

# Terraffic Pty Ltd

Traffic and Parking Consultants

ABN 83 078 415 871

10<sup>th</sup> November 2023

Ref: 23068

Westwood Capital Pty Ltd  
61-65 Kingsway  
Kingsgrove NSW 2208

Dear Sir/Madam,

## **PLANNING PROPOSAL - 921 PUNCHBOWL ROAD, PUNCHBOWL CARPARK AND VEHICULAR ACCESS COMPLIANCE REPORT**

As requested, I have assessed the architectural plans for the abovementioned planning proposal that incorporates the following components:

- Retail tenancies with a combined floor area of 1,103m<sup>2</sup>
- A 1,660m<sup>2</sup> club on the ground floor
- A residential development containing 320 dwellings

The site will be served by a total of 615 off-street parking spaces with 583 spaces within a 2 level basement carpark, 24 spaces for the townhouses and 8 at grade spaces. Loading areas are located within the basements and an indented drop off/pick up bay is provided on the ground floor. A 14m wide circulating road connects the basement carparks to Punchbowl Road.

Vehicular access to the site is proposed from Punchbowl Road and will be regulated to left-in and left-out movements only. This may be enforced by the construction of a median island on the centre of the carriageway. A secondary access to the north of the main access on to Punchbowl Road will allow for left out exit movements only.

### ***Proposed Parking Provision***

A Traffic Impact Assessment has been prepared by Traffix and concludes the proposal requires 591 parking spaces as follows:

Club parking	115 spaces
Retail parking	28 spaces
Residential parking	384 spaces
Visitor parking	64 spaces
<b>Total Required</b>	<b>591 spaces</b>

As noted above, the site is served by a total of 615 which exceeds the Traffix calculations.

### ***Compliance with AS2890***

The basement carpark and access ramps will be designed to satisfy the following requirements of the Australian Standard AS/NZS2890.1-2004 – “*Off-Street Car Parking*”:

- *Class 1A* long-stay (resident and employee) parking spaces are a minimum 5.4m long x 2.4m wide
- *Class 2* long-stay (visitor and Club patron) parking spaces are a minimum 5.4m long x 2.4m wide
- An additional 0.3m will be provided for spaces adjacent to a wall or obstruction
- A 1.0m wide blind aisle extension will be provided as per Figure 2.3 of the Standard
- The access/manoeuvring aisles will have a minimum width of 5.8m
- Pavement cross-falls at parking spaces will not exceed 5% (1 in 20)
- Maximum ramp grades will not exceed 25% (1 in 4)
- Ramp transitions will not exceed 12.5% (1 in 8) over a distance of 2.0m
- The one-way access ramps will have a minimum width requirement of 3.6m wall to wall comprising a 3.0m roadway and 2 x 300mm wide kerbs
- The two-way access ramps will have a minimum width requirement of 6.1m wall to wall comprising a 5.5m roadway and 2 x 300mm wide kerbs
- A minimum headroom clearance of 2.2m will be provided throughout the basement carpark

Disabled parking spaces will also be designed in accordance with the Australian Standard AS/NZS2890.6:2009 – “*Off-street parking for people with disabilities*” as follows:

- A 5.4m long x 2.4m wide dedicated (non-shared) parking space
- An adjacent shared area that is also 5.4m long x 2.4m wide
- A minimum headroom of 2.5m above the disabled spaces
- Pavement cross-falls in disabled spaces do not exceed 2.5% (1 in 40) in any direction

Bicycle parking will be designed in accordance with Figure B5 of AS2890.3:2015 – “*Bicycle Parking*”. End of Trip (EOT) facilities will also be provided in the basement for male and female staff of the Club and Retail floor space.

### ***Service Vehicles***

The planning proposal will be serviced by the 12.5m long Heavy Rigid Vehicle (HRV). The loading/waste collection bays on the upper basement levels will be a minimum 12.5m long and 3.5m wide as per Table 4.1 of AS2890.2:2018 (reproduced overleaf). A headroom clearance of 4.5m has also been provided on the ramp and the upper basement in accordance with Table 4.1.

**Table 4.1 — Service bay dimensions**

Vehicle class	Bay width m min.	Bay length m min.	Platform height m	Vertical clearance m min.
SRV	3.5	6.4	0.75 to 0.90	3.5
MRV	3.5	8.8	0.95 to 1.10	4.5 <sup>a</sup>
HRV	3.5	12.5	1.10 to 1.40	4.5 <sup>a</sup>
AV	3.5	20.0	1.10 to 1.40	4.5 <sup>a</sup>
<sup>a</sup> 4.8 m for animal transport vehicles, vehicle carriers and 4.6 m high vehicles or where access to the top of a tall vehicle, e.g. pantechicon or load is required.				

A swept path of the HRV accessing the loading bays and departing the basement in a forward direction are reproduced in **Annexure A**.

Furthermore, the ramps that will accommodate the HRV access have been designed as per Table 3.2 of the Standard with a maximum gradient of 1 in 6.5 (15.4%) with ramp transitions 7.0m long with a maximum change in grade of 1 in 16 (6.25%). A preliminary design for the HRV ramps is reproduced in **Annexure B**.

In addition to the ramp gradients, the ramps to be used by HRV's are 7.1m wide comprising a 6.5m wide roadway and 2 x 300mm wide kerbs in accordance with Table 3.1 of the Standard.

