Annexure 5

Transport Impact Statement

Proposed Mixed Use Development
10 Morley Drive, Tuart Hill
Transport Impact Statement

PREPARED FOR:
SMATS Consortium

April 2021

Document history and status

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TABLE OF CONTENTS

REPORT FIGURES

REPORT TABLES

1.0 Introduction

This Transport Impact Statement has been prepared by Transcore on behalf of SMATS Consortium with regard to the proposed mixed-use development to be located at 10 Morley Drive in Tuart Hill, City of Stirling.

The Transport Impact Assessment Guidelines for Developments (WAPC, Vol 4 – Individual Developments, August 2016) states: *"A Transport Statement is required for those developments that would be likely to generate moderate volumes of traffic*[1] *and therefore would have a moderate overall impact on the surrounding land uses and transport networks"*. Section 5.0 of Transcore's report provides details of the estimated trip generation for the proposed development. Accordingly, as the total peak hour vehicular trips are estimated to be less than 100 trips, a Transport Impact Statement is deemed appropriate for this development.

The site is located at the south east corner of Main Street/Morley Drive/Karrinyup Road signalised intersection as shown in **Figure 1**. The subject site is presently occupied by a three-storey apartment block. The site is located within a predominantly residential area.

The site is bounded by Morley Drive to the north, Main Street to the east and residential properties to the immediate west and south. Vehicle access to the site is presently available via two existing left in/left out crossovers; one on Morley Drive and one on Main Street.

Pedestrian are currently accessing the site directly via existing paths along Morley Drive and Main Street.

[1] *Between 10 and 100 vehicular trips*

Figure 1: Location of the subject site

2.0 Proposed Development

The subject site occupies an area of approximately 3,113m^2 at the south east corner of Morley Drive/Karrinyup Road /Main Street signalised intersection in Tuart Hill. The proposed development plan is included in **Appendix A**.

As part of the development proposal the existing structures at the subject site will be demolished and replaced with a 6-storey mixed use development comprising residential apartments and commercial component with multi- level car parking facility. A basement parking will be constructed for residential apartments and the ground floor parking will be used by commercial tenancies. The two parking levels are not connected. The commercial tenancies will be located on ground floor facing both Morley Drive and Main Street whereas the residential apartments will be constructed above the ground floor.

The proposal does not contemplate any changes to the existing crossovers on Morley Drive and Main Street currently serving the subject site. The existing crossovers will be used to facilitate access to the development car parks.

The development proposal entails the following elements:

- Total of 68 residential apartments comprising a mix of single-bedroom, two-bedroom and three-bedroom apartments distributed across five levels; and,
- Four commercial tenancies (422m^2) and a gym at the ground floor. The gym is for residents and tenants use only.

Parking will be fully provided on-site across two levels of car parking; basement level and ground floor. A total of 76 parking bays will be provided at the basement for residential apartments and a total of 27 parking bays will be provided at ground floor comprising of 16 bays for commercial use, one ACROD bay and the remaining of 10 bays are allocated for visitors. Motorbike and bicycle parking bays are also provided on the ground floor.

Separate vehicular crossovers are proposed for the use of residents and commercial tenancies. The proposed first floor car park for commercial tenancies and visitors is accessed directly off the existing left in/left out crossover on Main Street where as the access to the basement car park for residents will be via proposed ramp connecting to the existing left in/left out crossover on Morley Drive.

Separate bin storage areas are provided for residents and commercial tenancies next to each other which are accessed directly off Main Street. Deliveries and waste collection will accommodate within the site.

The secured bicycle and motorbike parking area and end of trip facilities are provided at the basement and ground floor area. Up to 8 motorbikes and 46 bicycles can be parked at these facilities.

Pedestrians will access the development from the external footpath network which is in place along Main Street and Morley Drive frontages. The commercial tenancies at ground level are accessible directly from Morley Drive and Main Street frontages.

3.0 Vehicle Access and Parking

According to the proposed development plan presented in **Appendix A**, the proposed car park facility is designed over two levels: basement level and ground floor level. The development proposes to utilise the existing left in/left out crossovers on Morley Drive and Main Street without any modifications.

The basement car park is accessed via a two-way ramp which connects to the existing crossover on Morley Drive at the north eastern corner of the building. The basement car park entails 76 parking bays solely allocated to the residents.

The ground level parking consists of 27 bays out of which 16 bays are allocated for the use of commercial tenancies, one ACROD bay and remaining 10 bays are for the use of the visitors to the residential apartment. The ground floor car park is accessed via existing crossover on Main Street.

The total proposed on-site parking provision for the development is 103 car bays for the use of residents, visitors and commercial tenancies. The total car parking supply for the development is distributed as follows:

Table 1: Car park schedule

Level	Residential	Commercial	Visitors/Disable
Ground	N/A	16	11
Basement	76	N/A	N/A
Sub-Total	76	16	11
Total	103		

The secured bicycle and motorbike parking area and end of trip facilities at the basement and ground floor area would provide parking provision for up to 8 motorbikes and 46 bicycles.

Review of the parking layout of the proposed development confirms compliance with the requirements of AS2890.1.

4.0 Provision for Service Vehicles

Deliveries and waste collection will be accommodated within the site. Separate bin storage areas are proposed for residential and commercial use at the ground floor and at the south western corner of the proposed building.

Waste collection and delivery activity will be accommodated within the proposed parking area at the ground floor. A waste management plan is prepared by Talis Consultants which identifies how waste is to be stored and collected from the proposed development. According to the information provided to Transcore, waste collection will be carried out by the City on designated collection days with a vehicle which is smaller than the "Instantwaste Isuzu NPR400".

