# Transport Engineering Report

## Proposed Build to Sell

## At 299 Coronation Drive, Milton

## On Behalf of Silverstone Developments No 18 Pty Ltd

## Revision Record

| No. | Author(s) | Reviewed/Approved | Description | Date |
|---|---|---|---|---|
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| 3. | | | | |
| 4. | | | | |

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# 1 Introduction

## 1.1 Purpose

Colliers International Engineering and Design (TTMC) Pty Ltd has been engaged by Silverstone Developments No 18 Pty Ltd to prepare a Transport Engineering Report (TER) for a proposed Build to Sell (BTS) multiple-unit dwelling (MUD) development at 299 Coronation Drive, Milton.

The subject site currently has one (1) approval, as detailed below:

- The Material Change of Use (MCU) approval was issued on 26 June 2024 (BCC Ref.: A006315084). This approval allows for a 24-storey office development and food & drink outlet. This represents the current approval for the site.

Traffic reports were prepared as part of this approval, with details provided below:

- Reference 1: Traffic Engineering Report, Proposed Office Tower Development, prepared by TTM Consulting Pty Ltd (now Colliers), dated 07 July 2023.
- Reference 2: Response to Information Request by TTM Consulting Pty Ltd (now Colliers), dated 21 September 2023.

This report assesses a new Development Application to be lodged with Brisbane City Council (BCC) for a proposed Build to Sell residential development.

## 1.2 Scope

This report investigates the following transport aspects associated with the proposed development:

- Parking supply required to cater for development demand.
- Parking layout to provide efficient and safe internal manoeuvring.
- Access configuration to provide efficient and safe manoeuvring between the site and the public road network.
- Service vehicle provisions and on-site manoeuvring.
- Suitability of access and internal facilities to provide for pedestrian and cyclist operation.
- Access to suitable level of public transport.

To evaluate the suitability of the proposed transport arrangements, the development scheme has been assessed against the following guidelines and planning documents:

- Brisbane City Plan 2014 (City Plan) Planning Scheme, specifically:
  - Bicycle Network Overlay Code

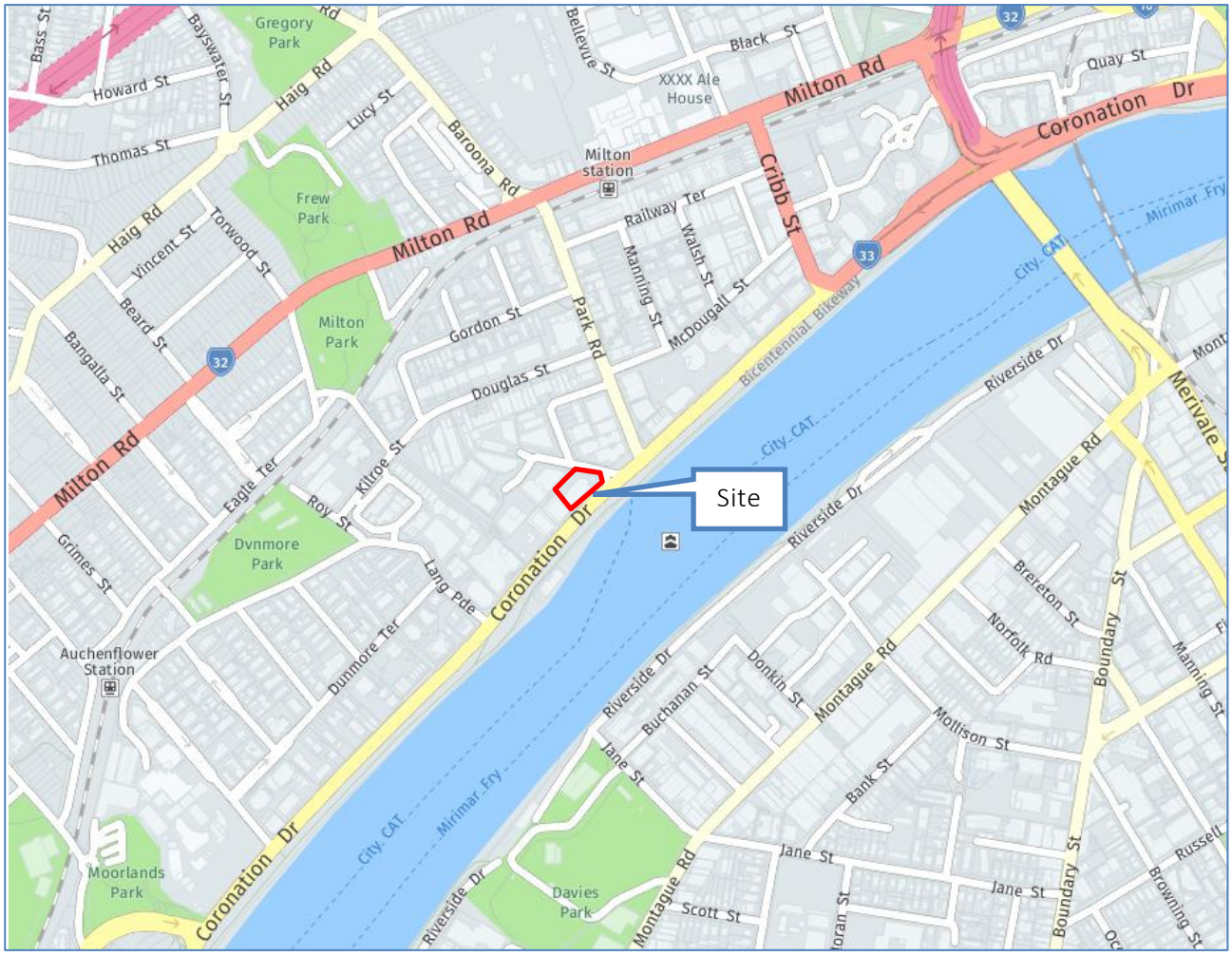
- City Centre Neighbourhood Plan Code
- Infrastructure Design Planning Scheme Policy (Infrastructure PSP)
- Refuse Planning Scheme Policy (Refuse PSP)
- Road Hierarchy Overlay Code
- Streetscape Hierarchy Overlay Code
- Transport, Access, Parking and Servicing Code (TAPS Code)
- Transport, Access, Parking and Servicing Planning Scheme Policy (TAPS PSP).

- Australian Standards for Parking Facilities (AS2890 series), namely:
  - Part 1: Off-street car parking (AS2890.1:2004)
  - Part 2: Off-street commercial vehicle facilities (AS2890.2:2018)
  - Part 3: Bicycle parking (AS2890.3:2015)
  - Part 6: Off-street parking for people with disabilities (AS2890.6:2009).

# 2 Site Location

The site is located at 299 Coronation Drive, Milton, southwest of the intersection of Graham Street and Coronation Drive, as shown in Figure 2-1 and Figure 2-2. The property description is Lots 1 on RP211215.

The site is currently occupied by a 4-storey BUSSQ (Building Super) commercial building. Access to the site is provided via a single driveway crossover to Graham Street. Parking and servicing occur on-site for all uses. The Gross Floor Area (GFA) for the existing commercial building is approximately 3,240 m², with 85 car parking spaces available for the existing use.




Source: Nearmp

Figure 2-1: Site Location (Surrounding context)


Source: Nearmap

Figure 2-2: Site Location (Immediate context)

The key site characteristics from a planning perspective include:

- The development is in MU1 Mixed Use (Inner city) zone.
- Located within the Milton Neighbourhood Plan and Office Precinct – NPP-003a.
- Located within the BCC City Frame area.

# 3 Proposed Development

## 3.1 Development Profile

The proposal involves the construction of a 29-storey MUD development, a café and an ancillary gym for internal use. The development summary is provided in Table 3-1.

Table 3-1: Development Summary

| Use | Area | Extent/Area |
|---|---|---|
| Multiple Dwelling Units | 2-bedroom apartments | 48 |
| | 3-bedroom apartments | 144 |
| Café | 143m$^2$ GFA | |
| **Total** | | **192 Apartments** |

The development plan, prepared by Woods Bagot, is provided in **Appendix A**.

## 3.2 Parking

A total of 297 parking spaces are proposed across six (6) levels and the ground floor including 291 car parking spaces and 6 motorbike spaces.

The development proposal includes the following parking supply breakdown across 6 levels, tabulated in Table 3-2.

Table 3-2: Breakdown of Proposed Parking Spaces

| Use | Car Parking Supply | Motorcycle Parking Supply |
|---|---|---|
| Basement 03 | 48 | |
| Basement 02 | 48 | |
| Basement 01 | 48 | |
| Ground | 4 | |
| Level 1 | 47 | 2 |
| Level 2 | 47 | 2 |
| Level 3 | 49 | 2 |
| **Total** | **291** | **6** |

In addition to the above, a total of 270 bicycle spaces are proposed, details below:

- 218 resident bike spaces
- 52 visitor bike spaces.

Further details in relation to the proposed parking provision are provided in Sections 5 and 9.

## 3.3 Access

The development plan includes the following access arrangements:

- A 7.0m Type B1 access crossover is proposed via Graham Street. This access will accommodate movement by both cars and service vehicles, with all movements permitted.
- Pedestrian access to Coronation Drive, Graham Street and Marie Street via footpath linkages.

Further details regarding the proposed access arrangements are included in Section 6.

## 3.4 Servicing

The development proposes to provide a loading area to accommodate a 10.24m refuse collection vehicle (RCV) and a 10.7m Large Rigid Vehicle (LRV).

Further details in relation to the proposed service vehicle provisions are included in Section 7.

# 4 Existing Transport Infrastructure

## 4.1 The Road Network

All roads in the immediate vicinity of the site are administered by BCC. The hierarchy and characteristics of these roads are shown in Table 4-1.

Table 4-1: Local Road Hierarchy

| Road | Speed Limit | Lanes | Classification |
|---|---|---|---|
| Coronation Drive | 60kph | Five to six lanes, two-way, divided | Arterial Road |
| Gardner Close | 50kph[1] | Two-way, two lanes, undivided | Neighbourhood Road |
| Graham Street | 50kph[1] | Two-way, two lanes, undivided, on-street parking | Neighbourhood Road |
| Marie Street | 50kph[1] | Two-way, two lanes, undivided, on-street parking | Neighbourhood Road |

[1]Default speed limit on unsigned roads is 50 kph in built-up areas in Queensland

The key characteristics of the above-mentioned roads are as follows:

- Coronation Drive has a 20m carriageway width at the site frontage and the intersection of Coronation Drive and Graham Street is a signalised intersection.
- Gardner Close is an extension of Graham Street that functions as a cul-de-sac with no allocated on-street parking.
- Graham Street has a 10.5m wide carriageway width at the site frontage. On-street parking bays are provided along the site frontage with 12-hour restrictions on weekdays.
- Marie Street has a 10.8m wide carriageway width with the provision of on-street parking provided for up to 2 hours daily. The intersection of Graham Street and Marie Street is priority-controlled intersection.

With respect to streetscape requirements, Coronation Drive and Graham Street are identified as a subtropical boulevard and centre street minor in the City Plan Streetscape Hierarchy Overlay. This specifies that the verge on existing streets (such as Coronation Drive and Graham Street) should be 3.75m wide. However, as part of the proposed development, a land dedication is provided to widen the verge from 3.75m to 5.0m Coronation Drive site frontage. For further details, refer to Section 9.

## 4.2 Road Planning

A review of the City Plan Local Government Infrastructure Plan (LGIP) and Department of Transport and Main Roads (Development Assessment Mapping System) does not identify any future trunk road upgrades planned within the local Milton area.

## 4.3 Public and Active Transport Facilities

### Train

Milton train station is located approximately 700m walk to the north-east of the site (via Park Road). This station services the Brisbane City, Ipswich, Rosewood, Springfield, Redcliffe Peninsula and Nambour-Caboolture lines. The station generally caters for approximately 195 trains on a typical weekday (two-way), with average peak hour frequencies of one train every five minutes.

### Buses

The review of TransLink website identifies number of bus services in close proximity to the subject site, as shown in Figure 4-1. It is evident that the site is served by numerous buses with the closest bus stop located immediately along the site frontage.


