

22 March 2024

Enquiries: Andrew Farran  
Project No: 301400273

Thornton Operations Pty Limited  
c/o- St Hilliers  
Level 3, 8 Windmill Street  
MILLERS POINT NSW 2000

**Attention: Frank Katsanevas**

Dear Frank

**RE: Thornton Central Village  
Response to Submissions**

## 1. Introduction

Two development applications were lodged with Penrith City Council for construction of a mixed-use development containing retail tenancies, residential units, commercial offices, a supermarket, child care centre and medical uses on 184 and 192 Lord Sheffield Circuit, Penrith (legally described as Lot 3003, Lot 3004 and Lot 3005 in DP 1184498). The proposal also included basement car parking and loading facilities. The development applications and associated traffic impact assessments are described below:

- **DA1** – Relating to the Stage 1 development on 184 Lord Sheffield Circuit, Penrith (Lot 3003 in DP 1184498) with Stantec preparing the *Thornton Central Village Development Application 1 Transport Impact Assessment*, Issue C, dated 19 December 2023 (herein referred to as the **DA1 TIA**).
- **DA2** – Relating to Stage 2 development on (part) 184, and 192 Lord Sheffield Circuit, Penrith (Part Lot 3003, Lot 3004, and Lot 3005 in DP 1184498) with Stantec preparing the *Thornton Central Village Development Application 2 Transport Impact Assessment*, Issue A, dated 24 November 202 (herein referred to as the **DA2 TIA**).

Gyde Consulting Pty Ltd (on behalf of Penrith City Council) has reviewed the development applications and provided various submissions contained within the following documents:

- *Request for Information: Rev23/0007*, Penrith City Council, dated 27 February 2024 (relating to the DA1 TIA, and herein referred to as **DA1 RFI**)
- *Request for Information: Rev23/0008*, Penrith City Council, dated 27 February 2024 (relating to the DA2 TIA, and herein referred to as **DA2 RFI**).

This letter has been prepared to detail Stantec's response to the comments received, as they relate to matters specific to traffic and parking. It should be read in conjunction with the Transport Impact Assessments prepared for DA1 and DA2 as discussed above.

## 2. Amendments to the Development

The architectural plans have been updated to reflect Council's comments (across all disciplines), including the following major updates related to transport items:

- addition of 3 visitor bicycle parking racks (catering for 6 bikes) to the ground floor level public domain area
- addition of four car wash bays (two additional spaces within both Stage 1 and Stage 2)
- net loss of four residential spaces due to minor reconfigurations of accessible and tandem spaces as follows:
  - loss of four spaces in Stage 1 level three
  - loss of one space in Stage 2 level two
  - addition of one space in Stage 2 level three.
- change of land use on level one Stage 1 from medical to indoor recreation centre facility operating as a Police Citizens Youth Club (PCYC).

Further minor changes have been provided to the plans, such as relocation of doors, details on waste compactors, etc., none which have impacted to the overall transport assessment of the proposal.

No change is proposed to the gross floor areas (GFAs) or apartment yields from the initial development applications. For reference, Table 1 provides a summary of the proposed development yields and car parking provisions.

**Table 1: Development yield**

Use	Description	Size (Apartments/ m <sup>2</sup> GFA)		
		Stage 1	Stage 2	Total
High-density residential apartments	Studio	21	4	<b>25 units</b>
	1-bedroom	102	43	<b>145 units</b>
	2-bedroom	166	169	<b>335 units</b>
	3-bedroom	27	21	<b>48 units</b>
	<i>Subtotal</i>	<i>316</i>	<i>237</i>	<b><i>553 units</i></b>
Retail	Supermarket	1,627	0	<b>1,627m<sup>2</sup></b>
	General	1,116	637	<b>1,753m<sup>2</sup></b>
Commercial		87	489	<b>576m<sup>2</sup></b>
Childcare		761 (100 children 17 staff)	0	<b>761 (100 children 17 staff)</b>
Indoor Recreation Centre		631 (Max 40 visitors 3 staff)	0	<b>631m<sup>2</sup></b>
Car Parking	Residential	325	254	<b>579</b>
	Non-Residential	120	22	<b>142</b>
	Total	445	276	<b>721</b>

### 3. TfNSW

TfNSW provided additional commentary (from Sydney Trains) regarding the proposed development via email to Urbis and St Hilliers on 22 March 2024. The key item from the email is reproduced below:

*“At this stage, we are after a Traffic Report that demonstrates that the levels of traffic movement around the commuter carparks as a result of the development will not have an unreasonable impact on the existing road network, including any road calming devices that may be necessary for accessible pedestrian connections from the commuter carparks to the TAHE owned shared zone and through the new site through link.”*

Reference to the updated traffic generation estimates presented later in this report indicate that the proposed development is forecast to generate in the order of 130 movements to Dunshea Street (to the south of the site) during the AM and PM peak hours. This level of traffic equates to approximately 2 additional vehicle movements per minute. Whilst designated as a “shared zone” this section of Dunshea Street is configured with separate footpaths, a defined carriageway and defined pedestrian zebra crossing points and therefore does not operate as a “traditional” shared zone (whereby pedestrians and vehicles are encouraged to mix).

As part of the application, it is proposed to update the existing zebra pedestrian crossings on the north-south section of Dunshea Street with raised zebra pedestrian crossings. The provision of raised pedestrian crossings across Dunshea Street will serve a dual purpose of enforcing the pedestrian priority over vehicles and also slow vehicles travelling along Dunshea Street. Its noted that regardless of the increase of traffic volumes, which is relatively modest at 2 additional vehicle movements per minute, pedestrians will have priority over vehicles at the designated zebra pedestrian crossings. Construction traffic volumes during the construction process are forecast to be less than the operational traffic volumes.

Finally, separate correspondence from TfNSW (dated 6 February 2024) confirms that no significant impact to the classified road network is expected from the development, which is located approximately 600m from the site, is expected from the development. The relevant extract from the letter is reproduced below:

*“TfNSW has reviewed the submitted information and advises that the proposed development will unlikely impact the surrounding classified network and as such has no further comment.”*

Based on the above, the additional traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network. Pedestrian access to the commuter car park will be maintained and indeed enhanced as part of the proposed works.

## 4. Response to Submissions

Each comment as they relate to DA1 and DA2 have been reproduced below (*in bolded italics*) accompanied by Stantec's response (noting many comments are consistent between both RFI's).

### 4.1 DA1 RFI Comments

***A II: The submitted swept path diagrams are not satisfactory. Sheets 17 – Sheet 20 of the swept paths indicate that vehicles do not have clearance from one another when passing in opposite directions around the corners within the car park, including the ramps. The development shall provide for two-way movement of vehicles, demonstrating satisfactory turning through aisles, around corners and accessing ramps without conflicting with vehicles travelling in the opposite direction. In addition, Sheet 6 indicates an aisle to be extension is required and conflicting column with turning movements. This shall be amended on the plans.***

The design requirements of circulation roadways are set out in Section 2.5 of AS2890.1:2004. Specifically, the Standards state the following design expectations:

*“Intersections between circulation roadways and ramps, and with parking aisles shall be designed so that both the approach roadways and the intersection area are wide enough to accommodate turning vehicles and there is adequate intersection sight distance.*

*Intersection areas designed for use by one vehicle at a time shall be designed for use by the B99 vehicle. Areas in which it is necessary for two vehicles to pass one another shall be designed for a B85 vehicle to pass a B99 vehicle. In both cases areas shall be checked using single turn swept path templates for the B99 vehicle and the B85 vehicle...”*

The car park layout and circulation has been designed in accordance with AS2890.1:2004. The key circulation paths were previously tested with simultaneous B99 vehicle movements. Whilst considered an appropriate testing scenario for key circulation pathways for retail land uses (although not required by the Standards), simultaneous B99 vehicle movements are not considered necessary for a residential car park.

In this respect, updated swept paths have been completed (of sheets 17 to 20 from DA1 and sheets 21 to 25 of DA2) to demonstrate simultaneous circulation of the residential car parking areas using a B85 and B99 vehicle. The swept paths are provided at Attachment 1.

As identified on the plans (Sheet 6) the identified conflict is proposed to be resolved at the detailed design stage, with coordination with the structural engineering team.

***A III: Concern is raised regarding potential heavy vehicle conflicts accessing the loading zone at the southern boundary of the site. The loading zone driveway only provides for access by one heavy vehicle, which creates a potential for excessive reverse manoeuvres or reversing onto the public road. The application must address potential heavy vehicular conflicts and consider the provision for the passing of two heavy vehicles along the driveway.***

In order to reduce the likelihood of conflicting vehicle movements occurring at the loading access it is recommended that a Loading Dock Management Plan (LDMP) be prepared prior to occupation as part of future Consent Conditions.

As detailed in the DA2 TIA, the expected number of loading deliveries is estimated at 25 per day across both loading docks (noting there would be minor increases to this, as noted in the response to DA2 RFI Comment C I). Regardless, given the low loading demand the likelihood of two vehicles entering/ exiting simultaneously is very unlikely. Notwithstanding, St Hilliers is also committed to implementing a dock management system to efficiently manage utilisation of all on-site loading spaces, requiring vehicles to be booked to controlled and defined timeslots ensuring a more equitable distribution of vehicles across the day rather than concentrated to shorter peaks. Such fundamental management measures are common for new mixed use developments across Sydney to ensure loading demand is appropriately managed with demand to not exceed loading supply at any given time. These systems would further reduce any likelihood of two vehicles simultaneously entering and exiting the loading docks.

Finally, it is noted that should a vehicle already be on the accessway when another vehicle arrives to enter from Dunshea Street, the entering vehicle would be required to prop and give-way to the exiting vehicle. This outcome is not dissimilar to a vehicle propping on the carriageway to reverse into a parallel car parking space. Moreover, at the loading access Dunshea Street is configured with a one-way traffic flow and carries low traffic volumes and as such, any delay to vehicles on Dunshea Street would be minor.

The proposed loading access arrangement, including the provision of a loading management plan, is considered acceptable.

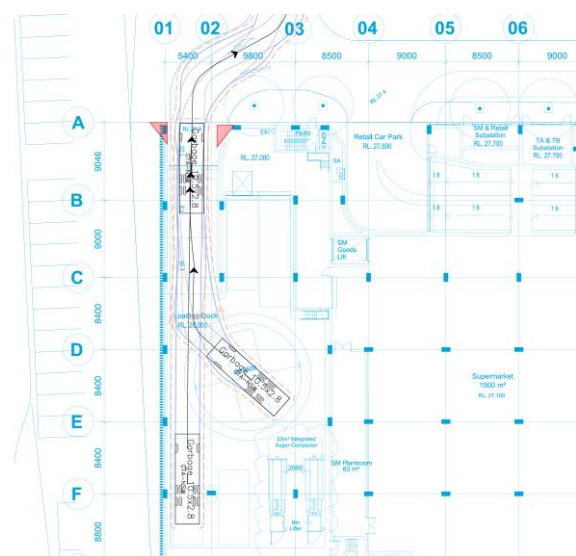
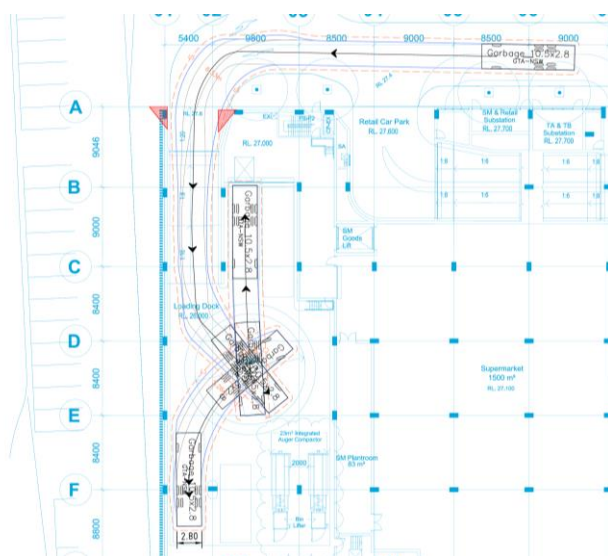
**D I: Appendix A Swept Path Assessment of the Transport Impact Assessment Report Issue #C shows the swept path diagram for the waste collection vehicles. A truck width of 2.8m and additional clearance of 0.5m on either side of the truck to be included in the swept path. In addition, the integrated auger compactor rails to be included on the plan to allow for the swept path diagram to demonstrate the truck aligning with the integrated auger compaction unit guide rails for removal and replacement of the unit.**

This comment is acknowledged, and the swept path assessment has been updated to include a 2.8m-wide garbage truck with clearances of 0.5m on either side. This swept path assessment is provided at Attachment 1 and reproduced in Figure 1 and Figure 2 depicting ingress and egress movements, respectively. The assessment confirms the loading dock can adequately cater for the wider garbage truck.