Turn path analysis for 6.6m Instantwaste Isuzu vehicle was undertaken (refer Appendix B) for waste collection which demonstrates the satisfactory circulation within the site. This 6.6m truck can enter the car park via Main Street, turn around within the car park, access the bin area and exit the car park in forward gear.

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5.0 Daily Traffic Volumes and Vehicle Types

The traffic volumes likely to be generated by the proposed mixed-use development have been estimated based on the proposed land uses and in accordance with the *Transport Roads & Maritime Services Technical Direction TDT 2013/04a and WAPC TIA 2016 Vol 2 Guidelines* documents.

In this particular case trip generation rates of 4.58, 0.53 and 0.32 trips/dwelling for total daily, AM and PM peak periods has been applied corresponding to "*high density residential flat dwellings (region*al)" type of residential apartments (TDT 04a). The adopted trip rates are conservative resulting in a robust assessment considering the site location, surrounding land uses and good public transport accessibility.

Accordingly, the proposed 68 residential apartments would generate about 312 daily, 36vph in the AM and 22vph in the PM peak periods respectively.

The daily, AM and PM peak hour trip rates for office land use of 11, 1.6 and 1.2 trips/100m^2 GFA was adopted for the commercial/office component of the development (TDT 04a).

Accordingly, the proposed 422m^2 GFA of commercial/office component of the development would generate about 46 daily, 7vph in the AM and 5vph in the PM peak periods respectively.

It is estimated that the proposed mixed-use development would generate a total of approximately 358 daily vehicle trips with about **43** and **27** trips during the AM and PM peak hour periods respectively. These trips include both inbound and outbound vehicle movements. The traffic distribution detailed in **Table 2** was based on the following directional split assumptions for peak hours:

- Morning (AM) peak split estimated at 25%/75% and 80%/20% for inbound/outbound trips associated with residential and commercial components respectively; and,
- Afternoon (PM) peak split estimated at 66%/34% and 20%/80% for inbound/outbound trips associated with residential and commercial components respectively.

Table 2: Peak hour trips for the proposed development

Time period	Directional traffic split	Residential Component	Commercial Component	Peak Hour Trips
Morning Peak	Inbound	9	6	43
	Outbound	27	1	
Afternoon Peak	Inbound	15	1	27
	Outbound	7	4	

With respect to the location of the development, permeability and layout of the surrounding road network and the actual traffic operation conditions at local

intersections, the assumed directional split for traffic arriving to the site is assumed as follows:

- 86% of all trips (residential trips) to Morley Drive;
- 14% of all trips (commercial trips) to Main Street;

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

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where the development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

The estimated traffic impact from the proposed development would be much lower than 100vph/lane threshold, Hence, it is concluded that the impact of the development traffic on the surrounding road network will be insignificant.

6.0 Traffic Management on the Frontage Streets

Morley Drive, in the vicinity of the subject site, is a dual divided carriageway with a solid/landscaped median. It features pedestrian paths and grassed verges on both sides of the road. Refer **Figure 2** and **Figure 3** for more details.

Morley Drive is classified as *Primary Regional Road (Red Road)* according to the *Metropolitan Region Scheme (MRS)* and comes under care and control of Main Roads WA. It is also classified as a *Primary Distributor* road in accordance with Main Roads WA *Functional Road Hierarchy* and operates under the posted speed limit of 70km/h.

Figure 2: Westbound view along Morley Drive

Figure 3: Eastbound view along Morley Drive

According to the latest traffic counts obtained from Main Roads WA Morley Drive (east of Main St) carried average weekday traffic volume of 20,416 vpd in 2018/19 with typical morning (7:45AM – 8:45AM) and afternoon (3:15PM – 4:15PM) weekday peak hour traffic volumes of 1,521vph and 1,583vph respectively.

Main Street in the vicinity of the subject site is a dual divided carriageway with solid median featuring pedestrian footpaths on both sides of the road. Refer Figure 4 and Figure 5 for more details.

Figure 4: Northbound view along Main Street

Figure 5: Southbound view along Main Street

Main Street is classified as *Other Regional Road (Blue Road)* according to the *Metropolitan Region Scheme (MRS)* and comes under care and control of the local authority with the ultimate authority resting with WAPC/DPLH. It is also classified as a *Distributor* A road in accordance with Main Roads WA *Functional Road Hierarchy* and operates under the posted speed limit of 60km/h.

According to the latest traffic count obtained from the Main Roads WA Main Street (south of Morley Drive) carried an average weekday traffic volume of 27,563 vpd in 2018/19 with typical morning (7:30AM – 8:30AM) and afternoon (4:45PM – 5:45PM) weekday peak hour traffic volumes of 2,248vph and 2,495vph respectively.

7.0 Public Transport Access

The subject site is well served by a number of bus services operating along Morley Drive (bus routes 998 and 999) and Main Street (bus routes 402 and 414). The available bus services provide connectivity to Morley Bus Station, Murdoch Station, Fremantle Station, Stirling Station, Perth Busport and Glendalough Station which provide access to the greater rail network.

The nearest bus stops on Karrinyup Road and Main Street are located approximately 100m east and 140m south of the subject site which are accessible via existing pedestrian paths. Refer **Figure 6** for more details.