Source: Google Maps and TransLink

Figure 4-1: Bus Stop Locations

### Ferry

Milton Ferry Terminal is located within 100m walking distance of the subject site. As of January 28th, 2025, these terminals service the F1 and F12 CityCat ferry routes with stops at UQ St Lucia, West End, Toowong, Milton, North Quay (Brisbane City), South Bank, QUT Gardens Point, Riverside, New Farm, East Brisbane, Hawthorne, Bulimba, Teneriffe and Hamilton.

### Pedestrian

The subject site is adequately served in terms of pedestrian facilities with footpaths provided on both sides of Coronation Drive, Graham Street and Marie Street. Pedestrian crossing facilities are provided at the Coronation Drive / Graham Street signal-controlled intersections, connecting the site to Riverwalk located on the Bicentennial Bikeway as shown in Figure 4-2.

### Cyclists

The site is in very close proximity to the Bicentennial Bikeway, which is just 100m south of the site. The Bicentennial Bikeway is one of the major dedicated off-road pathways stretching 4.8km from Toowong to Brisbane City, providing access to South Bank, Kangaroo Point and New Farm through connecting bridges and pathways. Secondary and local cycle routes are provided along Park Road and Douglas Street respectively in the vicinity of the subject site. A summary of the cycle routes in the vicinity of the subject site is provided in Figure 4-2.


Source: BCC Interactive Mapping

Figure 4-2: Excerpt from BCC`s Bicycle Overlay

For all intents and purposes, the existing bicycle network is expected to satisfy the desired level of cycle connectivity for the proposed development.

Overall, the site is located ideally close to a significant volume and range of public and active transport facilities.

# 5 Car Parking Arrangements

## 5.1 Parking Supply

### 5.1.1 BCC Requirement

As the site is within the current 'City Frame', the parking requirements are based on Table 13 of BCC's TAPS PSP:

- Multiple dwelling:
  - Minimum 1.1 spaces per 2-bedroom dwelling.
  - Minimum 1.3 spaces per 3 or above bedroom dwelling.
  - Minimum 0.15 spaces per dwelling for visitor parking.
  - Tandem parking spaces allowed where 2 spaces are provided for 1 dwelling.
  - Minimum 50% of visitor parking is provided in communal areas, not in tandem with resident parking.
- Uses other than multiple dwellings, rooming accommodation and short-term accommodation: Maximum 1 space per 100m$^2$ gross floor area

The following additional parking supply provisions are also outlined in the TAPS PSP:

- A minimum of 2% of the required parking supply be provided in the form of motorcycle parking. Given, however, a maximum parking rate is applicable within the 'City Frame' this would imply that no minimum requirement for motorcycle parking would also be applicable.
- A minimum of 1 PWD space per 50 standard parking spaces is provided.

### 5.1.2 Proposed Carparking Provision

A total of 291 car parking spaces are currently provided across the ground, 3 basement and 3 podium levels. Table 5-1 Details the proposed parking provisions.

Table 5-1: TAPS PSP Parking Supply Requirements

| Land Use | | TAPS PSP Parking Rate | Extent | Parking Requirement | Proposed Parking |
|---|---|---|---|---|---|
| Multiple dwelling | 2-bedroom | Min. 1.1 space per 2-bedroom | 48 | 53 | 273 parking spaces |
| | 3-bedroom | Min. 1.3 space per 3-bedroom | 144 | 188 | |
| | **Total residential parking** | | | **241 parking spaces** | |
| Visitor | | Min. 0.15 spaces per dwelling | 192 | 29 | 18 parking spaces |
| Retail | | Max. 1 space per 100m$^2$ GFA | 143m$^2$ GFA | 2 (max) | - |
| **Total parking** | | | | **270 parking spaces** | **291 parking spaces** |

As seen in Table 5-1, for residents, a minimum parking supply of 241 parking spaces is required and the proposal provides 273 parking spaces, which meets/exceeds the Council's requirements.

With regard to visitor parking, the minimum parking supply of 29 parking spaces is required and the proposal provides 18 parking spaces, with a shortfall of 11 parking spaces. The proposed supply of visitor parking is considered adequate due to the following:

- It is understood that the Council has proposed to amend the city core and city frame boundaries. It is expected that this change will be adopted within the timeframe for the development of this proposal. With this change, the site is located within 70m of the City Core Boundary, where Park Road falls within the City Core. The parking requirement for visitor spaces in City Core is *"one space per 20 dwelling units"*, which would require 10 parking spaces.
- The proposed development provides 18 visitor parking spaces, which is between the 29 spaces required in the frame and the 11 spaces required in the core. This midpoint provision is considered an appropriate outcome for use adjacent to the boundary of these precincts, where transport outcomes are relatively consistent. Colliers also note that the city core rate for residential parking is equivalent to 0.5 spaces per bedroom. This applied to the mix of proposed units, increases the residential parking provision to 264 residents. Additionally, the proposed development is near public transport and active transport, promoting the use of both.
- The above proposal of reduction in visitor parking space complies with the Performance Outcome PO12 which states that:

  *"Development in the City core and City frame as identified in Figure A provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport."*

Overall, the proposed parking arrangement is considered adequate for the proposed development.

Further details in support of the suitability of the proposed parking supply are provided as follows.

### Café

The proposed development is primarily residential, with a café (approximately 143m² GFA) as a small component. Due to the maximum parking rates set by the Council, dedicated parking for the café is not required. Given the scale of the café, it is likely designed to serve residents and the immediate area, requiring no external parking demand is expected as the significant majority of customers are expected to walk to the site.

### Tandem Spaces

The proposed parking supply provides a total of 18 tandem parking bays, each of which will be assigned to a single unit as per the TAPS PSP requirements.

### Small Car Bays

A total of 6 small car bays, equivalent to 2.1% of the total car parks are proposed, which is well within the maximum allowable allotment of 20% set out by the TAPS PSP.

### 5.1.3 PWD Parking

With regard to PWD parking, the general BCC requirement is a minimum of 1 PWD space per 50 non-reserved spaces, requiring one (1) PWD space including a shared area.

The development provides one (1) PWD visitor parking space including the shared area on the ground floor.

### 5.1.4 Motorcycle Spaces

The TAPS PSP details that 2% of the parking provision shall be provided in the form of motorcycle spaces in car parks with more than 50 spaces. This equates to a minimum requirement of six (6) motorcycle parking spaces in this instance. The development plan provides six (6) motorcycle parking spaces, satisfying these requirements.

Overall, the parking supply for the proposed development is considered acceptable.

## 5.2 Car Park Layout

Table 5-2 Identifies the characteristics of the proposed parking areas with respect to the TAPS PSP requirements. The last column identifies the compliance of each design aspect. Where compliance with the TAPS PSP is not achieved, further information is provided below.

Table 5-2: TAPS PSP Parking Design Requirements

| Design Aspect | Minimum BCC Standard | Proposed Provision | Compliance |
|---|---|---|---|
| Parking Space Length:<br>• Standard Bay<br>• Small Bay<br>• PWD Bay<br>• Tandem<br>• Motorcycle | <br>5.4m<br>5.0m<br>5.4m<br>10.8m<br>2.5m | <br>5.4m<br>5.0m<br>5.4m<br>10.8m<br>2.5m | <br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant |
| Parking Space Width:<br>• Standard Bay<br>• Small Car<br>• PWD Bay<br>• Tandem<br>• Motorcycle | <br>2.6m<br>2.3m<br>2.4m + 2.4m 'Shared Area'<br>2.6m<br>1.35m | <br>2.5m-2.6m<br>2.3m<br>2.6m + 2.6m 'Shared Area'<br>2.6m<br>1.35m | <br>Performance Solution<br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant |
| Parking Envelope Clearance - Column adjacent to the bay | Located between 0.8m and 1.8m of aisle | Located between 0.75m and 1.75 m of aisle | Performance Solution |
| Parking Envelope Clearance - space adjacent to the wall | Space 0.3m clear of wall | Space 0.3m clear of wall | TAPS Compliant |
| Aisle Width: | | | |

| Design Aspect | Minimum BCC Standard | Proposed Provision | Compliance |
|---|---|---|---|
| • Parking Aisle<br>• Circulation Road/Ramp <1000vph (two-way) | 6.2m<br>6.2m between walls*^ | 6.0m<br>6.5m | Performance Solution<br>TAPS Compliant |
| Parking Aisle Extension | 2.0m beyond the last bay or 8.0m aisle width | 1.0m or 7.0m aisle width podium level | Performance Solution |
| Maximum Gradient:<br>• PWD Parking<br>• Parking Bay<br>• Parking Aisle<br>• Ramp | <br>1:40 (2.5%)<br>1:20 (5%)<br>1:14 (7.1%)<br>1:6 (16.7%) | <br>1:40 (2.5%)<br>1:20 (5%)<br>1:14 (7.1%)<br>1:5 (20%) | <br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant<br>Performance Solution |
| Height Clearance<br>• General Min.<br>• Over PWD bay | <br>2.3m<br>2.5m | <br>2.7m<br>2.7m | <br>TAPS Compliant<br>TAPS Compliant |

* As per Section 7.4.3 of BCC's TAPS PSP, 0.15m clearance is required between the nominal face of the kerb to obstructions higher than 0.15m on a straight circulation road.

^Where servicing traffic volumes of less than 1,000vph, which is expected for car park ramps as detailed in Section 6

The development parking layouts are generally consistent with the provisions of the TAPS PSP. Further details about deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided following.

### Parking Bay Width

Table 18 of the BCC TAPS PSP indicates the minimum parking bay width requirement is 2.6m for residential use. The development proposes a 2.5m space width which meets the minimum requirement of 2.4m outlined in AS 2890.1:2004.

### Parking Envelope

Section 8 of the BCC TAPS PSP indicates that a clearance of 1.8m from the front of the parking space to the adjacent column is required. The development proposes to provide a clearance of 1.75m which complies with the minimum clearance required to allow for door openings and turning manoeuvre into the space, as outlined in AS2890.1:2004. Any obstruction to the proposed spaces will be addressed during the detailed design stage, in compliance with AS2890.1.2004.

### Parking Aisle Width

Section 7.4.4 of the BCC TAPS PSP indicates for a two-way circulating roadway the minimum requirement is 6.2m. The development proposes a 5.8m aisle width which meets the minimum requirement outlined in AS 2890.1:2004, also two-way circulation is demonstrated in Colliers Drawing 23BRT0684 within Appendix B.

### Ramp Gradient

TAPS PSP requires maximum ramp grades of 1:6 (16.7%) in a parking area, whereas the requirement set out in AS2890.1 is 1:5 (20%). The ramp between both the ground and L1 levels along with the ground and B1 level for the development, is 1:5 (20%) with 1:8 (12.5%) at the top of each ramp within the car parking area, which is consistent with the performance requirement detailed within AS/NZS2890.1:2004.

### Blind Aisle Extension

TAPS PSP requires a 2.0m blind aisle extension for the end bay. The development proposes to provide a 1.0m extension which complies with the requirements outlined in AS/NZS2890.1:2004.

### Vehicle Swept path

The following swept paths are completed and included in **Appendix B**; details are as follows:

- Colliers Drawing 23BRT0684-02 Revision C illustrates the passing of B85 and B99 vehicles on typical basement levels. The drawing also shows a B99 (large vehicle) reversing in the visitor parking area (basement 1) when the visitor parking is full, in compliance with Clause 2.4.2(c) of AS2890.1:2004.
- Colliers Drawing 23BRT0684-03 Revision C illustrates the passing of B85 and B99 vehicles on typical podium levels. The drawing also shows the turnaround area for the end bays.

Overall, the proposed car parking arrangements are generally by the TAPS PSP, apart from some design performance solutions that are deemed fit for purpose.

# 6 Site Access Arrangements

Vehicular access is proposed via a single 7.0m, Type B1 crossover located on Graham Street. The two-way operation of Graham Street allows vehicles to approach/depart in either direction.

Upon entering the site, cars will proceed to either the basement car park or ramp up to other car park levels. Service vehicles (refuse collection and furniture trucks) will reverse on-site and park onto one of the service bays (discussed further in Section 7).

The access driveway has the following key geometric characteristics and discussed in Table 6-1.

