Colston Budd Rogers & Kafes Pty Ltd
as Trustee for C & B Unit Trust
ABN 27 623 918 759

Our Ref: SK/11555/mr

Transport Planning
Traffic Studies
Parking Studies

22 October, 2021

Woolworths Limited
PO Box 8000
BAULKHAM HILLS NSW 2153

Attention: Michael Rumble
Email: MRumble@woolworths.com.au

Dear Sir,

RE: SSD-10470 MOD 1 FOR WOOLWORTHS CFC FACILITY
11-13 PERCY STREET, AUBURN

1. This traffic assessment supports the SSD-10470 Mod 1, which has been prepared subsequent to the review of adequacy by the Department of Planning, Industry and Environment (DPIE). A previous traffic report[1] has been prepared which was submitted for the approved SSDA.

2. Our traffic assessment is set down through the following sections:

- approved development;
- proposed modifications;
- parking provision;
- access arrangements;
- internal layout and servicing;
- traffic effects; and
- summary.

Approved Development

3. Approval was granted by DPIE on the 25 June 2021 for the construction and 24 hour operation of a warehouse and customer fulfilment centre at Auburn. The approved development includes a warehouse of some 19,228m^2, ancillary office of some 1,220m^2, a customer pick-up facility of some 135m^2 and parking

[1] "Traffic and Transport Impact Assessment for Proposed Woolworths Warehouse and Distribution Centre at 11-13 Percy Street, Auburn.", September 2020, Colston Budd Rogers & Kafes Pty Ltd.

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P.O. Box 5186 West Chatswood NSW 1515 Tel: (02) 9411 2411 Fax: (02) 9411 2422
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provision of 150 spaces. Access is approved via three access driveways onto Percy Street.

Proposed Modifications

4. The proposed modifications to the approved development are set out below in Table 1.

Table 1: Summary of Proposed Modification		
	Approved Development	**Proposed Development**
Gross Floor Area • Warehouse • Office • Pick-up facility	 19,228m^2 1,220m^2 135m^2	 18,305m^2 1,600m^2 235m^2
Staff parking spaces	150 spaces	144 spaces
Customer pick-bays	6 pick-up bays (for customers)	8 pick-up bays (for customers) plus 8 additional waiting bays
Van parking spaces	103 spaces	88 spaces
Loading docks • Inbound docks • Outbound docks	 7 bays 28 bays	 6 bays 27 bays

Parking Provision

5. The Auburn Development Control Plan 2010 includes the following parking requirements:

- Warehouse
  - one space 300m^2 GFA; and
- Ancillary office
  - one space per 40m^2 GFA.

6. Application of these rates to the proposed 18,305m^2 warehouse and 1,835m^2 of office/customer pick-up facility, results in a requirement of 127 parking spaces. The proposed parking provision is 144 staff parking spaces, plus eight additional customer waiting bays adjacent to the customer pick-up up facility. The proposed parking provision satisfies Council's DCP requirement and is therefore appropriate.

7. As set down in Table 1, the proposed modifications result in a reduction of six staff parking spaces, an increase of two pick-up bays, additional eight waiting

bays, reduction of 15 van parking bays and reduction of one inbound and one outbound loading bay.

8. As noted above, the proposed 144 staff parking spaces satisfies Council's DCP requirement of 127 spaces and is therefore appropriate. The appropriateness of the number of pick-up/waiting bays, van parking bays and loading bays is discussed in the following section on internal layout and servicing.

Access Arrangements

9. Access arrangements onto Percy Street will be unchanged compared to the approved development.

10. In association with the proposed modifications, boom gate access controls will be located on the inbound and outbound loading dock driveways. The access controls will be located within the site with appropriate queuing of service vehicles on approach to the controls, as discussed below. The swept paths of service vehicles accessing the site are shown on Figures 1 to 3.

11. The proposed inbound docks will generate some 10 to 15 articulated vehicles two-way per day. This is equivalent to on average only one articulated vehicle entering and exiting the site per hour over the day. These articulated vehicles will access the site via the northernmost access driveway. The boom gate controls will be located some 35 metres into the site, providing appropriate queuing area to accommodate an articulated vehicle on approach to the controls within the site.

12. During peak periods the outbound docks will generate some 40 delivery vans per hour two-way during the morning and afternoon periods. These delivery vehicles will access the site via the central access driveway. The 95th percentile queue for a single boom gate control would be some one to two vehicles. The boom gate controls will be located some 15 metres into the site, providing appropriate queuing area to accommodate two delivery vans on approach to the controls within the site.

13. The access driveways, with the introduction of the boom gate access controls, are therefore appropriate and will cater for the swept paths of service vehicles entering and exiting the site in a forward direction.

Internal Layout and Servicing

14. Inbound and outbound loading dock arrangements are proposed to be modified. The inbound docks will be located adjacent to the eastern boundary of the site. The number of inbound loading bays will be reduced from seven to six bays. They will be 3.5 metres wide and all bays will be suitable for access by 20 metre articulated vehicles.

15. The outbound docks will be located adjacent to the western boundary of the site. The number of outbound loading bays will be reduced from 28 to 27 bays. They will be 3.5 metres wide and will cater for delivery vans up to 6.4 metre small rigid trucks.

16. The Auburn DCP 2010 includes the following loading arrangements for industrial/warehouse developments:

- one loading bay per 800m^2 GFA up to 8,000m^2 GFA; plus
- one loading bay per 1,000m^2 GFA thereafter.

17. Application of these rates to the proposed development results in a requirement of 21 loading bays. The proposed development will provide 33 loading bays, including six inbound loading bays (suitable for 20 metre articulated vehicles) and 27 small rigid truck bays (suitable for delivery vehicles up to 6.4 metres in length). The proposed provision satisfies Council's requirement and is therefore appropriate.

18. Woolworths have advised that the proposed 88 parking spaces are appropriate to cater for their operation.

19. The proposed loading dock arrangements will be designed to comply with the requirements of the Australian Standard for Parking Facilities Part 2: Commercial vehicle facilities (AS2890.2-2018). The swept paths of service vehicles accessing the loading docks are shown on Figures 4 to 7.

20. Emergency vehicle access will be provided around the perimeter of the site, via the northern and southern driveways onto Percy Street. A fire brigade hardstand area is located adjacent to the south-eastern corner of the building. The internal circulation road and the emergency hardstand area will be designed to cater for emergency vehicles, including fire trucks to enter and exit the site in a forward direction, as shown on Figure 8.

21. Within the mezzanine car park, the reconfigured staff car parking arrangements, in terms of car parking dimensions, aisle widths, ramp grades, disabled parking and height clearances, will be provided in accordance with the Australian Standards for Parking Facilities Part 1: Off-street car parking and Part 6: Off-street parking for people with disabilities (AS2890.1-2004 and AS2890.6-2009). Boom gate access controls will be provided at the top of the vehicular ramp accessing the staff car park.

22. The customer drive through pick-up facility, to be located on the southern side of the building is proposed to be modified. It will provide eight pick-up bays, a turnaround area and eight additional waiting bays. Vehicles will enter and exit the drive through pick-up facility, to and from Percy Street (via the southern driveway), in a forward direction. Vehicle swept paths are shown on Figure 9.

23. The drive through pick-up facility will have a service capacity of some 80 vehicles per hour. The peak number of pick-ups is anticipated to be some 30 customers per hour. The 95th percentile queue for the pick-up operation would be some three to four vehicles, which will readily be accommodated within the drive through (eight pick-up bays).

Traffic Effects

24. Traffic generated by the proposed development will have its greatest effects during the weekday morning and afternoon peak periods.

25. Our previous SSDA traffic report assessed a traffic generation of some 160 vehicles per hour two-way (comprising some 120 cars and 40 delivery vans) during the morning and afternoon peak periods. With a similar floor area compared to the approved development, the proposed modified development would have a similar traffic generation compared to that assessed in our previous report.

26. The increase in the size of the customer pick-up facility, including an increase in the number of pick-up bays from six bays to eight bays, would result in an additional traffic generation of some 10 customer pick-ups per hour during peak periods. This would result in an overall traffic generation for the proposed modified development of some 180 vehicles per hour two-way (comprising some 140 cars and 40 delivery vans), an increase of some 20 vehicles per hour two-way, during the morning and afternoon peak periods.

27. The additional traffic generated by the proposed development has been assigned to the surrounding road network. Existing peak hour traffic flows plus

additional development traffic (approved development and proposed modified development) are shown on Figures 10 and 11, and summarised in Table 2.

Table 2: Existing Two-Way (Sum of Both Directions) Peak Hour Traffic Flows Plus Development Traffic

Road/Location	Weekday Morning			Weekday Afternoon		
	Existing	Approved Develop	Modified Develop	Existing	Approved Develop	Modified Develop
St Hilliers Road						
- north of Hall St	2,940	+75	+8	3,265	+75	+8
- south of Hall St	3,065	+30	+4	3,390	+30	+4
- south of Rawson Rd	50	-	-	85	-	-
Silverwater Rd						
- north of M4 Motorway	3,595	+35	+4	3,240	+35	+4
- north of Parramatta Rd	3,870	+45	+4	4,205	+45	+4
Parramatta Road						
- east of St Hilliers Rd	2,955	-	-	3,395	-	-
- west of St Hilliers Rd	2,605	+30	+4	3,145	+30	+4
Rawson Road						
- west of St Hilliers Rd	1,720	+35	+4	1,845	+35	+4
Boorea Road						
- east of St Hilliers Rd	3,865	+35	+4	4,260	+35	+4
- east of Percy Street	3,905	+30	+6	4,380	+30	+6
Percy Street						
- north of Hall St	175	+55	+2	385	+55	+2
- south of Hall St	180	+100	+14	315	+100	+14
- north of Boorea St	110	+35	+6	315	+35	+6
Hall Street						
- east of St Hilliers St	210	+105	+12	370	+105	+12

28. It can be seen from Table 2 that traffic flow increases as a result of the proposed modified development would be some 2 to 14 vehicles per hour two-way during peak periods, compared to the approved development.

