TRUNK ROAD INFRASTRUCTURE STANDARD No. 03

TRAFFIC MANAGEMENT

Supplement to Austroads Guide: Traffic Management

ACT Government

Territory and Municipal Services

Publication Number:	*TRIS 03*	
Date of Effect:		
Supersedes:		
Endorsed By:		
Approved By:		

DOCUMENT INFORMATION

Document Title	Trunk Road Infrastructure Standard No. 3 – Traffic Management
Next review date	
Key words	

REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date

PREFACE

The Austroads series of Guides for provision and management of road and transport infrastructure provides a level of consistency across all jurisdictions in Australia and New Zealand. All road authorities have agreed to adopt the Austroads Guides as the primary technical reference, together with the relevant Australian and New Zealand Standards.

The Australian Capital Territory has adopted the Austroads Guides, and has issued a revised series of documents to reflect this development in standards and specifications for practice in the ACT.

This present document is part of the ACT Trunk Road Infrastructure Standard (TRIS) series spanning the broad scope of road infrastructure development in the ACT:

- TRIS 01 – Road Planning
- TRIS 02 – Road Design
- TRIS 03 – Traffic Management
- TRIS 04 – Road Safety
- TRIS 05 – Asset Management
- TRIS 06 – Pavement Design
- TRIS 07 – Bridges and Structures
- TRIS 08 – Road Tunnels
- TRIS 09 – Project Delivery
- TRIS 10 – Project Evaluation.

Each of the TRIS documents indicates adoption of the relevant Austroads Guide, sets out specific requirements for implementation in ACT, and calls up more detailed Specifications.

This ACT Trunk Road Infrastructure Standard No.03 - TRAFFIC MANAGEMENT constitutes a supplement to the

AUSTROADS GUIDE TO TRAFFIC MANAGEMENT

The Territory and Municipal Services Directorate accepts the principles and general guidance in the Guide to Traffic Management. This Trunk Road Infrastructure Standard is issued to clarify any exceptions or additional requirements for implementation in the ACT, and to identify relevant complementary documents.

The planning and design of traffic management in the ACT must be implemented in general accordance with the Austroads Guide above, and in accordance with specific provisions of this Trunk Road Infrastructure Standard.
Where any differences in practice exist between the Austroads Guide and this Trunk Road Infrastructure Standard, the latter will prevail.

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CONTENTS

1 GENERAL

Austroads has released the Guide to Traffic Management and all road agencies across Australasia have agreed to adopt the Austroads guides to provide a level of consistency and harmonisation across all jurisdictions. This agreement means that the new Austroads guides and the Australian Standards, which are referenced in them, will become the primary technical references for use within ACT.

This present document constitutes a supplement to the Austroads Guide to Traffic Management.

2 GENERAL PRINCIPLES

The ACT Government accepts the principles in the Austroads Guide to Traffic Management with variations documented in this supplement. The general principles and guidelines of the Austroads documents are to be followed wherever appropriate.

If there are any differences in practice between the ACT supplement and other ACT documents, the provisions of this supplement will apply.

3 REFERENCE DOCUMENTS

The primary reference documents for traffic management in ACT are as follows:

- Australian Road Rules
- Roads and Public Places Act 1937
- Road Transport (General) Act 1999
- Road Transport (Safety and Traffic Management) Act 1999
- Road Transport (Mass, Dimensions and Loading) Act 2009
- Road Transport (Safety and Traffic Management) Regulation 2000
- Legislation Act 2001
- Planning and Development Act 2007 and the Territory Plan 2008
- Public Roads Act 1902
- Disability and Discrimination Act 1992
- National Road Safety Strategy
- ACT On Road Cycling Strategy
- ACT Road Safety Strategy
- ACT Road Safety Action Plan.

Details for all reference documents are given in Section 5 Reference List.

3.1 GUIDELINES

The primary technical guidance is set out in the Austroads Guide to Traffic Management, which is structured as follows:

- Part 1 – Introduction to Traffic Management
- Part 2 – Traffic Theory
- Part 3 – Traffic Studies and Analysis
- Part 4 – Network Management
- Part 5 – Road Management
- Part 6 – Intersections, Interchanges and Crossings
- Part 7 – Traffic Management in Activity Centres
- Part 8 – Local Area Traffic Management
- Part 9 – Traffic Operations
- Part 10 – Traffic Control and Communication Devices
- Part 11 – Parking
- Part 12 – Traffic Impacts of Developments
- Part 13 – Road Environment Safety

Some aspects of traffic management are also addressed in the following Austroads Guides:

- Austroads Guide to Road Design
- Austroads Guide to Road Safety
- Austroads Guide to Road Transport Planning.

For further information on Guide signs, refer to:

Design and installation of Guidesigns in the ACT, RD Gossip for Urban Services 2001

For consolidated guidance related to cycling facilities, refer to:
Cycling Aspects of Austroads Guides. Report AP-G88-11, Austroads 2011.

This report contains information that relates to the planning, design and traffic management of cycling facilities and is sourced from Austroads Guides, primarily the Guide to Road Design, the Guide to Traffic Management and the Guide to Road Safety.

For further technical guidance on parking areas, refer to:
ACT Crime Prevention and Urban Design Resource Manual, Planning and Land Management, ACT Department of Urban Services, Canberra, 2000.
ACT Parking and Vehicular Access Guidelines, Planning and Land Management, Department of Urban Services, Canberra, 2000.
Civic Accessibility Study Access Guidelines, Eric Martin and Associates, Able Access, Access Design Solutions for ACT Department of Urban Services, Canberra, 2001.
Guide to Traffic Generating Developments, Roads and Traffic Authority, NSW, 1993.
Proposed Policies for Residential Development in the ACT incorporating ACTCode, Urban Services, October 2000

3.2 RELATED TECHNICAL SPECIFICATIONS

Detailed design requirements related to traffic management in ACT are prescribed in the following Attachments to this supplement:
- Attachment A – Road Signs
- Attachment B – Traffic Control Devices
- Attachment C – Parking Areas

Detailed requirements for materials, processes, or procedures specific to traffic management in ACT are prescribed in:
- ACT Trunk Road Infrastructure Technical Specification No.01 – Roadworks
- ACT Trunk Road Infrastructure Technical Specification No.13 – Traffic Signals
- ACT Trunk Road Infrastructure Technical Specification No.14 – Road Signs
- ACT Trunk Road Infrastructure Technical Specification No.15 – Road Furniture

Implementation of traffic management measures must be undertaken in accordance with these Technical Specifications.

The Austroads Guides and the ACT Technical Specifications refer to the requirements of relevant Australian Standards, in particular:
- AS 1158 – Lighting for Roads and Public Spaces
- AS 1428 – Design for Access and Mobility
- AS 1742 – Manual of Uniform Traffic Control Devices
- AS 1743 – 2001 Road Signs - Specifications
- AS 1744 – 1975 Standard Alphabets for Road Signs
- AS 4113 – 1993 Traffic signal lamps – Lamps for 240V a.c. operation
- AS 2144 – 2002 Traffic signal lanterns
- AS 2276.1 – 2004 Cables for traffic signal installations – Multicore power cables
- AS/NZS 2276.2 – 1998 Cables for traffic signal installations – Feeder cable for vehicle detectors
- AS 2276.3 – 2002 Cables for traffic signal installations – Loop cable for vehicle detectors
- AS 2339 – 1997 Traffic signal posts and attachments
- AS 2353 – 1999 Pedestrian push-button assemblies
- AS 2578 – 2009 Traffic signal controllers
- AS 2703 – 2008 Vehicle loop detector sensors
- AS 2890 – Parking Facilities
- AS 2979 – 1998 Traffic signal mast arms
- AS 3845 – Road Safety Barrier Systems

3.3 LEGISLATIVE DOCUMENTS

- Road Transport (Safety and Traffic Management) Act 1999
- Road Transport (General) Act 1999

- Disability Discrimination Act 1992 (Cwlth)
- Australian Road Rules, National Road Transport Commission
- Motor Traffic Act (NSW).

4 SUPPLEMENTARY MATERIAL

The following tabulated material indicates elements of the implementation of traffic management measures in ACT, as they relate to the content of the various Parts of the Austroads Guide to Traffic Management. The tables provide advice on any additional ACT requirements, or exceptions, to the provisions of the Guide. Complementary documentation is also indicated where relevant.

Supplement to the Austroads Guide to Traffic Management

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 1: INTRODUCTION TO TRAFFIC MANAGEMENT PUBLICATION DATE: 2009		
Introduction to the discipline of traffic management, including the concept of functional road hierarchy, the basic elements of theory, data, analysis, control devices and their application, and an overview of the structure and content of the Guide. An overview of how the various parts of the guide would typically be used by a wide range of practitioners.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 1 of the guide is adopted with no exceptions in principle for the practice in ACT	
Section 3.4	The road hierarchy used in ACT is described in • Trunk Road Infrastructure Standard 01 – Road Planning	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 2: TRAFFIC THEORY PUBLICATION DATE: 2008		
Theoretical background necessary to appreciate the nature of traffic behaviour and to undertake analyses required in the development and assessment of both traffic management plans and road design proposals. Characteristics of traffic flow, basic variables and their interaction, and the theories, models and statistical distributions used to describe many traffic phenomena.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 1 of the guide is adopted with no exceptions in principle for the practice in ACT	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 3: TRAFFIC STUDIES AND ANALYSIS PUBLICATION DATE: 2009		
Outlines the importance of traffic data and analysis for traffic management and control. Guidance on the different types of traffic studies and surveys, their use and application, and methods for traffic data collection and analysis. Covers applications of traffic theory and provides guidance on traffic capacity analysis and levels of service for uninterrupted and interrupted flow facilities and for various types of intersection: signalised, unsignalised, and roundabouts. Outlines methods of analysis for effective traffic management, design and control.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 3 of the guide is adopted with no exceptions in principle for the practice in ACT	
2.5.1	Traffic surveys should take into account traffic volume in and around the vicinity of private schools as these locations generate significant amount of traffic during the AM and PM peak periods	
3.3.5	In ACT, adult cyclists are allowed on all footpaths. Addressing traffic capacity in ACT needs to take into account the flow of cyclists on footpaths especially when these cyclists leave the footpath and join the road network.	
6.3	The intersection analysis software SIDRA is to be used to analyse capacity of single intersections including roundabouts and traffic signals in ACT. Outputs from the application of intersection models are to conform to requirements in • Trunk Road Infrastructure Technical Specification No.13 – Traffic Signals.	
Appendix I	Refer to Austroads report AP-R286/06 on application of micro-simulation models.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 4: NETWORK MANAGEMENT PUBLICATION DATE: 2009		
Strategies and objectives for managing road networks to provide effective traffic management at a network level. Addresses network needs of freight, public transport, pedestrians, cyclists and private motor vehicles, characteristics of various types of network and describes a planning process for balancing or prioritising the competing needs of different users. Solutions and tools used to address needs at network management level include land-use access, traffic signals, parking and lane allocation measures. Provides an introduction, with examples, to network operations planning.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 4 of the guide is adopted with no exceptions in principle for the practice in ACT	
Sect. 4.1.2	The road hierarchy used in ACT is described in • Trunk Road Infrastructure Standard 01 – Road Planning Typically the speed limit on access streets and minor collector roads is 50 km/h, on major collector roads 60 km/h and on arterial roads 60 km/h or above.	
Sect 4.4	For information on public transport refer to: • Accessible Public Transport Action Plan 2009-2012 • ACT Public Transport Accessible Infrastructure & Services - August 2006 • Wheelchair Accessible Taxis Reference Group Report - September 2005 • Action Plan for Accessible Public Transport in the ACT (2000) • Safer Travel for Passengers Using Mobility Aids on Public Transport – Brochure – Jan 2009	
Section 4.5.6	For information on high productivity vehicles such as B-doubles, refer to: • Road Transport (Mass, Dimensions and Loading) Act General B-Double Exemption Notice 2010 (No.1)	
Section 4.6	Plans for development of the cycling network are given in the report ACT Cycling and Pedestrian Network – Priority Network for Capital Works, Feb 2011. For details of bicycle and pedestrian facilities, refer to: • Trunk Road Infrastructure Standard 02 Road Design, Attachment B – Pedestrian and Cyclist Facilities	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 5: ROAD MANAGEMENT PUBLICATION DATE: 2008		
Traffic management on sections of road between major intersections. Focus on traffic management issues and treatments related to various situations. Detailed information and guidance on factors to be considered in applying traffic management techniques and treatments to various road types. Considers the needs of all road users including pedestrians, cyclists, motorcyclists, heavy vehicles and public transport. Provides guidance under four key areas: access management, road space allocation, lane management and application of speed limits.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 5 of the guide is adopted with no exceptions in principle for the practice in ACT.	
3.3	In the ACT Community Path refers to a shared path for use by pedestrians, cyclists and wheelchairs.	
Section 3.2	Refer to: • ACT On-road Cycling Policy	
Section 4.3.6	Parking – Clearways are not used in ACT; general ACT practice is to have no parking on arterials, encouraged by design and culture, rather than traffic management. Refer to: • ACT Parking and Vehicular Access Guidelines • Australian Road Rules – Part 12 Restrictions on Stopping and Parking	
Section 5.3	A 50 km/h default speed limit applies in the ACT.	
Section 5.4.2	The ACT employs a 40 km/h speed limit on designated streets in designated school zones. This reduced limit applies for the times and days marked on the school zone signs, typically 8 am until 4 pm Monday to Friday. The school zone signs are erected at the entrance to these zones and are designed to be "closed" or "open". When "open" the zone is active, and when "closed" the default 50 km/h speed limit applies unless otherwise signposted. Flashing lights are not used to highlight the operation of school zones. Flags indicating a school crossing are placed at the crossing during school hours. School zone will not receive approval to operate school zone speeds outside of school hours.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 6: INTERSECTIONS, INTERCHANGES AND CROSSINGS PUBLICATION DATE: 2007		
Traffic management at locations where traffic and road user streams intersect, including all types of road intersections (signalised, unsignalised, roundabouts), grade-separated interchanges, rail crossings and pedestrian and bicycle crossings of roads. Presents detailed information and guidance on factors to be considered in the selection and functional design of intersections. Describes the appropriate use and design of various intersection types and traffic management techniques that are applied to meet traffic management objectives; considers the needs of all road users including pedestrians, cyclists, motorcyclists, heavy vehicles and public transport.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 6 of the guide is adopted with no exceptions in principle for the practice in ACT.	
2.1	Minor roundabouts are used in the ACT.	
Section 4	Unsignalised intersection layout and design in ACT are covered in • ACT Trunk Road Infrastructure Standard 02 – Road Design	
4.5	The design of cycle facilities at roundabouts in ACT are defined in • ACT Trunk Road Infrastructure Standard 02 – Road Design – Attachment B - Pedestrian and Cyclist Facilities	
5	Signalised intersection layout and design in ACT are covered in • ACT Trunk Road Infrastructure Standard 02 – Road Design	
5.5.2	In ACT, fully controlled right turn phases are preferred. Filter right turns are only provided at intersections where the speed limit is ≤ 60 km/h.	
5.6, 5.7, 5.8	All aspects of traffic signal control in ACT are covered in • ACT Trunk Road Infrastructure Technical Specification No.13 – Traffic Signals	
Section 6	In the ACT, 'MERGE' is used at lane drops on roads with speed limits greater than 80km/h; 'FORM ONE LANE' is used where roads have speed limits lower than or equal to 80km/h -	
6.9	Ramp metering is not currently used in ACT but its application is being investigated.	
Section 8	The design of pedestrian and cyclist facilities in ACT is covered in • ACT Trunk Road Infrastructure Standard 02 – Road Design – Attachment B - Pedestrian and Cyclist Facilities.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 7: TRAFFIC MANAGEMENT IN ACTIVITY CENTRES PUBLICATION DATE: 2009		
Guide Part 7: Traffic Management in Activity Centres Principles for planning and traffic management of centres typified by high levels of internal activity and interaction, especially by pedestrians; includes commercial and civic precincts, intermodal transport interchanges, tourist and sporting centres, with examples. Addresses the need to obtain a balance between providing for vehicular access and circulation and providing for pedestrian, cyclist and public transport needs without compromising the functionality of a site. Presents guiding principles for traffic management in activity centres, including policy and planning context, and major considerations and processes involved; outlines operational and physical measures to provide for movement to and within centres.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 7 of the guide is adopted with no exceptions in principle for the practice in ACT.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 8: LOCAL AREA TRAFFIC MANAGEMENT PUBLICATION DATE: 2008		
Planning and management of road space usage within a local area, to reduce traffic volumes and speeds in local streets, to increase amenity and improve safety and access for residents, especially pedestrians and cyclists. Provides guidance on the design, development and management of residential precincts. Presents a systematic approach to traffic management in local areas, outlining principles and practice of influencing driver behaviour in local streets, by physical changes to the environment, and by influencing driver perceptions. Provides guidance on planning, selection, design, application and effectiveness of traffic control measures and devices on an area-wide basis.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 8 of the guide is adopted with no exceptions in principle for the practice in ACT.	
7.5.8	ACT has full-day school zones. Traffic management guidelines for school zones in ACT is contained in the following documents: • Road Safety and Traffic Management Around Schools – Review of current practice and comparison with other jurisdictions. • Guidelines for road safety and traffic management around schools.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 9: TRAFFIC OPERATIONS PUBLICATION DATE: 2009		
Guidance on operations that support the provision of road services to road network users. Introduces the concept of traffic operations as underpinning road user services. Provides guidance on the configuration and operation of systems, both ITS and manual, supporting traffic operations. Includes network monitoring systems, incident management, traffic signal systems, congestion management, motorway management systems, traveller information and operational management of road space.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 9 of the guide is adopted with no exceptions in principle for the practice in ACT. The ACT Government Complementary material • ACT Trunk Road Infrastructure Technical Specification No.13 – Traffic Signals	
Sect. 4	ACT practice on the use of speed cameras is referred to in: • ACT Trunk Road Infrastructure Standard 04 – Road Safety	
Sect. 7	Traffic signal installations in the ACT are in accordance with NSW practice, as detailed in the 'RMS Traffic Signal Design', March 2008.	
Sect. 8.4.1	ACT practice in the use of VMS is described in: • 'ACT Policy - Use of Variable Message Signs', April 2011	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 10: TRAFFIC CONTROL AND COMMUNICATION DEVICES PUBLICATION DATE: 2009		
Principles, design and use of the various control devices used to regulate and guide traffic within a network. Includes traffic and electronic signs, traffic signals, pavement markings, delineation and traffic islands, plus other devices and technologies that convey information and guidance to road users while they are active in traffic. Provides advice on the functions, suitability and correct use of devices to create a more efficient and safer road traffic environment for all users in permanent or temporary situations.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 10 of the guide is adopted with no exceptions in principle for the practice in ACT. Primary complementary material: • ACT Trunk Road Infrastructure Technical Specification No.11 – Pavement Marking • ACT Trunk Road Infrastructure Technical Specification No.13 – Traffic Signals • ACT Trunk Road Infrastructure Technical Specification No. 14 – Road Signs	
Sect. 4.2.3	An alphanumeric route numbering system is not used in the ACT. The numbering system on existing route markers includes the numeral for the route and the emblem. The guide signs relate to Arterial and Major Collector roads.	
Sect. 5	ACT practice in the use of VMS is described in: • 'ACT Policy - Use of Variable Message Signs', April 2011	
Sect. 6	Details of pavement marking practice are given in: • ACT Trunk Road Infrastructure Technical Specification No.11 – Pavement Marking Pavement markings to indicate a change in speed limit are not used in ACT.	
Sect. 6.6	Red pavement surfacing is to be used on Bus Only lanes in ACT.	
Sect. 8	Traffic signal installations in the ACT are in accordance with NSW practice as detailed in the 'RTA Traffic Signal Design', March 2008.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 11: PARKING PUBLICATION DATE: 2008		
Provides guidance on the parking management process to ensure that parking is provided in a safe and efficient manner, and with due regard to considerations of access to, and impact on, the wider road and transport system; includes determining the demand for and supply of parking. Provides a parking policy framework for how the demand should be addressed, including implementation of on-street and off-street parking for all road users including urban centre controls and electronic parking guidance systems and signs.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 11 of the guide is adopted with no exceptions in principle for the practice in ACT. Detailed requirements are given in the following Attachment to this supplement: • Attachment C – Parking Areas. Complementary material: • 'ACT Parking and Vehicular Guidelines', October 2000	
Sect. 6.8.4	ACT practice on parking facilities for people with disabilities – Refer to ACT document 'Access guidelines', May 2004	
Sect. 6.8.5	ACT practice on parking facilities for bicycles– Refer to ACT document 'Bicycle parking guidelines', November 2008	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 12: TRAFFIC IMPACT OF DEVELOPMENTS PUBLICATION DATE: 2009		
Processes for identifying and managing the traffic and transport impacts of various land use developments, to ensure consistency in the assessment and treatment of traffic impacts, including addressing the needs of all road users and the effect upon the broader community. Presents the land use and transport planning context for traffic impact assessment, including travel demand, safety, parking and access management issues. Provides guidance on criteria for impact assessments, and a detailed procedure for identifying and assessing the traffic impacts, and mitigating their effects. Includes examples of checklists, report structures, traffic generation rates and case study projects.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 12 of the guide is adopted with no exceptions in principle for the practice in ACT. ACT practice is detailed in the document • Transport impact assessment in the ACT, February 2011.	

