FABCOT PTY LTD

TRAFFIC REPORT FOR PROPOSED SHOPPING CENTRE DEVELOPMENT, 495 FOURTH AVENUE, AUSTRAL

JUNE 2024

COLSTON BUDD ROGERS & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Email: cbrk@cbrk.com.au

REF: 12301/2

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1. INTRODUCTION

1.1. Colston Budd Rogers & Kafes Pty Ltd has been commissioned by Fabcot Pty Ltd to prepare a report on the traffic implications of a proposed shopping centre at 495 Fourth Avenue Lot 12 DP 1103748. Austral. The site forms part of the Gurner Avenue Neighbourhood Centre included in the Liverpool Growth Centre DCP.

1.2. The proposed development is for a shopping centre comprising a supermarket, specialty shops, and commercial development. Some 348 parking spaces will be provided within an at-grade and basement car parks with access from Fourth Avenue and Gurner Avenue.

1.3. In August 2022, appeal proceedings commenced for a DA (PL-67/2021) for a mixed use development on the site (comprising 6,654m^2 retail (supermarket and specialty retail) and 174 residential units). Council prepared a Statement of Facts and Contentions (dated 16 February 2023) which included a number of traffic contentions. The appeal was withdrawn prior to a Section 34 conciliation conference. The traffic matters raised in the previous DA are addressed in this report.

1.4. Construction of this development will not commence until 2026 and will not open for operation until 2027 when the north Austral region becomes more developed.

1.5. This report examines the traffic implications of the proposed development through the following chapters:

- Chapter 2 - describing the existing conditions; and

- Chapter 3 - assessing the traffic implications of the proposed development.

2. EXISTING CONDITIONS

Site Location

2.1. The site is located on the south eastern corner of the intersection of Fourth Avenue and Gurner Avenue, Austral, as shown in Figure 1. The site is currently vacant land. Surrounding land use is a primary school to the north, low density residential to the east and residential lots and undeveloped land to the west and south. A secondary school is proposed to the east of the site and a residential subdivision is proposed north of the site.

2.2. The site forms part of the future Gurner Avenue Neighbourhood Centre identified in the Liverpool Growth Centre DCP. The Liverpool Contributions Plan 2014 (amended 10 June 2020) – Austral and Leppington North Precincts, sets out expected development in the area. Neighbourhood centres are identified as having retail floor space in the order of 10,000m^2.

Previous Studies

2.3. The site is within the Leppington North precinct in the South West Priority Growth Area. An indicative layout plan (ILP) and development control plan (DCP) have been prepared for the Austral and Leppington North precinct.

2.4. The Austral and Leppington North precincts are two of 19 precincts in the South West Priority Growth Area. The precincts comprise some 2,025 hectares and will ultimately provide:

- 17,350 dwellings;
- 54,000 residents;
- 220 hectares of employment land;
- 135 hectares of open space and recreational areas;
- Leppington Major Centre with regional shopping, employment, cultural and community facilities;
- new Leppington railway station (constructed);
- three neighbourhood centres;
- new schools and upgrades to major roads; and
- walking and cycling routes.

2.5 In association with the rezoning of the precincts, transport studies[1,2] were prepared. The studies assessed the transport requirements to accommodate a level of development generally described above. These studies recommended road and transport works to accommodate development of the precincts.

2.6 The DCP and Contributions Plan for the Austral and Leppington North Precincts identifies upgrades to Gurner Avenue and Fourth Avenue (to collector roads) and design requirements for new roads in the area (collector and local roads), and provision for buses, pedestrians, and cyclists including a midblock pedestrian crossing on Gurner Avenue near the eastern boundary of the site.

2.7 In addition to these works, other major works within the South West Priority Growth Area, including upgrades to Bringelly Road, Camden Valley Way and

[1] "Austral and Leppington North (ALN) Precincts Transport Assessment." Prepared by Aecom for NSW Department of Planning and Infrastructure, 11 August 2011.

[2] "Post Exhibition Traffic Report (Addendum)." Prepared by Aecom for NSW Department of Planning and Infrastructure, 4 July 2012.

South West Rail Link Extension, have been provided to accommodate future development in the South West Growth Centre, including the Austral and Leppington North precincts and other surrounding areas. The overall transport and traffic planning for the area has therefore already identified works to cater for this development, with mechanisms in place to facilitate their implementation.

Road Network

2.8 Fourth Avenue forms the western boundary of the site and provides the main north-south access road in the vicinity of the site. It connects to Fifteenth Avenue to the south (at a roundabout controlled intersection) and to Bringelly Road, further south (at a traffic signal controlled intersection). The DCP and Contributions Plan identify Fourth Avenue as a collector road. Adjacent to the site, Fourth Avenue has been upgraded to provide kerb and gutter with a traffic lane with kerb side parking in each direction. South of site it provides one traffic lane in each direction and unsealed shoulders.

2.9 Gurner Avenue forms the northern boundary of the site. Within the vicinity of the site, it provides one traffic lane in each direction with kerb and gutter on the northern side of the road and an unsealed shoulder on the southern side of the road (along the frontage of the site). During school set down/pick up periods it a has a posted speed limit of 40km/h.

Traffic Conditions

2.10 In order to gauge traffic conditions, counts were undertaken during weekday morning and afternoon peak periods, which are busy times for the road network when traffic from the proposed development will combine with other commuter,

school and retail traffic. The afternoon counts included the school pick up period. The traffic counts were undertaken at the intersection of Fourth Avenue and Gurner Avenue and includes the school access located on the northern side of Gurner Avenue, east of Fourth Avenue..

2.11 The results of the surveys are shown in Figures 2 and 3, and summarised in Table 2.1.

Table 2.1 :	**Summary of Existing Two-Way (sum of both directions) Peak Hour Traffic Flows**	
Location	**Vehicles Per Hour**	
	Weekday Morning	**Weekday Afternoon**
Fourth Avenue		
– north of Gurner Avenue	0	11
– south of Gurner Avenue	680	444
Gurner Avenue		
– west of Fourth Avenue	298	154
– east of Fourth Avenue	910	503
– east of School entry	831	405
School Access		
– east of Fourth Avenue	435	248

2.12. Examination of Table 2.1 reveals that:

- Fourth Avenue, south of Gurner Avenue, carried some 445 to 680 vehicles per hour (two way) in the weekday morning and afternoon peak hours;

- Gurner Avenue carried some 155 to 298 vehicles per hour (two way) in the weekday morning and afternoon peak hours, west of Fourth Avenue. East of Fourth Avenue, traffic flows were higher at some 503 to 910 vehicles per hour (two way) in the weekday morning and afternoon peak hours; and

- The school access located on Gurner Avenue (east of Fourth Avenue) generates some 250 to 435 vehicles per hour (two way) in the weekday morning and afternoon peak hours.

Intersection Operations

2.13. The capacity of the road network is largely determined by the ability of its intersections to cater for peak traffic flows. The surveyed intersections shown in Figures 2 and 3 have been analysed using the SIDRA program.

2.14. SIDRA simulates the operations of intersections to produce a number of measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.

2.15. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode

>70	=	"F"	Unsatisfactory and requires additional capacity

- For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	“A”	Good
15 to 28	=	“B”	Acceptable delays and spare capacity
29 to 42	=	“C”	Satisfactory but accident study required
43 to 56	=	“D”	Near capacity and accident study required
57 to 70	=	“E”	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

2.16. It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.17. The SIDRA analysis found that:

- the priority controlled intersection of Fourth Avenue and Gurner Avenue currently operates with average delays of less than 20 seconds per vehicle (for the movement with highest delay, right turn out of Fourth Avenue) in the

weekday morning and afternoon peak hours. This represents level of service B, an acceptable level of service with spare capacity; and

- the priority controlled intersection of Gurner Avenue and the School Entry currently operates with average delays of less than 15 seconds per vehicle (for the movement with highest delay, right turn into the school) in the weekday morning and afternoon peak hours. This represents level of service A/B, a good level of service.

2.18 Observations of the operation of the Gurner Avenue/Fourth Avenue intersection noted that during the school drop off/pick up periods, queues from the school entry could extend back through the intersection for short periods. this is as a result of the school access management, where vehicles are getting stopped prior to entering the school. These queues are infrequent and clear quickly.

Public and Active Transport

2.19 The site currently has limited access to public transport services. Interline currently operate Route 855 service (Blacktown to Parramatta) and Route 865 (Rutleigh Park to Liverpool via Austral and Leppington Stations). This operates along Fifteenth Avenue some 600 metres from the site. The DCP and Contributions Plan do not indicate any future bus routes in the area although this may change as development is completed in the area.

