

“PRESTONS INDUSTRIAL ESTATE”
PROPOSED TOLL EXPANSION WAREHOUSE
MOD 6 APPLICATION
KURRAJONG ROAD, PRESTONS
Assessment of Traffic and Parking
Implications

August 2018
(Rev B)

Reference 15168

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1. INTRODUCTION

This report has been prepared to accompany a MOD 6 Application to Planning and Environment NSW for a modification to an approved warehouse development scheme for the “Prestons Industrial Estate” which is located in the southern part of the large industrial precinct at Prestons (Figure 1).

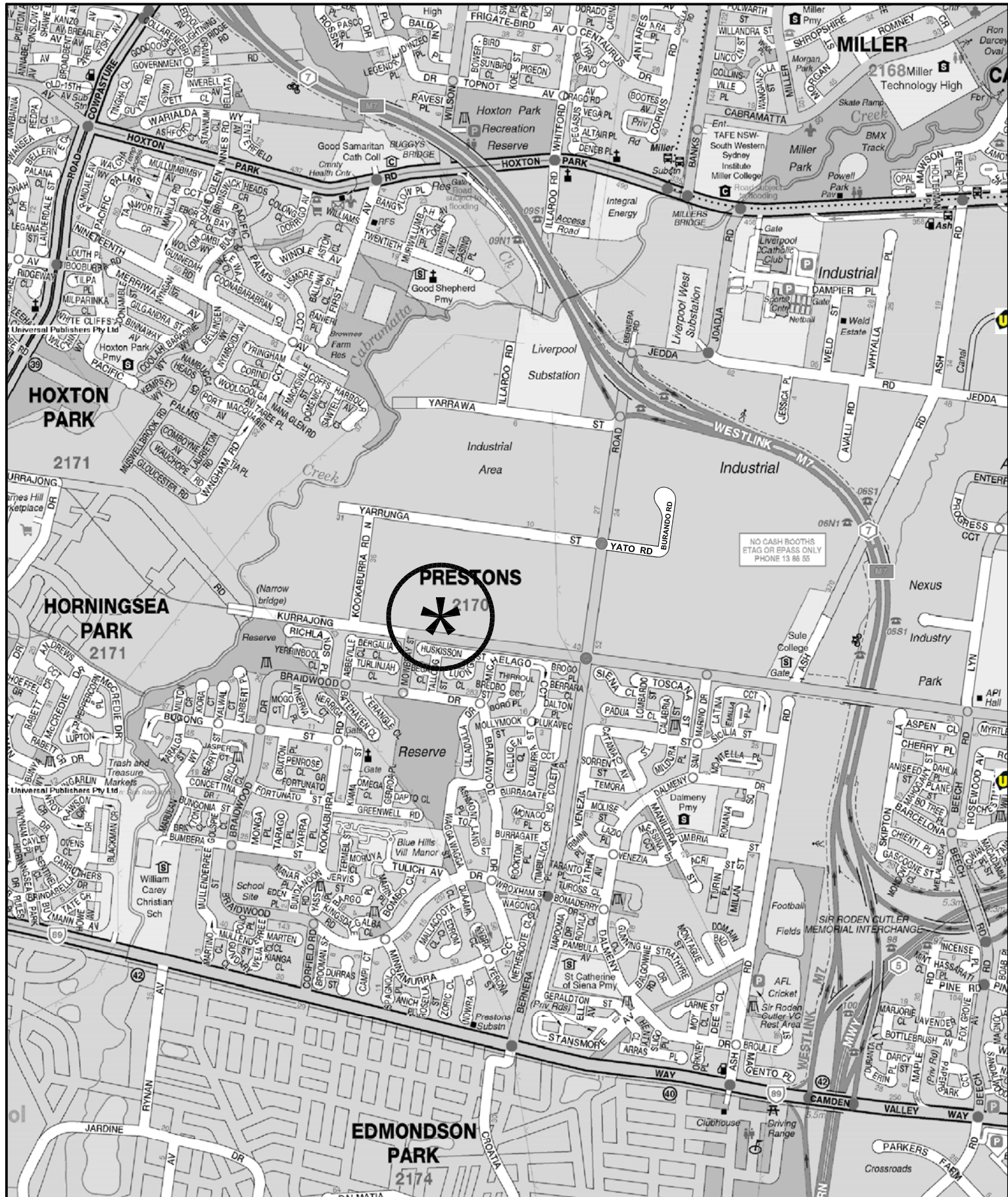
The Prestons area is a developing mixed industrial precinct which has evolved on largely vacant land bound by Kurrajong Road, Westlink M7 and Cabramatta Creek. There is a wide range of industrial, manufacturing, warehouse, waste recycling and other uses in the area which has excellent access to the arterial road system that links to the regional motorway systems.

Approval was granted for the staged development of the “Prestons Industrial Estate” comprising 5 warehouse buildings with ancillary offices. Warehouses 2 and 5 have been constructed and occupied by Toll while approved applications (MOD’s 2 & 3) propose modifications to the Warehouse 1, 3 & 4 outcomes. A MOD 7 application has been submitted for modification of the approved Warehouse 1.

The subject s4.55 (MOD 6) Application proposes to extend the site to the west incorporating 42B Kurrajong Road and construct an additional warehouse facility of 14,806m² for occupation by “Toll”.

The purpose of this report is to:

- * describe the site, the approved development scheme and the proposed MOD 6 scheme
- * describe the road network serving the site and the prevailing traffic conditions
- * assess the potential traffic implications in the context of the current approvals and the modification scheme having regard for the proposed access intersection upgrade
- * assess the adequacy of the proposed parking provision
- * assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



LEGEND



LOCATION

FIG 1

2. PROPOSED DEVELOPMENT

2.1 SITE AND CONTEXT

The Prestons Industrial Estate site (Figure 2) has been expanded to incorporate Lots A and B in DP408207 and now occupies an irregular shaped total area of approximately 24.34ha with frontages to the Yarrunga Street, Bernera Road and Kookaburra Road in the southern part of the Prestons Industrial Precinct.

The nearby uses comprise:

- * the surrounding existing and developing industrial uses
- * the residential area extending to the south of Kurrajong Road

2.2 APPROVED DEVELOPMENT

The approved development scheme (including MOD's 2 & 3) for the Prestons Industrial Estate comprises:

WAREHOUSE FACILITY 1		BUILDING 4	
Warehouse	35,370m ²	Indoor Sports	3,500m ²
Office	1,200m ²		
WAREHOUSE FACILITY 2		WAREHOUSE FACILITY 5	
Warehouse	30,005m ²	Warehouse	32,400m ²
Office	820m ²	Warehouse Mezzanine	6,560m ²
		Office & Dock Office	705m ²
WAREHOUSE FACILITY 3 (A, B & C)		VOLVO FACILITY	
Warehouse	11,000m ²	Building	5,899m ²
Office Area	1,115m ²		

Details of the current approved development scheme are provided on the plans prepared by Axis Architectural which are reproduced in part in Appendix A.



SITE		LEGEND
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FIG 2

2.3 OTHER DEVELOPMENT

A relevant major nearby development is the Charter Hall warehouse complex (M5M7 Logistics Estate) which has frontages to Yato Road and Kurrajong Road. This development scheme involves 4 large warehouse buildings together with an extension of Yato Road and comprises Warehouse 80,000m² and Office 1,619m².

This warehouse complex will have its main vehicle access through the Bernera Road, Yarrunga Road and Yato Road intersection and a secondary access on Kurrajong Road.

2.4 PROPOSED MOD 6 SCHEME

The proposed MOD6 scheme will be additional to the submitted MOD7 scheme which proposes to split the Warehouse 1 site to provide 2 separate warehouses as follows:

	Inter-trading	Spec.
Warehouse	24,917m ²	11,546m ²
Office	1,264m ²	250m ²
Total:	26,181m²	11,796m²
Grand Total:	37,977m² (+ 1,407m² to approved Total Floorspace)	

The MOD6 proposal is to extend the site to the west by consolidation with the adjoining lot with frontage to Kurrajong Road and the proposed additional development which is the subject of this application comprises:

Site Area	20,272m ²
Warehouse	14,000m ²
Office	806m ²
Total:	14,806m² GLA
Car Parking	70 spaces
Vehicle Access	
Cars	Kurrajong Road
Trucks	Walbanga Place

Details of the proposed MOD 6 scheme are provided on the plans prepared by Logos which accompany the Application and are reproduced in part in Appendix B.