SUPPLEMENT TO THE AUSTROADS GUIDE TO TRAFFIC MANAGEMENT PART 13: ROAD ENVIRONMENT SAFETY PUBLICATION DATE: 2009		
Principles and practice for ensuring a safe road environment within a traffic management context, under the Safe System philosophy. Considers the role of traffic management in influencing road user behaviour and emphasises the need for the road system to provide an environment which assists road users to behave effectively and safely. Outlines basic human factors as related to users of the road and traffic environment, and the role of road design and traffic management in providing road and roadside safety.		
Guide Reference Section	**ACT Practice, Complementary Material, or Departures**	**Date**
General	Part 13 of the guide is adopted with no exceptions in principle for the practice in ACT	

5 ROAD SIGNS

Standards for the design of road signs are set out in **Attachment A**. Detailed requirements for the installation of road signs are specified in Trunk Road Infrastructure Technical Specification RITS 14 – Road Signs.

6 TRAFFIC CONTROL DEVICES

Standards for the design of traffic control devices are set out in **Attachment B**. Detailed requirements for the installation of traffic signals are specified in Trunk Road Infrastructure Technical Specification RITS 13 – Traffic Signals.

7 PARKING AREAS

Standards for the design and installation of car parking facilities are set out in **Attachment C**.

8 REFERENCE LIST

ACT Department of Urban Services 2004, *Access guidelines,* ACT Government, Canberra, ACT.

ACT Department of Urban Services 2000, *ACT parking and vehicular access guidelines,* ACT Government, Canberra, ACT.

ACT Government 2000, *ACT Parking and Vehicular Guidelines*, ACT Government, Canberra, ACT.

ACT Government 2012, *ACT Trunk Road Infrastructure Standards*, ACT Government, Canberra, ACT.

ACT Government 2012, *ACT Trunk Road Infrastructure Technical Specification*, ACT Government, Canberra, ACT.

ACT Government 2009, *Accessible public transport in the ACT,* ACT Government, Canberra, ACT.

ACT Government 2006, *ACT public transport accessible infrastructure & services,* ACT Government, Canberra, ACT.

ACT Government 2005, *Wheelchair accessible taxis reference group report,* ACT Government, Canberra, ACT.

ACT Government 2000, *Action plan for accessible public transport in the ACT,* ACT Government, Canberra, ACT.

ACT Government 2010, *Road Transport (Mass, Dimensions and Loading) Act General B-Double Exemption Notice 2010 (No.1),* ACT Government, Canberra, ACT.

ACT Government 2011, *ACT Cycling and Pedestrian Network – Priority Network for Capital Works,* ACT Government, Canberra, ACT.

ACT Government 2011, *ACT policy: Use of variable message signs, ,* ACT Government, Canberra, ACT.

ACT Government 2011, *Transport impact assessment in the ACT,* ACT Government, Canberra, ACT.

ACT Government 2012, *ACT On-road cyclist policy,* ACT Government, Canberra, ACT <http://www.tams.act.gov.au/move/cycling/trunkcycleandpedestrianinfrastructure>.

ACT Planning and Land Authority 2006, *Bicycle parking guidelines,* ACT Government, Canberra, ACT.

Accessible Public Transport National Advisory Committee 2009, *Safer travel for passengers using mobility aids on public transport,* Australian Government, Canberra, ACT.

Australian Government 2009, Australian Road Rules, Australian Government, Canberra, ACT.

Austroads 2006. *The use and application of micro-simulation traffic models, AP-R286/06*, Austroads, Sydney, NSW.

Austroads 2009. *Guide to Road Design, Parts 1-8, AGRD09*, Austroads, Sydney, NSW.

Austroads 2009. *Guide to Road Safety, Parts 1-9, AGRS09*, Austroads, Sydney, NSW.

Austroads 2009. *Guide to Road Transport Planning, AGRTP09*, Austroads, Sydney, NSW.

Austroads 2009. *Guide to Traffic Management, Parts 1-13, AGTM09,* Austroads, Sydney, NSW.

Austroads 2011. *Cycling Aspects of Austroads Guides, Report AP-G88-11*, Austroads, Sydney, NSW.

Roads and Traffic Authority, 2008, *Traffic signal design,* RTA, Sydney, NSW.

9 STANDARD DRAWINGS

Title	Drawing Number
Linemarking types	DS9-01
Pavement messages	DS9-02
Linemarking Disabled Zones	DS9-03
RRPM's at Traffic Islands	DS9-04
Miscellaneous Details	DS9-05
Bus Stop Details	DS9-06
Vertical & lateral sign locations	DS9-11
Endorsed Sign Systems	DS9-12
Special signs	DS9-13
Finger boards	DS9-14
Signpost & footing details	DS9-15
Tcd's at Traffic Lights	DS9-20
Cable and Loop Layout	DS9-21
Hardware Layout	DS9-22
Tcd's for Arterial Road Roundabouts	DS9-23
Tcd's for Local Street Roundabouts	DS9-24
Children and Zebra Crossing Details	DS9-25
Raised Pavement Platform Typical Details	DS9-26
Form One / Two Lane Details	DS9-27
Refuge Islands	DS9-28
Use of B1 and B5 Lines	DS9-29
ACT Standard Parking Signs	DS9-40/1-5

Trunk Road Infrastructure Standard No. 03

TRAFFIC MANAGEMENT

Supplement to Austroads Guide: Traffic Management

Attachment A

GUIDE SIGNS

CONTENTS

1 PLANNING FOR ROUTINE GUIDE SIGN INSTALLATION

1.1 SIGNAGE PRINCIPLES

While the Standard is based on the framework of a hierarchy of roads and destinations, it has been prepared with the knowledge that the development of the road network and evolution of planning over the years has resulted in a variety of network characteristics which preclude the formulation of rigid signing rules. The application of a flexible and rational approach, within the framework established, is, therefore, an important part of guide-sign planning and design.

It is also clear that a signage system cannot cater for the entire length of most journeys and that some additional form of aid, map, street directory, or verbal/written instructions remain a necessity for most travellers.

1.2 DESTINATIONS

Destinations for which guide signs are provided are defined to be:
- Urban destinations,
- Services,
- Tourist attractions and heritage sites, and
- Rural destinations.

Urban destinations are classified as:
- Principal - the metropolitan area of Canberra and its extension into neighbouring New South Wales.
- Primary – the urban area districts of the ACT - Belconnen, Gungahlin, City (used as a simpler, more familiar substitute for Central Canberra), Tuggeranong, Woden and Weston Creek, and Queanbeyan.
- Secondary – the City centre, the town centres, industrial areas and other areas having similar activity levels, plus the highways, which are included to provide guidance without the need to sign several destinations.
- Tertiary - suburbs and group centres.

Services are defined according to their extent of influence and categorised as:
- Regional services
- Sub-regional services
- Community services
- Service stations
- Tourist services
- Recreation services

Tourist attractions are treated both as individual locations and, where they are co-located with other attractions, as a group. A distinction is made between national and local attractions.

Rural destinations in the region are classified as primary, secondary and tertiary according to their importance.

1.2.1 HIERARCHY OF ROADS

As described in 14.2 below, the progression from broad to local scale involves movement through a hierarchy of roads normally identified according to function, width and geometry. Some levels of signage will only be appropriate on roads of a particular level in the hierarchy.

1.2.2 SIGNAGE MODES

Two modes of direction finding are employed, - Destination Name and Street Name. The destination mode will predominate at the beginning of longer journeys, but regardless of the initial method, the street name gradually assumes greater importance, eventually becoming the only mode as the destination is approached. The choice of modes is recognised by equal prominence being given to street name and destinations throughout the Arterial road network.

Clarity of signing is sought by combining the hierarchy of roads with a hierarchy of signs and by limiting the number of destinations signed at major intersections (Arterial/Arterial). Signing at these intersections is

limited to primary and secondary destinations, i.e. towns, town centres, industrial areas and other activity centres that generate a similar level of vehicular movement.

Tertiary destinations, mainly the residential suburbs, are signed on adjacent Arterial roads between the Arterial/Arterial intersections. The intention is to provide direction to each suburb from all adjacent Arterial roads, normally to the suburb shops, as a destination where further guidance may be obtained. Suburbs are further identified by black on white reflective suburb signs, or the superseded routed timber type.

Service signs are provided only when the particular service is located where it may not be reasonably expected to be found. The range of services normally found at suburb, group and town centres are not signed, while a well-equipped health centre located within a suburb could not be anticipated and is, therefore, signed. Special provision is made for signing regional services and for service stations operating for extended hours.

Tourist signs are provided to guide visitors to attractions endorsed by the Australian Capital Tourism Corporation rather than for promotional purposes attracting passing trade. In general, the most suitable method of promoting the tourist industry is to provide clear and uncluttered signing for the arterial network, with the addition of individual attraction signing when the broad scale guidance provided by arterial signing is no longer adequate.

1.3 HIERARCHY OF ROADS

Conventionally, roads have been described according to a hierarchy based on function and geometric characteristics. Roads in the hierarchy range from the arterial road, which is designed to carry substantial through-traffic at high speeds, to the local access street, which is designed to accommodate local traffic at slow speeds.

The ACT Road Hierarchy is defined in terms of:
- Arterial Roads,
- Major Collector Roads,
- Minor Collector Roads, and
- Access Streets.

The Guide Signs Design Standard relates to signage on Arterial Roads and Major Collector Roads.

This classification for the ACT metropolitan area is shown on Map 1 Standard Drawing DS08-01.

1.3.1 GUIDE SIGNS ROAD HIERARCHY

- Arterial Roads
  Arterial roads perform the main traffic-carrying function between and within towns. They include the state and national highways which pass through the ACT. These routes are listed in Appendix A Table A.1
- Major Collector Roads
  Major Collector Roads provide the link between the arterial road network and lower order roads within the suburbs. They are generally either the main access roads into the suburb, connecting the suburb shops with the adjacent Arterial Roads or are located between suburbs and serve a maximum of four suburbs.

  These routes are listed in Appendix A Table A.2

The following rules are linked directly to the urban road hierarchy:
- national route markers are added where appropriate;
- normally, only primary and secondary destinations are signed at intersections between Arterial Roads. The main exception occurs where one of the four approaches is a Major Collector Road, when it may be necessary to sign a tertiary destination;
- intersections on Arterial Roads are signed with at least a G2–1 (route name only) sign, unless the Arterial Road is of low standard, e.g. single carriageway with a speed limit of 60 km/h and having many closely-spaced minor intersecting roads;
- signs on Major Collector Roads are normally located within the intersection. An exception may be made if traffic volume is uncharacteristically high; and
- all intersections are provided with G5-1 street name signs.

1.4 THE RURAL ROAD HIERARCHY

Rural roads are classified into three main categories:
- Trunk Routes (National Highways and National Routes)
- Rural Main Roads
- Rural Secondary Roads

The influence of the urban area of Canberra tends to distort the usage of the Rural Main and Rural Secondary Roads to the extent that they are classified by designation rather than by description. These are shown in Figure 2-2.

It should be noted also that routes which are not all-weather are not signed for external destinations, except at the ACT border.

1.5 ROADS WITH NATIONAL ROUTE MARKERS

In addition to signage to be provided as prescribed, route markers are to be provided on the following roads:
- Route 23
  Federal Highway Northbourne Avenue Vernon Circle Commonwealth Avenue Capital Circle (Commonwealth Av to Canberra Av) State Circle East (Northbound Canberra Av to Commonwealth Av) Canberra Avenue (Capital Circle to Monaro Highway) Monaro Highway (South of Canberra Avenue)
- Route 23 Alt
  Majura Road Fairbairn Avenue (Majura Rd to Morshead Dr) Morshead Drive (Fairbairn Av to Monaro Hwy) Monaro Highway (Morshead Dr to Canberra Av)
- Route 25
  Barton Highway
- Route 52
  Canberra Avenue (East of Monaro Highway) King's Highway

1.6 DESIGNATED AREAS

The National Capital Plan sets out the broad planning framework for all of the Australian Capital Territory, and provides detailed planning policies and guidelines for areas designated as having the special characteristics of the National Capital. The designated areas include the Parliamentary Zone, the War Memorial and its surrounds and the main avenues and approach routes to the Central National Area.

Any buildings or structures, demolition, landscaping or excavation works in these Designated Areas require the prior written approval of the National Capital Authority. Many destinations, particularly the main tourism attractions, are in designated areas or are located off the main avenues and approach routes, and, in these instances, signage must comply with the requirements of the National Capital Authority.

1.7 THE MAIN AVENUES AND APPROACH ROUTES

Canberra's main avenues and approach routes have historically been subject to rigorous planning scrutiny and care has been taken to ensure that suitably high standards of development and landscaping have been observed.

Design policies for the main avenues and approach routes are concerned with achieving awareness of the special symbolic and functional significance of the National Capital by:
- marking the boundary of the ACT;
- establishing a clear and identifiable route from the boundary to the symbolic centre of the city, by providing visual cues and strong structural links eg. avenue planting;
- building up expectations by progressively formalising the design character as travellers approach the Central National Area;
- enhancing views to recognisable and popular images of the National Capital so as to further build expectation and define the approach; and
- ensuring that the structure, detailing and signage is consistent along each approach route into the National Capital.

The Main Avenues and Approach Routes include the land within the boundaries of the reservations of the following roads:

Main Avenues

- State Circle
- Commonwealth Avenue
- Brisbane Avenue
- Canberra Avenue (to Hume Circle)
- Adelaide Avenue
- Northbourne Avenue
- University Avenue
- Limestone Avenue (Sth of Ainslie Avenue)
- Constitution Avenue
- Kings Avenue
- Sydney Avenue
- Hobart Avenue
- Melbourne Avenue
- Perth Avenue
- Edinburgh Avenue
- Ainslie Avenue
- Anzac Parade

Approach Routes

- Barton Highway
- Federal Highway
- Fairbairn Avenue
- Morshead Drive/Pialligo Avenue to the ACT border
- Canberra Avenue from Hume Circle to the ACT border
- Monaro Highway and its extension as the Eastern Parkway to Morshead Drive.

Detailed conditions of planning, design and development as specified by the National Capital Authority require that:

> *Road pavements, medians, footpaths and verges will be developed to consistently high standards. Signs will generally comprise traffic, directional and visitor information signs, and unnecessary repetition will be avoided. Commercial roadside signs are not permitted in road reservations, except on bus shelters. Non-commercial signs may be permitted where they comply with the Design and Siting Conditions for signs as set out in Appendix H of the National Capital Plan*

1.8 SIGNS IN HERITAGE PRECINCTS

The ACT Heritage Unit should be consulted in relation to the replacement or repair of a sign in a designated heritage precinct where the sign's appearance and materials are integral to the character of the precinct. The ACT Heritage Register provides guidance on locations where preservation of existing features may be required.

2 DESTINATION AND EXTENT OF INFLUENCE

Destinations are ranked in a hierarchical structure, with the position in the hierarchy determining the extent of influence, or geographical limit to the signing of the destination.

2.1 THE URBAN DESTINATION HIERARCHY

2.1.1 PRINCIPAL

The metropolitan area of Canberra, for which the extent of influence extends throughout the ACT and into New South Wales.

2.1.2 PRIMARY

City (used as a simpler, more familiar substitute for Central Canberra), Belconnen, Gungahlin, Tuggeranong, Weston Creek, Woden, and Queanbeyan.

The extent of influence of this group is illustrated on Standard Drawings DS08-02 to DS0807 and DS08-17 respectively.

The appropriate G1 and/or G2 signs are provided at the locations shown on the above listed drawings. The towns are further identified by G6-1 signs located on the Arterial Roads entering them at the point where the towns are first sighted by the motorist.

North Canberra and South Canberra may be used as destinations where their use does not create a conflict between the two commonly accepted meanings of these terms. These are:

a) that Canberra includes Woden and Belconnen, etc. and that North and South Canberra are, therefore, the urban areas north and south of Lake Burley Griffin.
b) that North and South Canberra are divided by Lake Burley Griffin and extend to Watson to the north and Red Hill to the south.

Therefore, the use of North Canberra and South Canberra as destinations is rare and requires special approval.

2.2 SECONDARY

The City Centre and the town centres, industrial areas and other areas having similar activity levels. National Highways are included to provide guidance without the need to sign several destinations.

The extent of influence of the individual categories is illustrated on the following Standard Drawings:

- City Centre and Town Centres DS08-08
- Industrial Areas DS08-12
- Employment/Activity Centres DS08-13
- Federal, Barton and Monaro Highways DS08-21

The appropriate G1 and/or G2 signs are provided at the locations shown on the above listed drawings.

<u>City Centre and the town centres</u>
Civic, Belconnen, Gungahlin, Tuggeranong and Woden Town Centres are defined as the areas subject to Commercial A and B Land Use Policies in the Territory Plan.
Beyond two kilometres from the perimeter of the centre they are to be signed respectively as:

- "City Centre"
- "Belconnen Town Centre"
- "Gungahlin Town Centre"
- "Tuggeranong Town Centre", and
- "Woden Town Centre"; and within two kilometres as:
- "City Centre" and
- "Town Centre".

<u>Industrial Areas</u>
The following industrial areas are to be signed:

- Fyshwick
- Hume
- Mitchell
- Belconnen Minor Industrial Area

<u>Employment Centres</u>
The following employment areas are to be signed:

- Bruce
- Parliamentary Zone
- Russell
- Symonston North
- Symonston West

<u>Highways</u>
The highways are to be signed as:

- "TO Barton Highway"
- "TO Monaro Highway"

2.2.1 TERTIARY

The suburbs and group centres.

Suburbs
Suburbs are signed on adjacent Arterial roads by the following methods:

G2 signs - indicate street name, suburb name and presence of shops.
G6 suburb identification signs at the corner of each suburb.
G5 –1 street name signs at the intersection of all Major Collector Roads.

Suburbs are not signed at Arterial Road intersections, except where the need is clearly demonstrated. The most common exception is where one of the four approaches is a Major Collector Road.

G2 signs are used to direct users to named suburb shops, give clear direction to the suburb, and indicate the shops as the suburb's activity centre where further direction-finding information can be obtained. The use of "Suburb Shop" signs is determined by the following considerations:

- • only one "Suburb Shop" sign is provided for each suburb on any Arterial or Major Collector Road along the edge of a suburb for each direction of travel along that road;
- generally, only two pairs of "Suburb Shop" signs are provided for each suburb;
- the route signed to the shops is the most easily followed and, preferably, the shortest
- turns required within a suburb are delineated by a G2-1 (white on blue) with the legend "Shops";
- in the case of a large suburb, where there are several unnamed activity centres which include shops (e.g. Kambah), the "Suburb Shop" sign may be replaced by a sign with the legend "Local Shops"; and
- where a suburb is bordered by a Major Collector Road, and that suburb is signed at the intersection of the Major Collector Road and Arterial Roads, then a G2-1 is provided on the Major Collector Road.

For suburbs without shops, signing is by suburb name on a G2 sign, one for each direction of travel on each adjacent Arterial Road or Major Collector Road signed for access to the suburb. Generally, the sign is located at the first access encountered in the direction of travel, unless a later access is more appropriate.

Signing of suburbs is illustrated in Figure 2-1.

