AS 1742.3:2019

Manual of uniform traffic control devices

Part 3: Traffic control for works on roads

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Manual of uniform traffic control devices

Part 3: Traffic control for works on roads

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Preface

This Standard was prepared by the Standards Australia Committee MS-012, Road Signs and Traffic Signals, to supersede AS 1742.3—2009. It was prepared with major contributions from a working group comprising committee members from road agencies, work safety authorities and road working organizations.

The objective of this Standard, together with the Austroads *Guide to Temporary Traffic Management* is to provide organizations and individuals carrying out such works with a set of uniform practices for the signing, delineation and use of devices for works on roads which will promote the safety of workers and the safe and efficient movement of road users at the work site.

This Standard is one in a series of 14 Standards which together form the *Manual of uniform traffic control devices*. The series comprises the following Standards:

AS 1742.1, *Manual of uniform traffic control devices, Part 1: General introduction and index of signs*

AS 1742.2, *Manual of uniform traffic control devices, Part 2: Traffic control devices for general use*

AS 1742.3, *Manual of uniform traffic control devices, Part 3: Traffic control for works on roads* (this Standard)

AS 1742.4, *Manual of uniform traffic control devices, Part 4: Speed controls*

AS 1742.5, *Manual of uniform traffic control devices, Part 5: Street name and community facility name signs*

AS 1742.6, *Manual of uniform traffic control devices, Part 6: Tourist and service signs*

AS 1742.7, *Manual of uniform traffic control devices, Part 7: Railway crossings*

AS 1742.9, *Manual of uniform traffic control devices, Part 9: Bicycle facilities*

AS 1742.10, *Manual of uniform traffic control devices, Part 10: Pedestrian control and protection*

AS 1742.11, *Manual of uniform traffic control devices, Part 11: Parking controls*

AS 1742.12, *Manual of uniform traffic control devices, Part 12: Bus, transit, tram and truck lanes*

AS 1742.13, *Manual of uniform traffic control devices, Part 13: Local area traffic management*

AS 1742.14, *Manual of uniform traffic control devices, Part 14: Traffic signals*

AS 1742.15, *Manual of uniform traffic control devices, Part 15: Direction signs, information signs and route numbering*

This edition of the Standard includes substantial variations to the previous (2009) edition. The more significant of these are as follows:

(a) A complete restructure of the Standard to concentrate on the essential and regulatory traffic control requirements to safely and effectively carry out works on roads.

(b) Removal of a large amount of the guideline information that appeared in the previous (2009) edition, in recognition that this information has now been enhanced and included in the Austroads *Guide to Temporary Traffic Management.*

(c) Alteration of information on temporary speed limits, traffic controllers and traffic signals in recognition that the controls place mandatory requirements on road workers and road users, and the inclusion of information relating to vulnerable pedestrians and cyclists.

(d) Changes to the former Section 3 (Description and use of signs and devices) which is in Section 4 (Function, description and use of standard signs and devices) of this edition, including the

addition of an alternative series of "multi-message" signs, which comprise a maximum of three logically related messages in a single display.

(e) Clarification of the terms "traffic management plan" and "traffic guidance scheme".

The relationship between Australian Standards and publications produced by Austroads should be noted. The former provide specifications and procedures that ensure that products and services are safe and reliable, and consistently perform the way they are intended. Austroads provides guidance documents that deal with the design, construction maintenance and operation of the road network. Austroads documents are also used by road authorities in New Zealand.

In cases of similar subject matter, this is dealt with across both sets of documents. Where this occurs, each document aims to provide information that is consistent, complimentary and supportive of the other.

The terms "normative" and "informative" are used in Standards to define the application of the appendices to which they apply. A "normative" appendix is an integral part of a Standard, whereas an "informative" appendix is only for information and guidance.

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Section 1 Scope and general

1.1 Scope

This Standard specifies the principles relating to the devices for the control of traffic for works on roads. It specifies the traffic control measures and devices to be used to warn, instruct and guide road users in the safe negotiation of work sites on roads including unsealed roads and footpaths. The principles may also be appropriate for work on shared paths and bicycle paths. It is applicable to traffic guidance schemes for road and bridge construction and maintenance sites, works associated with other public utilities and services, or any other activities which cause interference or obstruction to the normal use of a road or path by any road user.

NOTE 1 Detailed specifications for the design and manufacture of the standard signs in this Standard are given in AS 1743. At the time of the publication of this Standard, AS 1743 does not yet cover multi-message signs.

NOTE 2 This Standard is intended for use in conjunction with the relevant Austroads guidelines, including the Austroads *Guide to Temporary Traffic Management* and various Commonwealth, state and territory requirements relating to safe work and works on roads.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents for informative purposes are listed in the Bibliography.

AS 1428.1, *Design for access and mobility Part 1: General requirements for access—New building work*

AS 1742.2, *Manual of uniform traffic control devices, Part 2: Traffic control devices for general use*

AS 1742.4, *Manual of uniform traffic control devices, Part 4: Speed controls*

AS 1742.14, *Manual of uniform traffic control devices, Part 14: Traffic signals*

AS 1743, *Road signs—Specifications*

AS 1744, *Standard alphabets for road signs*

AS 1906.3, *Retroreflective materials and devices for road traffic control purposes, Part 3: Raised pavement markers (retroreflective and non-retroreflective)*

AS 2187.2, *Explosives—Storage and use, Part 2: Use of explosives*

AS 4852.1, *Variable message signs, Part 1: Fixed signs*

AS 4852.2, *Variable message signs, Part 2: Portable signs*

AS/NZS 1906.1, *Retroreflective materials and devices for road traffic control purposes, Part 1: Retroreflective sheeting*

AS/NZS 1906.2, *Retroreflective materials and devices for road traffic control purposes, Part 2: Retroreflective devices (non-pavement application)*

AS/NZS 3845.2, *Road safety barrier systems, Part 2: Road safety devices*

AS/NZS 4192, *Illuminated flashing arrow signs*

AS/NZS 4602, *High visibility safety garments*

Austroads, AP-C87-15, *Glossary of Terms*

Austroads, *Guide to Temporary Traffic Management*

1.3 Terms and definitions

For the purpose of this Standard, the terms and definitions in Austroads *Glossary of Terms* (AP-C87-15) and those below apply.

1.3.1
built-up area
roadside development comprising property accesses at spacings averaging less than 100 m over distances of at least 500 m or where street lights are provided and are not more than 100 m apart

1.3.2
competent person
person who has, through a combination of training, qualification and experience, acquired knowledge and skills enabling that person to correctly perform a specified task

Note 1 to entry: Competency requirements have been defined by Austroads *Guide to Temporary Traffic Management*.

1.3.3
frequently changing work area
where the area that work activities are carried out in is variable

Note 1 to entry: Examples include where minor maintenance is carried out along a pavement or shoulder, and longitudinal survey work and road furniture maintenance at successive closely spaced locations.

Note 2 to entry: Guidelines for frequently changing work areas are given in the Austroads *Guide to Temporary Traffic Management*.

1.3.4
long-term
where a traffic guidance scheme is required to operate both day and night and may be left unattended

1.3.5
may
indicates the existence of an option

1.3.6
multilane
two or more running lanes in one direction

1.3.7
open road area
roadside development less frequent than that specified for a built-up area (1.3.1)

1.3.8
road safety barrier system
physical barrier separating the work area and the travelled path, designed to resist penetration by an out-of-control vehicle and as far as reasonably practicable, to redirect out of control vehicles back into the travelled path

1.3.9
road user
any driver, rider, passenger or pedestrian, including people with disabilities, using the road

1.3.10
road worker
any person who works on a roadway, including the traffic management personnel

1.3.11
roadway
that portion of the road devoted particularly to the use of vehicles, inclusive of shoulders and auxiliary lanes

Note 1 to entry: This definition does not match any definition in the Australian Road Rules. Furthermore, the term "road" is used in this Standard in its common, all-embracing sense as defined in dictionaries and not as more narrowly defined in the Australian Road Rules.

