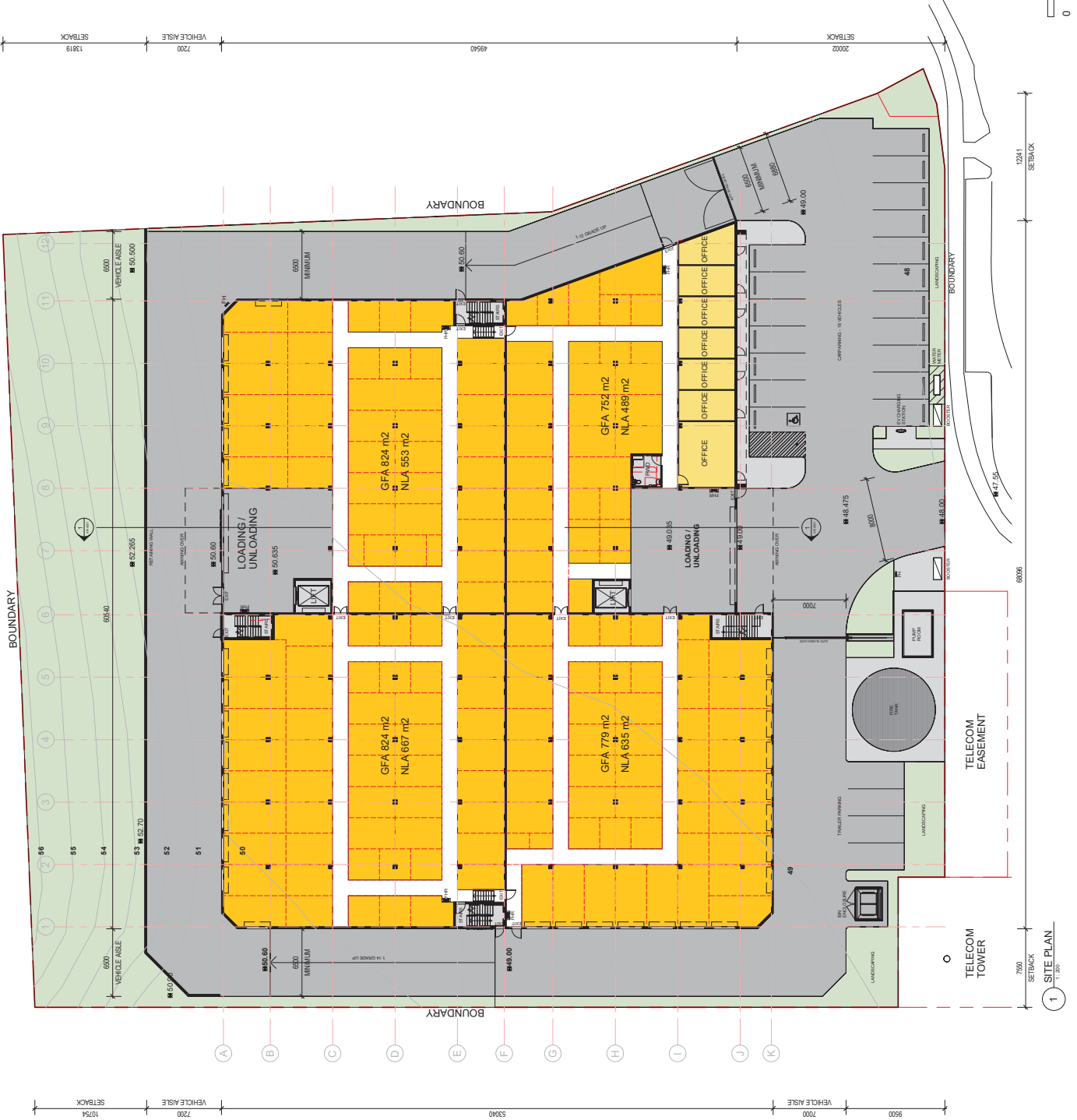


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CLIENT: FLAGSTONE CENTRESTORE
PROJECT DESCRIPTION: FLAGSTONE CENTRESTORE