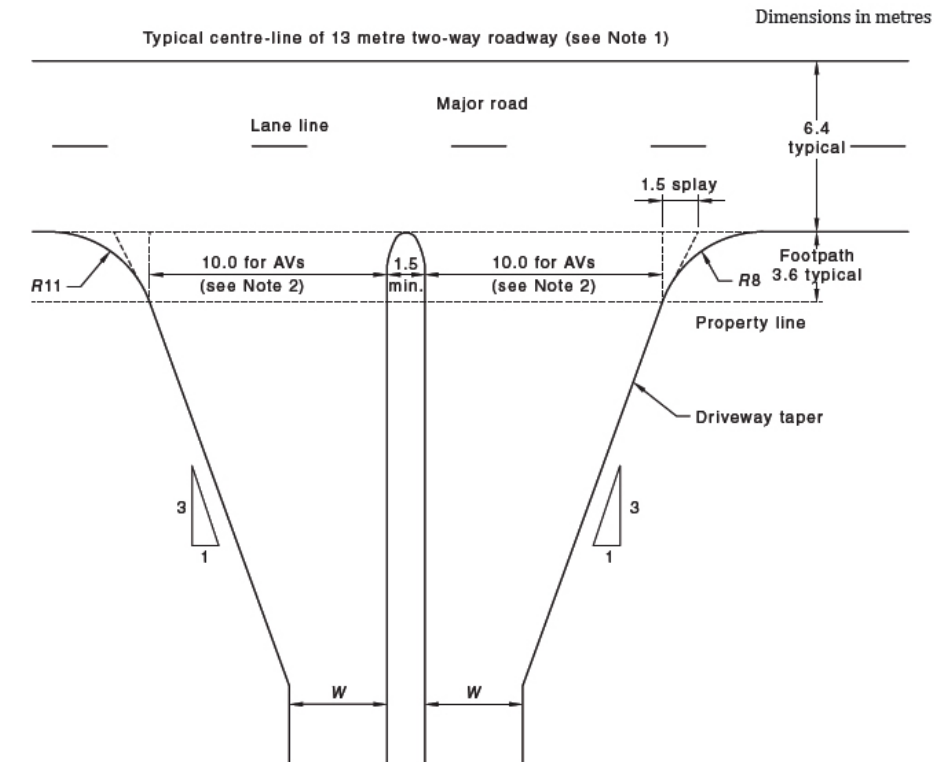
### ***Access Driveways***

As noted in the foregoing, the site will be served by a main driveway off Punchbowl Road that will be restricted to left-in / left-out only. An additional exit only driveway is located off Punchbowl Road towards the north of the site.

The main access driveway will accommodate all vehicles including HRV's. A median island will separate entering and exiting traffic and will be designed in accordance with Figure 3.2 of AS2890.2:2018 reproduced overleaf. Swept paths of the HRV entering and exiting the site off Punchbowl Road are reproduced in **Annexure C**. The paths of the HRV circulating through the site are also included in **Annexure C**.

The swept paths include the HRV turning left from the northern "exit only" driveway. As can be seen the driveway will be splayed accordingly and will comply with the requirements of TfNSW.

It is understood Council's Urban Planner has recommended a dual width driveway for the main access off Punchbowl Road. While this design does not satisfy the requirements of the Australian Standard, the HRV swept paths confirm that a dual width driveway will be insufficient in width to operate safely. The swept path of the HRV accessing the site with the Urban Planners design is also reproduced in **Annexure C**.



**Key**

$W$  = width of circulation roadway (see [Table 3.1](#))

**NOTE 1** [Figure 3.2](#) shows the HRV can turn left into the driveway entirely from the left lane and can turn out without encroaching over the public roadway centre-line. AVs up to 17 m in length, likewise, can turn in from the left lane and can turn out without encroaching over the centre-line. The design (20.0 m long) AV specified in this Standard can turn into the driveway by using the second lane out from the kerb as permitted by *Performance based Standards Scheme — The Standards and Vehicle Assessment Rules* (see Bibliography).

**NOTE 2** The corresponding dimensions for the MRV and SRV are 7 m and 5 m respectively. Larger vehicles may be able to use these narrower driveways depending on the width of public road available for manoeuvring in or out.

**NOTE 3** The access driveway median should be either fully- or semi-mountable kerb.

**Figure 3.2 — Minimum design for a major access driveway catering for HRVs and AVs**

It should also be noted that the Urban Planner required a roundabout or median treatment on the main circulating road where the ramp goes down to the Club basement. These treatments are not recommended as they would restrict HRV access.

Should you require any further information, please do not hesitate to contact Michael Logan on 0411 129 346 during business hours.

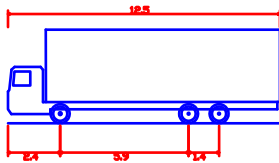
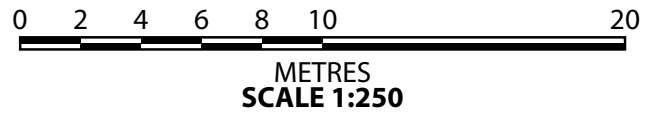
Yours faithfully

