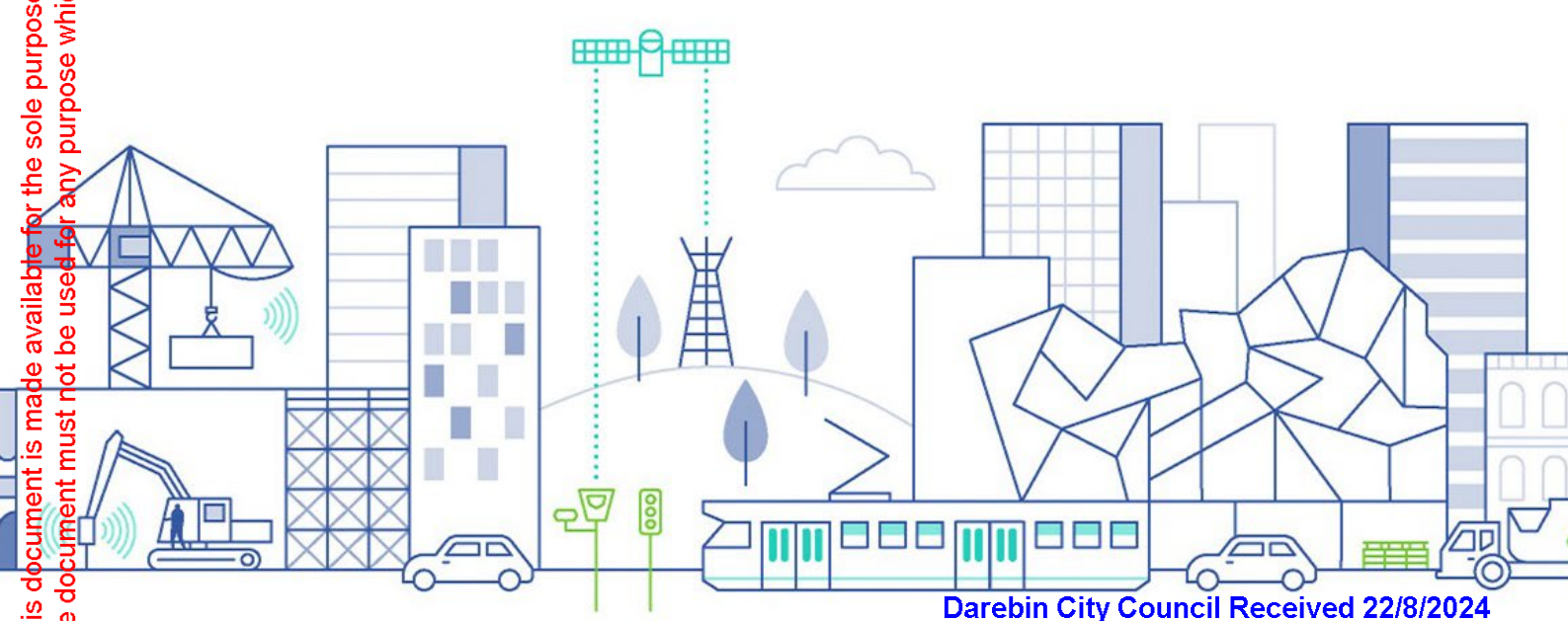
Traffic Engineering

Proposed Mixed-Use Development

488 Murray Road, Preston

Traffic Impact Assessment



1 Introduction and Scope

TTM Consulting (Vic) Pty Ltd has been engaged by the Applicant to prepare a traffic impact assessment for the proposed mixed-use development at 488 Murray Road, Preston.

This report includes an assessment of the traffic and parking implications for the Planning Application, including:

- Reviewing the existing conditions at the site and on the surrounding street network.
- The determination and appropriateness of the on-site car parking provision.
- The compliance of the parking layout and site access.
- Assessing the proposal against Clause 52.06-9 of the Planning Scheme.

The report concludes that the proposal is appropriate from a traffic perspective.

Record

No.	Author	Reviewed/Approved	Description	Date
1.	A. Sahin	D. Hancox	Original Issue	05/06/2024
2.	A. Sahin	D. Hancox	Amendment to Design Drawings	14/08/2024

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2 Existing Conditions

2.1 Site Conditions

The subject site is located at 488 Murray Road, Preston and occupies an area of approximately 247 square metres. The subject site has approximately 4.9 metres frontage to Murray Road along the southern boundary of the site. The figure below shows the location of the site and the surrounding road network.

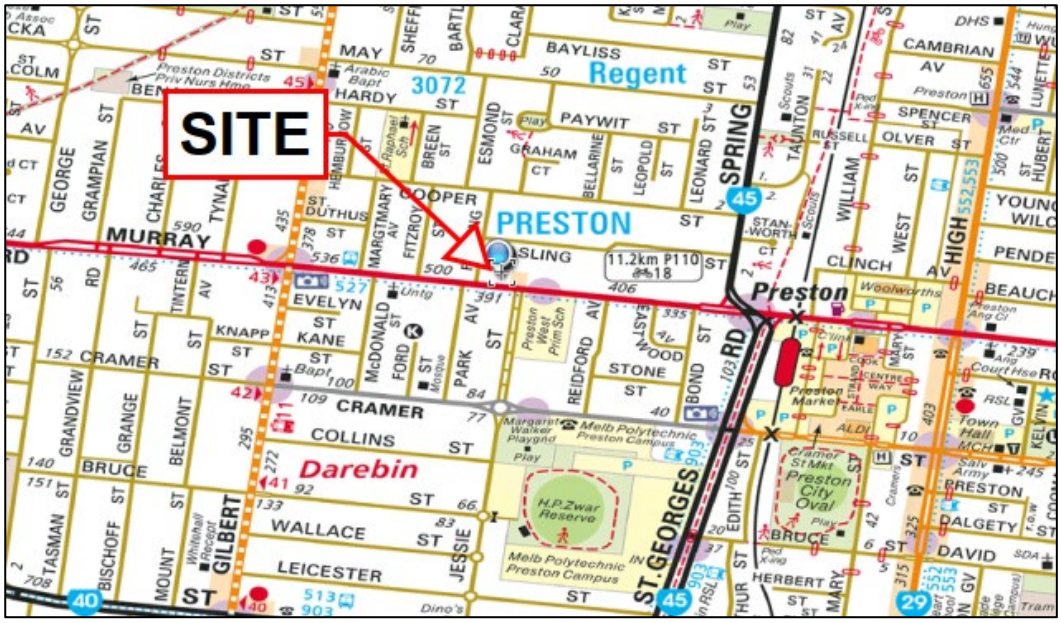


Figure 1: Site Location (Source: Street Directory, 2024)

The site is in the General Residential Zone 2 (GRZ2) in the Darebin Planning Scheme as shown in the figure below. The site is within the Principal Public Transport Network (PPTN).

Figure 2: Zoning Plan (Source: VicPlan, 2024)

An aerial view of the site is shown in the figure below.

Figure 3: Aerial View of Site (Source: NearMap, March 2024)

The previous use on the subject site comprised of the following.

Table 1: Previous Land Use Inventory

Item	Inventory
Land Use	Restricted Retail Premise
Net Floor Area	247 m^2
Car Parking Allocation	Car Parking Spaces – 0 no.
Bike Parking Allocation	Bicycle Parking Spaces – 0 no.

Further details are attached in Appendix A.

2.2 Road Network

2.2.1 Murray Road

Murray Road is a collector road consisting of a two-way, two-lane carriageway approximately 13 metres wide. Parking and bike lanes are present along both sides of the road. Parking is generally unrestricted nearby the site. The posted speed limit along the road nearby the site is 40 km/h. The figure below shows the street view of the carriageway proximate to the site.

Figure 4: Murray Road Configuration – Facing East (Source: Streetview, October 2022)

2.2.2 Fettling Street

Fettling Street is a local road consisting of a two-way carriageway approximately 7.8 metres wide. Parking is generally unrestricted nearby the site. The posted speed limit along the road nearby the site is 50 km/h. The figure below shows the street view of the carriageway proximate to the site.

Figure 5: Fettling Street Configuration – Facing North (Source: Streetview, March 2021)

2.3 Sustainable Transport

2.3.1 Public Transport Network

The table and figures below summarise the public transport routes and stops proximate to the site.

