HYDROX NOMINEES PTY LTD

TRANSPORT ASPECTS OF PLANNING PROPOSAL FOR PROPOSED MASTERS STORE, MACQUARIE PARK

JULY 2013

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1. INTRODUCTION

1.1 Colston Budd Hunt and Kafes Pty Ltd has been commissioned by Hydrox Nominees Pty Ltd to undertake the transport aspects of a planning proposal to permit a new Masters store on the former Peter Board High School site in Macquarie Park. The site location is shown in Figure 1.

1.2 The site has consent for a commercial development of 27,340m^2, with vehicular access from Wicks Road to on-site parking. The planning proposal would provide for a Masters store of some 13,706m^2 on the southern part of the site. Vehicular access would be provided from Wicks Road and Waterloo Road.

1.3 The transport aspects the planning proposal are set down in the following chapter.

2. TRANSPORT ASPECTS OF PLANNING PROPOSAL

2.1 The transport aspects of the planning proposal are set down through the following sections:

- site location and road network;
- approved development;
- road network changes;
- proposed development;
- policy context;
- public transport, walking and cycling;
- parking provision;
- access arrangements and servicing;
- traffic generation; and
- summary.

Site Location and Road Network

2.2 The subject site is the former Peter Board High School and is located within the Macquarie Park employment zone, as shown in Figure 1. The site has frontage to Epping Road to the south, Wicks Road to the east and Waterloo Road to the north. Surrounding land use is predominantly commercial (in Macquarie Park), with residential development on the southern side of Epping Road.

2.3 Epping Road is a major arterial road located on the southern boundary of the site. Through Macquarie Park it provides a six lane divided carriageway with three traffic lanes in each direction, clear of intersections. West of the site, Epping Road has a major intersection with Lane Cove Road. The through movement on Epping

Road is grade separated. Movements to and from Lane Cove Road are controlled by traffic signals. The eastbound on ramp from Lane Cove Road merges with Epping Road along the frontage of the site.

2.4 East of the site, Epping Road intersects with Wicks Road at a traffic signal controlled intersection. Along the frontage of the site Wicks Road provides one traffic lane in each direction. Additional traffic lanes are provided in both directions on Wicks Road closer to the intersection with Epping Road.

2.5 Waterloo Road is north of the site and connects Wicks Road with Lane Cove Road. It also provides a major access into the centre of Macquarie Park. The intersection of Waterloo Road and Wicks Road is a priority controlled t-intersection with Wicks Road the major road. Wicks Road is a dead-end north of Waterloo Road.

2.6 There is a large indentation and service road on the southern side of Waterloo Road, adjacent to the site, which was previously used by buses servicing the high school. The service road also provides access to and from the child care centre on the northern part of the site.

Approved Development

2.7 The site has consent for a commercial development of 27,340m^2, with vehicular access from Wicks Road to on-site parking.

2.8 Two internal roads, Road No. 3 (connecting from Wicks Road and running west into the site) and Road No. 11 (running north from Road No. 3 towards Waterloo Road) are approved as part of the development. These roads would become public roads, dedicated to Council.

Road Network Changes

2.9 As the site is located within the Macquarie Park Corridor, new development is subject to the guidelines included in the Macquarie Park Corridor Structure Plan.

2.10 Figure 4.05.05 of the structure plan identifies the future fine grain street network for the area. This includes new roads through the subject site, in a north-south direction through the site (connecting Waterloo Road with Epping Road) and in an east-west direction through the middle of the site (forming part of a connection between Wicks Road and Lane Cove Road). As large parcels of land are redeveloped within the Macquarie Park Corridor, a number of these roads are being constructed. As noted above, the consent for the approved development on the site includes construction of parts of these roads through the site.

2.11 As part of a long term strategy (2031) to improve traffic flow within the Macquarie Park Corridor, Council has identified a number of major works including grade separating the intersection of Wicks Road and Epping Road and upgrading the intersection of Lane Cove Road and Waterloo Road.

Proposed Development

2.12 The planning proposal would provide for a Masters store of some 13,706m^2 on the southern part of the site. Vehicular access would be provided from Wicks Road (Road 3) and Waterloo Road (Road 11). Road 11 is proposed, in association with the planning proposal, to connect to Waterloo Road. On-site parking and service vehicle areas are proposed.

Policy Context

2.13 There are a number of strategic state policies which are relevant to future development in the Sydney metropolitan area. The policies include NSW 2021, the draft Metropolitan Strategy for Sydney to 2031 and The NSW Long Term Transport Master Plan. These policies are discussed below.

- NSW 2021

2.14 NSW 2021: A Plan to Make NSW Number One sets targets to increase the proportion of commuter trips made by public transport for various areas within Sydney by 2016, including:

- 80 per cent in the Sydney CBD;
- 50 per cent in the Parramatta CBD;
- 20 per cent in the Liverpool CBD; and
- 25 per cent in the Penrith CBD.

2.15 It also has targets to:

- improve road safety, reduce fatalities to 4.3 per 100,000 population by 2016;
- double the mode share of bicycle trips made in the metropolitan area by 2016; and
- increase the proportion of the population living within 30 minutes by public transport of a city or major centre in the metropolitan area.

- Draft Metropolitan Strategy for Sydney to 2031

2.16 The draft Metropolitan Strategy for Sydney to 2031 provides a strategic plan to accommodate an additional 1.3 million people, 545,000 houses and 625,000 jobs.

2.17 It identifies a Global Economic Corridor for provision of much of the new employment, encompassing Port Botany, Sydney Airport, the CBD, North Sydney, St Leonards, Chatswood and Macquarie Park, with extension towards Norwest and Parramatta. A number of Urban Activation Precincts will be provided in this area.

2.18 Other key areas in the strategy include Sydney Harbour, Parramatta, the Parramatta Road Corridor, Anzac Parade Corridor, North West Rail Link Corridor, Western Sydney Employment Area and the Metropolitan Rural Area.

2.19 The draft strategy identifies the following objectives for housing, employment and transport:

- provide 27,500 new houses per year, across all of Sydney's six sub-regions;
- provide higher densities closer to major centres;
- provide appropriate land to support jobs growth, including new business parks and industry clusters and hubs;
- provide cross-city transport connections;
- provide appropriate infrastructure to facilitate business growth, including an efficient port, airport and freight network, telecommunications and educational facilities;
- use of the Urban Activation Precincts to demonstrate greater use of public transport, walking and cycling, and integrating land use and transport;

- improve travel times and reduce congestion through improvements to six high priority transport corridors (Parramatta – CBD via Strathfield, Parramatta – CBD via Ryde, Liverpool – Sydney Airport, Sydney Airport – CBD, Mona Vale – Sydney CBD and Rouse Hill – Macquarie Park);
- key transport measures, as outlined in the NSW Long Term Transport Master Plan) to support the strategy;
- provision of other infrastructure, including schools and hospitals, to support the identified growth; and
- improved environmental management by use of resources and energy more efficiently, better planning for natural disasters and increased green space.

