

Supplement to AS 1742.10

Manual of uniform traffic control devices

Part 10: Pedestrian control and protection

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TRAFFIC MANAGEMENT Supplements

Supplement to AS 1742.10

Part 10: Pedestrian control and protection

AMENDMENT RECORD

Version	Date	Section/Figure/Table	Amendment Description
1	14 Aug 2023	All	Original issue New supplement compiled from Operational Instructions 10.4 and 10.6, and Code of Technical Requirements, Section 8. Additional guidance on pedestrian related signs; revised guidance on zebra crossing dimensions; off-street wombat crossings added

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31 July 2023

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Part 1: Introduction

All road authorities across Australia are working towards harmonisation between States and Territories in how road networks are managed. In order to achieve this, the Austroads *Guide to Traffic Management* and Australian Standards relating to traffic management have been adopted to assist in providing consistency and harmonisation across all jurisdictions. This means that these Austroads Guides and the Australian Standards are the primary technical references.

Jurisdictional supplements identify where practices differ from the guidance in the national standards and/or provide additional information where required.

1.1 South Australia's supplements

The Department for Infrastructure and Transport (the Department) is developing a series of supplements to the parts of *Australian Standard AS 1742 Manual of Uniform Traffic Control Devices*. As these supplements are published for use, the Department's *Code of Technical Requirements, Standards and Guidelines* web page, *Operational Instructions* and other publications will be updated as necessary to reference the new supplement and remove duplicated content. Users are reminded to always access the live versions of these documents via the Department's *Technical Documents - Standards and Guidelines* web page (https://www.dit.sa.gov.au/standards/standards_and_guidelines) to ensure they are accessing the latest information, and are encouraged to subscribe to the web page to be notified of changes periodically.

The Department's *Code of Technical Requirements* sets out the mandatory requirements for variations from the Australian Standards and Austroads Guides for the use of traffic control devices in South Australia. The Code references various Departmental documents including this supplement and requires road authorities to comply with the variations and additional information to the Australian Standards and Austroads Guides contained in this supplement.

Australian Standards *AS 1742.10 Manual of uniform traffic control devices - Part 10: Pedestrian control and protection* is a nationally agreed standards document outlining the use of traffic control devices related to pedestrians on the road network and has been adopted by all jurisdictions.

This document is South Australia's supplement to *AS 1742.10 (2009)* and has been prepared and authorised by the Department.

1.2 Approvals for the use of traffic control devices

When used in accordance with *AS 1742.10 (2009)* and the variations and additions within this supplement, these traffic control devices may be installed under the Minister's *Instrument of General Approval and Delegation to Council*, or with the approval of the Department's Network Management Services. Traffic control devices which vary from this supplement require the separate approval of the Department's Manager, Traffic Services for each location prior to installation.

Refer to the Department's *Code of Technical Requirements* for further details on the legal requirements for the use of traffic control devices.

1.3 Structure of this document

Part 2 of this document provides the details of the supplement information as follows:

- **DEPARTURE:** Where South Australia's practices differ from the guidance in the Australian Standard. Where this occurs, these differences or 'Departures' will be highlighted. The departure information takes precedence over the Australian Standard clause.
- **ADDITIONAL INFORMATION:** All information not identified as a departure provides further guidance to the Australian Standard and is read and applied with the Australian Standard clause.

Where a clause does not appear in the body of this supplement, the Australian Standard requirements shall be followed.

Part 3 of this document, the Appendices, contain additional information in relation to pedestrian facilities not specifically covered in AS 1742.10.

Part 2: Details of Supplement Information

GENERAL (APPLICABLE TO ALL CLAUSES)

- The Department's [Sign Index](#) contains all approved signage to be used on the road network. Where inconsistencies between signs identified in AS 1742.10 and the *Sign Index* exist, the *Sign Index* shall prevail.
- Additional information on pavement marking for pedestrian control and protection devices is provided within the Department's [Pavement Marking Manual](#).
- Standard drawings for pedestrian facilities are provided at the Department's [Technical Documents - Standards and Guidelines](#) web page.
- Regulations under the *Road Traffic Act 1961* including the Australian Road Rules (ARR) can be accessed at the [South Australian Legislation](#) web page

CLAUSE 5 - GENERAL REQUIREMENTS

Clause 5.1 - Demand

ADDITIONAL INFORMATION

The Austroads [Australasian Pedestrian Crossing Facility Selection Tool](#) may also be used to assist in the determination of appropriate pedestrian facilities.

Numerical guidelines for the various types of pedestrian crossing facilities contained in this section are provided in Appendix B. Judgement should be used when applying these numerical guidelines to ensure the best overall pedestrian safety and traffic management solution for the site.

**Appendix B in this
supplement**

Clause 5.2 - Provision for people with disabilities

Clause 5.2(a) - Kerb ramps in accordance with AS 1428.1

ADDITIONAL INFORMATION


Kerb ramps at pedestrian (and cyclist) walkthroughs and refuges shall be installed in accordance with [Standard Drawing S-4074 Sheet 6](#). This drawing also includes details of holding rails, vertical plinths and tactile ground surface indicators

**Standard dwg
S-4074 Sht 6**

Holding rails in accordance with [Standard Drawing S-4020 Sheet 1](#) should be provided at mid-block refuges and walkthroughs, and the kerb ramps associated with these facilities, where space permits. Holding rails are generally not provided at intersections. Where pedestrian facilities are provided at roundabouts, holding rails should be provided at the kerb ramps and splitter islands.

**Standard dwg
S-4020 Sht 1**

Vertical plinths shall be provided on the left side of kerb ramps where a minimum clearance of 1500 mm is available behind the holding rail for circulation space of wheelchairs and gophers. Holding rails placed at the back of the vertical plinth will effectively remove any tripping hazard it may cause.

<p>Where the area on either side of the kerb ramp is not trafficable (i.e. an unformed untrafficable verge), vertical plinths shall be used on both sides of the kerb ramp instead of standard kerb wings (refer Type 5 kerb ramp on Standard Drawing S-4074 Sheet 6). However, if the minimum 1.5 m footpath width is not available behind the kerb ramp, consideration should be given to providing a formed trafficable area such that a Type 1 or Type 2 kerb ramp can be provided.</p>	<p>Standard dwg S-4074 Sht 6</p>
<p>Clause 5.2(b) - Pavement level ('cut through') access across medians and islands</p>	<p>ADDITIONAL INFORMATION</p>
<p>Walkthroughs may be installed at locations where there is a significant frequency of pedestrian and/or cyclist movement but the traffic volume and numbers of pedestrians and cyclists do not warrant the installation of a controlled pedestrian crossing.</p> <p>Walkthroughs may also be included in new designs as part of road engineering projects.</p> <p>All walkthroughs must have appropriately located fully accessible kerb ramps leading to the walkthrough. The exact location of a walkthrough may be aligned with the location of pedestrian network paths leading to a road or be determined by conducting a pedestrian and traffic survey in accordance with Appendix A.</p> <p>Holding rails in accordance with Standard Drawing S-4020 Sheet 1 should be provided at mid-block refuges and walkthroughs where space permits. Holding rails are generally not provided at intersections. Where pedestrian facilities are provided at roundabouts, holding rails should be provided at the kerb ramps and splitter islands.</p>	<p>Clause 9 in this supplement for details</p> <p>Standard dwg S-4074 Sht 6</p> <p>Appendix A in this supplement</p> <p>Standard dwg S-4020 Sht 1</p>
<p>Clause 5.2(c) - Tactile ground surface indicators</p>	<p>ADDITIONAL INFORMATION</p>
<p>Warning tactile ground surface indicators (WTGSIs) shall be installed in accordance with the Department's Standard drawings.</p>	<p>AS/NZS 1428.4</p> <p>Standard dwgs</p>
<p>Clause 5.2(d) - Audio-tactile push-button facilities at traffic signals</p>	<p>ADDITIONAL INFORMATION</p>
<p>Pedestrian push-buttons assemblies shall:</p> <ul style="list-style-type: none"> (a) be orientated parallel to the crosswalk (side mounted on the post) and facing towards pedestrians about to use the crosswalk; (b) incorporate arrow legends (in the audio tactile display), oriented to guide vision impaired pedestrians in the same direction indicated by cross walk markings. <p>Pedestrian push-button assemblies which incorporate an Infrared Proximity (IR) sensor shall comply with design, construction and performance requirements specified for standard pedestrian push-button assembly in accordance with <i>AS 2353 Pedestrian push-button assemblies</i>. IR sensor sensitivity shall be adjustable and typically in the range of 70 mm to 120 mm.</p>	<p>AS 2353</p> 

The push-button and switch mechanism shall operate independently to the IR sensor signal so that an IR sensor fault shall not result in the malfunction of the mechanical push-button or audio tactile signals. The approved User Instruction sticker (available on request from the Department's Traffic Services) shall be installed on the signal post where an IR sensor incorporated push-button is installed.

Clause 5.4 - Signs

Table 2 - Regulatory signs used for pedestrian facilities

**ADDITIONAL
INFORMATION**

The following signs may be used to support the regulatory requirement for drivers to give way to pedestrians and cyclists at slip lanes:

- Left turn give way to pedestrians and cyclists (R2-SA102)
- Remember give way to pedestrians and cyclists when turning (G9-SA110)

For details on the use of these signs, see Clause 6.3(b) (*ON-STREET ZEBRA DEPARTURE*) in this supplement.



R2-SA102



G9-SA110

**Clause 6.3(b)
(ON-STREET
ZEBRA) in this
supplement for
details of the use of
these signs**

CLAUSE 6 - PEDESTRIAN CROSSING (ZEBRA and WOMBAT)**DEPARTURE**

Due to the differences between on-street zebra crossings, on-street wombat crossings, off-street zebra and off-street wombat crossings in South Australia, the AS 1742.10 information is supplemented under individual headings pertaining to the particular crossing type for each clause.

An off-street area is defined as:

Any road-related area off the general road network, commonly used by the driving public or to which the driving public are permitted to have access, for example shopping centres, caravan parks, schools, National parks

On-street zebra crossings, on-street wombat crossings, off-street zebra crossings and off-street wombat crossings are each suited to different speed environments for their safe operation. For details, see the supplementary information to Clause 6.3(a) for each crossing type.

Council must obtain agreement and authorisation from the Department if it plans to install a crossing on a road under the care, control and management of the Commissioner of Highways.

Clause 6.1 - Purpose and safe operation (ZEBRA and WOMBAT)**DEPARTURE
&
ADDITIONAL
INFORMATION**

Drivers are legally required to give way to a pedestrian **or rider of a bicycle** on or entering the crossing, and must drive at a speed at which they can, if necessary, stop safely before the crossing. There is no requirement for drivers to wait for pedestrians or cyclists to clear the crossing.