2.20 The Contributions Plan identifies provision of an off road cycleway (shared path) along Gurner Avenue and Fourth Avenue.

2.21 Pedestrian access in the area will be provided by footpaths on the new roads. Collector roads will provide a minimum 2.5 metre wide shared path while local roads will provide a minimum 1.5 metre wide footpath. At the intersection of Fourth Avenue and Gurner Avenue, the southern and eastern legs provide medians with pedestrian refuges.

Future Roadworks

2.22 As part of the proposed expansion of the adjacent Al Faisal College, Conditions 5 and 70 of the DA Approval (dated 20 September 2019) and the modified consent conditions (dated 27 September 2022) are required to be met. These conditions are as follows:

Infrastructure upgrades

5. The following infrastructure upgrades to the development site are required to facilitate the staged increased in population of the educational establishment;

- *Construction of a roundabout at the intersection of Gurner Avenue and Fourth Avenue;*
- *Construction of a children's crossing on Gurner Avenue;*
- *Construction of an indented bus parking bay to facilitate drop-off and collections;*
- *Construction of additional parking spaces as indicated in the approved site plan;*
- *Construction of separate pedestrian entrance way and internal pathway.*

70. The approved roundabout at the Gurner Avenue and Fourth Avenue intersection, two bus bays and a Children's crossing on Gurner Avenue are to be constructed in 2023 and made operation prior to commencement of the 2024 school year.

2.23 It is also understood that the school will also be building the section of Fourth Avenue, north of Gurner Avenue. Once this section of road is constructed, all access to the school will be via Fourth Avenue. As of June 2024, the roundabout at the intersection of Fourth Avenue and Gurner Avenue has not been constructed.

3 IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The proposed development is for a shopping centre comprising a supermarket (3,856m^2) including a BWS (175m^2) and DTB facility (145m^2), specialty shops (1,825m^2), and commercial development, (1,729m^2), including supermarket office. Some 348 parking spaces (including six DTB spaces) will be provided within an at-grade and basement car park with access from Fourth Avenue and Gurner Avenue. Access from Gurner Avenue will be limited to left in/left out and right in (no right turn out of the site).

3.2 The traffic and parking implications of the proposed development have been assessed through the following sections:

- active and public transport;
- parking provision;
- access, servicing and internal layout;
- traffic effects;
- response to traffic matters raised by Council; and
- summary.

<u>Pedestrians, Cyclists and Public Transport</u>

3.3 As previously discussed in Chapter 2, the site currently has limited access to existing public transport services. The DCP and Contributions Plan do not indicate any future bus routes in the area although this may change as development is completed in the area.

3.4 Access by active transport (cycling and walking) will be provided by future pedestrian and cycle paths as new roads are constructed. The DCP requires new collector roads to provide an off an road shared pedestrian/cycle path (2.5 metres wide) and new local roads a footpath 1.5 metres wide.

3.5 To provide appropriate connectivity between the school and neighbourhood centre, a raised pedestrian crossing could be provided on Gurner Avenue at the eastern boundary of the site. This would function as a school crossing during school set down and pick up periods.

Parking Provision

3.6 The Liverpool City Council Growth Centre Precincts DCP includes the following car parking requirements:

- one space per 22m^2 GFA for retail > 200m^2;
- one space per 30m^2 GFA for retail < 200m^2; and
- one space per 40m^2 GFA for commercial.

3.7 The proposed development includes the following:

- 3,856m^2 retail > 200m^2;
- 1,825m^2 retail < 200m^2; (it is anticipated that specialty retail will be divided into tenancies less than 200m^2); and
- 1,729m^2 commercial.

3.8 On this basis, the development would require 279 spaces. Should the four large areas shown as specialty shops (1,460m^2) be divided in tenancies larger than 200m^2, parking required would increase to 296 spaces. Both requirements are

satisfied by the provision of 348 spaces. The provision of the DTB facilities has resulted in reduction in parking demand as customers using the DTB spend less time in the car park as customer shopping in store. No reduction in parking has been applied as result of the DTB.

3.9 The Liverpool City Council Growth Centre Precincts DCP 2021 provides no rates for bicycle parking for commercial and retail premises. Bicycle parking rates have been adopted from Austroads Guide to Traffic Management: Bicycle Parking Facilities. The rates are as follows;

- 0.14 spaces per 100m^2 for supermarkets for employees;
- 0.57 spaces per 100m^2 for supermarkets for customers;
- 0.1 spaces per 100m^2 for specialty shops for employees;
- 0.4 spaces per 100m^2 for specialty shops for customers;
- 0.45 space per 100m^2 for commercial for employees; and
- 0.05 space per 100m^2 for commercial for visitors.

3.10 On this basis, the proposed development would require 45 bicycle spaces (15 employee spaces and 30 spaces for customers/visitors). However, it is noted that in in the initial instillation stage it may be appropriate to make available 50 per cent of the recommended provision with space set aside for 100 per cent of the provision, in the event that full demand for bicycle parking is realised. On this basis, it is recommended that 23 bicycle spaces be provided initially (8 employee and 15 customer/visitor). Employee bicycle parking should be provided in a secure location and customer/visitor parking in conveniently located racks.

3.11 Bicycle parking is proposed to be provided in accordance with these requirements. Eight accessible spaces are provided in the at-grade and basement car park.

Access, Servicing and Internal Layout

3.12 The Growth Centre DCP sets out the following with regards to access within the Gurner Avenue Neighbourhood Centre:

Vehicular access to car parks and loading bays is to be primarily via perimeter streets including Fourth Avenue, and streets to the south and east of the centre.

3.13 Primary access will be via Fourth Avenue (to the at-grade car park) with all movements permitted. Secondary access to the basement car park will be via Gurner Avenue with vehicles prohibited from turning right out of the site. An internal ramp will connect the two parking levels.

3.14 Within parking areas, spaces should be a minimum 2.6 metres wide and a minimum of 5.4 metres long with 6.6 metre wide circulation aisles. Spaces with adjacent obstructions should be 0.3 metres wider to provide for doors to open. Disabled spaces should be provided at 2.4 metres wide, with an additional 2.4 metre wide adjacent area for loading /unloading wheelchairs. Height clearance should be a minimum 2.5 metres above disabled spaces and a minimum 2.2 metres elsewhere. These dimensions are for a Class 3A car park as set out in Australian Standard for Parking Facilities (Part 1: Off-street car parking), AS 2890.1:2004.

3.15 Six direct to boot (DTB) spaces for online orders from the supermarket are in the basement car park adjacent to the supermarket.

3.16 Provision will be included in the development for service vehicles, including garbage collection and deliveries, to enter the site, manoeuvre and exit the site in

a forward direction. A loading dock on the western side of the development, with access from Fourth Avenue has been designed to accommodate 19 metre long semi-trailers (for the supermarket) in accordance with the Australian Standard for Parking Facilities (Part 2: Off-street commercial vehicle facilities), AS 2890.2 – 2002. Truck swept paths are provided in Attachment A.

3.17 Following DA approval, access arrangements, parking layouts, servicing and vehicle swept paths should be reviewed and confirmed for compliance certification.

Traffic Effects

3.18 The overall traffic effects of the development have been assessed in previous studies for the Austral and Leppington North growth centres. However, to consider the traffic effects in the short term, an assessment of the impact of the proposed development on the existing road network has been undertaken.

3.19 Traffic generated by the proposed development would have its greatest effects during weekday morning and afternoon peak periods when it combines with commuter, school and retail traffic on the surrounding road network.

3.20 The RMS's "Guide to Traffic Generating Developments" indicates the following two-way peak hour traffic generation rates:

- supermarkets: 15.5 vehicles per hour per 100m^2 on weekday afternoon;
- specialty retail: 4.6 vehicles per hour per 100m^2 on weekday; and
- commercial: two vehicles per hour per 100m^2 on weekday morning and afternoons.

3.21 On this basis, the proposed development would have traffic generations of some 710 vehicles per hour two-way during weekday afternoon peak hour. Weekday morning peak hour traffic generation would be about half the afternoon peak hour (some 350 vehicles per hour two-way).

3.22 Woolworths has advised that due to the surrounding area not being fully developed and the constraints in the road network that will limit access to the site, in the short term the shopping centre is likely to generate some 75% of the traffic generated when the area is fully developed. However, an assessment of 100% traffic generation has been undertaken.