1.3.12
running lane
portion of the roadway allotted for a single line of moving vehicles

1.3.13
shall
indicates that a statement is mandatory

1.3.14
should
indicates a recommendation

1.3.15
short-term
where a traffic guidance scheme is required only while work personnel are in attendance. The duration is generally limited to a single work shift or lesser period where road conditions are returned to normal when the shift or lesser period ends

1.3.16
speed of traffic
traffic speed
estimate of the speed of the majority of vehicles in the stream if considered to be significantly different from the speed limit (see Note 2), either above or below, or the speed limit applying at a location

Note 1 to entry: This estimate can be made by travelling in the stream when there is a sufficient volume of traffic to match and observe the speed of the majority of vehicles. Occasional vehicles clearly travelling faster than the majority are ignored.

If the 85th percentile speed measured in accordance with AS 1742.2 is known at the location, this should be used in lieu.

Note 2 to entry: A variation from the speed limit of ±10 km/h or more is considered significant.

1.3.17
traffic
all vehicles or persons travelling on a road unless the context indicates otherwise

1.3.18
traffic control device
sign, delineation device or any other device that provides essential information to warn, instruct and guide road users around, through or past work sites

1.3.19
traffic controller
competent person whose duty it is to control traffic at a work site

1.3.20
two-way roadway
roadway having running lanes allotted for use by traffic in opposing directions without either physical separation or a painted median between them

1.3.21
travelled path
that part of the roadway which is made available to vehicles, including bicycles and which may consist of one or more running lanes

1.3.22
work area
specific area where work is being done

1.3.23
work site
area which includes the work area(s) and any additional length of road required for advance signing, tapers, side-tracks or other areas needed for associated purposes

1.4 Responsibility for safety at work sites

Organizations and individuals responsible for works in accordance with this Standard need to be cognizant of their responsibilities for any injury to road users or damage to property as a result of such operations. There is an equally important obligation to provide a safe workplace environment that eliminates, as far as is reasonably practicable, the likelihood of injury to workers by traffic within or adjacent to the work area. Principals and contractors need to be aware of the appropriate Commonwealth and state or territory safe work requirements and implement them as they apply to this obligation.

Steps shall be taken to eliminate, shield or delineate the hazards which may pose a risk to road users. Care should also be taken to avoid, wherever possible, long delays or detours which may cause unnecessary inconvenience to road users.

The designer of a traffic management plan has a duty of care to ensure the scheme is suitable for the operating environment.

Supervisory personnel carrying out construction, maintenance or other works that require the management of traffic have a duty of care to implement the traffic management plan. The traffic management plan shall —

(a) provide, as far as is reasonably practicable, a safe workplace for personnel and plant under their control, and safe travelling conditions for road users;

(b) ensure that personnel under their control are at all times courteous to road users;

NOTE Personnel should not allow themselves to become distracted by provocation from members of the public.

(c) ensure that all personnel at a work site are aware of their responsibilities and that traffic controllers are appropriately trained and informed of their duties; and

(d) operate, as far as is reasonably practicable, in accordance with the provisions of this Standard.

Any decision to vary or not follow a requirement or recommendation shall be based on sound traffic management judgement by a competent person and be documented.

Section 2 Traffic management plans

2.1 General

A traffic management plan provides the means of planning and implementing a road work operation that will ensure as far as is reasonably practicable —

(a) the safety of the road workers;

(b) road users in particular vulnerable road users (e.g. pedestrians, people with disabilities, cyclists and motorcyclists) are safely and efficiently guided around, through or past a road work site; and

(c) the performance of the road network is not unduly impacted and, the disruption and inconvenience to all road users are minimized for the duration of the works.

Traffic management plans shall be prepared by a competent person.

2.2 Preparation of traffic management plans

Generally, each road work site is unique, requiring an individual traffic management plan. Furthermore, additional road work activities for major long term works may require additional traffic management plans to be prepared during the progress of the work.

Consideration shall be given to the operation of the work site, no matter how brief the occupation of the site may be.

In preparing a traffic management plan, the following elements shall be addressed:

(a) Identify the issues, hazards and risks using the appropriate risk assessment methods relating to road workers, road users and the road environment at the work site.

(b) Determine the options to control the risks.

(c) Document all aspects of the plan.

(d) Approval(s) from the relevant authorities.

(e) Appropriate traffic guidance scheme(s).

(f) Management of community expectations, including stakeholder consultation.

(g) Implementation process.

(h) Monitoring, maintaining, improving and keeping of records.

(i) Traffic control devices removal process.

(j) Review and evaluation process.

Further detailed information relating to traffic management plans is given in the Austroads *Guide to Temporary Traffic Management*.

NOTE Consideration should also be given to the need for a road safety audit of the traffic management plan by an independent road safety auditor familiar with the requirements of this Standard and the Austroads *Guide to Temporary Traffic Management*.

Section 3 Traffic guidance scheme

3.1 General

A traffic guidance scheme typically describes the arrangement of signs and devices to warn, instruct and safely guide road users around, through or past a works site or temporary hazard. It usually includes one or more drawings or procedures for how, where and when to install the signs and devices.

A traffic guidance scheme forms part of a traffic management plan. They are site specific or site suitable, and mitigate and treat the risks identified in the Traffic Management Plan.

Traffic guidance schemes shall be prepared and implemented by competent persons.

3.2 Preparation of traffic guidance schemes

A traffic guidance scheme shall cover all aspects of the design, implementation, operation, record keeping and removal.

The following elements apply to the preparation of a traffic guidance scheme design:

(a) Selection of appropriate level of control in accordance with the requirements of the traffic management plan.

(b) Signs and devices shall be appropriate to the conditions at the work site.

(c) Signs and devices shall be clear and consistent so that they can be readily understood and followed by road users.

(d) Any adjacent planned work sites are identified and the traffic guidance schemes shall be coordinated.

(e) Signs and devices shall be used in accordance with this Standard, and the Austroads *Guide to Temporary Traffic Management* unless a risk assessment by a competent person indicates that an alternative arrangement is satisfactory. State or territory juristictional requirements may also apply.

3.3 Implementation of traffic guidance schemes

The following elements apply to the implementation of a traffic guidance scheme:

(a) On-site risk assessment shall be carried out to ensure the appropriateness of the traffic guidance scheme with the road environment.

(b) Signs and devices shall be erected and displayed in a defined order before work commences at a work site.

(c) A routine of monitoring and maintaining the signs and delineation arrangements of the scheme, including the keeping of records, shall be undertaken by a competent person, to ensure the safe and efficient operation of the implemented traffic guidance scheme. Records shall also be kept of any incident.

(d) Signs and devices shall be removed in a defined order from a work site when no longer applicable or required. However, appropriate signs shall remain in place until all work (including loose stone removal and line marking following bituminous surfacing) has been completed.

(e) Where works require the relocation of regulatory traffic control items, they shall be relocated or reinstalled promptly in positions where they are visible and can perform their regulatory function.

Detailed guidance regarding the preparation of traffic guidance schemes is given in the Austroads *Guide to Temporary Traffic Management*.

3.4 Creating a temporary speed zone

3.4.1 General

All stakeholders, including road authorities, road infrastructure managers, road working organizations, road workers and road users have a responsibility to ensure traffic travels at safe speeds through work sites.

Temporary speed zones may be required for workplace safety or for the safety of road users. Temporary speed zones shall be appropriate for the work site. These shall be created by using regulatory speed limit signs and may require additional traffic control devices so that the speed limit is complied with. Further guidance regarding managing speeds at work sites is given in the Austroads *Guide to Temporary Traffic Management*.

3.4.2 Requirements and recommendations

Requirements and recommendations for the use of temporary speed zones at works on roads are as follows:

(a) *Workplace safety* — Appropriate action to reduce the speed of traffic (see Clause 1.3.16) at a work site to either 80 km/h, 60 km/h, 40 km/h or less to meet certain specified safe workplace requirements, which includes the protection of traffic controllers, is a requirement of this Standard.

Temporary speed zone signs used for workplace safety shall be displayed only when workers, plant or traffic controllers are on site. At long-term works the signs shall be removed or covered at other times unless they are deemed necessary for traffic safety purposes.