Table 6-1: Council Parking Requirement

| Design Aspect | TAPS PSP Provision | Proposed Provision | Compliance |
|---|---|---|---|
| Width / Crossover Type to accommodate:<br>• Cars[1 2]<br>• Service vehicles [1 3] | <br>4.5m (entry) 3.5m (exit) Type C1<br>7.0m Type B2 | <br>7.0m wide Type B1<br>7.0m wide Type B1 | <br>Performance solution<br>Performance Solution |
| Distance from:<br>• Minor intersection[1]<br>• Major intersection[1]<br>• Adjacent driveway[1] | <br>10m (min)<br>20m (min)<br>3m (min) | <br>10m to Marie Street<br>50m to Coronation Drive<br>4m to 2 Gardner Close | <br>TAPS Complaint<br>TAPS Complaint<br>TAPS Complaint |
| Driveway Sight Splays | 2.0m wide x 5.0m deep (on each side) | 2.0m x 2.5m splays on driveway | Performance Solution |
| Minimum Queuing Provisions[1] | 8 car lengths (or 48m) | 2 car length (or 12 m) to the first conflict point | Performance Solution |
| Maximum Driveway grade | 1:20 (5%) maximum within first 6m | 1:20 (5%) maximum within first 6m | TAPS Complaint |

[1] Based on Graham Street being classed as a 'minor road' and speed limit of 50km/h.

[2] Based on the access servicing 291 low turnover car parking spaces.

[3] Based on the access servicing service vehicles up to the size of an LRV.

The development access arrangements are generally consistent with the provisions of the TAPS PSP. Further details about deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided following.

## Driveway Width

Table 8 of the BCC TAPS Policy outlines the requirement for a Type C1 crossover to accommodate 251-500 car parking spaces, which requires a median-separated entry and exit. However, due to the location of the loading bay and overall site layout, a median-separated crossover is not feasible, as the crossover must accommodate both cars and service vehicles. While a median-separated crossover is typically required for high-vehicle generation developments, the traffic expected from this development is low, with only one vehicle every 1-2 minutes – discussed further in Section 8.

Additionally, the location of the site in a high pedestrian area promotes the provision of a narrow crossover to reduce the conflict zone between vehicles and pedestrians. This restricted width allows for shorter pedestrian crossing distances and promotes lower speeds for vehicles operating through the access.

Therefore, the proposed combined driveway width of 7.0m with a Type B1 crossover is considered sufficient and complies with service vehicle requirements.

### Driveway Type – Service Vehicle

Table 9 of the BCC TAPS Policy details the requirement for a 7.0m, Type B2, to be used to accommodate RCV access from a minor road. The proposed development has the inclusion of a 7.0m Type B1 access. Type B1 splay is sufficient for the IN/OUT movement of RCVs and has been detailed within Colliers Drawing 23BRT0684-01 Revision B, within **Appendix B**. The Type B1 splay is also sufficient for the occasional LRV/HRV access to the site as shown in **Appendix B**. This is primarily facilitated by the shoulder on Graham Street, allowing additional manoeuvring space between the access and the traffic lanes.

### Sight Splays

Table 7 indicates that a standard sight triangle of 2.5m x 5.0m should be provided. The development plans propose a 2.0m x 2.5m allowance at the access crossover. This sight splay allowance is consistent with the alternative provisions outlined in AS2890.1:2004 and is therefore considered acceptable.

### Queuing

Whilst the 12m queuing distance between the property boundary and the first internal parking space is less than the 8-vehicle queuing provision required in accordance with Table 10 of BCC's TAPS PSP, it should be noted that BCC's queue capacity requirement is based solely on the number of parking spaces. It ignores the type of user and the likely turnover/traffic generation of the parking facility. In effect, BCC's queue capacity requirement for a given number of (for instance) parking spaces within a supermarket, is identical to that of the same number of parking spaces within a multiple-unit dwelling development.

The peak hour movement at the driveway crossover is estimated to be 37 vehicles per hour (vph) during the AM peak hour period and 27vph during the PM peak hour period for the 291 parking spaces. This equates to 1 vehicle every 1-2 minutes. As such, the potential for queuing and the need for queue capacity or storage is correspondingly lower than the requirements specified in BCC's TAPS PSP.

Overall, the proposed car parking arrangements are generally in accordance with the TAPS PSP, apart from some design performance solutions that are deemed fit for purpose.

# 7 Service Vehicle Arrangements

To assess the required service provisions for the development, Colliers has referred to the requirements as set out in the BCC's TAPS Policy.

## 7.1 BCC Requirements

To assess the required service vehicles for development, Colliers has referred to the BCC TAPS PSP requirements for service vehicles.

BCC's TAPS PSP gives guidance on the service vehicle requirements for developments based on proposed uses. For a multiple dwelling development, arrangements for the following service vehicles are required:

- A large rigid vehicle (LRV) is required to access the site on an occasional basis.
- A refuse collection vehicle (RCV) is required to access the site on a regular basis.

No specific requirements are set for a number of service bays required for multiple dwelling developments.

For commercial use, the requirements for the service vehicles are as follows:

- Café (approximately 143m$^2$ GFA)
  - A RCV is required to access the site on an occasional basis.
  - A small rigid vehicle (SRV) bay is required for food and drink outlet for an area 0-199m$^2$ GFA

## 7.2 Estimated Service Vehicle Demand

The estimated service vehicle traffic generation is as follows:

- Occasional furniture removal (and delivery) trucks by a large rigid vehicle (LRV).
- Regular RCVs (with refuse collection undertaken three per week for both general waste, recyclables and).

For commercial use, the proposed loading bay will be utilised, no additional service bay is proposed, noting the service bays accessing the café can be accommodated onsite.

## 7.3 Loading Area Design

Table 7-1 Identifies the characteristics of the proposed loading bay with respect to the TAPS PSP requirements. The last column identifies the compliance of each design aspect. Where compliance with the TAPS PSP is not achieved, further information is provided below.

Table 7-1: TAPS PSP Service Vehicle Design Requirements

| Design Aspect | TAPS Requirement | Proposed Provision | Compliance |
|---|---|---|---|
| Loading-bay length:<br>• LRV bay<br>• MRV bay<br>• RCV bay[1] | <br>12.5m (min)<br>8.8m (min)<br>10.235m (min) | <br>10.5m (min) (12.0m inclusive of bin transfer area)<br>10.5m (min)<br>10.5m (min) | <br>Performance Solution<br>TAPS Compliant<br>TAPS Compliant |
| Loading-bay width:<br>• LRV bay<br>• MRV bay<br>• RCV bay[1] | <br>3.5m (min)<br>3.5m (min)<br>3.5m (min) | <br>2.5m line marked (5.7m wall to wall)<br>2.5m line marked (5.7m wall to wall)<br>2.5m line marked (5.7m wall to wall) | <br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant |
| Service aisle width (two-way) | 6.5m (min) | 6.2m (min) | Performance Solution |
| Loading bay grades | 1:25 (4%) max | 1:25 (4%) max | TAPS Compliant |
| Height Clearance:<br>• LRV<br>• MRV bay<br>• RCV bay[1] | <br>4.5m (min)<br>4.5m (min)<br>3.6m (min) | <br>5.65m (min)<br>5.65m (min)<br>5.65m (min) | <br>TAPS Compliant<br>TAPS Compliant<br>TAPS Compliant |

[1]Based on a rear-loading RCV.

The proposed servicing arrangements are generally consistent with the provisions of the BCC TAPS Policy, however, the following have been resolved with performance solutions.

### LRV Provision

The TAPS PSP requires a 12.5m length service bay to accommodate LRV design vehicles. Section 3.2.1.2 of the TAPS PSP specifies that the provisions for servicing by the occasional access vehicle type nominated is to ensure that:

2. *"Provision for servicing by the vehicle type nominated in Column 2 of Table 1 is to ensure that:*
    a. *the vehicle can stand wholly contained within the Site (clear of the verge);*
    b. *occasional reverse manoeuvres by the vehicle are limited to one only, either to or from the Site if safe operation can be demonstrated;*
    c. *the swept path of the vehicle does not have a greater overall width than the access driveway."*

The proposed development meets all these criteria, as demonstrated in Drawing 23BRT0684-01, Revision B within **Appendix B**, which illustrates that an LRV can reverse from Graham Road (identified as a neighbourhood road, minor road) and exit the development in a forward gear.

### Aisle Width

TAPS PSP requires a 6.5m aisle width for the service vehicle. The development has approval for a 6.2m (Reference 1 and 2) which is considered adequate based on the performance solution, noting the service vehicle operations will be managed on-site and a service vehicle management plan will be developed, which will include the following:

- Convex mirror to be provided for safe operations
- Emergency lights to be used during servicing.

Additionally, the aisle width available between the security line is 7.2m, as shown in Figure 7-1, noting the chevron will be provided to maintain a separation between the column and the trafficable area. Therefore, the service vehicles have a 7.2m area to utilise during loading and unloading.

Therefore, a 6.2m circulation width is considered adequate.

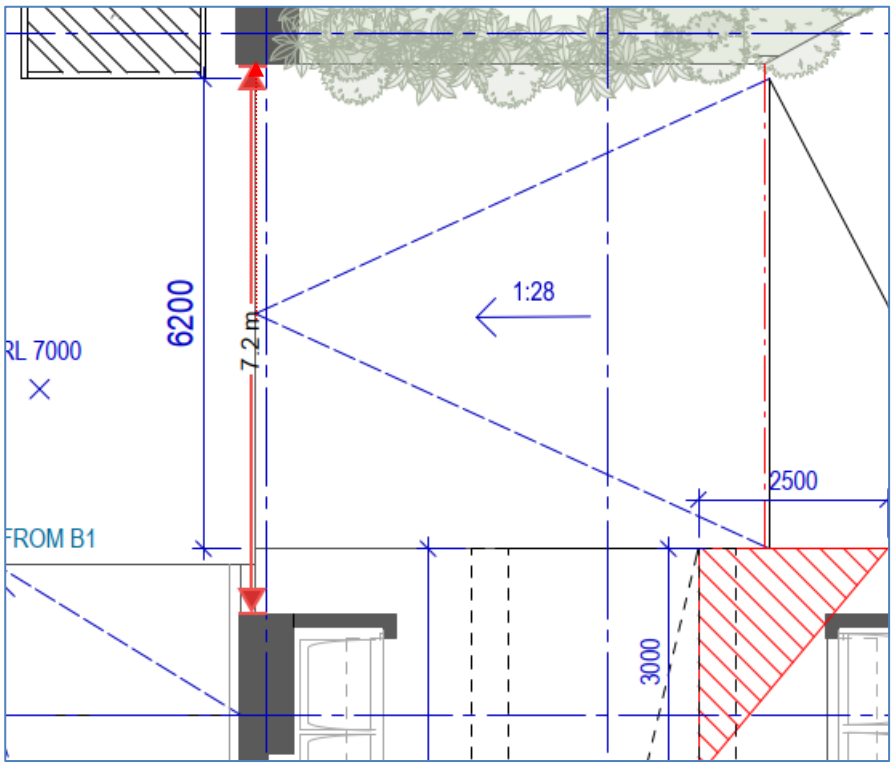



Figure 7-1: Proposed Aisle Width

## 7.4 Service Vehicle Manoeuvring

The on-site standing area on the driveway measures 2.5m wide x 10.5m deep (excluding space at the rear of the vehicle for bin collection) which is sufficient for an LRV and for a rear-loading RCV, noting the waste operations will be managed onsite. Refer to the waste management plan by Colliers for further details regarding the refuse collection method and arrangements.

The manoeuvring area has an overall width of 6.2m, is graded at 1:25 maximum and has in excess of 4.5m height clearance over. These provisions satisfy all the requirements of the TAPS PSP for rear-loading RCVs.

Access for LRVs and RCVs will require vehicles to enter the site via Graham Street (and then exit out in a forward manner) utilising the on-site manoeuvring area.

Swept path drawings showing both the design of a rear-loading RCV manoeuvring on-site, and utilising the loading bay, are shown in Colliers Drawings within Appendix B.

Overall, the proposed servicing arrangements are generally in accordance with the TAPS PSP.

# 8 Estimated Future Transport Demands

## 8.1 Existing Traffic Generation

The existing site is currently occupied by a 4-storey BUSSQ (Building Super) commercial building occupied by an office. The Gross Floor Area (GFA) for the existing commercial building is approximately 3,240 m², with 85 car parking spaces.

