HYECORP PROPERTY GROUP

TRAFFIC REPORT FOR PROPOSED REDEVELOPMENT OF WILLOUGHBY EX-LEGION CLUB

JULY 2019

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ATTACHMENT

1. INTRODUCTION

1.1 Colston Budd Rogers & Kafes Pty Ltd has been retained by Hyecorp Property Group to prepare a report on traffic aspects of the proposed redevelopment of the Willoughby Ex-Legion Club located at 26 Crabbes Avenue Willoughby, as shown on Figure 1.

1.2 The proposed development provides for an aged care facility (independent living units and residential aged care facility), a new club, mixed use (residential above ground floor retail) fronting Penshurst Street and basement parking with access from Crabbes Avenue. Pedestrian access will be provided from Crabbes Avenue, Penshurst Street and Legion Way.

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 currently occupied by the Willoughby Legion Ex-Services Club and three shops on Penshurst Street. The existing club has some 3,200m^2 GFA (with some 2,000m^2 licensed floor area/LFA) with some 160 parking spaces located in an at grade car park with access from Crabbes Avenue (via separate entry and exit driveways). The club also has three bowling greens and frontage to Penshurst Street. The shops fronting Penshurst Street have a small at grade car park (located at the rear of the shops) which is accessed off Crabbes Avenue (separate to the club access). Surrounding land use is generally residential with additional commercial/retail development located on the corner of Crabbes Avenue and Penshurst Street.

2.2 Penshurst Street is located west of the site and connects Mowbray Road to the south with Boundary Street to the north. It is a four lane undivided road with kerb side parking outside of clearway periods (southbound in the morning and northbound in the afternoon). Traffic movements at the intersection with Crabbes Avenue are restricted to left turns to/from Penshurst Street by a median.

2.3 High Street is located east of the site, running parallel to Penshurst Street. It connects Mowbray Road to the south with Victoria Avenue and Eastern Valley Way (via Smith Street) to the north. It provides one traffic lane in each direction with kerb side parking. The intersection of High Street and Crabbes Avenue is a priority controlled t-intersection with High Street the major road.

2.4 Crabbes Avenue is located north of the site between Penshurst Street and High Street. It provides one traffic lane in each direction with kerb side parking.

Traffic Flows

2.5 In order to gauge traffic conditions, counts were undertaken during the weekday morning (7.00am to 9.30am) and afternoon peak periods (3.00pm to 6.30pm) at the following intersections:

- Crabbes Avenue/Penshurst Street; and
- Crabbes Avenue/High Street.

2.6 The results of the surveys are shown in 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	Weekday Morning	Weekday Afternoon
Penshurst Street		
– north of Crabbes Avenue	1760	1840
– south of Crabbes Avenue	1790	1875
High Street		
– north of Crabbes Avenue	995	1100
– south of Crabbes Avenue	1100	1100
Crabbes Avenue		
– east of High Street	70	70
– east of Penshurst Street	60	65

2.7 Table 2.1 shows that:

- Penshurst Street carries traffic flows of some 1,760 to 1,840 vehicles per hour two-way during the weekday morning and afternoon peak periods;

- High Street carries traffic flows of some 995 to 1,100 vehicles per hour two-way during the weekday morning and afternoon peak periods; and

- Crabbes Avenue carries traffic flows of some 60 to 70 vehicles per hour two-way during the weekday morning and afternoon peak periods.

2.8 In addition to the intersection counts, automatic tube counts were located in Crabbes Avenue (either side of the club access) for a period of seven days between 18 May and 24 May 2019. The results are provided in Attachment A. In summary, the seven day counts found the following:

- the average day traffic flow (east of Penshurst Street) was 911 vehicles per hour (two way) with a range of 491 to 1,040 vehicles per hour (two way);
- the average day traffic flow (west of High Street) was 1,033 vehicles per hour (two way) with a range of 551 to 1,360 vehicles per hour (two way;
- some 70% of the daily traffic flow on Crabbes Avenue is westbound (both sides of the club access);
- highest hourly flows on each day (east of Penshurst Street) ranged between 62 and 141 vehicles per hour (two way) with a seven day average of 86 vehicles per hour (two way);
- highest hourly flows on each day (west of High Street) ranged between 70 and 229 vehicles per hour (two way) with a seven day average of 117 vehicles per hour (two way); and
- the 85th percentile speed on Crabbes Avenue was 45km/h, east of Penshurst Street, and 51 km/h, west of High Street.

2.9 The club was found to have a peak traffic generation of some 160 vehicles per hour (two way) during the week (at around 1.00pm on Wednesday) and some

140 vehicles per hour (two way) on weekends (at around 11.00am on Saturday). These times coincide with the beginning or end of Bridge Club meetings which average 100 to 120 attendees (in addition to the usual club activities). At other times the typical traffic generation of the club is much lower at some 40 vehicles per hour (two way).

2.10 The definition of the impact on residential amenity by varying levels of traffic flow is extremely complex. Perceptions of impact vary greatly from person to person. Traffic flows that one person may find perfectly acceptable may be considered excessive by another. Impact is affected by the nature of the street and the area in which it is located, its width, building setbacks, grades, etc. as well as by the speed of traffic and the mix of cars and heavy vehicles.

2.11 The RMS has undertaken considerable research into appropriate environmental capacity performance standards on residential streets. Their "Guide to Traffic Generating Developments" defines the following environmental capacity performance standards for local residential streets:

- Environmental goal - 200 vehicles per hour in the peak hour; and
- Maximum flow - 300 vehicles per hour in the peak hour.

2.12 Based on the above, existing traffic flows on Crabbes Avenue are consistent with its function as a local road with the 95th percentile hourly traffic flow (136 vehicles per hour) is less than 200 vehicles day, average weekday morning and afternoon peak hour flows of some 90 to 100 vehicles per hour (two way), and the 85th percentile speed consistent with its speed limit of 50 km/h.

Intersection Operation

2.13 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed using the SIDRA computer program. SIDRA analyses intersections controlled by traffic signals, roundabouts and signs.

2.14 SIDRA provides a number of performance measures. 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 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

2.15 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.

2.16 The SIDRA analysis found that:

- the intersection of Crabbes Avenue and Penshurst Street operates with average delays of less than 15 seconds per vehicle in the peak periods. This represents level of service A/B, a good level of intersection operation ; and

- the intersection of Crabbes Avenue and High Street operates with average delays of less than 25 seconds per vehicle in the peak periods. This represents level of service B, an acceptable level of intersection operation

Public Transport

2.17 The site is well located to existing public transport services with Penshurst Street operating as a major bus corridor between Chatswood and North Sydney/Sydney CBD/Bondi Junction. Bus stops are located on Penshurst Street adjacent to the site with pedestrian access provided to these stops by the existing footpaths on Crabbes Avenue/Penshurst Street and the signalised pedestrian crossing on Penshurst Street located immediately south of the site. Services which operate from these stops include:

- route M40: between Chatswood, Willoughby, Naremburn, City, Darlinghurst, Paddington, Woollahra and Bondi Junction. Services operate every 10 to 20 minutes in each direction, seven days per week;
- route 257: between Chatswood, North Willoughby, Willoughby, Naremburn, Crows Nest, Neutral Bay and Cremorne. Services are at least every 30 minutes in each direction, seven days per week;
- route 272: weekday peak hour service between North Willoughby, Willoughby, Naremburn and Wynyard;
- route 343: between Chatswood, North Willoughby, Willoughby, Naremburn, Crows Nest, North Sydney, City, Redfern, Waterloo, Zetland, Rosebery, Eastlakes, Kingsford.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The proposed development is for an aged care facility (RACF and ILU), mixed use fronting Penshurst Street (residential units above ground floor retail) and replacement of the existing club. The new club will include ancillary facilities such as a gym and café (for club member use). Basement parking will be provided with access from Crabbes Avenue: A summary of the proposed development is provided below:

- new club (some 3,066m^2 GFA/3,610m^2 LFA). This is a minor reduction in GFA compared to the existing club, however the LFA has increased by some 1,610m^2. This is due the provision of outdoor seating areas that are not provided at the existing club. Maximum staff on site at one time would be 70;
- 106 independent living units (ILU's) comprising 21 x 1 bed, 36x 2 bed and 49 x 3 bed units;
- 49 beds in a residential aged care facility (RACF) with a maximum of 24 staff on site at one time;
- Mixed use fronting Penshurst Street comprising 24 residential units (all 2 bed units) above seven shops (562m^2) at ground level;
- 441 car spaces located in two levels of basement parking; and
- access from Crabbes Avenue.