Basement plans have also been amended to include the integrated auger compactor rails, as requested.

**Figure 1: Updated garbage truck swept path**

**Figure 2: Updated garbage truck swept path**



**E I: Car wash bays shall be provided for the residential development in accordance with Council's DCP, E11, Part B. This cannot be at the expense of required carparking as per DCP requirements and it must be demonstrated that car washing facilities and parking is both appropriate and compliant with Council's requirements.**

It is acknowledged that Council's DCP, Section E11, Part B stipulates that one space for car washing should be provided for every 50 units up to a maximum of 4 spaces per building.

Previous plans indicated four car washing bays across Stage 1 and Stage 2 (two in each building). As such, two additional car wash bays have been provided in Stage 1 (on level 2) and Stage 2 (on basement 1) providing an additional four car wash bays (thereby bringing the total to eight across the two buildings) in accordance with Council requirements.

**E II: Table 4.1, Table 5.1, and Table 6.1 of the Transport Impact Assessment (TIA) report refers to Medical Use in calculating parking requirement. Note that the land use has been changed to Indoor Recreational Facility with this DA therefore the parking calculation has to be updated. It is specifically notes that a recreation facility is like to generate a higher car parking demand than a health services facility. As a result, revised modelling and parking generation rates must be detailed in an amended traffic and parking assessment report.**

St Hilliers have confirmed that the indoor recreation facility operating as a Police Citizens Youth Club (PCYC) would replace the previously proposed medical uses on level one within Stage 1.

There are no 'indoor recreation facility' parking rates detailed in the Penrith DCP, with the following rates identified as being most applicable:

- Section C10 Transport, Access and Parking
  - Commercial – 1 space per 50m<sup>2</sup> GFA (noting a minimum of 1 space per 75m<sup>2</sup> GFA is required)
- Section E11 Part B North Penrith
  - Fitness Centre (incl. Gym) – 7 spaces per 100m<sup>2</sup> GFA
  - Entertainment Facilities/ Function Centres – 1 space per 3.5 seats or 1 space per 3.5m<sup>2</sup> GFA, whichever is greater.

The PCYC is anticipated to provide a number of classes for young people including sports, safer driver, photography, boxing/ martial arts, mental health, and other community courses. As such, the commercial parking rate is considered the most applicable rate given the wide range of operations. It is noted that the commercial rate provides a maximum and minimum rate of provision (between 1 space per 50-75m<sup>2</sup>) The PCYC is expected to accommodate between 30-40 visitors at peak operations, with up to three staff on-site at any one time.

On the above basis Table 4.1 and Table 6.1 of the DA1 TIA have been updated to reflect the change in land use and impacts to car and bicycle parking requirements, respectively. These are presented below, with any errors to footnotes also amended (addressing subsequent comments from the RtS).

It is noted that the change of medical uses to a PCYC is expected to have minimal impacts on the loading demand, and therefore Table 5.1 in the DA1 TIA would remain unchanged.

**Table 4.1: Updated parking requirements considering PCYC**

Stage	Use	Description	Size	DCP Rate (Max)	Requirement (Max)	Provision
Stage 1	Residential flat buildings	Studio	21 apartments	0.5 spaces / dwelling	11	-
		1-bedroom	102 apartments	1 space / dwelling	102	
		2-bedroom	166 apartments	1 space / dwelling	166	
		3-bedroom	27 apartments	2 spaces / dwelling	54	
	<b>DA1 Residential Subtotal</b>				<b>333</b>	<b>325</b>
	Retail	Supermarket	1,627 m <sup>2</sup> GFA	1 space / 26 m <sup>2</sup> GFA	63	63
		General	1,116 m <sup>2</sup> GFA	1 space / 50 m <sup>2</sup> GFA [1]	22	22
	Commercial	-	87 m <sup>2</sup> GFA	1 space / 50-75 m <sup>2</sup> GFA [1]	1-2	0 [2]
	Childcare	-	761 m <sup>2</sup> GFA (100 children 17 staff)	1 space / 10 children plus 1 space / employee	27 (17 for staff and 10 for visitors)	27
	Indoor Recreation (PCYC)	-	631 m <sup>2</sup> GFA	1 space / 50-75 m <sup>2</sup> GFA [1]	8-13	8
<b>DA1 Commercial/ Retail Subtotal</b>					<b>144</b>	<b>120</b>
<b>Stage 1 total</b>					<b>477</b>	<b>445</b>
Stage 2	Residential flat buildings	Studio	4 apartments	0.5 spaces / dwelling	2	-
		1-bedroom	43 apartments	1 space / dwelling	43	
		2-bedroom	169 apartments	1 space / dwelling	169	
		3-bedroom	21 apartments	2 spaces / dwelling	42	
	<b>DA2 Residential Subtotal</b>				<b>256</b>	<b>254</b>
	Retail	General	637 m <sup>2</sup> GFA	1 space / 50 m <sup>2</sup> GFA [1]	13	12
	Commercial	-	489 m <sup>2</sup> GFA	1 space / 50-75 m <sup>2</sup> GFA [1]	7-10	10
<b>DA2 Commercial/ Retail Subtotal</b>					<b>23</b>	<b>22</b>
<b>Stage 2 total</b>					<b>279</b>	<b>276</b>

[1] A minimum of 1 space per 75 square metres GFA is required for all commercial/ retail uses.

[2] No parking provision is proposed for the minor commercial floor area for Stage 1 as this largely relates to lobby floor area which does not generate any parking demand.



The updated Table 4.1 indicates that the proposal presents a maximum DCP requirement of 477 car parking spaces for Stage 1 (including 333 spaces for residents and 144 spaces for retail/ commercial uses) and 279 car parking spaces for Stage 2 (including 256 spaces for residents and 23 spaces for the retail/ commercial uses). The proposed provision of 445 parking spaces for Stage 1 (including 325 spaces for residents and 120 spaces for the retail/ commercial uses) and 276 parking spaces for Stage 2 (including 254 spaces for residents and 22 spaces for the retail/ commercial uses), meets this maximum requirement.

The car parking assessment, including consideration of the 'indoor recreation' use, meets the expectations of the DCP and is considered to be appropriate.

**Table 6.1: Updated bicycle parking requirements considering PCYC**

Stage	Use	Size	Bicycle parking rate		Bicycle parking requirement	
			Resident/Staff	Customer/Visitor	Resident/Staff	Customer/Visitor
Stage 1	Residential	316 apartments	20-30% of number of units	5-10% of number of units	63-95 spaces	16-32 spaces
	Supermarket	1,627m <sup>2</sup> GFA 47 employees [1]	3-5% of number of staff	5-10% of number of staff	1-2 spaces	2-5 spaces
	Retail	1,116 m <sup>2</sup> GFA 32 employees [1]	3-5% of number of staff	5-10% of number of staff	1-2 spaces	2-3 spaces
	Commercial	87m <sup>2</sup> GFA 0 staff [2]	3-5% of number of staff	5-10% of number of staff	0 spaces	0 spaces
	Childcare	761m <sup>2</sup> GFA 17 staff [3]	3-5% of number of staff	5-10% of number of staff	1 space	1-2 spaces
	Indoor Recreation (PCYC)	631m <sup>2</sup> GFA 3 staff [4]	3-5% of number of staff	5-10% of number of staff	1 space	1 space
<b>Stage 1 total</b>					<b>67-101 spaces</b>	<b>22-43 spaces</b>
Stage 2	Residential	237 apartments	20-30% of number of units	5-10% of number of units	47-71 spaces	12-24 spaces
	Retail	637m <sup>2</sup> GFA 18 employees [1]	3-5% of number of staff	5-10% of number of staff	1 space	1-2 spaces
	Commercial	489m <sup>2</sup> GFA 24 staff [5]	3-5% of number of staff	5-10% of number of staff	1 space	1-2 spaces
<b>Stage 2 total</b>					<b>49-73 spaces</b>	<b>14-28 spaces</b>
<b>Grand total</b>					<b>116-174 spaces</b>	<b>36-71 spaces</b>

[1] Based on a density of one employee per 35m<sup>2</sup> GFA.

[2] Assumes no staff as commercial area in Stage 1 largely relates to lobby floor area.

[3] Based on data provided by St Hilliers.

[4] Based on data provided by St Hilliers.

[5] Based on a density of one employee per 20m<sup>2</sup> GFA.

The updated Table 6.1 indicates that the development should provide between 36-71 customer/ visitor and 116-174 resident/ staff bicycle spaces (or 42-79 non-resident spaces and 110-166 resident spaces). As stated in the DA1 TIA and DA2 TIA end of trip facilities will be provided within the basement of Stage 1, accommodating 34 bicycle parking spaces for use by staff and visitors for the whole development.

An additional 3 bicycle parking racks (catering for 6 bike spaces) are provided on the ground floor as shown in updated architectural plans for use by customers/ visitors/ staff.

The total provision of 40 visitor and employee spaces is less than the DCP requirement of 42 spaces. This outcome is considered acceptable having regard for the sharing of bicycle parking demands across the course of a typical day (for example some uses will peak during the day on weekdays, others in the evening and some on weekends).

A total of four showers (two male and two female) will also be provided within the basement level along with lockers.

It is understood that 237 storage cages will be provided in Stage 2 and a further 262 storage cages will be provided in Stage 1 for residents, with these storage cages suitable for accommodating bicycles. This provision therefore exceeds the minimum recommendations outlined above.

Updated traffic modelling is presented later in this letter and includes consideration of the revised land use mix.

***E III: Table 4.1 contains three footnotes, however numbers 2 and 3 cannot be located in the table and requires amendment.***

Table 4.1 (and the corresponding footnotes) have been updated in response to DA1 RFI Comment E II to consider change of land uses from medical to indoor recreation – refer updated table above.

***E IV: Visitor bike parking is proposed within Level B1. Retail/commercial/recreational facility visitor use are considered short term parking and therefore bike parking should be provided with Security Level C as per AS2890.3:2015 Table 1.1. Short term parking is to be provided in well-lit areas and where passive surveillance is likely (i.e., Ground floor frontage) which is not achieved with the proposed basement parking location. It is also noted that basement bike parking is not easily accessible for visitors and therefore may not encourage active transport.***

This comment is noted, however, neither Table 1.1 of AS2890.3:2015 nor Section C10 Transport, Access and Parking of Council's DCP state that visitor parking must be provided at ground floor. Whilst it is acknowledged that AS2890.3:2015 states that "facilities should be located in well-lit areas and where passive surveillance is likely" this will be achieved within basement parking levels with appropriate lighting and surveillance to ensure both visitor, staff and resident safety. Such provisions are common with mixed-use developments with retail/ commercial land uses occupying ground floor space requiring some bicycle facilities to be located in basement parking levels. Adequate signage would be provided to direct visitors to bicycle parking via the retail lifts/ travelators with building management also available to assist visitors, if required.