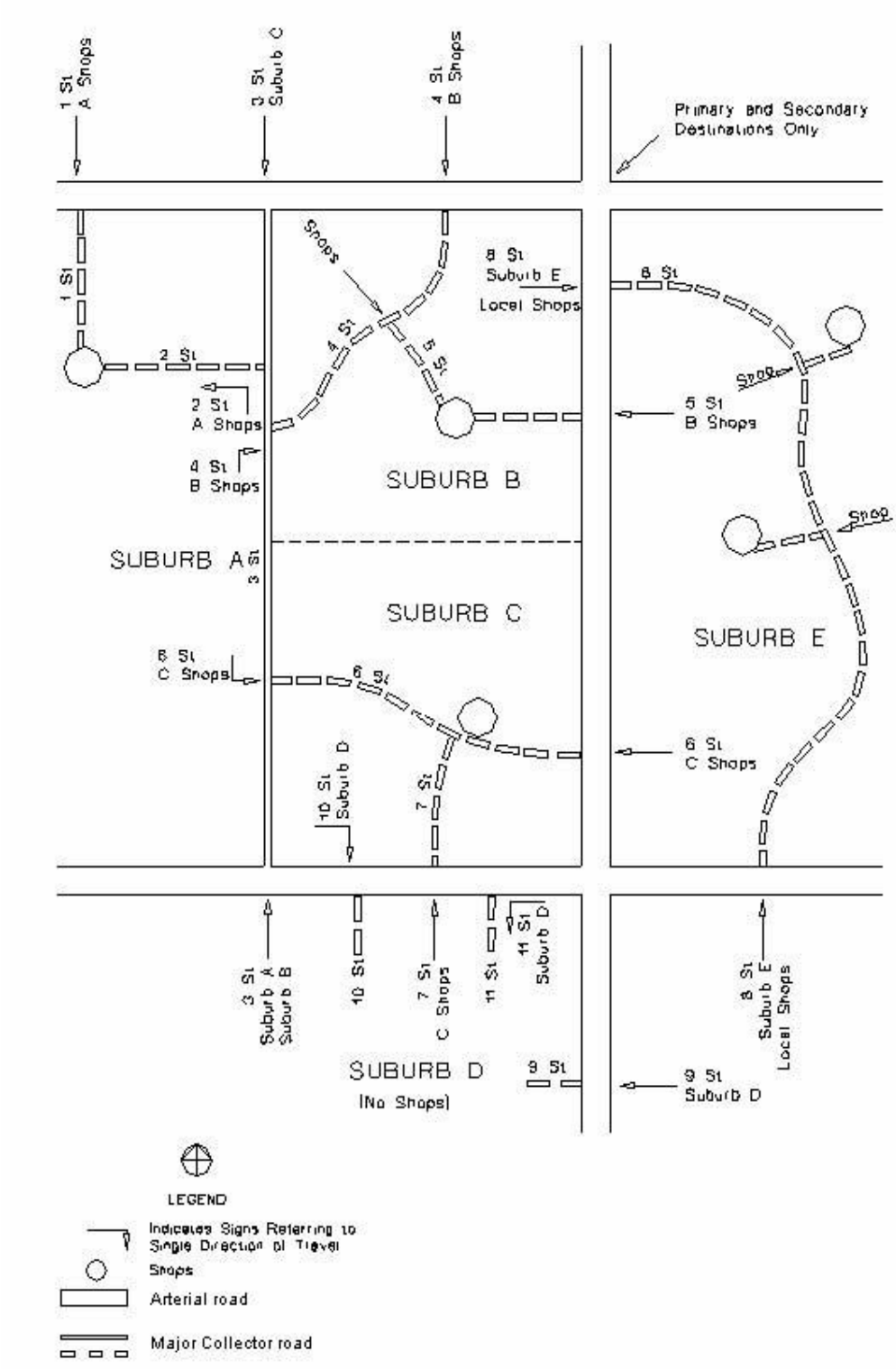


Figure 2-1: Suburb and Local Centre Signs.

2.2.2 GROUP CENTRES

Group Centres are defined as those centres subject to Commercial C Land Use Policies in the Territory Plan. G2 signs are used to direct users to named Group Centres, give clear direction to the suburb, and indicate the shops as the suburb's activity centre where further direction-finding information can be obtained. The use of Group Centre signs is determined by the following considerations:

- up to two signs are provided for each Group Centre on any Arterial or Major Collector Road for each direction of travel along that road;
- the route signed to the Centre is the most easily followed and, preferably, the shortest
- turns required within a suburb are delineated by a G2-1 (white on blue) with the name of the Centre; and
- a Centre may be signed at the nearest intersection of Arterial Roads or of Major Collector and Arterial Roads with a G2-1 sign.

Group Centres are signed as illustrated on Standard Drawing DS08-10.

2.3 SERVICES

Service signs are provided only in locations where the particular service would not normally be anticipated. For example, public telephones are signed if located in an isolated position on an arterial road, but are not signed if located in a suburban shopping centre, all of which have public telephones. Continuity of signing from the first sign to the destination is maintained.
Services are grouped for the purpose of determining the extent of influence:

2.3.1 CATEGORY 1: REGIONAL SERVICES

Canberra International Airport Standard Drawing DS08-14 Hospitals providing emergency services – The Canberra Hospital and Calvary Hospital Standard Drawing DS08-15 Exhibition Park in Canberra (EPIC) and, Australian Institute of Sport (AIS) Standard Drawing DS08-16

Signage of ACT Public and Private Hospitals
The ACT Policy for signage of hospitals is as follows:

- Use of the S1 (white cross on blue background) symbol is restricted to Hospitals providing emergency services - ie .The Canberra Hospital and Calvary Hospital.
- • Public hospitals: Within 2km of each Hospital location:
- -The Canberra Hospital is signed using the S1 symbol and appropriate directional markers only. (ie "Canberra Hospital' text is not used)
- -Calvary Hospital is signed with the legend 'Calvary Hospital' plus the S1 symbol - The legend is black on a white background using Series Mod E lettering.
- Outside a radius of 2km from each Hospital location:
- -Both Canberra Hospital and Calvary Hospital are signed using the S1 symbol only.
- Private hospitals (National Capital, John James, and Lidia Perin) are signed with black legends on white plates incorporated into bi-directional signage at all major road and secondary road intersections leading to the address road. Legends are:

  -"The National Capital Private Hospital"
  -"John James Private Hospital"
  -'Lidia Perin Private Hospital" Calvary Private Hospital, is located within the grounds of Calvary Hospital, and, given the similarity of the name, is not provided with additional specific directional signage.

2.3.2 CATEGORY 2: SUB-REGIONAL SERVICES

Major Retail Centres Standard Drawing DS08-09 Tertiary Educational Institutions Standard Drawing DS08-11 Canberra Railway Station Standard Drawing DS08-16 Mitchell and Mugga Resource Management Centres.

Major Retail Centres
The major retail centres in City and the Town Centres are classified as destinations in their own right, and may be signed with the following names as an adjunct to the City and Town Centre signs:

- "Canberra Centre"
- "Gungahlin Marketplace"

- "Tuggeranong Hyperdome"
- "Westfield Belconnen"
- "Woden Plaza"

The signs are to be limited to a distance of two kilometres from City or Town Centre perimeter and are only to be located on major arterial roads approaching the Centres.

Tertiary Educational Institutions
The institutions to be signed as:
- "Australian National University"
- "University of Canberra"
- "Australian Defence Force Academy"
- "Australian Catholic University"
- "National Theological Centre"
- "Australian International Hotel School"
- "Canberra Institute of Technology"

Mitchell and Mugga Resource Management Centres

The Mitchell Resource Management Centre is to be signed from the Federal Highway, Gungahlin Drive, Flemington Road and from the Gungahlin Town Centre.

The Mugga Resource Management Centre is to be signed from Yamba Drive, Hindmarsh drive and the Monaro Highway.

2.3.3 CATEGORY 3: COMMUNITY SERVICES

The City Centre and the Town Centres are assumed to provide all services so services are not signed externally. There are very few services which are signed for Group or Local shopping centres. Examples of the type of community services which could be signed are police stations and the motor registry.

Services which may be signed, if located outside the above areas are:
- Cafeteria/kiosk
- Parking Area
- Health Centre (full medical facilities)
- Police Station
- Post Office
- Restaurant
- Shops
- Telephones
- Toilets
- Recycling depots

These are signed on Arterial Roads, subject to the following conditions:
- they are not clearly visible from the road under consideration
- they are not more than 500 m along the road which intersects the route under consideration
- telephones are not signed more than once per kilometre.

2.3.4 CATEGORY 4: SERVICE STATIONS

Service stations are signed only if they operate for a minimum of 16 hours per day, 7 days per week. Signs may then be provided:
- • on Group or Local Shopping Centre signs provided for that particular centre
- • on Town Centre signs on the Arterial Roads, peripheral to that centre
- • on the nearest Arterial Road, providing the service station is not more than 500 m along the road which intersects, and is not clearly visible from the road under consideration.

2.3.5 CATEGORY 5: TOURIST SERVICES

The following services are included:

- Camp Ground
- Caravan Park
- Information Centre
- Hostel
- Hotel
- Motel
- Tourist Bureau

These are signed on Arterial Roads providing they are not clearly visible from and are within 1 km of the road for which signposting is being considered. For complexes offering more than one of the above Services, the signing normally directs to the primary service only.

Tourist services are not signed if located within Town, Group or Local Centres.

2.3.6 CATEGORY 6: RECREATION SERVICES

The following services are included:

- Barbeque Area
- Boat Hire
- Boat Ramp
- Bicycle Hire
- Canoeing Area
- Ferry Terminal
- Picnic Area
- Sailing Area
- Swimming Area
- Water-ski Area
- Lookout

These services are signed to the periphery of the services area, or the junction of their exclusive access road and the road for which signposting is being considered.

2.4 TOURIST ATTRACTIONS AND HERITAGE SITES

The intent is to provide tourist direction signs to guide visitors to tourist attractions and heritage sites endorsed by the Australian Capital Tourism Corporation or the National Capital Authority, and to promote the tourist industry in general by excellent arterial network guide signing. The promotion of individual tourist attractions is not an explicit objective.

To maintain clarity, it is necessary to limit the number of destinations signed at major intersections, thereby limiting the use of tourist guide signs to the immediate environs of the attraction. Generally, tourists are expected to find the general area or major address road, using the arterial signing network, and are provided with individual attraction signing only when the broad scale provided by this network is no longer adequate.

The extent of influence of a tourist attraction is along the road on which it is located to the road of the next highest order in the hierarchy.

This is modified by the following:

2.4.1 GROUP SIGNING

The development of a number of tourist attractions in a tourist group, which can be defined under a group name and which has become generally accepted, allows a greater extent of influence under a group name. In this way the group name can be effectively promoted by the Australian Capital Tourism Corporation and signposted by the Department of Urban Services. This is determined on a case by case basis with participation by tourist attraction operators and includes the replacement of the individual tourist attraction signs at the Address Road/next highest order road with group name signage.

Each group (the boundary of which is defined by the entrance roads of the outlying attractions) is entitled to 'National Signage' as defined below. In addition, each attraction within the group would also be entitled to 'ACT Signage' as defined below, but only within the confines of the group boundary.

The Tourist Route coloured markers must also be located on all direction and advance warning signs that the Tourist Drive follows within the group area.

Examples of locations where group signage should be implemented are as follows:

- Cotter Reserve Tidbinbilla (Nature Reserve, Canberra Deep Space Communication Centre)
- Corin (Dam, ski area)
- Yarramundi (National Zoo and Aquarium, Government House, Scrivener Dam)
- Black Mountain (Telstra Tower, Australian National Botanic Gardens)
- Gold Creek
- Parliamentary Zone
- Commonwealth Park/Acton Park
- Tharwa/Namadgi National Park

2.4.2 INDIVIDUAL SIGNAGE

Individual attractions which have a location unsuitable for inclusion in an Attraction Group, must be assessed for individual signage. This is most likely to apply to attractions such as the Royal Australian Mint and the Australian Institute of Sport. The categories would be as follows:

2.4.3 NATIONAL SIGNAGE

Individual attractions in this category would be determined by patronage levels or the discretion of the Australian Capital Tourism Corporation or National Capital Authority.

In this category attractions are entitled to direction signage at the nearest (two) intersection(s) of the access road with the next highest order road. At these designated intersections, direction signs are to be implemented on all inbound approaches to the destination.

Attractions are also to be provided with direction signage at the next (two) intersection(s) a hierarchical level above this where this road is on the route of a Tourist Drive. At these designated intersections, direction signs are to be implemented on all inbound approaches to these destinations.

Tourist Route markers are to appear next to the appropriate arrows on these signs on Tourist Route approaches only. Where these designated intersections are located in high speed (80km/h +) or non-urban areas, full advance warning signs are required.

Example 1: In the case of the Australian Mint tourist direction signs appear with the commuter direction signs on westbound Adelaide Avenue at the Kent Street exit and eastbound Adelaide Avenue at the Carruthers Street exit. Since the exit ramps are clearly marked with signs serving as both direction and advance warning signs, no advance warning is required at these two locations. Direction signs also appear at the intersection of Carruthers Street and Denison Street which is the Mint access road.

Example 2: The Australian Institute of Sport (AIS) is not straight forward because the Institute is both a tourist and a commuter destination, and is located on Tourist Drive 4.

The internal signage at the AIS is commuter signage. Outside the complex, tourist destination signage is used. Tourist advance-warning and direction signage is implemented at the intersections of Haydon Drive/Belconnen Way, Ginninderra Drive/Tucker Street, and Haydon Drive/Battye Street.

Tucker Street/Leverrier Street does not require tourist sign posting because Tucker Street is not a hierarchical level above the AIS access roads (Leverrier and Battye Streets). Instead this intersection has reassurance Tourist Route markers next to appropriate direction arrows on the exiting commuter signs.

2.4.4 ACT SIGNAGE

This category makes up the remaining individual destinations, which are acknowledged by the Australian Capital Tourism Corporation to be genuine attractions, and which cannot be included in an Attraction Group.

In this category, attractions are only entitled to direction signage at the nearest (two) intersection(s) of the access road with the next highest order road where this road is on the route of a Tourist Drive. At these designated intersections, direction signs are to be implemented on all inbound approaches to the destination.

Tourist Route markers are to appear next to the appropriate arrows on these signs on Tourist Route approaches only. Where these designated intersections are located in high speed (80km/h +) or non-urban areas, full advance warning signs are required.

Additional signposting is to be provided at the attraction's entrance road if the attraction is not visible from the approach roads.

2.4.5 NAMADGI NATIONAL PARK

Namadgi National Park is a unique and popular tourist attraction in the ACT. However, it is too large and is accessed from too many points to include completely in a tourist drive system. Some special signage is therefore provided to the Park destinations.

The Namadgi National Park Visitor's Centre on Naas Road, 2 km south of Tharwa, is signposted as part of Tourist Drive 5. Although Tourist Drive 5 does not extend into the National Park, the Park destinations on Naas - Boboyan Road and Brindabella Road are sign-posted as if they were on a tourist drive.

Except under the provisions described above, tourist attractions are not signed beyond the town or named area in which they are located.

2.4.6 SERVICE SIGNAGE

Services that provide for the tourist needs are signed in accordance to the type of service offered.

In the instances where many services need to be signed from a single direction, small individual symbols are not appropriate, and a finger-board containing all the individual service symbols is required.

Accommodation sites are to be provided with symbol signage at the nearest (two) intersection(s) of their address road with the next road a hierarchical level above if the address road is not trunk or Arterial route.

2.5 RURAL DESTINATIONS

The extent of influence of rural destinations is based on the RTA (N.S.W.) practice of establishing the extent of influence linearly between focal points. Focal points are the terminals or major junctions of rural, main or secondary roads and are, generally, primary or secondary destinations outside the urban area of Canberra.

A list of rural destinations is given below and the signing of these destinations is illustrated in Figure 2-2.

Only focal points appear on G1, G2, G3 and G10 signs. Focal point and intermediate destinations appear on G4 and G6 signs. Once the name of a destination appears on a G1, G2 or G3 sign, it appears on all subsequent guide signs until the destination is reached.

Primary rural destinations are:
- Cooma
- Goulburn
- Queanbeyan
- Yass
- Braidwood (at NSW border only)

Secondary rural destinations are:
- Adaminaby
- Tumut

Tertiary rural destinations (focal points indicated by *) are:

- Bredbo
- Brindabella*
- Bungendore
- Collector
- Cotter*
- Hall*
- Michelago
- Murrumbateman
- Naas
- Royalla
- Sutton
- Tharwa*
- Top Naas*
- Williamsdale
- Wee Jasper

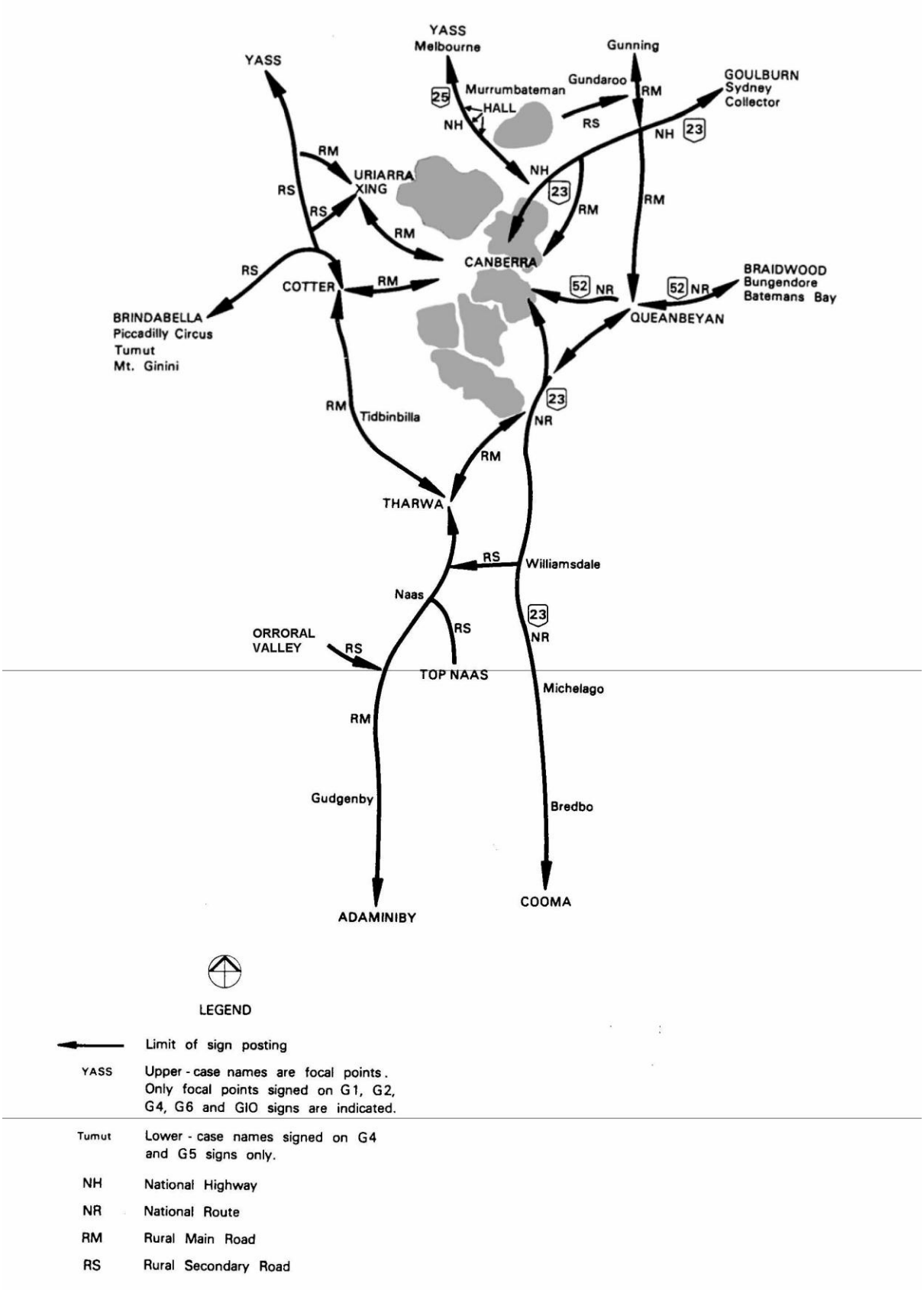


Figure 2-2: Rural destinations

3 SIGN TYPES

The following details provide basic information on the most commonly used sign types. Alternative diagrammatic advanced direction signs are designed to satisfy particular requirements. Reference should be made to the example signs provided in Standard Drawings DS08-25 to DS08-34 for more detailed information.

The preferred method of signing tourist destinations and services is by using symbols on standard square grids, the size of which is determined by speed. Services and tourist destinations, for which there is no symbol, are preferably signed with a written legend on the G7 or G8, on any of the standard sizes, providing this allows use of a reasonable letter height. Directional arrows may be included on the G7 or G8 where space permits. The use of G1, G2 and G3 signs for services is considered the least desirable option.

Care must also be taken in determining whether the destination to be signed is a service location or not. Service signs are generally used for an activity rather than a named place. For example, a 'market' can be considered a service, whereas 'Fyshwick Market' is a destination. Similarly, suburb shops are considered a destination rather than a service.

3.1 ADVANCE DIRECTION SIGNS (G1)

COLOUR	White legend (white, Class 1) on standard green background, except where: (a) the whole panel or sign displays a service location, then white on blue (Class 1) is used ; and, (b) where the whole panel or sign displays a tourist destination then white on reflective brown is used. Street names have black legend on white Class 1 plate
LEGEND	Maximum number of lines – 5 (unless otherwise approved), with initial capitals left justified unless modified for special circumstances – refer example designs.
LETTER STYLE AND HEIGHT	Refer to Section 8.8. Instructions such as TO, LEFT LANE and EXIT should all be capital letters, the height of which is equal to the street name letter height or the major capital letter height minus 40mm.
SHIELDS	Refer AS 1742.2 for locations and colours.
G1-3	Used where staggered T-junctions on Arterial Roads are less than 120 m apart. They may be also used on grade-separated "diamond" interchanges.
G1-5	Used on approaches to roundabouts on Arterial Roads and Major Collector Roads, except where diagrammatic sign is clearly not justified.

3.2 INTERSECTION DIRECTION SIGNS (G2)

COLOUR	White CL.1 legend on standard green background, except: White CL.1 on blue CL.1 when service locations are displayed. White CL.1 on brown CL.1 when tourist destinations are displayed. Street names have black legend on white Class 1 plate
LEGEND	Maximum number of lines - 3, including the street name. Street plates shall be centred on the blade. Destinations are to be left justified and the widest destination aligned centrally with the street plate.
LETTER STYLE AND HEIGHT	Refer to Section 8.8. Instructions such as TO or VIA should be all capital letters, and equal to the major capital letter height minus 40mm.
SHIELDS	Refer to AS1742.2 for colour and placement.
LOCATION	G2 signs may also be erected in the advance direction sign location-see Section 8.7
G2-2 SIGNS	Are preferred at diverge points, roundabouts and angle intersections or where the blade height exceeds 1200mm.

