QTraffic
Engineering Consultants

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2022/1300
Date: 18 September 2023

Queensland Government

Proposed Residential Development, 57 Banana Street, Redland Bay

Traffic Report

Revision A
6 July 2022

Our Ref: 1746_HAL05

Prepared for: HAL Architects

Prepared by: Richard Quinn
Director, Q Traffic
BE Civil, MIEAust, RPEQ

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1.0 Introduction

Q Traffic was engaged to prepare a Traffic Impact Assessment to accompany an application for a residential development on land located at 57 Banana Street in Redland Bay.

Whilst the site is located in the Redland City Council Local Government Area, the proposal constitutes a Material Change of Use as triggered by the Economic Development Act 2012 (ED Act) and defined in the Planning Act 2016. The proposal is assessable against the relevant provisions of the ED Act and the Weinam Creek Priority Development Area (PDA) Development Scheme effective 29 May 2014 (the Development Scheme).

This report provides relevant background information regarding the proposal, and documents the results and findings of our investigations addressing the following key traffic issues:

- Vehicular access arrangements;
- On-site car parking provision;
- Service vehicle requirements; and
- The traffic impacts anticipated as a result of the development.

2.0 Context

2.1 Site Location

The subject site is located at 57 Banana Street in Redland Bay, on the western side of the road, approximately 46 metres south of Outridge Street. It is legally described as Lot 8 on RP80201 and has a total site area of 834.52m^2.

The site has frontages to Banana Street to the east and Outridge Street to the west, and is otherwise bounded by a vacant lot to the north and a residential dwelling to the south. A vehicular crossing is provided on both of these streets.

Figure 2.1a and **Figure 2.1b** below show the location of the subject site and the road network in the vicinity of the site.

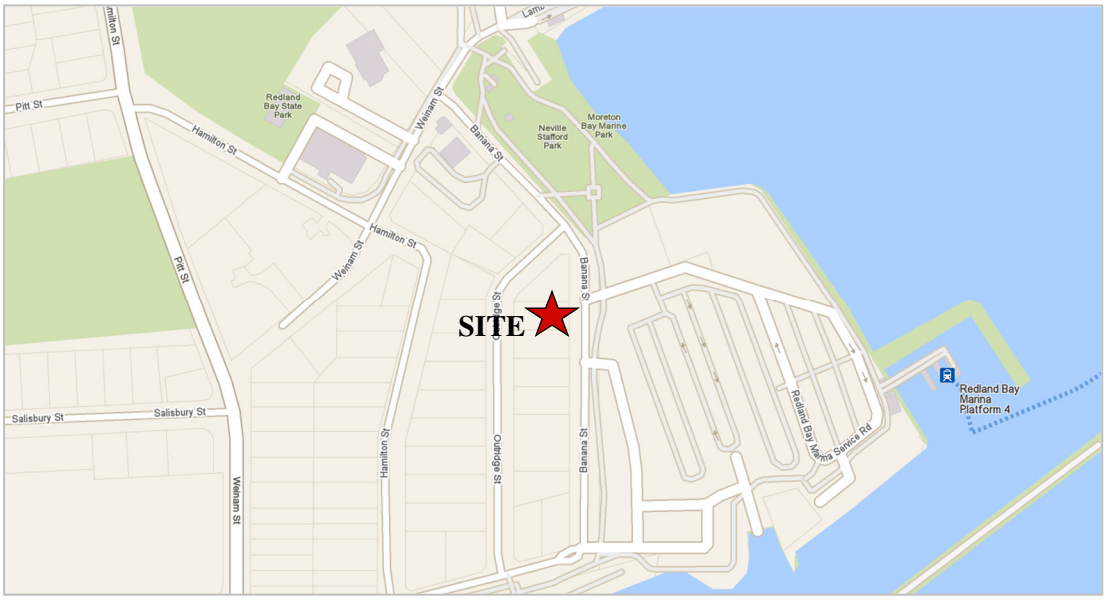

Figure 2.1a: Site Location **Source: Whereis**

Figure 2.1b: Subject Site **Source: QLD Globe**

2.2 Local Road Network

The subject site has frontages to Banana Street and Outridge Street.

Banana Street is a local street under control of Redland City Council and generally run in a north-south direction between Weinam Street and Meissner Street. It is a two-way, two-lane undivided road as shown in **Figure 2.2a** below. Parking is permitted along both kerbsides of Banana Street, though is prohibited along the subject site frontage.

Figure 2.2a: Looking south on Banana Street **Source: Google Maps**

Outridge Street is a local street under control of Redland City Council and generally run in a north-south direction between Banana Street and Meissner Street. It is a two-way, unmarked and undivided road as shown in **Figure 2.2b** below. Parking is permitted along both kerbsides of Outridge Street.

Figure 2.2b: Looking south on Outridge Street **Source: Google Maps**

3.0 Proposed Development

This application seeks approval for a multiple dwelling with a total of 17 dwellings are provided on-site including:

- 10 x two bedroom dwellings; and
- 7 x three bedroom dwelling.

A car park on the ground and basement levels will accommodate 31 parking spaces, including 29 resident spaces and two (2) visitor spaces. Access to the car park is provided via a 6.5m crossover from Outridge Street.

A copy of the architectural plans is included as **Appendix A** with an extract of the Ground Floor Plan and Basement Plan shown in **Figure 3a** and **Figure 3b** respectively.

The design of the development, considering the requirements of Council's Transport, Servicing, Access and Parking Code, is discussed in the following sections.