- NSW Long Term Transport Master Plan

2.20 The NSW Long Term Transport Master Plan has been developed, in association with the Sydney Metropolitan and Regional Strategies and State Infrastructure Strategy, to support NSW 2021. The key measures identified are as follows:

- providing a fully integrated transport system;
- providing a modern railway system and increase capacity by 60 per cent;
- providing a modern light rail system in the CBD;
- providing a modern bus system to complement the rail networks;
- connect the motorway network, including WestConnex, F3/M2 link and F6;
- reduce congestion in the CBD, including removing the monorail, increasing light rail, improving pedestrian links, increasing ferry use, providing increased capacity on the rail system and improved walking and cycling infrastructure;
- support the growth of new economic centres including the north west and south west rail links, new roads in growth areas and new bus infrastructure;
- connect regional communities through major highway upgrades, and improved rail, bus and air services;

- improve freight efficiency and productivity;
- improve access to Sydney Airport and Port Botany;
- boost walking, cycling and its integration with public transport; and
- preserve future transport corridors.

Public Transport, Walking and Cycling

2.21 Local bus services are provided by Sydney Buses, Hillsbus, Busways and Forest Coach Lines. The site is adjacent to bus services which operate along Epping Road. Services also operate along Waterloo Road, Wicks Road and Lane Cove Road (north, south and west of the site respectively). Services include:

- route 140: Manly, Fairlight, Balgowlah, The Spit, Spit Junction, Cremorne, Neutral Bay, Crows Nest, St Leonards, Gore Hill, Artarmon, Lane Cove, North Ryde, Macquarie Centre, Macquarie University, Epping;
- route 197: (Lane Cove Road) Gordon Station/Macquarie University to St Ives Chase/Mona Vale;
- route 290: Epping, Macquarie University, Macquarie Centre, North Ryde, Lane Cove, St Leonards, Crows Nest and the city;
- route 292: Marsfield, Macquarie University, Macquarie Centre, Fontenoy Road, Epping Road, Lane, Cove and the city;
- route 293: Marsfield to city via Epping Road and Lane Cove Tunnel;
- route 294: Macquarie University, Macquarie Park, Epping Road, Lane Cove, Gore Hill Freeway and the city;
- route M41 (Lane Cove Road): Hurstville, Bexley North, Campsie, Burwood, Concord, Rhodes, Ryde, North Ryde, Macquarie Park and Macquarie Centre;
- route 459 (Lane Cove Road): Macquarie University, Macquarie Centre, Ryde, Rhodes, Concord West, Strathfield;

- route M54 (Waterloo Road): Parramatta, Carlingford, Epping, Macquarie University, Macquarie Park;
- route 506 (Lane Cove Road): Macquarie University, Macquarie Centre, East Ryde, Hunters Hill, Drummoyne, Rozelle and the city;
- route 533 (Wicks Road): Chatswood, Mowbray Road, North Ryde, Ryde, Rhodes, Sydney Olympic Park;
- route 534 (Wicks Road): West Ryde, Ryde, North Ryde, Chatswood;
- route 545: Parramatta, Dundas, Telopea, Dundas Valley, Eastwood, Macquarie University, Macquarie Centre, Macquarie Park, North Ryde station, Chatswood West;
- route 550: Chatswood, Chatswood West, North Ryde station, Macquarie Park, Macquarie Centre, Macquarie University, Eastwood, Kissing Point, Parramatta;
- route 621 : Castle Hill, Cherrybrook, Macquarie Park;
- route 651: Castle Hill, West Pennant Hills, Macquarie Park;
- route 740 (Waterloo Road): Plumpton to Macquarie Park.

2.22 The site is close to Macquarie Park railway station. Macquarie Park is on the Northern Line (Hornsby or Epping – City).

2.23 Services through Macquarie Park on the Northern Line are every 15 minutes in each direction. During peak periods, services are more frequent.

2.24 All of the signalised intersections in Macquarie Park include pedestrian crossings. Appropriate bicycle parking will also be provided within the development.

2.25 Existing public transport services will provide for people to access the development by public transport, walking and cycling, particularly for employees.

2.26 The development will therefore satisfy the objectives of the NSW 2021, the draft Metropolitan Strategy for Sydney to 2031 and the NSW Long Term Transport Master Plan as follows:

- enabling commuters to readily access trains and buses close to the site;
- providing an appropriate level of on-site parking, with reference to appropriate Council and RMS requirements, to encourage public transport use and increase the proportion of trips by public transport; and
- providing employment and retail uses close to residential areas nearby to reduce the need for travel.

Parking Provision

2.27 Section 6.3.8 of Part 4.5 of the Ryde Development Control Plan 2010 indicates that parking for activities other than commercial and industrial development should be provided in accordance with Section 9.3 of the DCP. That section does not include a specific parking rate for home improvement centres such as Masters. The DCP notes that:

To establish the parking rate for any development type not specified above; comparisons should be drawn with similar development and outlined in a Traffic and Parking Impact Assessment Report submitted together with the Development Application. Such comparisons should include a minimum of two case studies drawn from the Ryde Local Government Area or adjoining Local Government Areas and be prepared in accordance with the RTA Guide to Traffic Generating Development.

2.28 There are no other Masters home improvement centres in the Ryde LGA or adjoining LGAs. However, the RMS (previously RTA) has undertaken surveys of

the parking demands of home improvement centres. The results of these surveys are provided in Appendix A. Two of the centres (Bankstown and Minchinbury) have areas (14,111m^2 and 11,915m^2 respectively) similar in size to the proposed Macquarie Park Masters.

2.29 The RMS parking demand surveys found peak parking demands of 318 and 264 spaces at Bankstown and Minchinbury respectively. These demands represent rates of some 2.2 to 2.3 spaces per 100m^2 at peak times.

2.30 Based on these rates, the proposed Masters would have parking demands of some 250 spaces. The proposed provision of 317 spaces would therefore satisfy this requirement.

Access Arrangements and Servicing

2.31 The plans for the development show access from Road No. 3 at the eastern end of the Masters lot (two-way driveway for customers) and western end of the lot (two driveways for service vehicles).