To estimate the traffic generation expectations of the proposed land uses (office use), reference is made to the NSW Government *Guide to Traffic Impact Assessment*, Technical Guidance for Transport Practitioners, *dated 2024*. This indicates the following traffic generation rates should be adopted for the office:

- AM Peak Hour Period 1.69 vph per 100m$^2$ GFA, being 55 vph
- PM Peak Hour Period 1.20 vph per 100m$^2$ GFA, being 40 vph

In situations of restricted parking supply, such as the BCC City frame, Colliers research has identified that a parking generation rate based on number of provided spaces is appropriate, This is typically a generation between 50% and 60% of parking spaces. For the existing 85 spaces this would equate to 42 to 50 trips per hour, consistent with the NSW GTIA rates.

## 8.2 Estimated Development Traffic Generation

As noted in Section 3.1, the proposed development comprises a total of 192 apartments and given the development is located within high public transport accessibility, the following traffic generation rates are adopted based on the NSW Government *Guide to Traffic Impact Assessment*, Technical Guidance for Transport Practitioners, *dated 2024*:

- AM Peak Hour Period 0.19 vph per dwelling
- PM Peak Hour Period 0.15 vph per dwelling

## 8.3 Net Traffic Generation

A comparison of the existing development and proposed redevelopment traffic generation potential is shown in Table 8.1.

Table 8.1: Net Traffic Generation Change – Existing vs Proposed BTS

| Scenario | Extent | Generation Rate | | Peak Traffic Generation | |
|---|---|---|---|---|---|
| | | AM Peak | PM Peak | AM Peak | PM Peak |
| Existing development | 3,240m2 GFA | 1.69vph / 100m2 GFA | 1.20vph / 100m2 GFA | 55vph | 40vph |
| Proposed development | 192 apartments | 0.19vph / dwelling | 0.15vph / dwelling | 37vph | 29vph |
| **Net Change** | | | | **-18vph** | **-11vph** |

As can be seen in Table 8.1, the proposed development will generate less traffic than the office use for both the AM and PM peak-hour periods, respectively.

## 8.4 BCC Warrants for Transport Impact Assessment

Acceptable Solution A02 of the Road Hierarchy Overlay Code details that the development traffic impacts be quantified and mitigated for an 'assessable development for a material change of use' which meets any of the following triggers:

- is classified as a major development; or
- involves an access driveway to a major road; or
- involves an access driveway within 100m of a signalised intersection.

Note: The BCC TAPS Policy defines a 'major development' as one with a total peak hour vehicle generation rate greater than 25vph.

Given the net change in traffic generation projected by the development compared to the existing use is negative, it is not classed as a major development. Site access is proposed to be at the location of the existing access driveway on Graham Street, which is classed as a minor road. While this access is within 100m of a signalised intersection, there is no change proposed to the existing operational conditions at the development driveway. On this basis, a detailed traffic impact assessment is not considered warranted at this stage.

# 9 Public and Active Transport

## 9.1 Public Transport

The site is located in close proximity to a high level of public transport provision, with high-frequency bus, train and ferry services all within easy walking distance. This will allow easy and convenient access for users of the site.

## 9.2 Pedestrian Access

The subject site is adequately served in terms of pedestrian facilities with footpaths provided on both sides of Coronation Drive, Graham Street and Marie Street. Pedestrian crossing facilities are provided at the Coronation Drive/ Graham Street signal-controlled intersections, connecting the site to the Riverwalk located on the Bicentennial Bikeway.

A 3.75m verge is provided along the site frontage on Coronation Drive, consistent with the streetscape hierarchy outlined in the City Plan. A land dedication has been provided to widen the verge to 5.0m, in line with the approved plans (Reference 1 & 2). This dedication enhances connectivity and contributes to the 'community benefit' proposed through the office tower (current approval Reference 1 & 2), which has been incorporated into the residential scheme. The additional verge width exceeds the streetscape requirements and has been provided to improve active transport connectivity.

## 9.3 Cyclists Requirement

BCC's bicycle parking requirements are detailed in Table 9-1 below. As detailed below, the proposed bicycle parking supply complies with the requirements of the BCC TAPS policy.

Table 9-1: Bicycle Parking Supply Requirements

| Land Use | TAPS PSP Provision (minimum) | Extent | Requirement (minimum) | Provision |
|---|---|---|---|---|
| Multiple dwelling | 1 bicycle space per unit (in either the garage or a separate on-site facility) | 192 units | 192 bicycle spaces | 218 bicycle spaces |
| Visitor | 1 bicycle space per 4 units or part thereof | | 48 bicycle spaces | 52 bicycle spaces |
| **Total** | | | **240 bicycle spaces** | **270 bicycle spaces** |

As seen in Table 9-1, the minimum bicycle parking supply of 240 spaces is required and the proposal provides 270 bicycle parking spaces, which meets/exceeds the Council's requirements.

Access to the cycling facility will be provided primarily via Coronation Drive. A wheeling ramp will be installed to assist resident and visitor bikes in and out of the development, which is consistent with the approved development (Reference 1 & 2). Additionally, an accessible ramp has been provided in compliance with AS1428.1.

Overall, the proposed development is well-served by both active and public transport, providing external connections for residents and visitors.

# 10 Summary and Conclusion

## 10.1 Access Arrangements

The car park is to be accessed via Graham Street, via a 7.0m wide, Type B1 crossover. The access arrangement is generally compliant with BCC requirements and can accommodate all required design vehicles including LRV and rear-loading BCC RCV.

## 10.2 Car Parking Arrangements

A minimum supply of 270 car parking spaces would be permitted under BCC's TAPS PSP for the proposed development. The scheme proposes to provide 291 car parking spaces which is considered acceptable and compliant.

The proposed car park layout generally complies with BCC's requirements and AS2890.1.

Overall, Colliers considers the proposed car parking arrangements for this development to be adequate.

## 10.3 Service Vehicle Arrangements

The development is to provide loading area located within the ground level. The development is to provide a loading dock suitable to facilitate up to an RCV, with occasional access provision for up to an LRV. To access the loading dock, all vehicles will enter and exit the site via Graham Street.

A minimum height clearance of 4.5m is to be provided within the service area.

## 10.4 Development Traffic Impacts

Given the traffic generation associated with the proposed development and the traffic generation associated with the existing land-uses over the subject site, it is not expected that there will be any noticeable change to the intersection performance in the vicinity of the subject site.

## 10.5 Public Transport and Bicycle Parking Arrangements

The current public transport infrastructure within the vicinity of the site is considered adequate for this type of development. The bicycle provision for the development is compliant for both residents and visitors as per BCC requirements.

## 10.6 Conclusion

Based on the assessment contained within this report, Colliers see no traffic engineering reason why the relevant approvals should not be granted.

# Appendix A Development Plans

# 299 Coronation Drive

| Revision F - Date 25/02/18 | Levels | Apartments | | | | | | | Parking | | | | | | Landscape | | | GFA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3 Bed Large | 3 Bed Large | 3 Bed Mid | 3 Bed Mid | 3 Bed Small | 2 Bed MPR | Total | Standard | Small Cars | Tandems | Total Cars | Total Motorbikes | Bicycles | Deep Planting | In Ground Planting | Elevated Planting | NLA | GFA | Total GFA |
| Amenities and Pool | L29 | | | | | | | | | | | | | | | | 202 | | 1219 | |
| Sub-Floor and Home Office | L28 | | | | | | | | | | | | | | | | 7 | | 1105 | |
| | L27 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L26 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L25 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L24 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L23 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L22 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L21 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L20 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L19 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L18 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L17 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L16 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L15 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L14 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L13 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L12 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L11 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L10 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L9 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L8 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L7 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L6 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L5 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1366 | |
| | L4 | 2 | 1 | 1 | 1 | 1 | 2 | 8 | | | | | | | | | | | 1646 | |
| | L3 | | | | | | | | 43 | 2 | 3 | | 2 | 42 | | | 168 | | | |
| Car Parking | L2 | | | | | | | | 43 | 2 | 3 | | 2 | 42 | | | 114 | | | |
| | L1 | | | | | | | | 43 | 2 | 3 | | 2 | 42 | | | 114 | | | |
| Lobby | Ground | | | | | | | | 4 | | | | | 114 | 198 | 136 | | 143 | 374 | |
| | B1 | | | | | | | | 44 | | 3 | | | 10 | | | | | | |
| Car Parking | B2 | | | | | | | | 44 | | 3 | | | 10 | | | | | | |
| | B3 | | | | | | | | 46 | | 3 | | | 10 | | | | | | |
| | **Total** | 48 | 24 | 24 | 24 | 24 | 48 | **192** | 267 | 6 | 18 | **291** | **6** | **270** | **198** | | **705** | 143 | 35762 | **35905** |

Car Parking Requirements

| Type | Required | Provided |
|---|---|---|
| Visitors | 29 | 18 |
| Residential | 240 | 273 |
| **Total Cars** | **269** | **291** |
| **Total Motorbikes** | **6** | **6** |

Bicycles

| Type | Required | Provided |
|---|---|---|
| Visitors | 48 | 52 |
| Residential | 192 | 218 |
| **Total Bicycles** | **240** | **270** |

| | Totals |
|---|---|
| Site Area | 2340 |
| Site Cover (Tower) | 61% |
| Site Cover (Podium) | 81% |
| Deep Planting | 8.5% |

01 02 03 04 05 06 07 08 09

9000 9000 9000 9000 4500 4500 4500 4500

A B C D

9000 9000 9000

2 SK3201 — 1 SK3300

MECH RISER

2600 x 5400 | 2500 x 5400

5500

DEEP PLANTING

1000

6000

B1 LOWER
RL 3150

STAIR

RAMP UP FROM B2

1:8 1:7 1:8

6500

2400 x 5400

2600 x 5400

2600 x 5400 TANDEM

2600 x 5400 VISITOR

RAMP UP TO GROUND

SECURE LINE

B1 UPPER
RL 4800

EXTENT OF DA SCHEME BASEMENT

2930

2 SK3300 — 1 SK3202

1 SK3201 — 1 SK3300

W—B WOODS BAGOT

SILVERSTONE

Project
**299 CORONATION DRIVE, MILTON**

Sheet title
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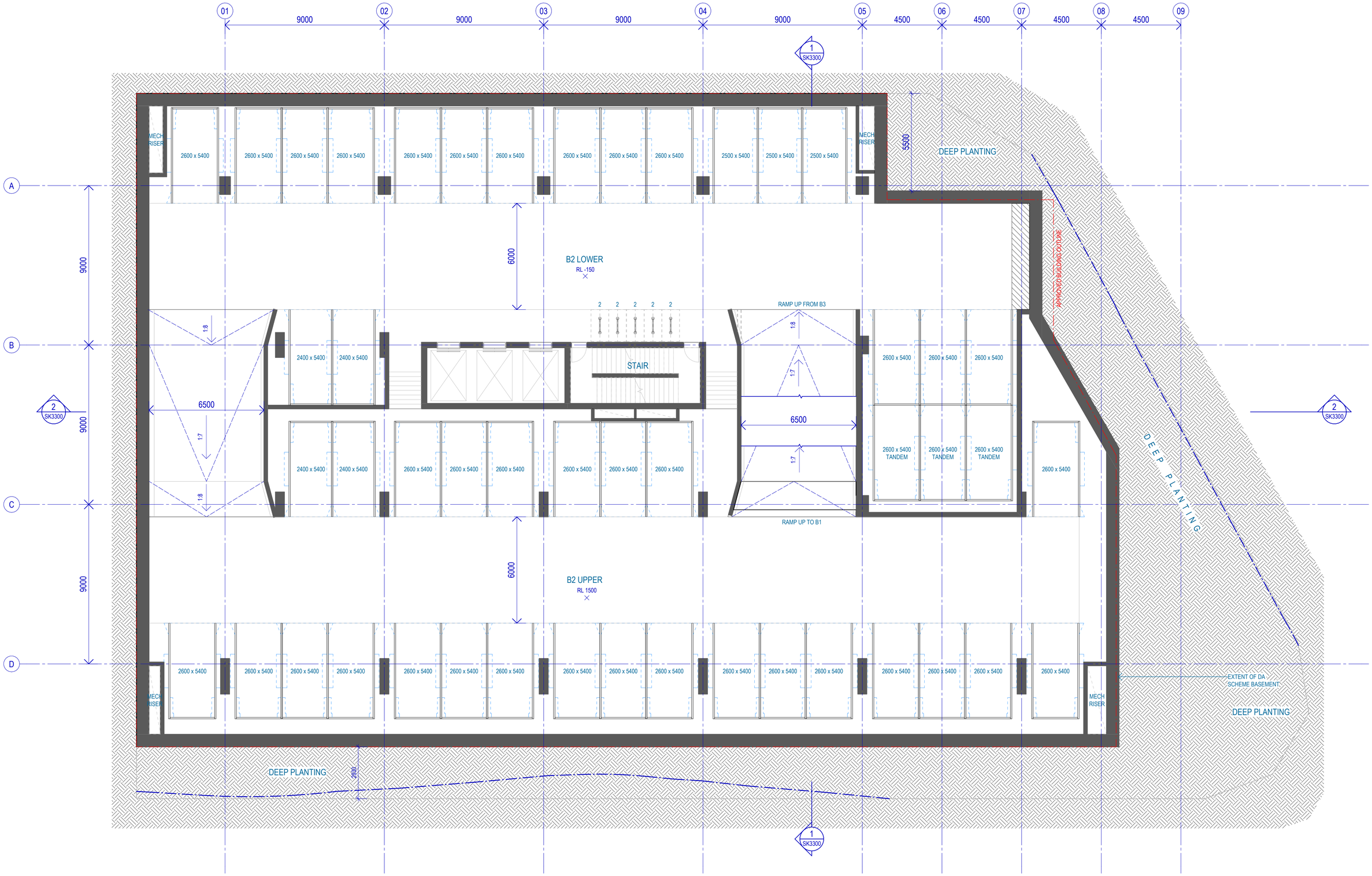


