SUMMIT CARE

TRAFFIC REPORT FOR PROPOSED AGED CARE FACILITY, KURRAJONG ROAD, CASULA

FEBRUARY 2019

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1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Summit Care to prepare a report examining the traffic implications of a proposed aged care development on Kurrajong Road, Casula, east of the M5 Motorway. The site location is shown in Figure 1. The site is currently vacant.

1.2 It is proposed to construct an aged care facility which comprises three buildings with 142 residential aged car facility (RACF) beds, 93 independent living units (ILU), retail (some 298m^2) and ancillary facilities. Parking for 140 vehicles is proposed within a basement car park. A porte coshere will be provided on the ground level for pick-up/drop-off. Vehicular access to the site is proposed from Kurrajong Road.

1.3 This report assesses 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 and Road Network

2.1 The site is located on Kurrajong Road, Casula, as shown in Figure 1. The site is currently vacated and located on the southern side of Kurrajong Road, east of the M5 Motorway. Surrounding land use includes Casula Mall to the east and low density residential to the north, west and south. Adjacent to the site is a park and playing fields.

2.2 The road network in the vicinity of the site includes Kurrajong Road, Napier Avenue and Ingham Drive. Kurrajong Road is located north of the site and is a collector/sub-arterial road running east west. It provides for two way traffic with one lane in each direction. Napier Avenue is located west of the site and is a collector road which connects Kurrajong Road at a roundabout providing for two way traffic. Ingham Drive is located east of the site and is collector road providing for two way traffic flow.

Traffic Flows

2.3 In order to gauge traffic conditions, counts were undertaken during weekday morning and afternoon peak periods at the intersections of Kurrajong Road with Napier Avenue and Ingham Drive. The results of the surveys are shown on Figures 2 and 3, and summarised in Table 2.1.

Table 2.1: Existing Two-Way (Sum of Both Directions) Peak Hour Traffic Flows		
Road	**Morning**	**Afternoon**
Kurrajong Road		
– west of Napier Avenue	1,130	1,150
– east of Napier Avenue	1,565	1,565
– west of Ingham Drive	1,365	1,285
– east of Ingham Drive	1,420	1,585
Napier Avenue		
– north of Kurrajong Road	840	620
Ingham Drive		
– south of Kurrajong Road	940	1,085

2.4 Table 2.1 shows that:

- Kurrajong Road carried some 1,285 to 1,585 vehicles per hour two-way during the surveyed morning and afternoon peak periods;

- Napier Avenue carried some 620 to 840 vehicles per hour one-way during the surveyed morning and afternoon peak periods; and

- Ingham Drive carried some 940 to 1,085 vehicles per hour two-way during the surveyed morning and afternoon peak periods.

Intersection Operations

2.5 The capacity of the road network is generally determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections shown on Figures 2 and 3 have been analysed using the SIDRA program. SIDRA simulates the operations of intersections to provide a number of performance measures.

2.6 The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For roundabouts, 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

2.7 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.

2.8 The SIDRA analysis found that:

- the roundabout controlled intersection of Kurrajong Road with Napier Avenue is operating with average delays of less than 14 seconds per vehicle

(for the movement with the highest delay) during morning and afternoon peak periods. This represents level of service A, a good level of service; and

- the roundabout controlled intersection of Kurrajong Road with Ingham Drive is operating with average delays of less than 25 seconds per vehicle (for the movement with the highest delay) during morning and afternoon peak periods. This represents level of service B, an acceptable level of service.

Public Transport

2.9 The site is well located to existing public transport services with bus stops located along both the Kurrajong Road and Ingham Drive, within 500 metres walking distance from the site. Bus services are provided by Transdev include:

- route 851: Liverpool to Carnes Hill Marketplace via Cowpasture Road;
- route 852: Liverpool to Carnes Hill Marketplace via Greenway Drive and Cowpasture Road;
- route 855: Liverpool to Rutleigh Park via Austral and Leppington Station;
- route 856: Liverpool to Bringelly
- route 857: Liverpool to Narellan;
- route 865: Licverpool to Casula via Lurnea Shops; and
- route 866; Liverpool to Casula.

2.10 Thus the site provides opportunities for people to travel to the site by means other than car.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 It is proposed to construct an aged care facility which comprises three buildings with 142 residential aged car facility (RACF) beds, 93 independent living units (ILU), and ancillary facilities (including some 298m^2 retail such as a pharmacy, hairdresser and café). Parking for 140 vehicles is proposed within a basement car park. A porte coshere will be provided on the ground level for pick-up/drop-off. Vehicular access to the site is proposed via Kurrajong Road. The application would be made under the Housing for Seniors or People with a Disability SEPP. This chapter assesses the implications of the proposed development through the following sections:

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

Public Transport

3.2 As previously discussed, the site is accessible by buses travelling along Kurrajong road and Ingham Drive Road. These services link the site with surrounding areas and services, including Liverpool Austral and Carnes Hill Market Place.

3.3 The proposed development would increase residential and employment densities close to existing public transport services. The proposal would strengthen

demand for these services, and is therefore consistent with government objectives and the planning principles of:

(a) improving accessibility to employment and services by walking, cycling and public transport;

(b) improving the choice of transport and reducing dependence solely on cars for travel purposes;

(c) moderating growth in the demand for travel and the distances travelled, especially by car; and

(d) supporting the efficient and viable operation of public transport services.

3.4 There will be a private minivan/people mover available for the use of residents of the new aged care. A 12 seat Toyota SLWB "Commuter" type bus will be utilised for larger trips and outings. This will be used for trips to the shops or and will be parked within the basement car park. The minivan/people mover is provided at call for residents, seven days a week. It provides a superior service to the public bus service as it is located on site, allows residents to board/depart the bus in a secure basement and provides all weather protection.

Parking Provision

3.5 The Housing for Seniors SEPP indicates that a development can not be refused on parking grounds if parking is provided at the following rates:

- one space per 10 beds (for residents and visitors);

- one space per 15 high dependency beds;
- one space per two employees on duty at one time;
- one parking space for an ambulance; and
- 0.5 spaces per bedroom for independent living units.

3.6 Liverpool City Council DCP 2008 requires a parking rate of one space per 20m^2 for retail premises under 12,000m^2 outside Liverpool City Centre.

3.7 The proposed development includes 142 RACF beds and 93 ILU's (39 one bedroom units, 47 two bedroom units and 7 three bedroom units). There are no high dependency beds. A maximum of 48 employees would be on duty at one time at the aged care facility. Applying the above rates to the proposed development results in a requirement for 131 parking spaces (15 RACF, 77 ILU, 24 staff and 15 retail spaces) plus an ambulance bay. It is proposed to provide 140 spaces, plus an ambulance bay and mini-bus parking space. This provision satisfies the parking requirements set out in the SEPP for the aged care facility and Liverpool DCP for the retail component. It is noted that the retail component is ancillary to the aged care facility and thus the majority of customers would already be located on site and not generate any additional parking. Thus in practice parking required for the retail component would be less and associated with staff parking.

3.8 The ambulance bay will be provided on the ground floor within the porte cochere. The proposed parking provision is therefore considered appropriate.

Access, Servicing and Internal Layout

3.9 Access is proposed off Kurrajong Road. Roundabouts at the Intersections of Kurrajong Road / Napier Avenue and Kurrajong Road / Ingham Drive will be utilised for those vehicles who wish to enter the site from the west or exit the sit to the east.

3.10 Within the site the, driveway will provide access to the basement car park and porte cochere. The loading dock and waste collection area will be located within the basement car park, whilst the ambulance bay will be provided within the porte cochere. The ramp to the basement car park will be designed to cater for vehicles up to 6.4 metre small rigid trucks. Due to sight light restrictions, access to the site will be limited to left in / left out. A median will be constructed to restrict access.

3.11 The basement car park will be designed to comply with the requirements of AS2890.1-2004 and AS2890.2-2018 with regard to ramps grades, aisle widths, height clearance and parking bay dimensions. Resident/visitor spaces will be a minimum of 2.5 metres wide by 5.4 metres long and staff spaces a minimum of 2.4 metres wide by 5.4 metres long. The aisle will be a minimum 5.8 metres wide. The access ramp has a maximum grade of 1:6.5 with 1:12.5 transitions. These grades comply with AS2890.1-2004 and AS2890.2-2018 for a ramp less than 20 metres long. Within the car park a height clearance of 3.5 metres will be provided for all areas travelled by service vehicles and a minimum height clearance of 2.5 metres elsewhere.