3.2 The traffic and parking effects of the proposed development are set out through the following sections:

- public transport;
- parking provision;
- access, servicing and internal layout;

- traffic effects; and
- summary.

Public Transport

3.3 As discussed in Chapter 2, the site has good access to public transport services, with a number of bus services operating along Penshurst Street past the site with bus stops located along the frontage of the site. Thus in the future the proposed development will be 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 These bus services provide connections to the services and facilities identified in SEPP Senior Living (including shops, banks, retail and commercial facilities, community services, recreation facilities and medical practices) in many locations along the routes, including in Chatswood, Crows Nest, North Sydney, the city and Bondi Junction. The site therefore satisfies the requirements of the SEPP in terms of its access to these facilities.

Parking Provision

3.5 Willoughby City Council WDCP sets out parking rates for different types of development. Relevant rates are set out below:

- aged care facility – rates in relevant Housing for Seniors Living SEPP;
- club - 1 space per 20m^2 LFA+ 1 space per 2 employees;
- retail – 1 space per 25m^2 of selling area;
- residential (located on a major public transport corridor such as Penshurst Street):
    - 0.5 spaces per studio unit;
    - 1 space per 1or 2 bed unit
    - 1.25 spaces per 3+ bed unit
    - 1 visitor space per 4 units;

3.6 The Seniors Living SEPP provides the following parking requirements:

- one space per 15 beds for dementia care; plus
- one space per 10 beds for residential care facilities; plus
- one space per two employees on duty at one time; plus
- one parking space for an ambulance; plus
- 0.5 spaces per bedroom for independent living units.

3.7 In addition WDCP requires the following parking rates for motor cycles and bicycles:

- motorcycles – 1 space per 25 car spaces;

- bicycles:
    - residential – 1 locker per 10 units plus 1 visitor space per 12 units;
    - retail/restaurant – 1 locker per 450m^2 plus 1 visitor space per 150m^2.

3.8 Bicycle lockers are for residents/employees and to should be provided in a secure location (an alternative to lockers are separate secure bicycle parking areas for the ILU's, residential units and club employees). Visitor bicycle parking is to be provided in racks that are located in publicly accessible locations.

3.9 Applying these rates, the proposed development would require provision of the following (minimum parking):

- 17 car spaces for the RCAF (5 visitor and 12 staff);
- 120 car spaces for the ILU's;
- 215 car spaces for the club (180 patron and 35 staff);
- 22 car spaces for the retail (the DCP has no breakdown of staff and customer parking, however with seven tenancies, it is suggested that 15 spaces be allocated to customers and 7 spaces for staff parking (1 per tenancy));
- 30 car spaces for the residential units (24 residential and 6 visitor);
- 9 motor cycle spaces;
- 11 residential and 9 visitor bicycle spaces for the ILU's
- 10 employee and 29 visitor spaces for the club/retail; and
- 3 residential and 2 visitor bicycle spaces for the residential units.

3.10 It is proposed to provide 441 car spaces as set down in Table 3.1 below. 19 motor cycle and 24 residential/employee bicycle parking spaces will provided, with bicycle parking provided in racks in separate secure locations for the

residential and non-residential uses. For the visitor bicycle parking, 40 spaces will be provided in racks around the site.

Table 3.1	**Summary of Parking Provision**		
Component/Code	Spaces Required	Spaces Provided	Compliance
ILU's (SEPP SL)	120 (120 residential, no visitor required)	157 (120 residential + 37 visitor)	Yes
RACF (SEPP SL)	17 (5 visitor + 12 staff)	17 (5 visitor + 12 staff)	Yes
Club (DCP)	215 (180 patron + 35 staff)	215 (180 patron + 35 staff)	Yes
Retail (DCP)	22	22 (15 customer + 7 staff)	Yes
Residential (DCP)	30 (24 residential + 6 visitor)	30 (24 residential + 6 visitor)	Yes
Total	406	441	Yes

3.11 Examination of Table 3.1 shows that the proposed provision of 441 spaces satisfies the WDCP parking requirement of 406 spaces. An additional 37 spaces have been provided in response to the communities request to provide more than the minimum parking provision. These 37 spaces would be used for parking for the ILU's.

3.12 Overall the proposed parking provision is considered appropriate and satisfies the requirements of WDCP.

Access, Servicing and Internal Layout

3.13 Vehicular access will be provided to Crabbes Avenue via a combined driveway with separate entry and exit lanes. The driveway will be some 11 metres wide with a 4 metre wide entry lane, 6 metre wide exit lane separated by a 1 metre wide median. This width is considered appropriate as it provides the minimum

driveway width for pedestrians to cross, provides entry for all vehicles, separate left and right turn lanes for vehicles exiting the site and separation of the entry and exit lanes. All vehicles will enter and depart the site in forward direction (including service vehicles).

3.14 Within the site, the driveway ramp provides access to the loading dock (on the western side of the driveway), club/residential units car parking and club/RACF port cochere (western of the side of the driveway) and club/ILU/RACF parking (to the south via the ramp to basement 2). Internal ramps on the western part of the car park connect basements 1 and 2 where retail, residential/ILU visitor and club parking are located. Parking for these uses will be shared. Appropriate signage will be provided within the car park to direct drivers to the appropriate location for parking depending on the purpose of their visit to the site.

3.15 Parking for the ILU's and RACF are located in eastern section of basement 2 with access restricted by a roller shutter. Similarly residential parking for the residential units (located in the northwest corner of basement 2) will have restricted access via a roller shutter.

3.16 The proposed porte cochere located on basement 1 provides set down/pick up for five cars with a u-turn area. The car park will be designed to comply with requirements of AS2890.1-2004 and AS2890.6-2009. Vehicle turn paths are provided in Attachment A.

3.17 The service area is located on the western side of basement 1 and has been designed to accommodate a 12.5 metre heavy rigid truck (HRV). In addition a secondary dock (suitable for vans) is provided on B2 for the ILU's and RACF. This would accommodate deliveries by vans to the ILU's/RACF as well as vans/utilities

for tradesmen servicing the ILU's/RACF. An ambulance bay is provided in basement 2 for the RACF. In order to minimise the width of the driveway, all large trucks accessing the site will be required to turn right into the site and thus access the site via a left turn from Penshurst Street. Large trucks can exit the site via a either a left or right turn onto Crabbes Avenue.

3.18 Waste will be stored in the main loading dock and collected by either Council or a private contractor. The dock and access have been designed to allow a 12.5m metre long HRV to enter and depart the site with 4.5 metre height clearance provided on the ramp and within the loading dock.

3.19 Service areas will be designed to comply with the requirements of AS2890.2-2018. Vehicle turn paths are provided in Attachment B.

Traffic Effects

3.20 Estimates of future traffic generation of the proposed development have been based on RMS Guidelines for the aged care facility/residential units and traffic generation of the existing club for the expanded club as set out below. The new retail fronting Penshurst Street is a similar size to the existing and is thus not anticipated to result in any increase traffic generation.

- aged care facility
    - 0.2 trips per dwelling (ILU);
    - 0.1 trip per bed (RACF).
- club – 50% increase in traffic generation. While the increase in LFA is some 80%, a lower increase in traffic generation from the new club (50% increase) is considered appropriate as:

  - the majority of the increase in LFA is outdoor seating either on the ground floor or upper level terraces and it is unlikely to 100% occupied at the same time; and
  - people living in the residential units and ILU's will be patrons to the club (who will walk to the club).
- residential – 0.5 trips per unit.

3.21 Using the above rates the proposed development would have a peak traffic generation of an additional 120 vehicle trips per hour (two way). During the weekday afternoon and evening peak periods, traffic flow increases would be less at some 40 to 80 vehicles per hour (two way). When assigned to the road network:

- the additional peak traffic generation would result in increases of some 60 vehicles per hour on Crabbes Avenue and some 20 to 40 vehicles per hour on Penshurst Street and High Street; and
- the additional traffic generated during the weekday morning and afternoon peak hours would result in increases of some 20 to 35 vehicles per hour on Crabbes Avenue and some 5 to 25 vehicles per hour on Penshurst Street and High Street:

3.22 With these increases traffic flows on Crabbes Avenue would still be consistent with its function as a local road with the 95th percentile traffic flow at 196 vehicles per hour (two way) with average weekday morning and afternoon peak hour traffic flows of some 130 to 140 vehicles per hour (two way).

