

13 December 2023

Our Ref: 20GCT0106\_LT02B

Your Ref:

Attention: Leo Mewing

Mewing Planning Consultants  
by email

Dear Leo,

**RE: 5 Hercules Street, Hamilton – Traffic Engineering**

## 1. Introduction

TTM Consulting has been engaged to prepare a traffic engineering report investigating a proposed mixed use development within the Northshore Hamilton PDA. This report has been prepared in support of an application to Economic Development Queensland (EDQ).

## 2. Existing Site Conditions

The site is located at 5 Hercules Street, Hamilton, near the north-east corner of the intersection between Hercules Street and Main Street.



Figure 1: Site location

The property is described as Lot 1 on SP231749 and has road frontage to Hercules Street and Main Street and is currently occupied by a commercial property.

### 3. Existing Transport Infrastructure

**Roads** - All roads within 200m of the site are administered by Council – the exception being Main Street which is a private road. Neighbourhood/local roads are subject to a 50kph speed limit and generally have two traffic lanes plus kerbside parking lanes. Kingsford Smith Drive is the nearest arterial road located 150m to the north of the site. Kingsford Smith Drive provides access to the broader Brisbane network, is subject to a 60kph speed limit and is 3 lanes wide in both directions. The Kingsford Smith Drive / Hercules Street intersection is signalised.

**Public transport** - Doomben and Ascot train stations on the Doomben line are located approximately 1.2km to the northeast and northwest of the site respectively. Bretts Wharf Citycat ferry terminal is located 380m walk to the south west of the site.

The nearest on-street bus stop is located on Remora Road 350m east of the site. The stop services routes 303, 304 and 305, connecting the site with Doomben, Eagle Farm, Pinkenba, Newstead and Brisbane CBD.

Located 450m away on Kingsford Smith Drive near the Bretts Wharf Citycat ferry terminal, additional stops are provided that service routes 300, and 302, connecting the site with both Toombul Centro and the Brisbane CBD.

These routes provide a weekday service generally every 15-20 minutes, and weekend services are generally every 30 minutes.

**Cyclists** - An off-road cycle path extends across the site frontage along Hercules Street and also from the nearby cruise ship terminal westward toward Newstead, between Kingsford Smith Drive and the river's edge. Other on-street routes connect Kingsford Smith Drive to the Doomben and Ascot train stations.

**Pedestrians** - Formal pedestrian footpaths are located on both sides of all roads in the immediate vicinity of the site, and signalised pedestrian crossings are incorporated into nearby intersections with Kingsford Smith Drive and Remora Road.

**Planning** – Review of the Queensland Transport and Roads Investment Program (QTRIP) 2026-2027 shows no planned road upgrades in the immediate vicinity of the site, or other works which will impact upon or be impacted by the proposed development.

An indicative pedestrian pathway is proposed along Main Street and a proposed indicative cross block link opposite the site, connecting to the Brisbane River as per the proposed amendment (Oct 2022) to the Northshore Hamilton PDA Development Scheme.

## 4. Proposed Development

The development proposes 648m<sup>2</sup> GFA of commercial area, of which 331m<sup>2</sup> is at ground level, a bar and restaurant, with 70 hotel rooms and 51 residential units on the levels above.

The ground and three podium levels provide parking for 91 car parking spaces. The site provides 75 bicycle spaces across the parking levels of which 17 freely accessible spaces are located at ground level. Standing for an MRV is also accommodated within a service bay at ground level.

The access arrangements include a 6.35m wide driveway crossover located on the southern boundary of the site direct to Main Street – to which the site has access easement rights. The access is priority controlled with all turns permitted.

## 5. Car Parking Supply

The Northshore Hamilton PDA Development Scheme identifies expected car parking rates for development, and these are outlined in Table 1 below. The rates are further defined by the October (2022) amendment to the Hamilton PDA, which for unspecified non-residential uses (ie. short term accommodation) refers to the City Frame rates identified within BCC TAPS PSP.

Table 1: Current Development Scheme Car Parking Supply Requirement

Land Use	Parking Rates	Extent	Required Spaces
Residential	Min 0.75 / Max 2.0 spaces per dwelling unit	51 units	38 min – 102 max
Residential - Visitor	0.15 spaces per dwelling unit	51 units	6
Residential – PWD	0.02 spaces per dwelling	51 units	1
Short term accommodation (BCC TAPS)	0.5 spaces per room, unit, or cabin, plus 0.5 spaces per staff	70 rooms	35 plus staff
Commercial *	Max. 2 spaces per 100m <sup>2</sup>	648m <sup>2</sup>	13
<b>Total</b>			<b>80 - 144 plus staff</b>

\* commercial parking is a maximum rate and is therefore not included within the minimum required spaces.

The development is proposing to provide 91 parking spaces. In TTM's opinion, the number of car parking spaces proposed reflects the expected demand for the development and complies with requirements of both the PDA and BCC TAPS PSP.

PWD parking is required to be provided at a rate of 1 space per 100 standard spaces or part thereof. The site provides 2 PWD spaces which satisfies the minimum requirement.