29. The intersections analysed in our previous report have been reanalysed using the SIDRA 9 Network Model, with the approved development and the proposed modified development additional traffic flows added to existing traffic flows, during the morning and afternoon peak periods.

30. The results of the SIDRA analysis are summarised in Table 3.

Table 3: Summary of SIDRA Analysis							
Intersection	**Output**	**Existing Intersection Operation**		**Plus Approved Development Traffic**		**Plus Modified Development Traffic**	
		AM	**PM**	**AM**	**PM**	**AM**	**PM**
Silverwater Rd/M4 Motorway	Average Delay (sec/veh)	27	22	28	25	28	25
	Level of Service (LOS)	B	B	B	B	B	B
Paramatta Rd/Silverwater Rd/St Hilliers Rd	Average Delay (sec/veh)	38	46	40	48	40	48
	Level of Service (LOS)	C	D	C	D	C	D
St Hilliers Rd/Hall St	Average Delay (sec/veh)	<15	<15	<15	<15	<15	<15
	Level of Service (LOS)	A/B	A/B	A/B	A/B	A/B	A/B
St Hilliers Rd/Rawson St/Boorea St	Average Delay (sec/veh)	37	46	39	48	39	48
	Level of Service (LOS)	C	D	C	D	C	D
Boorea St/Percy St	Average Delay (sec/veh)	<15	16	<15	<15	<15	<15
	Level of Service (LOS)	A/B	B	A/B	A/B	A/B	A/B
Percy St/Hall St	Average Delay (sec/veh)	<15	<15	<15	<15	<15	<15
	Level of Service (LOS)	A/B	A/B	A/B	A/B	A/B	A/B

31. Examination of Table 3 reveals the following:

- Existing traffic flows plus approved development traffic plus proposed additional modified development traffic

    - the signalised intersections of Parramatta Road/Silverwater Road/St Hilliers Road and St Hilliers Road/Rawson Street/Boorea Street will continue to operate with average delays of less than 40 seconds per vehicle in the morning and less than 50 seconds per vehicle in the afternoon peak periods. This represents level of service C and D respectively for the morning and afternoon peak periods, which are satisfactory levels of service;

- the signalised intersection of Silverwater Road and the on and off ramps to/from the M4 Motorway will continue to operate at level of service B during peak periods. Average delays will be 28 seconds per vehicle during the morning and 25 seconds per vehicle during the afternoon peak periods. This represents a good level of intersection operation;

- the signalised intersection of St. Hilliers Road and Hall Street will continue to operate with average delays of less than 15 seconds per vehicle in the morning and afternoon peak periods. This represents level of service A/B, a good level of intersection operation; and

- the priority controlled intersections of Boorea Street/Percy Street and Percy Street/Hall Street will continue to operate with average delays, for the movement with the highest average delay, of less than 15 seconds per vehicle in the morning and afternoon peak periods. This represents level of service A/B, a good level of service

32. With the additional development traffic, intersections in the vicinity of the site will continue to operate at the same level of service as today. Therefore, the road network will be able to cater for the proposed modified development traffic.

Summary

33. In summary, the main points relating to the traffic and parking implications of the proposed modifications are as follows:

i) the proposed modifications include the following:

- reduction in warehouse area from 19,228m^2 to 18,305m^2 and an increase in ancillary office area from 1,220m^2 to 1,600m^2;
- increase in the size of the customer pick-up facility from 135m^2 to 235m^2, including provision of an additional pick-up store and two additional pick-up bays;
- modification to the inbound and outbound loading dock arrangements (reduction of one inbound and one outbound loading bay);
- reduction in staff parking spaces from 150 spaces to 144 spaces;
- provision of eight additional customer waiting bays adjacent to the customer pick-up up facility; and

- introduction of boom gate access controls on the inbound and outbound loading dock driveways, and staff parking area

ii) parking provision is appropriate;

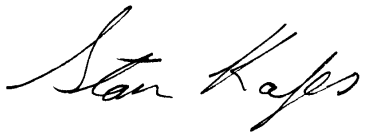
iii) access, internal circulation, servicing and parking layouts are appropriate;

iv) the modifications to the customer pick-up facility would result in an additional traffic generation of some 10 customer pick-ups per hour during peak periods;

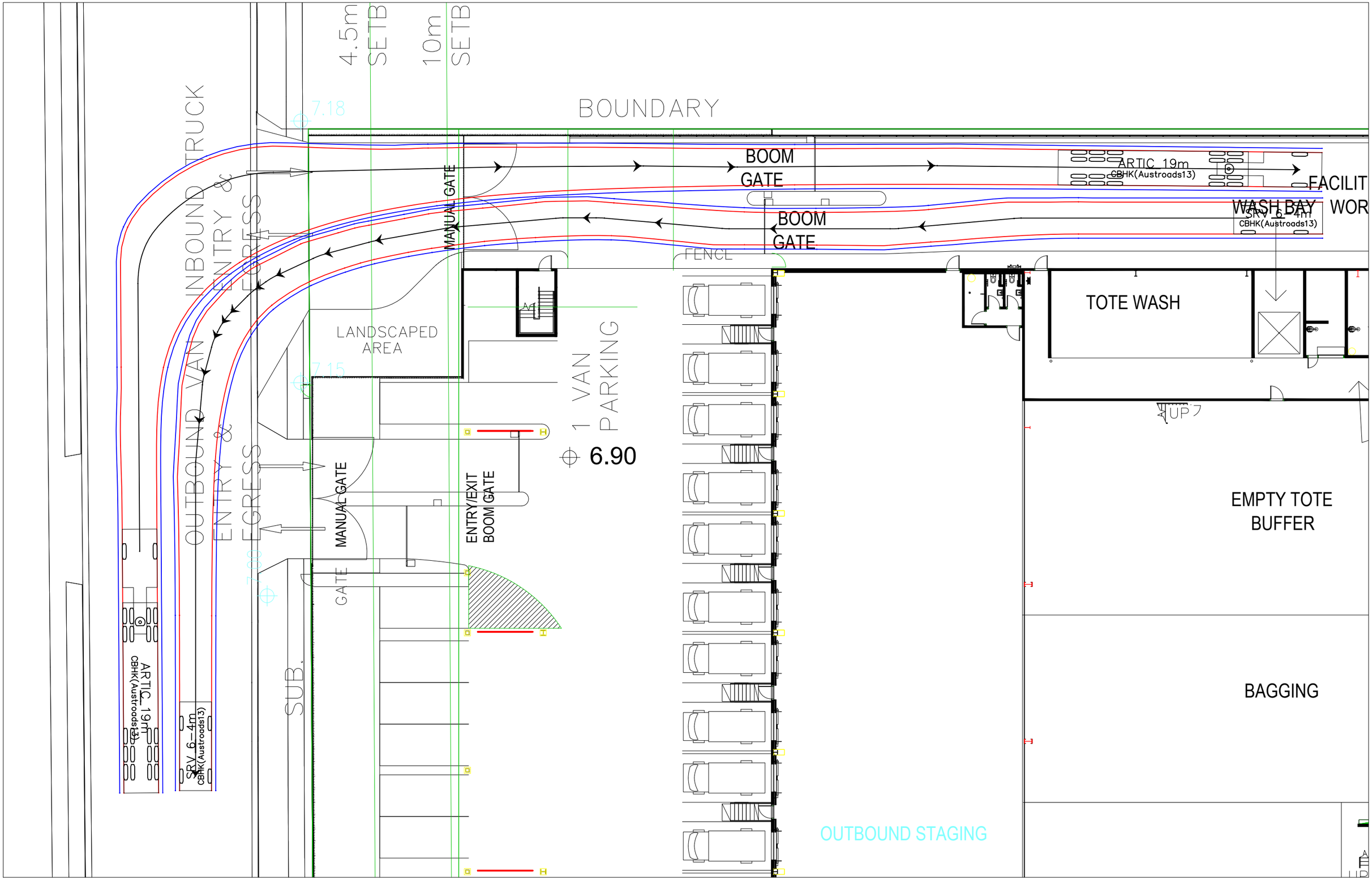
v) the surrounding intersections will continue to operate at the same level of service as today.

34. We trust the above provides the information you require. Finally, if you should have any queries, please do not hesitate to contact us.

