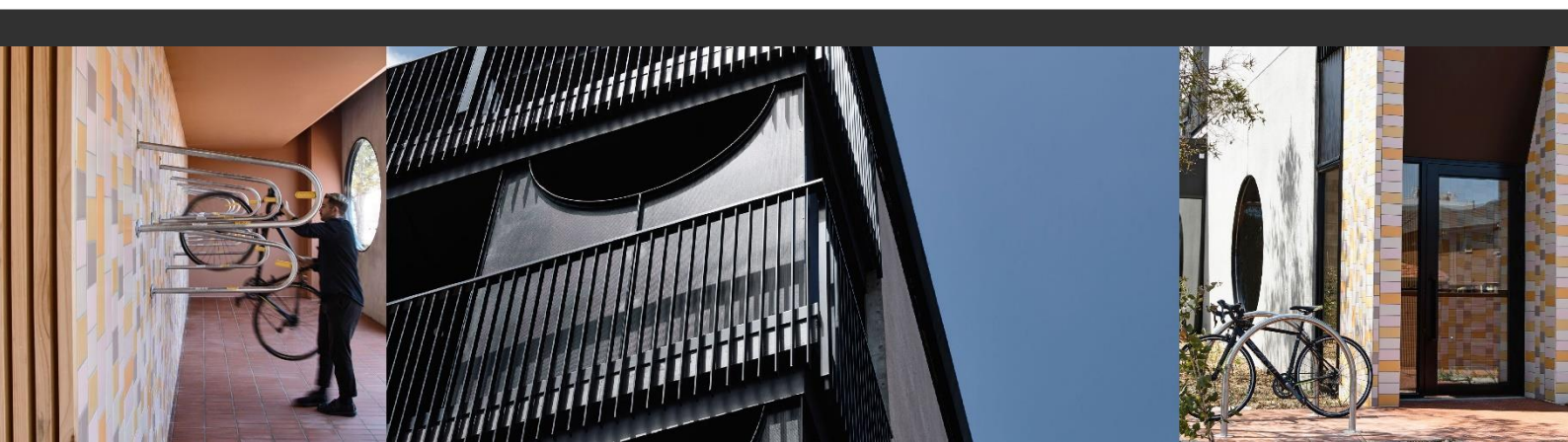


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18-24 Scott Street, Dandenong Transport Impact Assessment



240430TIA001B-F
16 December 2024

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DOCUMENT INFORMATION

Prepared for	Scott St Dandenong Pty Ltd		
File Name	240430TIA001B-F	Report Date	16 December 2024
Prepared by	MG	Reviewed by	VPG

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1 INTRODUCTION

onemilegrid has been requested by Scott St Dandenong Pty Ltd to undertake a Transport Impact Assessment of the proposed residential development at 18-24 Scott Street, Dandenong.

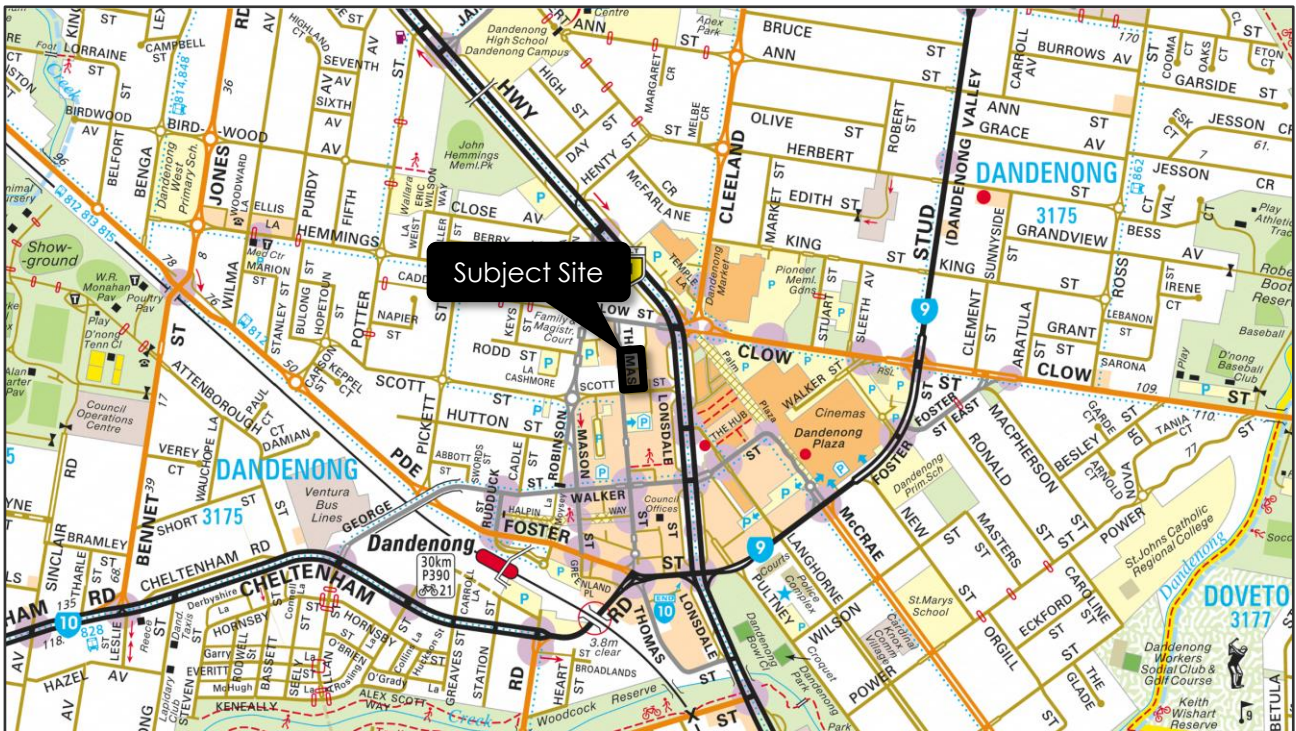
As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic data has been sourced, and relevant background information has been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The [subject site](#) is addressed as 18-24 Scott Street, Dandenong, and is located on the north side of Scott Street, approximately 80 m west of Lonsdale Street as shown in Figure 1.

Figure 1 Site Location



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The subject site occupies a total area of approximately 836 m² and has road frontages to Scott Street, Lois Lane and McQuade Lane of 20 metres each.

The subject site is currently vacant however it is being utilised for informal off-street parking, with vehicle access available from McQuade Lane and Lois Lane.

The subject site is located within the Dandenong Activity Centre and accordingly land use in the immediate vicinity of the site is mixed in nature. Largely, the land uses are commercial and retail in nature with the Lonsdale Street shopping strip and Dandenong Plaza to the east of the site and Dandenong station to the south.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context (13 May 2024)



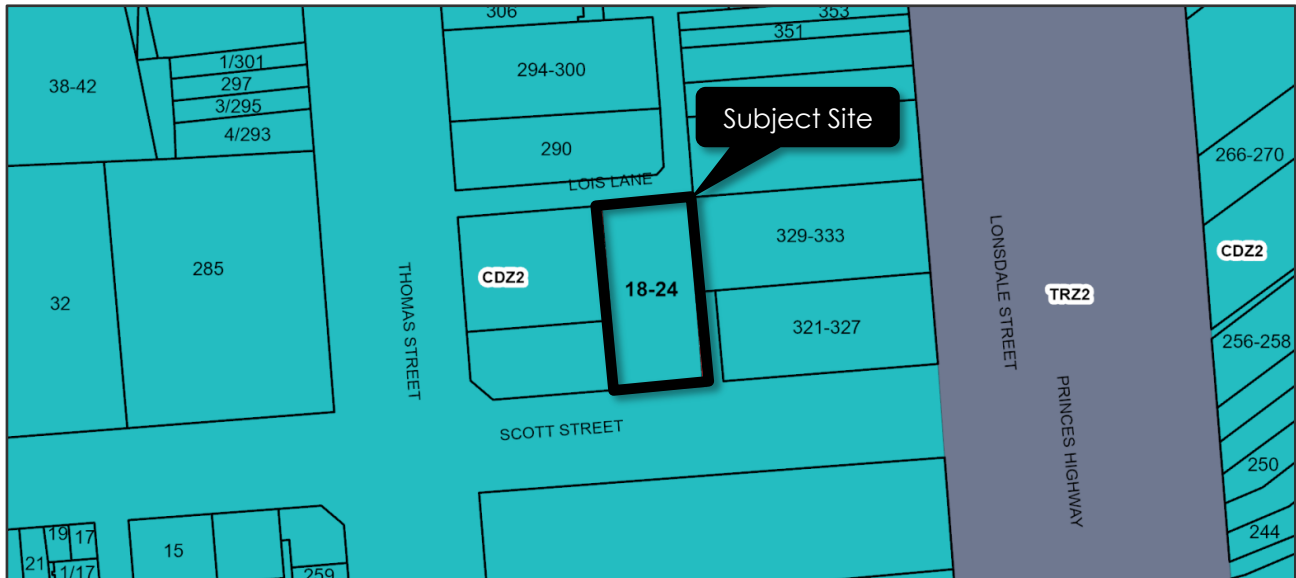
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2.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a Comprehensive Development Zone – Schedule 2 (CDZ2).

Figure 3 Planning Scheme Zones



Schedule 2 to Clause 37.02 Comprehensive Development Plan, applies to land within the Dandenong Activity Centre, with the schedule divided into six distinct precincts, of which the subject site is located within Precinct A.