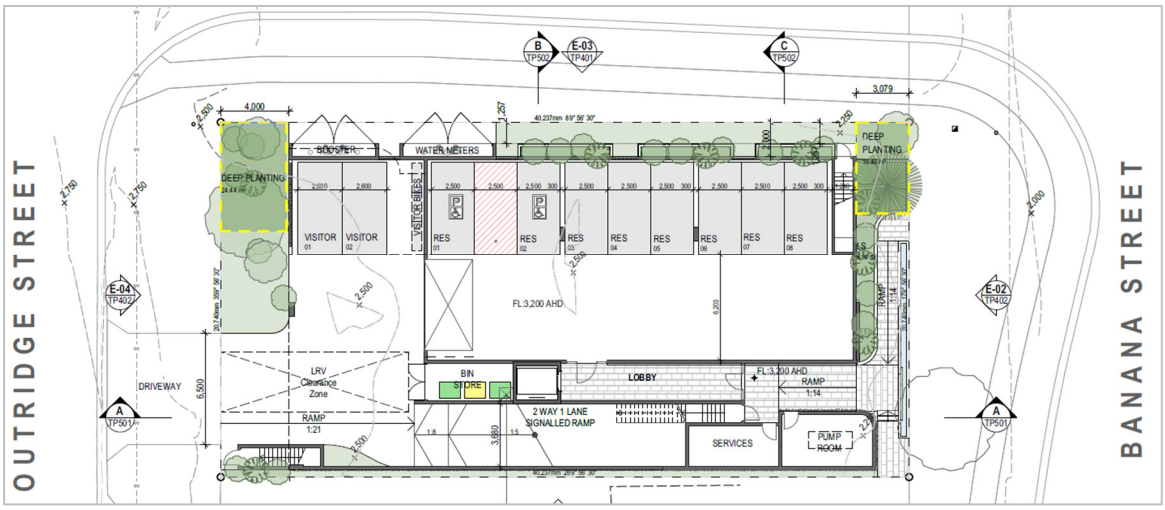

Figure 3a: Extract from Ground Floor Plan

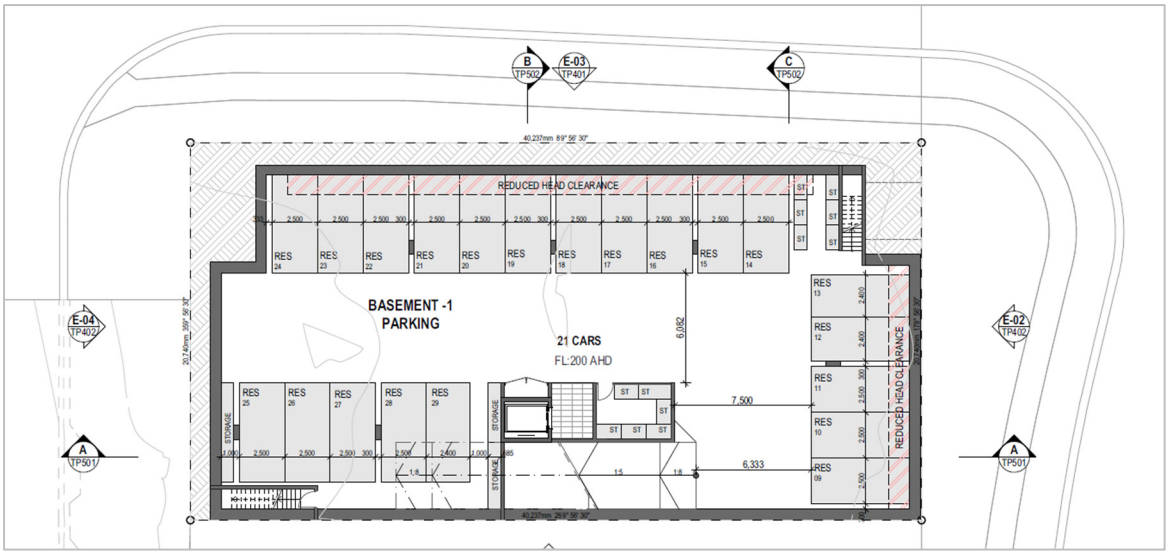

Figure 3b: Extract from Basement Plan

3.1 Vehicle Access

As previously noted, vehicular access to the development is proposed via a driveway onto Outridge Street (minor road) which will accommodate standard vehicles in additional to service vehicles. Under AS2890.1, a Category 1 driveway is warranted based on the capacity of the car park (31 low turnover spaces) which is defined as a combined driveway with a minimum width of 5.5m.

In response, the proposed Outridge Street access has a width of 6.5m meeting the requirements of AS2890.1. In addition to facilitating two-way passing of cars, the access has also been designed to accommodate refuse collection vehicles to stand on-site, where a 10.2m Rear Loading Refuse Truck is able to reverse from Outridge Street with only a single movement as shown in **Appendix B**. This arrangement is permissible for occasional service under the off-street commercial parking standard AS2890.2, where all exit movements from the site will occur in forward gear.

The proposed site access arrangements are considered to be acceptable and appropriate given the scale and nature of the proposed development, and in accordance with Council's requirements.

3.2 Car Parking Provision

Council's Transport, Servicing, Access and Parking Code outlines car parking requirements for developments. A summary of the car parking required by Council's Policy is summarised in Table 3.2. The applicable rates relate to multiple dwelling sites within 400m walking distance of a bus stop that provides a minimum of 10 return services during normal business hours per day including Saturdays. In the case of the subject site, bus stops within 150m of the site on Outridge Street meet the threshold of services with up to four routes running (250, 280, 281 & 282).

Table 3.2: Car Parking Requirement

Use	No	Car Parking Rate	Car Parking Requirement	Provided
Multiple Dwelling Development[1]				
Two-Bedroom	10	1.5 space per dwelling	29 spaces	29 spaces
Three-Bedroom	7	2 spaces per dwelling		
Visitor	17	1 space per 10 dwellings	2 spaces	2 spaces
		Total	**31 spaces**	**31 spaces**

[1] Rate adopted for developments within 400m walking distance of a bus stop that provides a minimum of 10 return services during normal business hours per day including Saturdays.

As shown the Table 3.2, the proposed car parking provision of 31 spaces complies with Council's requirement for 31 spaces. Furthermore, the allocation of 29 resident spaces and two (2) visitor spaces is also in accordance with the individual parking rates.

The proposed development thus provides a high standard of amenity and is expected to satisfy all parking demands on-site.

3.3 Internal Layout

The car parking area as shown in the plans included as Appendix A has been designed generally in accordance with Council and/or Australian Standards requirements, as summarised below:

- Car parking spaces are a minimum 2.4m wide by 5.4m long which accords the requirements of AS2890.1;
- Two (2) parking spaces for persons with a disability (PWD) is 2.4m wide by 5.4m long with a 2.4m wide shared space which accords with AS2890.6;
- Two (2) visitor spaces have been provided on the ground level, where the parking aisle is provided with sufficient depth to enable vehicles to turn and exit in forward gear, including when all spaces are occupied;
- A minimum parking aisle of 5.8m is provided in accordance with AS2890.1 (2004) with additional 0.3m clearance provided to opposing walls
- A height clearance ≥ 2.2m is proposed in accordance with AS2890.1

In summary, the internal site layout is efficient and legible, and designed generally in accordance with Council and/or Australian Standards requirements.

Circulation to the basement parking level will involve a 2-way 1-lane ramp facilitated by a traffic signal system. Included as **Appendix C** is the proposed signal management plan showing the suggested equipment and signage.

