Proposed Mixed Use Development

617-619 New North Road | Kingsland | Auckland

Traffic Impact Assessment

Address	617-619 New North Road | Kingsland | Auckland
Project:	Proposed Mixed Use Development
File Path:	Z:\2022_Projects\221065 - 617-719 New North Road\6 Reports\221220 221065 617-619 New North Rd Traffic Assessment.docx
Prepared By:	A. Hunter
Reviewed by:	A. Hunter

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01/11/2022	Draft V1	A. Hunter	
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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1 INTRODUCTION

This report examines and describes the traffic and parking effects of a proposal to redevelop the existing property on the site at 617-619 New North Road in Kingsland. Reporting includes an assessment of the proposal against the Auckland Unitary Plan (AUP) Chapter E27 rules and requirements.

The legal description of the site is understood to be Lot 2 DP 72255, with a total land area of approximately 943m2. The site is located within a Business – Local Centre Zone according to the AUP zoning maps.

The location of the site relative to the surrounding road network and neighbouring properties is shown in Figures 1 and 2 below.

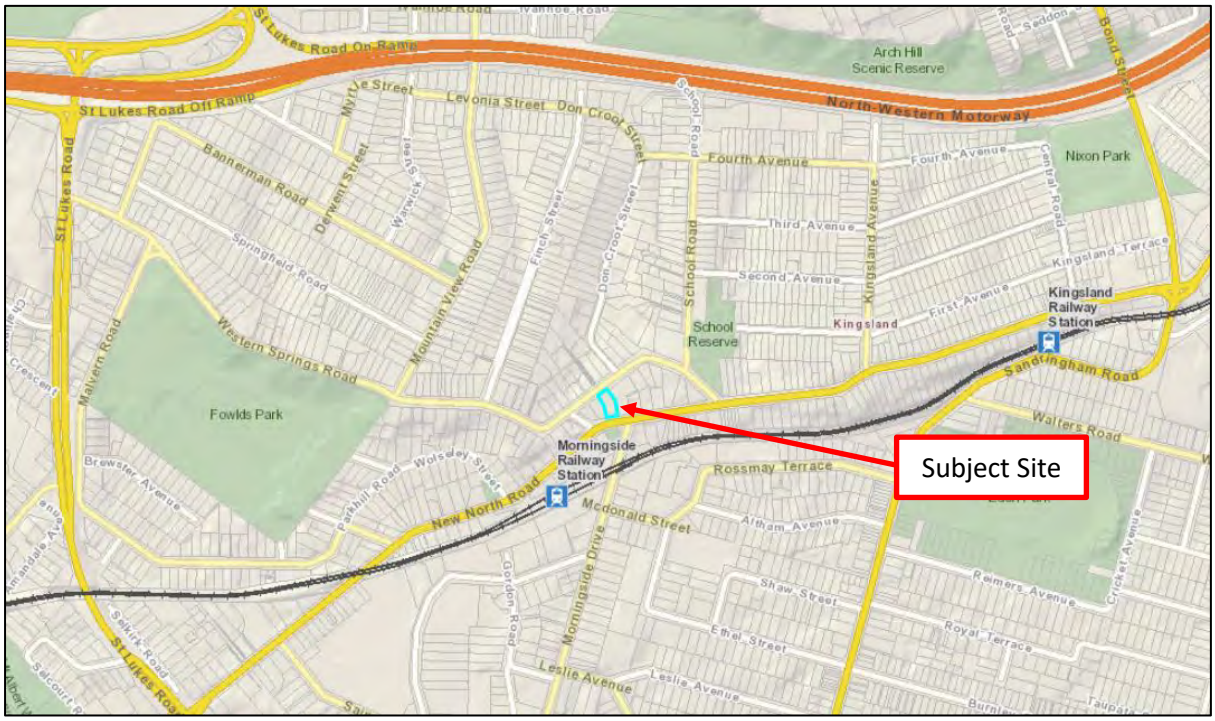

Figure 1:Subject site in relation to surrounding road network.

The proposal includes the construction of a nine-storey building that will contain 34 visitor accommodation units plus 44 residential apartments. In addition to the residential dwellings there will be a small retail component with direct access to New North Road.

The development will also contain 40 car parking spaces plus 12 scooter parks. A number of the car parking spaces will be accessed via a stacker system that will allow the driver to enter the stacked, park and then get out of the vehicle. The stacker will rotate to allow driver to access his vehicle to leave the site.

Access to the basement parking levels will be located in approximately the same position as the existing vehicle crossing that is on Western Springs Road. There is no access onto New North Road.

Figure 2: Subject site in relation to neighbouring properties.

Figure 3 below shows the site within the AUP zoning map.

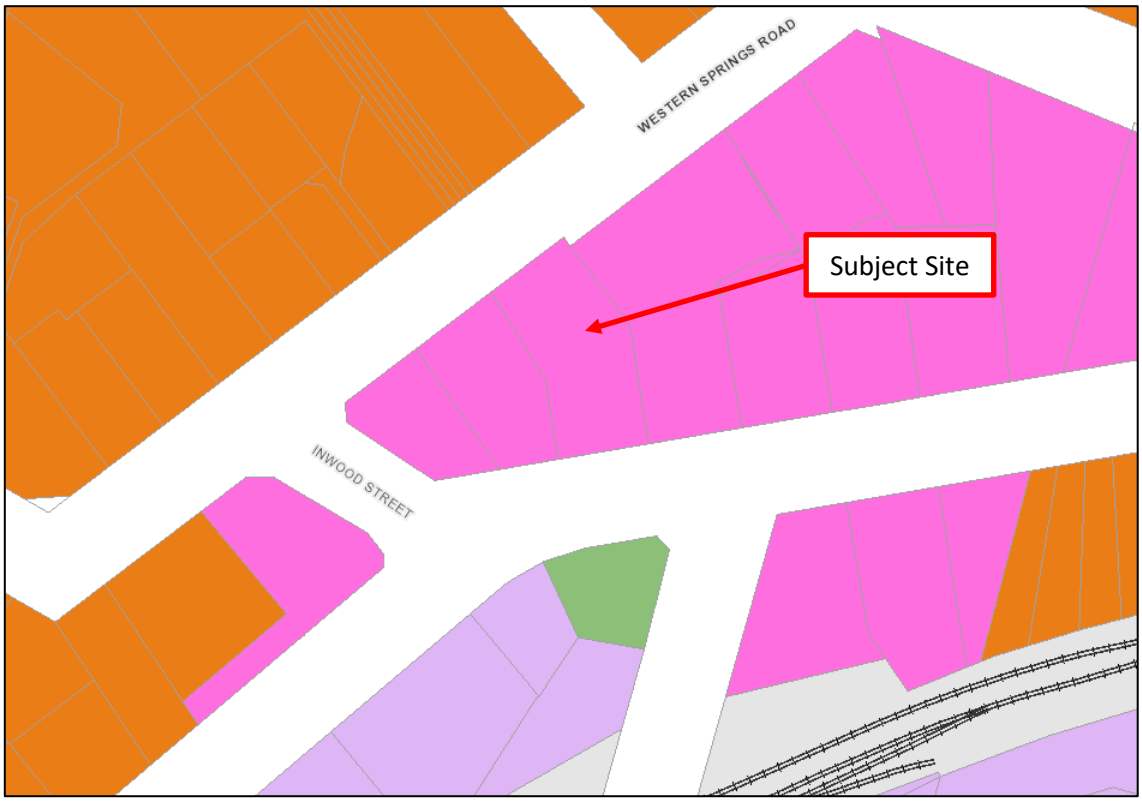

Figure 3: Subject site within AUP zoning map

2 DEVELOPMENT DETAILS

The proposal involves the construction of 68 dwellings, with these being configured as visitor accommodation and apartments and contained within the nine storey buildings. In addition, there is a small retail component that will have a GFA of about 66m^2

There will be four apartment typologies as follows.

Table 1: Visitor Accommodation Topology

Studio Apartment	24
One-bedroom apartment	6
Two-bedroom apartment	4
Three-bedroom apartment	0

Table 2: Apartment Topology

Studio Apartment	3
One-bedroom apartment	4
Two-bedroom apartment	20
Three-bedroom apartment	7

The GFA's of dwellings range from.

Studio Apartment	25m^2-30m^2
One-bedroom apartment	31m^2- 52m^2
Two-bedroom apartment	57m^2-68m^2 (2 units are larger at 115m^2&121m^2)
Three-bedroom apartment	79m^2-91m^2

The visitor accommodation will have the 13 at grade car parking spaces located on the ground floor with access on to Western Springs Road.

The apartment dwellings will have access to the 23 stacked car parking spaces plus the three at grade car parks on level B1.

In addition to the car parking there are 12 scooter parks plus storage areas on level B2 that would be suitable for the storage of 54 bicycles.

The layout of the development is shown on the plans in Appendix A.

3 ASSESSMENT METHODOLOGY

The subject site is zoned 'Business – Local Centre Zone' under the Auckland Unitary Plan as shown in Figure 3 above.

On this basis, the proposed development has been assessed in relation to the requirements of the Unitary Plan for residential developments located within the 'Business Local Centre Zone'.

It is noted that the proposed development has an address that fronts onto an Arterial Road however the access to the site is off Western Spring Road which is classified as a Collector Road.

On this basis, as access to the property is off a Collector Road and the access is over 30 metres clear of any intersection a 'Vehicle Access Restriction' assessment is not required.

The site is not subject to any other traffic related designations or controls.

4 EXISTING SITUATION

The subject site is located on the northern side of New North Road approximately 40 metres east of the intersection with Inwood Street. The property has two road frontages with the southern frontage facing New North Road whilst the northern frontage faces Western Springs Road. There is no vehicle access onto New North Road. There is currently a vehicular access near eastern boundary on Western Springs Road that provides access to the property and the existing activities occurring on the site.

There is currently a brick building housing the Unite Union facing Western Springs Road and a couple of small retail businesses with access onto New North Road.

All the buildings on the property will be removed to allow the construction of this development.

The property slopes down from Western Springs Road frontage to the New North Road frontage and provides a few metres fall and the site lends itself to the provision of basement parking.

4.1 Roading Characteristics

New North Road operates as an Arterial Road according to the Auckland Council GIS maps, and generally has an east – west alignment. The property is located on the northern side of the carriageway. There is currently no vehicular access onto New North Road and no access is proposed onto New North Road.

