25, 25A & 27 Bushlands Avenue, Gordon
Proposed Residential Care Facility

DA Traffic & Parking Assessment Report

Prepared for:

Australian Nursing Home Foundation

26/05/2017

The Transport Planning Partnership

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25, 25A & 27 Bushlands Avenue, Gordon
Proposed Residential Care Facility

DA Traffic & Parking Assessment Report

Client: Australian Nursing Home Foundation

Version: V03

Date: 26/05/2017

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Quality Record

Version	Date	Approved by	Signature
V01	23/05/2017	Jason Rudd	
V02	25/05/2017	Jason Rudd	
V03	26/05/2017	Jason Rudd	

Table of Contents

Tables

Figures

APPENDICES

1 Introduction

1.1 Background

In 2015, the Australian Nursing Home Foundation (ANHF) submitted a development application (DA0418/15) for a proposed 84 bed residential care facility under the provisions of *SEPP (Housing for Seniors or People with a Disability) 2004* on a site at 25, 25A and 27 Bushlands Avenue, Gordon.

The Transport Planning Partnership Pty Ltd (TTPP) was engaged by ANHF to prepare a traffic and parking assessment of the proposed residential care facility to accompany the DA to Ku-ring-gai Council.

Through the course of the DA assessment process a number of design modifications were made by the applicant to address a number of matters raised by Council. These modifications included:

- The provision of services and facilities on site to satisfy the requirements of clause 26 of the SEPP (ie. accessibility to services);
- Removal of the U-shaped driveway with drop off bay in the centre of the front setback to provide additional landscaping area, reduce level changes and delete retaining wall;
- The residential community shuttle bus service was proposed to be available for staff travel between the site and Gordon railway station; and
- Extension of the basement car park footprint to include additional car spaces and storage area.

On the 8 March 2017, the Planning Panel deferred the matter noting that the proposal does have merit but required further details and amendments to the proposal.

With regard to traffic and parking these further details included:

6. *Review and submit traffic report to consider the impact of service vehicles and community bus in terms of traffic generation and the adequacy of Bushlands Avenue to safely accommodate the anticipated vehicle movements; and*

9. *Increase the disabled / accessible car parking spaces by 2 plus one additional ordinary space.*

These matters and others have been addressed with revised DA plans prepared for resubmission to the Planning Panel and are the basis of the traffic and parking assessment presented herein.

1.2 Site Location

The proposed development site is located at 25, 25A and 27 Bushlands Avenue, Gordon.

As shown in Figure 1, the site is located on the northern side of Bushlands Avenue between the intersections of Yarabah Avenue and Browns Road. The site has a single road frontage to Bushlands Avenue.

The site includes three single residential dwellings each with its own vehicle access driveway to Bushlands Avenue.

1.3 Purpose of this Report

This traffic and parking assessment report has been prepared to consider the various design modifications and amendments to the DA that have been made in response to Council and the Planning Panels requests.

Specifically, this assessment considers the matters raised by the Planning Panel and listed in the reasons for deferral.

Notwithstanding the above, this assessment is a complete update and stand alone report which assesses the current DA proposal.

Figure 1.1: Proposed Development Site Location

Source: www.maps.six.nsw.gov.au

2 ANHF Proposed Development

It is proposed to construct a residential care facility on the site currently occupied by the 3 residential dwellings.

The proposed facility will provide:

- A total of 84 residential care beds provided in 78 units (72 x 1 bed units + 6 x 2 bed units);
- Up to 25 staff would be on site at any one time, including nursing, administrative and on-site services staff;
- On-site services for residents and staff, including:
    - Community shop
    - Hair and beauty salon
    - Café
- Mobile services to be brought to the residential care facility on an as needed basis, including but not limited to:
    - Banking services
    - Chemist
    - Tailoring
- A basement facility providing:
    - 28 car parking spaces (including 3 accessible spaces)
    - a mini bus parking area
    - an ambulance bay
    - a loading area for waste and delivery vehicles
- A combined entry / exit driveway at Bushlands Avenue providing vehicle access to the basement parking area.

The *ANHF Plan of Management* (May 2017) for the proposed development includes the following operational undertakings:

- Residents and staff will have access to a 21 seater community bus which will operate between the site (via the basement) and Gordon Railway Station. The community bus will operate as a free service. The shuttle will run hourly between 0645 and 2300 with the exception 1430-1600 when ½ hourly trips will be provided to coincide with staff shift change over times.

- A separate community bus will be used / hired for resident outings such that the on – site community bus service will not be adversely affected. While the loading / unloading of passengers will occur on site in the basement, the second bus will not be stored / parked on site.
- The loading area in the basement will be utilised for waste / recycling collection and general deliveries between the hours of 8am and 6pm.
- Waste collection, deliveries and maintenance will be undertaken by contract services. As such the development does not seek to rely upon Council's waste collection services.

3 Existing Conditions

3.1 Surrounding Road Network

As shown in Figure 1.1, the site is located within close proximity to the Pacific Highway which is a classified regional road.

At the intersection of Bushlands Road, the Pacific Highway is a 6 lane road with 3 lanes in each direction separated by a central median. Parking is not permitted northbound along the Pacific Highway in the vicinity of the Bushlands Avenue intersection. Southbound parking is permitted outside of clearway (AM Peak) periods.

The central median along the Highway restricts vehicle movements to left in / left at the Bushlands avenue intersection.

Bushlands Avenue is a local road under the control of Council. At the site, Bushlands Avenue has a sealed road pavement of approximately 7 metres with kerb and gutter on the northern side of the street (ie. site's frontage). No kerb and gutter is provided on the southern side of the street with the road pavement meeting flush with the grass verge.

Kerb side parking is permitted on the northern side of Bushlands Avenue as shown in Figure 3.1. Parking on the southern side occurs within the grass verge.