Notwithstanding, additional bicycle racks have been provided on the ground floor between the two buildings to cater for some of the short-term bike parking demands.

***E V: The location of Ground Floor bike racks are to be shown on the plans.***

This comment is acknowledged, and additional bicycle parking racks (3 racks catering for 6 additional bike spaces) are provided on the ground floor as shown in updated plans.

***E VI: Section 6.1 of the report indicates that there will be a shortfall of bicycle parking spaces for customers/visitors for the whole development (Stage 1 and Stage 2). Furthermore, all resident bicycle parking is proposed to be accommodated in resident storage cages, however those residents who cycle regularly will likely choose to park their bike in the spaces provided rather than store it each time. Additional bicycle parking spaces should be provided in this regard. The current proposed location of visitor bike parking on Level B1 could be reallocated as additional mixed visitor/residential/staff parking if additional bike racks will be provided on Ground Level per Point #4 above.***

This comment has been addressed partly in response to DA1 RFI Comment E II and E IV.

In addition, the following is noted:

- The location and design of bicycle parking facilities are in accordance with AS2890.3:2015 and Council DCP. Additional bicycle parking will be provided on the ground floor as shown in updated architectural plans.
- The location of visitor/ bicycle parking being predominantly within the basement, with additional parking provided on ground level strikes a positive balance between delivering appropriate bicycle facilities whilst achieving a functional public domain space. Provision of all visitor/ staff bicycle parking on ground level may detract from such spaces.
- Further, for security reasons (theft, etc.) residents would be expected to utilise storage cages even if more parking is provided on ground level.
- Such storage systems for residents and provision of visitor/ staff bicycle parking on basement levels are common for mixed-use developments.

The proposed arrangement, including the provision of additional visitor bicycle parking at-grade, is considered acceptable.

***E VII: The footnotes for Table 6.1 are not consistent with the table and require amendment.***

Table 6.1 (and the corresponding footnotes) have been updated in response to DA1 RFI Comment E II to consider change of land uses from medical to indoor recreation – refer updated table above.

***E VIII: The existing pedestrian (zebra) crossing fronting the Stage 1 development shall be relocated further north towards the frontage of Tower B rather than removed altogether to facilitate pedestrian movements from the multi-storey commuter car park. The existing pedestrian crossing shall be removed, including the pram ramp and tactiles on the opposite side of Dunshea Street and reinstatement with kerb and gutter. These works must be identified on the plans for clarity.***

St Hilliers is committed to relocating the existing pedestrian (zebra) crossing north and reinstating the kerb and gutter fronting DA1. It is recommended that these works be issued as a Condition of Consent with the exact location of the relocated crossing to be confirmed during future detailed design stages.

***E IX: The two existing pedestrian crossings on Dunshea Street (one to be relocated) and one existing pedestrian crossing on Lord Sheffield Circuit shall be upgraded to fully compliant raised threshold pedestrian crossings, including compliant street lighting, signage, and line marking, due to the increased pedestrian movements to the east and west of the site from the development. These works must be identified on the plans.***

St Hilliers is committed to upgrading both pedestrian (zebra) crossings on Dunshea Street (the one to be relocated north and the existing one to remain) and the one on Lord Sheffield Circuit to fully compliant threshold pedestrian crossings including compliant street lighting, signage and line marking. The location of these crossings is depicted in Figure 3.

It is recommended that these works be issued as a Condition of Consent with the location of the relocated crossing to be confirmed during future detailed design stages at which point, the crossings would be identified on plans.

**Figure 3: Pedestrian crossings to be upgraded / relocated**



Source: Nearmap



***E X: Heavy vehicles accessing the loading area adjacent to the commuter car parking is of key concern due to high pedestrian activity in the same location during AM and PM peaks. A delineation between accessible areas is required. As such, TfNSW approved pedestrian fencing shall be provided on Dunshea Street fronting the commuter car park directing pedestrians to the pedestrian crossings on Dunshea Street. The fencing shall extend around the southern corner to the bike parking to prevent pedestrians crossing at the corner. To accommodate the pedestrian fencing, the existing footpath on the western side of Dunshea Street fronting the commuter car park shall be widened to be an accessible 1.5m wide (minimum) path with associated pram ramps.***

St Hilliers is committed to constructing fencing around the southern corner to the bike parking to prevent pedestrians crossing at the corner and for widening of existing footpath on the western side to 1.5m wide with associated pram ramps. It is recommended that these works be issued as a Condition of Consent with planning to completed as part of future detailed design stage.

***E XI: The loading dock access for Stage 1 is of insufficient width to cater for two-way movements for HRV and MRV vehicles and shall be amended to address safe vehicle passing.***

Two-way passing of loading vehicles is not required nor warranted for the proposed development. Designing for concurrent HRV and MRV movements at the loading dock access would result in a poor urban design outcome, with a very wide crossover and opening into the building required to cater for the simultaneous movements.

The likelihood for two vehicles simultaneously entering/ exiting the loading dock is very low as noted in response to DA1 RFI Comment A III. The management systems in place to ensure safe and efficient loading dock operations would be identified in the LDMP which is recommended to be prepared prior to occupation as part of future Consent Conditions.

***E XII: The architectural plans show reconfiguration of the intersection of Dunshea Street and the exit from the at-grade commuter car park. This needs to be addressed in the Traffic Impact Assessment and detailed on the civil plans for clarity, including details of proposed line marking and infrastructure upgrades.***

St Hilliers is committed to reconfiguration of the intersection of Dunshea Street in accordance with relevant standards and Council requirements. These works would be subject to further planning as part of the future detailed design stage.

***E XIII: Kerb adjustment is proposed on the eastern side of Dunshea Street between the Stage 1 and Stage 2 access points which will create a deflection for vehicles heading southbound on Dunshea Street. The Traffic Impact Assessment and civil plans shall address the need for any line marking or treatment measures on Dunshea Street to provide adequate delineation for vehicles heading southbound.***

St Hilliers is committed to kerb adjustments on the eastern side of Dunshea Street between DA1 and DA2 access points in accordance with relevant standards and Council requirements. These works would be subject to further planning as part of the future detailed design stage.

***E XIV: In addition to the Loading Dock Management Information presented in Appendix D of the TIA and to the above comment, the Applicant is requested to provide a management plan to manage two-way vehicle flow to/from the loading dock, mitigation measures in case of turntable malfunction, and minimise impact to external roads and footpath.***

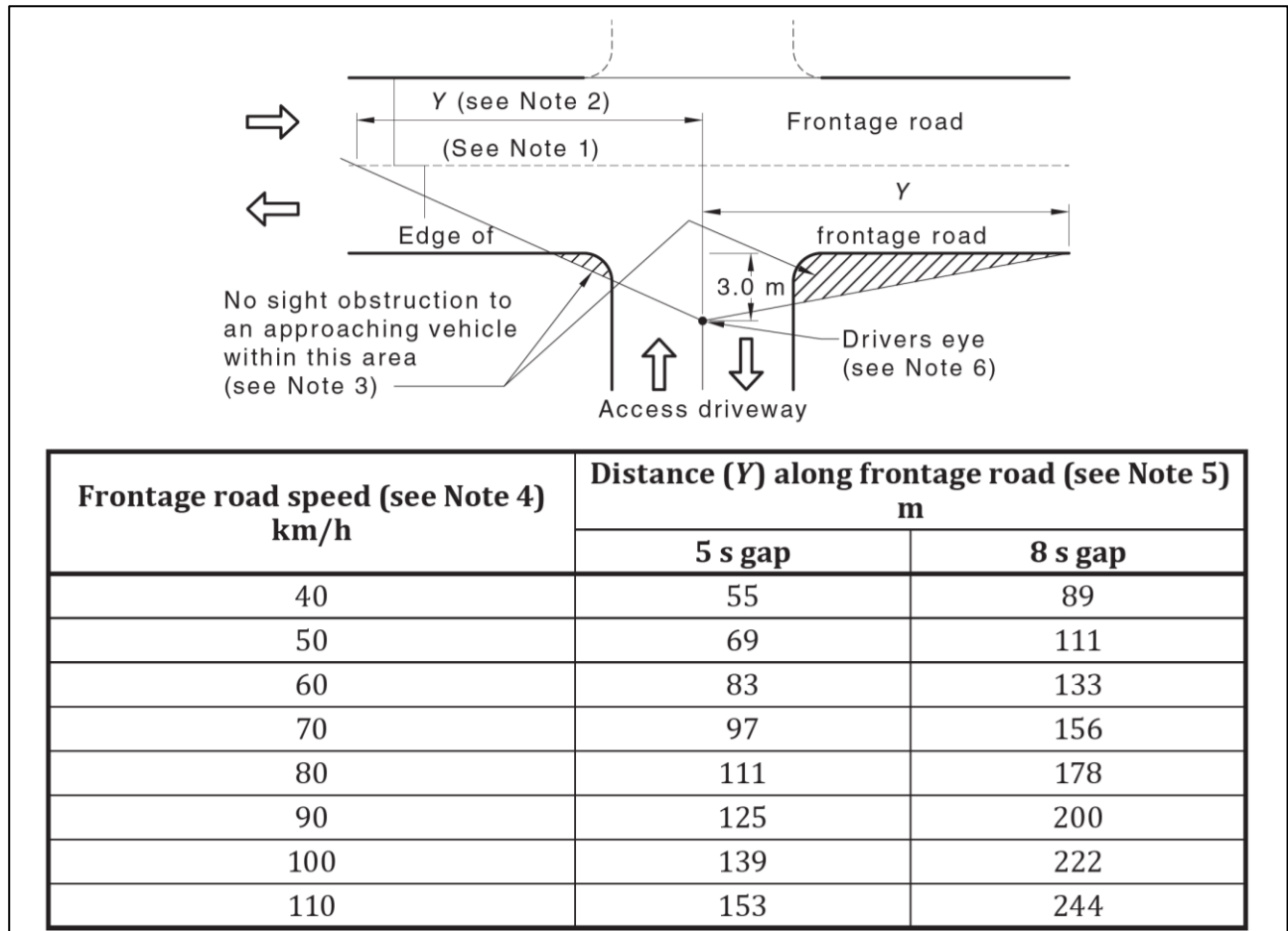
This comment is addressed in response to DA1 RFI Comment A III and E XI.

In the unlikely event that the turntable malfunctions, loading vehicles would be required to undertake multiple point turns to turnaround in the dock itself, whilst not ideal such an outcome is considered to be acceptable given the anticipated infrequent nature of such events. For longer term shot downs tenants would be instructed to (where appropriate) rely on smaller loading vehicles which would be better suited to operating in the loading area without the aid of the turntable.

***E XV: The Applicant is also requested to demonstrate that the required sight lines at loading dock entry are provided in accordance with AS2890.2.***

The design review has been updated to include a sightline assessment for egressing vehicles from the Stage 1 loading dock entry. Figure 3.3 of Section 3.4.5 AS2890.2 details sight distance requirements for a commercial vehicle egressing an access driveway, and has been reproduced in Figure 4.