(b) *Traffic safety* — In the application of temporary speed zones for traffic safety purposes at road work sites, this Standard provides guidance only. However, where a decision has been made to create a temporary speed zone, requirements may be specified for its implementation. Workplace safety requirements [see Item (a)] shall take precedence over traffic safety guidelines wherever the former requires a lower speed limit to be imposed.

A guide to the selection of temporary speed zones is given in the Austroads *Guide to Temporary Traffic Management*.

3.4.3 Duration

The temporary speed zone shall apply only while the relevant conditions exist. It shall be removed after the need for its imposition passes. This requirement applies to either of the purposes in Clause 3.4.2 for which the speed zone is used.

A record shall be kept of the dates and times temporary speed zones are in operation including any changes made, with the names of personnel erecting, changing or removing signs.

3.4.4 Advance warning of temporary speed zones (buffer zones)

Advance warning is required if the speed of traffic (see Clause 1.3.16) on the approach to the temporary speed zone is more than 30 km/h higher than the temporary limit. If road conditions restrict the speed of traffic to a value below the speed limit on the approach, the lower speed shall be used to determine the need for advance warning.

Advance warning shall be provided by means of a buffer zone comprising either —

(a) the Speed Limit AHEAD (G9-79 or GM9-79) (see Clause 4.7.6) sign; or

(b) a speed zone of intermediate value (e.g. 80 km/h where the reduction is from 100 km/h to 60 km/h).

A speed limit reduction of 60 km/h or more should be effected in two steps. The steps may comprise either two successive speed zone steps in accordance with Item (b), or a speed zone step and a step using the Speed Limit AHEAD sign in accordance with Item (a).

NOTE A change from 100 km/h to 40 km/h may comprise an 80 km/h buffer zone within which is placed a 40 km/h AHEAD sign.

3.4.5 Temporary speed zone

A temporary speed zone shall have a start of zone Speed Restriction sign and a sign to return to the posted speed limit. See Clause 4.7.6.

Repeater Speed Restriction signs may be required for situations such as for long lengths of temporary speed zone. Further details are provided in Austroads *Guide to Temporary Traffic Management*.

3.4.6 Temporary offset speed zones

Offset speed zones are speed zones on a particular length of road that have different speed limits for each direction of travel.

Offset speed zones may present risks at particular work sites; these risks shall be identified and mitigated at the traffic management planning stage.

A guide to the use of temporary offset speed zones is given in the Austroads *Guide to Temporary Traffic Management*.

Section 4 Function, description and use of standard signs and devices

4.1 Functions of devices

The functions of the various traffic control devices are as follows:

(a) To warn, instruct and guide road users, e.g. signs, barriers, channelizing devices and temporary ramps.

(b) To draw attention to the work area, personnel and equipment.

(c) To regulate vehicle movements and to control the speed or the passage of traffic within and adjacent to the work area, e.g. signals, boom barriers, stop/slow bat, speed limit signs and other regulatory devices.

(d) To manage drivers' behaviour and vehicle speed, e.g. Variable Message Signs, speed humps, rumble strips, chicanes and reduced lane widths.

(e) To indicate the direction and width of the available travelled path, e.g. delineators.

(f) To discourage access to the whole or portion of the work area, e.g. barrier boards and mesh fence.

(g) To provide physical protection for the work area and its occupants, e.g. safety barriers.

More detailed guidelines, including examples of the layout of signs and devices are given in the Austroads *Guide to Temporary Traffic Management*.

4.2 Selection and use

4.2.1 General

This Standard specifies the signs and devices required —

(a) to provide advance warning;

(b) to instruct and guide road users around, through or past the work area; and

(c) to minimize the possibility of confusion and misinterpretation of the intended instructions.

Signs and devices shall allow adequate time for correct response under the anticipated worst conditions. All approaches to the work area, including any side roads, shall be provided for.

Approval for erection or removal of certain regulatory traffic control devices may need to be obtained from the appropriate authority.

Signs specified in this Standard shall be used. However, there will be instances where there is no suitable standard sign. In such cases, the sign developed shall conform to the format requirements specified in Clause 4.4.

Emerging technologies in development of electronic variable message signs (See Clause 4.22) are providing alternative methods of displaying standard signs and are providing further opportunities to display more information to road users beyond that covered in this Standard. The use of such signs should be considered within the risk assessment planning stage (see Clause 2.2). The signs shall be in accordance with AS 4852.2.

Determination of letter sizes for signs shall be in accordance with AS 1743.

Prior to the use of any sign or device not specified in this Standard, approval shall be obtained from the relevant state or territory authority.

4.2.2 Multi-message signs

Multi-message signs offer an alternative sign display to that of standard signs in the Temporary (T Series), Regulatory (R Series), Warning (W Series) and Traffic Instruction (G Series) which are displayed singularly or sometimes as two signs with related messages. Multi-message signs, designated within the TM, RM, WM and GM Series, allow for the display of up to three logically related messages within a single uniform modular frame (see Clause 4.5.2).

Additional multi-message sign panels in common use for which there are no standard sign alternatives may be selected from Appendix A.

Further multi-message sign panels may be developed by state and territory authorities. Where this occurs, the sign specifications, conditions of use and permissible panel combinations should be consistently applied across all jurisdictions.

The conditions of use for multi-message signs are as follows, except when used to control pedestrians only:

(a) Multi-message sign shall have relevant messages consisting a minimum of —

  (i) two 600 mm × 600 mm panels; or

  (ii) one 600 mm × 600 mm panel and one 1200 mm × 300 mm panel; or

  (iii) one 1200 mm × 600 mm panel.

(b) There shall be no more than one regulatory sign panel in the same multi-message sign frame displayed facing the direction of traffic.

(c) When used, regulatory sign panels shall be placed in the top position of the frame on the side closest to the traffic.

(d) For multi-message signs facing traffic, within one frame, there should be no more than two message panels consisting of words only. If the 1200 mm × 600 mm space is filled with two separate 600 mm × 600 mm message panels, at least one of the 600 mm × 600 mm panels should be symbolic or a blank retroreflective yellow panel.

(e) A blank retroreflective yellow panel shall be placed within any unused module of the frame so that all panels in the frame are filled.

(f) Multi-message sign panels (TM, RM, WM, GM Series) shall only be used in multi-message frames.

Further information regarding the multi-message signs and examples are provided in this Section, Appendices A and B, and the Austroads *Guide to Temporary Traffic Management*.

4.2.3 Delineation

The travelled path on the approaches and past the work area shall be delineated so as to properly define which part of the roadway is available to road users, or the path that traffic is required to follow, under all reasonably expected weather and atmospheric conditions, day or night, as applicable.

Safety barriers alone shall not be used as delineating devices.

4.2.4 Night conditions

Signs shall be illuminated if outside the headlight beams, see Clause 4.3.1. Delineating devices shall comprise or incorporate retroreflectors. Flashing lamps may be used to draw attention to certain advance signs.

Flashing lamps may also be used for delineation purposes if connected electronically to provide a pathway of sequentially flashing lamps (see Clause 4.13).

Pavement markings through the work site shall be retroreflective. This may be achieved by means such as reflectorizing paint using surface applied glass beads, temporary tapes, retroreflective preformed materials or raised retroreflective pavement markers.

Hazards or barriers may require illuminating to make them more conspicuous. Care should be taken that illumination does not cause disabling glare for approaching drivers. Illumination should not be provided by use of vehicle headlights.

Further requirements for the use of devices used for delineation are given in Clause 4.11.2.

4.2.5 Adjustment to existing devices

Any signs and traffic control devices, including regulatory, warning, guide signs and pavement marking, which are inappropriate to, or conflict with the temporary work site situation shall be covered, obliterated or removed (see Clause 4.2.6). This shall be indicated in the traffic guidance scheme.

For certain regulatory traffic control devices, prior approval may need to be obtained from the appropriate authority. Reference should be made to the appropriate state or territory authority.