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

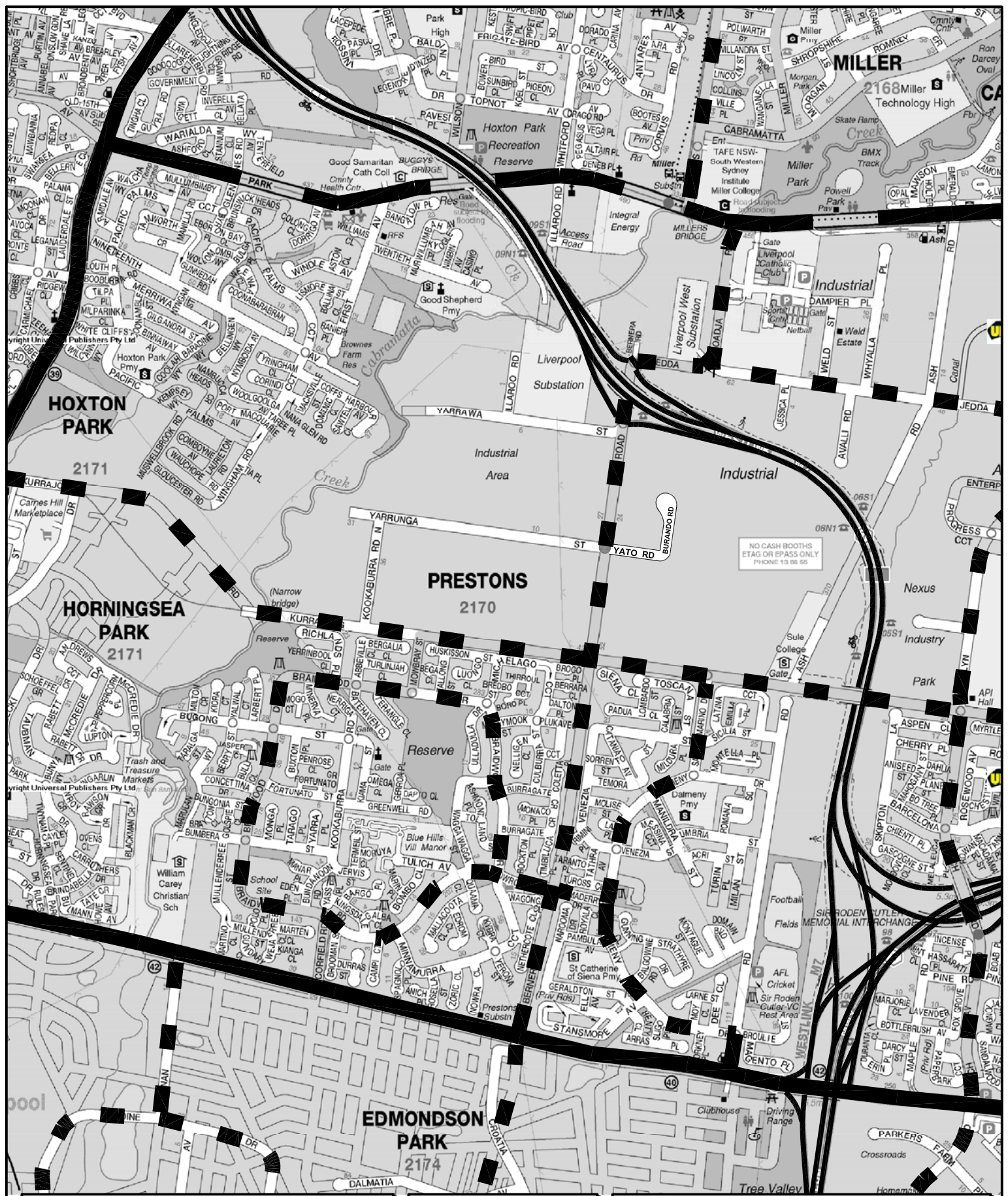
The road network serving the Prestons area (Figure 1) comprises:

Arterial and Sub-Arterial Routes

- * *Westlink (M7) Motorway* which links between the M2 Motorway at Seven Hills and the M5 Motorway at Prestons
- * *South Western (M5) Motorway* which links across the Georges River and continues southwards past Campbelltown
- * *Hume Highway* which runs along the western edge of Liverpool CBD to The Crossroads
- * *Camden Valley Way* which extends from The Crossroads across Cowpasture Road to Camden
- * *Hoxton Park Road* which extends from Hume Highway to Cowpasture Road
- * *Cowpasture Road* which extends northwards from Camden Valley Way across Hoxton Park Road

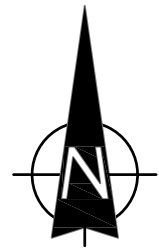
Collector Road Routes

- * *Kurrajong Road* which extends westerly from Hume Highway and will connect to Cowpasture Road when the current upgrading over Cabramatta Creek is completed
- * *Bernera Road* which extends (north-south) between Camden Valley Way and Hoxton Park Road (via sections of Jedda Road and Joadja Road)
- * *Ryan Avenue* which extends which extends to the south of Camden Valley Way
- * *Croatia Avenue* which extends to the south of Camden Valley Way.



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR



ROAD NETWORK

FIG 3

There are also numerous other 'lower order' collector routes through the Prestons, Hoxton Park, Horningsea Park, Casula and Lurnea areas including Yarrunga Street / Kookaburra Road North.

3.2 TRAFFIC CONTROLS

The existing traffic controls on the road system (Figure 4) are largely concentrated on the arterial and sub-arterial perimeter roads. Numerous intersections are controlled by traffic signals particularly along the Hume Highway and Camden Valley Way routes providing controlled access and crossing for the collector and local road system.

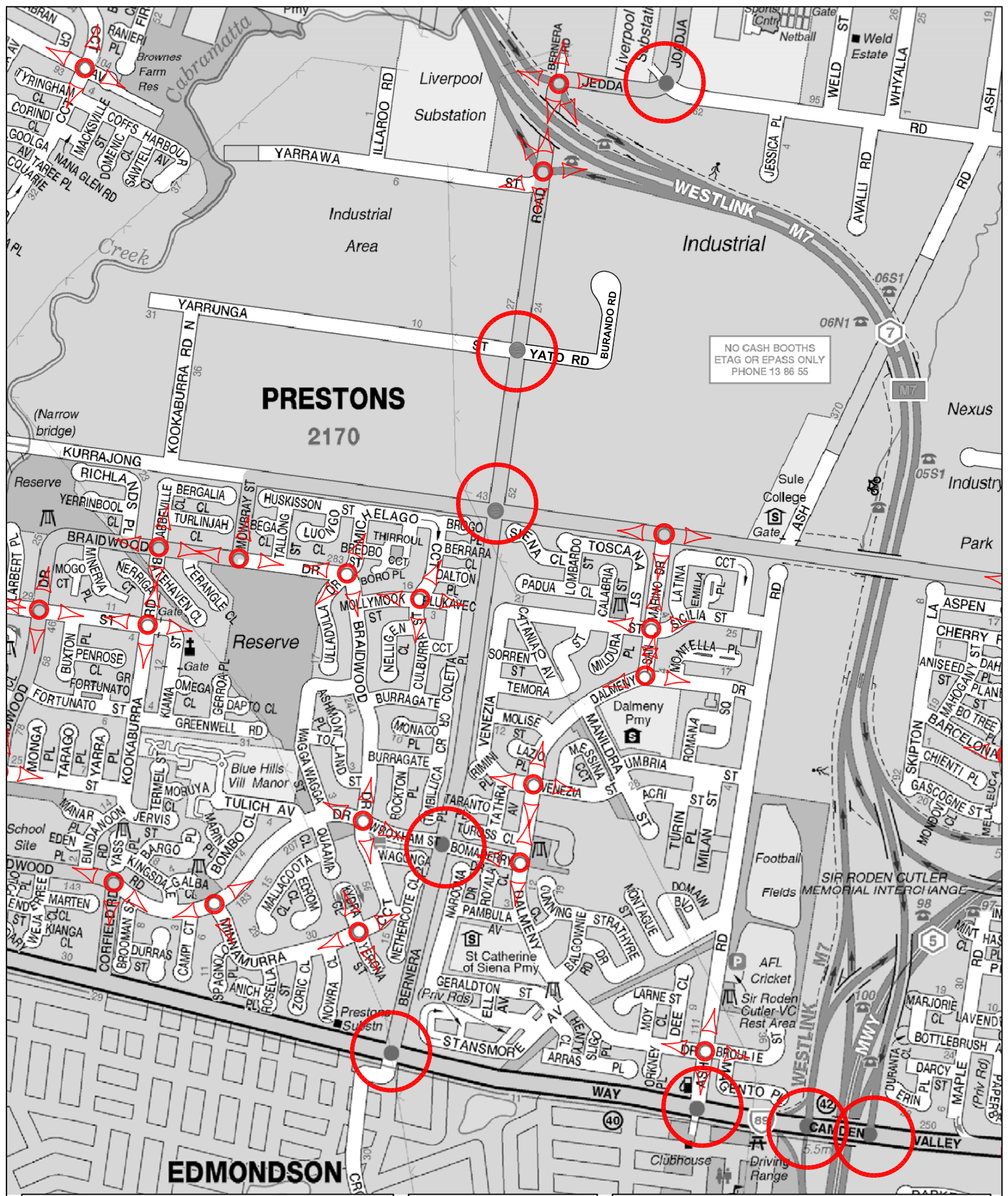
Of particular relevance to the access provisions for the development site are:

- * traffic signal control at the Camden Valley Way, Bernera Road and Croatia Avenue intersection
- * traffic signal control at the Kurrajong Road and Bernera Road intersection
- * traffic signal control at the Bernera Road and Yarrunga Street intersection
- * roundabout controls at the intersections of Bernera Road and Jedda Road with the M7 ON/OFF Ramp intersections

A 70 kmph speed restriction applies along the Camden Valley Way route, however the speed limit on the local and collector road systems is generally 50 kmph.