Michael Logan *MTraffic* (Monash University)  
Director  
Terraflow Pty Ltd

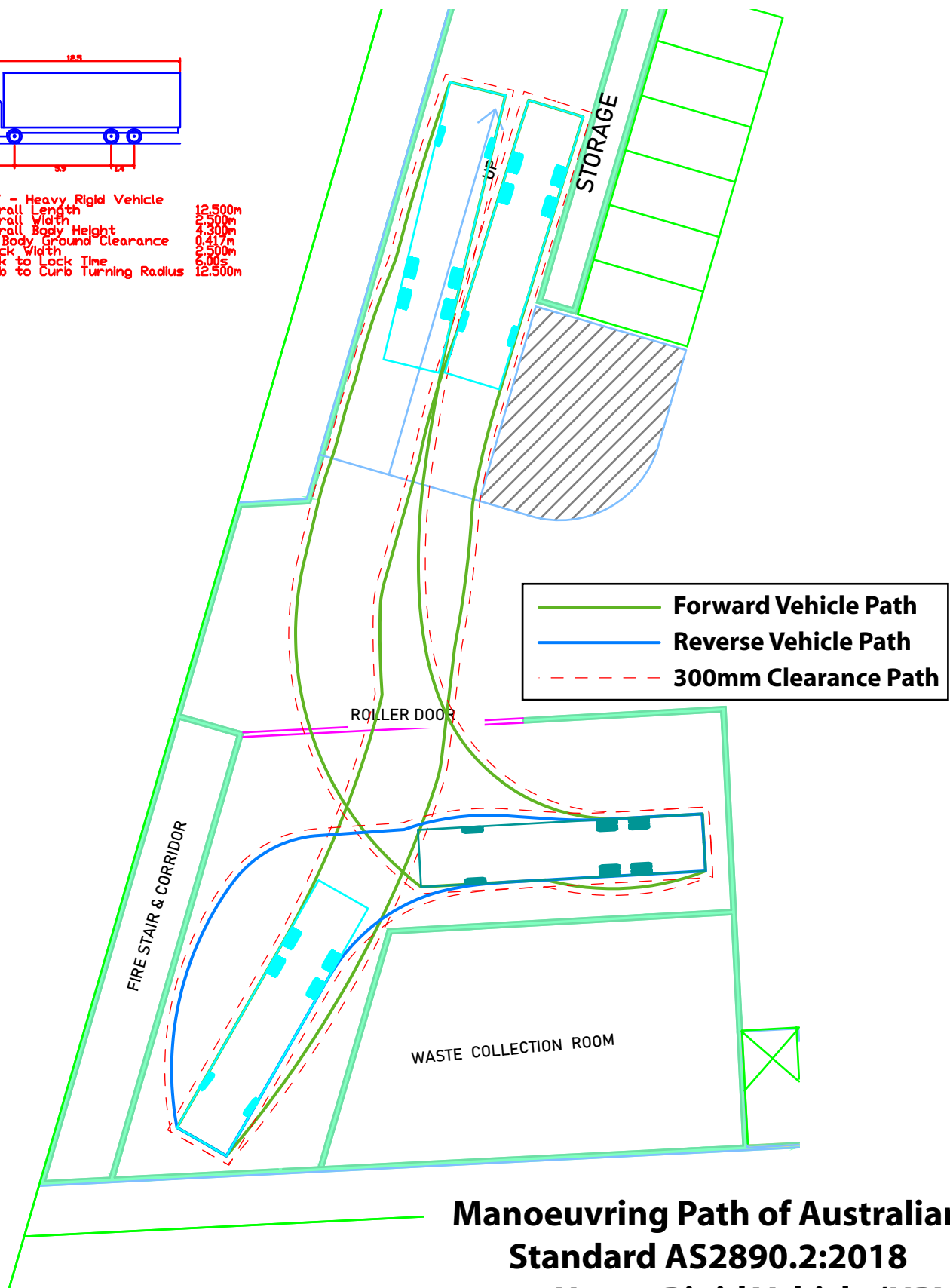
## **ANNEXURE A**

### **HRV LOADING BAY SWEEP PATHS**

**Path prepared using  
Autodesk Vehicle Tracking**



HRV - Heavy Rigid Vehicle  
 Overall Length 12.500m  
 Overall Width 2.500m  
 Overall Body Height 4.300m  
 Min Body Ground Clearance 0.417m  
 Track Width 2.500m  
 Lock to Lock Time 6.00s  
 Curb to Curb Turning Radius 12.500m

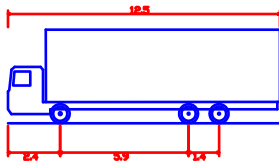
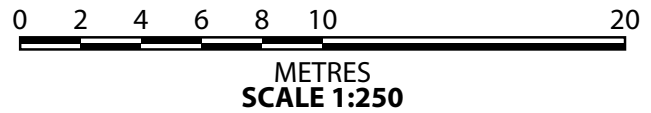


