Roads

Master Specification

RD-LM-D1 Traffic Control Device Design

Document Information	
K Net Number:	13993637
Document Version:	1
Document Date:	August 2020

DEPARTMENT FOR INFRASTRUCTURE AND TRANSPORT

Government of South Australia
Department for Infrastructure and Transport

Document Amendment Record

Version	Change Description	Date	Endorsement record (KNet ref.)
1	Initial Issue	28/06/19	
2	Formatting for publishing	August 2020	

Document Management

Contents

RD-LM-D1 Traffic Control Device Design

1 General

1.1 This Part defines the requirements for the design of traffic control devices (including line marking and signs).

DIT Code of Technical Requirements

1.2 The Commissioner of Highways' 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.

1.3 The Roads design shall comply with the Code of Technical Requirements including:

a) Part 1 – Legal Responsibilities.

b) Part 2 – Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices.

1.4 The design of all pavement markings shall comply with the Department's Pavement Marking Manual.

1.5 The Code of Technical Requirements and supporting information is available on the internet at the following https://www.dpti.sa.gov.au/standards/tass.

DIT Standards and Guidelines

1.6 The Design of Traffic Control Devices must be undertaken in accordance with the following:

a) Operational Instructions (refer https://www.dpti.sa.gov.au/standards/tass); and

b) AS1742.1 to 15: "Manual of Uniform Traffic Control Devices".

1.7 The design of road signs must be undertaken in accordance with the following:

a) Road Sign Guidelines: Guide to visitor and service road signs in South Australia.

1.8 The Contractor must complete a Traffic Impact Statement in accordance with the Department's Guidelines for Preparing Traffic Impact Statements as available https://www.dpti.sa.gov.au/standards/tass.

1.9 The traffic impact statement must be submitted with traffic control design drawings at the 70% and 95% submissions.

1.10 Road Design is to be in accordance with RD-GM-D1 "Road Design".

1.11 Traffic Modelling is to be in accordance with RD-GM-D4 "Traffic Analysis and Modelling".

2 Approval of Traffic Control Devices

2.1 Pavement markings are Traffic Control Devices. Traffic Control Devices require approval pursuant to the Road Traffic Act 1961 (SA).

2.2 Approval to modify, install or remove Traffic Control Devices shall constitute a **Hold Point**.

2.3 Traffic signals are traffic control devices and where the provision of traffic signals is being considered as part of the design the provisions of RD-EL-D2 "Traffic Signals Design" shall apply.

2.4 Where the traffic signal design is required to be approved by the Department, that approval will be provided by the Department's Traffic Operations Group, Norwood Office.

3 Signs

3.1 Signs and any other Road Furniture must not be placed within the Shoulder. Road Verges must be kept as free of furniture as practicable.

3.2 The proposal to place any traffic control device including signs (road furniture) within the Verge or the design clear zone shall constitute a **Hold Point**.

3.3 Any non-frangible Road Furniture which has been approved to be placed within the design clear zone must be protected using a safety barrier.

3.4 The location of the Direction Signs shall comply with the AS1742 Part 15 “Direction signs, information signs and route numbering”. The Contractor is responsible for determining the type and location of all signs. Drawings shall clearly show dimensions necessary to locate the signs and the type of supports to be used.

3.5 The Principal will provide authorised sign face drawings (Specific Road Sign Specifications for South Australia) to the Contractor regarding route numbering, road names, destinations, and Tourist and Service signs.

3.6 In the absence of the principal providing sign face drawings the Contractor shall design and provide drawings (Specific Road Sign Specifications for South Australia) detailing route numbering, road names, destinations, and Tourist and Service signs. Provision of these drawings shall constitute a **Hold Point**.

3.7 The Contractor shall design signs and the structures for the following minimum design life as detailed in Table RD-LM-D1 3-1.

Table RD-LM-D1 3-1 Design Life of Sign Structures

ELEMENT	Design Life (Yrs)
Major sign structures, including cantilever signs, gantries and supports for V/CMS	100
Other sign support structures and other roadside furniture	40
Sign faces	10

Major Sign Structures

3.8 Major sign structures, including cantilever signs, gantries and supports for V/CMS, shall comply with the requirements of Part “Design – Structural” and Part “Fabrication and Erection of Structural Steelwork”. The protective treatment shall comply with Part "Protective Treatment of Structural Steelwork".