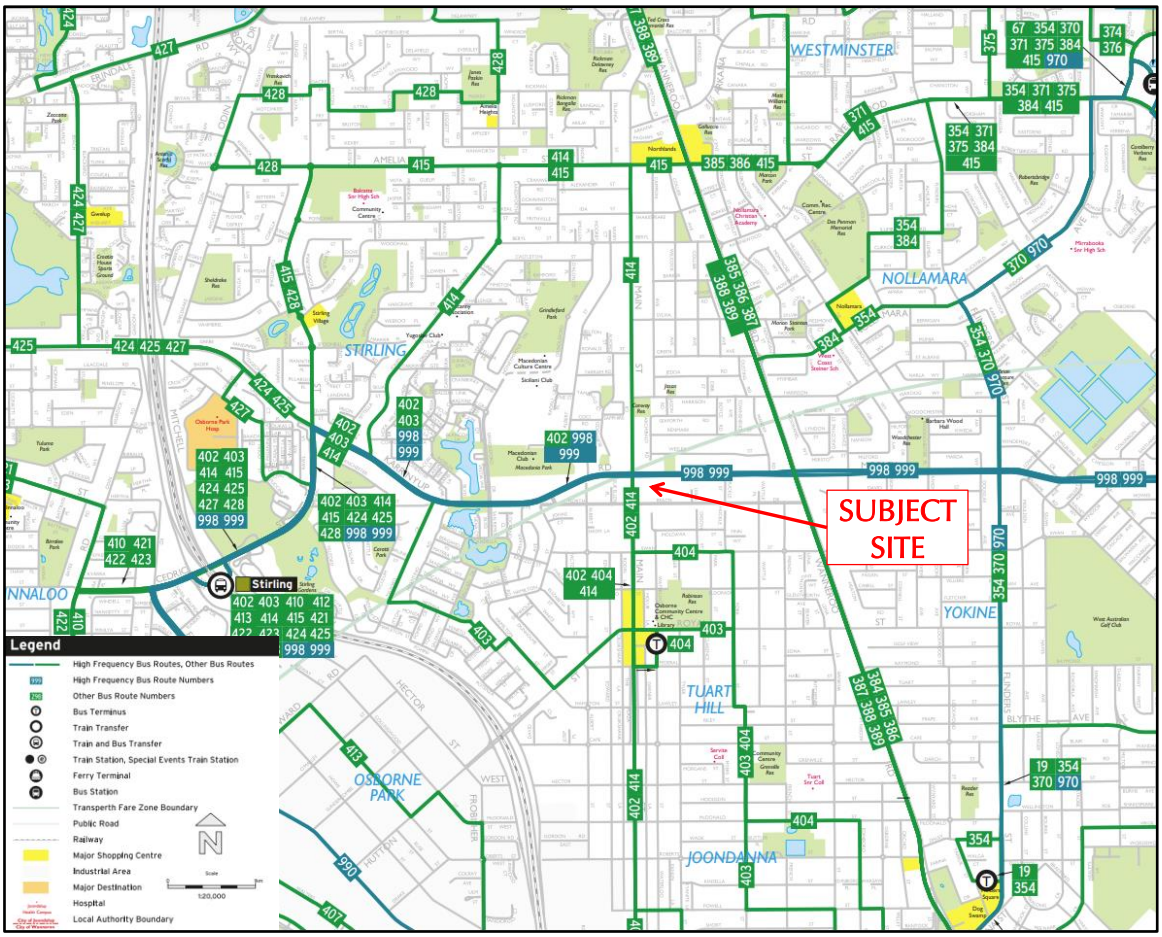


Figure 6. Local public transport service map (source: Transperth Maps)

8.0 Pedestrian Access

Pedestrian access to the subject site is available via existing footpaths which are in place along Morley Drive and Main Street fronting the subject site. Pedestrian crossing facilities are in place on all four legs of the signalised intersection of Morley Dr/Karrinyup Rd/ Main St located north west of the subject site.

9.0 Cycle Access

According to the current Department of Transport *Perth Bicycle Network Plan* illustrated in **Figure 7** , the subject site has relatively limited formal access to the existing bike path network within the locality.

However, Perth bicycle network route NE2 is in place along Albert Street approximately 260m to the west of the subject site. On road bicycle lanes are provided on both sides of N Beach Drive some 94m south of the subject site which is also classified as a good road riding environment.

With these bike routes and facilities in the vicinity of the site, it is evident that the subject site has good but indirect access to a number of bike routes that can support the use of non-motorised means of transport.