3.23 TfNSW guidelines indicate that some 25 per cent of retail traffic will be passing trade, i.e., traffic which would have driven past the centre, regardless of its visit to the centre.

3.24 Given the existing development in the area, it has been assumed that most traffic coming to the site will be from the south and the east. Traffic has been distributed as follows.

- 50 per cent from the south;
- 35 per cent from the east; and
- 15 per cent from the west.

3.25 Additional development traffic has been assigned to the surrounding road network. Existing peak hour flows plus the additional development traffic are shown in Figures 2 and 3, and summarised in Table 3.1.

Table 3.1 :	**Summary of Existing + Development Two-Way (sum of both directions) Peak Hour Traffic Flows**			
Location	**Vehicles Per Hour**			
	Weekday Morning		**Weekday Afternoon**	
	Existing	+ Dev	Existing	+ Dev
Fourth Avenue				
– north of Gurner Avenue	0	+0	11	+0
– south of Gurner Avenue	680	+50	444	+90
– south of Site Access	680	+155	444	+305
Gurner Avenue				
– west of Fourth Avenue	298	+45	154	+90
– east of Fourth Avenue	910	+75	503	+140
– east of Site Access	831	+70	405	+135
School Access				
– east of Fourth Avenue	435	+0	248	+0
Site Access				
– south of Gurner Avenue	0	+125	0	+245
– east of Fourth Avenue	0	+235	0	+465

3.26 Examination of Table 3.1 shows that:

- traffic flows on Fourth Avenue, south of Gurner Avenue, would increase by some 50 to 305 vehicles per hour (two way) in the weekday morning and afternoon peak hours;

- traffic flows on Gurner Avenue would increase by some 45 to 140 vehicles per hour (two way) in the weekday morning and afternoon peak hours; and

- the site access, south of Gurner Avenue, would generate some 125 to 245 vehicles per hour in the weekday morning and afternoon peak hours; and

- the site access, east of Fourth Avenue, would generate some 235 to 465 vehicles per hour in the weekday morning and afternoon peak hours.

3.27 The intersections along Fourth Avenue have been reanalysed with development traffic in place. The analysis found that:

- the priority controlled intersection of Fourth Avenue/Gurner Avenue would continue to operate with average delays of less than 20 seconds per vehicle (for the movement with highest delay, right turn out of Fourth Avenue) in the weekday morning and afternoon peak hours. This represents level of service B, an acceptable level of service with spare capacity;

- the priority controlled intersection of Gurner Avenue and the School Entry will continue to operate with average delays of less 15 seconds per vehicle (for the movement with highest delay, right turn in the school) in the weekday morning and afternoon peak hours. This represents level of service A/B, good level of service; and

- the site accesses with Gurner Avenue and Fourth Avenue would operate with average delays of less than 15 seconds per vehicle in the weekday morning and afternoon peak hours. This represents level of service A/B, a good level of service.

3.28 Therefore, the traffic generated by the proposed development can be catered for by the existing surrounding road network.

3.29 As a sensitivity test, an assessment of the traffic effects in 2036 has been undertaken. To estimate 2036 traffic flows (without the school expanded), existing traffic flows (excluding existing school traffic) have been increased by 2 per cent per annum.

3.30 Estimates of traffic generated by the expansion of the adjacent school (as identified in the Traffic and Accessibility Assessment undertaken by Traffix in October 2020) are based on the information provided in the Traffix report. Thes include:

- the access to the primary school will be removed from Gurner Avenue and all vehicles will use the northern leg of Fourth Aveue;
- The traffic generated by the expanded school during the morning and afternoon peak periods is assumed to be the same.
- The primary and secondary school will generate some 900 and 201 vehicles per hour (two-way) through the intersection of Gurner Avenue and Fourth Avenue respectively.

3.31 As noted in Chapter 2, as part of the proposed works for the proposed expansion of the school, a roundabout would be constructed at the intersection of Fourth Avenue and Gurner Avenue.

3.32 The operation of the intersection of Gurner Avenue and Fourth Avenue has been reanalysed for the following scenarios:

- 2036 AM/PM plus shopping centre (without roundabout and no expansion of school);
- 2036 AM/PM plus expanded school (with roundabout);
- 2036 AM/PM plus shopping centre and expanded school (with roundabout).

3.33 It should be noted that the provision of the roundabout at the intersection of Gurner Avenue and Fourth Avenue will result in a redistribution of development

traffic, with some 25 to 50 vehicles using the Gurner Avenue exit to perform a U-turn to head east in the morning and afternoon peak periods respectively.

3.34 The analysis found that:

- In 2036 plus the shopping centre and no expansion of the school, the priority controlled intersection of Fourth Avenue and Gurner Avenue would operate with average delays (for the movement with the highest delay, right turn out of Fourth Avenue) of some 30 seconds per vehicle. This represents a level of service B, a satisfactory level of service;

- In 2036 plus the expansion of the school, the roundabout controlled intersection of Fourth Avenue and Gurner Avenue would operate with average delays (for the movement with the highest delay, right turn out of Fourth Avenue) of less than 28 seconds per vehicle. This represents a level of service B, an acceptable level of service; and

- In 2036 plus the expansion of the school and the shopping centre, the roundabout controlled intersection of Fourth Avenue and Gurner Avenue would operate with average delays (for the movement with the highest delay, right turn out of Fourth Avenue) of less than 28 seconds per vehicle. This represents a level of service B, an acceptable level of service.

3.35 The above analyses have demonstrated that prior to the expansion of the school, the priority controlled intersection of Fourth Avenue and Gurner Avenue would be able to accommodate traffic generated by the proposed shopping centre. Once the roundabout is constructed as part of the expansion of the school, the

intersection of Gurner Avenue and Fourth avenue would be able to cater for traffic generated by the proposed school expansion and shopping center.

Response to Traffic Matters Raised by Council

3.36 Traffic matters raised by Council in a pre-DA meeting for this site was undertaken on 27 August 2021 and the Statement of Facts and Contentions for the previous DA, released on 16 February 2023, The traffic matters raised and our responses are set out below.

Pre-DA Matters

The intersection of Fourth Avenue and Gurner Avenue requires treatment due to the additional traffic generation from the proposed development and from nearby developments. The traffic impact assessment needs to assess the cumulative impact of the proposed development and school across the street on the operation of the intersection and identify appropriate treatment. The proposed development will be required to make contribution towards the implementation of the identified intersection improvement.

3.37 **Response:** Traffic counts were undertaken whilst the opposite school is operating. With the school operating and the traffic generated by the proposed supermarket in place, the intersection of Gurner Avenue and Fourth Avenue will operate at an acceptable level of service and does not require any treatment in the short term.

3.38 In 2036, the existing configuration of the intersection would be able to cater for traffic generated by the proposed shopping centre. However, as part of the expansion of the adjacent school, a roundabout would be required to cater for

traffic generated by the school expansion and the proposed Woolworths development.

Vehicular access to the proposed development is to be from streets other than Gurner Avenue, as per the GC DCP. This is reinforced by the proximity of the proposed vehicular access off Gurner Avenue to the intersection of Gurner and Fourth Avenues and the presence of a school directly opposite the proposed development.

3.39 **Response:** The Growth Centre DCP does not prohibit access from Gurner Avenue. It states that access should be primarily from adjacent streets including Fourth Avenue. As a measure to reduce the impact of the access from Gurner Avenue, it is proposed to restrict this access to ban the right turn out of the site onto Gurner Avenue.

SoFAC Traffic Matters

5. A revised Traffic Impact Statement must be prepared addressing the following:

- *a. Engage with the 4 adjoining land developers to prepare a revised cumulative traffic forecast and identify required road improvements using detailed network SIDRA modelling. (Assumptions in the model are to be discussed and agreed with Council).*
  - *I. Council is aware the school has commenced SIDRA modelling, and this could provide the basis for the assessment.*
- *b. The SIDRA modelling should identify and recommend required intersection treatments at the following locations:*
  - *I. Fourth Avenue and Gurner Avenue intersection including a Fourth Avenue extension to the north (to service the adjoining subdivision to the north-west and the Landcom development to the north)*

3.40 **Response:** This cumulative assessment has been undertaken in Section 3.18 to Section 3.33 of this report.

6. The applicant must prepare plans demonstrating any required road improvements and intersection treatments including; 4 lanes (2 lanes in each direction) for Fourth Avenue and Gurner Avenue frontages.