The seal width of Western Springs Road in the vicinity of the subject site is approximately 10.6 metres wide and provides for a single traffic lane in each direction that are about 3.5 metres wide, plus there is approximately 2.0 metres of seal width on each side in which cars can park.

The road reserve is 20.1 metres wide and the carriageway approximately centrally located. There are pedestrian facilities provided on both sides of the carriageway and the footpath on the southern side of the road is located near the middle of the berm.

There is a large street tree immediately west of the entrance and an arborist will need to be consulted to determine if the proposed vehicle crossing has any impact on the tree.

4.2 Traffic Counts

A tube count was carried out by Auckland Transport on Western Springs Road in March 2021. The count was undertaken approximately 100 metres east of the existing entrance to the property.

Table 3: Traffic Flows on Western Springs Road

Count Site Western Springs Road	5-day ADT vpd	7-day ADT vpd	AM Peak Hour vph	Mid Day Peak Flow vph	Am Peak Flow VPH
Eastbound	2,162	2,085	231	277	285
Westbound	2,129	2,063	142	177	250
Total	4,291	4,148	373	454	535

This volume of traffic is considered to be low for a Collector Road as collector roads are expected to carry volumes in excess of 10,000 vehicles per day. The current volume is appropriate for the environment in the vicinity of the subject site and the carriageway is expected to be able to cater for any additional traffic generated by the activities from this development.

4.3 Speed Environment

Western Springs Road has a posted speed limit of 50 km/h. The 85th percentile speed measurements were recorded during the survey in March 2021 and the results showed that the 85th percentile speed in the eastbound direction was 40.6 km/h whilst the 85th percentile speed in the westbound direction was 40.4 km/h

However, in an effort to be conservative, an 85th percentile vehicle speed of 45 km/h will be used for visibility calculations.

4.4 Crash History

A study has been made of the crash record maintained by NZTA for the full five-year period 2017 to 2021 inclusive. Also included in the search were the crashes that have been processed and were on file for 2022.

The crash search area covered a section of Western Springs Road within approximately 50 metres of the proposed entrance to the subject site.

In total there was one minor crash that resulted in one minor injury being sustained that was reported as occurring within the searched area and given timeframe.

The reported crash occurred approximately outside of the proposed entrance and involved a van that was travelling in a westbound direction hitting a parked car. The driver was travelling to far to the left and inadvertently veered left into the parked vehicle.

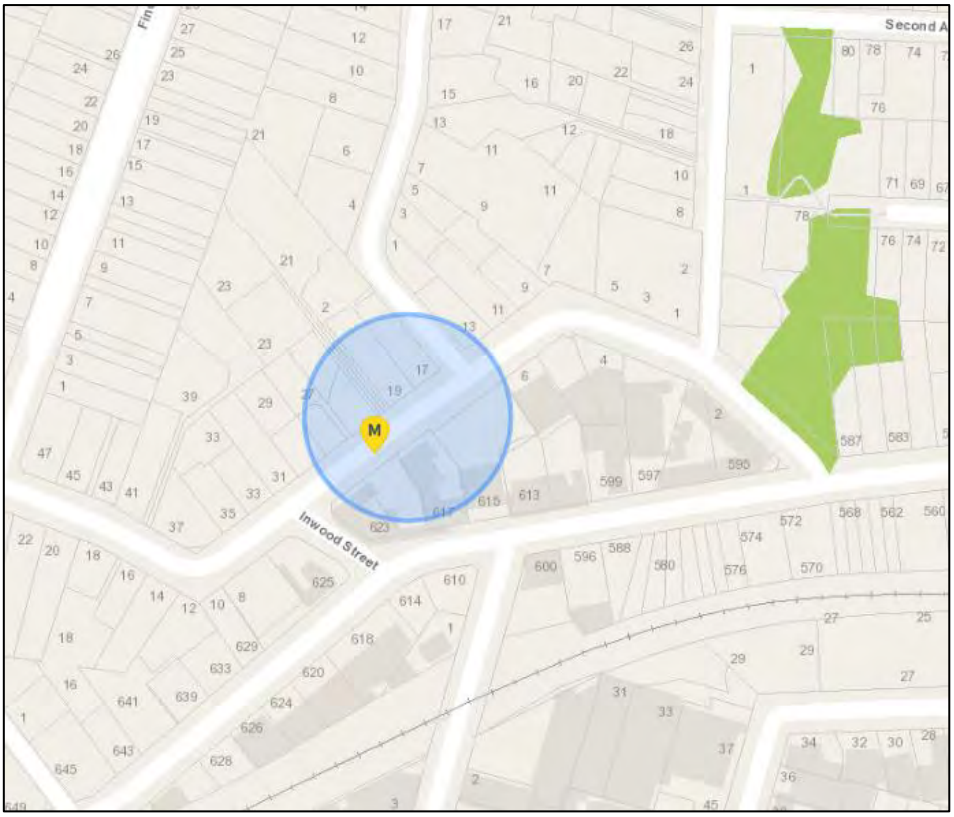

Figure 4: Extent of search area

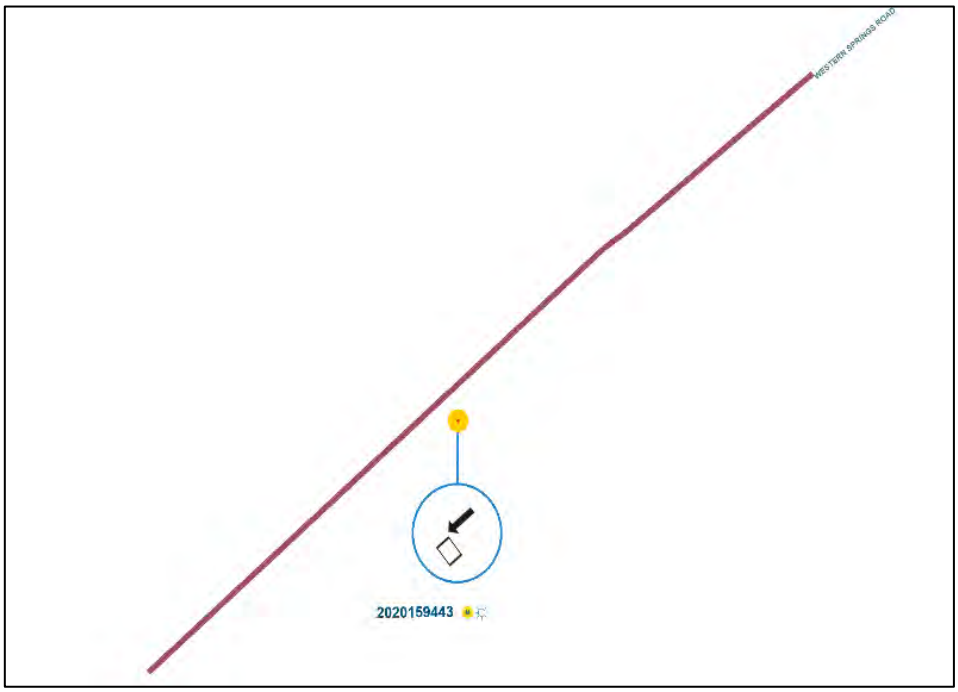

Figure 5: Collision Diagram

On this basis, it is considered that the crash outlined above was the result of driver error and do not indicate the presence of any inherent safety or operational concerns with the layout of Western Springs Road in the vicinity of the subject site.

4.5 Passenger Transport Amenities

The subject site has four bus services that pass by the site. The 20 service operates between St Luke's and Wynard Quarter and runs at 15-minute headways all day. The 22N service operates between New Lynn and the City and runs at 10-minute headways during the peak hours and 30 minutes headways for the balance of the day. The 22R service operates between New Lynn and the City and runs at 10-minute headways during the peak hours and 30 minutes headways for the balance of the day. The 209 service operates between Titirangi and the City and runs at 15-minute headways during the peak hours from Monday to Friday only.

A copy of the local bus routes near the site is shown in Figure 4.

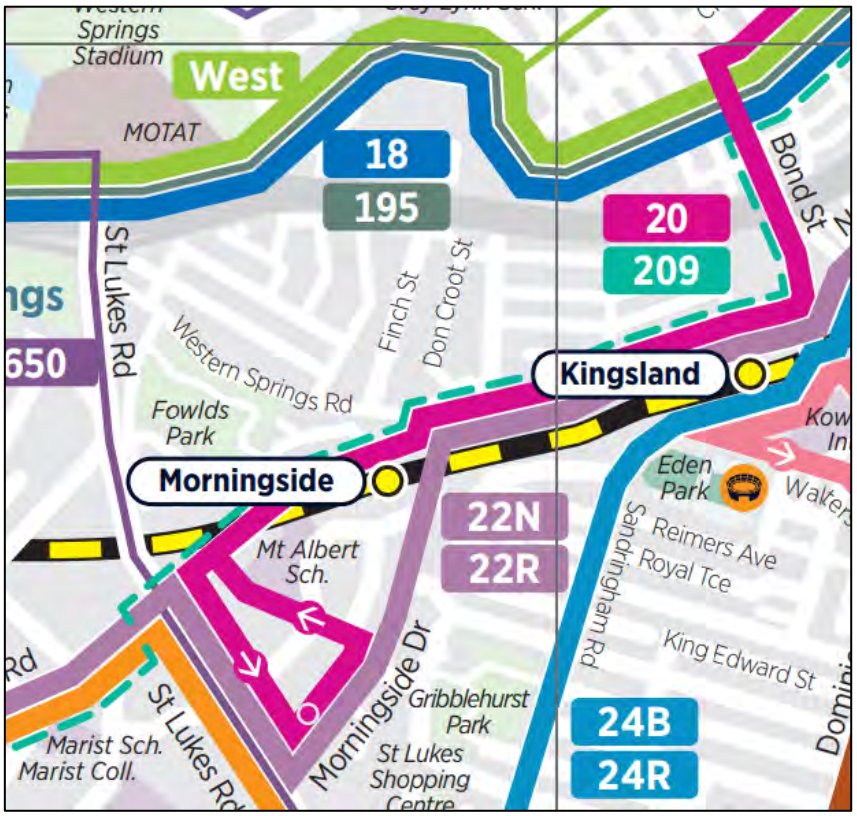

Figure 6: Public Transport Bus Routes near the site

There is a bus stop on New North Road within 50 metres of the property and residents are well serviced by public transport

4.6 Bicycle Amenities

There are no dedicated cycle amenities adjacent to the subject site. However, the north western cycle path is only a short distance away and is conveniently located for residents and staff to utilise if they so desired. Figure 7 below shows the location of the site in relation to the cycle facilities near the site.

