

Report Prepared for  
Pace Development Group

ratio:

**ADVERTISED COPY**

20 January 2021

Proposed Mixed Use Development  
554-558 High Street Road, Mount  
Waverley

traffic:impact

r:

**ratio:consultants**

8 Gwynne Street  
Cremorne VIC 3121  
ABN 93 983 380 225

**Prepared for:**

Pace Development Group  
Our reference 17545T-REP01-F01

Version	Date	Reason for Issue	Prepared By	Checked By
D02	19/01/21	DRAFT	S NAIK & J MCKENZIE	R FAIRLIE
F01	20/01/21	FINAL	S NAIK & J MCKENZIE	R FAIRLIE

Directory Path	Y:\17500-18001\17545T - 554-558 High Street Road, Mt Waverley\17545T-REP01-F01.docx
----------------	---

**ratio:consultants** pty ltd

This work is copyright. Apart from any use as permitted under Copyright Act 1968, no part may be reproduced without written permission of **ratio:consultants** pty ltd.

Disclaimer: neither **ratio:consultants** pty ltd nor any member or employee of **ratio:consultants** pty ltd takes responsibility in anyway whatsoever to any person or organisation (other than that for which this report is being prepared) in respect of the information set out in this report, including any errors or omissions therein. **ratio:consultants** pty ltd is not liable for errors in plans, specifications, documentation or other advice not prepared or designed by **ratio:consultants** pty ltd.



# Table of contents:

Chapter / Section	Page No.
<b>1 Introduction: .....</b>	<b>4</b>
<b>2 Existing Conditions:.....</b>	<b>5</b>
2.1 Location and Environment .....	5
2.2 Road Network.....	6
2.3 Parking Conditions .....	6
2.4 Sustainable Transport.....	9
<b>3 The Proposal: .....</b>	<b>12</b>
3.1 Development Overview .....	12
<b>4 Car Parking Assessment:.....</b>	<b>13</b>
4.1 Clause 52.06 – Parking Assessment .....	13
4.2 Car Parking Demand Assessment.....	14
4.3 Allowing Fewer Spaces to be provided .....	15
4.4 Appropriateness of Proposed Car Parking Supply .....	16
<b>5 Access and Car Parking Layout: .....</b>	<b>17</b>
5.1 Clause 52.06 Design Standard Assessment.....	17
5.2 Swept Path Assessment.....	20
<b>6 Bicycle Parking: .....</b>	<b>21</b>
6.1 Clause 52.34 – Bicycle Parking Assessment.....	21
<b>7 Service Vehicle Arrangements:.....</b>	<b>22</b>
7.1 Loading & Emergency Vehicle Arrangements .....	22
7.2 Waste Collection Arrangement.....	22
<b>8 Traffic Assessment:.....</b>	<b>24</b>
8.1 Traffic Generation .....	24
8.2 Traffic Distribution and Impact.....	25
<b>9 Conclusion:.....</b>	<b>26</b>

Appendices:

<b>Appendix A</b>	<b>Survey Results</b>
<b>Appendix B</b>	<b>Swept Path Assessment</b>
<b>Appendix C</b>	<b>Bicycle Parking Specifications</b>
<b>Appendix D</b>	<b>Waste Collection Swept Path</b>

# 1 Introduction:

Ratio Consultants was commissioned by Pace Development Group Pty Ltd to assess the traffic and parking implications of the proposed mixed-use development at 554-558 High Street Road, Mount Waverley.

The proposed development involves the construction of a six-storey building, and incorporates the following land uses:

- 88 retirement village units and communal amenities;
- Food and drink premises located on the ground floor, fronting High Street Road, with a floor area of 163 sqm;
- 91 parking spaces (including one DDA space) within a two-level basement car park, accessed via High Street Road.
- A total of 42 bicycle parking spaces spread throughout the development.

This report has been prepared to address the traffic and parking needs of the proposed development and is based on surveys and observations in the vicinity of the site and on previous studies of similar developments elsewhere in Melbourne.

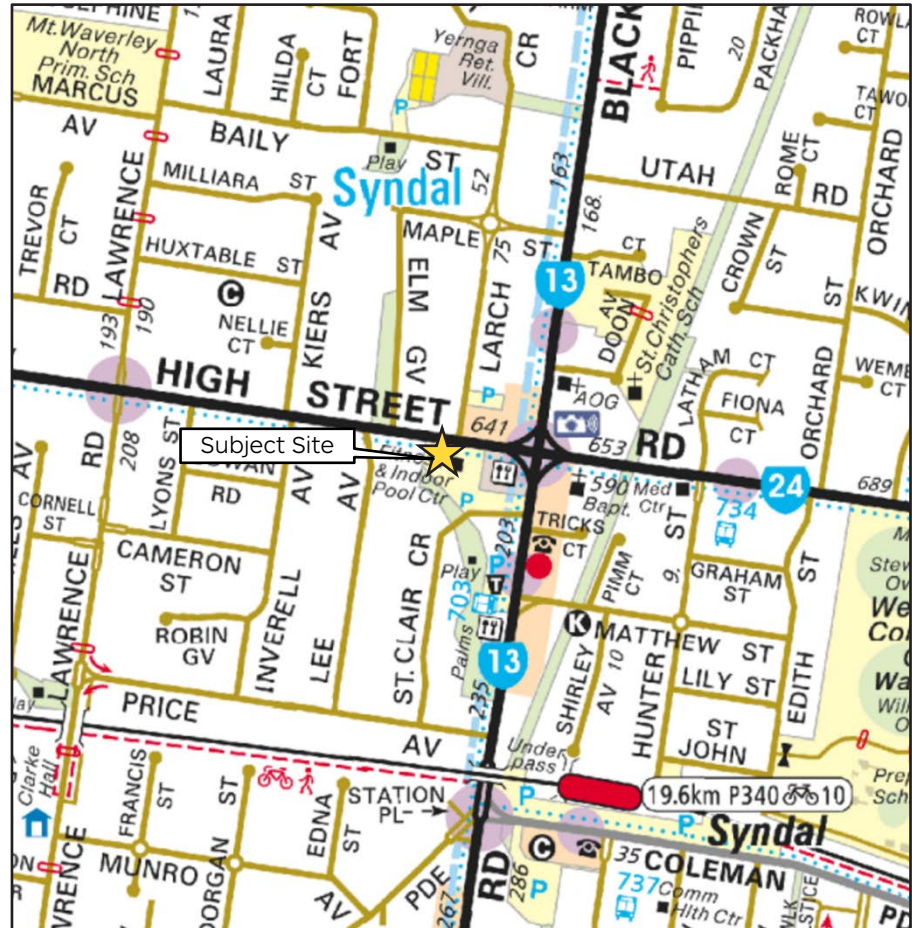


## 2 Existing Conditions:

### 2.1 Location and Environment

The site of the proposed development is located on the southern side of High Street Road, approximately 70 metres west of Blackburn Road, in Mount Waverley. The site's location relative to the surrounding road network is shown in Figure 2.1 below.

Figure 2.1: Site Location



Source: Melways Edition 39

The subject site is irregular in shape with a frontage to High Street Road of 61.55 metres, a maximum depth of 52.23 metres, and an overall site area of approximately 2,620 square metres.

The site is currently vacant, however was previously occupied by a number of different uses, including: a yoga studio, swimming school, car sales yard, and a fitness centre. Vehicular access to/from the site is currently provided via four single-width crossovers to/from High Street Road. Additional access is also provided via the Council public car park, which borders the eastern and southern boundaries of the site. The Council car park gains access to the road network via High Street Road to the north and St Clair Crescent to the east.

The site is located within a General Residential Zone – Schedule 2 (GRZ2). The surrounding land uses are predominantly residential in nature, with the Syndal Neighbourhood Activity Centre located along Blackburn Road east of the site.

Figure 2.2 below shows an aerial view of the site and its surrounds.

**Figure 2.2: Aerial View of the Site and Surrounds**



Source: [www.nearmap.com](http://www.nearmap.com)

## 2.2 Road Network

**High Street Road** is a Department of Transport managed road, and functions as an undivided Primary State Arterial Road. It runs in an east-west direction between Warrigal Road and Burwood Highway. In the vicinity of the subject site, High Street Road has an approximate carriageway width of 13.0 metres, accommodating two traffic lanes in each direction. Kerbside parallel parking is permitted on both sides of the road, outside of Clearway (directional) peak times. It has a posted speed limit of 60km/hr.

**St Clair Crescent** is classified as a municipal Local Road. It extends west from Blackburn Road and south to Prince Avenue. It has an approximate carriageway width of 7.2 metres, accommodating two-way vehicle movements. Kerbside parallel parking is provided on both sides of the road.

The High Street Road / Blackburn Road intersection is signal controlled, with pedestrian crossing facilities provided on all legs of the intersection.

The St Clair Crescent / Blackburn Road intersection is priority controlled, with 'Give Way' signage and line marking provided for vehicles exiting St Clair Crescent.

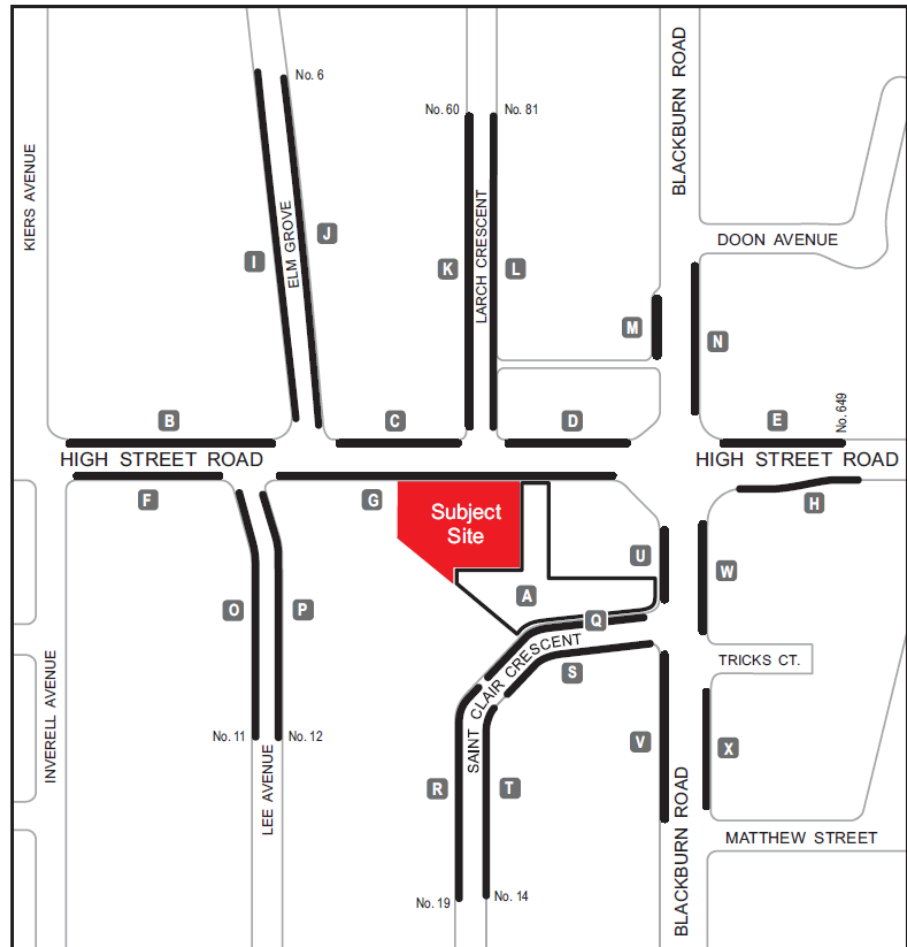
Footpaths are provided on both sides of all roads in the vicinity of the site.

## 2.3 Parking Conditions

Parking occupancy surveys were not able to be commissioned as part of the planning application due to the ongoing restrictions in response to the Covid-19 pandemic. Conducting surveys at this time would not be reflective of the 'typical' parking demand.

Notwithstanding, Ratio Consultants previously commissioned surveys of parking supply and demand on Friday 7 October 2016 between 11:00am to 8:00pm and on Saturday 8 October 2016 between 11:00am and 4:00pm. The extent of the survey area is presented in Figure 2.3 and detailed survey results are presented in Appendix A.

**Figure 2.3: Parking Survey Area**



The parking inventory reveals the supply of parking in the precinct is a mixture of restricted and unrestricted parking. Clearway parking restrictions apply along High Street Road, and 'No Stopping' restrictions apply on some local roads during business hours. The Council public car park located adjacent to the site accommodates 88 unrestricted parking spaces.

In summary, the survey results showed:

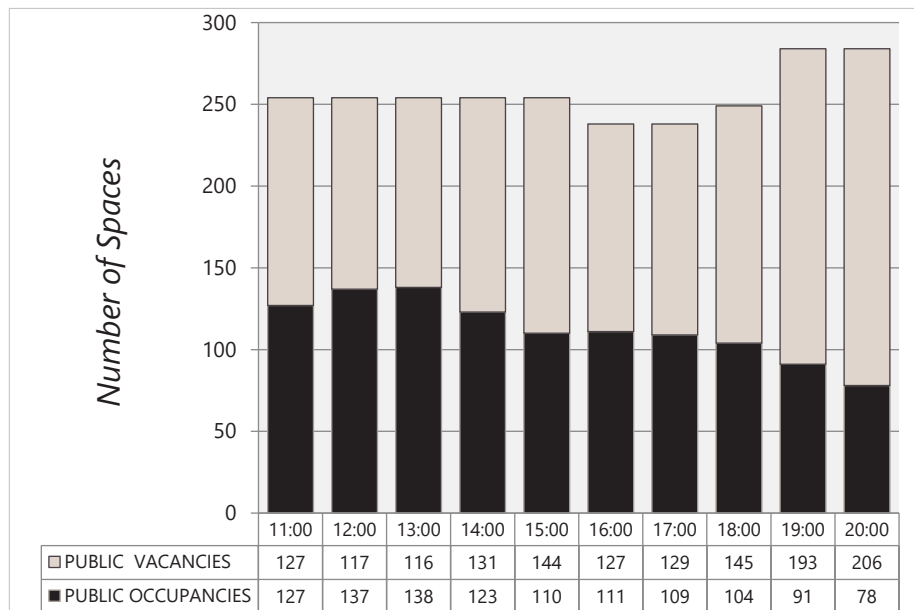
**Friday 7 October 2016**

- There was observed to be a minimum of 238 and a maximum of 284 parking spaces within the survey area (depending on the time of day). This includes 88 parking spaces associated with the Council car park, and between 150 and 196 on-street parking spaces.
- The demand for on-street parking was low to moderate during the survey period, with parking occupancies ranging between 24% and 40%.

- The on-street parking peak hour occurred at 12:00noon, when a total of 67 publicly available car parking spaces were recorded occupied out of an available supply of 166 spaces, representing a parking occupancy of 40%. There was a minimum of 99 on-street available spaces at this time.
- The Council car park experienced a moderate to high parking demand. The peak hour occurred at 1:00pm, when a total of 74 parking spaces were recorded occupied, representing a parking occupancy of 84%. There were a minimum of 14 parking spaces available within the Council car park during the survey period.

Graph 2.1 provides a graphical representation of the Friday parking demands.

**Graph 2.1: Parking demand survey results – Friday 7 October 2016**



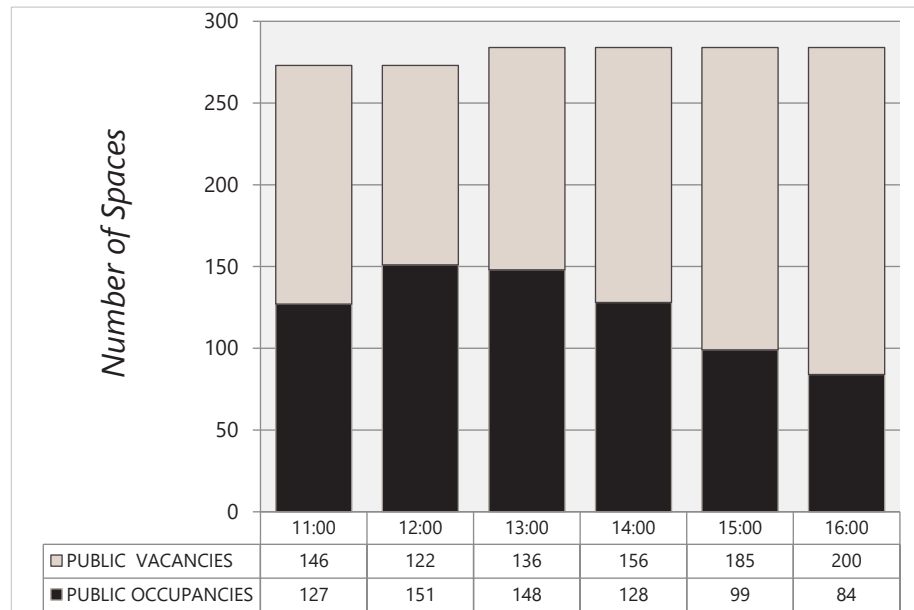
**Saturday 4 June 2016**

- There was observed to be a minimum of 273 and a maximum of 284 parking spaces within the survey area (depending on the time of day). This includes 88 parking spaces associated with the Council car park, and between 185 and 196 on-street parking spaces.
- The demand for on-street parking was low to moderate during the survey period, with parking occupancies ranging between 23% and 39%.
- The on-street parking peak hour occurred at 12:00noon, when a total of 73 publicly available car parking spaces were recorded occupied out of an available supply of 175 spaces, representing a parking occupancy of 39%. There was a minimum of 112 on-street available spaces at this time.
- The Council car park experienced a moderate to high parking demand. The peak hour occurred at 12:00noon, when a total of 78 parking spaces were recorded occupied, representing a parking occupancy of 89%. There were a minimum of 10 parking spaces available within the Council car park during the survey period.

Graph 2.2 provides a graphical representation of the Saturday parking demands.



**Graph 2.2: Parking demand survey results - Saturday 8 October 2016**



The survey results indicated that the overall parking demand is moderate throughout the survey period. The Council car park often experienced a high parking demand during business hours, which is not surprising given the parking is unrestricted. The on-street parking recorded a low to moderate parking demand during the weekday and weekend surveys. Overall, it is considered that there is spare parking capacity within the vicinity of the site to accommodate an increase in car parking.

Recent observations and a review of aerial photographs indicate that similar parking conditions still generally apply.

## 2.4 Sustainable Transport

### Public Transport

The site has very good access to the public transport network, principally via Syndal Railway Station. The following public transport services are provided within close proximity to the site:

**Table 2.1: Public Transport Services - Train**

Nearest Station	Railway Lines	Walking Distance
Syndal Railway Station	Glen Waverley	600 metres

Source: [ptv.vic.gov.au](http://ptv.vic.gov.au)

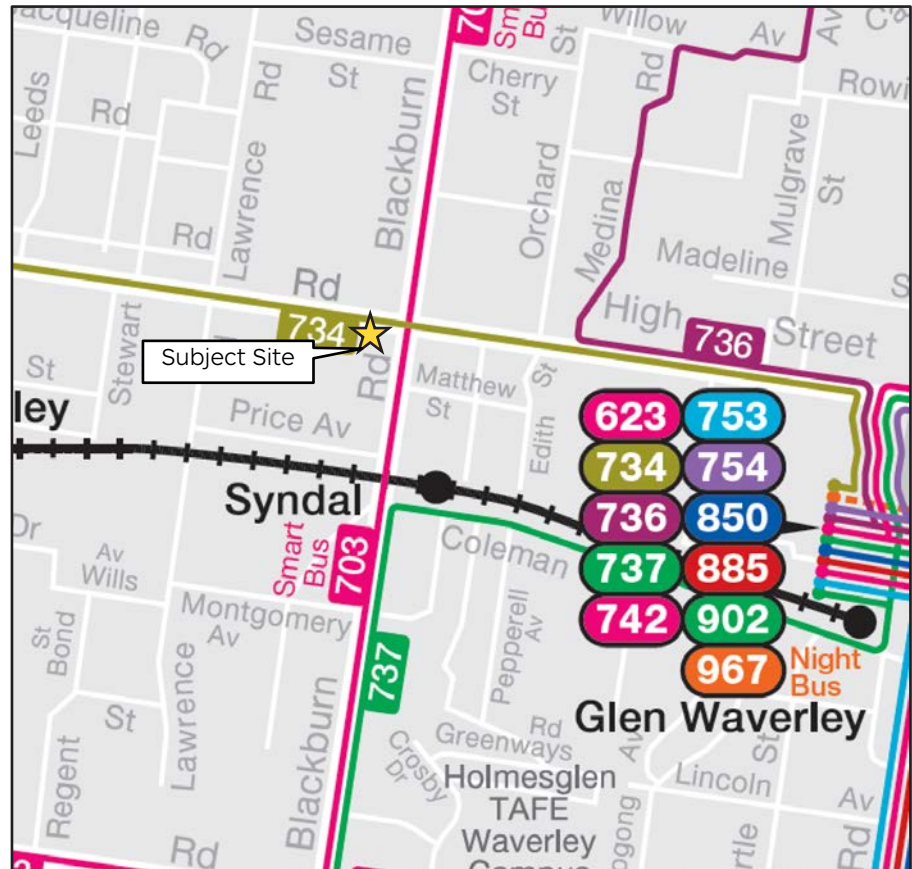
**Table 2.2: Public Transport Services - Bus**

Route Number	Route Description	Nearest Stop	Walking Distance
734	Glen Iris to Mount Waverley	High Street Road / Blackburn Road	70 metres
703	Middle Brighton to Blackburn via Bentleigh, Clayton, Monash University (SMARTBUS Service)	High Street Road / Blackburn Road	70 metres



Figure 2.4 presents the public transport services operating within convenient proximity of the site:

**Figure 2.4: Monash Public Transport Map**



Source: Public Transport Victoria

The subject site is also a part of the land identified as being within the Principal Public Transport Network Area (State Government of Victoria, 2018) as shown graphically in Figure 2.5. This is reflective of the site's good access to public transport services.