3.41 **Response:** Fourth Avenue and Gurner Avenue are identified as Collector Roads in the Growth Centre DCP and Contribution plans.

3.42 Fourth Avenue, adjacent to the site has already been constructed to a collector road, as part of the subsequent development, the southern section of Gurner Avenue, along the frontage of the site, will be constructed.

3.43 The required road and intersections improvements required by 2036 are detailed in Section 3.29 to Section 3.33 above.

7. The applicant must provide a Road Safety Audit addressing:

a. the movements to and from the site accesses and whether the estimated volumes require a dedicated right turn lane or left turn lane into the proposed access driveways, or whether the right turn movement should be prohibited.

I. A revised drawing showing the proposed configuration for Fourth Avenue and the retail access and Fourth Avenue and the residential access is to be submitted for review prior to finalizing the requested revised Traffic Report.

b. Consideration of the following:

I. Greater separation between the retail/loading dock access and the residential access driveways

II. Provision of a separate loading dock and associated access.

3.44 **Response:** the traffic assessment in this report has found that the site accesses Gurner Avenue and Fourth Avenue would operate with an average delay for all movements of less than 15 seconds per vehicle. This represents a level of service A. The car park and loading dock accesses are separated. The car park access on Fourth Avenue is some 80 metres from the intersection of Fourth Avenue and Gurner Avenue.

8. The applicant is to review and submit appropriate traffic facility at the intersection of Fourth Avenue and Gurner Avenue to address safe traffic movements due to increased traffic generations from this development.

3.45 **Response:** the existing priority controlled intersection of Gurner Avenue and Fourth Avenue can accommodate traffic generated by the proposed development. It is noted that as part of the proposed school expansion, that a roundabout is proposed at this intersection. The SIDRA analysis of 2036 plus school plus shopping centre can be catered for by the upgraded intersection.

Summary

3.46 In summary, the main points relating to the traffic implications of the proposed shopping centre are as follows:

i) the site is identified for development as part of the future Gurner Avenue Centre identified in the Liverpool Growth Centre DCP;

ii) the proposed development has limited access to public transport services in the area;

iii) the proposed parking provision is considered appropriate;

iv) access, on site circulation and servicing arrangements are considered appropriate;

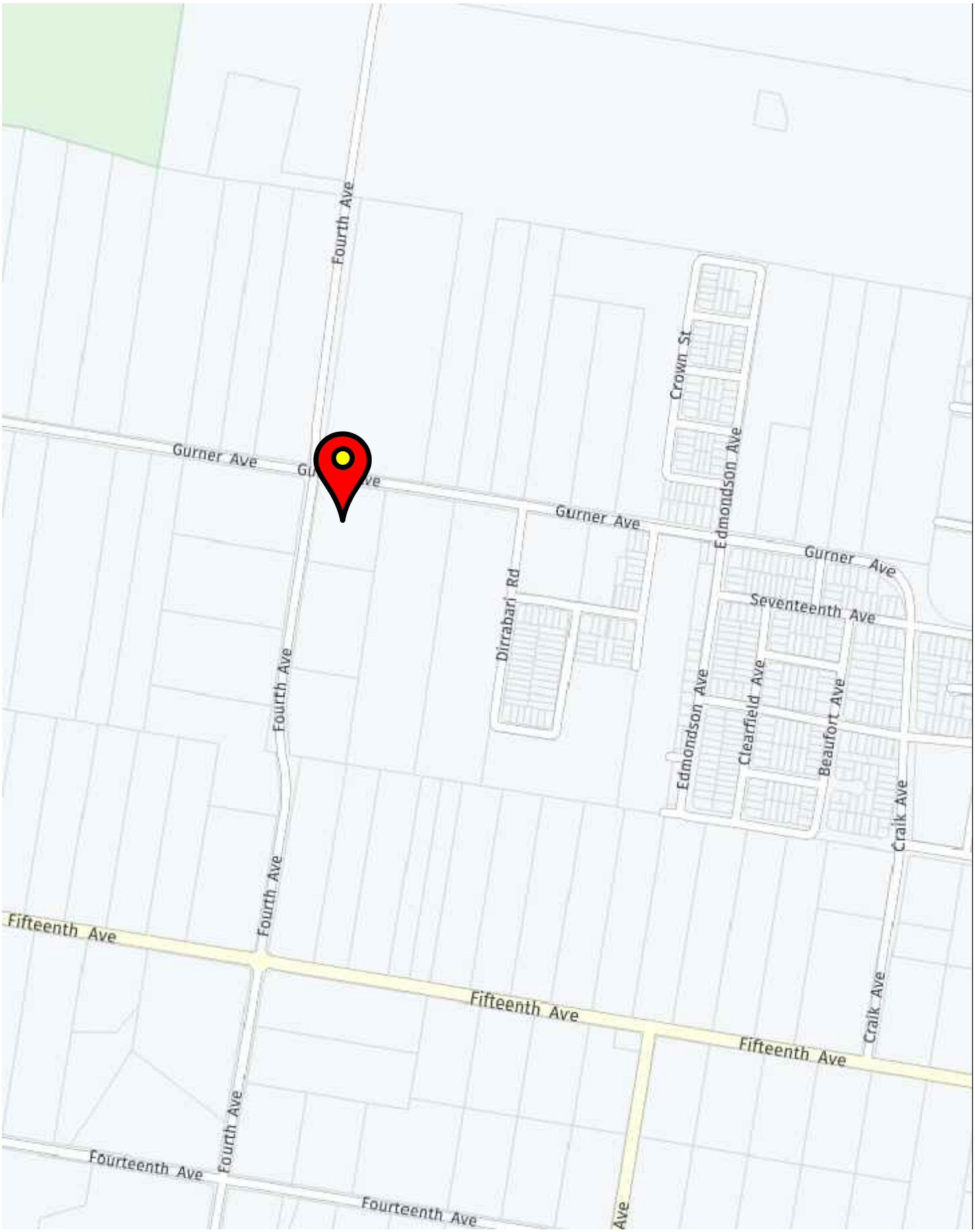
v) following DA approval, access arrangements, parking layout, servicing and vehicle swept paths should be reviewed and confirmed for compliance certification;

vi) a series of road, transport and intersection works has been identified to cater for traffic from future development in Austral, including the subject site;

vii) as the area continues to develop, the upgraded road network and intersections will be able to cater for future traffic growth, including traffic from the proposed development;

viii) In the short term, the existing road network can cater for the additional development traffic generated by the proposed development; and

ix) matters raised by Council have been addressed.