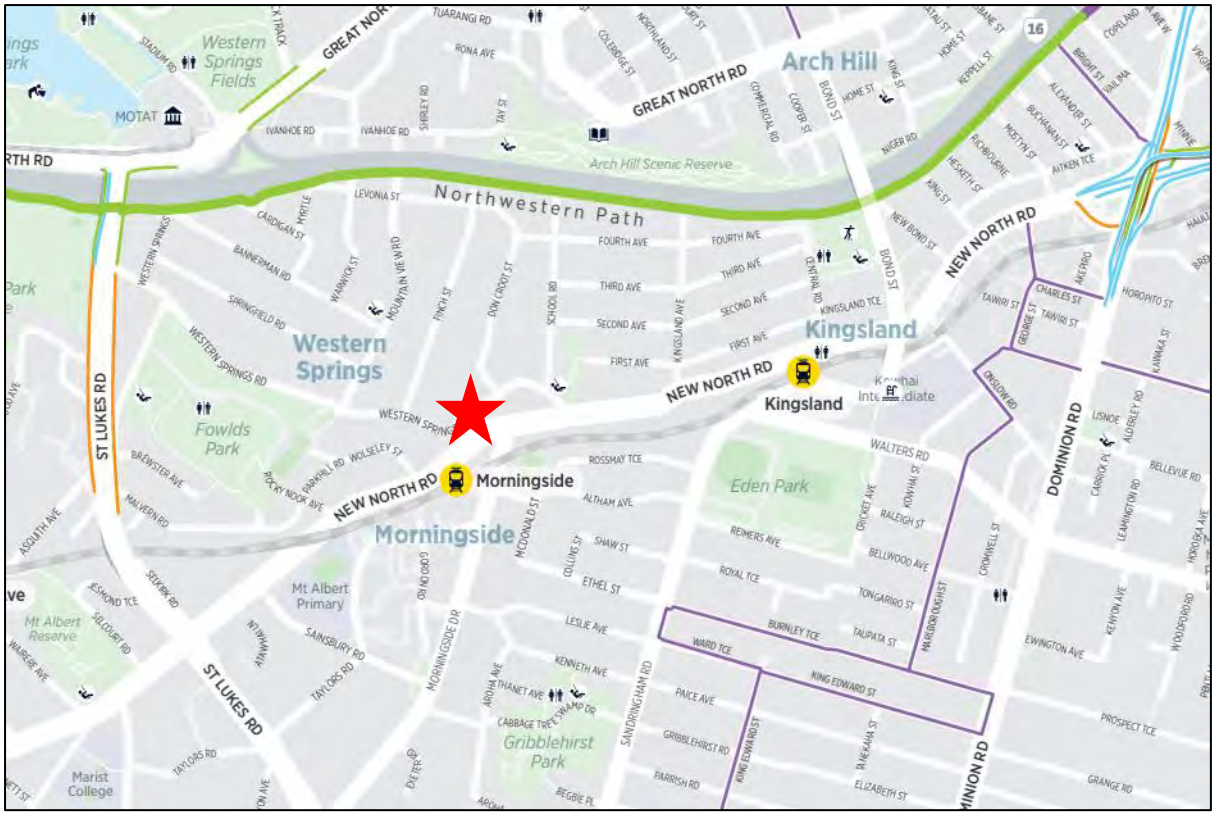

Figure 7: Cycle Facilities near the site.

4.7 Trains

The western train tracks run almost parallel to New North Road near the site and the Morningside train station is less than 100 metres from the property.

Figure 7 above shows how close the train station is to the development and residents and staff will have every opportunity to utilise the train services.

The development is well serviced by public transport and is close to high frequency bus services and well as train and cycle facilities.

5 PROPOSED SITUATION

The proposal seeks to remove the existing buildings on the properties and redevelop the site to accommodate a multi storied building. The new building will contain 34 visitor accommodation units, 44 residential apartments plus a small retail area. The details are included in section 2 above.

A copy of the plans is included in Appendix A.

It is anticipated that there will be a maximum of three staff on site depending on how busy the visitor accommodation activity is and the size of the retail component is small and likely to have two or three staff.

5.1 Parking

5.1.1 Car Parking Requirement

The parking requirements in a Business Local Centre Zone is covered in Table E27.6.2.3 Parking rates Area 1. The rates for the various activities that are proposed are summarised in the table below.

Table 4: AUP Parking Requirements

Activity	Rule	Minimum	Maximum
All other retail	T20	None	None
Residential Studio or 1 bedroom	T29	None	None
Residential 2 or more bedrooms	T30	None	None
Visitor Accommodation	T34	None	None

Based on the requirements in the Auckland Unitary Plan no parking is required to be provided.

5.1.2 Car Parking Provision

The proposal includes the provision of 16 at grade car parking spaces plus 23 car parking spaces that will utilise three car stacking systems. In addition, there will be 12 scooter parking spaces plus provision for 54 bicycle parking spaces.

The number of car parking spaces complies with the requirements in the Auckland Unitary Plan.

5.1.3 Car park Manoeuvring

The at grade car parking spaces on the ground floor are typically 2.6 metres wide by 5.0 metres deep and there is a minimum of 7.0 metres for manoeuvring behind those spaces. The other at grade car parking spaces on that level are vary in width between 2.6 metres and 3.1 metres wide by 5.0 metres long and have a minimum of 7.0metres for manoeuvring behind the spaces.

According to the requirements of the AUP under Table E27.6.3.1.1 'Minimum Car parking space and manoeuvring dimensions', a 2.6-metre-wide car parking space intended for regular users requires a minimum manoeuvring distance of 6.3 metres. The minimum manoeuvring requirement for a 2.7

metres wide space for casual users is 5.9 metres. All the at grade car parks on this level comply with the manoeuvring dimensions and drivers will be able to easily access these spaces.

There are three banks of a commercially constructed car stacking system and the details will be provided by the architect.

According to the requirements of the AUP under Table E27.6.3.1.1 'Minimum Car parking space and manoeuvring dimensions', a 2.6-metre-wide car parking space intended for casual users requires a minimum manoeuvring distance of 7.0 metres. The minimum manoeuvring requirement for a 2.7 metres wide space for casual users is 6.7 metres

Where parking is provided the number and design of spaces for the mobility impaired must comply with "The Buildings and Associated Facilities NZS 4121-2001".

The minimum width for an accessible car park is 3.5 metres.

The number of accessible car parks that should be provide are determined by the number of car parking spaces provided. Where car parking is provided, spaces for people with a disability shall be provided in accordance with the following table.

Table 5: Accessibility car parking requirements

Accessible Car Parking Space Requirements	
Total number of parking spaces	Number of accessible parking spaces
1 - 20	Not less than 1
21 - 50	Not less than 2
For every additional 50 parking spaces or part thereof	Not less than 1

Based on the provision of 39 car parking spaces two accessibility car parking spaces are required. However, where residential car parking is provided the provision of disabled spaces is not required.

In this instance with visitor accommodation plus a small retail component included as a part of the development the provision of one accessibility space would normally be required. Space 10 on the basement 1 level is considered to be appropriate for this purpose although the space has not been specifically designated as an accessibility space. In addition, the vertical clearance between levels is only 2.2 metres and does not comply with the 2.5metre vertical clearance above a disabled space. This is an infringement if the space is marked as a disabled space or alternatively the non-provision of a accessibility space is an infringement. The scale of the commercial activities is relatively small and the effects of not providing an accessibility space is considered to be negligible.

On this basis, the dimensional characteristics of the proposed parking spaces exceed the minimum requirements of the AUP, and are considered to be suitable for the intended use and acceptable from a traffic engineering perspective.

5.1.4 Gradients of Car Parks

The gradient across car parking areas is required to be at a grade of 1:20 or less. The car parks are all on level floors and the gradients comply with the Unitary Plan requirements.

5.1.5 Bicycle Parking

Table E27.6.2.5 of the AUP 'Required bicycle parking rates' defines the minimum number of visitor and secure cycle parking spaces that must be provided by an activity.

The property has a total area of 34 visitor accommodation units, 44 residential units plus a small retail component.

Table 6: Bicycle Parking Requirement

Bicycle Parking Requirement			
Activity		Visitor Minimum rate	Secure Minimum Rate
(T81)	Developments of 20 or more dwellings	1 per 20 dwellings	1 per dwelling without a dedicated garage
(T82)	Visitor Accommodation	1 space plus 1 space per 20 beds/rooms	1 per 10 FTE employees
(T89)	All other retail up to 500m^2	Nil	1 per 300m^2 GFA
	Total No of cycle parks	**5**	**44**

The size and type of the proposed development shows that under the AUP the requirement for bicycle parking is 5 visitor spaces plus 44 secure spaces.

The proposal is to provide 54 bicycle parking spaces and this number of spaces complies with the requirements under the Unitary Plan. The bicycle parking is all located on the basement 2 level.

5.1.6 Loading Requirements

The loading space requirements for a development are covered in table E27.6.2.7. The GFA of the proposed retail activity is very small at less than 50m^2 and typically would not require the provision of a loading area. The residential component of the development does not require the provision of a loading facility.

The visitor accommodation is less than 5,000m2 in size and therefore no loading area is required to be provided.

The development has an expectation that some small deliveries will be made and these delivery vehicles can utilise the existing loading zone on New North Road or alternatively the on-road parking areas on Western Springs Road. The non-provision of loading facilities on the site is not expected to have any adverse impacts on the operation of the site.

5.1.7 Lighting Requirements

Under E27.6.3.7 where 10 or more car parking spaces are provided a lighting plan must be provided. The parking and manoeuvring areas must be adequately lit during use in a manner that complies with the rules in Section E24 Lighting. All the car parking is internal and each floor will have adequate lighting provided.