2.32 As in the approved development, Road 3 will connect to Wicks Road. Road 11 will connect between Road 3 and Waterloo Road to the north. This compares to the approved development where Road 11 did not connect to Waterloo Road.

2.33 Swept paths of service vehicles are provided in Appendix B showing 19 metre semi trailers and 12.5 metre large rigid trucks entering the development, manoeuvring into the loading docks and exiting in a forward direction. Some minor modifications would be required to accommodate service vehicles manoeuvring on the site, as shown in these figures.

2.34 Within parking areas, parking space dimensions, aisle widths, ramp grades, transitions, column locations and height clearances should be provided in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking), AS 2890.1:2004 at the time that a development application is made.

Traffic Generation

2.35 Traffic generated by the proposed development will have its greatest effects during weekday afternoon and Saturday peak periods when it combines with commuter and other traffic.

2.36 The RMS surveys of home improvement centres (Appendix A) found the following two-way (sum of both directions) peak hour traffic generations for the home improvement centres at Bankstown and Minchinbury:

- 289 and 338 vehicles per hour two-way during the afternoon peak hour (representing rates of some 2.05 and 2.84 vehicles per hour per 100m^2 respectively); and

- 844 and 754 vehicles per hour two-way during the weekend peak hour (representing rates of some 5.98 and 6.33 vehicles per hour per 100m^2 respectively).

2.37 Using an average of the above rates, the proposed Masters home improvement centre would have the following two-way peak hour traffic generations:

- weekday afternoon peak hour: some 330 vehicles; and

- weekend peak hour: some 840 vehicles.

2.38 The effects of this traffic on the road network will be determined at the development application stage following traffic counts and analysis.

2.39 As previously noted, road 11 is now proposed to extend to connect to Waterloo Road. This provides an additional point of connection to the external road network, compared to the previously approved development.

Summary

2.40 In summary, the main points relating to the transport aspects of the planning proposal are as follows:

i) the site has frontage to Epping Road, Wicks Road and Waterloo Road;

ii) the site has consent for a commercial development of some 27,340m^2, which vehicular access via a new road connection to Wicks Road;

iii) the planning proposal would provide for a Masters store of some 13,706m^2;

iv) the proposed development would increase employment and retail densities close to good public transport services and is consistent with government objectives to reduce private car travel and encourage public transport use;

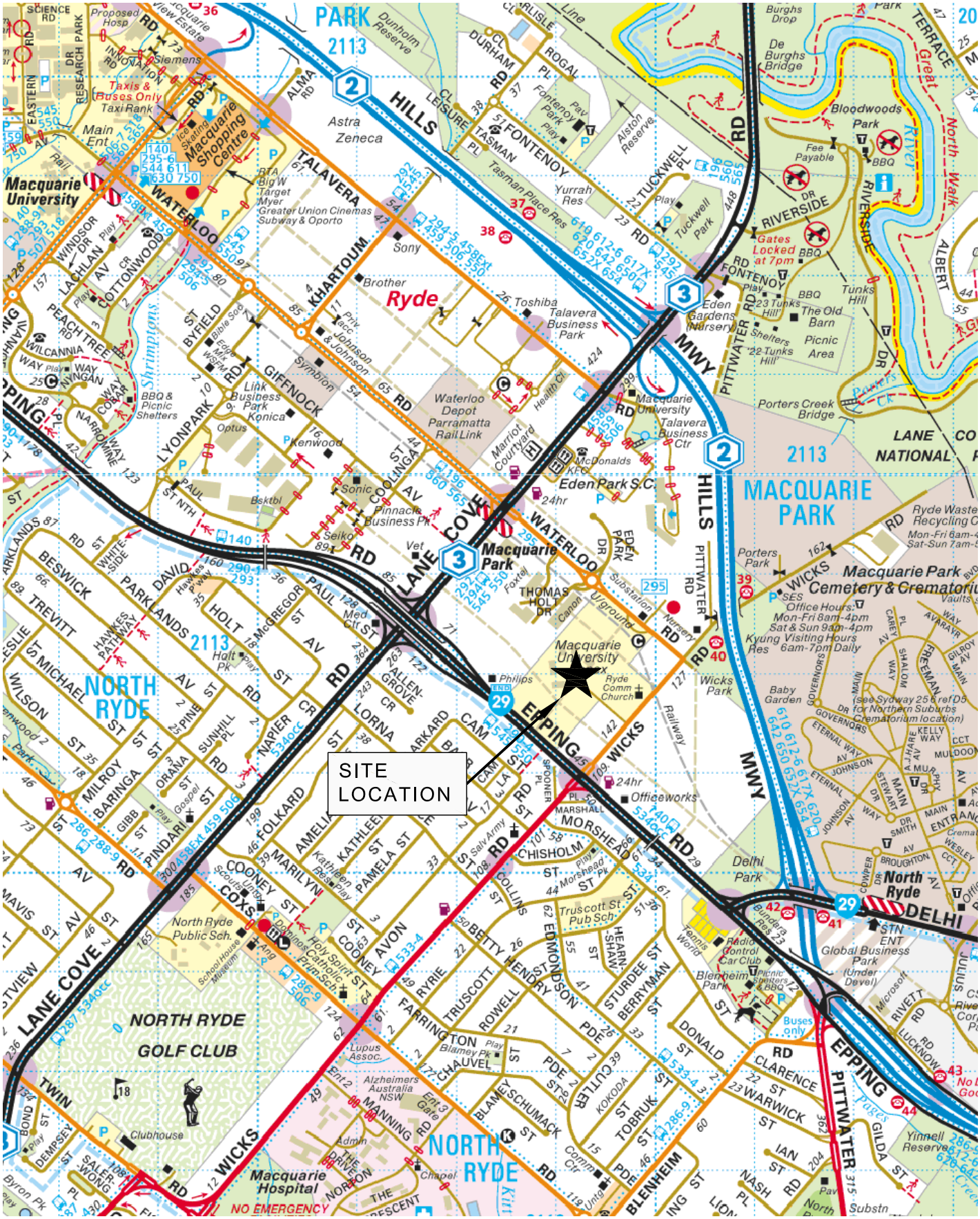
v) the proposed parking provision will satisfy expected demands;

vi) access is proposed to be provided from Wicks Road, via Road 3, and Waterloo Road, via Road 11;

vii) subject to minor modifications to accommodate vehicle swept paths, the proposed arrangements for service vehicles are considered appropriate;

viii) traffic effects will be determined at the development application stage following traffic counts and analysis; and

ix) road 11 is now proposed to extend to connect to Waterloo Road. This provides an additional point of connection to the external road network, compared to the previously approved development.