The following provides a summary of the equipment / signage:

- A stop bar is shown on the ground level prior to the ramp. Located directly above this location is a ceiling mounted sensor (TOF).
- Also shown on the ground level is a traffic signal (red / green) and signage "Stop here on red signal"
- Located on the basement level are 2 traffic signals (red / green) and signage to inform a motorist where to wait during red signal.

The following operation is proposed:

- The system will operate on a 24hr priority exit system. The default state will be green status for the basement signals until a vehicle presence is detected on the ground at the TOF sensor position (i.e stop bar).
- Once a vehicle is detected waiting at the ground floor stop bar, a solid red signal is indicated at both lights in the basement. A flashing red signal is present at the ground level waiting bay (indicating detection) and will flash for a programmed period of time to allow any vehicles exiting to clear the ramp from the basement;
- The signals then change state (green on entry / red in basement) with a timing sequence to allow the entering vehicle to travel to the basement;
- The suppliers of the parking equipment (e.g. TPS TRAFFIC & PARKING SYSTEMS) would calibrate the signal timing on-site during installation and monitoring.

The above-mentioned operation is relatively common in residential sites where the width of the site necessitates a two-way one-lane ramp. Given all spaces within the site are allocated to residents, they will quickly become familiar with the operation.

With only 17 dwellings proposed and 21 spaces on the basement level, the traffic volumes using the ramp will be low.

The proposed Signal Management Plan is considered acceptable from a traffic engineering standpoint.

3.4 Servicing and Refuse Collection

The proposed development is a residential development, the demand for service vehicles would be limited. With the exception of the occasional furniture removal truck or tradesman / courier, the only servicing requirements would be regular refuse collection.

Council's Infrastructure Works Planning Scheme Policy requires that multiple unit dwellings accommodate vehicles up to and including Waste Collection Vehicles (WCV). It is anticipated that waste collection will occur with trucks standing within the entry driveway.

The site layout (as shown in the drawing included as Appendix A) will accommodate on-site servicing and refuse collection, with provision made for a refuse collection vehicle (i.e. rear loading refuse vehicle) to reverse onto the site from the Street to the bin collection area to empty the bins, and then exit the site in a forward gear (see **Appendix B**).

Overall, the proposed servicing/refuse collection arrangements are appropriate given the nature and scale of the development, and its location on a minor road.

4.0 Traffic Impact Assessment

The RTA Guide to Traffic Generating Developments provides traffic generation rates for various land uses. The rate suggested for medium density residential flat buildings (containing up to 20 dwellings) is as follows:

- For smaller units of up to two bedrooms: 0.4 – 0.5 trips per dwelling in the peak hours; and
- For larger units comprising three or more bedrooms: 0.5 – 0.65 trips per dwelling in the peak hours.

Application of the upper end of these ranges to the proposed development (10 x two bedroom and 7 x three bedroom) results in an estimated traffic generation of 10 vehicle trips (entry and exit) during the AM and PM peak hours. This equates to approximately one vehicle trip every 6 minutes on average, during the peak hours.

This level of traffic generation is negligible, as it is well within the range of typical fluctuations in traffic volumes on the road network. As a consequence, no external roadworks should be imposed on this development.

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5.0 Recommendation

In light of the information contained within this report, we consider that the proposal is satisfactory from a traffic operations perspective and recommend that the development application be approved from a traffic engineering perspective, subject to the inclusion of recommendations outlined within this report.

5.1 Qualifications

This report has been approved by Richard Quinn | Director | RPEQ 08565

APPENDIX A

Development Plans

TOWN PLANNING DRAWINGS

Proposed Residences - 'Bella Baia'

57 Banana Street, Redland Bay, QLD, 4165

KEY PROPOSAL STATISTICS - MULTIPLE DWELLING		
Site Area	834.52	
Frontage:	20.74m + 40.237m + 20.74m	
Number of Storeys:	7	
Maximum Building Height :	28.3m Above NGL	
No. of Dwellings :	17	
Site Cover	632.15m^2	(75%)
Communal Open Space	99.73m^2	(12%)
Private Open Space	681.56m^2	(81%)
Landscaping (incl Deep planting)	130.81m^2	(15.6%)
Deep Planting	40.84m^2	(4.8%)
Car Spaces - Resident	29	
Car Spaces - Visitor	2	
Total Car Spaces Proposed	31	

TOWN PLANNING

General Notes

Confirm all dimensions on site.
Do not scale off drawings.
All levels are approximate only and are subject to confirmation by licenced surveyor.
All workmanship, materials and construction to comply with the Queensland Building Act 1975, the Queensland Development Code, the Building Code of Australia 2019, Premises Standard and AS1428.1.
Work to be carried out in a neat and appropriate manner.
Where ambiguities or discrepancies exist, Hayes Anderson Lynch Architects Pty. Ltd. shall be contacted for clarification.

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Date	Issue	Details	Checked
09/06/22	A	Lodgement Issue	EA

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Project
Apartment Development
57 Banana Street, Redland Bay, QLD 4165