**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Accessing Club Basement  
Loading / Waste Bay**

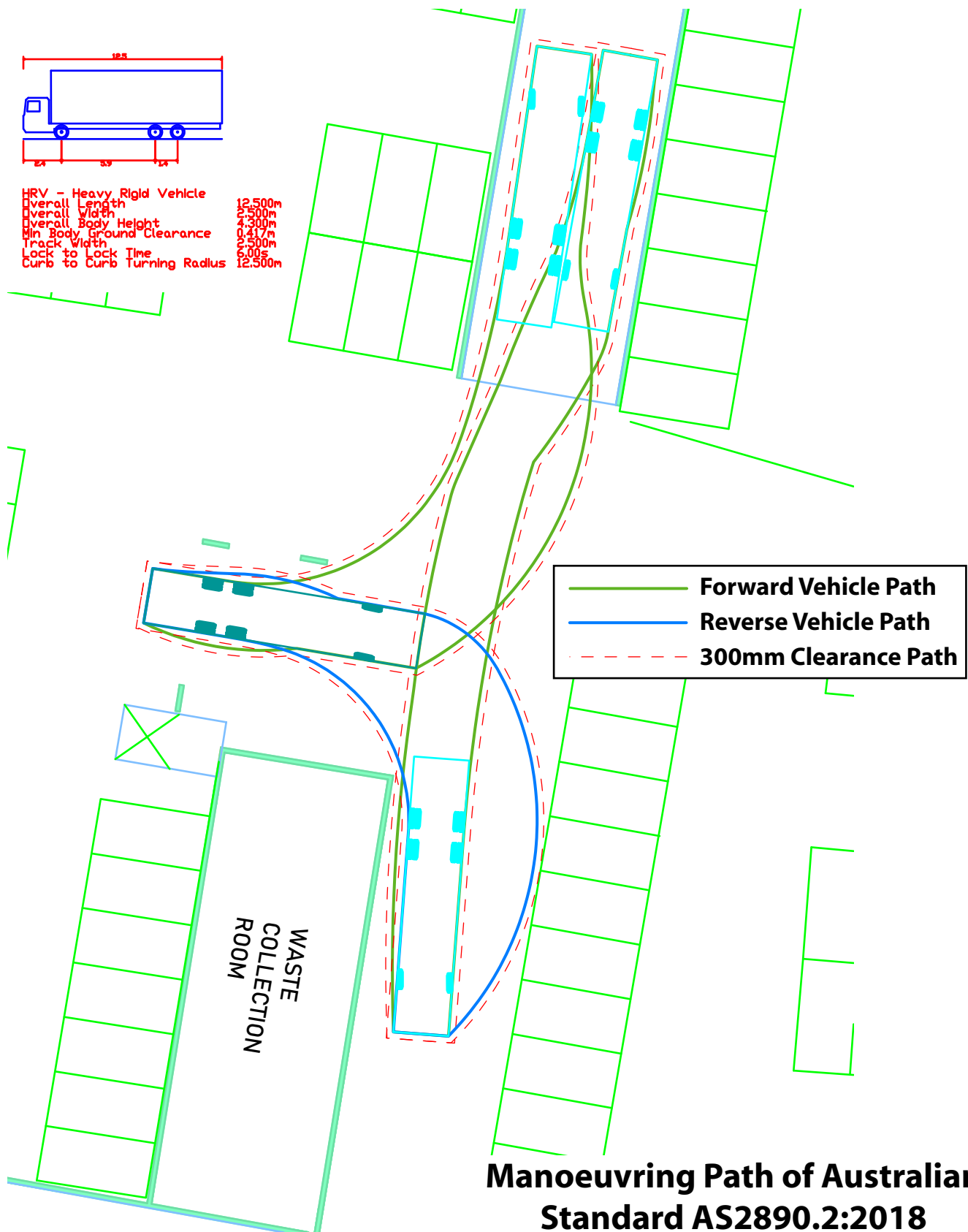


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**Path prepared using  
Autodesk Vehicle Tracking**



HRV - Heavy Rigid Vehicle  
Overall Length 12.500m  
Overall Width 2.500m  
Overall Body Height 4.300m  
Min Body Ground Clearance 0.417m  
Track Width 2.500m  
Lock to Lock Time 6.00s  
Curb to Curb Turning Radius 12.500m



