



# Station Parking – Train System

## Engineering Standard

Rail Commissioner

AR-PW-PM-SPE-00129012 (D072)

**DOCUMENT AMENDMENT RECORD**

REVISION	CHANGE DESCRIPTION	DATE	PREPARED	REVIEWED	APPROVED
0	Initial issue	March 11	Josh Ward	Doug Gillot	Rob Taverner
1	Changes in various sections	July 12	Kuldeep Zala	Keith Charlton	Rob Taverner
2	Document number change	July 13	Kuldeep Zala	Keith Charlton	Rob Taverner
3	Other changes	April 19	Sophie Wilkinson	Royce Mariadas	Mark Pronk
4	Scheduled update	July 24	Andrew Kalionis	Frank Melino	Naveen Sulake
<b>Document Review Schedule:</b>		July 2027			

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## 1. Introduction

The Department of Infrastructure and Transport owns the Adelaide Metropolitan Passenger Rail Network (AMPRN) currently operated and maintained under the Rail Accreditation of third party. There are approximately 89 train stations serving the AMPRN.

## 2. Purpose

The purpose of this standard is to specify the requirements for off street parking at the station precinct. This standard should be read in conjunction with the remainder of the DIT Station Standards for the Train System, as listed in DIT Master Specification Part RW-STS-D1 Stations.

## 3. Scope

This standard applies to all off street parking facilities located within any DIT station precinct.

## 4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Standard Drawing Kerb and Gutter Details	CS1-DRG-361824
Standard Drawing Car Park & Bus Interchange Signage & Pavement Marking Layout	CS1-DRG-361815
Standard Drawing Signage Schedule Drawing Register	CS1-DRG-361816
Station Precinct Concept – Bus Shelter	S7071 sheet 23
Station Furniture – Train System – D066	AR-PW-PM-SPE-00129007
Station Pedestrian Access – Train System – D065	AR-PW-PM-SPE-00129006

## 5. References

- AS 1428 Design for Access and Mobility
- AS 1742 Manual of Uniform Traffic Control Devices
- AS 2890 Parking Facilities
- AS 3500.3 Plumbing and Drainage – Stormwater Drainage
- Austroads Guide to Pavement Technology Part 2: Pavement Structural Design
- Austroads Guide to Road Design – Part 4a – Unsignalised and Signalised Intersections
- Austroads Guide to Traffic Management – Part 11 – Parking
- DIT Supplement to Austroads Guide to Pavement Technology Part 2: Pavement Structural Design
- DIT Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices Part 2 – Code of Technical Requirements

### Legislative Requirements

- Disability Standards for Accessible Public Transport (DSAPT)*

## 6. Acronyms

ACRONYM	FULL NAME
AMPRN	Adelaide Metropolitan Passenger Rail Network
DSAPT	Disability Standards for Accessible Public Transport
DIT	Department of Planning, Transport and Infrastructure

## 7. Design Requirements

### 7.1. Design Vehicles

#### 7.1.1. General

The parking facility shall be designed to accommodate “B99” and “B85” vehicles in accordance with AS/NZS 2890.1.

Parking spaces shall be provided in accordance with AS 2890.1, Table 1.1 Classification of Off-Street Car Parking Facilities – “User Class 1” (all-day commuter parking).

The typical minimum parking space size shall be provided in accordance with AS 2890.1.

#### 7.1.2. Maintenance Vehicle Access

Maintenance vehicles may need to gain access to areas of the station precinct for maintenance and servicing purposes. Where authorised vehicles require access, but public vehicles are prohibited, removable bollards shall be used in accordance with AR-PW-PM-SPE-00129007 Furniture

### 7.2. Parking Provisions

#### 7.2.1. General

Parking shall be provided at stations where motor vehicles are a major mode of transport for accessing the station. Parking shall be formalised in designated off-street areas and shall cater for cars, people with disabilities and motor cycles.

Vehicular and passenger circulation shall be designed together and shall be complimentary of each other.

The parking facility shall be sealed, delineated with pavement marking, include appropriate drainage and have lighting and CCTV.

The number of parking spaces shall be determined by the type of station and typical number of patrons at each station.

#### 7.2.2. Disability Parking

Disability parking spaces (for use by people with disabilities) shall be 90 degree or parallel spaces. These spaces shall be located adjacent to the station entrance and shall be as close as practicable to the primary access path to and from the station platforms.