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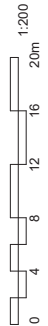
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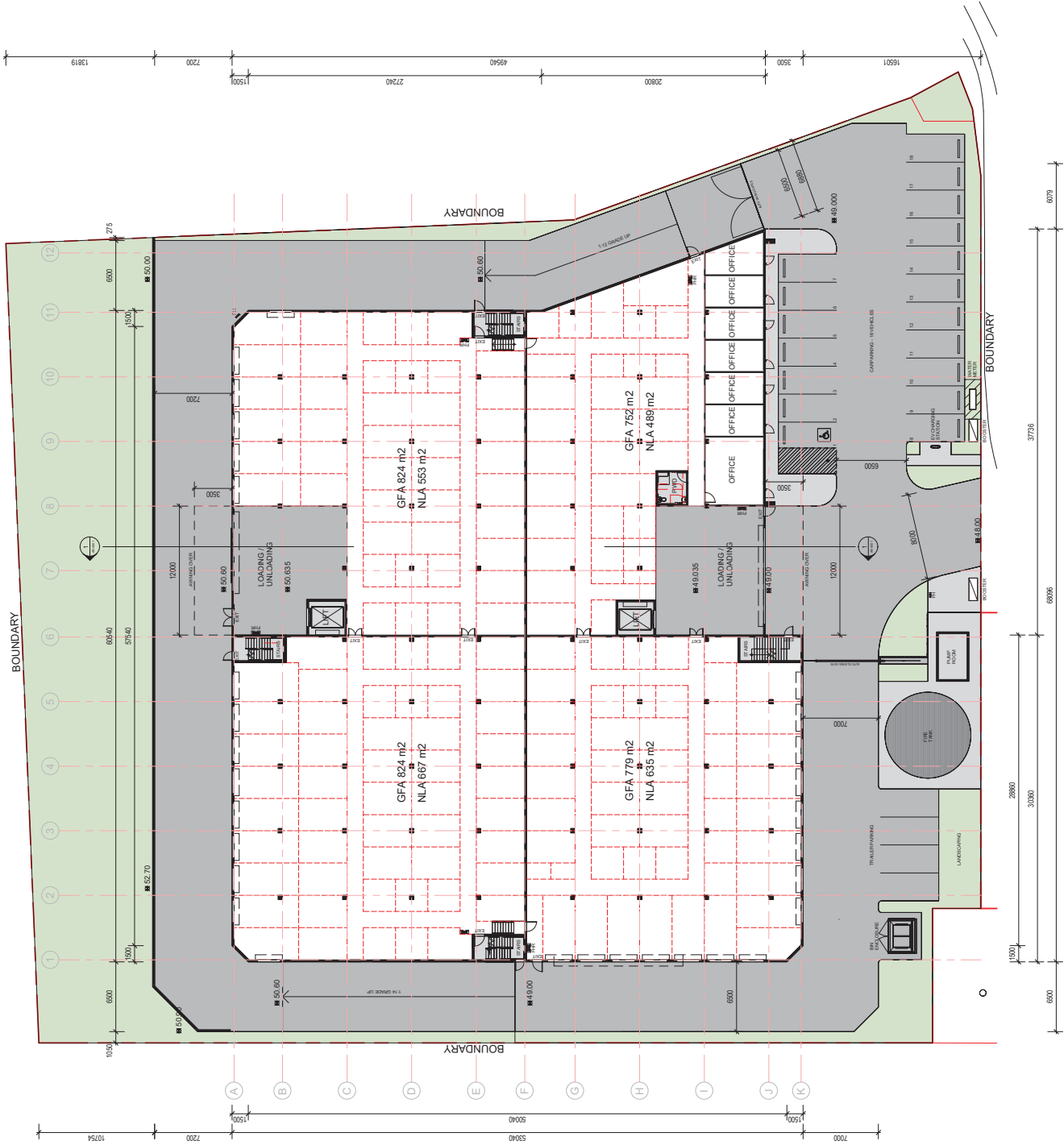
DEVELOPMENT SUMMARY