3.3 TRAFFIC CONDITIONS

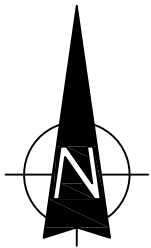
An indication of the existing morning and afternoon peak traffic conditions in the area is provided by traffic surveys undertaken at the principal intersections relevant to the site. The results of these surveys are summarised in Figure 5 and the operational performance of these intersections was assessed using SIDRA for the earlier application. The results for the morning and afternoon peak periods are summarised in the following while the criteria for interpreting SIDRA output is reproduced overleaf:



NO CASH BOOTHS
ETAG OR EPASS ONLY
PHONE 13 86 55

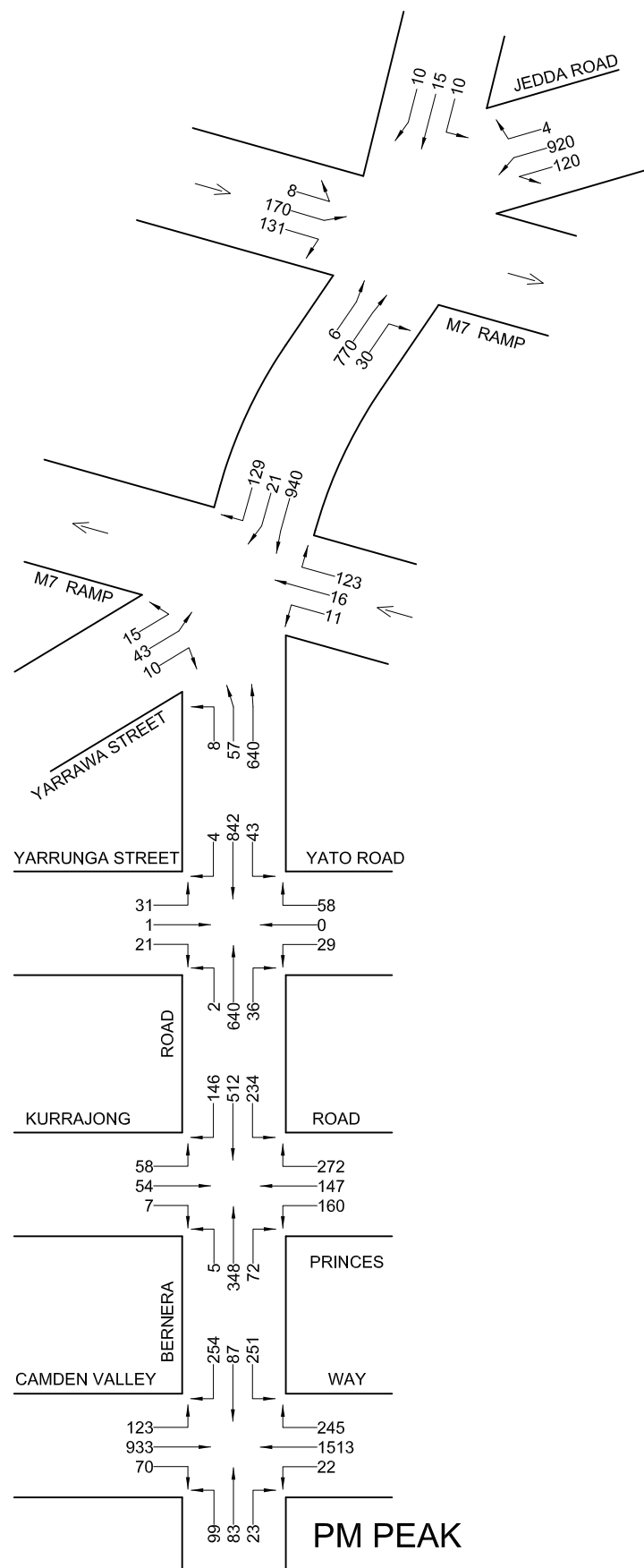
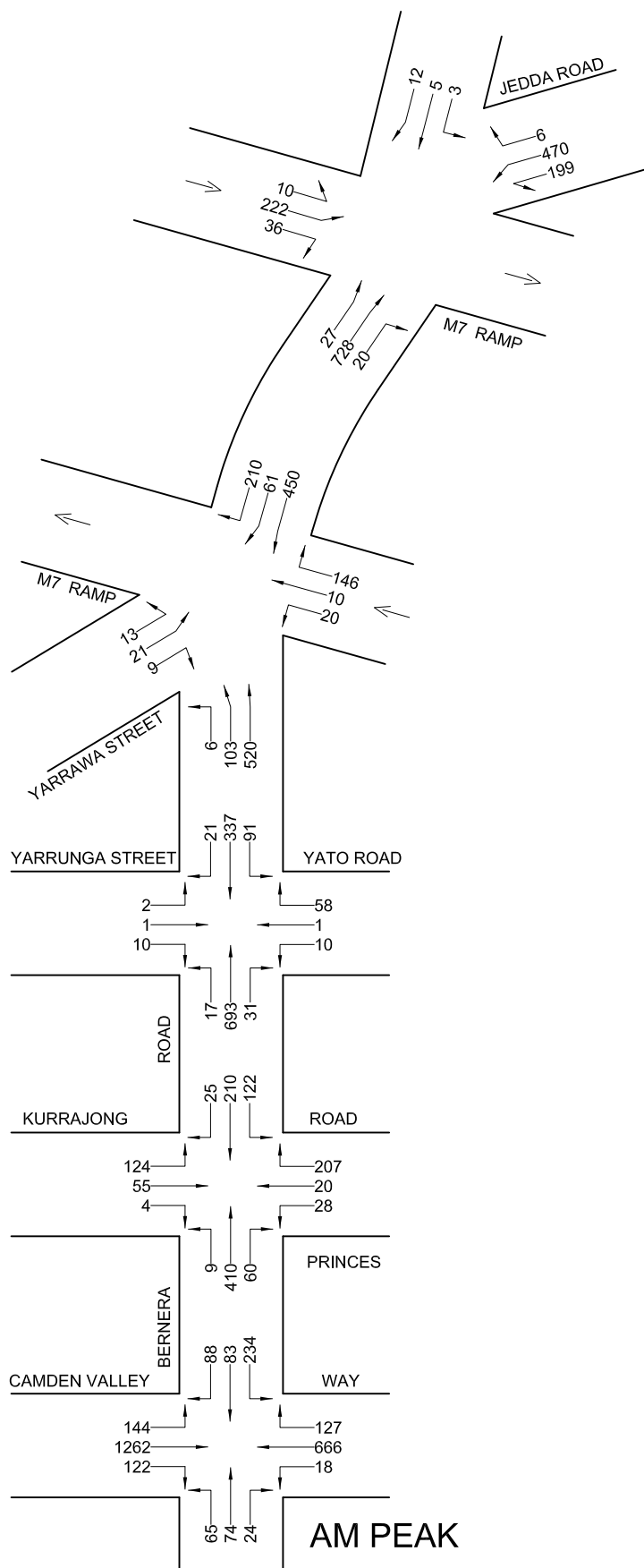
LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT
-  RESTRICTED TURNING MOVEMENT



TRAFFIC CONTROLS

FIG 4



LEGEND



EXISTING PEAK TRAFFIC MOVEMENTS

FIG 5

	AM		PM	
	LOS	AVD	LOS	AVD
Bernera/Yarrunga	A	9.4	A	10.4
Bernera/Kurrajong	B	23.5	B	25.1
CVWY/Bernera	B	17.2	B	25.9
Bernera/M7	A	5.8	A	4.6
Jedda/M7	A	6.6	A	6.7

The results of this assessment indicate that these intersections currently operate with a satisfactory level of service.

3.4 PROPOSED INTERSECTION UPGRADE

In order to accommodate the additional traffic demands of development on both the Prestons Industrial Estate and the M5M7 Logistic Estate, it has been agreed that the Bernera Road, Yarrunga Street and Yato Road intersection will be significantly upgraded. Details of the upgrading scheme are provided on the plan prepared by Costin Roe Consulting which is reproduced in Appendix C.

3.5 TRANSPORT SERVICES

At the present time, there is only somewhat limited public transport servicing of the Prestons area. The railway stations at Edmondson Park, Glenfield, and Casula are some 3 to 4km from the site where the Cumberland, Airport and East Hills, Inner West and Southern Railway lines provide connections to the Liverpool, Campbelltown, Fairfield, Bankstown, Parramatta and the Sydney CBD areas.

'Busabout' currently operates along Camden Valley Way with the Route 864 and 867 services providing connection to Glenfield Railway Station and Route 856 and 857 providing connection to Liverpool Railway Station and Interchange (see Appendix D details).

4. TRAFFIC

The traffic assessment for the recent MOD 3 Application concluded the following:

Network peak traffic generation (Warehouse + Office)	0.19 vtpm per 100m ²
Total Warehouse 119,070m ²	226 vtpm
Volvo	65 vtpm AM, 59 PM
Building 4	42 vtpm AM, 132 PM
Total:	333 vtpm AM, 417 PM

Application of the assessed network peak traffic generation criteria to the proposed MOD 6 Toll warehouse would indicate the following:

$$14,806\text{m}^2 @ 0.19 \text{ vtpm per } 100\text{m}^2 = 28 \text{ vtpm}$$

Data from the recent RMS surveys of the Erskine Park and Wonderland Industrial precincts reveals a “truck” component of the total generated traffic of 29% in the AM and 26% in the PM peak periods. Thus, the projected distribution of movements is some 8 truck trips (4 IN & OUT) on Walbanga Place and 20 car trips (15 in peak direction IN & OUT) on Kurrajong Road.

The approach and departure trips to/from the site will involve movements in all directions and unlike the other sites in the Prestons Industrial Estate, these movements will not be very largely concentrated through the Bernera Road / Yarrunga Road / Yato Road intersection. The generated movements will be relatively quite minor and once distributed to the various geographic directions and approach / depart factors, the numbers will be quite meaningless in terms of the capacity of the access intersections.

What is more, the proposed development yield (floorspace) is entirely compatible with the DCP provisions and the road/traffic planning for the Prestons Industrial Area.

5. PARKING

The parking provision criteria for 'warehouse' use contained in a number of Metropolitan Councils DCP's do not reflect the realities of contemporary warehouse and distribution centre type uses. Liverpool City Councils parking criteria is typical in specifying the following.

Warehouse

- * 1 space per 35m² of office LFA
- * 1 space per 75m² of warehouse LFA

It has been the accepted practice for large contemporary warehouse developments to assess parking provision with reference to the RMS Guidelines which specify a parking provision for warehouse use of 1 space per 300m² (warehouse and office floorspace) and this was the accepted approach for the previous approvals for the Prestons Industrial Estate and M5M7 Logistic Estate developments.