**ARR Rule 81
Road Traffic (Road
Rules Ancillary and
Miscellaneous
Provisions)
Regulations
9A and 9B**

The effect of a crossing on the flow of vehicular traffic, including the length of queuing, depends on the combination of the frequency of pedestrians using the crossing, and the vehicle flow rate. This can have detrimental safety effects on and near the crossing as well as along the road for all road users. Therefore, the suitability of a crossing should be determined for the particular location

Where a crossing is installed in the vicinity of an intersection, the risks associated with locating the crossing near the intersection need to be addressed. These include:

- the potential for blocking of the intersection when drivers give way to pedestrians on the crossing,
- the interaction between the give way requirements at the intersection and the crossing, and
- the potential for queued vehicles to block visibility of pedestrians on or approaching the crossing.

ON-STREET ZEBRA CROSSING

Clause 6.2 - Description (*ON-STREET ZEBRA*)

DEPARTURE

The pedestrian crossing (zebra) shall consist of markings and signs consistent with Figure 2.1 in this supplement.

Figure 2.1 in this supplement

Clause 6.3 - Requirements for installation (*ON-STREET ZEBRA*)

Clause 6.3(a)(i) - One lane in any one direction (*ON-STREET ZEBRA*)

DEPARTURE

No more than one lane or one line of traffic in any one direction shall be encountered by a pedestrian using a crossing (unless the additional lane is a bike lane). This can be achieved by such measures as narrowing the lane (consider widths of 2.7 m or less), blocking a parking lane with a kerb extension, or installing kerbs or other physical devices to prevent drivers passing to the left on unkerbed roads.

Two lanes may be installed in any one direction at a zebra crossing when one of those lanes is a bicycle lane. The width of the bicycle lane may be a minimum of 1 m on the approach to the zebra crossing, and the other lane should be 2.7 m wide or less to maintain the low speed environment.

For further information on bicycle lanes and pavement markings within bicycle lanes near a mid-block crossing, see Appendix E.

Appendix E in this supplement

Clause 6.3(a)(ii) - Sight distance (*ON-STREET ZEBRA*)

ADDITIONAL INFORMATION

Sight distance requirements are provided in Austroads *Guide to Road Design Part 4A: Unsignalised and signalised intersections*. Unless parking control signs permit otherwise, the Australian Road Rules prohibits drivers from stopping 20 m before and 10 m after the crossing.

**AGRD Pt 4A
ARR Rule 172**

Installation of parking zones adjacent to a pedestrian crossing facility shall ensure that a sight triangle remains unobscured by parked cars, landscaping, or street furniture. For the sight distance requirements at crossings, refer to Section 3.3 of Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2017)* and Section 8.2.2 of Austroads *Guide to Road Design Part 4: Intersections and Crossings - General (2017)*.

**AGRD Pt 4A
Section 3.3
AGRD Pt 4
Section 8.2.2**



Clause 6.3(a)(iii) - Speed on approach to the crossing (ON-STREET ZEBRA)**DEPARTURE**

A zebra crossing shall not be installed on roads subject to a speed limit greater than 50 km/h.

A low-speed environment with mean speeds in the order of 30 km/h or less (based on engineering judgement) should occur 30 m to 50 m before the crossing on each approach. This should be created when existing conditions are unsuitable. The use of kerb extensions to narrow the lane widths to 2.7 m or less is strongly recommended to assist in creating the low speed environment. Where mean speeds prior to the installation of the crossing are greater than 30 km/h, post-installation monitoring shall be conducted to confirm whether speeds have sufficiently reduced to meet this requirement or identify the need for subsequent measures to reduce speeds.

Clause 6.3(a) NOTE: (ON-STREET ZEBRA)**ADDITIONAL INFORMATION**

The crossing should be located where concentrations of pedestrians naturally cross the road, including any latent demand.

A detailed survey of pedestrian and vehicle movements should be undertaken to justify the installation and to determine the optimum location of a pedestrian crossing. For guidance, see Appendix A in this supplement.

This note states that road authorities may specify numerical warrants for mid-block pedestrian crossings. South Australian numerical guidelines for the provision of on-street zebra crossings are contained in Appendix B in this supplement.

Appendix A in this supplement**Appendix B in this supplement****Clause 6.3(b) - Crossings on slip lanes (ON-STREET ZEBRA)****DEPARTURE**

Zebra crossings shall not be installed at left turn slip lanes in South Australia. Zebra crossings currently installed at selected locations across the network are trial installation sites for the purposes of assessing their performance and developing future criteria for their use.

Under the Australian Road Rules, drivers are required to give way to pedestrians and cyclists crossing a slip lane.

ARR Rules 69(2A)(b), 72(4)(b) and 73(3)(b)**Road Traffic (Road Rules Ancillary and Miscellaneous Provisions) Regulations 9A and 9B**

The Give Way to Pedestrians and Cyclists (R2-SA102) sign may be used at slip lanes where there is a need to improve driver awareness of the potential for pedestrians and promote the need to give way to them, typically where factors such as limited sight distance, concentrations of vulnerable pedestrians, or auxiliary lanes on the approach to the slip lane are present.

**R2-SA102**

The Remember Give Way to Pedestrians and Cyclists When Turning (G9-SA110) may be used where the above factors for use of the R2-SA102 sign are not present, however there are still reported issues of poor driver compliance. The G9-SA110 sign may be used as a general reminder to drivers of the road rules, and should only be used as a temporary treatment for a period of 12 months. Where used, it should be installed either:

- on the slip lane island, or
- on the left in advance of the slip lane crossing point if the island is small and the sign may obstruct visibility of pedestrians.



G9-SA110

Clause 6.3(c) - Crossings at other locations (*ON-STREET ZEBRA*)

ADDITIONAL INFORMATION

Where a crossing is installed in the vicinity of an intersection, the potential for queued vehicles to block visibility of pedestrians on or approaching the crossing near the intersection should also be addressed.

ARR Rule 128A
AS 1742.10
Clause 6.1 and this supplement for details and risks to be addressed

Clause 6.4 - Signs (*ON-STREET ZEBRA*)

ADDITIONAL INFORMATION

The Pedestrian Crossing (R3-1) sign may need to be repeated overhead if there is insufficient visibility of roadside-mounted signs.

Continuously operating twin alternating flashing yellow signals may supplement the Pedestrian Crossing (R3-1) signs where:

- it is necessary to increase the visibility of the crossing, or
- the AADT is greater than 5000 vehicles, or
- the crossing provides a direct link to an off-road shared path, such that crossing users may be approaching from an off-road path rather than the footpath adjacent to and parallel with the road, or
- the crossing is located near a school.

The Pedestrian Crossing (R3-1) signs shall be placed either side of the carriageway on divided roads.

No Stopping signs (R5-35) or a continuous yellow line on the road adjacent to the kerb or edge of pavement shall be used to prohibit drivers from stopping before and after a zebra crossing.

Figure 2.1 in this supplement shows the minimum length of the no stopping prohibition required by the Australian Road Rules. For additional information, see Clause 6.3(a)(ii) in this supplement.

ARR Rule 172

Clause 6.3(a)(ii) in this supplement

For use of Pedestrian Crossing Ahead signs (W6-2) with horizontal arrow, see Clause 11.2(b) in this supplement.

Clause 11.2(b) in this supplement

Clause 6.5 - Pavement markings (ON-STREET ZEBRA)**DEPARTURE**

The parallel white stripes (longitudinal bars) shall be not less than 6 m long (measured in the direction of vehicle travel).

The kerb ramp should be located centrally to the crossing. Its minimum width shall be 1.5 m. The outer edge of the kerb ramp (inclusive of any wings) shall terminate at least 1 m from either end of the stripe markings. The location of the kerb ramp and crossing pavement markings is dependent on the physical site conditions and pedestrian desire lines.

The zebra crossing markings indicate the closest point for drivers to stop to give way to pedestrians. If there are safety reasons where it is necessary to further separate drivers from pedestrians, this is achieved by adjusting the width of the crossing relative to the width of the ramp.

Fencing or other measures on the roadside to guide pedestrians physically to the ramp may be needed. Where there are no kerbs, these requirements shall apply to the pedestrian path leading to the crossing.

**PMM Sections
2.1.2.3 and 3.3.24.4**

ON-STREET WOMBAT CROSSING**Clause 6.2 - Description (*ON-STREET WOMBAT*)****DEPARTURE
&
ADDITIONAL
INFORMATION**

The raised pedestrian crossing or 'wombat crossing' shall consist of markings and signs as shown Figure 2.2.

Figure 2.2 in this supplement

The requirements for the raised platform of a 'wombat crossing' are:

- Platform ramps shall be positioned at right angles to the direction of approaching vehicles.
- The length of the platform, measured parallel to the centreline of the road, shall be no less than 6.6 m. The length of the zebra markings, measured parallel to the centreline of the road, shall be no less than 6.0 m.
- The length of the platform ramps, measured parallel to the centreline of the road, shall be no less than 1.2 m.
- On bus routes, the length of the platform ramp, measured parallel to the centreline of the road, shall be 2.0 m, and the length of the platform, measured parallel to the centreline of the road, shall be no less than 7.0 m.
- The platform and platform ramps shall be constructed in a material that contrasts in colour with the pavement markings.
- The leading and trailing edges of the platform ramps shall be flush with the adjacent pavement.

AS 1742.10 states that the 'height of the platform shall be 75 mm to 100 mm and the ramp grade, 1 in 12 to 1 in 20'. The platform ramp grades specified in this clause are based on a longitudinal gradient of 0%, and will vary depending on the existing longitudinal grade of the pavement surface. The longitudinal grade of the platform will generally match the longitudinal grade of the road.

Pedestrian access to the wombat crossing must ensure that pedestrians are directed to cross at the stripes (on the platform) and not at the platform ramp. The platform and stripes should be located centrally to the pedestrian desire line. Additional treatment (e.g. fencing, landscaping) may be required to channelise pedestrians from the footpath to the crossing platform

Emergency (ambulance and fire) services shall be consulted before installing a wombat crossing on a route frequently used by these services. If the crossing is located on an existing or intended bus route, SA Public Transport Authority (SAPTA)'s Integrated Service Planning and bus operators shall also be consulted.

Clause 6.3 - Requirements for installation (*ON-STREET WOMBAT*)**Clause 6.3(a)(i) - One lane in any one direction (*ON-STREET WOMBAT*)****DEPARTURE**

Two lanes may be installed in any one direction at a wombat crossing when one of those lanes is a bicycle lane.