## 6. Car Park Layout

The characteristics of the proposed car parking area with respect to the EDQ requirements are reviewed against AS2890.1. The key aspects of the parking area comply with the following designs standards:

- User class 1A Standard bays – 5.4m x 2.4m
- User class 3 Standard bays – 5.4m x 2.6m
- Parking and circulation aisles – 5.8m (minimum)
- One way ramps – minimum 3.0m plus 0.3m clearance to walls
- Ramp grades – 1:5 (20%) with 1:8 (12.5%) summit and sag transitions
- Height clearances shall comply with the minimum 2.2m over aisles and standard spaces, and 2.5m over PWD spaces and adjacent shared area.
- 1.0m minimum aisle extension is provided to blind aisles

## 7. Ramp Operation

The site proposes a one way ramp from ground to podium. The ramp will be signal controlled due to its single lane width. It is proposed that inbound vehicles have priority, meaning outbound vehicles will be required to stop at a signal-controlled hold points on the podium level to allow inbound vehicles to enter.

The entry signal from Main Street will be default green to prioritise entry movements. When a vehicle on the podium approaches to exit, the ground entry signal will revert to red to allow the podium vehicle to exit. Upon exit the ground signal will revert back to green.

TTM have undertaken swept path analysis of the podium ramp entry and exit movement to demonstrate suitability of the proposed arrangement – refer to TTM Drawings 20GCT0017-05 to 07 attached.

Single lane ramps are also proposed between podium levels 1-2 and 2-3. These ramps will also be controlled via a signal system. Vehicles on an upper level (relative to the immediately lower level) will be stopped to allow upper level podium vehicles to exit – and in reverse for the opposite direction. These signals will operate independent of the ground level system.

On entry from Main Street, the site provides a hold point that accommodates two queuing vehicles within the property boundary, whilst allowing vehicles to pass to exit.

The development trip generation during the PM peak hours provide the highest inbound flow of traffic. As identified within this letter (see Section 11), a conservative total of 38vph is expected to be generated by this development. This is equivalent to 1 vehicle every 1½ minutes. The travel time between the ground and next level is limited to less than 1 minute, therefore the potential for more than one vehicle queue at any one time is unlikely. Additionally, the signal defaults in the peak periods give priority to the peak flow movement further limiting incidents of queuing in the driveway.

## 8. Cycle Parking

The development cycle parking identified in the current development scheme as a deemed-to-comply outcome is presented in Table 2 below. The October amendment to the Hamilton UDA notes that cycle parking rates are to conform to BCC bicycle parking rates.

Table 2: Current Development Scheme Cycle Parking Supply Requirement

Land Use	Bicycle Parking Rates	Extent	Spaces
Residential	1 space per dwelling unit	51 units	51
Residential – Visitor	1 space per 4 units	51 units	13
Restaurant – Staff (Austroads)	1 per 100m <sup>2</sup> public area	554m <sup>2</sup>	6
Restaurant – Visitor (Austroads)	2 visitor spaces	-	2
Hotel – Staff (Austroads)	1 per 100m <sup>2</sup> lounge beer garden	51m <sup>2</sup> resident's lounge	2
Hotel – Visitor (Austroads)	1 per 100m <sup>2</sup> lounge beer garden	51m <sup>2</sup> resident's lounge	2
<b>Total</b>			<b>76</b>

Space for 75 bicycle parking spaces is provided throughout the development, of which 17 spaces are located at ground level for use by visitors, and the remainder distributed over podium carparking levels for residents and their legitimate visitors.

TTM consider a shortfall of 1 bicycle parking space an acceptable provision in the context of the development given that all residents are provided for, and the close proximity of local amenities – in addition to the ground level commercial facilities providing for linked trips for residents which would reduce the visitor requirement.

Cycle parking layout accords with AS2890.3 requirements of a 500mm wide envelope per cycle and 1.5m access aisles.

## 9. Site Access Arrangements

The site is accessed from a local road and serves 154 low turnover car park spaces. The proposed access driveway requirements are identified in Table 4.

Table 3: Driveway requirements

Design Aspect	Requirement	Main Access	Compliance
Distance from a minor intersection	6m (min) from tangent point.	20m	Compliant
Distance from another driveway	3.0m (min)	10m	Compliant
Sight Distance – 30kph (estimated for low speed road)	Desirable – 42m Minimum – 17m	60m in both directions	Compliant

Design Aspect	Requirement	Main Access	Compliance
Driveway Design Type (Local road, 25-100 spaces)	Category 2	Category 2	Compliant
Driveway Width	6.0m - 9.0m combined	6.35m	Compliant
Pedestrian Sight Triangle	2.5m by 2.0m	2.5m by 2.0m	Compliant

The site access arrangements are considered to be appropriate for the site use and location.

## 10. Service Vehicle Arrangements

The proposed development is comprised of multiple dwellings, short-term accommodation, retail and commercial land uses. Standing room for an MRV (8.8m L x 2.5m W x 4.5m H) on site is provided in the driveway – refer to TTM Drawing 20GCT0017-08 attached.

The site provides a 4.5m height clearance over the driveway which is sufficient to accommodate an MRV.

The bin room is located at ground level adjacent to the driveway. It is proposed that for collection, bins be moved to the temporary storage area and also collected through the roller doors adjacent to the ground floor loading bay. Collection from the Hercules Street frontage is not considered appropriate due to the presence of the cycle network at this frontage.

### Refuse Collections

All refuse will be collected on-site. Refuse collection vehicles will enter the site via Main Street and park in the loading bay on the ground floor, the gradient of the loading bay is at most 1:20. Residential and commercial bins are collected from their respective storage areas adjacent to the loading area for emptying and returned once emptied.

Residential bins will be serviced by Council whilst commercial bins will be serviced by a private contractor.

