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Manager, Traffic Services
18 / 02 / 2018

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1. PART A INTRODUCTION

1.1 SCOPE

This manual specifies the lines, patterns, symbols, letters and numerals, pavement bars and markers used in or on roads, road related areas and other places including kerbs, for the purpose of regulating, guiding and warning road users, and provides guidelines for appropriate use.

1.2 LEGAL REQUIREMENTS

Traffic control devices, including pavement markings, may only be used with approval under the Road Traffic Act 1961 from the Minister for Transport and Infrastructure. The Minister has issued ‘Instruments of General Approval’ to Councils, the Commissioner of Highways and some other road authorities which grant general approval to use traffic control devices subject to a number of conditions. One of these conditions is that the installation, alteration and removal of traffic control devices must comply with the Part 2 – Code of Technical Requirements (the Code) which forms part of the Department of Planning, Transport and Infrastructure’s (DPTI) ‘Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices’.

The Code lists pavement markings which are not to be used in SA, and refers the reader to this Manual for details of the design of standard pavement markings for use. This manual takes into consideration the relevant Australian Road Rules, Australian Standards, Austroads guidelines DPTI's Operational Instructions.

Pavement markings not conforming to this Manual and the Code, such as innovative or non-standard treatments are not authorised to be used under the Instrument of General Approval issued by the Minister. Authorisation for such treatments may only be given by the Manager, Traffic Services, Department of Planning, Transport and Infrastructure (DPTI), acting as delegate for the Commissioner of Highways.

1.3 GENERAL ATTRIBUTES

1.3.1 PURPOSE

A system of clear, effective and consistently applied pavement markings is essential for the proper regulation, warning and guidance of drivers, cyclists, pedestrians and other road users.

Pavement markings may guide traffic or give advance warning or may impose restrictions which are supported by the Road Traffic Act. They may act as a supplement to other traffic control devices or may be used alone to convey certain regulations, warnings and guidance.

It is therefore important to ensure that the use of the markings conforms to the legal requirements mentioned above before they are approved, installed, altered or removed to avoid possible conflict or confusion, legal or otherwise.

1.3.2 REMOVAL OF MARKINGS

Where traffic conditions are altered and the existing pavement markings no longer apply it is essential that those markings be removed, covered or obliterated. It is important that the end result of removing or covering markings does not leave an impression of the marking on the road
surface which may otherwise be interpreted as a marking in any lighting and/or weather conditions. It is also important that any covering material create a surface of a similar skid resistance to that of the surrounding road surface.

In rare cases, redundant pavement markings may be allowed to fade but only when these markings cannot be misinterpreted or otherwise create a confusing message to the road user which may create a safety hazard.

Substantial changes to pavement markings will usually require pavement resurfacing.

1.3.3 LIMITATIONS

Pavement markings have the following limitations:
   a) They may not be clearly visible if the road is wet or dusty, for example near an edge of a median.
   b) They are subject to traffic wear and usually require frequent maintenance.
   c) They can be obscured by traffic.
   d) Their effect on skid resistance requires careful choice of materials and precludes the use of large marked surface areas.
   e) They cannot be applied to unsealed roads.

In spite of these limitations they have the advantage under favourable conditions of conveying information to the driver without diverting attention from the road.

1.3.4 REFLECTORISATION

All longitudinal and traverse lines except zig zag markings shall be reflectorised. Lane change arrows as shown in Part B 2.1.6.3 and painted kerbs as shown in Part B 2.1.16 shall also be reflectorised.

1.3.5 ANTI-SKID TREATMENT

An anti-skid treatment shall be applied to all markings other than longitudinal lines.

1.3.6 MATERIALS

Road pavements may be marked with paint, thermoplastics, pre-cut sheeting, raised pavement markers (retro-reflective, non-reflective or illuminated) or pavement bars.

1.3.7 COLOURS

Pavement markings shall be white unless specified as yellow, blue or red. Yellow shall be used on pavement bars and to define tram only lanes and areas where parking/stopping restrictions apply. The colour blue is used for disability access and red is used for Bus Only lanes. Raised pavement markers may be white, red or yellow. Blue markers are reserved for locations of fire hydrants.

Black paint may be used in the gaps and around the edges of pavement markings to heighten contrast where a light coloured pavement does not allow adequate marking definition to be obtained. Where this is being considered advice should first be sought from Manager, Traffic Services, DPTI.

In situations such as community events on temporarily closed roads light blue coloured pavement markings (known as honour lines) may be used to define pedestrian boundaries. The preferred width of the line is 50mm (75mm max) and shall be non-reflective. It should be painted with one coat and allowed to fade, or removed after the event, to ensure road users are not
confused by the markings. These markings are not considered traffic control devices

1.3.8 DISTINCTIVE PAVEMENT MARKING COLOURS AND TEXTURE

There is a trend by road authorities to use distinctive coloured pavements and/or textures to highlight the road surface in a visual, tactile or audible manner. Such treatments may supplement traffic control devices (e.g. Bus Only areas, bicycle lanes and islands) or they may be aesthetic marking devices to supplement streetscape designs. For commonly used distinctive coloured pavement marking used in South Australia, refer to Part B 2.1.15.

1.3.9 OFF STREET PARKING AREAS

This is a road related area and therefore pavement marking shall be accordance with AS1742.11, AS2890.1 and AS2890.6.

1.3.10 PAVEMENT MARKING MAINTENANCE

Refer To DPTI Operational Instruction 20.1


1.3.11 ROAD CATEGORY DEFINITIONS

Refer to Link
2. PART B - TYPES OF MARKINGS

This Section describes the types of marking used including paint substitutes, pavement bars, raised pavement markers and coloured areas.

It details the actual dimensions and other specification attributes of markings which need not be shown on traffic control and road design drawings.

IMPORTANT:

All drawings are not to scale. The reader shall use the dimensions specified throughout the manual.

DO NOT SCALE OFF DRAWINGS.

INSTALLATION SPECIFICATIONS

DPTI shall and all other road authorities should require pavement marking to be installed in accordance with DPTI Master Specification Division 2: Roadworks:

- Part R45 Supply of Materials for Pavement Markings
- Part R46 Application of Pavement Marking
- Part R47 Application of Audio Tactile Line Marking.

These documents can be found http://cms.dpti.sa.gov.au/procurement-management/standard_contract_documents
2.1 TYPES OF MARKINGS

2.1.1 LONGITUDINAL LINES

2.1.1.1 Dividing and Barrier lines (separates opposing traffic flows only)

a) Single broken (standard)

b) Wide dividing line treatment (double broken)

*1.05m to 1.2m. The gap between the wide dividing line treatment (double broken) may be increased to provide safer separation between opposing traffic flows. Such treatments shall be referred to the Manager, Traffic Services, DPTI.

c) Enhanced broken (for multi-lane roads in both directions or single direction including turning lanes)

d) Single continuous barrier

e) Enhanced single continuous barrier (for multi-lane roads in both directions or single direction including turning lanes)

f) Double one-way barrier

g) Double two-way barrier
Where the road speed limit is 70 km/h or less and:
- Double two-way barrier lines are justified then a single continuous barrier line shall be used, including approaches to railway crossings and ferries. No gaps should be left for driveways or other accesses, only side roads.

Where the road speed limit is 80 km/h or more and:
- Double two-way barrier lines are justified, then double two-way barrier lines shall be used. Gaps should be left in linemarking for driveways, or other accesses and side roads.
- Double one-way barrier lines are justified, then double one-way barrier lines shall continue across driveways and other access but gaps shall be left for side roads.
- Double two-way barrier lines are justified on the approaches to railway crossings and ferries, an enhanced single barrier line shall be used. Gaps should not be left for driveways or other accesses, only side roads.

h) Wide dividing line treatment (double one-way)
*1.05m to 1.2m. The gap may be increased to provide safer separation between opposing traffic flows i.e wide dividing line treatment on the Dukes Highway. Such treatments shall be referred to the Manager, Traffic Services, DPTI.

![Diagram of wide dividing line treatment (double one-way)](image)

i) Wide dividing line treatment (double two-way)
*1.05m to 1.2m. The gap may be increased to provide safer separation between opposing traffic flows i.e wide dividing line treatment on the Dukes Highway. Such treatments shall be referred to the Manager, Traffic Services, DPTI.

![Diagram of wide dividing line treatment (double two-way)](image)

j) Bicycle and shared paths (off road)

2.1.1.2 Lane lines

a) Standard broken
b) Continuous

2.1.1.3 Special purpose broken lines

2.1.1.4 Edge lines (continuous)

a) ** Standard - All roads with sealed shoulders unless (b) below, applies.

b) ** Enhanced Dukes Highway, Sturt Highway, Riddoch Highway, Pt Wakefield Highway, Augusta Highway Princes Highway (Murray Bridge to Tailem Bend), all Expressway/Freeway/Motorway type roads and all dual carriageway roads with sealed shoulders > 0.5m

**Note: Should there be just a few kilometres of sealed shoulder >0.5 metres in the middle of a route (between townships) with sealed shoulder <0.5 metres, the edge line should be applied with a transition to existing, refer to Part B 2.1.18.4

2.1.1.5 Continuity lines

a) Standard

b) Enhanced (used in conjunction with 150mm edge lines)

2.1.1.6 Turn lines

2.1.1.7 Outlines

a) Standard (continuous)

b) Enhanced (roads where 150mm edge lines are used, see Part B 2.1.1.4 (b)

c) Special purpose broken line
Community event pedestrian control line (honour line)

2.1.1.8  Bus only line

2.1.1.9  O’bahn bus guidance line

2.1.2  TRANSVERSE LINES

2.1.2.1  Stop lines
   a) Standard (≤ 70 km/h)
   b) Enhanced (≥ 80 km/h)
   c) Bicycle & shared paths

2.1.2.2  Give way lines
   a) Standard (<70 km/h)
   d) Enhanced (>80 km/h)
   e) Bicycle & shared paths

2.1.2.3  Marked Foot Crossing
   a) Standard (pedestrian actuated crossings, pedestrian crossings at signalised intersections, koala and emu crossings and bicycle crossings)

   **NOTE:** Below is the previous standard and is only used for maintenance of existing line marking only.

   b) Wombat and Zebra crossings

   Wombat - L = 3m min for off street and 6m min for on street
   Zebra - L = 3m min for off street and 8m min for on street
2.1.2.4 Pedestrian holding lines (rail station platforms only)

Refer to Part B 2.1.7.5 for layout of platform markings.

a) Platform edge hazard line

b) Platform ‘wait behind’ line

2.1.2.5 Pedestrian kerb ramp access (off street)

Access to kerb ramps between parking spaces may be marked with diagonal stripes to discourage drivers from impeding access to the ramp. Where marked they shall be white.