Yours faithfully,
COLSTON BUDD ROGERS & KAFES PTY LTD



S. Kafes
Director



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

19.0m ARTICULATED AND 6.4m SMALL RIGID VEHICLE SWEPT PATHS

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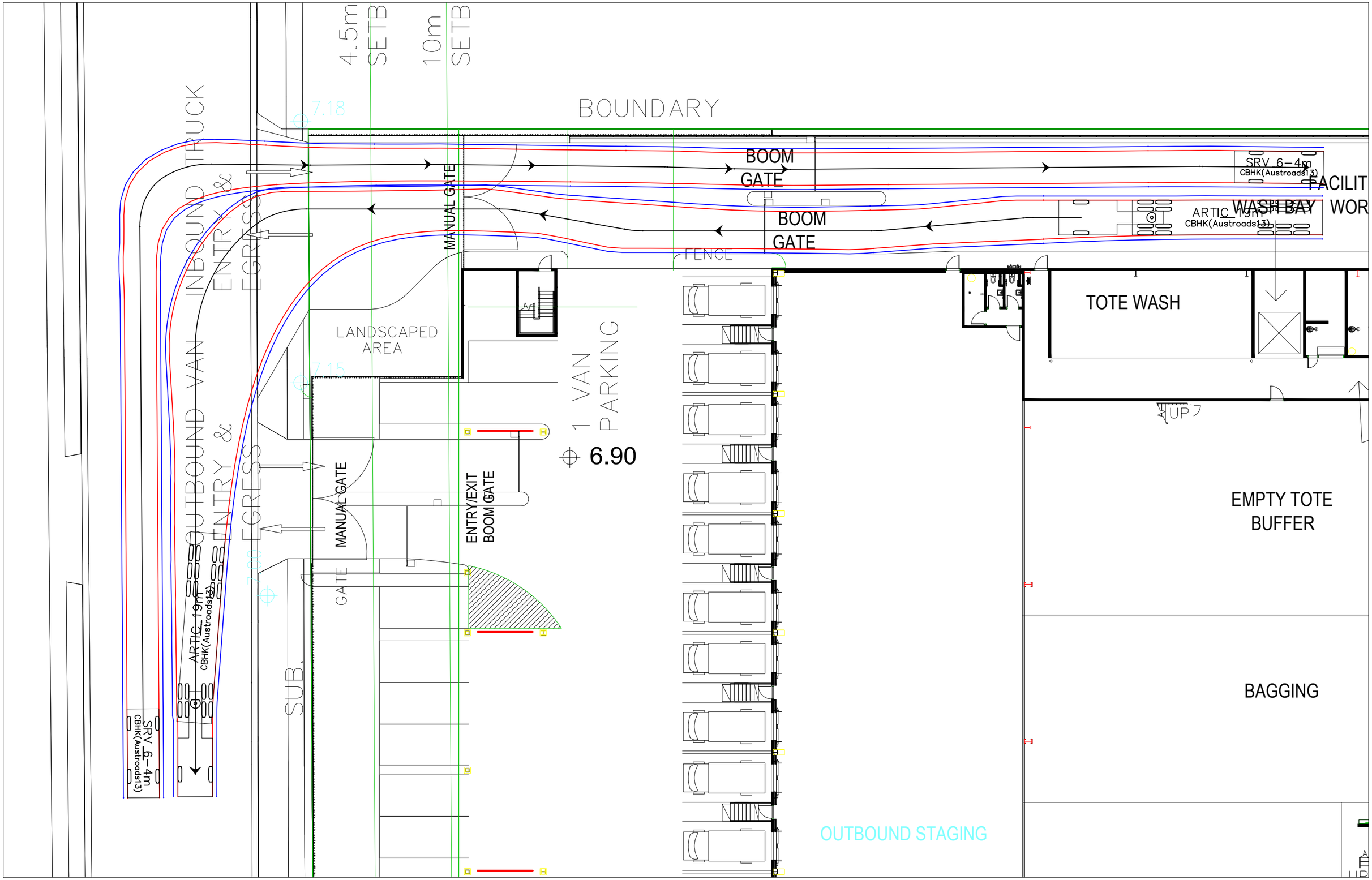
1



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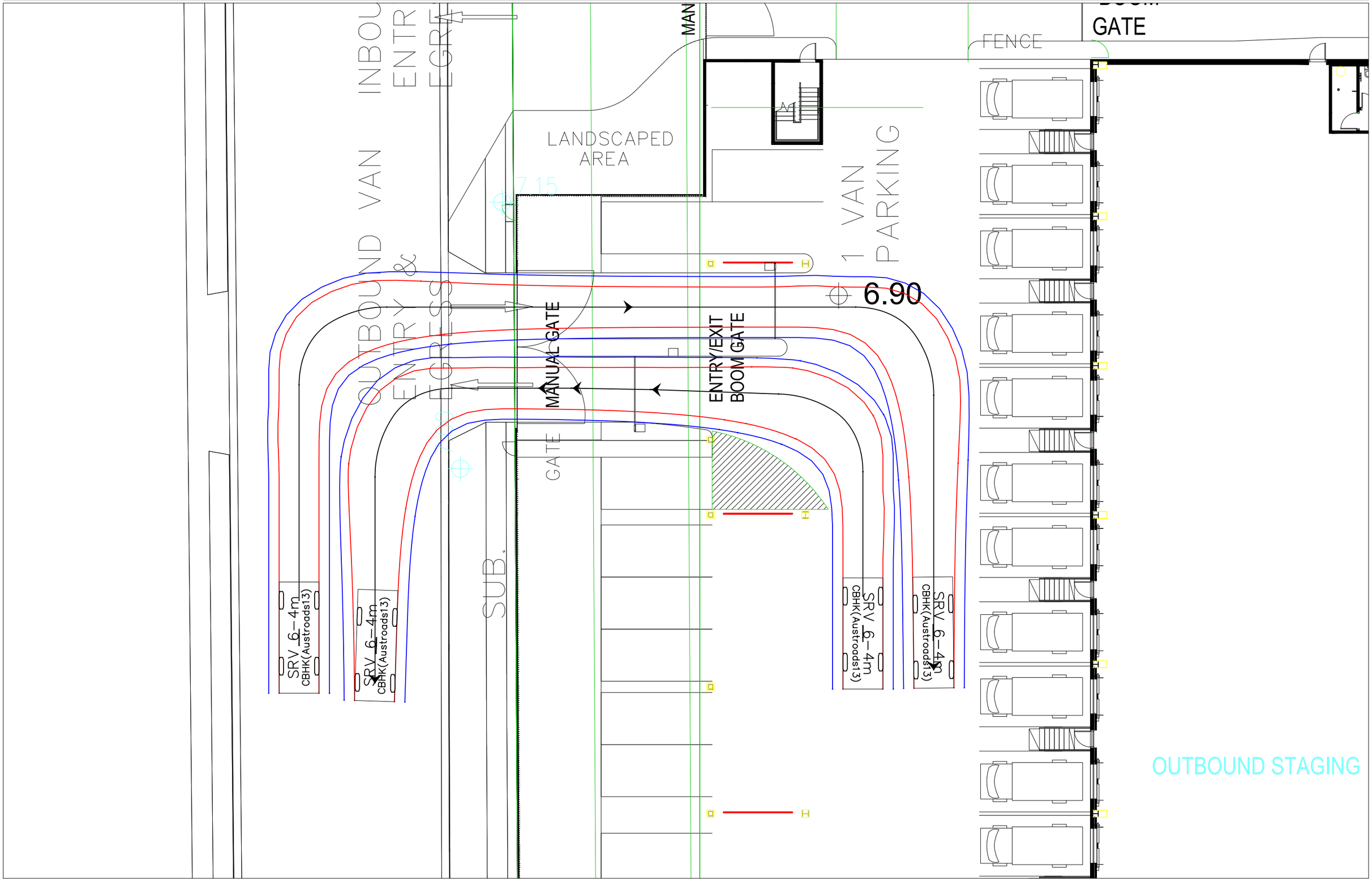

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6.4m SMALL RIGID VEHICLE SWEPT PATHS

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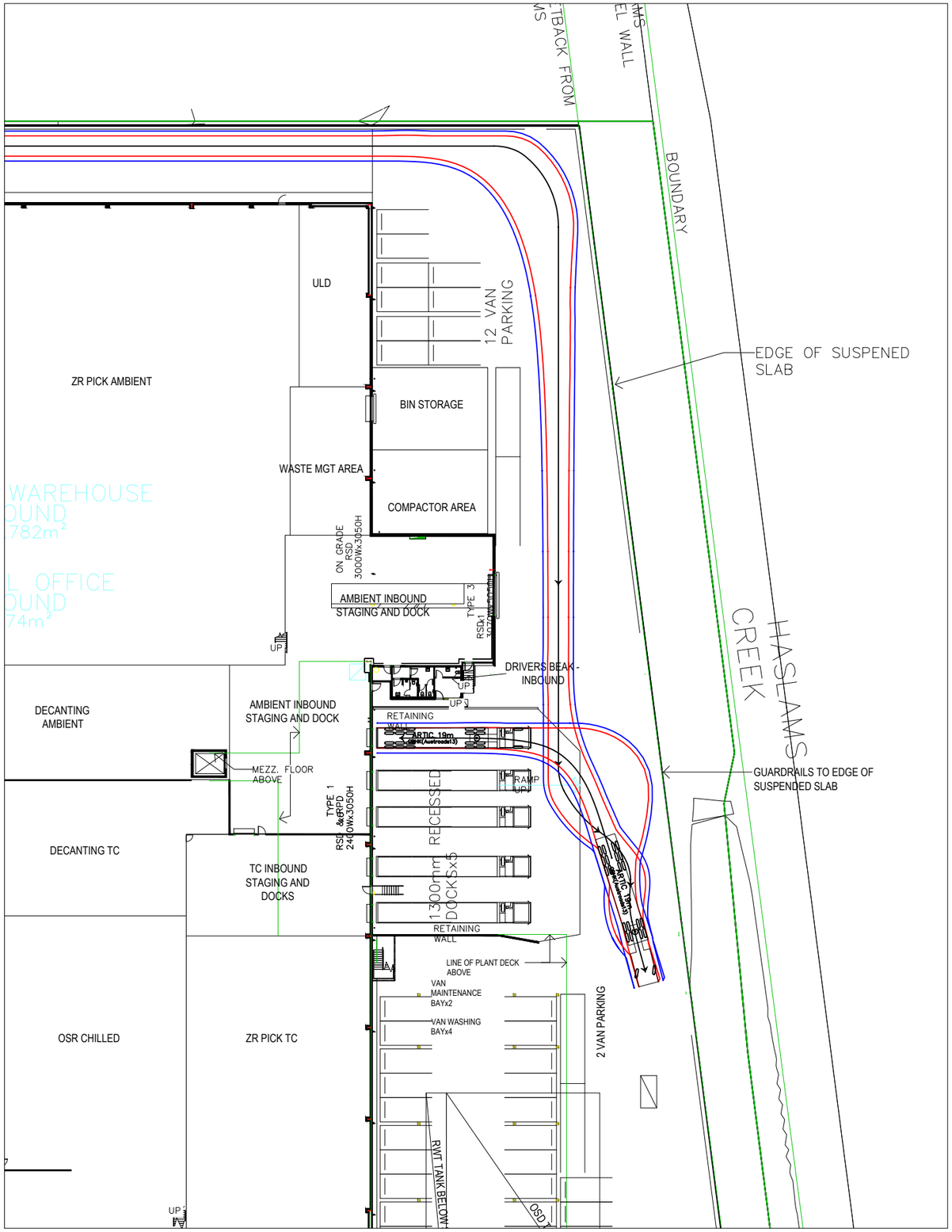