3.23 The intersections of Crabbes Avenue with High Street, Penshurst Street and the site access have been reanalysed with development traffic in place using SIDRA. The analysis found that:

- the intersection of Crabbes Avenue and Penshurst Street will continue to operate with average delays of less than 15 seconds per vehicle in the peak periods. This represents level of service A/B, a good level of intersection operation;

- the intersection of Crabbes Avenue and High Street will continue to operate with average delays of less than 25 seconds per vehicle in the peak periods. This represents level of service B, an acceptable level of intersection operation, and;

- the intersection of Crabbes Avenue and the site access will operate with average delays of less than 15 seconds per vehicle in the peak periods. This represents level of service A/B, a good level of intersection operation

3.24 Thus the surrounding road network can accommodate the additional traffic generated by the proposed development, with traffic flows on Crabbes Avenue consistent with its local road function and minimal impact on the operation of the intersections of Crabbes Avenue with High Street and Penshurst Street.

Summary

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

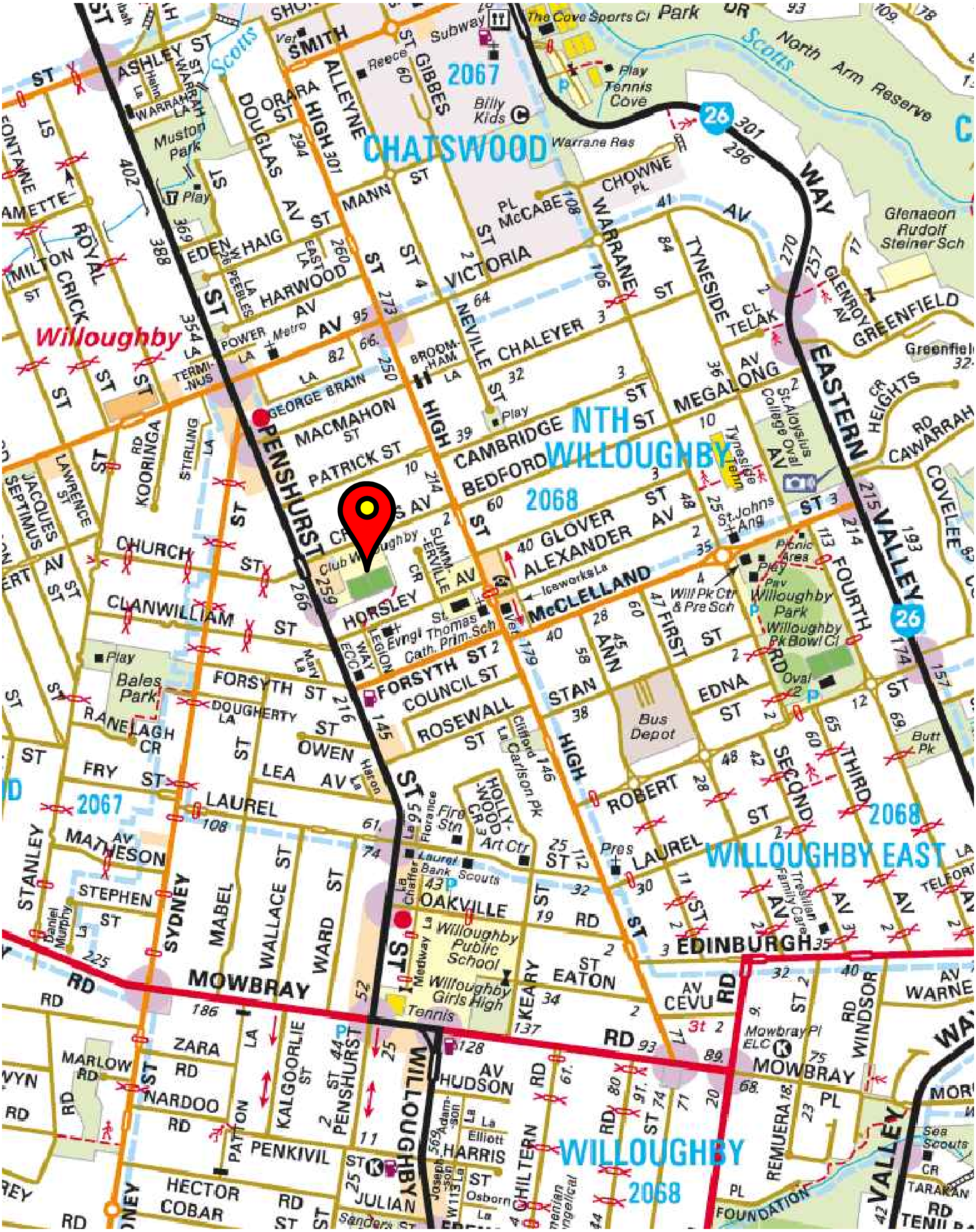
i) the proposed development is accessible by public transport services and will strengthen demand for these services;

ii) the proposed parking provision is appropriate and complies with the requirements of WDCP;

iii) the loading dock and car parking areas will be provided in accordance with AS 2890.1- 2004, AS 2890.2 – 2018 and AS2890.6-2009;

iv) service vehicle access to/and from the site is appropriate; and

v) the surrounding road network can accommodate the additional traffic generated by the proposed development with:
   - traffic flows on Crabbes Avenue consistent with its local road function; and
   - minimal impact on the operation of the intersections of Crabbes Avenue with High Street and Penshurst Street.



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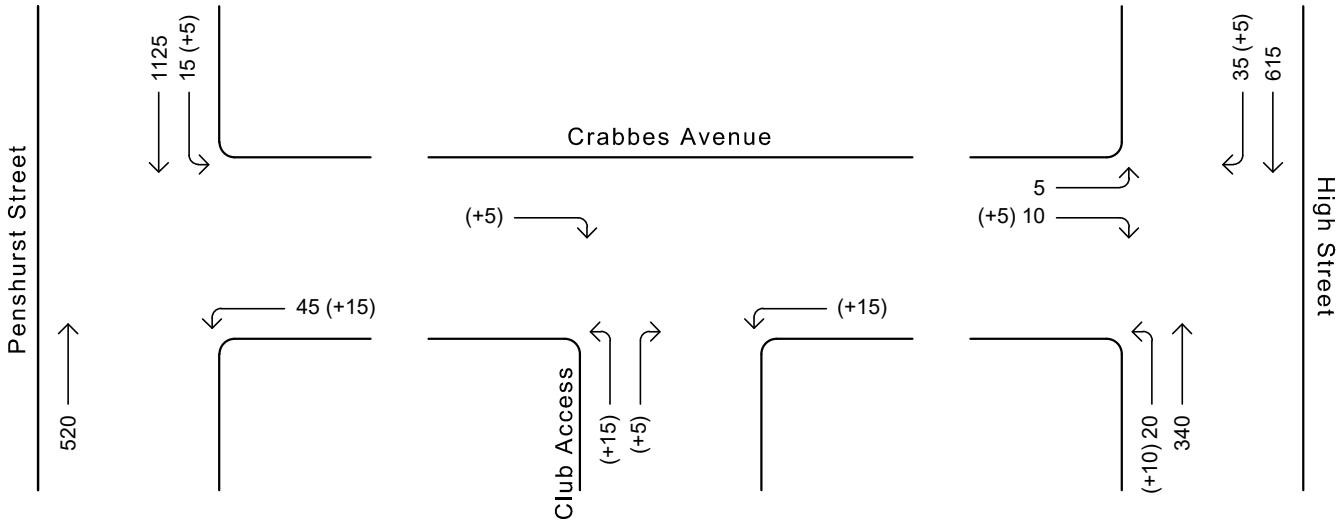
Location Plan