3.12 Within the car park parking spaces 45 parking spaces have been allocated to staff, 16 spaces have been allocated to visitors and 80 spaces have been allocated to

residents. Two Disabled spaces are provided with an adjacent shared zone in compliance with AS2890.6-2009.

3.13 The loading bay and mini-bus parking space is located in the centre of the basement car park. The loading bay has been designed to accommodate a small rigid truck. Waste collection will be carried out by a private contractor. The waste collection area is provided in a separate loading area south of the ramp within the basement car park. The waste collection area will be designed to accommodate a small rigid truck.

3.14 Overall the proposed access, internal layout and servicing arrangements are considered appropriate. Vehicle turning paths are provided in Attachment A.

Traffic Generation and Effects

3.15 Traffic generated by the proposed development will have its greatest effects during morning and afternoon peak periods when it combines with commuter traffic.

3.16 Estimates of future traffic generation of the proposed development have been based on RMS Guidelines for the aged care facility/residential units. Surveys undertaken by the Roads and Maritime Services (RMS) found that housing for aged and disabled persons generates the following:

- aged care facility
    - 0.2 trips per dwelling (ILU); and
    - 0.1 trip per bed (RACF).

3.17 As the retail component is ancillary it would not be expected to generate any additional traffic. Nonetheless it has been assumed to generate a nominal 5 vehicles per hour (two way) in the weekday morning and afternoon

3.18 Based on the above rates, the proposed development would therefore generate some 40 vehicles per hour two-way during morning and afternoon peak hours. The additional traffic has been distributed to the surrounding road network as shown in Figures 2 and 3 and summarized in Table 3.1.

Table 3.1: Existing Plus Development Two-Way (Sum of Both Directions) Peak Hour Traffic Flows

Road	Morning		Afternoon	
	Existing	+ Dev	Existing	+ Dev
Kurrajong Road				
– west of Napier Avenue	1,130	+20	1,150	+15
– east of Napier Avenue	1,565	+35	1,565	+20
– west of Ingham Drive	1,365	+25	1,285	+35
– east of Ingham Drive	1,420	+15	1,585	+15
Napier Avenue				
– north of Kurrajong Road	840	-	620	-
Ingham Drive				
– south of Kurrajong Road	940	+5	1,085	+10

3.19 Examination of Table 3.1 reveals that:

- Traffic flows on Kurrajong Road would increase by some 15 to 35 vehicles per hour two-way during the surveyed morning and afternoon peak periods;

- Traffic flows on Ingham Drive would increase by some 5 to 10 vehicles per hour two-way during the surveyed morning and afternoon peak periods

3.20 Such a low additional traffic generation would not have noticeable effects on the operation of the surrounding road network. The intersections of Kurrajong Road with Napier Avenue and Ingham Drive would continue to operate at their existing levels of service, with similar average delays per vehicle.

3.21 Therefore, the road network will be able to cater for the additional traffic from the proposed development.

Summary

3.22 In summary, the main points relating to the traffic implications of the proposed development are as follows:

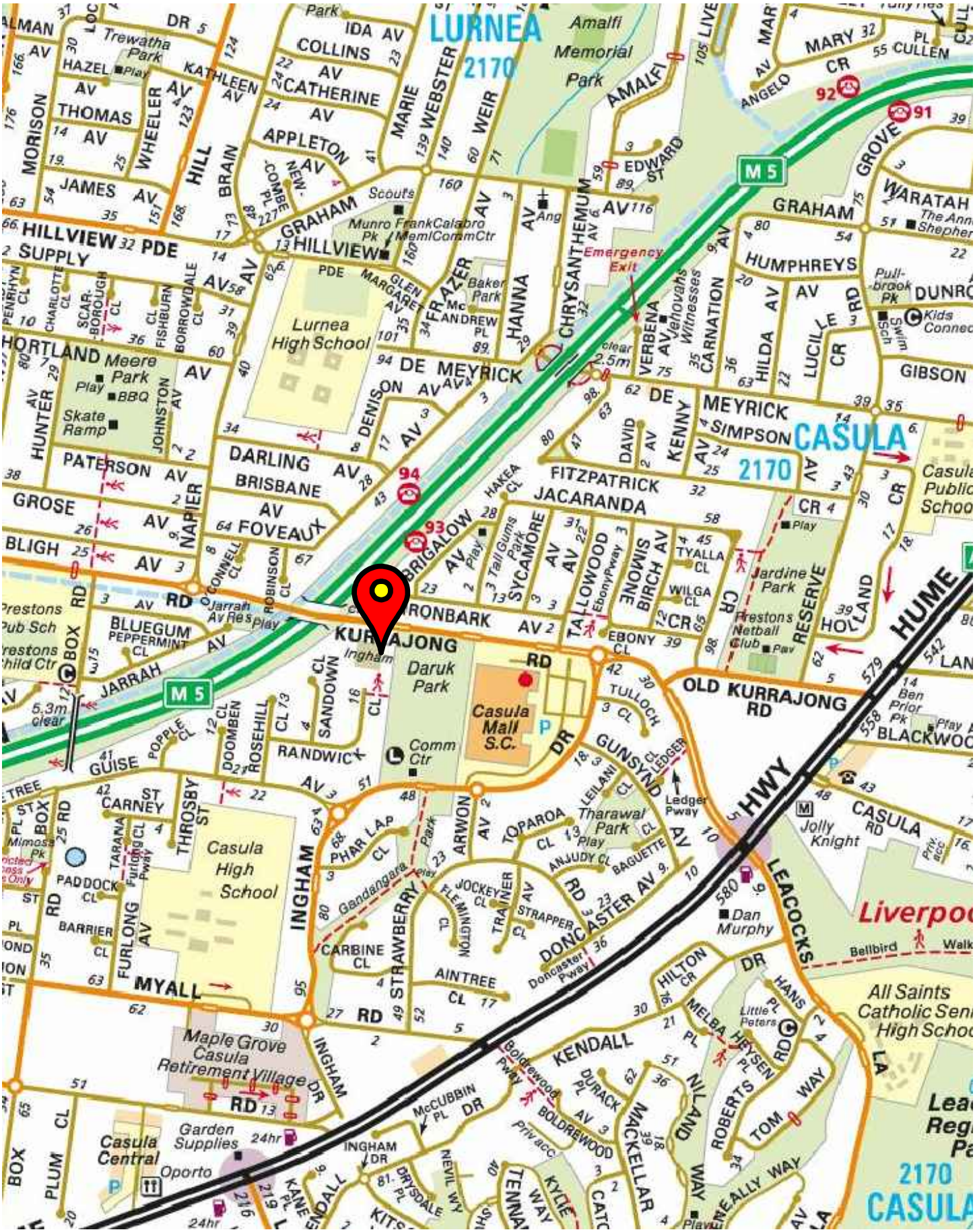
i) the proposed development would be accessible by public transport;

ii) the proposed parking provision is considered appropriate;

iii) access, internal circulation and layout will be provided in accordance with AS 2890.1:2004 and AS 2890.6 – 2009;

iv) the proposed development will have a low traffic generation of some 40 vehicles per hour during peak hours; and

v) such a low additional traffic generation would not have noticeable effects on the operation of the surrounding road network.