Location Plan

Colston Budd Hunt & Kafes Pty Ltd

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Figure 1

APPENDIX A

RMS SURVEYS

Table 2-2 Site Details of the Selected Sites – Hardware/DIY

Site ID	HW1	HW2	HW3	HW4	HW5	HW6	HW7	HW8	HW9
Name	Bunnings	Bunnings	Mitre10	Bunnings	Mitre10	Mitre10	Mitre10	Bunnings	Mitre10
Suburb	North Parramatta	Bankstown Airport	Windsor	Minchinbury	Narellan	Morisset	Picton	South Nowra	Orange
	2152	2200	2756	2770	2567	2264	2571	2541	2800
Region	Sydney	Sydney	Sydney	Sydney	Sydney	Northern	Northern	Northern	Southern
Network Peak Hours									
Year of Network Survey	2007	2005	2007	2007	2005	2004	2009	2009	2005
Dates							6/4-12/4	18/3-24/3	
AM Peak - Weekdays	0800-0900	0700-0800	0800-0900	0800-0900	0800-0900	0800-0900	0900-1000	0800-0900	0800-0900
PM Peak - Weekdays	1700-1800	1600-1700	1500-1600	1700-1800	1600-1700	1600-1700	1600-1700	1500-1600	1600-1700
Peak - Weekends	1200-1300	1200-1300	1100-1200	1100-1200	1100-1200	1100-1200	1200-1300	1100-1200	1100-1200
Site Details - Bulky Goods/Hardware									
Area Dimension (m^2)			6,700		3,500		3,600		Unknown
Gross floor area (m^2)	9,800	14,111	1,800	11,915	2,400	2,000	1,600	9,948	1,800
No. of Employee (Total)			42		20		12		23
No. of employee (at one time)			34		15	15	12		8
Year Constructed			1990		1991-1992		Unknown		1980
Accessibility Score	<79	<79	<79	<79	<79	0.5	1	0	2
Opening Hours									
Mon-Fri	0700-2100	0700-2100	0630-1700	0700-2100	0700-1730	0630-1730	0730-1700	0700-2100	0700-1730
Sat	0800-1800	0800-1800	0800-1600	0800-1800	0730-1600	0700-1600	0700-1600	0800-1800	0800-1600
Sun	0800-1800	0800-1800	0900-1500	0800-1800	0900-1600	0700-1600	0900-1400	0800-1800	0900-1600
Parking Spaces									
Customers	263	464	44	397	35	29	75	209	28
Disabled	2	8	0	6	2	1	0	4	2
Staff			0		0	0	0		10
Loading Bay			2		1	0	5		2
Total	265	472	46	403	38	30	80	213	42
Survey Results									
Date of Survey - Weekdays	12/03/09 (Thurs)	26/03/09 (Thurs)	19/03/09 (Thurs)	19/03/09 (Thurs)	19/03/09 (Thurs)	12/03/09 (Thurs)	26/03/09 (Thurs)	26/03/09 (Thurs)	19/03/09 (Thurs)
Weather	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny/ Rain Evening	Sunny
Date of Survey - Weekend	14/03/09 (Sat)	28/03/09 (Sat)	21/03/09 (Sat)	21/03/09 (Sat)	21/03/09 (Sat)	14/03/09 (Sat)	28/03/09 (Sat)	28/03/09 (Sat)	21/03/09 (Sat)
Weather	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny/ Rain Evening	Sunny	Sunny	Sunny