Table 2: Nearby Public Transport Services

Mode	Route #	Route Description	Nearest Stop	Distance to Stop
Train	Mernda	Melbourne – Mernda	Preston Station	680 m
Tram	#11	West Preston – Victoria Harbour Docklands	Murray Rd/Gilbert Rd	390 m
Bus	#513	Eltham – Glenroy	Jessie St/Bell St	880 m
Bus	#514	Eltham – Glenroy	Jessie St/Bell St	880 m
Bus	#527	Gowrie – Northland SC	Fettling St/Murray Rd	10 m
Bus	#552	North East Reservoir – Northcote Plaza	Murray Rd/High St	880 m
Bus	#553	West Preston – Preston	Murray Rd/High St	880 m
Bus	#903	Mordialloc – Altona	Jessie St/Bell St	880 m

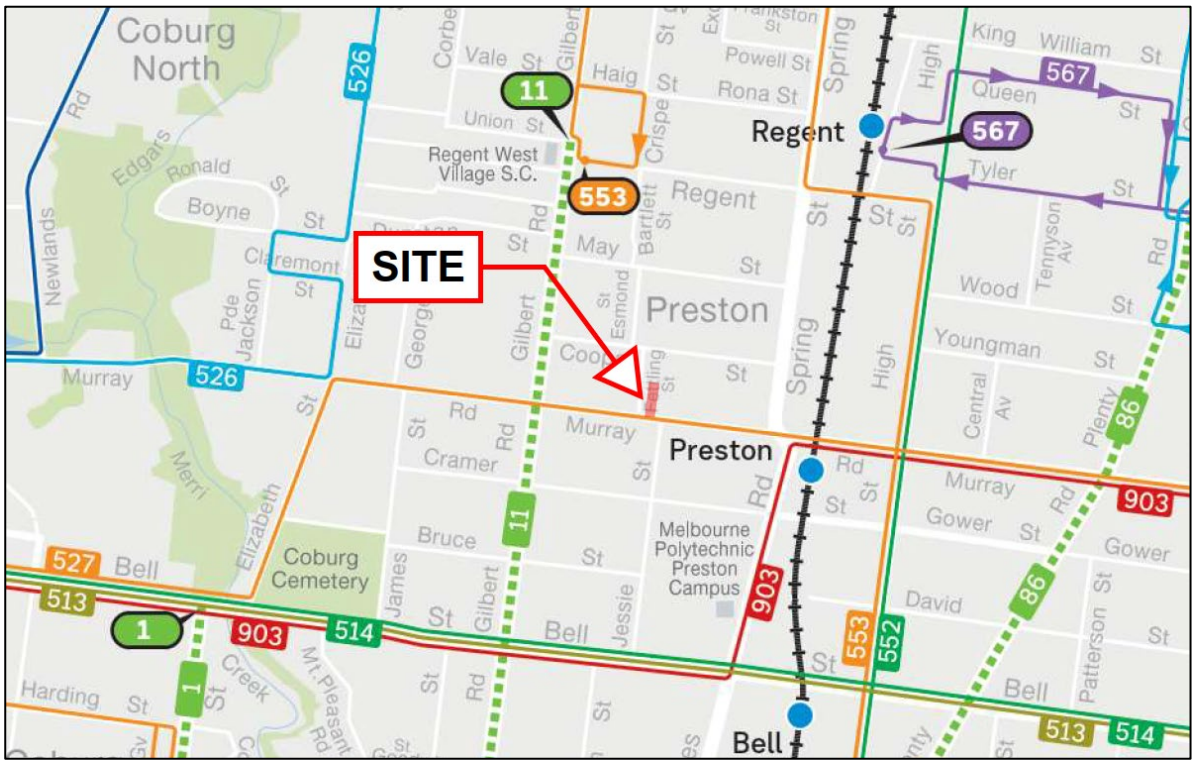


Figure 6: Darebin PTV Routes (Source: Public Transport Victoria, November 2023)

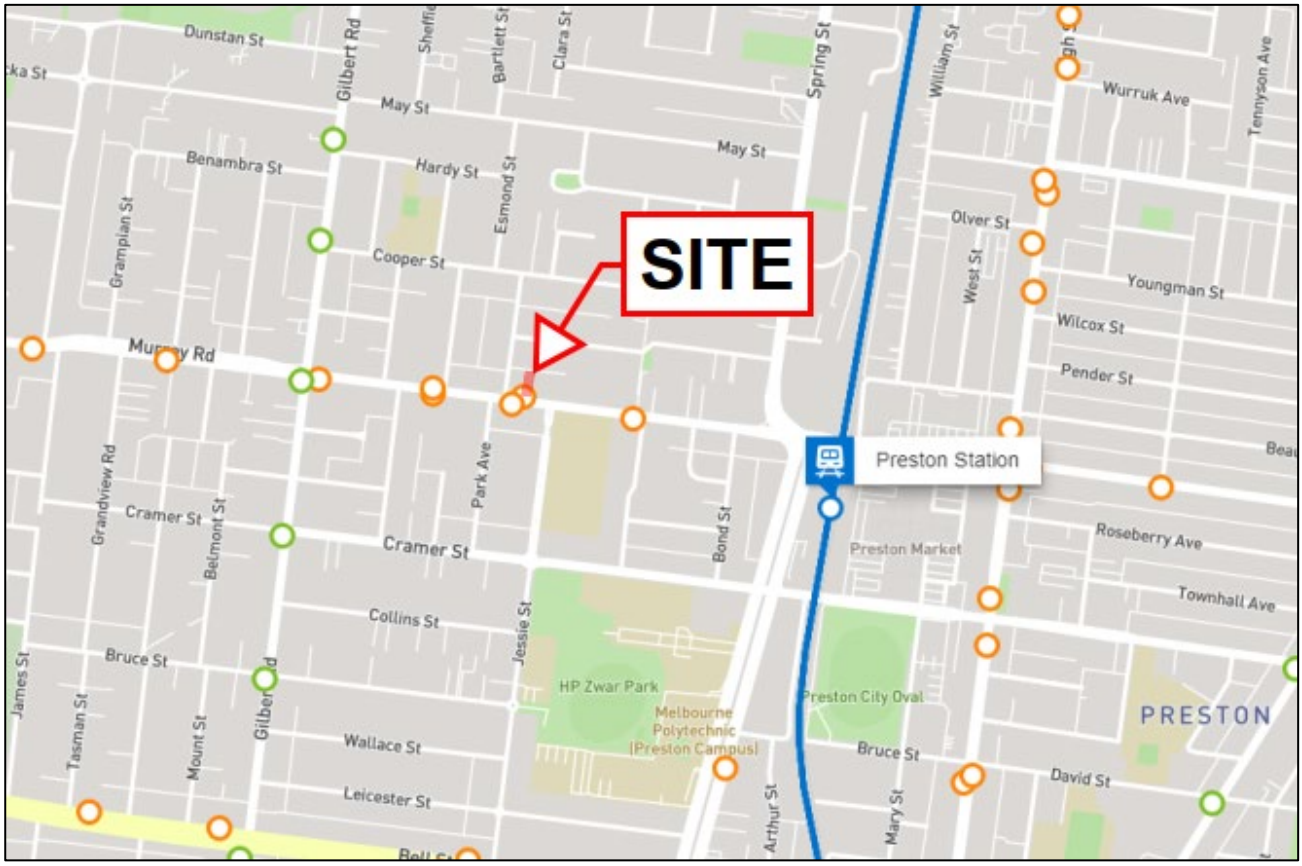


Figure 7: PTV Stops (Source: Public Transport Victoria, 2024)

2.3.2 Bicycle Network

A bicycle hoop is present along Murray Road approximately 5 metres from the site, providing 2 spaces for the general public.

Popular bicycle routes have been observed using Strava, a global activity logging software. The following heatmap is generated by the volume of cyclists on each road/bicycle corridor. Note that brighter regions indicate a larger volume, shown in the figure below.