Location Plan

Colston Budd Rogers & Kafes Pty Ltd

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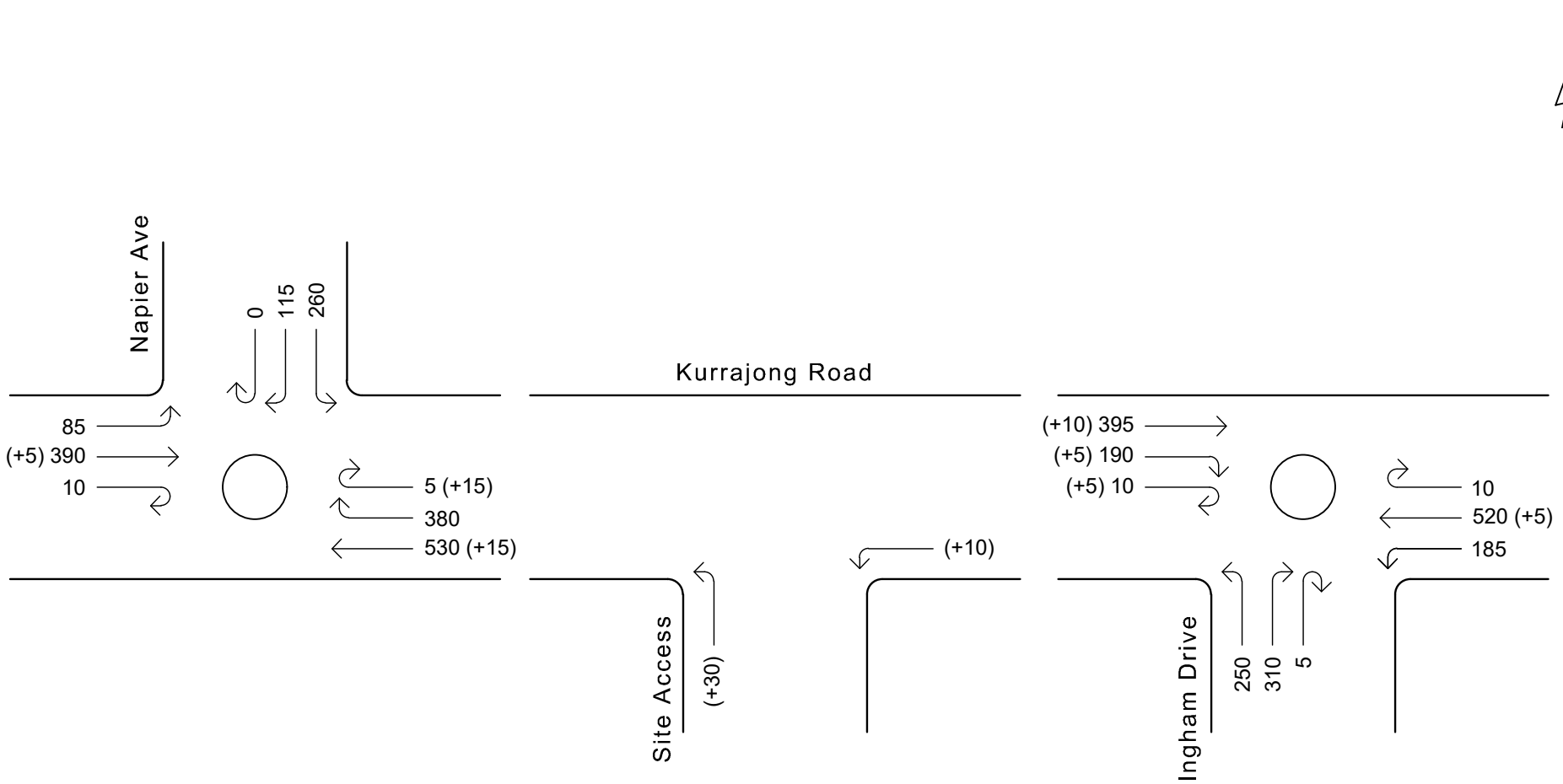
Figure 1



LEGEND

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

Existing weekday morning peak hour traffic flows plus development traffic

Figure 2

Colston Budd Rogers & Kafes Pty Ltd

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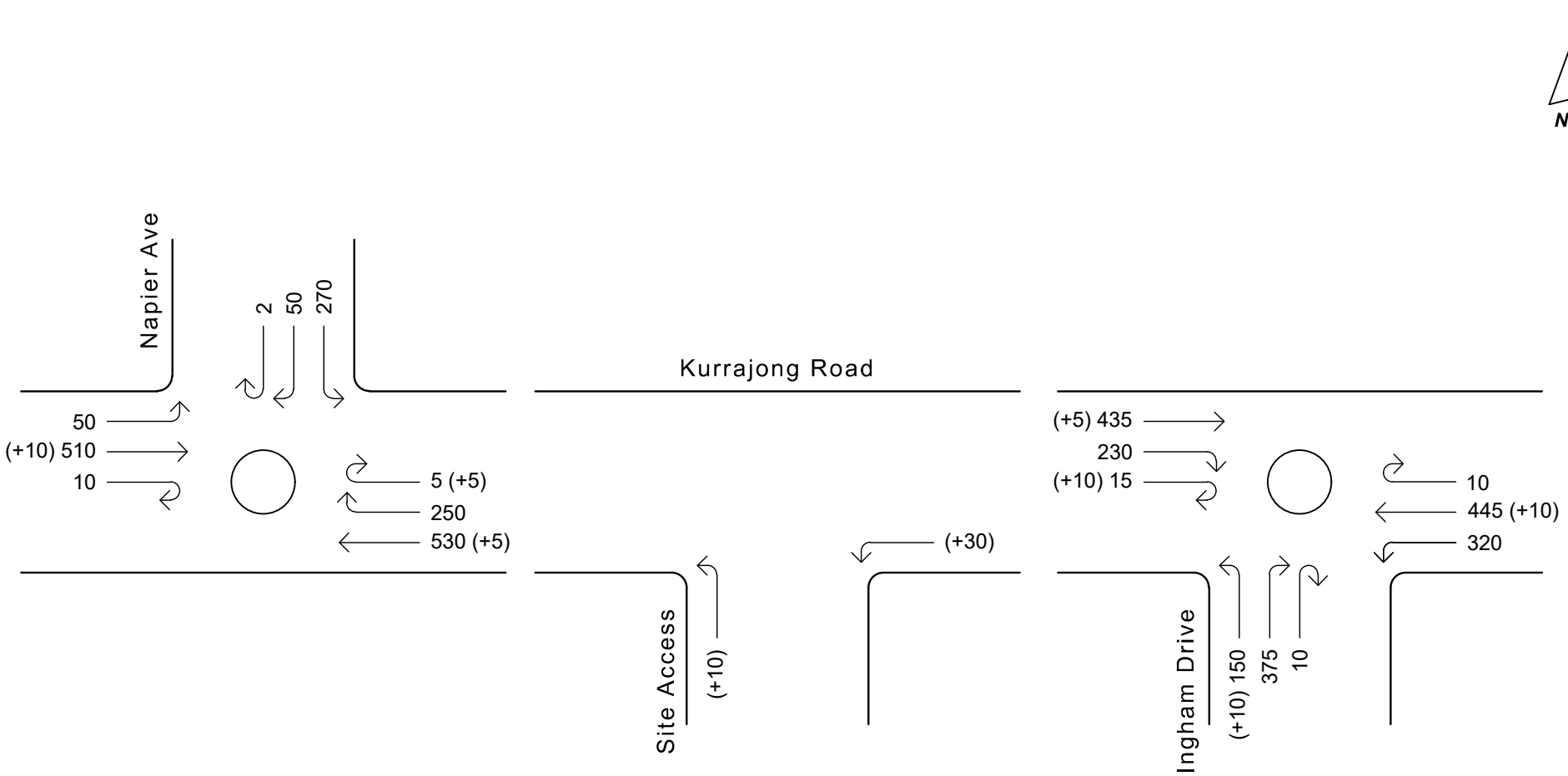