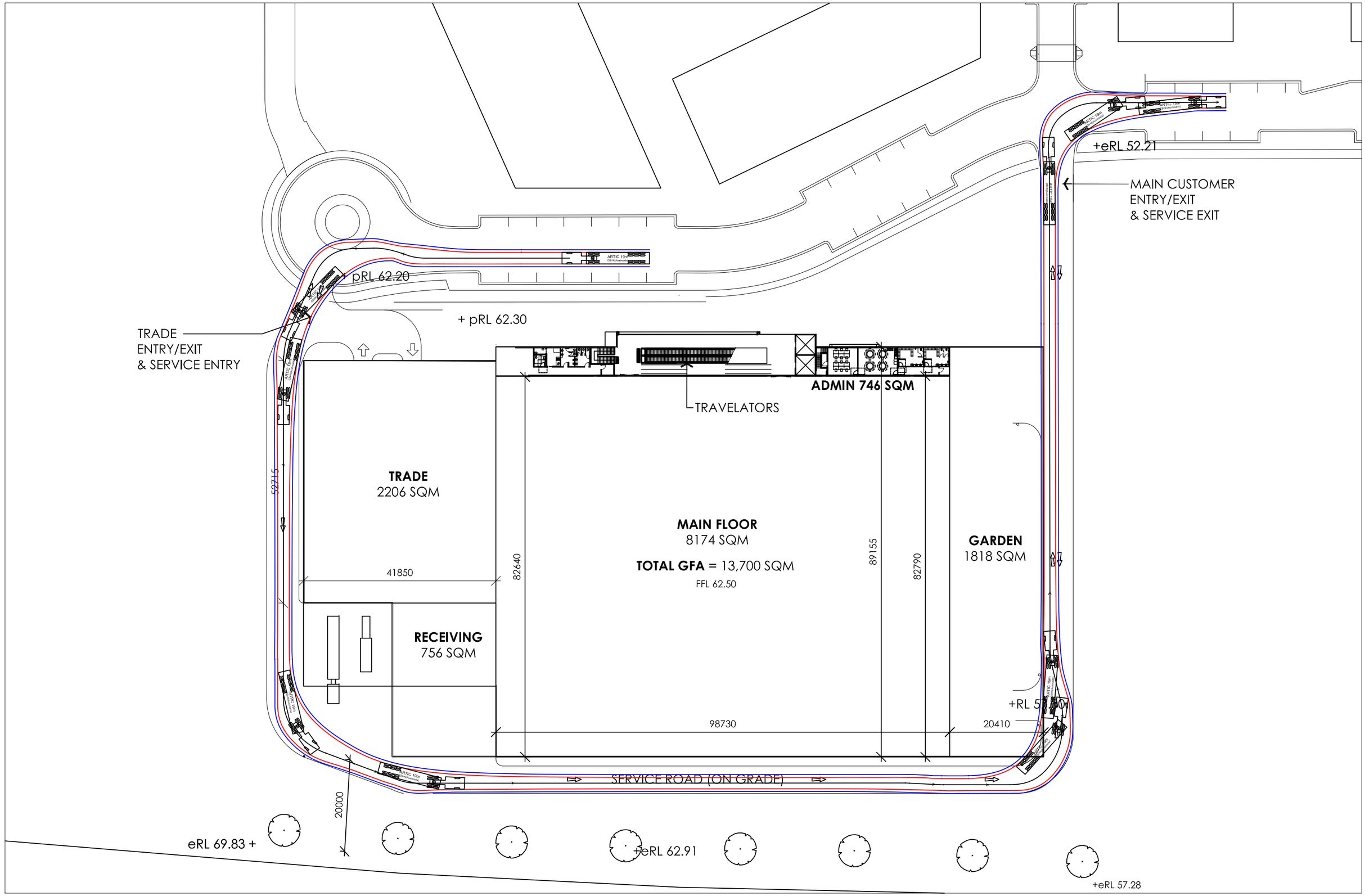
3.3.1 Hardware / DIY

Table 3-1 Traffic Results Summary – Hardware/DIY

	Sydney Metropolitan Area					Non-Metropolitan Area			
Site ID	HW1	HW2	HW3	HW4	HW5	HW6	HW7	HW8	HW9
Gross floor area (m2)	9,800	14,111	1,800	11,915	2,400	2,000	1,600	9,948	1,800
Weekdays									
Person-based Trips									
- Site Peak Hour	484	565	101	688	119	128	97	393	100
Trips/ 100m² GFA	4.94	4.00	5.61	5.77	4.96	6.40	6.06	3.95	5.56
- Vehicle Network AM Peak	162	92	49	273	65	49	76	127	61
Trips/ 100m² GFA	1.65	0.65	2.72	2.29	2.71	2.45	4.75	1.28	3.39
- Vehicle Network PM Peak	281	350	88	474	79	93	66	278	64
Trips/ 100m² GFA	2.87	2.48	4.89	3.98	3.29	4.65	4.13	2.79	3.56
Daily Total Person Trips	4,397	4,639	816	6,346	858	868	667	2,907	703
Trips/ 100m² GFA	44.87	32.88	45.33	53.26	35.75	43.40	41.69	29.22	39.06
Vehicle-based Trips									
- Site Peak Hour	403	444	84	491	98	112	75	273	83
Trips/ 100m² GFA	4.11	3.15	4.67	4.12	4.08	5.60	4.69	2.74	4.61
- Network AM Peak	140	84	40	243	51	42	62	108	53
Trips/ 100m² GFA	1.43	0.60	2.22	2.04	2.13	2.10	3.88	1.09	2.94
- Network PM Peak	225	289	64	338	66	76	50	198	58
Trips/ 100m² GFA	2.30	2.05	3.56	2.84	2.75	3.80	3.13	1.99	3.22
Daily Total LV Trips	3,441	3,643	514	4,558	605	718	523	2,055	575
Trips/ 100m² GFA	35.11	25.82	28.56	38.25	25.21	35.90	32.69	20.66	31.94
Daily Total HV Trips	122	139	111	178	51	45	19	69	33
Trips/ 100m² GFA	1.24	0.99	6.17	1.49	2.13	2.25	1.19	0.69	1.83
Daily Total Vehicle Trips	3,563	3,782	625	4,736	656	763	542	2,124	608
Trips/ 100m² GFA	36.36	26.80	34.72	39.75	27.33	38.15	33.88	21.35	33.78
% HV	3.4%	3.7%	17.8%	3.8%	7.8%	5.9%	3.5%	3.2%	5.4%
Peak Parking Accumulation	119	155	14	199	25	38	30	104	20
Peak Parking/ 100m² GFA	1.21	1.10	0.78	1.67	1.04	1.90	1.88	1.05	1.11
Weekend									
Person-based Trips									
- Site Peak Hour	1,000	1,331	123	1,256	205	184	122	739	147
Trips/ 100m² GFA	10.20	9.43	6.83	10.54	8.54	9.20	7.63	7.43	8.17
- Vehicle Network Peak	925	1,282	108	1,244	192	174	122	709	120
Trips/ 100m² GFA	9.44	9.09	6.00	10.44	8.00	8.70	7.63	7.13	6.67
Daily Total Person Trips	7,100	8,590	665	8,864	1,238	998	655	4,738	723
Trips/ 100m² GFA	72.45	60.87	36.94	74.39	51.58	49.90	40.94	47.63	40.17
Vehicle-based Trips									
- Site Peak Hour	656	844	77	754	151	112	78	447	111
Trips/ 100m² GFA	6.69	5.98	4.28	6.33	6.29	5.60	4.88	4.49	6.17
- Network Peak	593	805	65	754	119	104	78	426	96
Trips/ 100m² GFA	6.05	5.70	3.61	6.33	4.96	5.20	4.88	4.28	5.33
Daily Total LV Trips	4,780	5,493	396	5,440	882	644	489	2,809	571
Trips/ 100m² GFA	48.78	38.93	22.00	45.66	36.75	32.20	30.56	28.24	31.72
Daily Total HV Trips	27	115	16	60	3	5	0	15	2
Trips/ 100m² GFA	0.28	0.81	0.89	0.50	0.13	0.25	0.00	0.15	0.11
Daily Total Vehicle Trips	4,807	5,608	412	5,500	885	649	489	2,824	573
Trips/ 100m² GFA	49.05	39.74	22.89	46.16	36.88	32.45	30.56	28.39	31.83
% HV	0.6%	2.1%	3.9%	1.1%	0.3%	0.8%	0.0%	0.5%	0.3%
Peak Parking Accumulation	196	318	30	264	36	29	45	152	27
Peak Parking/ 100m² GFA	2.00	2.59	1.67	2.22	1.50	1.45	2.81	1.53	1.50