Colston Budd Rogers & Kafes Pty Ltd

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28.06.2019

Figure 1



LEGEND

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

Existing weekday morning peak hour traffic flows plus development traffic

Figure 2

Colston Budd Rogers & Kafes Pty Ltd

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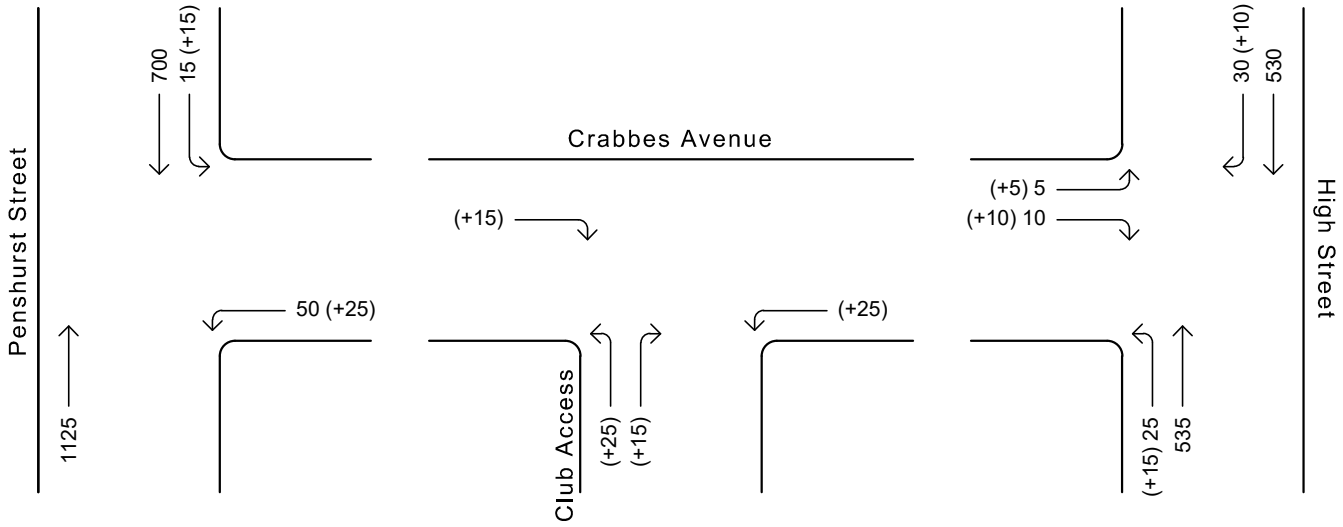

LEGEND

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

Existing weekday afternoon peak hour traffic flows plus development traffic

Figure 3

Colston Budd Rogers & Kafes Pty Ltd

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ATTACHMENT A

CRABBES AVENUE 7 DAY TRAFFIC SURVEYS

Job No	N5018 - Willoughby ATC
Client	Colston Budd Rogers & Kafes Pty Ltd
Site	ATC 1 - Crabbes Ave - East of Penhurst St and before Car Park Access 1
Location	Willougby
Site No	1
Start Date	18-May-19
Description	Volume Summary
Direction	Combined

MATRIX Traffic and Transport Data

Hour Starting	Day of Week							W'Day Ave	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	20-May	21-May	22-May	23-May	24-May	18-May	19-May		
AM Peak	116	81	91	76	88	156	51		
PM Peak	96	85	121	81	68	141	62	**927**	**911**
0:00	0	0	4	0	2	14	6	1	4
1:00	1	1	1	1	0	8	2	1	2
2:00	1	0	0	0	2	2	2	1	1
3:00	0	1	1	1	1	0	0	1	1
4:00	4	1	1	2	3	1	0	2	2
5:00	9	6	5	8	1	2	2	6	5
6:00	24	20	16	22	21	13	7	21	18
7:00	37	33	47	30	49	48	8	39	36
8:00	47	55	68	53	54	107	15	55	57
9:00	116	81	91	76	88	116	32	90	86
10:00	67	56	56	74	58	156	36	62	72
11:00	48	60	59	47	50	156	51	53	67
12:00	69	82	65	68	57	141	35	68	74
13:00	78	47	121	81	58	97	52	77	76
14:00	55	39	46	76	68	51	47	57	55
15:00	58	54	51	62	66	51	30	58	53
16:00	96	85	94	81	63	58	62	84	77
17:00	74	75	59	60	52	44	43	64	58
18:00	67	0	56	45	58	52	25	45	43
19:00	88	0	55	49	53	59	22	49	47
20:00	36	0	30	21	27	18	5	23	20
21:00	25	27	24	23	45	9	6	29	23
22:00	33	30	28	51	6	23	2	30	25
23:00	7	5	10	27	10	27	1	12	12
Total	1040	758	988	958	892	1253	491	927	911

7-19	812	667	813	753	721	1077	436	753	754
6-22	985	714	938	868	867	1176	476	874	861
6-24	1025	749	976	946	883	1226	479	916	898
0-24	1040	758	988	958	892	1253	491	927	911

Job No	N5018 - Willoughby ATC
Client	Colston Budd Rogers & Kafes Pty Ltd
Site	ATC 2 - Crabbes Ave - West of High St and after Car Park Access 2
Location	Willoughby
Site No	2
Start Date	18-May-19
Description	Volume Summary
Direction	Combined