Disability parking spaces and adjacent shared areas shall be provided in accordance with AS/NZS 2890.6 Parking Facilities – Off-street parking for people with disabilities.

The minimum number of disability parking spaces to be provided shall be:

1. One for car parks with up to 50 parking spaces; and

2. 2% (rounded up) of the total parking allocation with more than 50 parking spaces.

To ensure a continuous path of travel from the disability parking spaces to the access path, the gradient and cross fall of the disability parking space and the area of the car park providing links from these disability parking spaces to the access path shall be compliant with the Disability Standards for Accessible Public Transport (DSAPT) and AS 1428.

### 7.2.3. Motor Cycle/ Scooters

Parking spaces for motor cycles and scooters shall be located in:

1. a prominent area with a good level of passive surveillance; and
2. the vicinity of the bicycle enclosures.

The minimum parking space size for motorcycles/ scooters shall be 5 400 mm long and 1 200 mm wide.

There shall be a minimum of two motor cycle parking spaces provided.

### 7.3. Kiss 'n' Go Areas

Kiss 'n' Go areas shall be provided at all stations. These passenger drop-off / pick-up areas shall run parallel to the access road and/or station platforms and be located as close as possible to the main entrance of the station.

### 7.4. Pavement Design

Parking facilities and Kiss 'n' Go areas shall be surfaced with either asphalt or concrete.

Pavement for the parking facilities and Kiss 'n' Go areas shall be provided in accordance with Austroads Guide to Pavement Technology Part 2: Pavement Structural Design, Part RD-PV-D1 Pavement Design Austroads Supplement and DIT Master Specification Part D020 Design Roadworks.

### 7.5. Drainage

The drainage in the parking facilities shall be designed in accordance with AS/NZS 3500.3 Plumbing and Drainage – Stormwater Drainage.

The design shall minimise the extent of surface rain water flooding and ensure there is no ponding of water within the parking facilities.

The perimeter of the parking facilities shall be kerbed using CS1-DRG-361824 Kerb and Gutter Details. Where water does not flow longitudinally along the perimeter, "Kerb Only" may be used.

A petroleum hydrocarbon and gross pollutant trap may need to be provided if connecting any drainage from the parking facility to the local Council drainage system, in consultation with the local authority.

### 7.6. Permeable Paving

Where there are existing trees that cannot be removed within the parking facilities the use of permeable paving shall be used around the base of these trees to prevent pavement damage through root movement and to provide water to the trees.

Permeable paving shall be provided in accordance with Part RD-PV-C7 Permeable Paving.

## 7.7. Layout/ Access

### 7.7.1. Parking Angles

Parking shall be at 90° within aisles to provide the maximum number of spaces. Where geometry and/or space is restricted in areas of the parking facility, other parking angles may be used with approval from Unit Manager Track & Civil Engineering.

### 7.7.2. Parking Aisles

Parking aisles shall be designed to allow for two way traffic. The parking aisle width provided shall comply with AS/NZS 2890.1.

### 7.7.3. Speed Humps

The car park shall be designed so that the maximum length of a parking aisle is not greater than 100 m. Where this is not possible, speed humps shall be provided in the parking aisles in accordance with DIT Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices Part 2 – Code of Technical Requirements.

The placement of speed humps is not restricted to parking aisles in excess of 100 m, speed humps may be placed anywhere there is deemed a need to reduce the speed of vehicles. All speed humps shall comply with the requirements of AS/NZS 2890.1.

## 7.8. Car Park Entry/ Exit Points

Parking facility entry/exit points shall be designed to adequately cater for parking demand, with larger parking facilities providing multiple access and egress to the facility. These access points shall comply with AS/NZS 2890.1 and good traffic engineering practice - with particular attention to sight distance and locality to adjacent roads and premises. Drainage shall also be maintained across the parking facility access points.

For sight distance requirements refer to Austroads Guide to Road Design - Part 4a Unsignalised and Signalised Intersections and AS/NZS 2890.1. Sight distance to and from pedestrians shall also be taken into account when determining the position of parking facility access points.

Where a parking facility access point crosses over a DIT or Council owned access path, a reinforced concrete property crossover with minimum width equal to that of the parking access point shall be installed in accordance with CS1-DRG-361824 Kerb and Gutter Details.