For these developments, it has been accepted that a parking provision in the range of 1 space per 200m² to 300m² is applicable and the parking provision for the proposed Toll warehouse is as follows:

14,806m² - 70 spaces (1 space per 212m²)

It is apparent that the proposed parking provisions will be adequate and appropriate with a suitable provision of accessible spaces.

6. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

The proposed vehicle access provisions for the proposed development comprise:

- * separate wide ingress and egress driveways on the Walbanga Place cul-de-sac bulb for trucks
- * a combined ingress / egress driveway on Kurrajong Road for the carpark

The proposed vehicle accesses will be located where good sight distances are available and there will be appropriate separation from intersections and each other. The truck accesses will accommodate all vehicles requiring access to the site as indicated on the turning path diagrams in Appendix E.

INTERNAL CIRCULATION

The design of the carpark areas complies with the requirements of AS2830.1 and 6 with quite satisfactory provision for turning and manoeuvring.

The ability for trucks to manoeuvre on the site is confirmed by the turning path assessments for representative movements which are depicted on the diagrams in Appendix E.

SERVICING

Refuse will be removed by contract vehicle and this vehicle as well as other service vehicles will be able to utilise the large hardstand areas provided.

7. CONCLUSION

This assessment of the potential traffic and parking implications of the proposed MOD 6 scheme for the Prestons Industrial Estate has concluded that:

- * there will not be any unsatisfactory traffic implications
- * the proposed parking provision will be suitable and adequate
- * the proposed vehicle access arrangements will be appropriate and will accommodate all vehicles requiring to access the site
- * the proposed internal circulation arrangements will be suitable and appropriate for the manoeuvring and standing of trucks and cars

APPENDIX A

APPROVED PLANS



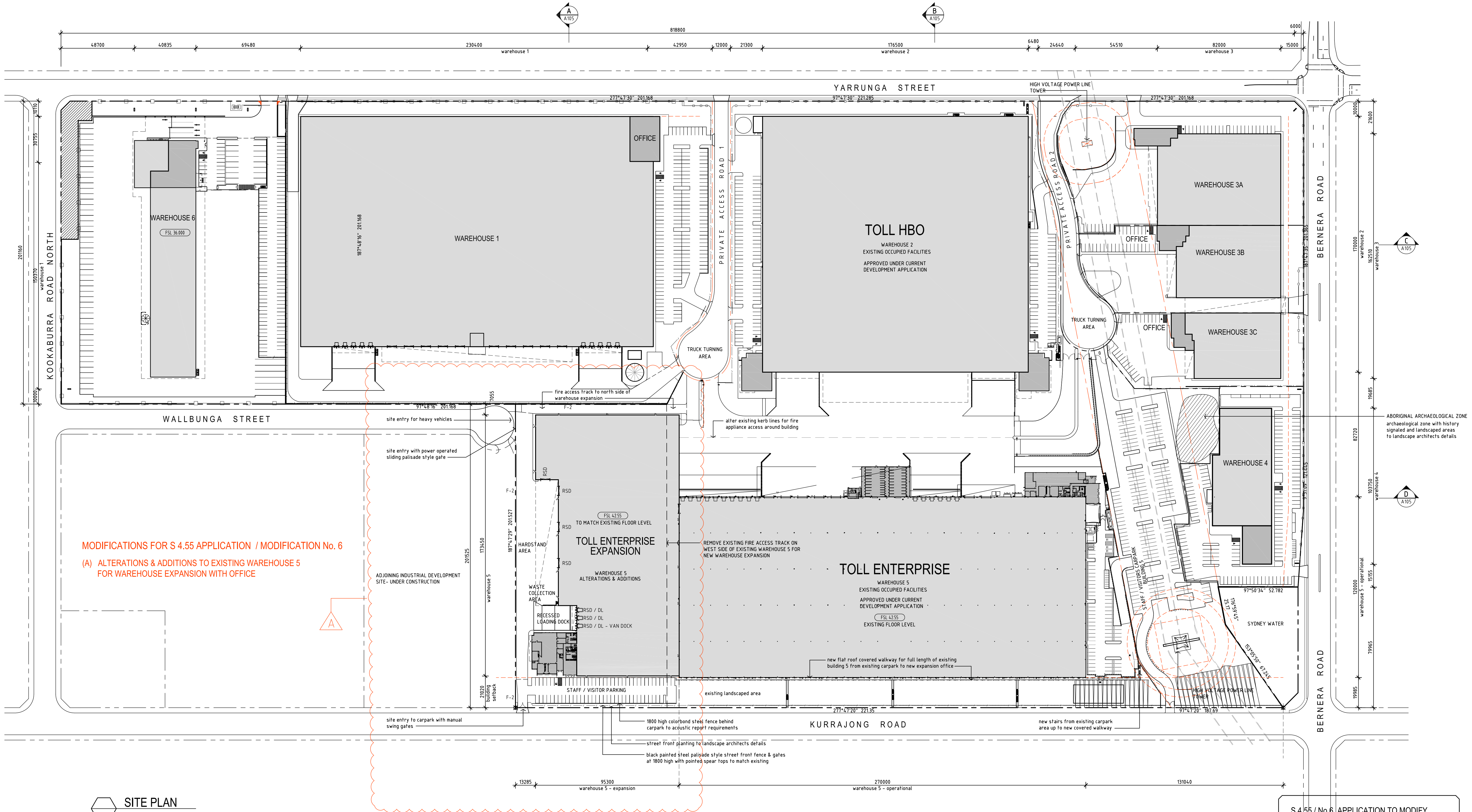
APPENDIX B

MOD 6 PLANS

ABBREVIATIONS - GENERAL

FTP	footpath - street path 1.2m wide
F-1	fence type 1 - 1800 high black palisade fence with pointed spear tops
F-2	fence type 2 - 1800 high black chain link fence with 3 rows of barb wire
FP	flag pole
FSL	finished structural level

G-SLD	gate - sliding
G-H	gate - hinged
PR	pump room for fire service
PS	pylon sign
RSD	roller shutter door - power operated
RWT	rain water tank
SWT	sprinkler water tank for fire service



SITE PLAN
1: 1200 scale

Issue: N 30/07/16 Amendment: MODIFICATION S4.55 MOD 6 FOR WAREHOUSE 5 FOR EXPANSION

Development Manager: **LOGOS** LOGOS Property Group

Suite 12.02 / 167 Macquarie Street
Sydney NSW 2000
F: + 612 9119 6066 F: + 612 9231 0948

Project Manager:

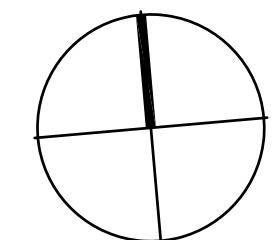
Project:

PRESTONS INDUSTRIAL ESTATE

PROPOSED WAREHOUSE DEVELOPMENT

Cnr YARRUNGA STREET & BERNERA ROAD, PRESTONS NSW

AXIS ARCHITECTURAL
4 / 112 Cronulla Street, Cronulla NSW 2230
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e + david@axisarchitects.com.au
AXIS ARCHITECTURAL Pty Ltd - ABN 18 086 853 376
Nominated Architect - David McDonald NSW ARB No. 7997