Figure 3.1: Proposed Development Site Location

Source: Google Maps (2015)

A footpath is provided along the northern side of Bushlands Avenue and extends from the Pacific Highway past the site and on to Lyme Regis Avenue.

Due to the left in / left out conditions at the Pacific Highway / Bushlands Avenue intersection, vehicles wishing to travel south from the site along the Highway can do so via the signalised intersection at St Johns Avenue. Those vehicles accessing the site from the north can do so via the signalised Pacific Highway / Dumaresq Street intersection which provides a designated right turn lane.

Both St Johns Avenue and Dumaresq Street are local collector roads.

As part of the 2015 DA traffic assessment, TTPP commissioned peak period traffic surveys at the following intersections:

- Pacific Highway / Bushlands Avenue; and
- St Johns Avenue / Vale Street.

The results of the surveys are summarised in Table 3.1. The detailed surveys results are provided in Attachment A.

Table 3.1: Surveyed Peak Period Traffic Flows (September 2015)

Location	AM Peak Hour (veh/hr)	PM Peak Hour (veh/hr)
Pacific Hwy (south of Bushlands Ave) – nth bound only	1,204	1,815
Bushlands Ave (west of Pacific Hwy) – two way	38	38
St Johns Ave (east of Vale Street) – two way	237	180
Vale St (north of St Johns Ave) – two way	79	75

Source: ROAR Data Surveys (September 2015)

Observations of traffic conditions surrounding the site were undertaken by TTPP in May 2017. These observations indicated that the traffic surveys undertaken in 2015 are representative of existing (2017) conditions.

Specifically, observed traffic flows for Bushlands Avenue in 2017 were less than the surveyed 2015 flows for the AM Peak and the same for the PM Peak. Notwithstanding the above, the 2015 detailed survey results have been utilised in this traffic assessment.

3.2 Existing On-Site Development

The existing site is presently occupied by three individual residential dwellings. Each of the three dwellings is serviced via individual driveways at Bushlands Avenue.

The existing dwellings have the potential to generate traffic. Based on RMS rates[1] it is expected that the existing uses generated in the order of 3 vehicle movements per peak hour and 30 movements per day.

[1] RMS (2002) Guide to Traffic Generating Developments

4 Assessment of Proposed Facility

4.1 Access to Facilities and Services

In the '*Record of Deferral*' by the Planning Panel, it is noted that the Plan considers the proposal for the provision of services on site, visiting professionals and the provision and operation of a bus for the use of residents addresses the objective of the provisions to provide development in a manner suited to residents who are both mobile, independent, active and frail.

The following sections of this assessment considers, amongst other matters, the appropriateness of the proposed design parameters of the basement parking area and associated access with regard to the operation of a community bus. Operational matters are addressed by the Plan of Management.

4.2 Traffic Generation Potential and Implications

The potential traffic generation of the proposed development has been estimated using standard RMS guidelines along with TTPP's knowledge of other similar residential care facilities in the Hornsby and Ku-ring-gai area.

It is noted that the site currently generates a level of traffic. Furthermore, it is understood that there is potential to subdivide the blocks, thereby increasing the number of dwellings on the site.

The estimated traffic generation of the proposed residential care facility has been compared with the existing and potential residential traffic generation of the site (see Table 4.1).

Table 4.1 indicates that the proposed residential care facility development of the site will increase the total number of car movements during the peak period by approximately 10 vehicles per hour. This is a relatively low volume of traffic and unlikely to have a noticeable effect on road network operation.

Table 4.2 provides an estimate of the likely number of delivery and service vehicle expected to access the proposed development site.

Table 4.1: Potential Peak Period Traffic Generation (Road Network Peak Hour)

	Existing Residential Development	Proposed Residential Care Facility
Residential Care Beds / Dwellings	3	84
Staff (On Site)	-	25
Mobile Services (visiting staff)	-	Up to 5
Vehicle Trip Rate Trips per Bed / dwelling / hour	0.99 (PM)	0.5 / on site staff 1.0 / visiting staff
Community Bus Trips	-	4
Total Trips / hour	3	22
Nett Increase Trips / hour	-	+ 19 vehicles / hour

Residential Care Facility trip rate based on staggered staff shifts. RMS rates not appropriate for low / high care.

Table 4.2: Estimated Delivery and Service Vehicles Accessing

	Number of Vehicles / Week
Waste Collection – Food	3
Waste Collection – General	2
Recycling Collection	2
Deliveries (ie. food and consumables)	7
TOTAL	14 per week (average 2-3 per day)

Delivery and waste collection movements to and from the site are likely to occur outside of the peak AM and PM periods.

Intersection operation of the surveyed intersections has been analysed using the SIDRA intersection modelling software to determine the implications of the additional traffic generation of the proposed Residential Care Facility. The results of the 'Level of Service" analysis are presented in Table 4.3.

Table 4.3: Intersection Operation Analysis with Proposed Development Traffic

Intersection	Peak Hour Period	Existing Level of Service	Proposed Level of Service
Pacific Hwy / Bushlands Ave	AM	B	B
	PM	C	C
St Johns Ave / Vale St	AM	A	A
	PM	A	A

The SIDRA analysis results presented in Table 4.3 indicate that there would be no change to the existing level of service at either intersection as a result of the proposed residential care facility.

Therefore, it is considered that the proposed development traffic can be satisfactorily accommodated within the existing road network without adversely impacting upon road network operation.

It is noted that the Planning Panel assessment report concluded that the additional traffic generated by the proposed development (2015 DA) is unlikely to exceed the traffic capacity of Bushlands Avenue or negatively impact on the operation of any nearby intersections.

As the level of traffic generation of the proposed development for the 2017 DA is similar to that of the 2015 DA, the conclusion of the Planning Panel assessment report should remain unchanged.

4.3 Site Access Arrangements

The site currently has 3 vehicle access driveways to Bushlands Avenue. Under the proposed residential care facility development this would be reduced to a single two way driveway servicing the basement.