Where works require the relocation of regulatory traffic control devices, they shall be relocated or reinstated promptly in positions where they are visible and can perform their regulatory function. Record of any changes shall be made [see Clause 3.3(c)].

4.2.6 Covering of signs and devices

Where signs or devices need to be covered, it shall be done using opaque materials. Open weave materials such as hessian are not suitable as the retroreflective performance of the sign is not sufficiently inhibited when viewed at night using vehicle headlights. Covering signs with black or dark coloured plastic materials can result in excessive temperature and moisture cycling which may damage the sign. Best results are obtained by using a dense fabric that allows entrapped moisture, e.g. condensation, to dissipate in a natural manner.

Covered signs should be inspected at night to ensure that they are not visible, and hence, do not provide conflicting messages to drivers. When signs are only partially covered, care should be taken to ensure that adhesive tapes are not applied directly to the reflective sign face as damage to the sign face could result from adhesive ageing.

Signs should be checked also in unusual weather conditions including high winds for loss or disturbance of the covering.

4.2.7 Safety barriers

Safety barriers should be provided for the following situations:

(a) When workers are working on roads that have high traffic volumes or are exposed to high speed traffic.

(b) Inadequate safe clearance between moving traffic and workers or plant on site.

(c) Hazardous traffic conflicts (e.g. potential head-on collisions).

(d) Collisions with hazardous fixed objects, construction works or falls into excavations close to the travelled way.

(e) Inadequate separation of temporary footpaths, shared paths or bicycle paths from vehicular traffic paths.

Requirements and recommendations for the selection, positioning and end treatment of safety barriers are given in Clause 4.12.3.

4.2.8 Vehicle size and load restrictions

Where the width, height or load-carrying capacity of the roadway or structure is to be temporarily reduced during works, the appropriate authority shall be informed in advance so that arrangements may be made to divert traffic which would exceed the temporary limitations. The authority shall also be advised when the restriction is removed so that all traffic can resume use of the roadway or structure. Possible ground clearance problems for long, low vehicles should also be made known.

Low clearance warning gauges may be required in advance of falsework structures (see Clause 4.19(e).

4.3 Installation and removal

4.3.1 Condition of devices

Individual signs, multi-message sign panels, and all other devices shall be examined before installation to ensure that they are in good condition and their performance is not impaired. The following checks are required:

(a) *Mechanical condition* — Items that are bent, broken or show surface damage shall not be used.

(b) *Cleanliness* — Items shall be free from accumulated dirt, road grime or other contamination.

(c) *Colour* — Signs and devices that have become colour faded to a point where they have lost their daylight impact shall be replaced.

(d) *Retroreflectivity* — Signs and devices required to be effective at night or in low-light conditions shall be checked for retroreflectivity as soon as possible after installation. Those whose retroreflectivity is degraded either from long use or surface damage shall be replaced. Retroreflective effectiveness can best be checked by viewing the signs by vehicle low beam headlights in dark conditions.

Functional inspections are also required (see Clause 4.3.5).

4.3.2 Positioning of devices

Signs and devices shall be positioned and erected so that they —

(a) are properly displayed and securely mounted (see Clause 4.5);

(b) are within the line of sight of the intended road user;

(c) are not and cannot be obscured from view (e.g. by vegetation or parked cars);

(d) do not obscure other devices from the line of sight of the intended road user;

(e) do not become a possible hazard to workers, pedestrians, people with disabilities (e.g. trip hazards for people with vision impairment), cyclists or vehicles;

(f) do not direct pedestrians, cyclists or vehicles into an undesirable path;

(g) do not restrict sight distance for drivers entering from side roads or streets, or private driveways; and

(h) are not installed using supports that could be a hazard if struck by a vehicle.

Fixed delineation devices (e.g. guideposts) should be placed 1 m clear of the travelled path. Other delineation devices (e.g. traffic cones and bollards) may be placed closer if necessary to assist in controlling the speed of traffic.

In open road areas and on unkerbed roads in built-up areas where signs are to be mounted on posts, they should normally be placed on the outer edge of shoulder and at least 2 m but not more than 5 m

clear of the travelled path. They should be erected 1.5 m minimum above the level of the nearest edge of the travelled path to the underside of the sign.

On kerbed roads in built-up areas where signs are mounted on posts adjacent to a footpath or where vehicle parking may occur, they should be placed a minimum of 300 mm clear distance behind the kerb and erected a minimum of 2.2 m above the level of the kerb or footpath to the underside of the sign, to reduce interference from parked vehicles. Where neither pedestrians nor parked vehicles have to be considered, e.g. on a traffic island or median, a mounting height of 1.5 m may be more appropriate.

Signs mounted on portable supports used for short-term operation (see Clause 4.5) should generally be located as follows:

(i) *In open road areas* — On the road shoulder a minimum of 1 m clear of the travelled path.

(ii) *In built-up areas* — Behind the kerb if visible to oncoming traffic and not obstructing pedestrians, otherwise on the pavement as near as practicable to the kerb without the sign becoming obscured and without obstructing moving traffic. Signs should not be located in operating bicycle lanes or in shoulders if used by cyclists.

Where an instruction sign and a road condition sign would normally be required at the same location, the former shall take precedence and the latter should be positioned at the best alternative location.

Signs shall be erected on both sides of the roadway on multilane roads. The exception would be where it is impractical to install a sign in a narrow median or on an undivided multilane road. This treatment should also be considered for curved alignments.

The visibility of a sign can be affected by deep shade, the direction of the sunlight, background conditions (including lighting) and oncoming headlights. These factors should be considered when signs and devices are erected to ensure that they can be clearly seen at all times.

4.3.3 Setting out of devices

Before work commences at a typical roadwork site, signs and devices at the approaches to and within the work area should be set out in accordance with the traffic guidance scheme.

Signs and devices that are erected before they are required shall be covered by a suitable material, see Clause 4.2.6. The cover shall be removed immediately prior to the commencement of work.

Further information regarding setting out of devices is given in the Austroads *Guide to Temporary Traffic Management*.

4.3.4 Orientation of sign

Signs shall face towards approaching traffic approximately at right angles to the line of sight from the driver to the sign.

At curved alignments, the sign should be placed approximately at right angles to the line of sight of a motorist 50 m in advance of the sign as shown in Figure 4.1.

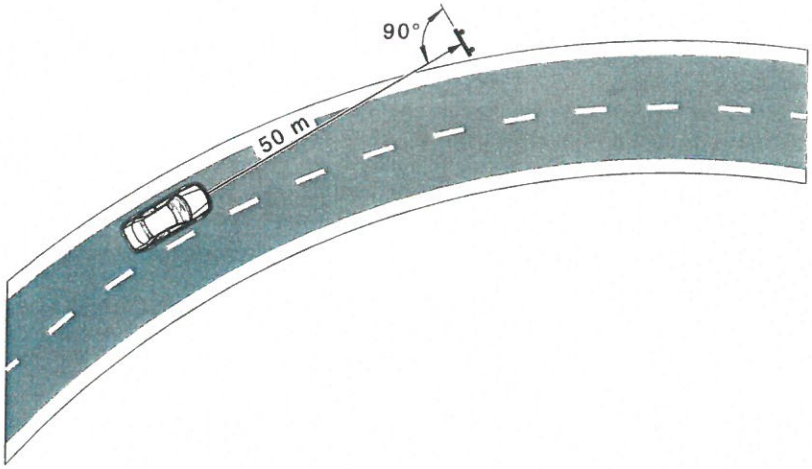


Figure 4.1 — Orientation of sign at curved alignments

4.3.5 Inspection

At a static work site, when the erection of the signs and devices is completed and the condition of devices has been checked in accordance with Clause 4.3.1, a competent person on site shall carry out a functional inspection.

The inspection should be carried out from within the traffic stream at the normal traffic speed taking into consideration all signs and devices. The same inspection should be carried out at night with low beam headlights.

A separate inspection shall be undertaken by foot or by bicycle to check paths used by pedestrians or cyclists considering all signs, delineation and accessibility for these road users. The same inspection should be carried out at night considering visibility of all signs, devices and path surface.