Drawing Title
Coversheet

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	RH	EA
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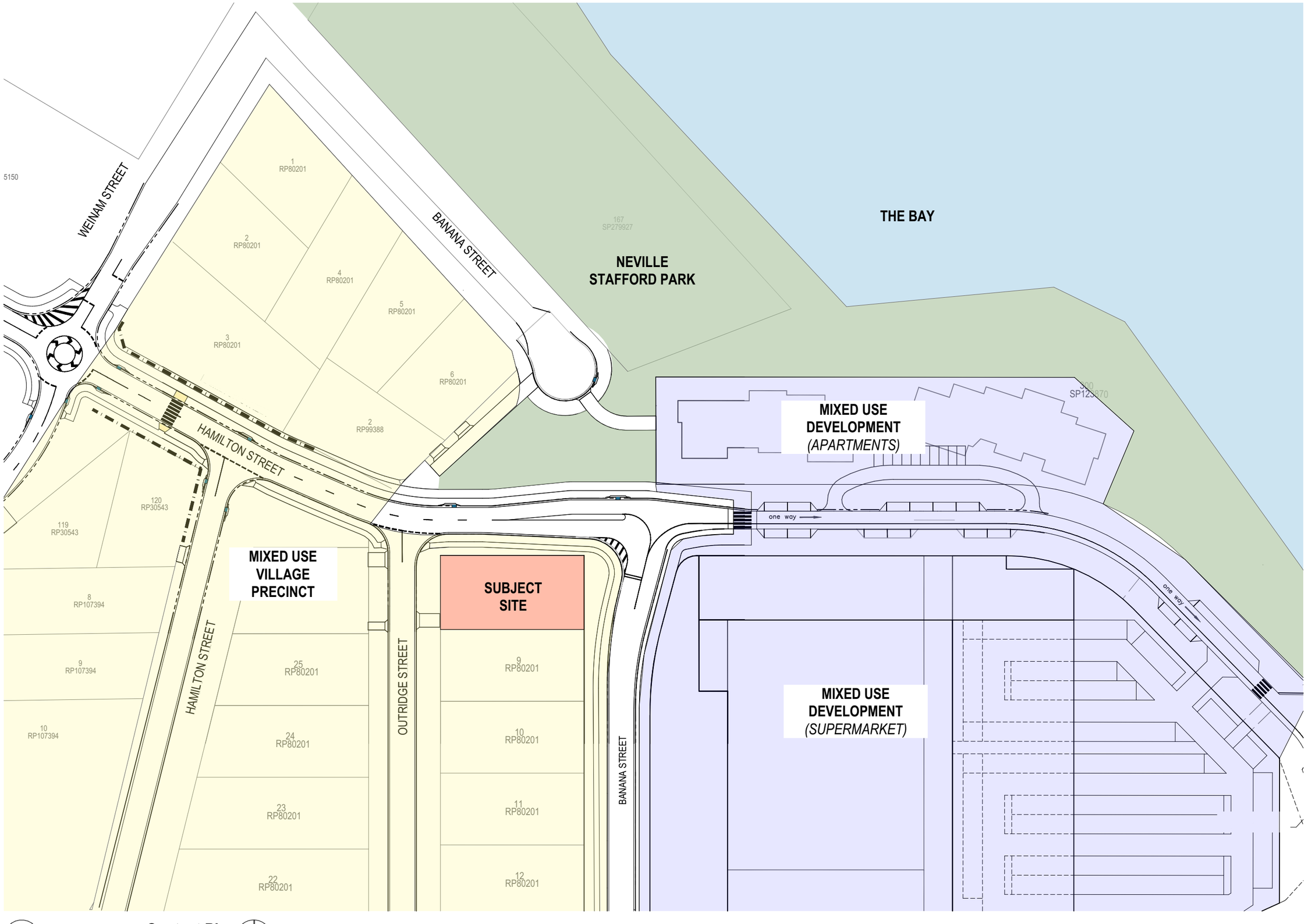

Context Plan
1:1000

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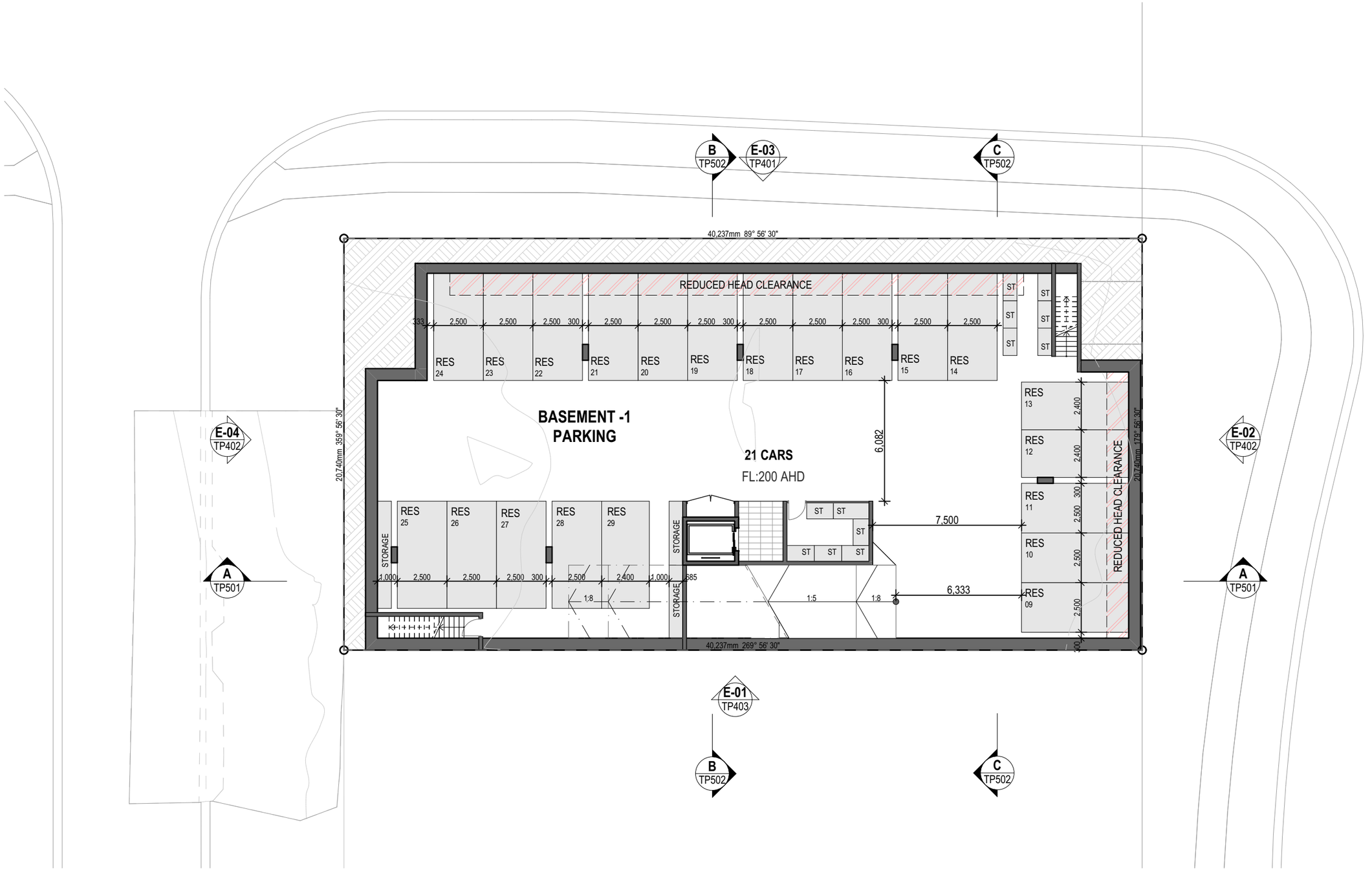