NOTE: For new works and large car parks, consideration should be given to raised kerb extensions and/or formal pedestrian crossings eg wombat crossings.
2.1.3 PARKING CONTROL LINES

2.1.3.1 Parking control edge lines

a) *No Stopping at all times

b) *Restricted parking other than Clearway

2.1.3.2 Parking space outline

a) *General use

b) *Special use (vehicle type)

c) **Parking for people with disabilities

* Restricted Parking by time and/or by vehicle type. Signs to be installed to indicate start & end of area

** Dedicated parking spaces for people with disabilities shall be outlined on all sides excepting any side delineated by a kerb, barrier or wall.

2.1.3.3 Shared space or area markings

Within off street car parking areas, shared areas or spaces located adjacent to the longitudinal side only of dedicated angle parking spaces for people with disabilities shall have a yellow outline and yellow diagonal stripes with a slip resistant surface.

Yellow diagonal stripes shall be marked at an angle of 45 ± 10 degrees to the side of the space.

Yellow diagonal stripes shall not be used in trafficked areas including walkways within or partly within a shared area, parking aisles or roadways.

Walkways within or partly within a shared area or space shall be marked with yellow 100mm wide unbroken longitudinal lines on both sides of the walkway excepting any side delineated by a kerb, barrier or wall (see Part B 2.1.7.6).
2.1.4 RURAL INTERSECTIONS

For more information regarding gaps in barrier lines see Part B 2.1.17. For more intersection examples see Part B 2.1.14.8 - 2.1.14.9.

2.1.4.1 Various accesses on to main roads

Notes:
1. The gap in the edge line for side roads starts/ends at the tangent point or clear of the vehicle turning envelope.
2. Where sufficient width is available on the sealed shoulder or apron, a Give Way line or Stop line (in accordance with AS1742.2 - 2009 Section 5.5.4) may be installed. See Insert A for example.
3. Continuity line may be used across wide side roads, generally wider than 12m TP to TP. See Insert B for example & Part C 3.3.13.
4. Edge line type (see part B 2.1.1.4).
5. Warrant for edge lines (refer to part C 3.4.7.1)

* Australian Road Rule 134 allows a driver to cross double one-way barrier lines to enter or leave the road. Nevertheless a gap of 10m is provided to provide drivers with a visual cue to the location of a side road and where to prop.
Various accesses on to main roads (con’t)
For use of continuity lines refer to note 3 on page 17

Note: The 48m standard continuous line shall only be a single or double barrier line.
Various accesses on to main roads (cont)
2.1.5 DIAGONAL STRIPES AND CHEVRON MARKINGS

2.1.5.1 Diagonal stripes edge treatment

2.1.5.2 Diagonal stripes dividing treatment

2.1.5.3 Chevron Markings

* 1st diagonal marking or chevron is placed where the width of the treatment is 1.0m.
** In rare cases wider outlines/edge lines may be specified on traffic control drawings.
~ 45% = nominally 45 degrees
x - Spacing may be modified to suit corner islands, painted islands and merges.
For design details see Part C 3.3.3
2.1.6 ARROWS

2.1.6.1 Arrows - common types
2.1.6.2 Arrows - special types

a) Double turn arrow

b) U-turn arrow

c) 45% turn arrow

d) Through right left turn arrow
2.1.6.3 Arrows - lane change

Note: For general treatment at lane reductions (merges) refer to AS1742.2 section 4.7.2 and 5.5.2.4 for application of arrows.

2.1.6.4 Arrows – expressway exit
2.1.7 MESSAGES AND SYMBOLS

2.1.7.1 Letters and Numerals

Letters and numerals other than those shown in Words (Part B 2.1.7.2) are available from Australian Standard 1742.2. The length of letters and numerals shall be 2.5m where the speed limit is up to 80km/h and 5.0m at higher speed limits unless otherwise specified.

2.1.7.2 Words

Refer to Part C 3.3.17 for the placement of KEEP CLEAR messages and Part B 2.1.8 for the placement of RAIL X messages.

The grid width (X) is constant at 100 mm, but the grid height (Y) may vary as follows:

\[ Y = \frac{\text{Height of letter or numeral required (mm)}}{40} \]

However the word AHEAD may be made narrower (eg grid width reduced to 75mm) to fit into a lane.
Notes:
The grid width (X) is constant at 100 mm, but the grid height (Y) may vary as follows:

\[ Y = \text{Height of letter or numeral required (mm)} \]

40
Notes: The grid width \( X \) is constant at 100 mm, but the grid height \( Y \) may vary as follows:

\[
Y = \text{Height of letter or numeral required (mm)}
\]

\[
40
\]
Notes:
The grid width (X) is constant at 100 mm, but the grid height (Y) may vary as follows:

\[ Y = \frac{\text{Height of letter or numeral required (mm)}}{40} \]
2.1.7.3 Bicycle and Pedestrian pavement symbols

**Pedestrian pavement symbol** (path only)
X=75mm

**Arrow pavement symbol** (path only)
X=100m
Bicycle and pedestrian pavement symbols (cont)

Bicycle pavement symbol Road X = 65mm Y = 1800mm, Path X = 28mm Y = 800mm

For bicycle lanes less than 1.2m, bicycle pavement symbol may be reduced proportionally. As an alternative parts of the bicycle pavement symbol may be omitted to ensure the symbol fits within the lane (refer to right diagram).
Bicycle and pedestrian pavement symbols (cont)

No-Bicycles Pavement symbol for path use

X=30mm
Bicycle and pedestrian pavement symbols (cont)

All skaters prohibited

$X = 24\text{mm}$
2.1.7.4 International symbol of access

Note: The grid is for positional purposes

Accessible boarding indicator patch (station platforms only)

Symbol shall be centrally located within the blue background and is for left and right directions

The colour used for the blue background shall be “Ultramarine” (AS2700-B21)

Identification of dedicated parking space for people with disabilities

Symbol shall be centrally located within the blue background

The colour used for the blue background shall be “Ultramarine” (AS2700-B21)
2.1.7.5 Station platforms

Note: For design requirements specific to station platforms, contact DPTI Technical Services.
2.1.7.6 Dedicated parking space identification & delineation (angle parking)

Each dedicated parking space for people with disabilities shall be identified by a white symbol of access on a blue background in the centre of the space between 500mm and 600mm from its entry point.

Note: The primary access path or the shared space can be located on the left or right side of the dedicated space.
2.1.8 RAILWAY LEVEL CROSSING PAVEMENT MESSAGE

**Urban ≤ 70km/h**
(the message shall commence with the 'X')

**Rural ≥ 80km/h**
(the message shall commence with the 'RAIL')

Note Message is from bottom up

The grid width (X) is constant at 100mm, but the grid height (Y) may vary as follows:

\[ Y = \frac{\text{Height of letter (mm)}}{40} \]

1. Marking to commence 15m to 20m beyond the first warning sign back from the railway level crossing. Refer to AS1742.7 Fig 4.4 - 4.6

2. When a new message scheme is required, the above example shall be used. When repainting original message, existing markings can be used.
2.1.9 RAILWAY LEVEL CROSSINGS YELLOW BOX (cross-hatched) MARKINGS

Refer to AS1742.7 for the warrants for box (cross-hatched) markings. Refer to Australian Road Rule 120 for rules relating to painted cross-hatching road markings.
2.1.10 ZIGZAG SCHOOL ZONE MARKINGS

Note: ZIGZAG marking commences 30m in advance of School Zone Sign.

2.1.11 POINT TO POINT SAFETY CAMERA MARKINGS (STUB LINE)

2.1.12 RAISED ROAD PAVEMENT MARKINGS

2.1.12.1 On street

Includes Flat-top Road Humps, Watts profile (3.7m length), Wombat Crossings (on street and off street) and Raised Intersections.
2.1.12.2 Off street (Watts profile 1.2m length only)

2.1.13 PAVEMENT BARS

Note: 1. Not to scale
2. Size B Bars 50mm nominal height.
PAVEMENT BARS (cont)

Control of turning movements at intersections

Pavement bars shall not be used where *85th percentile approach speeds are greater than 75km/h. (The use of yellow RRPMs is an alternative, refer to inset Part B 2.1.14.9).

Standard pavement bar median may be supplemented by RRPMs where physical turning control is less important. See Part B 2.1.14.9.

Pavement bars shall always be placed at 90 degrees to the direction of traffic.

* 85th percentile speed (V85 km/h) - the speed at or below which 85% of vehicles are observed to travel under free-flowing conditions past a nominated point. A vehicle is considered to be operating under free-flowing conditions when the preceding vehicle has at least 4 s headway and there is no apparent attempt to overtake the vehicle ahead.

Note: The 9m length using 4 bars at 3m spacing may be extended to 18m using 7 bars at 3m spacing.
2.1.14 RAISED PAVEMENT MARKERS

Colour of retroreflective raised pavement markers to augment painted lines

<table>
<thead>
<tr>
<th>Applications</th>
<th>RRPM Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane lines, small* channelizing outline Painted or raised – all sides</td>
<td>White</td>
</tr>
<tr>
<td>Left hand edge line, divided and 2-way roads. Left side of diverge outline,</td>
<td>Red</td>
</tr>
<tr>
<td>including expressway exit nose, and approach end of large island.</td>
<td></td>
</tr>
<tr>
<td>Dividing lines, right hand edge line (divided road), median island outline,</td>
<td>Yellow</td>
</tr>
<tr>
<td>painted or raised - all sides. Tram lane lines. Right side (when viewed in</td>
<td></td>
</tr>
<tr>
<td>the direction of travel) of exit lane on diverge outline, including expressway</td>
<td></td>
</tr>
<tr>
<td>exit nose, and approach end of large island.</td>
<td></td>
</tr>
</tbody>
</table>

* A small island should generally be regarded as one with no side longer than 12m including approach and departure markings.