Figure 2.5: Monash Principal Public Transport Area



Source: <https://transport.vic.gov.au/about/planning/principal-public-transport-network>

### 3.1 Development Overview

It is proposed to construct a six-storey mixed use development on the site located at 554-558 High Street Road, Mount Waverley. More specifically, the development comprises the following:

- Retirement village with a total of 88 units, comprising:
  - 32 x one-bedroom units;
  - 56 x two-bedroom units; and
  - Associated communal amenities (gym, library, cinema and yoga studio).
- Food and drinks premises located on the ground floor fronting High Street Road with a floor area of 163 sqm;
- 91 car parking spaces (including one DDA space) within a two-level basement car park, accessed via High Street Road. There will also be a dedicated drop-off / pick-up bay located within the basement car park.
- A total of 42 bicycle parking spaces are proposed, located on ground floor and within the two basement levels.

Vehicular access to the site will be provided via a new double-width crossover connecting to/from High Street Road, located centrally along the site frontage. All other existing crossovers to High Street Road will be reinstated with kerb, channel and nature strip to the satisfaction of the Responsible Authority.

Primary pedestrian access to the proposed units will be via an entrance located on the ground floor connecting to/from High Street Road. A separate entrance will be provided to/from the food and drinks premises.

Refuse and storage areas are provided within the basement car park.



## 4.1 Clause 52.06 – Parking Assessment

Car parking requirements for new developments are set out under in Clause 52.06 of the Monash Planning Scheme. The purpose of Clause 52.06 is defined in the Scheme as follows:

- To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

As per Amendment VC148, Column B rates of Table 1 from Clause 52.06 of the Monash Planning Scheme apply if:

- Any part of the land is identified as being within the Principal Public Transport Network Area as shown in the Principal Public Transport Network Area Maps (State Government of Victoria, 2018); or
- A Schedule to the Parking Overlay or another provision of the planning scheme specifies that Column B applies.

As the subject site falls within the Principle Public Transport Network Area (as discussed in Section 2.4), Column B rates of Table 1 in Clause 52.06 are applicable for the number of car spaces to be provided, which are outlined in Table 4.1 below:

**Table 4.1: Statutory Car Parking Requirement**

Use	Number / Size	Column B Rates	Requirement
Retirement Village	32 x one-bedroom units	1 space per unit	32 spaces
	56 x two-bedroom units		56 spaces
Retirement Village Visitors	88 units	No Requirement	0 spaces
Food and Drinks Premise	163 sqm	3.5 spaces per 100sqm leasable floor area	5 spaces
<b>Total Statutory Car Parking Requirement</b>			<b>93 spaces</b>

Accordingly, the proposed development has a statutory car parking requirement of 93 car parking spaces. It is proposed to provide 91 on-site spaces and allocate car parking as shown in Table 4.2 below:

**Table 4.2: Statutory Car Parking Requirement & Provision**

Use	Parking Requirement	Parking Supply	Statutory Reduction / Surplus
Retirement Village Units	88 spaces	88 spaces	-
Food and Drinks Premise	5 spaces	3 spaces (inclusive of one accessible space)	2 space reduction
<b>Total</b>	<b>93 spaces</b>	<b>91 spaces</b>	<b>2 space reduction</b>

On the basis of the above, the proposed development provides car parking in accordance with the statutory requirements of Clause 52.06 of the Monash Planning Scheme for the retirement village but seeks a reduction of two car parking spaces associated with the food and drink premises.

An application to reduce the number of car parking spaces required under Clause 52.06-5 must be accompanied by a Car Parking Demand Assessment. A Car Parking Demand Assessment and the appropriateness of allowing a reduction of on-site parking for the proposed development are discussed below:

## **4.2 Car Parking Demand Assessment**

Clause 52.06-6 sets out the factors to be considered when preparing a Car Parking Demand Assessment. These factors are listed below:

- The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.
- The variation of car parking demand likely to be generated by the proposed use.
- The short-stay and long-stay car parking demand likely to be generated by the proposed use over time.
- The availability of public transport in the locality of the land.
- The convenience of pedestrian and cyclist access to the land.
- An empirical assessment or case study.

Those factors relevant to this assessment are discussed in more detail below:

### **The Likelihood of Multi-Purpose Trips Within the Locality**

As discussed in Practice Note 22 – Using the Car Parking Provisions, in some situations a trip will serve more than one function and this will tend to reduce the need for car parking.

Given the location of the subject site, conveniently located along High Street Road and adjacent to Blackburn Road, it is expected that a significant portion of the trade of the food and drink premises will be drawn from local residents (including future residents of the proposed development), employees, and shoppers who have already travelled to the area for work/other reasons. Therefore, the demand for customer car parking associated with the food and drinks premises is expected to be limited.

### **Access to Provision of Alternative Transport Modes**

The site has very good access to public transport services, principally via the Syndal Railway Station. In addition, a number of bus services are provided within close proximity to the site. These facilities are detailed within Section 2.4.

In addition, the provision of 58 on-site bicycle parking spaces will reduce user's reliance on the private motor vehicle.

Given the very good access to sustainable transport options, users of the site are able to travel to and from the site without relying on the use of a private motor vehicle.

### **Food & Drink Premises Parking Demand**

Based on the empirical evidence, and in consideration of the site's location, access to alternative transport and other factors, it is considered that the application of a rate of 3.5 spaces per 100sqm of floor area, inclusive of 1.0 space per 100 sqm generated by staff, provides a conservative estimate of the food & drinks parking generation for the proposal (and is consistent with the Column B rate outlined under Table 1 to Clause 52.06 of the Planning Scheme which applies to the proposal).

Application of the above rate to the 163 sqm of food & drink floor area results in a forecast staff parking demand of between one and two car parking spaces. A total of three car parking spaces are provided on-site to cater for the staff car parking demand.

Customer parking may potentially generate demands of up to four spaces, although much of this demand can be expected to be absorbed by multi-purpose trips, as discussed previously.

## **4.3 Allowing Fewer Spaces to be provided**

Clause 52.06-6 sets out the factors to be considered when determining the appropriateness of allowing fewer car parking spaces to be provided. Some of the relevant factors for this case are listed below:

- The Car Parking Demand Assessment.
- The availability of alternative car parking in the locality of the land.
- Access to or provision of alternative transport modes to and from the land.
- Any other relevant consideration.

Those factors relevant to this assessment are discussed in more detail below:

### **Availability of Car Parking**

The car parking survey results, outlined in Section 2.3, indicate that the overall parking demand is moderate throughout the survey periods. Due to the unrestricted nature of the Council car park adjacent to the subject site, it experiences a higher parking demand during business hours. The on-street parking recorded a low to moderate parking demand during the weekday and weekend surveys.

During weekday business hours there were a minimum of 99 on-street parking spaces available within the vicinity of the site. In addition, there were a minimum of 14 unrestricted car parking spaces available within the Council car park located adjacent to the site. Accordingly, there is considered to be ample on and off-street parking to accommodate

the customer car parking demand of the food and drink premises (in the order of five spaces) during weekday business hours.

The parking demand in the vicinity of the site during weekends was similar to weekday business hours. There was a minimum of 112 on-street parking spaces available and 10 parking spaces available within the Council car park. Therefore, there is sufficient parking to accommodate the customer car parking demand of the food and drink premises (in the order of four spaces) during weekend periods.

On this basis, customer parking demands associated with the food and drinks premises can be accommodated in suitable off-site parking locations within convenient proximity of the site without adversely impacting on current parking conditions in the precinct.

### **Other Considerations**

It is considered more desirable for customers of the small food and drink premises to park within the surrounding off-site car park than traverse the basement ramp and park within the on-site private car park.

It is also proposed to reinstate the existing crossovers with kerb, channel and nature strip. This will generate an additional two parking spaces along High Street Road

## **4.4 Appropriateness of Proposed Car Parking Supply**

It is proposed to provide 91 parking spaces within a two-level basement park for the proposed development. It is considered that the proposed level of on-site parking is appropriate for the following reasons:

- The development meets the statutory parking requirement for residents.
- The site has very good access to the metropolitan public transport network, including train and bus services, which will reduce the dependence of private motor vehicles by users of the development.
- The provision of bicycle parking will encourage the use of alternative transport modes and reduce the reliance on private vehicle use.
- The proposed car parking is anticipated to meet the long-term staff car parking demand associated with the food & drinks premises.
- The proposed food & drinks premises is expected to generate a limited demand for car parking, with the majority of customers expected to be walk-up customers from the surrounding area.
- Parking surveys indicate that suitable on and off-street parking is available for customers of the food and drink premises in the vicinity of the subject site at all times.
- It is proposed to reinstate the existing crossovers with kerb, channel and nature strip. This will generate an additional two parking spaces along High Street Road.

On the basis of the reasons discussed above, it is considered that the proposed level of car parking is suitable for the nature and scale of the proposed development.

## 5.1 Clause 52.06 Design Standard Assessment

The proposed basement car park has been designed in accordance with the objectives and design requirements of Clause 52.06-9 of the Monash Planning Scheme, and in accordance with the relevant sections of AS/NZS 2890.1:2004 and AS/NZS2890.6:2009.

An assessment against the relevant design standards of Clause 52.06-9 of the Planning Scheme is provided below:

### Design Standard 1 – Accessways

Vehicular access to the site will be provided via a new double-width crossover connecting to/from High Street Road, located centrally along the site frontage. The new crossover will be designed in accordance with the Responsible Authority.

All other existing crossovers to High Street Road will be reinstated with kerb, channel and nature strip to the satisfaction of the Responsible Authority.

Design Standard 1 of Clause 52.06-9 relates to the design of accessways. The requirements of Design Standard 1 are assessed against the proposal in Table 5.1 below:

**Table 5.1: Design Standard 1 Assessment - Accessways**

Requirement	Comments
Must be at least 3m wide.	<b>Satisfied:</b> The accessway has been designed with a minimum width of 6.1 metres, which exceeds this requirement and Clause 2.5.2 of AS/NZS2890.1:2004 for the width of a two-way roadway.
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre.	<b>Satisfied:</b> All vehicles can depart the car park in a forward direction with one manoeuvre.
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	<b>Generally Satisfied:</b> A minimum headroom clearance of 2.2 metres is provided throughout the basement car park area.
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.	<b>Satisfied:</b> All cars can enter and exit the site in a forward direction.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Road Zone.	<b>Satisfied:</b> The accessway has a width of 6.6 metres (inclusive of 300mm kerbs on both sides) for the first 7.0 metres, complying with this requirement.
Have a corner splay or area at least 50% clear of visual obstructions extending at least 2m along the frontage road from the edge of an exit lane and 2.5m along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the	<b>Satisfied:</b> A pedestrian sight triangle is provided adjacent to the exit lane of the accessway (western side), measuring 2.0 metres along the site frontage and extending 2.50 metres into the site in accordance with the requirements of Design Standard 1. Any landscaping in this area will be kept below 900mm in height to ensure clear visibility.

landscaping in those areas is less than 900mm in height.

Given that the ramp is double width where it meets the property boundary, a sight triangle is not required on the eastern side of the ramp.

## Design Standard 2 - Car Parking Spaces

It is proposed to provide a total of 91 car parking spaces (including one accessible space) within a two-level basement parking, accessed via High Street Road.

Design Standard 2 of Clause 52.06-9 relates to the design of car parking spaces. The requirements of Design Standard 2 are assessed against the proposal in Table 5.2:

**Table 5.2: Design Standard 2 Assessment - Car Parking Spaces**

Requirement	Comments
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Design Standard 2.	<p><b>Satisfied:</b> Car parking spaces are dimensioned as follows:</p> <ul style="list-style-type: none"> <li>- 2.6 metres wide by 4.9 metres long, accessed via a minimum 6.4-metre-wide aisle;</li> <li>- 2.7 metres wide by 4.9 metres long, accessed via a minimum 6.1-metre-wide aisle; or</li> <li>- 2.3 metres wide by 6.7 metres long (parallel parking spaces) accessed via an aisle in excess of 3.6 metres.</li> </ul> <p>These dimensions comply with the requirements of Table 2 of Design Standard 2 of Clause 52.06 of the Monash Planning Scheme.</p>
<p>A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1 of Design Standard 2, other than:</p> <ul style="list-style-type: none"> <li>- A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1.</li> <li>- A structure, which may project into the space if it is at least 2.1m above the space.</li> </ul>	<p><b>Considered Satisfactory:</b> Columns have either been located in accordance with Diagram 1 of Design Standard 2 to Clause 52.06 of the Planning Scheme or car parking spaces have been widened to 2.7 metres if located adjacent to obstructions (which complies with AS/NZS2890.1 for regular users). Accordingly, it is considered that this design standard has been met.</p>
Car spaces in garages or carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage or carport.	<p><b>Not Applicable:</b> No garages or carports are proposed.</p>
Where parking spaces are provided in tandem (one space behind the other) an additional 500mm in length must be provided between each space.	<p><b>Not Applicable:</b> No car parking spaces are proposed in a tandem arrangement.</p>
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	<p><b>Satisfied:</b> All car parking spaces are located within the basement.</p>
Disabled car parking spaces must be designed in accordance with Australian Standard AS2890.6-2009 (disabled) and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width	<p><b>Satisfied:</b> One accessible car parking space has been provided for the food and drink premises.</p> <p>The accessible space has a width of 2.4 metres and a length of 5.4 metres as</p>

specified in Table 2 of Design Standard 2 by 500mm.

per the requirements of AS2890.6:2009. An adjacent shared zone is provided with dimensions of 5.4 metres in length and approximately 1.5 metres in width. The dimensions of the shared zone are not in strict accordance with AS2890.6:2009 and accordingly should be assessed by an Access Consultant or Building Surveyor.

### Design Standard 3 - Gradients

The basement ramps incorporate the following gradients:

#### Entry Ramp

- A flat section for 1.61 metres from the property boundary into the site at a RL of 102.95 metres;
- An initial 1:10 gradient for 5.0 metres from a RL of 102.95 metres;
- A transitional gradient of 1:4.5 for 2.0 metres;
- A midblock gradient of 1:4 for 7.69 metres, and
- A final 1:8 gradient for 2.5 metres to a RL of 99.77 metres.

#### Internal Ramp

- An initial 1:8 gradient for 2.0 metres from a RL of 99.77 metres,
- A midblock gradient of 1:4 for 8.83 metres, and
- A final 1:8 gradient for 2.5 metres to a RL of 97.00 metres.

Design Standard 3 of Clause 52.06-9 relates to the design of gradients. The requirements of Design Standard 3 are assessed against the proposal in Table 5.3 below:

**Table 5.3: Design Standard 3 Assessment - Gradients**

Requirement	Comments
Accessway grades must not be steeper than 1:10 (10%) within 5m of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage. This does not apply to accessways serving three dwellings or less.	<u>Complies:</u> The first 1.61 metres into the site are flat which is followed by a gradient of 1:10 for 5.0 metres. Therefore, the average gradient for the first five metres into the site is approximately 1:14 gradient which is in accordance with this standard.
Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 of Design Standard 3 and be designed for vehicles travelling in a forward direction.	<u>Complies:</u> The proposed grades are in accordance with Table 3 of Design Standard 3, with grades no steeper than 1:4.
Where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5%) for a summit grade change, or greater than 1:6.7 (15%) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.  Plans must include an assessment of grade changes of greater than 1:5.6 (18%) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.	<u>Complies:</u> Appropriate transition sections have been provided to prevent scraping or bottoming.

### **Other Items: Safety**

A security gate is proposed to control access and provide security to the basement car park. Resident and staff vehicles will have convenient access via remote control units or utilise the intercom system that is positioned centrally within the accessway. The intercom system will be located 4.5 metres from the site boundary, which will allow a vehicle to prop within the site, on the moderate 1:10 grade, whilst using the intercom system.

### **Other Items: Drop-Off / Pick-Up Bay**

A dedicated drop-off / pick-up bay (measuring 4.5 metres in width and 7.2 metres in length) has been provided for the development within Basement 1 which is a shared space proposed to operate as follows:

- Used for short-term drop-off and pick-ups (by Taxis, Ubers, private vehicles etc);
- Service and waste collection vehicles that need to access the site; and
- Emergency vehicles, such as ambulance vehicles.

## **5.2 Swept Path Assessment**

### **Site Access**

An assessment of the accessibility to/from the site using the 'Autodesk Vehicle Tracking' software has been conducted. The B99 (99.8th percentile car) was used in the assessment and it was found that two opposing vehicles could pass at the site access in a suitable manner. Further, all vehicles will be able to enter/exit the site in a forwards direction.

### **Car Parking Spaces**

An assessment of the accessibility to/from the critical parking bays was also undertaken using the B85 (85th percentile car) and it was found that each of the critical car parking space could be accessed (ingress and egress) in a satisfactory manner.

### **Vertical Clearance Assessment**

An assessment of the vertical clearance along the entrance ramp has been conducted using the 'Autodesk Vehicle Tracking' software. The B99 (99.8<sup>th</sup> percentile car) was used in the assessment and it was found that the B99 (having a height of 2.2 metres and ground clearance of 120mm) vehicle could gain access (ingress and egress) in a suitable manner without scraping.

### **Summary**

The assessment indicates that the access arrangements and car parking layout have been designed appropriately and in accordance with the requirements of the Monash Planning Scheme, AS/NZS2890.6:2009 and/or AS/NZS 2890.1:2004.



# 6 Bicycle Parking:

## 6.1 Clause 52.34 – Bicycle Parking Assessment

Clause 52.34-3 of the Monash Planning Scheme outlines the requirements for bicycle parking for various uses. It is noted that ‘Retirement Village’ is not a listed land use under Clause 52.34-3 of the Monash Planning Scheme.

To ensure that an appropriate provision of bicycle parking is provided for residents and visitors of the retirement village units, the rates specified for Dwelling use under Clause 52.34-3 of the Monash Planning Scheme have been adopted. It is considered that the dwelling rates are conservative given the anticipated travel patterns of residents and visitors of a retirement village.

On this basis the bicycle parking quota for the proposed development are outlined in Table 6.1 below:

**Table 6.1: Bicycle Parking Requirement**

Use	Type	Number / Size	Rate	Requirement
Retirement Village <i>(assessed as Dwelling under Table 1 to Clause 52.34)</i>	Resident	88 dwellings	1 space per five units	18 spaces
	Visitor		1 space per ten units	9 spaces
Food and Drink Premise <i>(Retail premises other than specified under Table 1 to Clause 52.34)</i>	Staff	163 sqm	1 space per 300sqm of leasable floor area	1 space
	Customers		1 space per 500sqm of leasable floor area	0 spaces
<b>Total</b>				<b>28 spaces</b>

On the basis of the above assessment, the proposed development has a quota for 28 bicycle parking spaces.

The development proposes a total of 42 parking spaces, arranged as follows:

- 1 x ‘Arc de Triomphe’ bicycle rails or similar (2 spaces) on ground floor;
- 14 x ‘Ned Kelly’ bicycle racks or similar (14 spaces) on ground floor;
- 2 x ‘Arc de Triomphe’ bicycle rails or similar (4 spaces) within Basement 1;
- 10 x ‘Ned Kelly’ bicycle racks or similar (10 spaces) within Basement 1; and
- 6 x ‘Arc de Triomphe’ bicycle rails or similar (12 spaces) within Basement 2.

Accordingly, the proposed development exceeds the bicycle parking quota and is considered acceptable.

AS 2890.3:2015 requires that 20% of bicycle parking be provided via ground level rails. The proposed bicycle parking provides approximately 43% of the bicycle spaces at ground level.

The bicycle parking specifications are provided within Appendix C.