LEGEND

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

Existing weekday afternoon peak hour traffic flows plus development traffic

Figure 3

Colston Budd Rogers & Kafes Pty Ltd

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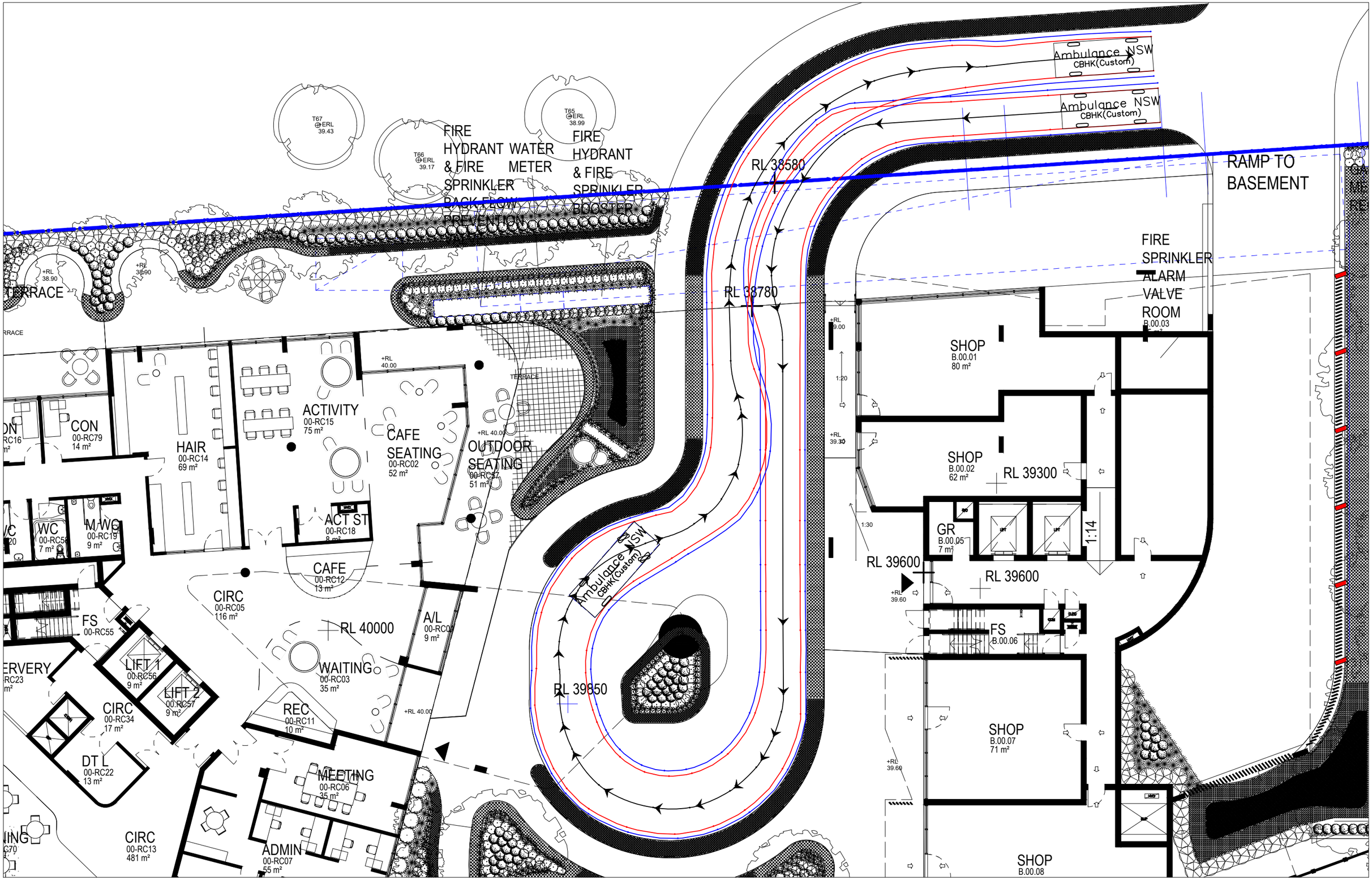
ATTACHMENT A

VEHICLE SWEPT PATHS



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

5.64m AMBULANCE SWEPT PATHS

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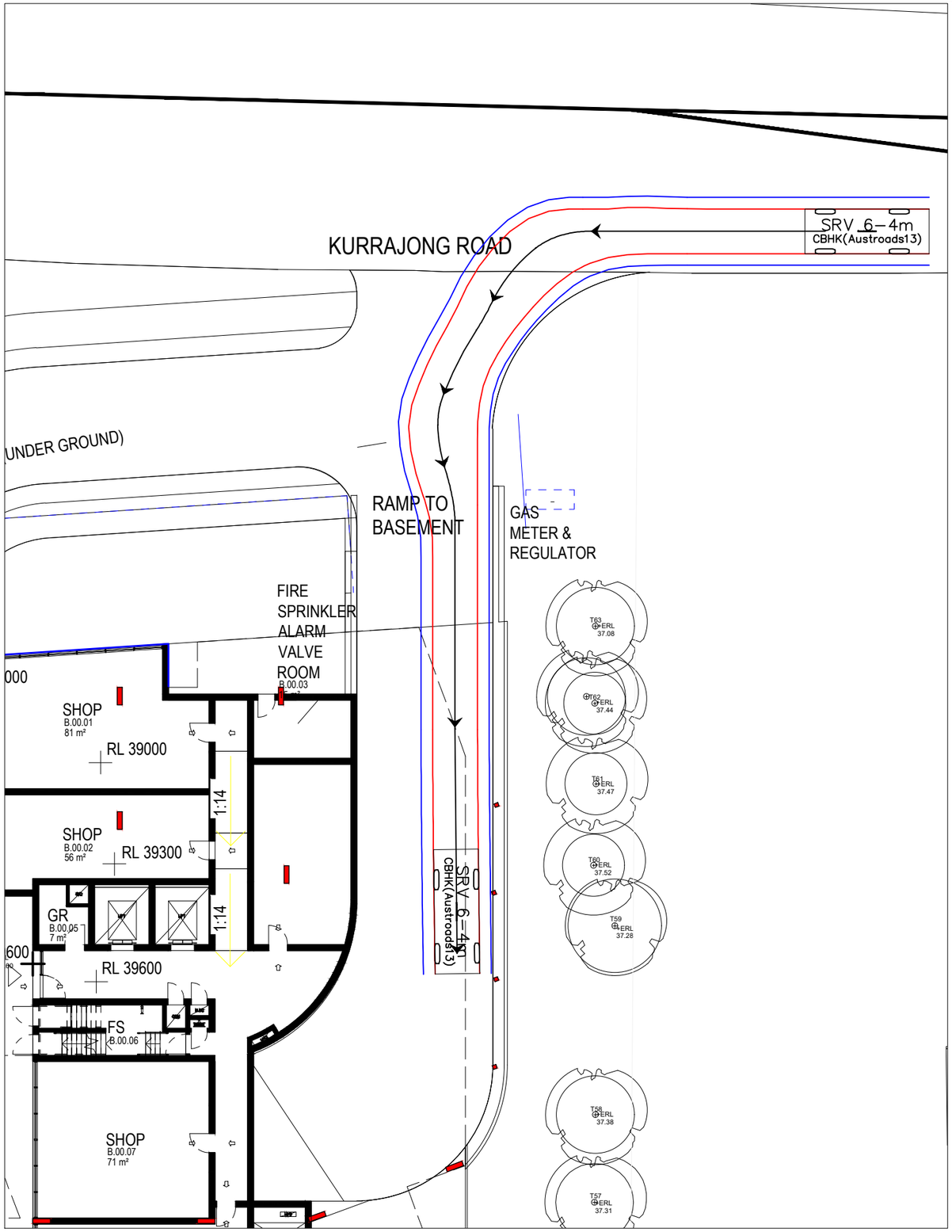
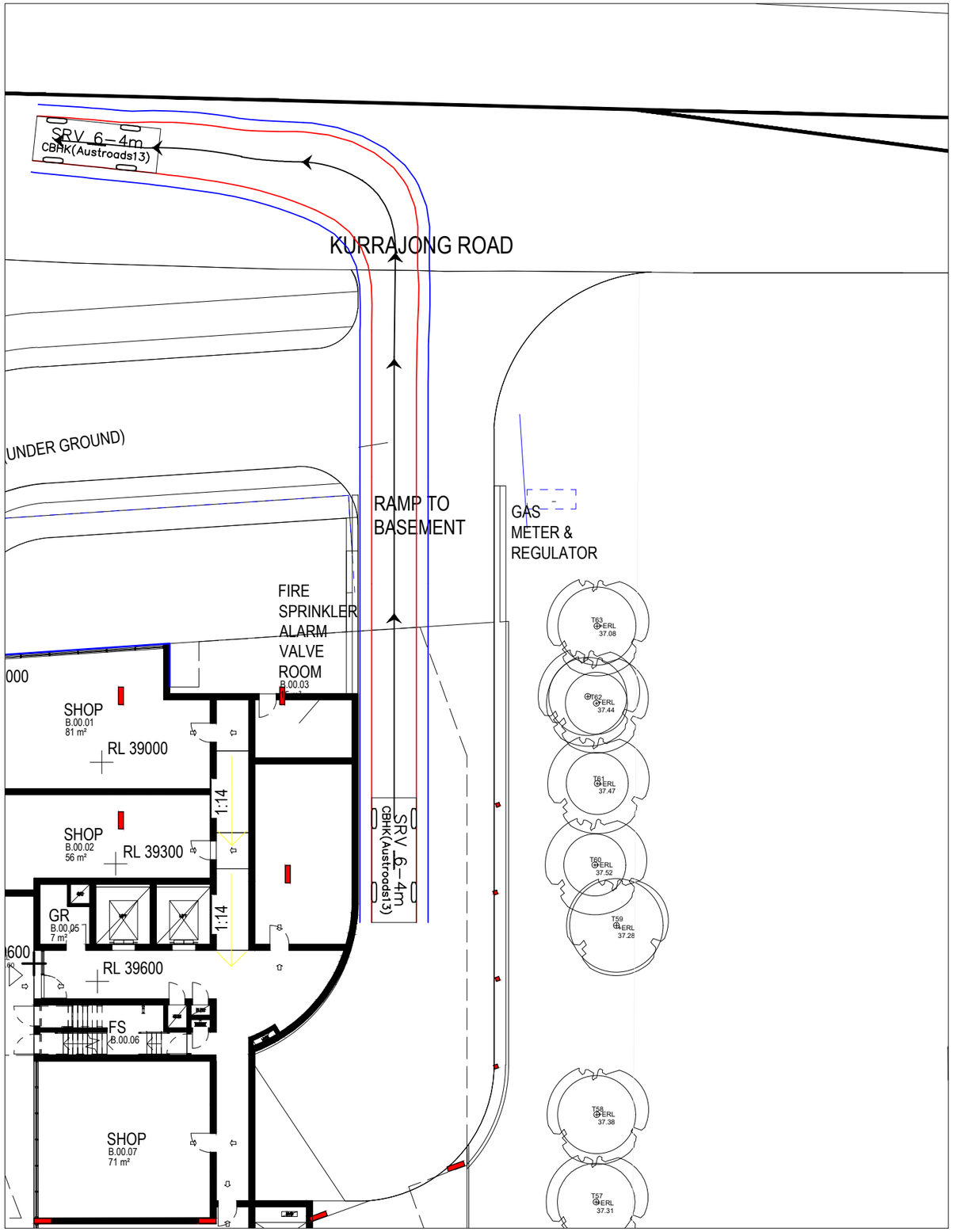
A1