Symbols for raised pavement markers

<table>
<thead>
<tr>
<th>Marker</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective pavement dot</td>
<td>○</td>
</tr>
<tr>
<td>Retroreflective raised pavement marker :</td>
<td></td>
</tr>
<tr>
<td>Unidirectional</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>⬇️</td>
</tr>
<tr>
<td>Yellow</td>
<td>🟢</td>
</tr>
<tr>
<td>Red</td>
<td>🟡</td>
</tr>
<tr>
<td>Bidirectional</td>
<td>🟢</td>
</tr>
</tbody>
</table>

* Line extension on symbol indicates direction of reflection. Face of marker to be normal to direction of travel.
2.1.14.1 Dividing and Barrier lines (separates opposing traffic flows only)

a) Single broken (standard), unlit

b) Single broken (standard), lit

c) Enhanced broken (multi-lane), unlit

d) Enhanced broken (multi-lane), lit

e) Single continuous (standard), unlit

f) Single continuous (standard), lit

g) Enhanced continuous barrier, unlit

h) Enhanced continuous barrier, lit

i) Double one-way barrier, unlit

j) Double one-way barrier, lit

k) Double two-way barrier, unlit
Dividing and Barrier lines (separates opposing traffic flows only) (cont)

l) Double two-way barrier, lit

m) Outline urban roads, lit

n) Outline urban roads, lit

o) Enhanced outline rural roads, motorways, freeways and expressway, unlit

p) Enhanced outline rural roads, motorways, freeways and expressway, lit

q) Wide dividing (double broken)

r) Wide dividing (double one-way barrier)
Dividing and Barrier lines (separates opposing traffic flows only) (cont)

s) Wide dividing (double two-way barrier)

\[ \text{X = The gap between the lines may be increased to provide a safer separation between opposing traffic flows i.e. wide dividing line treatment on Dukes Highway. Such treatments shall be referred to the Manager, Traffic Services, DPTI.} \]

2.1.14.2 Lane lines

a) Broken, unlit

b) Broken, lit

c) Continuous, unlit. Markers may be on left or right of line.

d) Continuous, lit. Markers may be on left or right of line.

e) Special purpose lane line, unlit

f) Special purpose lane line, lit

**Note:** Direction of travel is left to right in above diagrams.
2.1.14.3 Edge lines (without offset ATLM)

- **a)** Standard, unlit
  
- **b)** Standard, lit
  
- **c)** Enhanced, unlit
  
- **d)** Enhanced, lit

**Note:** Direction of travel is left to right in above diagrams.

**Notes:**
1. Edge lines in the merge taper on overtaking lanes from this specification (see Part B 2.1.14.10).
2. RRPM shall not be used on narrow sealed shoulders of 0.2 metres or less but if required can be installed on the line.
3. RRPM shall be placed to the left of the edge line (direction of travel) where there is the sealed shoulder width of > 0.2 metres or left of the offset ATLM where it is installed. Refer to OI 2.13
2.1.14.4 Corner islands

**Note** that raised island/median noses are painted unless RRPM's surrounding the median are installed or a sign is installed highlighting the raised island/median nose.

**Speed limit ≤ 80km/h**

![Diagram showing RRPM placement near corner islands with speed limit ≤ 80km/h]

**Note:**
RRPMs on corner islands are to be white except where large raised dividers are used (refer to Part B 2.1.14.5) or where red RRPMs have been used on the edge lines on the approach or downstream from the corner island. In the latter cases, red RRPMs shall be used to 'continue' the line of RRPMs on the driver's left hand side only.

**Speed limit ≥ 90km/h**

![Diagram showing RRPM placement near corner islands with speed limit ≥ 90km/h]

**NOTE:**
On roads with edge lines (standard or enhanced) red RRPMs should be located on the other side of the corner island outline.
2.1.14.5 Motorway/Freeway/Expressway type ramps

a) Preferred

**Diagram**

Indicates direction of travel

**NOTE:**

RRPMs should be placed on the median traffic island or shoulder side where sufficient pavement width permits.
Motorway/Freeway/Expressway type ramps (cont)

b) Alternative

NOTE:
This treatment narrows the lane width and may not be consistent with RRPM locations before and after the ramp.
Motorway/Freeway/Expressway type ramps (cont)

c) Two lane exit
2.1.14.6 Urban road

For RRPM’s on urban corner islands see Part B 2.1.14.1
2.1.14.7 Rural multi-lane road

NOTE: If the intersection is lit, RSPM spacing is 12m.

Dr RSPMs on rural corner islands see Part B 2.1.14.4.
2.1.14.8 Rural two-lane two-way road

**Note:** Continuity line may be used across side roads See Part B 2.1.4 & Part C 3.3.11.3
2.1.14.9 Rural intersection

(a) Auxiliary Left Turn (AUL)

Generally no R/PAMs on continuity lines

(b) Channelised Right Turn (CHR and CHRS)

See treat A on the next page for more detail

Start laying yellow R/PAMs before first diagonal marking then every 24 ft.
Rural intersection (cont)
2.1.14.10 Overtaking lane - merge area delineation treatment 80km/h or greater
2.1.14.11 Wide dividing line treatment

Wide Dividing Line Treatment 1.05m to 1.2m RRPMs past this point see Part B 2.1.14.1 (q), (r) and (s)
2.1.15 DISTINCTIVE COLOURED PAVEMENT AREAS

Only the following AS2700 colours shall be used:

a) Bus Only areas (not bus lanes) - Red (Signal Red, R13).
b) Bicycle lanes - Green (Emerald, G13).
c) Full time signalised pedestrian crossings (only) - Yellow (Golden Yellow, Y14).
d) Accessible boarding indicator patch and identification of dedicated parking spaces for people with disabilities - Blue (Ultramarine, B21) (refer to Part B 2.1.7.4).
e) Islands and medians with diagonal stripes and chevron markings - Red (Terra Cotta, R52).

The above coloured pavement areas shall be treated with skid resistant material to a minimum value 45 BPN (British Pendulum Number).

Distinctive coloured pavements for areas other than those stated above shall be referred to Manager, Traffic Services, DPTI.

Also refer to Part C 3.3.26 & 3.3.27
2.1.16 OUTLINES AND PAINTED KERBS

Raised median kerbs shall be outlined **100mm from kerb**, where the adjacent through lane width is 3.0m or greater in width.

Raised median kerbs shall be painted where the adjacent through lane width is less than 3.0m.

Raised median kerbs in auxiliary right turn lanes shall not be outlined unless the right turn lane is greater than or equal to 3.0m in width.

Raised islands, other than raised medians and roundabouts shall be outlined unless the adjacent lane is a bicycle lane less than or equal to 1.5m wide.

All roundabouts and splitter island kerbs shall be painted and may be outlined.

Outlines on raised islands and medians shall be standard continuous, except on roads where 150mm edge lines are used (refer to Part B 2.1.1.7)

Where back to back medians are installed the whole median shall be painted unless outlined

**Note that raised island/median noses are painted unless RRPM's surrounding the median are installed or a sign is installed highlighting the raised island/median nose.**

2.1.16.1 Medians

Isolated openings in median kerbs left for drainage purposes shall not be painted.
Medians (cont)
2.1.16.2 Roundabouts

Kerbs on roundabouts including stand alone splitter islands shall be fully painted. On roundabouts with provision for heavy vehicle movements i.e. with mountable or semi-mountable areas, the first 200mm of the mountable or semi-mountable area shall be painted white. The kerb of the central or main island in these circumstances may be painted.
2.1.16.3 Through lanes and auxiliary right turn lanes

Outlines and median kerb painting for auxiliary right turn lanes <3.0m

Outlines and median kerb painting for auxiliary right turn lanes >3.0m
2.1.16.4 Other raised islands

Unless specified otherwise on traffic control drawings the approach ends of traffic islands shall be painted white for a distance of 6 metres. Exit ends of islands need not be painted. Where approach end of islands have outlines with diagonal markings or chevrons, kerbs need not be painted. Kerbs on islands with sides measuring less than or equal to 9 metres (between end tangent points) shall be fully painted.
2.1.16.5 Pedestrian Refuges

For taper treatments see Part C 3.3.10.3

**Adjacent lane > 3.0m**

![Diagram of pedestrian refuge with lane width greater than 3.0m]

**Adjacent lane < 3.0m**

as above but no outline, add line across opening as prolongation of kerb line.

![Diagram of pedestrian refuge with lane width less than 3.0m]

2.1.16.6 Local Area Traffic Management (LATM)

For each length of median kerb 24m or less, the entire kerb must be painted. Where the length of kerb is greater than 24m, at least 6m of kerb from each end must be painted.

The kerb is painted the full length where the width of the adjacent lane is less than 3m. Otherwise the usual markings for medians apply.

It is not necessary to delineate the drainage channel formed by the existing kerb and kerb extensions, unless pedestrian safety is compromised or it forms part of a by-pass of the device for cyclists.

Typical installations of RRPMs at LATM treatments are shown in AS1742.13-2009.

2.1.17 BARRIER LINE INSTALLATION

2.1.17.1 Intersections

Gaps shall be provided in double two way barrier lines and shall generally be 10m wide and centrally placed at the intersecting centre point of the side road.

Where barrier lines are required for vertical or horizontal alignment, sight restrictions take precedence over standard rural two lane, two way road intersection treatments.
2.1.17.2 Property accesses

Gaps should not generally be provided in double two way barrier lines. Leaving a gap allows a driver to legally enter and leave the road as well as U-turns at a place where there may be a restricted sight distance due to horizontal or vertical curves. A gap may only be provided where a survey determines that sufficient sight distance is available to safely allow all movements.

Where provided the gap shall generally be 5m. The gap may be increased at wider accesses or where the turning vehicle envelope would otherwise cross the double two way barrier lines.

2.1.18 LONGITUDINAL LINE STYLE TRANSITIONS

2.1.18.1 Dividing lines

Broken (standard) to enhanced broken

Continuous to enhanced continuous

Enhanced continuous to standard outline

2.1.18.2 Barrier lines

Transition from ‘one direction’ to ‘both directions’ lines
Barrier lines (cont)

2.1.18.3 Edge lines or outlines
Transition between normal and enhanced
2.1.18.4 **Edge line mis-match**

A mis-match of the edge line road markings may result where a change of lane width occurs after sealing the road shoulders, resealing works or road reconstruction. Where this occurs, a transition of the edge line between the new and existing markings shall be made as indicated in the diagrams below.
Edge line mis-match (cont)
3. PART C - DESIGN GUIDE

3.1 SCOPE

This section contains the requirements for the correct and consistent use of pavement markings on roads in South Australia.