Refer to waste management plan for details of quantities, room arrangements and servicing frequency.

## 11. Impact Assessment

TTM are aware that comprehensive planning was undertaken to inform the design of the upgraded road network in the vicinity of the site, which included accounting for traffic generated by the land uses and developments outlined within the sub-precinct plan. These upgrades were based on a Transport Study for the Hamilton Northshore PDA undertaken by Cardno in February 2016. The Transport Study details the Brookfield, Peleton, Pamada, Citimark, Wentworth (Precinct 3c) as generating a total of 1,020vph (including 306vph for residential, 221vph for commercial use, 359vph for retail use and 134vph for hotel) during the peak hour periods.

In the undertaken study, Cardno adopted the traffic generation rates outlined in RMS' Supplementary Guide to Traffic Generating Developments to calculate the traffic generating potential of the precinct. The AM and PM peak hour traffic generation rates adopted for the proposed residential land use were 0.19vph per unit.

The 306vph identified in the Cardno report represents 1,609 units, of which 132 units (25vph) were 'anticipated' across the development site.

The development proposes 51 residential units, which equates to a total trip generation in peak periods of 10vph. Additionally, the site proposes 70 short term accommodation units, which based on RTA trip generation rates of 0.4 evening peak hour trips per unit (Casual accommodation), equates to a further 28vph at 100%. It is noted that the RTA guide suggests a reduced rate of 85% occupation may be adopted, which would equate to 24vph.

This means the development is expected to generate between 34vph and 38vph during evening peak hours. This is 13vph more than that previously anticipated across the site, equating to 1 additional vehicle every 5 minutes. This is negligible when considering the separation of inbound and outbound movements and distribution throughout the wider network. The development is therefore considered to be provided at an acceptable limit and is not expected to impact on the design horizon of the local road network for which it has been designed. A detailed impact assessment is not warranted or required.

## 12. Conclusion

The development proposes 51 multiple dwelling units, 70 short term accommodation units, with ancillary commercial and retail uses. TTM have reviewed the traffic and transport aspects of the development throughout this report and provide the following conclusions.

- The car parking provisions are compliant with EDQ requirements and the layout is geometrically compliant.
- The internal ramps and access will be controlled via a series of hold points and stop/go signals.
- The cycle parking provisions are considered suitable for the site and location.
- The site access arrangements are geometrically compliant with EDQ requirements.
- Service requirements for the site can be achieved via vehicles up to and including size MRV to stand on site.

Based on this assessment, TTM see no traffic engineering reason why the relevant Development Approval cannot be granted.