**Figure 4: AS2890.2 sight distance requirements**



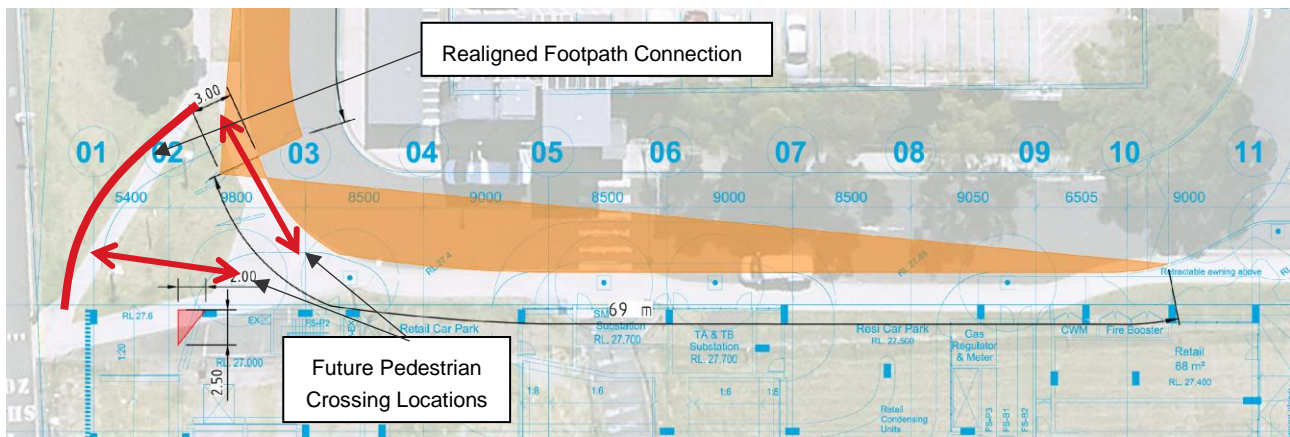
Source: Figure 3.3, Section 3.4.5, AS2890.2

With an imposed speed limit of 50km/h on Dunshea Street egressing vehicles are required a sight distance of 69m (based on a 5 second gap) – the reality is that vehicles approaching the loading access would be travelling lower than 50km/h as they are approaching a 90 degree bend in the road. The sightline assessment, shown in Figure 5, indicates that this is comfortably achieved at the Stage 1 loading dock access and therefore is in compliance with Section 3.4.5 of AS2890.2.

The pedestrian footpath through this location would need to be redesigned to cater for the proposed loading driveway. Any crossing of the driveway itself should ensure that the 2.5m by 2.0m sight triangle is maintained, this sight triangle could be reinforced through the provision of a short section of pedestrian fencing on the southside of the access point. Similarly offsetting the pedestrian crossing of the driveway, would address the minor non-compliance of the column located to the immediate north of the driveway.

Again, these items would be confirmed as part of the detailed design stage and could be conditioned as required.

Figure 5: Sight line assessment



**E XVI: Table 7.3 of the Transport Impact Assessment (TIA) report refers to Medical Use in calculating trip generation. Note that the land use has been changed to Indoor Recreational Facility with this DA therefore the trip generation calculation has to be updated as outlined above.**

St Hilliers have confirmed that the indoor recreation facility operating as a PCYC would replace the previously proposed medical uses on level one within Stage 1. As stated in response to DA1 RFI Comment E II, the PCYC is anticipated to accommodate a maximum of 40 visitors and three staff at any one time, with operational hours of 9am to 5pm. As a conservative assessment it is assumed that all staff and visitors (assuming maximum patronage) would arrive/ depart during the peak hours. A vehicle occupancy of 1.2 has also been assumed for visitors to account for parents driving multiple children to the centre. On this basis the PCYC would be expected to generate up to 36 vehicle trips during any peak hour (or 29 inbound/ 7 outbound trips assuming an 80% inbound and 20% outbound split during the AM peak, and vice versa in the PM).

The updated traffic generation estimates are summarised in Table 7.3.

Table 7.3: Traffic generation estimates

Stage	Land Use	Size (GFA/ number of car spaces)	Traffic generation rate (vehicle trips per hour)		Traffic generation estimate (vehicle trips per hour)	
			AM	PM	AM	PM
Stage 1	Residential	325 spaces	0.15 / space	0.12 / space	49	39
	Supermarket	63 spaces	1.50 / space	2.00 / space	95	126
	Retail	22 spaces	0.75 / space	1.0 / space	17	22
	Childcare	10 visitor spaces	4.0 / visitor space	4.0 / visitor space	40	40
	Indoor Recreation (PCYC)	631m <sup>2</sup>	-	-	36	36
Stage 1 total					237	263
Stage 2	Residential	254 spaces	0.15 / space	0.12 / space	38	30
	Retail	12 spaces	0.75 / space	1.0 / space	9	12
	Commercial	10 spaces	0.5 / space	0.5 / space	5	5
Stage 2 total					52	44
Total					289	307

The SIDRA assessment has been updated to include change of use from medical to an indoor recreational facility and is detailed in response to DA1 RFI Comment E XXI.

***E XVII: The traffic modelling year shall include 10-year post opening. This is consistent with that was required for other significant traffic generating developments within Penrith CBD.***

The SIDRA assessment has been updated to include a 10-year post opening scenario and is detailed in response to DA1 RFI Comment E XXI.

***E XVIII: It is noted that the trip generation assessment was calculated based on car park rates and not per GFA/units. It is considered that calculation based on GFA/units is still applicable and appropriate as some development trips will not be wholly accommodated within site parking (i.e., some visitors will use nearby public parking facilities) which is typically observed within Thornton.***

Adopting a per GFA/unit basis would be appropriate for development where car parking is to be provided consistent with current practice (typically minimums). However, the proposed development is subject to maximum car parking controls and as such, the proposed car parking provision is less than typical. As such, we are of the view that the adoption of a rate per unit would result in an overestimation of the likely traffic generation to and from the site, particularly given the site's location adjacent to Penrith Station and town centre which would further reduce the need for users of the site to use their cars.

Traffic generation to nearby parking facilities would be considered as part of the traffic generation for these parking facilities and should not be assessed again by this development (this would result in overcounting). An over estimation of traffic generation rates will lead to an outcome where the transport network is designed with greater capacity and emphasis for car movements rather than other modes. This would not be an appropriate outcome for a town centre location.

The original traffic generation rates presented in the original TIAs are considered fit for purpose and have been retained for this assessment.

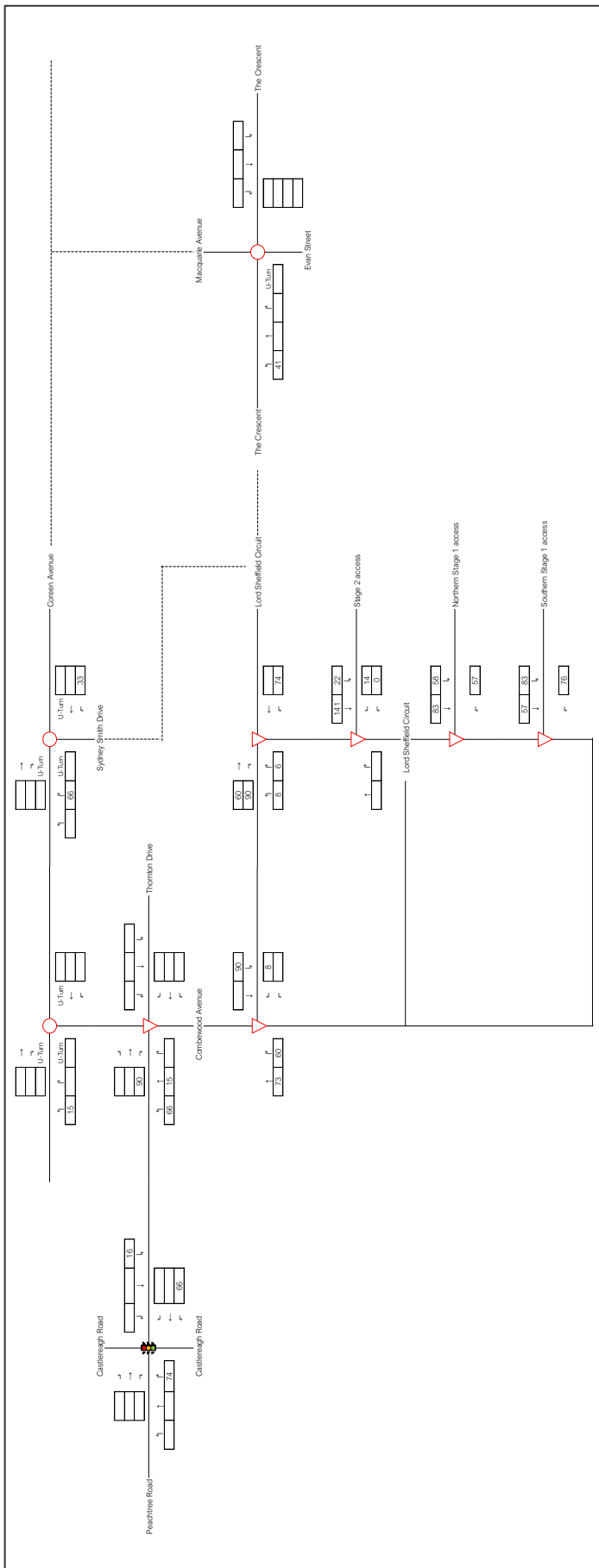
***E XIX: The assumed traffic distribution in Figure 7.1 requires further explanation, specifically to detail and show how traffic is distributed at each intersection. The traffic report shall also include traffic network diagram showing existing and future peak hour volumes for assessment.***

Traffic distribution diagrams for the development traffic are presented in Figure 6 and Figure 7 for the AM and PM peak hour, respectively. Regarding local access to the site the following is noted:

- Stage 2 access refers to above ground parking contained within Stage 2.
- Northern Stage 1 access refers to retail basement parking contained within Stage 1 as well as residential basement parking contained within Stage 2 (considering access to this parking area is via the Stage 1 basement).
- Southern Stage 1 access refers to above ground parking contained within Stage 1.



**Figure 6: Development volumes - AM peak**



The diagram illustrates a proposed road network for a residential development. The network is organized into a grid-like structure with several key roads and junctions.

**Key Roads and Features:**

- Peachtree Road:** A primary road running horizontally across the top of the site. It features a signalized junction with Castleknagh Road.
- Castleknagh Road:** A secondary road running horizontally, intersecting Peachtree Road and Cornbrook Avenue.
- Cornbrook Avenue:** A secondary road running horizontally, intersecting Castleknagh Road and Lord Sheffield Circuit.
- Lord Sheffield Circuit:** A secondary road running horizontally, intersecting Cornbrook Avenue and The Crescent.
- The Crescent:** A tertiary road running horizontally, intersecting Lord Sheffield Circuit and the main access road.
- Main Access Road:** A tertiary road running vertically along the right side of the site, providing access to the development.

**Junctions and Lane Configurations:**

- Peachtree Road / Castleknagh Road:** Signalized junction. Peachtree Road has 10m wide lanes. Castleknagh Road has 11m wide lanes.
- Castleknagh Road / Cornbrook Avenue:** Signalized junction. Castleknagh Road has 10m wide lanes. Cornbrook Avenue has 11m wide lanes.
- Cornbrook Avenue / Lord Sheffield Circuit:** Signalized junction. Cornbrook Avenue has 10m wide lanes. Lord Sheffield Circuit has 11m wide lanes.
- Lord Sheffield Circuit / The Crescent:** Signalized junction. Lord Sheffield Circuit has 10m wide lanes. The Crescent has 11m wide lanes.
- Main Access Road / The Crescent:** Signalized junction. The Main Access Road has 10m wide lanes. The Crescent has 11m wide lanes.

**Other Features:**

- School:** Located near the intersection of Peachtree Road and Castleknagh Road.
- Park:** Located near the intersection of Castleknagh Road and Cornbrook Avenue.
- Bus Stop:** Located on Peachtree Road near the intersection with Castleknagh Road.

**Legend:**

- Primary Road:** Indicated by a solid line.
- Secondary Road:** Indicated by a dashed line.
- Tertiary Road:** Indicated by a dotted line.
- Signalized Junction:** Indicated by a circle with a cross.
- Roundabout:** Indicated by a circle with a dot.
- Priority Junction:** Indicated by a circle with a horizontal line.
- Lane Width:** Indicated by numbers (e.g., 10m, 11m, 12m) next to the lane.