The schedule states in relation to Precinct A:

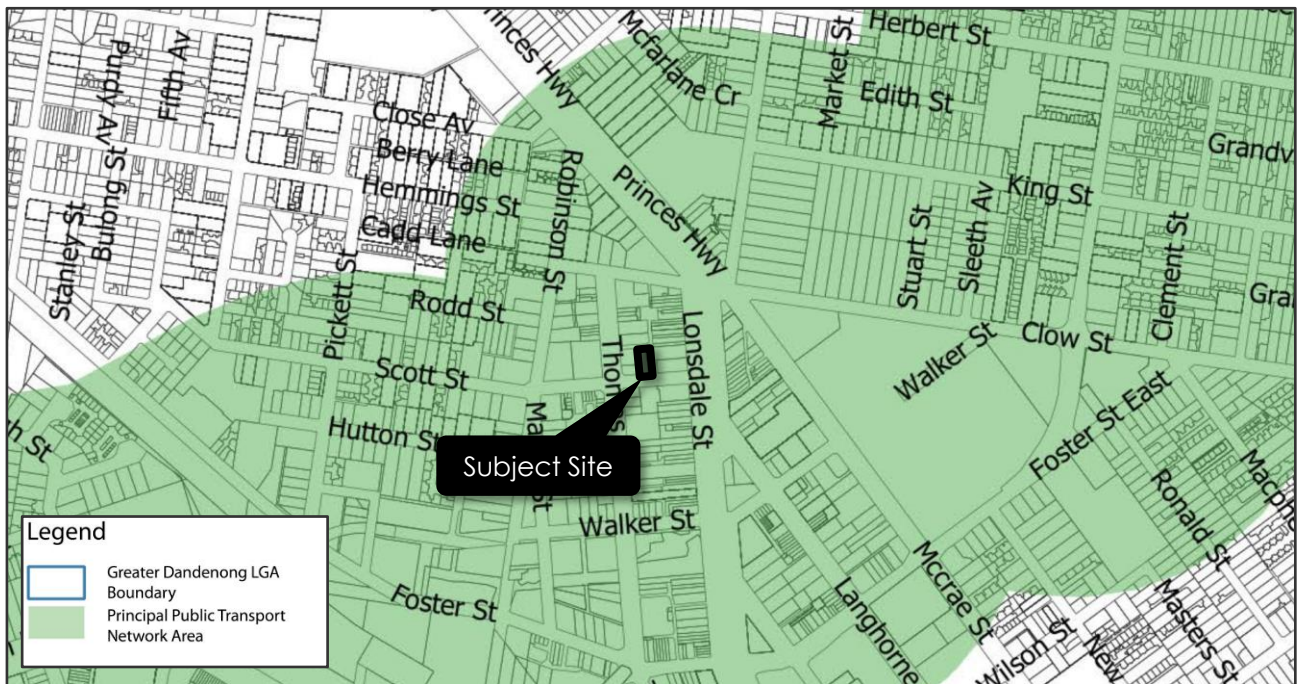
This precinct together with Precinct B form the core street front retail precincts within the Dandenong Activity Centre and will promote a greater diversity of use including a mixture of commercial uses at ground level with offices, and accommodation above to create 24 hour activity. It forms a vital part of the spine of consolidation.

The land use objectives of this Precinct are:

- To consolidate and enhance street frontage retailing.
- To encourage a variety of commercial, shops, food and drink premises at ground floor level. Commercial uses may include food and drink premises, offices, shops and service industry facilities such as a postal agency which are compatible with the location.
- To facilitate the creation of an active, pedestrian focused 'City Street' from Lonsdale Street to Dandenong Railway Precinct, which will significantly enhance connectivity of the city centre with the main public transport interchange.
- To encourage high density office and residential development above the ground level.
- To encourage community and residentially compatible entertainment based facilities.
- To encourage the location of tertiary, adult and other compatible learning and educational facilities.
- To provide innovative design and building frontages which contribute to the aesthetics and amenity of the area.
- To require active frontages at street level and integration with the public realm.
- To develop a strong public realm and public open space network as an extension to private space.
- To encourage safe and efficient pedestrian movement.

In addition, the site is located within the Principal Public Transport Network Area as shown in Figure 4

Figure 4 Principal Public Transport Network Area Map



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2.3 Road Network

2.3.1 Scott Street

Scott Street is a local road generally aligned east-west, running between Lonsdale Street in the east, and the Carson Street / Bulong Street / Hopetoun Street roundabout intersection to the west.

Scott Street provides a single traffic lane and line marked parallel parking lane in each direction adjacent to the site. Parallel parking spaces are provided on both sides of the road, generally restricted to 1-hour ticketed parking between 9am and 5pm, Monday to Friday and between 9am and 1pm on Saturdays.

A 40 km/h speed limit applies to Scott Street in the vicinity of the site.

The cross-section of Scott Street at the frontage of the site is shown in Figure 5.

Figure 5 Scott Street Cross-Section



Image date: July 2024

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2.3.2 Lois Lane

Lois Lane is a local laneway arranged in a reverse 'L' shape which runs between Thomas Street in the west, and Clow Street to the north. Lois Lane is largely constructed with an asphalt surface and provides rear car parking and service access to properties fronting Lonsdale Street to the east and Thomas Street to the west.

Lois Lane has a trafficable carriageway width of 5.5 m allowing for vehicle movements in each direction adjacent the site. 'No Stopping' restrictions are generally provided on both sides of the laneway restricting any parking opportunities, although a 'Loading Zone' is provided on the northern side of the laneway adjacent Thomas Street.

The cross-section of the E-W aligned section of Lois Lane at the rear of the site is shown in Figure 6, and the cross-section of the N-S aligned section also at the rear of the site is shown in Figure 7.

Figure 6 Lois Lane Cross-Section (E-W section)

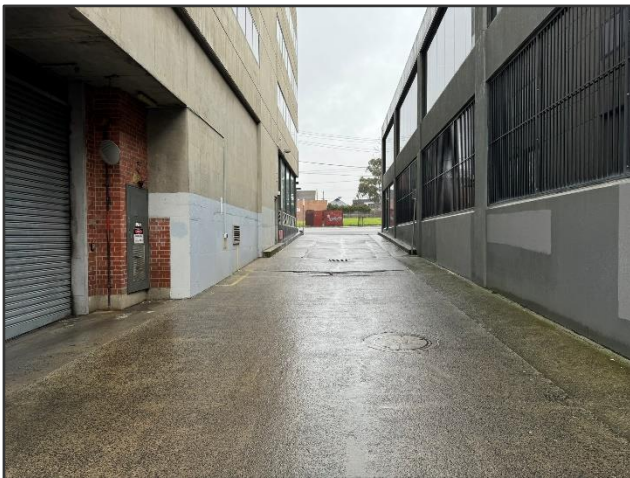


Image date: July 2024

Figure 7 Lois Lane Cross-Section (N-S section)



Image date: July 2024

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2.3.3 McQuade Lane

McQuade Lane is an asphalted laneway generally aligned north-south, running from Scott Street in the south and terminating approximately 50 m to the north of Scott Street, and provides a 4 metre wide carriageway.

The cross-section of McQuade Lane along the eastern boundary of the site is shown in Figure 8.

Figure 8 McQuade Lane Cross-Section



Image date: July 2024

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2.4 Traffic Volumes

Traffic volume, speed and classification surveys were undertaken by Trans Traffic Survey on behalf of **onemilegrid** on both ends of Lois Lane in the vicinity of its intersection with Thomas Street and Clow Street for a one-week period from Tuesday 23rd July 2024 to Monday 29th July 2024 inclusive.

The results of the surveyed portions of Lois Lane are summarised in Table 1 and Table 2 respectively.

Table 1 Traffic Volume and Speed Survey – Lois Lane (east of Thomas Street)

Data		Both Directions	Westbound	Eastbound
Daily Volumes	Weekday Average	217	111	106
	7-Day Average	190	97	93
Peak Hour	AM Peak (8am – 9am)	27	1	26
	PM Peak (5pm – 6pm)	38	31	7
Speeds (km/h)	85 th Percentile	10.4	8.5	12.2
	Average	9.7	7.7	11.4
Classification	Light Vehicles (%)	98.4%	98.0%	98.9%

Table 2 Traffic Volume and Speed Survey – Lois Lane (south of Clow Street)

Data		Both Directions	Northbound	Southbound
Daily Volumes	Weekday Average	267	115	152
	7-Day Average	258	114	144
Peak Hour	AM Peak (8am – 9am)	28	1	27
	PM Peak (4pm – 5pm)	27	16	11
Speeds (km/h)	85 th Percentile	8.9	6.6	11.7
	Average	8.1	6.1	10.4
Classification %	Light Vehicles (%)	97.7%	97.4%	97.9%

The above data indicates that the laneway carries a slightly higher level of traffic at the Clow Street end with an average of approximately 260 vehicles per day compared to the Thomas Street end where an average of 190 vehicles per day were recorded. At both ends, traffic movements were tidal in nature with arrivals in the morning and departures in the evening although not as prevalent in the afternoon at the Clow Street end. These observations are not unexpected noting the surrounding land uses with parking accessed from Lois Lane almost exclusively provided for staff. It is noted that the above data would have included traffic associated with vehicles parking informally on the subject site.

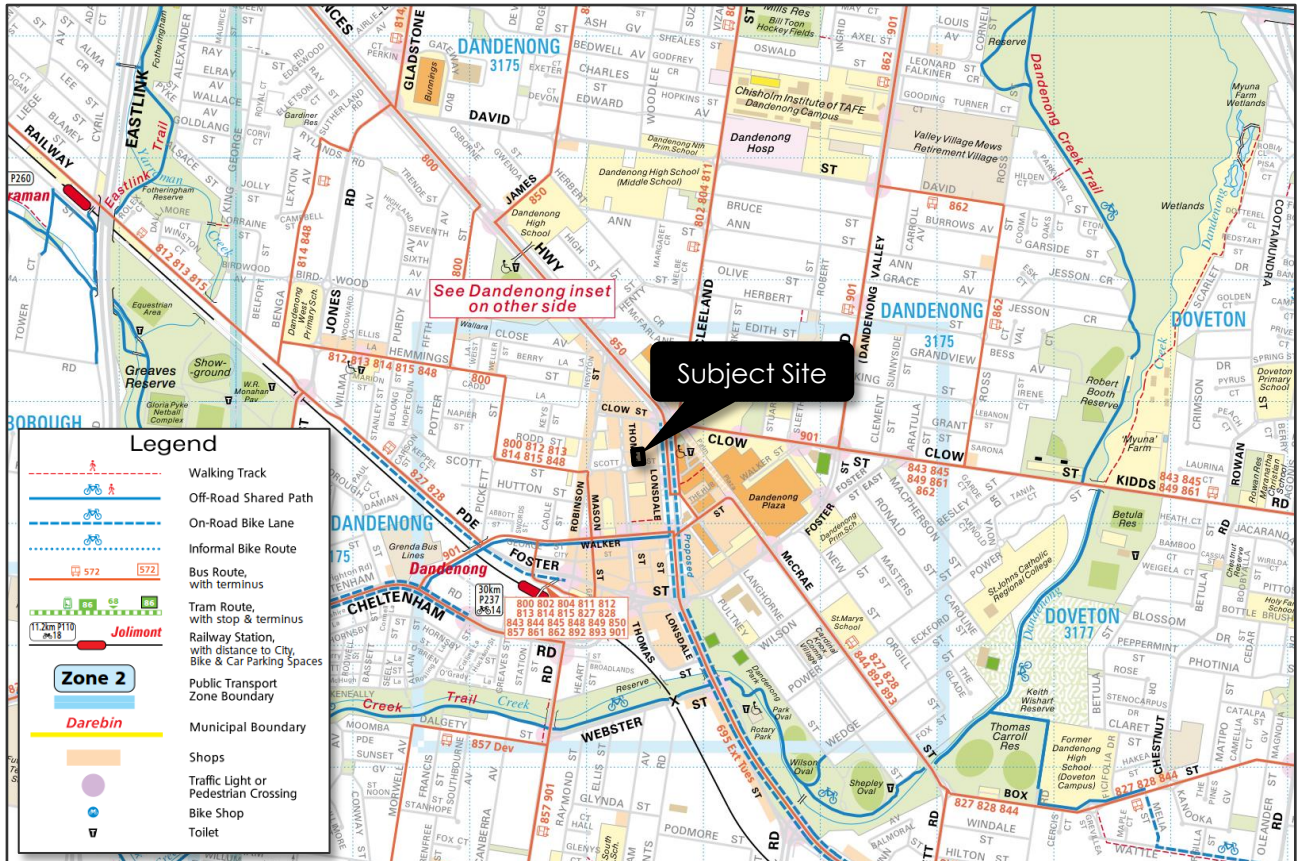
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2.5 Sustainable Transport

2.5.1 General

An extract of the TravelSmart Map for the City of Greater Dandenong is shown in Figure 9, highlighting the public transport, bicycle and pedestrian facilities in the area.