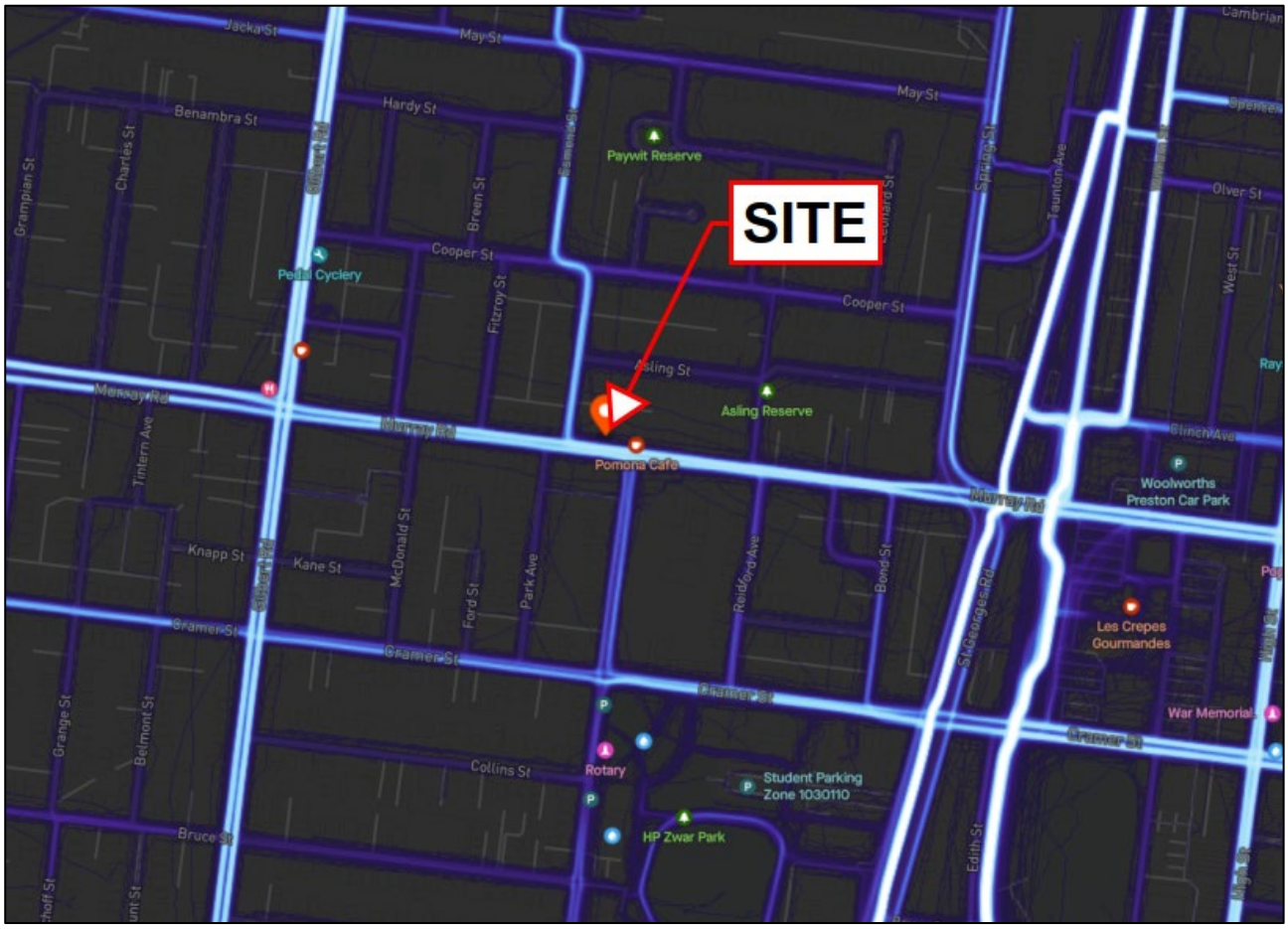


Figure 8: Bicycle Heat Map Proximate to the Site (Source: Strava, 2024)

There are numerous roads nearby the site which are frequented by a high volume of cyclists.

Murray Road nearby the site consists of dedicated bike lanes heading east and west. It connects to numerous local roads which allows cyclists to travel to nearby suburbs in all cardinal directions. East of Murray Road is St Georges Road which comprises of the Railway Reserve Bike Path, which connects users towards the Melbourne CBD towards the south. West of Murray Road is Gilbert Road which is bike friendly and connects users to nearby suburbs to the north and south.

There are numerous bike friendly roads connecting between the main roads and bike trails along the nearby parks which cyclists can traverse to access nearby amenities.

2.4 Nearby Amenities

The table and figure below display the proximity to nearby facilities from the subject site.

Table 3: Nearby Amenities

Purpose	Amenity	Proximity
Education	Preston West Primary School	90 m
	Melbourne Polytechnic Electrical School	440 m
	St Raphael's Primary School	470 m
Errands	Australia Post – Preston	1.01 km
	Preston Library	1.28 km
Food & Drink	Pomona Cafe	30 m
Grocery	Woolworths Preston	750 m
	Aldi Preston	970 m
Medical	Murray Road Medical Centre	730 m
	Chemist Warehouse	810 m
	Preston Market Medical Centre	960 m
Park	Margeret Walker Reserve	320 m
	Preston City Oval	810 m
Recreation	Preston Cricket Club	870 m
Restaurants	Murray Road Restaurants (2+)	<60 m
	Preston Market Restaurants (8+)	<650 m
Shopping Centre	Preston Market	650 m

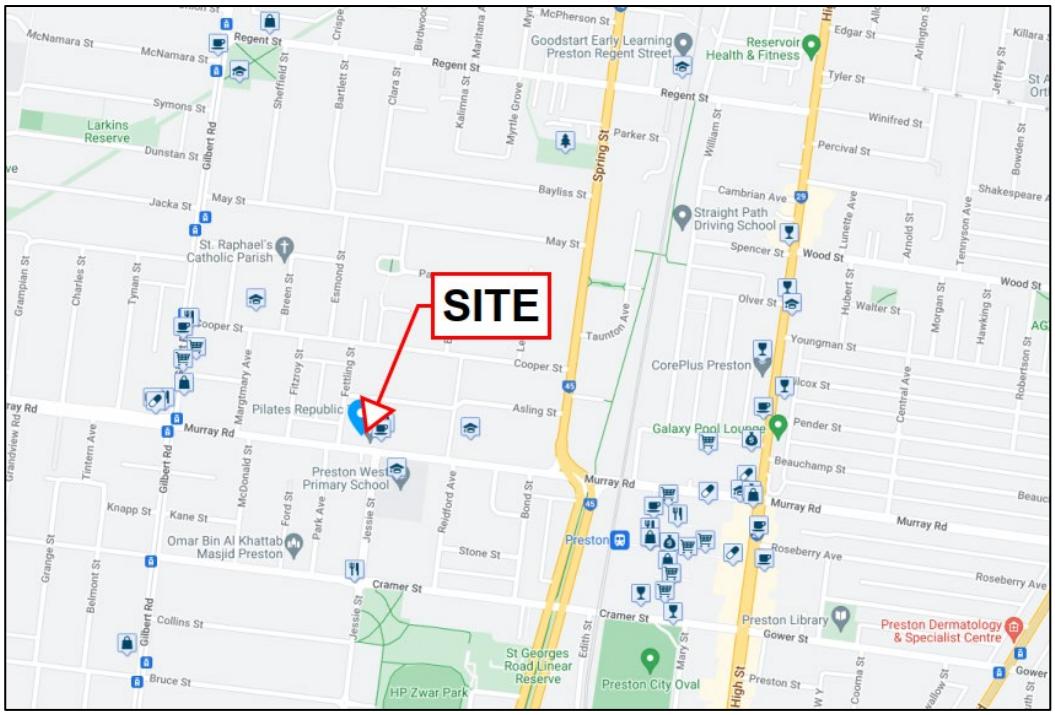


Figure 9: Nearby Amenities (Source: Walk Score, 2024)

2.5 Parking Demand Survey

Parking utilisation surveys have been obtained along the site frontage using NearMap to determine the existing demand in the area. The parking area surveyed is depicted in the figure below.

Figure 10: Parking Demand Survey (Source: NearMap, March 2024)

The table below summarises the existing parking inventory, controls, utilisation, and availability at the times of the survey.

Table 4: Existing On-Street Parking Demand Survey

Location	Side	Control	Inventory	Sat 10/02/24 3:27pm	Sun 19/11/23 4:50pm	Mon 13/11/23 2:46pm	Tue 20/09/23 2:25pm
Murray Road – From Fitzroy St to Reidford Ave	North	1P[a]	8	2	6	4	6
		-	15	10	9	9	5
	South	-	17	7	5	7	8
Fettling Street	East	-	10	1	1	0	4
	West	-	9	2	3	5	5
Park Avenue	West	3P[b]	8	5	3	6	6
Jessie Street	East	2P[c]	5	0	1	3	0
	West	2P[c]	4	2	3	3	1
Total			**76**	**29**	**31**	**37**	**35**
Available Parking Spaces				**47**	**45**	**39**	**41**

[a] Mon-Fri from 8:30am to 6:30pm, Sat from 8:00am to 12:30pm
[b] 8:00am to 11:00pm
[c] Mon-Fri from 8:00am to 6:00pm

Throughout the survey there have been at least 39 on-street parking spaces available near the subject site.

2.6 Motor Vehicle Ownership per Dwelling

Appendix B displays the motor vehicle ownership rates per apartment in postal code 3072 in which the subject site is located as reported on the Australian Bureau of Statistics (ABS) in 2021. Apartments are categorised by their number of bedrooms present to compare with the parking requirements in Table 1 of Clause 52.06-5 of the Planning Scheme.

The summary of this data regarding 3-bedroom dwellings is shown in the table below.

Table 5: Anticipated Car Ownership per Apartment in Postal Code 3072

No. of Vehicles Owned	No. of Bedrooms Per Dwelling
	3 Bedrooms
0	102
1	574
2	407
3	76
4	26
Total	1,185
Weighted Average No. of Vehicles Owned	**1.45**
Proportion Owning 0 Vehicles	**8.6%**
Proportion Owning 1 or Less Vehicles	**57.0%**

Residents of 3-bedroom apartments in postal code 3072 on average own 1.45 vehicles with 8.6% of these residents owning 0 vehicles and 57.0% owning 1 or less vehicles.

3 The Proposal

The Applicant is proposing a mixed-use development upon the subject land with the following inventory shown in the table below.