PROJECT ADDRESS
1 HOMESTEAD DRIVE, JIMBOOMBA
REAL PROPERTY DATA
LOT 25024 on SP 303119
SITE AREA
664.6 m²
LANDSCAPE
124.944 m²
SITE COVERAGE
18 %
3284.6 m²
47 %
AREAS
GFA
GROUND FLOOR - TYPE A CONSTRUCTION x 2 COMPARTMENTS
COMPARTMENT 1 1648 m² 5274 m³
COMPARTMENT 2 1531 m² 7349 m³
TOTAL 3179 m²
FIRST SECOND FLOORS - TYPE B CONSTRUCTION x 4 COMPARTMENTS
(EACH COMPARTMENT OVER 2 LEVELS)
COMPARTMENT 1 1588 m² 4834 m³
COMPARTMENT 2 1588 m² 4804 m³
COMPARTMENT 3 1480 m² 4477 m³
COMPARTMENT 4 1532 m² 4654 m³
TOTAL 6188 m²
TOTAL GFA 9377 m²
NLA
GROUND FLOOR 2344 m²
FIRST FLOOR 2370 m²
SECOND FLOOR 2370 m²
TOTAL GFA 7084 m²
NLA BEING 75.5 % OF GFA
CARPARKING
SELF STORAGE - 1 CAR PER 100 STORAGE UNITS (843 UNITS) 9
1 CAR PER STAFF 9
OFFICE CARPARKS PER 20 m² - 2 VISITORS (140 m²) 9
TOTAL CARPARKS 18



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						PROJECT NUMBER 5084	PROJECT STAGE 12.21	REVISION -
						DRAWING NUMBER SK	PROJECT STAGE -AR-1001	REVISION C
						AMENDMENTS		



0 4 8 12 16 20m
1:200

1 GROUND FLOOR
OF 2

1300 2800 1000 6000 3758 8006 6078

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CLIENT: FLAGSTONE CENTRESTORE
PROJECT DESCRIPTION: FLAGSTONE CENTRESTORE