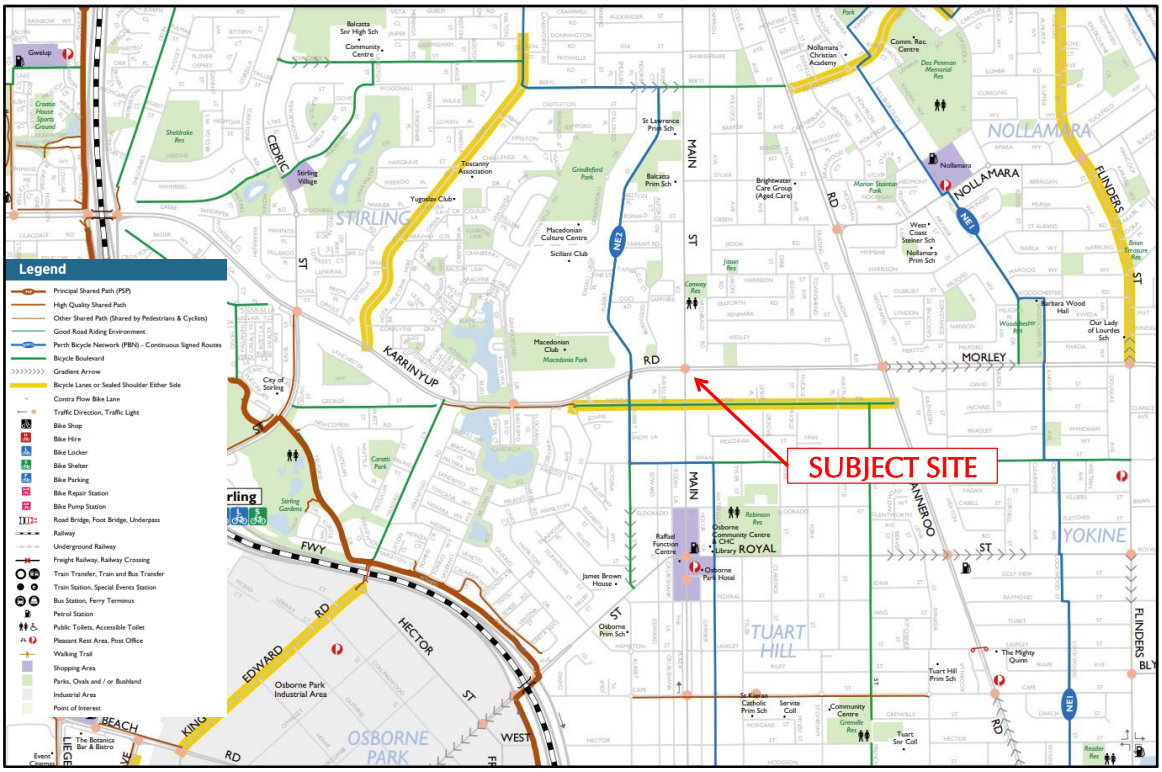


Figure 7: Extract from Perth Bicycle Network (Department of Transport)

10.0 Site Specific Issues

No particular site-specific issues have been identified for this proposed mixed-use development.

11.0 Safety Issues

No particular transport safety issues have been identified for this proposed mixed-use development.

12.0 Conclusions

This Transport Impact Statement provides information on the proposed mixed-use development to be located at 10 Morley Drive in Tuart Hill, City of Stirling.

The development comprises of 68 residential apartments plus commercial land uses on the ground floor facing both Morley Drive and Main Street. The proposed development is served by a multi-level (basement and ground floor) car park facility.

A total of 76 car parking bays are provided in the basement for the use of residents and a total of 27 bays are provided on the ground floor comprising of 16 bays for commercial land uses, 10 bays for the use of visitors and one ACROD bay.

The subject site has very good accessibility by the existing road, pedestrian and to a lesser degree cyclist network and enjoys very good public transport coverage through existing bus and train services located in the close proximity of the site.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development is conservatively estimated to be approximately 358 daily vehicle trips with about 43 and 27 trips during the AM and PM peak hour periods respectively. These trips include both inbound and outbound traffic. However, the actual net traffic impact of the development will be lower as the proposed development replaces the existing residential development.

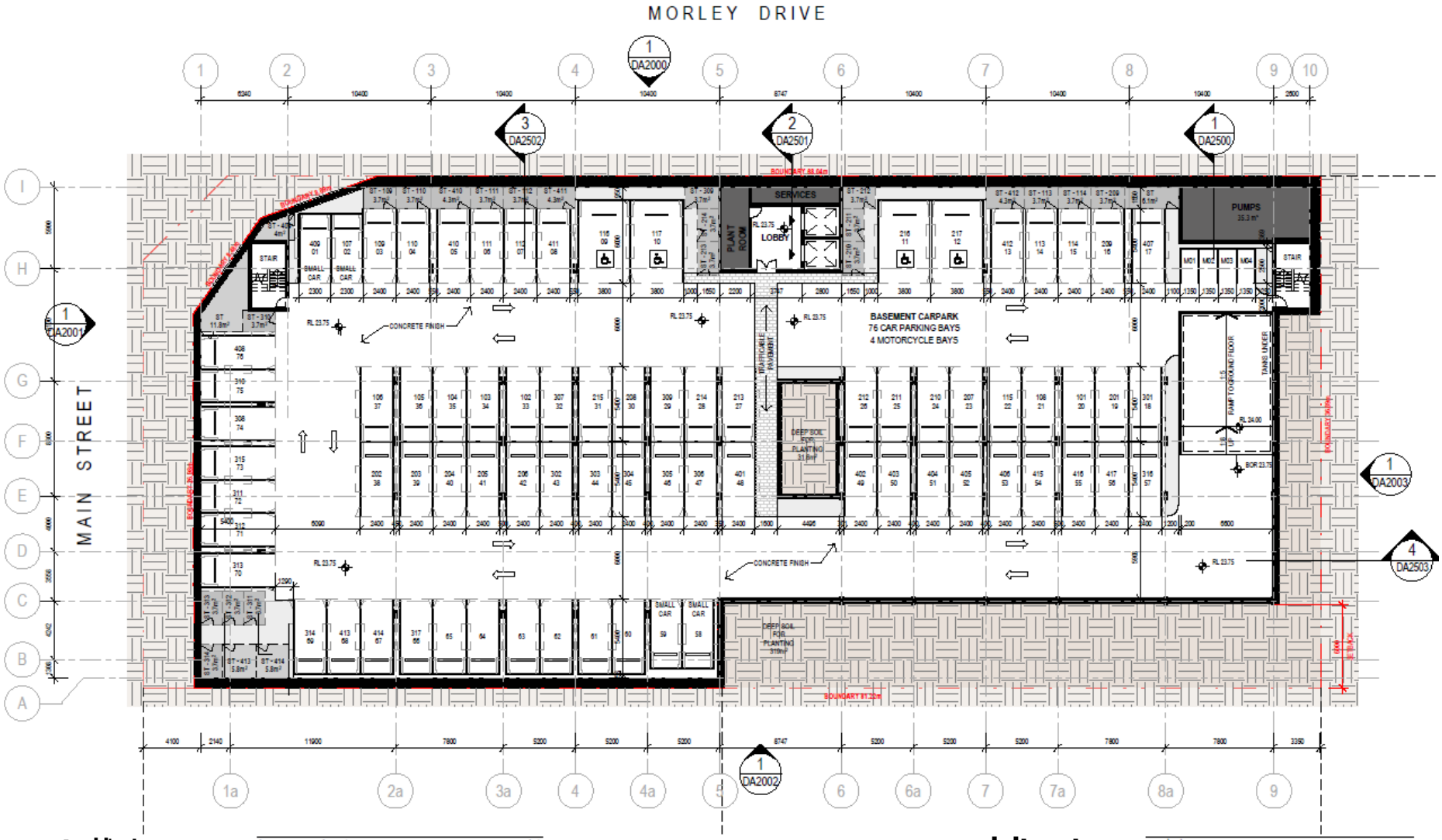
Accordingly, the traffic impact of the proposed development on the surrounding road network will be insignificant.