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

6.4m SMALL RIGID VEHICLE SWEPT PATHS

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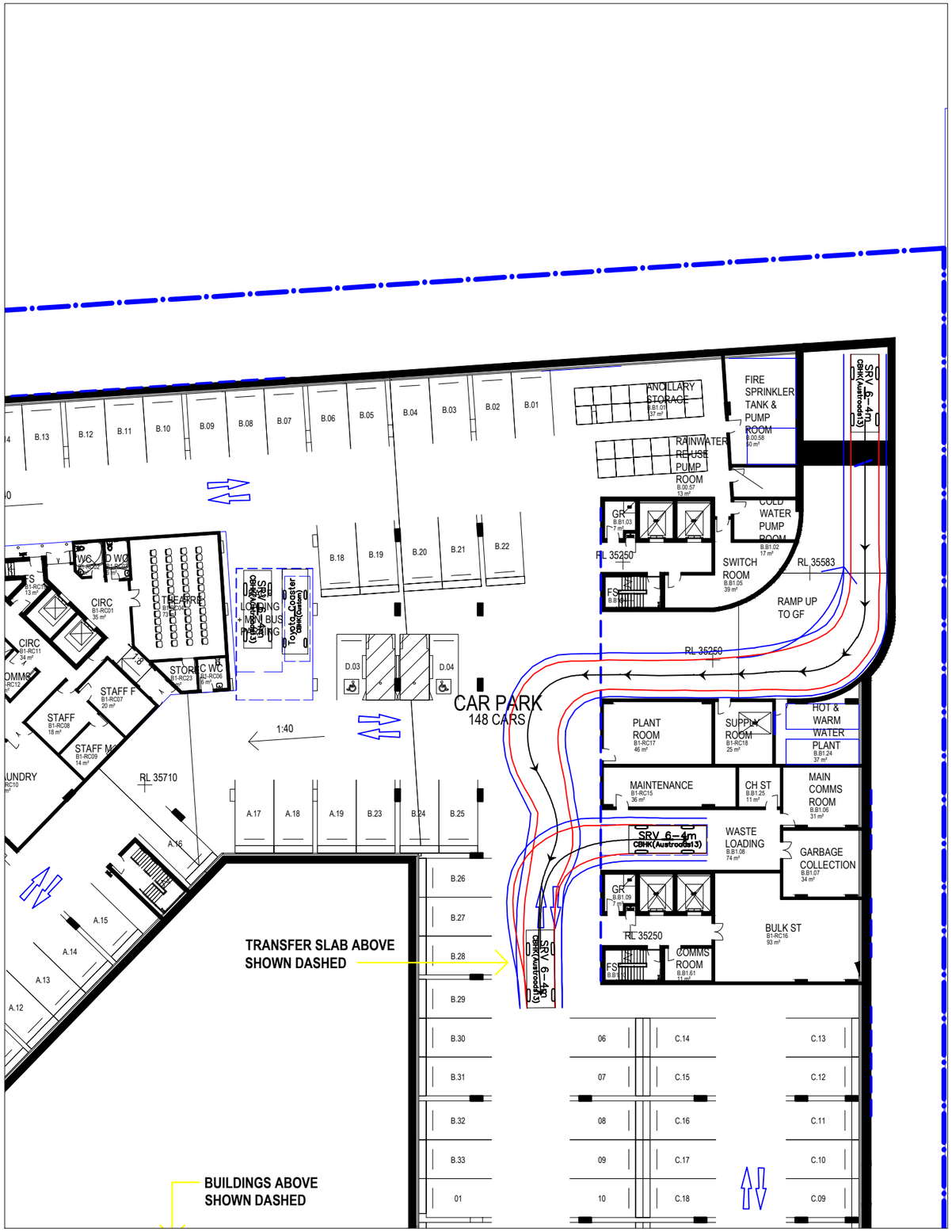
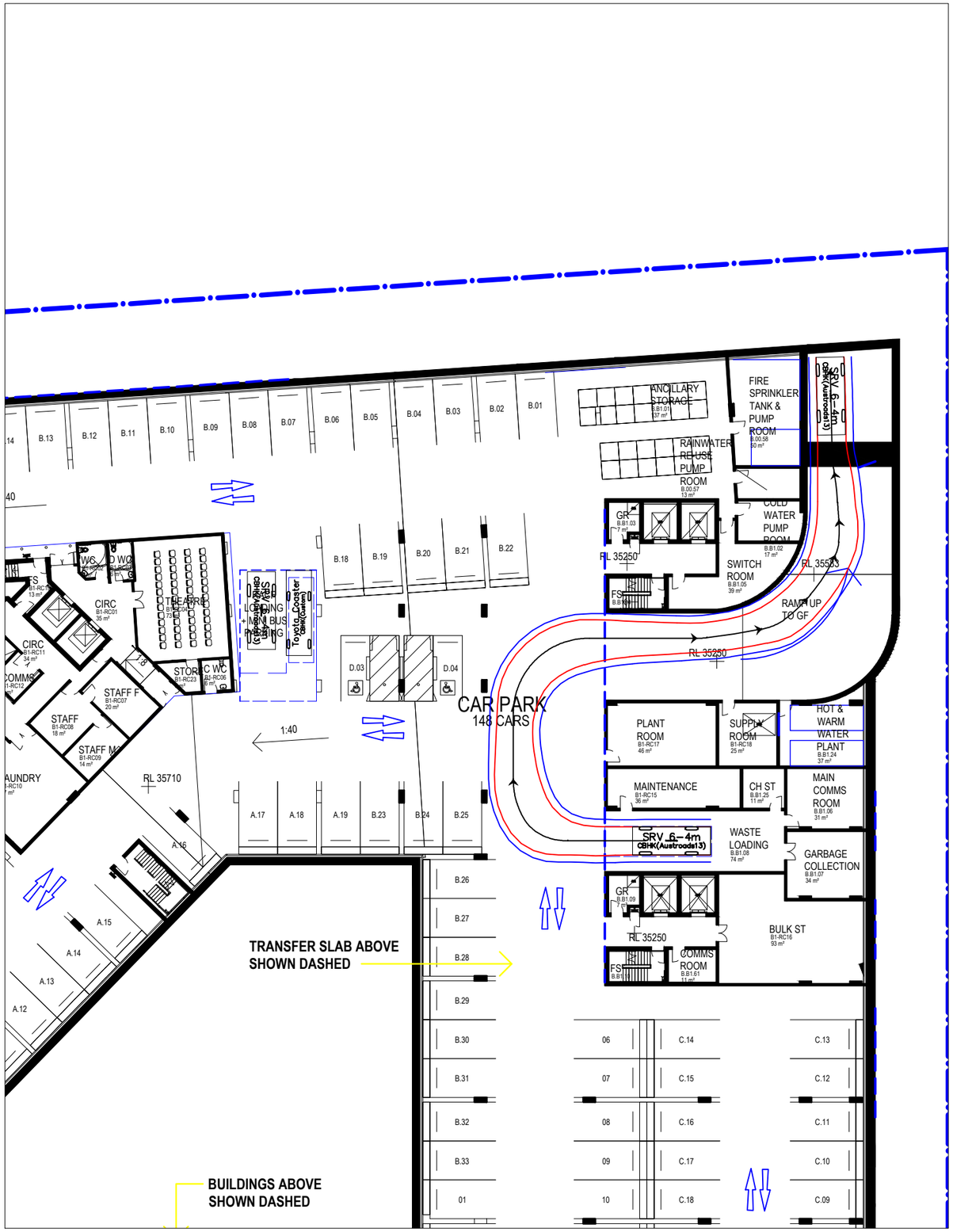
A2