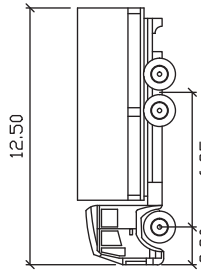
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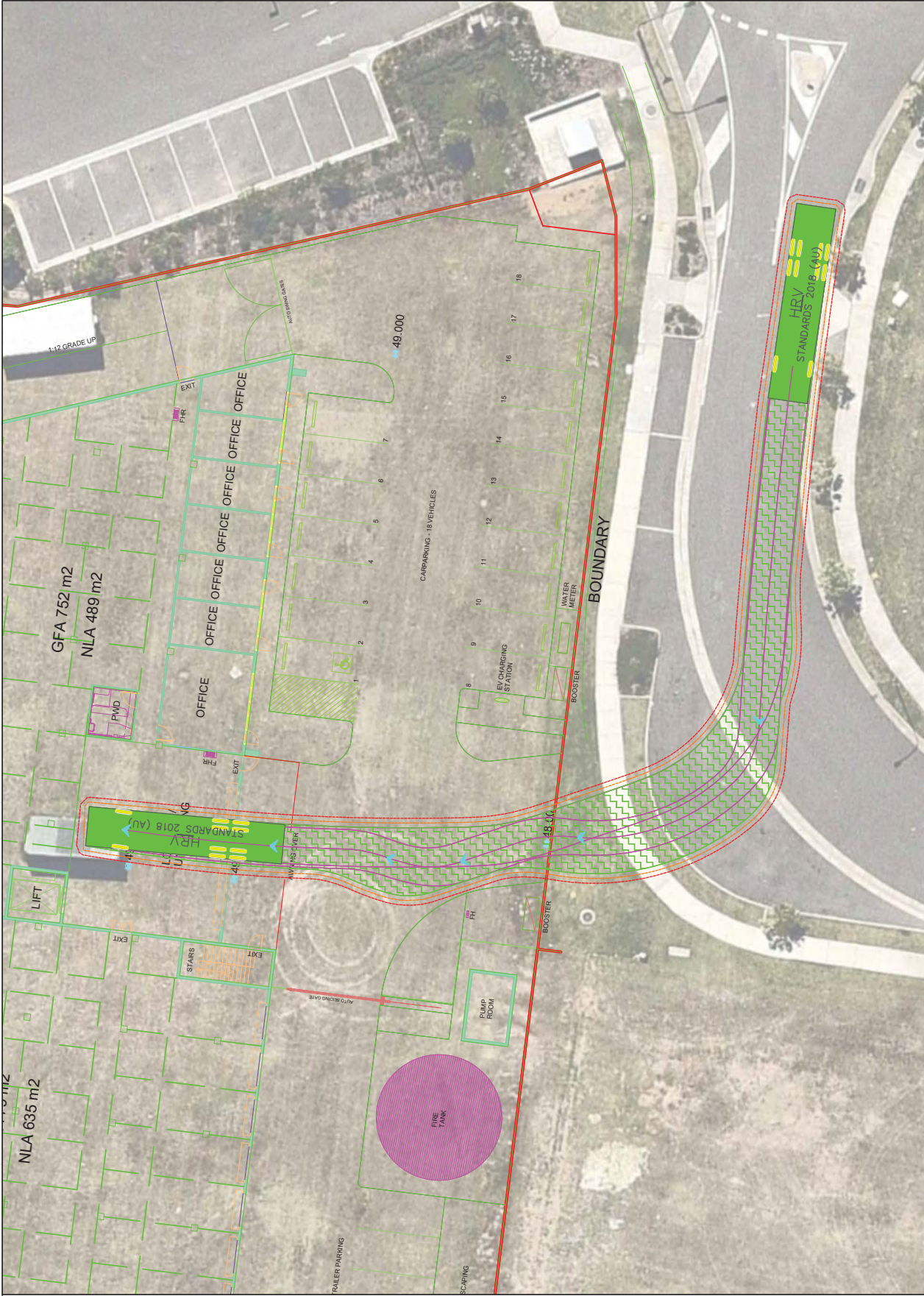
Appendix B: Swept Path Diagram



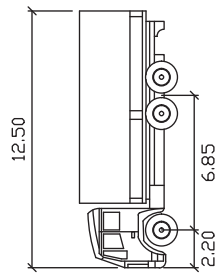


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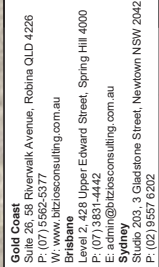
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Steering Angle : 36.7



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								Project Number P5356		Issue 001				
						Title HRV Ingress to Servicing Area								