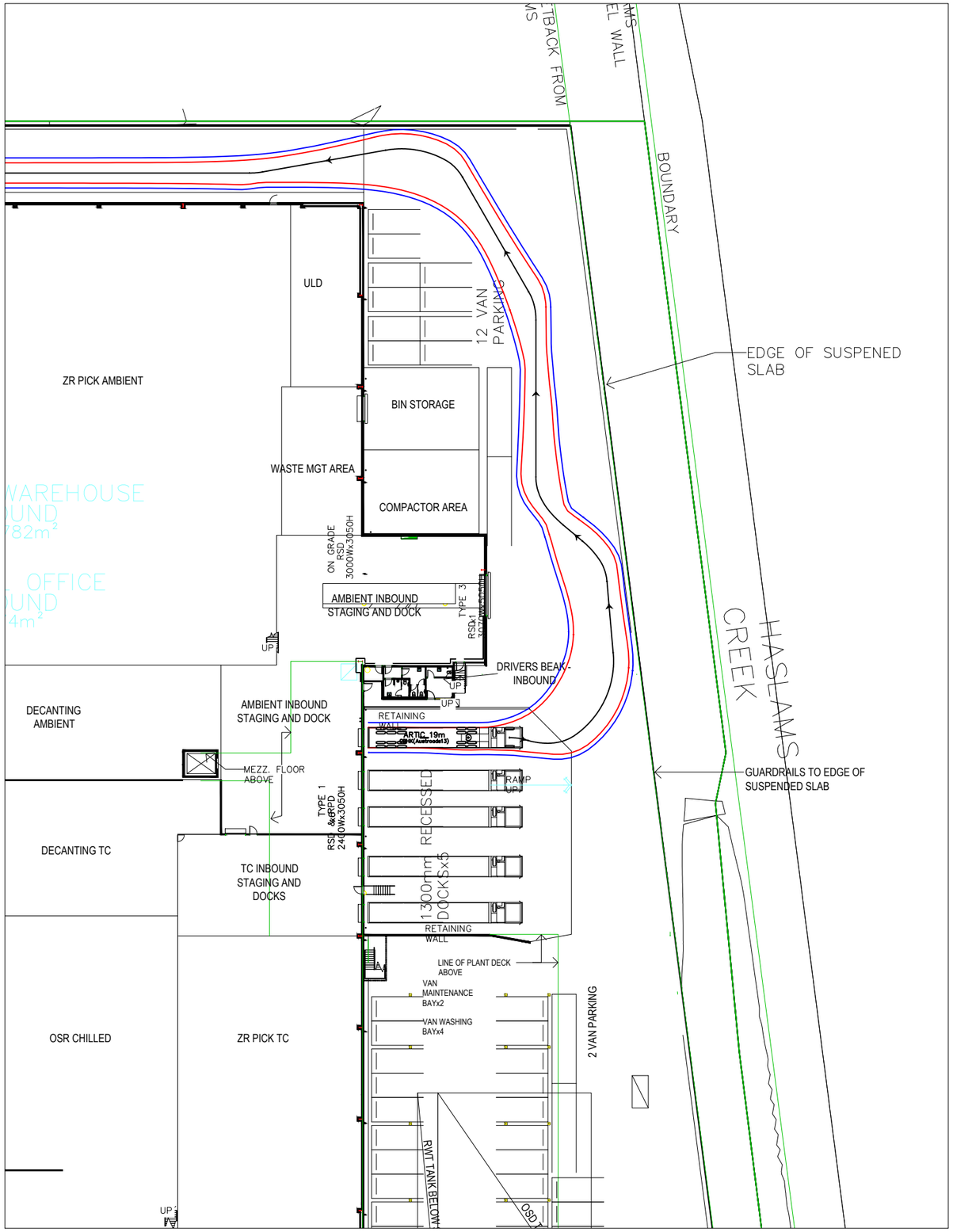

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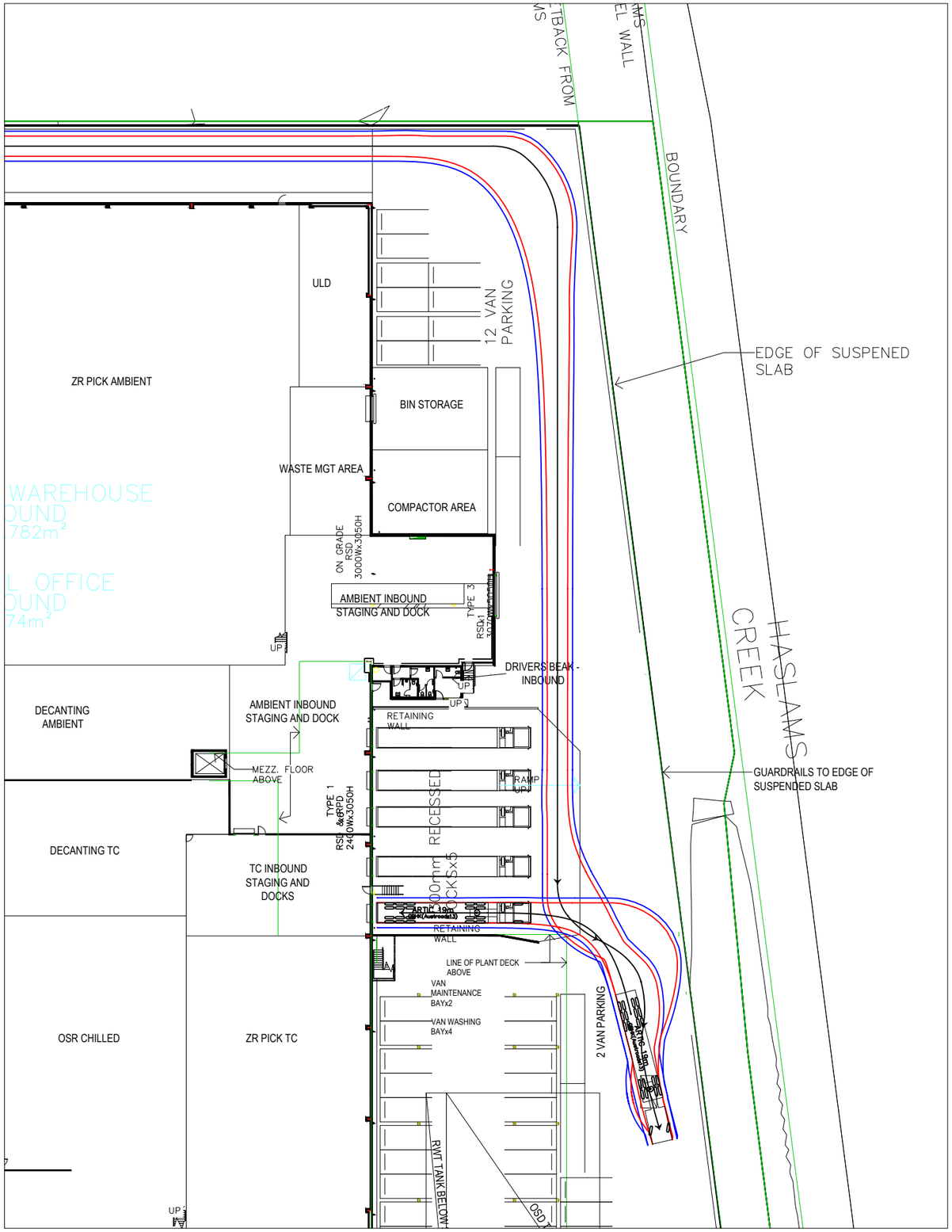