Clause 6.3(a)(ii) - Sight distance (<i>ON-STREET WOMBAT</i>)	ADDITIONAL INFORMATION
<p>Sight distance requirements are provided in Austroads <i>Guide to Road Design Part 4A: Unsignalised and signalised intersections</i>. Unless parking control signs permit otherwise, the Australian Road Rules prohibits drivers from stopping 20 m before and 10 m after the crossing.</p> <p>Installation of parking zones adjacent to a pedestrian crossing facility shall ensure that a sight triangle remains unobscured by parked cars, landscaping, or street furniture. For the sight distance requirements at crossings, refer to Section 3.3 of Austroads <i>Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2017)</i> and Section 8.2.2 of Austroads <i>Guide to Road Design Part 4: Intersections and Crossings - General (2017)</i>.</p>	<p>AGRD Pt 4A ARR Rule 172</p> <p>AGRD Pt 4A Section 3.3</p> <p>AGRD Pt 4 Section 8.2.2</p>
Clause 6.3(a)(iii) - Speed on approach to the crossing (<i>ON-STREET WOMBAT</i>)	DEPARTURE
<p>The crossing shall only be installed on roads with a speed limit of 50 km/h or less.</p> <p>A low speed environment with mean speeds in the order of 40 km/h or less (based on engineering judgement) should occur 30 m to 50 m before the crossing on each approach. This may be achieved through the use of local area traffic management devices. Where this requirement is not met, a full-time 40 km/h speed limit shall be signposted in accordance with Figure 3.4. Where used, 40 km/h speed limit (R4-1) signs shall be duplicated on each side of the road, on each approach to the crossing.</p>	
Clause 6.3(a) NOTE: (<i>ON-STREET WOMBAT</i>)	ADDITIONAL INFORMATION
<p>The crossing should be located where concentrations of pedestrians naturally cross the road, including any latent demand.</p> <p>A detailed survey of pedestrian and vehicle movements should be undertaken to justify the installation and to determine the optimum location of a pedestrian crossing.</p> <p>For guidance on pedestrian surveys, see Appendix A in this supplement.</p> <p>This note states that road authorities may specify numerical warrants for mid-block pedestrian crossings. South Australian numerical guidelines for the provision of wombat crossings are contained in Appendix B in this supplement.</p>	<p>Appendix A in this supplement</p> <p>Appendix B in this supplement</p>
Clause 6.3(c) - Crossings at other locations (<i>ON-STREET WOMBAT</i>)	ADDITIONAL INFORMATION
<p>Where a crossing is installed in the vicinity of an intersection, the potential for queued vehicles to block visibility of pedestrians on or approaching the crossing near the intersection should also be addressed.</p>	<p>ARR Rule 128A</p> <p>AS 1742.10 Clause 6.1 and this supplement for details and risks to be addressed</p>

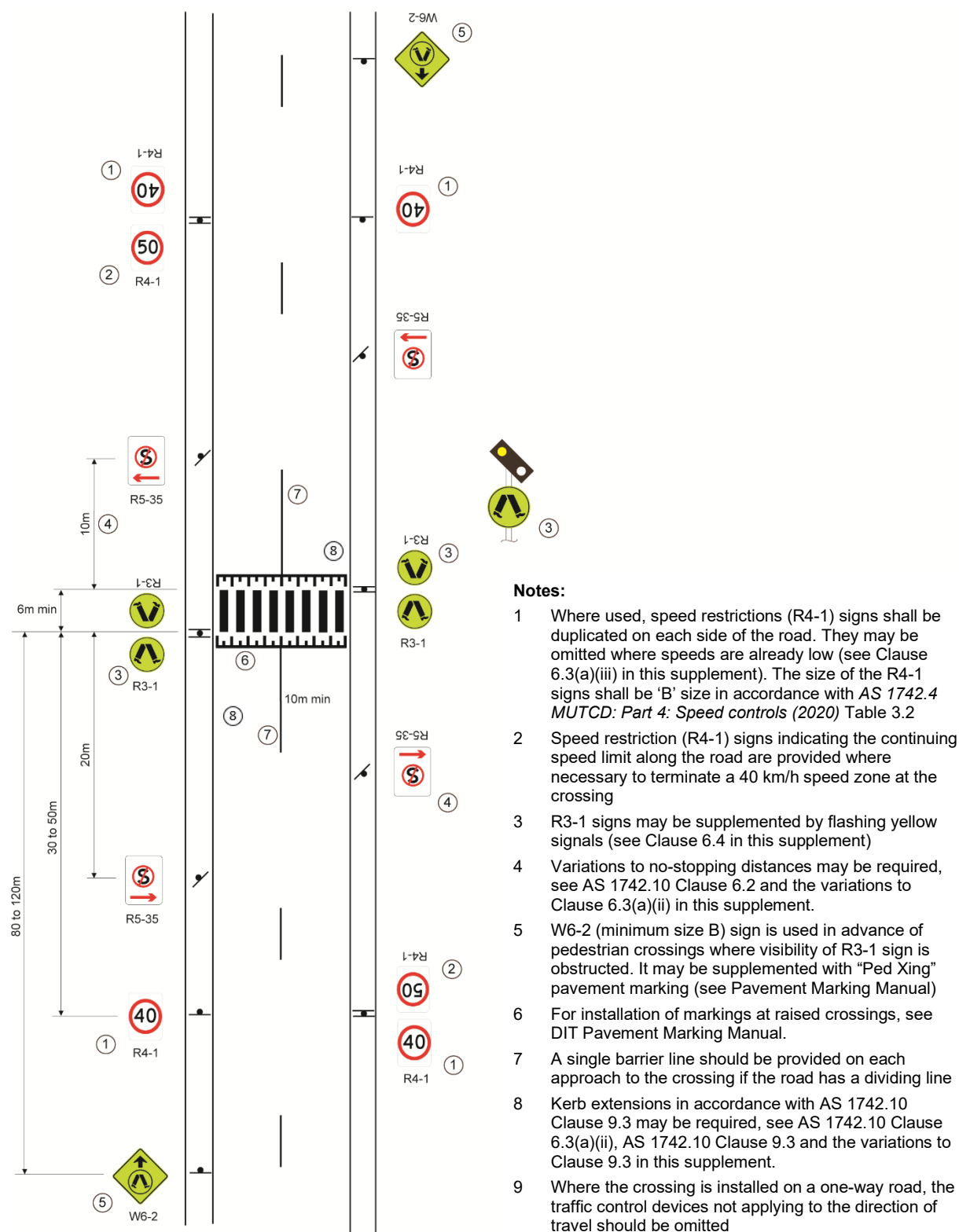


Figure 2.2 - Wombat Crossing Details (Replaces Figures 1 & 2) - DEPARTURE

Clause 6.4 - Signs (ON-STREET WOMBAT)**ADDITIONAL
INFORMATION**

The Pedestrian Crossing (R3-1) sign may need to be repeated overhead if there is insufficient visibility of roadside-mounted signs.

Continuously operating twin alternating flashing yellow signals may supplement the Pedestrian Crossing (R3-1) signs where:

- it is necessary to increase the visibility of the crossing, or
- the AADT is greater than 5000 vehicles, or
- the crossing provides a direct link to an off-road shared path, such that crossing users may be approaching from an off-road path rather than the footpath adjacent to and parallel with the road, or
- the crossing is located near a school.

The Pedestrian Crossing (R3-1) signs shall be placed either side of the carriageway on divided roads.

No Stopping signs (R5-35) or a continuous yellow line on the road adjacent to the kerb or edge of pavement shall be used to prohibit drivers from stopping before and after a zebra crossing.

Figure 3.4 shows the minimum length of the no stopping prohibition required by the Australian Road Rules. For additional information, see Clause 6.3(a)(ii).

ARR Rule 172

**Clause 6.3(a)(ii) in
this supplement**

For use of Pedestrian Crossing Ahead signs (W6-2) with horizontal or 45 degree arrows, see Clause 11.2(b) in this supplement.

**Clause 11.2(b) in
this supplement**

Clause 6.5 - Pavement markings (ON-STREET WOMBAT)**DEPARTURE**

The parallel white stripes shall be not less than 6.0 m long.

For wombat crossings on roads with a median, the markings shall continue across the median.

**PMM Sections
2.1.2.3 and 3.3.24.4**

Platform and ramps shall be constructed in a material that contrasts in colour with the pavement markings. Refer to Section 1.3.7 of the *Pavement Marking Manual* for the use of black paint to improve contrast on light coloured pavement.

**PMM Sections 1.3.7
and 2.1.13**

OFF-STREET ZEBRA and OFF-STREET WOMBAT CROSSING**Clause 6.2 - Description (*OFF-STREET ZEBRA and WOMBAT*)****DEPARTURE**

An off-street zebra crossing or off-street wombat crossing shall consist of markings and signs consistent with Figures 1 and 2 of AS 1742.10, except that the no-stopping zones may be reduced to 5 m on the approach sides and 2.5 m on the departure sides of the crossing.

AS 1742.10
Figures 1 and 2

Clause 6.3 - Requirements for installation (*OFF-STREET ZEBRA and WOMBAT*)**Clause 6.3(a)(iii) - Speed environment (*OFF-STREET ZEBRA and WOMBAT*)****DEPARTURE**

Off-street areas, such as car parks, may need to cater for a high level of interaction between pedestrians, cyclists and vehicles, and where this occurs, off-street areas should be designed to create a speed environment of 20 km/h. If speeds within an off-street area exceed 20 km/h, pedestrian facilities need to compensate for the higher speed environment by offering a greater level of protection to pedestrians.

An off-street zebra crossing may be used where the speed environment is no greater than 20 km/h.

Where the speed environment is greater than 20 km/h, the crossing type appropriate to the speed environment shall be used, for example, an on-street zebra crossing (appropriate for speed environments of 30 km/h), an off-street wombat crossing (appropriate for speed environments of 30 km/h) or an on-street wombat crossing (appropriate for speed environments of 40 km/h).

Refer to the
Speed Limit
Guideline for South
Australia
for details of speed
limits in off-street
areas

Clause 6.3(a) NOTE: (*OFF-STREET ZEBRA and WOMBAT*)**ADDITIONAL INFORMATION**

An off-street zebra or wombat crossing shall connect areas where pedestrians are separated and protected from vehicles on the road. For example, installing a pedestrian crossing between a footpath alongside a building to a kerb extension on the opposite side of the road or car park circulating lane.

Clause 6.5 - Pavement markings (*OFF-STREET ZEBRA and WOMBAT*)**DEPARTURE**

An off-street zebra or wombat crossing shall consist of markings in accordance with Clause 6.5 and Figures 1 and 2 of AS 1742.10, except that the no-stopping zones may be reduced to 5 m on the approach sides and 2.5 m on the departure sides of the crossing. Pavement marking details of the off-street zebra and wombat crossing stripes are included in the Department's *Pavement Marking Manual*.

AS 1742.10 Clause
6.5 and Figures 1
and 2
PMM Section 2.1.2.3

CLAUSE 7 - CHILDREN'S CROSSING**Clause 7.2 - Description (*EMU and KOALA CROSSINGS*)****DEPARTURE**

Children's crossing permitted in South Australia are described as follows:

- Emu crossing is the term for Type 1 crossings (see Figure 2.3).
 - Emu crossings shall be located within a school zone (see the Department's *Speed Limit Guideline for South Australia*).
 - The 25 km/h school zone speed limit operates when a child is present within the school zone
 - The crossing operates when the CHILDREN CROSSING flags are in place.
 - Emu crossings are not intended to operate outside of daylight hours as the road lighting is likely to be insufficient for the safe operation of the crossing.
 - An emu crossing shall not be installed on an unsealed road.
- Koala Crossing is the term for Type 2 crossings (see Figure 2.4)
 - The crossing operates when the lights are flashing.
 - A speed limit of 25 km/h is applied when the lights are flashing.
 - The 25 km/h speed limit is only applied to a short section of road before and after the crossing (as shown on Figure 2.4)
 - Times of operation of the flashing lights are determined in accordance with Appendix C.
 - Koala crossings are not intended to operate outside of daylight hours as the road lighting is likely to be insufficient for the safe operation of the crossing.
 - A koala crossing shall not be installed on a road with a speed limit greater than 60 km/h.