5.2 Traffic Generation

The traffic generation for a development of this type is difficult to predict given the high level of public transport that is conveniently located close to the site, the visitor accommodation is likely to have a variable number of clients on a daily basis and there are a restricted number of car parking spaces.

A number of assumptions have been made to assist with the determination of the traffic generation. These assumptions include the use of the visitor accommodation car parking spaces being four trips per day. The RTA Guide to Traffic Generating Developments recommends a rate of 0.29 trips per unit during the peak hour for a residential development in a metropolitan sub regional centre.

There are 13 car parks reserved for the visitor accommodation and at four trips per day this equates to 56 trips per day. It is assumed that each car park will generate one trips during the peak hours and therefore it is expected that there will be 13 trips during the peak hour.

There are 44 residential units and the peak hour trips is expected to be in the order of thirteen trips per hour based on the RTA guide. There are 26 car parking spaces and in reality, it could be expected that there would be between 13 and 26 trips made during the peak hour. The bulk of the residential car parking is provided within the stacker systems and these are slightly more difficult to access than normal car parks and it is anticipated that each space would be accessed a maximum of four times per day. This equates to a maximum of 176 trips per day.

In total it is anticipated that there will be a maximum of 232 trips per day and between 27 and 39 trips during the peak hour.

This number of vehicle trips is relatively low and will be easily accommodated on the local road network.

On this basis, the traffic generation of the proposed development is considered to be acceptable from a traffic engineering perspective.

5.3 Site Access

5.3.1 Vehicle Crossing Arrangement

It is proposed to construct a new vehicle crossing in approximately the same position as the existing vehicle crossing adjacent to eastern boundary on Western Springs Road. The vehicle entrance will be designed to comply with the TDM Plan VX 0203 which specifies the requirement for a commercial vehicle crossing where the footpath is separate from the kerb.

The dimensional requirements for vehicle crossing widths are defined in Table E27.6.4.3.2 of the AUP. These requirements are repeated in the following table.

Table 7: AUP vehicle crossing width requirements.

AUP vehicle crossing width requirements.			
Item	Number of parking	Minimum width of crossing at site boundary	Maximum width of crossing at site boundary
(T155)	Serves 10 or more parking spaces	6.0m (two way)	7.0m (two way)

The approach to the vehicle crossing is from within a building and the external walls will be located at the edge of the crossing. This means that the intervisibility of pedestrians passing the site and drivers exiting the property will be compromised. It is recommended that a warning system including a flashing light and a warning bell is installed. The provision of a warning system can be set as a condition of consent.

On this basis, it is considered that drivers will have ample opportunities to safely enter and leave the property.

Overall, the proposed vehicle crossing arrangement is considered to be suitable for the intended use and acceptable from a traffic engineering perspective.

5.3.2 Visibility

The available visibility has been assessed in both directions along Western Springs Road from the location of the proposed vehicle crossing.

The visibility in both directions was assessed as in excess of 80 metres.

The visibility at an intersection on an arterial road is often measured using the Safe Intersection Sight Distance (SISD). Where the 85th percentile speed is 45km/h the SISD is 40 metres. The visibility requirement at a vehicle crossing is usually made using the Safe Stopping Distance (SSD) measurement. The SSD where the 85th percentile speed is 45km/h is 77 metres.

The visibility in both directions exceeds the higher standard of the SISD standard.

Overall, the available visibility from the proposed vehicle crossing location is considered to be acceptable from a traffic engineering perspective.

5.3.3 Gradients

The AUP contains gradient related requirements as per the following:

- Vehicle accesses serving commercial activities must have a gradient no steeper than 1:6.
- Transition sections must be provided where the access has a change in gradient exceeding 1:8 at a summit, or exceeding 1:6.7 at a sag.
- A 4.0-metre-long platform is to be provided at the boundary that is no steeper than 1:20.
- All parking spaces must have a gradient no steeper than 1:20.
- All manoeuvring areas must have a gradient no steeper than 1:8.

The entrance to the property is level and therefore, the maximum gradient of the first 20 metres complies with the gradient requirements.

The floor is level and the car parking spaces are all at grade. There is a ramp linking the ground floor to the first basement level and this ramp is at a grade of 1:5. To assist drivers it is proposed to have transition areas at the top and bottom of the ramp. These transitions will ensure that cars do not bottom out.

The ramp is 5.7 metres wide and would provide sufficient width for two cars to pass if the ramp was on a straight, however there is a slight curve at the bottom of the ramp and the ramp cannot accommodate two cars passing each other As there is no opportunity to widen the ramp further the width of the ramp is a constraint and it is recommended that the ramp operates as a one-way system. It is recommended that a signal system is installed to control the movement of vehicles between levels.

A signal system has not been designed at this stage and the provision of a signal control system can be set as a condition of consent.

There is a narrow ramp linking level B1 and B2 and this ramp is solely for the use by scooters and bicycles. The ramp is at a grade of 1:5 and there are transitions at the top and bottom of the ramp. It is anticipated that scooters and bicycle using the ramp will ride down the ramp although cyclists would likely walk the bike up the ramp. There will be an access off New North Road into the lower basement and cyclists could use this access to exit as an alternative if the lifts have sufficient width to accommodate a bicycle.

On this basis, the relevant gradients are considered to be suitable for the intended use and acceptable from a traffic engineering perspective.

5.3.4 Vehicle Access Restriction Assessment

According to standard E27.6.4.1 'Vehicle Access Restrictions' (VAR), a vehicle access restriction is triggered where a site boundary has frontage to an Arterial Road, or where a vehicle crossing is located within 10 metres of any intersection as measured from the property boundary.

The proposed access is onto a collector road and the vehicle crossing is more than 10 metres from an intersection and therefore the VAR assessment is not required.

In summary, the proposed access arrangements for the development meet the requirements of the Unitary Plan, are considered to be suitable for the intended use and are expected to operate in a safe and efficient manner.

5.3.5 Pedestrian Access

There will be two pedestrian access points provided with one off Western Springs Road and the main entry and lobby will be on New North Road. Two lifts and an internal staircase provide residents with connectivity to the units on the various levels.

The retail area will have direct access to New North Road and it is expected that there will be at least one pedestrian entrance.

On this basis, the proposed pedestrian access arrangements are considered to be suitable for the intended use and acceptable from a traffic engineering perspective.

5.4 Loading and Servicing

As noted previously in 5.1.6 no loading space is required to be provided. However it is expected that the rubbish/recycling servicing for the site will occur via a private waste management company.

A Waste Management Plan has been prepared and the size of the storage enclosure has been assessed and a storage area has been designated on the ground floor level.

The layout of the building is such that it will be difficult to have the collection of waste by a truck within the building and hence the waste management company will need to make collections from the side of the road. The driver will be able to use the on-road car parking spaces directly outside of the building on Western Springs Road if they are available to park the truck whilst the driver moves the waste bins from the storage area. It is expected that the waste will be collected three times a week and take approximately 15 minutes to complete the task.

The proposed waste collection is expected to operate safely and efficiently.

5.5 Construction Traffic Management Plan

The construction contractor will be required to submit a site-specific Construction Traffic Management Plan (CTMP) to be approved by Auckland Council for the site preparation and construction phases of the project.

The approved CTMP will be used to manage the movement of construction traffic to and from the site, while maintaining the safe and efficient movement of vehicles and pedestrians in the vicinity of the site.

Given the good site access arrangements available for construction and also the good connectivity to the surrounding road network, there is not expected to be any issues in this regard.

The information required to prepare a CTMP is not available at this juncture, given that a construction contractor has yet to be engaged. Until this occurs, the construction methodology and timing, the type of trucks, the routes to/from the site and the frequency of movements are all unknowns.

On this basis, it is recommended that the provision of a ‘Construction Traffic Management Plan’ forms a condition of consent, with the following suggested wording (or similar):

Construction Traffic Management Plan

At least ten working days prior to works beginning, the consent holder shall prepare a Construction Traffic Management Plan (CTMP) to address the control of the movement of earthmoving vehicles, heavy vehicles, and deliveries to and from the site, and the management of traffic resulting from undertaking works in a road corridor.

The CTMP shall be submitted to the Council Team Leader Compliance Monitoring for certification that the CTMP gives effect to the objectives and requirements set out in the condition below. No work shall commence until confirmation is provided from the council that the CTMP is in accordance with the Auckland Council Code of Practice requirements and shall satisfactorily manage traffic effects and any required measures referred to in that plan have been put in place.

The provision of an approved Construction Traffic Management Plan will ensure that any potential effects will be controlled and minimised.

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6 UNITARY PLAN STANDARDS ASSESSMENT

Section E27 of the Auckland Unitary Plan sets out the development standards relating to transport. The table below lists the relevant standards that apply to this development and comments on compliance. The site is located within a **Business Local Centre Zone.**

Auckland Unitary Plan Transport Standards Assessment.	
AUP Standard	**Assessment**
E27.6.2. **(1) Number of Vehicle Parking Spaces** Defines the minimum and maximum number of parking spaces allowed on-site. **Table E27.6.2.4 Parking Rates – Area 2** (T29, T29, T30 & T34) No Minimum and no maximum	**Complies:** There are 39 car parking spaces.
E27.6.2. **(6) Number of Bicycle Parking Spaces** Defines the number of bicycle parking spaces required to be provided. **Table E27.6.2.5 Required bicycle parking rates** (81, T82 and T89) 5 visitor bicycle parks plus 44 secure bicycle parks are required.	**Complies:** 54 bicycle parks are proposed
E27.6.2. **(7) End of Trip Facilities** Defines the end of trip facilities to be provided for office, education or hospital facilities. **Table E27.6.2.6 Required end-of-trip facilities**	**Complies:** N/A
E27.6.2. **(8) Number of Loading Spaces** Defines the number of loading spaces required to be provided on-site. **Table E27.6.2.7 Minimum loading space requirements** (T108, T112) No loading space	**Complies:** No loading space provided.
E27.6.2. **(10) Accessible Parking** Defines the number of accessible parking spaces required to be provided on-site. No accessible spaces required for the residential portion and a min of one accessible space is required for the retail.	**Complies:** One space on level B1 is suitable for accessible parking but is not marked. Furthermore, the vertical clearance on the ramp is only 2.2m
E27.6.3.1. **(1) Size and Location of Parking Spaces**	**Complies:** All sealed spaces are a minimum of 2.6 metres wide and 5.0 metres deep and