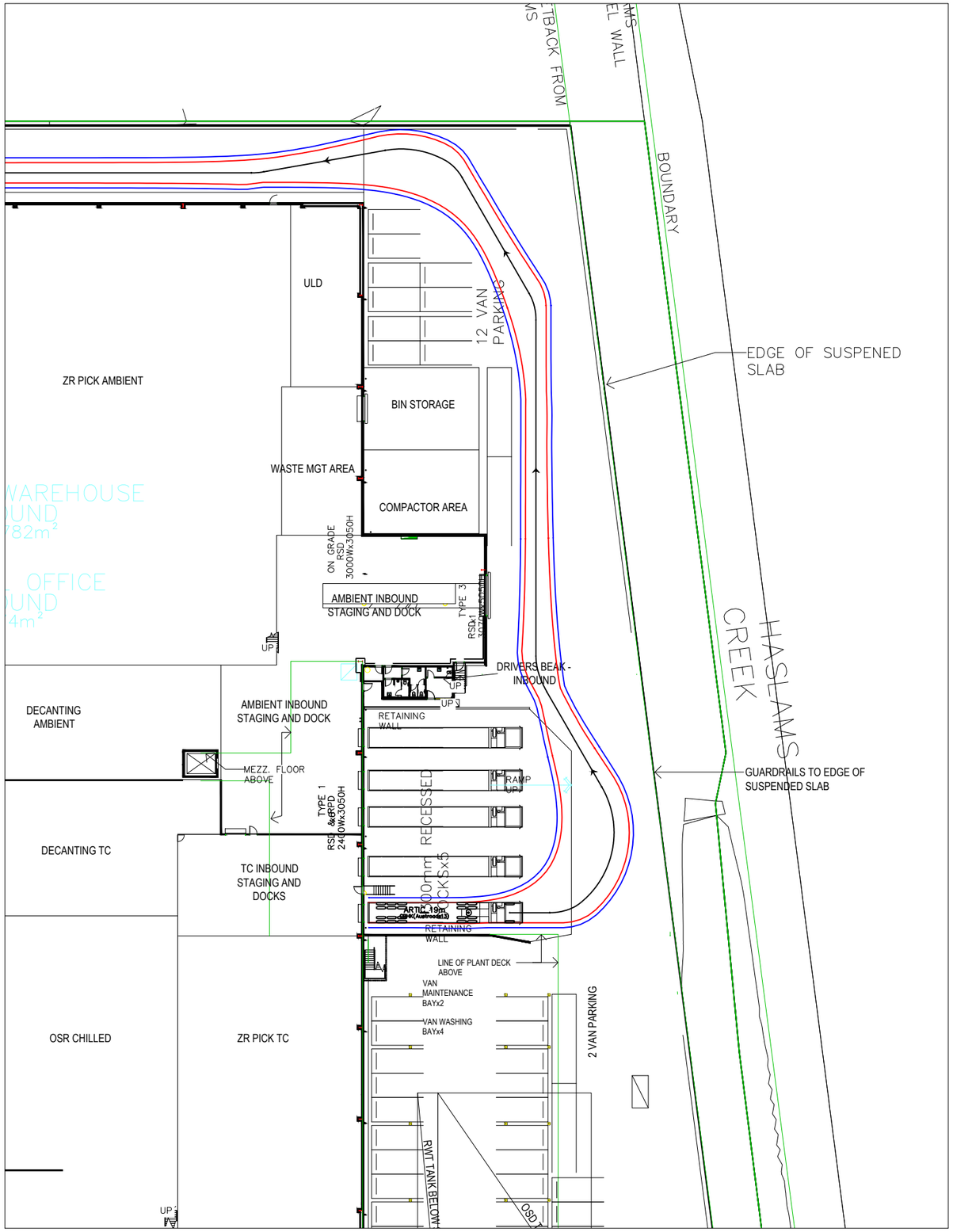

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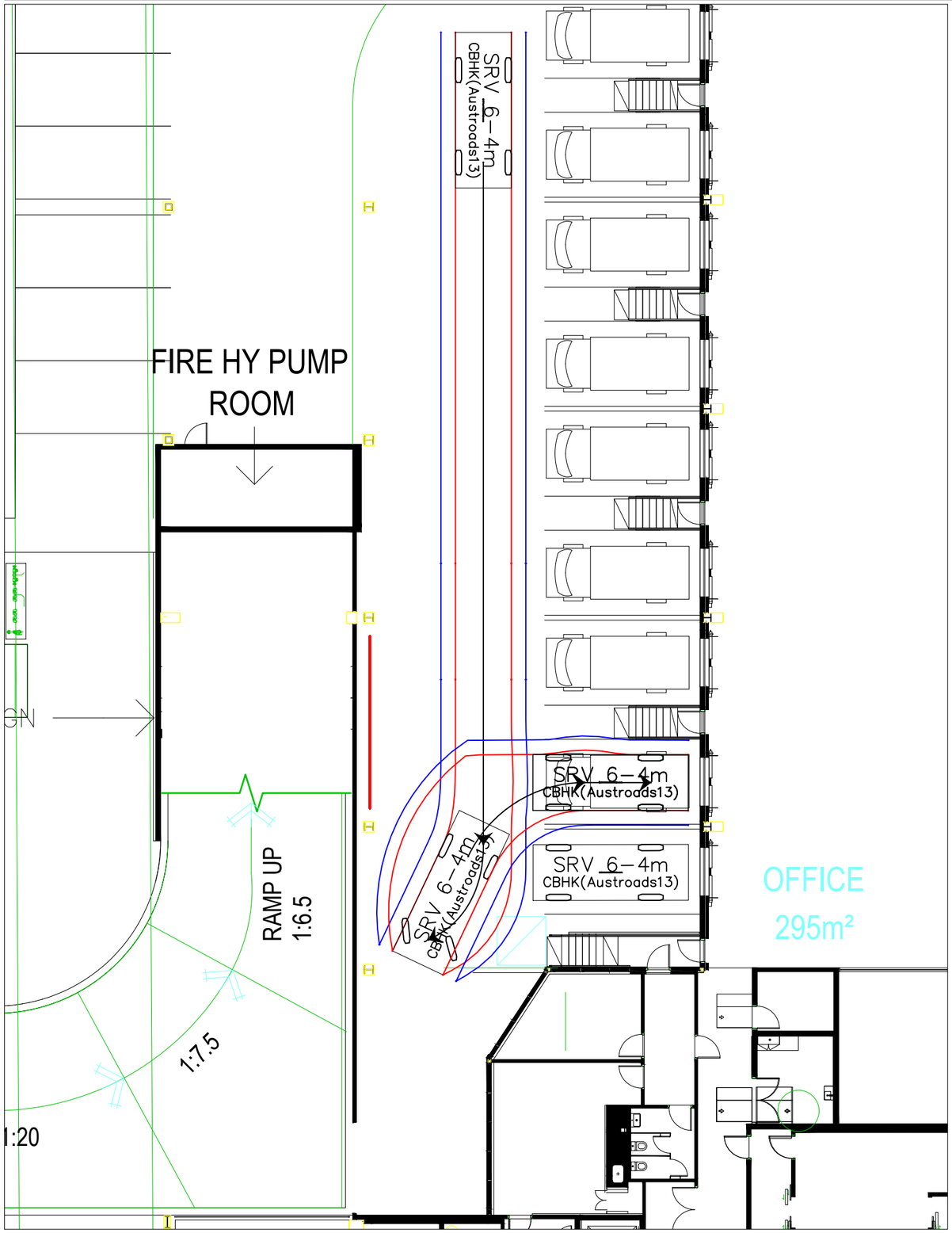

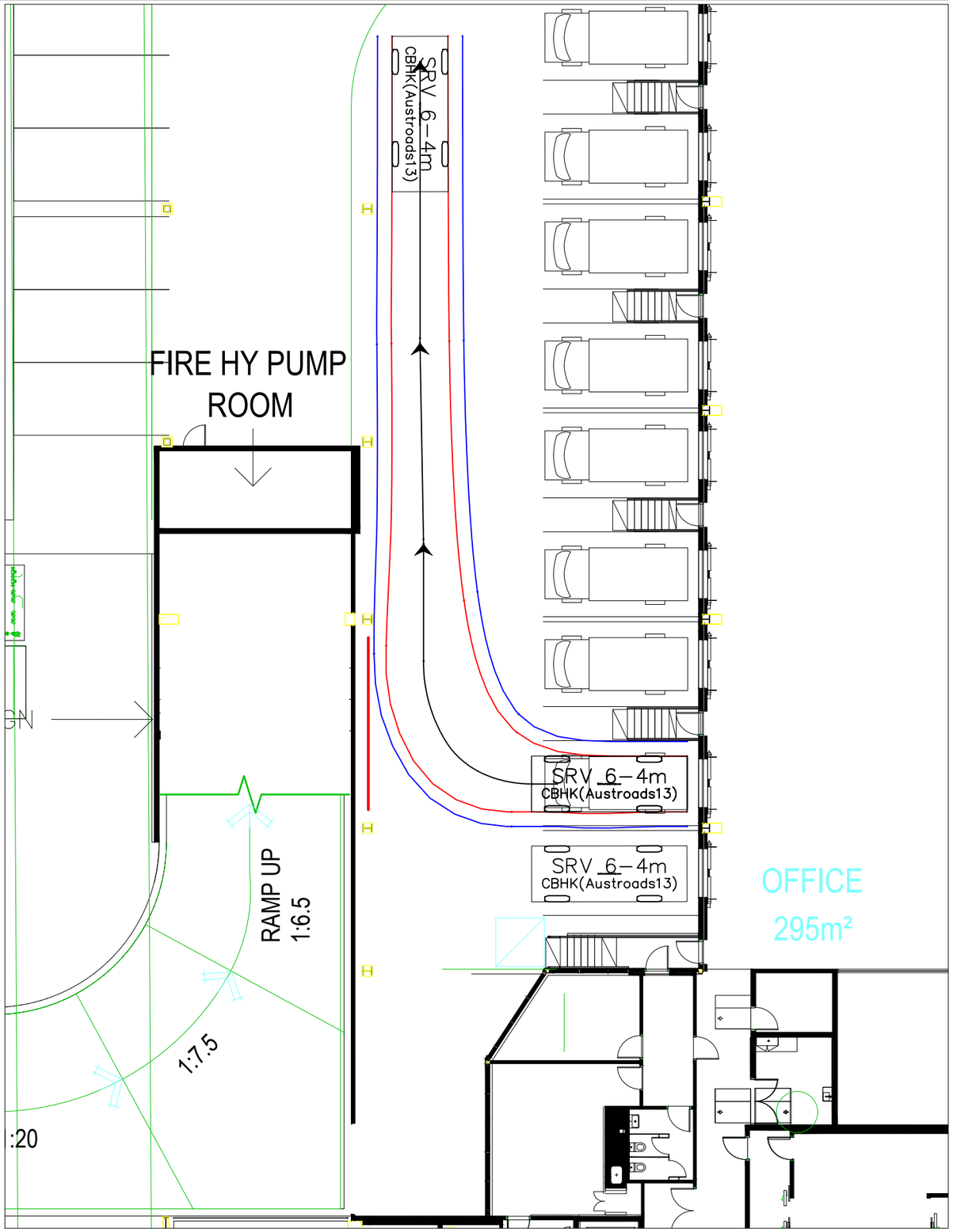

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6.4m SMALL RIGID VEHICLE SWEPT PATHS