Yours sincerely,



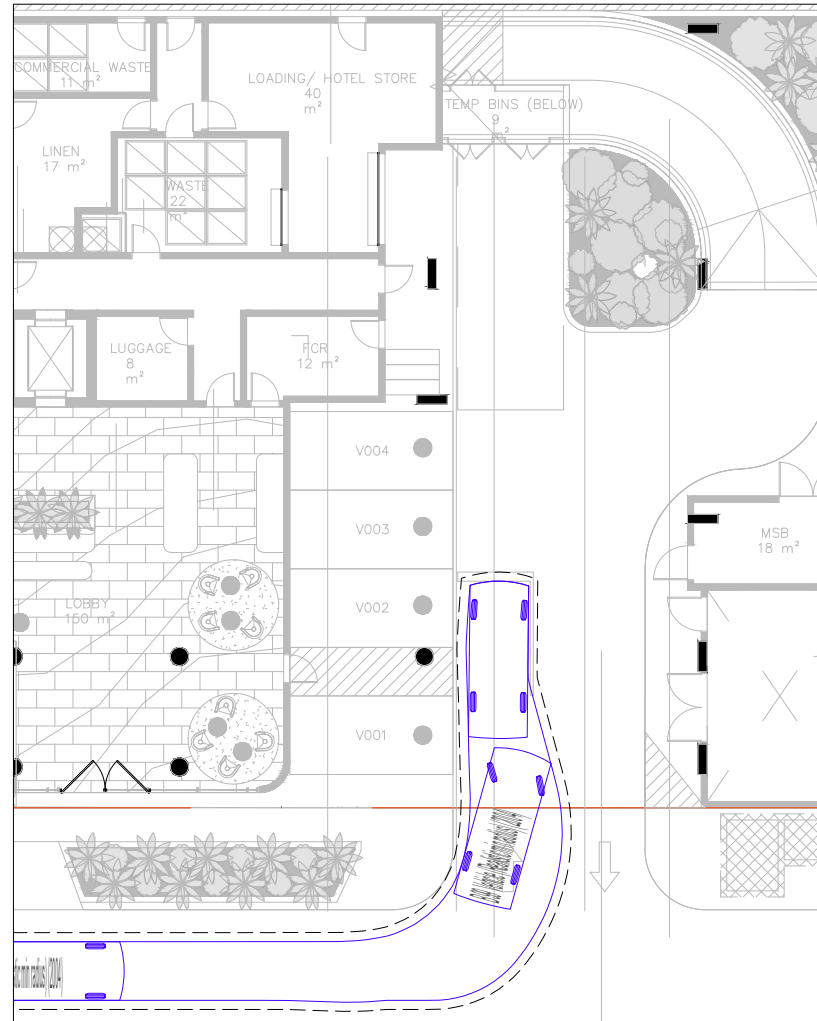
Ilona Blackburn

Senior Associate Director | RPEQ 16879

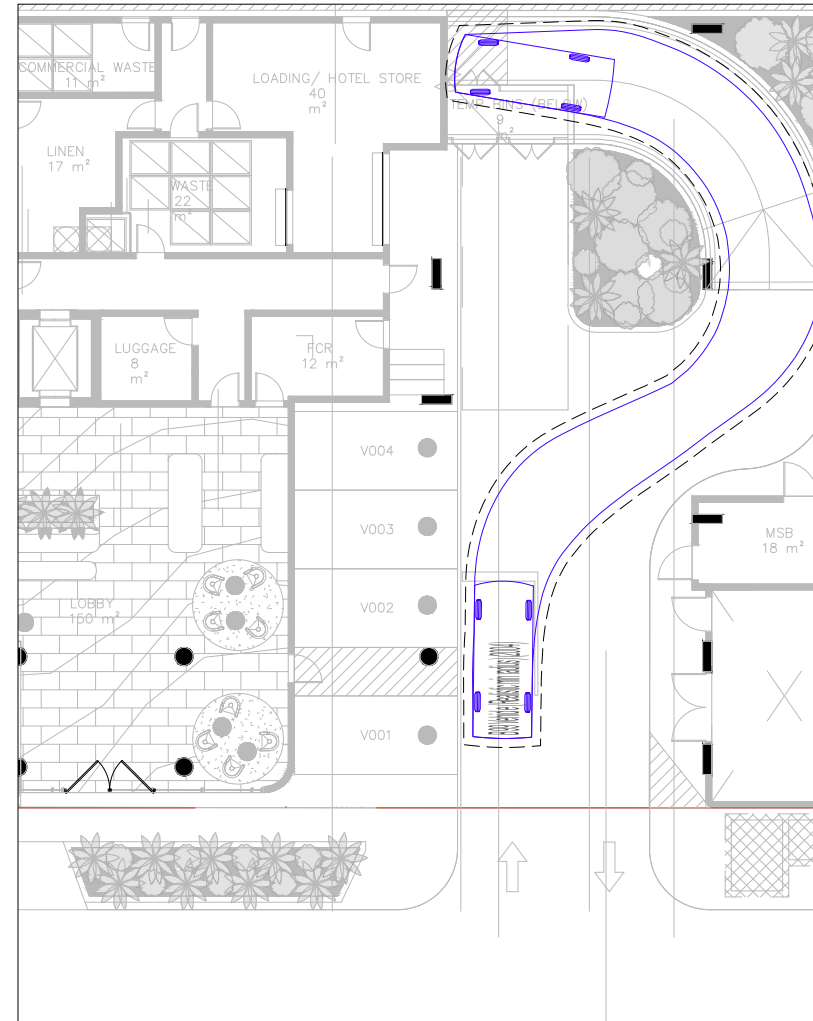
[TTM Consulting Pty Ltd](#)

Attachment 1 – Swept Path Analysis



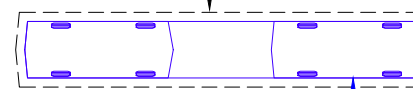


ENTRY TO HOLD POINT AND PODIUM EXIT

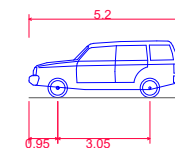


GROUND FLOOR RAMP ACCESS FROM HOLD POINT

VEHICLE CLEARANCE  
300mm (DASHED LINE)

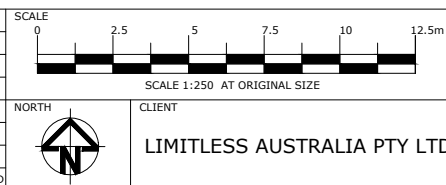


BLUE - VEHICLE BODY



**B99 Vehicle (Realistic min radius) (2004)**  
 Overall Length 5.200m  
 Overall Width 1.940m  
 Overall Body Height 1.878m  
 Min Body Ground Clearance 0.272m  
 Track Width 1.840m  
 Lock-to-lock time 4.00s  
 Curb to Curb Turning Radius 6.250m  
 Design Speed Forward 5.0km/h

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-12-23	ORIGINAL ISSUE	JS	IB	IB



**TTM CONSULTING PTY LTD**  
 ABN 65 010 868 621  
 LEVEL 8, 369 Ann Street, BRISBANE QLD 4000  
 P.O. BOX 12015, BRISBANE QLD 4003