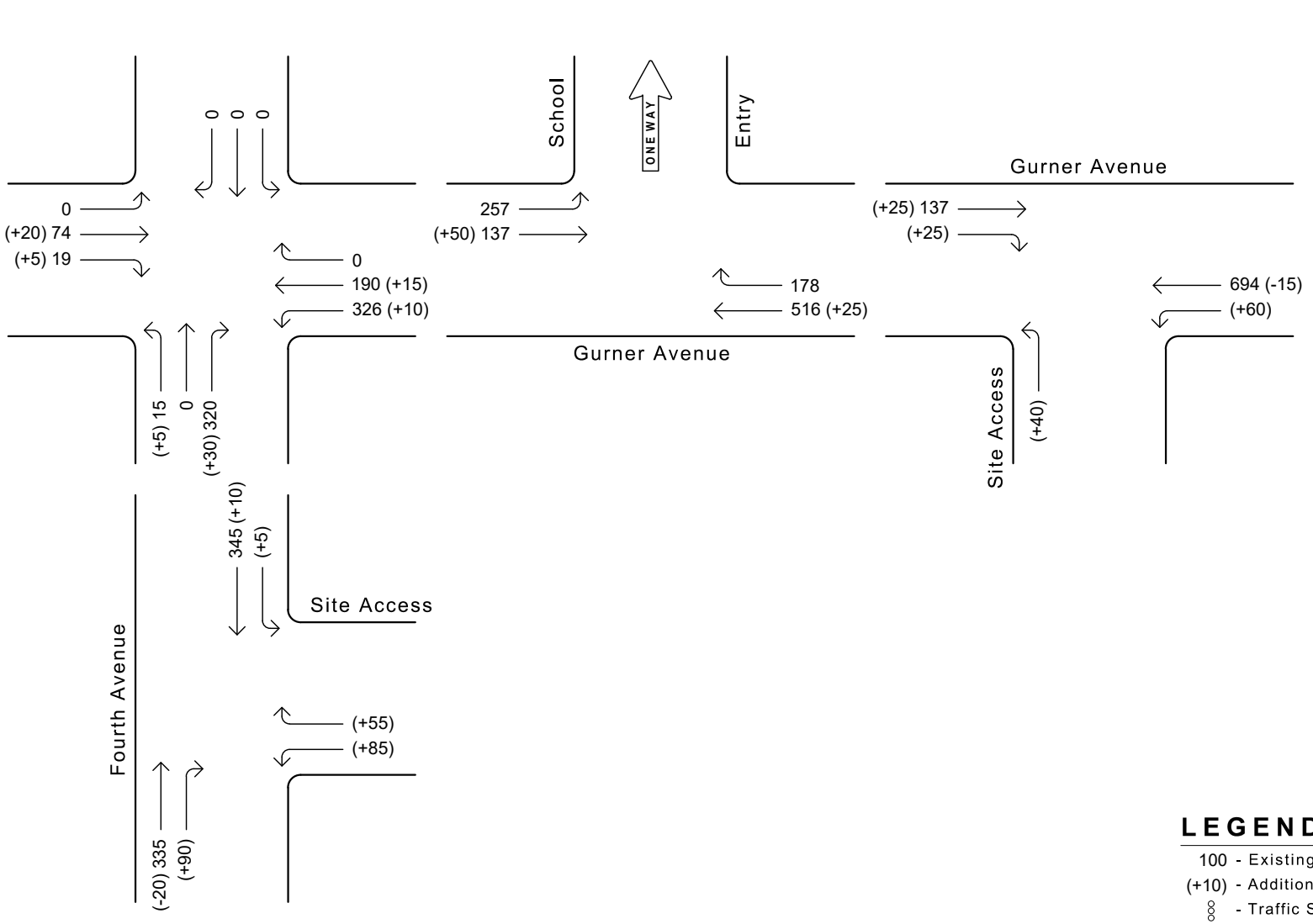


Location Plan

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 6.06.2024

Figure 1



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Existing weekday morning peak hour traffic flows plus development traffic

Figure 2

Colston Budd Rogers & Kafes Pty Ltd

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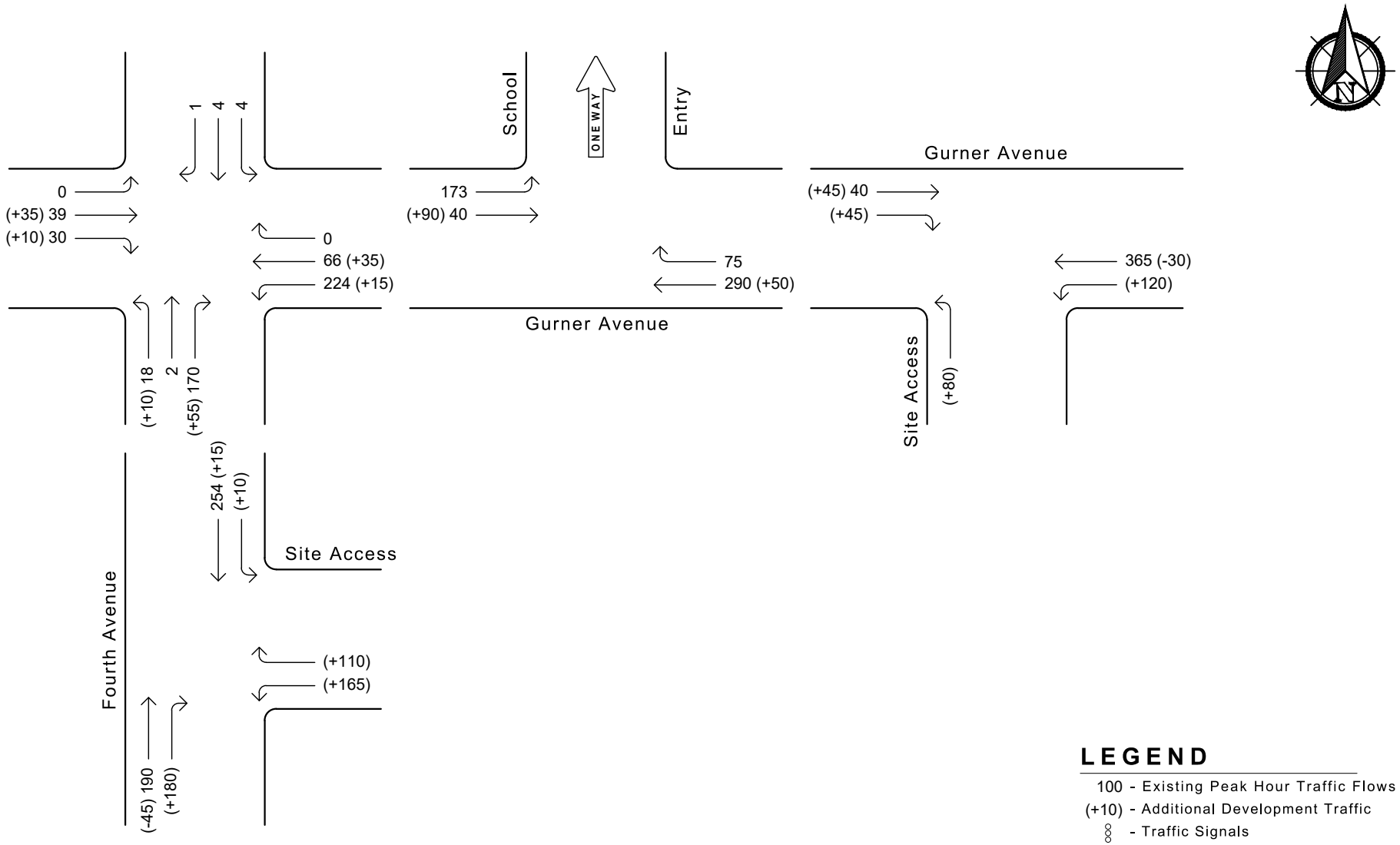

LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Existing weekday afternoon peak hour traffic flows plus development traffic

Figure 3

Colston Budd Rogers & Kafes Pty Ltd

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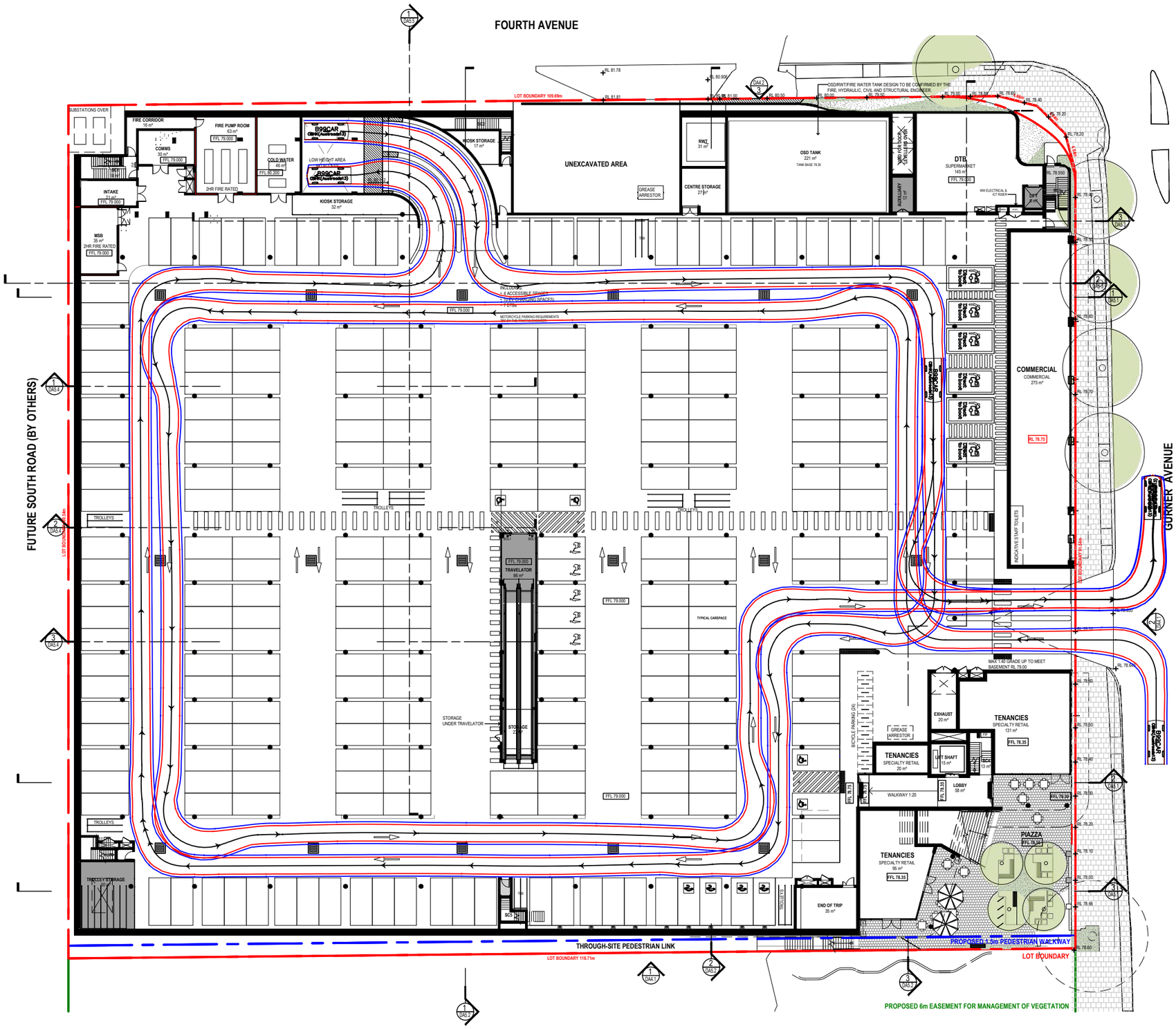
ATTACHMENT A