## 7.1 Loading & Emergency Vehicle Arrangements

Clause 65.01 'Decision Guidelines' of the Monash Planning Scheme outlines the provision of loading requirements, and states the following:

*"Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:*

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts."*

Loading and unloading activities associated with the proposed development will primarily be related to the delivery of goods for the food and drink premises. Some vans / small trucks may occasionally seek to access the site for the loading / unloading of furniture and goods into and out of the units. This will largely occur when residents initially move into the units.

As discussed in Section 5.1, it is proposed to provide a dedicated drop-off / pick-up zone within Basement 1, which comprises dimensions of 4.5 metres in width and 7.2 metres in length. This zone can be utilised by vans and small trucks that comprise a height clearance of less than 2.8 metres.

Larger trucks that seek to access the site will need to undertake loading on-street. It is considered that loading and unloading associated with these large vehicles can appropriately be on-street, on the basis of the following:

- The site's location adjacent to High Street Road and available kerbside parallel parking fronting the site (noting that loading associated with larger vehicles will need to occur outside of peak Clearway times).
- The existing commercial tenancies along High Street Road currently operate without on-site loading bays and complete loading activities through on-street parking.
- Smaller trucks and vans will be able to utilise the dedicated drop-off / pick-up zone located on Basement 1.

A swept path assessment has been undertaken with a typical ambulance vehicle to assess the accessibility of the drop-off / pick-up bay. The assessment demonstrates that this vehicle can enter the site via High Street Road, traverse the entrance ramp to access the drop-off / pick-up zone located within Basement 1 and exit the site in a suitable manner.

A vertical clearance assessment has also been undertaken via a typical ambulance vehicle (vehicle height = 2.8 metres). The vertical clearance assessment demonstrates that sufficient headroom clearance is provided above the entrance ramp to enable access for this vehicle into Basement 1 in a suitable manner.

## 7.2 Waste Collection Arrangement

Dedicated refuse and recyclables rooms (separate rooms for food & drinks waste and retirement village waste) are provided within Basement 1 adjacent to the lift core.

It is understood that waste will be collected by a private contractor from within the on-site loading bay using a Mini Rear Loader Truck, which is 2.08 metres high, 6.35 metres long and 1.7 metres wide. The swept path assessment demonstrates the ability for a Mini Rear Loader Truck to enter the site, via High Street Road, traverse the entrance ramp to access

the drop-off / pick-up zone located within Basement 1 and exit the site in a suitable manner.

This is considered to be an acceptable arrangement from a traffic engineering perspective.

## 8.1 Traffic Generation

### Retirement Village Generation

The Transport Road and Maritime Services (previously RTA) Guide to Traffic Generating Developments (Update August 2013) indicates a daily traffic generation of 2.1 vehicle movements per day per dwelling for housing for seniors. The Transport Road and Maritime Services rates outline a weekday peak hour rate of 0.4 vehicle movements per dwelling. Peak activity for independent living units typically occurs outside of commuter peak hours.

Reference is also made to traffic generation surveys undertaken by traffic engineering consultancy One Mile Grid at Hunters Green Retirement Village in Cranbourne. The results of the surveys showed an AM peak hour rate of 0.34 trips per dwelling and a PM peak hourly rate of 0.21 trips per dwelling.

To provide a conservative assessment of the traffic generation of the retirement village component of the proposal, a peak rate of 0.4 vehicle movements has been adopted in the morning and afternoon peak hour periods, consistent with the rate outlined by the Transport Road and Maritime Services.

It is anticipated that there will be a slightly higher proportion of departing trips than arriving trips in the morning peak hour period. An even distribution of arriving and departing trips has been assumed in the afternoon peak hour period.

The retirement village traffic generation for the AM and PM peak hours and on a daily basis on a typical weekday are conservatively estimated as follows:

**Table 8.1 – Retirement Village Traffic Generation**

Trips <sup>1</sup>	AM Peak	PM Peak
Arriving trips:	14 vph	18 vph
Departing trips:	21 vph	17 vph
<b>Total trips:</b>	<b>35 vph</b>	<b>35 vph</b>

### Food and Drink Premises

The food and drinks premises is expected to generate in the order of one trip per allocated staff space during the AM and PM peak hours, which equates to two trips per hour (excluding the accessible car space). During the AM commuter peak period, it is expected that every staff trip generated will be an arrival. Similarly, every staff trip generated during the PM peak will be a departing trip.

Accordingly, in the AM and PM peak hours on a typical weekday the traffic generation for the shop use will be approximately as shown in Table 8.2:

<sup>1</sup> Anticipated trip rates have been rounded up in where appropriate to provide a conservative estimation of the traffic generation.

**Table 8.2: Food and Drink Premises**

Trips	AM Peak	PM Peak
Arriving trips:	2 vph	0 vph
Departing trips:	0 vph	2 vph
<b>Total trips:</b>	<b>2 vph</b>	<b>2 vph</b>

A summary of the overall peak hour traffic generation for the proposed development is presented below in Table 8.3.

**Table 8.3: Total Traffic Generation**

	AM Peak	PM Peak
Arriving trips:	16 vph	18 vph
Departing trips:	21 vph	19 vph
<b>Total trips:</b>	<b>37 vph</b>	<b>37 vph</b>

## 8.2 Traffic Distribution and Impact

The traffic generation for the overall development is anticipated to be up to 37 vehicle movements per hour during the commuter peak hour periods (one movement every one to two minutes on average).

The additional traffic generated by the proposed development will flow directly onto High Street Road and the surrounding road network.

The traffic signals at the nearby High Street Road / Blackburn Road intersection create regular gaps in westbound traffic along High Street Road which will facilitate the ability for vehicles to enter and exit the site even during peak times.

The surrounding road network has the ability to accommodate the expected increase in traffic volume associated with the proposed development.

The proposed six-storey mixed use development at 554-558 High Street Road, Mount Waverley, comprises 88 retirement living units, and a food and drink premises with a floor area of 163 sqm. Car and bicycle parking is provided within a two-level basement parking, accessed via High Street Road.

Based on the above assessment, it is considered that:

### **Car Parking Provision**

- The provision of 91 car parking spaces for the proposed development is considered to be satisfactory for the following reasons:
  - The development meets the statutory parking requirement for residents.
  - The site has very good access to the metropolitan public transport network, including train and bus services, which will reduce the dependence of private motor vehicles by users of the development.
  - The provision of bicycle parking will encourage the use of alternative transport modes and reduce the reliance on private vehicle use.
  - The proposed car parking is anticipated to meet the long-term staff car parking demand associated with the food & drinks premises.
  - The proposed food & drinks premises is expected to generate a limited demand for car parking, with the majority of customers expected to be walk-up customers from the surrounding area.
  - Parking surveys indicate that suitable on and off-street parking is available for customers of the food and drink premises in the vicinity of the subject site at all times.
  - It is proposed to reinstate the existing crossovers with kerb, channel and nature strip. This will generate an additional two parking spaces along High Street Road.

### **Vehicular Access and Car Parking Layout**

- Vehicular access to/from the site is proposed via a double width crossover located centrally along the site's frontage of High Street Road. All other existing crossovers to High Street Road will be reinstated with kerb, channel and nature strip to the satisfaction of the Responsible Authority.
- The proposed 91 car parking spaces within two levels of basement parking have been designed in accordance with the requirements of the Monash Planning Scheme and/or relevant sections of AS 2890.1:2004.
- Swept path assessments demonstrate that all critical car parking spaces can be accessed in a satisfactory manner.

### **Bicycle Parking Provision and Layout**

- The development provides a total of 42 bicycle parking spaces on-site to cater for the needs of all the users of the proposed development. This provision of bicycle parking spaces exceeds the statutory requirements of Clause 52.34 of the Monash Planning Scheme and is considered to be appropriate.
- The bicycle parking layout has been designed in accordance with the Australian Standard AS2890.3:2015 and is considered satisfactory.

### **Service Vehicle Arrangements**

- A dedicated drop-off/pick-up bay has been provided within Basement 1 of the development which is a shared space proposed to operate in the following manner:
  - Used for short-term drop-off and pick-ups (by Taxis, Ubers, private vehicles etc);
  - Loading and waste collection vehicles that need to access the site; and
  - Emergency vehicles such as an Ambulance Vehicle.
- Refuse and recycling areas are provided within the Basement 1 car park. Waste will be collected on-site by a private waste contractor.

### **Traffic Generation and Impact**

- The volume of peak hour traffic generated by the development is predicted to be up to 37 vehicle movements in the commuter peak hour periods (one movement every one to two minutes on average). This level of traffic can be accommodated by the surrounding road network.

Overall, the proposed development is not expected to create adverse traffic or parking impacts in the precinct.

# Appendix A Survey Results





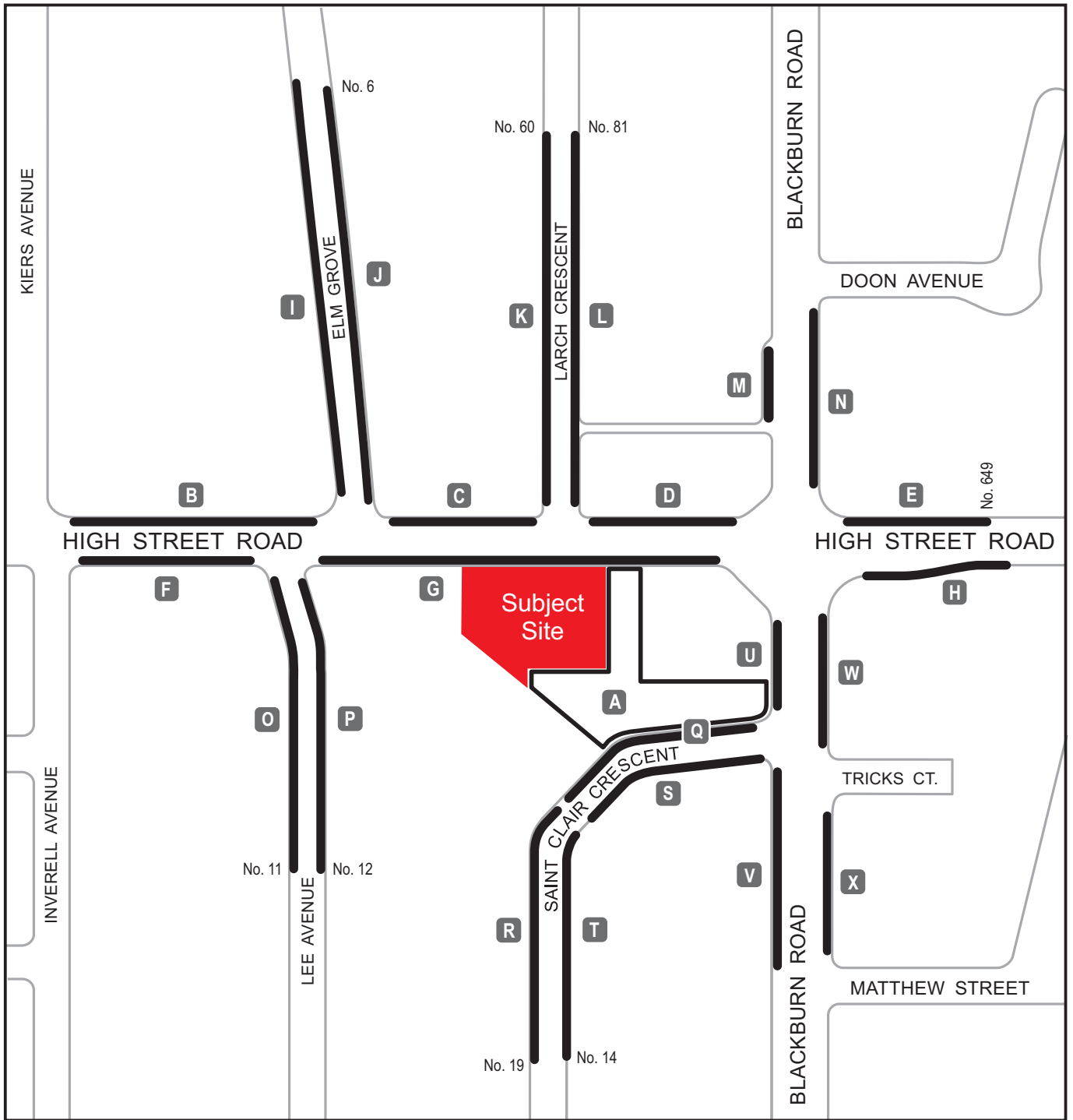


FIGURE 2.1  
**PARKING SURVEY AREAS**



# TRANS TRAFFIC SURVEY

trafficsurvey.com.au



QUALITY ASSURED COMPANY BY AS/NZS ISO 9001:2008  
 OWNERS SYSTEM CERTIFIED TO AS/NZS ISO 4001:2004  
 ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFIED TO AS/NZS ISO 14001:2004  
 PAS AIR ISO REG. Number 3557, cm3 REG. Number 6264

## Parking Occupancy Survey

Date:	Friday, 7 October 2016
Location:	554 High Street Road and Blackburn Rd, Mount Waverley
Weather:	Fine
Customer:	Ratio

Map Ref	Street	Section	Side	Restriction	Clear Way	Capacity	Parking Occupancy									
							11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
A	High St Rd	Off Street Carpark	S	Unrestricted		88	65	70	74	70	65	62	60	50	39	31
B		From Inverell Ave To Lee Ave	N	Unrestricted	Clearway 4:00pm-6:30pm Mon-Fri	9	1	0	1	0	0	0	0	0	0	0
				Bus Zone		1	0	0	0	0	0	0	0	0	0	0
		From Lee Ave To Elm Grv		No Standing		0	0	0	0	0	0	0	0	0	0	0
C		From Elm Grv To Larch Cres	N	Unrestricted	Clearway 4:00pm-6:30pm Mon-Fri	7	0	0	0	0	0	0	0	0	0	0
D		From Larch Cres To Blackburn Rd	N	1P 8:00am-6:00pm Mon-Fri; 8:00am-12:30pm Sat		4	3	4	4	3	2	4	2	3	3	3
E		From Blackburn Rd To No.650	N	Bus Zone		1	0	0	0	0	0	0	0	0	0	0
F		From Inverell Ave To Lee Ave	S	Unrestricted	Clearway 7:00am-9:00am Mon-Fri	9	0	1	1	0	0	0	0	0	0	0
G		From Lee Ave To Elm Grv	S	Unrestricted	Clearway 7:00am-9:00am Mon-Fri	1	0	0	0	0	0	0	0	0	0	0
		From Elm Grv To Larch Cres		Unrestricted	Clearway 7:00am-9:00am Mon-Fri	8	0	0	0	0	0	0	0	0	0	0
		From Larch Cres To Blackburn Rd		Unrestricted	Clearway 7:00am-9:00am Mon-Fri	4	0	0	0	0	0	0	0	0	0	0
H		From Blackburn Rd To No.649	S	No Standing		0	0	0	0	0	0	0	0	0	0	0
I	Elm Grv	From No.10/No.12 To High St Rd	W	Unrestricted		20	3	3	3	2	2	2	1	1	1	1
J			E	Unrestricted		11	4	4	3	3	2	2	3	5	5	5
K	Larch Cres	From High St Rd To No.62/No.60	W	Unrestricted	No Standing 8:00am-6:00pm Mon-Sat	4	0	0	0	0	0	0	0	0	0	0
				Unrestricted		10	6	6	6	5	4	3	4	5	4	3
L			E	Unrestricted	No Standing 8:00am-6:00pm Mon-Sat	4	0	0	0	0	0	0	0	0	0	0
				Unrestricted	No Parking 8:30am-5:30pm Mon-Fri; 8:30am-12:30pm Sat	11	0	0	0	0	0	0	0	0	0	0
M	Blackburn Rd	From High St Rd To Doon Ave	W	2P 8:00am-6:00pm Mon-Fri; 8:00am-1:00pm Sat		6	4	3	4	3	4	3	4	3	3	3
				Unrestricted		3	0	0	0	0	0	0	0	0	0	0
N			E	Bus Zone		1	0	0	0	0	0	0	0	0	0	0
O	Lee Ave	From High St Rd To No.12	W	Unrestricted		12	4	5	5	3	3	4	4	5	5	4
P			E	Unrestricted		12	5	5	4	6	4	3	3	5	5	4
Q	St Clair Cres	From Blackburn Rd To No.7	N	Unrestricted	No Standing 8:00am-6:00pm Mon-Fri	9	0	0	0	0	0	0	0	0	0	0
R		From No.7 To No.19	W	Unrestricted	No Standing 8:00am-6:00pm Mon-Fri	2	0	0	0	0	0	0	0	0	0	0
				Unrestricted		7	3	3	2	2	1	1	2	2	2	2
S		From Blackburn Rd To No.7	S	Unrestricted		3	3	3	3	3	3	2	2	1	1	1
T		From No.7 To No.19	E	Unrestricted		10	4	5	5	4	4	3	2	3	3	3
U	Blackburn Rd	From High St Rd To Trick Ct	W	Bus Zone		1	0	0	0	0	0	0	0	0	0	0
V		From Trick Ct To Matthew St	W	No Standing		0	0	0	0	0	0	0	0	0	0	0
W		From High St Rd To Trick Ct	E	1P 8:00am-6:00pm		6	3	4	5	3	4	5	3	4	3	3
				1P 8:00am-6:00pm; 1/2P 6:00pm-10:00pm		7	6	6	4	4	3	4	6	5	5	5
X		From Trick Ct To Matthew St	E	1P 8:00am-6:00pm		9	7	8	8	7	5	7	8	7	7	5
				Mail Zone 12:30pm-1:30pm; 4:30pm-5:30pm Mon-Fri		1	1	1	0	1	1	0	0	1	1	1
				1P 8:00am-6:00pm		7	5	6	6	4	3	6	5	4	4	4
<b>PUBLIC CAPACITY</b>							<b>254</b>	<b>254</b>	<b>254</b>	<b>254</b>	<b>254</b>	<b>238</b>	<b>238</b>	<b>249</b>	<b>284</b>	<b>284</b>
<b>PUBLIC OCCUPANCIES</b>							<b>127</b>	<b>137</b>	<b>138</b>	<b>123</b>	<b>110</b>	<b>111</b>	<b>109</b>	<b>104</b>	<b>91</b>	<b>78</b>
<b>PUBLIC VACANCIES</b>							<b>127</b>	<b>117</b>	<b>116</b>	<b>131</b>	<b>144</b>	<b>127</b>	<b>129</b>	<b>145</b>	<b>193</b>	<b>206</b>
<b>PUBLIC % OCCUPANCIES</b>							<b>50%</b>	<b>54%</b>	<b>54%</b>	<b>48%</b>	<b>43%</b>	<b>47%</b>	<b>46%</b>	<b>42%</b>	<b>32%</b>	<b>27%</b>

not available for public parking

# TRANS TRAFFIC SURVEY

trafficsurvey.com.au



QUALITY ASSURED COMPANY BY AS/NZS ISO 9001:2008  
 QMS SYSTEM CERTIFIED TO AS/NZS ISO 9001:2008  
 ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFIED TO AS/NZS ISO 14001:2004  
 ISO 9002 ISO REG. Number 3532, cm3 REG. Number 6254

## Parking Occupancy Survey

Date:	Saturday, 8 October 2016
Location:	554 High Street Road and Blackburn Rd, Mount Waverley
Weather:	Fine
Customer:	Ratio