**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Accessing Residential Basement  
Loading / Waste Bay**

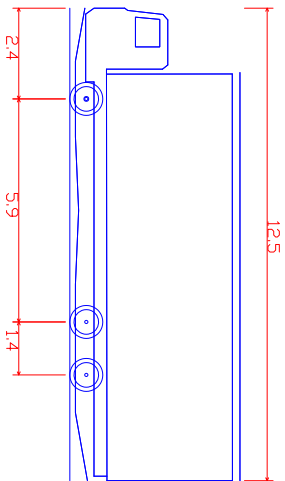


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## **ANNEXURE B**

### **HRV RAMP DESIGN**





- HRV - Vertical Clearance
- Overall Length

Overall Width

Overall Body Height

Min Body Ground Clearance

Track Width

Lock-to-lock time

Curb to Curb Turning Radius
- 12.500m

2.500m

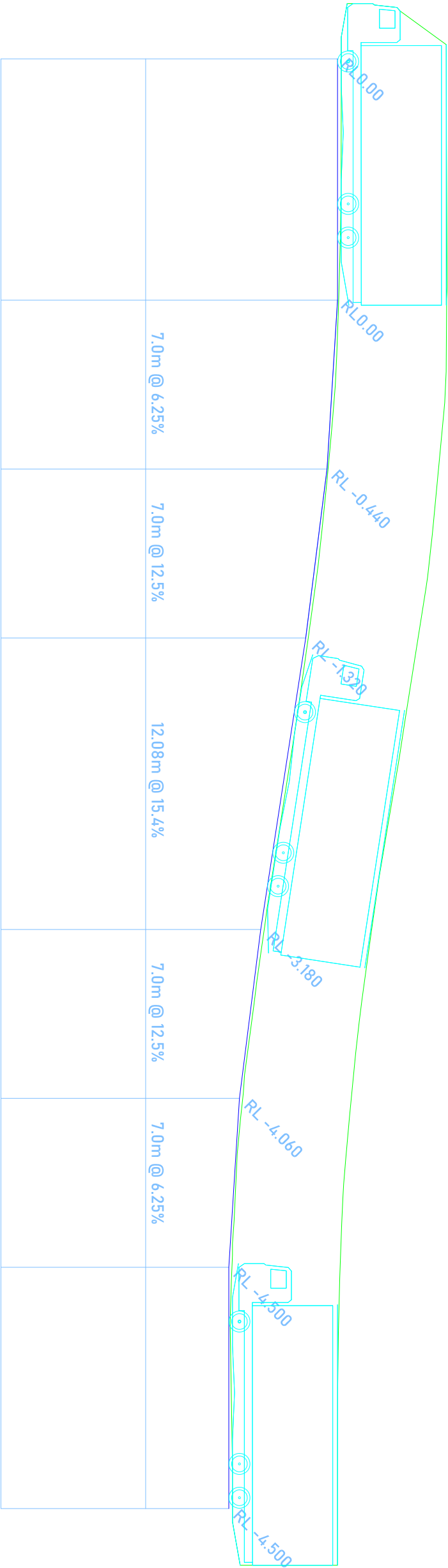
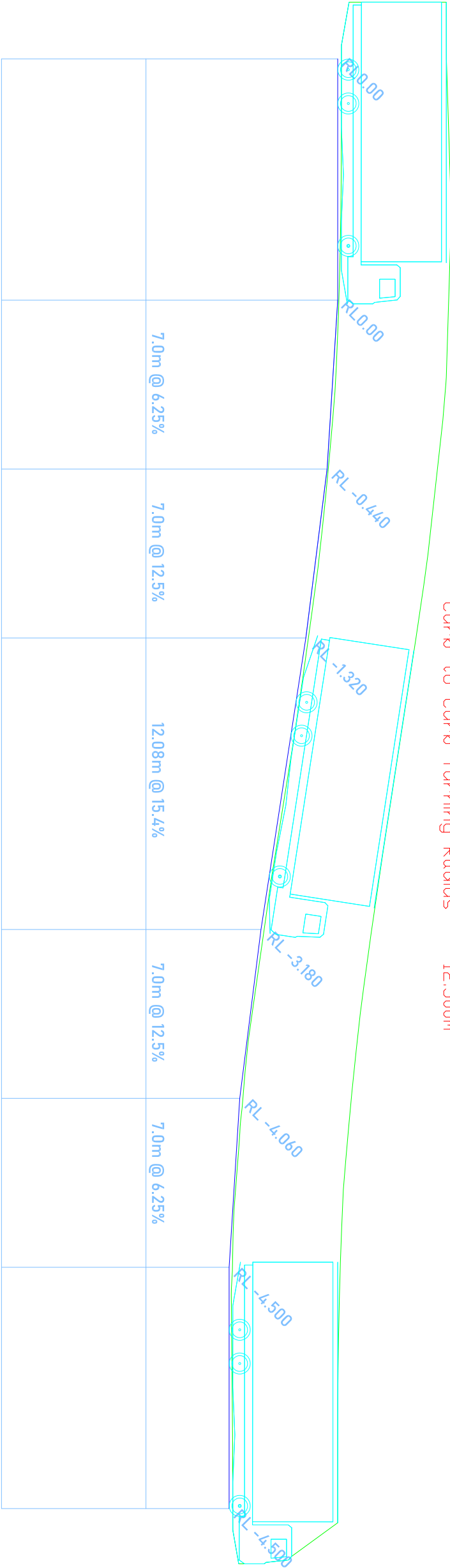
4.500m

0.150m

2.500m

6.005

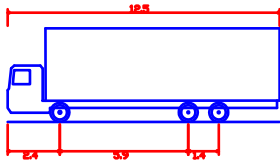
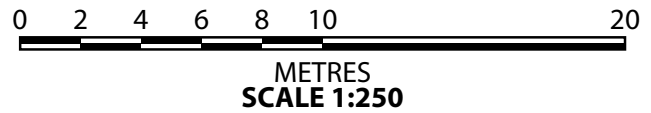
12.500m



## **ANNEXURE C**

### **HRV ACCESS DRIVEWAY AND CIRCULATING SWEPT PATHS**

**Path prepared using  
Autodesk Vehicle Tracking**



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Overall Length 12.500m  
Overall Width 2.500m  
Overall Body Height 4.300m  
Min Body Ground Clearance 0.417m  
Track Width 2.500m  
Lock to Lock Time 6.00s  
Curb to Curb Turning Radius 12.500m

**Note: Driveway compliant with  
Figure 3.2 of AS2890.2:2018**

**PUNCHBOWL ROAD**

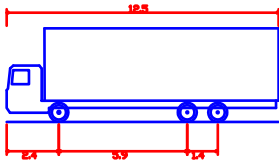
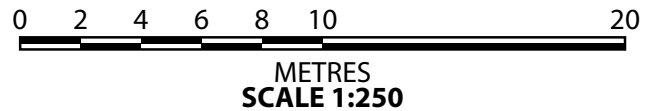
**Forward Vehicle Path**