Drawing: **SITE PLAN**
OVERALL ESTATE PLAN

Drawn: AA
Date: AUGUST 2018
Scale: 1: 1200 @ A1
1: 2400 @ A3

Project No: 140604

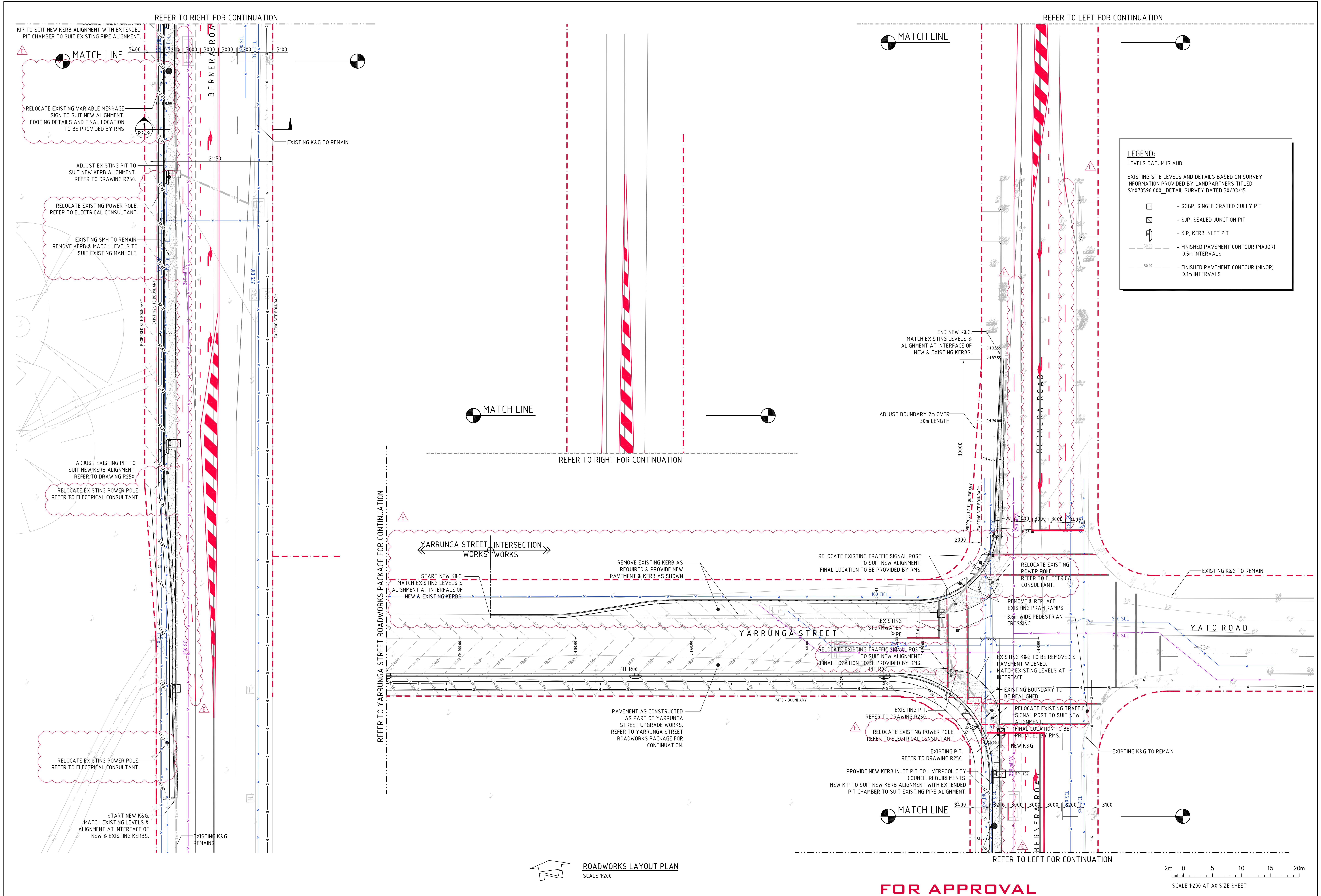
Drawing No: DA - A 101

Issue: N

1: 1200 scale @ A1 / 1: 2400 scale @ A3

APPENDIX C

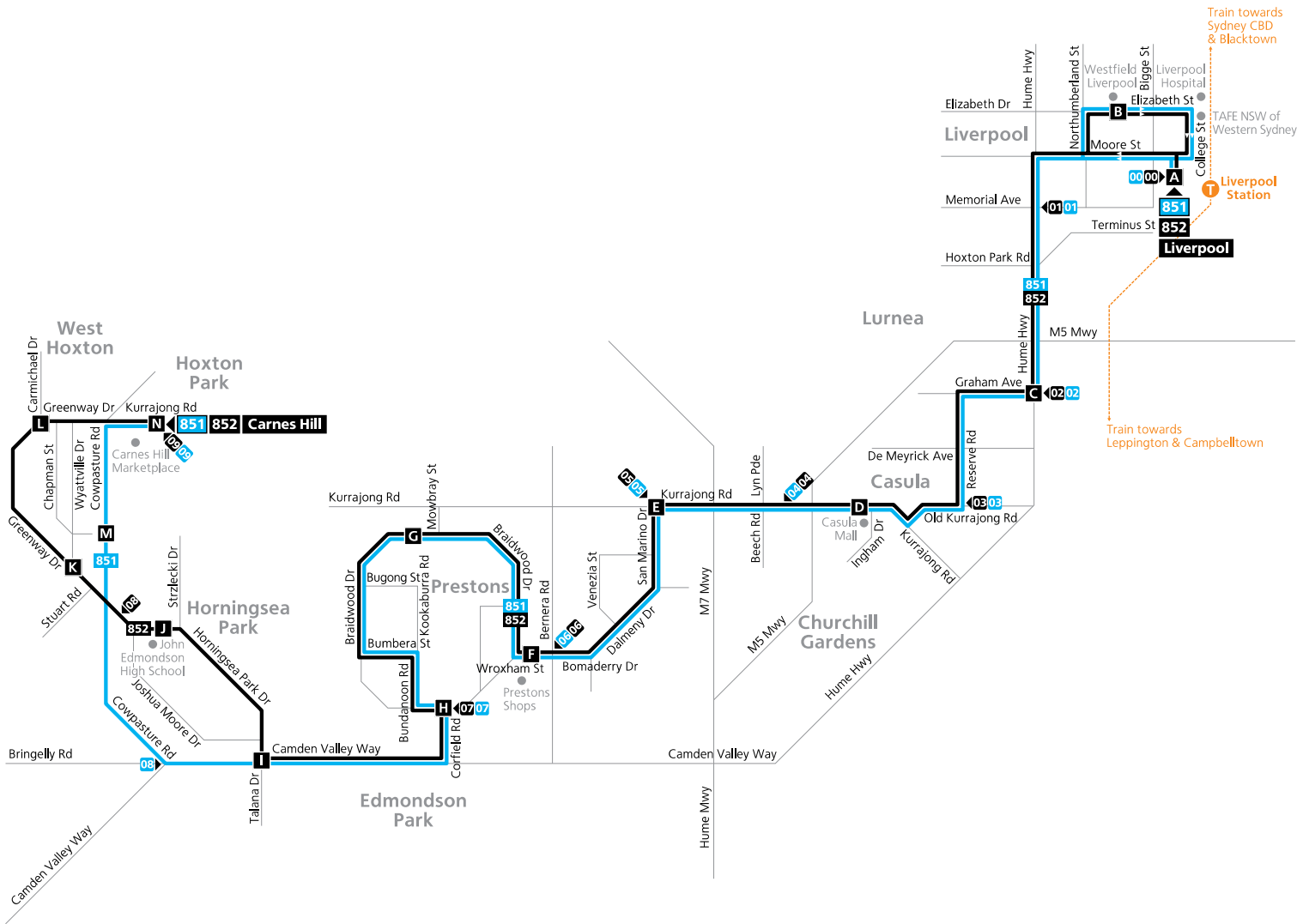
INTERSECTION DETAILS



EXTENT OF WORKS & LINEMARKING REVISED AS CLOUDED				19.01.17				E				ARCHITECT				CLIENT LOGOS PROPERTY SUITE 02, LEVEL 12 167 MACQUARIE STREET SYDNEY NSW				PROJECT PROPOSED DEVELOPMENT 32 YARRUNGA ROAD PRESTONS NSW								Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 9 Macquarie Street Wahah Bay, Sydney NSW 2000 Tel: (02) 9251-7699 Fax: (02) 9241-3721 email: mail@costinroe.com.au								DRAWING TITLE ROADWORKS LAYOUT PLAN			
VERGE WIDTH & SITE BOUNDARY REVISED AS CLOUDED				02.12.16				D																															
VERGE WIDTH & SITE BOUNDARY REVISED AS CLOUDED				06.10.16				C																															
KERB LAYOUT REVISED AS CLOUDED				28.09.16				B																															
ISSUED FOR APPROVAL				09.09.16				A																															
AMENDMENTS				DATE				ISSUE				AMENDMENTS				DATE				ISSUE				AMENDMENTS				DATE				ISSUE							

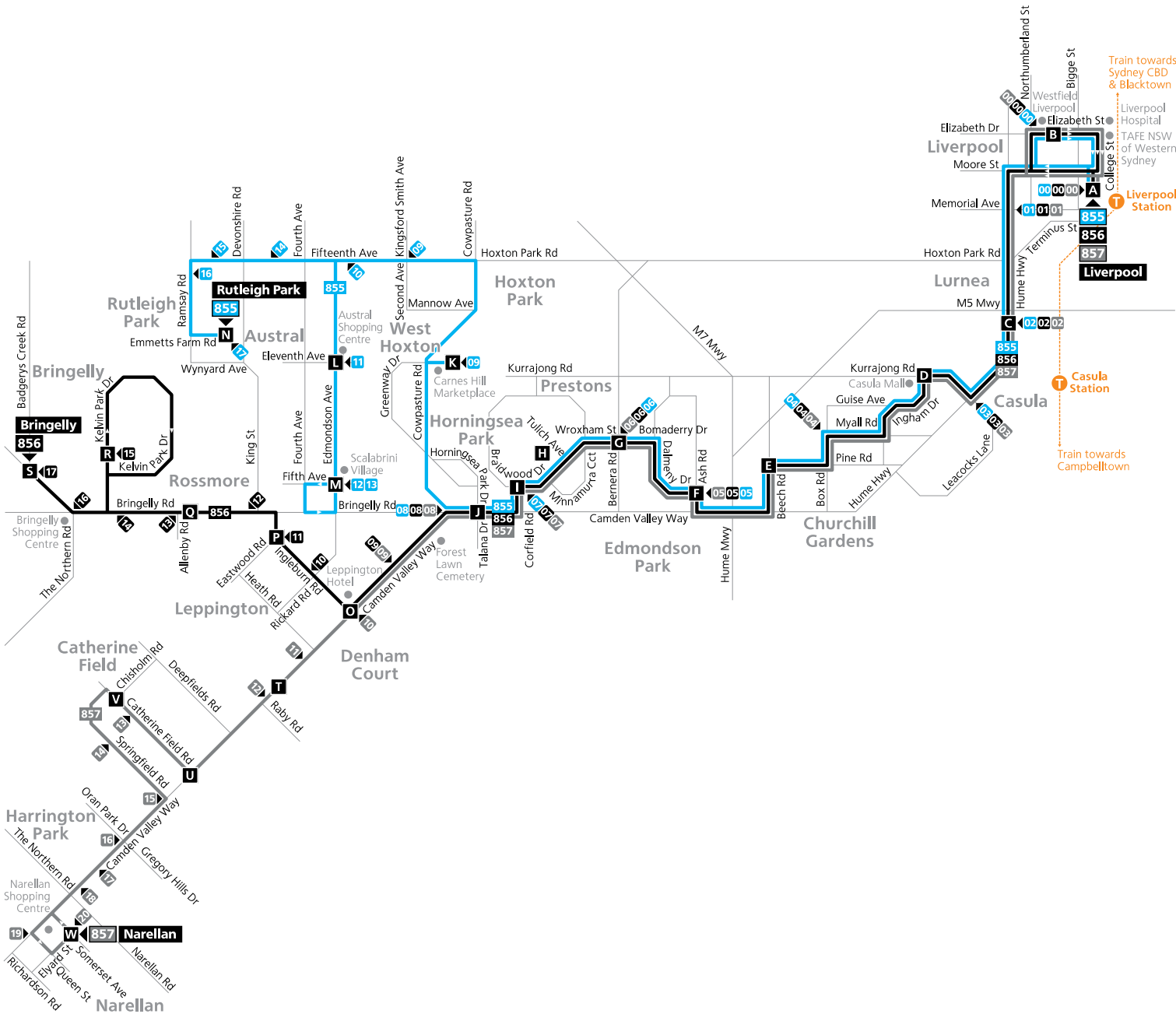
APPENDIX D

BUS SERVICES



Legend

-  Bus route
-  Timing point
-  Train line/station
-  Bus route number
-  Section point