Figure 9 TravelSmart Map



2.5.2 Public Transport

The subject site has excellent public transport accessibility, with numerous bus services accessible from Lonsdale Street, Clow Street and Dandenong Central, and train services available from Dandenong Station within a 1 km walk from the site.

The site has a Transit Score rating of 71/100 and is considered to have Excellent Transit, with public transport convenient for most trips.

Furthermore, as previously noted the site is located within the Principal Public Transport Network Area, indicating the site is serviced by high-quality transport.

The full public transport provision in the vicinity of the site is shown in Figure 10 (Dandenong Central) and detailed in Table 3.

Figure 10 Public Transport Provision (Central Dandenong)

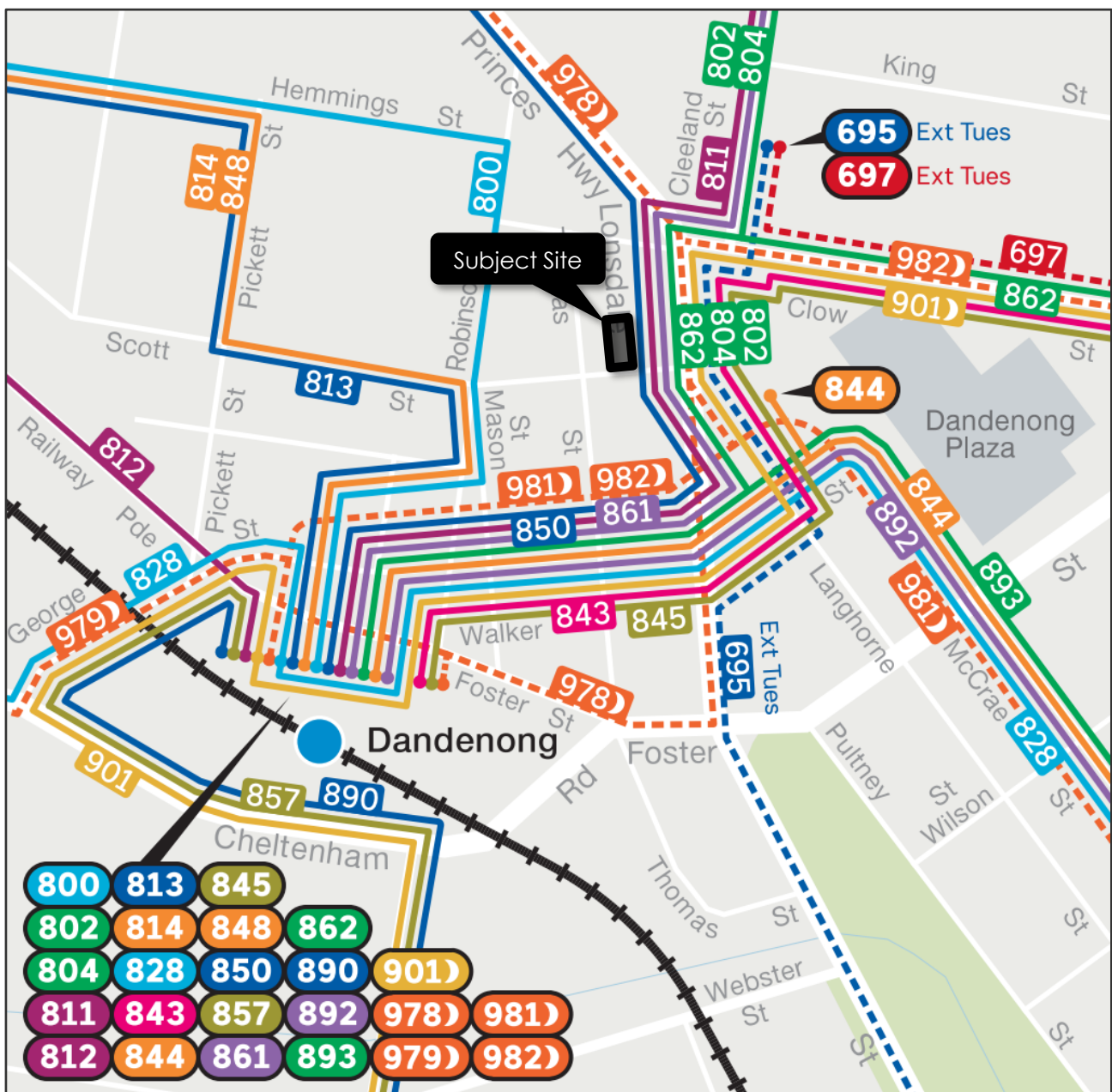
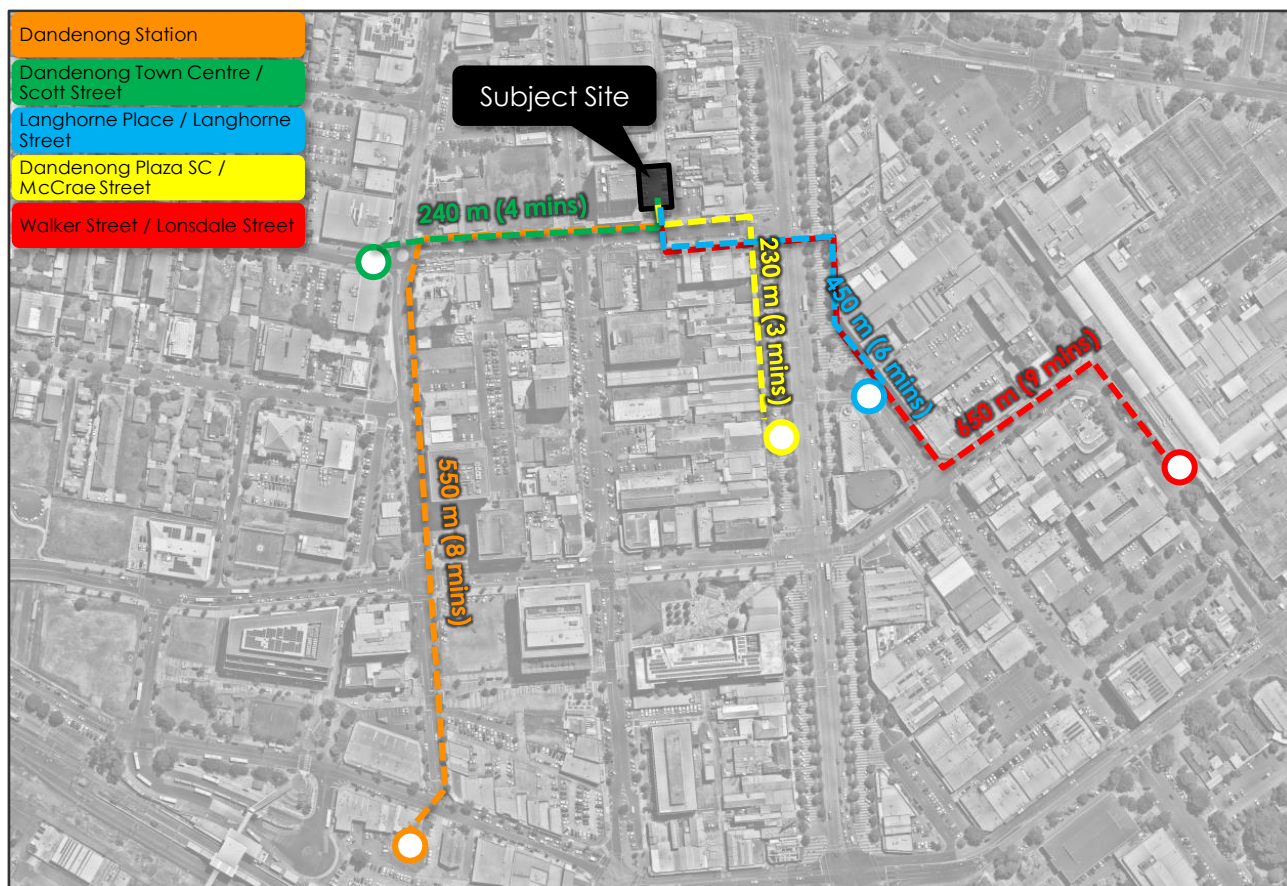


Table 3 Public Transport Provision

Mode	Route No.	Route Description	Nearest Stop/Station
Train		Cranbourne Line	
		Pakenham Line	Dandenong Station
Bus	697	Belgrave – Belgrave South via Belgrave Heights	
	800	Dandenong – Chadstone via Princes Highway & Oakleigh	Dandenong Town Centre / Robinson Street
	802	Dandenong – Chadstone via Mulgrave & Oakleigh	
	804	Dandenong – Chadstone via Wheelers Hill & Oakleigh	
	811	Dandenong – Brighton via Heatherton Road & Springvale	Langhorne Place / Langhorne Street
	812	Dandenong – Brighton via Parkmore SC	
	813	Dandenong – Waverley Gardens SC	
	814	Springvale South – Dandenong via Waverley Gardens SC & Springvale	Dandenong Town Centre / Scott Street
	828	Hampton – Berwick Station via Southland SC & Dandenong	Dandenong Plaza SC / McCrae Street
	843	Endeavour Hills – Dandenong Station via Daniel Solander Drive	
	844	Dandenong – Doveton via McCrae Street	Langhorne Place / Langhorne Street
	845	Endeavour Hills – Dandenong Station via Kennington Park Drive	
	848	Dandenong – Brandon Park SC via Waverley Gardens SC	Dandenong Town Centre / Scott Street
	850	Dandenong – Glen Waverley via Mulgrave & Brandon Park	Langhorne Place / Langhorne Street
	857	Chelsea Railway Station – Dandenong Railway Station via Patterson Lakes	Dandenong Station / Foster Street
	861	Endeavour Hills – Dandenong Station via Dandenong Hospital	
	862	Dandenong – Chadstone via North Dandenong & Oakleigh	Langhorne Place / Langhorne Street
	892	Casey Central SC – Dandenong Station via Hampton Park SC	Dandenong Plaza SC / McCrae Street
	893	Cranbourne Park SC – Dandenong Station	Langhorne Place / Langhorne Street
	901	Frankston – Melbourne Airport (SMARTBUS Service)	Langhorne Place / Langhorne Street
	978	Clayton Station – Dandenong Station via Mulgrave	Walker Street / Lonsdale Street
	979	Clayton Station – Dandenong Station via Keysborough	Dandenong Station
	981	Dandenong Station – Cranbourne via Berwick	Dandenong Plaza SC / McCrae Street
	982	Dandenong Station – Cranbourne via Endeavour Hills & Hampton Park	Walker Street / Lonsdale Street
Bus (regional)		Cowes or Inverloch – Melbourne via Dandenong & Koo Wee Rup	
		Traralgon – Melbourne via Pakenham, Moe & Morwell	Dandenong Station
		Traralgon – Pakenham, Moe & Morwell	

A view of the pedestrian walk route between the subject site to the public transport stops prescribed in Table 3 is demonstrated in Figure 10.