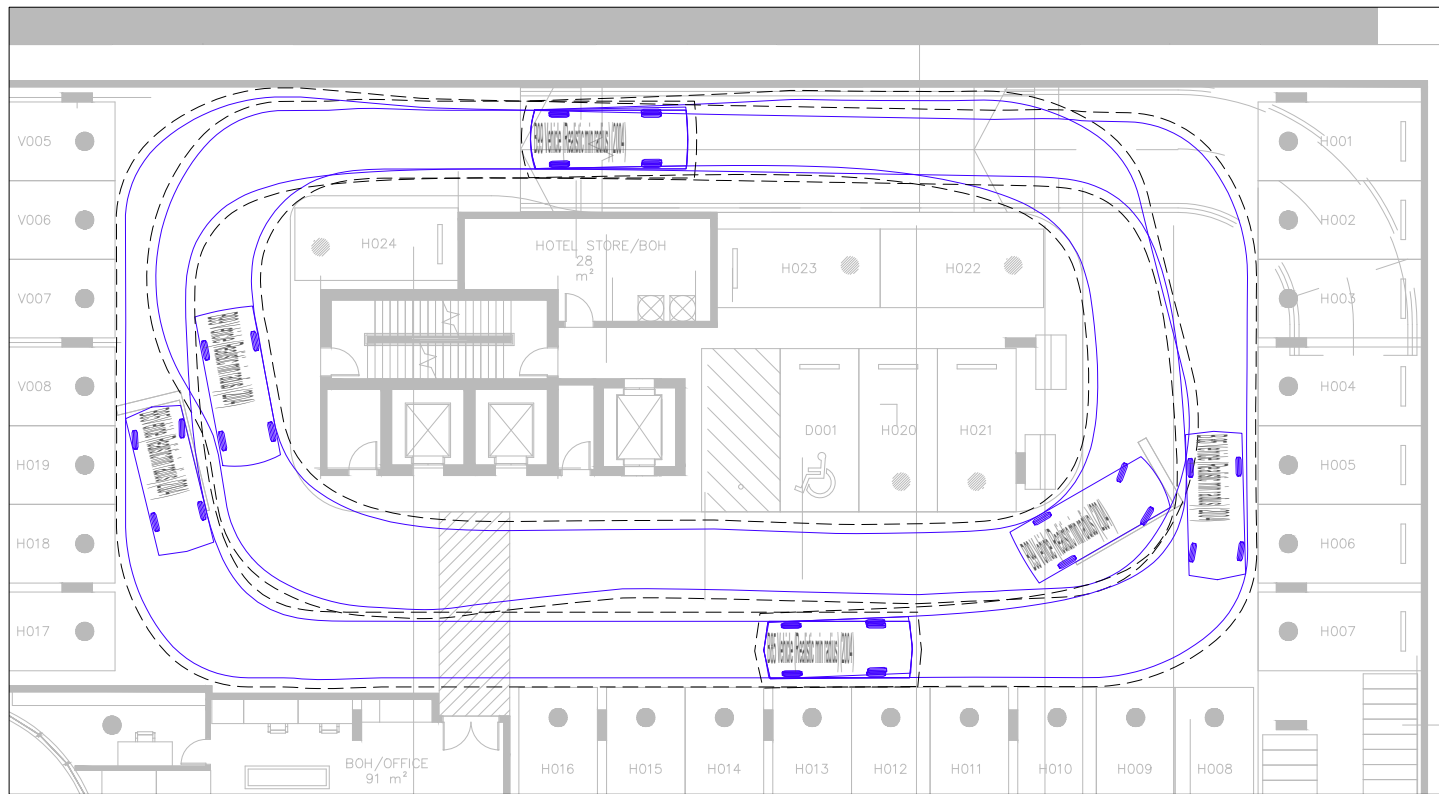
**ttm**

T: (07) 3327 9500 F: (07) 3327 9501  
 E: ttbris@ttmgroup.com.au W: www.ttmgroup.com.au

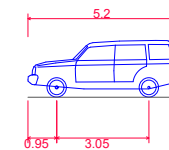
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DRAWING TITLE  
**SWEPT PATH ANALYSIS**  
 GROUND LEVEL - RAMP HOLD POINT OPERATION

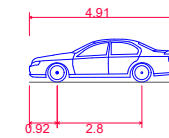
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DRAWING NUMBER 20GCT0106-05	REVISION A
DATE 6 Dec 2023	SHEET 1 OF 1