**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Accessing Main Access Driveway**

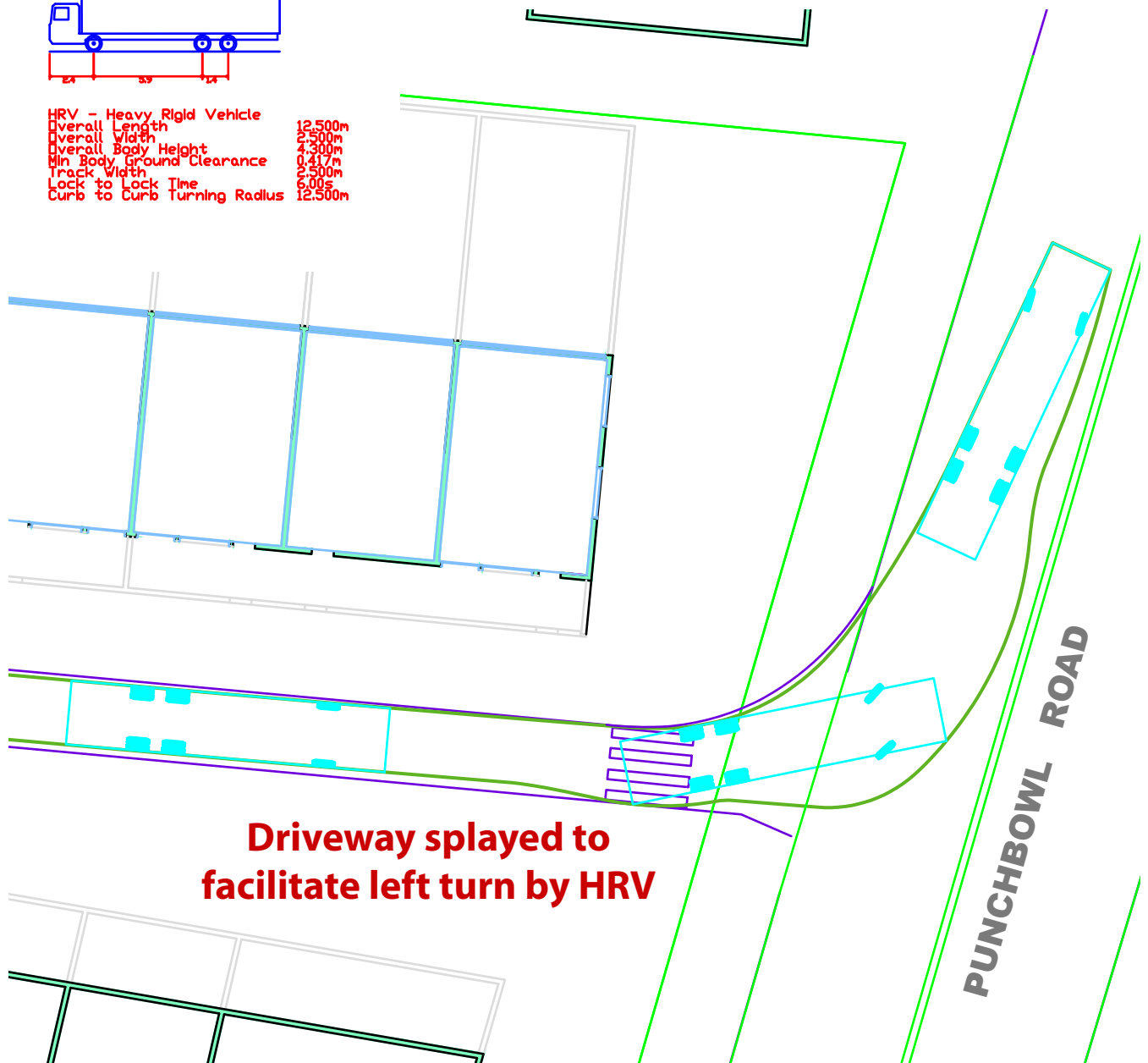


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Path prepared using  
Autodesk Vehicle Tracking



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Track Width 2.500m  
Lock to Lock Time 6.00s  
Curb to Curb Turning Radius 12.500m



**Driveway splayed to  
facilitate left turn by HRV**

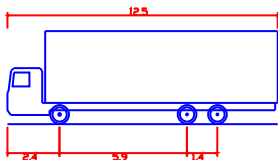
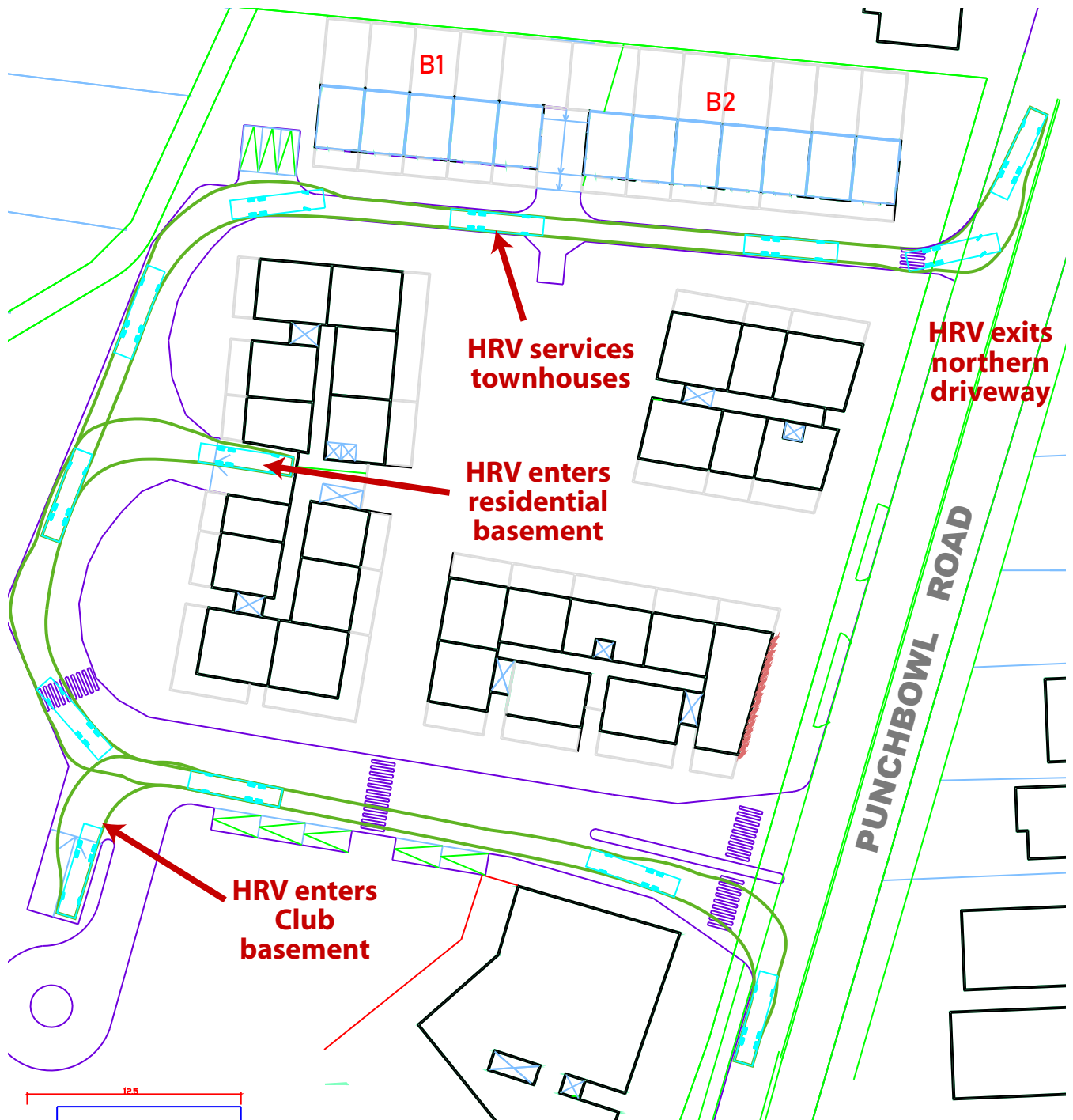
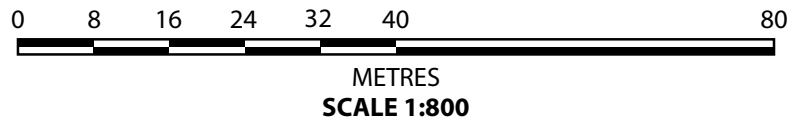
Forward Vehicle Path