Redundant driveways will be removed and replaced with standard kerb and gutter. The removal of two driveways will facilitate an additional 2 on street parking spaces to be provided on the proposed development's frontage to Bushlands Avenue.

The location of the proposed basement driveway has been set back away from the western boundary by approximately 5 metres to provide adequate separation between the site's driveway and that of the neighbouring property which is constructed at the boundary line.

The available sight distances to vehicles and pedestrians at the proposed basement driveway access have been reviewed and found to comply with the minimum sight line requirements of AS2890.1. Good sight lines are afforded to the site entire frontage due to the straight horizontal and vertical alignments of Bushlands Avenue near the site.

The proposed driveway width has been designed to accommodate two way traffic flows along its entire length. This will remove the need for vehicles to stop and give way to approaching vehicles within the site and hence negate the potential for queuing associated with single lane – two way flow driveways.

It is noted that at the property boundary there is sufficient width for a vehicle to stand and wait while another vehicle enters the site, hence the potential for vehicle queuing on street is mitigated.

The proposed driveway width will accommodate service vehicle movements to and from Bushlands Avenue. Vehicle swept path analysis for service vehicle access to and from the site is provided in Appendix B.

In summary the proposed vehicle access arrangements are considered to be satisfactory for the proposed residential care facility and will facilitate safe and efficient access to and from the on site parking and loading areas.

4.4 Car Parking Provisions

The requirements for on site car parking are set out in the SEPP (Housing for Seniors or People with a Disability) 2004.

This SEPP specifies that development cannot be refused on the grounds of parking if the following minimum parking rates are provided. The minimum rates for car parking are:

- 1 space / 10 beds +
- 1.0 spaces / 2 employees +
- 1 ambulance space

For a 84 bed facility with up to 25 staff on site at any one time this equates to a minimum provision of 21 car spaces + 1 ambulance bay.

As noted above in Section 2, mobile services will be brought onto site for the residents. It is understood that there may be as many as 5 visitors on site providing the various mobile services. A provision of 1 space per visitor has been used in the design of the proposed on site parking area.

Overall, if 5 mobile service visitors were to be on site simultaneously, then this would equate to a requirement to provide 26 car spaces and 1 ambulance bay.

The proposed provision of 28 cars, 1 mini bus space and an ambulance space exceeds the minimum requirements of the SEPP and is thus considered satisfactory for the proposed development.

It is noted that the community shuttle bus will be available to staff (free of charge), which will provide an attractive alternative to private vehicle use.

The provision of 3 disabled / accessible car parking spaces meets the minimum requirement of the Ku-ring-gai Council DCP and is consistent with the provisions required by the Planning Panel deferral notice.

The layout of the basement car park has been reviewed and found to be consistent with the requirements of AS2890.1/2.

It is noted that proposed development includes the provision of 3 accessible parking bay which has been set out to comply with AS2890.6.

4.5 Emergency Vehicle Access and Parking

A designated ambulance bay is proposed within the basement parking area and located directly adjacent to the 'holding area' and nearby the lifts connecting to the upper residential floors.

The available headroom and spatial set out of the basement will be sufficient to allow ambulance access and operation within the basement.

4.6 Community Shuttle Bus Operation

It is noted that the proposed resident care facility will own and operate its own community (mini) bus to transport residents and staff to various activities, services and public transport nodes. The operational characteristics of the community bus are set out in the *Plan of Management*.

The community bus would be parked on site within the designated space provided in the basement. With regard to headroom requirements for basement access a typical "Coaster" have the dimensions of 7.0 metres long x 2.6 metres high x 2.1 metres wide. Thus a headroom provision of 3.5 metres would adequately accommodate a community bus within the basement.

Swept path analysis (see Appendix B) indicates that the community bus can access its designated parking space within the basement and manoeuvre internally to allow forward entry and forward exits movements from the site via the proposed driveway at

Bushlands Avenue. Based on the swept path analysis provided in Appendix B it is recommended that the median shown on the architectural plans adjacent to the bus parking space be a painted rather than raised median.

Pedestrian access between the community bus parking area and the residential care facility will be provided via the main lift operating between the basement and the residential floors of the development.

4.7 Service Vehicle Arrangements

As discussed above, all waste collection and deliveries for the proposed residential care facility would be undertaken on site using contractor services. As such the size of trucks used to access the site can be controlled by the contractor.

In particular, the vehicles used to access the site can be set such that vehicles can access and operate within headroom provisions of the site.

The proposed development will have a minimum headroom provision of 3.5 metres along the vehicle path of travel between the entrance and the loading area and headroom of 4.0 metres at the loading area.

This headroom would be more than sufficient to allow contractors to select trucks from their fleet such that they can access and operate within the loading area.

As noted in the *Plan of Management* a preferred waste contractor has been selected on the basis that they can adequately service the site with the proposed headroom and loading area design.

The vehicle manoeuvring requirements of service vehicles within the site have been assessed using automated swept path simulations (AutoTRACK). The results are presented in Appendix B.

The swept path analysis indicates that the design service vehicle can adequately access the site and manoeuvre to access the proposed loading. The internal manoeuvring area will facilitate forward entry and forward exit movements to and from the site.

4.8 Construction Traffic Management

It is anticipated that a detailed Construction Traffic Management Plan (CTMP) will be required to be prepared and approved by Council prior to the commencement of construction activities on the site. The requirement for a CTMP would be included as a consent condition attached to a development approval for the proposed development.

Notwithstanding the above, the following considerations and mitigation measures are discussed such that an understanding of the potential construction traffic implications can be understood prior to development approval and to guide the development of the CTMP.

The CTMP will need to include but not be limited to the following:

- Identification of construction vehicle haulage routes to and from the site;
- Identification and control measures for vehicle site accesses;
- Use of traffic controllers and appropriate warning signage (including TCPs);
- Hours of operation; and
- Use of On Street work zones.

Each of the above will need to be detailed once a building contractor has been appointed.