3.3 FINGERBOARDS (G3)

Generally not used in the ACT – Use G2 or G5 types unless otherwise approved

3.4 REASSURANCE DIRECTION SIGNS (G4)

COLOUR	As per G1 signs
LEGEND	Maximum number of lines - 6, including the street name or shield. Initial capitals left justified in left section. Street names or shield centred in the centre section. Distances are right justified in the right section.
LETTER STYLE AND HEIGHT	Street names are 40mm less than the height of the major letters of the destination.

3.5 STREET NAME AND PEDESTRIAN DIRECTION SIGNS (G5)

COLOUR	Black legend on white Class 1 plate on green background.
LEGEND	Maximum number of line – 1. Legend centred on panel.
LETTER STYLE AND HEIGHT	Refer to Section 8.8. Letter style to be Series C or D.
SHIELD	Shields (G8 signs) may be attached below the chevron or arrow on left or right pointing signs or centrally beneath a double pointing sign.

3.6 GEOGRAPHICAL FEATURE SIGNS (G6)

COLOUR	Black legend on White Class 1 background.
LEGEND	Maximum number of line – 2. Legend centred on the panel.
LETTER STYLE AND HEIGHT	Letter style to be Series D, wide spacing – Height to be 240mm
SHIELD	Preferably on the left side of the road, at a point on the road where the destination is clearly visible.

3.7 SERVICE, TOURIST SIGNS (G7) AND HOSPITAL SIGNAGE

COLOUR	White (silver white Cl.1) legend on Class 1 blue or brown background as indicated.	
LEGEND	Where words are used on G7 signs, the letter series and spacing shall be as detailed in AS1743. Letter heights are as follows:	
	Symbol size A B	 3140mm 210mm
ASSEMBLIES	G7 signs may be grouped in horizontal or vertical assemblies to a maximum of 4 signs (including arrows)	
OTHER SERVICE SIGNS	Refer to AS 1742 Part 6,	

4 INTERSECTION SIGN SEQUENCE

4.1 URBAN INTERSECTIONS

The sequence of signs at intersections is designed to respond to direction-finding methods adopted by users. For primary and secondary destinations in urban areas and for most rural destinations, many users depend on destination signing. When seeking tertiary destinations in the urban area, however, dependence on street name signing increases as the destination is approached. Therefore, it is important to adequately sign street names in the urban area, including advanced sign locations.

Three sign locations are recognised – advanced, intersection and reassurance, as detailed in AS1742.2.

4.1.1 ADVANCED SIGN LOCATION

The provision of a sign at the advanced location is dependent on geometry and traffic conditions except where a straight ahead destination is to be signed, and is, therefore, guided by the following considerations. These are applied with discretion, thus allowing provision of an advanced location sign where a number of factors, none of which individually meet the requirements, combine to provide justification.

Advanced location signs are normally provided:

a) where the approach speed limit is 100 km/h or greater;
b) on approaches to roundabouts (diagrammatic G1-5) except within suburbs, or suburb/local access roads where the roundabout's main function is speed control. In this case, provision of an advanced sign is discretionary;
c) on the stem of a T-intersection where the AADT is 10,000 or greater;
d) on multi-lane approaches to four-way intersections and on the head of a T-intersection, in accordance with Figure 4-1; and
e) on Arterial Roads on entry to the urban area.

Advanced location signs are not normally provided:

a) on single lane approaches, even where additional turning lanes are provided within the intersection area; or
b) on the stem of a T-intersection where the AADT is less than 10,000.

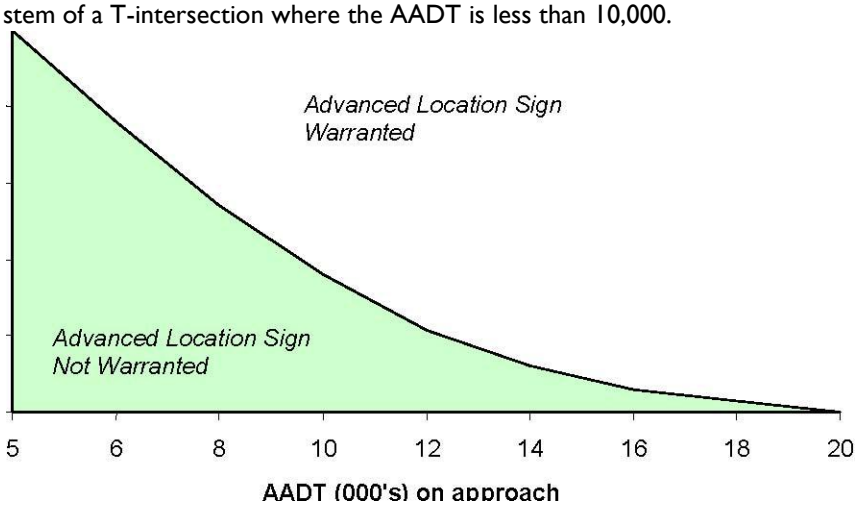


Figure 4-1: Advanced Location Sign Warrant

4.1.2 INTERSECTION SIGN LOCATION

In addition to other signs provided as appropriate, a G5 fingerboard

4.2 RURAL INTERSECTIONs

Sign sequence on rural roads is determined by turning traffic volumes as below:

AADT TURNING	SIGN SEQUENCE
0 – 25	G3
6 – 125	G2
Over 125	G2 ()intersection) and G4

4.3 ROUTE MARKERS

Route markers are located on intersection signs in accordance with AS 1742, Part 2.

4.4 Kilometre Posts and Markers

Route markers are located as specified in AS 1742, Part 2.

5 DETAILED LOCATION

5.1 GENERAL

Conventionally, guide signs have been located on the left hand side of the roadway and this has, therefore, become the expected location. This may, however, be modified to provide adequate visibility, where visibility would be otherwise limited by obstructions (landscaping, buildings, light or signal columns, etc.) or by horizontal and/or vertical geometry. Accepting that obstructions to visibility will occur quite often, alternative lateral placements, ranked in order of preference, are described in the following pages.

The visibility requirement to be achieved is that the whole sign must be clearly seen from all appropriate lanes for the following distances:

60 km/h-visibility distance 80 m
80 km/h-visibility distance 120 m
100 km/h-visibility distance 180 m

The lateral placement and height mounting of signs is in accordance with AS 1742.2.

It should be noted that many arterial roads in the ACT have a rural environment which needs to be considered in determining sign height in respect of pedestrian activity.

In some cases signs on medians or traffic islands may need to be lower. In these instances, consideration should be given to the potential of injury to pedestrians or of obscuring pedestrians on the median or island in determining the location and height of the sign.

5.2 PREFERRED LOCATIONS

5.2.1 ADVANCE DIRECTION SIGNS (G1), INTERSECTION DIRECTION (G2, G3), REASSURANCE DIRECTION (G5), AND STREET NAME PLATES (G5)

The preferred placement for this group of signs is generally in accordance with details shown in AS1742.2 with the following exceptions:

1. AS1742.2 Fig 2.14 – Major Rural Intersection
    - G2-1 signs located at tangent point (TP) at commencement of turn lanes
2. AS1742.2 Fig 2.15 – Minor Rural Intersection – Straight Approach
    - Replace G3-3 with G2-1 signs located 30 metres from intersection
    - Back-to-back G3-3 signs not used for right turns – G2-1 sign located on left verge only
    - G1-1 signs – dimension A measured from modified G2-1 location
    - G1-1 signs to include street name plate
3. AS1742.2 Fig 2.16 – Minor Rural Intersection – Curved Approach
    - G2-1 sign used in lieu of G3-5
    - G2-4 sign used in lieu of G3-3 and G3-4
4. AS1742.2 Fig 2.17 – Major Urban Intersection
    - G4-1 re-assurance direction sign generally not provided in urban environment
    - G2-5/G2-1 signs located 30 metres from intersection
    - location preference 1 for Intersection direction signs is at TP at commencement of turn lanes, with Advance Direction signs 100 to 150 metres beyond the TP.
5. AS1742.2 Fig 2.18 – Major Urban Intersection – Divided Road
    - G4-1 re-assurance direction sign generally not provided in urban environment except on exit routes – eg Northbourne Ave, Monaro Highway.
    - location preference 1 for Intersection direction signs is at TP at commencement of turn lanes, with Advance Direction signs 100 to 150 metres beyond the TP.
    - street name plates (G5) located within median islands preferably adjacent to stop lines.
6. AS1742.2 Fig 2.19 – Minor Urban Intersections
    - G2-1 chevron signs used in lieu of G2-5 and located 30 metres from intersection or at commencement of turn lanes.
7. AS1742.2 Fig 2.20 – Large Roundabout
    - G4-1 reassurance direction signs generally not used.

Street name blades are to be located as depicted in Figure 5-1 rather than as per the Australian Standard. This is to ensure consistency with the established ACT practice. Note that the positions shown are indicative only and the actual position should be chosen so as to maximise visibility and to utilise existing poles wherever possible.

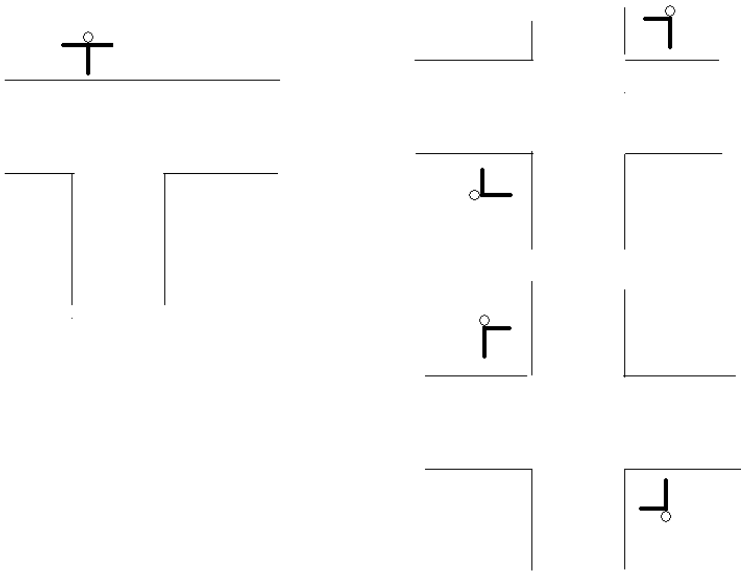


Figure 5-1: Typical Street Name Blade Positions

No more than five (5) fingerboards should be attatched to any single post or pole. If there is an agreed need for a large number of 'destinations' to be signposted in a single street, consideration must be given to alternative sign designs. 200mm high fingerboard signs should be used on roads with posted speed greater than 70km/h.

It is noted that these requirements differ to those in AS 1742.2.

5.2.2 GEOGRAPHICAL FEATURE SIGNS (G6)

The preferred placement for this group of signs is generally in accordance with AS1742.2. Suburb name signs are to be located at the corners of each suburb.

5.2.3 SERVICE SIGNS (G7)

Service signs are permitted where a service is not anticipated which differs from AS 1742.6 Section 1.6 General Principles

The preferred location for service signs is on the first guide sign passed on the approach to an intersection. Symbols are generally incorporated on the blade of the G1 or G2 sign. Fingerboard Service G3 signs are not used in ACT.

If there is an arrow on the G1/G2 sign and the service sign is on the blade, no further arrow is required. Service signs mounted under G1/G2 signs require a supplementary arrow. Generally, service signs are located on the main sign post on the side to which the service sign refers, but exceptions are made for adequate visibility.

5.2.4 ROUTE MARKERS (G8)

Route markers are located as specified in AS 1742 Part 2

5.2.5 MISCELLANEOUS G7 SIGNS

Refer to AS 1743 for details of other G7 signs.

5.3 ROUTE MARKERS (G8) AND MARKER EMBLEMS (NR AND TRB)

5.3.1 NATIONAL ROUTE MARKERS AND EMBLEMS

G8-1-2 (yellow legend on green background) used on National Highway 25 and 23 from their junction (Barton Highway/Northbourne Avenue) north to the ACT border (see 8.3.5).

G8-1-1 (black legend on white background) used on National Route 52 and National Route 23, south of its junction with National Highway 25 at Barton Highway / Northbourne Avenue, and on the Route 23 Alternative via Majura Road, Fairbairn Avenue, Morshead Drive and Monaro Highway (see 8.3.5). The Alternative route markers are to be mounted with G8-2-7 (black legend on white background) ALT signs.

The word "National" is excluded from National Highway Route Markers in the ACT.

5.3.2 TOURIST DRIVE MARKERS AND EMBLEMS

Tourist Drives routes are shown in the Canberra Visitors map and in the UBD and are colour coded – refer to Section 8.9.2 for details.

Tourist Drive markers and emblems used in the ACT differ from the Australian Standard in that the legend "TOURIST DRIVE" is omitted.

With the exception of Tourist Drive 7, all Tourist Drive routes are bi-directional and placement of Route Markers should allow for travel in opposite directions.

Where an attraction is signed from a Tourist Drive, the attraction legend should be continuously signed to the attraction. To guide visitors back to the Tourist Drive, Route Markers are to be erected at all changes of direction. Once the Tourist Drive is reached, the Route Markers are to be placed adjacent to G2-1 signs so that drivers can ascertain the correct direction of travel.

5.4 KILOMETRE POSTS (G10)

Refer to AS 1742.2 for general details

Used on National Highway, National Routes and Rural Main Roads outside the urban area.

LEGEND The following abbreviations are used:

Adaminaby	A	Goulburn	G
Braidwood	B	Queenbeyan	Q
Canberra	C	Yass	Y
Cooma	Co	Tumut	T

6 SIGN LEGENDS

6.1 ALPHABETS

AS 1744 specifies six standard alphabets for capital letters, ranging from the narrow Series A to the wide Series F. Unless special conditions prevail, all ACT guide signs use series D for capital letters, with wide spacing.

All destinations are signed using the Modified Series E alphabet. This is an upper-case alphabet combined with a compatible lower-case alphabet, where the lower case alphabet letter height is nominally 75% of the upper case alphabet. For street names or other words having all upper-case letters, there is a choice of Series D or E, with series D being preferred. For upper-case words, other than street names, Series C may be used in exceptional circumstances.

The spacing of Series E lettering is usually "medium". However, this should be adjusted to "narrow", if the word controls the length of the sign, and "wide", if the word is noticeably short in relation to other words in the legend.

6.2 LETTER HEIGHTS

The required letter height is dependent on:

- lateral placement with respect to the driver's position; and
- vehicular speed;

and, except for G5 signs, is determined in accordance with Table 6-1.

Table 6-1: Letter Heights

Letter Heights			
Speed Limit (km/h)	**No of Lanes in direction of travel**	**Capital Letter Height**	
		Destination (Mod E)	Street Name (D)
100	2+	240	200
	1	200	160
80 and 90	2+	200	160
	1	180	140
60 and 70	2+	180	140
	1	160	120
Roundabouts	2 Lane Departure	160	120
	1 Lane Departure	140	120

The minimum letter height for any vehicular sign is 120mm.

The speed selected is normally the speed limit of the road at the point where a driver needs to make a decision based on the signage information, but this may be adjusted upward if the 85th percentile speed is clearly well in excess of the speed limit.

For G5 signs, the minimum letter height is 100mm.

6.3 SERVICE AND TOURIST SYMBOLS

6.3.1 SIZES

Service symbol sizes are as follows:

Speed Limit	**Symbol Size** (refer AS 1743)
Less than or equal to 70km/h	A
Greater than 70 km/h	B

The numeral in a tourist shield shall be equal to the capital height of the adjacent Mod E lettering. The overall height of the shield shall be 2 times the height of the numeral. The words "TOURIST DRIVE" are not to be incorporated into the shield.

6.3.2 HOSPITAL SYMBOLE

Hospital service symbols is only used for hospitals that offer emergency services (ie TCH and Calvary).

The hospital service symbol is white on blue and no longer contains the legend "HOSPITAL" within the symbol. The hospital service symbol is only to be used for hospitals offering emergency services. In the ACT this is currently limited to the Canberra Hospital and Calvary Hospital.

Where the symbol is used in conjunction with a black on white hospital service legend (eg Calvary Hospital), the white background plate may be extended to incorporate the hospital symbol where appropriate.

6.4 JUSTIFICATION

In general, street name plates are to be centred on the horizontal length of the blade and destinations are to be left justified.

Distances in G4-1 signs are to be right justified.

To reduce blade sizes it may be necessary in some signs to offset the groups of destinations so that they are not vertically aligned.

6.5 ORDER OF LETTERING

Destinations should always have the nearest destination at the top of the sign and the most distant destination at the bottom of the sign. Where practical, it is preferred that tourist shields and service symbols be placed adjacent to the destination that contains or is closest to the tourist attraction or service.

6.6 PLACE NAMES AND ABBREVIATIONS

6.6.1 PLACE NAMES

The following list identifies the legend used for national places (legend used on signs is underlined).

Table 6-2: Place names

Australian War Memorial	National Gallery
Australian Defence Force Academy	Nation Library
Australian National University	National Museum of Australia
High Court of Australia	Parliament House
Austrlian Institute of Sport	Royal Australian Mint
National Botanic Gardens	Royal Military College, Duntroon

6.6.2 ABBREVIATIONS

Where a line of the legend controls the length of a guide sign abbreviations may be used to reduce the overall size and cost of the sign. The following abbreviations may be used:

Table 6-3: Standard Abbreviations

Above Sea Level	ASL		Maximum	Max
Alternative	Alt		Metre	m
Arcade	ARC		Minimum	Min
Avenue	AV		Mount	Mt
Brace	BR		Mountain	Mtn
Boulevard	Bvd		Mountains	Mts
Circle	CR		North	Nth
Circuit	CCT		Number	No
Close	CL		Numbers	Nos
Court	CT		Park	Pk
Creek	Ck		Parkway	PWY
Crescent	CRES		Place	PL
Croft	CRO FT		Point	Pt
Crossing	Xing		Population	Pop
Department	Dept		Railway	Rly
Drive	DR		Range	Ra
East	East		Reserve	Res
Elevation	Elev		Rise	Rise
Government	Govt		River	R
Gardens	GDN		Road	RD
Glen	Glen		Row	Row
Harbour	Hbr		South	Sth
Height	Ht		Square	SQ
Heights	Hts		Station	Stn
Highway	Hwy		Street	ST
Island	Is		Terrace	TCE
Junction	JNC		Through	Thru
Kilometre	km		Tonnes(s)	t
Kilometres per hour	km/h		Way	WAY
Parade	PDE		West	West

The distinctive part of a name or destination, such as "Tuggeranong" in "Tuggeranong Parkway" must not be abbreviated.

6.7 LEGEND LAYOUT

AS1743 is used as a minimum and maximum guide to the spaces between lines of legend and edge of sheets. It is preferred that the following ACT modified layout distances are adopted unless it is not economical due to sheet sizes or other influences:

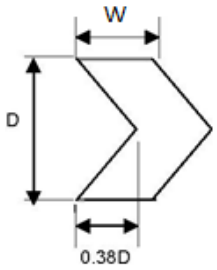
- Vertical spacing between lines of legend = 0.6 times the capital letter height of the adjacent legend or 0.75 if the legend has a descender. Spacing between lines of the legend shall be increased where two plates are beside each other by the gap between the lettering and the edge of the plate.
- Signs without borders (eg; suburb signs, some geographical features):
  Top and bottom spaces = 50% of the Capital letter height of the adjacent legend. End Spaces = 100% of the Capital letter height of the adjacent legend.
- Signs With Borders (space measured to inside of border):
  Top and bottom spaces = 50% of the Capital letter height of the adjacent legend. End spaces = 100% of the Capital letter height of the adjacent legend less 2 times the border width.
- Border widths and radii:
  The border widths and radii listed in Tables 2 and 4 of AS 1743 are to be adopted in the ACT. End, top or bottom spaces may need to be increased where large border radii are used.

6.8 ARROW HEADS

The 'width' of the arrow head (perpendicular to the pointing direction) is to be 1.5 x the largest letter height contained on the sign blade (usually Mod E). If the arrow is of an oblique form, then the horizontal width or vertical height is to be 1.5 x the largest letter height contained on the sign blade (usually Mod E).

6.9 CHEVRONS

Chevrons are to be scaled to size using the following proportions:



D	W
<= 600	0.5D
>600 TO 1200	0.4D or 250, Whichever is less

The gap between the edge of the chevron and the edge of the finished blade is to be as follows:

Top / bottom: 4 x the border thickness (usually 100mm or 64mm).

Side (pointed): 0.8 x the largest letter height contained on the sign blade (usually Mod E).

In most circumstances chevrons should not be used for signs with a blade height greater than 1200mm. For signs greater than 1200mm in height an arrow should be used within a rectangular border – Refer Standard Drawing DS08-31.