Legend

 Bus route

 855 Bus route number

 A Timing point

 00 Section point

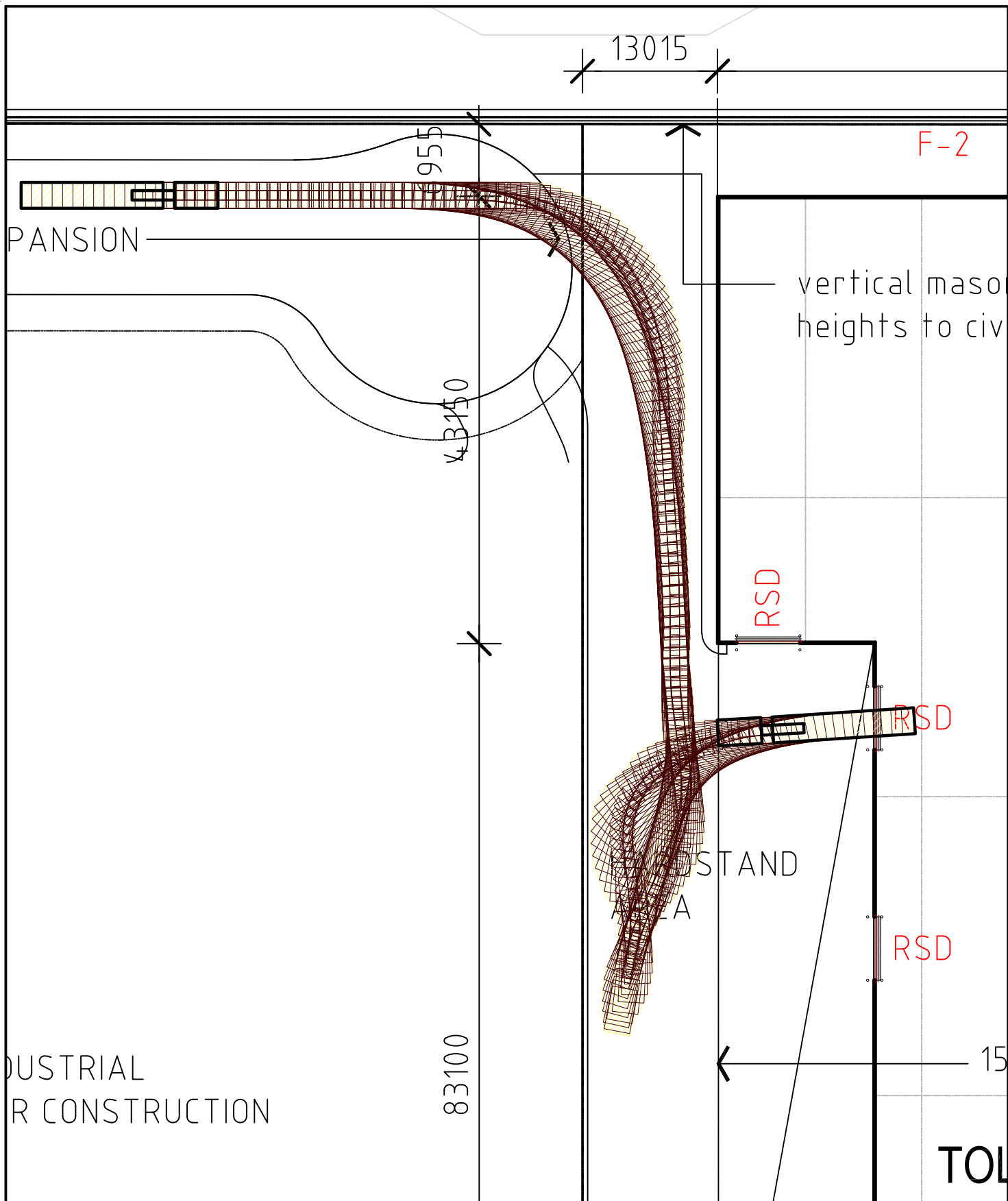
 T Train line/station

 Diagrammatic Map
Not to Scale



APPENDIX E

TURNING PATH ASSESSMENT



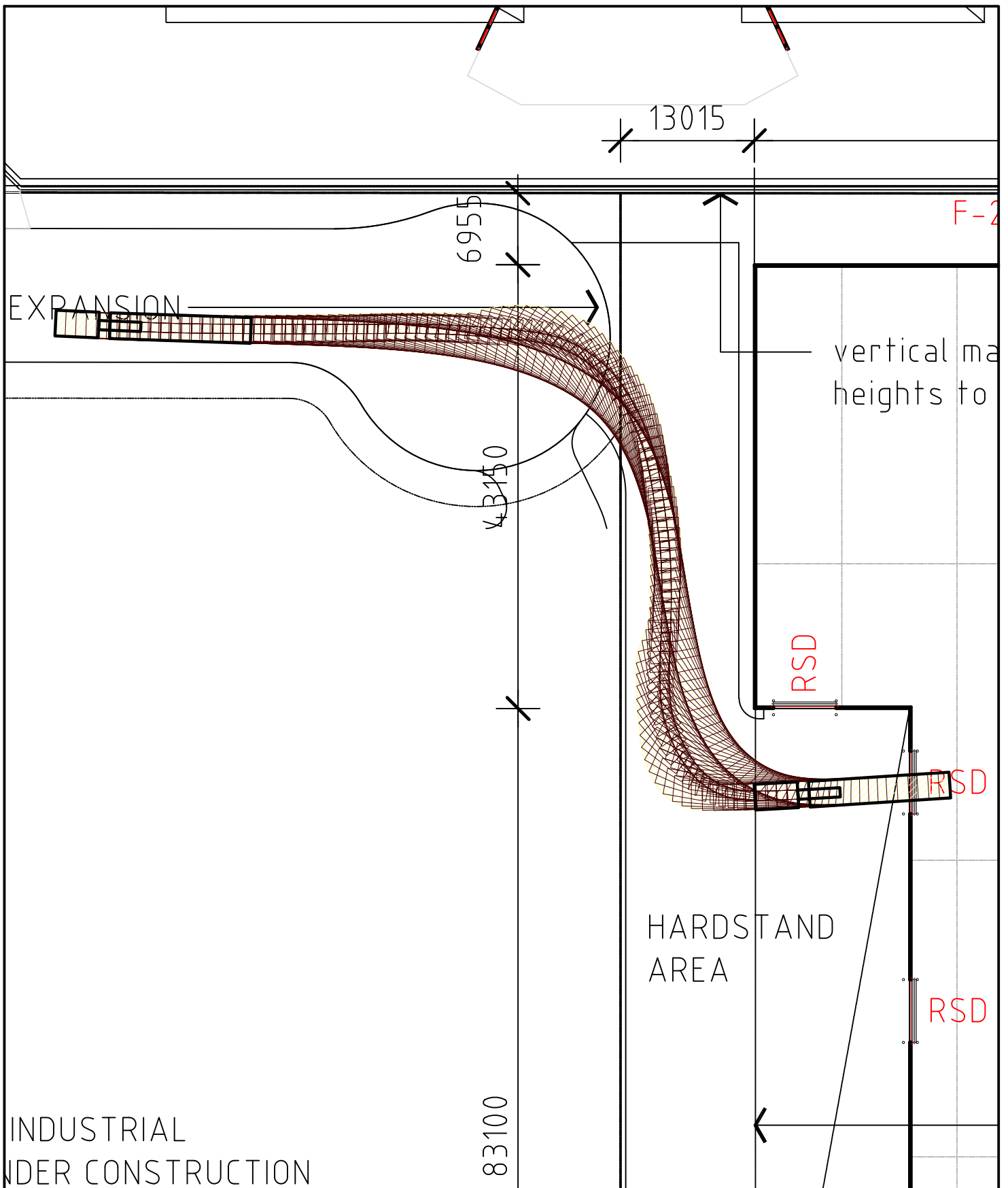
LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE ENTERING THE SITE**