Construction activities for the proposed residential care facility will include the following stages:

- Demolition
- Bulk excavation
- Construction
- Fit Out

As the site only has a single road frontage to Bushlands Avenue, all construction vehicle access will need to be via Bushlands Avenue. However to limit the extent of heavy vehicle traffic on local roads it is recommended that all heavy vehicle (ie. truck) access be via the Pacific Highway / Bushlands Avenue intersection. This would restrict truck movements to the section of Bushlands Avenue between the site and the Highway.

Construction hours will be set by the conditions of consent, however, it is anticipated that construction activities will be restricted to 5 ½ days per week with half days on Saturday and no work on Sunday or public holidays.

The use of traffic controllers shall be considered to control vehicle movements to and from the site and across the pedestrian foot path.

Measures to discourage construction workers on the street shall be considered including the potential to provide on site parking.

5 Conclusions

Based on the findings of the traffic assessment presented in this report it is concluded that:

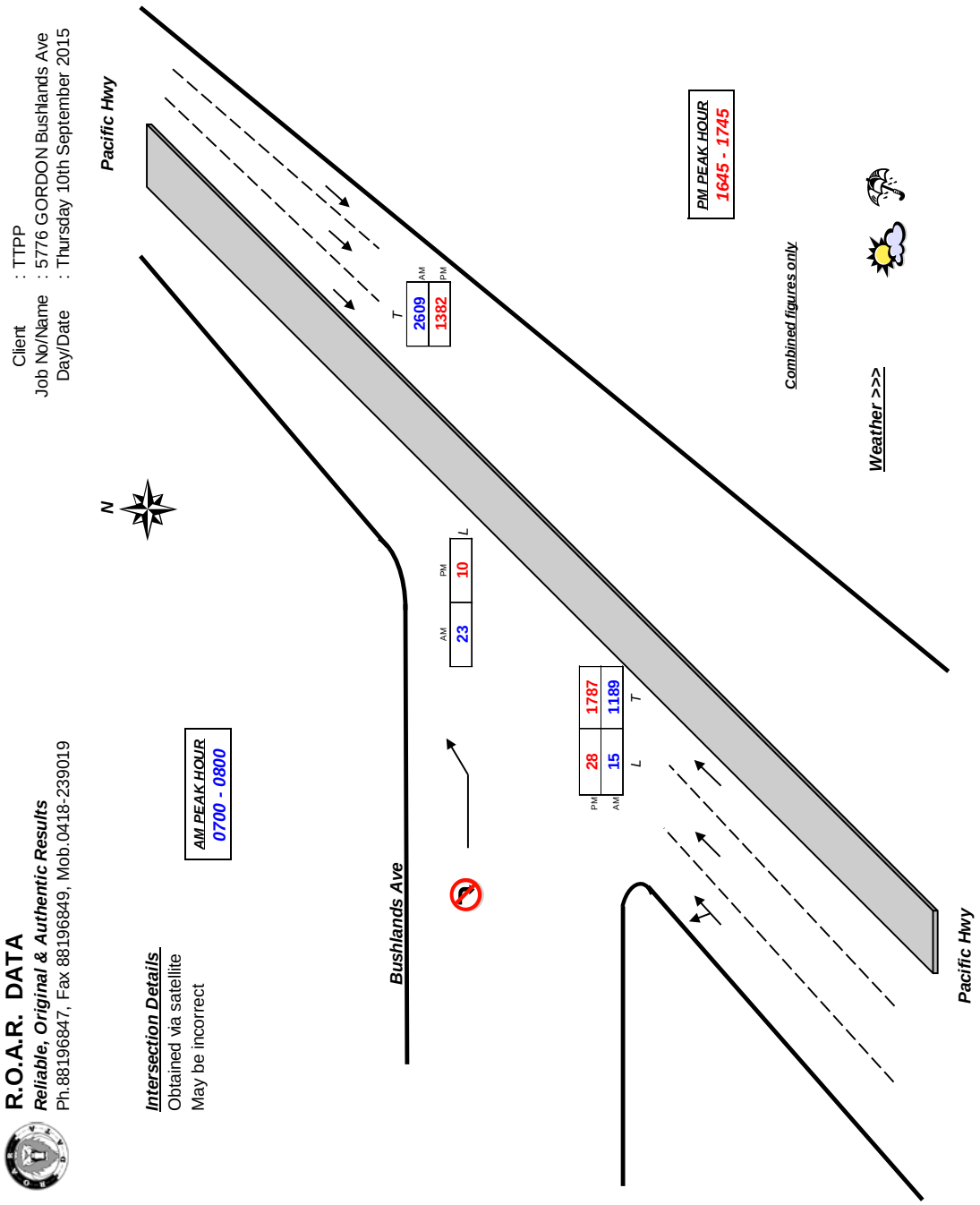
- The proposed residential care facility will provide sufficient on site car parking provisions to meet the minimum requirements under SEPP (Housing for Seniors or People with a Disability) 2004 and the likely demands of the proposed residential care facility.
- The traffic generation potential of the proposed residential care facility is considered to be low and will not have a discernible impact on the operation of Bushlands Avenue and the surrounding road network.
- The parking and loading dock arrangements are designed in accordance with AS2890.1/2 and would enable service vehicle access by the largest truck likely to access the site.
- The site access arrangements at Bushlands Avenue will facilitate efficient and safe access to and from the site.