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**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Exiting Northern Access Driveway**

Path prepared using  
Autodesk Vehicle Tracking



HRV - Heavy Rigid Vehicle  
Overall Length 12.500m  
Overall Width 2.500m  
Overall Body Height 4.300m  
Min Body Ground Clearance 0.417m  
Track Width 2.500m  
Lock-to-lock time 6.00s  
Curb to curb Turning Radius 12.500m

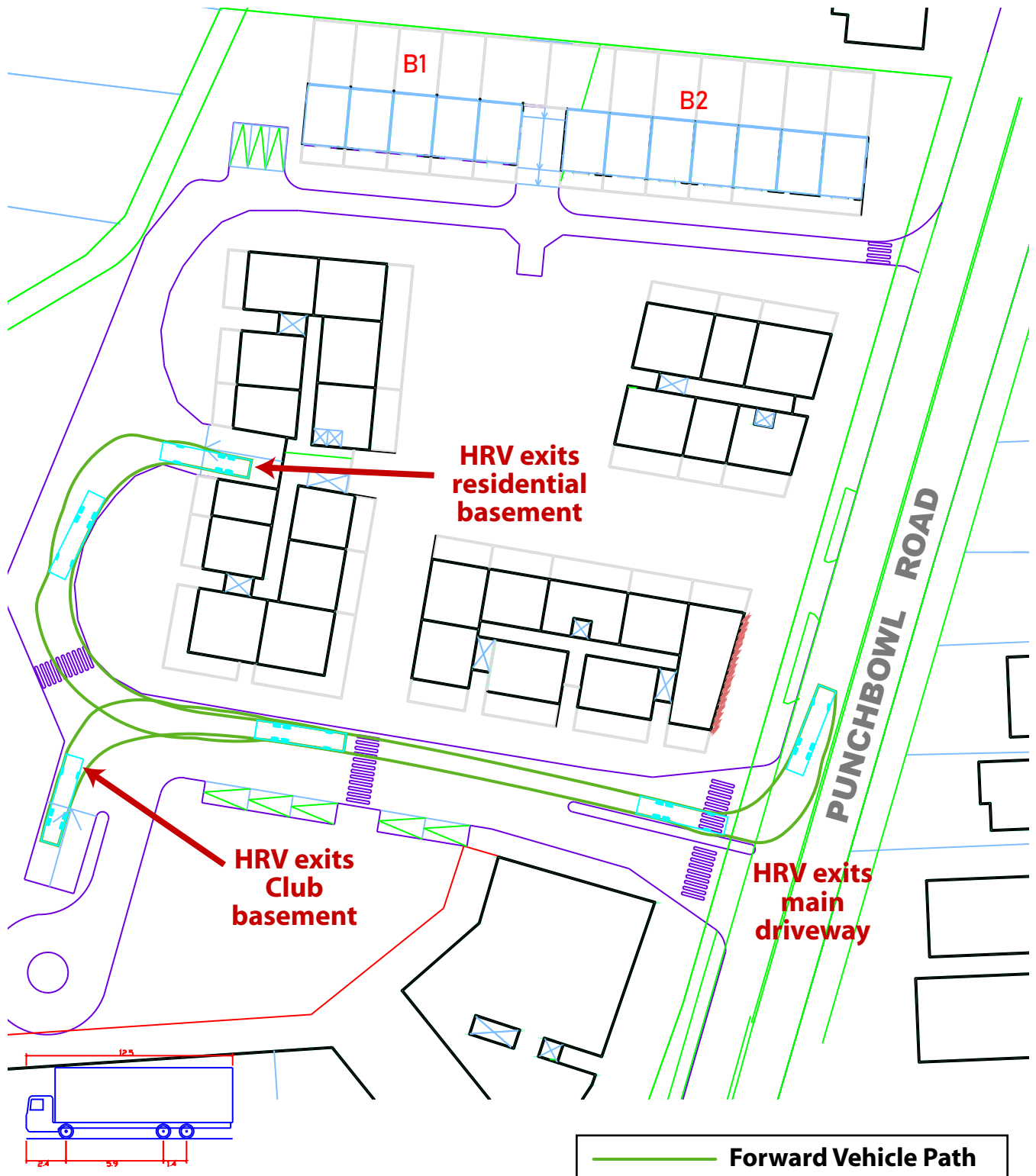
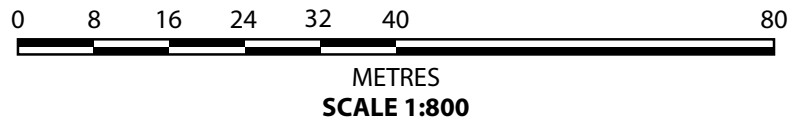
Forward Vehicle Path