ARR Rule 80**Figure 2.3 in this supplement****Speed Limit Guideline for South Australia****Figure 2.4 in this supplement****Separation between koala crossings and school zones on the same road:**

Where an emu crossing and a koala crossing are installed on the same section of road, the koala crossing, and the school zone (required for the emu crossing) must be separated by a minimum of 100 m. This is because the 25 km/h speed limits associated with the koala crossing and the school zone operate under different conditions, and each has separate signing requirements.

NOTE: ARR Rules 21 and 23 refer to the ending of a speed zone with a speed limit sign "with a *different number* on the sign" (i.e. not a speed limit sign with the same number and a different time or condition), hence the above requirement for separation between the two treatments.

Refer to the Department's *Speed Limit Guideline for South Australia* for details of school zones.

Clause 7.2(a)(i) - Stop line (<i>EMU and KOALA</i>)		DEPARTURE
Stop lines shall be 450 mm wide in accordance with the <i>Pavement Marking Manual</i> .		PMM Section 2.1.2.1
Clause 7.2(a)(ii) - Crosswalk line (<i>EMU and KOALA</i>)		DEPARTURE
<p>Crosswalk lines are mandatory. Crosswalk lines shall be marked between a minimum of 2.4 m, up to a maximum of 6 m apart.</p> <p>Crosswalk lines shall consist of a broken line with 1 m line and 300 mm gap in accordance with the <i>Pavement Marking Manual</i>.</p>		PMM Section 2.1.2.3
Clause 7.2(a)(iii) - No Stopping signs (<i>EMU and KOALA</i>)		DEPARTURE
<p>No Stopping (R5-36) signs shall be provided as shown on Figure 2.3 and Figure 2.4.</p> <p>R5-36 (7 am to 5 pm School Days) may be used as an alternative to the R5-36 (no times School Days) to allow parking at other times. A full time no stopping restriction (R5-35) may be used if there is a need to prohibit stopping on this section of road at all times.</p>		ARR 171
Clause 7.2(a)(iv) - Hand STOP banner (<i>EMU and KOALA</i>)		ADDITIONAL INFORMATION
The double-sided hand-held stop banners (R6-7) used at monitored crossings shall be 375 mm in diameter and mounted on a handle 1.8 m to 2.2 m in length (measured to underside of the R6-7 sign).		
Clause 7.2(b)(i) - Red and White posts and Location of Stop Bar (<i>EMU</i>)		DEPARTURE
<p>Posts painted in red and white alternate bands at and in advance of the crossing are mandatory.</p> <p>Posts at the crosswalk shall be 1.2 m high as shown on Figure 2.3.</p> <p>Posts in advance of the crossing for mounting the Children Crossing flags shall be 1.8 m high as shown on Figure 2.3.</p> <p>All red and white posts shall be nominally 100 mm in diameter and frangible.</p> <p>The stop line at an emu crossing should be located as close as practical to 6 m in advance of the crossing, and generally adjacent the post and flag assembly. ARR Rule 80 requires drivers to stop as near as practicable to, but before reaching the stop line.</p> <p>Where driveways or other physical road geometry features adjacent to the crossing make the installation of the post and flag assembly at this location impractical, it may be located within the range of 3 m to 10 m from the crosswalk. If the post and flag assembly can only be located > 6 m from the crossing, consideration should be given to installing the stop line at 6 m, instead of directly adjacent to the post and flag assembly. This will assist to reduce the risk of poor compliance with the stop line which may occur if it is located further from the crossing.</p>		ARR Rule 80 PMM Section 3.3.24.2

Where the crossing is to be installed on a one-way road, the traffic control devices not applying to the direction of travel should be omitted.

Clause 7.2(b)(ii) - Children Crossing Flags R3-3 (EMU)**ADDITIONAL
INFORMATION**

The CHILDREN CROSSING flag (R3-3) must be displayed to be legally effective. The flags shall be displayed only during periods when school children are likely to be proceeding to or from school within normal school hours and not at other times. Generally, these periods occur at the start and end of the normal school hours, but there may be a need for the crossing to operate during school hours (e.g. for times when students are required to cross the road as part of a school activity, to cater for students travelling between campuses, or for students travelling to and from facilities such as sports grounds during the day).

An emu crossing operating outside of normal times may be confusing to drivers. If the flags are displayed when students are not likely to use the crossing, drivers may disregard them. This can lead to increased risk to the children at other crossings.

Emu crossings are not intended to operate outside of daylight hours as the road lighting is likely to be insufficient for the safe operation of the crossing.

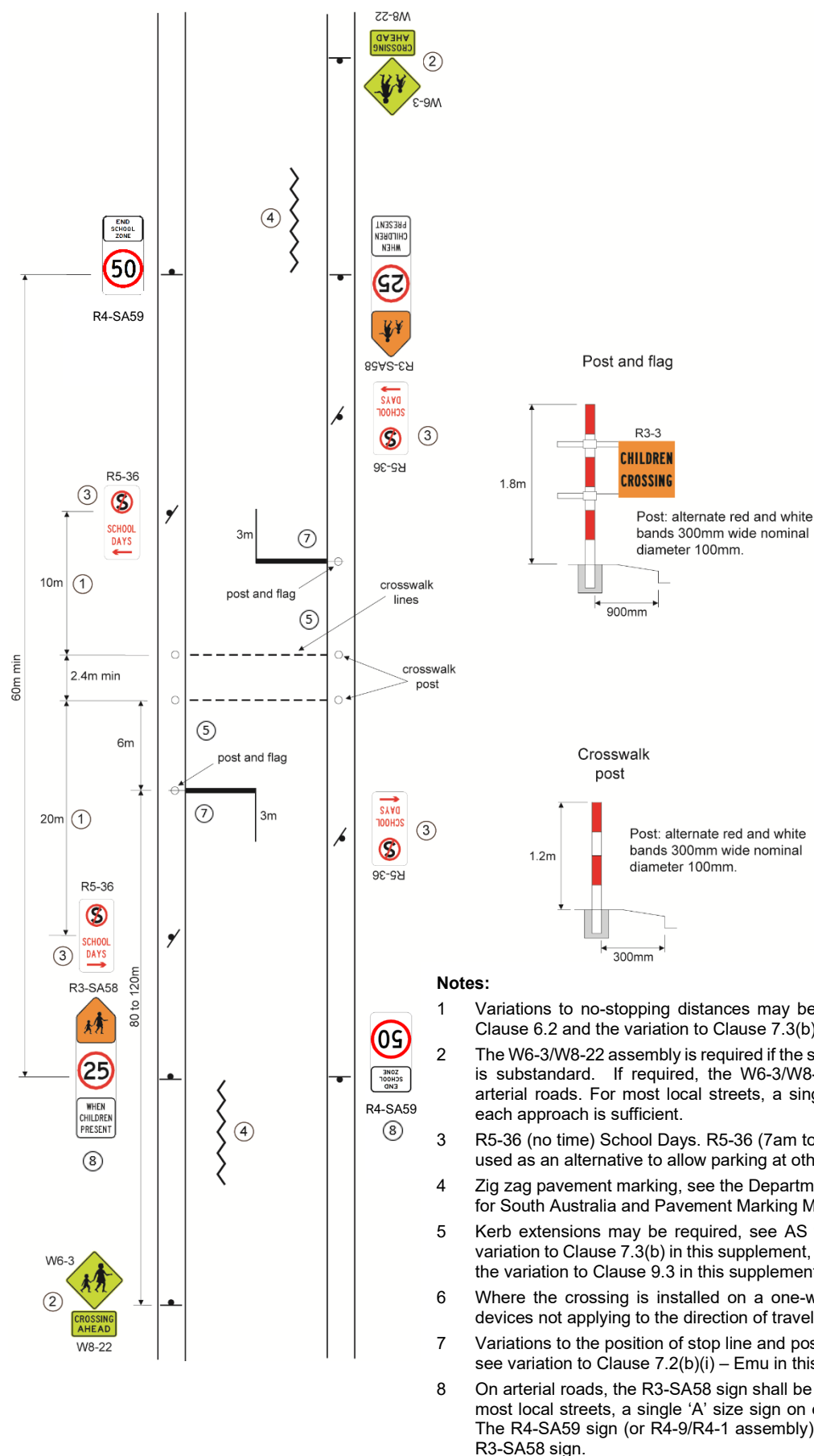
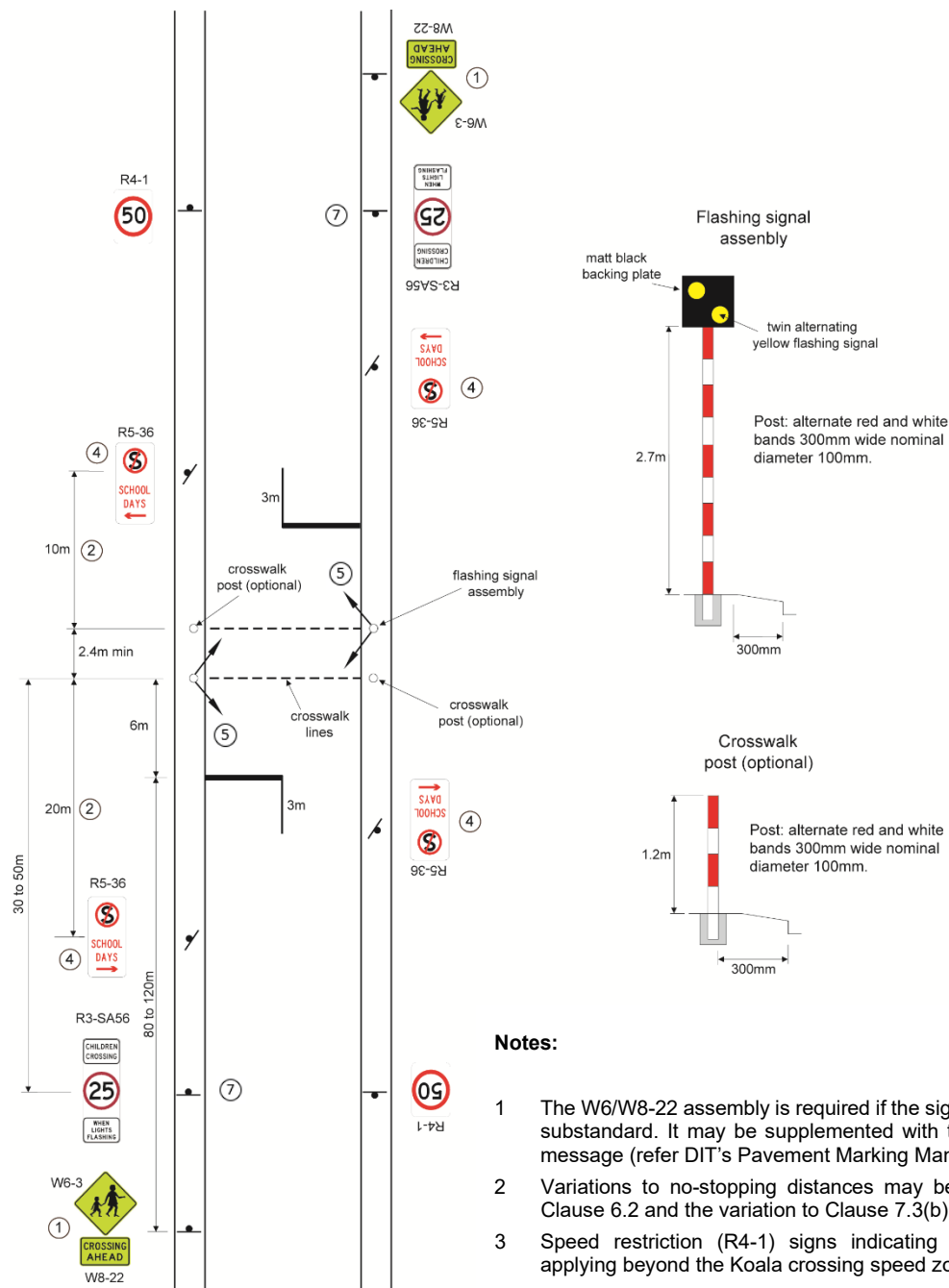