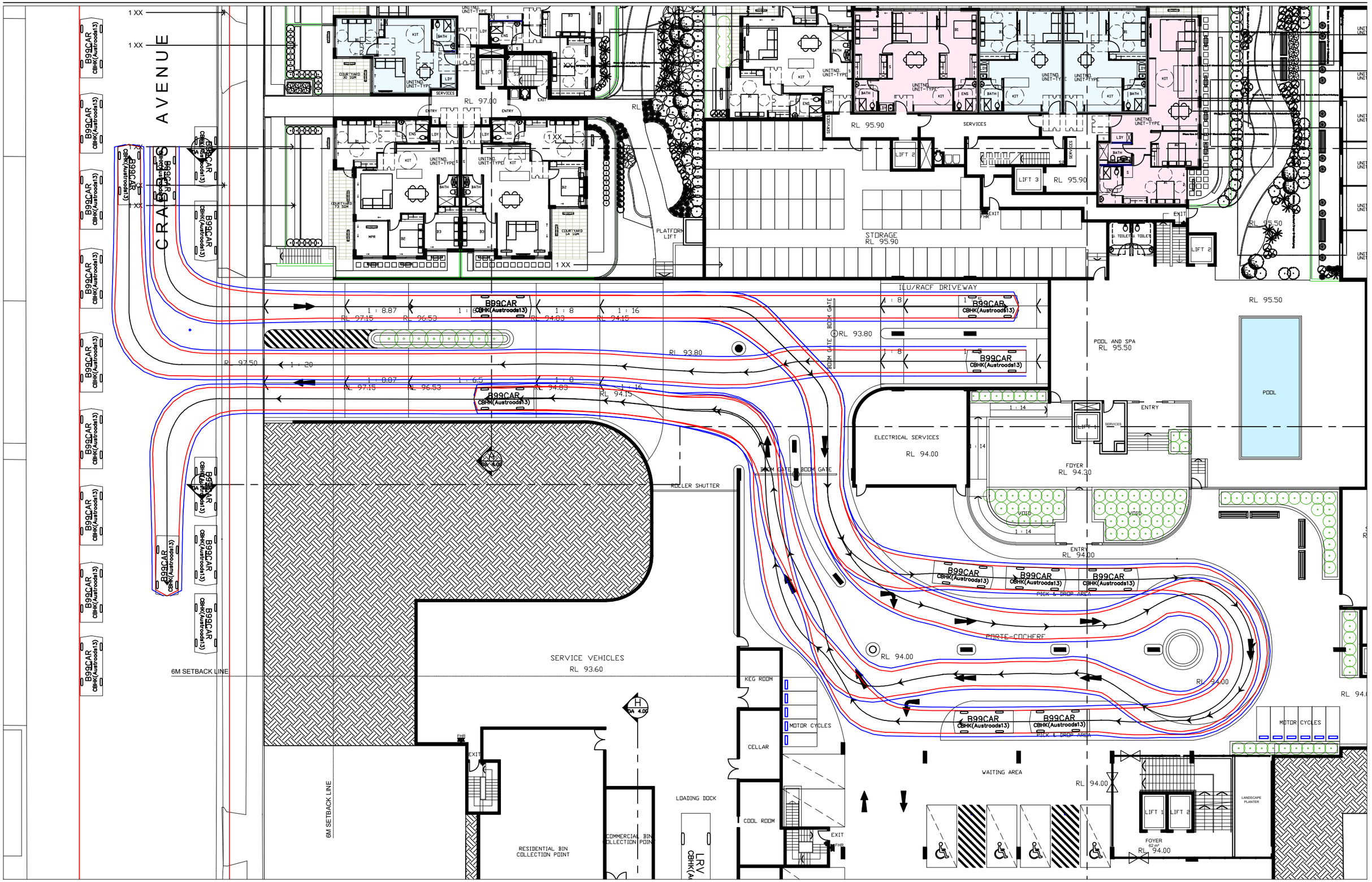
MATRIX Traffic and Transport Data

Hour Starting	Day of Week							W'Day Ave	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	20-May	21-May	22-May	23-May	24-May	18-May	19-May		
AM Peak	136	16	126	91	103	229	46		
PM Peak	181	148	190	122	88	123	70	**1064**	**1033**
0:00	0	0	5	1	3	17	4	2	4
1:00	1	0	1	1	0	5	2	1	1
2:00	1	0	0	0	2	2	2	1	1
3:00	0	0	1	1	0	2	0	0	1
4:00	4	0	1	2	3	1	0	2	2
5:00	7	0	5	8	2	3	0	4	4
6:00	18	0	16	18	20	18	7	14	14
7:00	42	0	39	38	42	107	8	32	39
8:00	48	5	65	56	51	168	15	45	58
9:00	136	16	126	91	103	169	38	94	97
10:00	75	0	57	86	66	229	30	57	78
11:00	53	10	66	52	57	33	46	48	45
12:00	92	148	77	88	60	47	51	93	80
13:00	181	53	190	122	88	123	60	127	117
14:00	68	51	65	78	69	67	61	66	66
15:00	63	62	55	62	67	66	49	62	61
16:00	129	115	122	88	63	88	70	103	96
17:00	79	80	76	63	69	5	43	73	59
18:00	79	76	73	67	70	68	27	73	66
19:00	93	74	74	84	61	71	25	77	69
20:00	23	32	34	29	32	16	7	30	25
21:00	0	30	17	30	35	11	5	22	18
22:00	0	44	32	54	9	19	2	28	23
23:00	0	5	10	18	9	25	2	8	10
Total	1192	801	1207	1137	981	1360	554	1064	1033

7-19	1045	616	1011	891	805	1170	498	874	862
6-22	1179	752	1152	1052	953	1286	542	1018	988
6-24	1179	801	1194	1124	971	1330	546	1054	1021
0-24	1192	801	1207	1137	981	1360	554	1064	1033

ATTACHMENT B

VEHICLE TURN PATHS



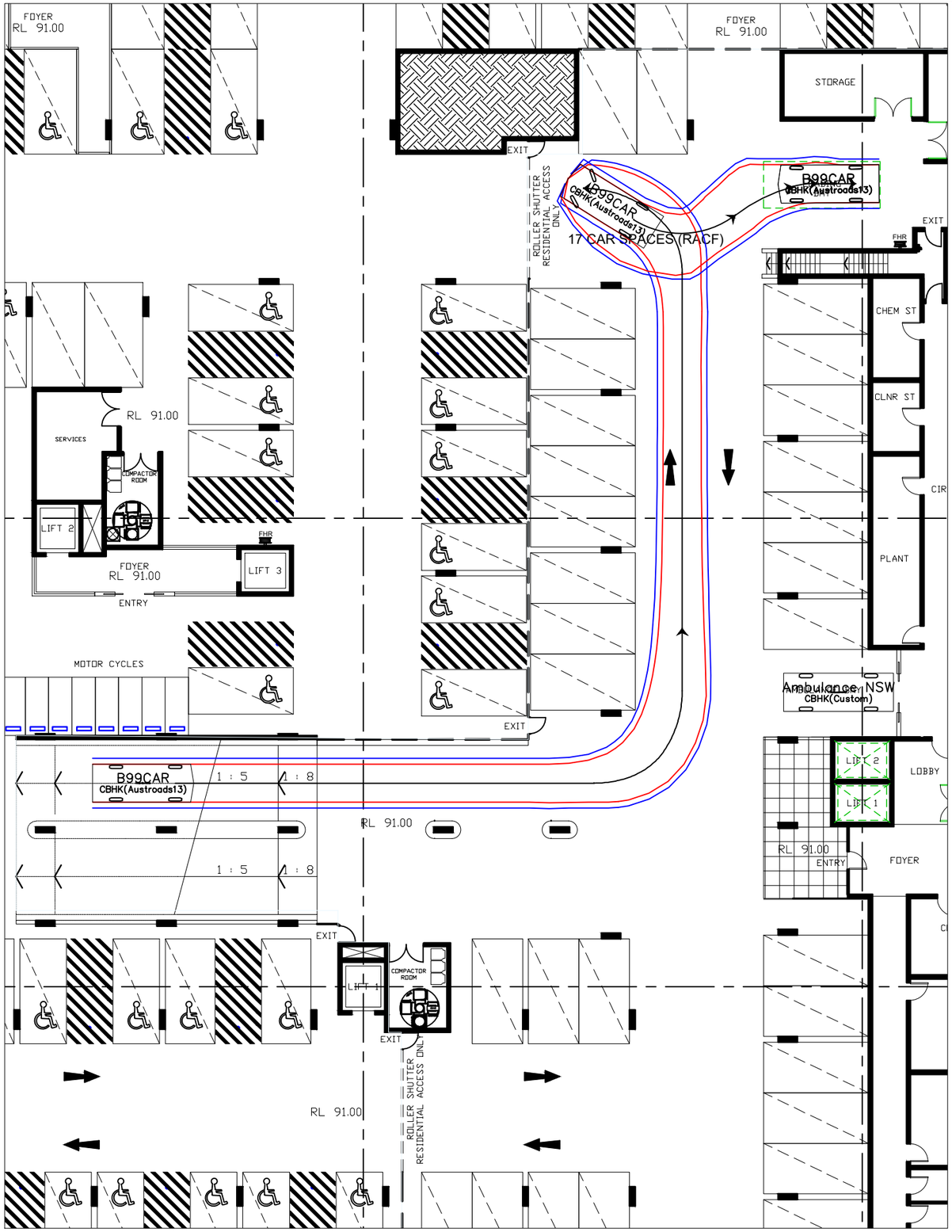
NOTE:
SKETCH PLAN ONLY. PROPERTY BOUNDARIES, UTILITIES, KERBLINES & DIMENSIONS ARE SUBJECT TO SURVEY AND FINAL DESIGN. TRAFFIC MEASURES PROPOSED IN THIS PLAN ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN BY CIVIL ENGINEERS.