Figure 11 Public Transport Pedestrian Wayfinding Route



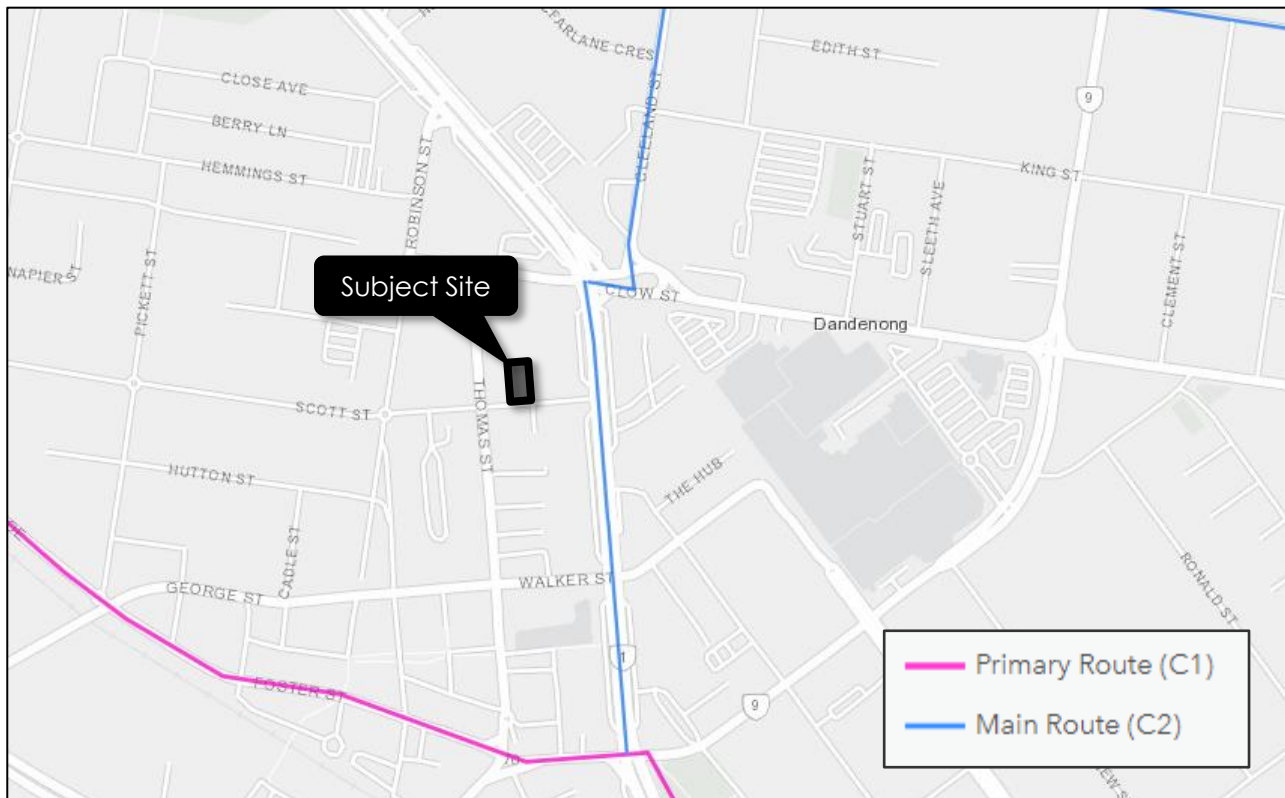
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2.5.3 Bicycle Facilities

On-road bicycle lanes are provided on each of Lonsdale Street, which are supplemented by additional bicycle lanes and trails along the railway corridor, Eastlink and Dandenong Creek Trail.

Strategic Cycling Corridors are important routes for cycling for transport are intended to provide connected, low stress and safe routes, intended primarily for the use of cyclists for transport (rather than recreation). The SCCs in the vicinity of the site are shown in Figure 12.

Figure 12 Strategic Cycling Corridors



As shown above, Lonsdale Street and Cleeland Street in the vicinity are classified as Main Cycling Routes (C2) with Foster Street to the south classified as a Primary Cycling Route (C1).

2.5.4 Pedestrian Accessibility

In addition to having good access to public transport modes, the site is well-located for pedestrian accessibility, with a number of recreation, education, shopping and employment uses located within 10 - 15 minutes' walk of the site.

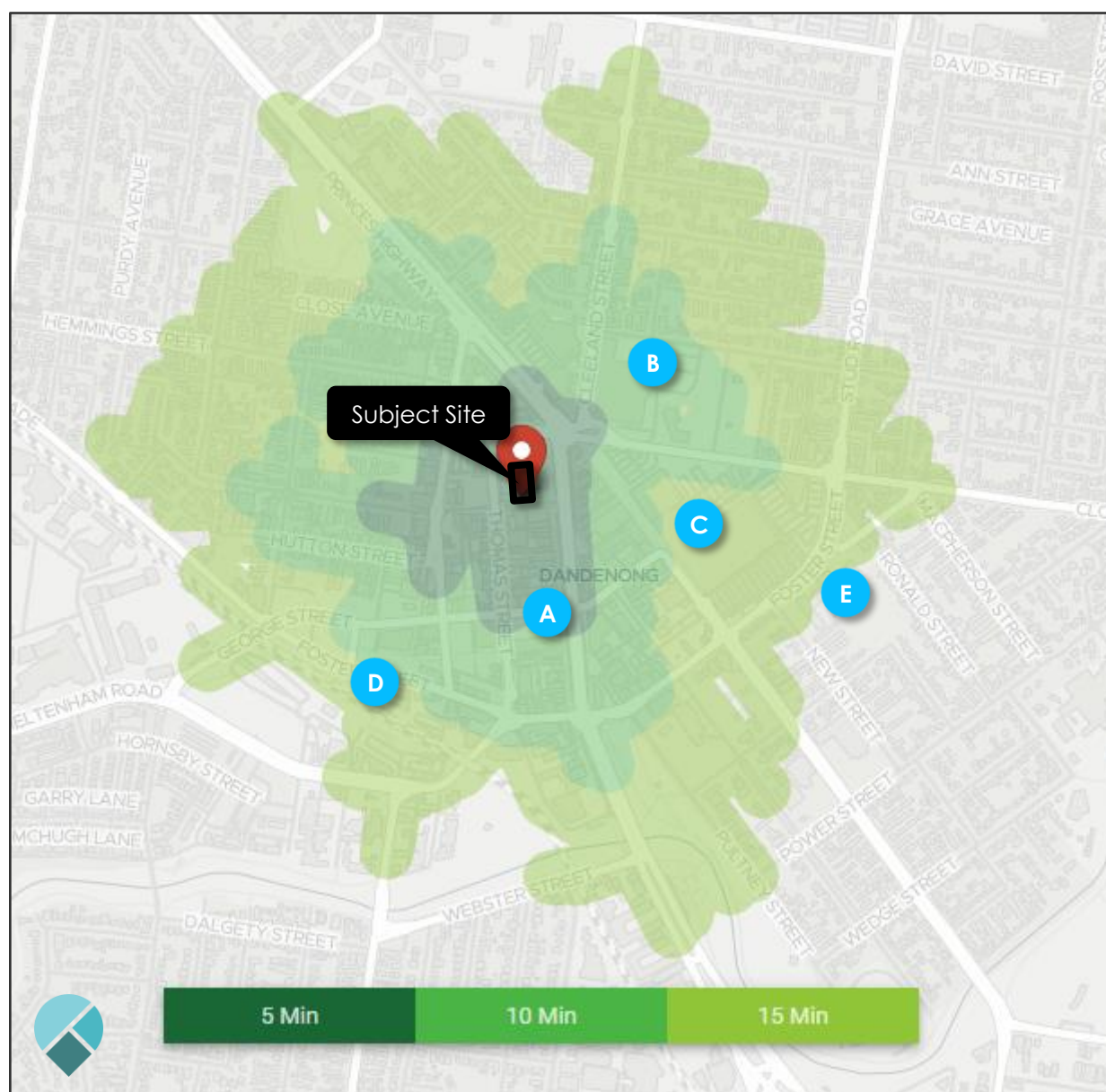
Walkability is a measure of how friendly an area is to walking. Walkability has many health, environmental, and economic benefits. Factors influencing walkability include the presence or absence and quality of footpaths or other pedestrian rights-of-way, traffic and road conditions, land use patterns, building accessibility, and safety.

The site has a Walk Score rating of 97/100 and is considered to be a 'Walker's Paradise', with daily errands not requiring a car.

Figure 13 shows a pedestrian walk time map for the site, with the major facilities in the vicinity of the site identified in Table 4.

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Figure 13 Pedestrian Walk-Time Map



Courtesy of [Targomo](#)

Table 4 Site Facilities

Reference	Facility	Approximate Distance
A	Dandenong Library	400 m
B	Dandenong Market	400 m
C	Dandenong Plaza	400 m
D	Dandenong Railway Station	700 m
E	Dandenong Primary School	850 m

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3 SCHEDULE 2 TO CLAUSE 37.02 – CDZ2

As detailed in Section 2.2, the site is located within a Comprehensive Development Zone which applies to land within the Central Dandenong Activity Centre.

The Schedule notes the following in relation to, car and bicycle parking:

Car Parking

On-site car parking for all uses must be in accordance with the provisions of Clause 52.06 other than the rates for the following uses which are specified below:

- Dwellings:
 - ✦ 1 and 2 bedroom apartments – 1 space to each apartment.
 - ✦ 3 or more bedroom apartments – 1.5 spaces to each apartment
 - ✦ Other detached or attached dwellings – 2 spaces to each dwelling.
 - ✦ Visitor parking – 1 space to every 5 apartments.
- Lower rates can be applied to the satisfaction of the Responsible Authority.
- Car parking areas should assist in the overall function, safety and appearance of the centre by:
 - Not intruding onto activities that require footpath frontage or areas of Priority Active Frontage.
 - Incorporating frontage landscaping and fencing.
 - Incorporating larger canopy trees, at a ratio of at least one tree to each 6 car spaces and avoiding large areas of shrubby plants.
 - Incorporating adequate security lighting.
 - Blending the exterior of multi-deck car parks with adjacent streetscapes.
 - Not locate at ground floor in the areas designated for retail functions.
 - Not take access from the ground floor on streets or urban open spaces which are dedicated to street front retailing.
 - Must be architecturally sensitive to surrounding development.
 - Must seek to be architecturally innovative and utilise the opportunity to create an architectural statement.
 - Have façades which contribute attractiveness of the built form, and typical gaping concrete boxes will be strongly discouraged.
 - Be well landscaped with minimal visibility from the street front.
 - Be high quality and positively contribute to the evolving Central Dandenong character.
 - Be at the rear of development.
 - Be safe and secure both internally and externally.
- Providing an approved Management Plan addressing the following:
 - ✦ Safety and security, both within the car park and its interface with the public realm,
 - ✦ Hours of access,
 - ✦ Staffing,
 - ✦ Access 'categories' for example whether it has exclusive access or allows for general public access.