Basement -1
1:200

NOTE:
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Apartment Development
57 Banana Street, Redland Bay, QLD 4165

Drawing Title
Basement -1 Floor Plan

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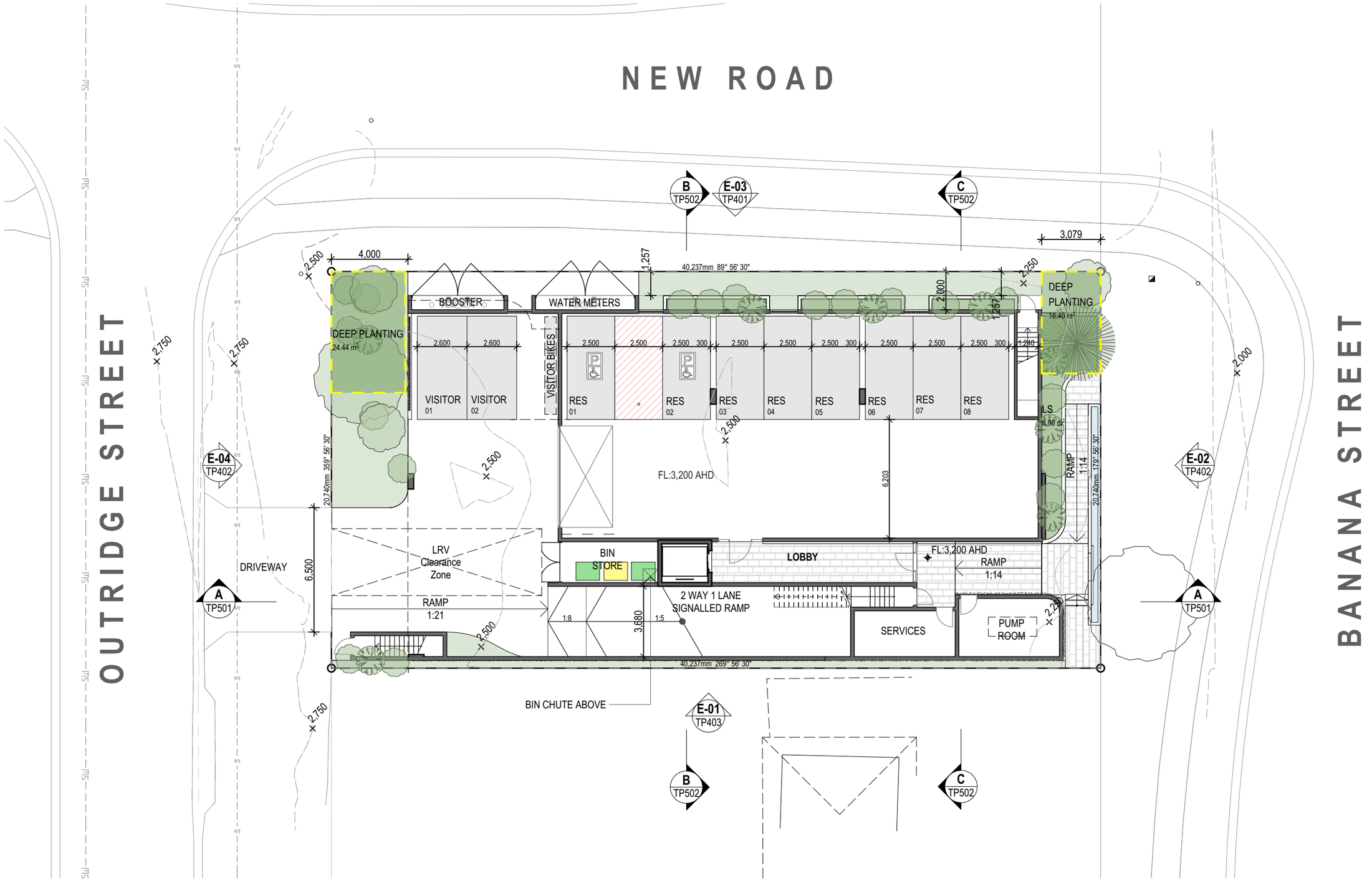

Ground Floor Plan
1:200

NOTE:
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TOWN PLANNING

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Project
Apartment Development
57 Banana Street, Redland Bay, QLD 4165

Drawing Title
Ground Floor Plan

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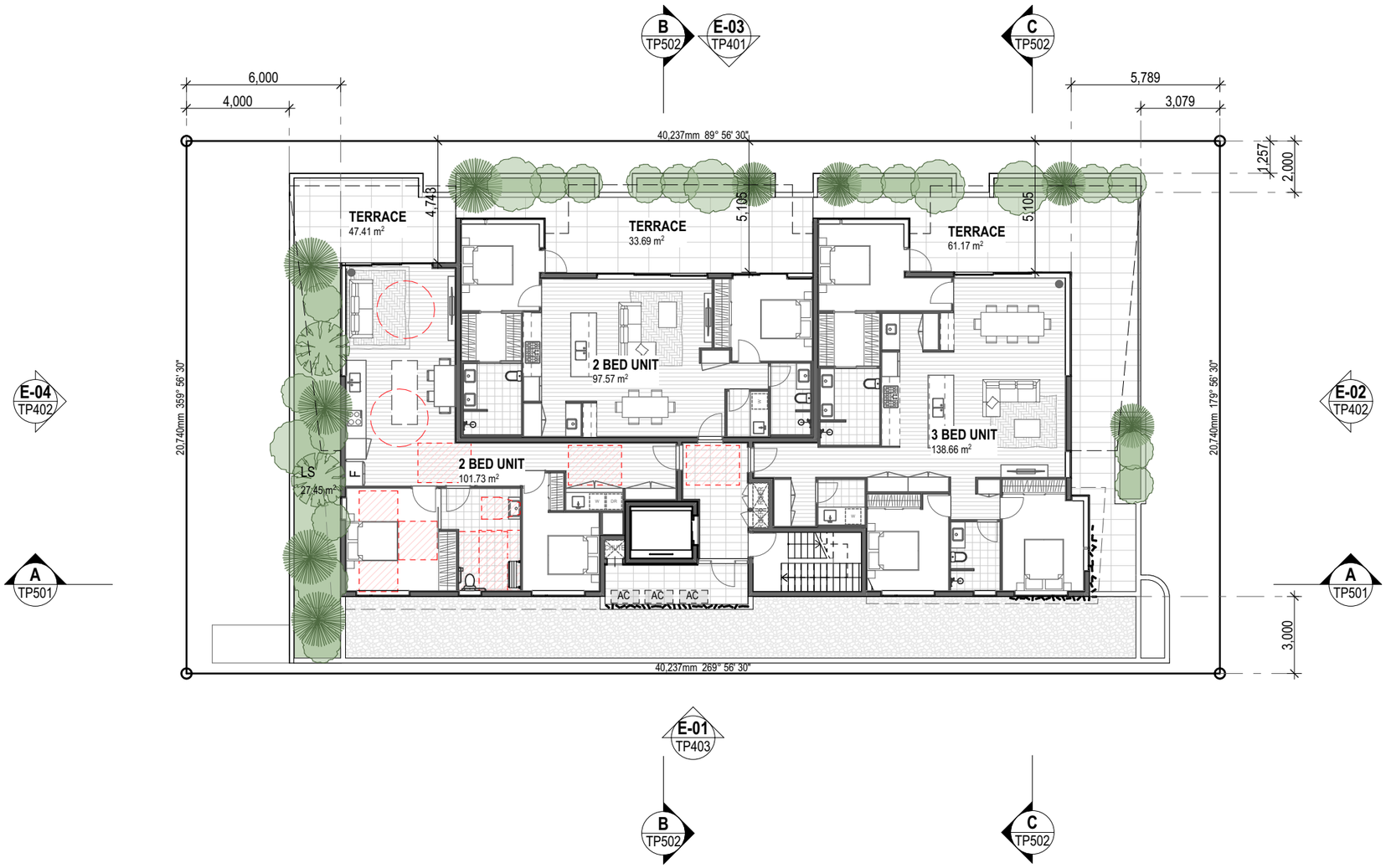