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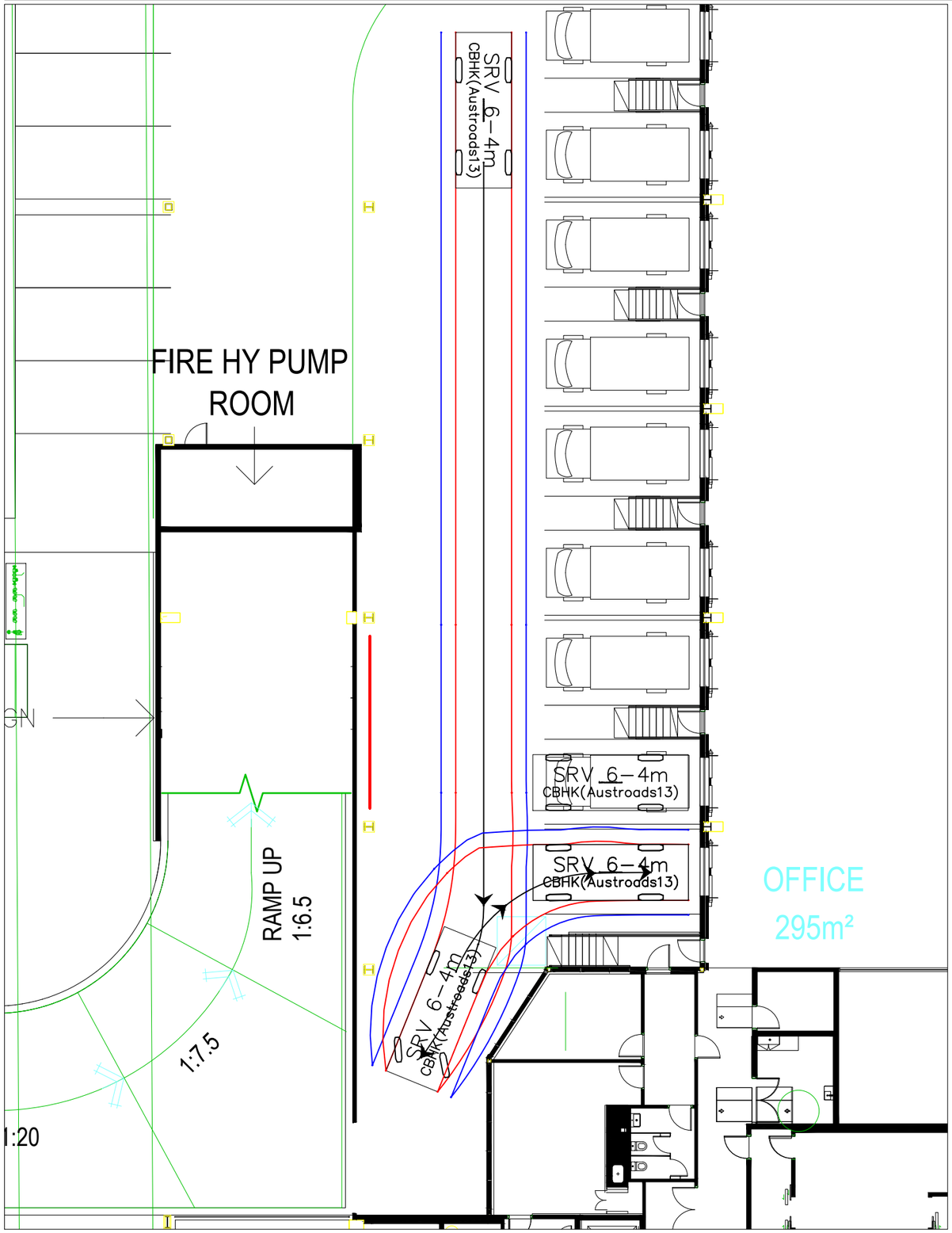

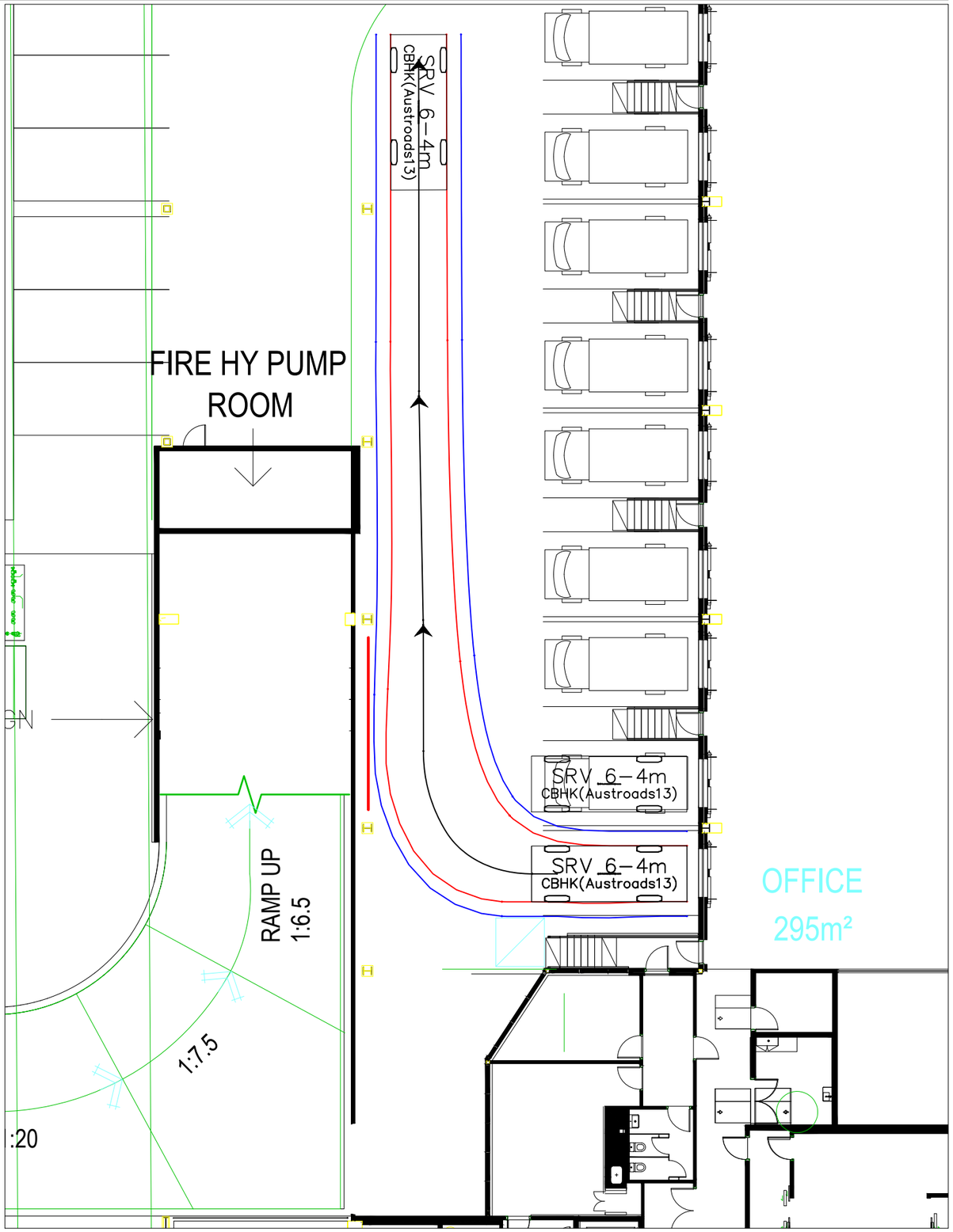

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6.4m SMALL RIGID VEHICLE SWEPT PATHS