Bicycle Facilities

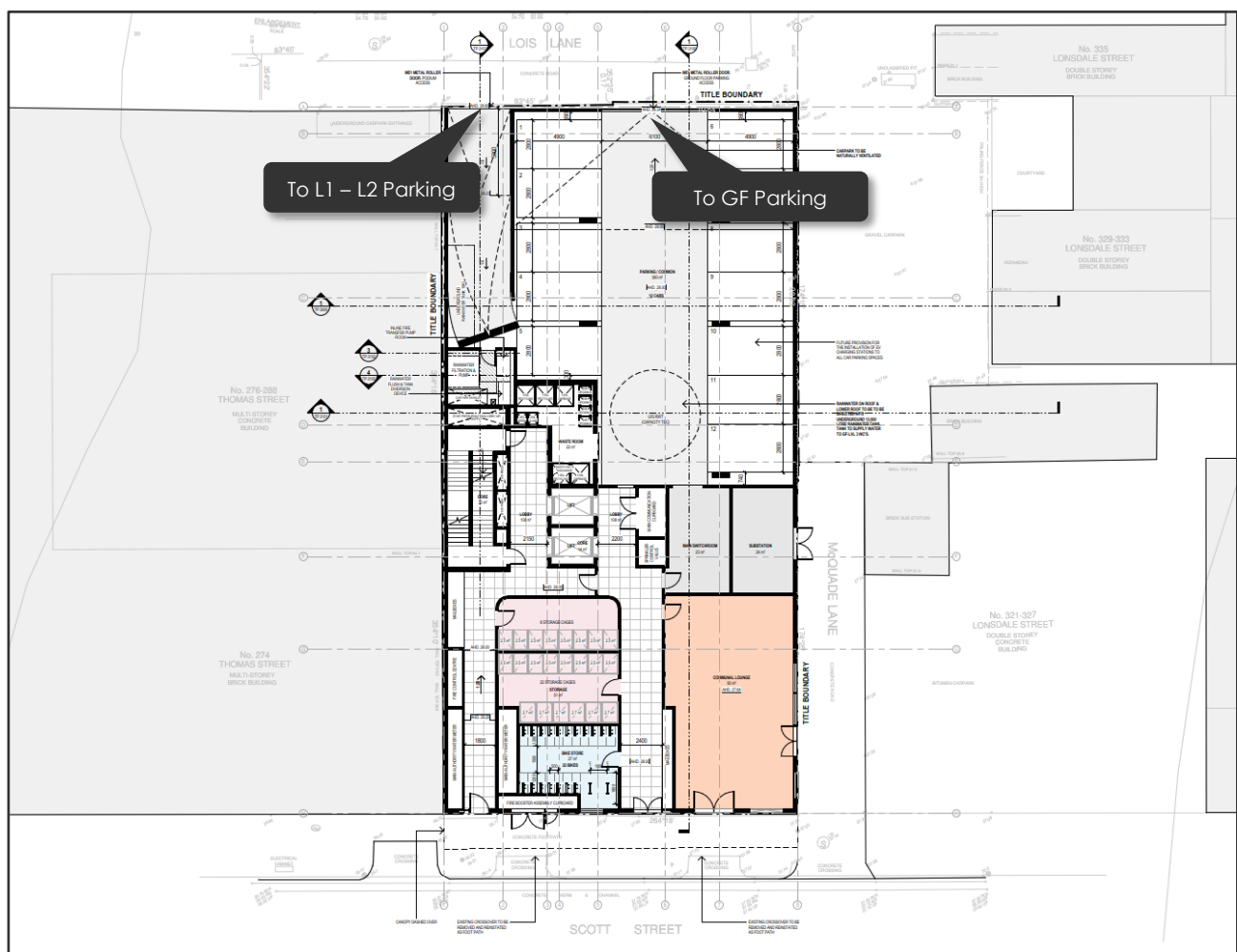
- Design of residential and non-residential buildings must accommodate safe bicycle storage and in the case of non-residential buildings adequate on site ablution facilities need to be available for in-commuters.

4.1 General

The apartment mix is to consist of 54 one-bedroom apartments and 32 two-bedroom apartments between levels L1 – L12, whilst multi-level ground and podium parking is proposed on the lower levels.

Two separate car parking areas are proposed on-site comprising a ground floor car park with 12 car spaces and a podium car park with 24 car spaces over two levels. Vehicle access to each of the car parks is proposed from the rear of the site via Lois Lane. The ground floor car park includes a double-width roller door which provides direct access to the car parking aisle, whilst the podium parking level is accessed via a separate single-width ramp in the northwest corner of the site. The ramp provides access to each parking level and will be controlled with a traffic signalling system.

Figure 14 Ground Floor Level Layout



A total of 36 car parking spaces, all of which are to be allocated to residents, are proposed across GF – L2, as detailed in Table 5.

Table 5 Proposed Car Parking Provision

<i>Level</i>	<i>No. Spaces</i>
GF	12
L1	11
L2	13
Total	36

4.3 Bicycle Parking

A total of 34 bicycle parking space site proposed, comprising a mix of vertical spaces (18) for residents and horizontal spaces (4) for visitors provided within a secure compound on the ground floor. The remaining spaces provided in the form of horizontal hoops (12) are proposed within each subsequent upper parking level (L1 – L2) for resident use.

A breakdown of the proposed bicycle parking provision is detailed in Table 6.

Table 6 Proposed Bicycle Parking Provision

<i>Level</i>	<i>No. Spaces</i>
GF	18 x vertical 4 x horizontal
L1	8 x horizontal
L2	4 x horizontal
Total	34 spaces

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5 DESIGN ASSESSMENT

5.1 Greater Dandenong Planning Scheme – Clause 52.06

onemilegrid has undertaken an assessment of the car parking layout and access for the proposed development with due consideration of the Design Standards detailed within Clause 52.06-9 of the Planning Scheme. A review of those relevant Design Standards is provided in the following sections.

5.1.1 Design Standard 1: Accessways

A summary of the assessment for Design Standard 1 is provided in Table 7.

Table 7 Clause 52.06-9 Design Assessment – Design Standard 1

Requirement	Comments
Be at least 3 metres wide.	Satisfied – minimum accessway width of 3.6 m is proposed along the ramp
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Satisfied – an internal radius of 4 m is provided along the ramp
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.	N/A – private car park
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres.	Satisfied – a height clearance in excess of 2.1 m is achieved along each vehicle accessway
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.	Satisfied – vehicles can enter and exit the site in a forward direction
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.	Satisfied
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 900 mm in height.	N/A – access to the site is provided via Lois Lane, where no footpaths are proposed, nor high vehicle speeds occur
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.	N/A – does not connect to a Transport Zone

In addition, swept path diagrams have been provided within Appendix A demonstrating access to and from Lois Lane and circulation on-site with a 99th percentile passenger vehicle (B99).

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5.1.2 Design Standard 2: Car Parking Spaces

All car spaces on-site are proposed with either a minimum width of 2.6 m, length of 4.9 m and are accessed from aisles of no less than 6.4 m, or a minimum width of 2.8 m, length of 4.9 m and are accessed from aisles in excess of 5.8 m.

5.1.3 Design Standard 3: Gradients

A summary of the assessment for Design standard 3 is provided in Table 8.

Table 8 Clause 52.06-9 Design Assessment – Design Standard 3

Requirement	Comments
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.	Refer to below for further discussion
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.	Satisfied – a maximum grade of 1:4 is proposed
Where the difference in grade between two sections of ramp or floor is greater than 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.	Satisfied – a maximum change in grade of 12.5 % is proposed

The intent of the 1:10 section at the start of the ramp for the first 5 m is to provide visibility to pedestrians and vehicles on the frontage road and is associated with ramps **down** into a basement. The proposed ramp is provided with a ramp **up** at a grade of 1:8 for 5 m. As the ramp is travelling up, rather than down, motorists will not be hindered in terms of visibility and accordingly the requirement for a 'flatter' grade is not prevalent.

This is specifically noted within the Australian Standards for Off-Street Car Parking AS2890.1 which notes that grades may be increased to 1:8 when vehicles are travelling down toward the frontage road. An extract of the standard is provided below.

A1	<p>The grade of the first 6 m into the car park may be increased to 1 in 8 (12.5%) provided all three of the following conditions are met:</p> <ul style="list-style-type: none"> (i) The grade is a downgrade for traffic leaving the property and entering the frontage road. (ii) The user class is Class 1, 1A or 2 only. (iii) The maximum car park size is— <ul style="list-style-type: none"> (1) for entry into an arterial road—25 car spaces, or (2) for entry onto a local road—100 car spaces.
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As an aside it is noted that all other requirements are also satisfied. Based on the above, whilst the Planning Scheme requirement is not specifically satisfied, the intent of the Clause has been based on interpretation of the guide and with reference to the Australian Standard.

Furthermore, the ramp connects to a lane (Lois Lane) where a footpath is not provided, and thus, pedestrian movements at the rear of the site is likely not common.

5.2 Waste Collection

It is proposed to utilise a private contractor to manage the collection and disposal of all waste streams associated with the development.

Bins will be stored within a dedicated bin storage room on the ground floor level of the development. The waste collection vehicle, will enter the ground level car park and prop adjacent the bin store, from where the bins will be transferred directly to the waiting truck for emptying. Once collection is complete the truck will depart the site.

Refer to the Waste Management Plan for further information.

5.3 Bicycle Parking

Bicycle parking is proposed to be provided in a mixture of vertically mounted and staggered bicycle racks and on-ground bicycle hoops.

The vertical mounted racks have been designed in accordance with the Australian Standard; specifically, they are located at 500 mm centres, with an envelope of 1.2 m provided for bicycles and a 1.5 m access aisle.

The bicycle hoops have been designed in accordance with the Australian Standard; specifically, they are provided at 1 m centres, with an envelope of 1.8 m provided for bicycles and a 1.5 m access aisle.

In addition, the horizontal bicycle parking provision is proposed in excess of the Australian Standard requirement for 20% of spaces provided on-ground.