Level 2 Floor Plan
1:200

NOTE:
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Project
Apartment Development
57 Banana Street, Redland Bay, QLD 4165

Drawing Title
Level 2 Floor Plan

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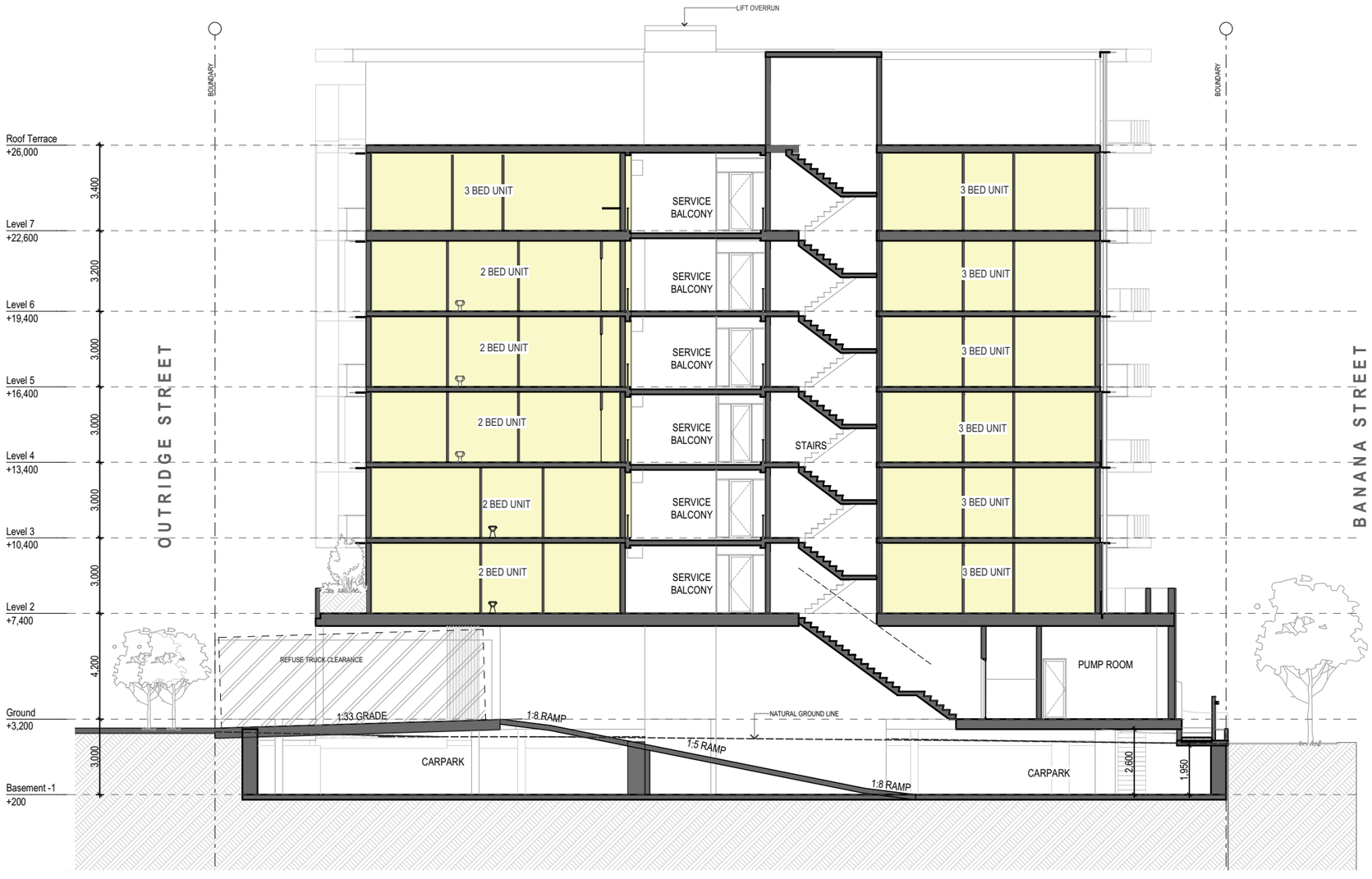

Section A
1:200

NOTE:
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Drawing Title
Sections