Figure 2.3 - Emu Crossing Details (Replaces Figure 3) - DEPARTURE

Clause 7.2(c)(i) - Flashing yellow signals (KOALA)	ADDITIONAL INFORMATION
<p>A minimum of two signals shall be installed at a koala crossing. Each signal has two lanterns with two yellow alternating flashing aspects on a matt black backing plate. Operation of signals shall be in accordance with Appendix C.</p>	<p>Appendix C in this supplement</p>
Clause 7.2(c)(ii) - Signs in advance of the crossing (KOALA)	DEPARTURE
<p>A Speed Restriction sign indicating 25 km/h supplemented with a Children Crossing / When Lights Flashing (R3-SA56) sign shall be located 30 m to 50 m before the crosswalk lines on each approach. On arterial roads, the sign shall be B size and duplicated. For most local streets, a single 'A' size sign on each approach is sufficient.</p> <p>A Children Crossing on Side Road (G9-SA134) sign should be installed on a side road where the crossing is present on an intersecting road and the intersection is located either within the 25 km/h zone, or within 40 m of the start of the 25 km/h zone. This is the preferred alternative to the common practice of installing an R3-SA56 sign on the side road as advance warning.</p> <p>A Children sign (W6-3) supplemented with a Crossing Ahead (W8-22) sign is used where sight distance to the crossing is sub-standard.</p>	<p>Clause 7.4 in this supplement</p>
Clause 7.2(c)(iv) - Speed Restriction (R4-1) sign (KOALA)	DEPARTURE
<p>A Speed Restriction (R4-1) sign showing the speed limit applying beyond the koala crossing speed zone shall be placed on the opposite side of the road to the 25 km/h speed limit sign.</p>	



Notes:

- 1 The W6/W8-22 assembly is required if the sight distance to the crossing is substandard. It may be supplemented with the "School Xing" pavement message (refer DIT's Pavement Marking Manual)
- 2 Variations to no-stopping distances may be required, see AS 1742.10 Clause 6.2 and the variation to Clause 7.3(b) in this supplement.
- 3 Speed restriction (R4-1) signs indicating the continuing speed limit applying beyond the Koala crossing speed zone
- 4 R5-36 (no time) School Days. A full time no stopping restriction may be used if there is a need to prohibit stopping on this section of road at all times. R5-36 (7am to 5pm) School Days may be used as an alternative to allow parking at other times.
- 5 Kerb extensions may be required, see AS 1742.10 Clause 7.3(b), the variation to Clause 7.3(b) in this supplement, AS 1742.10 Clause 9.3 and the variation to Clause 9.3 in this supplement.
- 6 Where the crossing is installed on a one-way road, the traffic control devices not applying to the direction of travel should be omitted
- 7 On arterial roads, the R3-SA56 sign shall be 'B' size and duplicated. For most local streets, a single 'A' size sign on each approach is sufficient. The R4-1 sign shall match the size of the R3-SA56 sign.

Figure 2.4 - Koala Crossing Details (Replaces Figure 4) - DEPARTURE

Clause 7.3 - Requirements for installation (EMU and KOALA)**Clause 7.3(a) - Number of lanes (EMU and KOALA)****DEPARTURE**

The carriageway shall be constrained to only one lane in each direction at the crossing, each with a width no greater than 4 m, unless the carriageway incorporates a bicycle lane. Where the carriageway incorporates a bicycle lane, the width in each direction shall not exceed 4.5 m, comprising a 1.2 m to 1.5 m bicycle lane and a vehicle lane of 3.3 m to 3 m respectively. A bicycle stop line shall be provided in advance of the vehicular stop line in accordance with the *Pavement Marking Manual* for the bicycle lane at the crossing.

Where kerb extensions are impractical to achieve the desired lane widths, a raised median or painted median supplemented with pavement bars, may be installed.

If an emu or koala crossing is to be monitored during periods of high concentration of use by children, the monitors shall be trained by Police. For details, see Appendix B in this supplement. The use of monitors does not vary the geometric requirements for the maximum number of travel lanes at the crossing.

Clause 7.3(b) - Sight distance (EMU and KOALA)**ADDITIONAL
INFORMATION**

Installation of parking zones adjacent to an emu or koala crossing shall ensure that a sight triangle remains unobscured by parked cars, landscaping or street furniture. For the sight distance requirements at crossings, refer to Section 3.3 of *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (2017) and Section 8.2.2 of *Austroads Guide to Road Design Part 4: Intersections and Crossings – General* (2017). Installation of parking control signs which vary the minimum no stopping distances contained in the Australian Road Rules are only permitted where sight distance requirements are met.

**AGRD Part 4A
Section 3.3****AGRD Part 4
Section 8.2.2****ARR 171****Clause 7.3(b) NOTE - (EMU and KOALA)****ADDITIONAL
INFORMATION**

This note states that road authorities may specify numerical warrants for children's crossings. South Australian numerical guidelines for the provision of children's crossings are contained in Appendix B in this supplement.

**Appendix B in this
supplement****Clause 7.4 - Signs (EMU and KOALA)****ADDITIONAL
INFORMATION**

For the use of No Stopping signs (R5-36 or R5-35), see Figure 2.3 and Figure 2.4 and the variation to Clause 7.2(a)(iii) in this supplement.

**R5-36**

See the variation to Clause 7.2(a)(iv) in this supplement for the requirements for the R6-7 Hand Stop banner



R6-7

Clause 7.4 - Signs (EMU)

**ADDITIONAL
INFORMATION
&
DEPARTURE**

For the use of Children Crossing flags, see the variation to Clause 7.2(b)(ii) in this supplement.



R3-3

The R3-SA58 signs shall be installed a minimum of 30 m prior to the crosswalk lines on each approach to the emu crossing (see Figure 2.3) and the Department's *Speed Limit Guideline for South Australia*.

On arterial roads the signs shall be 'B' size and duplicated. For most local streets, a single 'A' size on each approach is sufficient.



R3-SA58

The R4-SA59 signs shall be installed opposite the R3-SA58 sign as shown on Figure 2.3. The sign R4-SA59 sign shall match the size of the R3-SA58 sign.

The R4-9/R4-1 sign combination may be used as an alternative to the R4-SA59.



R4-SA59

Clause 7.4 - Signs (KOALA)

DEPARTURE

The R3-SA56 signs shall be installed 30 m to 50 m before the crosswalk lines of each approach to the koala crossing.

On arterial roads the signs shall be 'B' size and duplicated. For most local streets, a single 'A' size on each approach is sufficient.



R3-SA56

A Children Crossing on Side Road (G9-SA134) sign should be installed on a side road where the crossing is present on an intersecting road and the intersection is located either within the 25 km/h zone, or within 40 m of the start of the 25 km/h zone. This is the preferred alternative to the common practice of installing an R3-SA56 sign on the side road as advance warning.

**G9-SA134**

CLAUSE 8 – PEDESTRIAN ACTUATED TRAFFIC SIGNALS (MID-BLOCK)**Clause 8.1 - Description****Figure 5 Crosswalk dimension****DEPARTURE****Figure 6 Crosswalk dimension**

The 2.4 m minimum crosswalk and 6 m spacing between the crosswalk and the Stop line / primary signal pole location shown on Figures 5 and 6 do not achieve the desirable requirement of AS 1742.14 Clause 6.2.1(g). AS 1742.14 Clause 6.2.1(g) specifies a desirable spacing between the Stop line and the secondary or tertiary signal face of 10 m. To achieve this, the minimum crosswalk width should be 4 m.

**AS 1742.14
Clause 6.2.1(g)**

Clause 8.2 - Guidelines for installation**DEPARTURE**

South Australian warrants and guidelines for the provision of Pedestrian Actuated Crossings (PACs) are contained in Appendix B.

**Appendix B in this
supplement**

Pedestrian Actuated Crossings should not be installed in speed zones greater than 70 km/h. In exceptional circumstances, a PAC may be installed in a speed zone of 80 km/h where:

- it is not in an isolated location (i.e there are signalised intersections nearby),
- the adjacent development provides visual cues to drivers to expect pedestrians and/or cyclist crossing activity, and
- its operation is coordinated with adjacent signals. (e.g. Main North Road, Elizabeth between Phillip Hwy and Elizabeth Way intersections)

Clause 8.4 - Signs and pavement markings**Clause 8.4(b) - Signals ahead signs (W3-3)****ADDITIONAL
INFORMATION****Figure 5 NOTE****Figure 6 NOTE**

The Crossing Ahead (W8-22) supplementary sign should only be used with the W3-3-2 sign where the W3-3-2 is required in accordance with AS 1742.10 Clause 11.2(a) and the crossing is located less than 200 metres in advance of a signalised intersection.

**AS 1742.10
Clause 11.2(a)**



**W3-3-2
W8-22**

The School (W8-14) supplementary sign may be used with the W3-3-2 sign in advance of a PAC located at or near a school.



W3-3-2
W8-14

Clause 8.4(c) - Stop lines

DEPARTURE

Stop lines shall be 450 mm, for PACs installed in speed zones of 70 km/h or less. Refer *Pavement Marking Manual* for details.

PMM
Section 2.1.2.1

Clause 8.4(d) - Crosswalk lines

DEPARTURE

Crosswalk lines shall be a minimum of 2.4 m apart, comprising parallel broken lines 150 mm wide, with 1 m line segments and 300 mm gap. Refer *Pavement Marking Manual*.