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6 LOADING

Clause 65 (Decision Guidelines) of the Greater Dandenong Planning Scheme identifies that:

"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."

In relation to the proposed residential development, loading facilities will only be required for occasional removalist vehicles, which may utilise the existing on-street parking along the site frontage.

Furthermore, existing on-street loading bays are provided along Scott Street at the frontage of the site, which is considered appropriate to accommodate residential loading as required.

The provision for loading is therefore considered appropriate for the proposed use.

7 BICYCLE PARKING

The bicycle parking requirements for the subject site are identified in Clause 52.34 of the Greater Dandenong Planning Scheme, which specifies the following requirements for the proposed development.

Table 9 Clause 52.34 – Bicycle Parking Requirements

Component	No/Area	Requirement	Total
Dwelling (four or more storeys)	86 dwellings	1 space per 5 dwellings for residents	17
		1 space per 10 dwellings for visitors	9
Total			26

Considering the above, the proposed provision of 34 spaces, subsequently exceeding the requirements of the Planning Scheme, and therefore considered appropriate.

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8 CAR PARKING

8.1 Statutory Car Parking Requirements

8.1.1 Car Parking Planning Control

The proposed development is intended to provide Affordable Housing on behalf of a Registered Housing Provider, with this application being considered under Clause 53.23 of the Planning Scheme which seeks the delivery of residential development with affordable housing.

Whilst Clause 53.23 does not vary the requirements of Clause 52.06 of the Planning Scheme, it is accepted that the parking provisions contained with Clause 52.20 and 53.20 of the Planning Scheme provide the relevant consideration for Social and Affordable Housing.

The requirements of Clause 52.06 are outlined below, noting that these are not expected to be in line with the actual car parking demands generated by the site.

8.1.2 Car Parking Requirements – Clause 52.06 & Clause 37.02

The car parking requirements for a development are typically identified in Clause 52.06 of the Greater Dandenong Planning Scheme, though where parking requirements are specified under another provision of the planning scheme, the requirements of Clause 52.06 do not apply.

As identified in Section 2.2, the site is located within a Comprehensive Development Zone (CDZ2) which outlines specific requirements for land within the Central Dandenong Activity Centre. Clause 5.0 of Schedule 2 to Clause 37.02 of the Greater Dandenong Planning Scheme prescribes the car parking requirements detailed in Table 10 for the residential developments.

Table 10 Clause 37.02 Schedule 2 – Car Parking Requirements

Use	No/Area	Rate	Car Parking Measure	Total
Dwelling	86	1	space to each 1 and 2 bedroom apartment	86
	0	1.5	spaces to each 3 or more bedroom apartments	0
	86	1	space to each 5 apartments	17
Total				103

Based on the above calculations, a total of 103 parking spaces are required for the proposed development.

8.2 Proposed Car Parking Provision

It is proposed to provide a total of 36 car parking spaces on-site, which equates to a shortfall of 50 spaces for residents and 17 spaces for visitors when compared to the Planning Scheme requirements. Of note, the entirety of the parking provision is to be allocated to residents, with no spaces allocated to visitors.

The CDZ acknowledges that lower rates than those prescribed can be applied, to the satisfaction of Council, and includes decision guidelines in the CDZ for assessing the suitability of a proposal, including:

- The effect of traffic to be generated on roads.
- Opportunities to maximise densities and opportunities to live near public transport and support walkable neighbourhoods.
- Opportunities for residential buildings to be at least 5 storeys in height.

A review of these factors, and others considered relevant to the proposal has been undertaken below.

8.3 Review of Car Parking Provision

8.3.1 Resident Car Parking – Clause 52.20 & Clause 53.20

As previously noted, the development intends to provide Affordable Housing on behalf of a Registered Housing Provider, and it is therefore anticipated that the car parking demands generated by the site will be in line with those contained with Clause 52.20 and 53.20 of the Planning Scheme as they outline specific rates for social and affordable housing developments.

Based on Clause 73.03 – Land Use Terms, the development will be assessed as ‘dwellings’, therefore the rate of 0.6 spaces to each dwelling will be used to determine car parking demands.

The car parking requirements for the subject site is calculated in Table 11.

Table 11 Clause 52.20 & Clause 53.20 – Car Parking Requirements

Use	No./Area	Car Parking Measure	Total
Private and affordable housing	86	A minimum of 0.6 spaces to each dwelling	51

Based on the above calculations, Clause 52.20 & Clause 53.20 requires providing a total of 51 spaces for the development.

It is proposed to provide a total of 36 car parking spaces on-site, which equates to a shortfall of 15 parking spaces when compared to the Clause 52.20 & Clause 53.20 requirements.

Notwithstanding the shortfall parking, a further review of the suitability of the proposed parking provision is as follows.

8.3.2 Impact of Parking Supply on Traffic Congestion

A previous VCAT decision (Ronge v Moreland CC [2017] VCAT 550 (9 May 2017), www.austlii.edu.au/au/cases/vic/VCAT/2017/550.html) highlighted the value of reduced car parking provision with regard to traffic congestion, identifying the potential adverse impact of providing excessive car parking, as below:

“Our roads are already congested and will be unimaginably so if a ‘business-as-usual’ approach is accepted through until 2050. The stark reality is that the way people move around Melbourne will have to radically change, particularly in suburbs so well served by different modes of public transport and where cycling and walking are practical alternatives to car based travel.

A car parking demand assessment is called for by Clause 52.06-6 [now Clause 52.06-7] when there is an intention to provide less car parking than that required by Clause 52.06-5. However, discussion around existing patterns of car parking is considered to be of marginal value given the strong policy imperatives about relying less on motor vehicles and more on public transport, walking and cycling. Census data from 2011 or 2016 is simply a snapshot in time, a base point, but such data should not be given much weight in determining what number of car spaces should be provided in future, for dwellings with different bedroom numbers.

Policy tells us the future must be different.

Oversupplying parking, whether or not to comply with Clause 52.06, has the real potential to

undermine the encouragement being given to reduce car based travel in favour of public transport, walking and cycling."

"One of the significant benefits of providing less car parking is a lower volume of vehicle movements and hence a reduced increase in traffic movements . . ."

8.3.3 Local Council Policy

The Greater Dandenong Sustainable Strategy is a documented prepared by Greater Dandenong City Council which identified key priorities and strategic actions to maximise the benefits of an integrated approach to sustainability between 2016 – 2030.

The strategic community objectives and targets highlighted in the Sustainable Strategy in relation to transport is shown in Table 12.

Table 12 Greater Dandenong Sustainable Strategy – Traffic Objectives

Objective	Target
Increasing community access to and use of active and low carbon transport options	15% increase in public transport use within Greater Dandenong by 2030
	10% reduction in single occupancy private vehicle as method of travel to work by 2028 (compared with 2016 census data)
	Double the number of trips to work undertaken by bicycle by 2028 (compared with 2016 census data)

Overall, the Greater Dandenong Sustainable Strategy aims to provide a more sustainable community within the Greater Dandenong municipality by following a decision framework that reduces the dependence on private vehicles.

The proposed development which reduces car ownership reliance is entirely in line with the initiatives within the strategy.

Furthermore, clause 22.06 of the Greater Dandenong Planning Scheme is Council's Environmentally Sustainable Development policy, which includes a number of objectives and requirements to ensure that development achieves "best practice in environmentally sustainable development".

In relation to Transport, the following objectives are identified:

- To ensure that the built environment is designed to promote the use of walking, cycling and public transport, in that order.
- To minimise car dependency.
- To promote the use of low emissions vehicle technologies and supporting infrastructure.

The reduction in car parking assists in achieving the above Environmentally Sustainable Development objectives.

8.3.4 Alternative Modes of Transport

As indicated in Section 2.5, the subject site has excellent access to public transport services with train and bus services available within close walking distance to the subject site. The provision of excellent public transport ensures that residents, staff and visitors of the development will have good access to alternate transportation modes.

Additionally, secure bicycle parking spaces are provided on-site ensure that residents and visitors have access to alternative sustainable transport modes with bicycle facilities provided providing within the broader area surrounding the site.

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8.3.5 Maximising Density

As discussed, the proposed development proposes a reduced car parking provision to service the development, a byproduct of maximising development density on the site. It is acknowledged that the proposed development occupies the total subject site area with the proposed car parking supply maximised due to the limited size of the site.

Nonetheless, residents of the development are well located with regard to amenities, education and employment services. Of note, the subject site is located in the centre of the Central Dandenong Activity Centre with Dandenong Plaza and Dandenong Market within the immediate vicinity to the south and east of the site, respectively. Several commercial services such as grocery stores, banks, post offices, etc are also available within this area.

Based on the above, the day to day requirements of a resident can comfortably be met without the need for a private vehicle on-site.

8.4 Summary

Based on the above, noting the location of the site where residents will be encouraged to live without reliance on a private vehicle, demands will be suppressed.

It is acknowledged that from time to time there may be some overflow resident demands generated however noting that there is limited unrestricted public car parking in the area, the 'everyday' proposition of parking on-street is not feasible.

In this regards, public transport and utilising the excellent bicycle facilities will be paramount.

It is expected that the proposed supply of car parking is appropriate for the proposed development, considering the following:

- The proposed parking provision equates to a negligible shortfall of one parking spaces when compared to the Clause 52.20 & Clause 53.20 requirements, in which this application seeks;
- Recent VCAT decisions support reduced car parking rates;
- A reduced car parking provision assists with the desired reduction in private vehicle usage, therefore minimising traffic impacts in the vicinity;
- The reduced provision of car parking is entirely in line with the initiatives within the Greater Dandenong Sustainable Strategy;
- The proposed development bicycle parking supply satisfies the Planning Scheme requirements, therefore providing an alternate means of transportation; and
- The development is located within the Central Dandenong Activity Centre and is within walking distance of amenities, including shops, education, entertainment, and recreational facilities.

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9 TRAFFIC

9.1 Traffic Generation

Surveys undertaken by **onemilegrid** and other traffic engineering firms at residential dwellings have shown that the daily traffic generation rates vary depending on the size, location and type of the dwelling, the parking provision and proximity to local facilities and public transport.

Generally, where a site is closer to high-quality public transport, or local services and amenities (e.g., a full-line supermarket), lower traffic generation rates occur. Medium to high density dwelling in inner areas generate traffic with rates between 3.0 and 6.0 movements per dwelling.

Considering that the site is located within the Central Dandenong Activity Centre and has excellent access to public transport, it is expected that generation rates will be towards the lower end of the range.

Considering the type of the dwellings proposed, the proximity of the site to public transport, and the provision of parking proposed, it is anticipated that the proposed development may generate up to six (6) vehicle trips per dwelling per day for each dwelling that is provided with a parking space, with 10% occurring during the commuter and weekend peak hours.

Application of the above rates indicates that the 36 dwellings with a car parking space will generate 216 movements per day, inclusive of 22 vehicle movements during the morning and afternoon peak hours. Furthermore, during the morning peak it is estimated that 80% of the residential traffic will be outbound, while during the afternoon peak, 60% of the residential traffic will be inbound.