APPENDIX B

SERVICE VEHICLE SWEPT PATHS



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

19.0m ARTICULATED VEHICLE SWEPT PATHS

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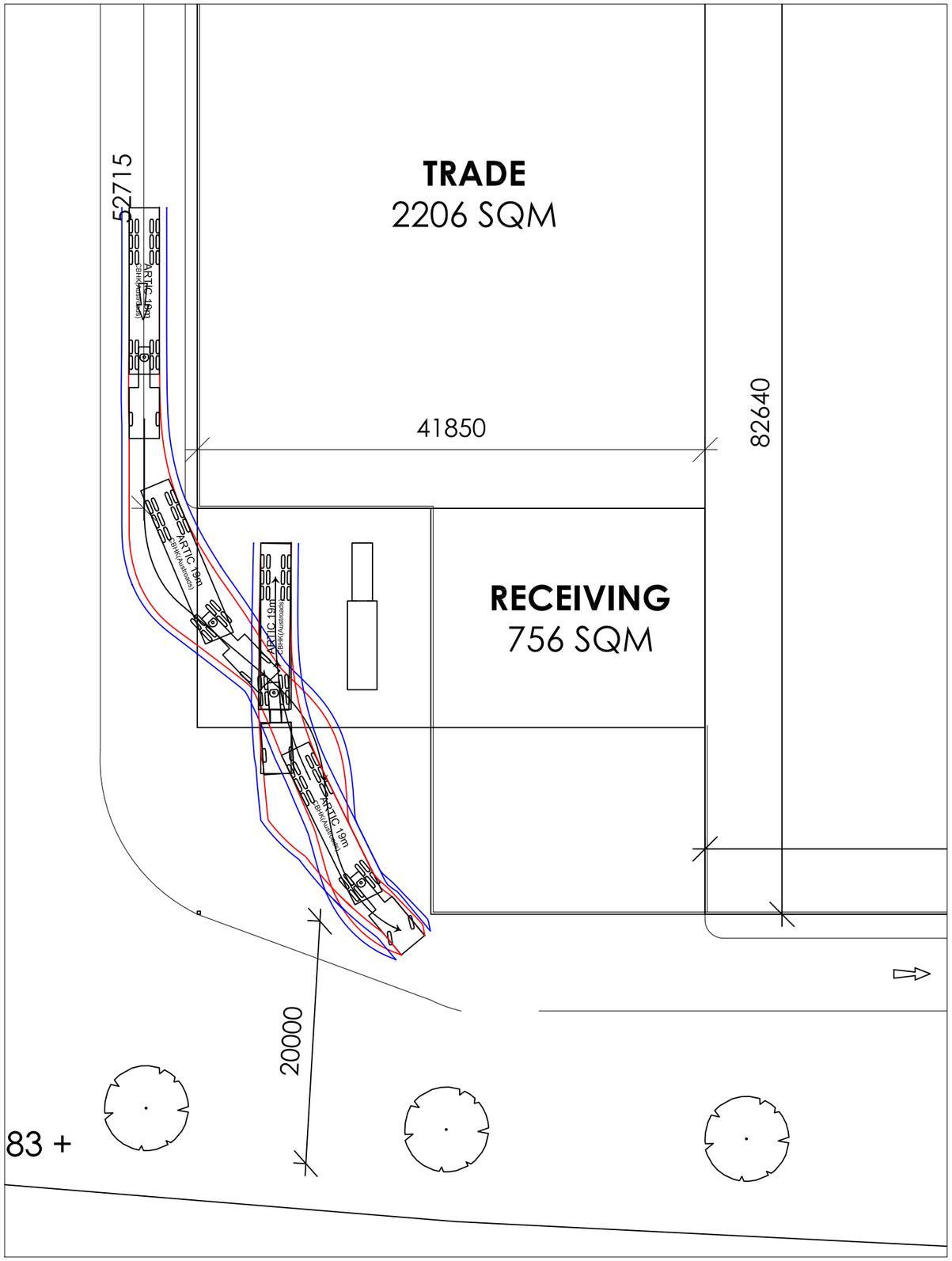