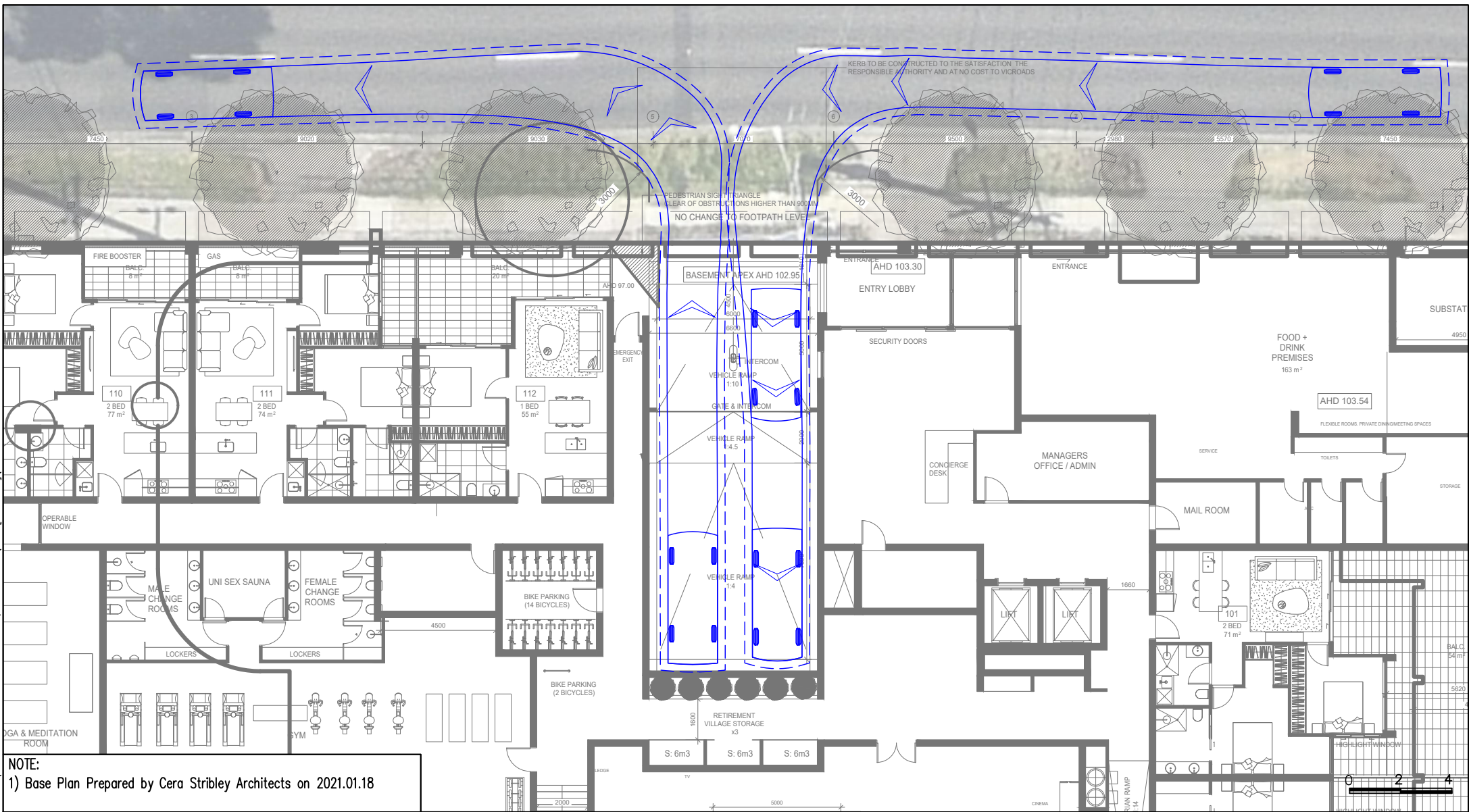
Map Ref	Street	Section	Side	Restriction	Clear Way	Capacity	Parking Occupancy					
							11:00	12:00	13:00	14:00	15:00	16:00
A	High St Rd	Off Street Carpark	S	Unrestricted		88	60	78	75	62	50	38
B		From Inverell Ave To Lee Ave	N	Unrestricted	Cleanway 4:00pm-6:30pm Mon-Fri	9	0	0	0	0	0	0
				Bus Zone		1	0	0	0	0	0	0
		From Lee Ave To Elm Grv		No Standing		0	0	0	0	0	0	0
C		From Elm Grv To Larch Cres	N	Unrestricted	Cleanway 4:00pm-6:30pm Mon-Fri	7	0	0	0	0	0	0
D		From Larch Cres To Blackburn Rd	N	1P 8:00am-6:00pm Mon-Fri; 8:00am-12:30pm Sat		4	3	3	2	3	2	2
E		From Blackburn Rd To No.650	N	Bus Zone		1	0	0	0	0	0	0
F		From Inverell Ave To Lee Ave	S	Unrestricted	Cleanway 7:00am-9:00am Mon-Fri	9	0	0	0	0	0	0
G		From Lee Ave To Elm Grv	S	Unrestricted	Cleanway 7:00am-9:00am Mon-Fri	1	0	0	0	0	0	0
		From Elm Grv To Larch Cres		Unrestricted	Cleanway 7:00am-9:00am Mon-Fri	8	0	0	0	0	0	0
		From Larch Cres To Blackburn Rd		Unrestricted	Cleanway 7:00am-9:00am Mon-Fri	4	0	0	0	0	0	0
H		From Blackburn Rd To No.649	S	No Standing		0	0	0	0	0	0	0
I	Elm Grv	From No.10/No.12 To High St Rd	W	Unrestricted		20	2	2	3	3	1	1
J			E	Unrestricted		11	3	3	4	4	2	2
K	Larch Cres	From High St Rd To No.62/No.60	W	Unrestricted	No Standing 8:00am-6:00pm Mon-Sat	4	0	0	0	0	0	0
				Unrestricted		10	6	7	6	6	5	5
L			E	Unrestricted	No Standing 8:00am-6:00pm Mon-Sat	4	0	0	0	0	0	0
				Unrestricted	No Parking 8:30am-5:30pm Mon-Fri; 8:30am-12:30pm Sat	11	0	0	0	0	0	0
M	Blackburn Rd	From High St Rd To Doon Ave	W	2P 8:00am-6:00pm Mon-Fri; 8:00am-1:00pm Sat		6	4	5	5	4	3	3
				Unrestricted		3	0	0	0	0	0	0
N			E	Bus Zone		1	0	0	0	0	0	0
O	Lee Ave	From High St Rd To No.12	W	Unrestricted		12	4	4	5	5	4	4
P			E	Unrestricted		12	6	7	7	6	6	5
Q	St Clair Cres	From Blackburn Rd To No.7	N	Unrestricted	No Standing 8:00am-6:00pm Mon-Fri	9	5	5	5	3	2	2
R		From No.7 To No.19	W	Unrestricted	No Standing 8:00am-6:00pm Mon-Fri	2	0	0	0	0	0	0
				Unrestricted		7	3	3	3	2	1	1
S		From Blackburn Rd To No.7	S	Unrestricted		3	2	2	2	2	1	1
T		From No.7 To No.19	E	Unrestricted		10	4	4	3	3	2	2
U	Blackburn Rd	From High St Rd To Trick Ct	W	Bus Zone		1	0	0	0	0	0	0
V		From Trick Ct To Matthew St	W	No Standing		0	0	0	0	0	0	0
W		From High St Rd To Trick Ct	E	1P 8:00am-6:00pm		6	5	5	5	4	3	3
				1P 8:00am-6:00pm; 1/2P 6:00pm-10:00pm		7	6	6	7	6	5	4
X		From Trick Ct To Matthew St	E	1P 8:00am-6:00pm		9	7	9	8	8	7	7
				Mail Zone 12:30pm-1:30pm; 4:30pm-5:30pm Mon-Fri		1	1	1	1	1	0	0
				1P 8:00am-6:00pm		7	6	7	7	6	5	4
<b>PUBLIC CAPACITY</b>							<b>273</b>	<b>273</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>
<b>PUBLIC OCCUPANCIES</b>							<b>127</b>	<b>151</b>	<b>148</b>	<b>128</b>	<b>99</b>	<b>84</b>
<b>PUBLIC VACANCIES</b>							<b>146</b>	<b>122</b>	<b>136</b>	<b>156</b>	<b>185</b>	<b>200</b>
<b>PUBLIC % OCCUPANCIES</b>							<b>47%</b>	<b>55%</b>	<b>52%</b>	<b>45%</b>	<b>35%</b>	<b>30%</b>

not available for public parking

# Appendix B Swept Path Assessment



19/01/2021 10:28:16 AM Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



**NOTE:**  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
 RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

**B99 Vehicle (AS/NZS2890.1: 2004)**  
  
 Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 2.200m  
 Min Body Ground Clearance 0.312m  
 Track Width 1.840m  
 Lock to Lock Time 4.90 sec  
 Curb to Curb Turning Radius 6.30m

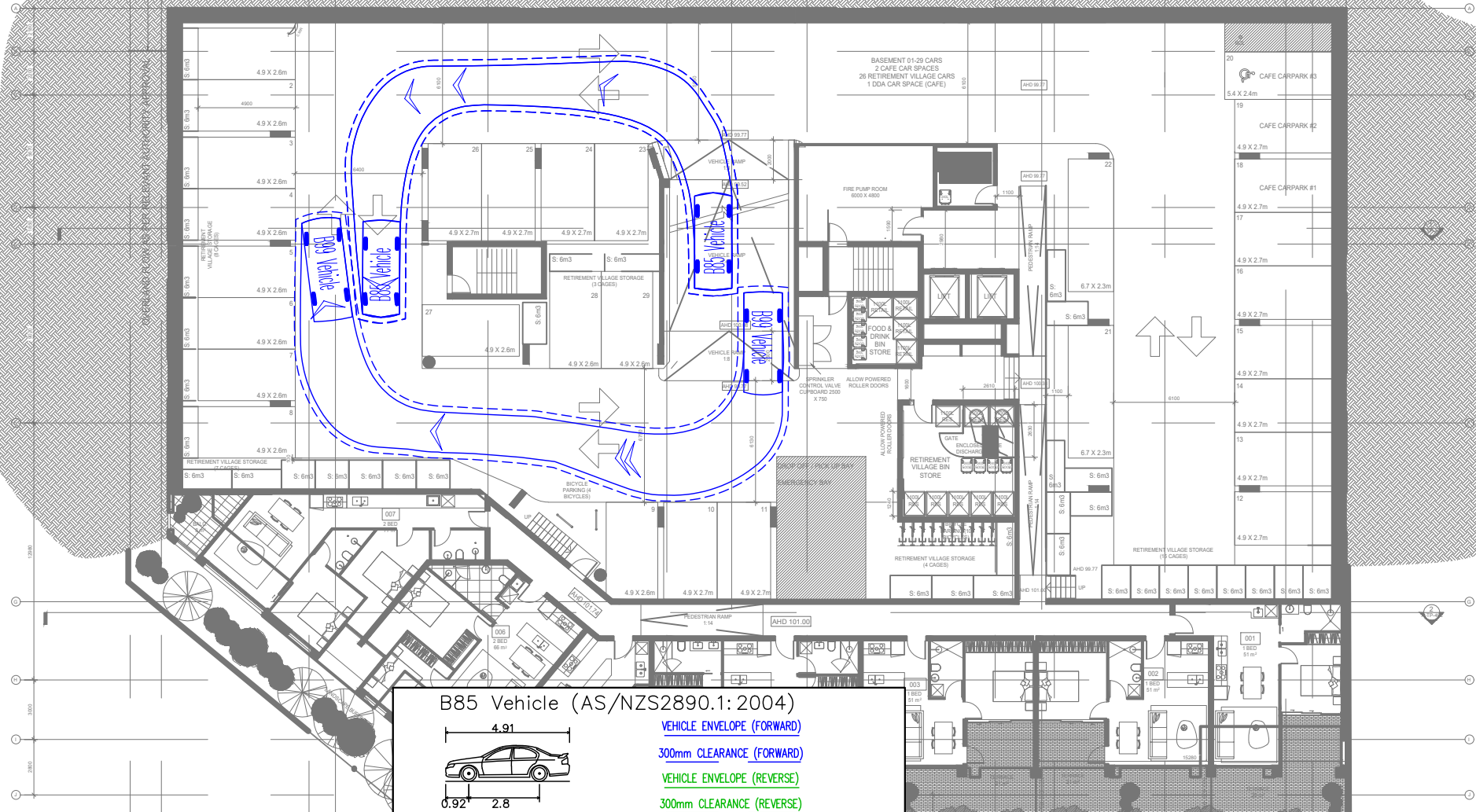
Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Swept Path Assessment – Ground Floor



RATIO REFERENCE SK03-17545T/SN	SHEET No. 1	SCALE 1:200@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------



19/01/2021 10:26:18 AM Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

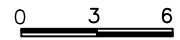
**B85 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

**B99 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

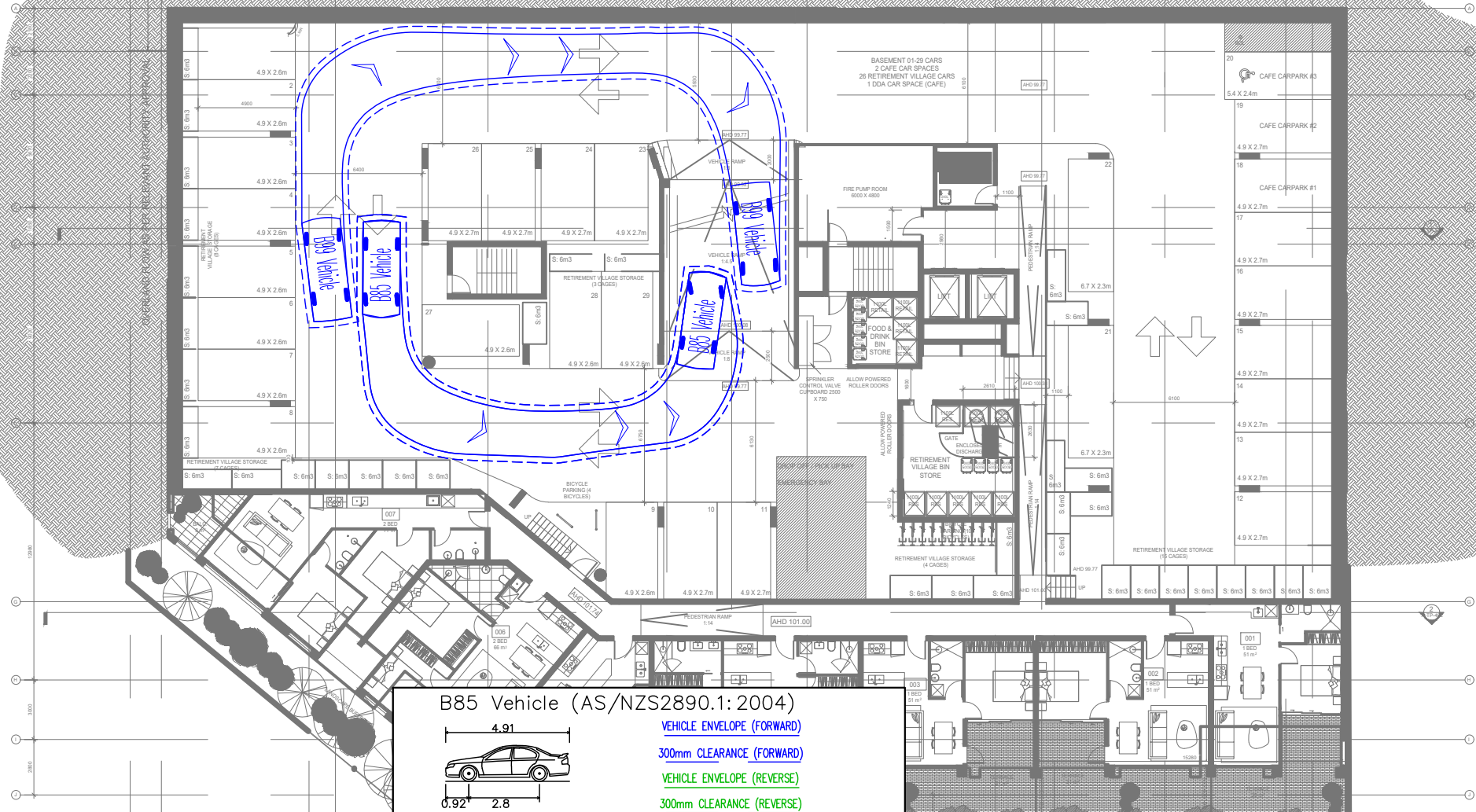
Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1



**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

RATIO REFERENCE SK03-17545T/SN	SHEET No. 2	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------

19/01/2021 10:26:20 AM Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**B85 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

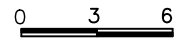
Overall Length 4.910m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 5.80m

**B99 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 1.200m  
 Min Body Ground Clearance 0.312m  
 Track Width 1.840m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 6.30m

Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1

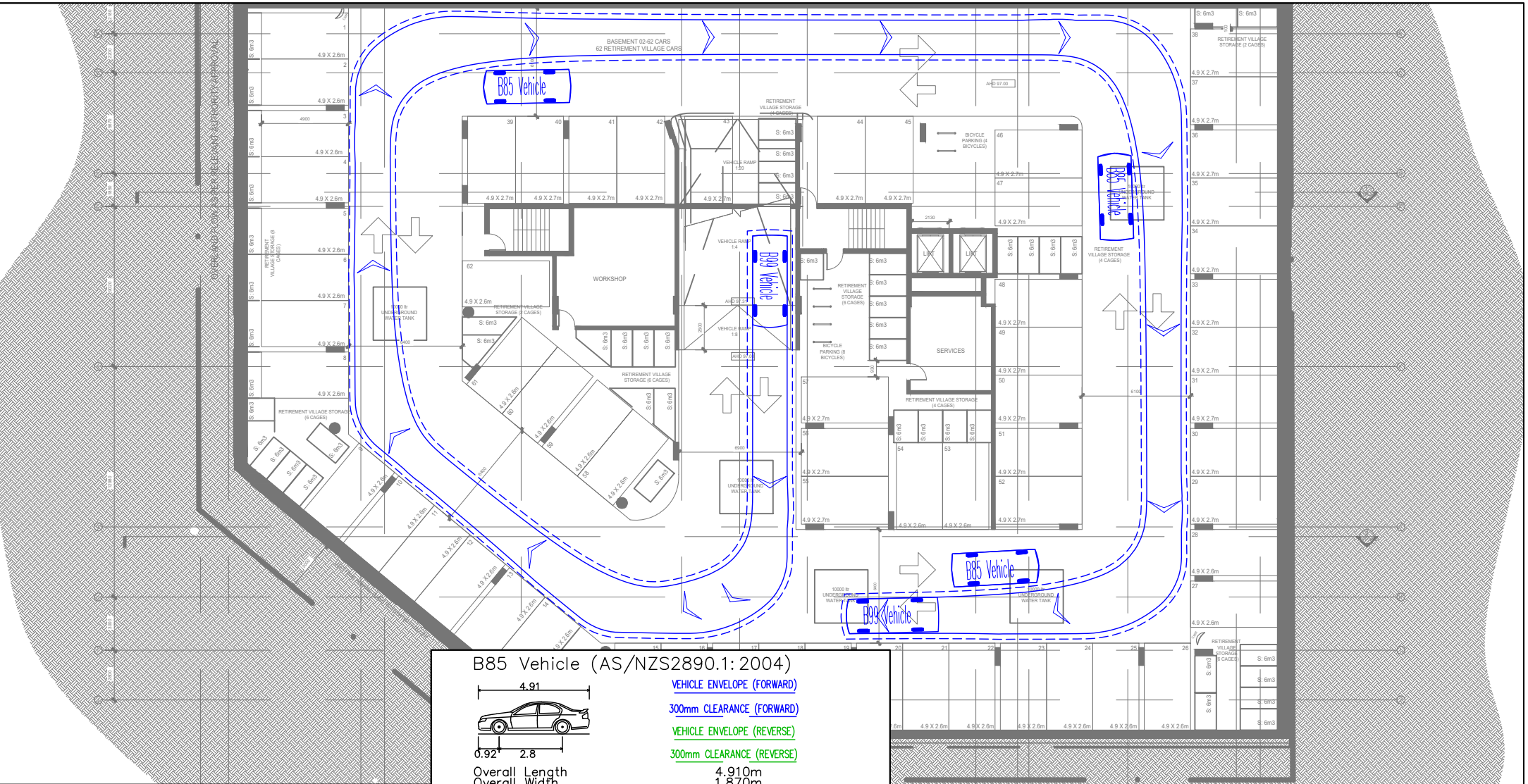


**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

RATIO REFERENCE SK03-17545T/SN	SHEET No. 3	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------



19/01/2021 10:26:22 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**B85 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD) 4.91m  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE) 2.8m  
 300mm CLEARANCE (REVERSE)

Overall Length 4.910m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 5.80m

**B99 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD) 5.2m  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE) 3.05m  
 300mm CLEARANCE (REVERSE)

Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 2.200m  
 Min Body Ground Clearance 0.312m  
 Track Width 1.840m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 6.30m

Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 2

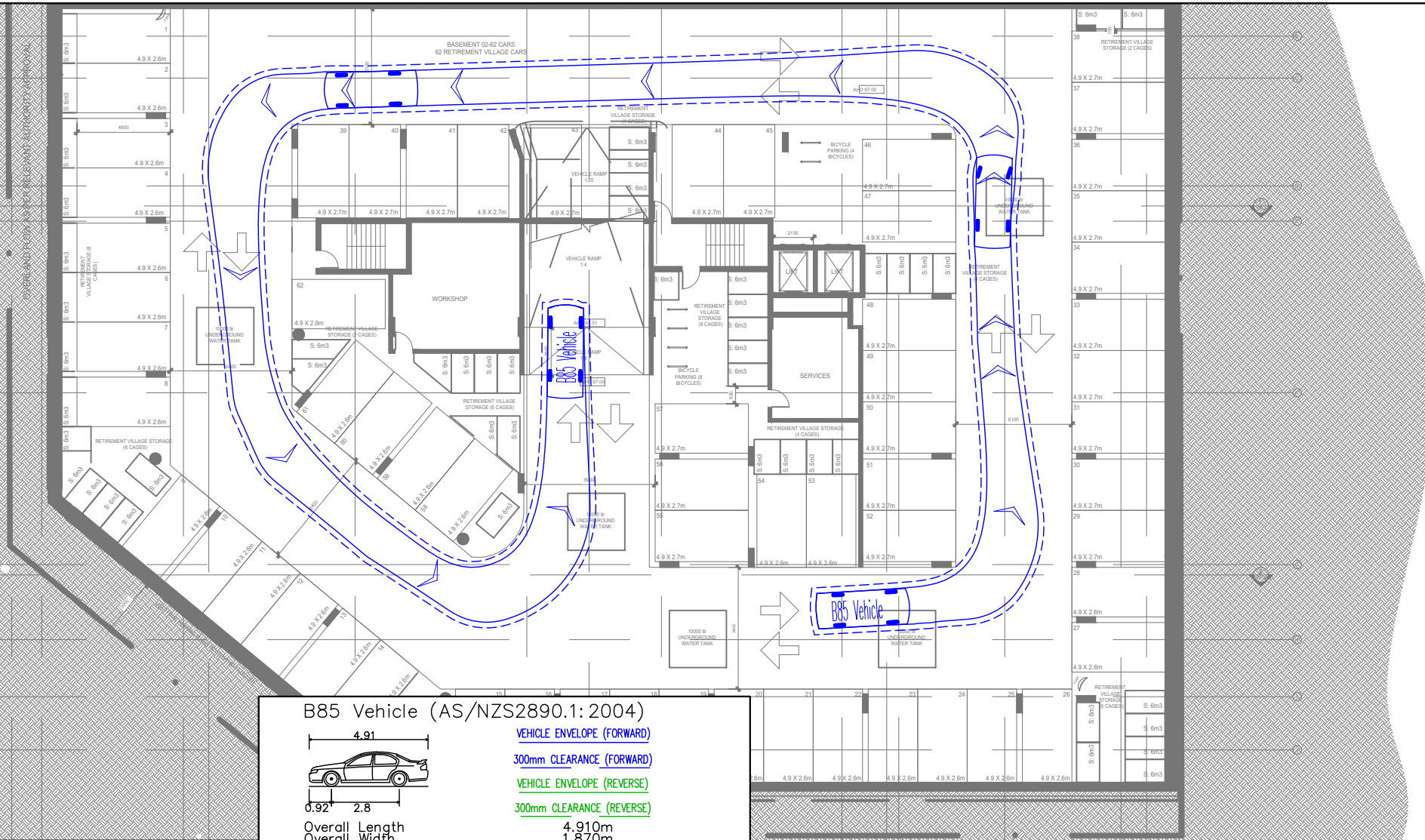


**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

RATIO REFERENCE SK03-17545T/SN	SHEET No. 4	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------



19/01/2021 10:26:24 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**B85 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

Overall Length 4.910m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 5.80m

**B99 Vehicle (AS/NZS2890.1: 2004)**

VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 2.200m  
 Min Body Ground Clearance 0.312m  
 Track Width 1.840m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 6.30m

Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 2

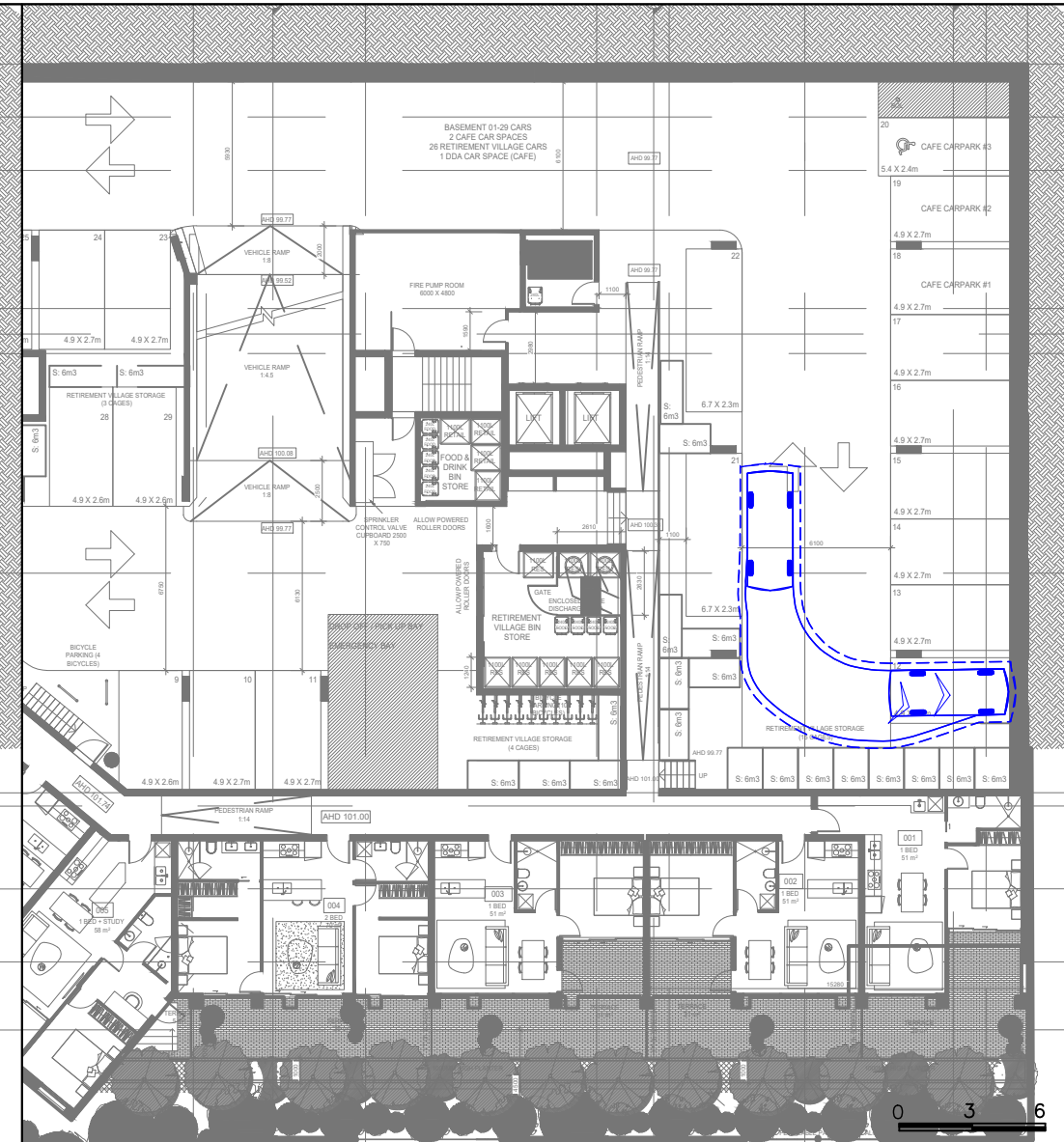
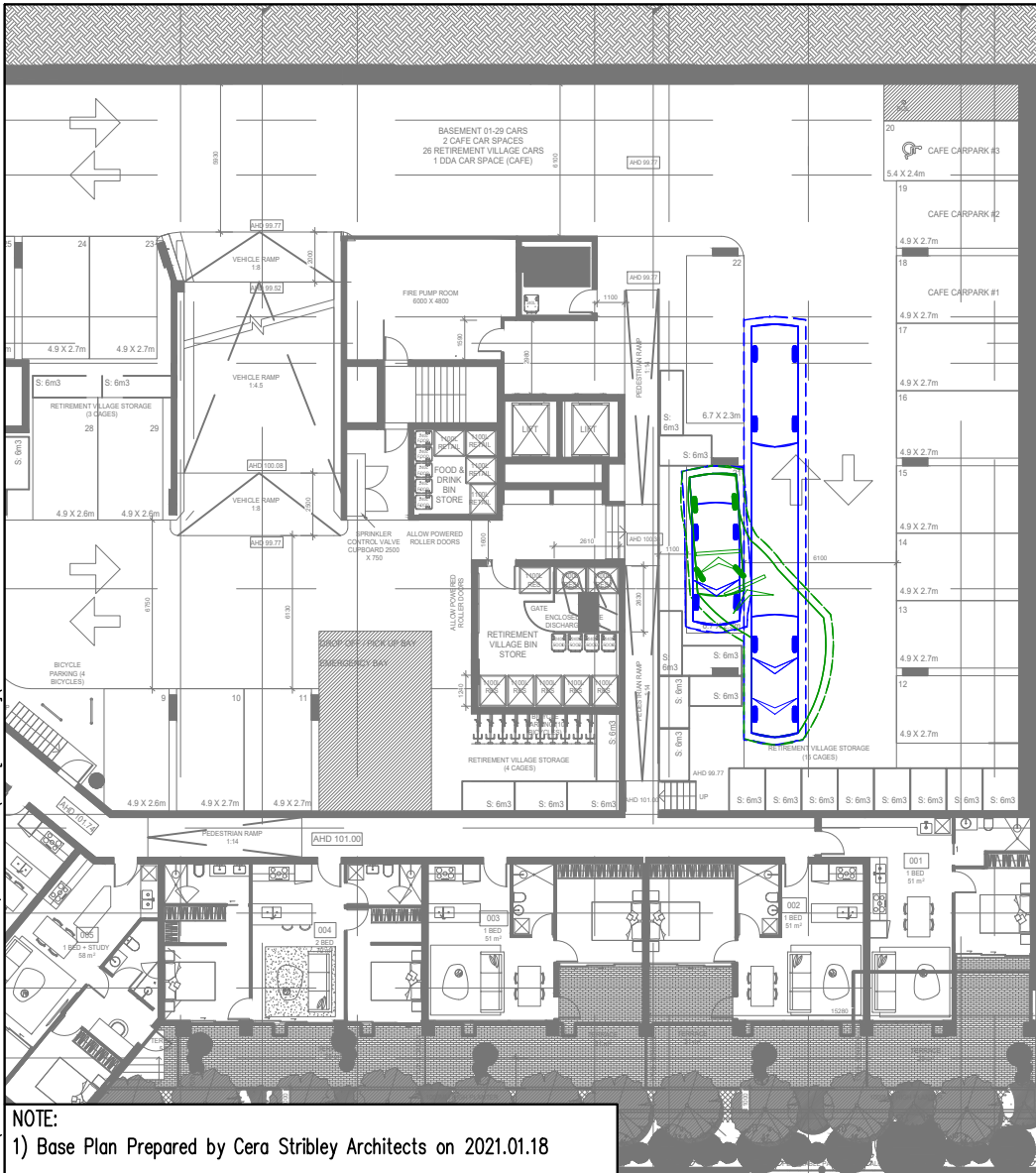


RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

RATIO REFERENCE SK03-17545T/SN	SHEET No. 5	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------



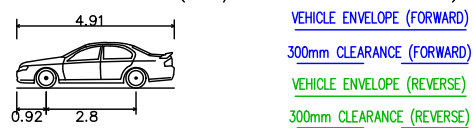
Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



**NOTE:**  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

B85 Vehicle (AS/NZS2890.1:2004)



Overall Length 4.910m  
Overall Width 1.870m  
Overall Body Height 1.421m  
Min Body Ground Clearance 0.159m  
Track Width 1.770m  
Lock to Lock Time 4.00 sec  
Curb to Curb Turning Radius 5.80m

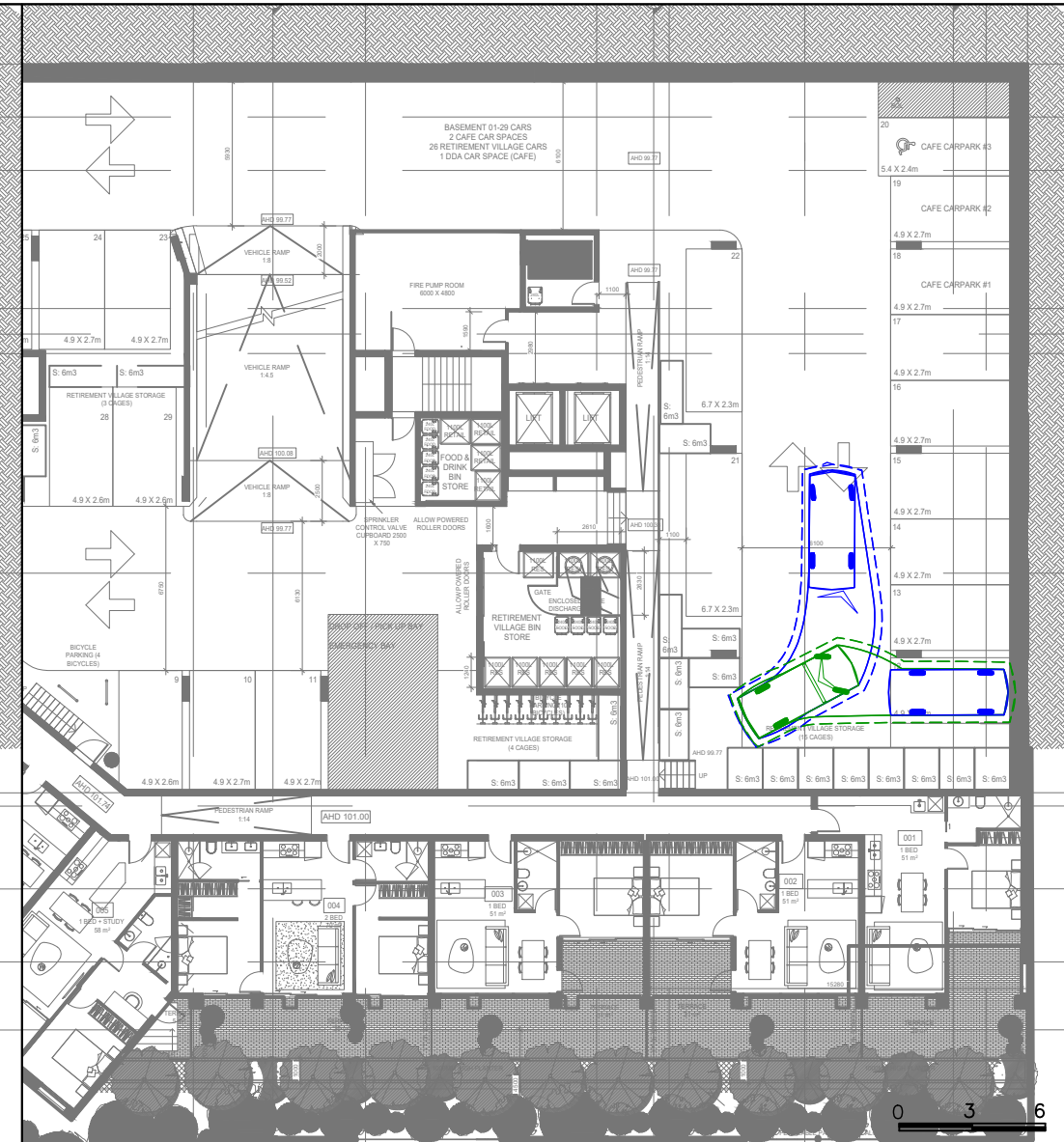
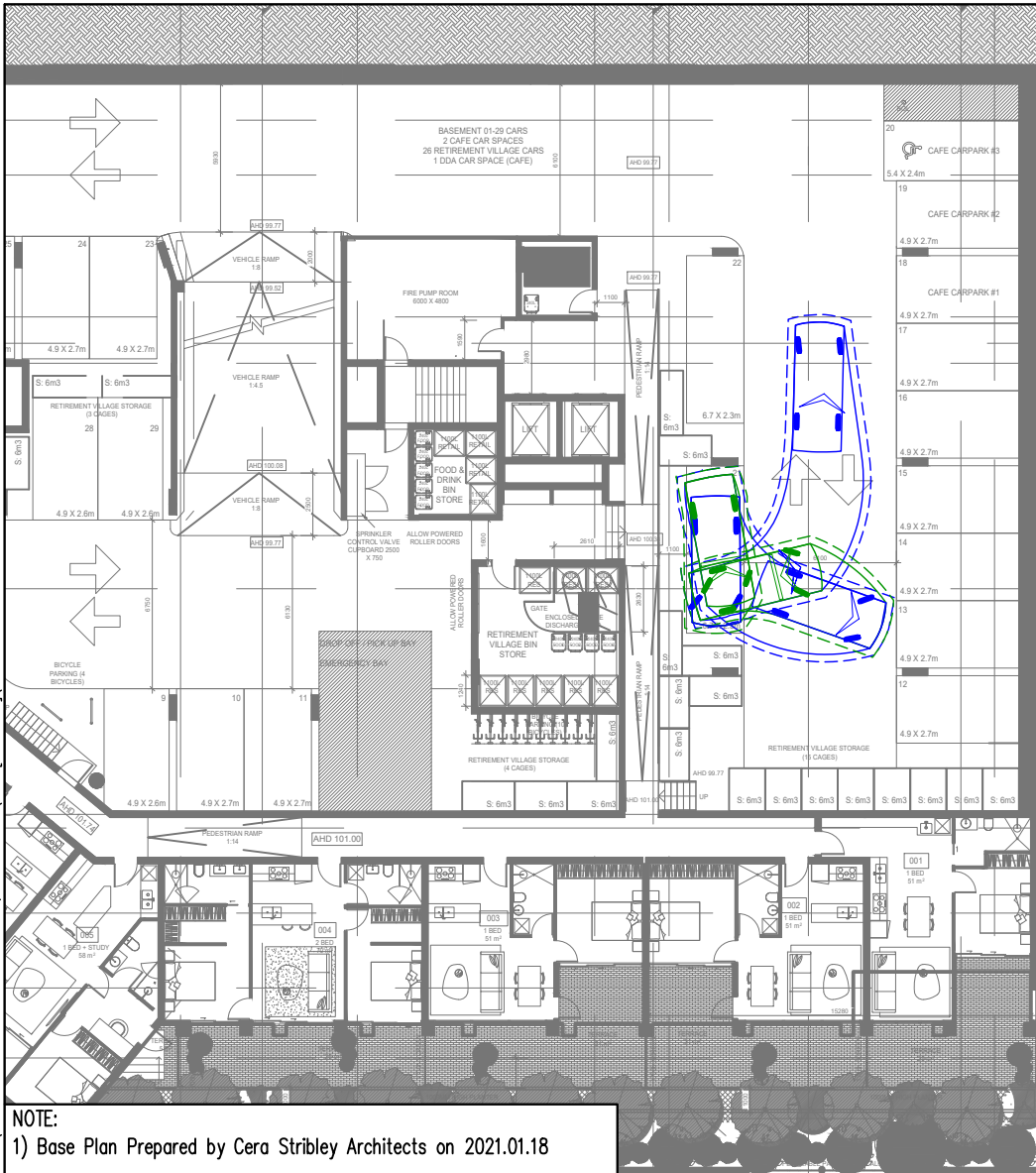
Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1



RATIO REFERENCE SK03-17545T/SN	SHEET No. 6	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------