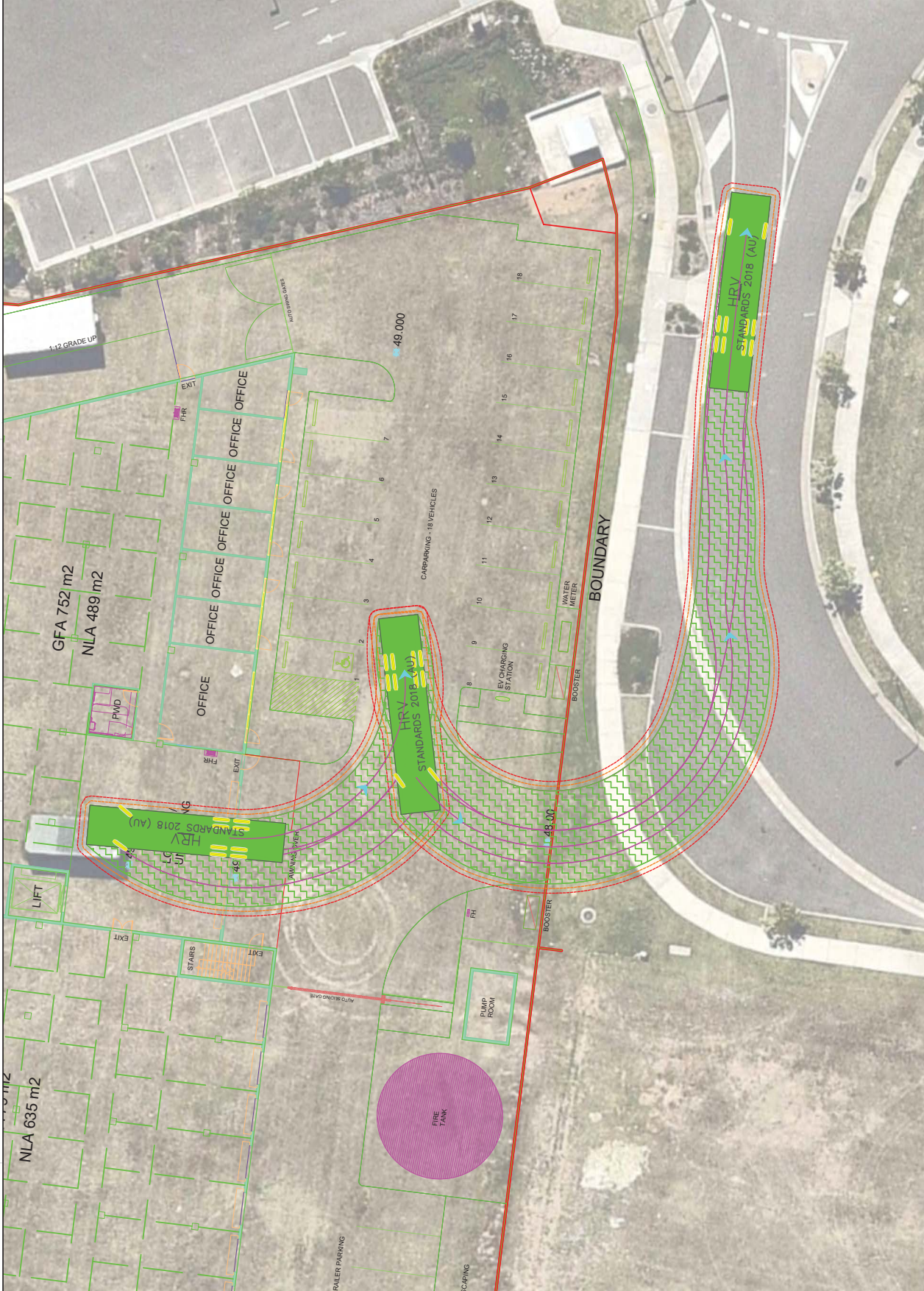


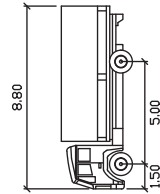
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Issue	REVISIONS	Drawn	Date
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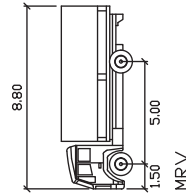
Project	Commercial Circuit Flagstone T/A				Design	R.T.U	R.T.U	Drawn	Checked
Title	HRV Egress From Servicing Area				NOT FOR CONSTRUCTION			Date 16.03.2023	
					Project Number P5356		Sheet Number 2		Issue 001





Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0





Width
Track to Lock Time
Lock to Lock Time
Steering Angle

8.80
1.50
5.00
5.00

MRV

meters
: 250
: 250
: 50
: 340



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REVISIONS	
Issue	Revisions
001	Swap Path Assessment