No particular transport or safety issues have been identified for the proposed development.

Hence, it is concluded that the traffic related issues should not form an impediment to the approval of the proposed mixed-use development.

Appendix A

PROPOSED DEVELOPMENT PLANS



issue	amendment	date
A	DA SUBMISSION	25/03/2021

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checked	AS
drawn	FMK
scale	1:250 @ A3

project	10 MORLEY DRIVE, TUART HILL
drawing	BASEMENT PLAN
project no	200611
drawing no.	DA1000
issue	A

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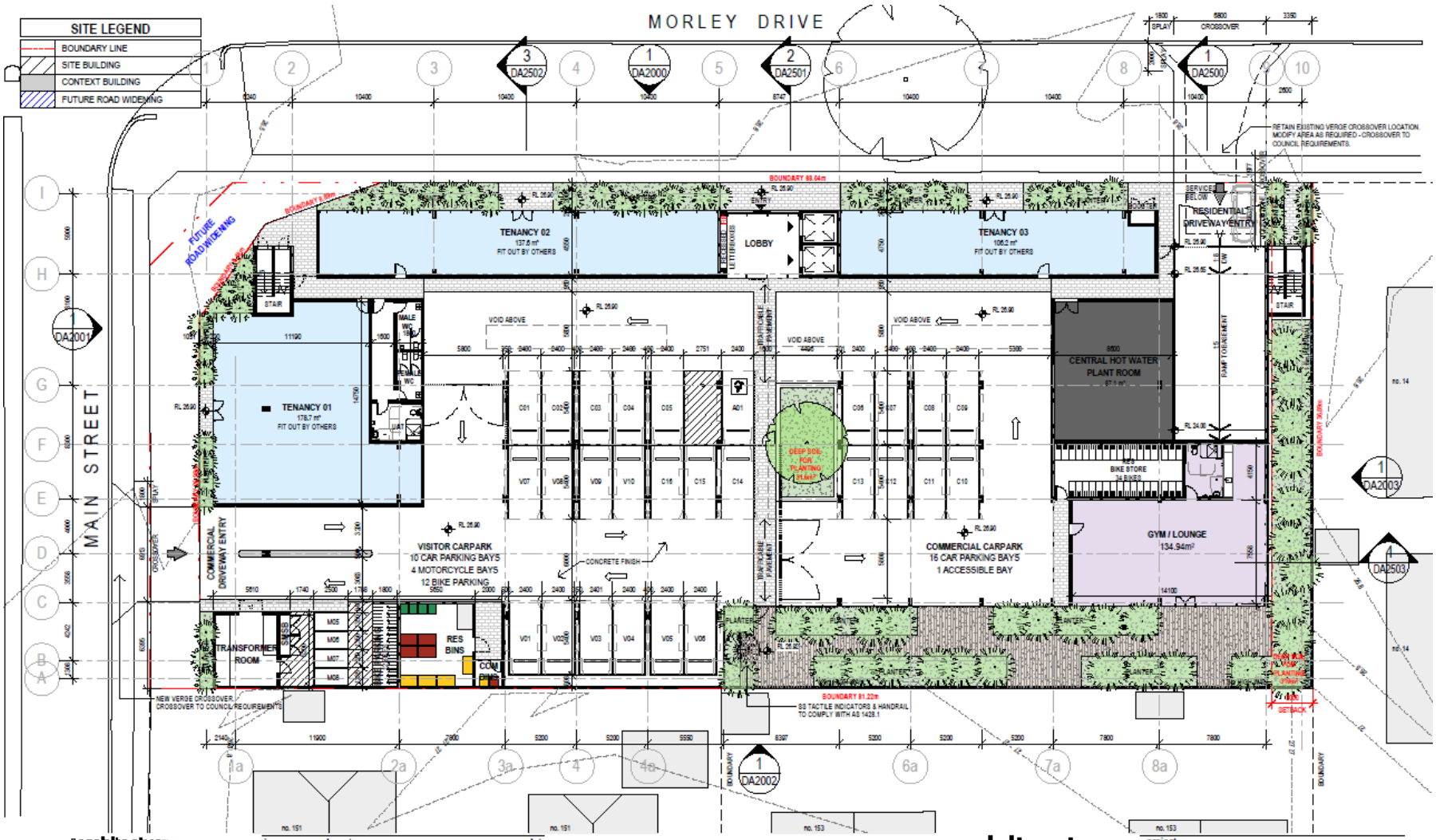

issue | amendment | date
A | DA SUBMISSION | 25/03/2021

Nominated Architect
Ray Brown, NSWARB 6359

Do not scale drawings. Verify all dimensions on site

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checked	AS
drawn	FMK
scale	1:250 @ A3