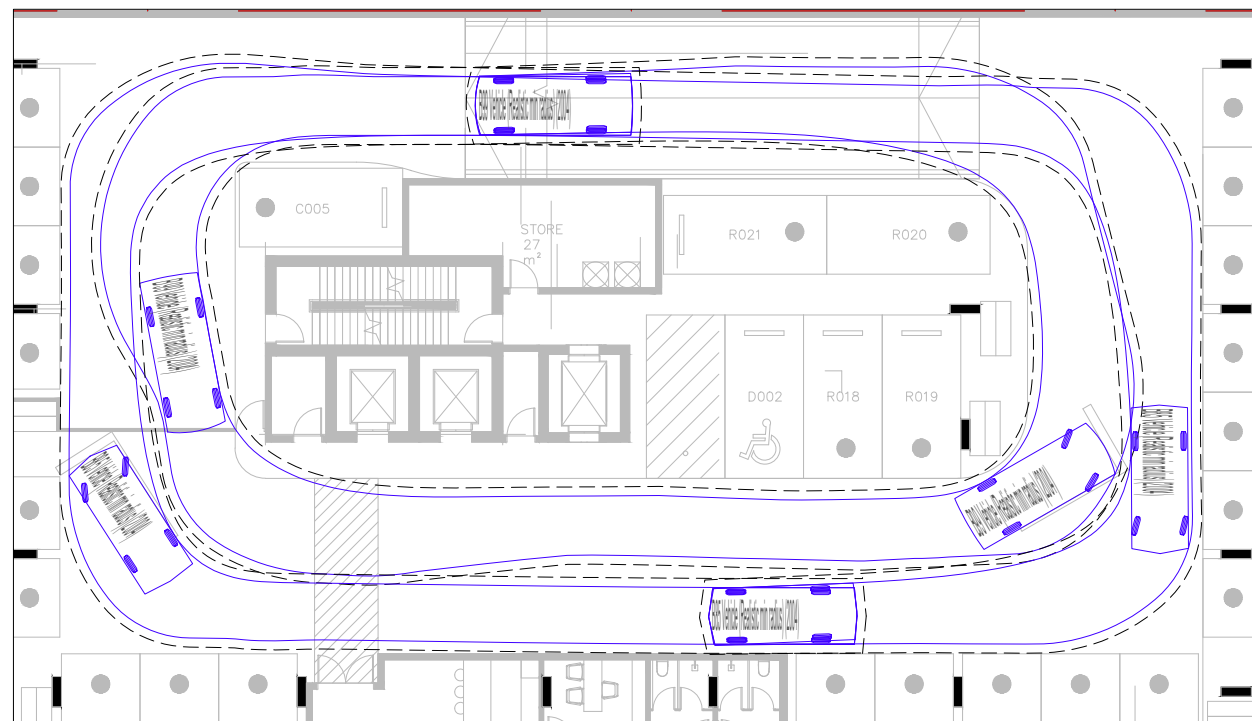
PODIUM LEVEL 1



**B99 Vehicle (Realistic min radius) (2004)**  
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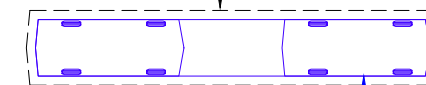


**B85 Vehicle (Realistic min radius) (2004)**  
 Overall Length 4.910m  
 Overall Width 1.870m  
 Overall Body Height 1.421m  
 Min Body Ground Clearance 0.159m  
 Track Width 1.770m  
 Lock-to-lock time 4.00s  
 Curb to Curb Turning Radius 5.750m  
 Design Speed Forward 5.0km/h



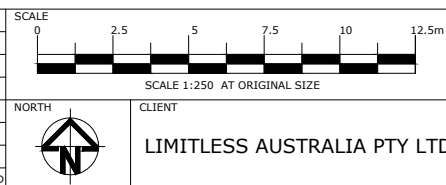
PODIUM LEVEL 2

VEHICLE CLEARANCE  
 300mm (DASHED LINE)



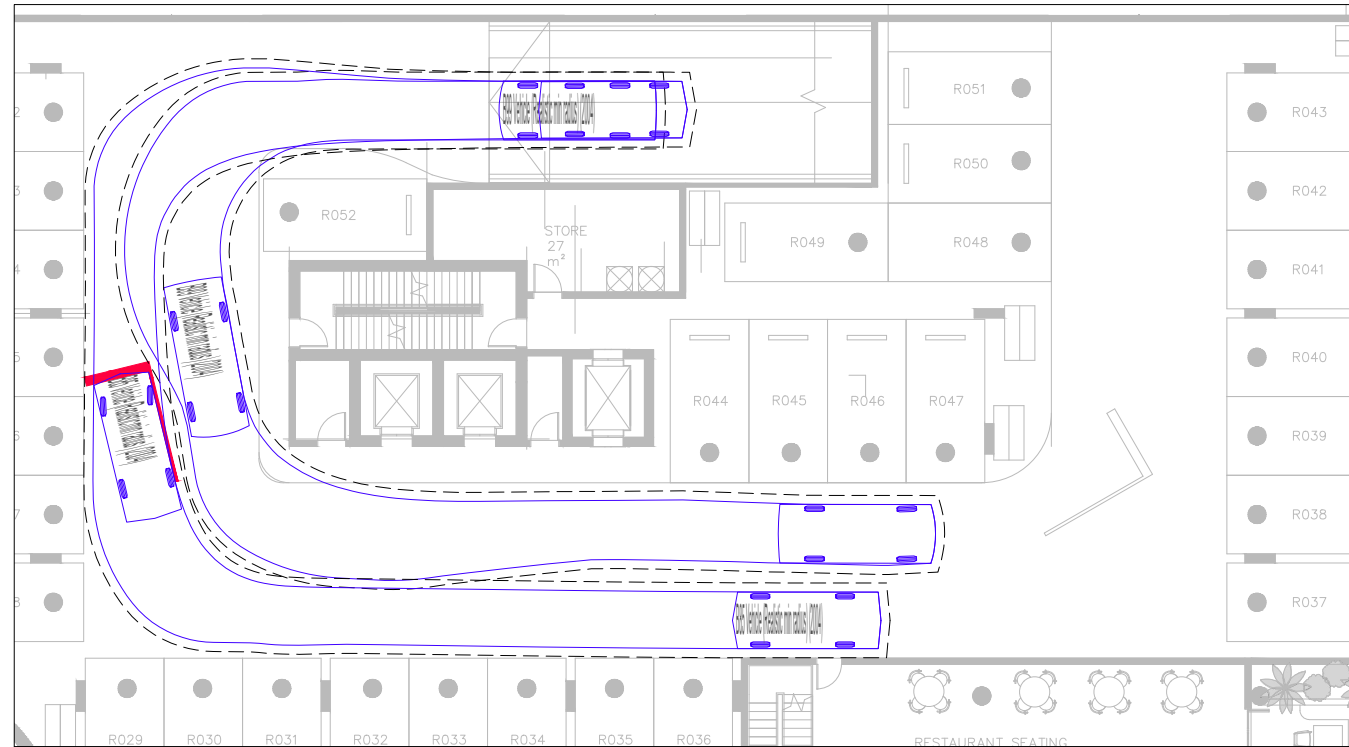
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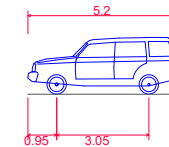