It is intended that this section provides specific diagrammatic examples (i.e. not to scale or proportion) of the application of markings and where necessary explain to the designer the reasons why certain treatments are used. It also provides references to:

- The Road Traffic Act (RTA)
- Australian Road Rules (ARR)
- DPTI Code of Technical Requirements (the Code)
- Australian Standards (AS)
- Austroads Guide to Traffic Management (GTM)
- Austroads Guide to Road Design (GRD)
- Master Specifications (MS)
- DPTI Traffic Engineering and Road Management Operational Instructions (OI)

All road authorities including their consultants and contractors are required to conform to this manual.

Note: Dimensioning Convention

All drawings are not to scale. The reader shall use the dimensions specified throughout the manual. **DO NOT SCALE OFF DRAWINGS.**

All markings (longitudinal and transverse) are dimensioned centre to centre, except for Give Way, Stop lines and pavement messages.

Give Way, Stop lines and pavement messages are generally measured from either the leading or trailing edge of the line or message.
3.2 TRAFFIC CONTROL DRAWINGS AND DESIGN LAYOUTS

3.2.1 LONGITUDINAL LINES

Longitudinal lines shall be shown on all traffic control drawings. This includes edge lines and outlines. Dimensions to kerbs shall be to the kerb face. Dimensions to longitudinal lines (other than zigzag school zone markings) shall be to the centre of the line. Dimensions of barrier lines shall be to the centre of the combination of the two parallel lines.

3.2.2 TRANSVERSE LINES

Transverse lines shall be shown on all traffic control drawings. Dimensions shall be clearly shown to either the leading or trailing face of all transverse lines, except pedestrian crosswalk lines. Pedestrian crosswalk lines shall be dimensioned to the centre of the line.

3.2.3 PARKING CONTROL LINES

3.2.3.1 Parking Control Edge lines

Parking control edge lines shall be marked in a consistent alignment parallel to and approximately 400mm from the kerb or edge of seal. This is to ensure that the line is not marked on the water table.

3.2.3.2 Parking Space Outlines

Parking space outlines shall be shown and dimensioned on traffic control drawings.

3.2.4 DIAGONAL STRIPES AND CHEVRON MARKINGS

Diagonal stripes and chevron marking shall be shown on traffic control drawings.

3.2.5 ARROWS

All arrows shall be shown on traffic control drawings and may be dimensioned longitudinally. Arrows shall be located centrally within the lane width as shown in Part B 2.1.6.

3.2.6 MESSAGES AND SYMBOLS

All messages and symbols shall be shown and the longitudinal spacing dimensioned longitudinally on traffic control drawings. Messages and symbols shall be located centrally within the lane such that a minimum of 150mm gap is maintained between the edge of the message or symbol and the centre of any adjacent longitudinal line or to the edge of seal. Spacing between letters to form commonly used words are shown in Part B 2.1.7.2.

Bicycle symbols shall be located approximately 100mm from the bicycle lane line adjacent to the traffic lane. Where the bicycle lane is less than 1.4 metres wide it will be necessary to reduce the width of the symbol. This will be achieved by masking part of the rear wheel to preserve the 100mm gap between the edge of the symbol and the centre of lane line.

Symbols on paths shall be located centrally within the designated area of travel i.e. between the left edge of the path and the separation line. Examples for both symbols and messages on paths is shown in Part C 3.3.25.
3.3 URBAN (Built-up area) TREATMENTS

General treatments are considered those that apply to all Access, Connector, Arterial, and Motorway type roads in built up areas in or near cities and townships. They may include roads of any speed environment.

References ARR 132, 134, 208 (6), AS1742.2 Section 5, GTM Part 10, OI 2.15 OI 2.27

3.3.1 DIVIDING LINES

There is no traffic volume warrant for the provision of dividing lines on urban roads in South Australia. It is important for designers to remember that the use of single continuous dividing line prohibits certain crossing movements, including U turns, but does not prohibit entering or leaving the road. U turns should generally not be restricted by the use of single continuous lines unless site distance is poor or special facilities have been provided to satisfy U turn demand within the section of road.

Parking is also prohibited if the parked vehicle is less than 3 metres from the dividing line as specified in ARR 208 (6). Any assessment for the need for dividing lines should take the following into consideration:

- All ‘arterial’ roads shall be provided with dividing lines in urban areas, and shall be augmented with RRPMs.
- All ‘collector’ roads should be provided with dividing lines.
- Local roads may be provided with dividing lines. Installing dividing lines on narrow roads may have implications for parking.
- Where provided between major intersections dividing lines should be broken, and shall be standard width for two lane roads and enhanced for multi-lane roads. **Note that turning lanes are considered as a lane in a multi lane configuration.**
- Where provided on minor or local roads at intersections, short sections of continuous dividing lines may be provided (see intersection examples in Part B 2.1.4.1, 2.1.14.8, 2.1.14.9 and Part C 3.3.17).
- Double barrier lines, i.e. multiple lines consisting of combinations of broken and continuous lines or double continuous lines, are not used on urban roads.
- Broken dividing lines on arterial roads continue through minor road intersections.
- On any road, a break is provided in continuous dividing lines through intersections (see Part B 2.1.4 for examples).

Dividing lines are not normally necessary on minor road approaches to major roads. However there may be situations where such lines could provide additional guidance to road users. Such cases include:

- Wide side roads
- Multi lane side roads
- High volumes of right turn movements into and/or from minor road

Dividing lines should not be provided on minor road approaches where right turn and through movements are prevented or prohibited from the minor road.
Dividing lines (cont)

Dividing lines should always be provided on minor road approaches that have give-way or stop lines (also see Part C 3.3.19).

### 3.3.2 BARRIER LINES

Double one-way barrier lines are used at Railway Crossings and Ferries in both rural and urban areas where the speed limit is ≥ 80km/h to prohibit overtaking on the approached side. A single continuous barrier line should be used where the speed limit is ≤ 70km/h or as an alternative to permit traffic to cross the line to enter or leave the road. Where single continuous barrier line is used, it shall be standard width on roads ≤ 70km/h and enhanced on roads ≥ 80km/h. Note that single continuous lines are still subject to the requirements of AS1742.2 Clause 5.3.

Generally single continuous lines should be used instead of double barrier lines (one-way or two-way) in urban and low speed rural areas (also see Part B 2.1.1.1). If used, consideration should be given to allow for U-turns movements at safe locations.

There is a temptation to use double barrier lines (double one-way or double two-way) to control vehicle movements. However experience has shown that such treatments are generally too passive in nature. Where it is considered necessary to prohibit all crossing movements (for road safety) then preference should be given to physical controls e.g. raised medians and islands, that are self-regulating and do not rely on police enforcement to be effective.

For further information on the use of barrier lines on rural roads refer to Part C 3.4.4.
3.3.3 DIAGONAL STRIPES AND CHEVRON MARKINGS

References ARR 88, 138 and 197 AS1742.2 Section 5 GRD Part 4A

Diagonal stripes and chevron markings are used to augment and highlight pavement marking treatments. They often have legal significance under the ARR. They take the form of chevrons when used to indicate that drivers, travelling in the same direction may pass either side of the treated area or as diagonal stripes where the treatments separate opposing traffic flows. Refer to Part B 2.1.5 for detailed layout of stripes.

Spacing between diagonal stripes at low speed turns is generally 6m. The spacing for diagonal stripes and chevron markings is generally 6m on roads 70km/h or less, 12m on roads 80km/h or greater and 24m or 48m on freeways/expressways.

Diagonal stripes shall be nominally 45 degrees to the direction of travel whether straight or curved and shall be nominally 45 degrees to the centre line of the divergence where drivers travel on both sides of the markings.

While not exclusive, below are examples of diagonal treatments.

Traffic on either side (opposing direction)  Traffic to right side only

Traffic on either side (same direction)
3.3.4 PAINTED ISLANDS

Painted islands may separate lanes dividing opposing traffic streams, while allowing access to and from the road or entrance to a turning lane. References ARR 138 & 137

It should be noted that unlike raised medians, painted islands do not provide physical control of traffic movements nor do they have the advantages of being clearly visible, especially at night and in wet weather.

Spacing between chevron markings

Spacing between diagonal markings should be 12m for speeds < 80km/h. Spacing may be varied between 10 - 15m to suit island lengths. 24m spacing’s should be used for speeds 80km/h or greater and spacing may be varied between 20- 25m. Spacing must be consistent along entire length of each median section. Although it is preferable to provide at least 2 diagonal markings in short lengths, one marking may be used in cases of very short lengths.
3.3.5 CORNER ISLANDS

The use of very small corner islands (less than 3m sides) should be avoided. Such islands cause confusion to drivers regarding give way responsibilities when turning at intersections.

Chevrons and diagonal stripes may be used between the outline and the kerb of a raised island where better turning control is required. However, they should only be augmented with diagonal stripes where the distance between the kerb and outline is greater than 1.0m.

3.3.5.1 PAINTED ISLAND

Corner Islands both flush and raised for left turning vehicles should be augmented with chevron markings for the guidance of both left turn and through vehicles. The treatment also clearly define the differences in the ARR between turning movement priorities at intersections.

Note A broken edge around a painted flush island is used to allow heavy vehicles to legally cross over when turning paths are restricted.

ARR 62, 69 (2A) and 72 (4)

3.3.5.2 RAISED CORNER ISLAND
3.3.6 CORNER TREATMENT

On curved alignments, where diagonal markings are not parallel, the spacing of the markings shall be measured at the outline or edge line. ARR 138 (2)(a)

The use of diagonal stripes is discouraged on left turn treatments, where the left turn driver has priority i.e. AUL type treatment see Part B 2.1.14.9. Stripes are a passive treatment and in this location are usually driven over regularly, requiring additional maintenance. They can also be a slip hazard with differential skid resistance between the painted area and the pavement.

*Nominal spacing between stripes is 6 metres and nominally 45 degrees to the tangent along the edge line but may be varied. For rural treatments the spacing may be increased depending on the radius of the curve. Where the section to be striped is short it is preferable to provide stripes closer together (as close as 3 metres) to ensure the stripes provide the desired effect.
3.3.7 **HIGH ANGLE TREATMENT**

Diagonal stripes adjacent to kerbs at left turn treatments may be placed to guide standard design vehicles through left turns. Vehicles such as semi-trailers are permitted to turn over diagonal stripes to complete turns. Diagonal markings may be supplemented with pavement bars to promote lane compliance.