Drawn	Check
R.T.U.	R.T.U.
16.03.2023	16.03.2023

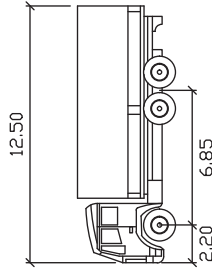
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Project	Commercial Circuit Flagstone TIA
Title	MRV Egress From Servicing Area

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Drawn	R.T.U.
Checked	A.P.
Date	16.03.2023
Issue	001
Project Number	P5356
Sheet Number	5

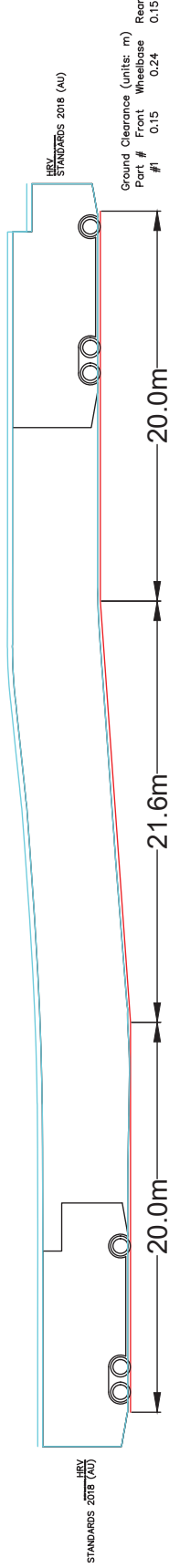
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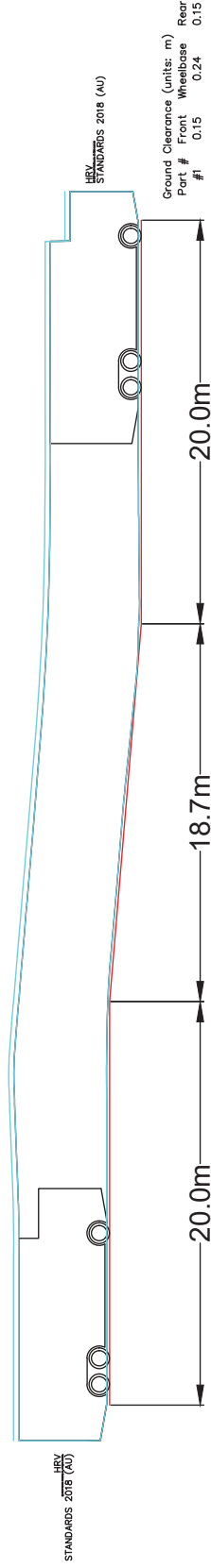


HRV

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Lock to Lock Time 6.0
Steering Angle : 36.7