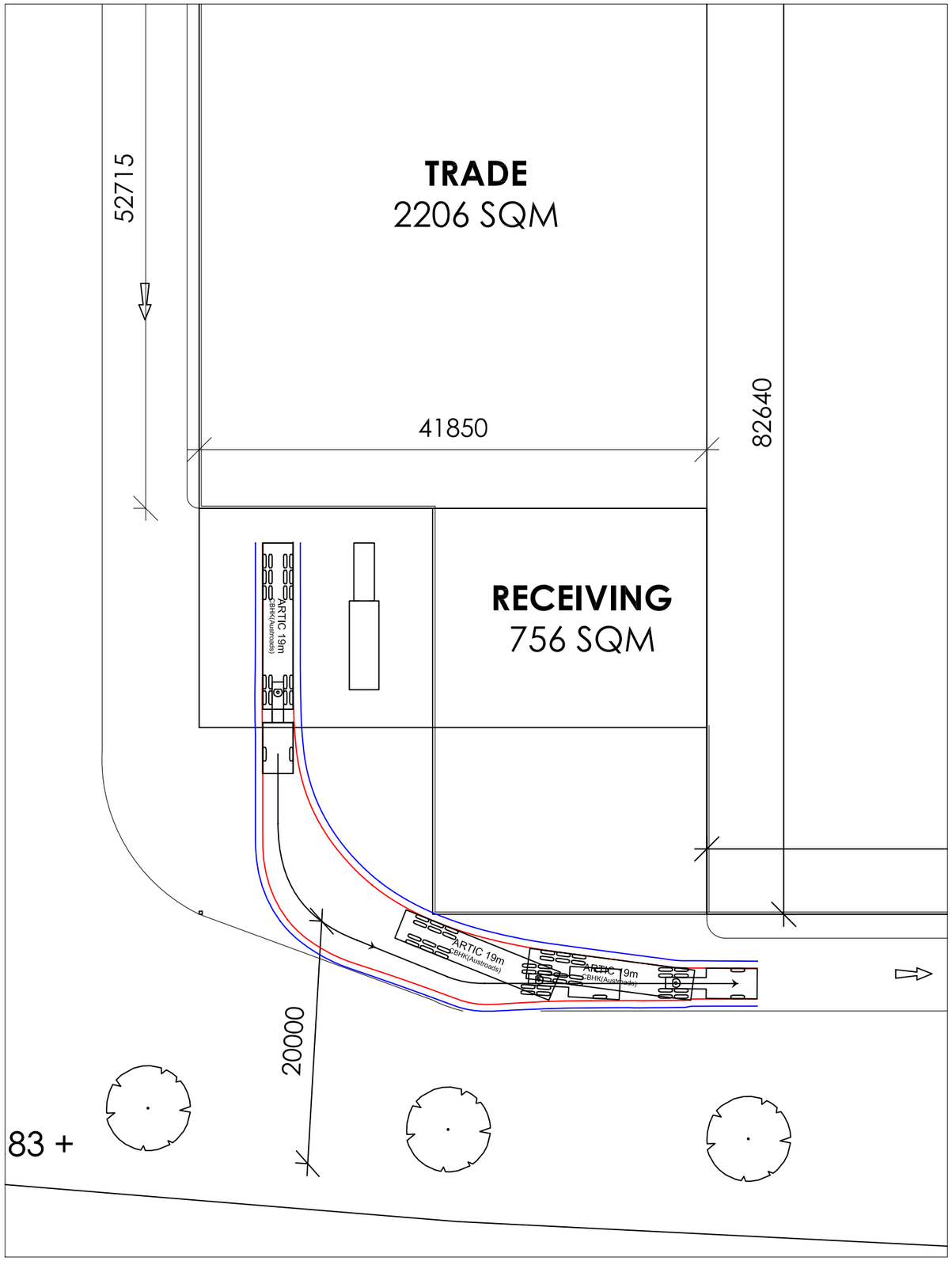

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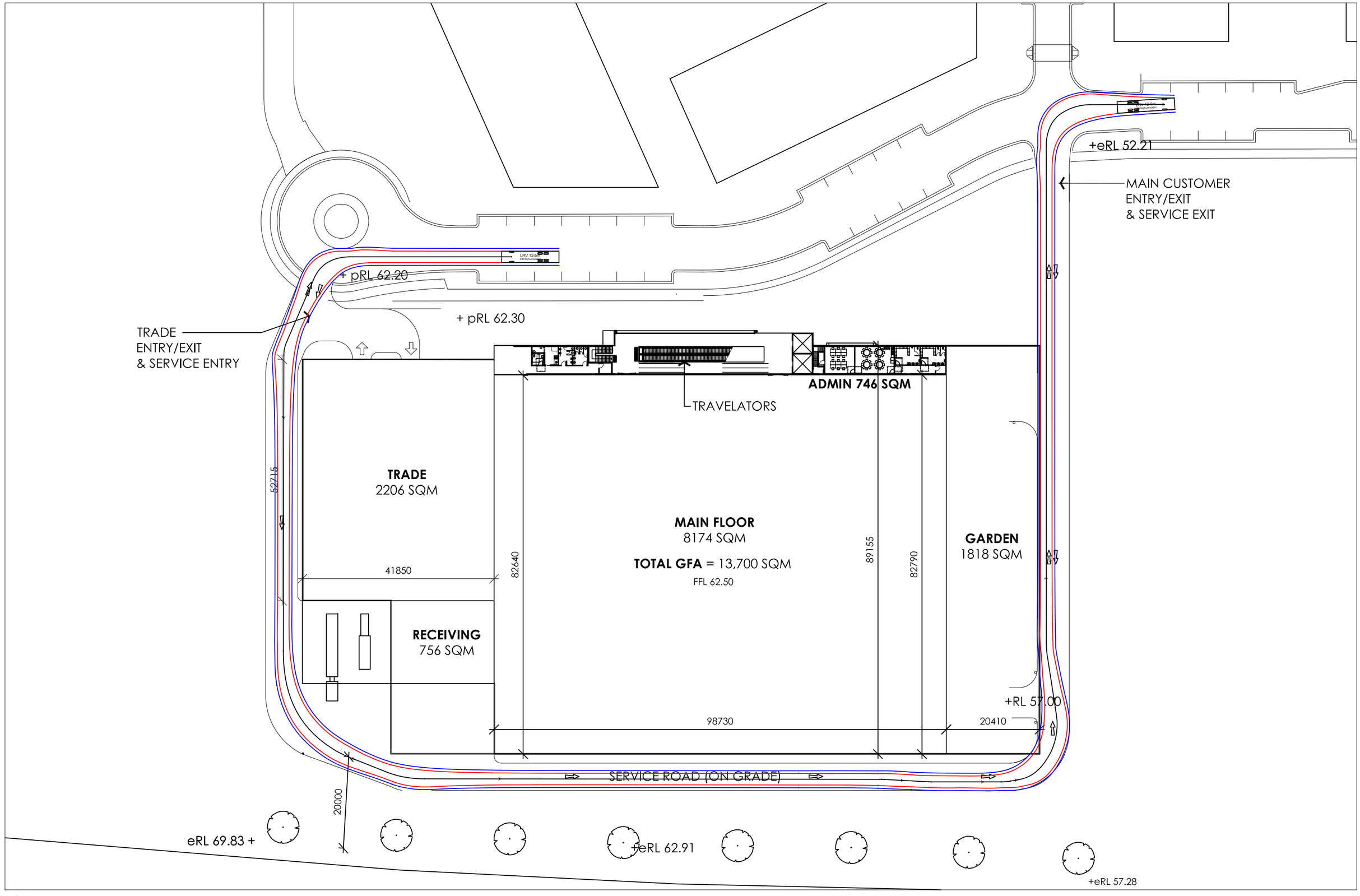

NOTE:
SKETCH PLAN ONLY. PROPERTY BOUNDARIES, UTILITIES, KERBLINES & DIMENSIONS ARE SUBJECT TO SURVEY AND FINAL DESIGN. TRAFFIC MEASURES PROPOSED IN THIS PLAN ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN BY CIVIL ENGINEERS.