PMM
Section 2.1.2.3

Clause 8.5 - Pelican Crossings

DEPARTURE

The pelican crossing as described in AS 1742.10 **shall not** be installed in South Australia.

CLAUSE 9 - PHYSICAL PEDESTRIAN FACILITIES

Clause 9.2 - Pedestrian refuge islands and median walkthroughs

Clause 9.2.2 - Installation

**ADDITIONAL
INFORMATION**

Refuges shall be installed in accordance with the Department's [Standard Drawing S-4075 Sheet 4](#), with line marking and RRPMs in accordance with the *Pavement Marking Manual*.

Standard Dwg
S-4075 Sht 4

All refuges/walkthroughs in medians shall be aligned at 90 degrees to the median kerb to provide directional wayfinding clues to assist pedestrians who are blind, or vision impaired to cross the road and find the destination kerb ramp.

PMM
Section 3.3.24.1,
Section 2.1.14

For requirements for holding rails at refuge islands, traffic islands and medians (and their associated kerb ramps), see Clause 5.2 of this supplement.

Clause 5.2 of this
supplement for
holding rails

Refuges should not unexpectedly constrict road width or create a hazard for on-road cyclists. Vehicles must be able to successfully negotiate any deviation from their normal travel path around the refuge while maintaining sufficient clearance from the refuge and parked vehicles. Care should be taken when locating refuges in the vicinity of bus stops. For details of the use of kerb extensions in conjunction with refuge islands, refer to AS 1742.10 Clause 9.3 and this supplement.

AS 1742.10 Clause
9.3 and this
supplement for kerb
extensions

For information on shared pedestrian/cyclist refuges refer to Austroads *Guide to Road Design Part 4: Intersections and Crossings* Figure C2 and AS 1742.9 Section 3.7.3. For details of signs, see Clause 11.3 in this supplement.

**AGRD Part 4
Figure C2**
AS 1742.9
**Clause 11.3 in this
supplement for
signs**

Figure 7 - Pedestrian Refuge

**DEPARTURE
&
ADDITIONAL
INFORMATION**

The minimum gap in the refuge/walkthrough (the spacing between islands measured longitudinally as indicated in AS 1742.10 Figure 7 Note 2) shall be 2.1 m, as shown on the Department's [Standard Drawing S-4075 Sheet 4](#).

**Standard Dwg
S-4075 Sht 4**

Refer to AS 1742.10 Clause 11.3 and this supplement for details of warning signs in conjunction with refuges islands and median walkthroughs.

**AS 1742.10 Clause
11.3 and this
supplement**

Clause 9.2.3(c) - Guidelines for installation

**ADDITIONAL
INFORMATION**

For guidance on assessing two-way traffic volumes and the level of difficulty to cross the road, see Appendix B4.

**Appendix B4 in this
supplement**

The exact location of a refuge may be aligned with the location of pedestrian and shared network paths leading to a road or be determined by conducting a pedestrian and traffic survey in accordance with Appendix A.

**Appendix A in this
supplement**

Clause 9.3 - Kerb extensions

**ADDITIONAL
INFORMATION**

For kerb extensions at koala and emu crossings, refer to the Department's [Standard Drawing S-4074 Sheet 5](#).

**Standard Dwg
S-4074 Sht 5**

NOTE: Dimension K* on this drawing is used for the length of a kerb extension at un-signalised crossings. The size of the kerb extension may be adjusted to suit environmental features such as driveways and on-street parking, and the anticipated volume of pedestrians and cyclists which may be stored on the kerb extension at one time. The kerb ramp shall be aligned so that pedestrians cross the road perpendicularly to reach the refuge.

For other kerb extensions, refer to the Department's [Standard Drawing S-4075 Sheet 4](#).

**Standard Dwg
S-4075 Sht 4**

Kerb extensions shall be constructed opposite a pedestrian refuge where full-time parking is permitted (e.g. a dedicated parking lane), or where the remaining portion of a road to cross exceeds 4.5 m for two lane-two-way roads, to prevent drivers overtaking.

The width of a kerb extension will depend on the available road width and lane width requirements for the expected motor vehicle composition along the road. Kerb extensions should not reduce single travel lane past the protuberance to less than 4.5 m as this width enables all motor vehicles and cyclists to effectively share road space leaving legal clearances when passing.

A kerb extension can be incorporated in the road verge or nature strip if drainage can be provided. Otherwise, a channel between the kerb extension and the existing kerb is required for drainage. If this drainage has the potential to be a hazard to pedestrians, the channel should be covered, or the pedestrians should be physically prevented from reaching it.

Tubular loop, "Belmont" style fencing, or the equivalent, 1.2 m in height may be used at the kerb side to direct pedestrians to refuges where possible. Fencing must not be used on the refuge or on the kerb extension. Where the kerb extension primarily caters for school children, fencing 0.9 m in height may be used. See Clause 9.6 in this supplement for details.

A holding rail and vertical plinths shall be provided on the kerb extension in accordance with the Department's [Standard Drawing S-4074 Sheet 6](#), to suit the kerb extension size and trafficable area.

Kerb extensions shall be suitably delineated with painting of the kerbs, pavement marking, and Unidirectional Hazard markers (D4-1-2) in accordance with AS 1742.2.

**Standard Dwg
S-4074 Sht 6**

**PMM Sections
2.1.17 and 3.3.16
AS 1742.2**

Clause 9.6 - Pedestrian Fencing

ADDITIONAL INFORMATION

Austroads *Guide to Road Design Part 4: Intersections and Crossings (2017)* Table 8.1 identifies issues for consideration in relation to sight distance and the selection of the height, type and location of pedestrian fencing.

**AGRD Part 4
Table 8.1**

While a low fence height improves the visibility of small children at the crossing facility, it may not provide sufficient protection and channelisation to older children, particularly in situations where groups of children with heavy school bags may be present in congested areas such as on narrow footpaths or waiting at a pedestrian actuated crossing (PAC) adjacent to a school.

Where pedestrian fencing is used at children's crossings (emu and koala), wombat crossings and zebra crossings it is critical that drivers are able to clearly see pedestrians on or approaching the crossing in order to give way to them. A maximum fence height of 0.9 m is recommended. At these crossing types, speeds are generally lower, and pedestrians have priority at the crossing and are less likely to be waiting in large groups.

A maximum fence height of 0.9 m may also be considered where pedestrian fencing is required at a pedestrian refuge location near a primary school.

At PACs, drivers are required to observe and react to the traffic signals, rather than the presence of pedestrians. The tubular loop 'Belmont' style of fencing is unlikely to completely obscure visibility of pedestrians when approaching the PAC, and drivers will be able to partially detect the presence of children through, rather than above, the fence. A pedestrian fence of 1.2 m in height is recommended at these locations.

On roads under the care, control and management of the Commissioner of Highways, pedestrian safety fencing shall be 1.2 m high, except:

- where used near intersections where it obstructs SISD, or

- at pedestrian crossings where drivers are required to see and give way to pedestrians on or approaching the crossing (ie children's crossings (emu and koala), wombat crossings or zebra crossings).

In these locations, it shall be a maximum of 0.9 m high.

CLAUSE 11 - WARNING SIGNS

Clause 11.1 - General

Table 3 - Warning signs

DEPARTURE

The retroreflective yellow/green version of the Signals Ahead (W3-3) warning sign is designated as W3-3-2.



W3-3-2

Clause 11.2(a) – Warning signs for pedestrian crossings - signalised

ADDITIONAL INFORMATION

The retroreflective yellow/green version of the Signals Ahead (W3-3) warning sign is designated as W3-3-2.



W3-3-2

The Crossing Ahead (W8-22) supplementary sign should only be used with the W3-3-2 sign where the W3-3-2 is required in accordance with AS 1742.10 Clause 11.2(a) and the crossing is located less than 200 metres in advance of a signalised intersection.



W8-22

Clause 11.2(b) – Warning signs for pedestrian crossings - zebra / wombat

ADDITIONAL INFORMATION

The arrow on the W6-2 sign is also available in horizontal or 45 degree angle configurations.

The W6-2 sign with horizontal arrow should be installed on a side road where the crossing is present on an intersecting road within 40 m of the side road, in particular where the crossing is located to the left. Drivers turning left from the side road on to the intersecting road may tend to focus their attention to the right when checking for a gap in traffic and therefore be less aware of a crossing facility located to their left.

Where the crossing is located on a slip lane, the W6-2 sign with 45 degree arrow should be used if visibility of the R3-1 signs is obstructed and advance warning of the crossing is required.



W6-2

Clause 11.3 - Warning signs for pedestrian not at crossings**ADDITIONAL
INFORMATION**

Warning signs are used to warn motorists of the unexpected presence of pedestrians and/or cyclists who may be crossing the road and should not be considered as a standard requirement for the installation of a refuge or walkthrough. To maintain the effectiveness of these warning signs, they shall only be installed where the crossing point is not easily detected by an approaching driver due to sight restrictions.

For specific requirements at median walkthroughs and refuges, see below.

Pedestrian and bicycle warning signs are generally installed on the left side of the carriageway and may be duplicated on the right side of the carriageway on multi-lane roads. Where signs are duplicated, they shall be manufactured and installed to show the pedestrian symbol facing towards the road.

At **median walkthroughs**, the Pedestrians Warning Sign (W6-1) or Children Warning sign (W6-3) shall be used in advance of the walkthrough only where:

- visibility is restricted, i.e. where the sight distance to the walkthrough is less than the stopping sight distance, or
- where the presence of pedestrians and bicycles may be unexpected

Where the **median walkthrough connects shared paths** and the above requirement for warning signs is met, the Pedestrian/Bicycle Warning Sign combination (W6-SA110 & W8-SA23) should be used instead of the W6-1 or W6-3 sign.

**W6-1****W6-3****W6-SA110
W8-SA23**



At **refuge islands**, refer to AS 1742.10 Figure 7 and this supplement for the use of warning signs.

For arterial roads (as identified in the road category details in the *DIT Road Features file*) or high speed roads, AS 1742.10 Figure 7 Note 5 states: "Where refuges are used on arterial or high speed roads, pedestrians or children warning signs W6-1 or W6-3 (minimum size B) as appropriate, shall be erected together with supplementary plate REFUGE ISLAND (W8-25) in advance of the refuge". This is a mandatory signing requirement for refuges on these roads.