**E XX: Sidra assessment results to show 95th percentile queue rather than Average queue in accordance with TfNSW Modelling Guidelines.**

The SIDRA assessment results have been updated to show 95<sup>th</sup> percentile queues and is detailed in response to DA1 RFI Comment E XXI.

**E XXI: It is stated in Section 2.3 of the TIA that the existing traffic volumes used were obtained from 2019 and 2020 surveys which are within 'COVID-19' period and are likely to be lower than current traffic volumes. It is also noted that there could be significant growth of Thornton Estate since 2019/2020 as such appropriate growth factors have to be applied to the survey volumes to represent current conditions. Also note that DA22/1086 is recently approved and should be included in the future base traffic volumes.**

Impact of COVID-19 on Traffic Volumes

The possible impact of COVID-19 on travel patterns surrounding the site is acknowledged. As such, publicly available data on traffic volumes has been accessed from the Transport for NSW Traffic Volume Viewer. A permanent traffic counter station is located on the Great Western Highway near Pages Street in St Mary's. Although located outside of Penrith, the permanent counter provides insight into travel patterns in the Western Sydney region during the COVID pandemic. The average annual weekday morning and evening peak hour traffic volumes for both direction of travel for the six year period from 2019 to 2024 is summarised in Table 2.

**Table 2: Weekday traffic volume data**

Year	Westbound		Eastbound	
	AM Peak (6am-10am)	PM Peak (3pm-7pm)	AM Peak (6am-10am)	PM Peak (3pm-7pm)
2019	2,468	3,555	2,874	2,908
2020	2,253	3,282	2,521	2,717
2021	2,122	3,103	2,242	2,439
2022	2,277	3,252	2,275	2,420
2023	2,450	3,522	2,711	2,701
2024	2,246	3,285	2,548	2,597

Table 2 indicates there is minor fluctuations across the six-year period, with 2019 and 2020 traffic volumes being closely aligned with those volumes in 2024. These results are expected to be representative of the traffic conditions surrounding the subject site and therefore historic intersection counts completed in 2019 and 2020 are considered appropriate.

Notwithstanding an annual 2% background traffic growth rate has been adopted for the SIDRA assessment, as requested by Council (which is conservatively higher than the general Sydney average of around 1.5%).

Updated Traffic Modelling

Updated modelling has been included to consider the following:

- Change of land uses from medical to an indoor recreation facility per (DA1 RFI Comment E XVI).
- Post 10-year opening scenario (per DA1 RFI Comment E X VII).
- 95<sup>th</sup> percentile queues rather than average queues (per DA1 RFI Comment E XX).
- Adjacent development at 160-172 Lord Sheffield Circuit, Penrith, DA22/1086 (per DA1 RFI Comment E XXI). As per the *160-172 Lord Sheffield Circuit, Penrith Traffic and Parking Assessment Report* prepared by Varga Traffic Planning Pty Ltd (dated 3 November 2022) the adjacent development is expected to generate 170 vehicles trips during the AM peak hour (95 inbound and 75 outbound) and 129 vehicle trips during the PM peak hour (58 inbound and 71 outbound). Traffic volumes have been assumed to follow the same distributions adopted for the subject site given no discussion was provided in the Traffic and Parking Assessment Report for the adjacent development.

It is noted that no change has been made to trip generation rates for reasonings detailed in response to DA1 RFI Comment E XVIII.

On the above basis the following future scenarios have been tested and are summarised in Table 3 to Table 7:

- Scenario 1 – 2025 Base (including the adjacent development traffic volumes only)
- Scenario 2 – 2025 Base plus Road Upgrades (including the adjacent development traffic volumes only)

- Scenario 3 – 2025 with Development (Scenario 2 plus development traffic).
- Scenario 4 – 2035 Base plus Road Upgrades (including the adjacent development traffic volumes only)
- Scenario 5 – 2035 with Development (Scenario 4 plus development traffic).

Detailed SIDRA modelling outputs can be provided upon request.

**Table 3: Scenario 1 – 2025 Base**

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95 <sup>th</sup> Percentile Queue (m)	Level of service (LOS)
Castlereagh Road/ Thornton Drive	AM	0.97	90	599	F
	PM	1.17	143	965	F
Combewood Avenue/ Thornton Drive	AM	0.27	12	7	A
	PM	0.47	17	15	B
Coreen Avenue/ Combewood Avenue	AM	0.12	11	5	A
	PM	0.51	13	28	A
Coreen Avenue/ Sydney Smith Drive	AM	0.30	13	13	A
	PM	0.74	12	70	A
The Crescent/ Evan Street/ Macquarie Avenue	AM	0.60	24	43	B
	PM	0.55	11	32	A

**Table 4: Scenario 2 – 2025 Base plus Road Upgrades**

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95 <sup>th</sup> Percentile Queue (m)	Level of service (LOS)
Castlereagh Road/ Thornton Drive	AM	0.75	34	267	C
	PM	0.89	42	319	C
Combewood Avenue/ Thornton Drive	AM	0.04	10	1	A
	PM	0.05	9	2	A
Coreen Avenue/ Combewood Avenue	AM	0.05	7	1	A
	PM	0.17	8	5	A
Coreen Avenue/ Sydney Smith Drive	AM	0.49	17	99	B
	PM	0.70	24	131	B
The Crescent/ Evan Street/ Macquarie Avenue	AM	0.60	24	43	B
	PM	0.32	13	15	A



**Table 5: Scenario 3 – 2025 with Development**

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95 <sup>th</sup> Percentile Queue (m)	Level of service (LOS)
Castlereagh Road/ Thornton Drive	AM	0.85	54	309	D
	PM	0.96	70	408	E
Combewood Avenue/ Thornton Drive	AM	0.04	10	2	A
	PM	0.05	10	2	A
Coreen Avenue/ Combewood Avenue	AM	0.07	7	2	A
	PM	0.19	8	6	A
Coreen Avenue/ Sydney Smith Drive	AM	0.56	24	115	B
	PM	0.74	35	147	C
The Crescent/ Evan Street/ Macquarie Avenue	AM	0.60	24	43	B
	PM	0.32	13	15	A

Table 3 indicates that all intersections with the exception of the Castlereagh Road/ Thornton Drive intersection are expected to operate satisfactorily at a LOS A or B in both weekday peak hours in 2025. The Castlereagh Road/ Thornton Drive intersection is expected to be over capacity in the PM peak hour as indicated by the DOS of 1.17. This results in high delay overall for the intersection and an associated LOS F. The operation of this intersection in the AM peak hour is expected to be better, however still at LOS F with DOS of 0.97.

As outlined in Section 2.2.3 of the DA1 TIA it is expected that various upgrades would be completed by TFNSW to the surrounding road network by 2025 to improve its operation, which have been considered in Table 4. The table indicates that the planned upgrades to the Castlereagh Road/ Thornton Drive intersection would result in the intersection operating at a LOS C in the weekday peak hours in 2025, however noting the DOS during the PM peak at the Castlereagh Road/ Thornton Drive intersection remains high. Similarly, the other key intersections are also expected to operate satisfactorily with the potential upgrades to the Combewood Avenue/ Thornton Drive, Coreen Avenue/ Combewood Avenue and Coreen Avenue/ Sydney Smith Drive intersections at a LOS C or better.

Table 5 provides a summary of the SIDRA modelling results for Scenario 3. The addition of development traffic to the road network has minimal impact of most intersections with the exception of the Castlereagh Road/ Thornton Drive intersection which deteriorates to LOS E. However, it is noted the DOS for this intersection under Scenario 2 was already high and therefore more sensitive to the development traffic volumes (which only represent approximately 1.8% of the total background intersection volumes).

As outlined in the DA1 TIA and DA2 TIA, the local intersection upgrades assessed in this scenario are not proposed as “mitigation works” of the development as they are understood to be upgrades proposed by Council to improve the precinct accessibility.

SIDRA results for the 10-year post opening scenarios are presented in Table 6 and Table 7 for the without and with development volumes, respectively.

**Table 6: Scenario 4 – 2035 Base plus Road Upgrades**

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95 <sup>th</sup> Percentile Queue (m)	Level of service (LOS)
Castlereagh Road/ Thornton Drive	AM	0.88	40	387	C
	PM	1.03	76	606	F
Combewood Avenue/ Thornton Drive	AM	0.05	10	2	A
	PM	0.06	10	2	A
Coreen Avenue/ Combewood Avenue	AM	0.07	8	2	A
	PM	0.22	8	7	A
Coreen Avenue/ Sydney Smith Drive	AM	0.60	18	122	B
	PM	0.84	29	190	C

The Crescent/ Evan Street/ Macquarie Avenue	AM	1.17	227	350	F
	PM	0.45	12	265	A

**Table 7: Scenario 5 – 2035 with Development (Scenario 4 plus development traffic)**

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95 <sup>th</sup> Percentile Queue (m)	Level of service (LOS)
Castlereagh Road/ Thornton Drive	AM	0.94	49	447	D
	PM	1.10	95	684	F
Combewood Avenue/ Thornton Drive	AM	0.05	11	2	A
	PM	0.06	10	3	A
Coreen Avenue/ Combewood Avenue	AM	0.08	8	2	A
	PM	0.24	8	8	A
Coreen Avenue/ Sydney Smith Drive	AM	0.65	20	143	B
	PM	0.88	32	210	C
The Crescent/ Evan Street/ Macquarie Avenue	AM	1.17	229	352	F
	PM	0.99	18	400	B

Table 6 and Table 7 indicates that majority of the surrounding local intersections would operate acceptably at LOS C or better under the 10-year post opening scenarios with development traffic volumes having minimal impact on their operation.

However, the Castlereagh Road/ Thornton Drive and The Crescent/ Evan Street/ Macquarie Avenue intersections are expected to operate above capacity at DOS 1.03 and 1.17, respectively under Scenario 4 (base plus adjacent traffic development volumes). As such it is clear that the capacity constraints are a result of background traffic growth rather than the addition of traffic as a result of the development. As detailed above, the development traffic represents only a minor portion of total intersection volumes (less than 2%).

### Traffic Modelling Observations

For the assessment of the DA, it is crucial to understand that the SIDRA modelling is presented to gauge the relative impact of the development on the network, rather than determine the future level of service per se. Significantly, the modelling indicates that key intersections surrounding the site, with or without, the development are forecast to operate at or near their capacity in 2025 and even more so in 2035 (with consideration of growth).

In summary, Stantec acknowledges that numerous intersections in the Penrith precinct are operating near or at their capacity with respect to traffic movements and will continue to do so in the future. In such circumstances, Stantec notes its view that development should not necessarily try to find a way to address capacity constraints by adding more road network capacity, but rather seeking to proactively reduce its traffic generation. In this context, Stantec supports the adoption of a travel demand management approach to the planning of the development (and the precinct more broadly), this is consistent with the existing planning controls for the site and surrounds which implement maximum car parking rates and promote development adjacent to public transport facilities (i.e. adjacent to Penrith Station).

Importantly, it is reiterated that TfNSW has indicated that they have no objection to the traffic impacts of the proposed development on the classified road network.

Based on the above the proposed traffic impacts are considered acceptable.

***E XXII: Section 3.5 of the TIA indicates that removalist trucks up to 6.4m SRV will be accommodated within Stage 2 loading dock, with larger removalist vehicles to be accommodated within Stage 1 loading dock. However, there is no direct access between Stage 1 loading dock and Stage 2 units. In addition, there is no lift access between Stage 2 loading dock and residential units.***

The residential land use comprises predominantly 2-bedroom apartments or smaller. Given the smaller size of these apartments they are typically serviced by smaller loading vehicles up to 6.4m SRVs. That being said, there will be times when larger loading vehicles up to 8.8m MRVs will be required to access the residential land uses.