SP 1



INDUSTRIAL
UNDER CONSTRUCTION

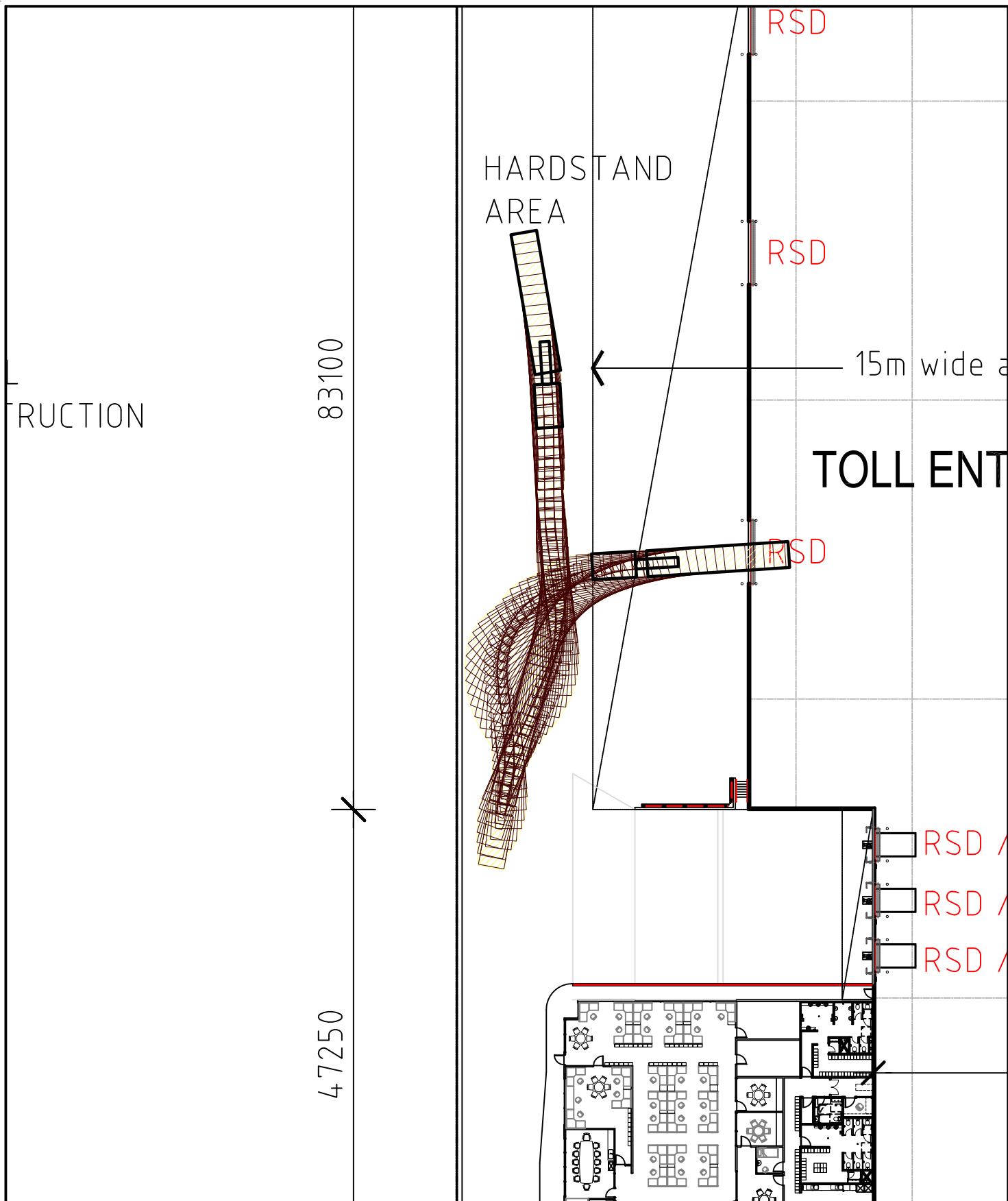
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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE EXITING THE SITE**

SP 2



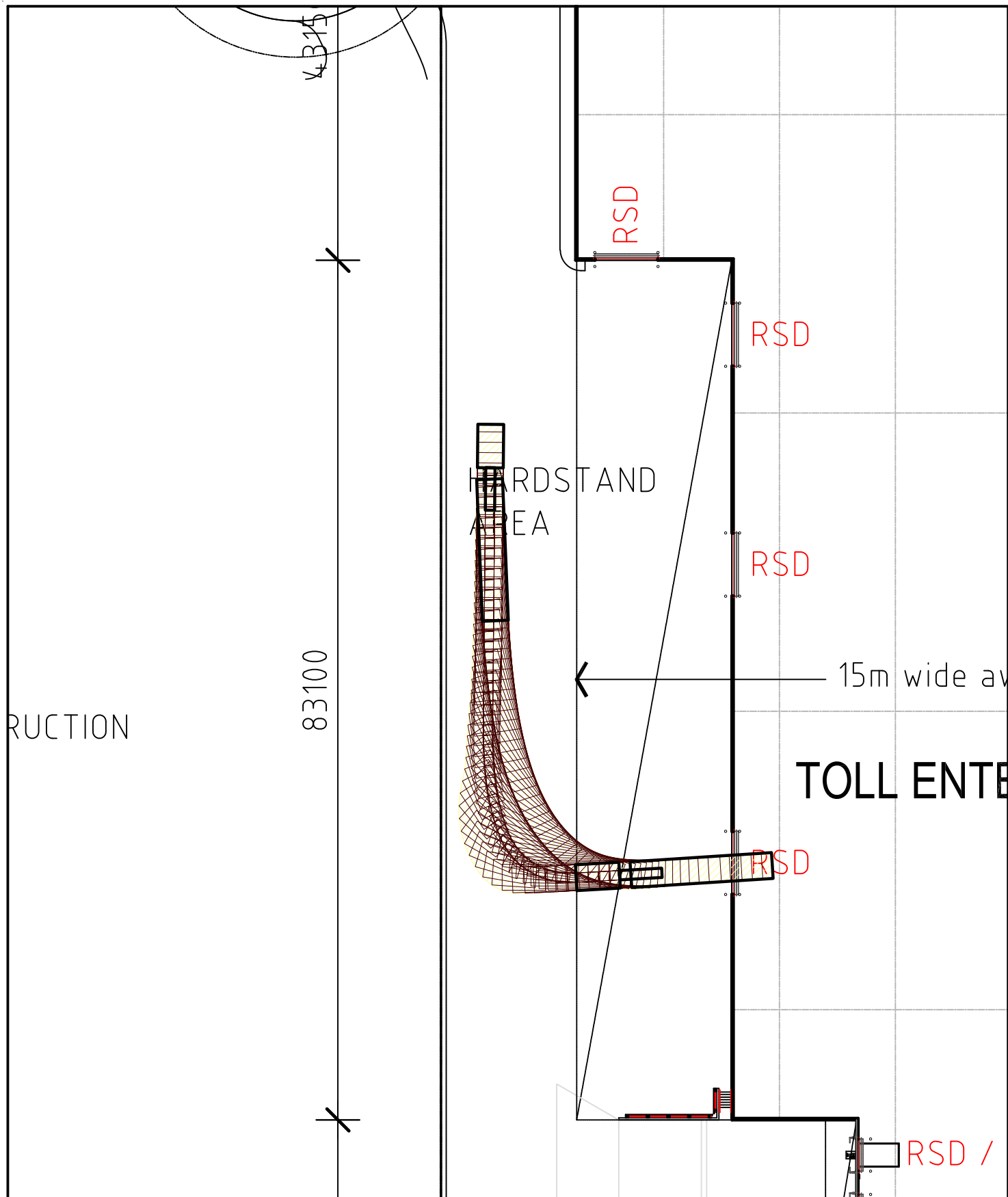
LEGEND

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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE ENTERING THE SITE**

SP 3



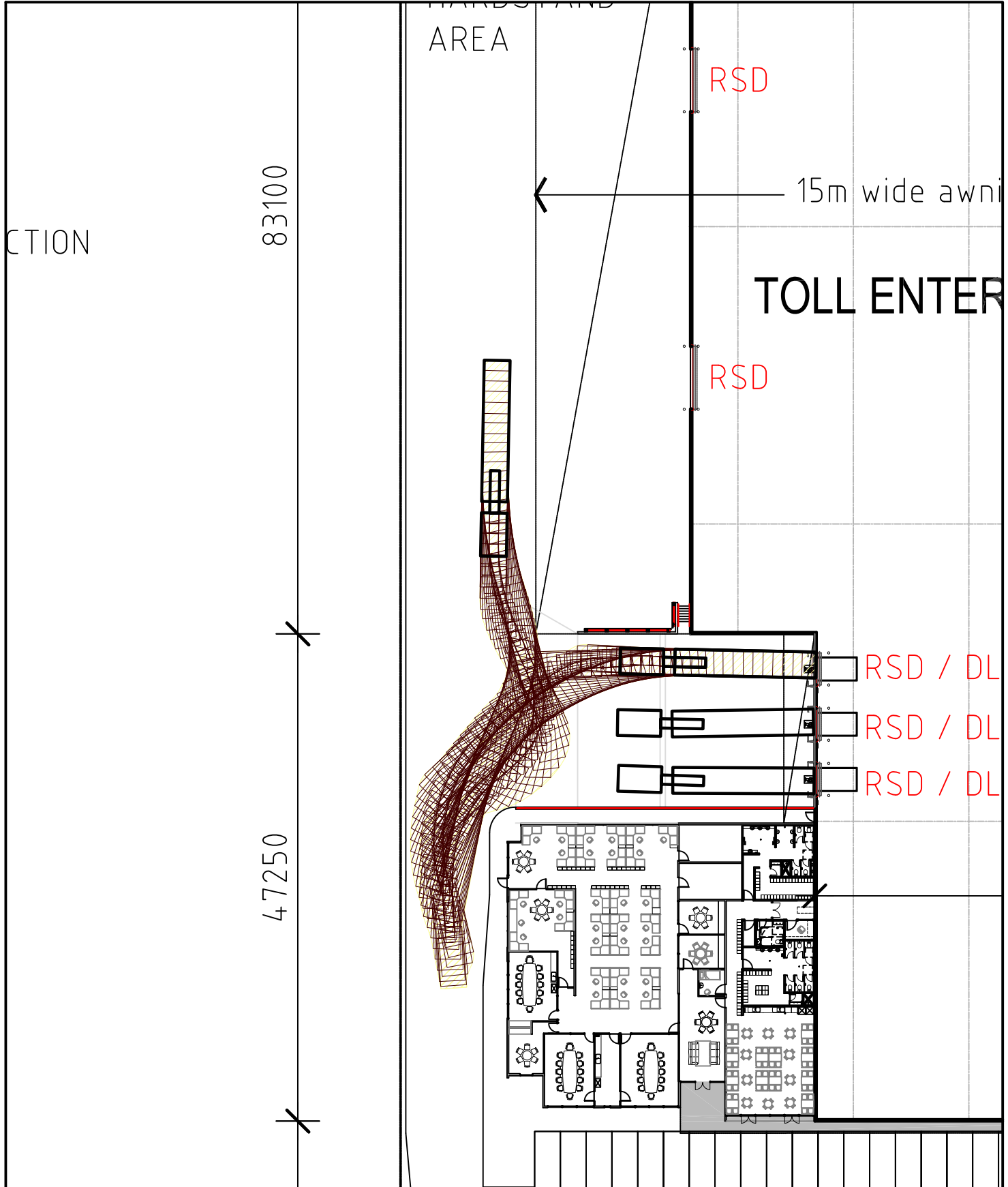
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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE EXITING THE SITE**