Defines the size, use, and location of parking spaces. **Table E27.6.3.1.1 Minimum car parking space and manoeuvring dimensions** (T122) 2.6m wide, 5.0m deep, 7.0m manoeuvring (T123) 2.7m wide, 5.0m deep, 6.7m manoeuvring	have 7.0 metres for manoeuvring. The overflow parking areas have spaces that are 3.0m wide by 5.0m long and there is a min of 6.7m for manoeuvring.
E27.6.3.2. Size and Location of Loading Spaces Defines the size, use, and location of loading spaces. **Table E27.6.3.2.1 Minimum loading space dimensions** .	**Complies:** N/A.
E27.6.3.3. Access and Manoeuvring Defines the requirements for the access and manoeuvring of design vehicles, to and from parking spaces on-site. **Table E27.6.4.3.2 Vehicle crossing and vehicle access widths** (T153) 5.5m Min crossing width and 6.0m maximum width. The minimum formed access width is 5.5 m.	**Complies:** An 85th percentile vehicle can enter and leave all the car parking spaces in a single manoeuvre or with one additional manoeuvre. **Complies:** The proposed crossing will be 6.0m wide The access will be a min of 5.7m metres wide.
E27.6.3.4. Reverse Manoeuvring Defines the conditions in which reverse manoeuvring is acceptable to and from a site.	**Complies:** All vehicles will be able to enter and exit the site in a forward's direction.
E27.6.3.5. Vertical Clearance Defines the minimum vertical clearance to overhead structures. (a) 2.1m for residential activities (b) 2.3m for all other activities (c) 2.5m for accessible parking (d) 3.8m for loading	**Complies:** The vertical clearances are listed below Ground floor will be 2.4m. B1 is 2.4m B2 is 2.3m Vertical clearance on the ramps is a min of 2.1m
E27.6.3.6. Formation and Gradient Defines the formation and gradients for all parking spaces and manoeuvring areas. (3)(a) Max gradient 1:25 for accessible spaces. (3)(b) Max gradient 1:20 for all other parking spaces. (4) Max gradient 1:8 for manoeuvring areas.	**Complies:** The floors of the building are flat and the car parks are on the level. There are ramps between floors that have a maximum grade of 1:5 and there are transitions at the top and bottom of the ramps.
E27.6.3.7. Lighting Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit during use in a manner that complies with the rules in section E24 Lighting.	**Complies:** A lighting Plan will be provided

E27.6.4.1. Vehicle Access Restrictions Defines the acceptable locations of access points in relation to strategic roads and intersections .	**Complies:** The location of the proposed entrance is considered to be in the most appropriate position
E27.6.4.2. Width and Number of Vehicle Crossings Defines the number of vehicle crossings, proximity to other vehicle crossings, and permitted widths of vehicle crossings.	**Complies:** The number of vehicle crossings serving the site do not exceed the rate of 1/25m of frontage
Table E27.6.4.2.1 Maximum number of vehicle crossings and separation distance between crossings (T146) Max number of vehicle crossings per site: 1/25m of frontage or part thereof. Min separation between on-site crossings and neighbouring crossings: 2m	**Complies:** There is more than 2.0m between vehicle crossings at the boundary.
Min separation between crossings on same site: 6m	**Complies:** N/A
E27.6.5. Design and Location of Off-road Pedestrian and Cycling Facilities Defines the requirements for off-road pedestrian and cycle facilities.	**Complies:** N/A

7 Conclusion

This report discusses the traffic-related aspects of an application to construct a mixed-use development that will have a small retail unit that is 66m^2 in area, 34 visitor accommodation units plus 44 residential units at 617-619 New North Road in Kingsland.

The crash history does not indicate the presence of any inherent safety or operational concerns with the layout on New North Road or Western Springs Road.

The site is well located for access to passenger transport options to service residents and visitors as well as staff.

The proposed parking arrangement complies with the requirements of the AUP, and is considered to be acceptable from a traffic engineering perspective.

The anticipated level of additional traffic generated by the proposal can be easily accommodated by the existing road network, and is considered to be acceptable from a traffic engineering perspective.

The proposed vehicle crossing arrangement is considered to be acceptable from a traffic engineering perspective.

The gradients of the manoeuvring area and proposed parking spaces satisfy the requirements of the AUP.

The loading and servicing arrangements for the site are considered to be acceptable from a traffic engineering perspective.

Overall, it is considered that the traffic engineering aspects of the proposal are appropriate for the intended use, and are not expected to result in any operational or safety issues from a traffic engineering perspective.

APPENDIX A: PLAN OF THE SITE

NEW NORTH RD
KINGSLAND

RC DRAWING SCHEDULE

	COVER
RC01	NEW NORTH ROAD
RC02	WESTERN SPRINGS ROAD
RC03	STREET ELEVATION
RC04	SITE CONTEXT
RC05	PROPOSED BASEMENT 02
RC06	PROPOSED BASEMENT 01
RC07	PROPOSED GROUND
RC08	PROPOSED LEVEL 01 & 02
RC09	PROPOSED LEVEL 03 - 06
RC10	PROPOSED LEVEL 07
RC11	PROPOSED LEVEL 08
RC12	NORTH & SOUTH ELEV
RC13	ELEV 01 & 02
RC14	ELEV 03 & 04
RC15	SECTION A
RC16	UNIT AREA SCHEDULE
RC17	LEVEL 03 - 06 OUTLOOK
RC18	LEVEL 07 OUTLOOK
RC19	NNR GROUND FLOOR 1:50
RC20	SURVEY