3.9 The design shall comply with the following:

a) fabrication of sign fasteners shall be in accordance with the Department’s Drawing No. TES 12186;

b) fixings of signs to gantry structure shall be the same in principle as shown on the Department’s Drawing No. 1-2894, sheet 87;

c) unless specified otherwise, the geometric shape and appearance of gantries (portal and cantilever types) shall match gantries on the adjacent road network;

d) the final coating colour of all exposed steel surfaces and the back of the sign plate shall be G61 to AS 2700 "Colour Standards for General Purpose";

e) gantries shall be rigid type; and

f) gantries shall be protected from traffic impact.

3.10 The gantry structures located within clear zone shall be protected with a traffic barrier system complying with Clause 4 “Barriers”.

3.11 The minimum nearside and offside distance to the edge of the lane and the barrier shall comply with AS3845 and Austroads IR-97/05. The barrier shall have sufficient clearance to the gantry to allow for barrier deflection and provide access for maintenance. Refer to Clause 261.6 “Site Maintenance Access” for further access requirements for structures supporting Equipment for Intelligent Transport Systems (ITS).

4 Placement of Variable and Changeable Message Signs

4.1 Variable and Changeable Message Signs (V/CMS) shall:

a) unless impracticable, be positioned overhead rather than being placed in a Verge;

b) provide sufficient vertical and lateral clearances from the running lanes and not create a hazard to road users;

c) not be permitted within an interchange area where merging, frequent braking or weaving movements are common; and

d) be placed in locations that allow adequate reading time for all road users and adequate time and travel distance for the road user to act on the message and where this will not adversely affect the driving task.

Lateral Clearance of V/CMS

4.2 The minimum lateral clear zone widths for V/CMS supports shall comply with Table RD-LM-D1 4-1.

Table RD-LM-D1 4-1 Minimum Clear Zone Widths for VMS/CMS Supports

Speed (km/hr)	Clear Zone (m)
60	4
70	5.5
80	7
90	8
100	9
110	9
120	9

4.3 Where guardrail or a concrete barrier has been installed, the supports of the V/CMS shall be at least 1.0 m behind the face of a guardrail or concrete barrier.

4.4 The display or face of an overhead V/CMS shall not be further than 5.0 m from the closest running lane.

4.5 Where the ground clearance of the sign face of a roadside V/CMS is less than 5.5 m, the sign face shall be located outside the design clear zone.

4.6 The minimum clearance from the edge of a roadside V/CMS to the outer edge of the shoulder or guidepost shall comply with the following

a) Rural areas: 2.0 m.

b) Urban areas: 1.5 m.

Vertical Clearance of V/CMS

4.7 The minimum vertical clearance from the ground or road surface to any part of a sign or structure shall comply with the Table RD-LM-D1 4-2.

Table RD-LM-D1 4-2 Vertical Clearance of V/CMS

Location	Vertical Clearance (m)
Overhead V/CMS - Over a running lane	5.5 m minimum 6.5m desirable
Overhead V/CMS - Not directly over a running lane:	
• Urban environment with likely pedestrian movements:	2.0 m minimum
• Above a defined pathway	2.5 m minimum
• Rural areas not subject to pedestrians	1.5 m minimum

Longitudinal Placements of V/CMS

4.8 All V/CMS shall be positioned to achieve the following:

a) be clearly legible to all road users;

b) not compete with other traffic signs, traffic control devices or roadside furniture; and

c) not be placed in locations where the V/CMS will be partially hidden by any roadside objects, furniture or vegetation.

4.9 The distance between any V/CMS and a hazard, decision point, intersection, or any other piece of roadside furniture that may take the road users attention shall be:

Table RD-LM-D1 4-3 Distance between V/CMS and object

Location / Design Speed	Distance
Business and residential districts	30-100 m
Rural / Arterial Roads	
• 60 – 70 km/h	80-120 m
• 80 – 90 km/h	120-180 m
• 100 – 110 km/h	180-250 m

4.10 The minimum distance between any V/CMS and another road sign shall be as detailed in Table RD-LM-D1 4-4.

Table RD-LM-D1 4-4 Distance between V/CMS and sign

Location / Design Speed	Distance
Business and residential districts	30 m
Rural / Arterial Roads	
• 60 – 70 km/h	20 m
• 80 – 90 km/h	60 m
• 100 – 110 km/h	70 m

5 Hold Points

5.1 The following is a summary of Hold Points referenced in this Part:

Document Ref.	Hold Point	Response Time
2.2	Approval to remove or modify a Traffic Control Device	15 Working Days
3.2	Proposal to place a Traffic Control device within a verge or clear zone	10 Working Days
3.6	Directional Sign face designs	10 Working Days