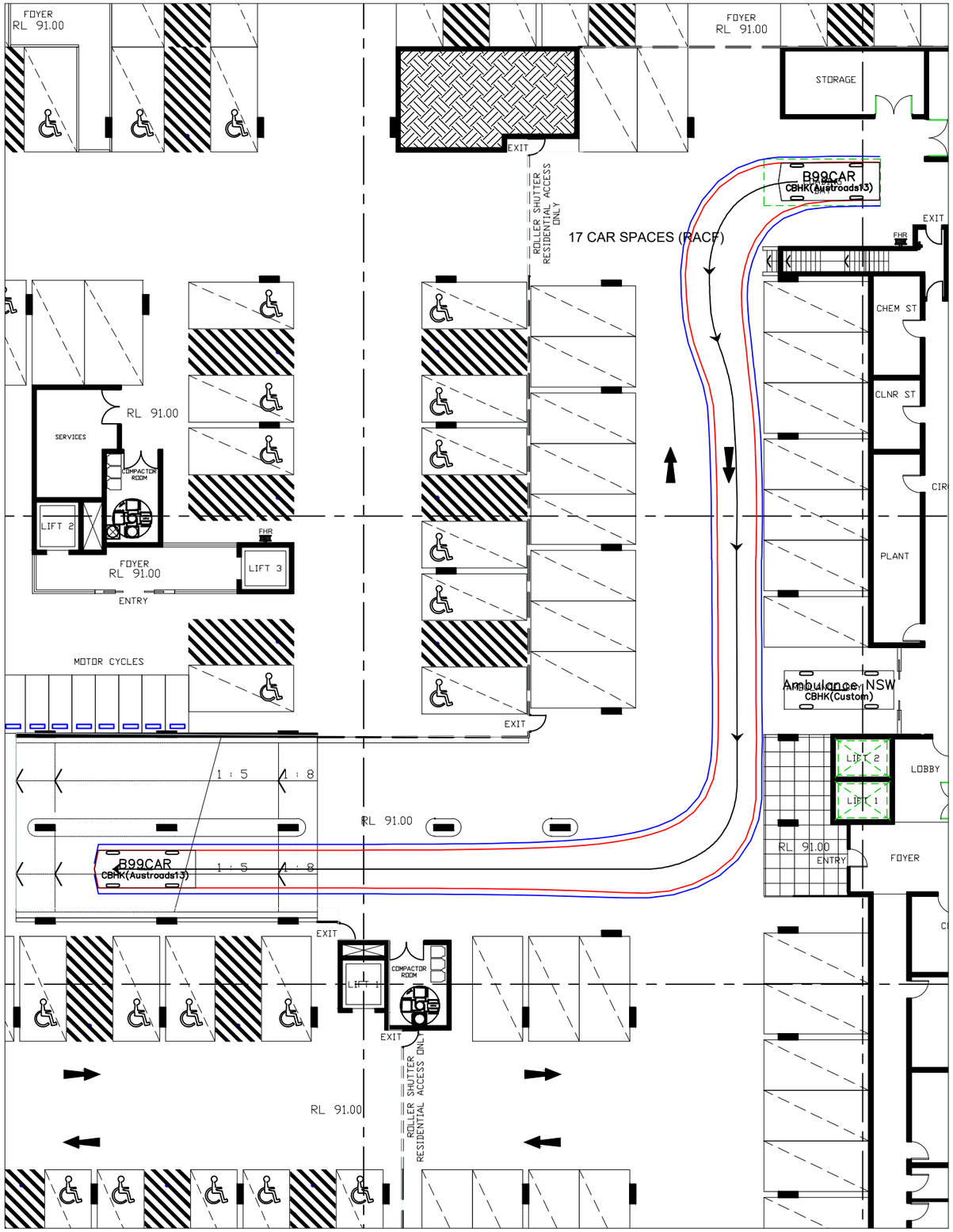
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B1





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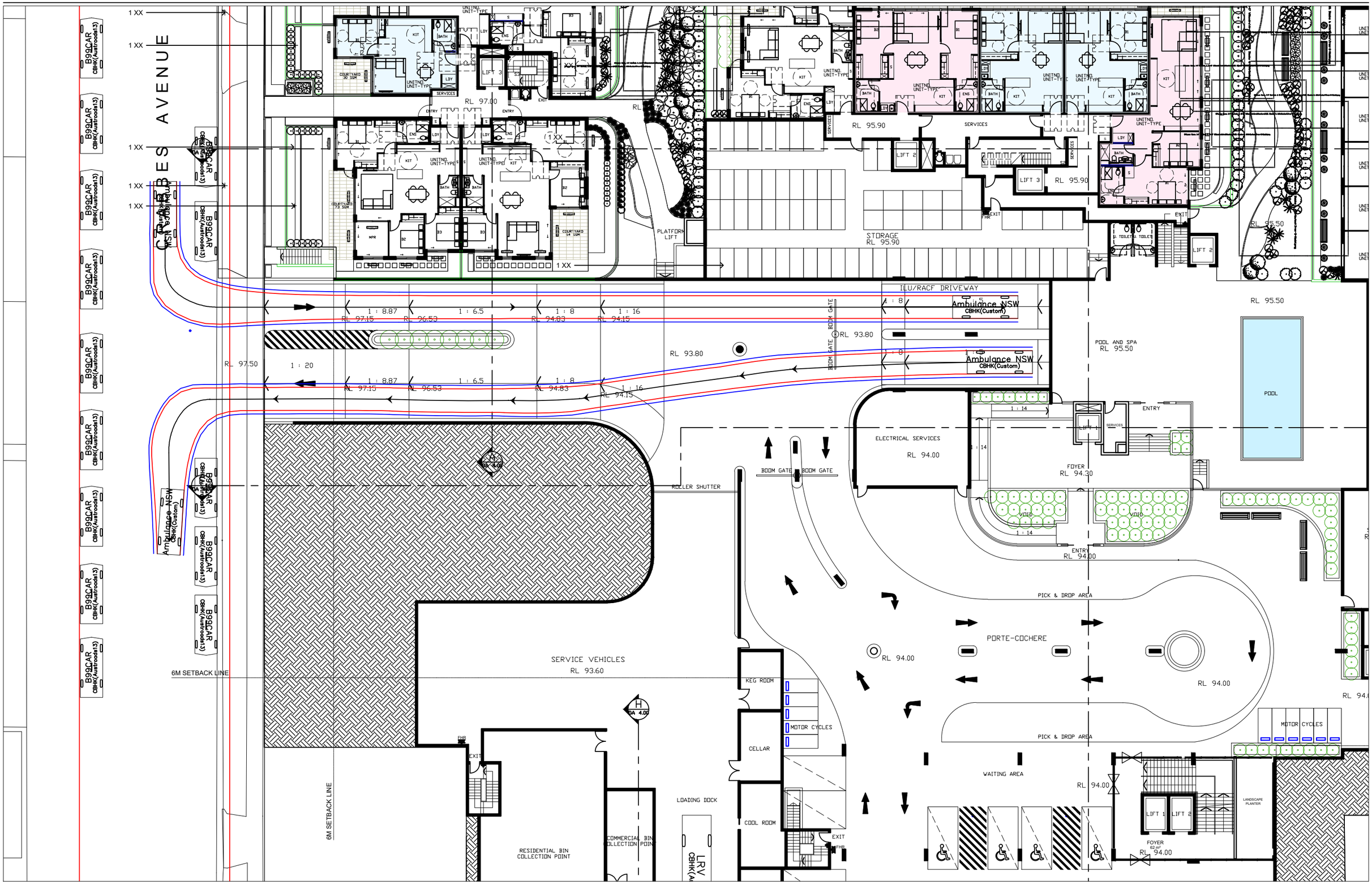
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B2