SP 4



LEGEND

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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE ENTERING THE SITE**

SP 5

ION

83100

47250

1000

RSD

15m wide awning

TOLL ENTERP

RSD

RSD / DL

RSD / DL

RSD / DL -

TOLL EXPANSION CAR

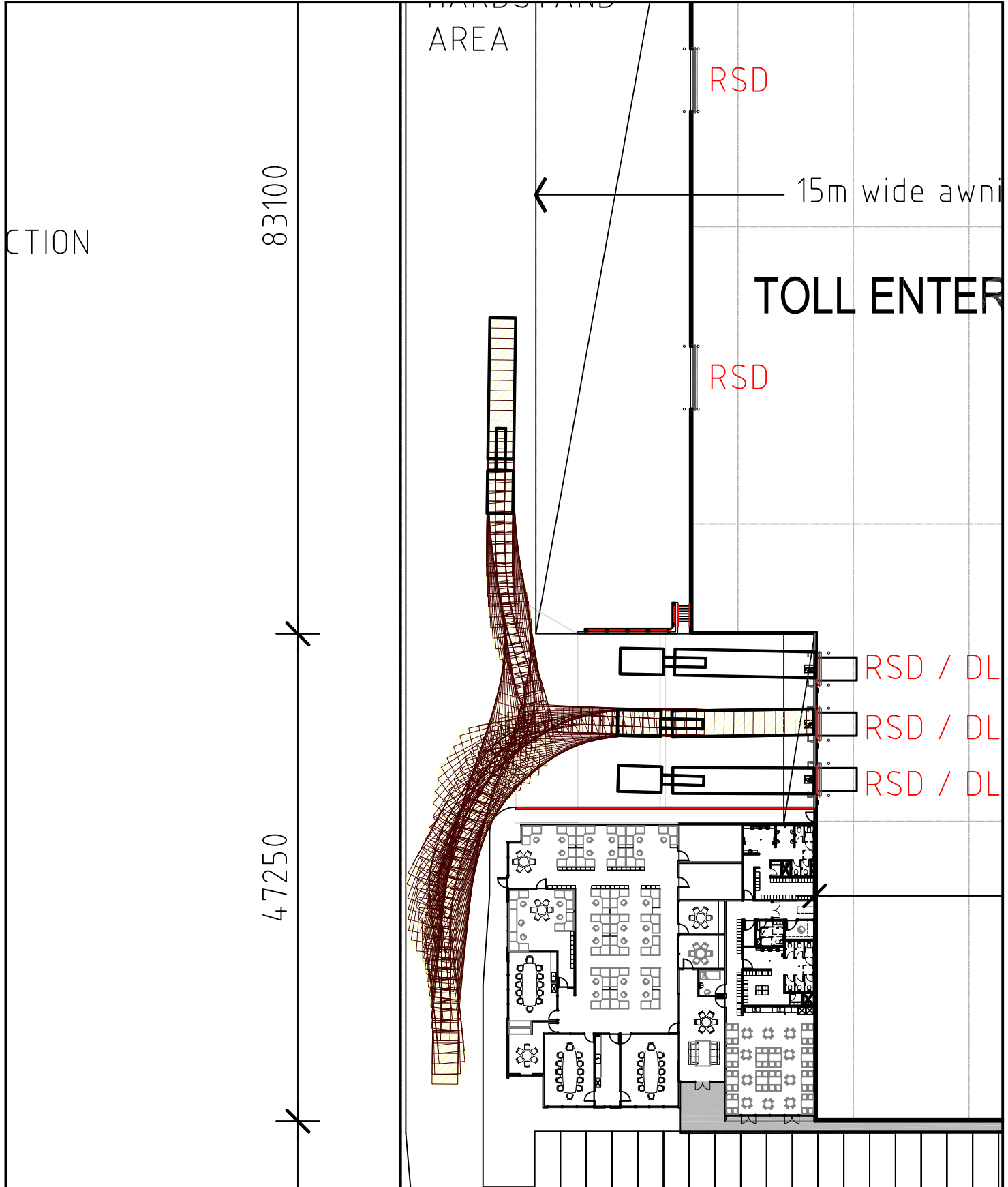
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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE EXITING THE SITE**

SP 6



LEGEND

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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE ENTERING THE SITE**

SP 7

ION

83100

47250

1000

RSD

15m wide awning

TOLL ENTERP

RSD

RSD / DL

RSD / DL

RSD / DL -

TOLL EXPANSION CAR

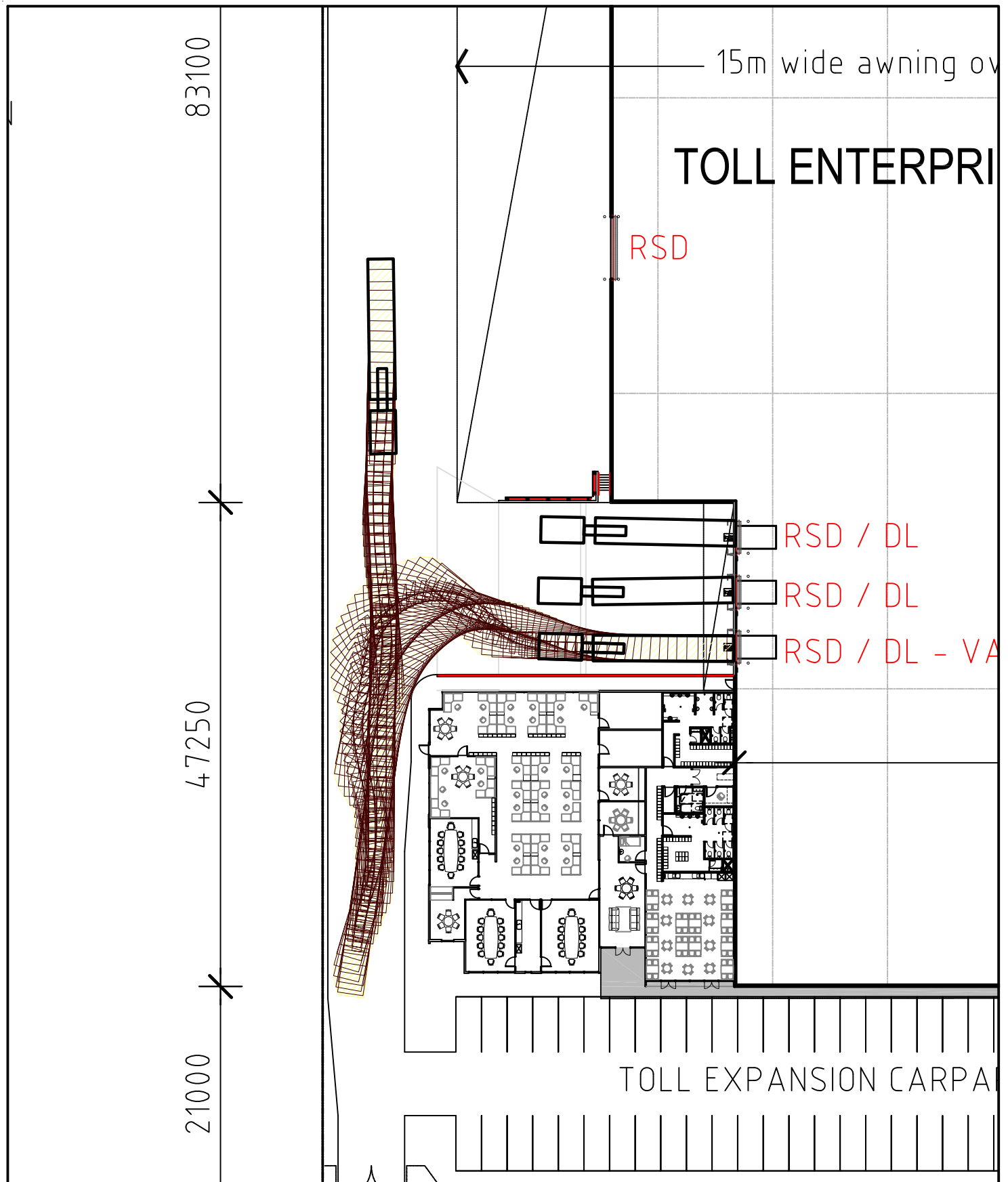
LEGEND

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**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE EXITING THE SITE**

SP 8



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE ENTERING THE SITE**

SP 9

ION

83100

47250

1000

RSD

15m wide awning

TOLL ENTERP

RSD

RSD / DL

RSD / DL

RSD / DL -

TOLL EXPANSION CAR

LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 19m ARTICULATED
VEHICLE EXITING THE SITE**

SP 10