W—B WOODS BAGOT

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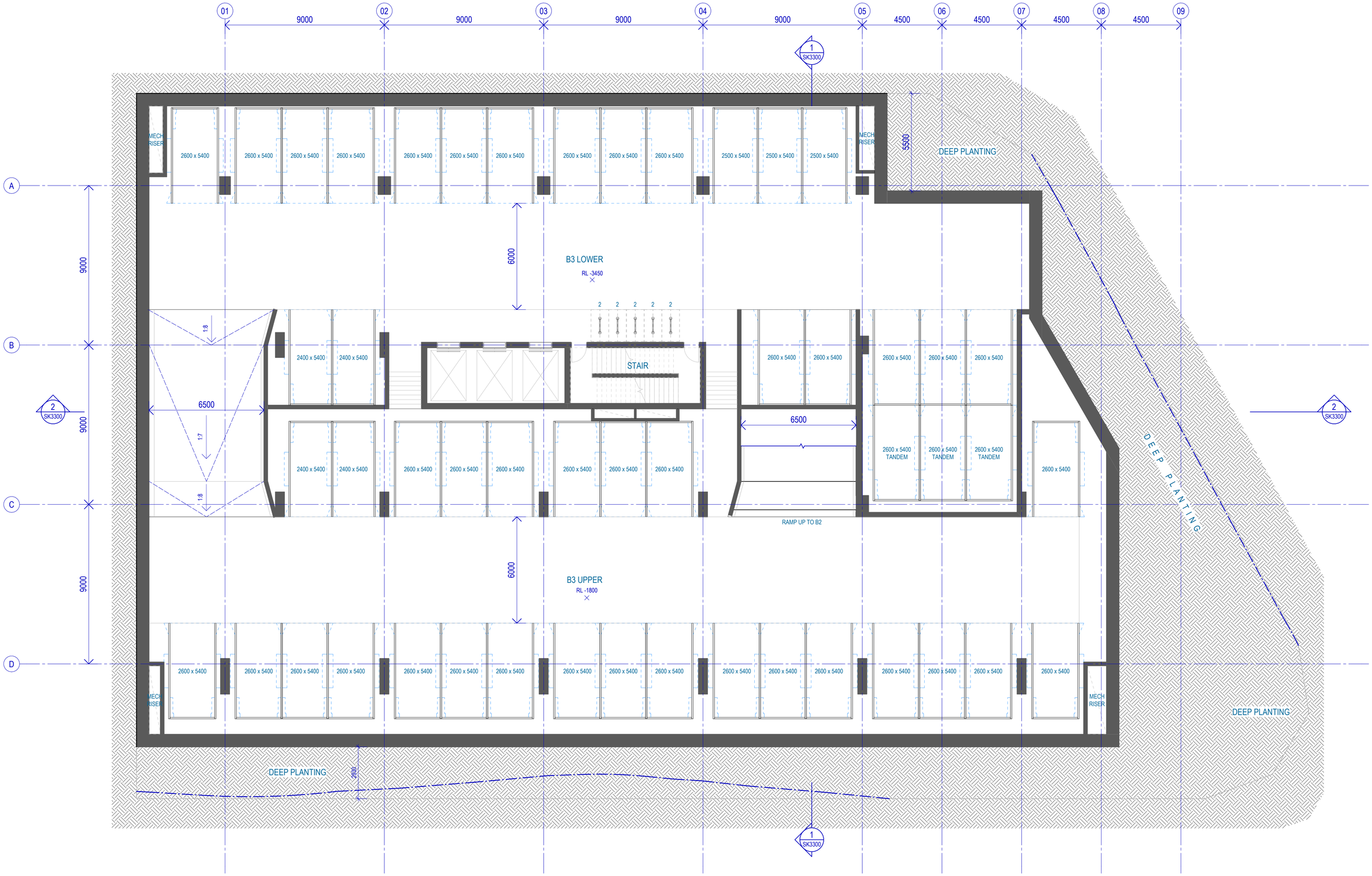
**19/02/25**

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Revision
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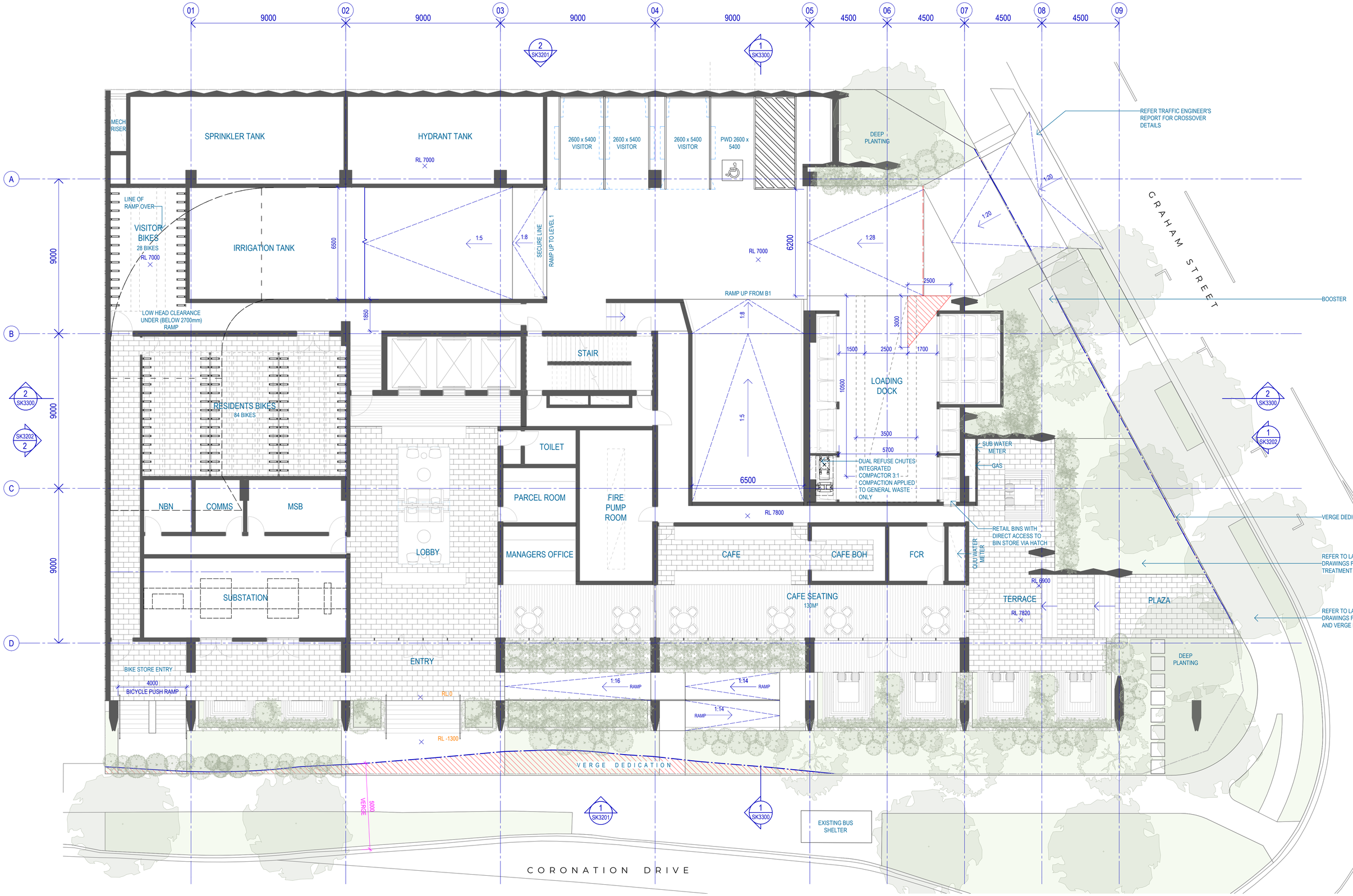
Date
**19/02/25**




W—B WOODS BAGOT

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Sheet size
**A1**



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Revision
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Date
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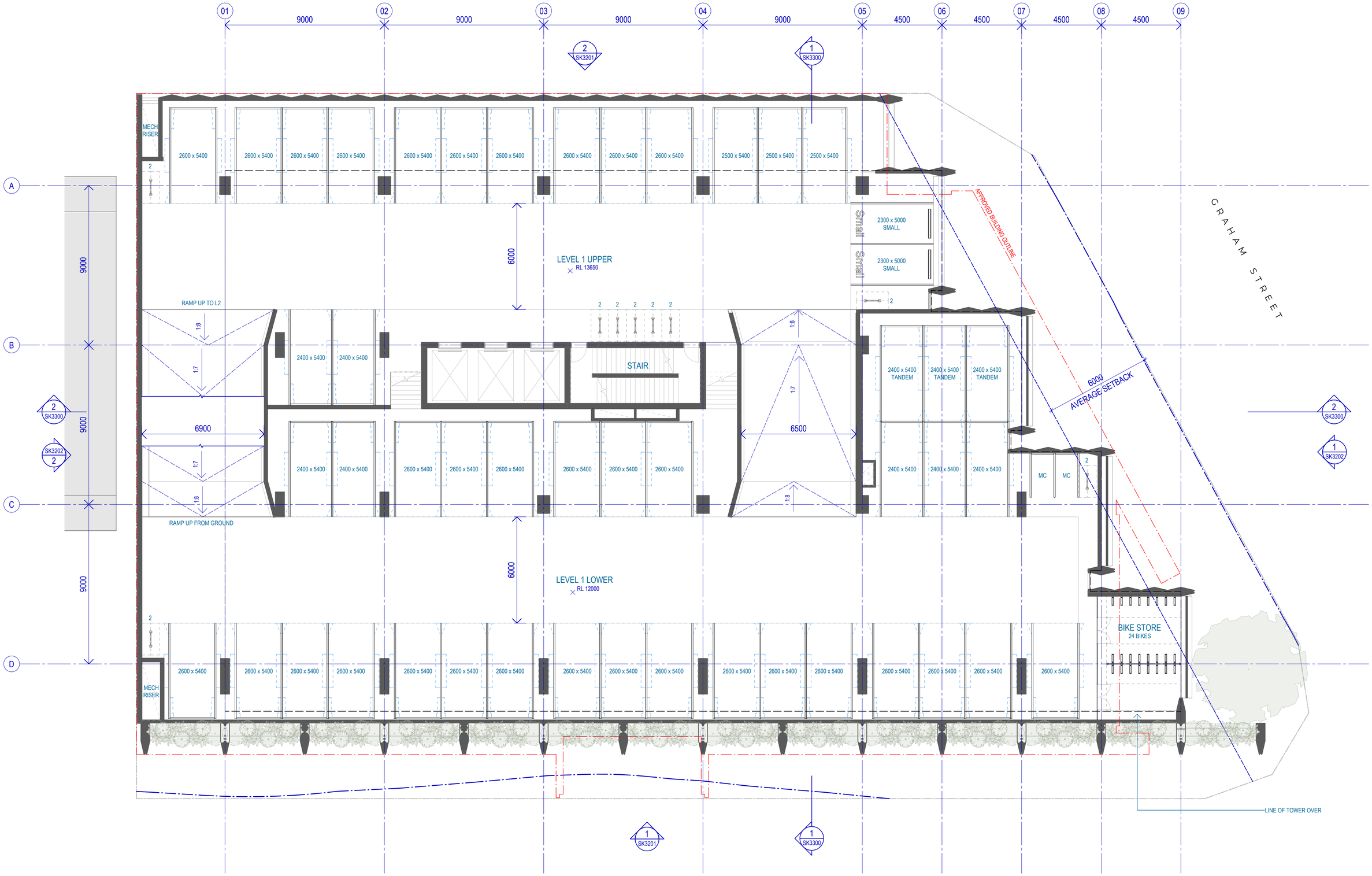