Table 6: Proposed Land Use Inventory

Land Use	Proposed Inventory
Land Use	Dwelling (Caretaker): 3-Bedroom – 1 no. Restaurant – 1 no.
Net Floor Area	Dwelling (Caretaker): 3-Bedroom – N/A Restaurant – 185.1 m^2
Floor Area Available to Public	Dwelling (Caretaker): 3-Bedroom – N/A Restaurant – 101 m^2
Car Parking Allocation	Car Parking Spaces – 1 space
Bike Parking Allocation	Bicycle Parking Spaces – 2 spaces

The laneway is proposed to be further constructed to enable vehicle access to the rear of the site. Further details regarding the proposal are attached in Appendix A.

4 Car Parking Assessment

4.1 Statutory Car Parking Requirements

The Planning Scheme sets out car parking requirements for developments under Clause 52.06. The car parking requirements and land uses outlined in Table 1 of Clause 52.06-5 is to be calculated using the Column B rate as the site lies within the PPTN, shown in the table below.

Table 7: Car Parking Requirement for the Proposed Development

Planning Scheme Use	No. / Area	Column B, Table 1, Clause 52.06-5 Rate	Parking Required
Dwelling (3+ Bedrooms)	1 no.	2 per Dwelling	2 no.
Dwelling (Visitor)	1 no.	0 per 5 dwellings for developments of 5 or more dwellings	0 no.
Restaurant	185.1 m^2	3.5 per 100 m^2 of leasable floor area	6 no.
Total			**8 no.**

The proposal has provision for 1 space for the required 8 spaces, thus is seeking a car parking reduction of 7 spaces as per the statutory car parking requirements of Clause 52.06-5 of the Planning Scheme.

The parking reduction is due to the provision of zero parking spaces to restaurant customers and reduction of 1 space for the 3-bedroom dwelling.

4.2 Assessment of Car Parking Reduction

The Planning Scheme allows for the car parking provision of a proposed development to be less than the statutory car parking requirement. Clause 52.06-3 states:

> *A permit is required to*: Reduce (include reduce to zero) the number of car parking spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay.

A two-step assessment is required in order to justify the car parking reduction being sought.

The first step is to assess the likely car parking requirement or demand generated by the proposed development, which is to undertake a Car Parking Demand Assessment. If the Car Parking Demand Assessment determines the likely demand will not be met on-site, the second step is to determine whether or not it is appropriate to reduce the number of car spaces provided.

4.3 Previous Use Parking Demand

The site previously comprised a restricted retail premise which would have had a car parking demand. The car parking requirements and land uses outlined in Table 1 of Clause 52.06-5 has been calculated using the Column A rate as the use was permitted before the PPTN was introduced in 2017, shown in the table below.

Table 8: Car Parking Requirement for the Previous Development

Planning Scheme Use	No. / Area	Column A, Table 1, Clause 52.06-5 Rate	Car Parking Required
Restricted Retail Premise	247 m^2	3 per 100 m^2 of leasable floor area	7 no.
Total			**7 no.**

The existing development has provision for 0 on-site parking spaces for the required 7 spaces, which would have required a parking reduction of 7 parking spaces. This matches the parking reduction being sought for the proposed development.

The parking demand for the previous use being reduced is largely for the customers for the site. Customers would have likely relied on on-street parking nearby the site. For the proposal, it is expected that the parking demand largely consisting of patrons would also utilise on-street parking nearby the site.

Therefore, it is expected that nearby on-street parking areas can accommodate the proposed demand as it is expected to be equal to that of the previously operating use.

4.4 Car Parking Demand Assessment

Clause 52.06-6 sets out that the Car Parking Demand Assessment must have regard to the following key factors listed in the table below.

Table 9: Car Parking Demand Assessment

Car Parking Demand Assessment - Clause 52.06-7 item	TTM Response
The car parking demand is assessed on the basis of the following matters, as appropriate:	
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	Not Applicable.
The variation of car parking demand likely to be generated by the proposed use over time	Not Applicable.
The short-stay and long-stay car parking demand likely to be generated by the proposed use	The restaurant staff and residents of the caretaker dwelling would be classed under long-term parking. The restaurant customers would be classified under short-term parking.
The availability of public transport in the locality of the land	As per Section 2.3.1, a variety of public transport modes are available within walking distance to the site including 1 train line, 1 tram route, and several bus routes.
The convenience of pedestrian and cyclist access to the land	As per Section 2.3.2, Murray Road, St Georges Road, and Gilbert Road have dedicated bike lanes or trails which allows cyclists to travel in all major cardinal directions to surrounding suburbs and directly to Melbourne CBD. Pedestrians have access to the site via the Murray Road footpath which is clear from vehicular movements. Pedestrians may cross Murray Road via the nearby signalised pedestrian crossing east of the site.
The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land	The proposal includes the provision of 2 bicycle spaces, exceeding the bicycle parking requirement by 1 space. A bicycle hoop exists along Murray Road approximately 5 metres away from the site, allowing for 2 bicycle spaces.
The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land	The ABS has observed 57% of 3-bedroom apartments within the subject site's postal code own 1 vehicle or less. Thus, the car parking space provided is likely to satisfy the parking demand for the 3-bedroom apartment.
Any empirical assessment or case study	As per Section 2.5, parking surveys observed at least 39 parking spaces available nearby the site.

4.5 Justification of Sought Parking Reduction

Considering the Clause 52.06 decision guidelines, the parking reduction is justified as follows in the table below.

Table 10: Justification of Sought Parking Reduction

Appropriateness to reduce the car parking requirement - Clause 52.06-7 item	TTM Response
Thus, the sought parking reduction is considered with regard to the following, as appropriate	
The Car Parking Demand Assessment	The parking reduction sought is equal to that of the previous use on the subject land. The demand of the proposed development would likely utilise nearby on-street parking similarly to the previous development, to the same extent. Parking surveys nearby the site observed at least 39 spaces available, significantly greater than the 7 space reduction being sought.
Any relevant local planning policy or incorporated plan	Not Applicable.
The availability of alternative car parking in the locality of the land, including: • Efficiencies gained from the consolidation of shared car parking spaces. • Public car parks intended to serve the land. • On street parking in non-residential zones. • Streets in residential zones specifically managed for non-residential parking.	As per Section 2.2, Murray Road, Park Avenue and Jessie Street have time limitations for on-street parking during business hours nearby the site. Thus, they are intended for non-residential uses including the proposed restaurant.
On street parking in residential zones in the locality of the land that is intended to be for residential use	Fettling Steet nearby the site has no car parking time restrictions and was less than 50% utilised throughout the parking survey.
The practicality of providing car parking on the site, particularly for lots of less than 300 square metres	As per Section 2.1, the subject site area is approximately 247 m^2. Parking is being provided along the entire extent of the north boundary adjacent to the laneway. Providing additional parking spaces at the rear of the site would require a significant decrease to the floor area of the development. The parking reduction being sought is due to the insufficient provision of parking largely to patrons. If additional parking spaces were provided at the rear of the site, patrons are unlikely to use access them via the laneway due to the greater convenience of on-street parking being near the restaurant front entrance. Thus, providing additional parking spaces on site is impractical.

Appropriateness to reduce the car parking requirement - Clause 52.06-7 item	TTM Response
Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre	No Impact.
The future growth and development of any nearby activity centre	Not Applicable.
Any car parking deficiency associated with the existing use of the land	Not Applicable.
Any credit that should be allowed for car parking spaces provided on common land or by a Special Charge Scheme or cash-in-lieu payment	Not Applicable.
Local traffic management in the locality of the land	Not Applicable.
The impact of fewer car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas	As per Section 2.4, there are numerous nearby amenities nearby the site.
The need to create safe, functional, and attractive parking areas	Not Applicable.
Access to or provision of alternative transport modes to and from the land	As per Section 2.3: • A variety of public transport options are available, including a train route and numerous train, tram, and bus routes within walking distance to the site. • A vast network of cycling routes surrounds the site in all major cardinal directions including towards Melbourne CBD.
The equity of reducing the car parking requirement having regard to any historic contributions by existing businesses	Not Applicable.
The character of the surrounding area and whether reducing the car parking provision would result in a quality/positive urban design outcome	Not Applicable.
Any other matter specified in a schedule to the Parking Overlay	As per Section 2.1, the site is located within the PPTN overlay.

TTM Consulting are satisfied that the sought parking reduction is appropriate based on the objectives outlined for Clause 52.06.

5 Bicycle Parking Assessment

5.1 Statutory Car Parking Requirements

The Planning Scheme sets out bicycle parking requirements for developments under Clause 52.34. The bicycle parking requirements and land uses outlined in Table 1 of Clause 52.34-5 is calculated as shown in the table below, noting that the development is less than 4 storeys and the public floor area available to the public is approximately 101 square metres.