**References ARR 138 (2) (a)**

Special purpose lanes and corner island treatments, adjacent to motor vehicle through lanes.
3.3.8 DIVERGE AND MERGE TAPER TREATMENTS

For overtaking lanes see Part C 3.4.8 and for diverses at kerb extensions see Part C 3.3.16, the approaches to intersections e.g. CHR type treatments, see Austroads Guide to Road Design Part 4A.

References GRD Part 4A

3.3.8.1 Diverge taper treatments

It is often necessary to move traffic laterally across a section of road without merging lanes. Examples include divergence of lanes to avoid pedestrian refuges, on street parking areas and at the start of median sections.

It is preferable to provide as long a divergence length as possible, especially where two or more adjacent lanes must diverge and also if visibility to the island is reduced by vertical or horizontal alignment. The following diverge calculation provides a minimum length. However, experience has shown that greater lengths should be provided whenever possible. For example, extra taper length is important for pedestrian refuge situations to provide additional protection for pedestrians and to avoid damage to signs and pedestrian hand rails (see Part C 3.3.24.1).

References GRD Part 3 Section 9

3.3.8.2 Undivided to divided

The following example may be applied to locations where road widening has been undertaken predominantly on one side of the road.

References ARR 135, 137, 138, AS1742.2 Section 2, GRD Part 3 Section 9
3.3.8.3 Merge taper treatments (lane drop situations)

Zip merge’, is the preferred merge treatment in urban areas and are only installed on roads with a speed limit of 80km/h or less.

Below is a minimum merge taper length, however, experience has shown that greater lengths should be provided, to assist drivers undertake the ‘zip merge’.

References ARR 149, AS1742.2 Section 4.7, GRD Part 4A

3.3.9 RAISED PAVEMENT MARKERS

Painted lines, stripes and chevrons may be augmented with retroreflective raised pavement markers (RRPMs) to improve their visual properties (see Part B 2.1.14).

As a minimum, RRPMs shall be provided on all dividing lines in urban areas and should be provided on dividing lines in rural areas. RRPMs should also be provided on lane lines, special purpose lane lines and Flush Island outlines.

RRPMs enhance longitudinal lines to such an extent that they discourage crossing movements. For this reason RRPMs shall not be used on continuity lines except in circumstances shown (see Part C 3.3.9.1).

May be used on collector and local roads if additional delineation treatment is considered necessary.

Standard spacing is 12m on lit and 24m on unlit roads.
Raised Pavement Markers (cont)

For the use of non-reflective pavement markers through intersections, refer to Part C 3.3.21.6.

References AS1742.2 Section 5.6

3.3.9.1 Continuity lines

Generally RRPMs should not be used on continuity lines. They may be required to provide guidance on long lengths of curvilinear continuity lines.

Note:
1. RRPMs shall not be used on continuity lines in merging situations.
2. Where used, spacing shall be generally the same as that applied to lane lines ie 12m on lit and 24m on unlit roads

3.3.9.2 Bicycle lanes

The provision of RRPMs can be hazardous to cyclists when placed adjacent bicycle lane lines. This is particularly the case for part-time bicycle lanes when cyclists are required to ride around parked cars outside bicycle lane operating times. Therefore it is recommended that RRPMs not be located adjacent to or near part-time bicycle lane lines. It may also be appropriate to not install RRPMs on full-time bicycle lanes in areas where cyclists are required to ride around buses and other vehicles legitimately stopped on the road.
3.3.10 LANE LINES

Lane lines divide two or more lines of traffic travelling in the same direction and shall be provided on roads where traffic is expected to travel in more than one lane.

When re-allocating the carriageway width to allow cyclists and drivers to travel side by side within the wide kerbside lane, the minimum lane width shall be 3.7m.

Lane lines are normally standard broken. However, continuous lane lines may be required between exclusive through and exclusive turn lanes on approaches to intersections (see Part C 3.3.11). They may also be used to restrict lane changing mid-block.

Lane lines should be continued through minor road intersections.

At a lane drop, the lane line should cease before the taper commences. This distance is shown in the table in Part C 3.3.8.3.

For lane lines on the approach to signalised intersections see Part C 3.3.23.5.

For the use of continuity lines as lane lines (including the length of continuous line) see Part C 3.3.11.

References ARR 146, 147, 148 AS1742.2 Section 5
3.3.10.1 Roundabouts

Lane lines on the approach to a multilane roundabout are positioned as they would be for other intersections. The lane lines within the circulating lanes and leading out of a roundabout, known as special purpose lines, provide added guidance through the curves while negotiating within and exiting the roundabout. Lane lines must be curved where necessary to ensure this guidance is further enhanced.

References ARR Part 9, AS1742.2 Section 5, GTM Part 6, GTM Part 10

Exit line placement
Multi-lane roundabout with two single lane approaches and two single lane exits

Multi-lane roundabout with two lane approaches and two lane exits
Multi-lane roundabout with two approach lanes, one exit lane, and featuring an exclusive left turn lane

Multi-lane roundabout with two approach lanes, one exit lane, and featuring an exclusive right turn lane
3.3.10.2 Bicycle lanes adjacent to bus stops

References ARR 77, 183, 187, 195

Note: For bus stop design requirements, refer to GD800 (www.dpti.sa.gov.au/standards/roads-all)
3.3.10.3 Bicycle lanes start and end

ARR 153, 187 AS1742.9, GRD Part 3 GTM OI 9.2 OI 9.3

formula for calculating diverging taper

\[ d = \frac{V W}{3.6} \]

- \( d \) = minimum length of taper (m)
- \( V \) = design speed or speed limit (km/h)
- \( W \) = lateral movement of vehicle, or width reduction (m)

end of bicycle lane

start of bicycle lane
3.3.11 CONTINUITY LINES

Continuity lines generally provide longitudinal 'continuity' to traffic along lengths of road where lane lines or other longitudinal lines either cannot or should not be provided. They are used to substitute lane, dividing or edge lines where it is intended that the line be crossed by traffic turning or lane changing.

References ARR 147, 148

Where they are used in lieu of a lane or dividing line it is important to remember that they may continue to have the same legal effect in regard to traffic movements.

Examples of continuity lines include:

- To provide continuity at very wide straight openings across side roads or other entry and exit points along a road or across those openings that are subject to significant vertical or horizontal changes. Continuity lines should only be provided for such situations where it is likely that through traffic would otherwise lose continuity of travel (see Part C 3.3.11.3 and 3.3.19 for example).

- At the start and end of auxiliary and special purpose lanes to indicate the section of road that should be crossed to access or exit the auxiliary lane. Examples include:
  - Acceleration and deceleration lanes (see below)
    - Bus lanes (Part C 3.3.26.2 - 4)
    - Bicycle lanes (Part C 3.3.10.3)
    - Overtaking lanes (Part C 3.4.8)
    - Slow vehicle turnouts (Part C 3.4.9)
  - Across side roads and other sections of road to indicate the continuance of bicycle lanes.
  - Across median openings where the median is greater than 2 metres in width.

3.3.11.1 Left and right turn storage / deceleration / acceleration lanes

<table>
<thead>
<tr>
<th>A</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;72m</td>
<td>0m (all continuity line)</td>
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<tr>
<td>72m - 120m</td>
<td>12m continuous line</td>
</tr>
<tr>
<td>120m - 180m</td>
<td>24m continuous line</td>
</tr>
<tr>
<td>&gt;180m</td>
<td>36m continuous line</td>
</tr>
</tbody>
</table>

Part C Design Guide
3.3.11.2 Bicycle lane continuity lines

Note:
1. Check turning vehicle envelope for standard design vehicle.
2. Bicycle lane continuity lines to extend across turning vehicle envelope.
3. Bicycle logo not to be placed within bicycle lane continuity lines.
3.3.11.3 Side road continuity lines

**Notes**
Side roads >12m wide
Continuity line may be used on narrower side roads if there is a loss on continuity of the edge line due to the road geometry.
Edge line and barrier/dividing line type will vary

If a Stop bar or a Give Way line is required to be installed they shall be positioned no closer than 150mm to the continuity line and no greater than 300mm from the continuity line.
Side road continuity lines (cont)
3.3.12 PAVEMENT ARROWS

3.3.12.1 Unsignalised intersections

(a) Auxiliary Left Turn (AUL)

(b) Channelised Right Turn (CHR)
Unsignalised intersections (cont)

(c) Channelised Left Turn (CHL)
3.3.12.2 Mid-block (includes local road and property access)

**Note:** For longer turning lanes, see arrow placement for AUL, CHR & CHL treatments on the previous pages

* If lane is <25m but >12m then place one arrow mid-way along lane. If lane is <12m then no arrows.
Mid-block (includes local road and property access) cont

* If lane is <25m but >12m then place one arrow mid-way along lane. If lane is <12m then no arrows.

3.3.12.3 Median turning bays

References ARR 86

3.3.13 EDGE LINES

Kerbed roads in urban areas are generally not edge lined.

Unkerbed roads in urban areas shall be provided with edge lines.

For edge lines on rural roads and Motorways see Part C 3.4.7.
3.3.14 **ON-STREET PARKING CONTROL**

**References ARR 169, 184, 195**

On-street parking control markings shall conform to the Australian Standard AS 1742.11, except as indicated below.

Generally parking control markings, such as lines, T's and L's used to delineate parking spaces are white.

Clearways, both part time and full time shall not be marked with edge lines.

Full time parking restriction lines i.e. continuous yellow lines, may be used to designate No Stopping areas (with or without signs), but should not be used to designate No Stopping areas already covered in the Road Rules. They may be used in areas of high parking demand with a history of poor compliance with the road rules. In these situations, broken yellow lines maybe used where stopping is restricted to particular vehicle types i.e. at bus stops and post boxes and continuous yellow lines may be used where the no stopping restrictions applies to all vehicles i.e. at intersections

Taxi zones must be signed and may be delineated with parking space markings.