W—B WOODS BAGOT

SILVERSTONE

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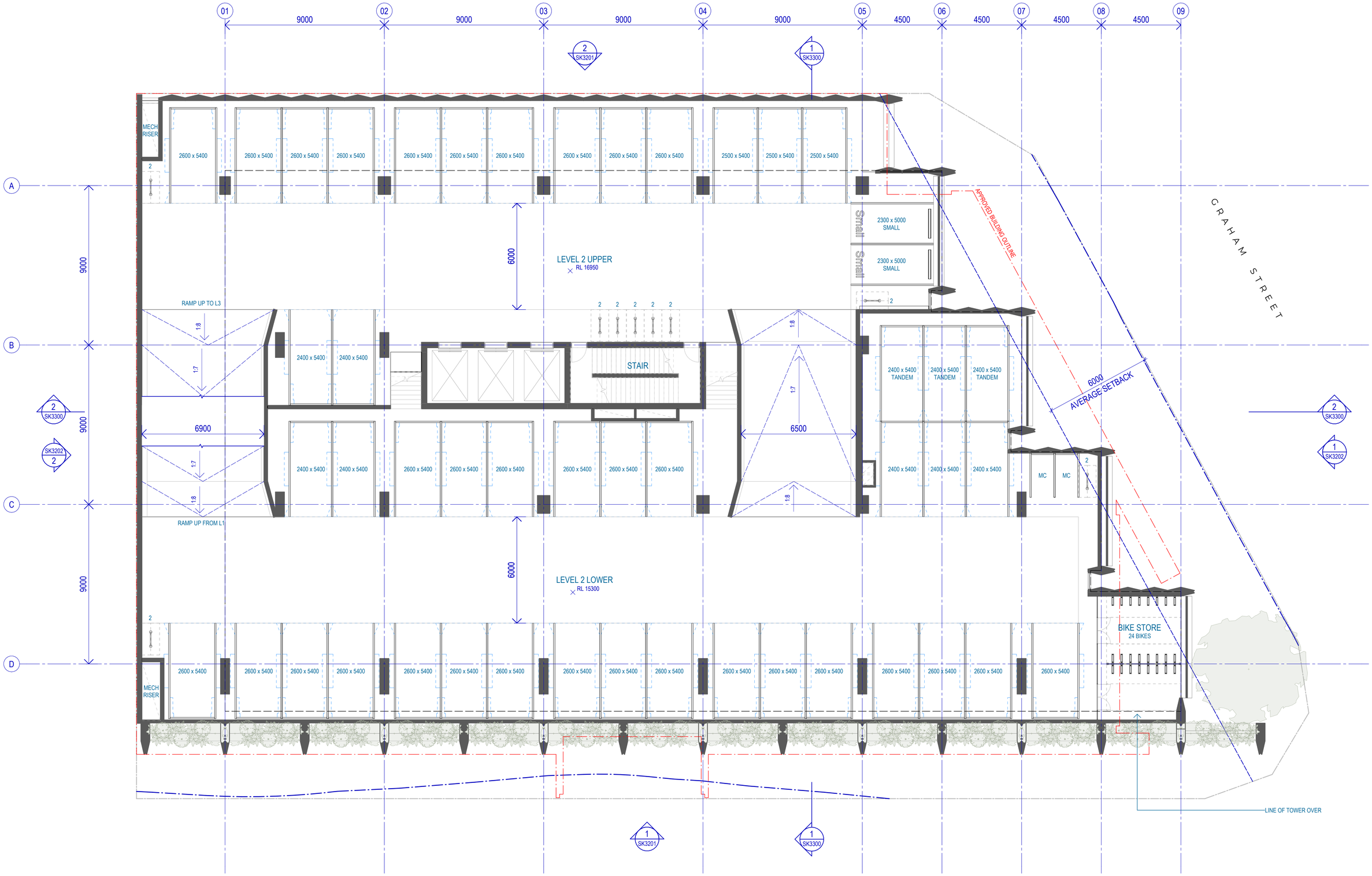


W—B WOODS BAGOT

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Sheet no.
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Revision
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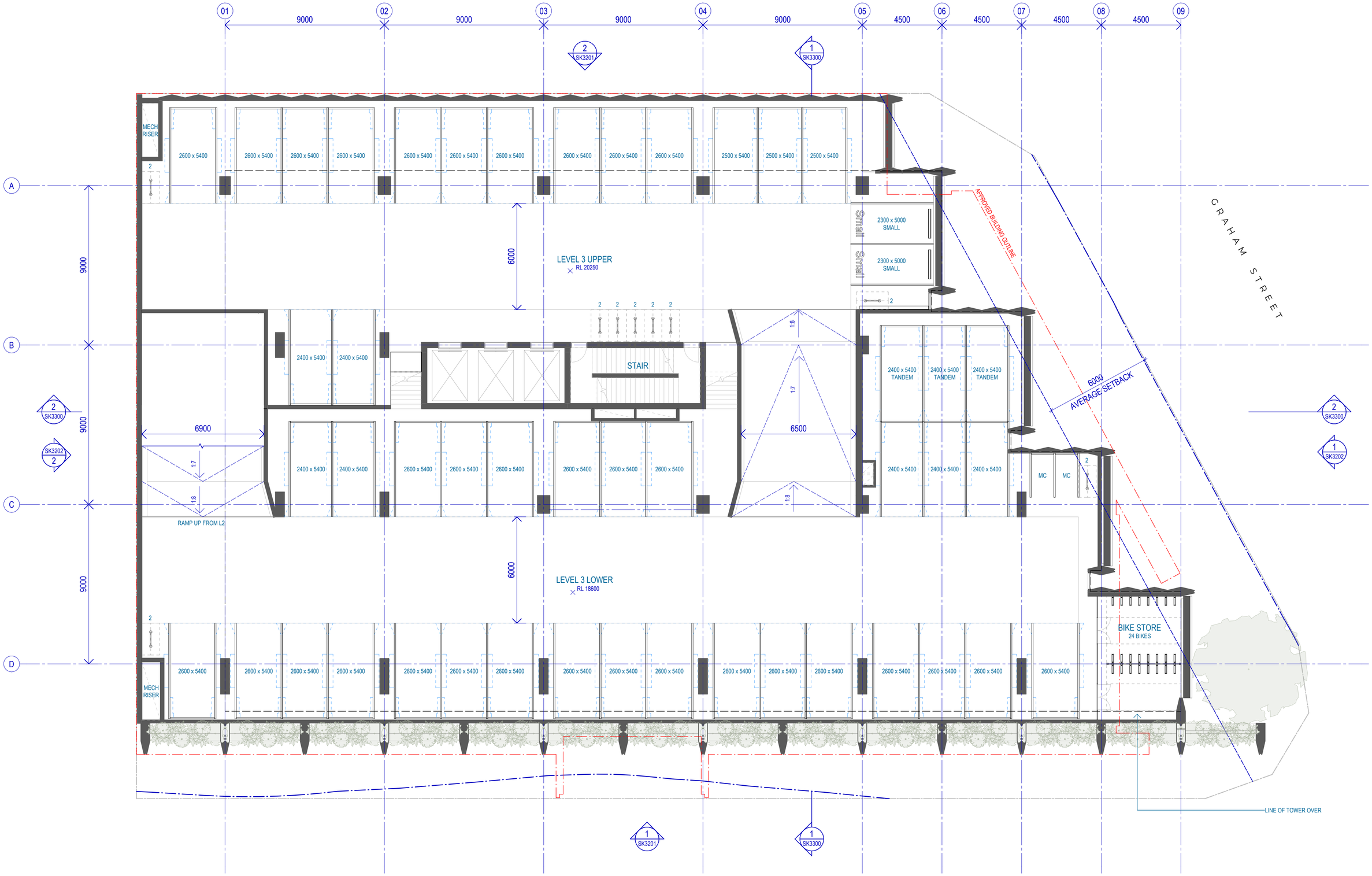
Date
**19/02/25**