In these circumstances, loading vehicles larger than SRVs will be instructed to use the Stage 1 loading area, which caters for loading vehicles up to 12.5m, which are generally associated with the retail / supermarket land uses. From the Stage 1 loading area residents will be able to transfer their goods directly to the Stage 1 residential uses by the adjacent lifts or to the Stage 2 residential uses via the basement 1 car park. Any goods being transferred to Stage 2 via the basement car park would be escorted by building management.

It is reiterated that loading activities to the residential uses via vehicles greater than SRVs is expected to be infrequent and as such, the proposed arrangement is considered to be acceptable.

## 4.2 DA2 RFI Comments

**A II: The submitted swept path diagrams are not satisfactory. Sheets 21– Sheet 25 of the swept paths indicate that vehicles do not have clearance from one another when passing in opposite directions around the corners within the car park, including the ramps. The development shall provide for two-way movement of vehicles, demonstrating satisfactory turning through aisles, around corners and accessing ramps without conflicting with vehicles travelling in the opposite direction. In addition, Sheets 3 and 4 indicate columns to be located. This shall be amended on the plans.**

This comment has been addressed in response to DA1 RFI Comment A II.

**C I: Section 5.1 of the Traffic Report states that waste collection for the residential apartments is one or two times per week. The servicing program will see waste vehicle movements of 4 times per week for garbage, 2 times per week for recycling and up to 4 times per week for bulky waste. The garbage and recycling waste vehicle movements are doubled due to the use of an auger compaction unit which is fully removed during servicing and returned empty.**

Having regard for the above, the forecast weekly residential waste vehicle movements would increase from 10 to 16 across the week (i.e. 6 additional loading vehicle demands for the garbage and recycling compactor collections). These additional demands spread across the course of the week (i.e. less than one additional loading event per day) does not have a material impact on our previous findings.

It is further understood that the accessibility of the waste room in Stage 2 was queried as part of the waste services review. The query specifically relates to how bins from the Stage 2 waste room would be transferred to the Stage 1 loading area for collection.

The bins would be transferred using a bin tug (which would tow up to two large bins at a time) between the rooms. The bin tug would operate outside of retail operating hours when vehicle demands on-site are negligible. The bin tug has a similar swept path requirement as a B99 design vehicle and would therefore be expected to be able to circulate through the car park comfortably.

**D I: Car wash bays shall be provided for the residential development in accordance with Council's DCP, E11, Part B. This cannot be at the expense of required carparking as per DCP requirements and it must be demonstrated that car washing facilities and parking is both appropriate and compliant with Council's requirements.**

This comment has been addressed in response to DA1 RFI Comment E I.

**D II: Table 4.1 contains three footnotes, however numbers 2 and 3 cannot be located in the table and requires amendment.**

This comment has been addressed in response to DA1 RFI Comment E II.

**D III: Visitor bike parking is proposed within Level B1. Retail/commercial/recreational facility visitor use are considered short term parking and therefore bike parking should be provided with Security Level C as per AS2890.3:2015 Table 1.1. Short term parking is to be provided in well-lit areas and where passive surveillance is likely (i.e., Ground floor frontage) which is not achieved with the proposed basement parking location. It is also noted that basement bike parking is not easily accessible for visitors and therefore may not encourage active transport.**

This comment has been addressed in response to DA1 RFI Comment E IV.

***D IV: The location of Ground Floor bike racks are to be shown on the plans.***

This comment has been addressed in response to DA1 RFI Comment E V.

***D V: Visitor and staff bike parking is proposed within Level B1 of Stage 1 footprint which is not easily accessible by visitors and staff of Stage 2 development and requires reconsideration and amendment.***

This comment has been addressed in response to DA1 RFI Comment E IV and E VI.

***D VI: Section 6.1 of the report indicates that there will be a shortfall of bicycle parking spaces for customers/visitors for the whole development (Stage 1 and Stage 2). Furthermore, all resident bicycle parking is proposed to be accommodated in resident storage cages, however those residents who cycle regularly will likely choose to park their bike in the spaces provided rather than store it each time. Additional bicycle parking spaces should be provided in this regard. The current proposed location of visitor bike parking on Level B1 could be reallocated as additional mixed visitor/residential/staff parking if additional bike racks will be provided on Ground Level per Point #4 above.***

This comment has been addressed in response to DA1 RFI Comment E VI.

***D VII: The footnotes for Table 6.1 are not consistent with the table and require amendment.***

This comment has been addressed in response to DA1 RFI Comment E II.

***D VIII: The existing pedestrian (zebra) crossing fronting the Stage 1 development shall be relocated further north towards the frontage of Tower B rather than removed altogether to facilitate pedestrian movements from the multi-storey commuter car park. The existing pedestrian crossing shall be removed, including the pram ramp and tactiles on the opposite side of Dunshea Street and reinstatement with kerb and gutter. These works must be identified on the plans for clarity.***

This comment has been addressed in response to DA1 RFI Comment E VIII.

***D IX: The two existing pedestrian crossings on Dunshea Street (one to be relocated) and one existing pedestrian crossing on Lord Sheffield Circuit shall be upgraded to fully compliant raised threshold pedestrian crossings, including compliant street lighting, signage, and line marking, due to the increased pedestrian movements to the east and west of the site from the development. These works must be identified on the plans.***

This comment has been addressed in response to DA1 RFI Comment E IX.

***D X: Heavy vehicles accessing the loading area adjacent to the commuter car parking is of key concern due to high pedestrian activity in the same location during AM and PM peaks. A delineation between accessible areas is required. As such, TfNSW approved pedestrian fencing shall be provided on Dunshea Street fronting the commuter car park directing pedestrians to the pedestrian crossings on Dunshea Street. The fencing shall extend around the southern corner to the bike parking to prevent pedestrians crossing at the corner. To accommodate the pedestrian fencing, the existing footpath on the western side of Dunshea Street fronting the commuter car park shall be widened to be an accessible 1.5m wide (minimum) path with associated pram ramps.***

This comment has been addressed in response to DA1 RFI Comment E X.

***D XI: The loading dock access for Stage 1 is of insufficient width to cater for two-way movements for HRV and MRV vehicles and shall be amended to address safe vehicle passing.***

This comment has been addressed in response to DA1 RFI Comment E XI.



***D XII: The architectural plans show reconfiguration of the intersection of Dunshea Street and the exit from the at-grade commuter car park. This needs to be addressed in the Traffic Impact Assessment and detailed on the civil plans for clarity, including details of proposed line marking and infrastructure upgrades.***

This comment has been addressed in response to DA1 RFI Comment E XII.

***D XIII: Kerb adjustment is proposed on the eastern side of Dunshea Street between the Stage 1 and Stage 2 access points which will create a deflection for vehicles heading southbound on Dunshea Street. The Traffic Impact Assessment and civil plans shall address the need for any line marking or treatment measures on Dunshea Street to provide adequate delineation for vehicles heading southbound.***

This comment has been addressed in response to DA1 RFI Comment E XIII.

***D XIV: In addition to the Loading Dock Management Information presented in Appendix D of the TIA and to the above comment, the Applicant is requested to provide a management plan to manage two-way vehicle flow to/from the loading dock, mitigation measures in case of turntable malfunction, and minimise impact to external roads and footpath.***

This comment has been addressed in response to DA1 RFI Comment A III and E VIII.

***D XV: The Applicant is also requested to demonstrate that the required sight lines at loading dock entry are provided in accordance with AS2890.2. It is noted that the column between the loading dock and carpark driveways are within the sight triangles and should be amended for further explained.***

This comment has been addressed in response to DA1 RFI Comment E XV.

***D XVI: The report has determined trip generation rates for the residential flat building based on the TfNSW Technical Direction TDT 2013/14a, however the Sydney Metropolitan traffic generation rates are not considered appropriate to Penrith LGA. The TfNSW traffic generation rates would underestimate the traffic impact by the proposed development on the road network. Council has developed the following localised traffic generation rates for RFBs that have been determined based on the TfNSW Technical Direction survey findings for similar suburbs and the rates provided in the Penrith Core Centre Transport Management Study and Plan: 0.30 vehicle trips per unit in the AM peak and 0.27 vehicle trips in the PM peak. The traffic generation rates, and SIDRA modelling shall be updated accordingly in the report.***

This comment has been addressed in response to DA1 RFI Comment E XVIII.

***D XVII: Table 7.3 of the Transport Impact Assessment (TIA) report refers to Medical Use in calculating trip generation. Note that the land use has been changed to Indoor Recreational Facility with this DA therefore the trip generation calculation has to be updated as outlined above.***

This comment has been addressed in response to DA1 RFI Comment E XVI.

***D XVIII: The traffic modelling year shall include 10-year post opening. This is consistent with that was required for other significant traffic generating developments within Penrith CBD.***

This comment has been addressed in response to DA1 RFI Comment E XVII.

***D XIX: It is noted that the trip generation assessment was calculated based on car park rates and not per GFA/units. It is considered that calculation based on GFA/units is still applicable and appropriate as some development trips will not be wholly accommodated within site parking (i.e., some visitors will use nearby public parking facilities) which is typically observed within Thornton.***

This comment has been addressed in response to DA2 RFI Comment D XVI.

***D XX: The assumed traffic distribution in Figure 7.1 requires further explanation, specifically to detail and show how traffic is distributed at each intersection. The traffic report shall also include traffic network diagram showing existing and future peak hour volumes for assessment.***

This comment has been addressed in response to DA1 RFI Comment E XIX.

***D XXI: Sidra assessment results to show 95th percentile queue rather than Average queue in accordance with TfNSW Modelling Guidelines.***

This comment has been addressed in response to DA1 RFI Comment E XX.

***D XXII: It is stated in Section 2.3 of the TIA that the existing traffic volumes used were obtained from 2019 and 2020 surveys which are within 'COVID-19' period and are likely to be lower than current traffic volumes. It is also noted that there could be significant growth of Thornton Estate since 2019/2020 as such appropriate growth factors have to be applied to the survey volumes to represent current conditions. Also note that DA22/1086 is recently approved and should be included in the future base traffic volumes.***

This comment has been addressed in response to DA1 RFI Comment E XXI.

***D XXIII: Section 3.5 of the TIA indicates that removalist trucks up to 6.4m SRV will be accommodated within Stage 2 loading dock, with larger removalist vehicles to be accommodated within Stage 1 loading dock. However, there is no direct access between Stage 1 loading dock and Stage 2 units. In addition, there is no lift access between Stage 2 loading dock and residential units.***

This comment has been addressed in response to DA1 RFI Comment E XXII.

The updated analysis presented above does not materially change the key transport findings from the initial TIA Reports prepared for each DA submission. I trust this is satisfactory; should you have any questions, please do not hesitate to contact me directly.

Yours sincerely

**Stantec Australia Pty Ltd**



**Andrew Farran**  
**Senior Principal Transport Engineer**

Encl.