Where a parking facility access point crosses the primary access path, the maximum cross fall grade shall be 1:40. For all other paths, the maximum cross fall grade of the crossover shall be 1:20.

Where there are significant vehicle numbers making a right turn across oncoming traffic to enter the parking facility, a dedicated right turn lane shall be provided to allow for safe vehicle entry, (in accordance with Austroads Guide to Road Design Part 4a, Unsignalised and Signalised Intersections).

Traffic signals shall not be provided.

### **7.9. Vehicular Ramps**

Where parking facilities and/ or access roads are at different levels a vehicular ramp may be required to join or access the parking facilities. These ramps shall be designed in accordance with AS/NZS 2890.1.

Ramp grades shall comply with relevant components of AS 2890.1, Clause 2.5.3 Circulation roadway and ramp grades.

Ramps shall be a minimum of 3.5 m wide between kerb faces for one-way traffic and a minimum of 6 m wide for two-way traffic. Design dimensions shall comply with AS 2890.1, Clause 2.5.2 Layout design of circulation roadways and ramps.

Multi level parking facilities or curved ramps shall not be provided unless approved by Unit Manager Track & Civil Engineering.

### **7.10. Wheel Stops**

Wheel stops shall not be provided in parking facilities unless approved by Unit Manager Track & Civil Engineering.

Where an existing parking facility has wheel stops, the wheel stops shall be removed as part of the parking facility upgrade and abutting footpaths shall be widened in accordance with Clause 7.11.1 access paths.

### **7.11. Pedestrian Access**

#### **7.11.1. Access Paths**

Access paths and other paths shall be provided around the perimeter of the parking facility. These paths shall be 2.0 m wide in accordance with AR-PW-PM-SPE-00129006 Pedestrian Access.

#### **7.11.2. Circulation within Parking Facility**

Pedestrian access in the parking facility shall generally be along the length of the parking aisles.

#### **7.11.3. Kerb Ramps**

Pedestrian access from the parking facility to the primary access path shall be via kerb ramps located at the end of each parking aisle. The area in the parking facility immediately adjacent the kerb ramp shall be chevroned to delineate exclusive use by pedestrians, in accordance with Clause 7.15 Pavement Marking.

Kerb ramps shall be provided in accordance with AR-PW-PM-SPE-00129006 Pedestrian Access.

## 7.12. Furniture

### 7.12.1. Bollards

Protective impact absorbing bollards shall be provided in and around the parking facility to protect buildings or other fixed infrastructure where there is a risk of damage by vehicles.

Bollards shall be provided in accordance with AR-PW-PM-SPE-00129007 Furniture.

### 7.12.2. Litter Bins

Litter bin/s shall be provided at the main pedestrian entry/ exit point/s of the car park adjacent to the primary access path/s in accordance with AR-PW-PM-SPE-00129007 Furniture.

## 7.13. Fencing

Use of fencing in car parks shall be limited. For details of usage and fencing types refer to AR-PW-PM-SPE-00129009 Fencing.

## 7.14. Signage & Pavement Marking

Signage and pavement marking shall be provided in accordance with AR-PW-PM-SPE-00129010 Signage and Pavement Marking.

## 7.15. Lighting

Lighting for parking facilities and kiss 'n' go areas shall be designed in accordance with CS5-DOC-003511 - Public Transport Standard: Electrical Infrastructure Engineering – Design.

Lighting in car parks shall take into consideration accessible car parks and CCTV. A risk assessment shall be undertaken as the level of lighting required. The final level shall be agreed with DIT Risk, Security and Emergency Management and DIT Rail Infrastructure Management.

Light poles shall be positioned around the perimeter of the car park. The distance from the face of kerb at the edge of the car park to the closest surface of the light pole shall be at least 600 mm to ensure the overhang of vehicles does not damage the light poles.

## 7.16. CCTV

CCTV shall be installed to provide a minimum of 70% camera coverage within all parking facilities and kiss 'n' go areas in accordance with PI5-DOC-003517 – Public Transport Infrastructure Security Systems – Engineering Specification.

## 7.17. Landscaping

Landscaping shall be designed to suit the local environment and conditions in accordance with AR-PW-PM-SPE-00129018 Landscaping.