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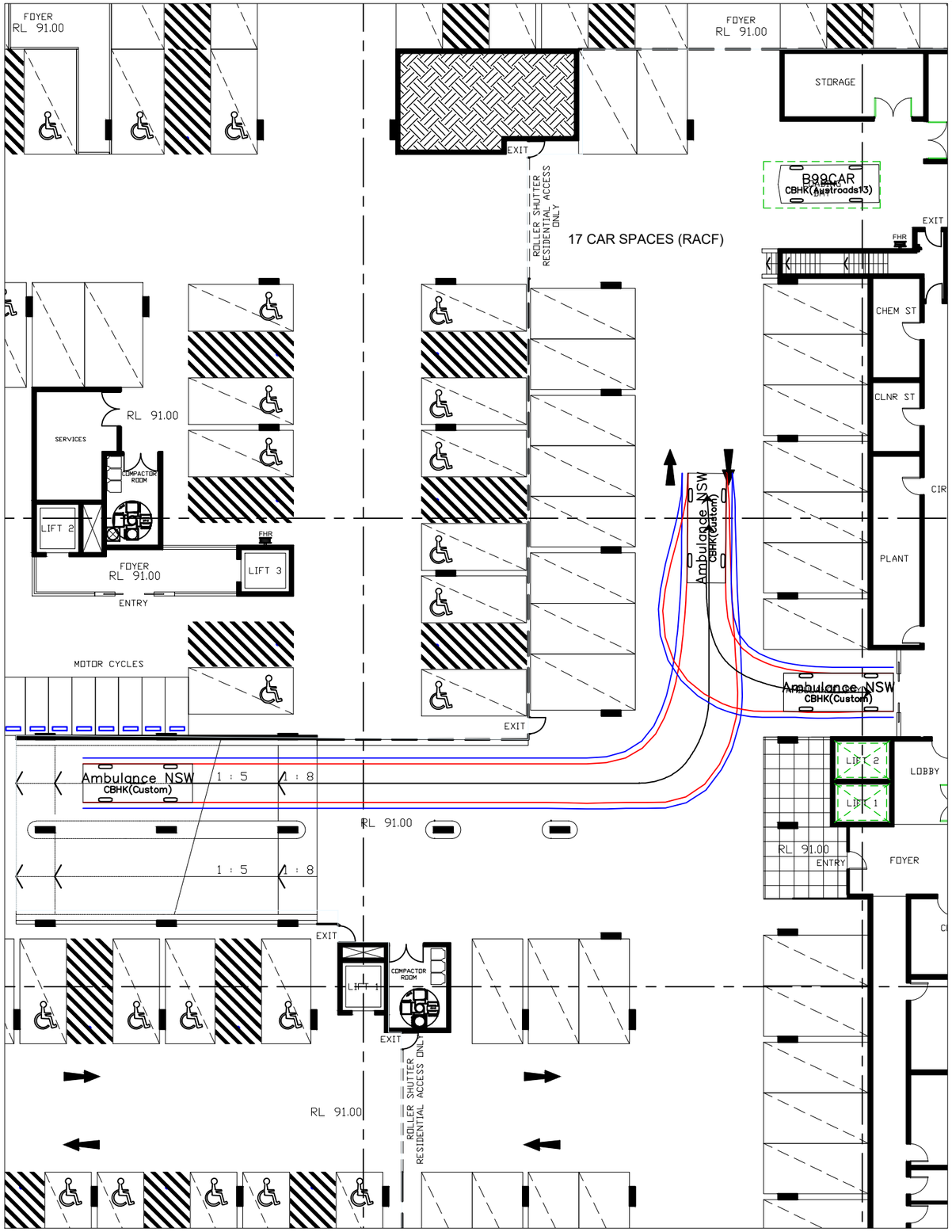
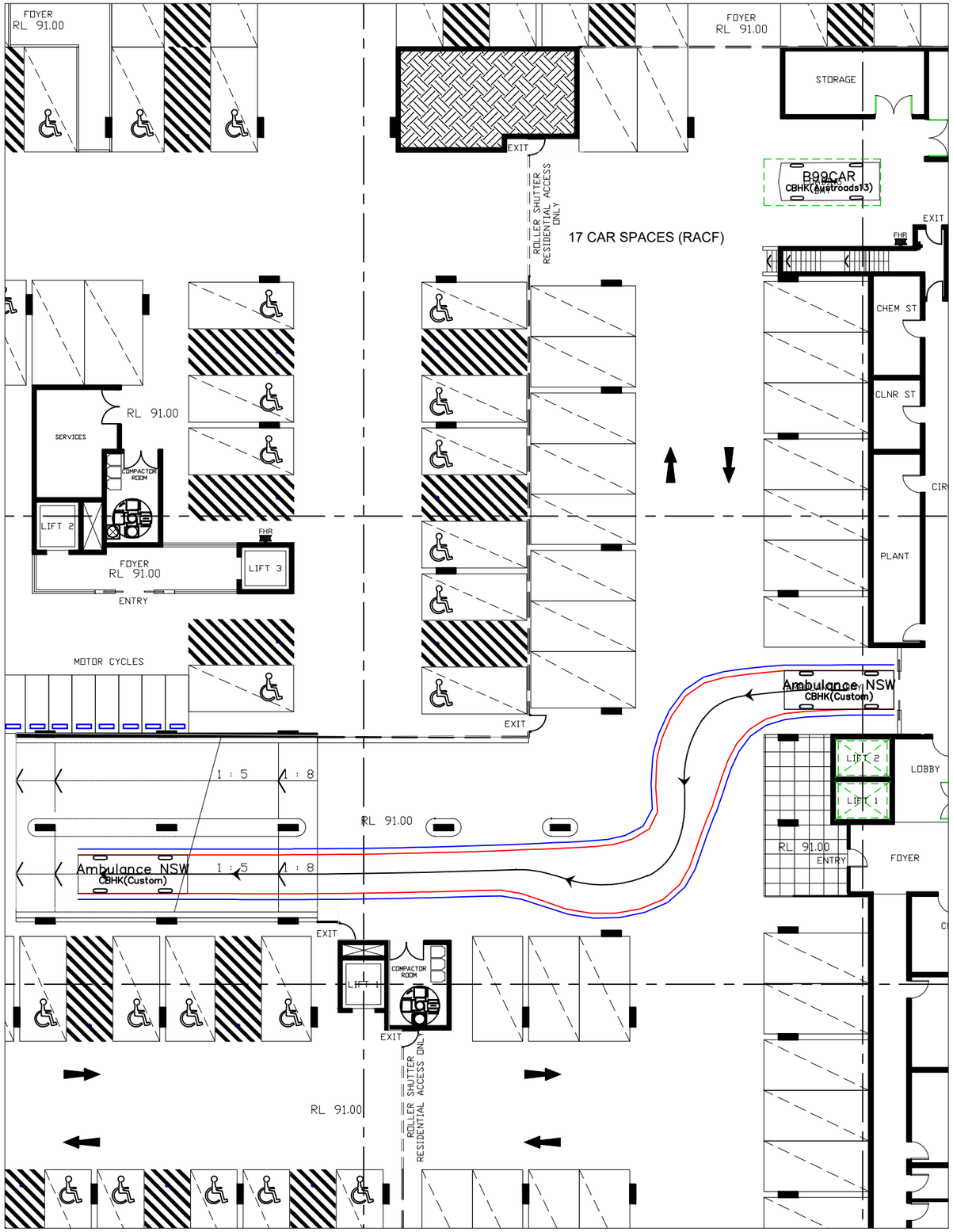
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

5.64m AMBULANCE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B3





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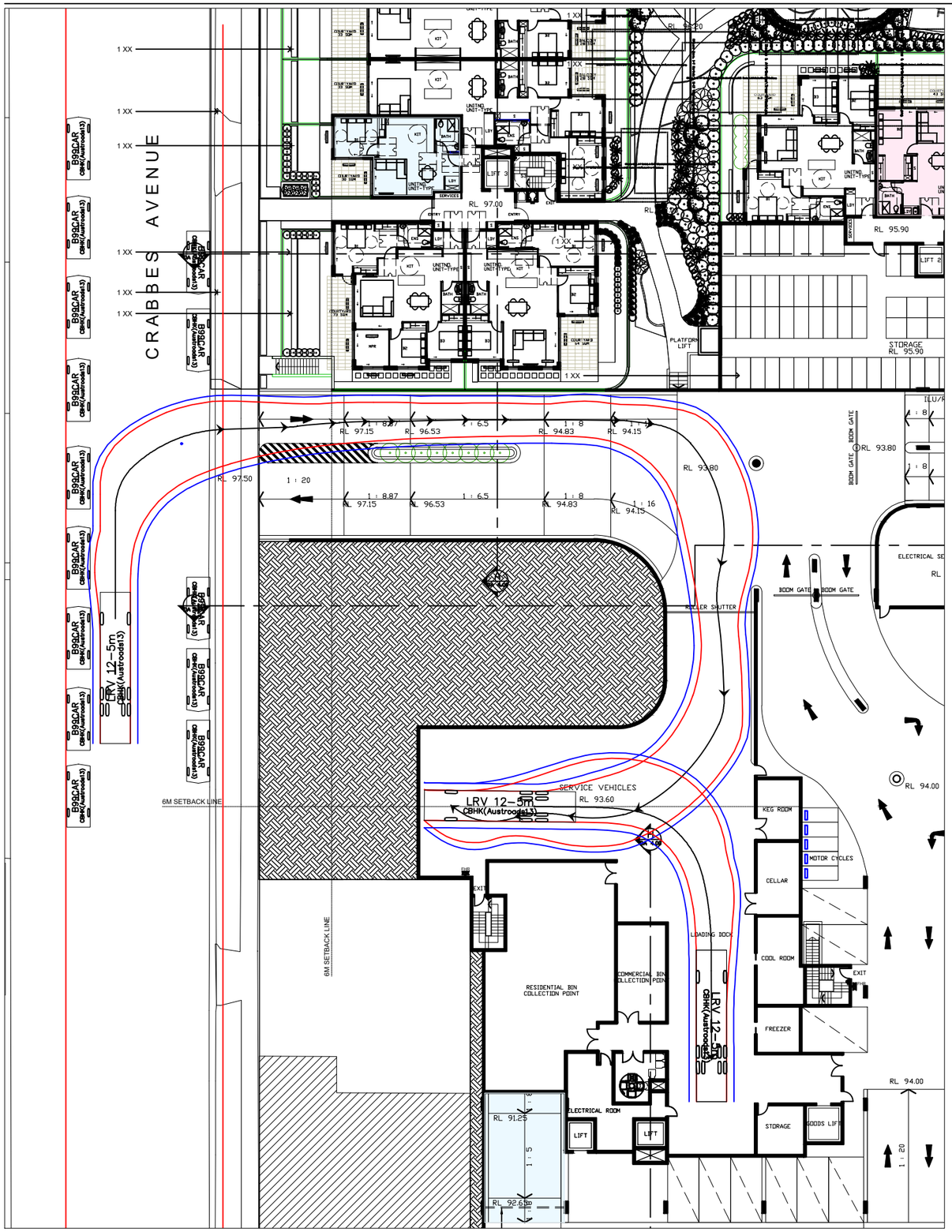
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