6.10 PLATES

Where a legend is required to be on a different colour background than the general sign background colour it is placed on a plate. Depending on the method of sign blade manufacture, plates are either placed on top of or cut into the main background. The gap between the edge of lettering and the plate is:

- 0.25 x the Capital letter height in the panel rounded up to the nearest 10mm increment. eg. 160 D lettering would be 0.25 x 160 = 40mm or 140 D lettering would be 0.25 x 140 = 35mm, therefore round up to 40mm.

Where the reverse cut method of manufacture is used, the background film surrounding the plate is cut to an enlarged size to provide a 12mm white border between the two coloured overlay films to avoid the need for precise matching of the plate and background films. It also provides a visual enhancement to the plate.

7 LOGOS

Unless approved otherwise, the maximum height of a logo shall be 1.5 x the capital letter height. If a logo is to match an existing logo, the existing logo height may be retained as long as the details of the logo including dimensions and locations are submitted to the Department of Urban Services for prior approval. It is preferred that the logo is vertically placed so that the centre of the logo is aligned with the centre of the capital letter height of the text it is associated with.

7.1 DIAGRAMMATIC LAYOUTS

7.1.1 G1-3 (MULTIPLE INTERSECTION)

The width of the diagrammatic shown in AS 1743 is 0.775 times the Capital Letter height. In the ACT a figure of 0.75 may be adopted.

7.1.2 G1-5 (ROUNDABOUT) SIGNS

The diagrammatic details shown in AS 1743 are based on a width equal to the capital letter height of the destinations. These details can lead to a diagrammatic which is large and in urban areas difficult to locate. A factor of 0.75 is to be applied to the dimensions shown in the Standard or preferably to the modified diagrammatic details shown in the example drawings provided in Standard Drawings DS08-25 to DS08-34. Once a diagrammatic detail is drawn using a CAD package it may easily be enlarged or reduced to suit alternative letter heights.

7.2 COLOURS

In general the colours specified in AS 1742.2 and AS 1743 are to be applied to guide signs. There are some ACT specific colours which are listed below:

7.2.1 MAJOR RETAIL CENTRES

Major retail centre destinations are signed using a white legend on a blue plate within G1 and G2 signs

7.2.2 TOURIST DRIVES

Table 7-1: Tourist Drive Sign Colours

Drive	Vinyl Colour	ECF Colour	Numeral Colour
1	Satin Gold	No Equivalent	Black
2	Burgundy	No Equivalent	White
3	Peacock Blue	No Equivalent	White
4	Royal Purple	Violet 1170-13	White
5	Bright orange	Orange 1174	Black
6	Satin Aluminium	No Equivalent	Black
7	Sunflower	Yellow 1171	White

7.2.3 UNIVERSITY OF CANBERRA

University of Canberra signage is to consist of a white Mod E series legend on blue background and is to incorporate the University 'pentagonal C' logo.

8 SIGN SUPPORTS

Sign supports are to be designed in accordance with the requirements of the ACT Standard Specification for Urban Infrastructure Works. Designers should take particular care to ensure that posts meet frangibility requirements unless installed in a safe location behind safety barriers or beyond the clear zone. This requirement extends to the replacement of existing non-frangible posts as part of sign replacement work. In many cases, existing posts are oversized, and may often be cut off 50mm or so above ground level. The socket thus formed can be used to hold new smaller diameter posts, secured either by tack welding or by filling the void between socked and post with 'super sand' a proprietary mix of fine sand and binding agent.

If post sizes within frangibility limits cannot be used due to design loads, then proprietary frangible posts are to be used. Current standards adopted within the ACT preclude the use of light duty propped posts, and frangibility systems utilising slip bases and 'fuse' plates are used. Due to the high cost of these items, designers should investigate all possible location and/or sign design solutions to avoid unnecessary use of proprietary frangible supports.

9 DESIGN PROCEDURES AND PRACTICE

9.1 PROCEDURAL MATTERS

9.1.1 LEGEND REQUIREMENTS

The designer shall determine the route name (road name) and / or destination using the maps and information in this design guide, existing or new roads, services or tourist attractions, and general knowledge of the area. If the designer is unsure of a destination, service symbol etc. the Department of Urban Services may be contacted to confirm any requirements.

9.1.2 DESIGN LODGEMENT

The designer shall obtain approval for all TCDs including guide sign inventory forms and designs. Guide sign inventories and designs are to be submitted at the same time as the initial TCD submission.

A Guide sign inventory form shall be completed and attached to the guide sign design. For each new guide sign, a guide sign number will be allocated by the Department of Urban Services. Where a guide sign is in a new area or its number is not known or shown on a TCD Drawing, the guide sign number shall be left blank. A TCD / TTM submission pro-forma shall be completed and lodged with the relevant traffic control device drawings (if any), guide sign inventory form (refer Figure 9-1) and the guide sign design. If there are any comments by the Department of Urban Services, they will be marked on the drawing in ink or on the inventory form in pencil. The designer shall then modify the sign design, guide sign inventory form and TCD Drawing (if any) and re-submit for approval. Upon approval of the guide sign design and inventory form, The Department of Urban Services will add the guide sign number into the box on the guide sign inventory form. The designer shall then transfer the guide sign number onto the guide sign design drawing and TCD Drawing.

9.1.3 WORK-AS-EXECUTED INFORMATION

The date of installation, manufacturer, and date of manufacture, sheet brand and any changes to the approved design or information contained on the inventory form shall be marked on the inventory form. Changes shall also be reflected in the guide sign design or traffic control device drawing.

This information, together with a digital photograph of the actual guide sign installed constitutes required work as executed records and shall be submitted to the Department of Urban Services on completion of the works. Note that major changes to the design (eg. destinations, letter heights, alphabets etc.) are to be approved prior to manufacture.

9.2 DESIGN PRESENTATION

9.2.1 SIGN FACE DESIGN DRAWING

While some variations exist between the design presentations produced by competing computer sign design software, the sign face designs are required to be presented principally in accordance with the computer generated format shown in the examples provided as Standard Drawings DS08-25 to DS08-34, except that actual dimensions are to be provided on the blade set-out.

Design drawings shall use the standard title block, and shall provide full details of the following:

- dimensions of the sign blade
- text style, dimensions and positioning
- positions and sizes of plates, symbols, logos and arrows
- border widths
- corner radii
- colours
- background and legend materials (may be referenced to the inventory form)

For TraSiCAD users a rules set file can be modified to suit ACT requirements and is available from the Department of Urban Services.

9.2.2 SIGN INVENTORY FORM

As noted above in 8.11.1, the standard inventory form shall be completed for each sign design. The current version of the inventory form is shown in Figure 9-1. The inventory form is available from the Department of Urban Services in spreadsheet form.

Post and footing details shall be determined in accordance with the procedure shown on Standard Drawing DS9-15 and noted in the relevant section of the form, together with notification of the use of post sockets or direct burial.

Installation instructions are to be included in the comment box below the post and footing information:

eg; "remove existing blade and posts, erect new blade and posts" ;
"remove existing blades (3 no), extend existing posts by 0.7m, erect new blades"
"remove existing blade, erect new blade on existing posts"

Where proprietary frangible posts are to be used, the description shall include the required moment capacity required for the installation, ie:

"remove existing blade and posts, install proprietary frangible post system with a total moment capacity for the installation of XX kNm, erect new blade"

The location of the sign is to be fully detailed in the appropriate section of the form, with heights and offsets in accordance with the requirements of Standard Drawing DS9-11 and AS 1742.2 Appendix C. The environment details will be either "urban" or "rural". It should be noted that many arterial roads in the ACT have a "rural" environment which needs to be considered in determining sign height in respect of pedestrian activity. Reference should be made to the Department of Urban Services where doubt exists as to the correct environment category.

Blade details shall be transferred from the sign face design drawing to the relevant section.

The legend details shall be entered commencing from the top of the sign (position 1). Arrows are not to be included in the legend section, but shields, symbols and logos shall be referenced by type; eg. 'Service Symbol S3', 'Grapes Logo' etc

For new post installations, a sketch of the site layout showing necessary location, offset dimensions (and varying post and sign blade mounting heights where in embankment conditions) is to be provided in the locality plan box at the foot of the form when the required location cannot be accurately defined by distance and offset descriptions. This is particularly relevant to traffic islands and some median installations.

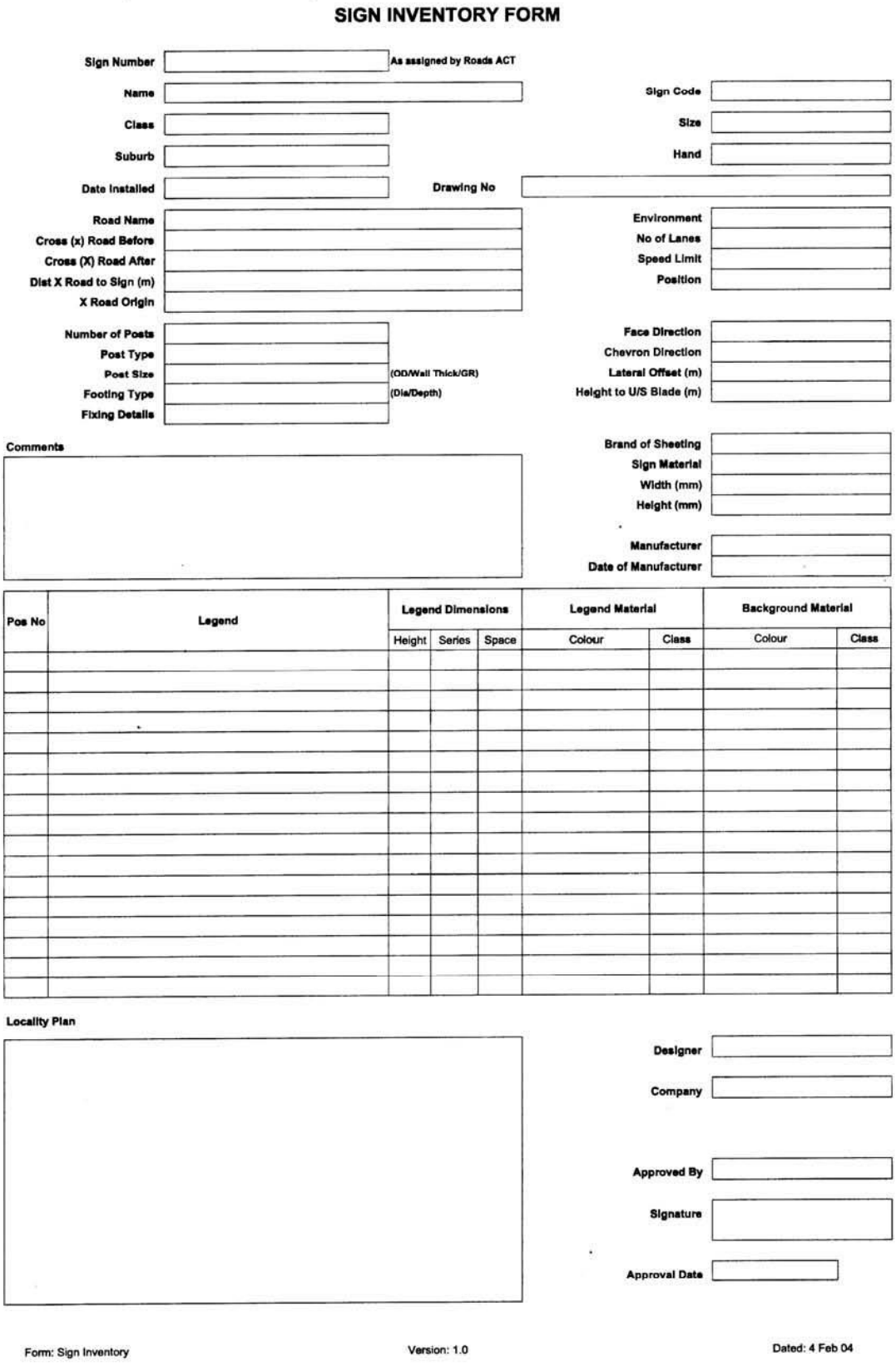
Sheeting details are to be provided on completion of the installations as part of the work as executed details.

An explanation of the fields in the Sign Inventory Form is shown in Table 9-1.

9.2.3 BALANCED DESIGN

Within the parameters given above, designers should aim to produce a sign which is visually balanced. To this end, or to achieve an economical sign size, it may be necessary for minor adjustments to be made to symbol, arrows and dimensions.

Example design layouts are provided in Standard Drawings DS08-25 to DS08-34 to provide a guide as to the style of sign preferred in the ACT.



SIGN INVENTORY FORM

Sign Number | As assigned by Roads ACT
Name | Sign Code
Class | Size
Suburb | Hand
Date Installed | Drawing No
Road Name | Environment
Cross (x) Road Before | No of Lanes
Cross (X) Road After | Speed Limit
Dist X Road to Sign (m) | Position
X Road Origin
Number of Posts | Face Direction
Post Type | Chevron Direction
Post Size (OD/Wall Thick/GR) | Lateral Offset (m)
Footing Type (Dia/Depth) | Height to U/S Blade (m)
Fixing Details
Comments
Brand of Sheeting
Sign Material
Width (mm)
Height (mm)
Manufacturer
Date of Manufacturer

Pos No	Legend	Legend Dimensions			Legend Material		Background Material	
		Height	Series	Space	Colour	Class	Colour	Class

Locality Plan

Designer
Company
Approved By
Signature
Approval Date

Form: Sign Inventory Version: 1.0 Dated: 4 Feb 04

Figure 9-1: Guide Sign Inventory Form

Table 9-1: Inventory Form Terms

Sign Inventory Form Field	***Explanation***	***Example***
Sign number	An identification number assigned by the Department of Urban Services (DUS)	
Name	Sign name as per AS1742	ADS
Class	The class (series) of the sign as per AS1742.	GUIDE
Suburb	The suburb in which the sign is located.	Kambah
Sign code	Sign reference number as per AS1742	G2-1
Size	Size designation as per AS1742 for a sign of	A, B, C or D
Hand	Direction of turn to which the sign applies	Left / right / both
Date installed	To be added by DUS after installation at the WAE stage	
Drawing number	The Drawing Number for the detailed set-out of the sign legend.	
Road Name	The road on which the sign is to be erected.	Drakeford Drive
Cross (X) road before	The intersecting road before the sign.	Marconi Cr
Cross (X) road after	The intersecting road after the sign.	Summerland Cct
Dist X Road to sign	The distance from the cross road after the sign to the sign.	143m
X Road origin	The origin from which the distance from the road after is measured.	Centre of Summerland Cct
Environment	The road environment	Rural/Urban/Commercial etc
No of lanes	The number of traffic lanes in the direction of travel on the approach to the sign.	3
Speed limit	The speed limit on the road on which the sign is to be erected	80km/h
Position	The location of the sign relative to the road's cross-section	Left shoulder/median
Number of posts	The number of posts on which the sign is to be mounted	3
Post type	The type of post(s) to be used.	MS pipe
Post size	The cross-section of the post(s) in terms of outside diameter, wall thickness and material strength	60.3 OD x 2.3mm GR350
Footing type	The type of footing for the sign post(s)	Concrete/slip base etc
Fixing details	The means by which the blade is fixed to the post(s)	Bandit/Saddle brackets/wall-mounted etc
Face Direction	The direction that the sign faces.	N/S/SE/NNW
Chevron direction	The direction of chevrons on the sign	Right/Left/Both/None
Lateral offset	The position of the closest point of the sign to the road.	3.6m to edge line
Height to U/S Blade	The clearance from road pavement level to the underside of the sign or to the lowest sign in an assembly (measured in metres).	2.0m
Brand of sheeting	Manufacturer's name	3M/other manufacturer
Sign material	The material from which the sign	Aluminium/Timber etc

	blade is made	
Width	Horizontal dimension of the sign blade.	1634mm
Height	Vertical dimension of the sign blade.	1587mm
Manufacturer	To be added at WAE stage by DUS	
Date of manufacture	To be added at WAE stage by DUS	
Comments	Any further information necessary to specify the erection of the sign	Remove existing signs (3No); extend posts by 0.6m and erect new blade.
Pos. No.	The position number for each legend.	1 if only one legend at that height, or 1C if multiple legends at the same height on the blade.
Legend	The text for the legend for this position.	SUMMERLAND CCT
Legend Dimensions Height/Series/Space	The height (mm) of the upper case lettering in the legend/	160 Mod E Medium
Legend material Colour/Class		White / Class 1
Background material Colour/Class		Green / Class 1
Designer	Consultant designer	
Company	Consultant designer's company	
Approved By	DUS approving officer	
Signature	Signature of DUS approving officer	
Approval Date	Date approved by DUS	

10 RETROREFLECTIVE SHEETING CLASSES

Class 2

Description: Otherwise known as 'Engineer Grade' – Introduced in the 1950s. Uniformly distributed glass beads overlying a metallic reflector coat and sealed with a transparent surface film – has a frosted silver appearance. Lowest reflectance of commonly available materials.

Uses: With the introduction of higher performing materials, Class 2 materials are now only recommended for use in areas of low ambient lighting.

Performance: Brightness – Low. Angularity – Fair.

Class 1

Description: Sometimes known as 'High Intensity Grade' – Introduced in the 1970s. Construction similar to that of Class 2 material but glass beads are encapsulated within cells of shapes which differ between manufacturers. Has a 'honeycomb' appearance.

Uses: Now the most commonly used sign face material for rural and urban areas with medium ambient light levels.

Performance: Brightness – High. Angularity – Good.
Depending on the entrance angle, the retroreflectivity of Class 1 material exceeds that of Classs 2 material by between 3 and 4 times.

Class 1W

Description: Often referred to as 'VIP Grade' (3M designation), or collectively and often confusingly with Class 1A as 'Diamond Grade' due to the commonly used diamond shape of the encapsulation. Introduced in the 1990's, the glass beads of the Class 1 material are replaced with a prismatic lens located within each capsule which is formed into the rear of the transparent surface sheeting. The lens shape of Class 1W material provides enhanced (W)ide angle reflectivity. Under general lighting conditions, Class 1W material has a brighter, whiter appearance than Class 1 material. The thicker surface sheeting creates a material which is more rigid and more difficult to cut than Class 1.

Uses: Used for signs where geometric constraints inhibit the approach angle.

Performance: Brightness – Superior – 1.6. to 1.7 times that of Class 1.
Angularity – Best.

Class 1A

Description: Commonly referred to as 'LDP Grade' (Long Distance Performance), it shares the general construction and appearance of Class 1W, but differs from it in the shape of the prismatic lens, which in the case of Class 1A, are formed to enhance long distance viewing.

Uses: High speed roads or other cases where long distance viewing is desirable, or for highlighting accident black spots.

Performance: Brightness – Very High – approx. 3 times that of Class 1.
Angularity – Excellent.

Class 1 on Class 1

Descriptive term for the traditional method of building up a sign face by overlaying white Class 1 letters on coloured Class 1 background material. Often involves 3 layers (background, plate and lettering/numerals).

EC Film (ECF)

Translucent adhesive film used as an overlay to white Class 1 material to replicate standard colours in Class 1 material. The film is stencil cut in such manner as to allow the white Class 1 background to form the legend and borders. Allows panels of differing colours to be inserted without multi layering of Class 1 material.