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

12.5m LARGE RIGID VEHICLE SWEPT PATHS

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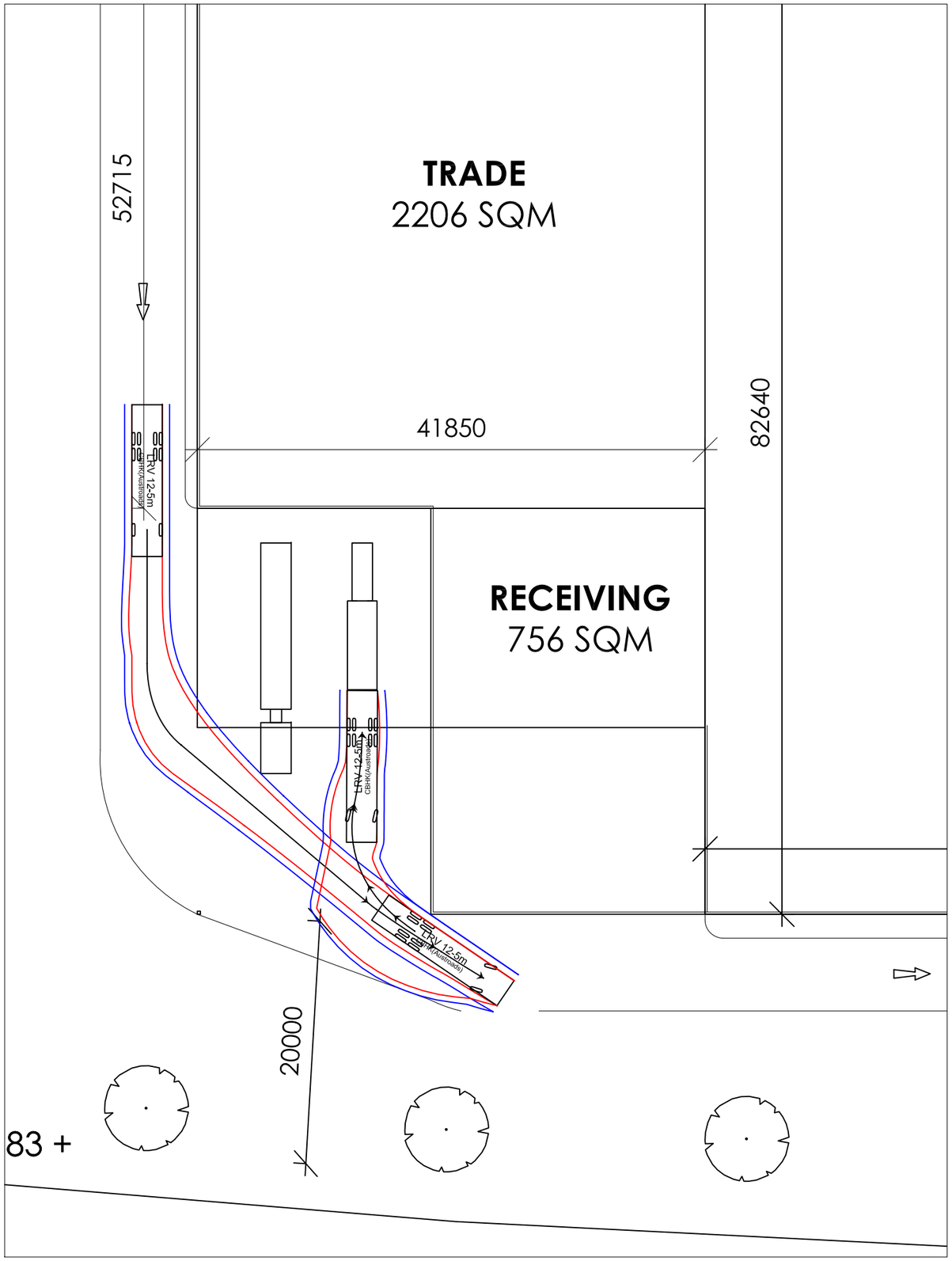

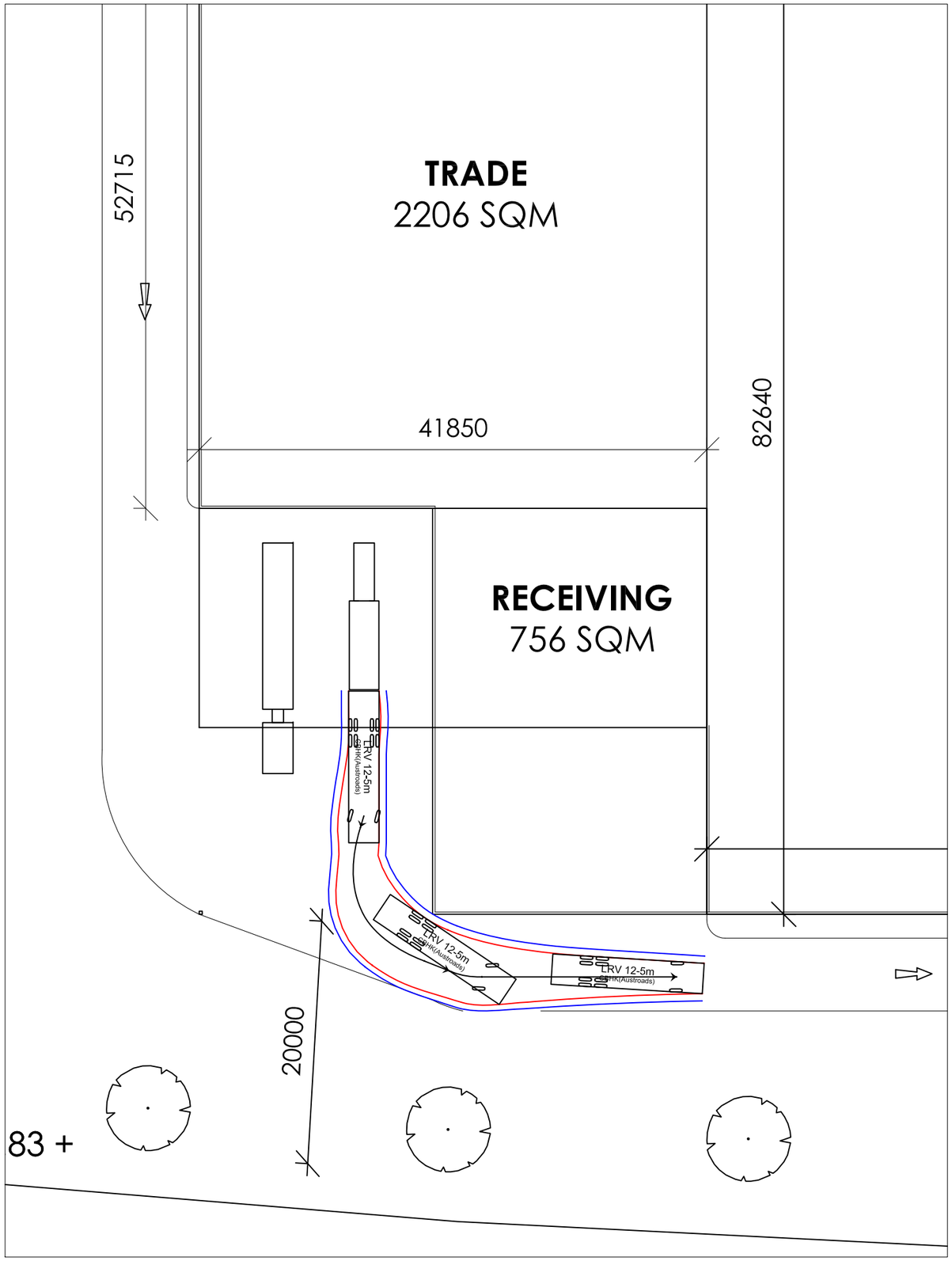

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Swept Path of Vehicle Body
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