For other roads, the warning sign / REFUGE ISLAND (W8-25) combination should only be installed where:

- visibility is restricted, i.e. where the sight distance to the walkthrough is less than the stopping sight distance, or

**W6-SA110
W8-25**

<ul style="list-style-type: none"> • where the presence of pedestrians and cyclists users may be unexpected <p>Where refuges are installed in series, or two refuges are closely spaced, warning signs may be used in advance of the first refuge only and omitted from subsequent refuges.</p> <p>The Pedestrian/Bicycle Warning (W6-SA110) sign should be used in conjunction with the Refuge Island (W8-25) sign where the above requirement for warning signs is met and the refuge island connects shared paths.</p>	
<p>Where a multi-user trail crosses the road and the requirements for warning signs in accordance with AS 1742.10 and this supplement are met, the Pedestrians, bicycles, horses warning sign (W6-SA109) should be used instead of the W6-1 or W6-3 sign.</p>	 <p>W6-SA109</p>
<p>Clause 11.3(iii) - Supplementary plates</p>	<p>ADDITIONAL INFORMATION</p>
<p>For use of the School Bus (W8-SA56) supplementary plate, refer to the Department's Operational Instruction 10.2 – School Bus Stops on Rural Roads.</p>	<p>Operational Instruction 20.2</p>  <p>W8-SA56</p>
<p>CLAUSE 13 - LIGHTING</p>	<p>ADDITIONAL INFORMATION</p>
<p>The Preface of AS/NZS 1158.4 <i>Lighting for roads and public spaces Part 4: Lighting of pedestrian crossings</i> states:</p> <p><i>The function of lighting at pedestrian crossings is to illuminate the crossing, the immediate verge and any pedestrian at or on the crossing, so that the crossing and pedestrian are highly conspicuous to approaching vehicular traffic. Accident studies have shown that specifically lighting pedestrian crossings can significantly reduce the night accidents associated with them.</i></p> <p><i>Considering the safety benefits for pedestrians, it would be preferable that lighting be provided at all crossings on Category V and P roads unless there are specific reasons not to install lighting. Nevertheless, whether a particular crossing, normally not controlled by traffic signals and generally of the type known and marked as a zebra crossing, will or will not be lit, will be determined by the road controlling authority.</i></p> <p>Lighting complying with the requirements of AS/NZS 1158 <i>Lighting for roads and public spaces</i> shall be provided before a zebra crossing is fully installed and operational. A decision to not provide lighting at the crossing must be accompanied with a comprehensive risk assessment.</p>	<p>AS/NZS 1158.4</p>

Pedestrian walkthroughs and refuges should be lit to a level of V3 as specified in *AS/NZS 1158.1.1* Table 2.1.

Any kerb extensions installed for the purpose of reducing the crossing distance for pedestrians should be lit to a level of V3. The provision of kerb ramps from the footpath only (without a pedestrian refuge, kerb extension or walkthrough) require general road lighting or ambient light.

For further information refer to the Department's [RD-EL-D1 Road lighting design](#).

**AS/NZS 1158.1.1
Table 2.1**

**DIT Master Spec
RD-EL-D1
Road Design Guide
LD001**

Part 3: Appendices

APPENDIX A - Pedestrian and vehicle surveys

ADDITIONAL INFORMATION

These surveys are usually conducted for the continuous period from 8:00 am to 6:00 pm on a typical weekday, but may be extended if the time of peak pedestrian movement is outside that period.

The section of road under consideration is divided into zones of approximately 30 m in length.

The numbers of pedestrians categorised according to type (such as Adult / Adult with bike / Child / Child with bike / Older person / Person with a disability etc) crossing the road in each zone are counted and the totals recorded for each 15 minute period.

When the category includes 'bike', only those who cross the road are counted; not those riding along the road or footpath.

Young children, the elderly and people with a disability should be given greater recognition in the pedestrian surveys by weighing their numbers. The observed numbers of:

- a) children under 10 year old who are not accompanied by an adult,
- b) older people who may exhibit a degree of frailty or difficulty in crossing the road in a timely manner,
- c) people recognised as having a disability

should be weighted by being multiplied by a factor of 1.5.

NOTE: The weighting of children does not apply in the case of surveys undertaken for proposed koala crossings.

The number of vehicles travelling along the road is also recorded, by direction of travel, for each period.

In assessing the survey to decide whether a pedestrian crossing is justified and to determine its location, the numbers of pedestrians crossing the road in the same three adjacent zones in each of two separate hours are totalled. The combined two-way vehicle volume in each corresponding hour is used on roads without a median. If there is a median, subject to engineering judgement, the highest flow in one direction is used.

APPENDIX B - Guidelines for pedestrian crossings

ADDITIONAL INFORMATION

The following numerical guidelines may assist in assessing the demand for pedestrian facilities. Judgement should be used when applying these numerical guidelines to ensure the best overall pedestrian safety and traffic management solution for the site.

B1. Pedestrian actuated traffic signals (mid-block)

Installation of pedestrian actuated traffic signals may be appropriate where the conditions described below are met:

a) A pedestrian survey, undertaken in accordance with Appendix A, shows that:

In two separate one hour periods of a typical weekday:

- 60 or more pedestrians per hour actually cross the road and could reasonably be expected to use the crossing; and
- 600 or more vehicles per hour pass the site during the same two hours where the pedestrians cross; and
- the product of the number of pedestrians per hour and vehicles in the same hour exceeds 90,000

or

b) A koala crossing is justified (see B3 below) and:

- children frequently cross the road between two sections of a school at other times;
- there is a steady demand for the crossing by adult pedestrians; or
- it is considered desirable to link the crossing with other nearby traffic signals.

B2. Zebra or Wombat crossing

An on-street zebra or wombat crossing may be provided where a pedestrian survey undertaken according to Appendix A shows that:

a) In two separate one hour periods of any day (including Saturday and Sunday):

- 40 or more pedestrians per hour actually cross the road and could reasonably be expected to use the crossing; and
- 200 or more vehicles per hour pass the site where the pedestrians cross during the same two hours;

or

b) During eight hours of any day:

- An average of 20 or more pedestrians per hour, cross the road (a total of 160 or more in eight hours) and could be reasonably be expected to use the crossing; and
- An average of 200 or more vehicles per hour pass the site during the same eight hours (a total of 1600 or more in eight hours).

B3. Children's crossing (koala)

A koala crossing may be installed if a pedestrian survey undertaken according to Appendix A shows that:

In two separate one hour periods of a typical school day:

- 50 or more children actually cross the road and could reasonably be expected to use the crossing; and
- 200 or more vehicles per hour pass the site where the children will cross during the same two hours.

B4. Children's crossing (emu)

An emu crossing has no minimum child/vehicle guide, however a pedestrian survey in accordance with Appendix A should assist in determining the crossing location.

B5. Pedestrian refuge

An initial assessment of the ease with which a pedestrian is able to cross the road should be conducted to assist in determining whether further investigation and treatment is required. The delay or Level of Service (LOS) experienced by a pedestrian waiting for a safe gap in a traffic stream based on the volume of traffic is the key factor in determining if pedestrians can safely cross a road. As traffic volumes increase, the number of gaps long enough for pedestrians to cross decreases, making it more difficult to cross and increasing delays to pedestrians. As volumes increase further, a point is reached at which there are few, if any, gaps of sufficient length for pedestrians to cross safely and delays become significant. This has two potential impacts:

- Pedestrians take risks by crossing in less than desirable gaps
- Pedestrians do not try to cross, or give up after waiting for some time – i.e. the road becomes an impassable barrier.

The gap required (or crossing time) for a pedestrian to safely cross the road is based on the width of traffic lanes required to be crossed in one movement and the pedestrian walking speed. A road divided by a pedestrian refuge stages the crossing into two movements, reducing the length of gap required for a pedestrian to safely cross each section of road. It is considered that a maximum delay of 30 seconds for pedestrians who wish to cross a road is a reasonable time period and therefore a crossing facility is not generally warranted.

Once the peak hour traffic exceeds the volumes shown in the tables below, the delay for pedestrians is likely to increase beyond 30 seconds and additional pedestrian facilities should be considered.

The tabulated volumes were calculated using SIDRA Intersection 8.0 based on the following assumptions:

- pedestrian walking speed is 1.2 m/s
- all traffic lanes are equally utilised (i.e. all lanes assumed to have the same volume)
- all lanes are of equal width.

It should be noted that SIDRA does not take into account the number of pedestrians as the analysis is based on available gap.

The traffic volumes in the following tables are based on a maximum delay of 30 seconds for pedestrians which is equivalent to Level of Service D.

Given the same road width, the volume threshold for a two-lane, two-way road is lower than that of a four-lane, two-way road. This is attributed to the traffic volume being spread across more lanes, creating more crossing opportunities which result in a higher threshold for a four lane, two-way road.

Two-lane, two-way road:

Total road width (m)	Maximum volume (veh/hr)	
	Undivided road ¹	Divided road ²
6	1560	3536
7.2	1290	3184
8.4	1087	2854
9.6	929	2564
10.8	804	2310
12	704	2090

Four-lane, two-way road:

Total road width (m)	Maximum volume (veh/hr)	
	Undivided road ¹	Divided road ²
12	744	2504
13.2	653	2238
14.4	578	2014
15.6	516	1820
16.8	463	1656
19.2	380	1384
21.6	—	1176
24	—	1010

NOTES:

- ¹ If the peak hour volume is greater than the maximum volume indicated in the table for an undivided road, consider treatments such as narrowing the road width with kerb extensions or a pedestrian refuge.
- ² If the peak hour volume is greater than the maximum volume indicated in the table for a divided road, consider treatments such as narrowing the road width with kerb extensions or providing pedestrians with a priority crossing. However, if the peak hour volume is less than the maximum volume indicated in the table for a divided road, consider the provision of a pedestrian walkthrough.

APPENDIX C - Operation of koala crossings

ADDITIONAL INFORMATION

C1. Automatic operation

The times of automatic operation of a koala crossing are tailored to the normal pattern of demand for children crossing the road. Koala crossings shall only operate on school days.

C1.1. Morning operating period

The morning operating period should commence approximately ten minutes earlier than either:

- (a) the earliest arrival time permitted by the school; or
- (b) the normal first arrivals of children wishing to cross.

Operation should cease approximately five minutes after the school starting time but may cease earlier if the crossing is some distance from the school.

C1.2. Afternoon operating period

The afternoon operating period should commence approximately five minutes before the school finishing time (later if the crossing is some distance away).

Operation should cease approximately ten minutes after the time when sustained use of the crossing by children is normally over.

C1.3. Additional operating periods

Additional operating periods may be justified if different times apply to some parts of the school and there is a significant demand for children to cross the road.

Only rarely will a koala crossing need to operate at lunchtime.

C2. Manual operation

Each koala crossing has a two-position key switch, marked AUTO and MANUAL, for which the school's Principal has a key. With this key, the crossing can be switched from the automatic times preset on the time clock to manual operation. This allows a crossing to be used occasionally such as early dismissal for hot weather or end of term.

A koala crossing operating outside normal times may be confusing to drivers. Consequently, crossings operating at unexpected times are generally less safe than normal, and the following conditions shall be strictly observed whenever a crossing is operated manually:

- (a) The period of manual operation shall be within normal school hours.
- (b) The period of manual operation shall be as short as is practicable while catering adequately for the crossing needs of the children.
- (c) During the entire duration of manual operation, a member of the school staff or other adult person, authorised by and under the direction of the Principal, shall be responsible.