Table 11: Bicycle Parking Requirement for the Proposed Development

Planning Scheme Use	Commuter	Inventory	Table 1, Clause 52.34-5 Rate	Bicycle Parking Space Requirement
Dwelling	Employee / **Resident**	0 no.	If development is 4 storeys or more, 1 per 5 dwellings	0 no.
	Visitor / Shopper / Student	0 no.	If development is 4 storeys or more, 1 per 10 dwellings	0 no.
Restaurant	**Employee** / Resident	101 m^2	1 per 100 m^2 of floor area available to the public	1 no.
	Visitor / **Shopper** / Student	101 m^2	2 plus 1 per 200 m^2 of floor area available to the public if the floor area available to the public exceeds 400 m^2	0 no.
Total				**1 no.**

The Applicant has provision for a Mona Lisa bicycle rack, which allows for 2 bicycles to park. The total requirement is 1 space, thus the provision satisfies the statutory bicycle parking requirements of Clause 52.34-5 of the Planning Scheme.

Furthermore, Tables 2 and 3 of Clause 52.34-5 of the Planning Scheme discuss the requirements for bicycle amenities. As fewer than 5 bicycle parking spaces are provided for employees, there is no need for additional amenities.

6 Parking and Access Area Design

6.1 Site Access

Site access to the car park is via the laneway connecting to Fettling Street. The laneway is at least 3 metres wide. The car space is accessed directly from the laneway. The accessway dimensions within the site comply with the Design Standards of the Planning Scheme Clause 52.06-9.

6.2 Car Parking Spaces

The proposal comprises of 1 car parking space dimensioned at least 4.9 metres long by 2.6 metres wide. There is additional spacing adjacent to both sides of the car space, providing an effective width of at least 3.4 metres. The setback from the opposite end of the laneway is at least 6.29 metres wide, satisfying the dimension criterion of the car park design standards under Clause 52.06-9 of the Planning Scheme.

Swept path diagrams have been generated by TTM Consulting using the software AutoDesk Vehicle Tracking V25 using the B85 Vehicle from AS2890.1-2004, attached in Appendix C. Vehicles can access the spaces using at most a single corrective manoeuvre in one of its trips. The vehicles can enter and exit Fettling Street to/from the site via the laneway in a forward direction.

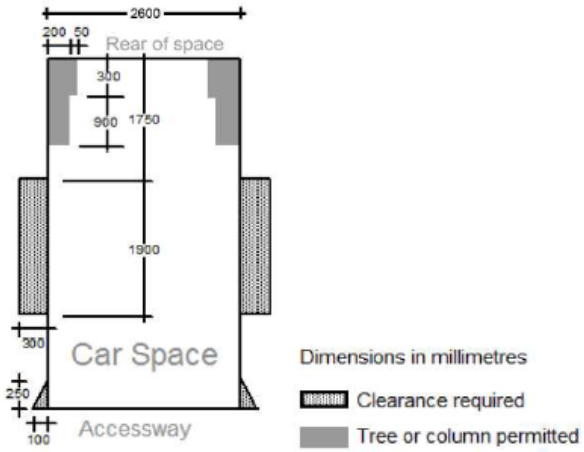
Thus, the car parking dimensions is appropriate from a traffic perspective in accordance with Clause 52.06-9 of the Planning Scheme.

6.3 Response to Clause 52.06-9 Design Standards

Clause 52.06-9 of the Planning Scheme outlines design criteria for accessways, car parking spaces, gradients, and mechanical parking. The table below provides a response to each of the relevant design criteria.

Table 12: Response to Clause 52.06-9 Design Standards

Clause 52.06-9 design criteria	TTM Response
Note: Design standards 1, 3, 6 and 7 do not apply to an application to construct one dwelling on a lot.	
Design Standard 1 - Accessways	
Be at least 3 metres wide.	Satisfied.
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Satisfied.
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.	Not Applicable.
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheelbase of 2.8 metres.	Satisfied.
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	Not Applicable.
Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Not Applicable.
Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres 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 landscaping in those areas is less than 900mm in height.	Not Applicable.
If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway.	Not Applicable.

<table>
<tr><th>Clause 52.06-9 design criteria</th><th>TTM Response</th></tr>
<tr><td colspan="2">Design Standard 2 – Car parking spaces</td></tr>
<tr><td>Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2.
Table 2: Minimum dimensions of car parking spaces and accessways
<table>
<tr><th>Angle of car parking spaces to access way</th><th>Accessway width</th><th>Car space width</th><th>Car space length</th></tr>
<tr><td>Parallel</td><td>3.6 m</td><td>2.3 m</td><td>6.7 m</td></tr>
<tr><td>45°</td><td>3.5 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td>60°</td><td>4.9 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td>90°</td><td>6.4 m</td><td>2.6 m</td><td>4.9 m</td></tr>
<tr><td></td><td>5.8 m</td><td>2.8 m</td><td>4.9 m</td></tr>
<tr><td></td><td>5.2 m</td><td>3.0 m</td><td>4.9 m</td></tr>
<tr><td></td><td>4.8 m</td><td>3.2 m</td><td>4.9 m</td></tr>
</table>
Note Some dimensions in Table 2 vary from those shown in the Australian Standard AS2890.1-2004 (off street). The dimensions shown in Table 2 allocate more space to aisle widths and less to marked spaces to provide improved operation and access. The dimensions in Table 2 are to be used in preference to the Australian Standard AS2890.1-2004 (off street) except for disabled spaces which must achieve Australian Standard AS2890.6-2009 (disabled).</td><td>Satisfied.</td></tr>
<tr><td>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, other than:
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.
A structure, which may project into the space if it is at least 2.1 metres above the space.
Diagram 1 Clearance to car parking spaces.
 
</td><td>Satisfied.</td></tr>
<tr><td>Car spaces in garages or carports must be at least 6 metres long and 3.5 metres wide for a single space and 5.5 metres wide for a double space measured inside the garage or carport.</td><td>Not Applicable.</td></tr>
<tr><td>Where parking spaces are provided in tandem (one space behind the other) an additional 500 mm in length must be provided between each space.</td><td>Not Applicable.</td></tr>
</table>

<table>
<tr><th>Clause 52.06-9 design criteria</th><th>TTM Response</th></tr>
<tr><td>Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.</td><td>Not Applicable.</td></tr>
<tr><td>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 specified in Table 2 by 500mm.</td><td>Not Applicable.</td></tr>
<tr><td colspan="2">Design Standard 3 – Gradients</td></tr>
<tr><td>Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres 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.</td><td>Satisfied.</td></tr>
<tr><td>Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction.
<table>
<tr><th>Type</th><th>Length Ramp</th><th>Max Grade</th></tr>
<tr><td rowspan="2">Public</td><td><20m</td><td>1:5</td></tr>
<tr><td>>20m</td><td>1:6</td></tr>
<tr><td rowspan="2">Private</td><td><20m</td><td>1:4</td></tr>
<tr><td>>20m</td><td>1:5</td></tr>
</table></td><td>Satisfied.</td></tr>
<tr><td>Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) 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 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.</td><td>Satisfied.</td></tr>
<tr><td colspan="2">Design Standard 4 – Mechanical Parking</td></tr>
<tr><td>At least 25 per cent of the mechanical car parking spaces can accommodate a vehicle height of at least 1.8 metres.</td><td>Not Applicable.</td></tr>
<tr><td>Car parking spaces that require the operation of the system are not allocated to visitors unless used in a valet parking situation.</td><td>Not Applicable.</td></tr>
<tr><td>The design and operation is to the satisfaction of the responsible authority.</td><td>Not Applicable.</td></tr>
</table>

7 Summary and Conclusions

The Applicant is proposing a mixed-use development at 488 Murray Road, Preston. The analysis of the development is summarised as follows:

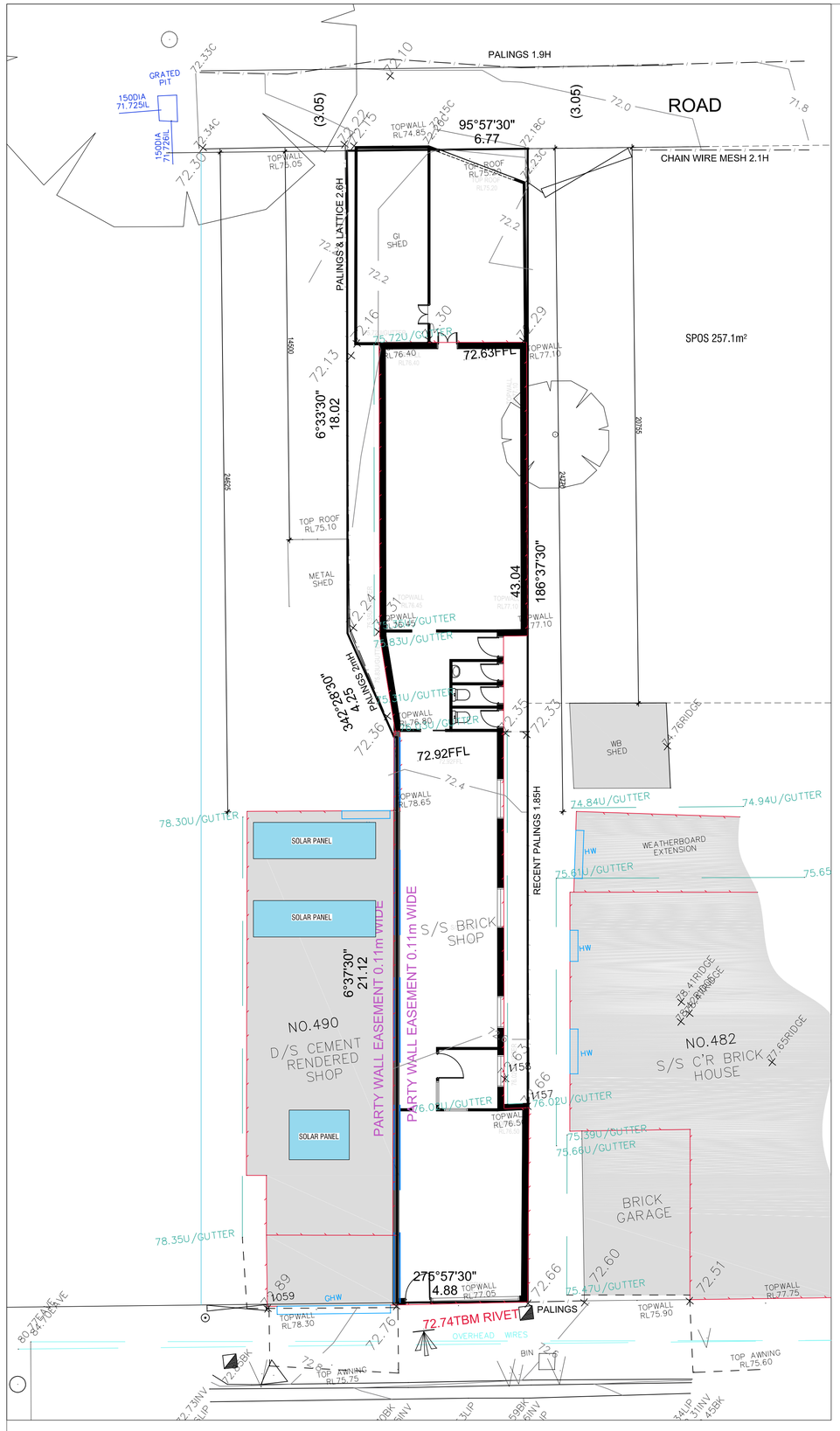
- The Applicant has provision for 1 car parking space, thus is requesting a 7 car parking space reduction as per the car parking requirements from Clause 52.06-5 of the Planning Scheme. TTM Consulting deems the reduction appropriate on the following grounds:
    - The parking reduction being sought for the proposed development (7 spaces) is equal to that of the shortfall for the previous restricted retail premises (7 spaces).
    - The site is located within the PPTN, such that a variety of public transport modes including trains, trams and buses are accessible within walking distance to the site.
    - Parking surveys observed at least 39 off-site parking spaces were available nearby the site, this is significantly greater than the 7 space parking reduction being sought.
    - ABS has observed 57% of 3-bedroom apartments own 1 vehicle or less within the subject site's postal area, thus the provision of 1 space is appropriate for the dwelling.
    - The parking reduction is only applicable to restaurant customers, who are likely to park on-street due to the low utilisation of on-street spaces, and it being relatively more visible than the on-site car park at the rear of the site accessed via a laneway.
    - It is impractical to provide additional parking spaces on a site with a site area less than 300 square metres.
    - The mixed-use development is within a single title; thus it is likely the owner of the caretaker residence would be the owner of the restaurant.
- The Applicant has provision for 2 bicycle parking spaces, satisfying the bicycle parking requirements as per Clause 52.34-5 of the Planning Scheme.
- Swept path diagrams confirm the parking space can be accessed using a most a single corrective manoeuvre in one of its trips. The vehicles can enter and exit the site via the laneway to Fettling Street in a forward direction.
- The proposed car park access is appropriately designed in accordance with Clause 52.06-9 of the Planning Scheme.

The proposed development is considered appropriate from a traffic and parking perspective.

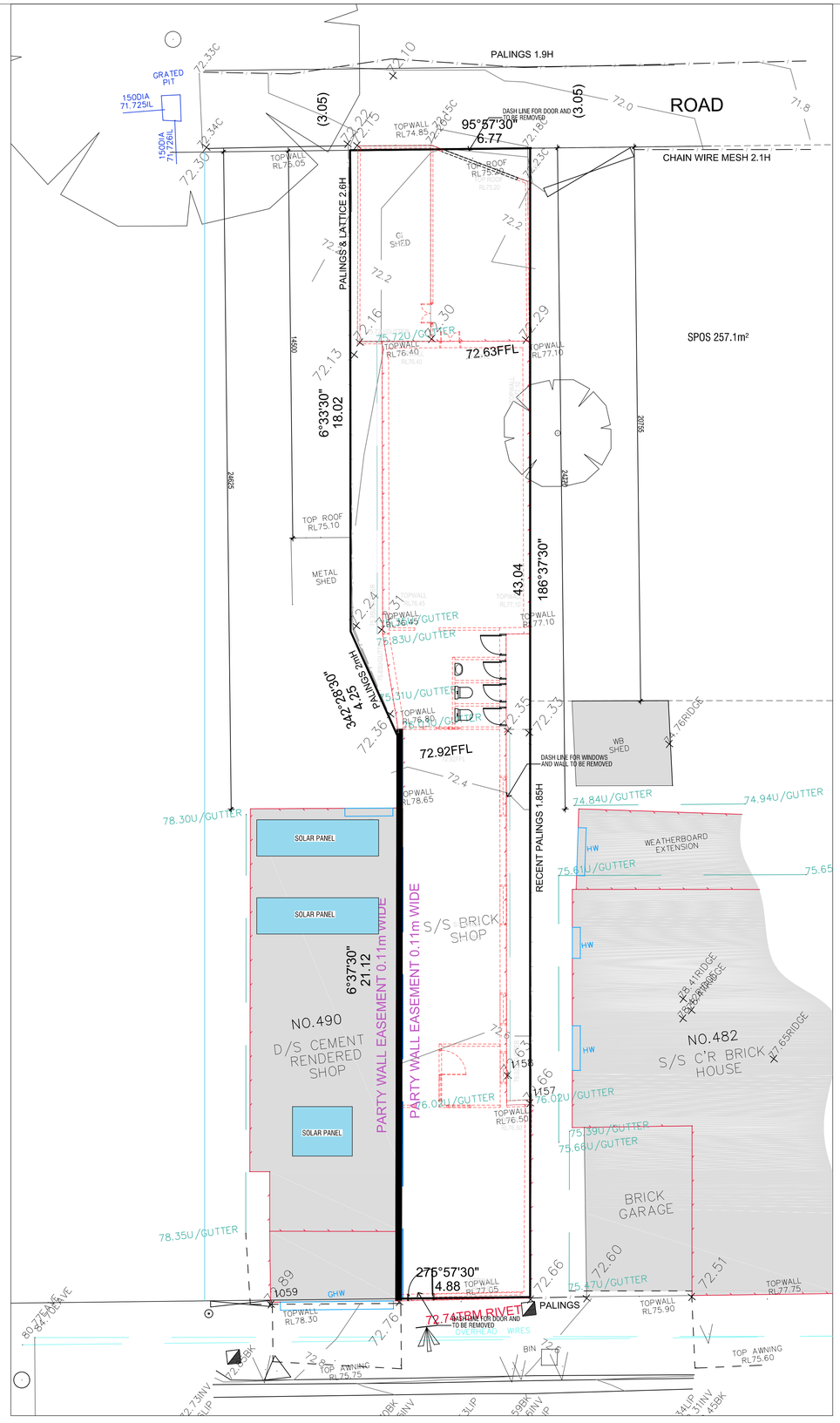
TTM Consulting (Vic) Pty Ltd

Adem Sahin

Appendix A Design Drawings



EXISTING FLOOR PLAN
SCALE 1:100



DEMOLISHED PLAN
SCALE 1:100

LEGEND

EXISTING STRUCTURE TO BE RETAINED

EXISTING STRUCTURE TO BE DEMOLISHED

NOTE: ALL DIMENSIONS MUST BE MEASURED ON SITE DURING CONSTRUCTION ESPECIALLY ROOF TRUSS

Revisions		
Rev-A	12.02.2024	TOWN PLANNING SUBMISSION
Rev-B	28.06.2024	RESPOND TO COUNCIL'S RFI
Rev-C	12.08.2024	RESPOND TO COUNCIL'S RFI