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 T: (07) 3327 9500 F: (07) 3327 9501  
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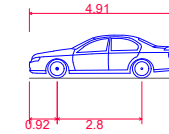
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<b>5 HERCULES ST, HAMILTON</b>	20GCT0106	A3
DRAWING TITLE	DRAWING NUMBER	REVISION
<b>SWEPT PATH ANALYSIS</b> PODIUM LEVELS - CIRCULATION AND HOLD POINT OPERATION	20GCT0106-06	A
DATE	SHEET	
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PODIUM LEVEL 3

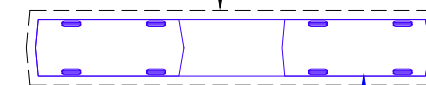


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VEHICLE CLEARANCE  
 300mm (DASHED LINE)



BLUE - VEHICLE BODY

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-12-23	ORIGINAL ISSUE	JS	IB	IB

SCALE  
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 SCALE 1:250 AT ORIGINAL SIZE

NORTH

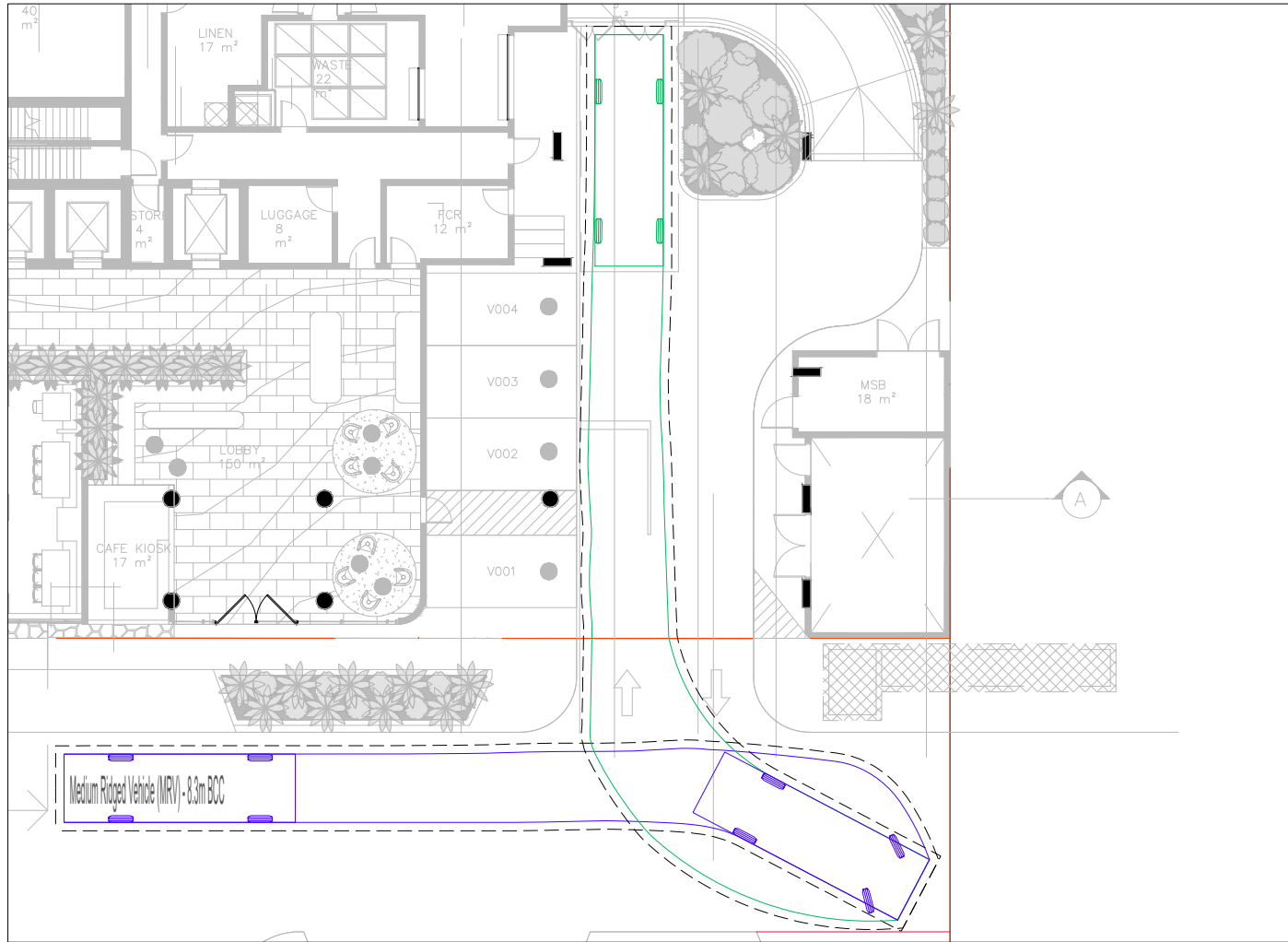
CLIENT  
 LIMITLESS AUSTRALIA PTY LTD

**ttm**  
 TTM CONSULTING PTY LTD  
 ABN 65 010 868 621  
 LEVEL 8, 369 Ann Street, BRISBANE QLD 4000  
 P.O. BOX 12015, BRISBANE QLD 4003  
 T: (07) 3327 9500 F: (07) 3327 9501  
 E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