If the arrangement is considered confusing or unsatisfactory, any changes to the traffic guidance scheme shall be documented and approved by a competent person. A similar functional inspection shall be carried out after any change is made to the arrangement.

4.3.6 Public awareness

Depending on the complexity of the traffic guidance scheme and the length of time it is to operate, it may be necessary to erect special signs to inform the public of the traffic guidance scheme. Advice on the determination of letter sizes for special signs is given in AS 1743.

NOTE It may also be advisable to implement a publicity campaign using printed material and local media, radio, websites and social media.

4.3.7 Removal

The relevant signs and devices shall be removed or concealed from view as soon as any activity is completed or a hazard ceases to exist. When all work is complete, signs and devices should be removed as specified in the traffic guidance scheme.

4.4 Format and size of signs

4.4.1 Format of signs

The format of signs used at works on roads shall be as follows:

(a) *Signs warning of workers on foot* — These shall be rectangular or square with a black legend and border on a retroreflective fluorescent orange background. Signs warning of workers on foot shall be displayed only when there are workers on foot present at the site.

(b) *PREPARE TO STOP signs and signs associated with blasting operations* — These shall be rectangular or square with a white retroreflective legend and either a white retroreflective or black border on a red retroreflective background.

(c) *Regulatory, warning and traffic instruction signs used for roadworks purposes* — Signs in the R, W and G Series and multi-message signs in the RM, WM and GM Series are described in this Standard and in other parts of AS 1742.

(d) *Direction and other roadworks signs* — All other roadworks signs including temporary direction signs shall be rectangular or square with a black legend and border on a yellow retroreflective background.

NOTE Retroreflective fluorescent yellow may be used.

4.4.2 Retroreflective material

Retroreflective material used on signs for works on roads shall meet at least the requirement for Class 400T sheeting as specified in AS/NZS 1906.1.

4.4.3 Sign sizes in the T Series (excludes multi-message signs)

The application of the sign size designations A and B in the T Series in this Section are as follows:

(a) *A size* — Applicable to all signs in T Series. This size will be suitable for —

(i) traffic speeds up to 90 km/h where the lateral offset of the sign from the travelled path used by motor vehicles is not more than 8.0 m; or

(ii) at traffic speeds up to 110 km/h where the lateral offset of the sign from the travelled path used by motor vehicles is not more than 4.5 m; or

(iii) signs directed at pedestrians.

(b) *B size* — Applicable where an oversize sign may be required —

(i) because the recommendations in Item (a) are exceeded; or

(ii) on expressway type roads for added emphasis of the onset of works, detours or closures; or

(iii) for other critical safety messages.

NOTE B size signs should also be considered for all T1 Series signs where the A size signboard is less than 1 m^2 in area and traffic speeds exceed 70 km/h.

4.4.4 Sign panel sizes in the TM Series (for use in multi-message sign frames)

Multi-message sign frames are designed to cater for four possible sign panel sizes within the frame (see Clause 4.5.2). The application of the sign size designations A, B, C and D in the TM, RM, WM and the GM Series relates to the size of the panels within the multi-message sign frame and are as follows:

(a) *A size* — 600 mm square. This size may not be suitable for expressway type roads.

(b) *B size* — 1200 mm wide by 300 mm high. This size may not be suitable for expressway type roads.

(c) *C size* — 1200 mm wide by 600 mm high.

(d) *D size* — 600 mm wide by 900 mm high.

(e) *E size* — 600 mm wide by 300 mm high.

4.5 Sign mountings

4.5.1 General

Mountings for signs at works on roads are required to suit a variety of maintenance and construction situations.

Signs and mountings used for short-term operations or where staging of works requires their frequent relocation, should be portable, easily erected and stored. The mountings should —

(a) be quick and easy to install;

(b) provide secure sign attachment;

(c) be stable in windy conditions and from the effects of moving traffic;

(d) provide for installation on all types of road, shoulder or verge surface;

(e) have the flexibility to handle the sizes of signs involved;

(f) be easily handled, transported and stored; and

(g) not be a hazard to road users if struck in their normal upright position or after being knocked over.

Mountings for short-term operations should be arranged so that the signs are prominently displayed to traffic and will command attention. The minimum mounting height of the lower edge of the sign shall be 200 mm above the level of the nearest lane and the sign shall be horizontal.

For work of longer duration consideration should be given for mounting signs on normal (frangible) fixed supports so that they are less likely to be disturbed by the weather, vandals or traffic (see Clause 4.3.2). Other requirements regarding sign installation shall be in accordance with AS 1742.2.

Stand-alone barricade or safety barrier units shall not be used as sign supports in locations exposed to traffic.

4.5.2 Multi-message sign frame

A multi-message sign frame shall conform to the following:

(a) Be capable of securely holding either (see Figure 4.2) —

  (i) two 600 mm square panels together with one 1200 mm wide × 300 mm high panel which may be at either the bottom or at the top of the frame;

(ii) one 1200 mm wide × 600 mm high message panel, together with one 1200 mm wide × 300 mm high panel which may be at either the bottom or at the top of the frame;

(iii) two 600 mm wide × 900 mm high panels; or

(iv) one 600 mm wide × 900 mm high panel together with one 600 mm square panel and one 600 mm × 300 mm panel.

(b) Be black in colour.

(c) Be capable of displaying the sign in such a way as to ensure the message is horizontal in all environments.

(d) Conform to the requirements of Clause 4.5.1 of this Standard.

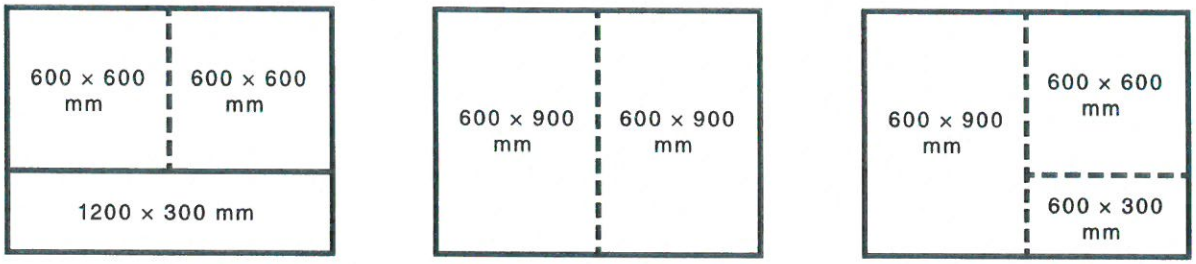


Figure 4.2 — Multi-message sign frame

4.6 Signs and devices for work site approaches and departures

4.6.1 General

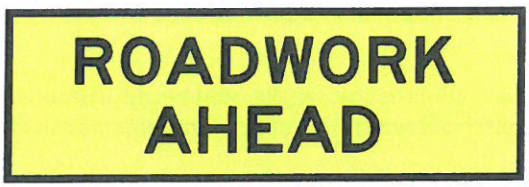
Signs used for work site approaches and departures are listed in Tables 4.1(A) to 4.1(I).

4.6.2 ROADWORK AHEAD (T1-1, TM1-1, T1-31), ROADWORK X km AHEAD (T1-16)

Table 4.1(A) — Signs for work site approaches and departures — Size table — Road work ahead, ROADWORK X km AHEAD

Sign	Sign number	Size[a], mm
ROADWORK AHEAD	T1-1A	1800 × 600
	T1-1B	2400 × 900
	TM1-1A	600 × 600
	TM1-1B	1200 × 300
	TM1-1C	1200 × 600
ROADWORK X km AHEAD	T1-16A	1800 × 600
	T1-16B	2400 × 900
ROAD WORK AHEAD (Narrow format)	T1-31	900 × 1200

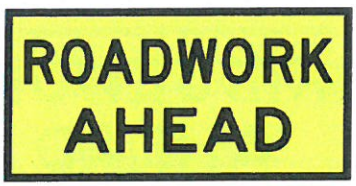
[a] Guidance on sign size selection is given in Clause 4.4.3.