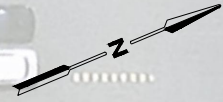
Updated Swept Path Assessment and Design Reviews

# Attachment 1

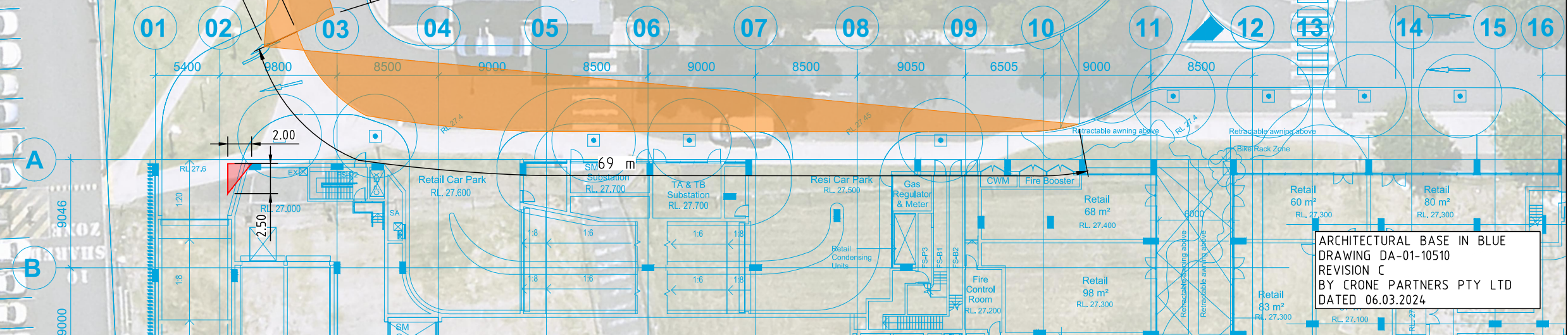
Swept Path Assessment



AS 2890.2 SIGHT DISTANCE ASSESSMENT  
FRONTAGE ROAD SPEED = 50 km/h  
DISTANCE ALONG FRONTAGE ROAD (5 SEC GAP) = 69m



\\AU2019-PPF5501\SHARED\_PROJECTS\301400273\TECHNICAL DRAWINGS\301400273-01-P1.DWG PLOTTED BY ARALAR, SEDRIK ON 21/03/2024 AT 16:14



ARCHITECTURAL BASE IN BLUE  
DRAWING DA-01-10510  
REVISION C  
BY CRONE PARTNERS PTY LTD  
DATED 06.03.2024



**PRELIMINARY PLAN**  
FOR DISCUSSION PURPOSES ONLY  
SUBJECT TO CHANGE WITHOUT  
NOTIFICATION

**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATIONS OF UNDERGROUND SERVICES ARE  
APPROXIMATE ONLY AND THEIR EXACT POSITION  
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS  
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED  
S. ARALAR  
  
APPROVED BY  
A. FARRAN

DESIGN CHECK  
A. FARRAN  
  
DATE ISSUED  
21 MARCH 2024

SCALE  
A3 0 2 4 8 1:400  
  
CAD FILE NO.  
301400273-01-P1.DWG

**THORNTON CENTRAL VILLAGE - DA01**  
**LOT 3003, 3004 AND 3005 OF DP 1184498 (184, 192 AND**  
**41 LORD SHEFFIELD CIRCUIT PENRITH NSW 2750)**  
**LOADING DOCK ACCESS SIGHT LINE ASSESSMENT**  
DRAWING NO. 301400273-01-01 SHEET 01 OF 04 ISSUE P1



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SWEPT PATH KEY

— VEHICLE CENTRE LINE

— VEHICLE TYRE PATH

— VEHICLE BODY PATH

— 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

10.50

1.66

5.50

Garbage 10.5x2.8 meters

Width : 2.80

Track : 2.80

Lock to Lock Time : 4.0

Steering Angle : 36.0

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DESIGNED  
S. ARALAR

APPROVED BY  
A. FARRAN

DESIGN CHECK  
A. FARRAN

DATE ISSUED  
21 MARCH 2024

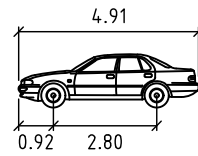
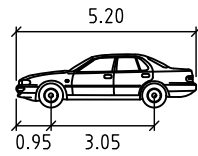
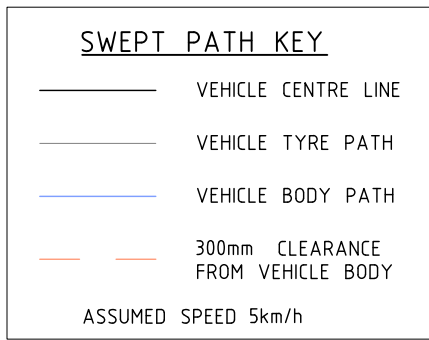
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CAD FILE NO.  
301400273-01-P1.DWG

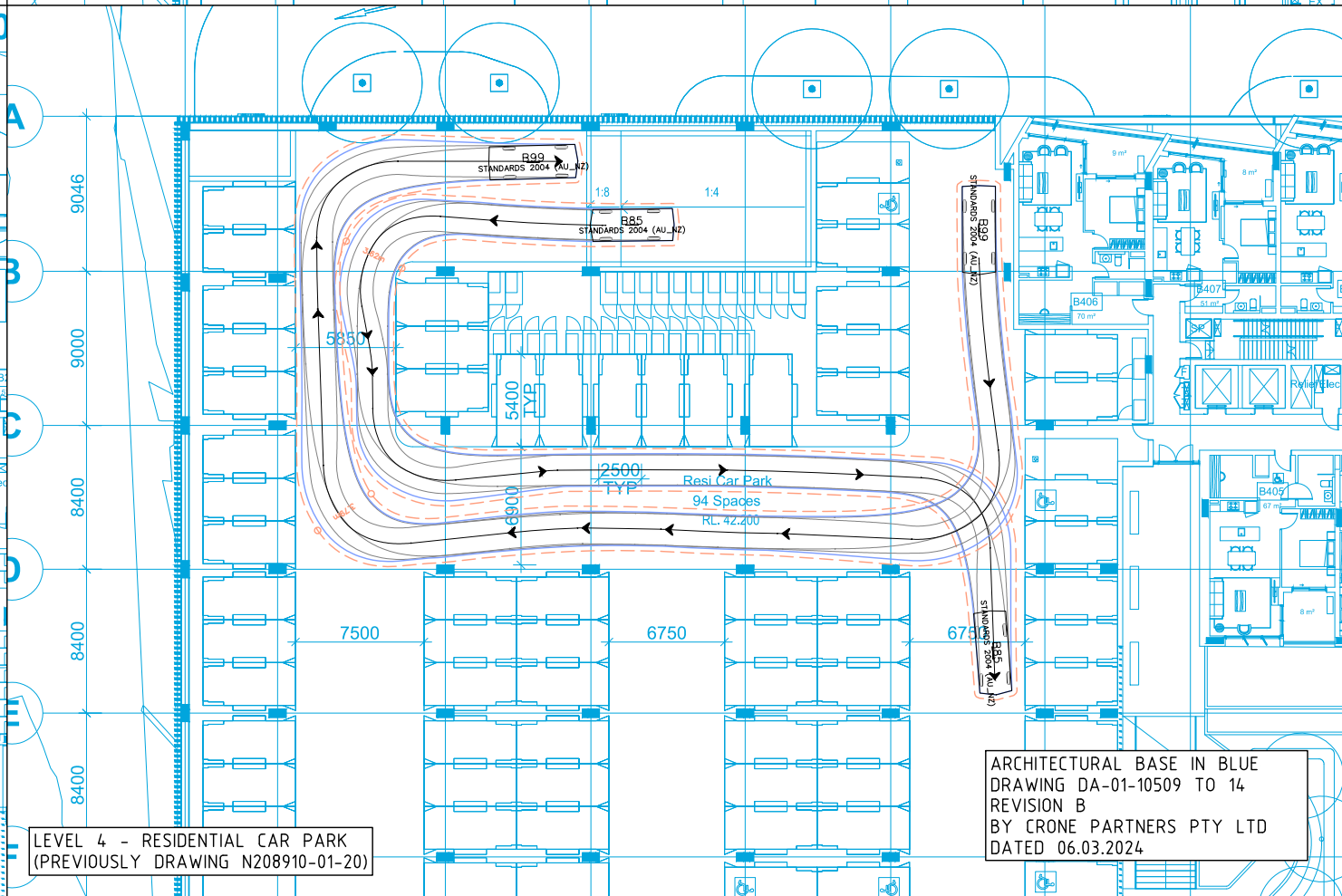
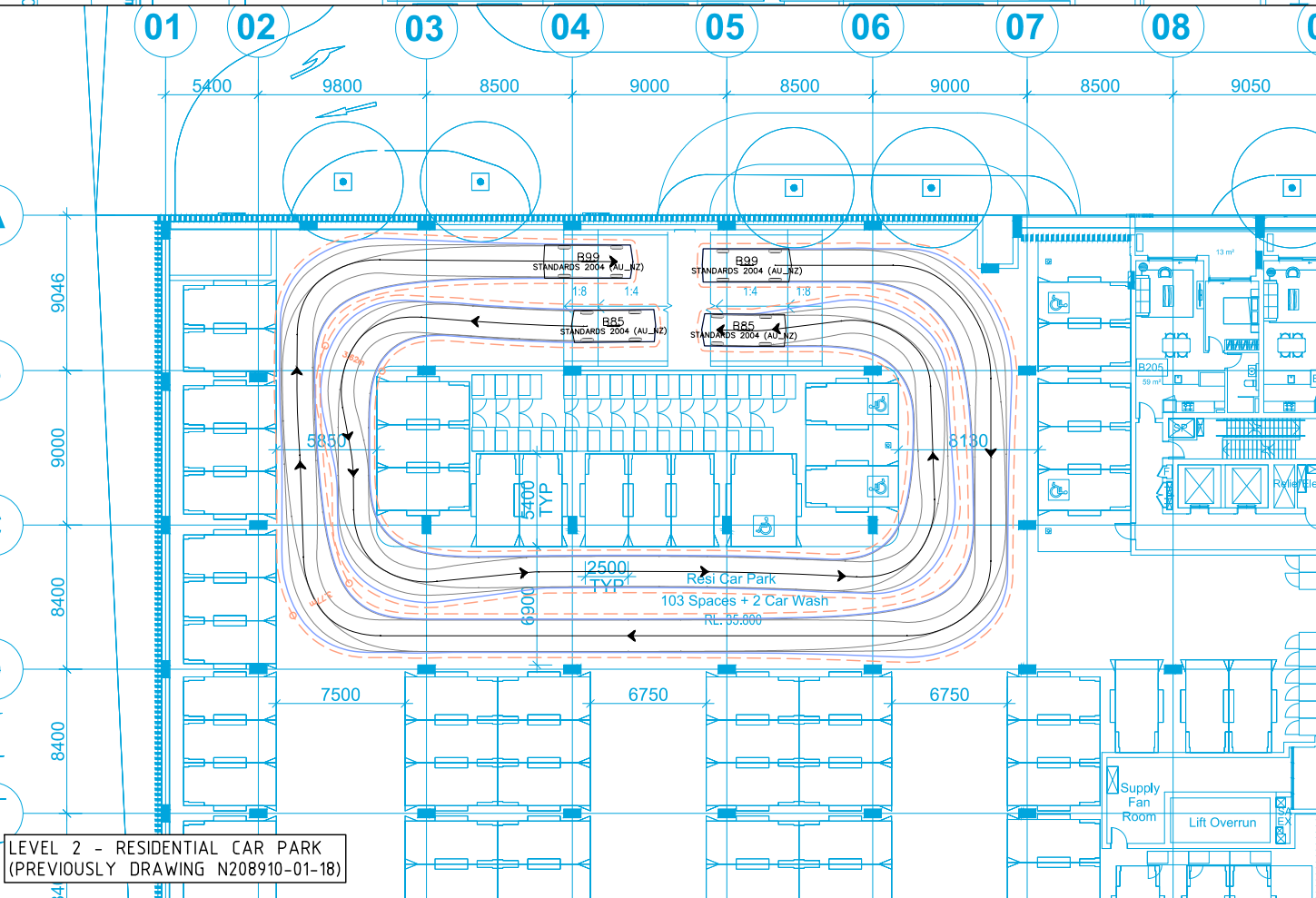
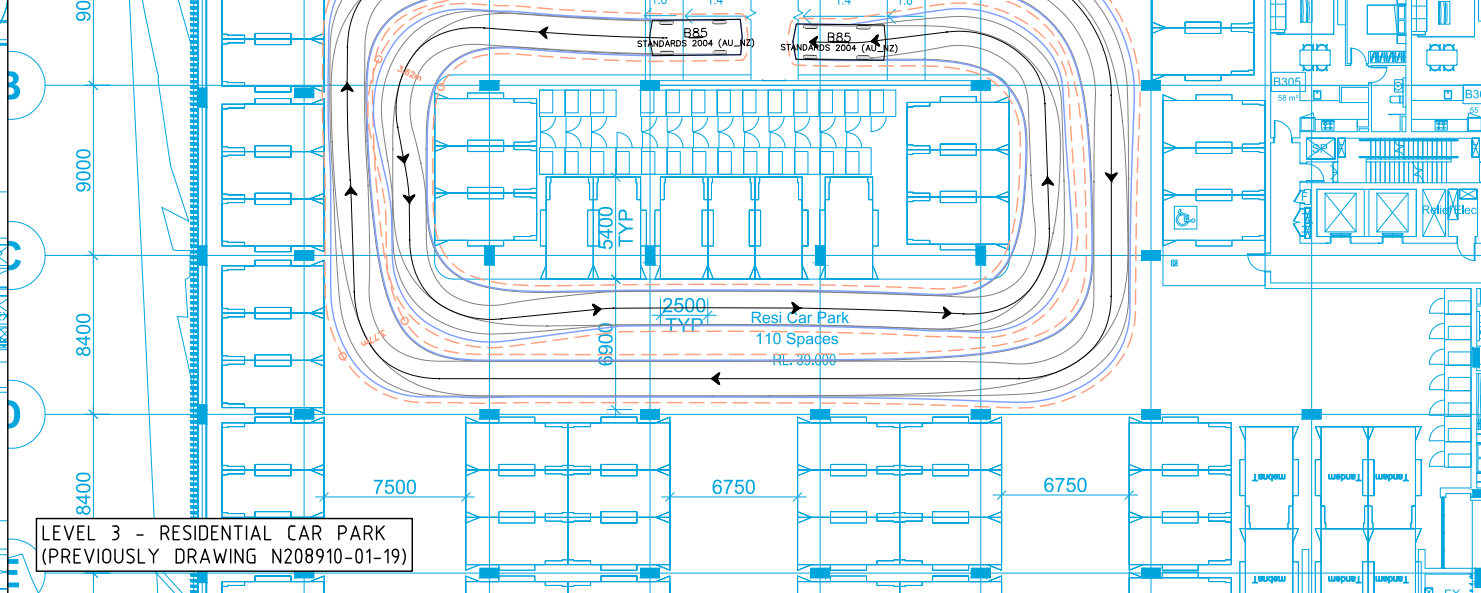
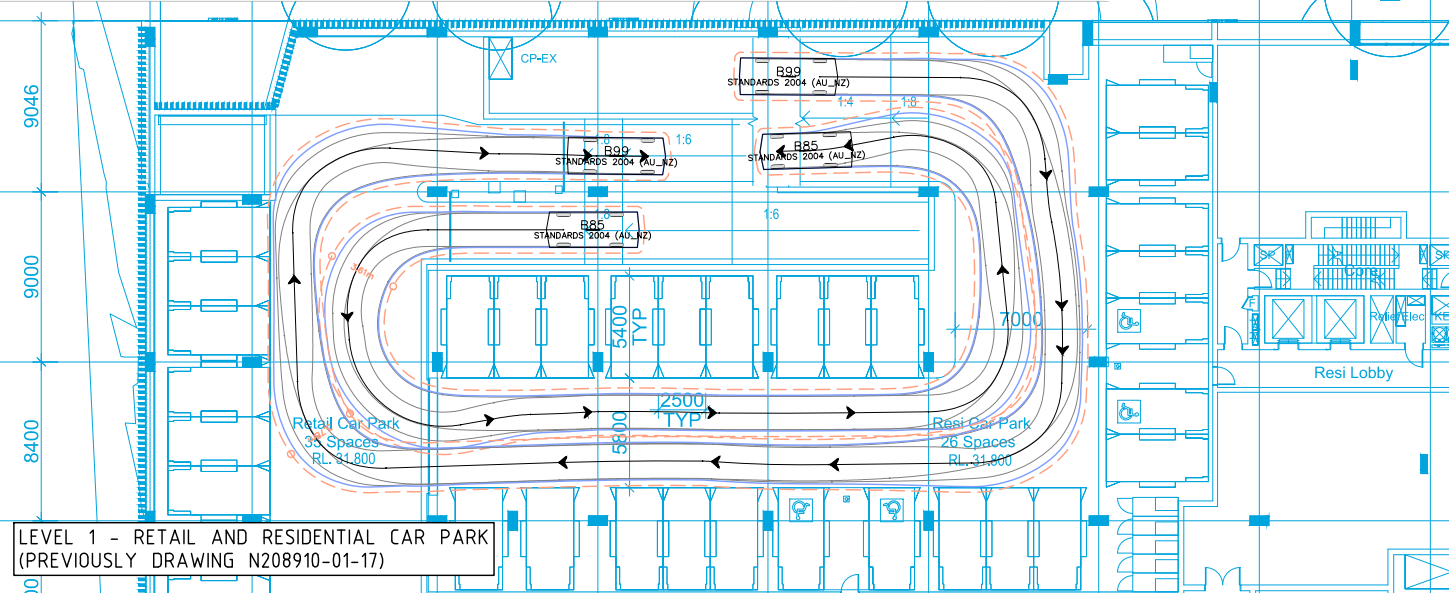
**THORNTON CENTRAL VILLAGE - DA01**  
**LOT 3003, 3004 AND 3005 OF DP 1184498 (184, 192 AND 41 LORD SHEFFIELD CIRCUIT PENRITH NSW 2750)**  
**LOADING DOCK SWEEP PATHS - WASTE TRUCK**  
DRAWING NO. 301400273-01-02 SHEET 02 OF 04 ISSUE P1