11 STANDARD DRAWINGS

DS08-01	Hierarchy of Roads
DS08-02	Areas of Signing Influence – City
DS08-03	Areas of Signing Influence – Belconnen
DS08-04	Areas of Signing Influence – Gungahlin
DS08-05	Areas of Signing Influence – Tuggeranong
DS08-06	Areas of Signing Influence – Weston Creek
DS08-07	Areas of Signing Influence – Woden
DS08-08	Areas of Signing Influence – City Centre and Town Centres
DS08-09	Areas of Signing Influence – Major Retail Centres
DS08-10	Areas of Signing Influence – Group Centres
DS08-11	Areas of Signing Influence – Tertiary Educational Institutions
DS08-12	Areas of Signing Influence – Industrial Areas
DS08-13	Areas of Signing Influence – Employment/Activity Centres
DS08-14	Areas of Signing Influence – Airport
DS08-15	Areas of Signing Influence – Hospitals
DS08-16	Areas of Signing Influence – AIS, EPIC, Railway Station
DS08-17	Areas of Signing Influence – Queanbeyan
DS08-18	Areas of Signing Influence – Yass
DS08-19	Areas of Signing Influence – Goulburn
DS08-20	Areas of Signing Influence – Cooma
DS08-21	Areas of Signing Influence – Barton and Monaro Highways
DS08-25	Guidesign Example Design – Advanced Direction Sign G1-1
DS08-26	Guidesign Example Design – Advanced Direction Sign G1-5
DS08-27	Guidesign Example Design – Roundabout G1-5
DS08-28	Guidesign Example Design – Intersection Direction Sign G2-1
DS08-29	Guidesign Example Design – Intersection Direction Sign G2-1
DS08-30	Guidesign Example Design – Intersection Direction Sign G2-1
DS08-31	Guidesign Example Design – Intersection Direction Sign G2-2 and G2-4
DS08-32	Guidesign Example Design – Intersection and Reassurance Direction G2-4 & G4
DS08-33	Guidesign Example Design – Street Name and Suburb Sign– G5 & G6-1
DS08-34	Guidesign Example Design – Tourist Route- G8-9

APPENDIX A

Table A.1 – Arterial Roads

Road	*Link*	*Road*	*Link*
Adelaide Avenue		Ginninderra Drive	
Aikman Drive		Gungahlin Drive	
Ainslie Avenue	Ballumbir St to Limestone Av	Haydon Drive	
Anzac Parade		Hindmarsh Drive	
Ashley Drive		Horse Park Drive	
Athllon Drive		Isabella Drive	
Baldwin Drive		Johnson Drive	
Ballumbir Street		Kings Avenue	
Barry Drive		Kingsford Smith Drive	
Barton Highway		Kuringa Drive	Barton Highway to Kingsford Smith Dr
Belconnen Way	Barry Dr to Coulter Dr	Lanyon Drive	
Benjamin Way	Belconnen Way to College St	Limestone Avenue	
Bindubi Street		Long Gully Road	
Brisbane Avenue		Macarthur Avenue	
Canberra Avenue		Majura Road	
Capital Circle		Melrose Drive	
Caswell Drive		Monaro Highway	
Clarrie Hermes Drive		Morshead Drive	
College Street	Haydon Dr to Eastern Valley Way	Mouatt Street	
Commonwealth Avenue		Mugga Lane	
Capital Circle		Northbourne Avenue	
Caswell Drive		Nurdurr Drive	
Clarrie Hermes Drive		Parkes Way	
College Street	Haydon Dr to Eastern Valley Way	Pialligo Avenue	
Commonwealth Avenue		Southern Cross Drive	
Constitution Avenue		State Circle	
Cooyong Street		Streeton Drive	Cotter Rd to Hindmarsh Dr
Copland Drive	Ginninderra Dr to Moynihan St	Sulwood Drive	
Corranderrk Street		Taverner Street	
Cotter Road		Tharwa Drive	
Coulter Drive		Tuggeranong Parkway	
Drake Brockman Drive		Vernon Circle	
Drakeford Drive		Wakefield Avenue	Northbourne Av to Limestone Av
Eastern Valley Way		Wells Station Drive	
Edinburgh Avenue		Wentworth Avenue	
Erindale Drive		William Hovell Drive	
Fairbairn Avenue		William Slim Drive	
Fairfak Street		Woodcock Drive	
Federal Highway		Yamba Drive	
Flemington Road		Yarra Glen	

Table A.2 – Major Collector Roads

Road	*Link*	*Road*	*Link*
Ainsworth Street		David Street	
Alexandrina Drive		Denison Street	
Alpen Street		Devonport Street	
Amagula Avenue		Dixon Drive	
Anketell Street		Dookie Street	
Ann Clark Avenue		Dorsch Street	
Anthony Rolfe Avenue		Drumston Street	
Antill Street	Federal Hwy to Hackett	Dudley Street	
Aspinall Street		Duggan Street	
Atkins Street		Dumas Street	
Badimara Street		Eggleston Street	
Bandjalong Crescent		Ellenborough Street	
Barr Smith Avenue		Ellerston Avenue	
Barrit Street		Eucumbene Drive	Cotter Rd to Warragamaba Av
Bateman Street		Fincham Crescent	Athllon Dr to Wheeler Cres
Battye Street		Findlay Street	
Beasley Street		Flinders Way	
Belconnen Way	Coulter Dr to Kingsford Smith Dr	Florey Drive	
Benjamin Way	College St to Emu Bank	Flynn Drive	
Bindel Street		Forlonge Street	Taverner St to Wheeler Cres
Blamey Crescent		Fullagar Crescent	Starke St (E) to Findlay St
Bodington Crescent		Filmore Crescent	
Boldrewood Street		Girrahween Street	
Bollard Street		Gold Creek Road	
Box Hill Avenue		Goldstein Crescent	
Braybrooke Street		Goyder Street	Dalrymple St to Jerrabomberra Av
Bugden Avenue		Gozzard Street	The Valley Ave to Anthony Rolfe
Burdekin Avenue		Grampians Street	
Burrowa Street		Gungahlin Place	Hibberson St to The Valley Av
Callam Street		Hambidge Crescent	
Captain Cook Crescent		Heagney Crescent	
Carruthers Street		Heysen Street	Hilder St to Devonport St
Castleton Crescent		Hibberson Street	
Catchpole Street		Hobart Avenue	
Challis Street		Hodgson Street	
Charleston Street		Hopetoun Circuit	
Chewings Street		Hoskins Street	
Chuculba Crescent		Hurtle Avenue	
Clancy Street		Inkster Street	
Clift Avenue		Ipima Street	
Clive Steele Avenue		Ipswich Street	
Clunie Ross Street		Jerrabomberra Avenue	
College Street	Eastern Valley Way to Lathlain Street	Jim Pike Avenue	
Connah Street		John Cleland Crescent	
Copland Drive	Moynihan St to Owen Dixon Dr	Johnson Street	
Coronation Drive		Joynton Smith Drive	
Cowper Street		Julia Flynn Avenue	
Coyne Street		Katherine Avenue	
Curran Drive		Kellett Street	
Dalrymple Street		Kelleway Avenue	
Darwinia Terrace		Kent Street	

Kerrigan Street		Noorooma Street	
King Edward Terrace		Nortcott Drive	
Kitchener Street		Novar Street	
Knoke Avenue		O'Halloran Circuit	
Knox Street		Osburn Drive	
Koscisuszko Avenue		Outtrim Avenue	
Kreft Street		Owen Dixon Drive	
Kuringa Drive	Kingsford-Smith Dr to Tillyard Dr	Palmer Street	
Lady Denman Drive		Perry Drive	
La Perouse Street		Petterd Street	
Lambrigg Street	Beasley St to Dookie St	Phillip Avenue	
Langdon Avenue		Pockett Avenue	
Langton Crescent		Randwick Road	
Lathlain Street		Ratcliffe Street	
Launceston Street		Redfern Street	
Lawrence Wackett Crescent		Sainsbury Street	
		Sandford Street	
Learmonth Drive		Schumack Street	
Lexcen Avenue		Shoalhaven Avenue	
Lhotsky Street		Soward Way	
Linvgston Avenue		Spalding Street	
London Circuit		Springvale Drive	
Luxton Street		Starke Street	
Lysaught Street		Statton Street	
Lyttleton Crescent		Sternberg Crescent	
MacFarland Crescent		Stirling Avenue	
MacNaughton Street		Streeton Drive	Hindmarsh Dr to Namatjira Dr
MacPherson Street		Sturt Avenue	
Madigan Street		Summerland Circuit	
Majura Avenue		Telopea Park	
Mannheim Street		Tharwa Drive	
Manuka Circle		Tharwa Road	
Marconi Crescent		The Valley Avenue	
Marcus Clarke Street		Theodore Street	
Maribyrnong Avenue		Tillyard Drive	
Masson Street		Tom Roberts Avenue	
Mawson Drive		Torrens Street	
McCaughey Street		Tyagarah Street	
Melba Street	Antill St to Bradfiel St	Vansittart Crescent	
Melbourne Avenue		Verbrugghen Street	
Miller Street	Macarthur Av to David St	Victoria Street	
Morphett Street		Vosper Street	
Moynihan Street		Wanganeen Avenue	
Mugga Way		Wattle Street	
Murranji Street		Were Street	
Namatajira Drive		Wilkins Street	
Narrabundah Lane		William Webb Drive	
National Circuit		Windeyer Street	
Nettlefold Street		Wisdom Street	
Newcastle Street			

Trunk Road Infrastructure Standard No. 03

TRAFFIC MANAGEMENT

Supplement to Austroads Guide: Traffic Management

Attachment B

TRAFFIC CONTROL DEVICES

CONTENTS

1 INTRODUCTION

With the introduction of the Australian Road Rules to the ACT, all traffic control devices are now designed in accordance with those rules and the appropriate Australian Standards.

The Standard Drawings for Traffic Control Devices which form part of these specifications give some guidance to designers in typical cases. As all variations could not be shown, the designers should exercise good engineering judgement and responsibility. Typical details are a guide only and designers will need to modify details to suit individual requirements as appropriate.

Materials should be chosen which provide minimum whole of life cost bearing in mind the many factors which determine the useful life of a traffic control device. The prime determinant is visibility and legibility in all lighting conditions. A sign which is still structurally sound has reached the end of its useful life if it can no longer be read at night time. Another major determinant in the case of road markings is the surface friction particularly during wet conditions.

2 TRAFFIC SAFETY AUDITS

On larger projects it is good practice to carry out both a design audit and a pre opening audit of Traffic Safety. Designers should be aware that the ACT Government is considering making the submission of the Audit results a condition of approval in the future.

3 SIGN MATERIALS

3.1 SIGN BLADES

Regulatory signs should use Class 1 or Class 1A or 1W sheeting given the higher retroreflectivity or luminance values. Class 1 should be used however recent changes in fabrication methods with the introduction of electronically cut film (ECF) make Class 1A or "diamond grade" material a suitable alternative. Class 1W is good for "wide angle" approaches where signs are located in the medians of divided carriageways.

The use of class 2 sheeting is generally limited to parking signs and information signs in the ACT.

Designers should consider the whole of life cost as well as reflectivity requirements if they wish to vary from these provisions bearing in mind that Class 1 material has a 12 year warranty whereas Class 2 material has only a 5 year warranty although its initial cost is lower.

3.2 SIGN SUPPORTS

Timber supports for signs are not approved as the timber can deteriorate rapidly in the ground leading to unexpected collapse of the sign with a potential for injury to people and property in the vicinity.

The use of devices cast into concrete and which will allow rapid and economic replacement of any sign and/or support damaged in vehicle accidents is encouraged for smaller installations except where the risk of accidents is low. One of the approved systems listed in the Standard specification for urban infrastructure should be used in all other areas.

Major signs, such as urban arterial / freeway signs require the submission of detailed design calculations and drawings prepared by a practicing structural engineer.

All signs support shall be checked by the Designer to ensure they are frangible. In all other cases they should be located behind a safety barrier system.

3.3 SIGN LOCATION

Signs should generally be located as described in the Australian Standard. The standard drawings attatched to this chapter give additional guideance where the Australian Standard is unclear. Further information can be found in section 5.2.1 of Attachment A to TRIS 03.

4 ROAD MARKING MATERIALS

Retroreflective raised pavement markers should be avoided in front of driveways to properties.

5 PEDESTRIAN CROSSINGS AND RAISED PLATFORMS

Where raised platforms are installed in areas where there is likely to be pedestrian activity, a formal pedestrian crossing is required whether or not it would be warranted on pedestrian and vehicle volumes alone. This clarifies the uncertainty between motorist and pedestrian as to who has priority. The standard drawing depicts the requirements for traffic control devices on raised platforms. In new subdivisions the raised platform shall have no side slopes so that pedestrians can cross the platform on an even gradient. Adequate stormwater drainage and bollards to prevent verge access shall be provided.

(Refer to Trunk Road Infrastructure Standard 02 – Road Design section 7: Fences Guardrails and Barriers, and Trunk Road Infrastructure Standard 02 – Road Design for details).

6 KERB MOUNTED HOUSE NUMBERING

It is a requirement of the Deeds of Agreement for most new subdivisions that house numbers be marked on the kerb near the driveway. The following method has been found satisfactory in most cases.

Numbers should be at least 75mm high white or yellow in colour and applied using a stencil on a black background at least 120mm square using one of the roadmarking materials specified above. The number should be at least 25mm from the top of the kerb and located within 1metre of the driveway on the side which most clearly shows the property to which the number refers.

Designers may submit proposals for other methods of application but should be aware that proposals which involve mechanical fixings (screws or rivets etc) will not be approved.

7 HYDRANT MARKING

To assist emergency services to locate fire hydrants, bi-directional blue reflective pavement markers are to be placed adjacent to the centreline of the road and level with the hydrant in accordance with ActewAGL requirements. The marker should be offset from the centreline towards the side of the road on which the hydrant is located. If there is no marked centreline at the marker location, a single bi-directional white marker can be placed on the centreline adjacent to the blue marker.

8 ACT STANDARD PARKING SIGNS

In order to simplify maintenance, most parking signs in the ACT are 300mm wide and 450mm deep. In the case of signs which have very long messages, the signs may be increased to 600mm deep.

Appendix A details all the sign identifiers and messages currently approved for use in the ACT together with the identifiers used on previous approved sign lists. These signs are pictorially depicted on Drawings DS9-40/1-11. Signs marked as superseded are not allowed in new installations but may be used in maintenance situations if only a few signs need replacing.

The use of signs bearing different messages may be approved for special circumstances. These signs must be identified as "special" on the Traffic Control Device drawings for the project and a pictorial representation of the sign will be required on the drawings submitted for approval. Justification must be supplied for the use of special messages. The previous ACT practice of giving a catalogue number to special signs will no longer apply.

9 TICKET PARKING, THREE FOR FREE, PARK AND RIDE SIGNS

For the purposes of sign colour, signs advising motorists of the operational aspects of ticket parking areas are considered to be Information Signs and should be designed with white lettering on a blue background. These signs include those which delimit the ticket parking area, indicate the location of ticket machines and list the costs and conditions of parking.

Park and Ride and Three for Free signs included within a ticket parking area should also follow this colour scheme. Park and Ride signs having regulatory effect in other areas should be red on white.

The list of parking signs included as Appendix A outlines all the sign identifiers and messages currently approved for use in the ACT together with the identifiers used on previous approved sign lists. Signs marked S/S have been superseded by the sign number in the "USE" column. Signs marked as superseded are not allowed in new installations but may be used in maintenance situations if only a few signs need replacing.

Similar to other parking signs, use of signs bearing different messages may be approved for special circumstances with appropriate code allocated by the ACT Government, and a pictorial representation of the sign will be required on the drawings submitted for approval. Justification for the use of special messages must be supplied.

10 LINEMARKING STANDARDS

Title	Drawing Number
Linemarking types	DS9-01
Pavement messages	DS9-02
Linemarking Disabled Zones	DS9-03
RRPM's at Traffic Islands	DS9-04
Miscellaneous Details	DS9-05
Bus Stop Details	DS9-06

11 SIGNPOSTING STANDARDS

Title	Drawing Number
Vertical & lateral sign locations	DS9-11
Endorsed Sign Systems	DS9-12
Special signs	DS9-13
Finger boards	DS9-14
Signpost & footing details	DS9-15

12 TYPICAL DESIGNS

Title	Drawing Number
Tcd's at Traffic Lights	DS9-20
Cable and Loop Layout	DS9-21
Hardware Layout	DS9-22
Tcd's for Arterial Road Roundabouts	DS9-23
Tcd's for Local Street Roundabouts	DS9-24
Children and Zebra Crossing Details	DS9-25
Raised Pavement Platform Typical Details	DS9-26
Form One / Two Lane Details	DS9-27
Refuge Islands	DS9-28
Use of B1 and B5 Lines	DS9-29

13 PARKING SIGNS

Title	Drawing Number
ACT Standard Parking Signs	DS9-40/1-5

14 REFERENCES

ACT Government 2012, Trunk road infrastructure standards, ACT Government, Canberra, ACT.

ACT Government 2011, *Design standards for urban infrastructure, standard drawings DS9: traffic control devices*, ACT Government, Canberra, ACT.

Australian Government 2012, Australian road rules, Australian Government, Canberra, ACT.

APPENDIX A – LIST OF PARKING SIGNS

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
1 HOUR				
R5-1	P122/1	P122	1 HOUR	
R5-1/1	P122/2	P123	1 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-1/2	P122/3	P123/1	1 HOUR - 7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-1/3	P122/4		1 HOUR - MOTOR BIKES ONLY 9AM-5.30PM MON-FRI 9AM-12.00NOON SAT PUB HOL EXCEPTED	
R5-1/4	P122/5		1 HOUR - 9AM-3PM SUN	
R5-1/6	P122/8		1 HOUR - 4PM-8PM MON-FRI PUB HOL EXCEPTED	
R5-1/7	P122/9		1 HOUR - 9AM-3PM MON-FRI PUB HOL EXCEPTED	
R5-1/8	P122/10		1 HOUR - 9.30AM-3PM SCHOOL DAYS	
R5-1/20			1 HOUR 7.30-12NOON 2PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-1/21			1 HOUR - 8:30AM-5:30PM MON-FRI PUB HOL EXCEPTED	
R5-1/30			1 HOUR 8.00-12NOON 2PM-4PM MON-FRI PUB HOL EXCEPTED	
R5-1/35			1 HOUR 8.00-10AM 2PM-4PM SCHOOL DAYS	
R5-1/36			1 HOUR 9AM-4:30PM MON-FRI PUB HOL EXCEPTED	
2 HOUR				
R5-2	P100/1	P100	2 HOUR	
R5-2/1	P100/2	P124	2 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-2/2	P100/3	P124/1	2 HOUR - 7.30AM - 6PM MON-FRI 7.30AM -12 NOON SAT PUB HOL EXCEPTED	
R5-2/4	P100/5		2 HOUR - 9AM-3PM MON-FRI PUB HOL EXCEPTED	
R5-2/5	P100/6		2 HOUR - 8AM-5PM SCHOOL DAYS	
R5-2/6	P100/7		2 HOUR - 8.30AM - 5PM MON-FRI PUB HOL EXCEPTED	
R5-2/7	P100/8		2 HOUR - 8.30AM - 5.30PM MON-FRI PUB HOL EXCEPTED	
R5-2/8	P100/9		2 HOUR - 7.30AM - 6PM MON-SAT PUB HOL EXCEPTED	
R5-2/9	P100/10		2 HOUR - 7.30AM - 6PM MON-FRI PUB HOL EXCEPTED	
R5-2/10	P100/11		2 HOUR - 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-2/11	P100/12		2 HOUR - 7.30AM-4PM MON-FRI PUB HOL EXCEPTED	
R5-2/23			2 HOUR - 7.30AM-6PM MON-THUR PUB HOL EXCEPTED	
R5-2/24			2 HOUR - 8.30AM-5.00PM MON-THUR PUB HOL EXCEPTED	
R5-2/25			2 HOUR - MON-FRI PUB HOL EXCEPTED	
R5-2/26			2 HOUR 8.00-10AM 2PM-4PM SCHOOL DAYS	
R5-2/27			2 HOUR - 7.30AM-6PM MON-THUR PUB HOL EXCEPTED	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
3 HOUR				
R5-3			3 HOUR	
R5-3/1	P134/2	P134	3 HOUR 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-3/3	P134/4		3 HOUR - 8.30AM-5.30PM MON-FRI 8.30-12NOON SAT PUB HOL EXCEPTED	
R5-3/15			3 HOUR -8.30AM-5:30PM MON-FRI PUB HOL EXCEPTED	
R5-3/20			3 HOUR -7.30AM-6PM MON-THUR PUB HOL EXCEPTED	
4 HOUR				
R5-4/1	P151/1	P151	4 HOUR - 9AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-4/2	P151/2	P154	4 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-4/3	P151/3		4 HOUR - 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-4/15			4 HOUR - MON-FRI PUB HOL EXCEPTED	
6 HOUR				
R5-6/1	P6/1		6 HOUR - 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-6/2	P6/2		6 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
5 MINUTE				
R5-13	P88/1	P88	5 MINUTE	
R5-13/1	P88/2	P119	5 MINUTE - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-13/2	P88/3		5 MINUTE - 7AM - 9AM 4PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-13/3	P88/4		5 MINUTE - ALL OTHER TIMES	
R5-13/4	P88/5		5 MINUTE PARKING - 8.30AM - 5.30PM MON-FRI PUB HOL EXCEPTED	
R5-13/6			5 MINUTE PARKING - 7.30AM - 10AM 3PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-13/7			5 MINUTE PARKING -7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
15 MINUTE				
R5-15	P60/1	P60	15 MINUTE	
R5-15/1	P60/2	P60/1	15 MINUTE - ALL OTHER TIMES	
R5-15/2	P60/3	P120	15 MINUTE - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-15/3	P60/4	P120/1	15 MINUTE - 7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-15/4	P60/5		15 MINUTE - 9AM-11PM SUNDAY PUB HOL EXCEPTED	
R5-15/5	P60/6		15 MINUTE - 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
30 MINUTE				
R5-16	P52/1	P52	30 MINUTE PARKING	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-16/1	P52/2	P121	30 MINUTE - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-16/2	P52/3	P121/1	30 MINUTE - 7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-16/3	P52/4		30 MINUTE - ALL OTHER TIMES	
R5-16/4	P52/5		30 MINUTE - 8.30AM - 6.30PM MON-FRI 8.30AM-12.30PM SAT SUN PUB HOL EXCEPTED	
R5-16/5	P52/6		30 MINUTE - 8AM-5PM SCHOOL DAYS	
R5-16/6	P52/7		30 MINUTE - 8.30AM-5.30PM MON-FRI 8.30AM-12 NOON SAT PUB HOL EXCEPTED	
R5-16/7	P52/8		30 MINUTE - 8AM-4PM SCHOOL DAYS	
R5-16/8	P52/9		30 MINUTE - 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12 NOON SAT PUB HOL EXCEPTED	
R5-16/14			30 MINUTE - 10 AM- 3 PM PUB HOL EXCEPTED	
R5-16/20			30 MINUTE - 8:30AM-5:30PM MON-FRI PUB HOL EXCEPTED	
METER PARKING				
R5-10/8	P77/27		PARKING - METER 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
1 HOUR METER PARKING				
R5-1/9	P77/17		1 HOUR - METER 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-1/10	P77/18		1 HOUR - METER 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-1/11	P77/23		1 HOUR - METER 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-1/12	P77/29		1 HOUR - METER 8.30AM-5.30PM MON-THUR 8.30AM-5PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
2 HOUR METER PARKING				
R5-2/12	P77/16		2 HOUR PARKING - METER 9AM-4PM MON-FRI 9AM-12NOON SAT PUB HOL EXCEPTED	
R5-2/13	P77/19		2 HOUR - METER 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-2/14	P77/20		2 HOUR - METER 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-2/15	P77/24		2 HOUR - METER 8.30AM-5.30PM MON-FRI PUBHOL EXCEPTED	
R5-2/16	P77/28		2 HOUR - METER 8.30AM-5.30PM MON-THUR 8.30AM-5PM FRI // 8.30AM-12NOON SAT // PUB HOL EXCEPTED	
15 MIN METER PARKING				
R5-15/7	P77/6	P139	15 MINUTE - METER	
R5-15/8	P77/21		15 MINUTE - METER 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-15/9	P77/26		15 MINUTE - METER 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
30 MIN METER PARKING				
R5-16/9	P77/25		30 MINUTE - METER 8.30AM-5.30PM MON-THUR 8.30AM-9PM FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-16/10	P77/22		30 MINUTE - METER 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-16/11	P77/30		30 MINUTE - METER 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-16/12	P77/15	P152	30 MINUTE - METER	
PAY PARKING				
R5-10/2	VA0/1		PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	AISLE
R5-10/3	VA0/2		PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED	AISLE
R5-10/4	VE0/1		PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	ENTRANCE
R5-10/5	VE0/2		PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	ENTRANCE
R5-10/6	VM0/1		PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-10/7	VM0/2		PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-10/11			PARKING - PAY MON-FRI 8.30AM-5.30PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE/ ONSTREET
R5-10/12			PARKING - PAY MON-FRI 8.30AM-5.30PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-22/5			PAY PARKING MON-THUR 10AM-5.30PM FRI 10AM 9PM SAT 8.30AM 12NOON	ON STREET
R5-22/6			PAY PARKING MON-FRI 10AM-5.30PM	ON STREET
PAY PARKING 30 MIN				
R5-30/2	VA30/1		1/2P 30MIN PARKING PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9PM PUB HOL EXCEPTED	AISLE
R5-30/3	VA30/2		1/2P 30MIN PARKING PAY MON-FRI8.30AM-5.30PM PUB HOL EXCEPTED	AISLE
R5-30/4	VE30/1		1/2P 30 MIN PARKING PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	ENTRANCE
R5-30/5	VE30/2		1/2P 30MIN PARKING PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	ENTRANCE