**Note:** The yellow line at fire plug indicators (blue RRPM) and hydrants are the responsibility of SA Water.

3.3.15 **PAVEMENT MESSAGES (Including Symbols)**

**References AS1742.2 Section 5**

The length of letters and numerals shall be 2.5m where the speed limit is up to 80 km/h and 5.0m at higher speeds. A message should, if possible, be confined to one line. Where two or more lines are required they shall be designed as follows:

(a) Where the 85th percentile speed is greater then 80 km/h, a separation of four times the character height shall be used, and the message arranged to read sequentially, i.e. with the first word nearest to the driver.

(b) At speeds lower than in Item (a), the separation between lines shall be from one-half to one times the character height and the message arranged to read from top to bottom.

Pavement messages and symbols detailed in this manual are as follows:

BUS LANE - see Part C 3.3.28 RAIL X - see Part B 2.1.8 KEEP CLEAR - see Part C 3.3.15

School Zone (Zig zag) - see Part C 3.3.25

Pavement messages on roads shall be limited to the following:

BUS LANE AHEAD, BUS LANE, BUS ONLY, BUS ONLY AHEAD

RIGHT TURN ONLY, KEEP CLEAR, FERRY, LEFT TURN ONLY

SIGNALS AHEAD, SCHOOL, NO ENTRY

Bicycle (symbol), Pavement Arrows, Yellow Box Markings

Pavement messages other than those stated above shall be referred to the Manager, Traffic Services, DPTI.
3.3.15.1 Keep clear

References AS1742.2 Section 5, OI 2.23

The keep clear pavement message shall only be used in accordance with Operational Instruction 2.23 KEEP CLEAR Pavement Markings

- Keep clear pavement markings shall consist of the words “KEEP CLEAR” and:
  - Be positioned wholly within a single lane where possible.
  - Shall have 2.5m letter height with 2.5m spacing between words.
  - Shall have a letter style as shown in AS1742.2 and Part B 2.1.7.2.

Where two or more lanes in the same direction are to be marked with KEEP CLEAR, the message may be staggered at wide side roads or driveways

If the lane widths in the same direction are, on average, less than 3.3m wide then a single KEEP CLEAR message may be used across 2 lanes or 2 messages across 3 lanes.
3.3.15.2 Speed limits

Speed limit pavement messages shall not be used in South Australia.

3.3.15.3 Other messages

Where it is desired to use other pavement messages, the matter shall be referred to the Manager, Traffic Services, DPTI.

3.3.16 KERB EXTENSION MARKINGS

Kerb extensions are used to reduce road widths, especially in pedestrian crossing locations.

As the name suggests, kerb extensions should preferably consist of raised areas bordered by semi mountable median type kerbing. However, they may also consist of pavement markings designated by outline markings with diagonal stripes, and pavement bars and/or RRPMs.

Kerb extensions may also be used to physically control the movement of vehicles, such as a traffic divergence on a road section or to create a high angle entry to the main road.

* taper length determined in accordance with Part C 3.3.8

Note: Diagonal stripes should be placed at 6m spacing on the divergence taper section and then at 12m spacing for long parallel sections up to 200m. For sections longer than 200m where diagonal stripes are considered necessary they may be spaced at up to 24m in urban areas and up to 48m in high speed rural areas.
3.3.16.1 Painted kerb extensions

References ARR 195
3.3.17  STANDARD INTERSECTIONS (Local Urban Roads)

Local or minor roads need not to be line marked. However, where they are, it is preferred to provide a single dividing line to the extent of the limit of the No Stopping restriction from the intersection (only) on the road with priority.

The controlled road approaches i.e. the road under Give Way or Stop sign control must be provided with a Give Way or Stop line. The provision of a dividing line from the Give Way or Stop line is preferred.

The dividing line would not normally extend beyond 10m from the kerb alignment of the intersecting road. This length of line matches the road rule which prohibits stopping within 10m of an intersecting road.

References ARR 170

3.3.18  GIVE WAY AND STOP LINE MARKINGS

Line width for less than 80km/h = 450mm

80km/h or greater = 600mm

For the Position of Stop & Give Way line refer AS1742.2 section 5.4.4

Note: Examples shown apply for both GIVE WAY and STOP locations.

3.3.18.1  At Roundabouts
GIVE WAY AND STOP LINE MARKINGS (cont)

3.3.18.2 At T intersections

Refer to Part 3.3.11 for position of continuity line.
3.3.18.3 For left turns at un-signalised intersections

A Give Way line shall be installed where the left turn facility that has a raised/painted corner or flush island in place and there is potential conflict between a left turn and the opposing right turn for road with a speed limit of 80km/h or less.

Not used for this situation
3.3.19 CHANGED PRIORITY

Changed priority intersection
3.3.20  ROUNDABOUTS

Give Way lines

All roundabouts shall be provided with give way lines at the point drivers are expected to ‘hold’ to give way before entering the circulating lane(s). To determine the location of the give way line it is important to consider sight distance to approaching vehicles from the right while ensuring that the holding vehicle is not placed within the turning path of vehicles travelling within the circulating lane(s). See Part C 3.3.18.

References: The Code Section 7, AS1742.2 Section 2, AS1742.2 Section 5, ARR Part 9

Special purpose and lane lines

Special Purpose line marking is used to denote lane lines around a multi-lane roundabout. Note that the spiral lane line markings i.e. where additional lanes are created within a roundabout, shall not be used in SA without the authorisation of Manager, Traffic Services, DPTI.

Pavement arrows

Pavement arrows, while not used on single lane roundabouts, shall be used on any approach to the roundabout which has more than one lane.

Splitter islands

Splitter islands, raised or flush, shall be provided on each approach. A standard single continuous barrier line should be marked on the approach to a splitter island.

Painted kerb and outlines

All roundabouts, splitter islands and kerb extensions shall be painted and may be outlined. For semi-mountable central islands and splitter islands refer to Part B 2.1.16.

Single lane roundabout
3.3.20.1 Multi-lane T-intersection roundabout

3.3.20.2 Bicycle lane approach and exit to a single lane roundabout
3.3.20.3 Bicycle lane approach and exit to a multi lane roundabout
3.3.21 SIGNALISED INTERSECTIONS

Signalised intersection treatment index

1. Pedestrian crosswalk lines (refer to 3.3.21.1)
2. Stop lines (refer to 3.3.21.2)
3. Turn lines (refer to 3.3.21.3)
4. Pavement arrows (refer to 3.3.21.4)
5. Lane lines (refer to 3.3.21.5)
6. Reflective pavement dots (refer to 3.3.21.6)
3.3.21.1 Pedestrian crosswalk lines

References AS1742.2 AS1742.10 AS1742.14

a) Pedestrian

The marked crossing should be at least 2m wide and delineated by two parallel lines. See Part B 2.1.2.3. The line nearest the centre of the intersection should be not less then 0.6m (desirably 1m) clear of the cross street kerb line projection. Crosswalks shall always be on a straight alignment between staged crossing points. No other lines shall be placed between the crosswalk lines.

b) Shared Use

Shared use marked crossings may vary in width between 2.4m - 4.0m depending on the facility width leading to the marked crossing.

c) Scramble Pedestrian Crossings

Scramble pedestrian crossing markings are covered in Operational Instruction 14.1.
3.3.21.2 Stop lines
References ARR Part 6, AS1742.2, AS1742.9, AS1742.14

a) Stop line and bicycle lane

Stop lines for bicycles should be placed ahead of the vehicular stop line so that drivers will be aware of bicycles waiting at the stop line prior to the start of the green period.

b) Angled and stepped stop lines

The correct stopping position at an angled stop line is often difficult for drivers to accurately determine when the angle of the line is less than 60 degrees to the direction of travel. Generally it is preferred to use shallow angle stop lines but this will sometimes depend upon site suitability.

Note: 90 degree to the direction of travel or stepped stop line are required for safety camera installations.
3.3.21.3 Turn lines

References: AS1742.2, AS1742.14

Turn lines may be used within signalised intersections to indicate the proper course to be followed by turning vehicles. They shall always be used within an intersection where there is more than one turning lane for turns in a particular direction. They are not required when the path to be followed is obvious to drivers under all conditions. Note that these lines are only installed for the inside of the lane path.

Turn lines should not be carried through pedestrian crosswalks but may continue after to continue guidance. The radius of the turn line should be as large as possible and not less than 7m.

Note: For guiding non-turning traffic through an intersection refer to Section 3.3.21.6
3.3.21.4 Pavement arrows

Pavement arrows may only be used at an intersection.

Drivers are legally required to travel in the direction of the arrow at the intersection. Arrows shall only be used in lanes where the movements differ from the ARR (refer to the Intersection Pavement Arrows table (Page C-112)). For example, since drivers are permitted to turn left or travel through an intersection from the left lane, a pavement arrow indicating these directions shall not be used in the lane.

Intersection pavement arrows shall not be used:
- For turns that are restricted during certain hours of the day, or
- In bicycle and bus lanes.

When used, a minimum of 3 arrows shall be used on the approach to the intersection unless insufficient length is available (refer below). The arrow closest to the intersection shall be placed 6 metres from the stop line or from the tangent point of the start of a curve for a turn lane. The last arrow shall be marked at a point where the full width of the lane occurs. Arrows between these two should be equally spaced as close to 30 metres as possible (tail to tail). However, to ensure a minimum of three arrows are provided, spacing may be reduced to a minimum of 15 metres.

The minimum number of three arrows may be reduced when the lane is short or access to a side road is permitted such that there is insufficient length to physically install the arrows at the minimum 15 metres spacing. In such cases the last arrow shall be aligned with the end of the opening.

References ARR 92, ARR Part 4
Multiple turn lanes

References AS1742.2 Section 2

Continuous lines length refer to the table in Part C 3.3.11
Multiple turn lanes (cont)

T-Intersection combinations of left/right arrows are required to allow the movements intended.
### Multiple turn lanes (cont)

<table>
<thead>
<tr>
<th>Description of requirements</th>
<th>Two lane</th>
<th>Three lane</th>
<th>Four lane</th>
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<td>Legal manoeuvres if lane unmarked</td>
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<td><img src="image2" alt="Diagram" /></td>
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<td>Markings for shared right turn and through from lane adjacent to right turn lane</td>
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<td>Markings for shared left turn and through from lane adjacent to two exclusive left turn lanes</td>
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<td><img src="image23" alt="Diagram" /></td>
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<td>Markings for shared right turn and through from lane adjacent to two exclusive right turn lanes</td>
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<td>Markings to indicate left turn prohibition (signing also required, see Clause 2.8.5)</td>
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<td><img src="image32" alt="Diagram" /></td>
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</tbody>
</table>

**Notes:**
1. Full lines indicate arrows to be marked.
2. Dotted lines indicate manoeuvres which are permitted by regulations but which need not be marked.
3. On some intersection approaches, it may be necessary to combine two or more of the marking methods shown.
4. Arrows for all movements shall be marked on multi-lane side road approaches to signal controlled “T” intersections and on all multi-lane approaches to roundabouts.
3.3.21.5 Lane lines

*References ARR 146, 147, 148*

On the immediate approaches to traffic signals, the use of lane lines is essential where the approach width will accommodate two or more traffic streams.