ARCHITECTURAL BASE IN BLUE  
DRAWING DA-01-10510  
REVISION C  
BY CRONE PARTNERS PTY LTD  
DATED 06.03.2024

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	B99		B85
		meters	meters
Width	: 1.94	Width	: 1.87
Track	: 1.84	Track	: 1.77
Lock to Lock Time	: 6.0	Lock to Lock Time	: 6.0
Steering Angle	: 33.9	Steering Angle	: 34.1



ARCHITECTURAL BASE IN BLUE  
DRAWING DA-01-10509 TO 14  
REVISION B  
BY CRONE PARTNERS PTY LTD  
DATED 06.03.2024



**PRELIMINARY PLAN**  
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NOTIFICATION

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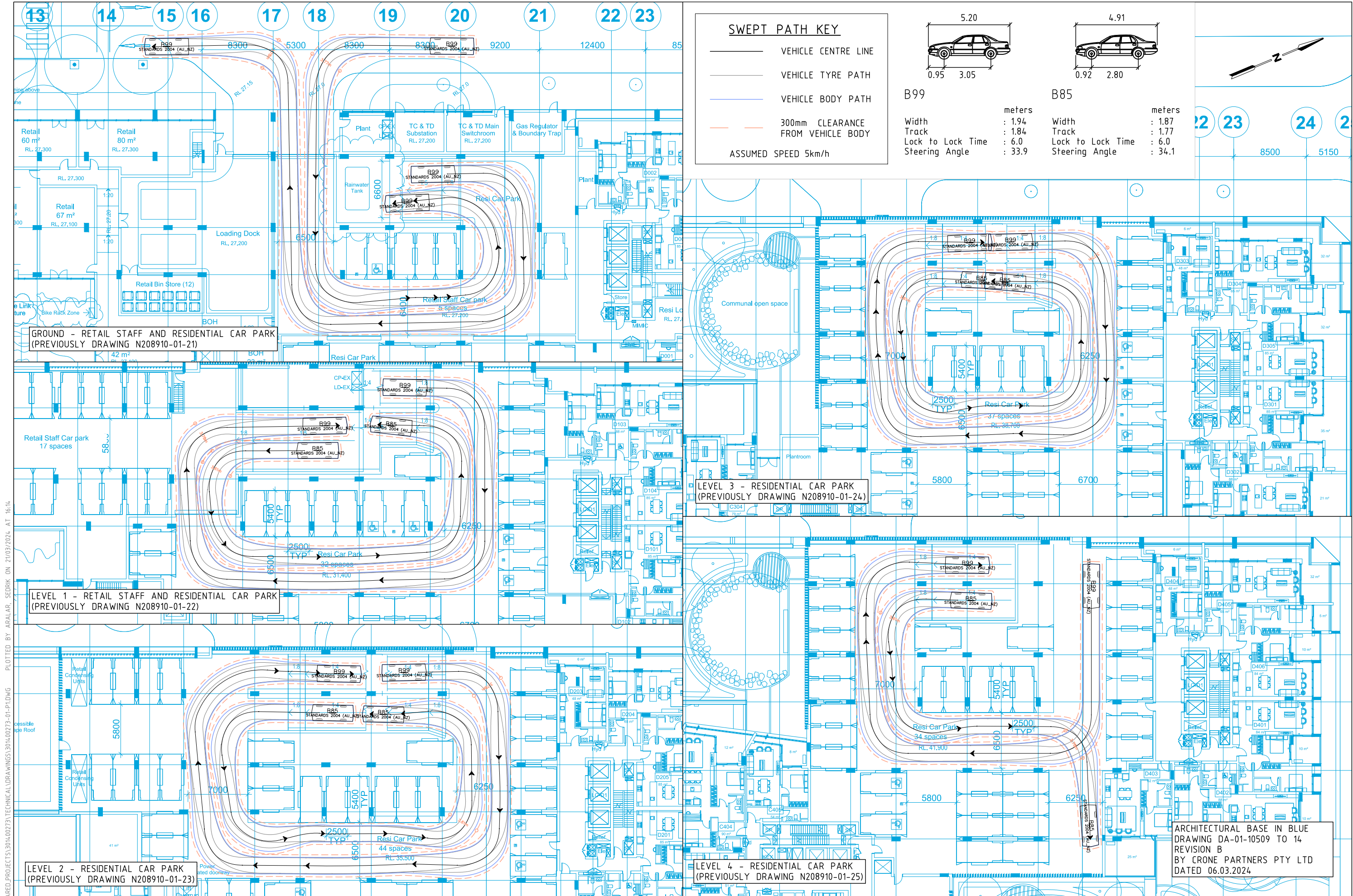
DESIGNED  
S. ARALAR  
  
APPROVED BY  
A. FARRAN

DESIGN CHECK  
A. FARRAN  
  
DATE ISSUED  
21 MARCH 2024

SCALE  
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CAD FILE NO.  
301400273-01-P1.DWG

**THORNTON CENTRAL VILLAGE - DA01**  
**LOT 3003, 3004 AND 3005 OF DP 1184498 (184, 192 AND 41 LORD SHEFFIELD CIRCUIT PENRITH NSW 2750)**  
**B85 AND B99 SWEPT PATHS**  
DRAWING NO. 301400273-01-03 SHEET 03 OF 04 ISSUE P1





**SWEPT PATH KEY**

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

	5.20	4.91
	0.95 3.05	0.92 2.80
B99		B85
Width	: 1.94	Width : 1.87
Track	: 1.84	Track : 1.77
Lock to Lock Time	: 6.0	Lock to Lock Time : 6.0
Steering Angle	: 33.9	Steering Angle : 34.1

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**PRELIMINARY PLAN**  
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DESIGNED  
S. ARALAR  
  
APPROVED BY  
A. FARRAN

DESIGN CHECK  
A. FARRAN  
  
DATE ISSUED  
21 MARCH 2024

SCALE  
A3 0 2 4 8 1:400  
  
CAD FILE NO.  
301400273-01-P1.DWG

**THORNTON CENTRAL VILLAGE - DA02**  
LOT 3003, 3004 AND 3005 OF DP 1184498 (184, 192 AND  
41 LORD SHEFFIELD CIRCUIT PENRITH NSW 2750)  
**B85 AND B99 SWEPT PATHS**  
DRAWING NO. 301400273-01-04 SHEET 04 OF 04 ISSUE P1