VEHICLE TURN PATHS



NOTE:
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Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

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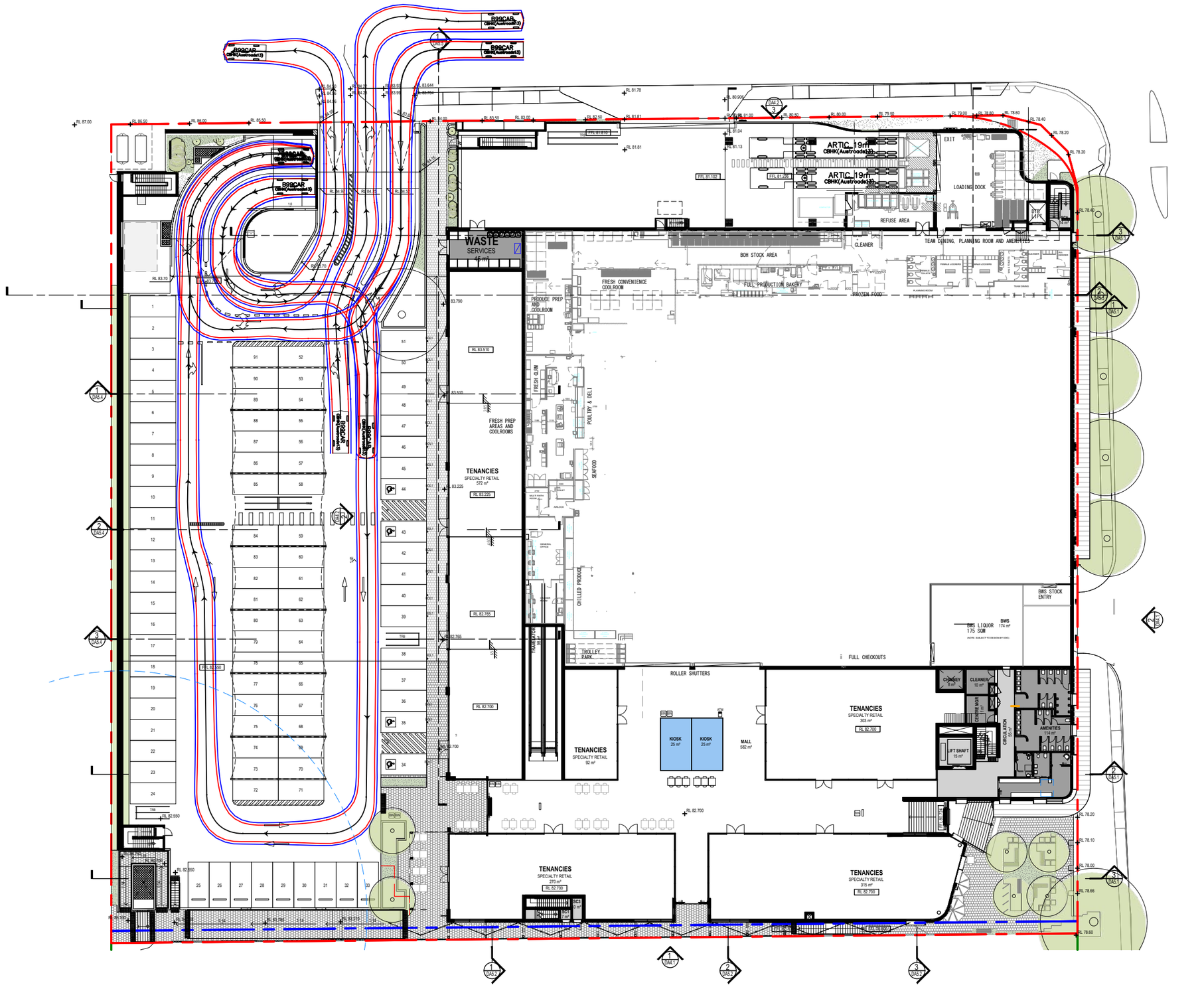
A1



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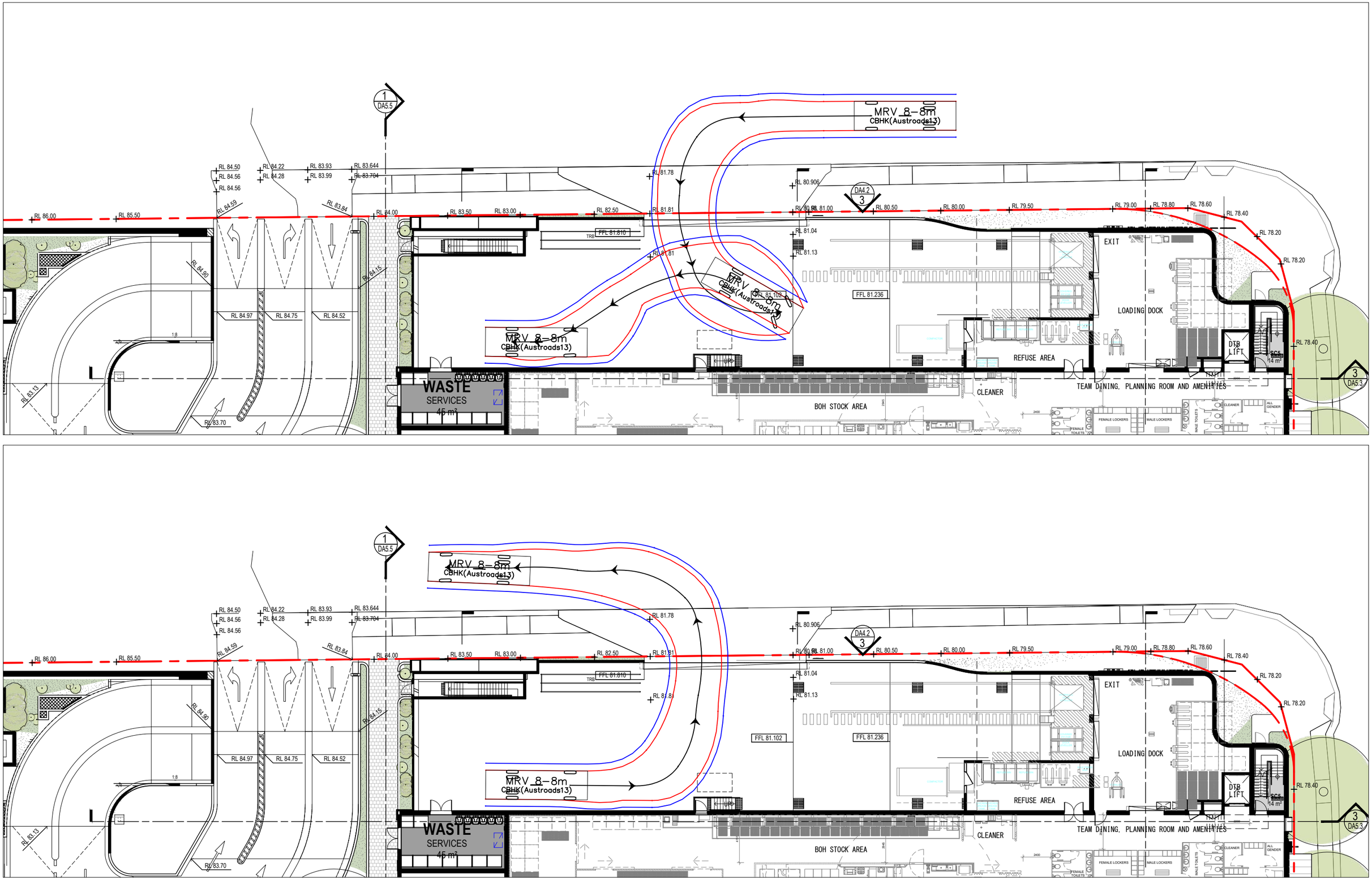
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 11.06.2024