VIEW FROM NEW NORTH ROAD

PRELIMINARY

NEW NORTH ROAD

DWG No.	REV	SCALE
RC01	A	N.T.S. @A3

MATZ ARCHITECTS LTD

+09 3033722 +DATE 20/09/22 +PROJECT 1309

MATZ

NEW NORTH RD
KINGSLAND

VIEW FROM WESTERN SPRINGS ROAD

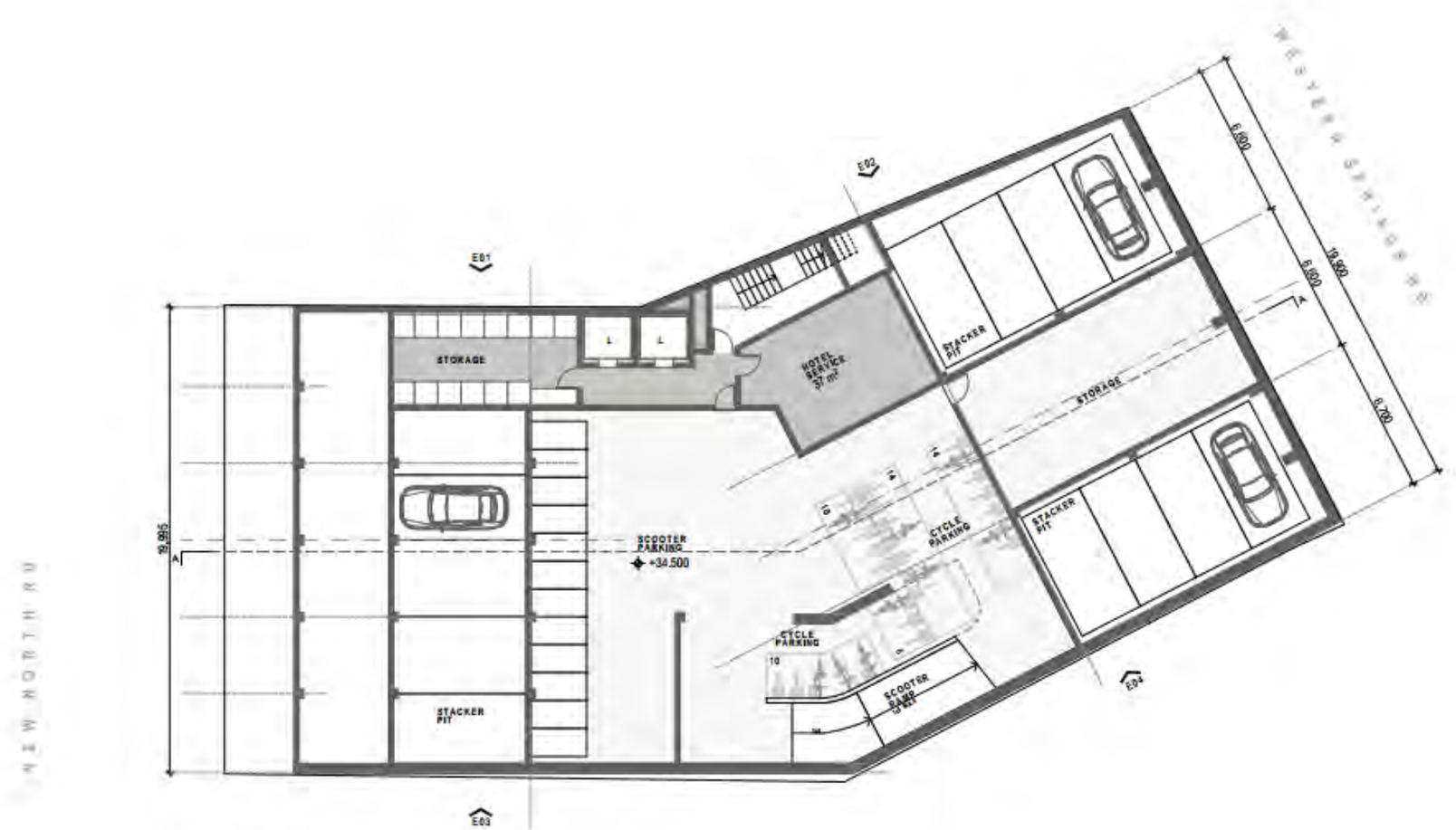
PRELIMINARY

WESTERN
SPRINGS ROAD

DWG No.	REV	SCALE
RC02	A	N.T.S. @A3

MATZ ARCHITECTS LTD +09 3033722 +DATE 20/09/22 +PROJECT 1309 MATZ

NEW NORTH RD
KINGSLAND



BASEMENT 02
1:200 @ A3

RC ISSUE 15.12.22 +A

PROPOSED
BASEMENT 02

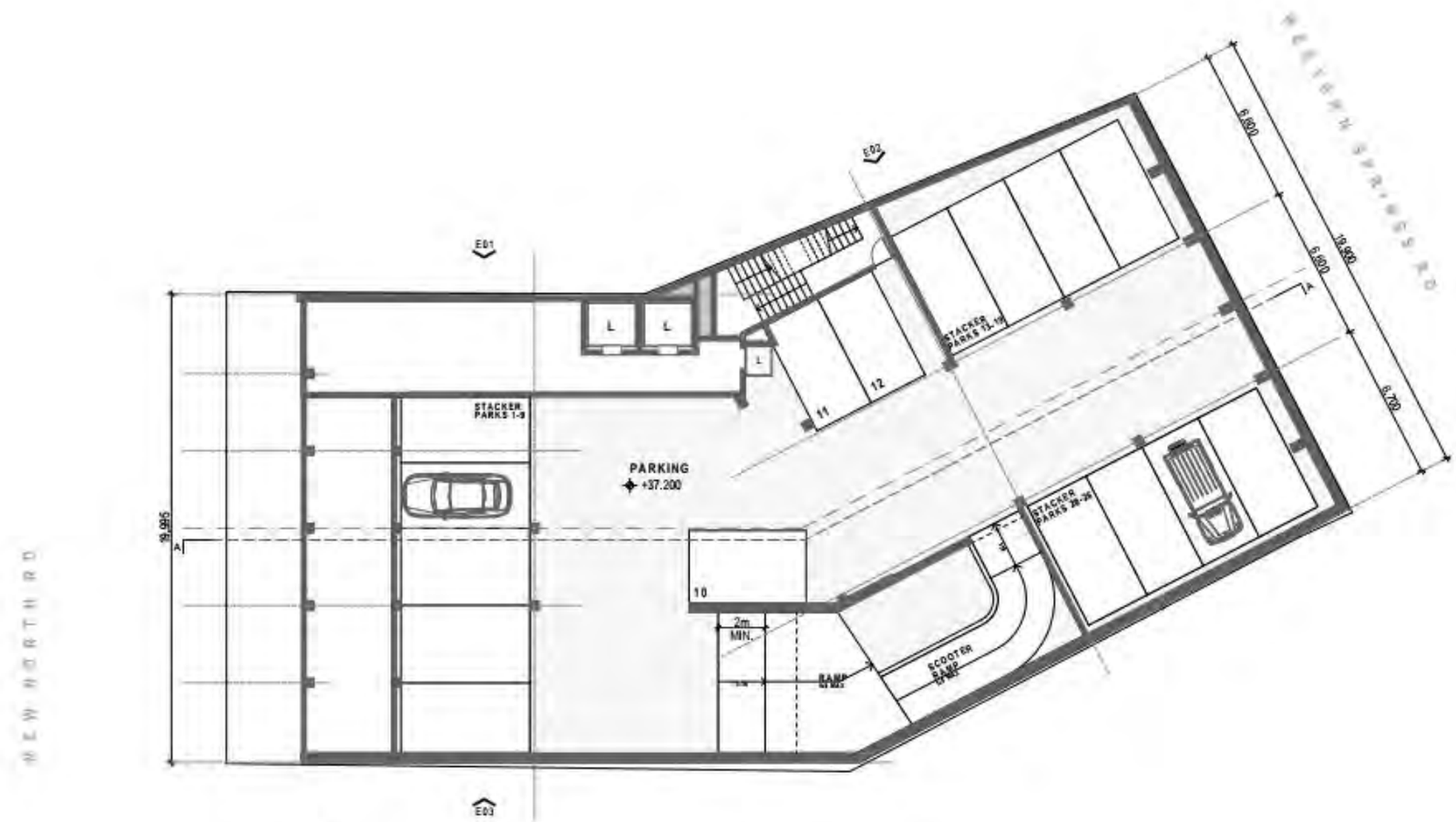
DWG No.	REV	SCALE
RC05	A	1:200 @ A3

MATZ ARCHITECTS LTD

 +09 3033722 +DATE 15/12/22 +PROJECT 1309

MATZ

NEW NORTH RD
KINGSLAND



BASEMENT 01
1:200 @ A3

RC ISSUE 15.12.22 + A

PROPOSED
BASEMENT 01

DWG No.	REV	SCALE
RC06	A	1:200, 1:50 @ A3

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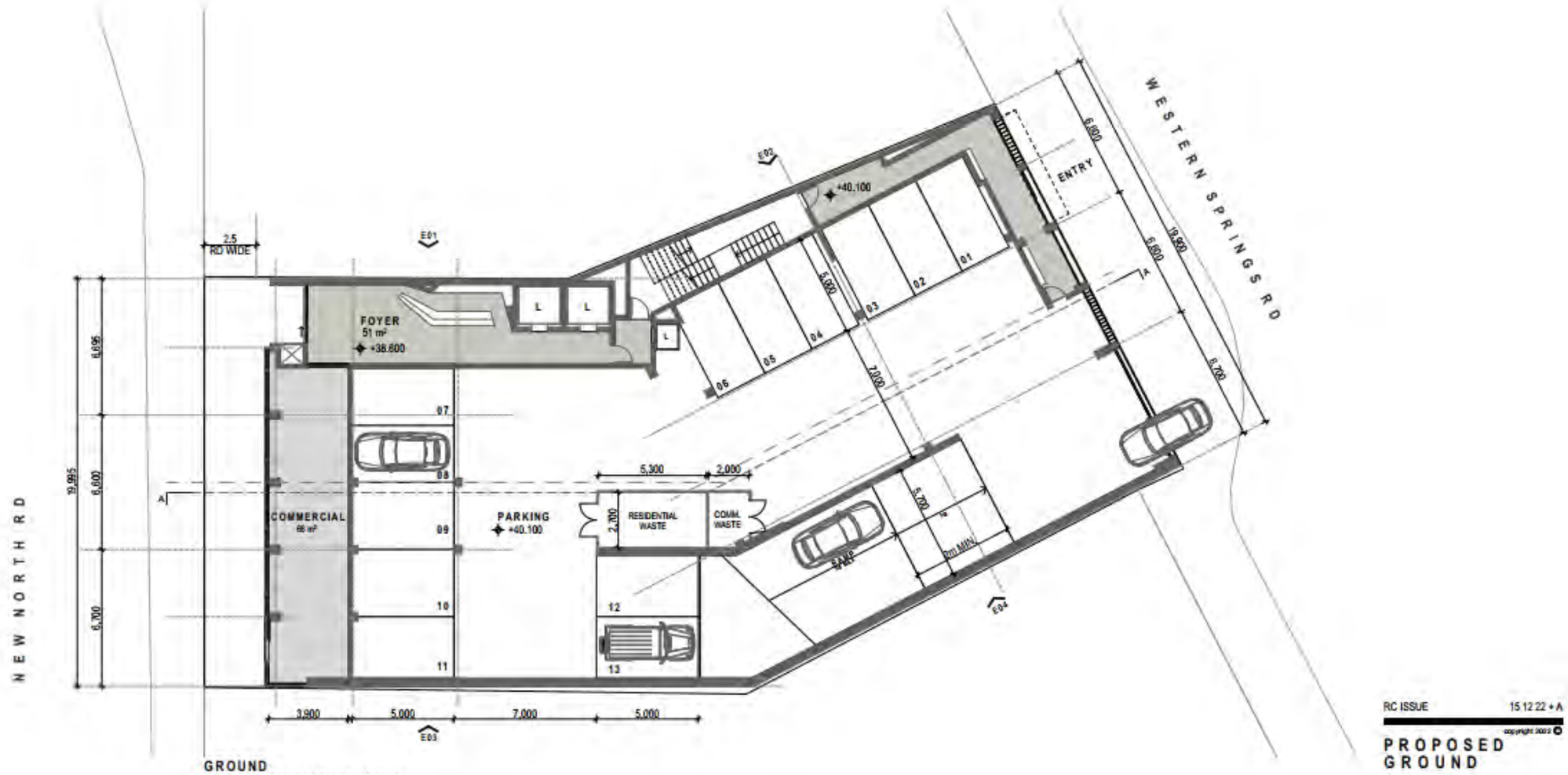
NEW NORTH RD
KINGSLAND