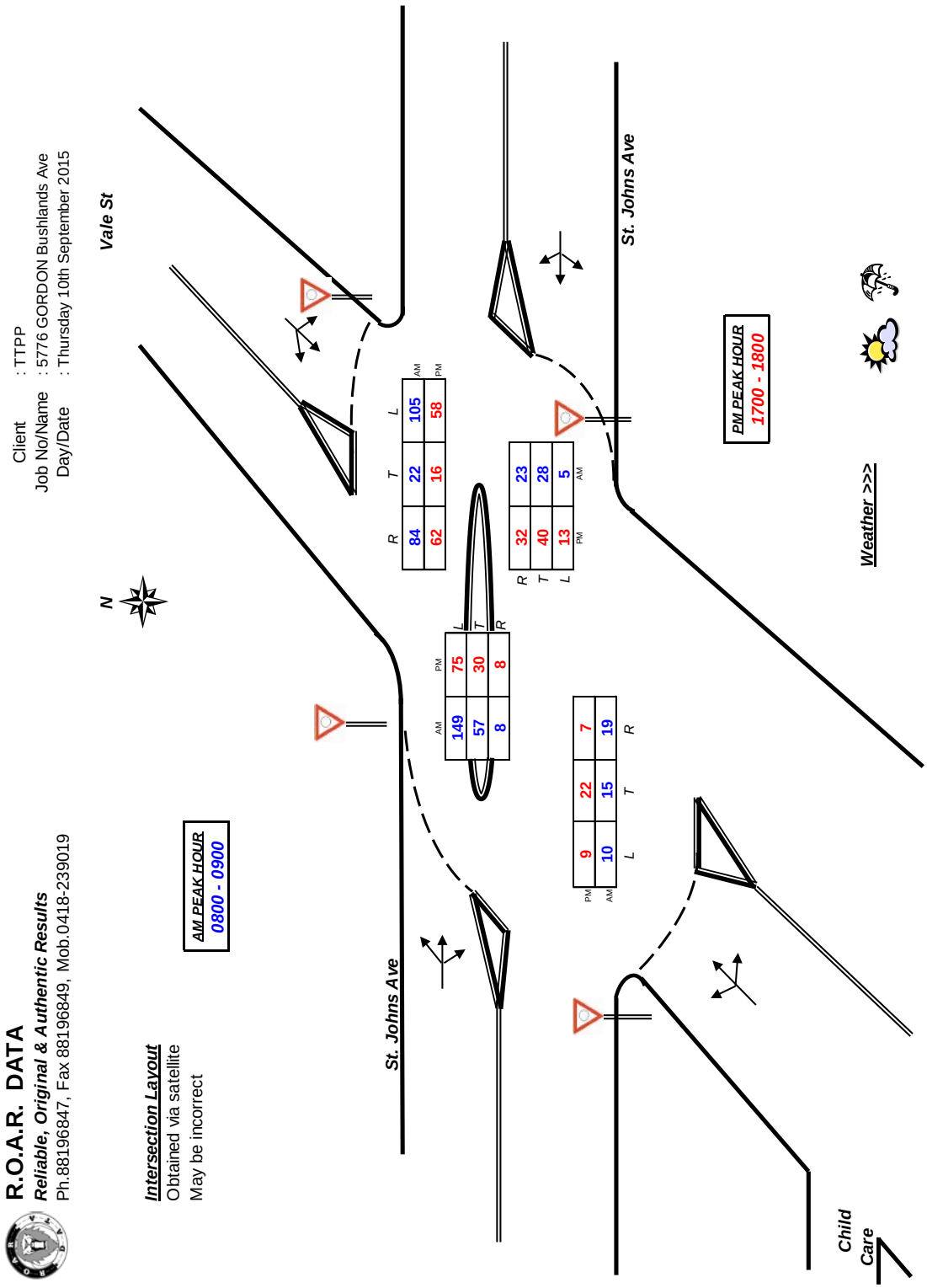
With regards to traffic and parking the proposed development is considered to be satisfactory.

Furthermore, this traffic and parking report has considered and assessed the issues raised by the Planning Panel. Specifically, this assessment report has provided the further information sought by the Panel to enable a determination of the proposal.

Appendix A

Traffic Surveys




R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019
Client : TTPP
Job No/Name : 5776 GORDON Bushlands Ave
Day/Date : Thursday 10th September 2015
Vale St
St. Johns Ave
St. Johns Ave
N
Intersection Layout
Obtained via satellite
May be incorrect
AM PEAK HOUR
0800 - 0900
PM PEAK HOUR
1700 - 1800
Weather >>>
Child Care
R T L
AM 84 22 105
PM 62 16 58
R T L
AM 32 40 13 23 28 5
PM
L T R
AM 149 57 8
PM 75 30 8
L T R
AM 9 22 7
PM 10 15 19

Appendix B

Vehicle Swept Path Analysis

CARPARK
RL.93.56

VOID

20 21 22 23 24 25 26 27 28 29 30

BUILDING

VOID

MED. STORE

STO

ACC WC

LIFT

LIFT

LIFT LOBBY

SERVICES LOBBY

CLNR'S

WC

CORRIDOR

LINE OF DROP CEILING ABOVE

VOID

GROUND FLOOR BUILDING OUTLINE OVER

GROUND FLOOR BUILDING OUTLINE OVER

05 - AMBULANCE

HOLDING 1

07

MSB

KITCHEN

06

05

04

03

02

01 - BUS PARKING

MECH.RISER TO ABOVE

COOL ROOM

F'ZER

DRY STO

OFFICE

WASTE

MAINTENANCE

RECEIVING

VOID

BULK STORE

ARCHIVES

COMMS

STAIR 3

VOID

FIRE HYDRANT PUMP ROOM & SPRINKLER VALVE ROOM

RAIN WATER TANK 2

VOID

MRV - Medium Rigid Vehicle

LINE OF BUILDING OUTLINE ABOVE

VOID

VOID

4.57

247 ° 27' 15"

27.435

247 ° 27' 15"

B U S H L A N D S A V E N U E

MRV - Medium Rigid Vehicle

104.83

337 ° 27' 15"

BOUNDARY

BRICK GARAGE TILE ROOF

METAL CARPORT

19
DP 656330

1 & 2 STOREY BRICK RESIDENCE TILE ROOF NO.29

1 & 2 STOREY BRICK RESIDENCE TILE ROOF NO.29

RESIDENCE
No.31A BUSLANDS AVENUE

1
DP 230159
No. 31

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	JR	JR	22/05/17

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PROJECT
25 BUSHLANDS AVENUE, GORDON