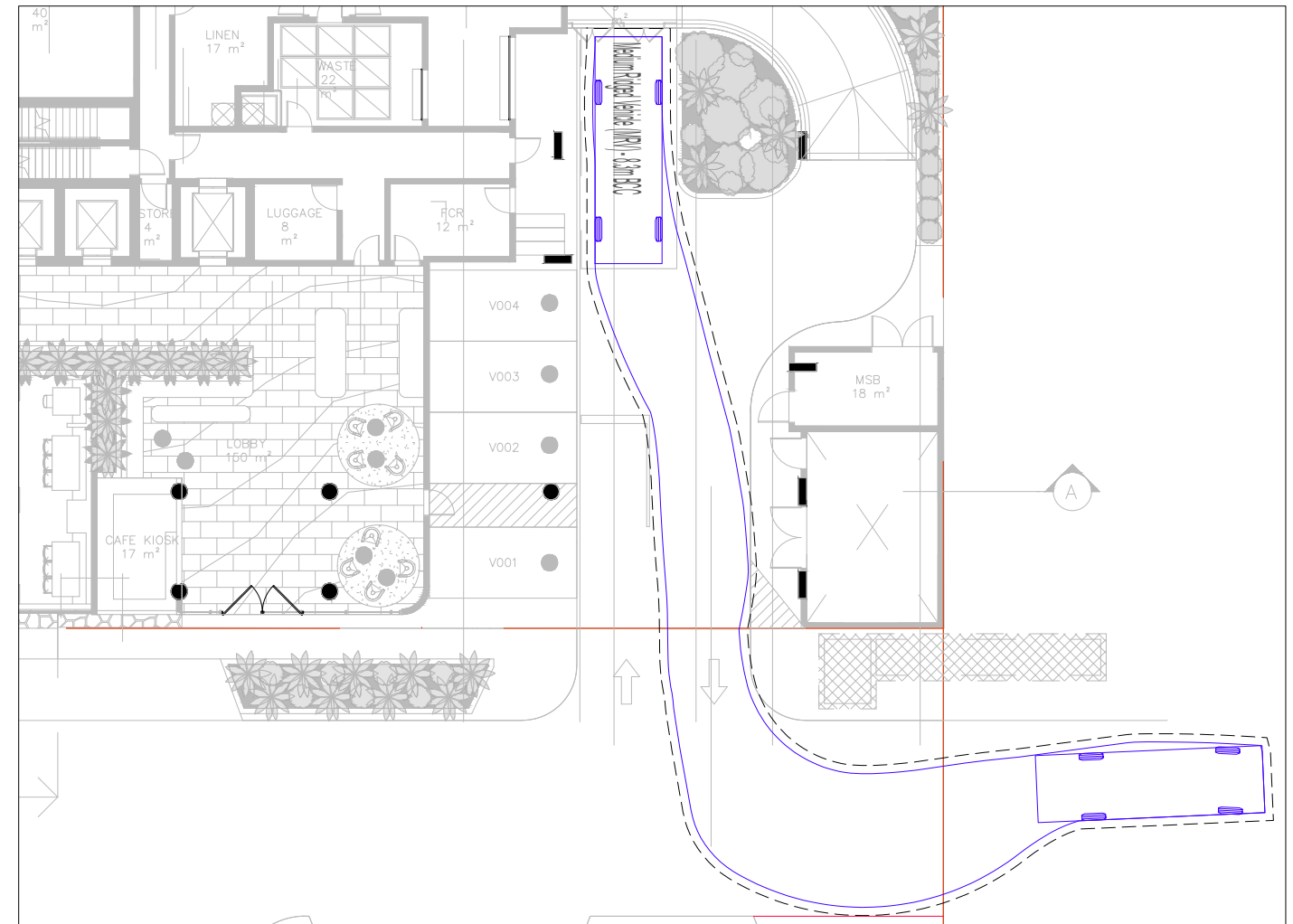
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DRAWING TITLE  
**SWEPT PATH ANALYSIS**  
 PODIUM LEVELS - CIRCULATION AND HOLD POINT OPERATION

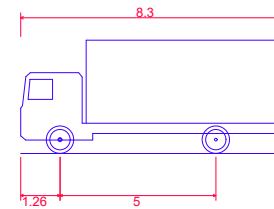
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DRAWING NUMBER	REVISION
20GCT0106-07	A
DATE	SHEET
6 Dec 2023	1 OF 1



REVERSE ACCESS



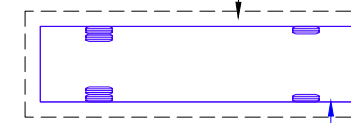
FORWARD-OUT EGRESS



**MRV - 8.3m BCC**

- Overall Length 8.300m
- Overall Width 2.450m
- Overall Body Height 3.633m
- Min Body Ground Clearance 0.428m
- Track Width 2.450m
- Lock-to-lock time 4.00s
- Curb to Curb Turning Radius 8.500m
- Design Speed Forward 5.0km/h

**VEHICLE CLEARANCE**  
300mm (DASHED LINE)



BLUE - VEHICLE BODY

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SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT  
LIMITLESS AUSTRALIA PTY LTD

**ttm** TTM CONSULTING PTY LTD

ABN 65 010 868 621  
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000  
P.O. BOX 12015, BRISBANE QLD 4003

T: (07) 3327 9500 F: (07) 3327 9501  
E: ttbris@ttmgroup.com.au W: www.ttmgroup.com.au

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