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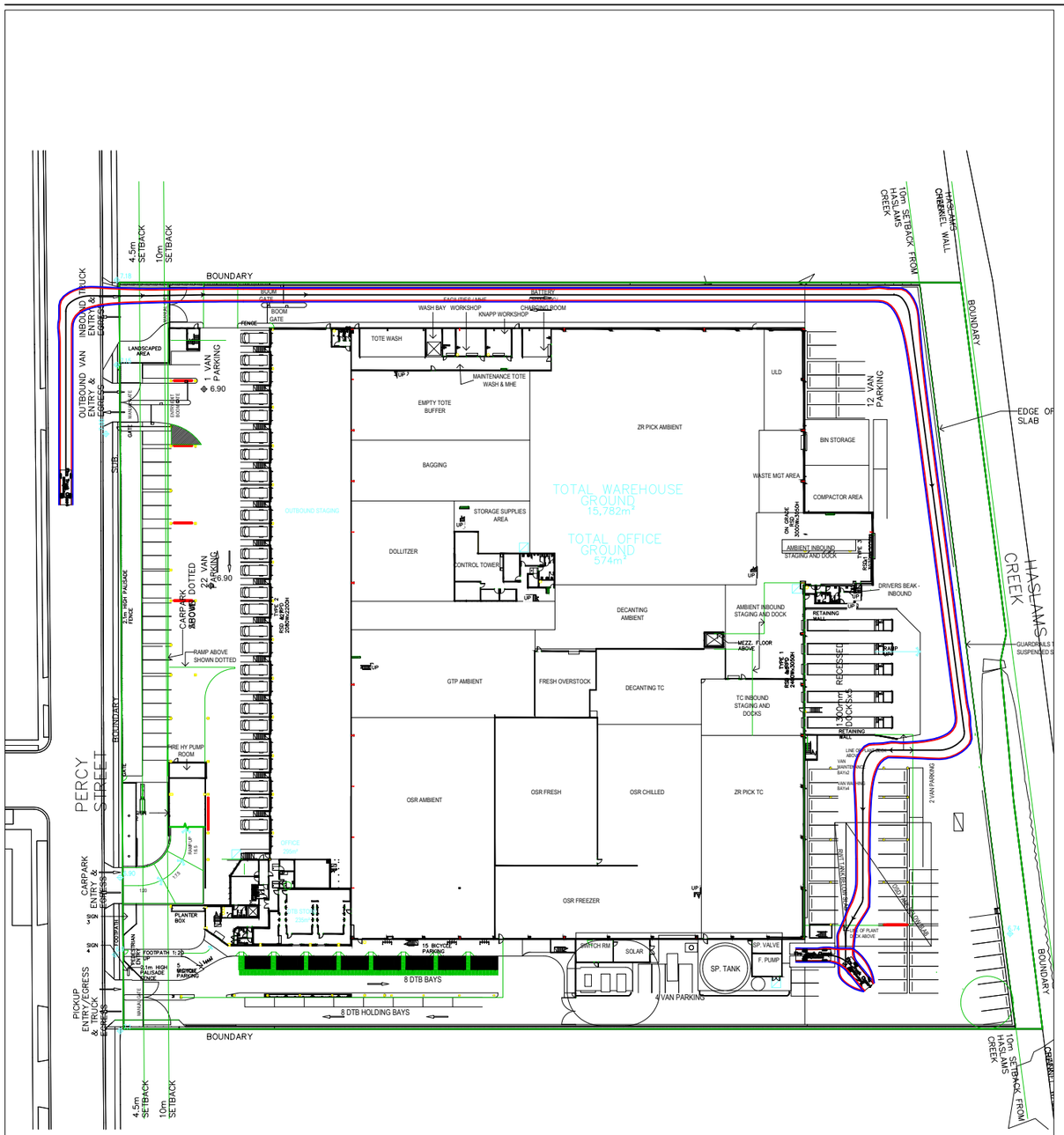

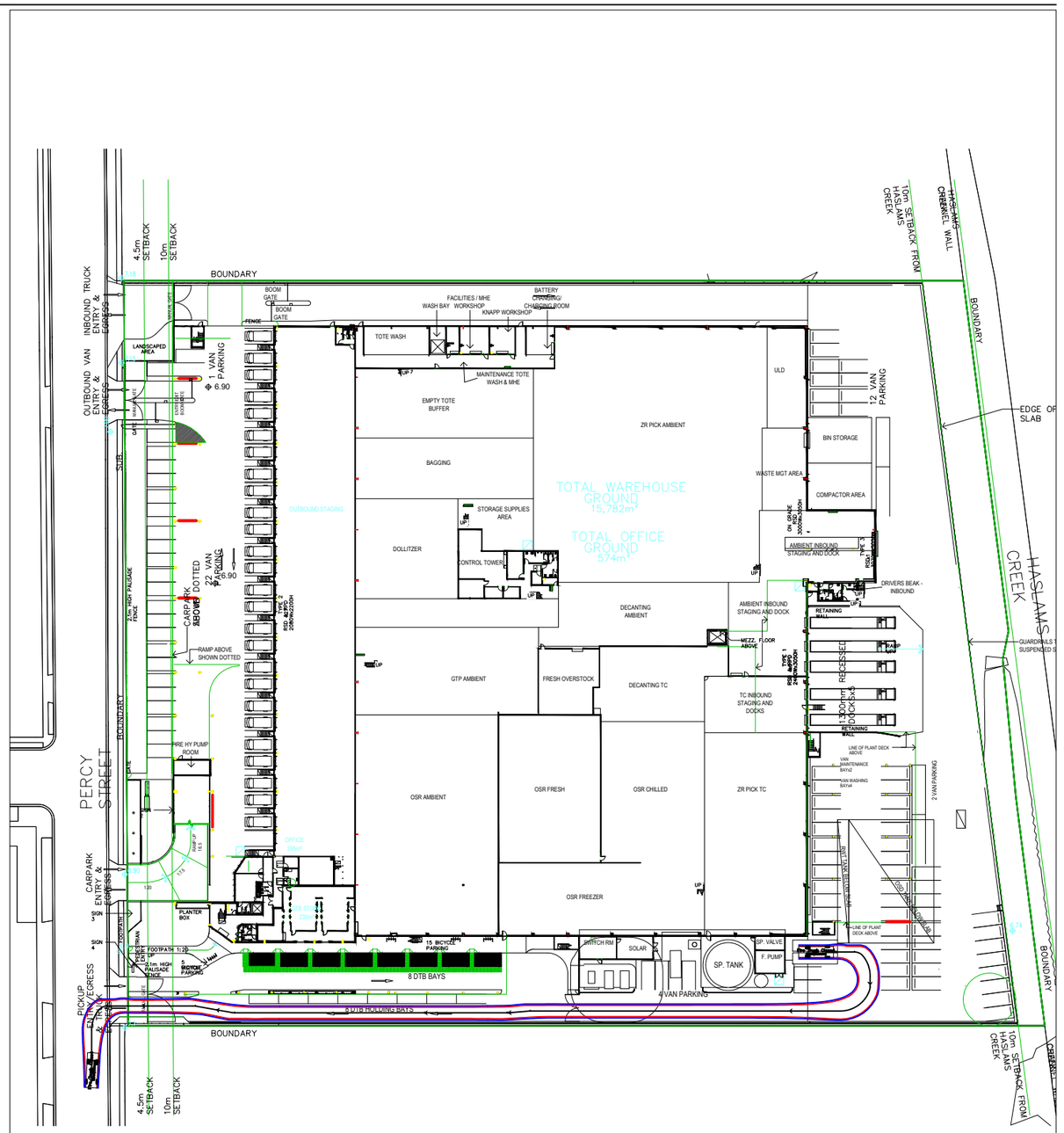

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Swept Path of Vehicle Body
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7.75m FIRE TRUCK VEHICLE SWEPT PATHS

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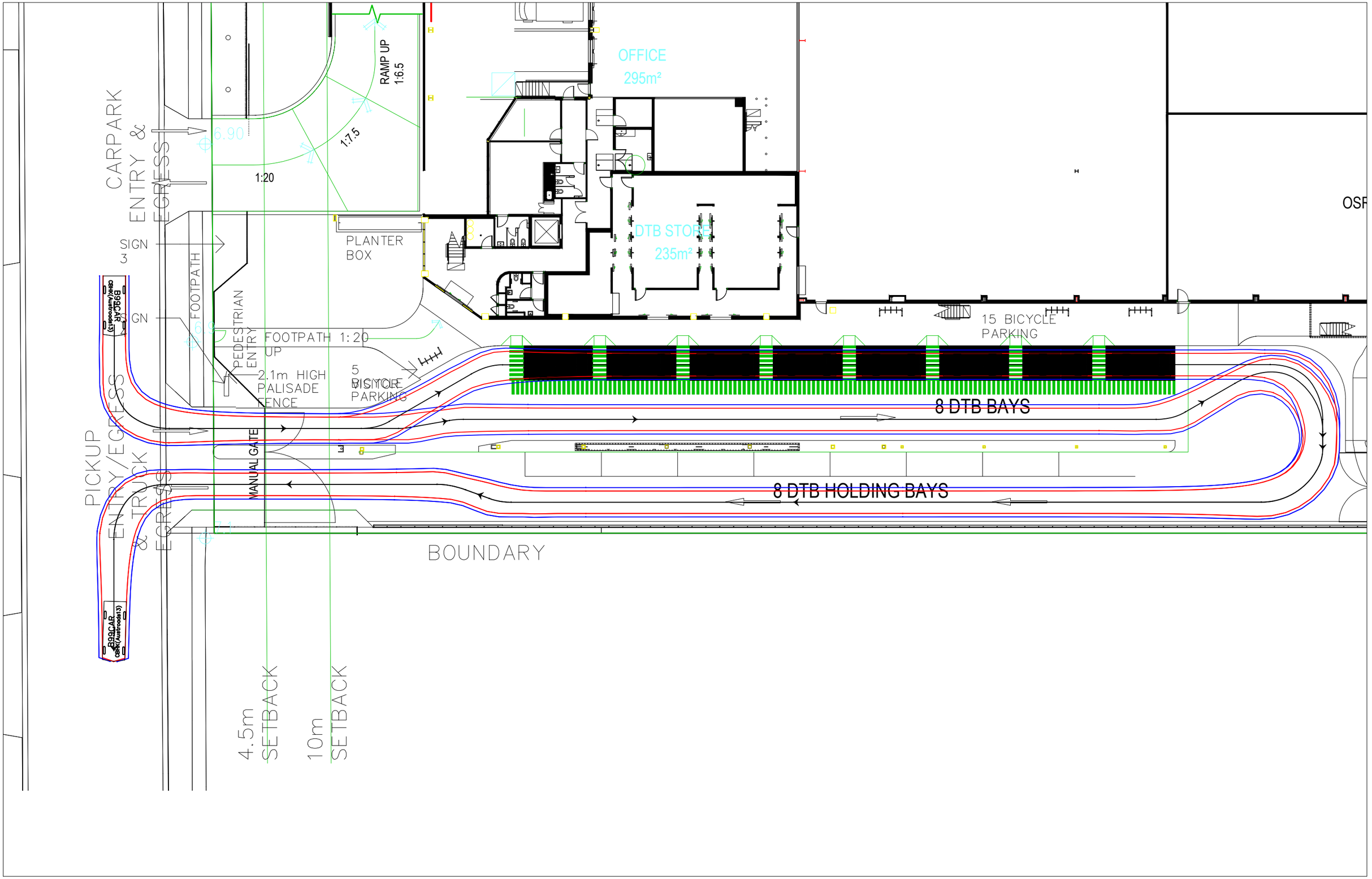