Applying these rates to the total peak hour vehicle generation results in the following peak hour traffic distribution detailed in Table 13.

Table 13 Anticipated Traffic Generation

Period	Inbound	Outbound	Total
AM Peak	4	18	22
PM Peak	13	9	22

9.2 Traffic Impact

Reviewing the volumes above, it is noted that a maximum of 22 vehicle movements per hour are expected in and out of the site during the peak hour periods. When these movements are split into inbound and outbound movements, divided between the two vehicle access points, and then further distributed between the north and east, the actual peak traffic generation is to be less than that indicated above. Regardless, this level of traffic is considered low in traffic engineering terms and is expected to be easily absorbed into the surrounding road network.

Noting the volumes determined above will be further distributed between the two proposed separate access points (24 spaces provided across L1 – L2 parking levels and the remaining 12 spaces on the ground level), the following traffic generation is expected to be generated via each proposed vehicle access point.

Table 14 Generated Traffic Volumes per Access

Period	L1 – L2 Access		Ground Level Access	
	Inbound	Outbound	Inbound	Outbound
AM Peak	2	12	1	6
PM Peak	8	6	4	3

9.3 One-Lane Ramp Operation

The proposed development includes a one-lane ramp to service the upper car parking levels, which as detailed above, a maximum of 14 vehicles will be using the ramp from any given direction (inbound or outbound) during the peak hours, which equates to one vehicle every 4 and a half minutes. The tidal nature of residential traffic, combined with the low traffic volumes indicates that vehicle movements along the ramp and accessways will operate appropriately for the expected traffic volumes and minimal conflicts are expected.

Notwithstanding the low likelihood of two vehicles meeting along the ramp, it is noted the swept paths diagrams (attached in Appendix A) of the parking accessways demonstrating limited opportunities for two vehicles to simultaneously pass in opposing directions owing to the confined building envelope.

In order to manage the potential conflict of two vehicles meeting (albeit very low likelihood), it is recommended that the ramps and accessways are controlled by traffic signals, with the following operation.

- Signal displays are provided at each end of the one-lane ramp and within each parking aisle, and include a simple red light display;
- Detector loops (or other detection system) are provided at each end of the one-lane ramp to detect a vehicle entering or exiting the car parking area;
- Vehicles entering from Lois Lane will activate the system by either passing over a detector loop at the site access or when pressing the remote control. This action will illuminate the red display to the car parking area on all levels. This will highlight to any other user that the ramp is in use and that all vehicles should wait in their car space. Once the clearance time has elapsed, the red light will drop;
- Vehicles wishing to exit the car parking areas will need to pass over the detector loop at the entrance to the one-lane section of ramp and accessway. Once the exiting vehicle is detected (and assuming a vehicle has not already been detected at the Lois Lane entry point) the red display will present to Lois Lane. After a short clearance time, the red display will then drop at the car park entry.

Through the above operation, traffic from Lois Lane entering the site has priority, and will typically not be delayed on entry to the site. Should an entering vehicle arrive as a vehicle is exiting from the car parking area, sufficient passing area is provided along Lois Lane such that the entering vehicle can wait within the lane without impacting other users.

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10 CONCLUSIONS

It is proposed to develop the subject site for the purposes of a twelve-storey residential development comprising a total of 86 apartments catering for affordable and social housing.

Considering the analysis presented above, it is concluded that:

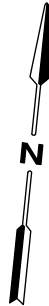
- The car parking layouts and accesses have been designed generally in accordance with the requirements of the Planning Scheme and are considered appropriate;
- The bicycle design is considered appropriate;
- The proposed loading and waste collection arrangements are appropriate;
- The proposed provision of resident and visitor bicycle parking satisfies the requirement of the Planning Scheme, and is therefore considered appropriate
- Whilst the provision of car parking spaces equates to a total shortfall against the CDZ rates and against the Clause 52.20 rates, the provision of 36 residential spaces is considered acceptable for the proposed social and affordable housing considering the following;
 - ✦ Parking restrictions in the area will encourage travel via modes other than private vehicle;
 - ✦ The site has excellent access to sustainable transport; and
 - ✦ Reduced private vehicle usage is encouraged within the Greater Dandenong Sustainable Strategy.
- The anticipated traffic volumes generated by the development are expected to have a negligible impact on the operation of the surrounding road network;
- The short sections one-lane ramp with a traffic signalling system will provide for appropriate traffic management at the site access and will ensure that there is no vehicle conflict; and
- There are no traffic engineering reasons which would preclude a permit from being issued for this proposal.

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Appendix A Swept Path Diagrams

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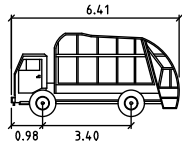




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· · · · · 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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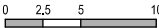
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· · · · · 300mm CLEARANCE ENVELOPE SHOWN DOTTED



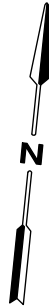
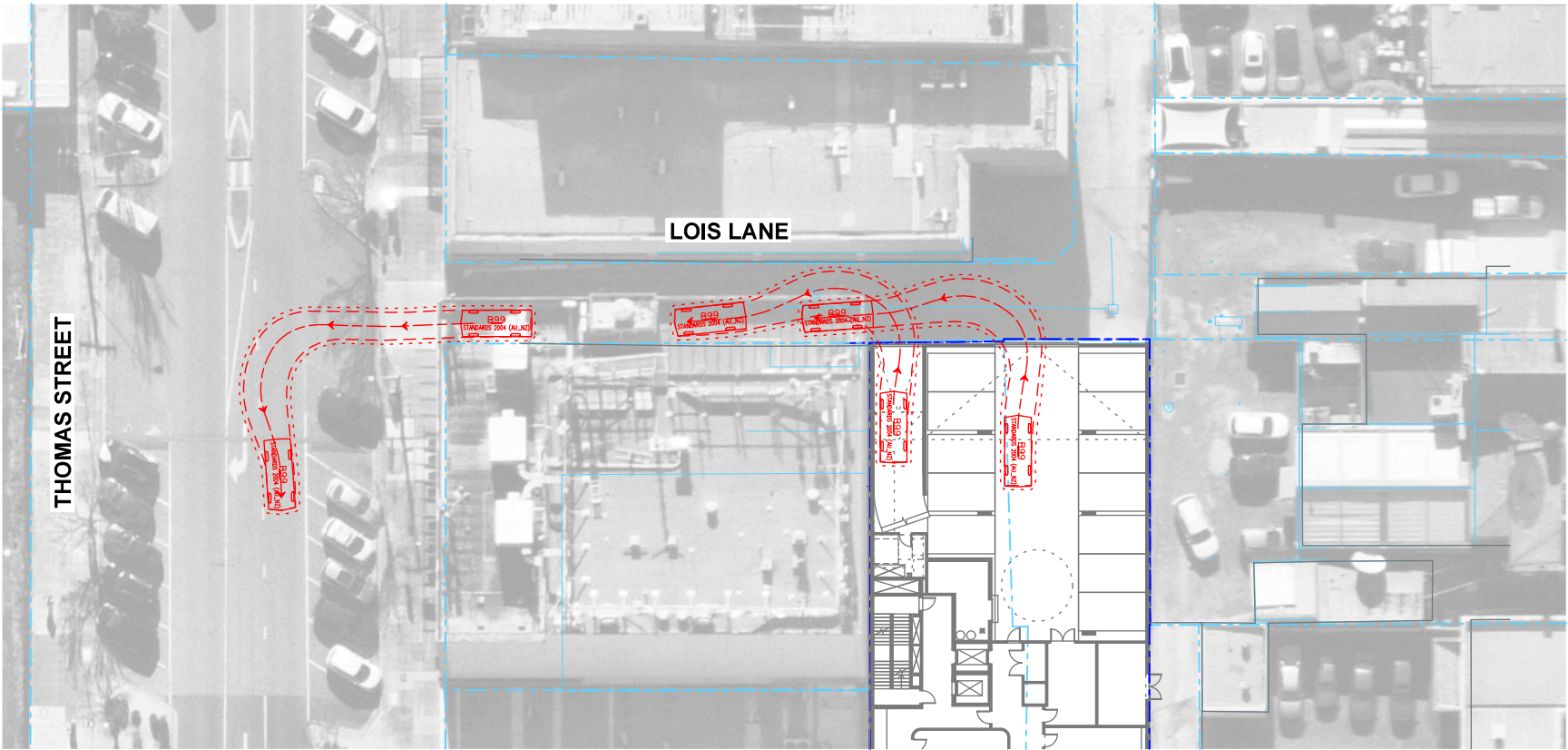
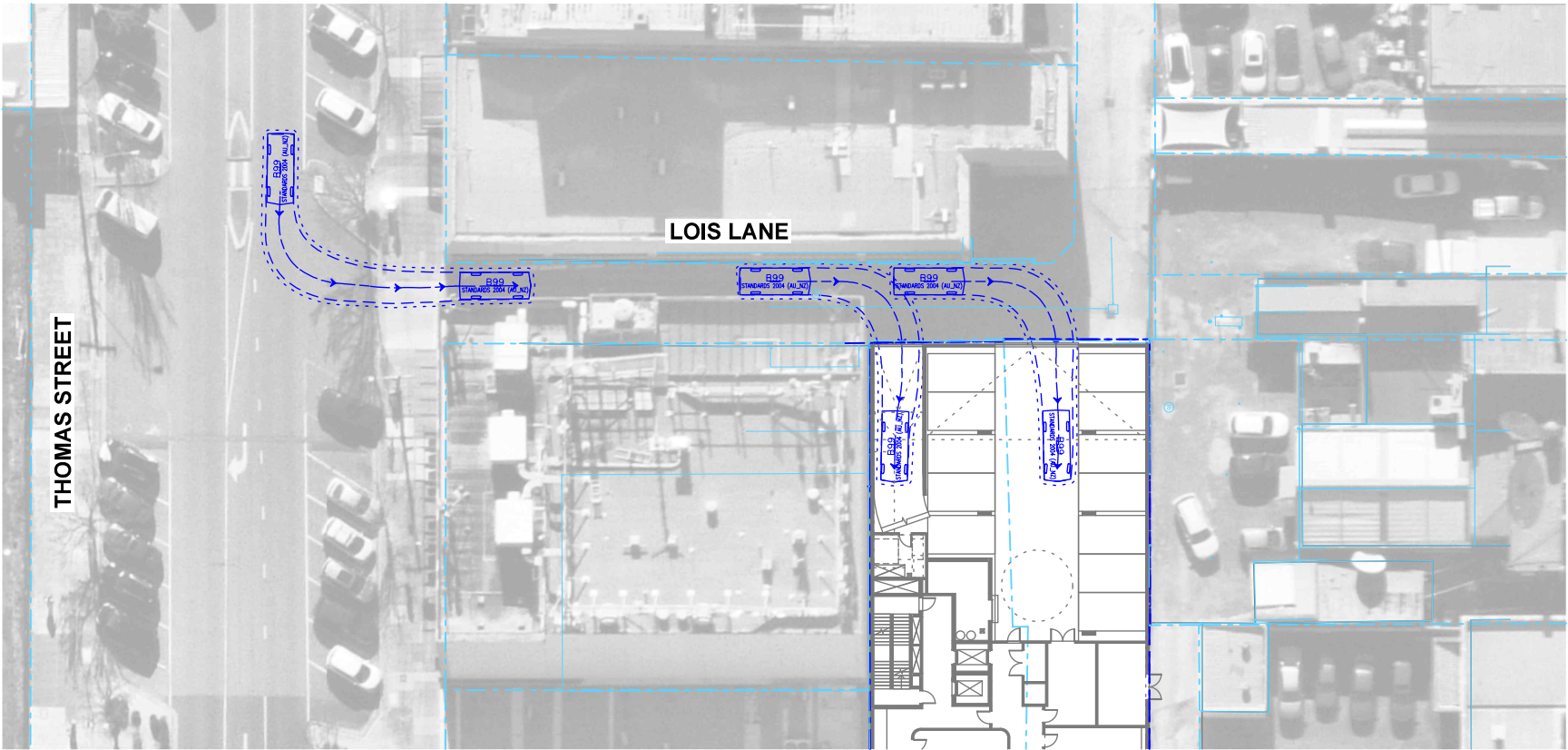
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Steering Angle	: 33.6