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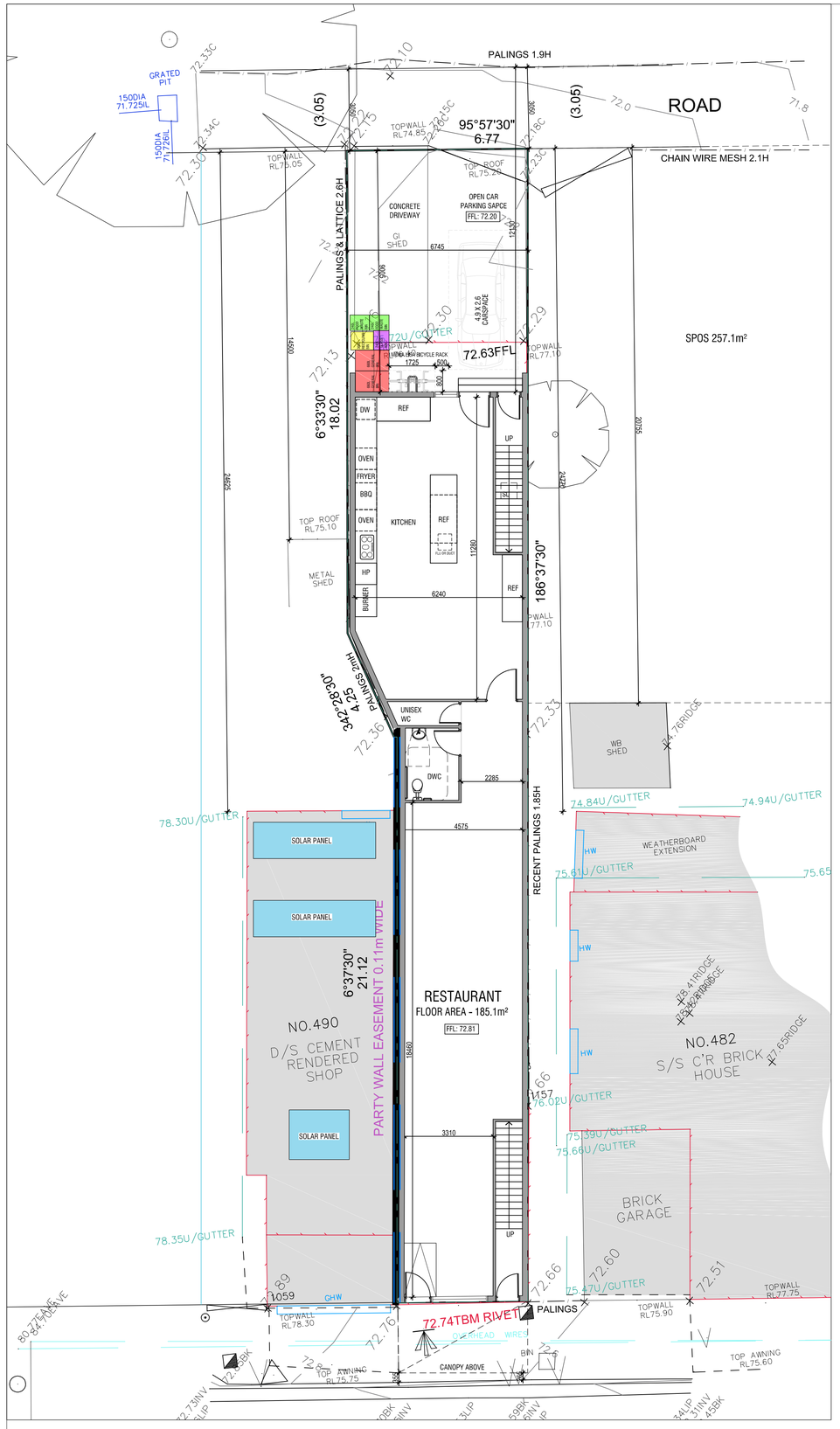
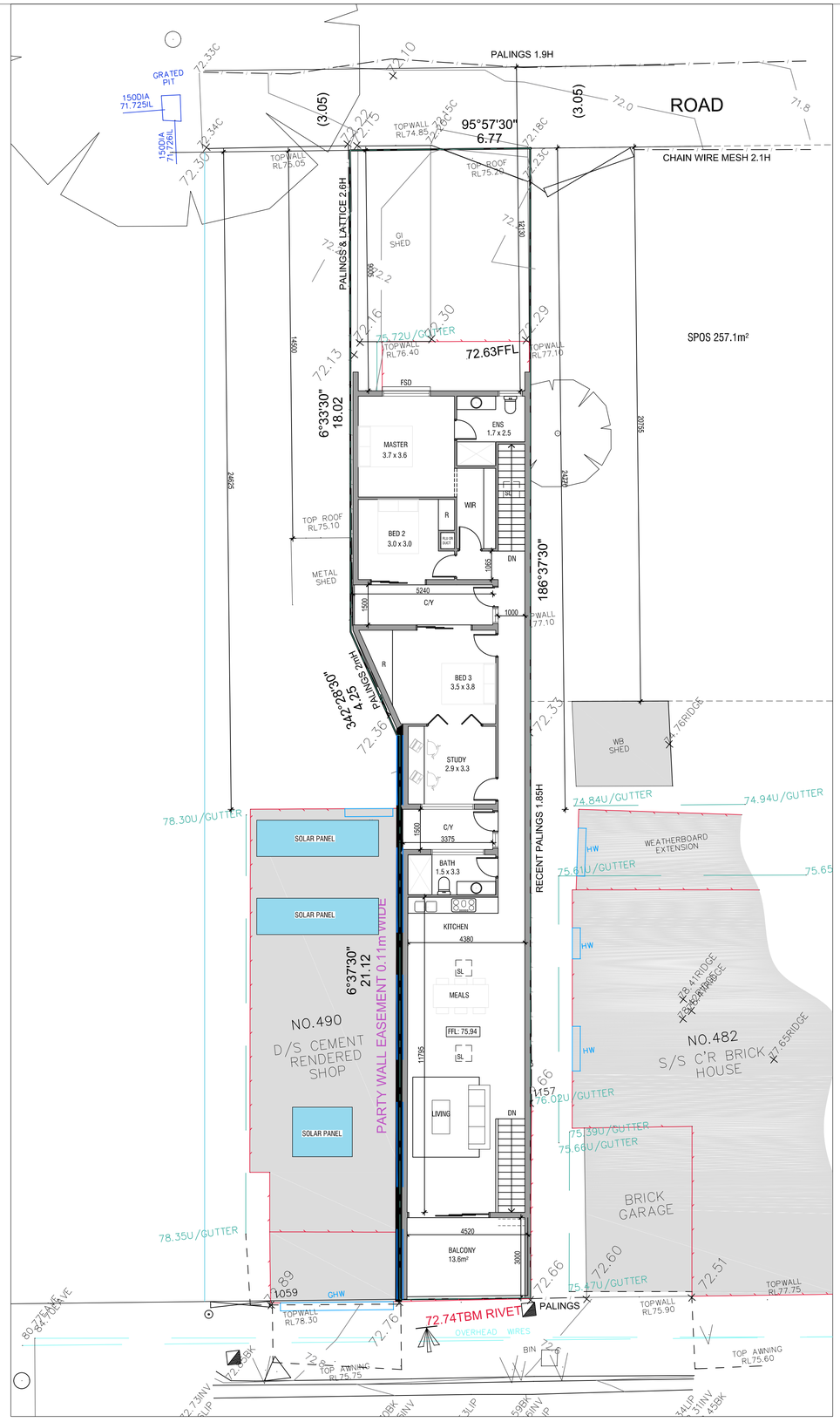
DATE	SCALE	DRAWN BY	CHECKED BY	PROJECT No.
JULY 2023	1:100@A1	WM	CJM	7661

EXISTING AND DEMOLISH PLAN

MIXED USED DEVELOPMENT
488 MURRAY ROAD,
PRESTON

TP01
REV-C





AREA SCHEDULE

RESTAURANT/CARETAKER

GROUND FLOOR		185.1m²
FIRST FLOOR		162.4m²
BALCONY		14.7m²
TOTAL AREA:	39.0SQ	362.2m²

SITE

SITE AREA		247.3m²
SITE COVERAGE	74.9%	185.1m²
SITE PERMEABILITY	0%	0m²

NORTH

Revisions		
Rev-A	12.02.2024	TOWN PLANNING SUBMISSION
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GROUND & FIRST FLOOR PLAN