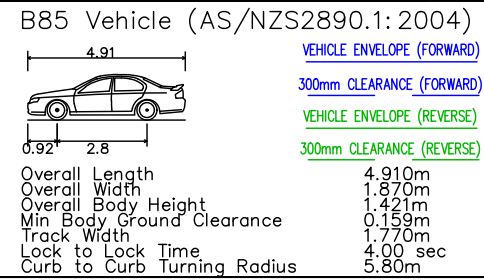


19/01/2021 10:26:30 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

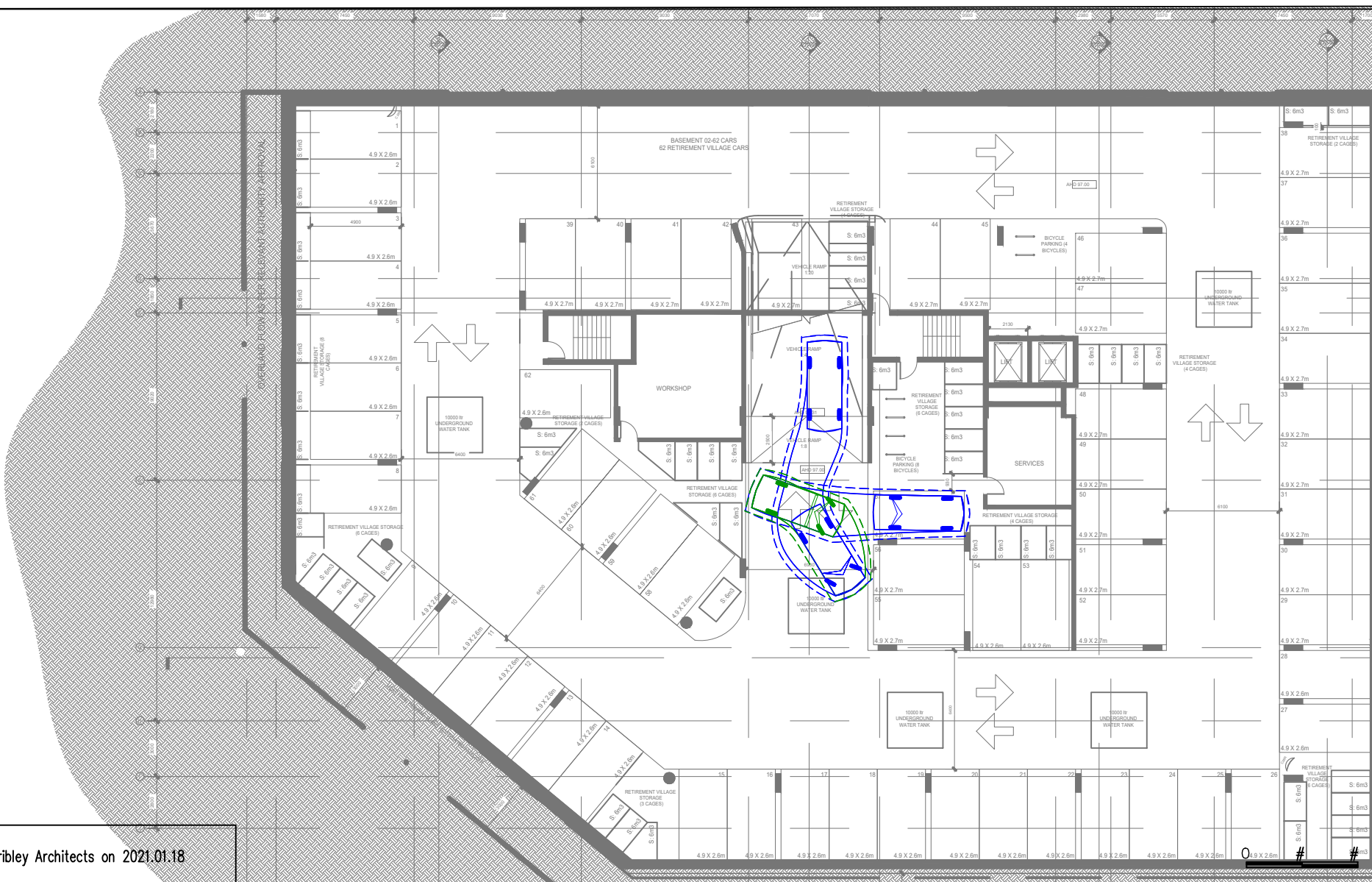


Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1



RATIO REFERENCE SK03-17545T/SN	SHEET No. 7	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	----------------	-------------------	--------------------

19/01/2021 10:26:32 AM Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
 RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

**B85 Vehicle (AS/NZS2890.1: 2004)**

Overall Length 4.91m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 5.80m

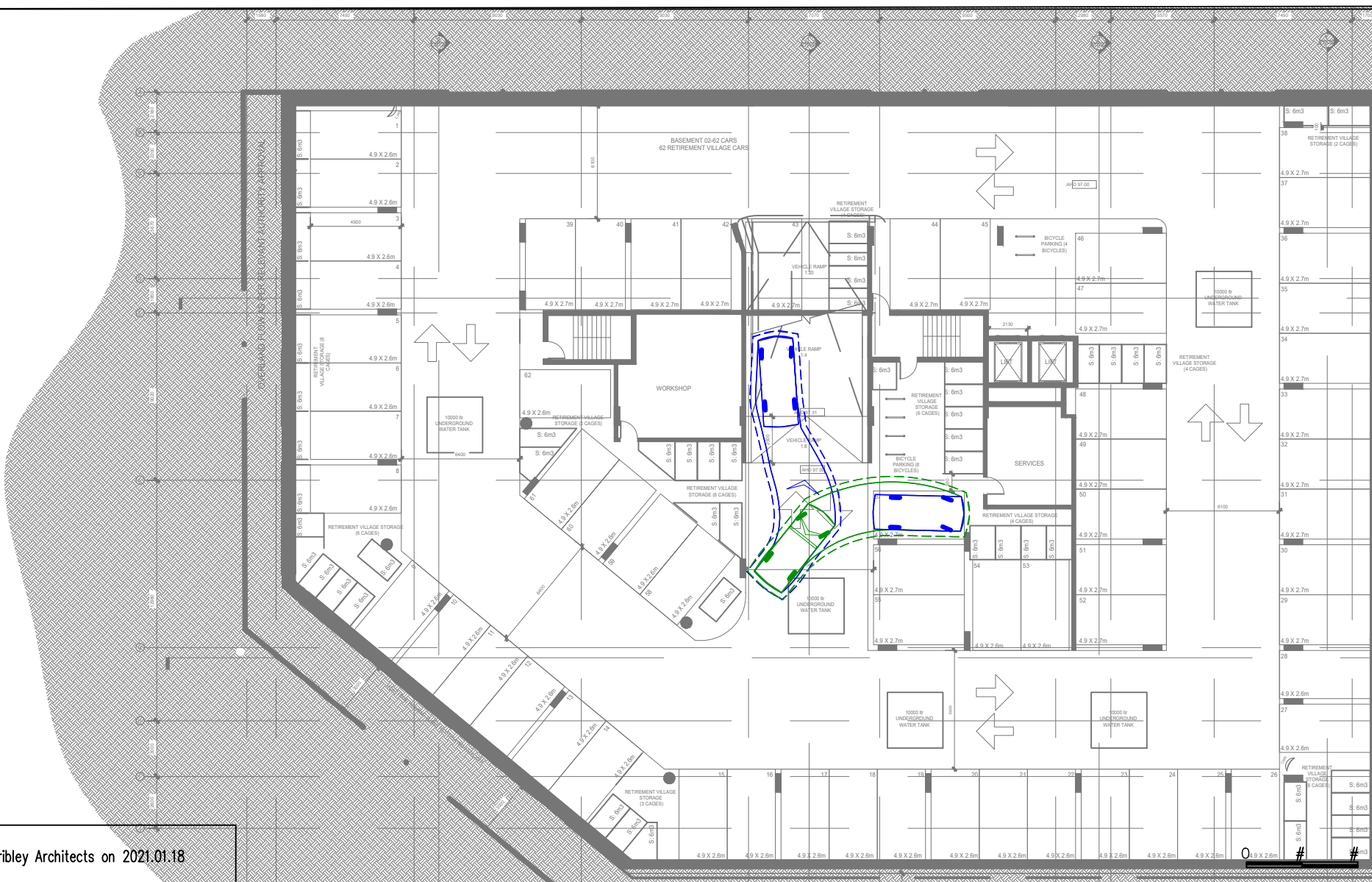
VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
 VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Swept Path Assessment – Basement 2

RATIO REFERENCE SK03-17545T/SN	SHEET No. 8	SCALE ####@A4	DATE 19/01/2021
-----------------------------------	----------------	------------------	--------------------



19/01/2021 10:26:34 AM Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**

RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

B85 Vehicle (AS/NZS2890.1: 2004)

Overall Length 4.910m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 5.80m

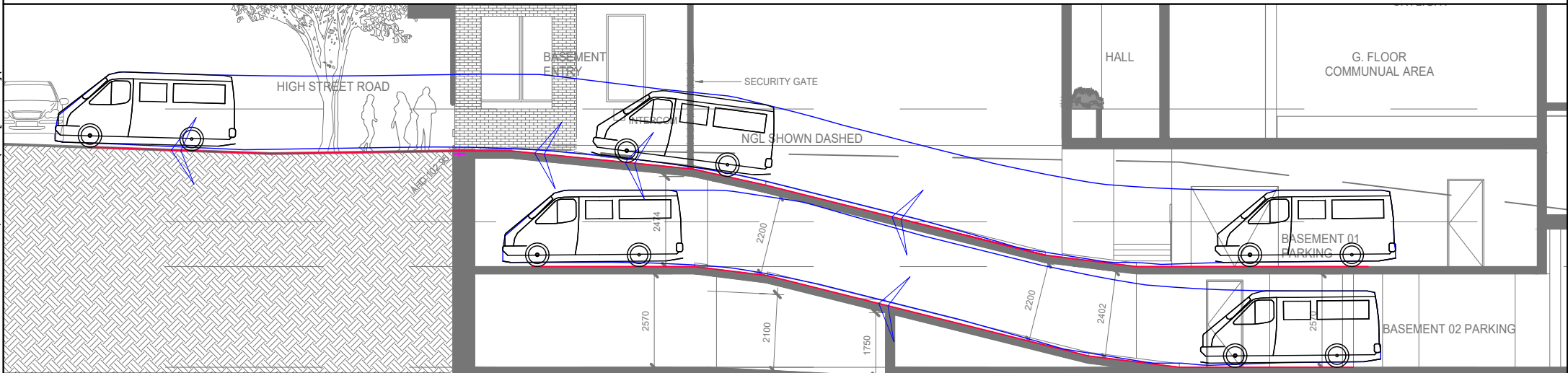
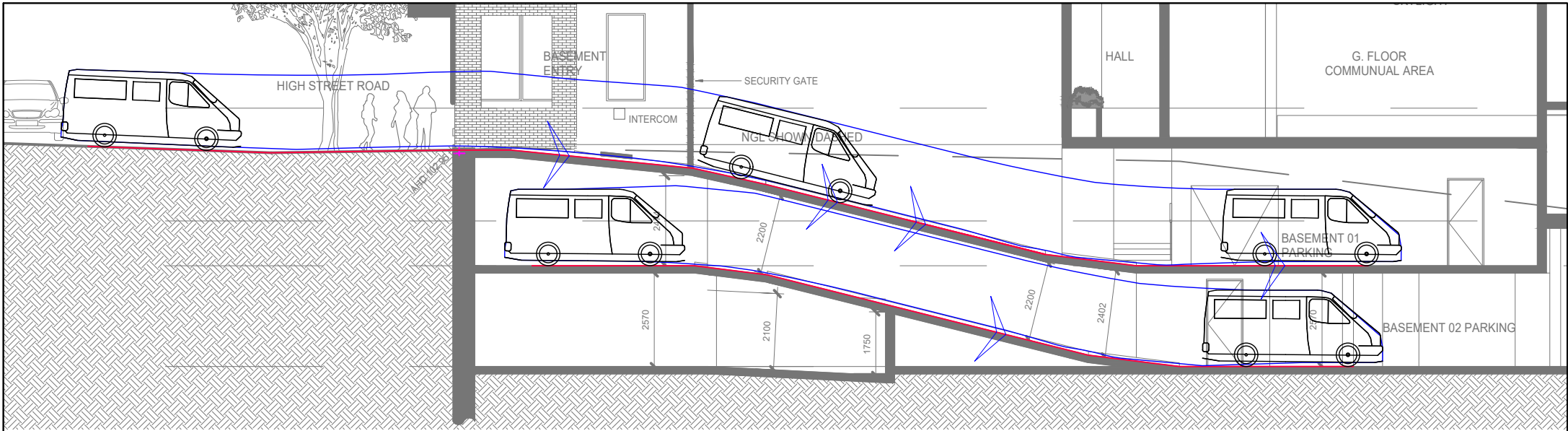
VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)

VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Swept Path Assessment – Basement 2

RATIO REFERENCE SK03-17545T/SN	SHEET No. 9	SCALE ####@A4	DATE 19/01/2021
-----------------------------------	----------------	------------------	--------------------

19/01/2021 10:26:37 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.18]\SK03-17545T.DWG



**NOTE:**  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18



**ratio:**

RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

B99 Vertical Model (AS/NZS2890.1:2004)

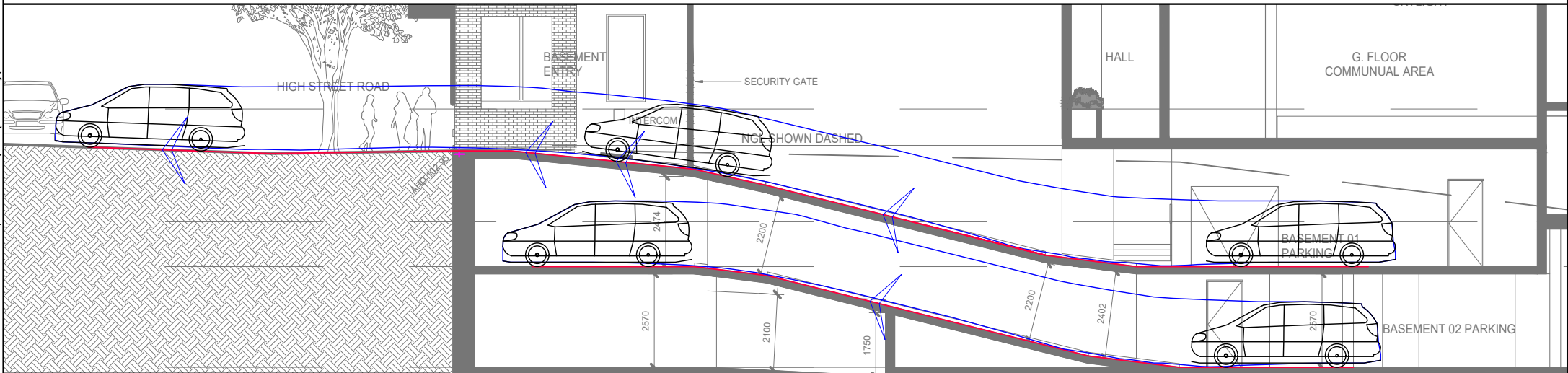
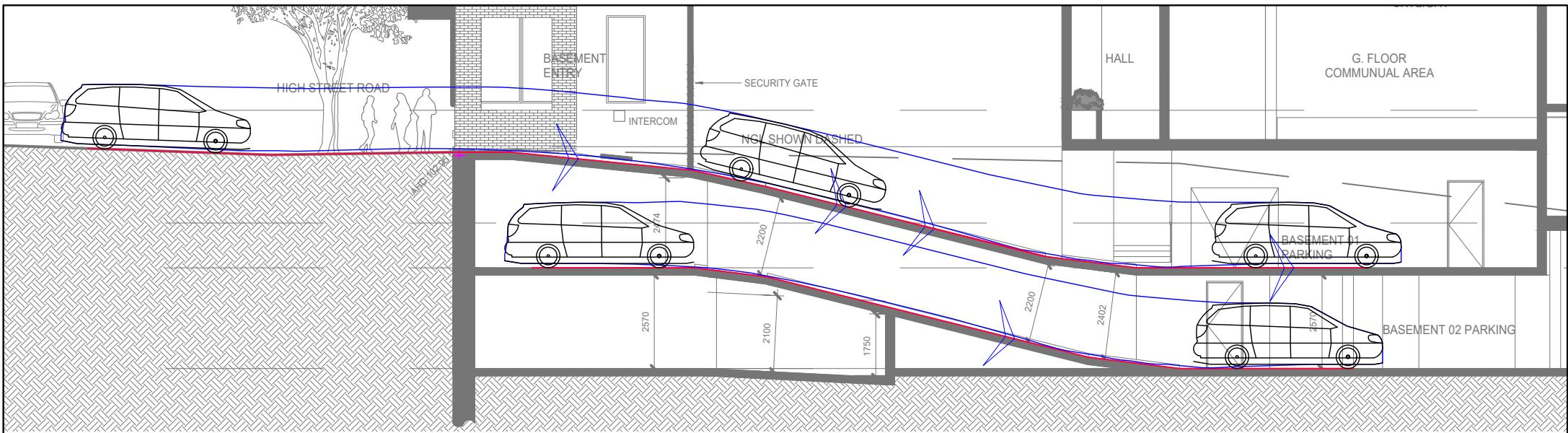
Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 2.200m  
 Min Body Ground Clearance 0.120m  
 Track Width 1.840m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 8.000m

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Vertical Clearance Assessment

RATIO REFERENCE SK03-17545T/SN	SHEET No. 10	SCALE 1:150@A4	DATE 19/01/2021
-----------------------------------	-----------------	-------------------	--------------------



19/01/2021 10:28:41 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.18]\SK03-17545T.DWG



**NOTE:**  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18



**ratio:**

RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

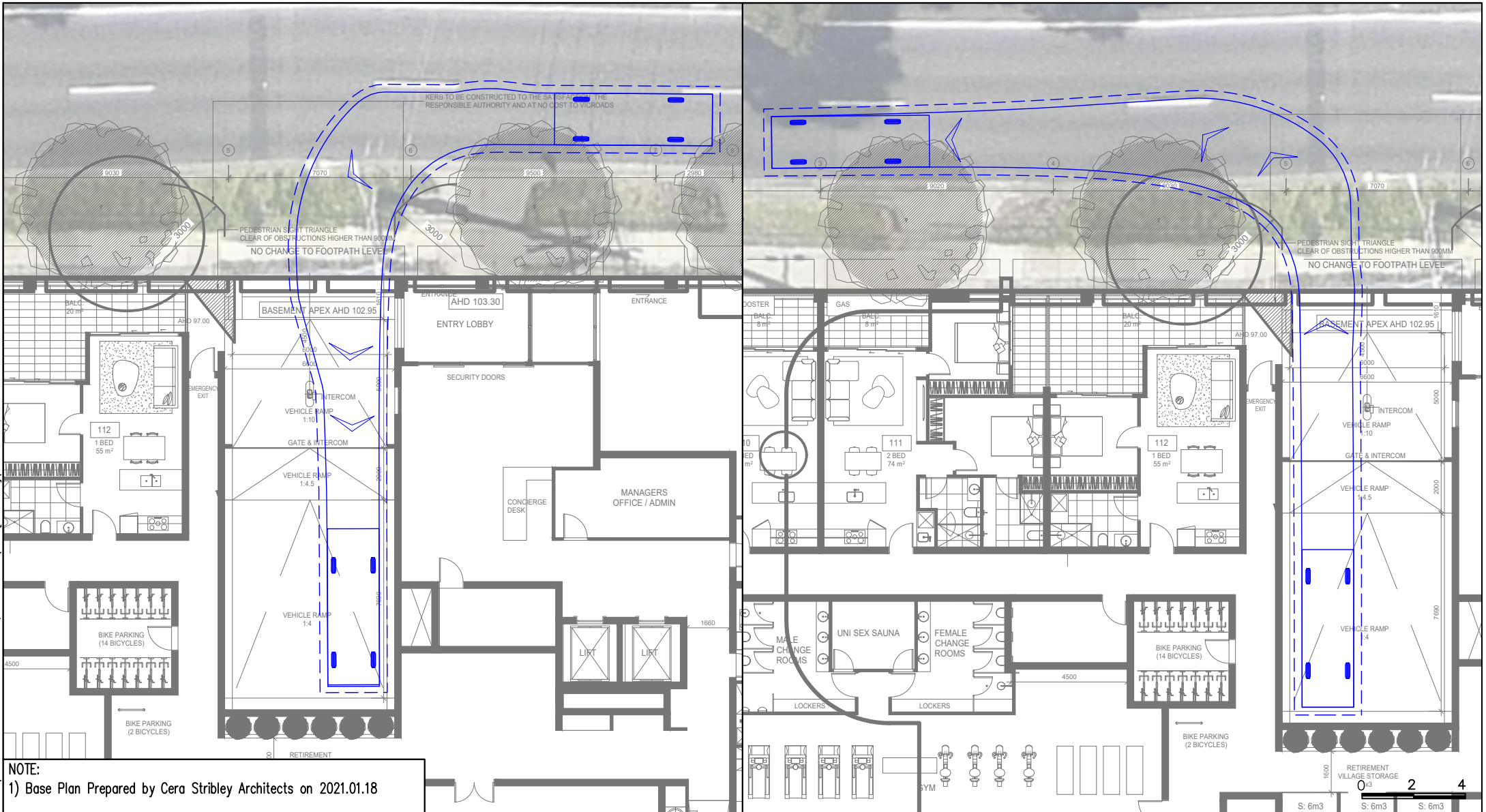
B99 Ground Clearance Model (AS/NZS2890.1:2004)

Overall Length 5.200m  
 Overall Width 1.940m  
 Min Body Ground Clearance 0.120m  
 Track Width 1.840m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 8.000m

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Ground Clearance Assessment

RATIO REFERENCE SK03-17545T/SN	SHEET No. 11	SCALE 1:150@A4	DATE 19/01/2021
-----------------------------------	-----------------	-------------------	--------------------

Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG  
 19/01/2021 10:28:43 AM



**NOTE:**  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
 RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

**VEHICLE ENVELOPE (FORWARD)**  
**300mm CLEARANCE (FORWARD)**  
**VEHICLE ENVELOPE (REVERSE)**  
**300mm CLEARANCE (REVERSE)**