Scale 1:500 @ A3



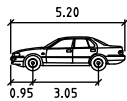
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Designed CM	Approved VG	Melway Ref 90 D7
Project Number 240430	Drawing Number SPA101	Revision A



ENTRY MANOEUVRES
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..... 300mm CLEARANCE ENVELOPE SHOWN DOTTED

ADVERTISED PLAN

EXIT MANOEUVRES
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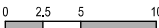


B99 meters
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Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 33.9



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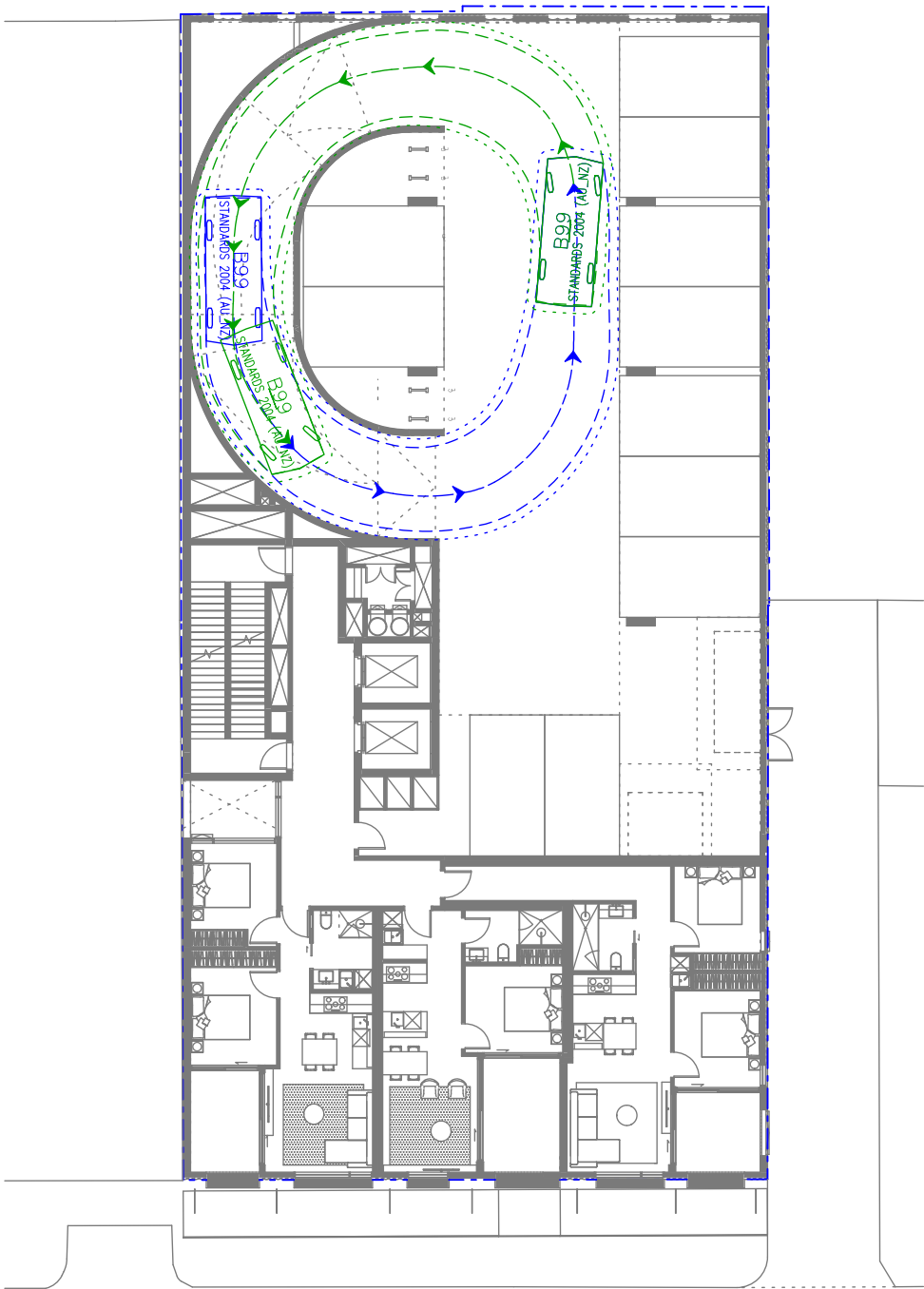
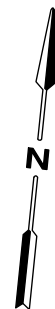


Drawing Title
18-24 SCOTT STREET, DANDENONG
VEHICLE SITE ACCESS - GROUND
SWEEP PATH ANALYSIS

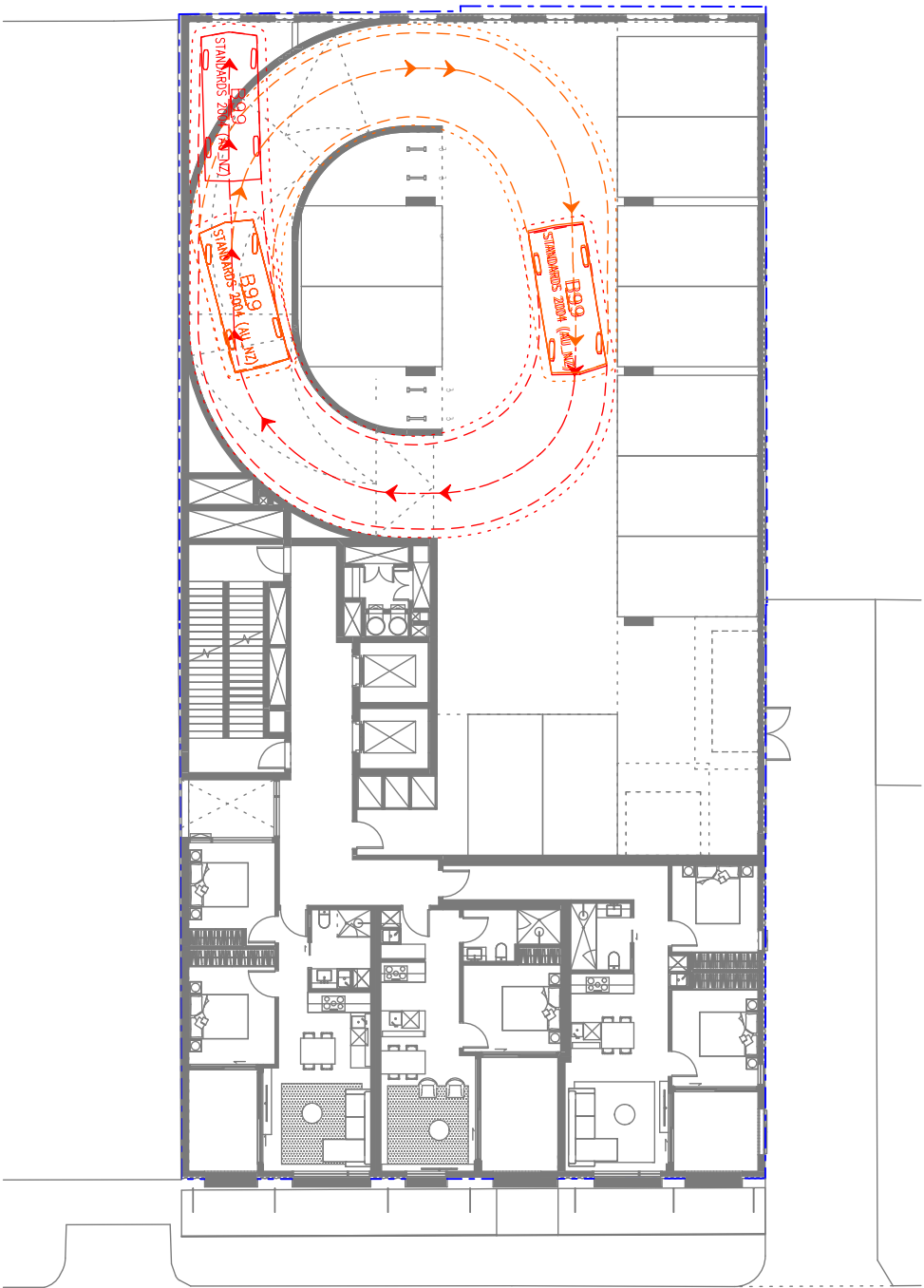
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Project Number 240430	Drawing Number SPA100	Revision A
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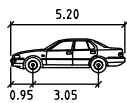
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ENTRY MANOEUVRES
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..... 300mm CLEARANCE ENVELOPE SHOWN DOTTED



EXIT MANOEUVRES
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
..... 300mm CLEARANCE ENVELOPE SHOWN DOTTED



B99	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

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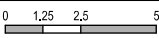
onemilegrid operates from Wurundjeri Woiwurrung Country of the Kulin nation.
We acknowledge and extend our appreciation to the Wurundjeri People, the Traditional Owners of the land.
We pay our respects to leaders and Elders past, present and emerging for they hold the memories,
the traditions, the culture, and the hopes of all Wurundjeri Peoples.

Aerial Photography
Aerial photography provided by Nearmap



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Scale
1:250 @ A3



Drawing Title
18-24 SCOTT STREET, DANDENONG
VEHICLE SITE ACCESS - LEVELS 1 & 2
SWEPT PATH ANALYSIS

Designed CM	Approved VG	Melway Ref 90 D7
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Project Number 240430	Drawing Number SPA200	Revision A
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