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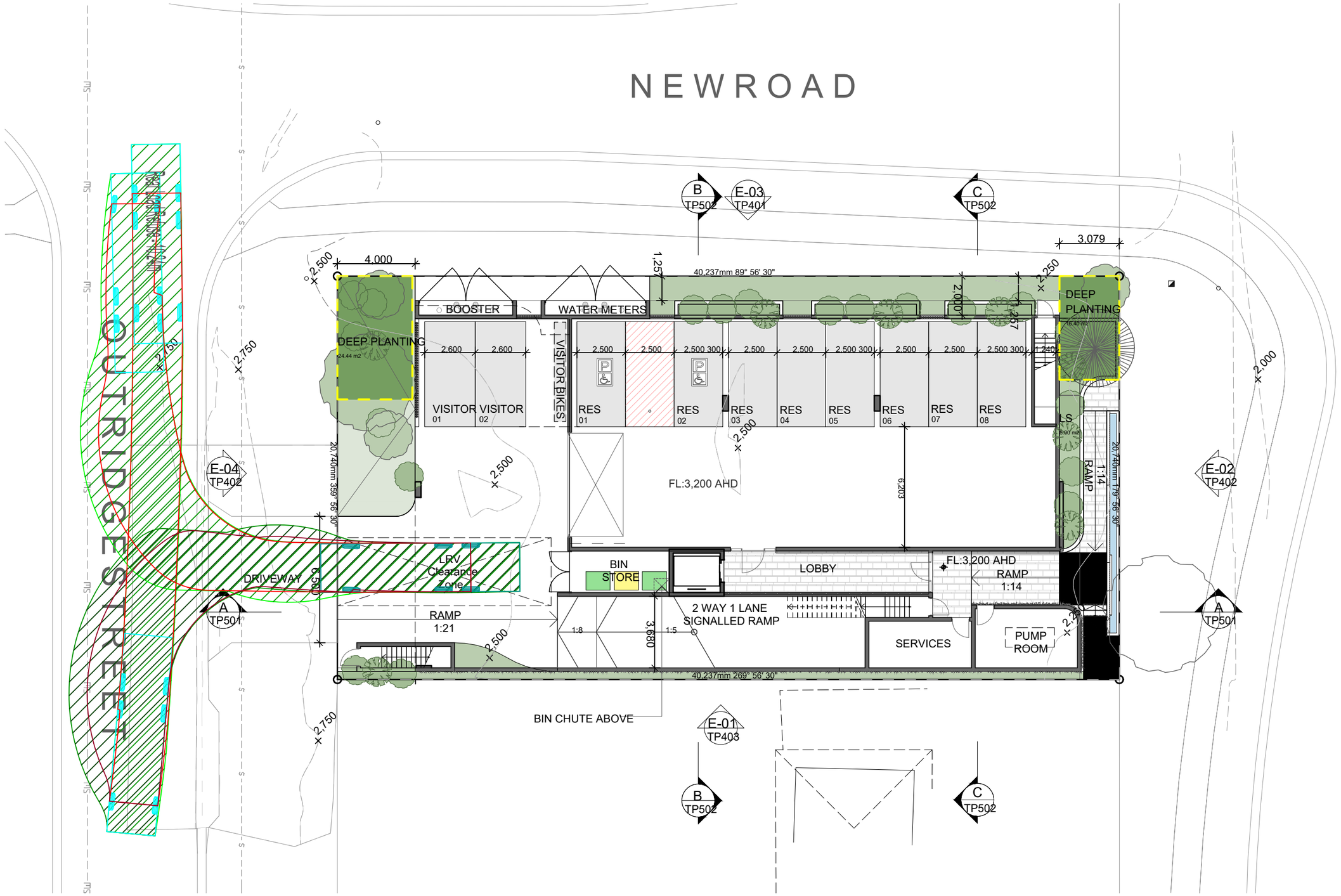
APPENDIX B

Swept Path Rear Loading Refuse (RCV)



I Richard Quinn (RPEQ 08565) certify that the swept paths have been carried out in accordance with AS2890.2

drawing title

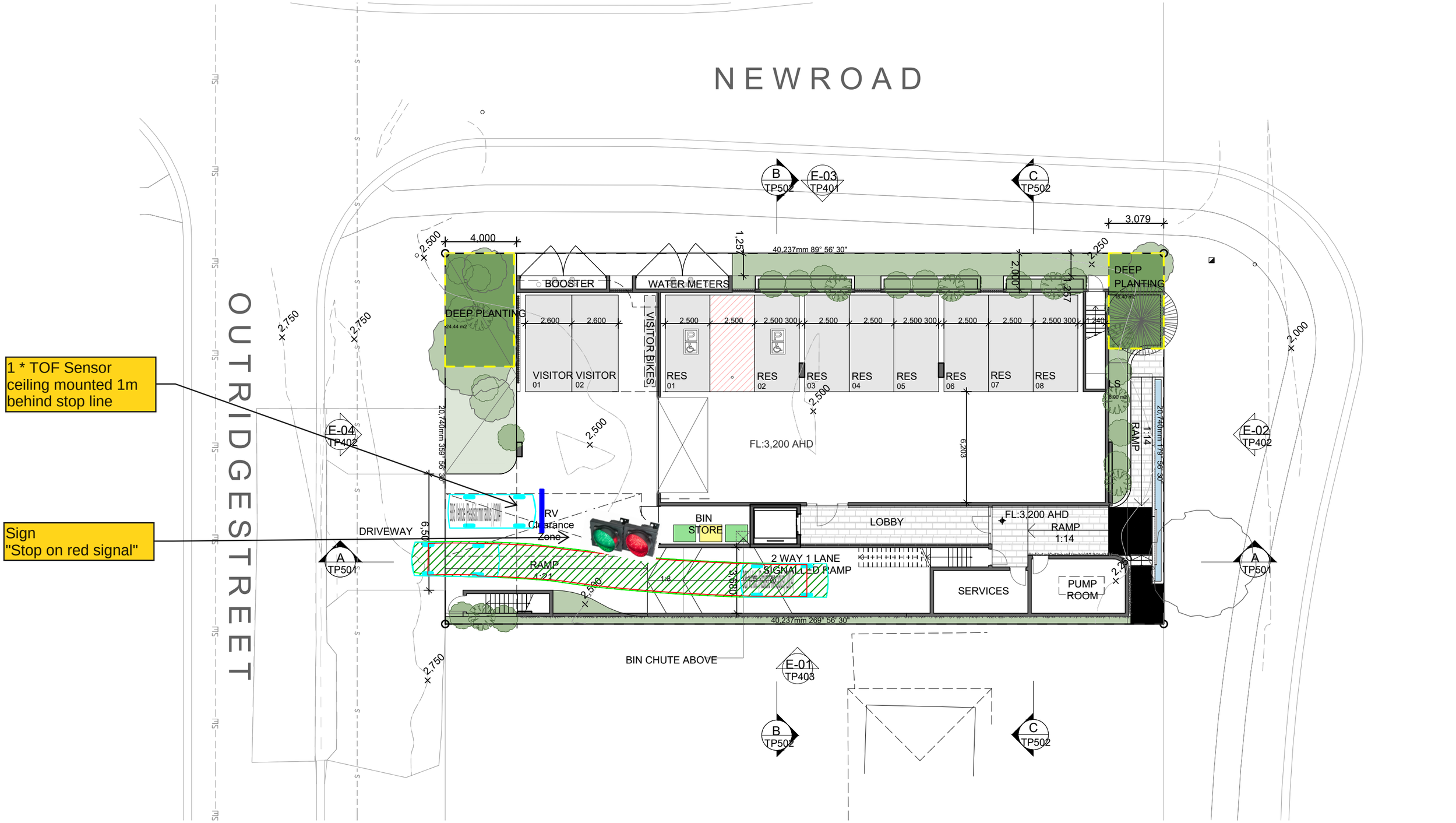
57 Banana Street, Redland Bay
Swept Path Rear Load Refuse Truck