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-30/6			1/2P 30MIN PARKING PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9PM SAT 8.30-12NOON PUB HOL EXCEPTED	ONROAD
R5-30/7			1/2P 30MIN PARKING PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9PM SAT 8.30-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	ONROAD-NEXT TO TICKET MACHINE
R5-30/8			1/2P 30MIN PARKING PAY MON-FRI 8.30AM-5.30PM SAT 8.30-12NOON PUB HOL EXCEPTED	ONROAD
PAY PARKING 1 HOUR				
R5-1/13	VA1/1		1 HOUR - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE
R5-1/14	VA1/2		1 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED	ENTRANCE
R5-1/15	VE1/1		1 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-1/16	VE1/2		1 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-1/17	VM1/1		1 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-1/18	VM1/2		1 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	AISLE
R5-1/19			1 HOUR PARKING- PAY 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	ENTRANCE
R5-1/31			1 HOUR PARKING- PAY 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
PAY PARKING 2 HOUR				
R5-2/17	VA2/1		2 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE
R5-2/18	VA2/2		2 HOUR - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED	ENTRANCE
R5-2/19	VE2/1		2 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-2/20	VE2/2		2 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-2/21	VM2/1		2 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	
R5-2/22	VM2/2		2 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	AISLE
R5-2/30			2 HOUR PARKING - PAY 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	ENTRANCE
R5-2/31			2 HOUR PARKING - PAY 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
PAY PARKING 3 HOUR				
R5-3/4	VA3/1		3 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE
R5-3/5	VA3/2		3 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED	MACHINE
R5-3/6	VE3/1		3 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-3/7	VE3/2		3 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	AISLE
R5-3/8	VM3/1		3 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	AISLE
R5-3/9	VM3/2		3 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	
R5-3/10			3 HOUR PARKING- PAY MON-FRI 8.30AM-5.30PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	AISLE
PAY PARKING 4 HOUR				
R5-4/4	VA4/1		4 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE
R5-4/5	VA4/2		4 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED	ENTRANCE
R5-4/6	VE4/2		4 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
R5-4/7	VE4/1		4 HOUR PARKING - PAY MON-THU8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-4/8	VM4/1		4 HOUR PARKING - PAY MON-THUR 8.30AM-5.30PM FRI 8.30AM-9.PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	
R5-4/9	VM4/2		4 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	
R5-4/10			4 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM SAT 8.30AM-12NOON PUB HOL EXCEPTED	ENTRANCE
R5-4/11			4 HOUR PARKING - PAY MON-FRI 8.30AM-5.30PM SAT 8.30AM-12NOON PUB HOL EXCEPTED 1 PARK CAR 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD CARPARK NO.	MACHINE
MOTOR BIKE				
R5-10/1	P38/1	P38	PARKING - MOTOR BIKES ONLY	
BUS ZONE				
R5-20	M1/1	M1	BUS ZONE	
R5-20/1	M1/2	M1/1	BUS ZONE - 15 MINUTE PARKING	
R5-20/4	M1/5		BUS ZONE - 1 HOUR PARKING	
R5-20/6	M7/2	M7/1	BUS ZONE - 7.30AM-6PM PUB HOL EXCEPTED	
R5-20/7	M7/3	M7/2	BUS ZONE - 7.30AM-9.30AM 4PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-20/8	M7/4		BUS ZONE - 6AM - 10AM PUB HOL EXCEPTED	
R5-20/10	M8/2	M8/2	BUS ZONE - 8AM-9.30AM 2.30PM-4PM SCHOOL DAYS	
R5-20/11	M8/3	M8/1	BUS ZONE - 3PM-4PM SCHOOL DAYS	
R5-20/12	M8/4		BUS ZONE - 8AM-4PM SCHOOL DAYS	
R5-20/13			BUS ZONE -12NOON-2PM	
R5-20/13-1			BUS ZONE -12NOON-2PM PICK UP AND SET DOWN ONLY	
R5-20/14			TRUCK ZONE FOR TRUCK WITH GVM OVER 4.5t	
R5-20/15			BUS ZONE - ALL OTHER TIMES	
R5-20/16			LOCAL SERVICES ONLY	
TAXI				
R5-21	M3/1	M3	TAXI ZONE	
R5-21/1	M3/2	M3MOD	TAXI ZONE - ALL OTHER TIMES	
R5-21/2	M3/2		TAXI ZONE - 8PM-6AM	
R5-21/3	M3/2		TAXI ZONE - 5.30PM-8.30AM 7 DAYS	
DISABLED				
R5-22/1	P19/1	P19	PERMIT ZONE - DISABLED PERSONS ONLY DISPLAY PERMIT	
R5-22/1-1			PERMIT ZONE - DISABLED PERSONS ONLY DISPLAY PERMIT TIME LIMIT	
R5-22/1-2			DISABLED ACCESS	
PERMIT				
R5-22/2	P20/1	P20	PERMIT ZONE - MEDICAL PRACTITIONERS ONLY DISPLAY PERMIT	
R5-22/3	P93/1	P93	PERMIT ZONE - COMMUNITY NURSE ONLY DISPLAY PERMIT	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-22/4	P79/1	P79/1	PERMIT ZONE - CATEGORY L DISPLAY PERMIT	
R5-22/7	P82/1	P82	PERMIT ZONE - DIPLOMATIC CORPS DISPLAY PERMIT	
R5-22/7-1			2 HOUR PERMIT ZONE - DIPLOMATIC CORPS DISPLAY PERMIT	
R5-22/8	P82/2	P46	PERMIT ZONE - MEMBER PARLIAMENT DISPLAY PERMIT	
R5-22/37			PERMIT ZONE - HOSPITAL AUTHORISED VEHICLES ONLY DISPLAY PERMIT	
PARK AND RIDE				
R5-22/9	P46/1		PERMIT ZONE - PARK N RIDE BELCONNEN DISPLAY PERMIT	
R5-22/10	P46/2		PERMIT ZONE - PARK N RIDE TUGGERANONG DISPLAY PERMIT	
R5-22/11	P46/3		PERMIT ZONE - PARK N RIDE WODEN DISPLAY PERMIT	
R5-22/11-1			PERMIT ZONE - PARK N RIDE WODEN DISPLAY PERMIT 7:30AM 5:30PM MON -FRI PUB HOLIDAYS EXCEPTED	
R5-22/18	P46/4		PERMIT ZONE - PARK N RIDE BELCONNEN 8.30AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED DISPLAY PERMIT	
R5-22/19	P46/5		PERMIT ZONE - PARK N RIDE WODEN MON-FRI 7.30AM-10AM DISPLAY LABEL // PAY PARKING MON - THUR 10AM-5.30PM FRI 10AM-9PM SAT 8.30AM-12NOON PARK N RIDE PARK FREE PUB HOL EXCEPTED	
R5-22/20	P46/6		PERMIT ZONE - PARK N RIDE TUGGERANONG MON-FRI 7.30AM-10AM PUB HOL EXCEPTED // PAY PARKING MON-THUR 10AM-5.30PM FRI 10AM-9PM SAT 8.30AM-12NOON PUB HOL EXCEPTED PARK N RIDE PARK FREE 1 PARK 2 PURCHASE TICKET 3 DISPLAY ON DASHBOARD	
R5-22/21	P46/7		PERMIT ZONE - PARK N RIDE WODEN DISPLAY PERMIT 7.30AM-5AM P.H.E DISPLAY LABEL//3 HOUR PARKING 10AM-5.30PM MON-FRI 8.30AM-12NOON SAT PUB HOL EXCEPTED	
PERMIT ZONE				
R5-22/22	P75/1	P75	PERMIT ZONE - GOVERNMENT VEHICLES ONLY 30 MINUTE PARKING	
R5-22/23	P75/2	P75MOD	PERMIT ZONE GOVERNMENT VEHICLES ONLY 30 MINUTE PARKING 8.30AM-5.30PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
R5-22/24	P75/3	P87	PERMIT ZONE - GOVERNMENT VEHICLES ONLY 8.30AM-5PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
R5-22/26	P75/6	P166	PERMIT ZONE - GOVERNMENT VEHICLES ONLY 2 HOUR PARKING 8.30AM-5.30PM MON-FRI DISPLAY PERMIT PUB HOL EXCEPTED	
R5-22/27	P75/7	P9	PERMIT ZONE - PARKING GOVERNMENT VEHICLES ONLY DISPLAY PERMIT	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-22/32			PERMIT ZONE - AIRPORT PERMIT HOLDERS, DISPLAY PERMIT	
R5-22/33			NO PARKING EMERGENCY VEHICLES EXCEPTED	
R5-22/34			NO PARKING ACTION VEHICLES EXCEPTED	
R5-22/35			NO PARKING POLICE VEHICLES EXCEPTED	
R5-22/36			PERMIT ZONE GOVERNMENT VEHICLES ONLY 9AM-5.30PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
RESIDENTIAL PERMIT PARKING				
R5-22/12	P138/1	P134/04MOD	PERMIT ZONE - RESIDENTIAL NO4 8AM-5.30PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
R5-22/13	P138/2	P138/01	PERMIT ZONE - RESIDENTIAL NO1 8AM-5.30PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
R5-22/14	P138/3	P138/02MOD	PERMIT ZONE - RESIDENTIAL NO2 8AM-5.30PM MON-FRI PUB HOL EXCEPTED DISPLAY PERMIT	
LOADING ZONE				
R5-23/1	P27/1	P27	LOADING ZONE - 30 MINUTE	
R5-23/3	P27/3	P135	LOADING ZONE - 30 MINUTE 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-23/4	P27/4	P135MOD1	LOADING ZONE - 30 MINUTE 8AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-23/5	P27/5	P135/2	LOADING ZONE - 30 MINUTE 7.30AM-6PM PUB HOL EXCEPTED	
R5-23/6	P27/6	P135/1	LOADING ZONE - 30 MINUTE 7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-23/7			LOADING ZONE-1 HOUR	
R5-23/11	P27/11		LOADING ZONE - 30 MINUTE 7.30AM-4PM MON-FRI PUB HOL EXCEPTED	
R5-23/12			LOADING ZONE 7:30AM-11:30AM	
R5-23/15			LOADING ZONE - 30MINUTE 7.30AM-9PM MON-FRI 7.30AM-6PM SAT PUB HOL EXCEPTED	
R5-23/16			LOADING ZONE - 30MINUTE 7.30AM-9PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-23/17			LOADING ZONE - 30 MINUTE 6.30AM-9PM MON-FRI 6AM-12NOON SAT PUB HOL EXCEPTED	
R5-23/18			LOADING ZONE - 2 HOUR	
R5-23/20			LOADING ZONE - 2 HOUR 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-23/21			LOADING ZONE - 2 HOUR 8AM-5.30PM MON-FRI PUB HOL EXCEPTED	
R5-23/22			LOADING ZONE - 2 HOUR 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-23/23			LOADING ZONE - 2 HOUR 7.30AM-6PM MON-FRI 7.30AM-12NOON SAT PUB HOL EXCEPTED	
R5-23/26			LOADING ZONE - 2 HOUR 7.30AM-9PM MON-FRI 7.30 -12NOON SAT PUB HOL EXCEPTED	
R5-23/27			LOADING ZONE - 2 HOUR 7.30AM-4PM MON-FRI PUB HOL EXCEPTED	
R5-23/28			LOADING ZONE - 30 MINUTE ALL OTHER TIMES	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-23/29			LOADING ZONE -30 MINUTE 7.30AM-5:30PM MON-THUR 7.30AM-9PM FRI 7.30-12 NOON SAT	
R5-23/30			LOADING ZONE-30MINUTE 5AM-8AM	
R5-23/31			LOADING ZONE 1 HOUR 7:30AM-6PM MON-FRI PUB HOL EXCEPTED	
NO STOPPING				
R5-35	P72/1	P72	NO STOPPING	
R5-35/1			NO STOPPING ALL OTHER TIMES	
R5-36/1	P72/2	P129	NO STOPPING - 7.30AM-9AM MON-FRI PUB HOL EXCEPTED	
R5-36/2	P72/3	P130	NO STOPPING - 4.30PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-36/3	P72/4	P131	NO STOPPING - 7.30AM-9AM 4.30PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-36/4	P72/5	P132	NO STOPPING - 8AM-9.30AM 2.30PM-4PM SCHOOL DAYS	
R5-36/5	P72/6		NO STOPPING - 8AM-4PM SCHOOL DAYS	
R5-36/6	P72/7		NO STOPPING - 8AM-9.30AM 2.30PM-3.30PM SCHOOL DAYS	
R5-36/7	P72/8		NO STOPPING - SAT SUN	
R5-36/8	P72/9		NO STOPPING - 9AM-10AM 3PM-4PM SCHOOL DAYS	
R5-36/9	P72/10		NO STOPPING - EMERGENCY VEHICLES EXPECTED	
R5-36/10	P72/11		NO STOPPING - MON- FRI	
R5-36/11			NO STOPPING - 7.30AM-9.30AM 4.30PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-36/12			NO STOPPING 9.30AM-3PM SCHOOL DAYS	
R5-36/13			NO STOPPING MID NIGHT -6AM SAT-SUN NIGHTLINK TAXIS EXCEPTED	
R5-36/14			NO STOPPING 8AM-10AM 2PM -4PM SCHOOL DAYS	
NO PARKING				
R5-40	P1/1	P1	NO PARKING	
R5-41/1	P1/2	P110	NO PARKING-PICK UP AND SET DOWN ONLY	
R5-41/4	P1/5	P128	NO PARKING - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-41/5	P1/6	P128/1	NO PARKING - 8.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-41/6	P1/7	P160	NO PARKING - 9AM-11.00 AM MON-FRI PUB HOL EXCEPTED	
R5-41/7	P1/8	P160/1	NO PARKING - 7.30AM-9.30AM MON-FRI PUB HOL EXCEPTED	
R5-41/8	P1/9	P160MOD	NO PARKING - 9AM-11AM 2PM-3PM MON-FRI PUB HOL EXCEPTED	
R5-41/9	P1/10	P160/2	NO PARKING - 9AM-11AM 3PM-4PM MON-FRI PUB HOL EXCEPTED	
R5-41/10	P1/11	P161	NO PARKING - 9AM-5PM MON-FRI PUB HOL EXCEPTED	
R5-41/11	P1/12	P165	NO PARKING - 9AM-11AM 1PM-3PM MON-FRI PUB HOL EXCEPTED	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
R5-41/14	P1/15		NO PARKING - AUSTRALIA POST EXCEPTED	
R5-41/15	P1/17		NO PARKING-PICK UP AND SET DOWN ONLY 8.30AM-9.30AM 2.30PM-3.30PM SCHOOL DAYS	
R5-41/16	P1/18		NO PARKING - 6AM-8AM 3.45PM-6PM MON-FRI PUB HOL EXCEPTED	
R5-41/17	P1/19		NO PARKING - 7AM-11AM FRIDAY PUB HOL EXCEPTED	
R5-41/17-1			NO PARKING - 7AM-1PM WEDNESDAY PUB HOL EXCEPTED	
R5-41/18	P1/20		NO PARKING - SUNDAY	
R5-41/18-1			NO PARKING 7.30AM-6PM FRIDAY	
R5-41/21	P1/23		NO PARKING - 9AM-11AM THURSDAY	
R5-41/22			NO PARKING - GRASS AREA	
R5-41/23			NO PARKING - 7.30AM-5PM MON-FRI PUB HOL EXCEPTED	
R5-41/24	P1/26		NO PARKING - PICK UP AND SET DOWN ONLY 8AM-9.30AM 3PM-4PM SCHOOL DAYS	
R5-41/29			NO PARKING - 9AM-11AM 2PM-3PM MON-THUR PUB HOL EXCEPTED	
R5-41/30			NO PARKING-PICK UP AND SET DOWN ALL OTHER TIMES	
R5-41/31			NO PARKING BETWEEN_____	PARKING RESTRICTION. ON BETWEEN TWO INTERSECTING ROADS
R5-41/32			NO PARKING 6AM-10AM MON-FRI	
R5-41/33			NO PARKING 7.30AM-12 NOON FRIDAY	
R5-41/34			NO PARKING 12 NOON 2PM	
R5-41/35			NO PARKING PICK UP AND SET DOWN ONLY 7.30AM-6PM MON-FRI	
NO PARKING ON GARBAGE COLLECTION DAYS				
R5-42/1			NO PARKING 7:30AM-6PM MONDAY	
R5-42/2			NO PARKING 7:30AM-6PM TUESDAY	
R5-42/3			NO PARKING 7:30AM-6PM WEDNESDAY	
R5-42/4			NO PARKING 7:30AM-6PM THRUSDAY	
R5-42/5			NO PARKING 7:30AM-6PM FRIDAY	

NEW CODE	OLD CODE (1)	OLD CODE (2)	DESCRIPTION	USE
SUPERSEDED				
R5-1/5	P122/6		1 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	
R5-1/19			PARKING - HEALTH VEHICLES ONLY	
R5-3/2	P134/3		3 HOUR - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	X
R5-13/5	P88/6		5 MINUTE PARKING - 7.30AM - 6PM MON-FRI PUB HOL EXCEPTED	X
R5-22/28	P75/8		PERMIT ZONE - GOVERNMENT VEHICLES ONLY 8.30AM-5PM MON-FRI DISPLAY PERMIT PUB HOL EXCEPTED	X
R5-23/2	P27/2	P126	LOADING ZONE - GOODS VEHICLES LOADING & UNLOADING ONLY 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	X
R5-23/8	P27/8	P136	LOADING ZONE - 7.30AM-6PM MON-FRI PUB HOL EXCEPTED	X
R5-23/9	P27/9	P168	LOADING ZONE - 7.30AM-6PM MON-THUR 7.30AM-9PM FRI 7.30AM-6PM SAT PUB HOL EXCEPTED	X
R5-23/10	P27/10		LOADING ZONE - 7.30AM-6PM MON-FRI 7.30AM-12.00 NOON SAT PUB HOL EXCEPTED	X
R5-23/12	P27/12		LOADING ZONE - 7.30AM-6PM PUB HOL EXCEPTED	X
R5-23/13	P27/13		LOADING ZONE - MON-THUR 7.30AM-6PM FRI 7.30AM-9PM SAT 7.30AM-12NOON PUB HOL EXCEPTED	X
R5-23/14	P27/14		LOADING ZONE - MON-THUR 6AM-6PM FRI 6AM-9PM SAT 6AM-12NOON PUB HOL EXCEPTED	

Trunk Road Infrastructure Standard No. 03

TRAFFIC MANAGEMENT

Supplement to Austroads Guide: Traffic Management

Attachment C

PARKING AREAS

CONTENTS

1 INTRODUCTION

In new commercial developments, or as commercial areas are redeveloped, it is generally a development condition that parking be provided.