project: 10 MORLEY DRIVE, TUART HILL

drawing: GROUND FLOOR PLAN

project no	200611
drawing no.	DA1001
issue	A

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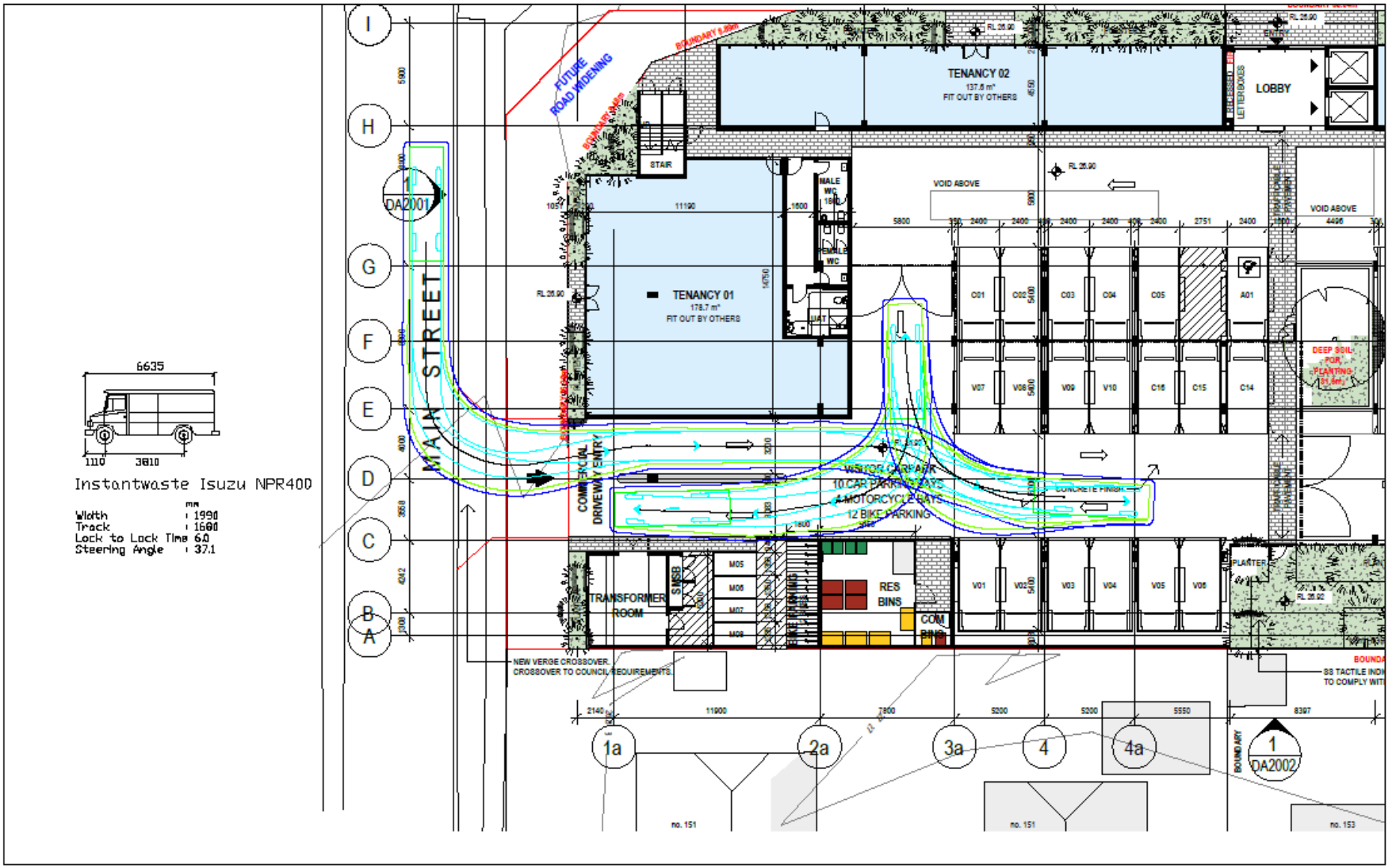
Appendix B