drawn:	RQ	Scale:	1:200@ A3	date:	05/07/22

The base drawing is provided to Q Traffic by others. This drawing is draft for discussion purposes only

1746_HAL05	SK.03	B
project no.	drawing no.	rev

APPENDIX C
Signal Management Plan



Operating as a 24hr priority exit system.

Default green status on the basement signals until a presence is detected on ground at the TOF sensor position.

Once detected, a solid red signal is indicated at all basement signals, a flashing red signal is present at the ground waiting bay (indicating a detection) for a programmed period of time to allow for clearance of the ramp.

The signals then change state (Green entry, red basement) with a timing sequence for potential movement through to basement.

I Richard Quinn (RPEQ 08565) certify that the swept paths have been carried out in accordance with AS2890.1

drawing title

QTraffic Engineering Consultants

57 Banana Street, Redland Bay
Signal Management Plan (Sheet 1)

drawn:	RQ	Scale:	1:200@ A3	date:	05/07/22

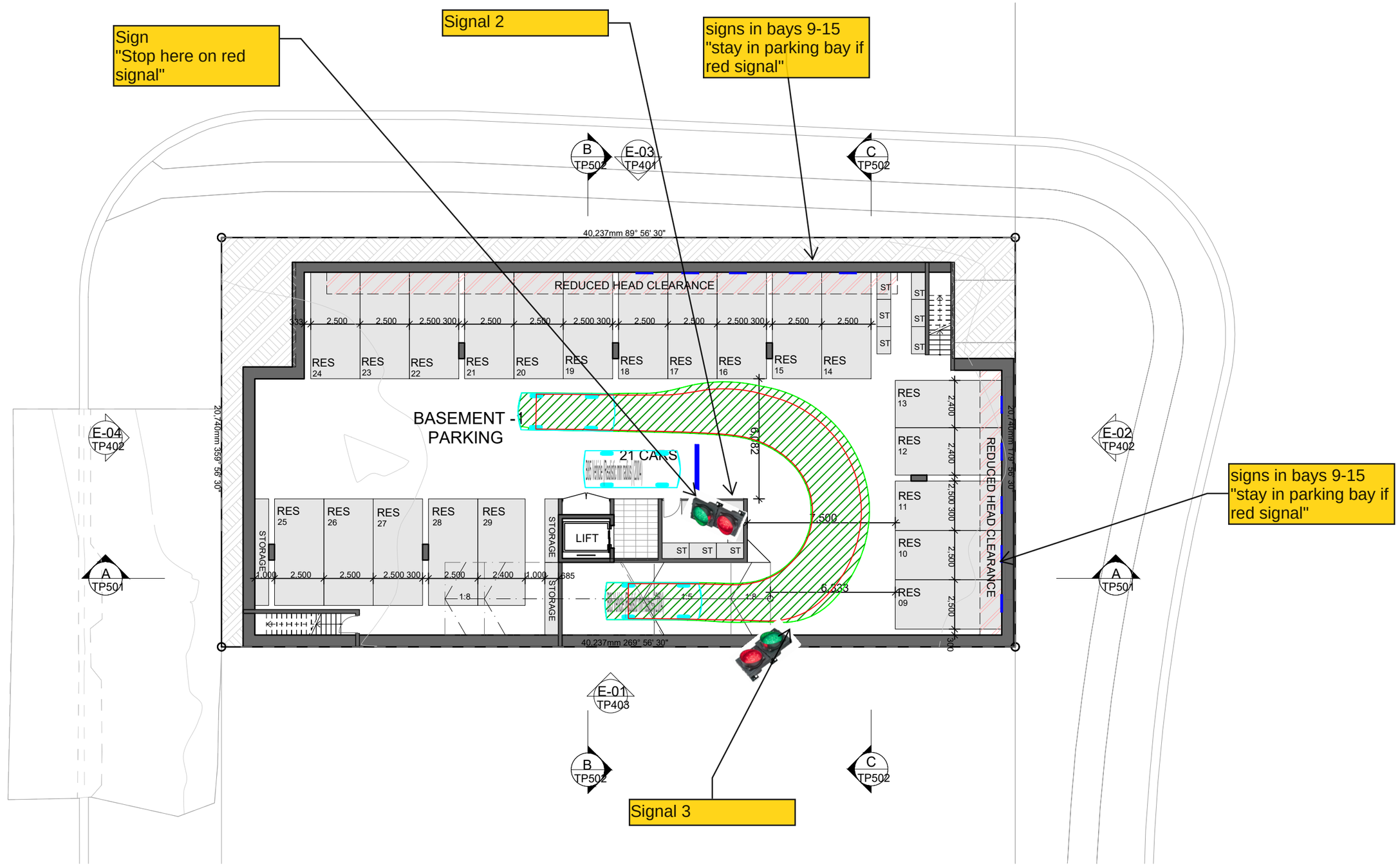
The base drawing is provided to Q Traffic by others. This drawing is draft for discussion purposes only

project no.	drawing no.	rev
1746_HAL05	SK.01	B

Sign
"Stop here on red signal"

Signal 2

signs in bays 9-15
"stay in parking bay if red signal"



signs in bays 9-15
"stay in parking bay if red signal"

Signal 3

I Richard Quinn (RPEQ 08565) certify that the swept paths have been carried out in accordance with AS2890.1

drawing title

QTraffic Engineering Consultants

57 Banana Street, Redland Bay
Signal Management Plan (Sheet 2)

drawn: RQ Scale: 1:200@ A3 date: 05/07/22

The base drawing is provided to Q Traffic by others. This drawing is draft for discussion purposes only

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