Gradient: 1:14



Gradient: 1:12

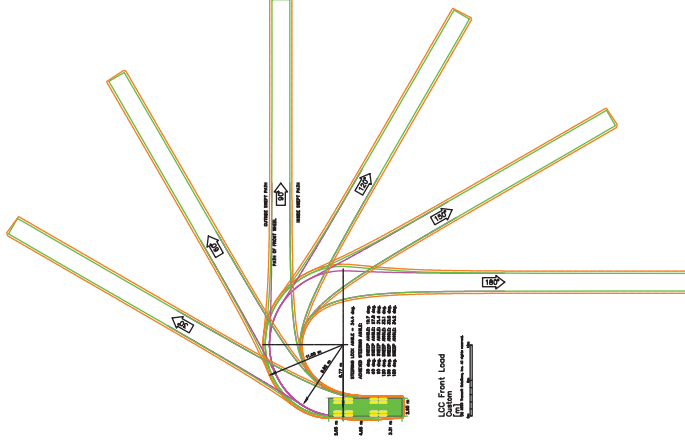
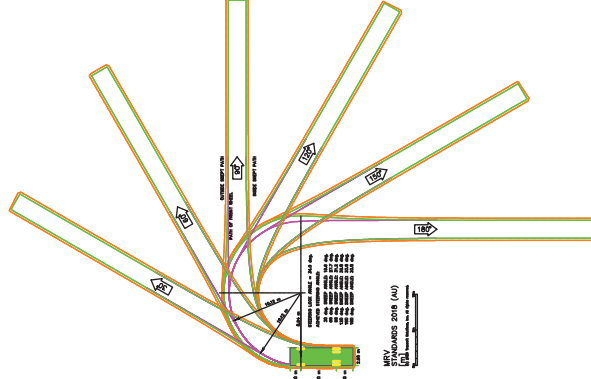
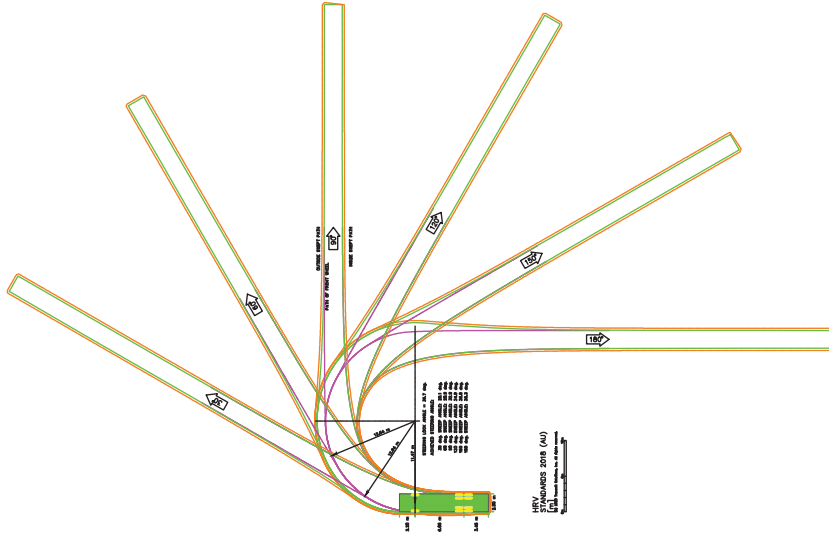
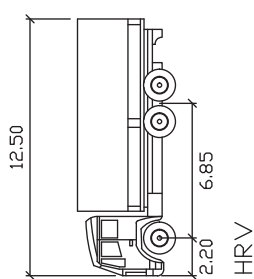
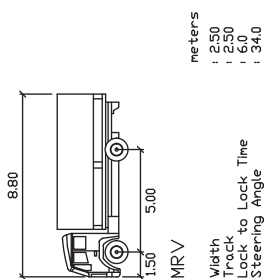
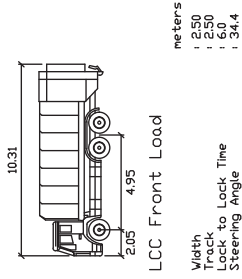
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REVISIONS	
Issue	Revised Description
001	Sweep Path Assessment

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Project	Commercial Circuit Flagstone TIA	
Title	HRV Vertical Sweep Path Checks	

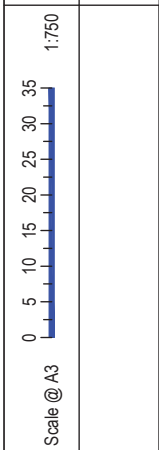
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P5356		Sheet Number		Issue	001
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REVISIONS	
Issue	Revisions
001	Sweep Path Assessment

Drawn	Date
R.TU	16.03.2023



Project	Commercial Circuit Flagstone TIA
Title	Vehicle Turn Templates

Design	R.TU	Drawn	R.TU	Checked	A.P
		NOT FOR CONSTRUCTION		Date	16.03.2023
		Project Number		Issue	
		P5356		Sheet Number	001
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