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

6.4m SMALL RIGID VEHICLE SWEPT PATHS

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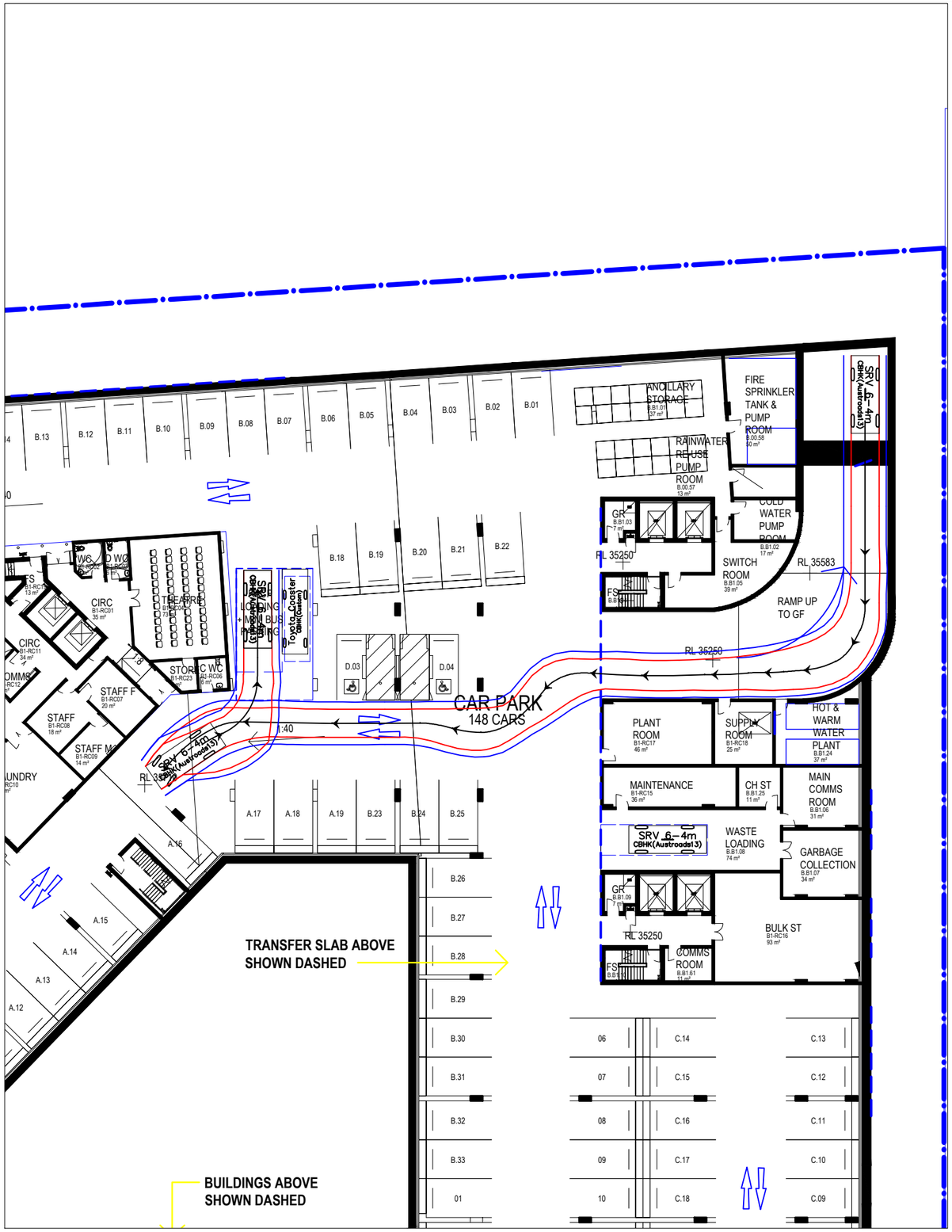
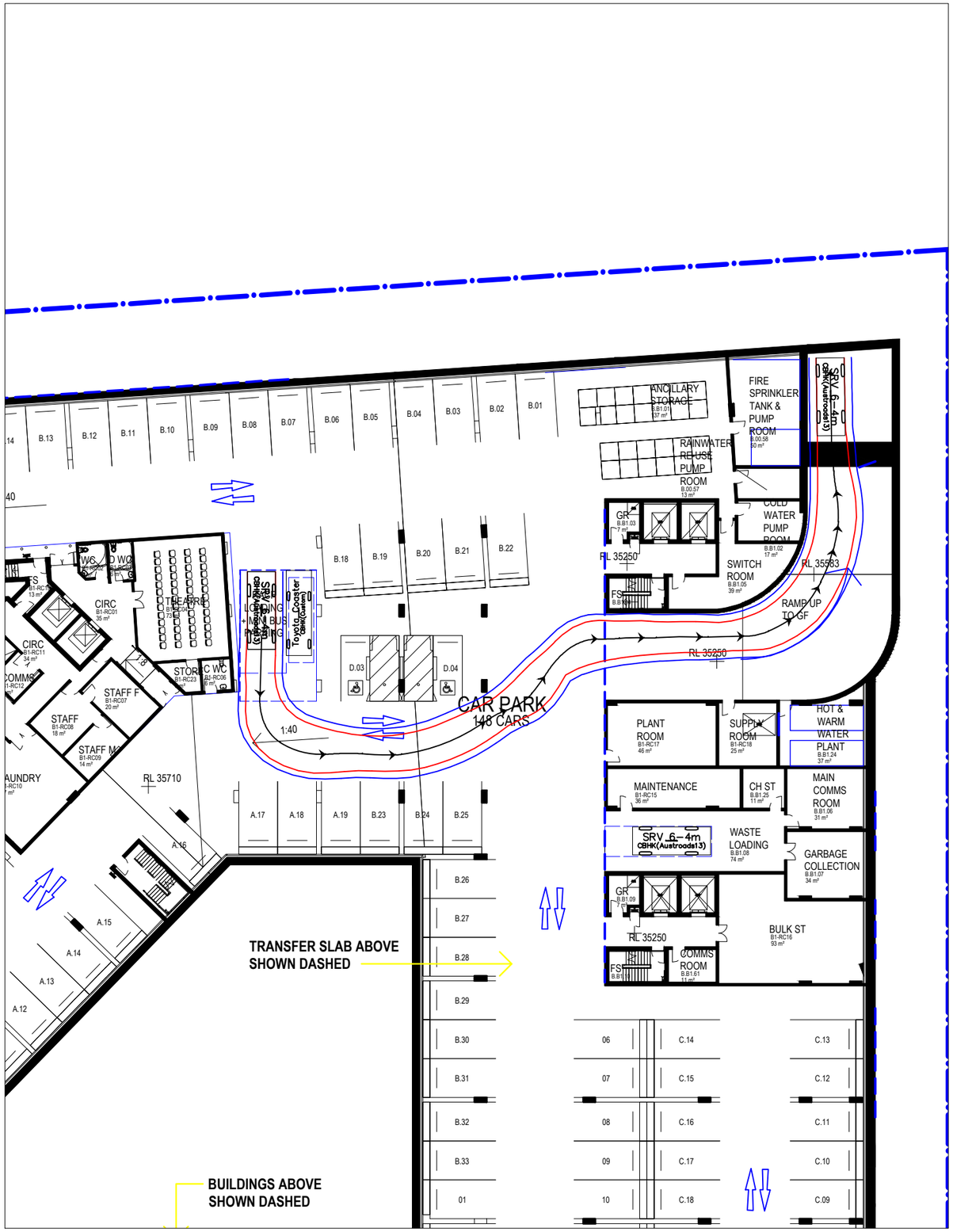
A3