W—B WOODS BAGOT

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Project
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Sheet title
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Project no.
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Scale
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Sheet size
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Sheet no.
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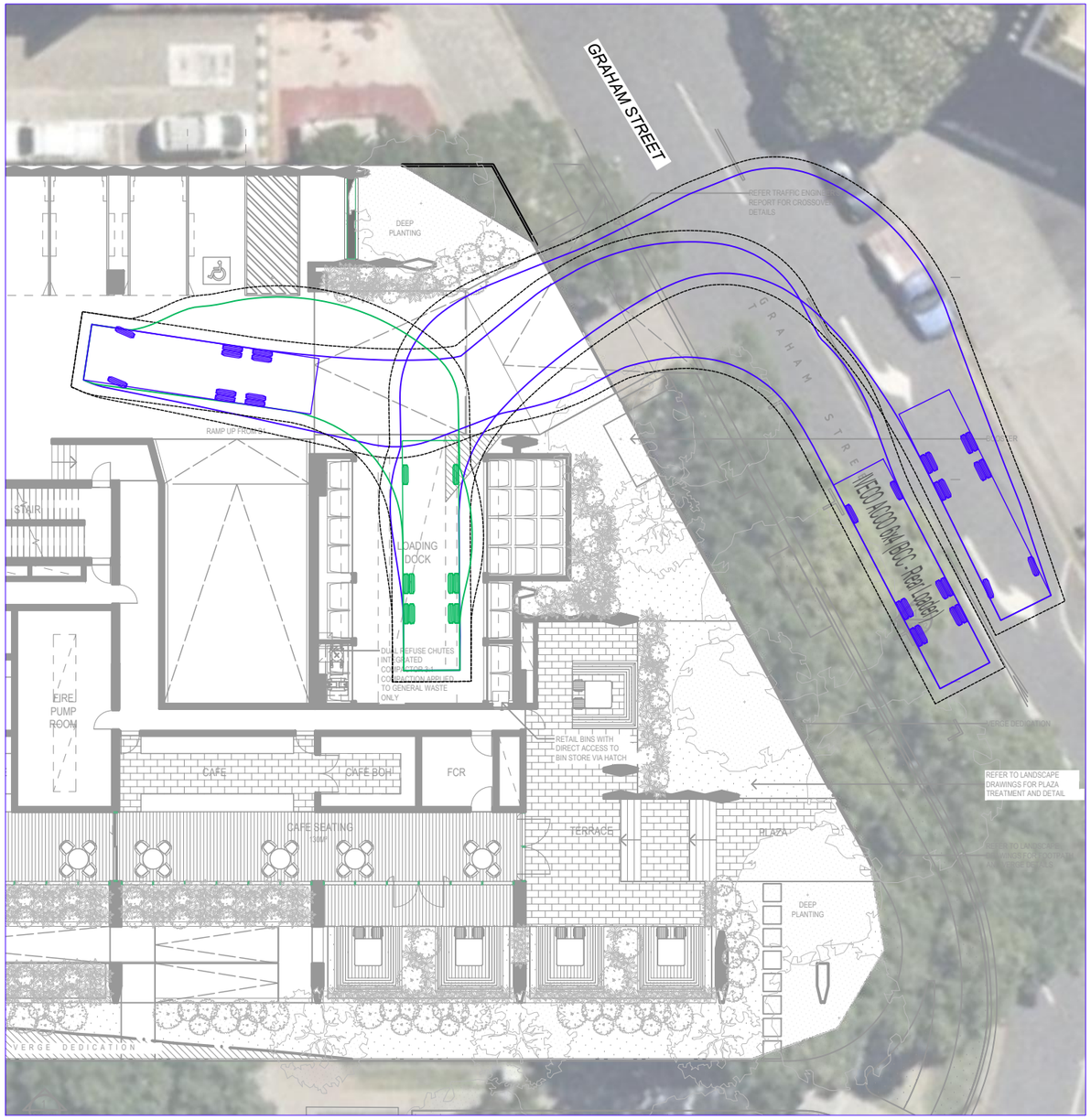
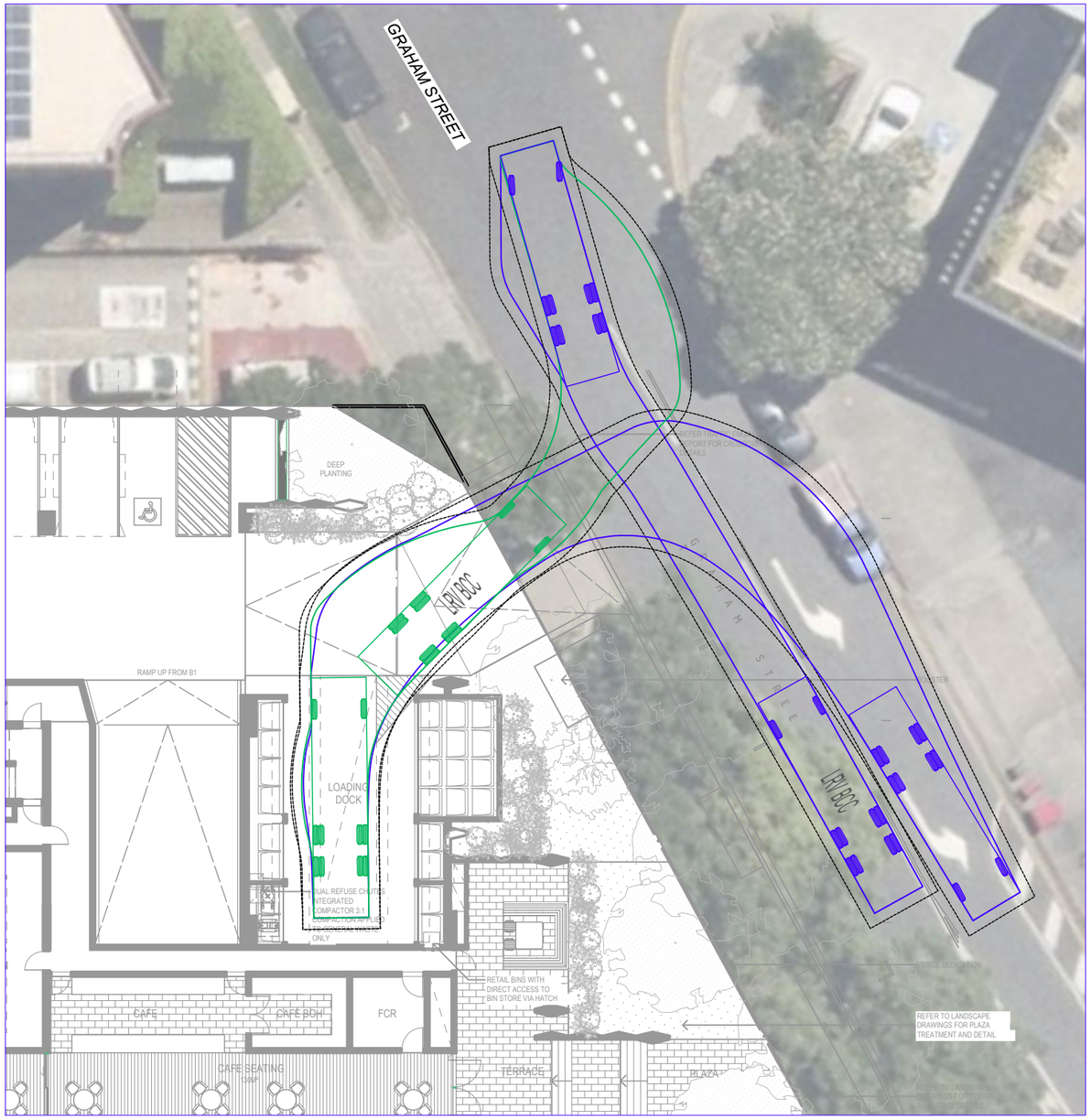
Revision
**C**

Date
**19/02/25**

# Appendix B Colliers Drawings

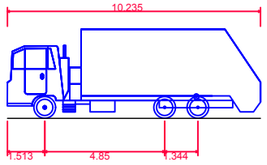



BCC RCV (REAR LOADER) INGRESS AND EGRESS MANOEUVRE



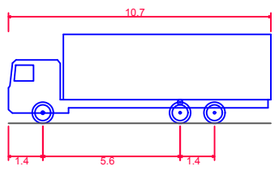

BCC LARGE RIGID VEHICLE (LRV) INGRESS AND EGRESS MANOEUVRE

## VEHICLE PROFILES




IVECO ACCO 6x4 (BCC - Rear Loader)

| | |
|---|---|
| Overall Length | 10.235m |
| Overall Width | 2.500m |
| Overall Body Height | 3.600m |
| Min Body Ground Clearance | 0.260m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 9.757m |
| Design Speed Forward | 5.00km/h |
| Clearance Envelope | 0.500m |




LRV BCC

| | |
|---|---|
| Overall Length | 10.700m |
| Overall Width | 2.450m |
| Overall Body Height | 3.623m |
| Min Body Ground Clearance | 0.419m |
| Track Width | 2.450m |
| Lock-to-lock time | 4.00s |
| Curb to Curb Turning Radius | 11.000m |
| Design Speed Forward | 5.00km/h |
| Clearance Envelope | 0.500m |

DIRECTOR

SIMON CRANK RPEQ 18360

APPROVED 21 Feb 2025

| REV. | DATE | AMENDMENT DESCRIPTION | DRAWN | CHECKED | APPROVED |
|---|---|---|---|---|---|
| D | 21-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| C | 17-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| B | 11-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| A | 10-02-23 | ORIGINAL ISSUE | DSF | NR | SC |

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

SILVERSTONE DEVELOPMENTS

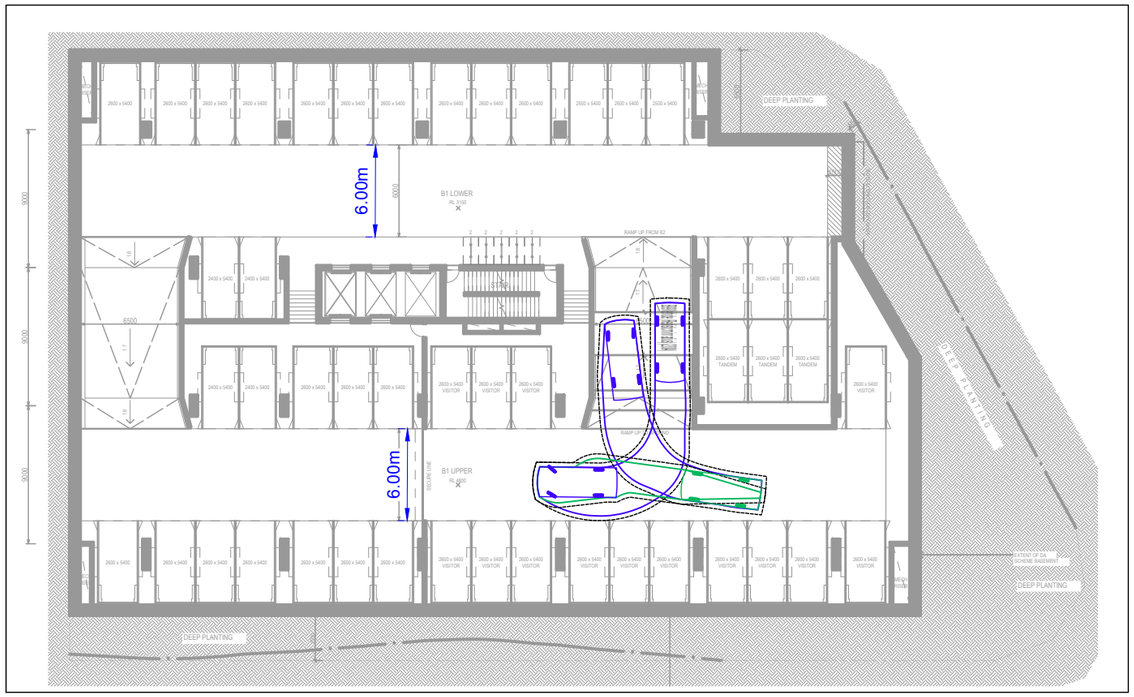
Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT
**299 CORONATION DRIVE, MILTON**

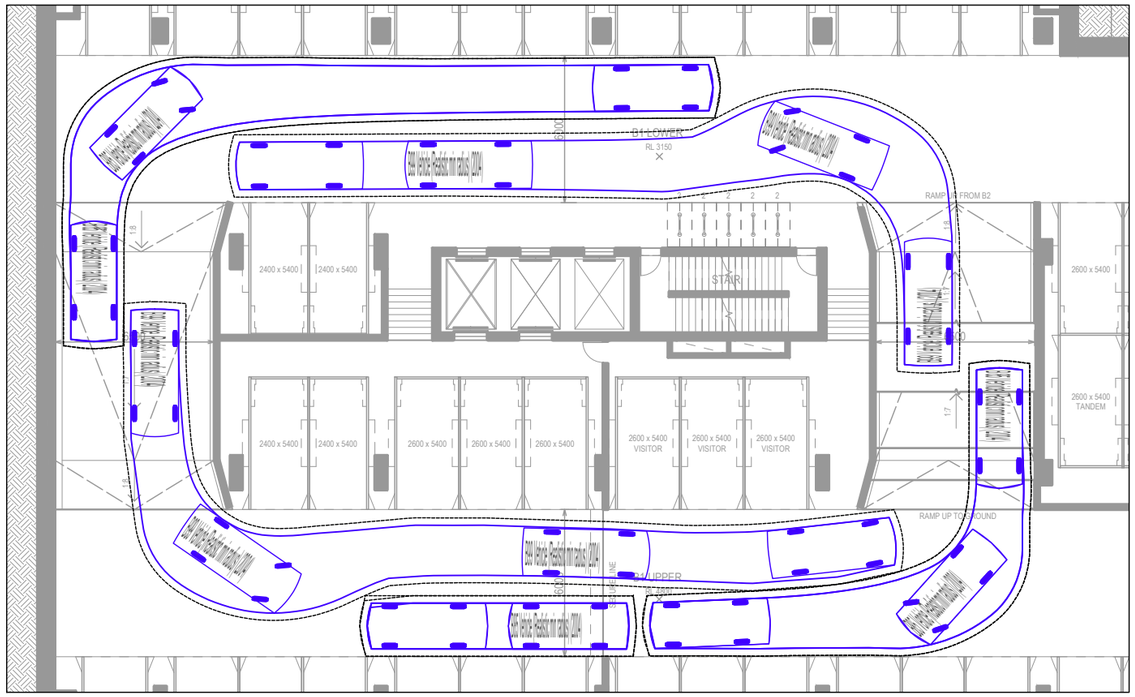
DRAWING TITLE
**SWEPT PATH ANALYSIS - GROUND LEVEL LAYOUT**
10.235m REAR LOADING RCV & 10.7m LARGE RIGID VEHICLE

| PROJECT NUMBER | ORIGINAL SIZE |
|---|---|
| 23BRT0684 | A3 |
| DRAWING NUMBER | REVISION |
| 23BRT0684-01 | D |
| DATE | SHEET |
| 21 Feb 2025 | 1 OF 1 |