APPENDIX D - Children's crossing monitors

ADDITIONAL INFORMATION

Children's crossings should, except where it is not reasonably practicable, be supervised by monitors during periods of greatest concentration of use by children.

Factors which may render supervision by monitors impracticable include:

- (a) Where a crossing is not within reasonable walking distance of the school, taking into account of the need for the monitors to collect hand STOP banners and safety vests from the school.
- (b) Where a primary school has no grade higher than year five.
- (c) Where a crossing is used only by high school children, and not by primary school children.

Although a children's crossing which is not monitored provides assistance for children crossing a road, the risk is further reduced when the crossing is supervised by properly trained monitors. The presence of monitors also inhibits the particularly risky behaviour of children crossing the road near a crossing but not actually on it. A relatively brief period of supervision by monitors can provide additional protection for most of the children using the crossing.

Pedestrians of any age shall obey the directions of a monitor. Clause C of the *Minister's Notice to the Commissioner of Police* grants approval for the Commissioner to authorise School Crossing Monitors to use STOP banners, barrier devices and CHILDREN CROSSING flags.

Further requirements for children's crossing monitors are specified in Clause C of the *Minister's Notice to the Commissioner of Police*.

Monitors shall be trained by the SA Police Department and shall wear appropriate safety clothing designed to make them conspicuous and to warn road users of their presence.

APPENDIX E - Bicycle lane treatment on approach to on-street zebra crossing

ADDITIONAL INFORMATION

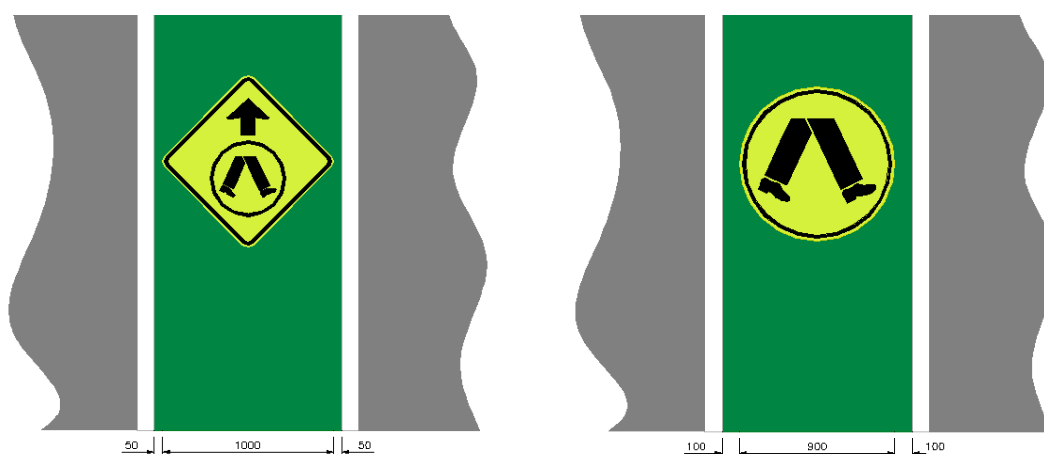
The line marking of the bicycle lane shall not be marked through the crossing. A gap of 1 m from the parallel white stripes of the crossing shall be provided.

The width of the bicycle lane may be a minimum of 1 m on the approach to the zebra crossing, and the other lane should be 2.7 m wide or less to maintain the low speed environment.

Advance warning of the zebra crossing shall be provided in the bicycle lane in the form of pavement marking of the Pedestrian Crossing (R3-1) symbol, and either the Pedestrian Crossing Ahead (W6-2) symbol or the words "Ped Xing Ahead".

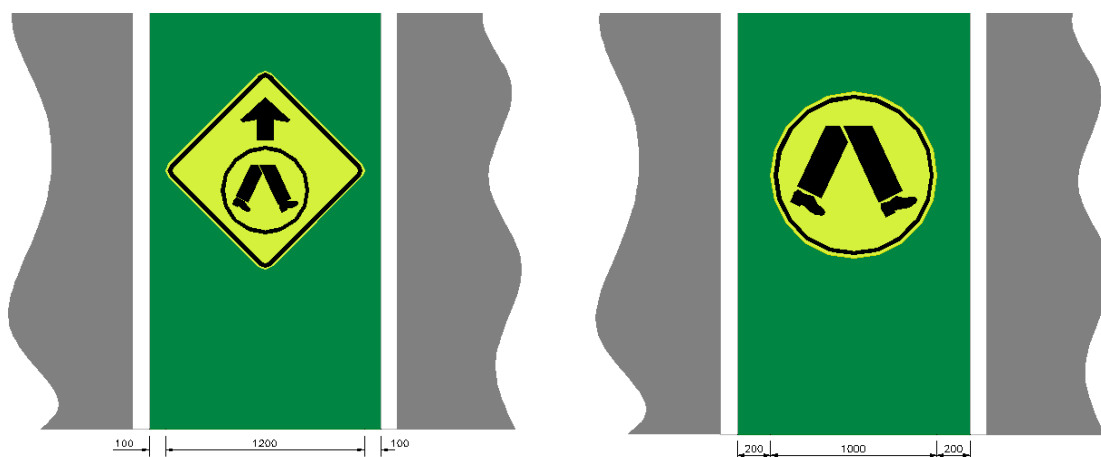
The W6-2 or "Ped Xing Ahead" pavement marking shall be installed 24 m in advance of the crossing. The R3-1 pavement marking shall be installed 4 m in advance of the crossing.

Dimensions of the W6-2 and R3-1 symbols are shown in Figures E1 and E2 for varying widths of bicycle lane.



NOTE: Green coloured pavement in this figure is for illustrative purposes only and is not a mandatory requirement for bicycle lanes on the approach to zebra crossings.

Figure E1: W6-2 and R3-1 pavement symbols for 1.2 m bicycle lane



NOTE: Green coloured pavement in this figure is for illustrative purposes only and is not a mandatory requirement for bicycle lanes on the approach to zebra crossings.

Figure E2: W6-2 and R3-1 pavement symbols for 1.5 m bicycle lane

These pavement markings shall be skid and slip resistant to the requirements of *AS 4049 Paint and related materials – Pavement marking materials* and the *Pavement Marking Manual* so as not to cause a hazard for road users. Pavement marking shall comply with the Department's *Master Specification Parts RD-LM-S1* and *RD-LM-C1*.

As the pavement marking symbols are intended to replicate the R3-1 and W6-2 warning signs, the colour of the pavement marking should match the *AS 1906 Fluorescent Yellow Green* sign colour. Pantone 396C is considered to be a suitable match. If the symbol is produced with pavement marking paint in accordance with the Department's *Master Specification, Part RD-LM-S1* the use of *AS 2700 Golden Yellow (Y14)* is permissible.

APPENDIX F - Priority pedestrian / cyclist treatments across side roads

ADDITIONAL INFORMATION

While not specifically covered in AS 1742.10, the following guidance is provided in relation to treatments for providing priority for pedestrians (and cyclists) across side roads.

Many of the *Australian Road Rules* relating to intersections require that a driver turning left or right give way to a pedestrian on or crossing the road that the driver **is entering**.

Australian Road Rule 353(1) further states:

If a driver who is turning from a road at an intersection is required to give way to a pedestrian who is crossing the road that the driver is entering, the driver is only required to give way to the pedestrian if the pedestrian's line of travel in crossing the road is essentially perpendicular to the edges of the road the driver is entering — the driver is not required to give way to a pedestrian who is crossing the road the driver is leaving.

Regulations 9A and 9B of the Road Traffic (Road Rules - Ancillary and Miscellaneous Provisions) Regulations specifies the rules where a reference to a pedestrian is taken to include a reference to a rider of a bicycle.

Where it is desired to require drivers **entering or leaving** a side road to give way to pedestrians (and cyclists) across the side road, the treatments identified in below may be used.

F1. Continuous Footpath Treatment:

In a continuous footpath treatment, the footpath adjacent to the main road is continued across a side road as a raised treatment, where the surface material matches that of the footpath, and ideally varies from the road surface material. It provides priority through the application of *Australian Road Rules 13, 74 and 75*. Under the *Australian Road Rule 13*, a footpath is a road related area, and under *Australian Road Rules 74 and 75*, when entering or crossing a road related area from a road, drivers must give way to any pedestrians or other road users on the road related area. This treatment is best suited to low vehicle volume, high pedestrian activity locations.

Where used, continuous footpath treatments shall be installed in accordance with *Austroads Guide to Road Design Part 4*, and the document it references for additional guidance ([RMS Technical Direction TDT 2013/05](#)).

As this treatment is a road design treatment rather than a traffic control device, the road authority is responsible for determining the appropriateness of this treatment and addressing the recommendations of the Austroads guidance in their traffic impact statement for their decision making and records.

F2. Raised crossing with Give Way signs (Rule 71)

Where separated bicycle / pedestrian paths, or a shared path catering primarily for cyclists runs parallel to the main road and crosses a side road, the preferred treatment across the side road is a raised crossing with Give Way sign controls (*Australian Road Rule 71*). Green paint (in accordance with the Department's *Pavement Marking Manual*) may be used where the crossing forms part of a separated bicycle path, or the shared path primarily caters for bicycle traffic.

Ideally the crossing should be set back (desirably 5 m to 7 m) from the traffic lane on the main road to allow a vehicle to store between the main road traffic lane and the crossing. Optimum

set-back is a compromise between having vehicle storage space and not diverging crossing users from desire lines or reducing sight lines. Set-back also allows for improved orientation of Give Way signs facing traffic turning from the main road. The "Give Way Sign Left Arrow" (W3-SA2) sign may be used in advance on the main road where set-back cannot be achieved.

Examples:

[Franklin Avenue / Main South Road, Bedford Park \(separated pedestrian / bicycle path\), Riverside Drive / Main South Road, Bedford Park \(separated pedestrian / bicycle path\), Wylde Street, Adelaide \(shared path\), Plane Tree Drive / Hackney Road, Adelaide \(shared path\),](#)

F3. Wombat Crossing

Where a shared path crosses a road midblock, a wombat crossing in accordance with AS 1742.10 and this supplement is the preferred treatment.

Where a wombat crossing is to be located near a main road intersection, it should cater for primarily pedestrian traffic. If a priority crossing near an intersection is intended to cater for shared path users which are primarily bicycle riders, the crossing described in Section F2 should be provided instead of a wombat crossing.

A wombat crossing near a main road intersection should be set back a minimum of 7 m from the main road traffic lane to allow a vehicle to store between the main road traffic lane and the crossing. Maximising the set back from the main road traffic lane provides improved visibility of the Pedestrian Crossing (R3-1) signs at the crossing. The 40 km/h speed limit associated with a wombat crossing may be omitted in this situation. See AS 1742.10 and the Clause 6 of this supplement for full requirements for wombat crossings.

Examples:

[Main Road, McLaren Vale \(Coast to Vines shared path crossing\), Bonython Park access / Port Road, Adelaide \(shared path\)](#)