MIXED USED DEVELOPMENT
488 MURRAY ROAD,
PRESTON

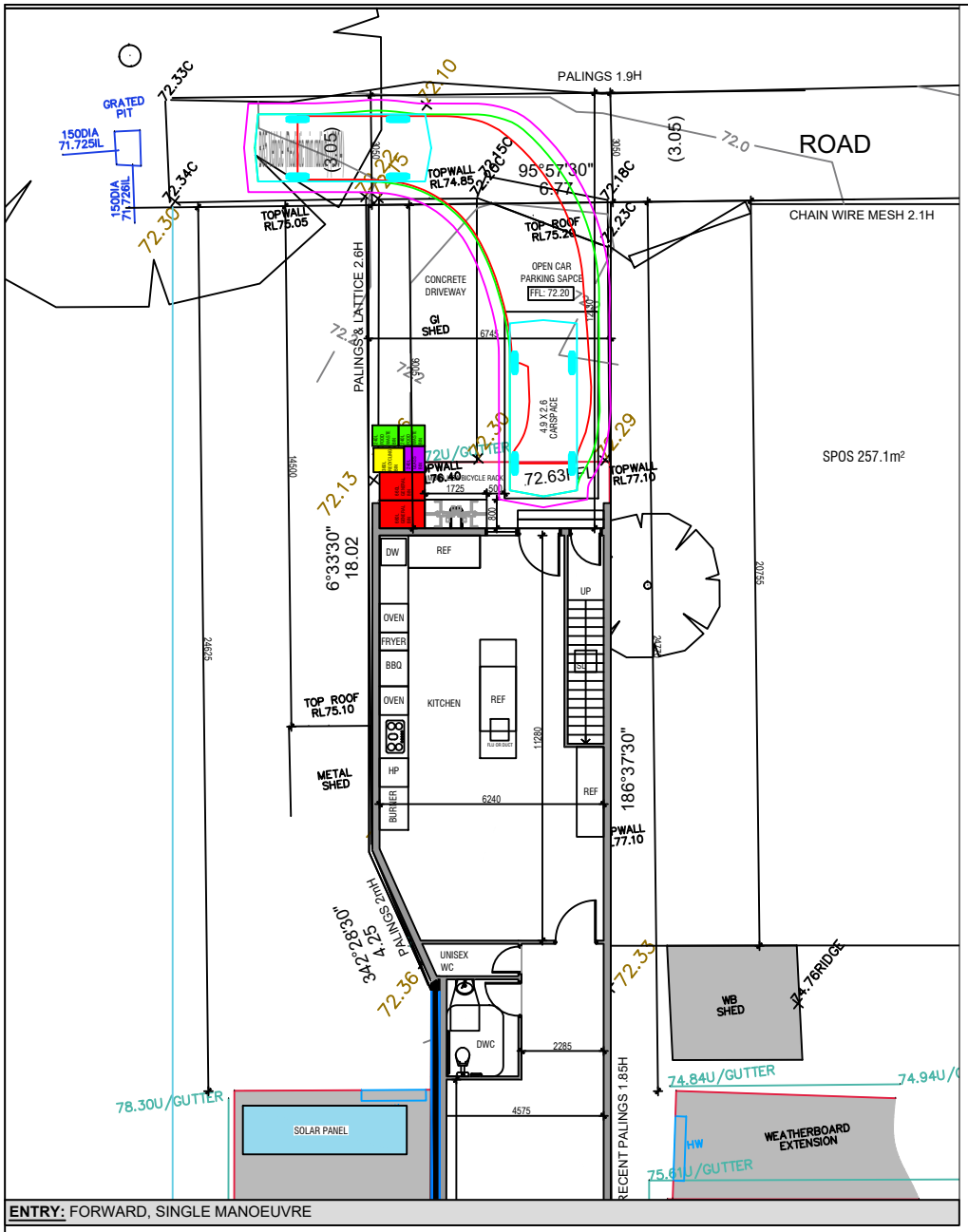
TP02 REV-C

Appendix B Motor Vehicle Ownership

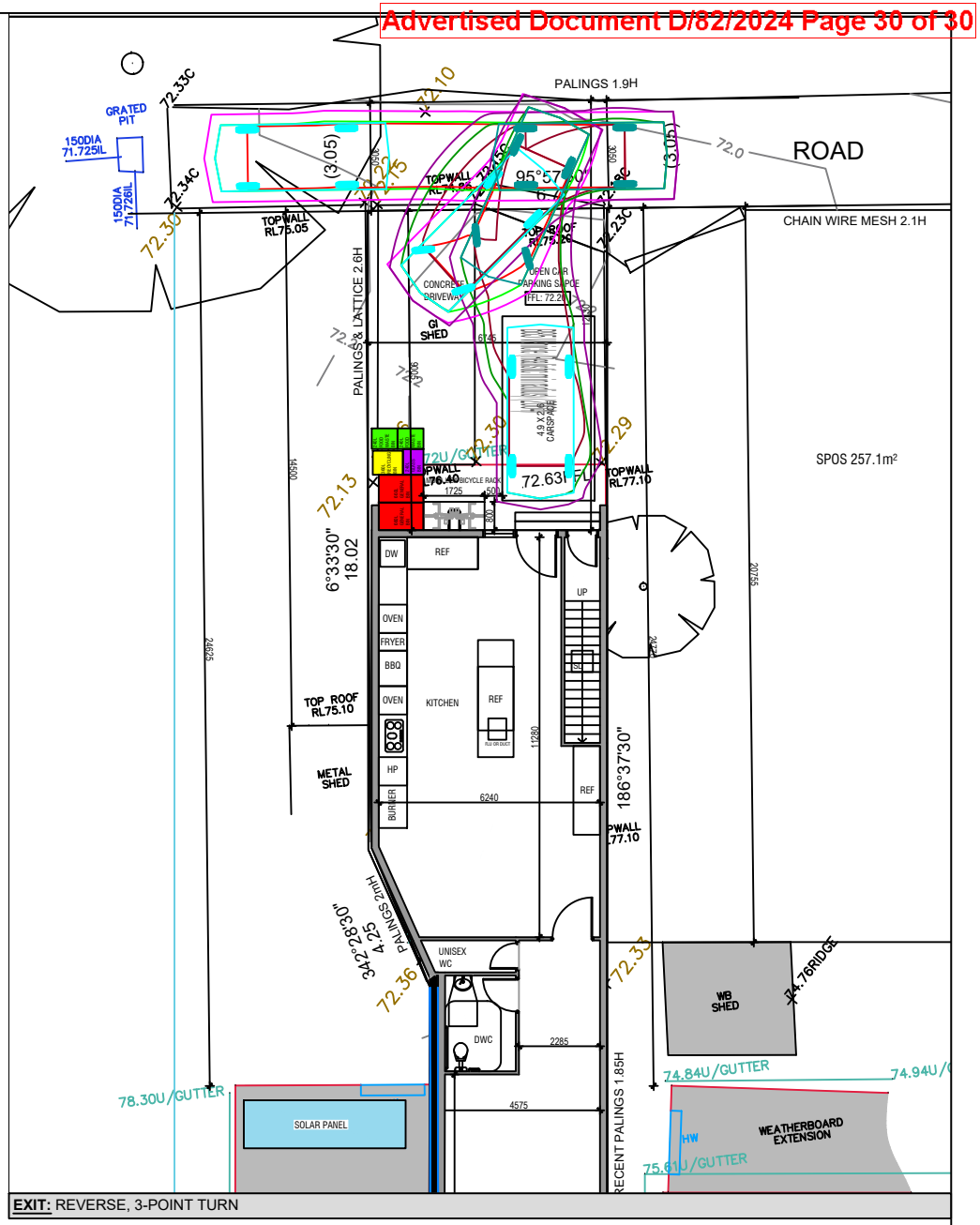
Australian Bureau of Statistics							
2021 Census of Population and Housing							
Postal Area (POA) - 3072							
Dwelling Structure (STRD) - Apartment							
Number of Bedrooms in Apartment (BEDD)	Number of Motor Vehicles (VEHD)						Car Ownership
	0	1	2	3	4	Total	
None	27	18	0	0	0	45	0.40
1 bed	206	321	32	0	3	562	0.71
2 bed	329	1278	495	37	6	2,145	1.12
3 bed	102	574	407	76	26	1,185	1.45
4 bed	14	40	67	15	11	147	1.79
5 bed	0	0	0	5	0	5	3.00

Number of Bedrooms in Apartment (BEDD)	Dwellings with Zero Motor Vehicles		Dwellings with One or less Motor Vehicles	
	No.	%	No.	%
None	27	60.0%	45	100.0%
1 bed	206	36.7%	527	93.8%
2 bed	329	15.3%	1607	74.9%
3 bed	102	8.6%	676	57.0%
4 bed	14	9.5%	54	36.7%
5 bed	0	0.0%	0	0.0%

Appendix C Swept Path Diagrams



ENTRY: FORWARD, SINGLE MANOEUVRE



EXIT: REVERSE, 3-POINT TURN

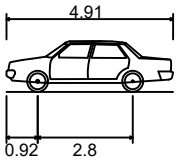
Wheel path

Vehicle Overhang

Vehicle Overhang + 300mm Clearance

Issue	Appd	Date	Comments
B	AS	14/08/24	Amendment to Design Drawing
A	AS	04/06/24	Original Issue

Swept Path Diagram Prepared using AutoDesk Vehicle Tracking v25



B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.499m
Min Body Ground Clearance	0.120m
Track Width	1.770m
Lock to Lock Time	4.00sec
Curb to Curb Turning Radius	5.750m

ttm
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W : www.ttmgroup.com.au

PROPOSED MIXED USE DEVELOPMENT
488 MURRAY ROAD, PRESTON
SWEPT PATH DIAGRAMS

Scale: 1:200 @ A4

Drawing No : 24MET0041D01

Sheet No : 1 Issue : B