TURN PATH ANALYSIS



10 Morley Drive, Tuart Hill
6.6m Instantwaste Isuzu NPR400
Service Vehicle Entry

LEGEND
Vehicle Body
Wheel Path
300mm Clearance

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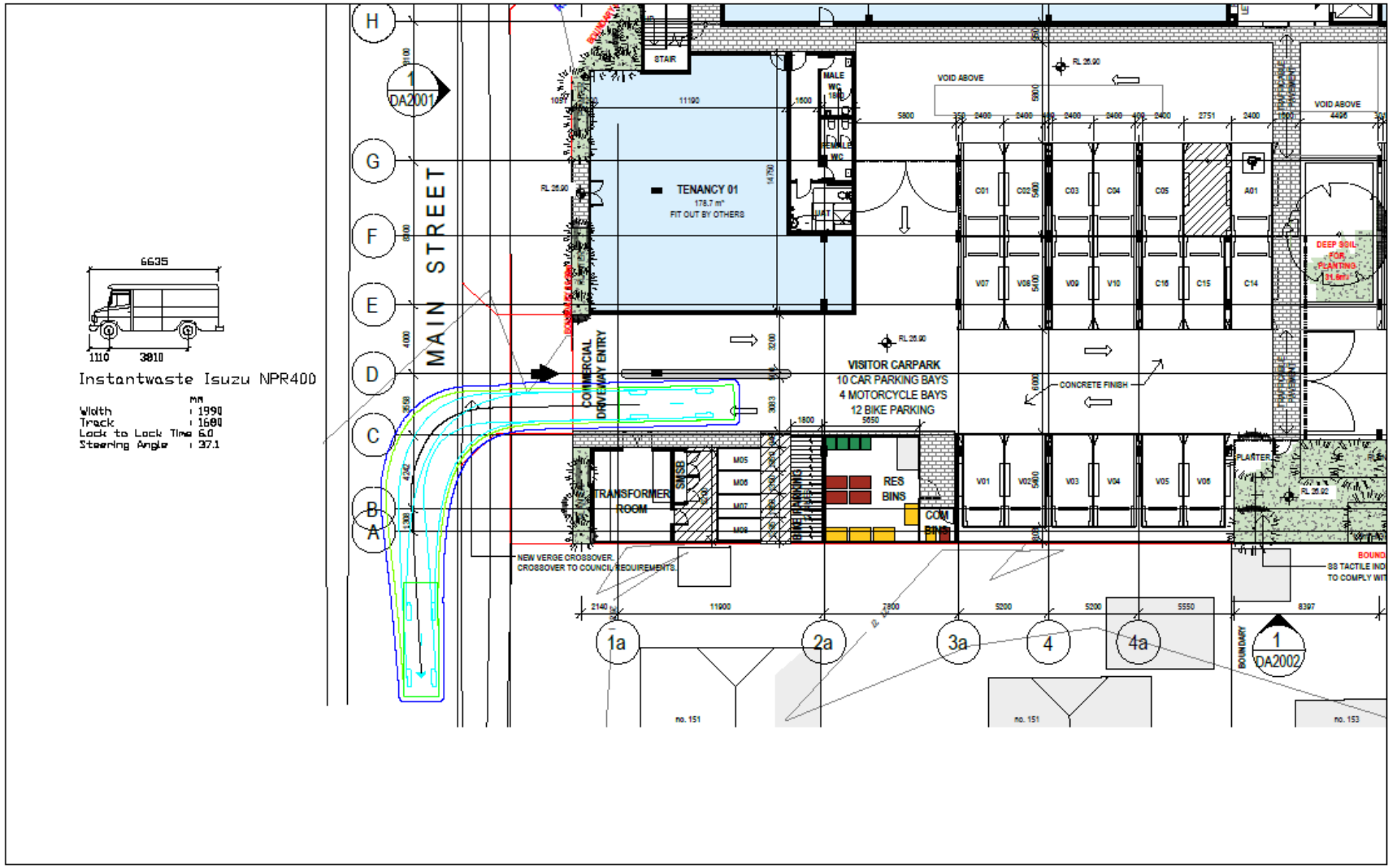

10 Morley Drive, Tuart Hill

6.6m Instantwaste Isuzu NPR400
Service Vehicle Exit

LEGEND

Vehicle Body
Wheel Path
300mm Clearance

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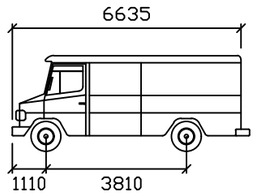
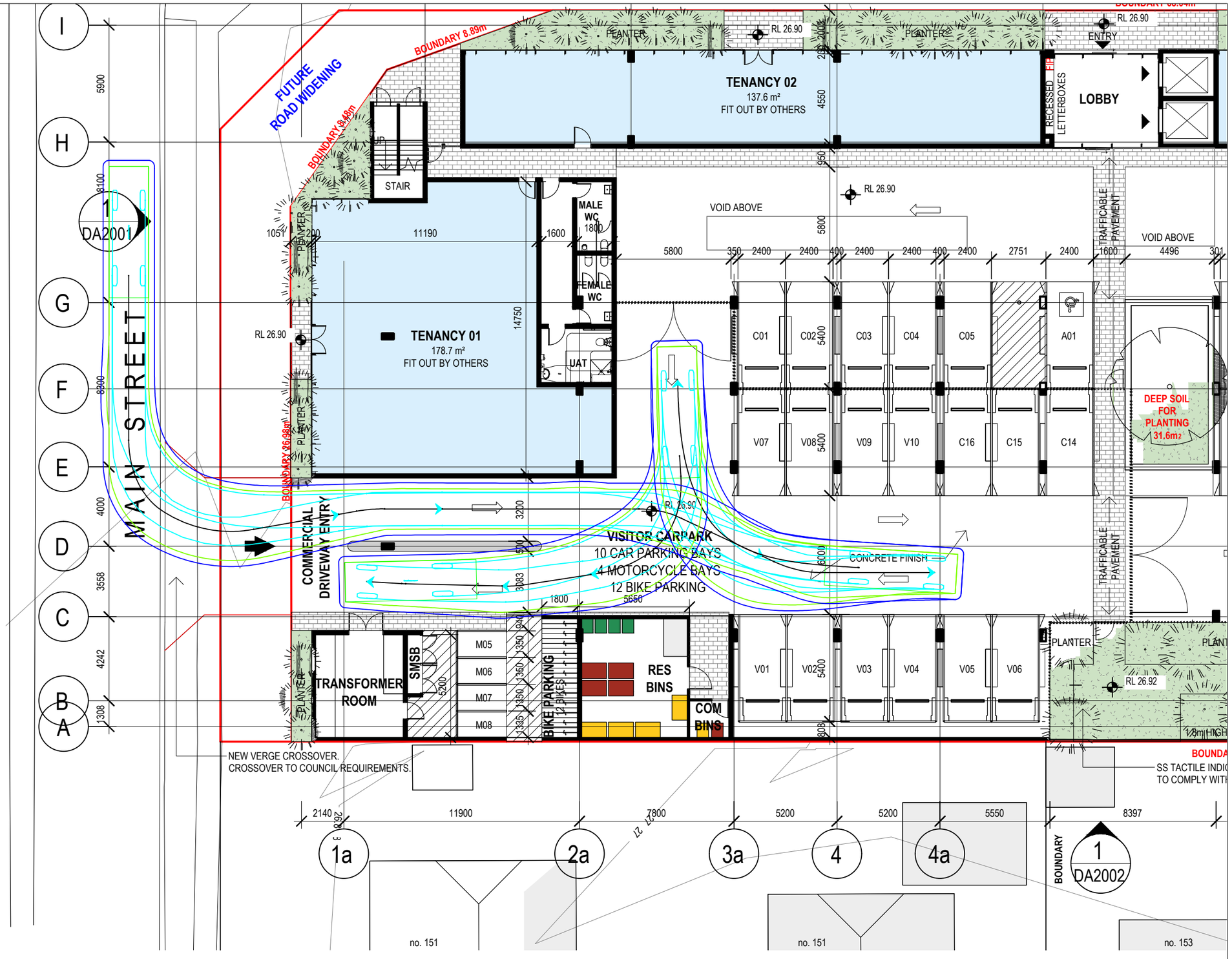