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

6.4m SMALL RIGID VEHICLE SWEPT PATHS

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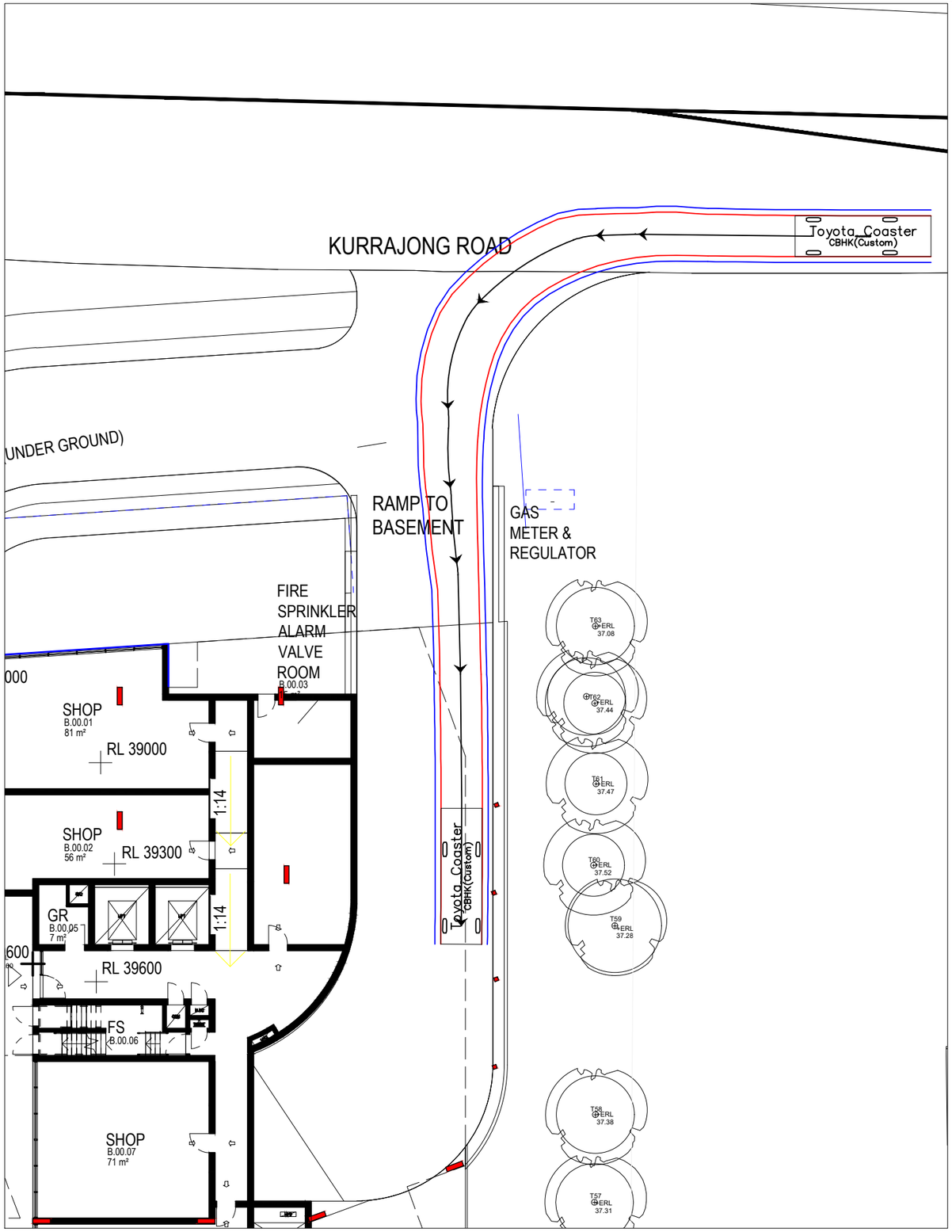
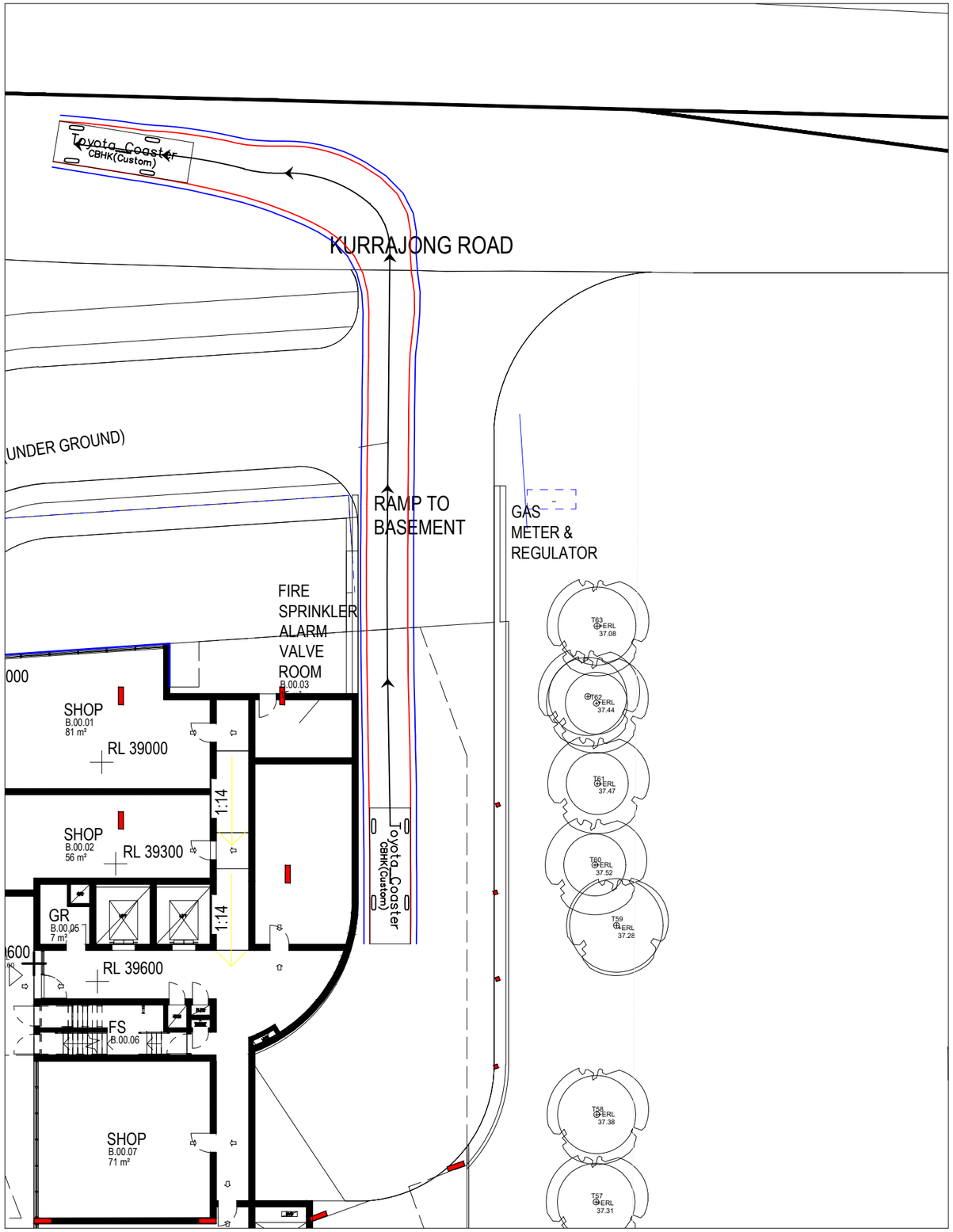
A4