**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Circulating Through Site and  
Entering Basement Carparks**



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Path prepared using  
Autodesk Vehicle Tracking



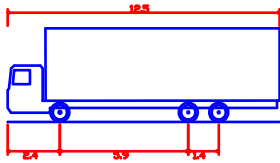
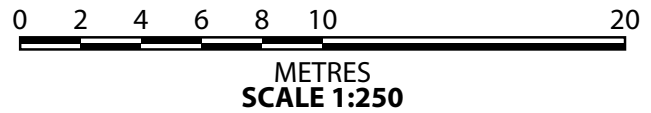
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Track Width 2.500m  
Lock-to-lock time 6.00s  
Curb to curb Turning Radius 12.500m

**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Circulating Through Site and  
Exiting Basement Carparks**

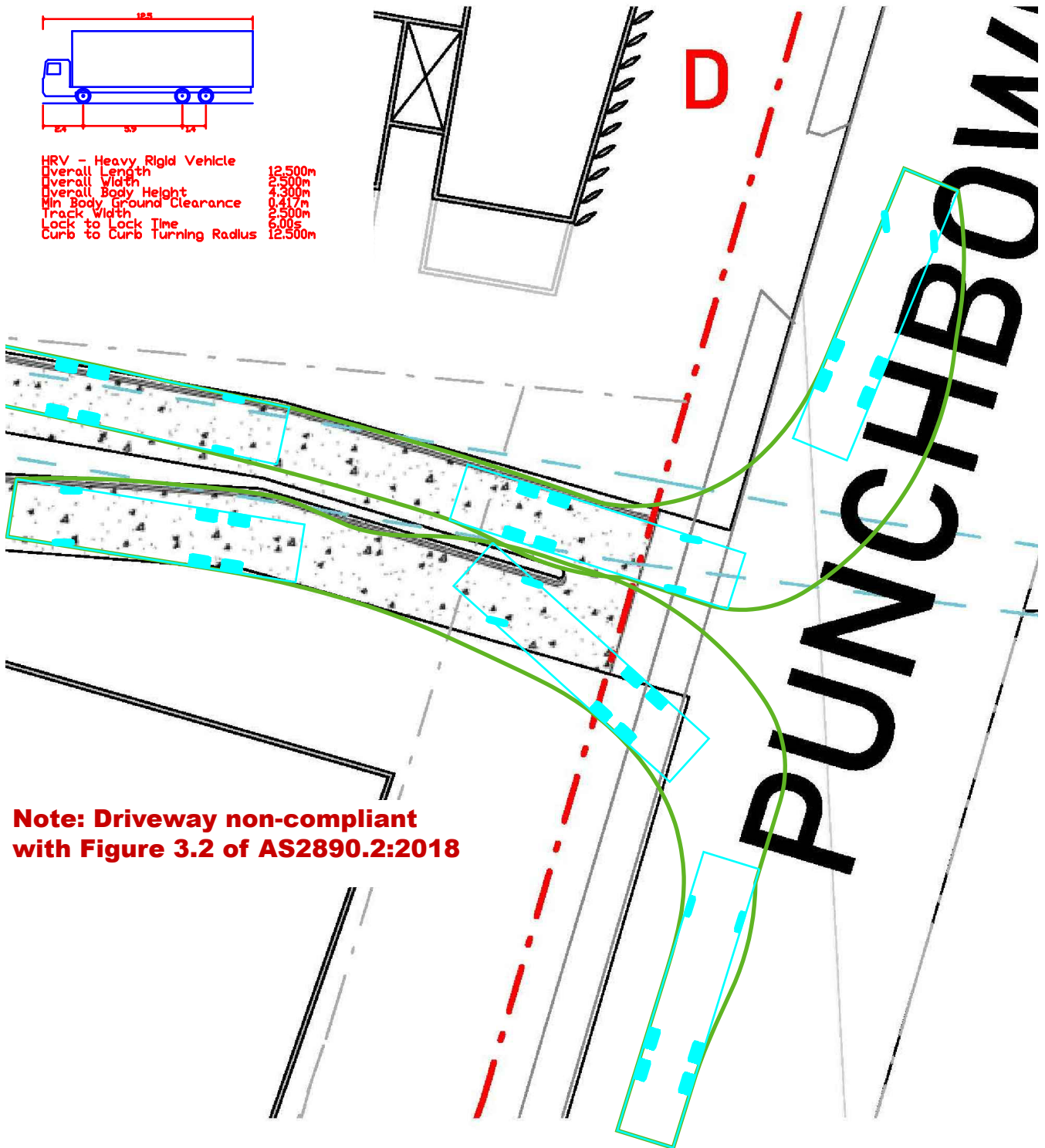


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**Path prepared using  
Autodesk Vehicle Tracking**



HRV - Heavy Rigid Vehicle  
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Overall Width 2.500m  
Overall Body Height 4.300m  
Min Body Ground Clearance 0.417m  
Track Width 2.500m  
Lock to Lock Time 6.00s  
Curb to Curb Turning Radius 12.500m



**Note: Driveway non-compliant  
with Figure 3.2 of AS2890.2:2018**

 **Forward Vehicle Path**

**Manoeuvring Path of Australian  
Standard AS2890.2:2018  
12.5m Heavy Rigid Vehicle (HRV)  
Accessing Main Access Driveway  
Designed by Urban Planner**



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