The parking should provide an adequate number of spaces for the proposed use of associated areas, be landscaped to an appropriate level to provide shade and screening for cars, provide a safe environment for users and meet the relevant Australian Standards.

2 CAR PARKS

2.1 GENERAL CAR PARK DESIGN PRINCIPLES

The layout and physical geometry of a car park is to be designed in accordance with Australian Standards AS 2890.1, AS 2890.2 and AS 2890.3.

The number of spaces provided is to be in accordance with the *ACT Parking and Vehicular Access Guidelines* unless stipulated otherwise in a Section Master Plan for site specific development conditions.

The car park layout is to be designed to be sympathetic with the landform and surrounding landscape.

Refer to the ACT Parking and Vehicular Access Guidelines for details of the provision for motorcycle parking.

The design of car park and facilities must take into account sewer mains and water pipes, easements and pipe protection rules. Consultation with ActewAGL is required to reference their pipe protection rules.

2.2 SAFETY

Car parks are to provide a safe environment for users. The design of the car park and surrounding landscape should provide clear sightlines into and throughout the car park.

Car parks should be provided with direct access via pedestrian paths to destinations and car parks should be provided with lighting where they will be used regularly during evenings (see Design Standard 12 Public Lighting). The design should minimise the probability of vehicle/vehicle conflict and vehicle/pedestrian conflict.

The ACT Parking and Vehicular Access Guidelines provides details of design issues to be considered to maximise community safety in car parks. The ACT Crime Prevention and Urban Design Resource Manual provides further information about designing for community safety and crime prevention.

2.3 STORMWATER DRAINAGE

After making allowance for water harvesting and other onsite water re-use, underground drainage should be according to the specifications listed in TRIS 02 Road Design, under the heading Supplement to the Austroads Guide to Road Design Part 5: Drainage Design. It should be noted that it is illegal to connect stormwater from the car park to the sewer.

Sub-soil drainage should be provided for all trees and shrubs in planting areas in, or adjacent to car parks. For this and aesthetic reasons, proposals should not include a large number of plantings in small islands or narrow strips. Design objectives can be better achieved in most situations through the use of fewer planting areas with a minimum width of 2.5 metres.

Any sumps in mulched areas must be set at soil level. However, they should be identifiable so that they can be found for cleaning.

Downpipes from roof gutters of adjacent buildings must be connected to the stormwater drainage system (see TRIS 01 Stormwater) and should not drain into planted areas unless this is part of a water harvesting scheme and the overall drainage system is designed to accommodate this.

Water harvesting should be considered for trees and shrubs planted in car parks. The following are desirable features of any water harvesting scheme for trees or shrubs.

- The water running off from the car park pavement must reach sufficient area adjacent to the tree or shrub so that the water can soak into the subgrade and the tree roots are able to take advantage of the moist subgrade.
- The subsurface drainage (sub-soil drains) must be installed to ensure that the ground and adjacent car park pavement materials do not become water-logged and result in pavement failure.
- The area of the car park denied to cars because of water harvesting be minimised to ensure maximum utilisation from the investment in car parking.
- That maintenance costs be minimised by providing car park pavement of sufficient strength to support the imposed loads and a protection system to the trees so that they will not be hit by motor vehicles.

2.4 WHEEL STOPS

Wheel stops are only to be allowed under special conditions where no other treatment is applicable. Wheel stops need to be constructed as a permanent kerb with allowance for vehicles to overhang a paved area that is additional to any pedestrian movement areas.

If wheel stops are used, arrangements which involve fixing of logs or kerbs to the pavement by spikes will not be approved as considerable damage can occur to vehicles when the wheel stops become dislodged under the vehicle.

2.5 PAVEMENTS

Sealed pavements should be used rather than gravel surfaces due to maintenance issues associated gravel surfaces.

Pervious pavements could be used as a means of water harvesting or stormwater run-off reduction. If adopted, subsoil drainage and pavement structure needs to be carefully considered to ensure the required car park design life will be achieved.

See Trunk Road Infrastructure Standard 06 Pavement Design.

2.6 SIGNAGE AND LINE MARKING

See Trunk Road Infrastructure Standard 03 – Traffic Management, Attachment B - Traffic Control Devices.

Note: The use of raised ceramic markers to delimit parking bays is expressly forbidden.

2.7 DRIVEWAYS

The ACT Parking and Vehicular Access Guidelines provide details of design issues to be considered for car park driveways.

Where gravel surfaces are adopted within a carpark, all driveways from the road to the car park should be sealed.

3 DISABLED PARKING

Provision of parking spaces for people with disabilities should conform to Australian Standard AS 2890.1. Access pathways and car parking gradients should meet Australian Standards AS 1428.1, AS 1428.2 and AS 1428.4. Within Civic, the Civic Accessibility Study, Access Guidelines should also be met.

It is desirable that full width access ramps along the front of a disabled car park should be used.

4 LANDSCAPE ELEMENTS FOR CAR PARKS

Car owners show a clear preference to park in the shade but the benefits of tree and shrub planting in carparks are not restricted to shade alone. Planting reduces the apparent size of the hard paving and ameliorates the visual impact of masses of multi-coloured cars or harsh expanses of pavements when car parks are empty.

Well-designed car parks, shaded by trees and screened by hedges, shrub beds or grassed mounds are a relief from stark expanses of paving. However, the integration of the landscape development with the design and

construction of the car park is an essential requirement for both aesthetic and functional reasons. A minimum of 15 per cent of the car park area is to be landscaped with trees or shrubs.

The following design principles for incorporating trees and shrubs into car parks balance plant and human requirements:

- Use groups of trees rather than individual specimens to improve conditions for the trees.
- Design for pedestrian movement around carparks that may include pedestrian paths through garden beds.
- Choose appropriate ground surfaces for the area around trees to maximise their access to water and air. These could be mulch, gravel, porous paving, groundcover plants and grasses.
- Consider using water harvesting to provide additional water to plants.
- Shrub beds within car parks may need to be restricted for safety and maintenance reasons but may be useful for screening on the edges of car parks. The need for modification of views of masses of cars from key viewing points does not necessarily imply the excessive use of shrubberies to achieve complete screening.
- Select plant species to achieve appropriate colour form and textural detail.
- Plants with thorns or berries are often not suitable for use in car parks.
- Shrubs and tree planting designs should be designed to require minimal or no pruning at maturity. In particular, shrub plantings should not overgrow paths or cause heavy shading of windows.
- Integrate services and other structural elements such as signs, posts, light poles, cycle parking and storage.
- Consider any landscape character policies for the area and the existing landscape character of the site.

The prime functions of car parking, access and pedestrian movement should be adequately supported by the design. The following points require specific attention:

- Predicted pedestrian movement routes need careful assessment. The design must realistically accommodate these on either brick or concrete unit paving, stabilised granite gravel, concrete, bituminous concrete or some other form of hard pavement. The orientation of the aisle perpendicular to the building entrance or other pedestrian destination may overcome most of the pedestrian circulation issues.
- Access routes for disabled people to comply with AS1428.1 and include suitable surfaces.
- Landscape proposals should not increase the possibility of vehicle/ vehicle and vehicle/ pedestrian conflicts both within the car park, and at points of entry from roads.
- The design should not render it difficult for owners to find their car.
- Co-ordination between lighting design and tree planting is required to ensure that trees do not obscure lights, initially or at maturity.
- No tree or shrub planting should occur in areas where car overhang will occur. The normal car overhang allowance is 1 metre.

Vegetation should be protected using tree guards, fencing and other schemes for up to four years where the risk of vandalism and damage from vehicles is high.

Paths and other hard surfacing in car parks should be carefully located to minimise the need for mowing edges. All edges of irrigated mown grass areas should be finished with a permanent mowing edge.

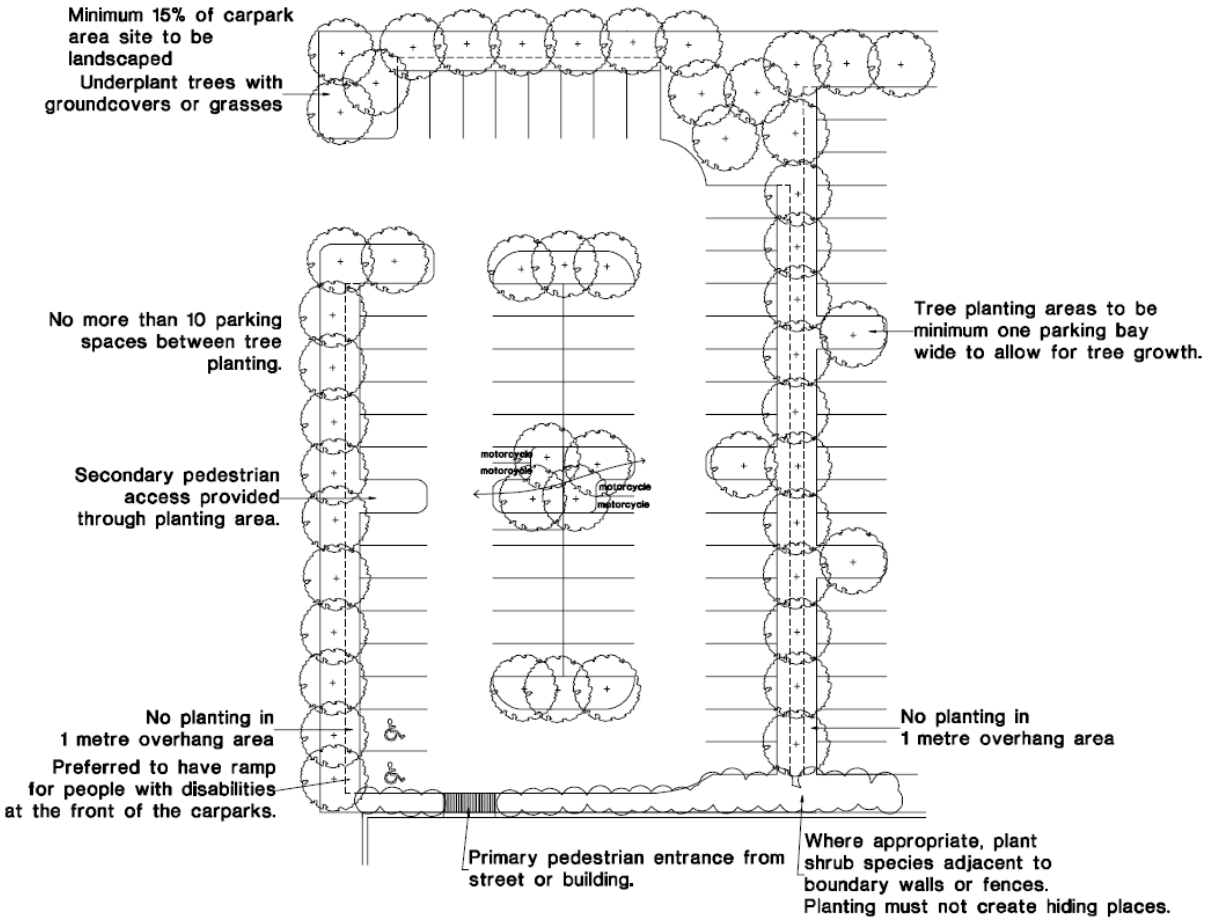


Figure 4-1: Indicative car park layout

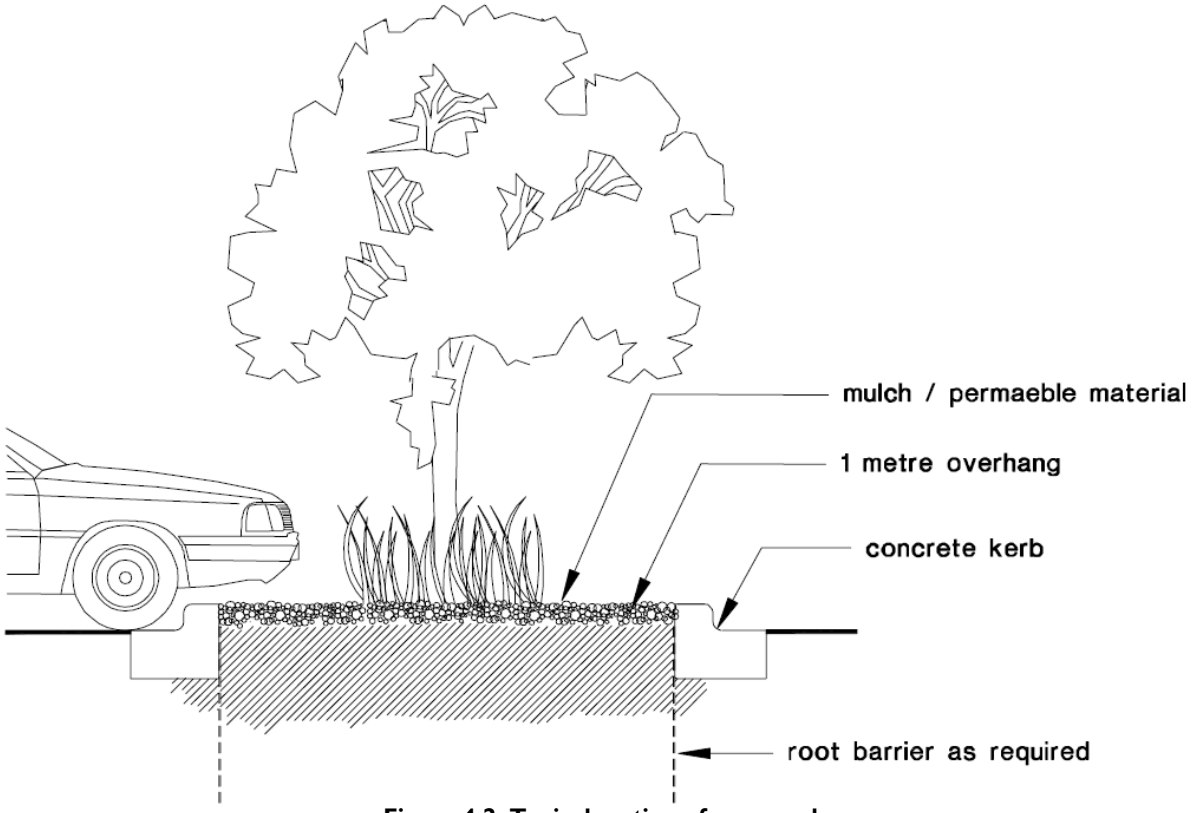


Figure 4-2: Typical section of a car park

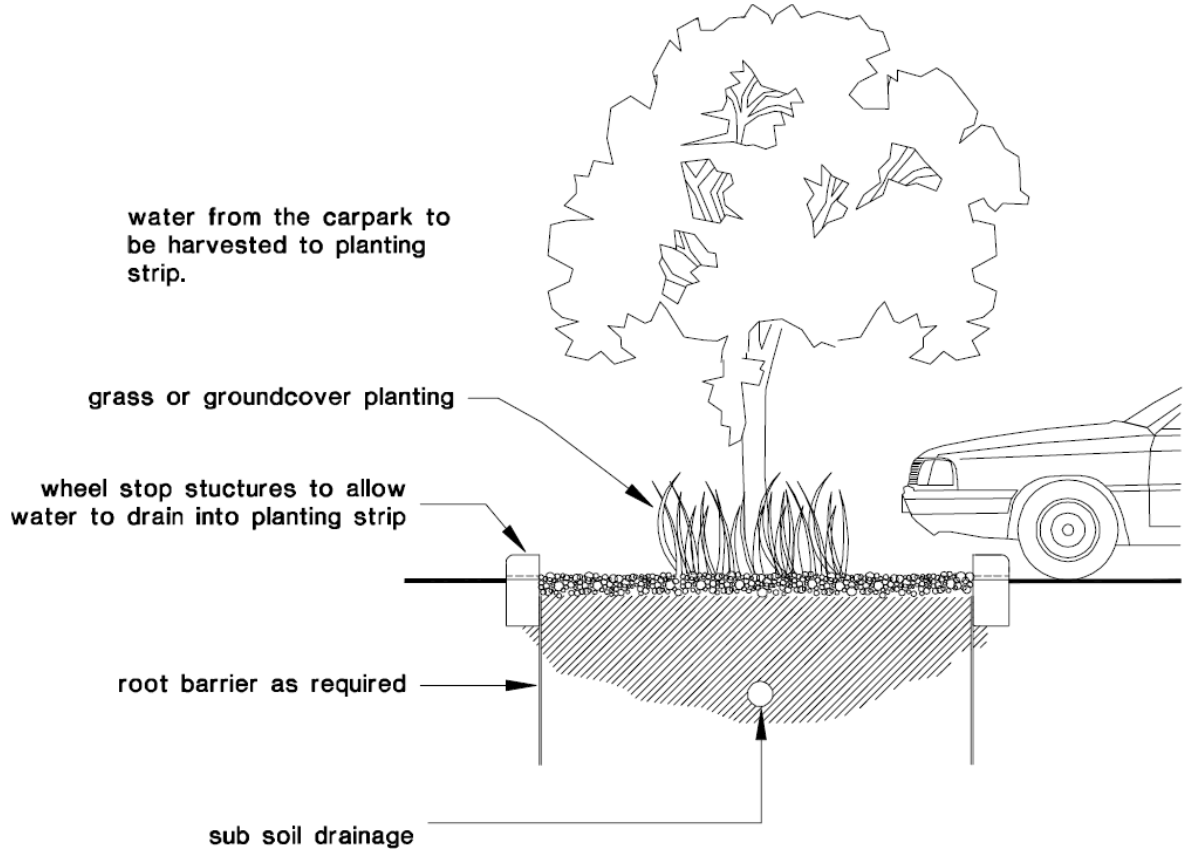


Figure 4-3: Typical section of car park incorporating water harvester

5 TREES IN CAR PARKS

Trees often perform poorly when planted in areas with hard surfaces, suffering stress from a poor growing medium, and lack of water and air. When trees do grow well there is often conflict due to roots damaging the surface. Providing more space and growing a medium around the tree should reduce these problems.

Adequate air and water in the tree root zone can also be provided for in the design. For example, designing continuous islands between bays for mass planting, including an area of porous paving for a least 1 metre on all sides of the tree and a suitable growing medium to allow for air and water movement to the root zone and drainage away.

Structural soils allow water permeability and aeration to roots where in normal situations become impacted from pavement construction. Structural soil is made up of a load bearing stone lattice to support the pavement and soil. The voids between the lattice allows for air, water and root penetration. Soil partially fills these voids and is specified for its nutrient and water holding capacity. Plant functional requirements are: vigorous growth, longevity, minimal maintenance and ample shade. For plant selection see Design Standard 23 Plant Species for Urban Landscape Projects.

The design and location of underground services needs to be carefully co-ordinated with planting designs to ensure that services are not located within 2 metres of trees. See Design Standard 23 Plant Species for Urban Projects for recommended distances between particular tree species and footpaths and kerbs.

In the cases where small islands or strips less than 2.5 metres in width are used then protective kerbs, barriers or bollards must be used to protect areas that are subject to car overhang.

Trees that drop nuisance litter such as fruit, bark and sap or are likely to drop branches are not suitable for carparks.

In pedestrian areas, branches need to be pruned to 2000mm from ground level to ensure safe and easy access.

Where existing trees will be in paved areas, a minimum 2 metre diameter area of aggregate under a tree grate or other porous surface should be left to provide aeration and for fertilizing and watering.

6 MAINTENANCE

The design of public car parks and associated landscape should aim to achieve minimum maintenance. The following points need particular attention.

- Signs, posts and barriers need to be carefully located and designed to ensure that minimal landscape maintenance is necessary.
- Areas proposed for mowable grass should not be steeper than 1:4.
- Granite gravel should not be used near entrances to buildings or on slopes greater than 1:30.
- The 1 metre car overhang areas should be surfaced with either compacted stabilised decomposed granite, concrete, no fines concrete, bituminous concrete or another hard or porous surface treatment as appropriate.
- Mulches should only to be used on slopes where the mulch will be stable.
- Dry grass areas adjacent to the car park should be protected from vehicles.

7 REFERENCES

ACT Department of Urban Services 2000, *ACT crime prevention & urban design resource manual*, ACT Government, Canberra, ACT.

ACT Department of Urban Services 2000, *ACT parking and vehicular access guidelines*, ACT Government, Canberra, ACT.

ACT Government 2012, Trunk road infrastructure standards, ACT Government, Canberra, ACT.

ACT Government 2012, Trunk road infrastructure technical specifications, ACT Government, Canberra, ACT.

Martin, E, Marcar, C, Mountain, M, Conroy, S 2004, *Civic accessibility study volume 3: Access guidelines,* ACT Government, Canberra, ACT.

Standards Australia 2009, AS2890: *Parking facilities*, Standards Australia, Sydney, NSW.

Standards Australia 2010, AS1428: *Design for access and mobility*, Standards Australia, Sydney, NSW.