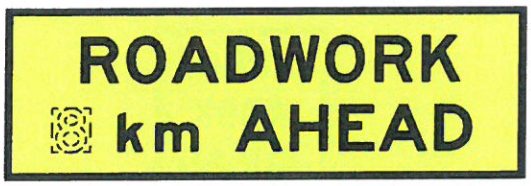
T1-1

TM1-1A

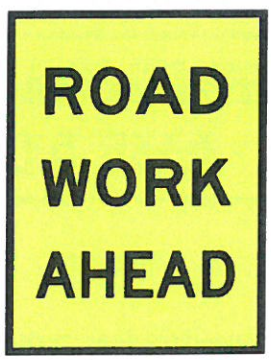
TM1-1B



TM1-1C



T1-16



T1-31

The sign ROADWORK AHEAD shall be used to give advance warning of all long-term work sites other than bridgeworks.

The sign may also be used at short-term works where additional advance warning is considered necessary. The T1-1 sign is preferred wherever space available at the site allows it to be used.

The ROADWORK X km AHEAD sign should be used X km in advance of a road work site, where additional advance warning is necessary.

Where ROADWORK AHEAD or ROADWORK X km AHEAD sign is used the END ROADWORK sign shall be used at the end of the work site (See Clause 4.6.10).

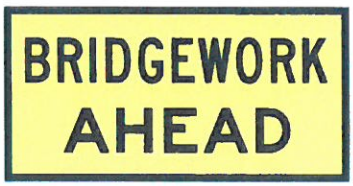
4.6.3 BRIDGEWORK AHEAD (T1-2, TM1-2), BRIDGEWORK X km AHEAD(T1-29)

Table 4.1(B) — Signs for work site approaches and departures — Size table — BRIDGEWORK AHEAD, BRIDGEWORK X km AHEAD

Sign	Sign number	Size[a], mm
BRIDGEWORK AHEAD	T1-2A	1800 × 600
	TM1-2A	600 × 600
	TM1-2C	1200 × 600
BRIDGEWORK X km AHEAD	T1-29	1800 × 600
[a] Guidance on sign size selection is given in Clause 4.4.3.		

T1-2

TM1-2A



TM1-2C

The sign BRIDGEWORK AHEAD shall be used to give advance warning of long-term works on bridges.

The sign may also be used at short-term works where additional advance warning is considered necessary.

T1-29

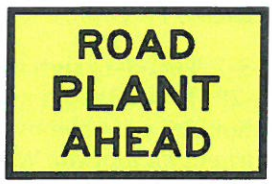
The sign BRIDGEWORK X km AHEAD shall be used on the approach to a bridgework site under the same conditions as specified for the ROADWORKS X km AHEAD (T1-16) in Clause 4.6.2.

4.6.4 ROAD PLANT AHEAD (T1-3-1, TM1-3-1, T1-3-2, TM1-3-2), GRADER AHEAD (T1-4, TM1-4)

Table 4.1(C) — Signs for work site approaches and departures — Size table — ROAD PLANT AHEAD, GRADER AHEAD

Sign	Sign number	Size[a], mm
ROAD PLANT AHEAD	T1-3-1A	900 × 600
	T1-3-2B	1800 × 600
	TM1-3-1A	600 × 600
	TM1-3-2C	1200 × 600
GRADER AHEAD	T1-4A	900 × 600
	TM1-4A	600 × 600

[a] Guidance on sign size selection is given in Clause 4.4.3.



T1-3-1

TM1-3-1A

T1-3-2

TM1-3-2C

T1-4

TM1-4A

The sign ROAD PLANT AHEAD shall be used at work sites where machinery is working on the roadway and no form of traffic control, barrier or delineation is present to separate traffic from the work area. Where a grader alone is engaged in pavement, shoulder or roadside maintenance, the alternative sign GRADER AHEAD (T1-4, TM1-4) may be used.

The smaller ROAD PLANT AHEAD (T1-3-1, TM1-3-1) sign or the GRADER AHEAD sign should be used in conjunction with the NEXT 2 km (T1-28, TM1-28) sign at a frequently changing work area involving maintenance work carried out on the shoulder or verge by a grader or other machine. At a frequently changing work area where there are workers on foot the Worker (symbolic) (T1-5, TM1-5) sign shall be used instead of these signs.

The signs should only be displayed when workers are on site and machinery is being used at various times during the works.

4.6.5 Workers (symbolic) (T1-5, TM1-5)

Table 4.1(D) — Signs for work site approaches and departures — Size table — Workers (symbolic)

Sign	Sign number	Size[a], mm
Workers (symbolic)	T1-5A	900 × 600
	T1-5B	1200 × 900
	TM1-5A	600 × 600
	TM1-5C	1200 × 600
[a] Guidance on sign size selection is given in Clause 4.4.3.		

T1-5

TM1-5A

TM1-5C

The Workers (symbolic) sign shall be used to give warning of personnel engaged in short-term or long-term works on or adjacent to the travelled path. It shall comprise a black symbol on a retroreflective fluorescent orange background.

As this sign is used to warn of the presence of personnel, it shall only be displayed when they are visible and not protected from direct conflict with traffic.

The sign NEXT X km (T1-28, TM1-28) (see Clause 4.6.8) shall be used in conjunction with this sign when it is used for frequently changing work areas in accordance with the details in the Austroads *Guide to Temporary Traffic Management*.

4.6.6 ROADWORK NEXT X km (T1-24)

Table 4.1(E) — Signs for work site approaches and departures — Size table — ROADWORK NEXT X km

Sign	Sign number	Size[a], mm
ROADWORK NEXT X km	T1-24A	1800 × 600
	T1-24B	2400 × 900

[a] Guidance on sign size selection is given in Clause 4.4.3.

T1-24

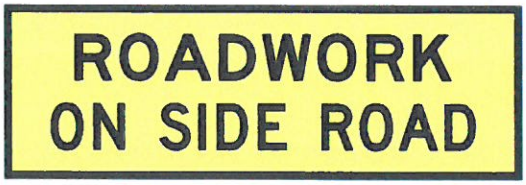
The ROADWORK NEXT X km may be used to supplement other advance signs wherever, over a distance of 2 km or more, there are a series of two or more work areas within the one work site separated such that road users may not be aware that they are still within the work site. Advance signing shall be provided in advance of each individual work area.

4.6.7 ROADWORK ON SIDE ROAD (T1-25, TM1-25), ROAD PLANT ON SIDE ROAD (T1-27, TM1-27)

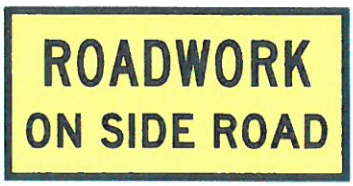
Table 4.1(F) — Signs for work site approaches and departures — Size table — ROADWORK ON SIDE ROAD, ROAD PLANT ON SIDE ROAD

Sign	Sign number	Size[a], mm
ROADWORK ON SIDE ROAD	T1-25	1800 × 600
	TM1-25C	1200 × 600
ROAD PLANT ON SIDE ROAD	T1-27	1800 × 600
	TM1-27C	

[a] Guidance on sign size selection is given in Clause 4.4.3.

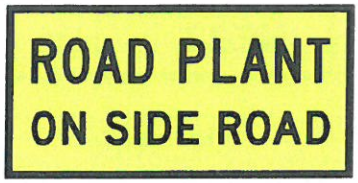


T1-25



TM1-25C

T1-27



TM1-27C

The ROADWORK ON SIDE ROAD and ROAD PLANT ON SIDE ROAD signs shall be used in advance of an intersection to warn of the relevant activities on the side road where there is insufficient distance from the through road at the intersection to the start of the works for turning traffic to be given adequate warning. A direction arrow multi-message sign (e.g. TM5-8B) may be used together with these signs.

Where works are on an intersecting road and are only in one direction from the intersection, an arrow should be used in conjunction with the primary sign (e.g. ROADWORK AHEAD) to indicate which direction.

The ROADWORK ON SIDE ROAD sign shall not be used on a side road to warn of relevant activities on the through road. The ROAD WORK AHEAD (TM1-1A) with a direction arrow (TM5-8A) should be used instead.