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

6.99m MINI BUS SWEPT PATHS

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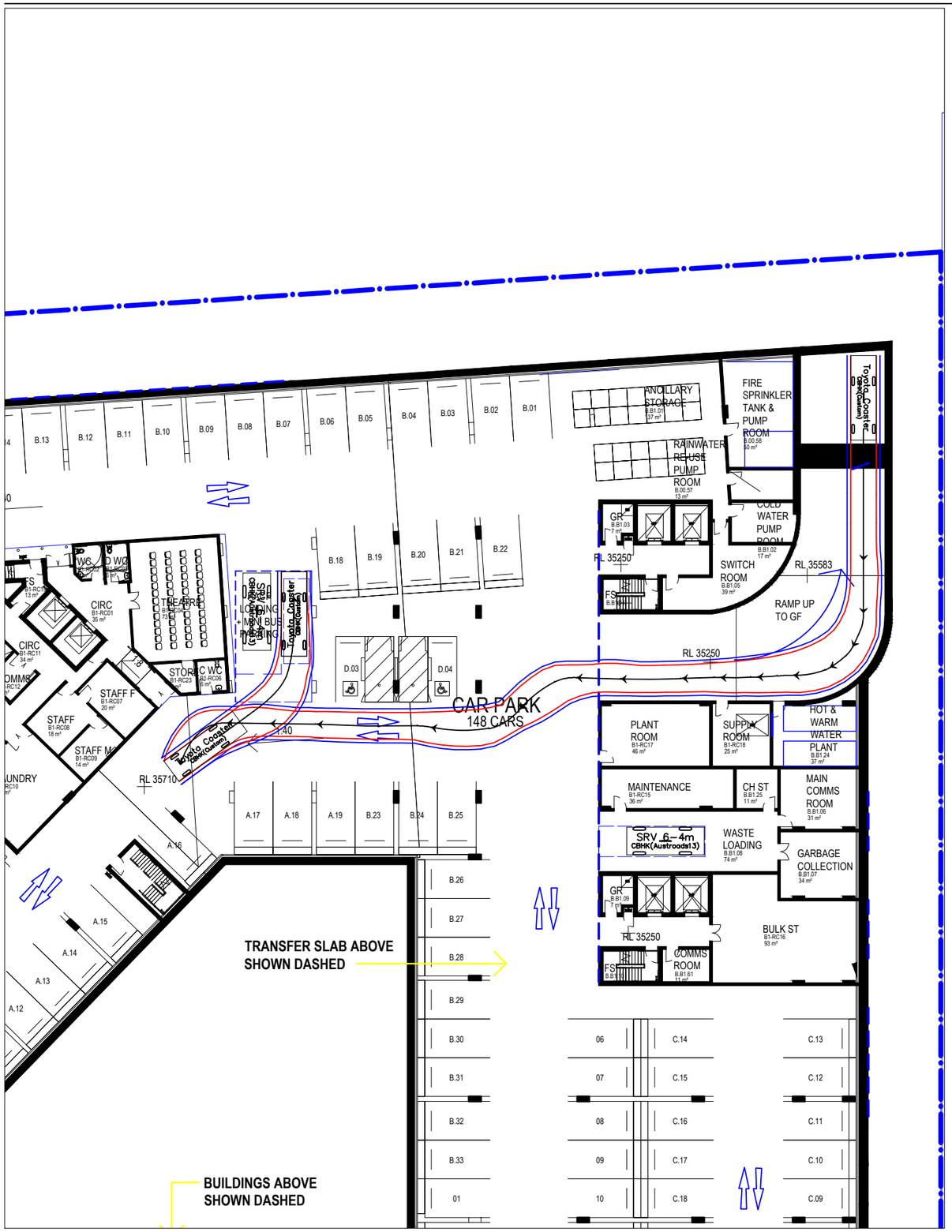
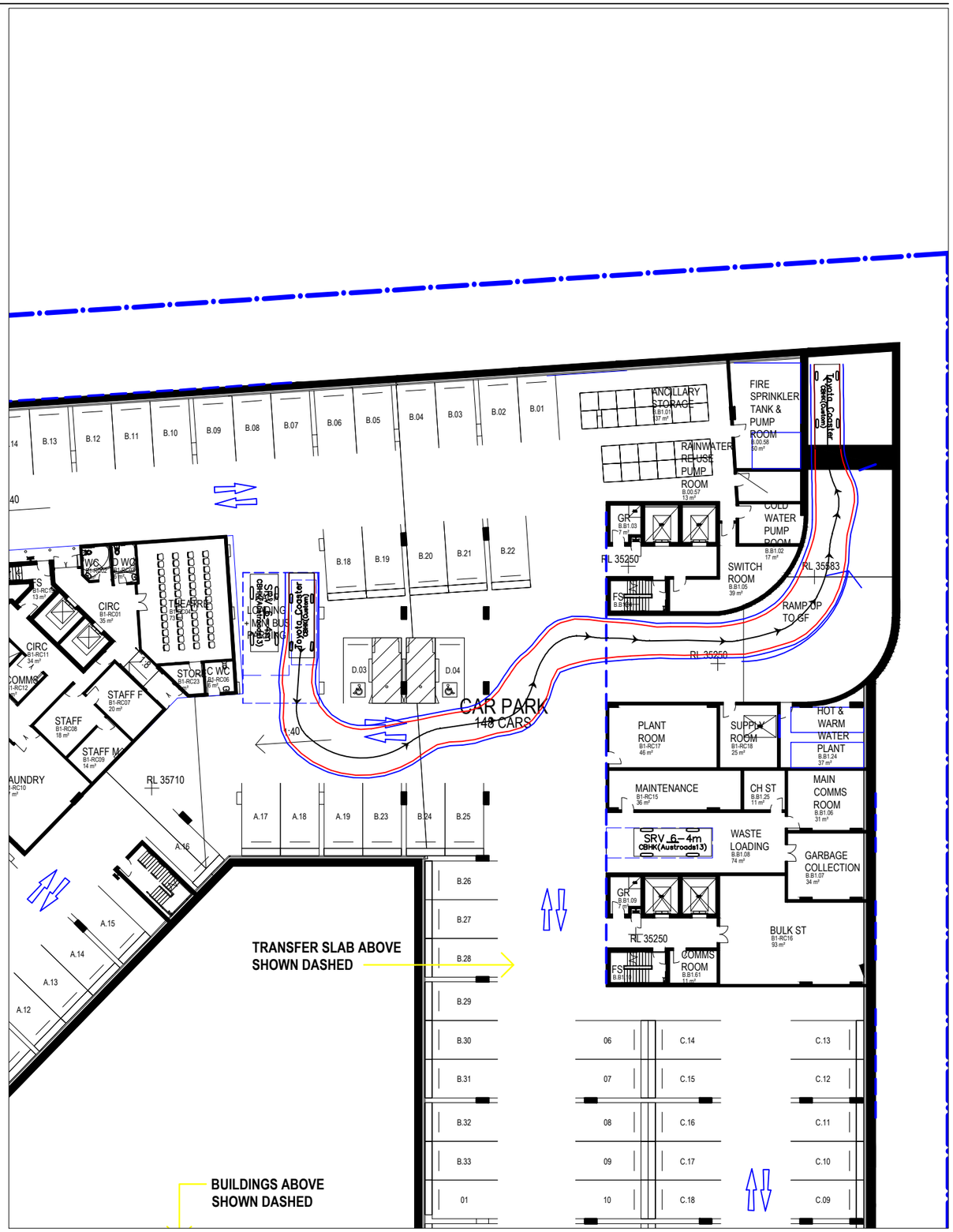
A5





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

6.4m SMALL RIGID VEHICLE SWEPT PATHS

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A6