TITLE
AS2890.2 8.8m MRV SWEPT PATH

DWG No.
FIGURE 1

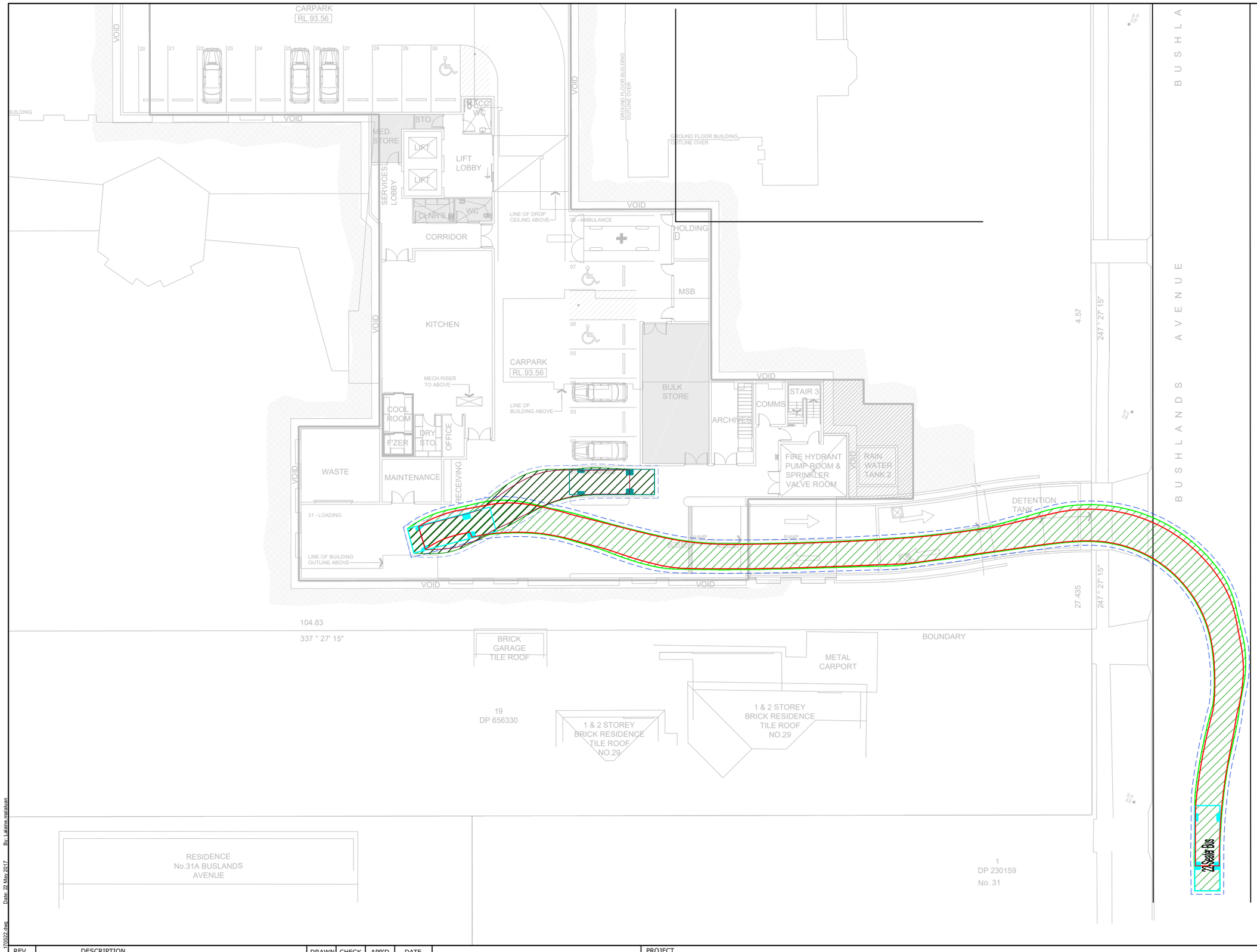
DATE STAMP
22 MAY 2017

PROJECT No.
15002

SCALE
1:300 (@A3)

REV.
A

Filename: 15002CAD03_SweptPath_170522.dwg Date: 22 May 2017 By: Lafiene mailakaan



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	JR	JR	22/05/17

The Transport Planning Partnership

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PROJECT: 25 BUSHLANDS AVENUE, GORDON