Instantwaste Isuzu NPR400

	mm
Width	: 1990
Track	: 1680
Lock to Lock Time	6.0
Steering Angle	: 37.1



10 Morley Drive, Tuart Hill

6.6m Instantwaste Isuzu NPR400

Service Vehicle Entry

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Vehicle Body

Wheel Path

300mm Clearance

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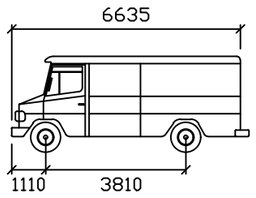

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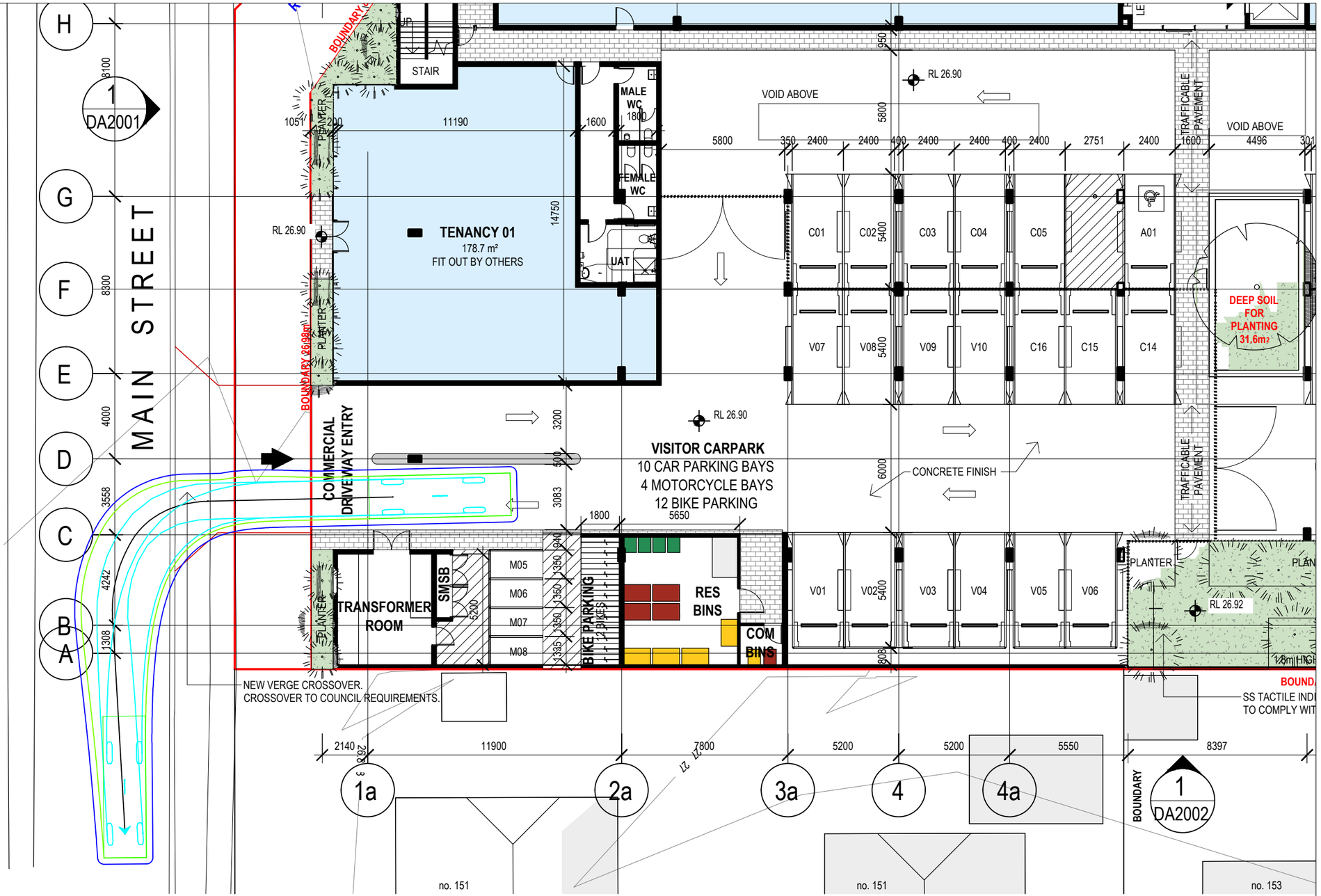

10 Morley Drive, Tuart Hill

6.6m Instantwaste Isuzu NPR400

Service Vehicle Exit

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