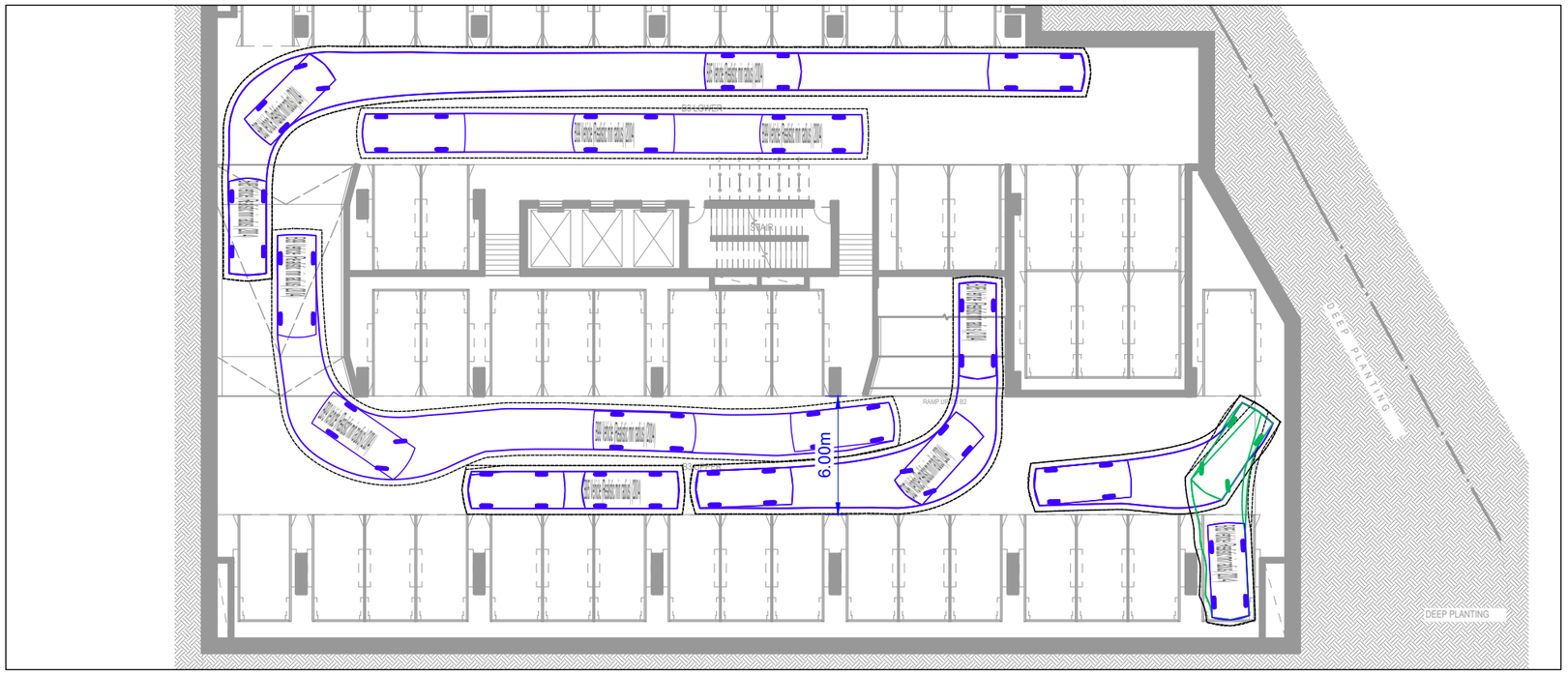
23BRT0684-F04 V01 LAYOUT REVIEW.DWG




BASEMENT LEVEL 1 - 5.2m (B99) LARGE CAR TURNAROUND AT SECURITY LINE
SCALE - 1:400

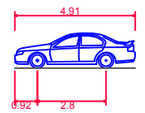



BASEMENT LEVEL 1 - INGRESS AND EGRESS: B85 VS B99
SCALE - 1:250



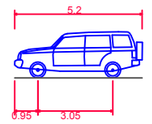

TYPICAL BASEMENT LEVEL - INGRESS AND EGRESS: B85 vs B99
SCALE - 1:300

## VEHICLE PROFILES




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 | 5.00km/h |
| Clearance Envelope | 0.300m |




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 | 5.00km/h |
| Clearance Envelope | 0.300m |

DIRECTOR

SIMON CRANK RPEQ 18360

APPROVED 21 Feb 2025

0 2.5 5 7.5 10 12.5 15m
SCALE 1:300 AT ORIGINAL SIZE

0 4 8 12 16 20m
SCALE 1:400 AT ORIGINAL SIZE

| REV. | DATE | AMENDMENT DESCRIPTION | DRAWN | CHECKED | APPROVED |
|---|---|---|---|---|---|
| C | 21-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| B | 17-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| A | 10-02-23 | ORIGINAL ISSUE | DSF | NR | SC |

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
SILVERSTONE DEVELOPMENTS

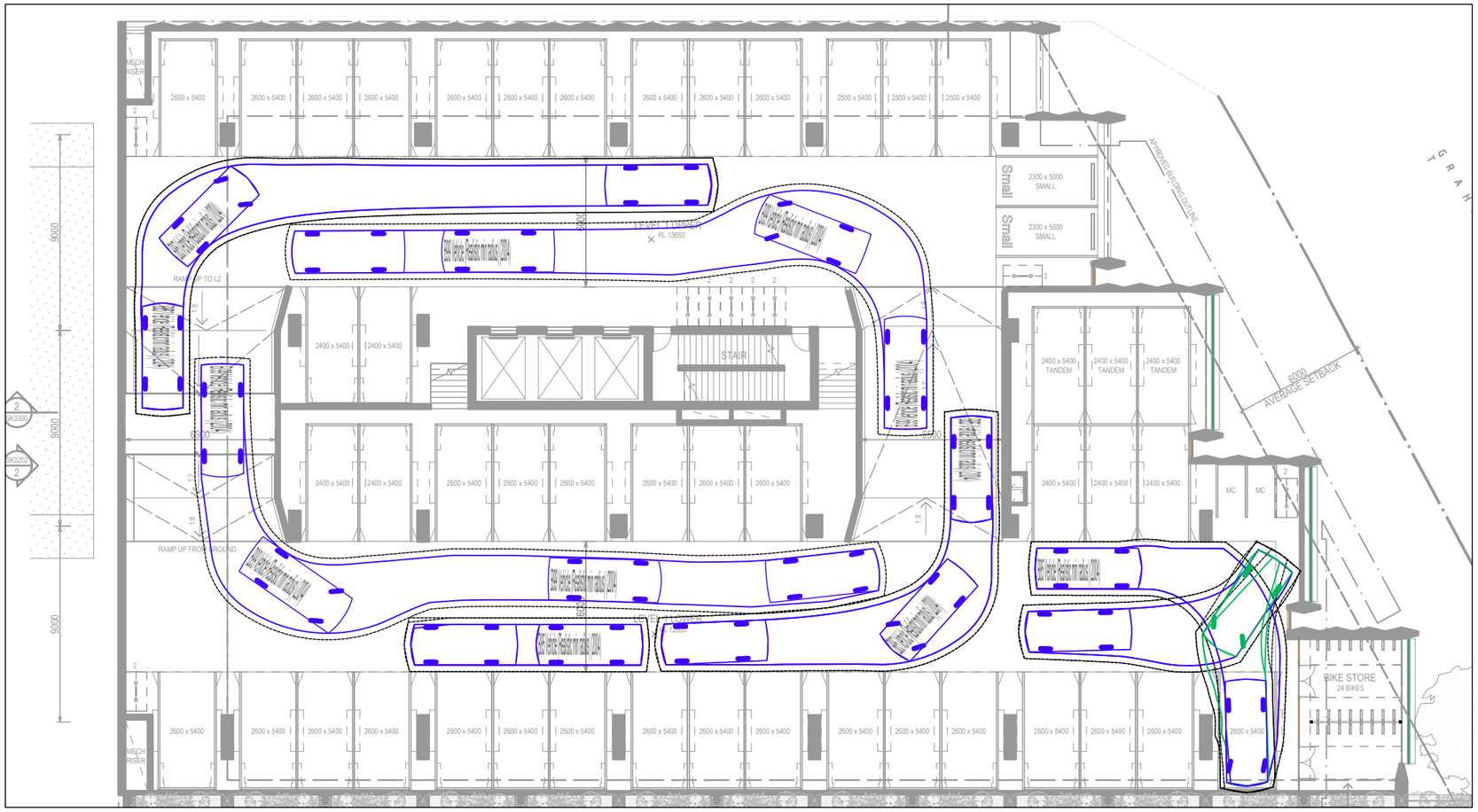
Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT
**299 CORONATION DRIVE, MILTON**

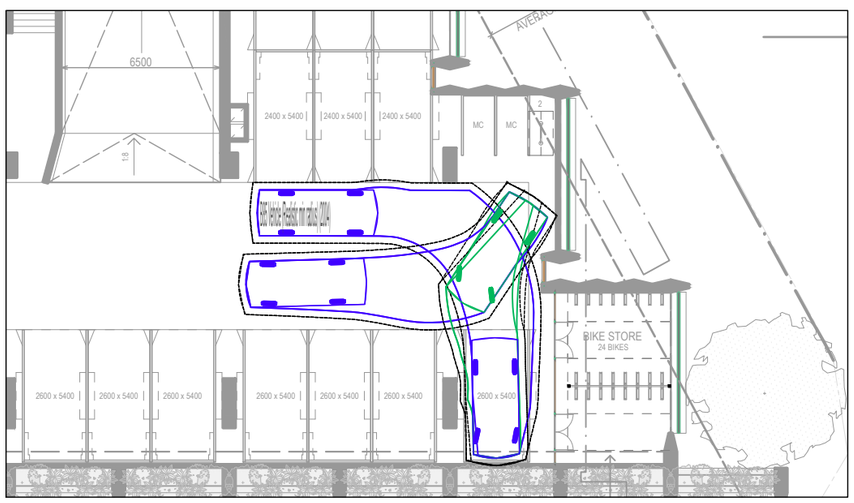
DRAWING TITLE
**SWEPT PATH ANALYSIS - TYPICAL BASEMENT LEVEL**
5.2m (B99) LARGE CAR PASSING 4.91m (B85) MEDIUM CAR

| | |
|---|---|
| PROJECT NUMBER | 23BRT0684 |
| ORIGINAL SIZE | A3 |
| DRAWING NUMBER | 23BRT0684-02 |
| REVISION | C |
| DATE | 21 Feb 2025 |
| SHEET | 1 OF 1 |

23BRT0684-F04 V01 LAYOUT REVIEW.DWG

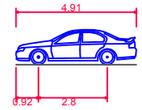



TYPICAL PODIUM LEVEL - INGRESS AND EGRESS: B99 vs B85



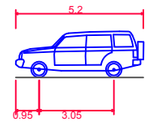

LEVEL 1 - END BAY MEDIUM CAR INGRESS AND EGRESS MANOEUVRE

## VEHICLE PROFILES




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 | 5.00km/h |
| Clearance Envelope | 0.300m |




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 | 5.00km/h |
| Clearance Envelope | 0.300m |

DIRECTOR

SIMON CRANK RPEQ 18360

APPROVED 21 Feb 2025

| REV. | DATE | AMENDMENT DESCRIPTION | DRAWN | CHECKED | APPROVED |
|---|---|---|---|---|---|
| B | 21-02-25 | REVISED ARCHITECTURAL BASE | DSF | NR | SC |
| A | 10-02-23 | ORIGINAL ISSUE | DSF | NR | SC |

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

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PROJECT
**299 CORONATION DRIVE, MILTON**

DRAWING TITLE
**SWEPT PATH ANALYSIS - TYPICAL PODIUM LEVEL**
5.2m (B99) LARGE CAR PASSING 4.91m (B85) MEDIUM CAR

| | |
|---|---|
| PROJECT NUMBER | 23BRT0684 |
| ORIGINAL SIZE | A3 |
| DRAWING NUMBER | 23BRT0684-03 |
| REVISION | B |
| DATE | 21 Feb 2025 |
| SHEET | 1 OF 1 |

23BRT0684-F04 V01 LAYOUT REVIEW.DWG