4.6.8 NEXT X km (T1-28, TM1-28)

Table 4.1(G) — Signs for work site approaches and departures — Size table — NEXT X km

Sign	Sign number	Size[a], mm
NEXT 2 km	T1-28A	600 × 600
	T1-28B	900 × 900
	TM1-28A	600 × 600
	TM1-28B	1200 × 300
[a] Guidance on sign size selection is given in Clause 4.4.3.		

T1-28A

TM1-28A

TM1-28B

The NEXT X km sign shall be used in conjunction with either the Worker (symbolic) (T1-5), the ROAD PLANT AHEAD (T1-3-1) or the GRADER AHEAD (T1-4) signs where they are used to warn of a frequently changing work area.

For shoulder grading and verge mowing on sealed roads in open road areas and for maintenance grading on unsealed roads the distance may be increased up to 10 km.

4.6.9 SIDE ROAD CLOSED (T1-32, TM1-32)

Table 4.1(H) — Signs for work site approaches and departures — Size table — SIDE ROAD CLOSED

Sign	Sign number	Size[a], mm
SIDE ROAD CLOSED	T1-32	1500 × 600
	TM1-32A	600 × 600
[a] Guidance on sign size selection is given in Clause 4.4.3.		

T1-32

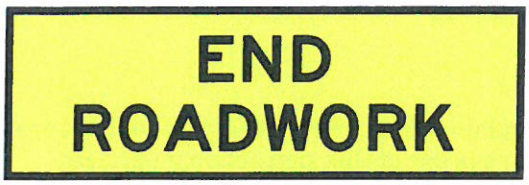
TM1-32A

The SIDE ROAD CLOSED sign shall be used in advance of an intersection where the side road is closed to all traffic.

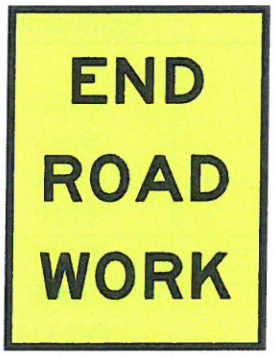
4.6.10 END ROADWORK (T2-16, T2-17, TM2-17)

Table 4.1(I) — Signs for work site approaches and departures — Size table — END ROADWORK

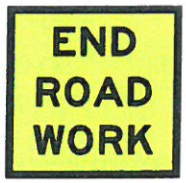
Sign	Sign number	Size[a], mm
END ROADWORK	T2-16A	1800 × 600
	T2-17A	900 × 1200
	TM2-17A	600 × 600
	TM2-17C	1200 × 600
a Guidance on sign size selection is given in Clause 4.4.3.		



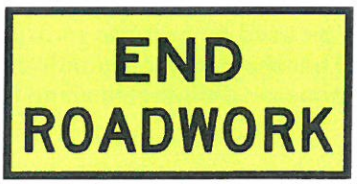
T2-16



T2-17



TM2-17A



TM2-17C

The END ROADWORK sign shall be used whenever there is a ROADWORK AHEAD or ROADWORK NEXT X km sign is used on the approach to the work site.

The END ROADWORK sign should be used at the departure end of a work site. The sign is not necessary on short-term, mobile works or where an END DETOUR sign (T2-23) is used (see Clause 4.8.2). The T2-16 sign is preferred wherever space available at the site allows it to be used.

4.7 Signs and devices for regulatory control of traffic

4.7.1 General

Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(A) for Manual Control, Table 4.2(B) for Sign Control, Single Lane Operation, Table 4.2(C) for Traffic Signal Control and Table 4.2(D) for Boom Barrier. Other regulatory signs specified in AS 1742.2 may be required if the usage specified in that Standard applies.

4.7.2 Manual control

Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(A) for manual control. See Clause 4.7.5(c) for the use of this sign at boom barriers.

Table 4.2(A) — Signs for and associated with the regulatory control of traffic — Size table — Manual control

Sign	Sign number	Size, mm (see Note)
STOP/SLOW bat:		
STOP face	R6-8A	450 dia
	R6-8B	600 dia
SLOW face	T7-1A	450 dia
	T7-1B	600 dia
PREPARE TO STOP	T1-18A	900 × 600
	T1-18B	1200 × 900
	TM1-18A	600 × 600
	TM1-18B	1200 × 300
Traffic Controller (symbolic)	T1-34A	900 × 600
	T1-34B	1200 × 900
	TM1-34A	600 × 600
STOP HERE WHEN DIRECTED	T1-35A	900 × 600
	T1-35B	1200 × 900
	TM1-35C	1200 × 600
NOTE Application of sign size designations in the T Series is given in Clause 4.4.3.		

(a) *STOP/SLOW bat (R6-8, T7-1)*

The STOP/SLOW bat shall be used by a traffic controller to control traffic at any temporary obstruction or hazard. The bat should have a handle approx. 1.8 m long to the underside of the sign. For night-time operations, an illuminated wand may be used in conjunction with the bat.

R6-8

T7-1

Instructions for traffic controllers when using a STOP/SLOW bat and the method of using the wand are given in the Austroads *Guide to Temporary Traffic Management.*

(b) *PREPARE TO STOP (T1-18, TM1-18)*

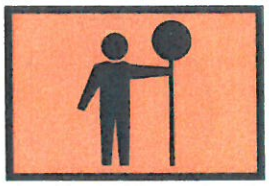
T1-18

TM1-18A

TM1-18B

The PREPARE TO STOP sign shall be used to give advance warning where traffic may be required to stop in accordance with the directions of a traffic controller. The sign shall be used in conjunction with the Traffic Controller (symbolic) (T1-34, TM1-34) in this application. See Clause 4.7.4(c) for use of this sign at temporary traffic signals.

(c) *Traffic Controller (symbolic) (T1-34, TM1-34)*



T1-34

TM1-34A

The Traffic Controller (symbolic) sign shall be used to give advance warning of the presence of a traffic controller. The PREPARE TO STOP sign shall be used in conjunction with this sign. The sign shall comprise a black symbol and border on a retroreflective fluorescent orange background.

(d) *STOP HERE WHEN DIRECTED (T1-35, TM1-35)*

T1-35

TM1-35C

This sign may be used at roadworks during traffic controller operations when vehicles are required to stop at a particular point.

4.7.3 Sign control, single lane operation

The Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(B) for Sign control, single lane operation.

Table 4.2(B) — Signs for and associated with the regulatory control of traffic — Size table — Sign control, single lane operation

Sign	Sign number	Size, mm (see Note)
GIVE WAY	R1-2A	750 ht
	R1-2B	900 ht
	RM-2A	600 × 600
GIVE WAY AHEAD	W3-2B	750 × 750
	W3-2C	900 × 900
	WM3-2A	600 × 600
NO OVERTAKING OR PASSING	R6-1A	750 × 900
	R6-1B	1200 × 1440
	RM6-1C	1200 × 600
ONE LANE	R9-9A	600 × 400
	R9-9B	750 × 500
	RM9-9A	600 × 600
NOTE Application of sign size designations in the T Series is given in Clause 4.4.3.		

(a) *GIVE WAY (R1-2),GIVE WAY AHEAD (W3-2, WM3-2), ONE LANE (R9-9)*

R1-2

W3-2

WM3-2A

R9-9

The GIVE WAY, ONE LANE sign assembly may be used to assign priority to one direction of travel past the work area when the travelled path is reduced to less than that required for two lanes of traffic. This technique is appropriate for road or bridgeworks when —

(i) the traffic volume is 150 vpd or less and the traffic speed (see Clause 1.3.16) is 70 km/h or less;

(ii) each entry to the work area is visible from the other;

(iii) the work area is less than 100 m in length; and

(iv) there is sight distance to opposing traffic of at least 200 m beyond the far end of the work area for traffic facing the GIVE WAY, ONE LANE assembly.

If advance warning of this assembly is required, the Give Way Sign Ahead sign (W3-2, WM3-2A) should be used.