5.64m AMBULANCE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B4



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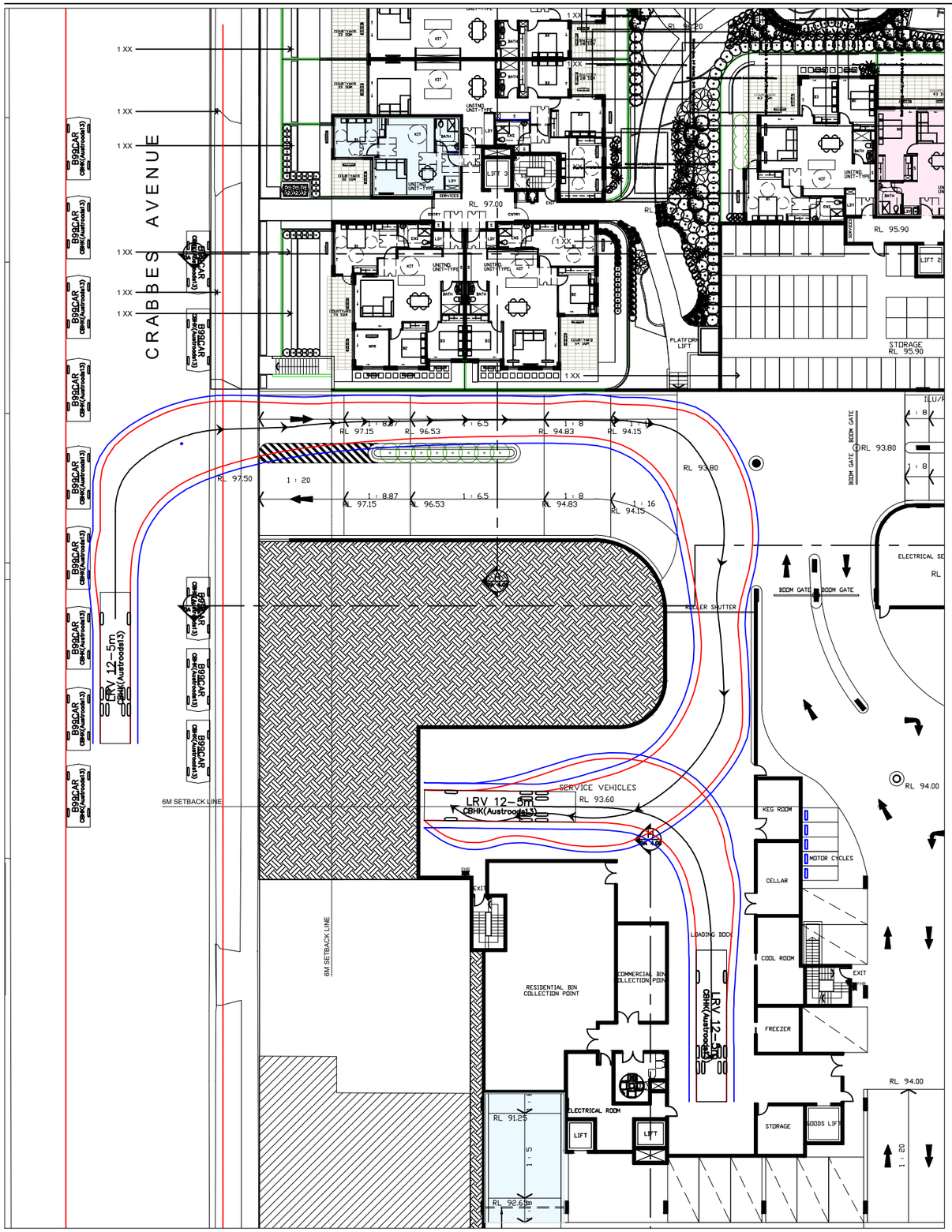
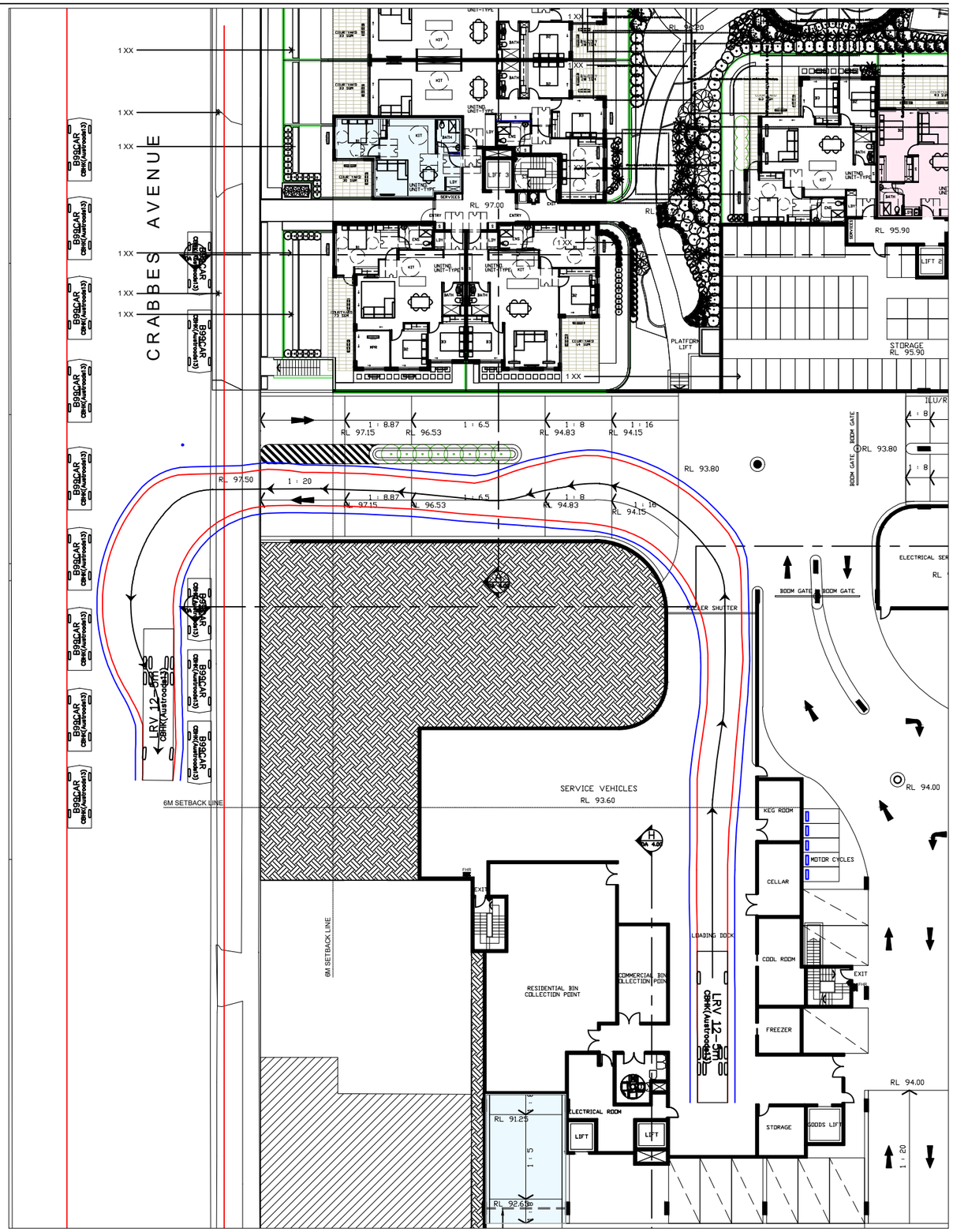
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

12.5m LARGE RIGID VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B5





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

12.5m LARGE RIGID VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 10526 28 JUNE 2019

B6