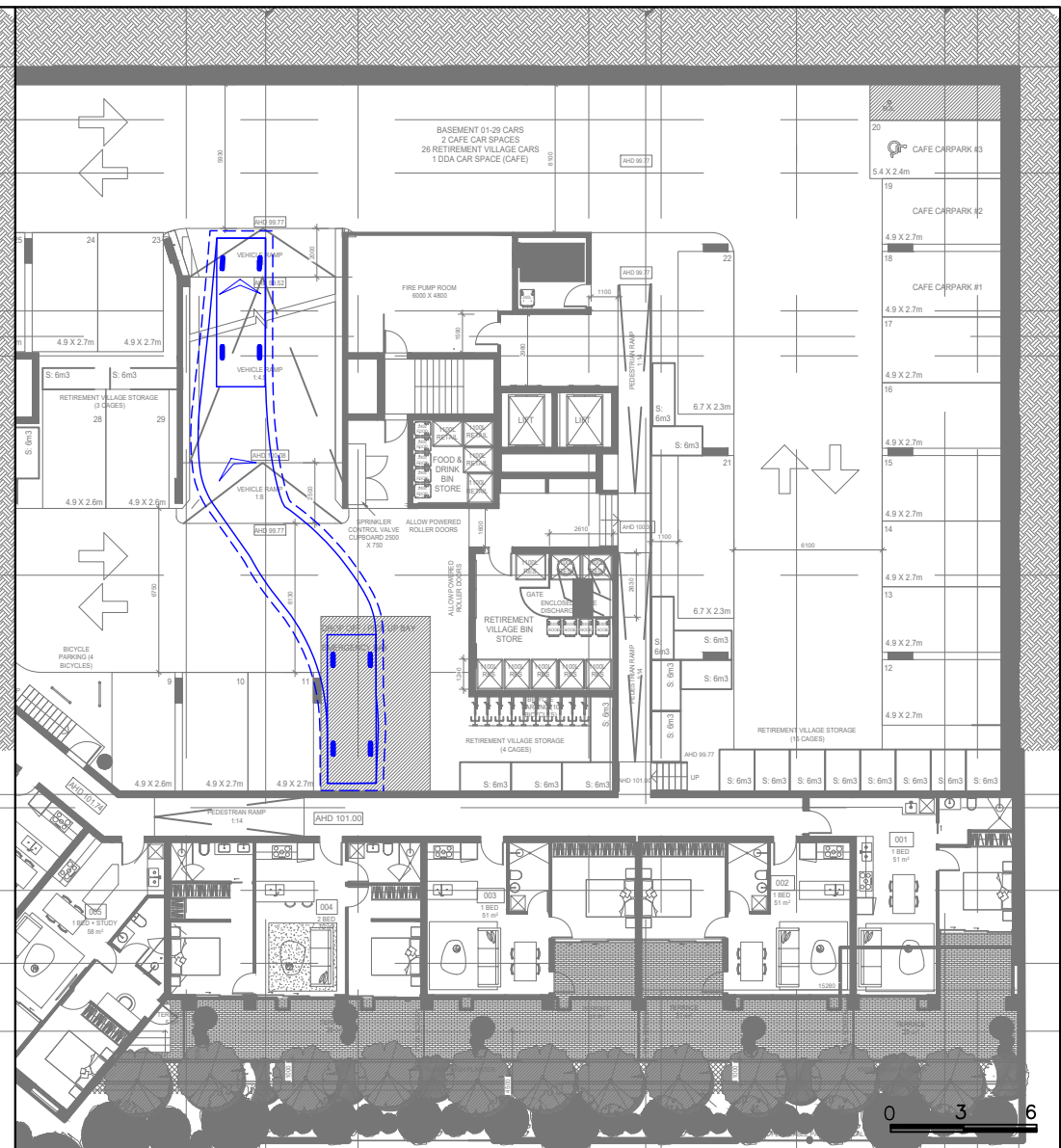
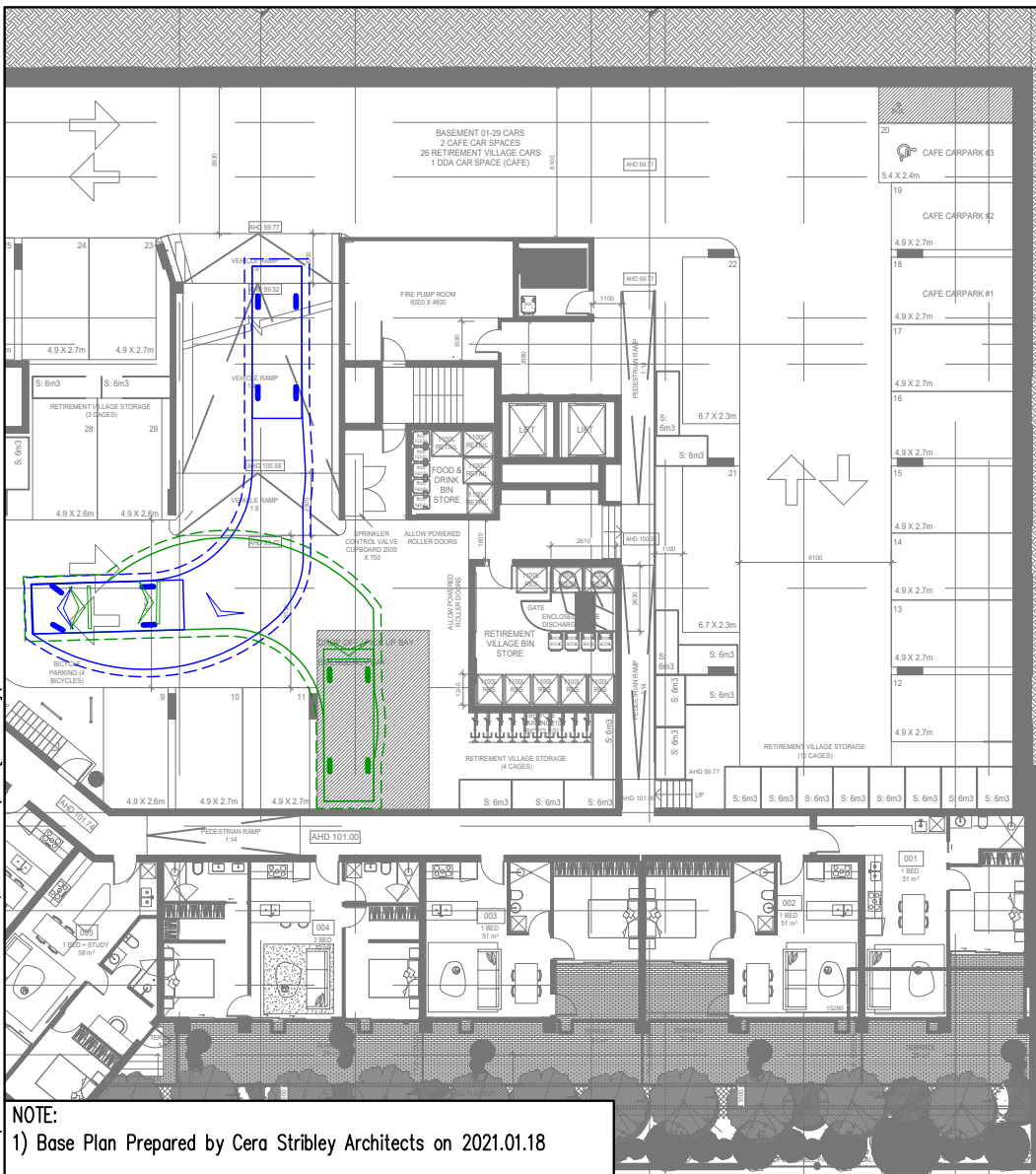
Ambulance Victoria - Typical  
 Overall Length 6.115m  
 Overall Width 2.005m  
 Overall Body Height 2.800m  
 Min Body Ground Clearance 0.150m  
 Track Width 1.705m  
 Lock-to-lock time 4.90s  
 Curb to Curb Turning Radius 6.800m

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Swept Path Assessment - Ground Floor

RATIO REFERENCE	SHEET No.	SCALE	DATE
SK03-17545T/SN	12	1:200@A4	19/01/2021

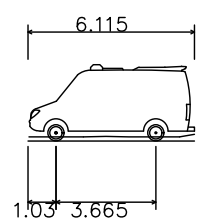


19/01/2021 10:26:45 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011



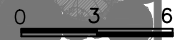
VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

Ambulance Victoria – Typical  
Overall Length 6.115m  
Overall Width 2.005m  
Overall Body Height 2.800m  
Min Body Ground Clearance 0.150m  
Track Width 1.705m  
Lock-to-lock time 4.90s  
Curb to Curb Turning Radius 6.800m

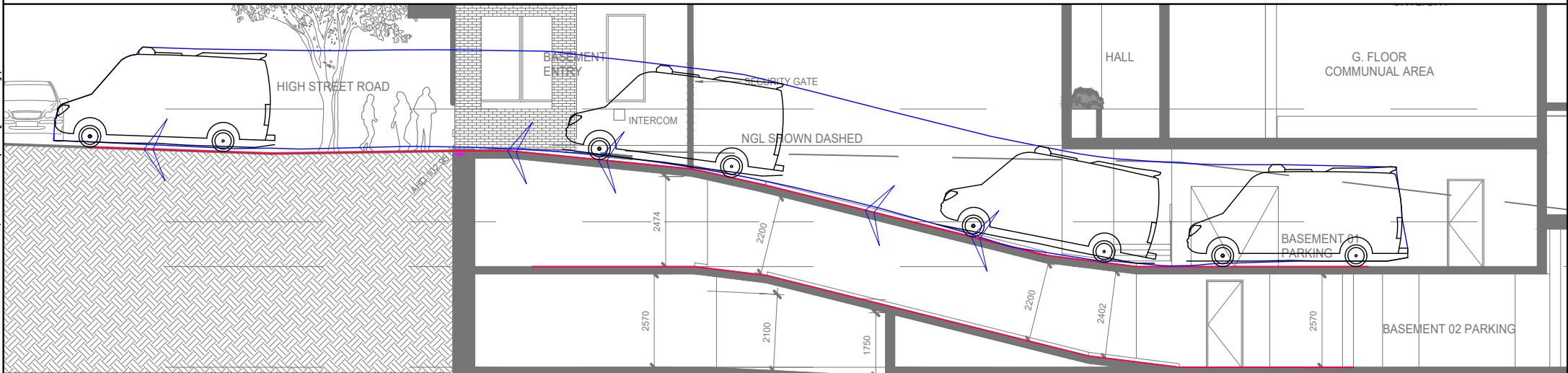
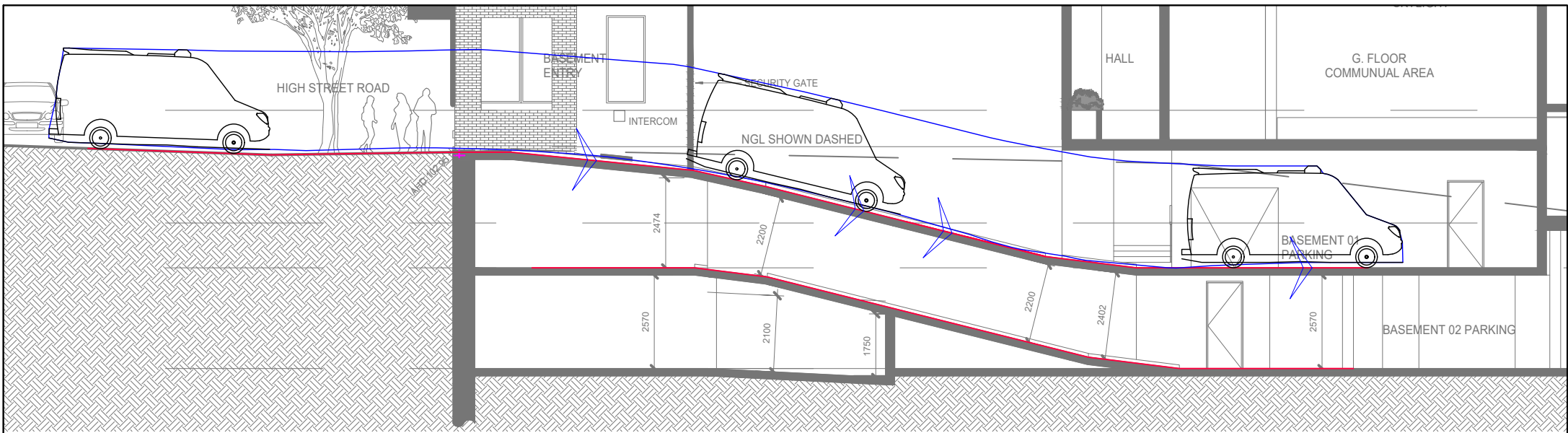
Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1



RATIO REFERENCE SK03-17545T/SN	SHEET No. 13	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	-----------------	-------------------	--------------------



Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG  
 19/01/2021 10:28:49 AM

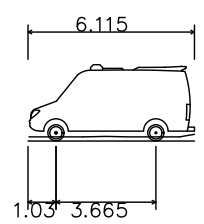


**NOTE:**  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18



# ratio:

RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011



- VEHICLE ENVELOPE (FORWARD)
- 300mm CLEARANCE (FORWARD)
- VEHICLE ENVELOPE (REVERSE)
- 300mm CLEARANCE (REVERSE)

Ambulance Victoria – Typical	6.115m
Overall Length	2.005m
Overall Width	2.800m
Overall Body Height	0.150m
Min Body Ground Clearance	1.705m
Track Width	4.90s
Lock-to-lock time	6.800m
Curb to Curb Turning Radius	

Proposed Mixed-Use Development  
 554 High Street Road, Mount Waverley  
 Ground Clearance Assessment



RATIO REFERENCE	SHEET No.	SCALE	DATE
SK03-17545T/SN	14	1:150@A4	19/01/2021



# Appendix C Bicycle Parking Specifications

# Arc de Triomphe™



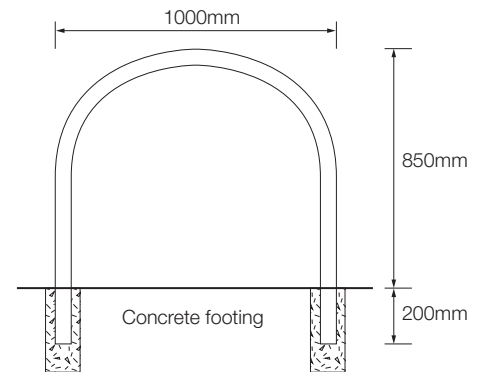
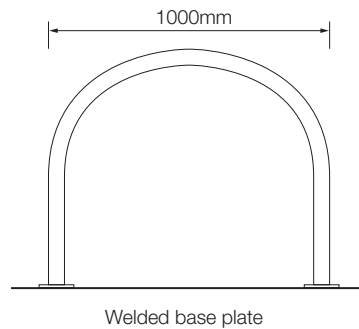
Galvanised finish / Stainless Steel finish

## Features



- Each rail supports two adult bikes in an upright position
- Can be either bolted to a concrete slab or concreted in situ
- Available in stainless steel or galvanised steel
- Provides the ability to lock both wheels and frame
- Suitable for foyers and entry areas

## Dimensions



## Specifications

### Material options

- Galvanised (Duragal)
- 316 Marine grade stainless steel

### Fixing options

- Welded flange - Bolt on
- In situ

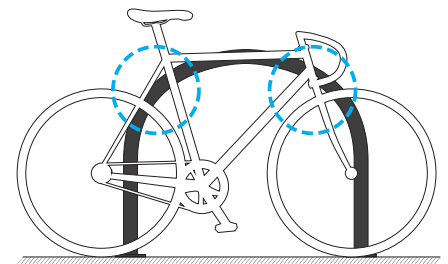
### Recommended fasteners

- Galvanised Dynabolts (M10 x 65mm)
- Stainless Dynabolts (M10 x 65mm)
- Shear Nut security fasteners

### Dimensions

1000mm [w] x 850mm [h]

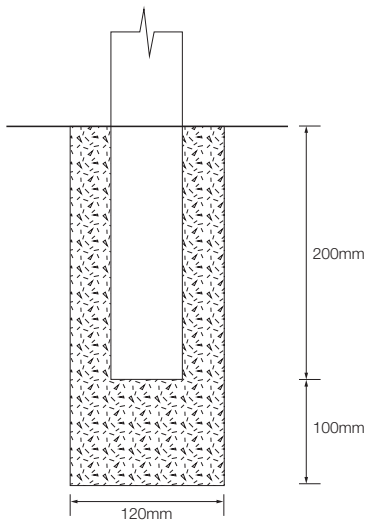
## Locking Points



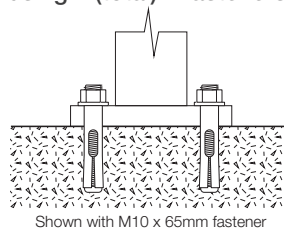
V4.1 - 1/05/2017 | Specification may be subject to change without notice. ©Bicycle Network

## Fixing options

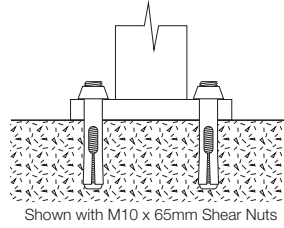
In situ (Concrete footing)



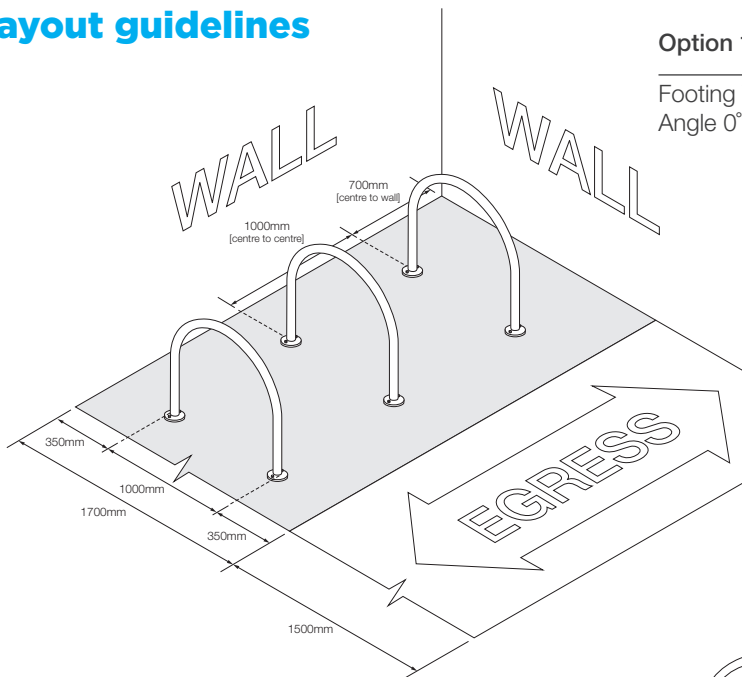
Welded flange (Bolt on)  
using 4 (total) x fasteners



Welded flange (Security heads)  
using 4 (total) x fasteners



## Layout guidelines

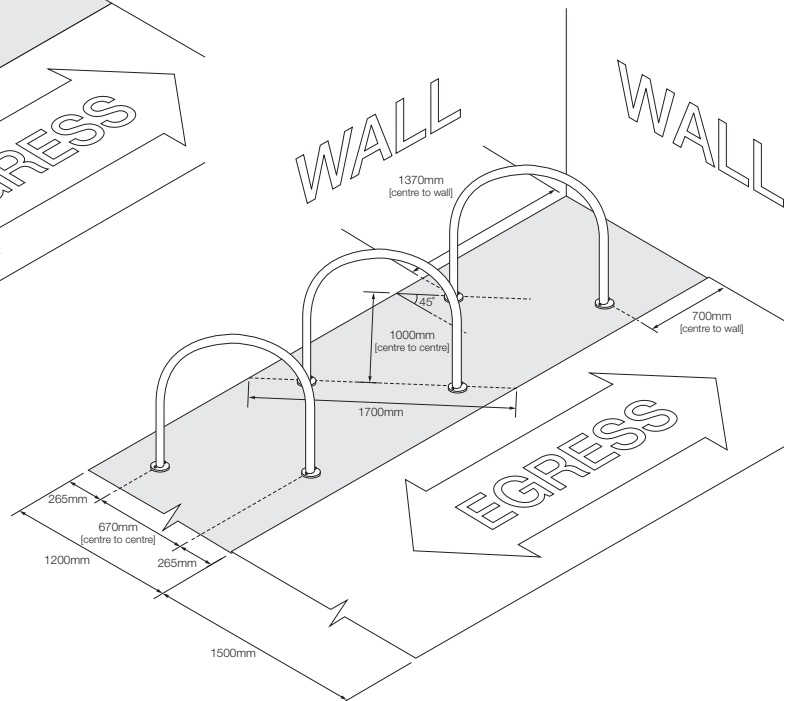


Option 1:

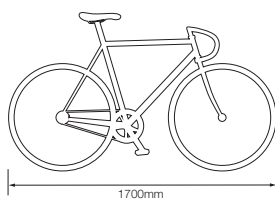
Footing Width 1700mm  
Angle 0°

Option 2:

Footing Width 1200mm  
Angle 45°



Typical Bicycle Length



V4.1 - 1/05/2017 | Specification may be subject to change without notice. ©Bicycle Network



# Ned Kelly™



Zinc finish



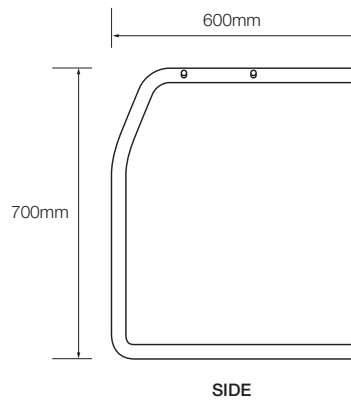
Black powder coat finish

## Features



- Each rail provides storage for a single bike
- Suits bikes with full length mud guards
- Available in Zinc finish or Black powder coat over mild steel
- Provides the ability to lock the main frame and one wheel
- Support prongs with protective coating prevent damage to rim
- Can be used with custom framing - no wall needed

## Dimensions



## Specifications

### Material options

- Zinc finish
- Black powder coat over mild steel
- Stainless steel - *Pre-order only*

### Fixing options

- Bolt on to wall
- Fixed to support framing

### Recommended fasteners - wall

- Dynabolts (M8 x 40mm)
- Shear Nut security fasteners

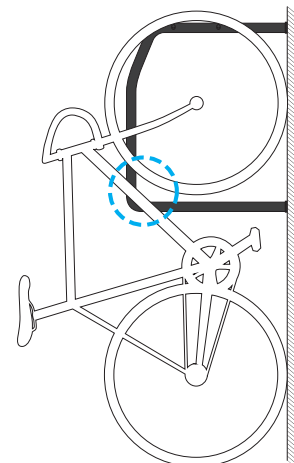
### Recommended fasteners - framing

- Bolt and nut (M10 x 60mm)
- Tek screws

### Dimensions

125mm [w] x 700mm [h] x 600mm [d]

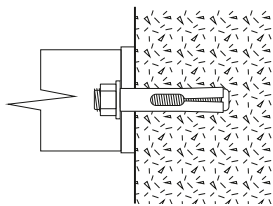
## Locking Points



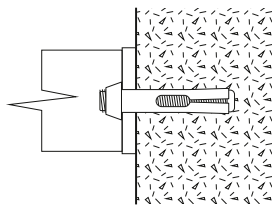
V4.1 - 1/05/2017 | Specification may be subject to change without notice. ©Bicycle Network

# Fixing options

## Fix to a wall using 4x fasteners or Shear Nuts

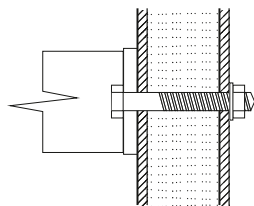


Shown with M8 x 40mm fastener

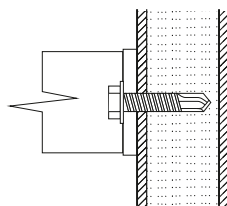


Shown with M8 x 40mm Shear Nuts

## Fix to a frame using 4x bolts or Tek Screws



Shown with M10 x 60mm Bolt, Washer & Nut

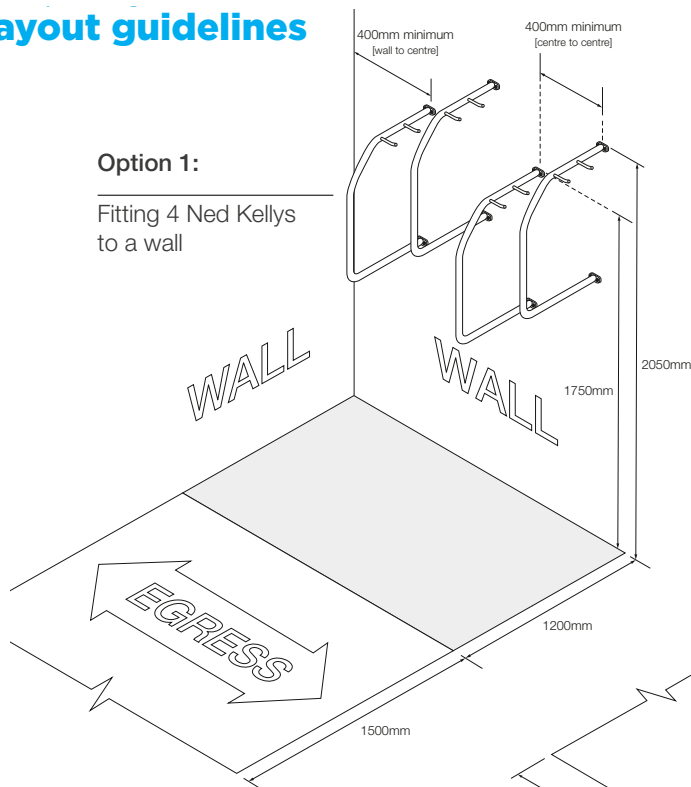


Shown with Tek Screw

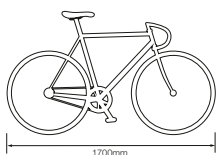
# Layout guidelines

### Option 1:

Fitting 4 Ned Kellys to a wall

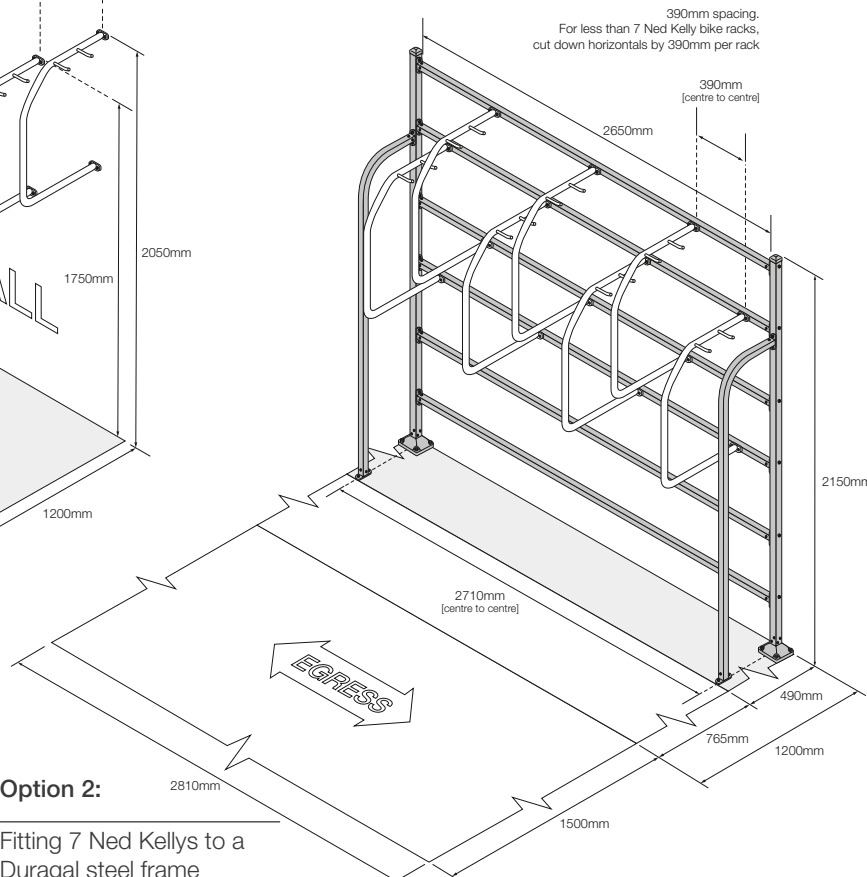


Typical Bicycle Length



### Option 2:

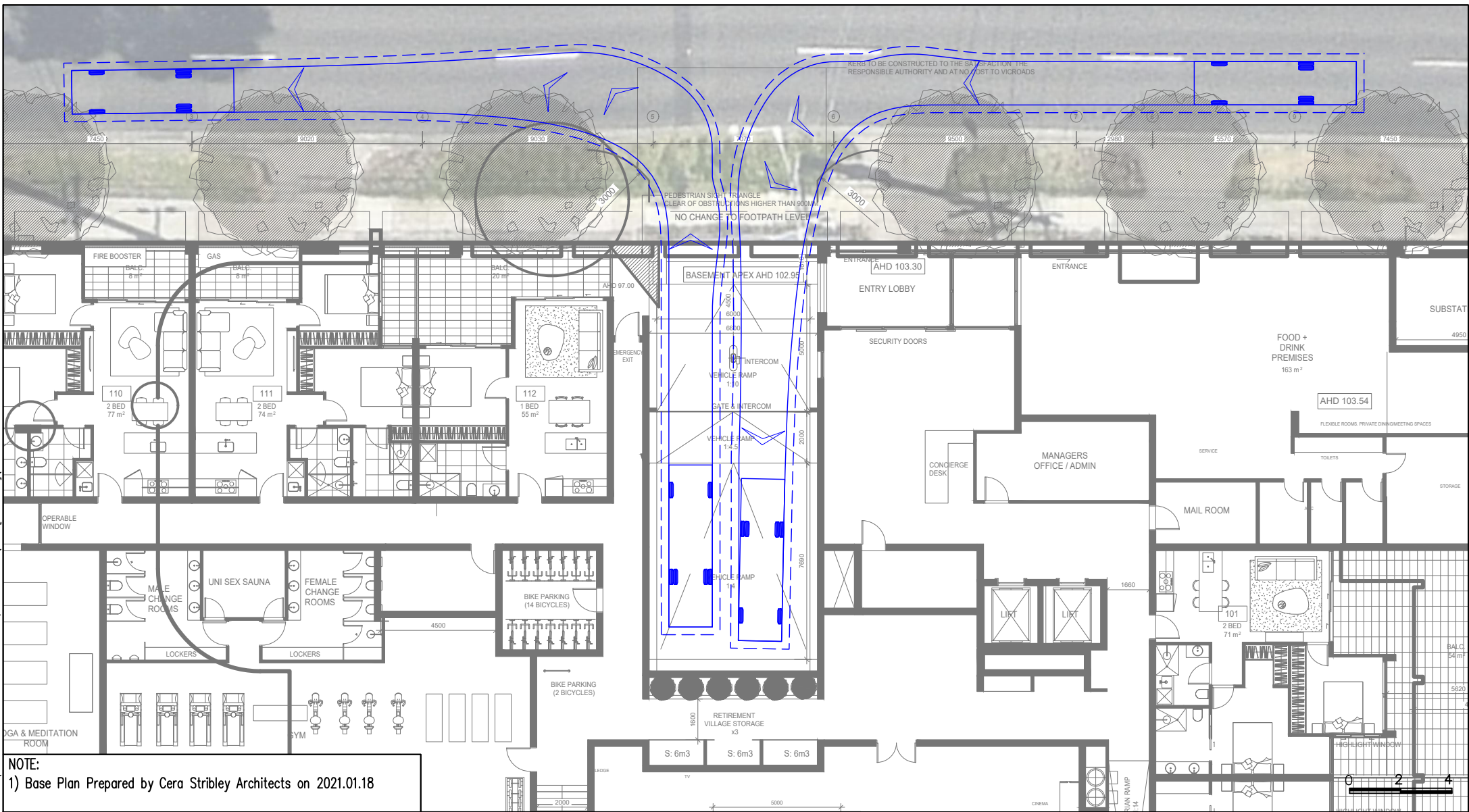
Fitting 7 Ned Kellys to a Duragal steel frame



# Appendix D Waste Collection Swept Path



Y:\17500-1800\17545T - 554-55B HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG  
 19/01/2021 10:26:50 AM



**NOTE:**  
 1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
 RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

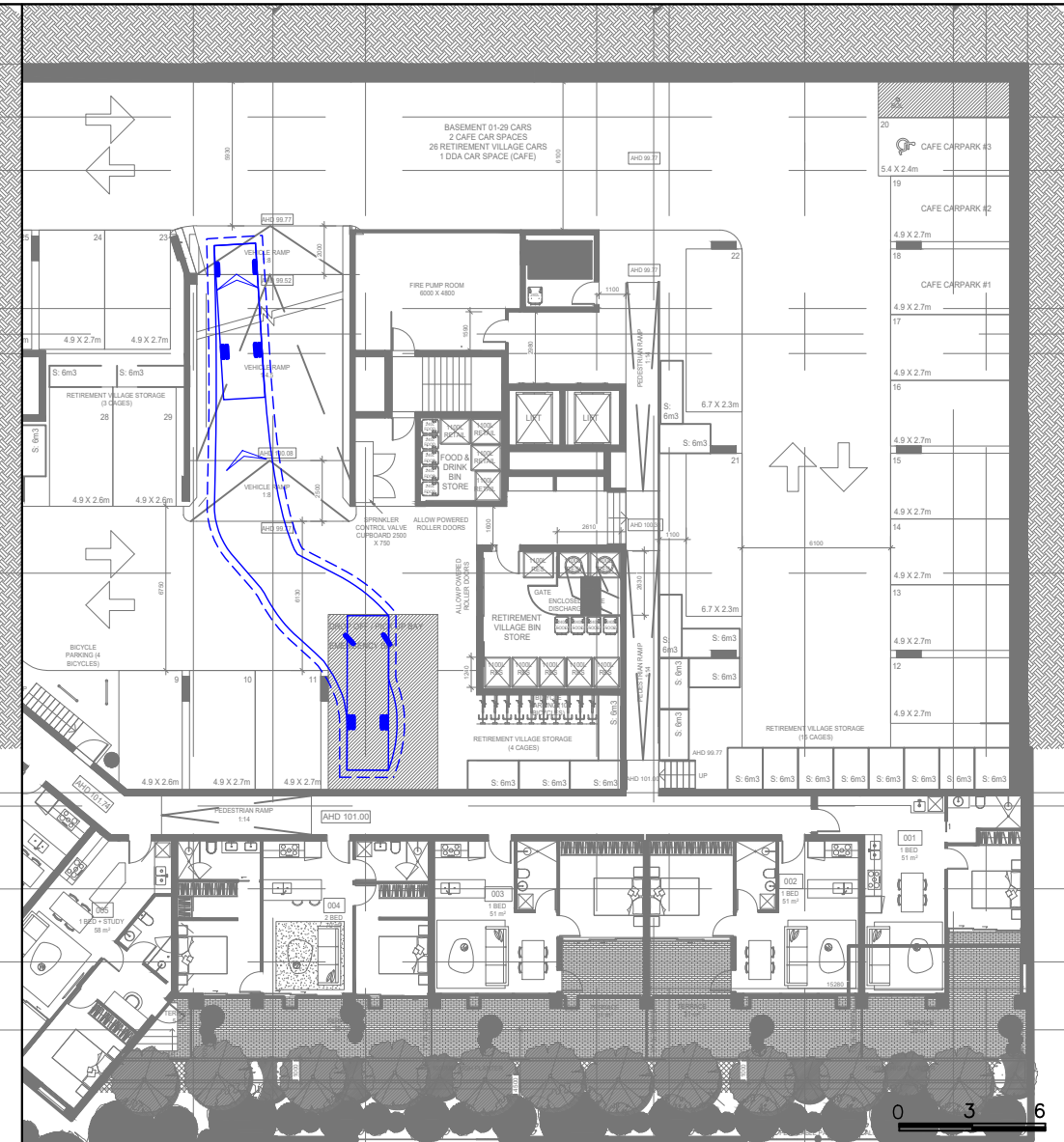
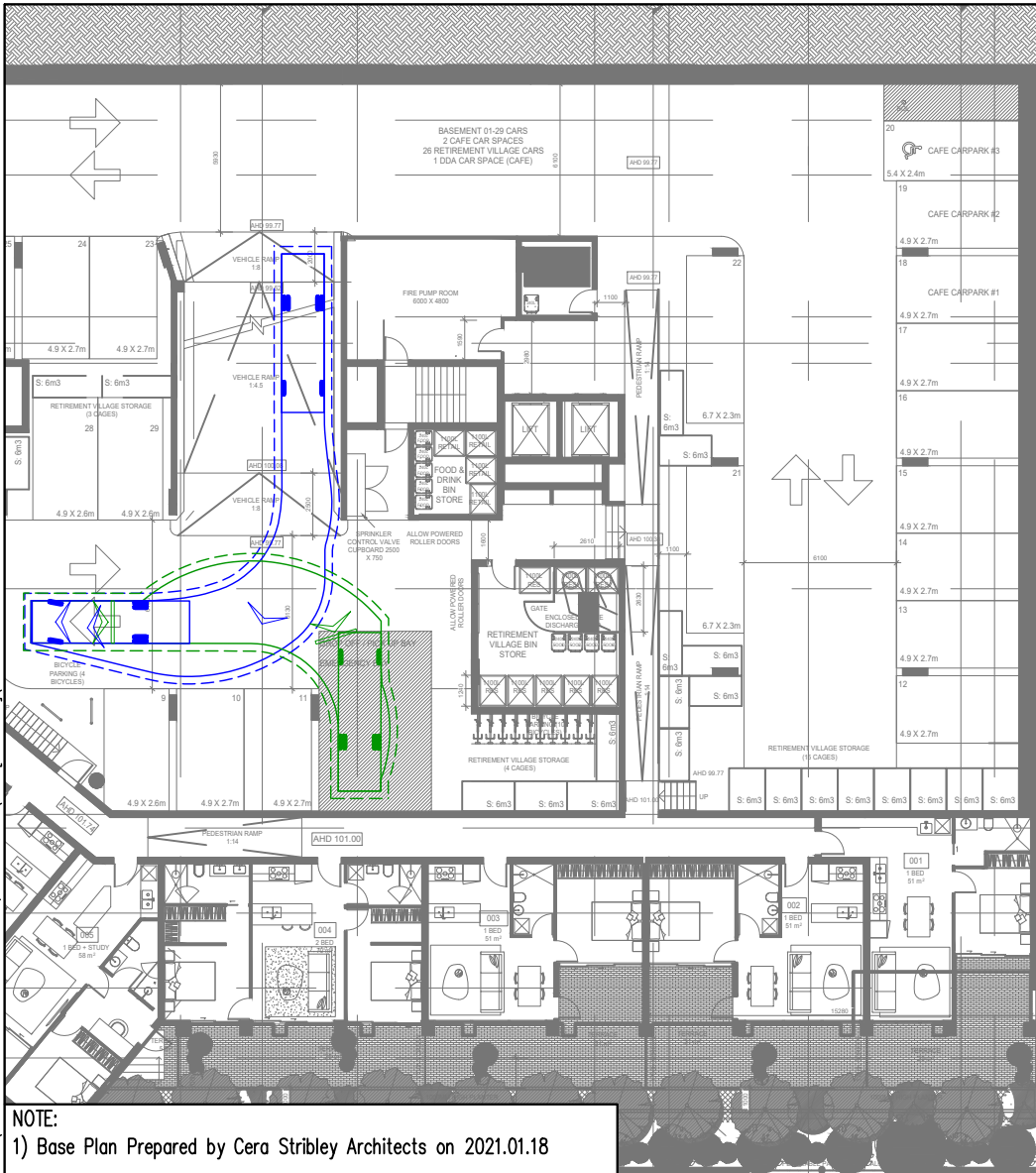
**Mini-Rear Loader Waste Collection Vehicle**  
  
**VEHICLE ENVELOPE (FORWARD)**  
**300mm CLEARANCE (FORWARD)**  
**VEHICLE ENVELOPE (REVERSE)**  
**300mm CLEARANCE (REVERSE)**

**Proposed Mixed-Use Development**  
 554 High Street Road, Mount Waverley  
 Swept Path Assessment – Ground Floor

RATIO REFERENCE	SHEET No.	SCALE	DATE
SK03-17545T/SN	15	1:200@A4	19/01/2021



19/01/2021 10:26:53 AM Y:\17500-1800\17545T - 554-558 HIGH STREET ROAD, MT WAVERLEY\SK03 [2021.01.19]\SK03-17545T.DWG



NOTE:  
1) Base Plan Prepared by Cera Stribley Architects on 2021.01.18

**ratio:**  
RATIO CONSULTANTS PTY LTD  
ABN 005 422 104  
8 GWYNNE STREET  
CREMORNE, VICTORIA 3121  
TELEPHONE (03)9429 3111  
FACSIMILE (03)9429 3011

Mini-Rear Loader Waste Collection Vehicle

VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

Overall Length 6.345m  
 Body Width 1.980m  
 Overall Body Height 2.080m  
 Min Body Ground Clearance 0.205m  
 Track Width 1.670m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 6.450m

Proposed Mixed-Use Development  
554 High Street Road, Mount Waverley  
Swept Path Assessment – Basement 1

RATIO REFERENCE SK03-17545T/SN	SHEET No. 16	SCALE 1:300@A4	DATE 19/01/2021
-----------------------------------	-----------------	-------------------	--------------------