GROUND
VISITOR ACCOMODATION PARKING
1:200 @ A3

RC ISSUE 15 12 22 + A

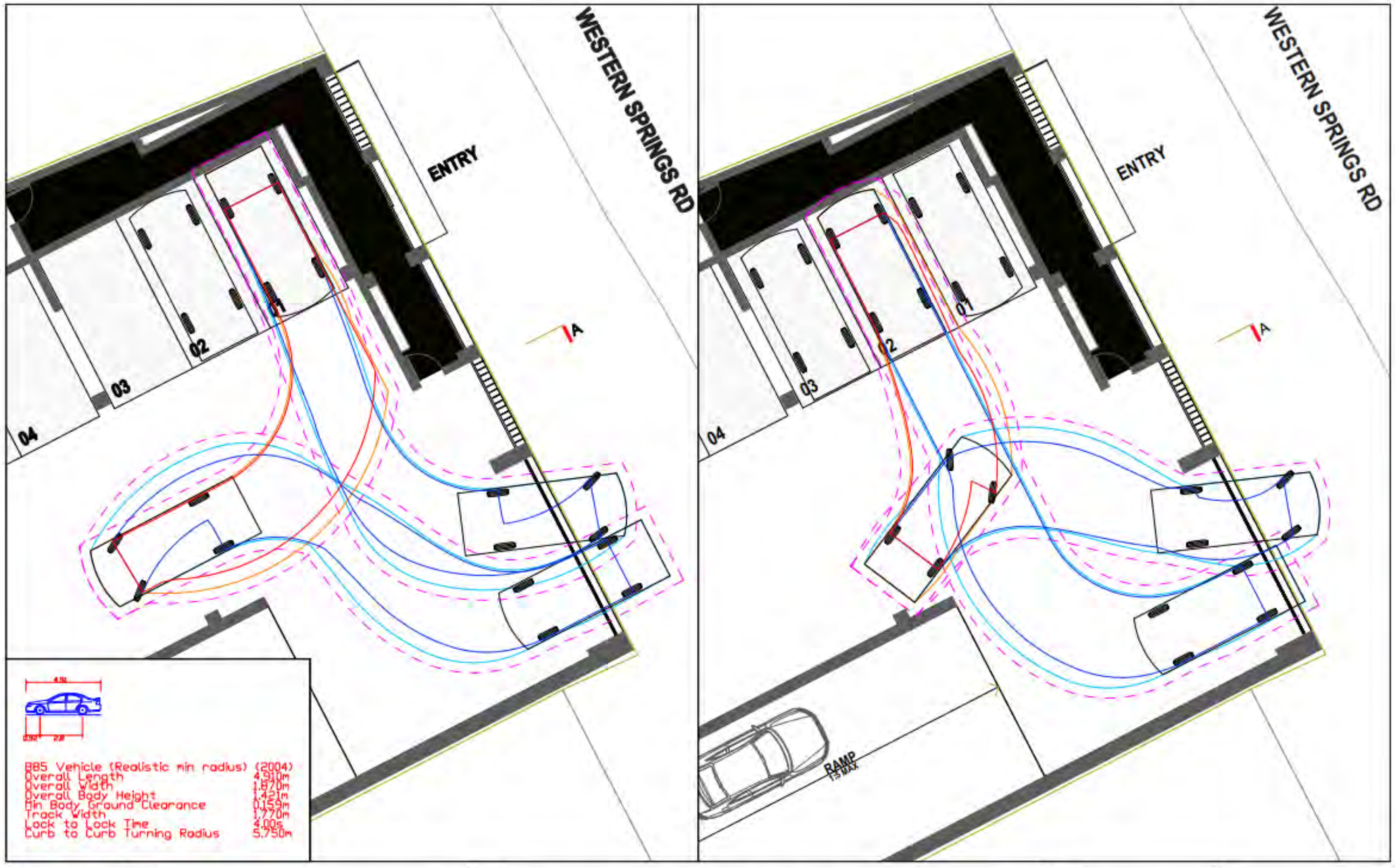
PROPOSED
GROUND

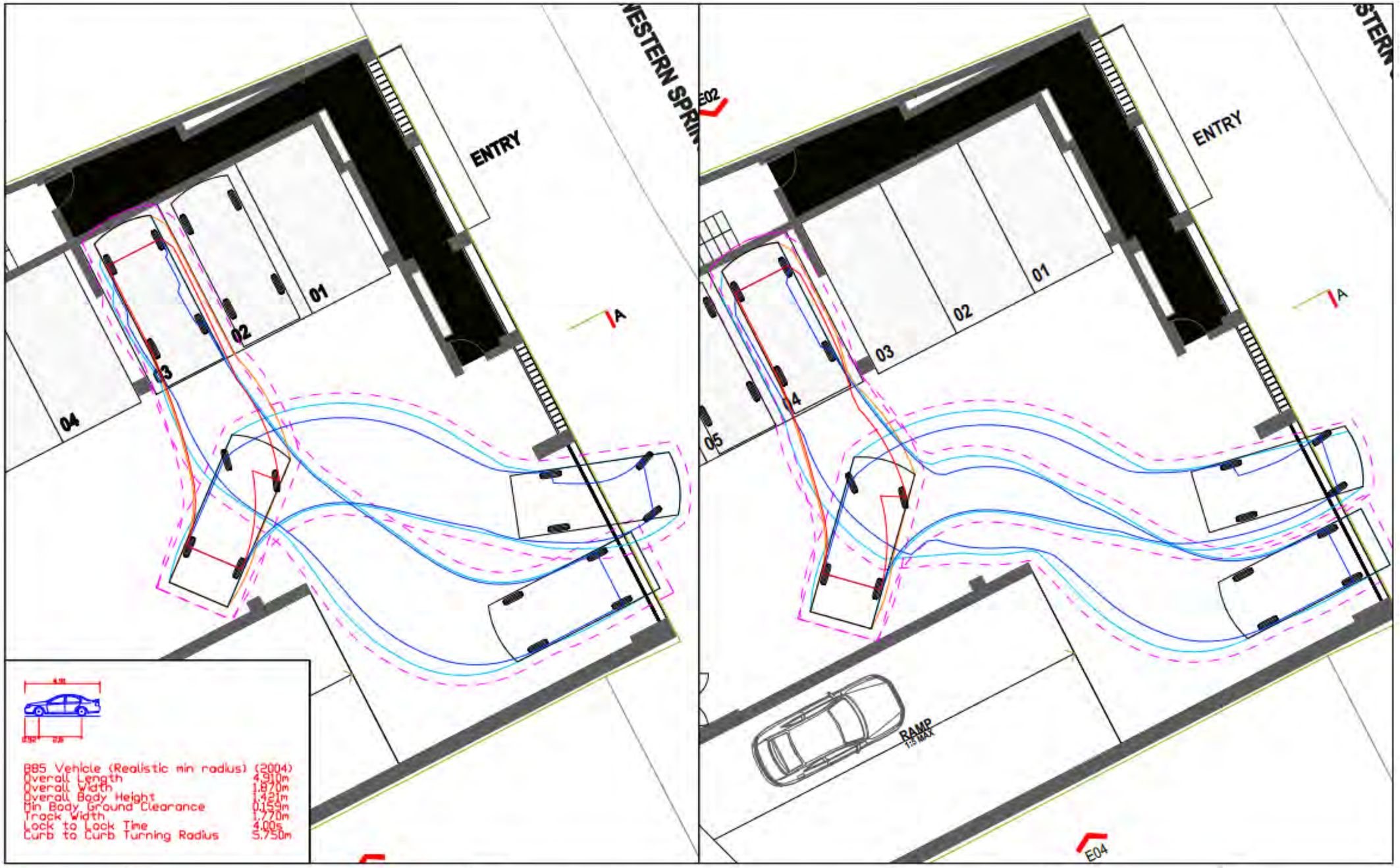
DWG No.	REV	SCALE
RC07	A	1:200 @ A3

MATZ ARCHITECTS LTD

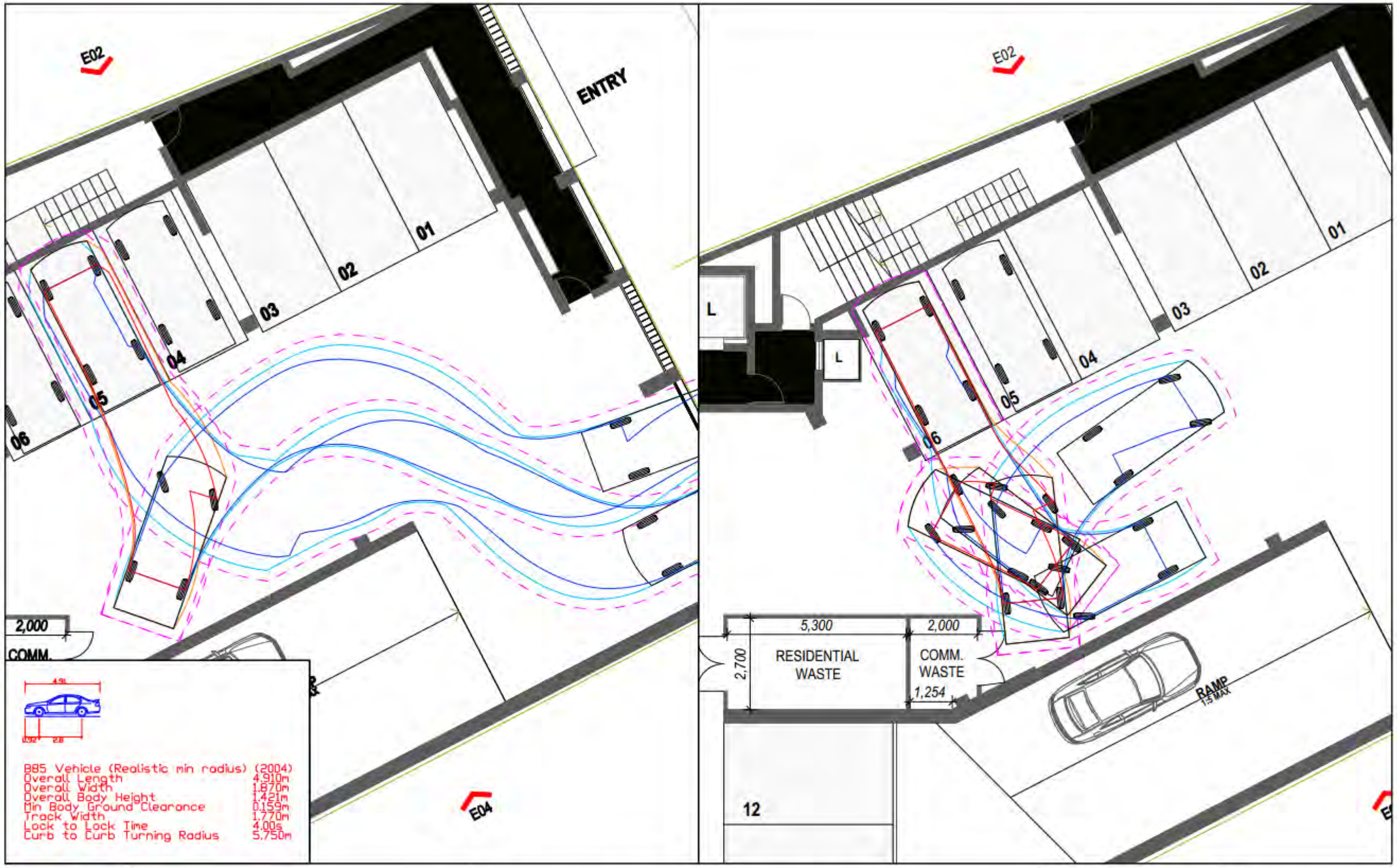
 +09 3033722 +DATE 15/12/22 +PROJECT 1309