On the approach lane lines should cease with a full line segment at the stop line. This may require a shorter gap segment, or a longer line segment.

On exits from intersections where pedestrian crosswalks exist, lane lines should start as close as practicable (but not closer than 300mm) to the crosswalk.

For zip merges on the exit from intersections, refer to Part C 3.3.8.3

For the use of continuity lines as lane lines, refer to Part C 3.3.11.
3.3.21.6 Reflective pavement dots (RPD)
For DPTI roads use the cold applied plastics dot instead of the standard poly dot for maintenance purposes. Alternatively, a round white reflective tape could be used.

References AS1742.2 Section 5

Drivers may require guidance through intersections by the placement of RPD’s within the intersection for non-turning traffic. Treatment is normally applicable only to wide signalised intersections on multilane roads. RPD’s must be placed such that they do not interfere with the alignment of the cross movement lanes.

Note that RPD’s are only installed on the inside of a lane.

Typical situations are:

- Lanes on opposite sides of the intersection offset by half a lane width or more.
- Drivers required to steer a curved course through the intersection.
- Highly skewed intersections where the travel distance within the intersection is excessive.
- Features such as tram lines or adverse geometry which may make the course difficult to follow.
3.3.22 EXPRESSWAYS

References AS1742.2 Section 3

For signs and lane line markings refer to AS1742.2 section 3.8

Expressway exit lane arrows can be used for a single or multiple lanes exit onto a ramp where it is a trapped lane.
3.3.23  PATH TREATMENTS

References AS1742.9

3.3.23.1  Destination group layout

3.3.23.2  Connector group layout
3.3.23.3 Shared use paths, T intersection layout

- Destination group: see Part C 3.3.23.3 for typical layout
- 1m x 7m gap x 80mm wide dividing line
- 15m min
- Connector group: see Part C 3.3.23.2 for typical layout
- 12m x 80mm wide single continuous line
- Connector path eg. Smith Street
- 50m
- 10m
- 6m
- 5m
- 15m min
- Destination group: see Part C 3.3.23.1 for typical layout
3.3.23.4  Shared use paths, intersection layout
3.3.23.5  Shared use paths, T intersection offset layout
3.3.24 PEDESTRIAN FACILITIES

References AS1742.10, OI 10.4, Std Dwg S-4075 sht 4

There are a number of distinctive facilities to assist the safe passage of pedestrians walking adjacent to and across roads. The distinctive features including the legal effect for some of these facilities is partly created by the pavement markings.

These facilities are: Pedestrian refuge, Emu crossing, Koala crossing, Wombat crossing, Pedestrian actuated crossing

3.3.24.1 Pedestrian refuge

Refuges shall be outlined and the outline shall continue past the pedestrian opening.

Where pedestrian openings are provided through medians, outlines shall also continue past the opening or a line placed across the opening as shown in Part B 2.1.16.5.

Where the pedestrian refuge divides opposing traffic movements unidirectional yellow RRPMs shall be provided at 6.0m spacings. White RRPMs shall be provided at the same spacing where the refuge separates traffic travelling in the same direction.

Pedestrian refuges are either short lengths of raised medians used on roads for the sole purpose of providing a staging area for pedestrians crossing the road or are long lengths of median through which ‘cut outs’ or ‘walkthroughs’ may be provided.
3.3.24.2 Emu crossing two-lane two-way road

References The Code Section 8, AS1742.10

two-lane two-way road

two-lane two-way road (with kerb extensions)
3.3.24.3 Koala crossing

References AS1742.10

two-lane two-way road

![Diagram of two-lane two-way road](image)

two-lane two-way road (with kerb extensions)

![Diagram of two-lane two-way road with kerb extensions](image)
3.3.24.4  Wombat and Zebra crossings

References Part B 2.1.2.3(c), The Code Section 8, OI 10.6 & AS1742.10

Wombat crossing

two-lane two-way road

![Diagram of Wombat crossing]

divided carriageway

![Diagram of divided carriageway]

zebra crossings

![Diagram of zebra crossings]

For L refer to Part B 2.1.2.3(c)
3.3.24.5 Pedestrian actuated crossing

References AS1742.10

Undivided roads
two-lane two-way

![Diagram for two-lane two-way pedestrian actuated crossing]

four-lane two-way

![Diagram for four-lane two-way pedestrian actuated crossing]
3.3.25 SCHOOL ZONES

References ARR 23 The Code Section 4

A zigzag marking is used to increase driver awareness of a school zone. It is placed in advance of a School Zone sign, subject to site conditions.

Zigzag pavement markings shall be used at all School Zones.

Typically the trailing end of the zigzag marking is placed at the school zone sign with the marking commencing 30m in advance of the sign.

‘SCHOOL’ pavement messages may be used where visibility to the R3-SA58 School Zone sign is limited by the horizontal or vertical alignment of the road. This message may supplement the W6-SA106 School Zone warning sign(s) in which case the message shall be adjacent the sign see Part C 3.3.25.3.

Other markings, such as speed limits, coloured patches or symbols shall not be used.

The zigzag markings must be as shown in Part B 2.1.10, unless otherwise indicated in the following examples.

3.3.25.1 Zigzag marking position

a) Parking prohibited at all times.

b) Adjacent indented parking lane and full time bicycle lane.
c) Adjacent wide kerbside lane.

d) Part time parking restriction.

3.3.25.2 Basic school zone
3.3.25.3 Curved alignment

Notes:

1. 'SCHOOL' pavement message may be used adjacent to a W6-SA106 School Zone warning sign where sight distance to the R3-SA58 School Zone sign may be restricted.

2. Zigzag shall follow the curve of the road.

3.3.25.4 At intersections and Emu crossings
At intersections and Emu crossings (cont)

Notes:

1. Zigzag marking should be 30m long but may be reduced to a minimum of 21m.
2. Zigzag markings must not extend into an intersection. It must be clear of the prolongation of the kerb or edge of road by at least 1.0m.
3. Prolongation of kerb or edge of road.
4. Zigzag marking may retain its length by extending past the School Zone sign i.e. where sign installation may be restricted due to driveways.

3.3.25.5 Undivided multi-lane road

3.3.25.6 Divided multi-lane
3.3.26 BUS FACILITIES

Bus facilities on roads include part time Bus Lanes, full time Bus Lanes and Bus Only areas. All three are pavement marked differently.

General requirements:

- For Bus Lane widths on an urban arterial road agreement shall be sought from Public Transport Services, DPTI.
- At the start of a Bus Lane where road users are required to diverge to avoid entering the lane, a continuity line transition shall be provided.
- Full time Bus Lanes shall have an continuous lane line.
- Part time Bus Lanes shall have a special purpose broken lane line.
- BUS LANE AHEAD pavement messages placed in advance of the continuity line transition are preferred for both full and part time Bus Lanes.
- BUS LANE pavement messages must be placed at the start of both full and part time Bus Lanes after intersections and at intervals not exceeding 200 metres.
- BL pavement messages shall not be used.
- Continuity line transitions lines shall be
  - Not less than 35 metres where traffic is not required to merge with another lane of traffic to avoid entering the Bus lane.
  - Full merging transition length where traffic is required to merge with another lane.
- Pavement messages need not be in lateral alignment with Bus Lane signs.
- Red pavement colouring in a lane or part of a lane shall only be used with a Bus Only pavement message. Red shall not be used for any other purpose.

3.3.26.1 Placing of lane messages

References AS1742.12

Bus Lane Ahead

Part Time Bus Lane

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UNCONTROLLED COPY WHEN PRINTED
Full Time Bus Lane

Bus Only
Placing of lane messages (cont)
3.3.26.2  Full-time / Part-time bus lanes

References ARR 154, 158, 187 AS1742.12 Section 6
3.3.26.3 Parking bays in Bus Lanes

References AS1742.12

Parking bays should not normally be marked in part-time bus lanes. However, when they are required, they should be marked with “T” and “L” markings.

3.3.26.4 Bus Only

References Road Traffic Act (Road Rules Ancillary and Misc Provisions) Regulations 2014, Part 2 reg 13)
Bus Only (cont)
3.3.27 DISTINCTIVE COLOURED BICYCLE FACILITIES

Distinctive green (Emerald Green G13) can be used in areas of ‘potential conflict’ between motor vehicle and bicycle traffic include those segments of on-road bicycle lane where motor vehicle traffic is legally permitted to cross double continuity lines. Areas of conflict between cyclists and pedestrians may include areas where parallel parking exists with high parking turnover.

Distinctive coloured pavements may also be applied to:

- bicycle storage areas at signalised intersections
- contra-flow bicycle lanes
- contra-flow bicycle storage areas
- separated bicycle lanes
- bicycle lanes located next to or between motor vehicle lanes where desirable minimum motor vehicle and bicycle lane width requirements are not achieved
- bicycle lanes on a left hand curve where vehicles routinely cut into the bicycle lane or
- bicycle lane located adjacent on-street parallel parking where the likelihood of car ‘dooring’ may occur
3.3.27.1 Left turn acceleration & deceleration lanes

For detail see Part 9 2.1.15
3.3.27.2 High angle left turn lane

3.3.27.3 Minor side road junction
3.3.27.4 Bicycle storage area (with a bicycle lane)

Notes:
1. For bicycle logo details see Part B 2.1.7.3.
2. Green coloured pavement surface shall be Emerald Green G13.
3.3.27.5 Bicycle storage area (without a bicycle lane)

Notes:
1. For bicycle logo details see AS1742.9 or Part B 2.1.7.3.
2. Green coloured pavement surface shall be Emerald Green G13
3.3.28 OTHER BICYCLE FACILITIES

3.3.28.1 Indented hook turn
3.3.28.2 Detector loop

- Stop line
- Kerb or edge line
- 6 diamond markings (100mm x 100mm) at 300mm centers
- 300mm
- 500mm
- 250mm
- 250mm
- Lane line
3.4 RURAL TREATMENTS

This section details the pavement marking differences between the general or urban treatments and those in rural areas. In cases other than those listed below, treatments should be the same for both built up urban and rural situations.