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Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

B99 VEHICLE SWEPT PATHS

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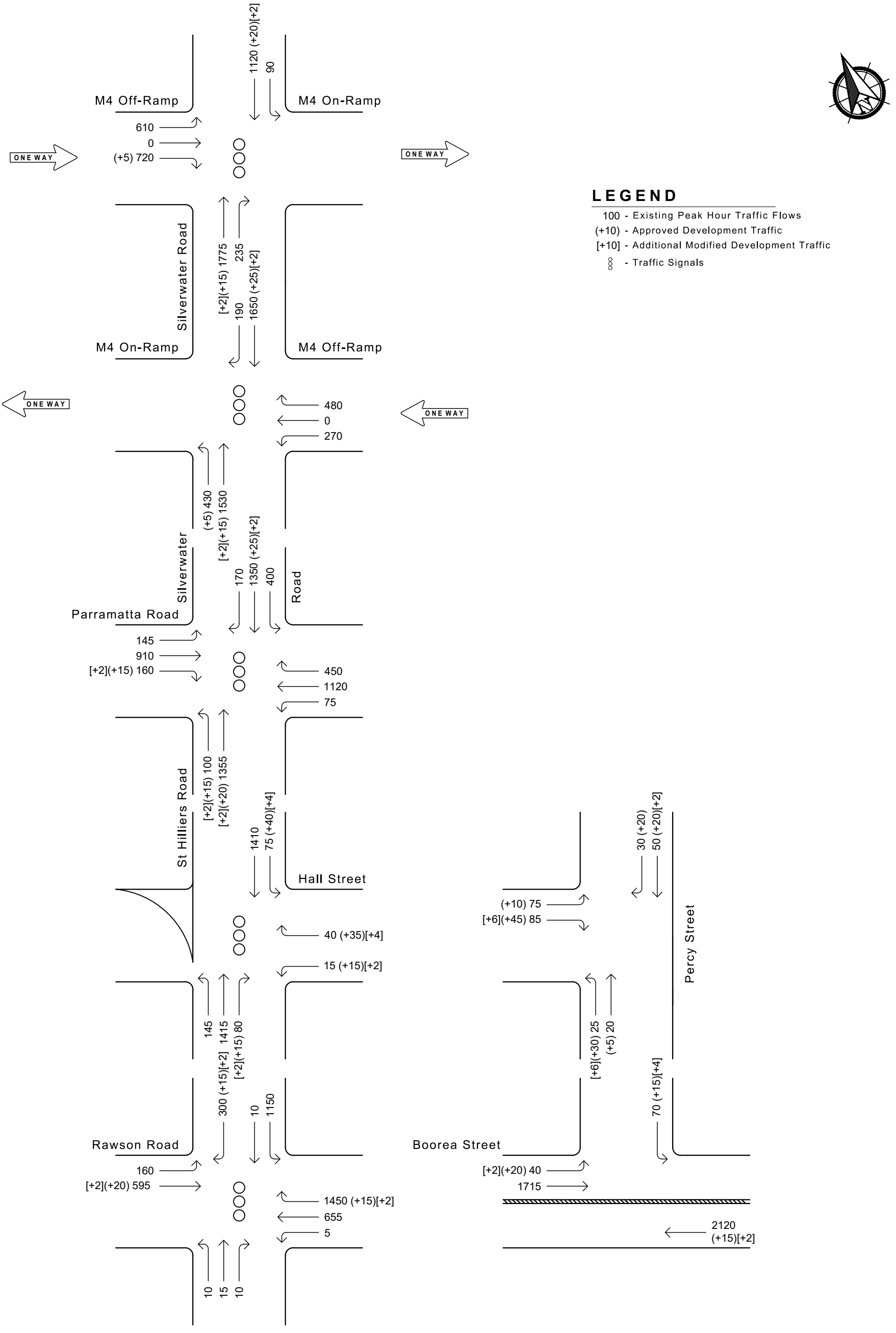


LEGEND

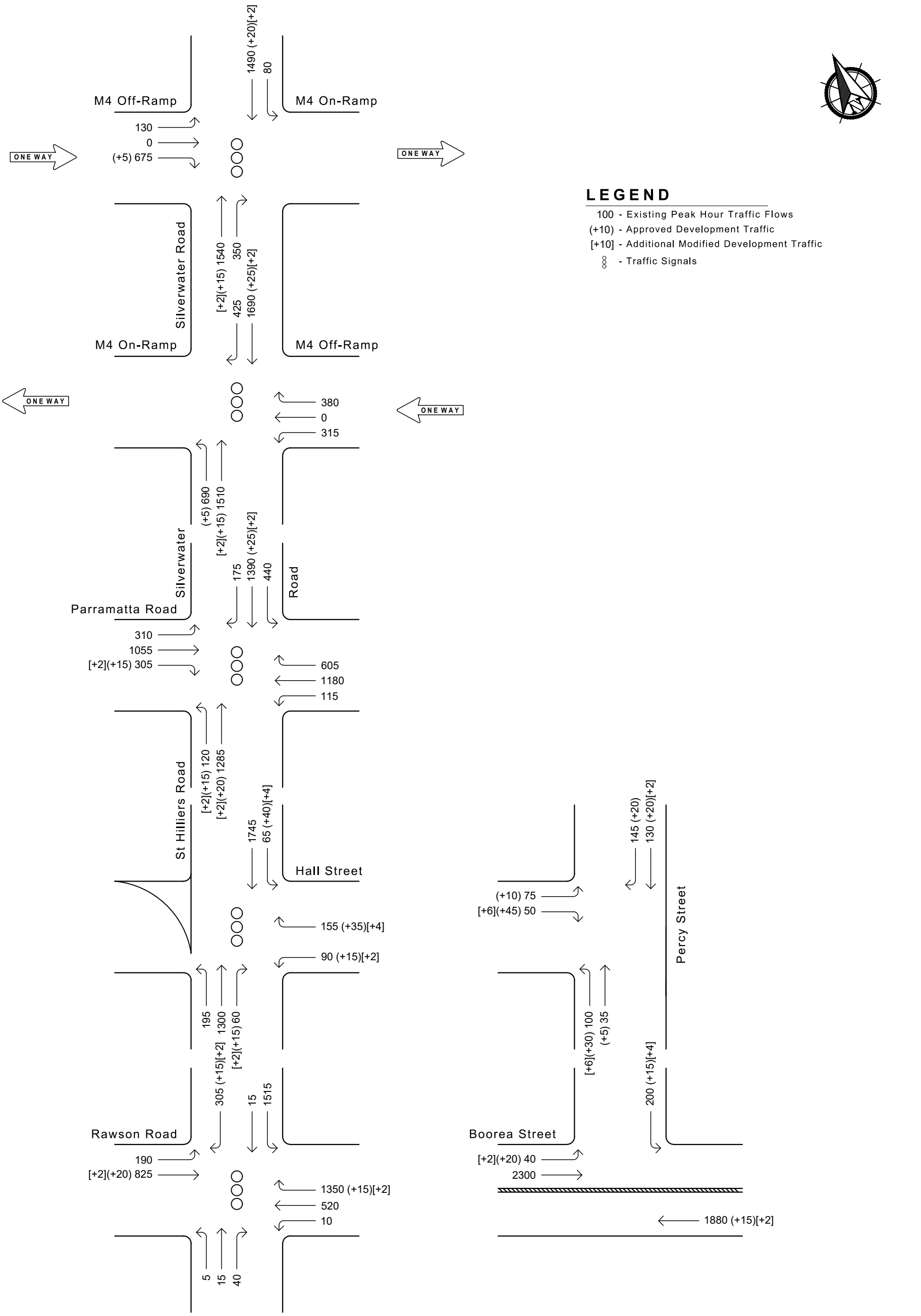
100 - Existing Peak Hour Traffic Flows
(+10) - Approved Development Traffic
[+10] - Additional Modified Development Traffic
- Traffic Signals

Existing weekday morning peak hour traffic flows plus development traffic

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11555 09.12.2020

Figure 10



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Approved Development Traffic
[+10] - Additional Modified Development Traffic
- Traffic Signals

Existing weekday afternoon peak hour traffic flows plus development traffic

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11555 09.12.2020

Figure 11