A2



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Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

8.8m MEDIUM RIGID VEHICLE SWEPT PATHS (WASTE COLLECTION)

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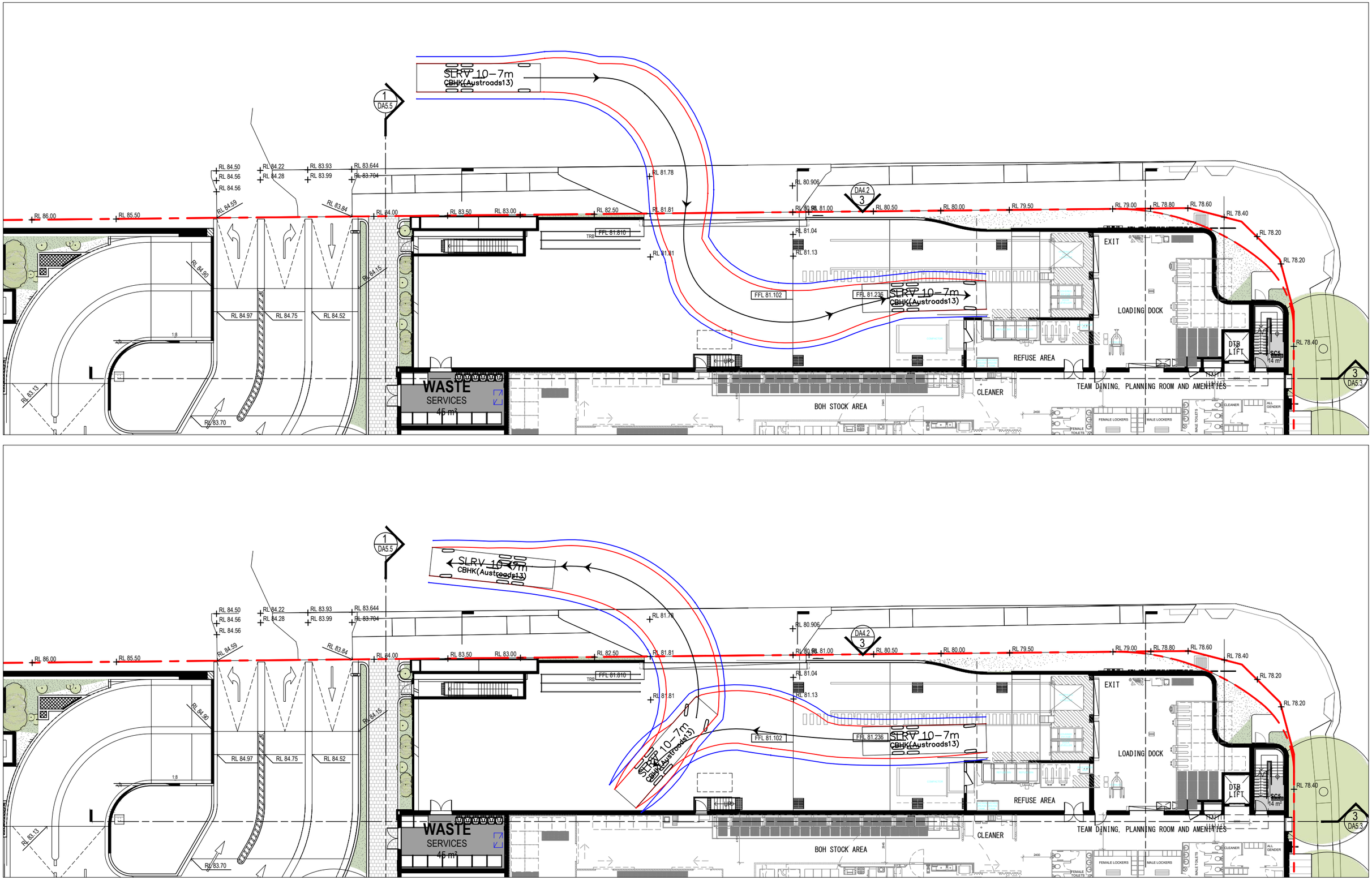
A3



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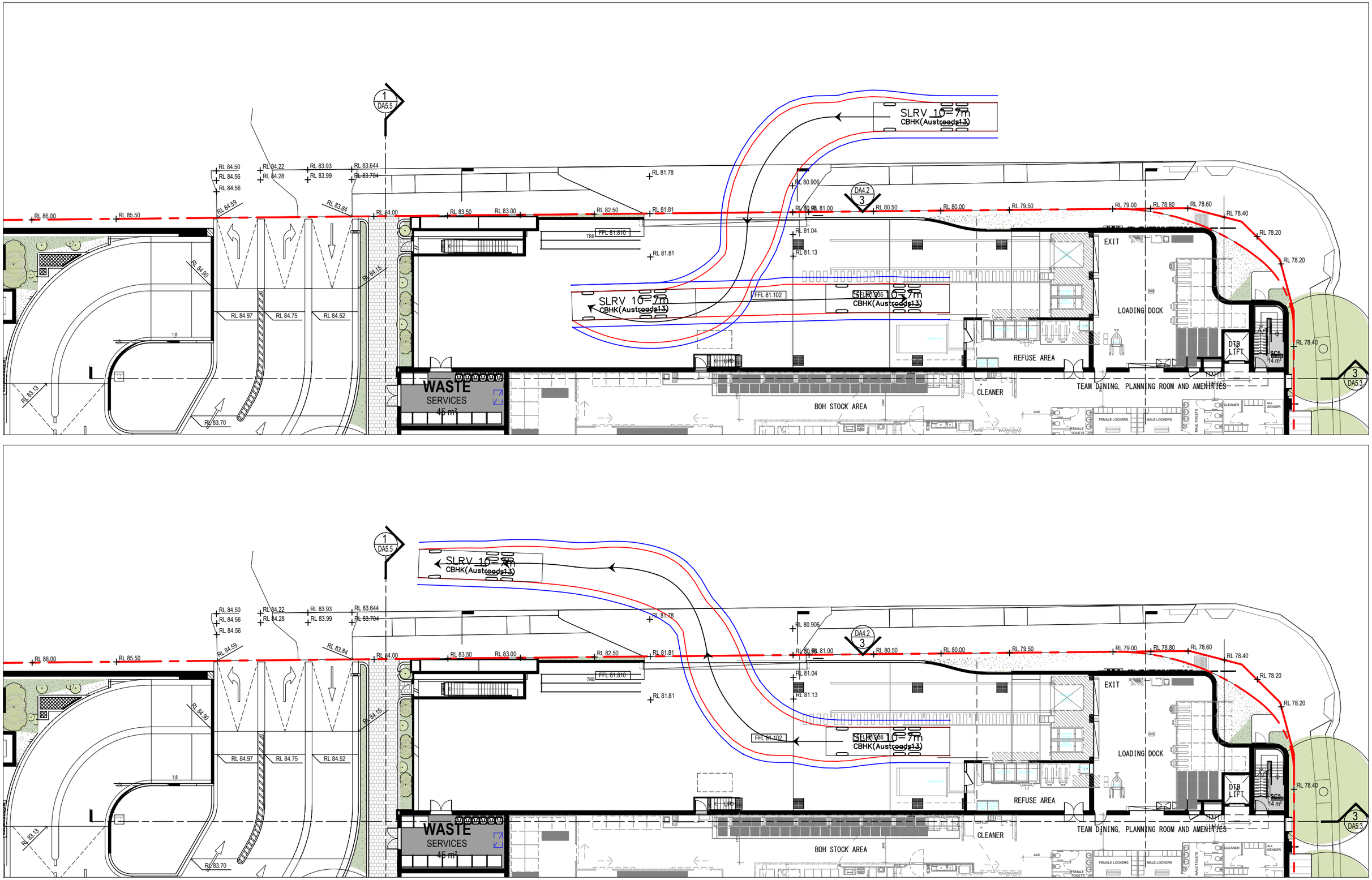
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