3.4.1 DIVIDED RURAL ROADS

Although most of the design details for treatments between intersections in this section relate to undivided roads, the same principles, with the exception of dividing lines, should be applied for divided roads.

3.4.2 MULTI-LANE UNDIVIDED RURAL ROADS

References GRD Part 3, GRD Part 4A

Multi-lane undivided roads shall not be used in high speed rural environments with the exception of specific treatments such as overtaking lanes, channelised right turn treatment (CHR) and channelised left turn treatment (CHL).

3.4.3 DIVIDING LINES ON RURAL ROADS

References ARR 132, 134, AS1742.2 Section 5

Dividing lines shall be installed in accordance with AS1742.2 other than at isolated intersections treatments. The use of single continuous barrier lines as dividing lines are generally not recommended in high speed rural environments. Although such lines prohibit certain crossing movements, including u-turns, they do not prohibit entering or leaving the road (see Barrier Lines on Rural Roads).

Any assessment for the need for dividing lines needs to consider the following:
- All rural 'arterial' roads shall be provided with dividing lines and should be augmented with RRPMs.
- All rural 'collector' roads should be provided with dividing lines.
- Local rural roads may be provided with dividing lines. Installing dividing lines on narrow roads may have implications for parking.
- Where provided between major rural intersections dividing lines should be broken, and shall be standard width for 2 lane roads and enhanced for multi lane roads.
- Where provided on minor or local rural roads at intersections, short sections of single continuous barrier line may be provided.
- Dividing lines on rural roads through minor road intersections are generally broken (see Part B 2.4 Rural Intersections).

3.4.4 BARRIER LINES ON RURAL ROADS

A single continuous barrier line should be used through rural townships as an alternative to double two-way barrier lines or in high speed areas where the double barrier lines may reduce lane widths below the desirable minimum. This allows the line to be crossed by traffic entering or leaving the road.

Barrier lines on high speed rural roads shall only consist of double lines, either ‘Double One Way Barriers’ or ‘Double Two Way Barriers’ to create ‘No Overtaking Zones’ and shall be restricted to locations with either horizontal or vertical sight restrictions or both and only be
determined in accordance with AS1742.2.

Double barrier lines, one way or two way, are not generally used in SA to prohibit overtaking at isolated locations unless there are sight restrictions which meet the requirements for such lines.

The only exceptions to the above requirement include:
- Railway level crossings in accordance with Australian Standards Manual of Uniform Traffic Control Devices (AS1742.7).
- Overtaking lanes in accordance with this document and Operational Instruction 2.15
- Ferry approaches in accordance with Australian Standards Manual of Uniform Traffic Control Devices.

3.4.5 WIDE DIVIDING LINE TREATMENTS

For wide dividing line treatments the following requirements for the establishment of no-overtaking zones apply. For all other locations, refer to AS1742.2.

For 110km/h design speed
- Minimum overtaking sight distance 590m
- Barrier line distance 280m
- Maximum length with no Barrier Lines 55m*
- Minimum length of Barrier Lines 165m
- Minimum distance between Barrier Lines 310m

For 120km/h design speed
- Minimum overtaking sight distance 690m
- Barrier line distance 330m
- Maximum length with no Barrier Lines 60m*
- Minimum length of Barrier Lines 180m
- Minimum distance between Barrier Lines 350m

*where a short length of road has substandard overtaking sight distance, barrier lines should not be marked e.g. short sag (floodway) on an otherwise level road.

3.4.6 LANE LINES ON RURAL ROADS

Lane lines i.e. lines dividing lanes of the same direction traffic, must be provided on roads where traffic is expected to travel in more than one line of traffic.

Lanes should not be marked on a rural road where it would result in lane widths of less than 3.2 metres. Restricted access routes may require greater lane widths.

Lane lines are normally standard broken. However, unbroken lane lines may be used between exclusive through and exclusive turn lanes on approaches to intersections.
Lane lines on rural roads should be continued through minor road intersections.

All multi lane divided rural roads shall be provided with enhanced edge lines and outlines.
3.4.7 EDGE LINES ON RURAL ROADS

References AS1742.2 Section 4, AS1742.2 Section 5, GRD Part 3

Edge lines shall be provided on all rural roads and motorways to ensure the lane width does not exceed 3.5 metres.

Edge lines provide a clear definition of the lane both day and night and discourage traffic from travelling on shoulders.

Practices regarding lane and sealed shoulder widths including the issues relating to pavement depth, should be considered before providing an edge line.

Part C 3.4.7.1 and 3.4.7.2 show best practice in regard to installing edge lines.

Part C 3.4.7.3 and 3.4.7.4 indicates a required treatment.
3.4.7.1 Narrow rural two-lane two-way road (sealed width ≥ 5.5m, <6.8m)

References AS1742.2 Section 4
3.4.7.2 Standard rural two-lane two-way road (sealed width ≥ 6.8m)
3.4.7.3 Wide shoulder rural two-lane two-way road (sealed shoulder width ≥ 0.5m)

*on the following roads, the edge line shall be enhanced
- Dukes Highway
- Sturt Highway
- Riddoch Highway
- Augusta Highway
3.4.7.4 Multi-lane divided road (sealed shoulder width > 0.5m)
3.4.8 OVERTAKING LANE TREATMENTS

References AS1742.2 Section 2, GRD Part 3, OI 2.15

More details in Operational Instruction 2.15 Overtaking Lanes.

3.4.8.1 Overtaking lane – diverge
3.4.8.2 Overtaking lane – merge

<table>
<thead>
<tr>
<th>$V_{85}$ (km/h)</th>
<th>A (m)</th>
</tr>
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<tbody>
<tr>
<td>&lt;75</td>
<td>100</td>
</tr>
<tr>
<td>75-90</td>
<td>150</td>
</tr>
<tr>
<td>&gt;90</td>
<td>250</td>
</tr>
</tbody>
</table>
3.4.9 SLOW VEHICLE TURNOUTS

References ARR 167, 168, 169 AS1742.2 Section 4 GRD Part 3

Slow vehicle turnouts are short sections of sealed shoulder or added lane to provide drivers of slow-moving vehicles an area to be overtaken or passed by another vehicle where constraints do not allow provision of a full overtaking or climbing lane. Located on low speed, winding or hilly two-lane two-way roads, which have limited passing opportunities, they consist of a widened unobstructed sealed shoulder and are most effective if used in a series along a section of road.

Turnouts should be located where drivers of slow moving vehicles believe their use will not result in undue delay. Turnouts should not be interspersed with overtaking or climbing lanes.

Drivers should have a clear view of the entire turnout to determine whether it is available for use and to anticipate the movement of any other vehicles which may be exiting. Experience suggests that turnouts which cannot be seen for some distance by approaching drivers are less likely to be used.

A total length of 80-100m (including tapers) is considered suitable for most environments. Total length should not exceed 160m. The lengths below are provided as a guide.

<table>
<thead>
<tr>
<th>Mean Approach *Rec. overall Speed (km/h)</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>60</td>
</tr>
<tr>
<td>50 – 59</td>
<td>80</td>
</tr>
<tr>
<td>60 – 69</td>
<td>100</td>
</tr>
<tr>
<td>70 – 79</td>
<td>135</td>
</tr>
<tr>
<td>&gt;80</td>
<td>160</td>
</tr>
</tbody>
</table>

* These lengths are based on the assumption that slow moving vehicles enter the turnout 8km/h slower than the mean speed of the through traffic. They are sufficient to allow a vehicle to enter the turnout at the assumed speed, coast to the midpoint and then, if necessary, stop in the remaining length using a deceleration rate of 3 m/s².

No Parking or No Stopping?

If the driver of the slow moving vehicle were to stop in the slow vehicle turnout to allow multiple vehicles to pass and No Stopping signs and/or yellow edge lines were installed, the driver could be committing an offense under ARR 167 and ARR 169 respectively. Therefore, No Stopping signs and yellow edge lines shall not be used. No Parking signs shall be installed to allow drivers to stop for short periods (up to 2 minutes - see ARR 168).
Slow vehicle turnout (con’t)

References GRD Part 6, DPTI road design standard GD 1000 - Slow Vehicle Turnout
3.4.10  **REST AREAS**

Rest areas may be lay bys, truck (only) parking bays, information bays, and points of interest sites. These may be sealed or unsealed.

3.4.10.1  **Roads with edge lines**

**ARR 150 (1B), (3) OI 20.3**
3.4.10.2 Roads without edge lines

- Narrow sealed shoulder may exist after opening
- Deceleration lane (if necessary)
- Continuity line
- Edge of existing seal
3.4.10.3  Full acceleration / deceleration lane
3.4.10.4 Sealed shoulders only

edge of seal

100m min

(30m taper)
3.4.11  STRUCTURES AND OBSTRUCTIONS

References ARR 192 (1)
Includes narrow bridges and grids etc.

- All bridges and other road narrowing’s shall be edge lined.
- Barrier lines to be provided only in accordance with no overtaking zone sight distance requirements and only on roads greater than 5.5m width.
- If the road is provided with an enhanced edge line, the enhanced edge line shall be continued across the narrow bridge to match.
- Special purpose broken lines to be used for dividing lines on floodway’s and causeway’s only (see Part C 3.4.12).
- Yellow edge lines shall not be used as ARR 192 (1) applies.
Grid example
3.4.12 FLOODWAYS AND CAUSEWAYS

References ARR 192 (1)

Floodway's and causeway's are sections of road that are subject to flooding. When water is over the road, delineation is reduced because the edge lines and particularly the standard dividing line (3m line, 9m gap) are very difficult to see through the water.

It is important not to unreasonably prohibit overtaking or u-turns by providing a continuous dividing line. To increase delineation qualities of the dividing line while still allowing the line to be crossed, a special purpose broken dividing line (i.e. 9m line, 3m gap) shall be used across the section of road regularly subject to flooding.

Floodway/causeway examples