TITLE: 22-SEATER BUS SWEPT PATH (VEHICLE ENTERING) - RAISED MEDIAN

DWG No.: FIGURE 2

DATE STAMP: 22 MAY 2017

PROJECT No.: 15002

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REV.: A

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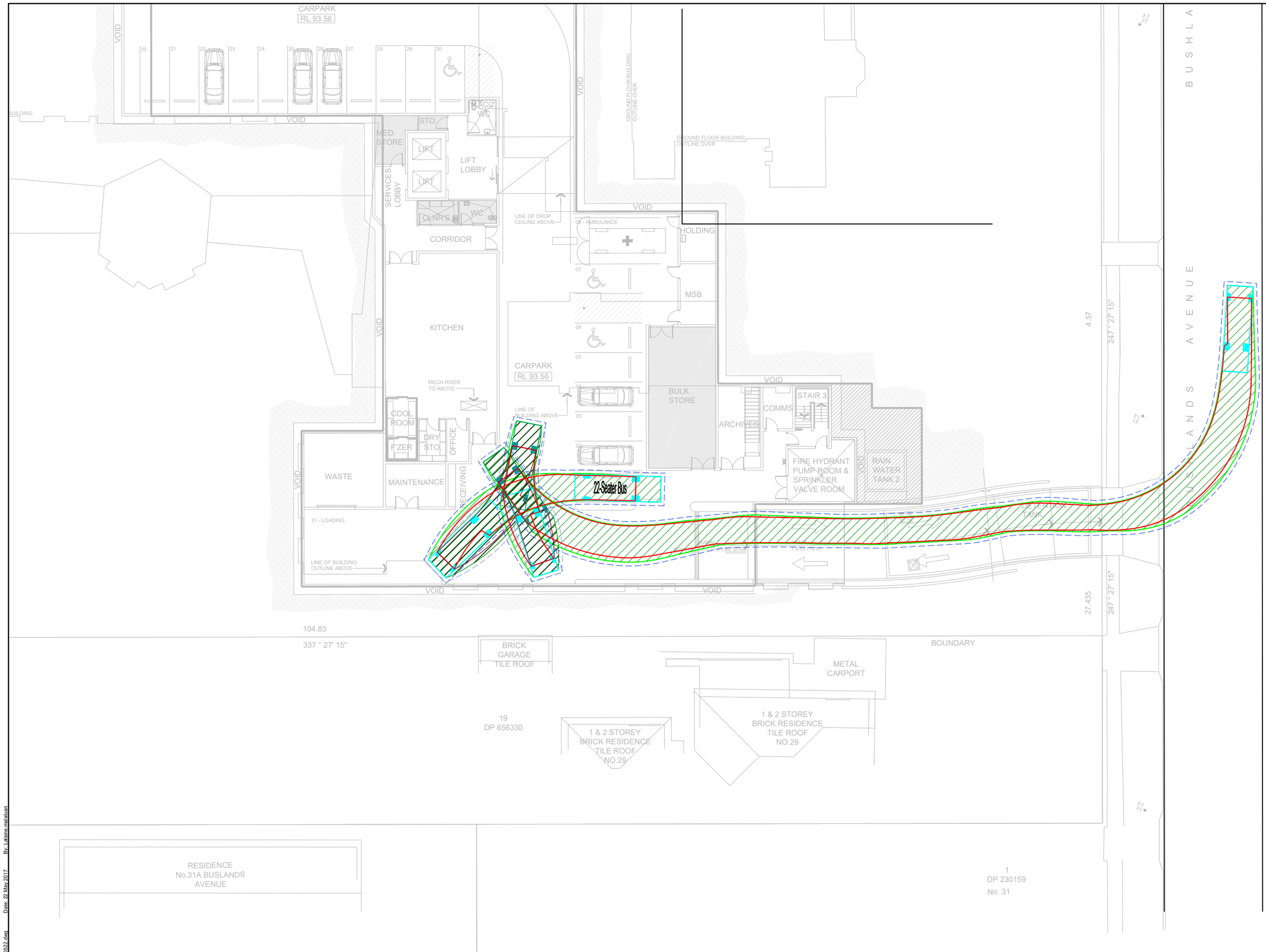

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	JR	JR	22/05/17

The Transport Planning Partnership

Suite 402, 22 Atchison Street
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Tel: 02 8437 7800
Email: info@ttpp.net.au

PROJECT: 25 BUSHLANDS AVENUE, GORDON

TITLE: 22-SEATER BUS SWEPT PATH (VEHICLE EXITING) - RAISED MEDIAN

DWG No.: FIGURE 3

DATE STAMP: 22 MAY 2017

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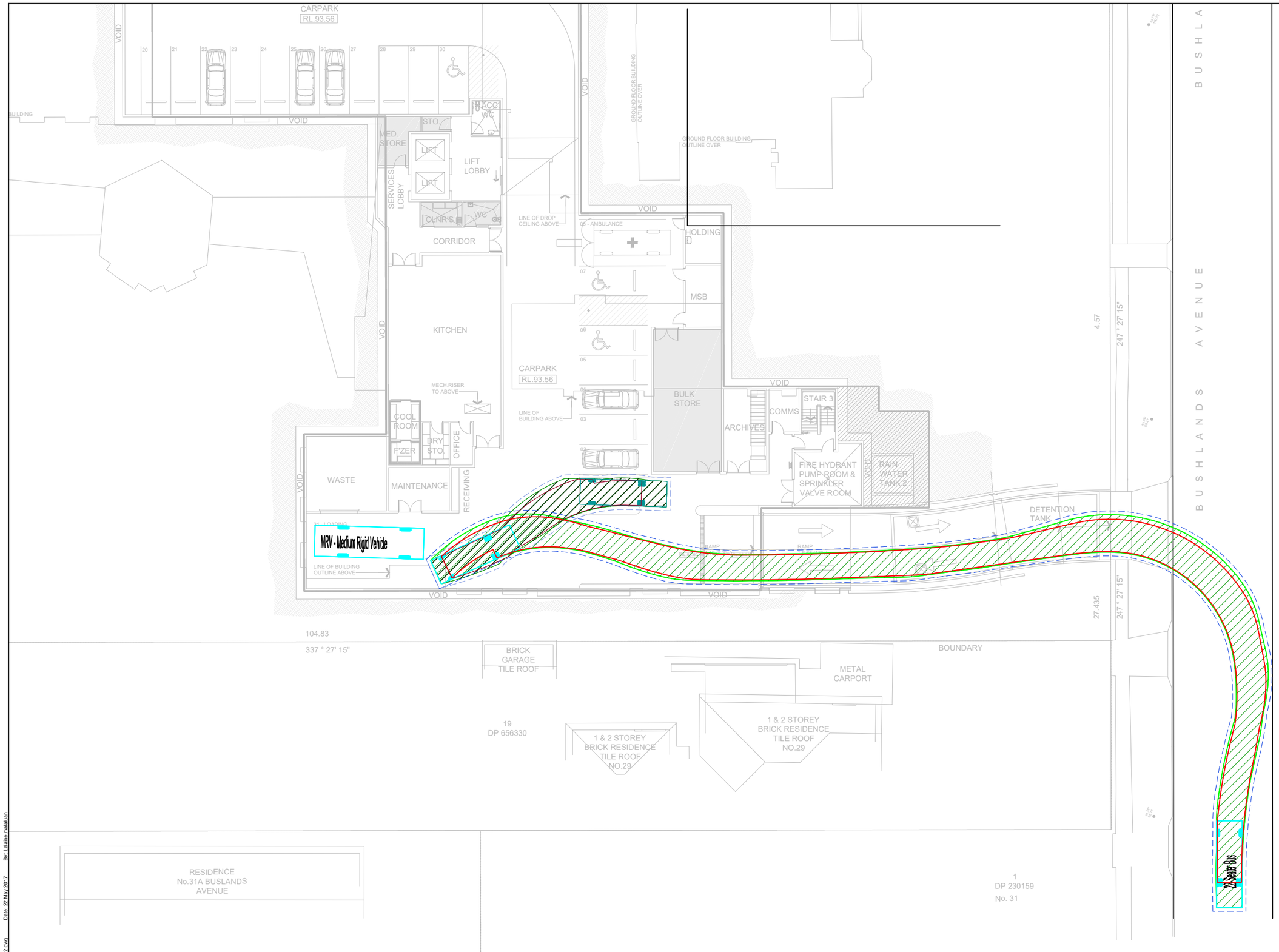