10.7m LARGE RIGID VEHICLE SWEPT PATHS (WASTE COLLECTION)

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 11.06.2024

A4



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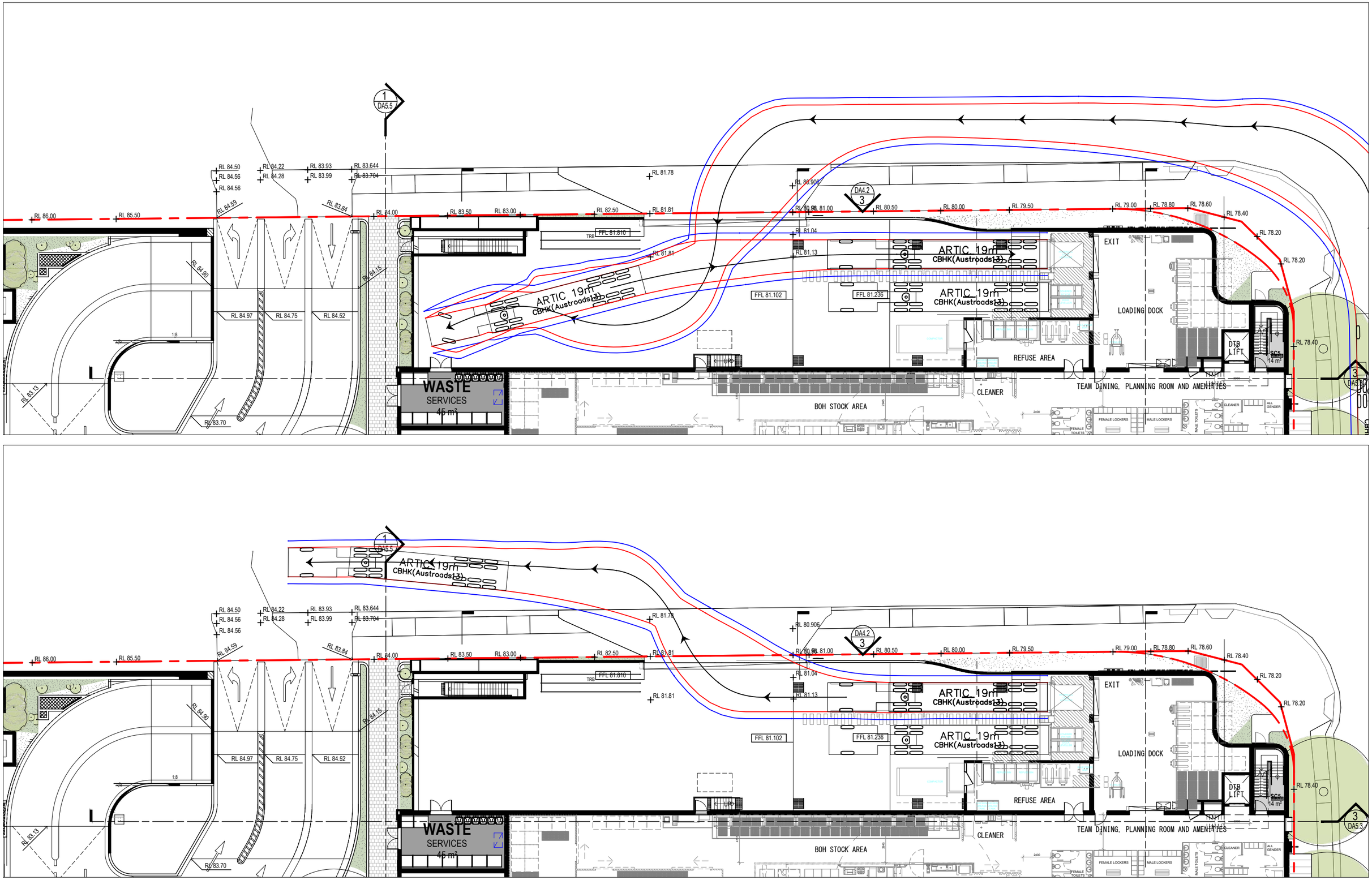
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

10.7m LARGE RIGID VEHICLE SWEPT PATHS (WASTE COLLECTION)

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 11.06.2024

A5



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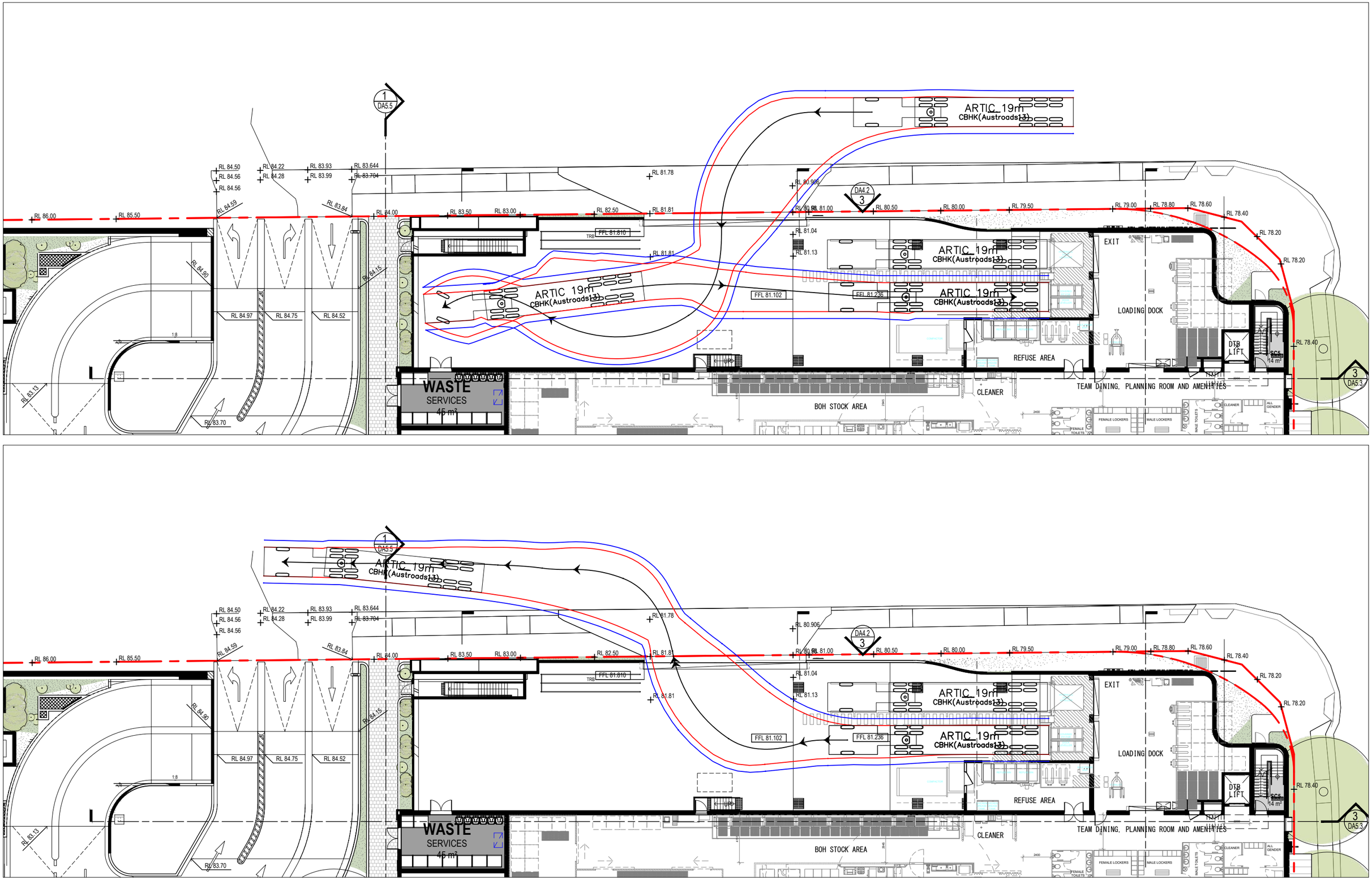
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

19.0m ARTICULATED VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 11.06.2024

A6



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Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

19.0m ARTICULATED VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 12301 11.06.2024

A7