APPENDIX B: TRACKING PLANS



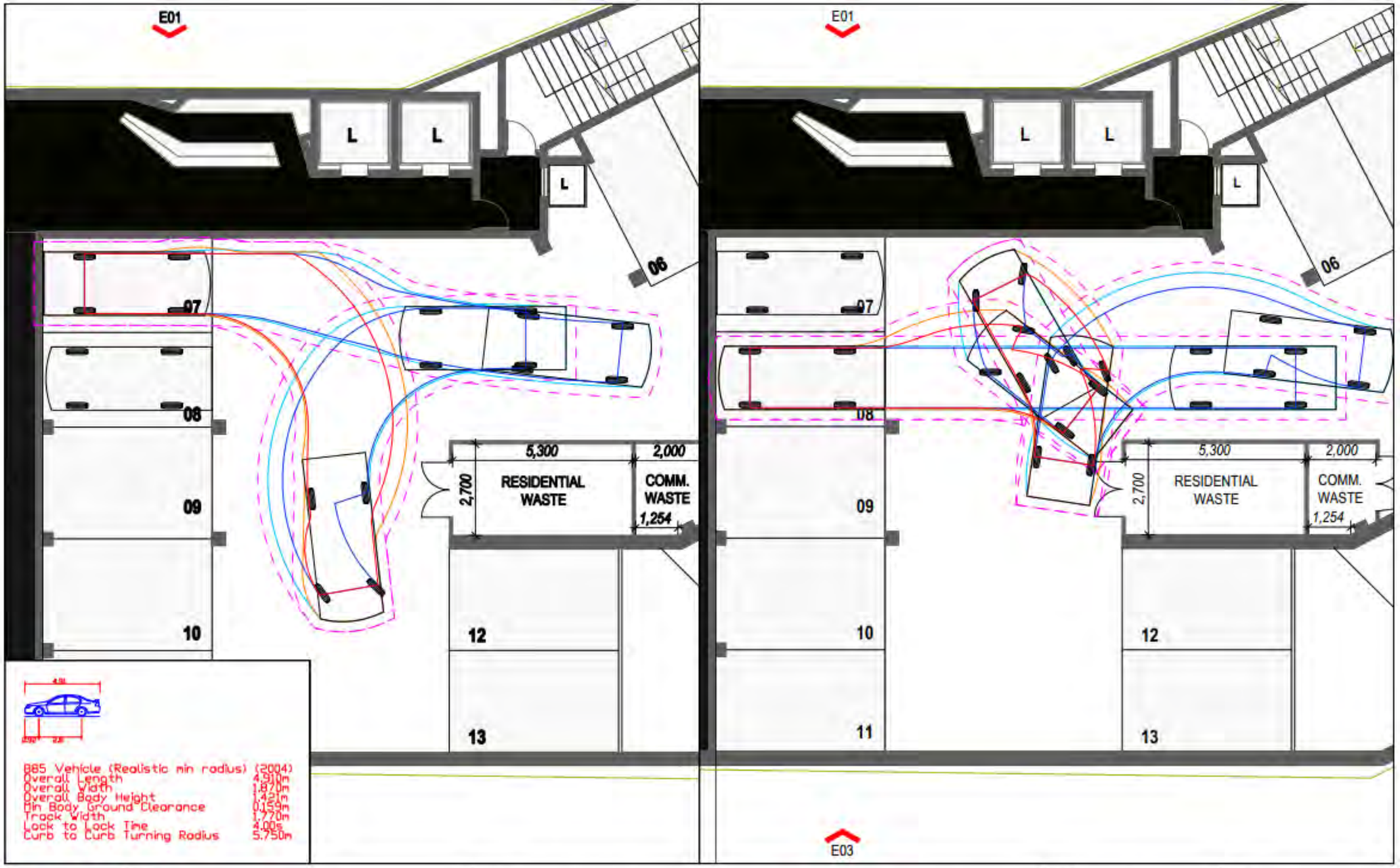


team Traffic Engineering & Management Ltd. T: +64 9 8363886 www.teamtraffic.co.nz	NOTES	PROJECT: 617-619 NEW NORTH ROAD, KINGSLAND	STATUS: VEHICLE TRACKING ANALYSIS	DATE: 13/12/2022
		DRAWING TITLE: PARKING SPACE 3 & 4 - B85 VEHICLE TRACKING	PROJECT NO.: 221065 / SCALE: 1:100 A3	SHEET: 2 / REV: A



team Traffic Engineering & Management Ltd. T: +64 9 8363888 www.teamtraffic.co.nz	NOTES	PROJECT: 617-619 NEW NORTH ROAD, KINGSLAND	STATUS: VEHICLE TRACKING ANALYSIS	DATE: 13/12/2022	
		DRAWING TITLE: PARKING SPACE 5 & 6 - B85 VEHICLE TRACKING	PROJECT NO.: 221065 / SCALE: 1:100 A3	SHEET: 3	REV: A

team — Traffic Engineering & Management Ltd.	NOTES	PROJECT: 617-619 NEW NORTH ROAD, KINGSLAND	STATUS: VEHICLE TRACKING ANALYSIS	DATE: 13/12/2022
		DRAWING TITLE: PARKING SPACE 12 & 13 - B85 VEHICLE TRACKING	PROJECT NO.: 221065 / SCALE: 1:100 A3	SHEET: 4 / REV: A


E01
L
L
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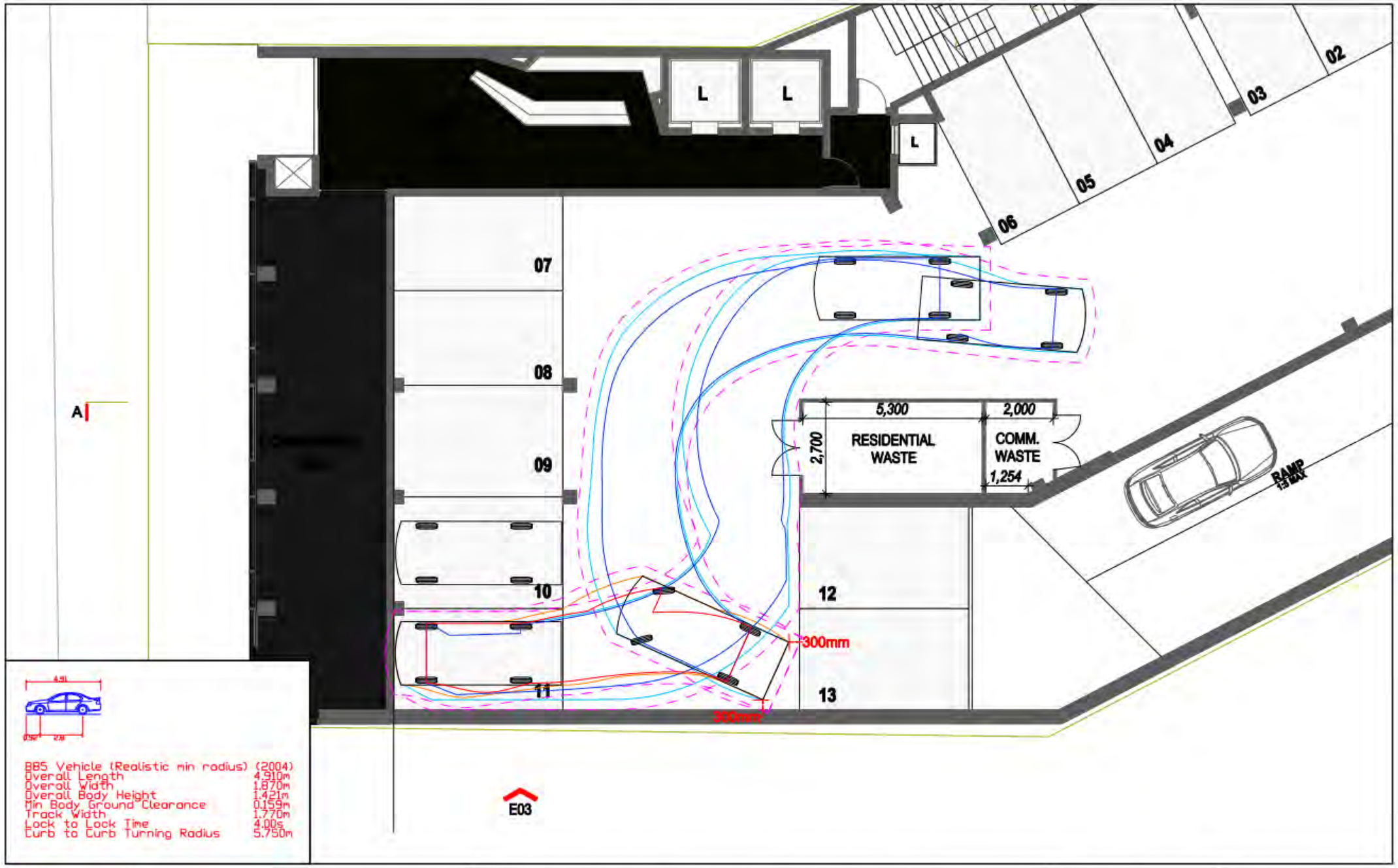
06
07
08
09
10
12
13
5,300
2,000
2,700
RESIDENTIAL WASTE
COMM. WASTE
1,254
E01
L
L
L
06
07
08
09
10
11
12
13
5,300
2,000
2,700
RESIDENTIAL WASTE
COMM. WASTE
1,254
E03
B85 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.425m
Min Body Ground Clearance 0.155m
Track Width 1.770m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 5.750m
team
Traffic Engineering & Management Ltd.
NOTES
PROJECT
617-619 NEW NORTH ROAD, KINGSLAND
STATUS
VEHICLE TRACKING ANALYSIS
DATE
16/12/2022
DRAWING TITLE
PARKING SPACE 7 & 8 - B85 VEHICLE TRACKING
PROJECT NO.
221065
SCALE
1:100
A3
SHEET
4
REV
A

team Traffic Engineering & Management Ltd. T: +64 9 8303869 www.teamtraffic.co.nz	NOTES	PROJECT: 617-619 NEW NORTH ROAD, KINGSLAND	STATUS: VEHICLE TRACKING ANALYSIS	DATE: 16/12/2022
		DRAWING TITLE: PARKING SPACE 9 & 10 - B85 VEHICLE TRACKING	PROJECT NO.: 221065 / SCALE: 1:100 A3	SHEET: 5 / REV: A



team

Traffic Engineering & Management Ltd.

T: +64 9 8363888

NOTES

PROJECT: 617-619 NEW NORTH ROAD, KINGSLAND

STATUS: VEHICLE TRACKING ANALYSIS

DATE: 16/12/2022

DRAWING TITLE: PARKING SPACE 11 - B85 VEHICLE TRACKING

PROJECT NO.: 221065

SCALE: 1:100 A3

SHEET: 6

REV: A