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Email: info@ttpp.net.au

PROJECT: 25 BUSHLANDS AVENUE, GORDON

TITLE: 22-SEATER BUS SWEPT PATH (VEHICLE ENTERING) - PAINTED MEDIAN

DWG No.: FIGURE 4

DATE STAMP: 22 MAY 2017

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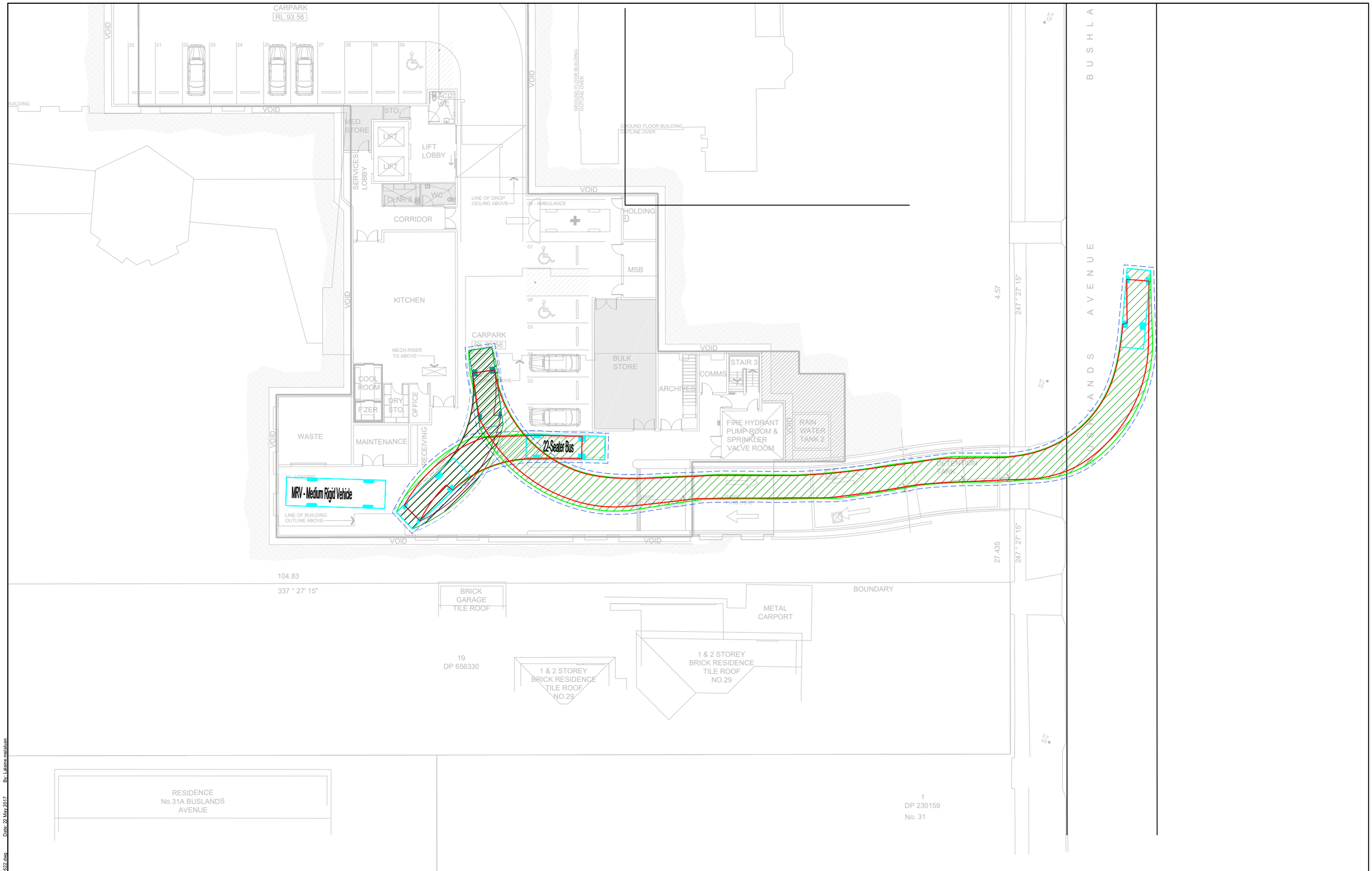

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	JR	JR	22/05/17

The Transport Planning Partnership

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PROJECT: 25 BUSHLANDS AVENUE, GORDON

TITLE: 22-SEATER BUS SWEPT PATH (VEHICLE EXITING) - PAINTED MEDIAN

DWG No.: FIGURE 5

DATE STAMP: 22 MAY 2017

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Filename: I:\15002\CAD\03 Swept Path\ 170522.dwg Date: 22 May 2017 By: Lafaine.malakuan

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