(b) *NO OVERTAKING OR PASSING (R6-1, RM6-1)*

R6-1

RM6-1C

Where traffic at a single lane section is controlled by a GIVE WAY, ONE LANE sign assembly at one end in accordance with Item (a) above, the NO OVERTAKING OR PASSING sign shall be erected at the start of the single lane for traffic in the opposite direction.

4.7.4 Traffic signal control

The Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(C) for Traffic Signal Control.

Table 4.2(C) — Signs for and associated with the regulatory control of traffic — Size table — Traffic signal control

Sign	Sign number	Size, mm (see Note)
STOP HERE ON RED SIGNAL	R6-6A	450 × 750
	TM6-6C	1200 × 600
Signals Ahead (Rectangle)	T1-30	900 × 600
	TM1-30A	600 × 600
Signals Ahead (Diamond)	W3-3B	750 × 750
	W3-3C	900 × 900
NOTE Application of sign size designations in the T Series is given in Clause 4.4.3.		

(a) *STOP HERE ON RED SIGNAL (R6-6, RM6-6)*

R6-6

RM6-6C

The STOP HERE ON RED SIGNAL sign shall be used to indicate where traffic must stop when there is no stop line on the pavement.

(b) *Portable traffic signal*

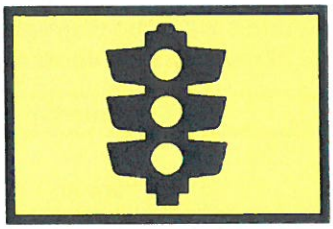
The use of portable traffic signals is controlled by state or local government authorities. Their authorization and display must be in accordance with the requirements of those authorities. Guidance regarding the use of portable traffic signals is provided in the Austroads *Guide to Temporary Traffic Management*.

(c) *Temporary fixed traffic signal*

The design and installation of a temporary fixed traffic signal shall be in accordance with the relevant requirements of AS 1742.14.

The use of temporary fixed traffic signals instead of portable signals should be considered on safety grounds. The additional signal lanterns provide a more reliable control indication to traffic.

(d) *Signals Ahead (T1-30, TM1-30) Signals Ahead (W3-3)*



T1-30

TM1-30A

W3-3

If portable or temporary fixed traffic signals are used to control traffic, the Signals Ahead sign (T1-30, TM1-30) shall be used to give advance warning. The PREPARE TO STOP (T1-18) sign shall be used in conjunction with this sign.

For long-term use with temporary fixed signals the diamond version of this sign (W3-3) should be substituted.

4.7.5 Boom Barrier

The Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(D) for Boom Barrier.

Table 4.2(D) — Signs for and associated with the regulatory control of traffic — Size table — Boom barrier

Sign	Sign number	Size, mm (see Note)
STOP/SLOW bat:		
STOP face	R6-8A	450 dia
	R6-8B	600 dia
SLOW face	T7-1A	450 dia
	T7-1B	600 dia
PREPARE TO STOP	T1-18A	900 × 600
	T1-18B	1200 × 900
	TM1-18A	600 × 600
	TM1-18B	1200 × 300
STOP HERE WHEN DIRECTED	T1-35A	900 × 600
	T1-35B	1200 × 900
	TM1-35C	1200 × 600
Boom Barrier	TM2-52A	DL to Provide
NOTE Application of sign size designations in the T Series is given in Clause 4.4.3.		

(a) *STOP sign (R6-8)*

R6-8

A STOP sign (R6-8) shall be mounted on a boom barrier for operation by a traffic controller.

(b) *PREPARE TO STOP (T1-18, TM1-18)*

T1-18

TM1-18A

TM1-18B

The PREPARE TO STOP sign shall be used to give advance warning where traffic may be required to stop in accordance with the directions of a boom barrier.

(c) *STOP HERE WHEN DIRECTED (T1-35, TM1-35)*

T1-35

TM1-35C

This sign may be used at roadworks during boom barrier operations when vehicles are required to stop at a particular point.

(d) *Boom Barrier (TM2-52A)*

TM2-52A

The Boom Barrier symbolic sign shall be used to give advance warning of the presence of a boom barrier. The PREPARE TO STOP shall be used in conjunction with this sign.

4.7.6 Temporary speed limits

The Signs commonly used for regulatory control of traffic at work sites are listed in Table 4.2(E) for Temporary speed limits.

Table 4.2(E) — Signs for and associated with the regulatory control of traffic — Size table — Temporary speed limits

Sign	Sign number	Size, mm (see Note)
Speed Restriction	R4-1A	450 × 600
	R4-1B	600 × 800
	R4-1C	900 × 1200
	R4-1D	1200 × 1600
	RM4-1A	600 × 600
ROAD WORK	R4-3A	450 × 300
	R4-3B	600 × 400
	R4-3C	900 × 600
END Speed Limit	R4-12B	600 × 800
	RM4-12D	600 × 900
Speed limit AHEAD	G9-79B	600 × 1000
	GM9-79D	600 × 900
NOTE Application of sign size designations in the T Series is given in Clause 4.4.3.		

(a) *Speed Restriction (R4-1, RM4-1)*

R4-1

RM4-1A

The Speed Restriction sign shall be used to create a temporary speed zone in accordance with the requirements and recommendations set out in Clause 3.4. It indicates the speed limit which applies between the sign and the next speed control sign ahead.

A Variable Speed Limit sign in accordance with AS 1742.4 may be used.

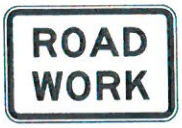
Repeater Speed Restriction signs may be erected at intermediate locations within the zone.

The end of a temporary speed zone shall be indicated by a Speed Restriction sign (R4-1) displaying the appropriate speed limit for the road continuing beyond the works or the END Speed Limit sign (R4-12) where the conditions described in Item (c) apply.

NOTE It is a legal requirement that a speed zone be terminated either by another regulatory speed control sign, or other means as specified in traffic regulations.

These signs should not be used without other appropriate warning signs, and may need to be used with the supplementary ROAD WORK sign (R4-3) [see Item (b)].

(b) *ROAD WORK (R4-3)*

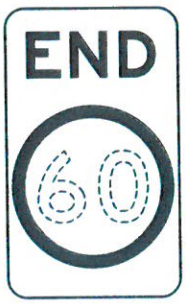


R4-3

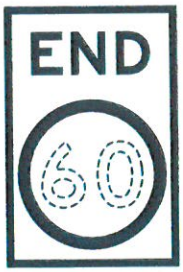
The Supplementary ROAD WORK sign is for use with Speed Restriction sign (R4-1) to indicate the start of a temporary speed zone.

The A, B and C size signs are for use with the Speed Restriction sign sizes A, B and C respectively.

(c) *END Speed Limit (R4-12, RM4-12)*



R4-12



RM4-12D

This sign should be used when displaying a returned speed limit is not suitable for the road condition beyond the work zone. This sign shall only be used where a state or territory defined default speed limit applies beyond the sign.

(d) *Speed Limit AHEAD (G9-79, GM9-79)*

G9-79

GM9-79D

This sign shall be used to provide advance warning of the start of a temporary speed zone in accordance with Clause 3.4.4.

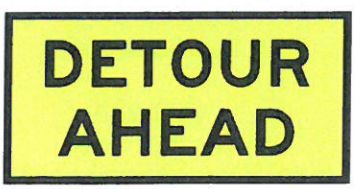
4.8 Detour signs

4.8.1 DETOUR AHEAD (T1-6, TM1-6)

Signs used for detour ahead are listed in Table 4.3(A).

Table 4.3(A) — Signs for detours — Size table — DETOUR AHEAD

Sign	Sign number	Size, mm[a]
DETOUR AHEAD	T1-6A	1200 × 600
	T1-6B	1800 × 900
	TM1-6A	600 × 600
	TM1-6B	1200 × 300
a Application of the sign size designations in the T Series is given in Clause 4.4.3.		



T1-6

TM1-6A

TM1-6B

The DETOUR AHEAD sign shall be used to give advance warning of a detour bypassing a section of the normal roadway that is not trafficable or on which work is being carried out. The detour may be either via other roads or streets, or via a side track constructed for that purpose.

4.8.2 END DETOUR (T2-23, TM2-23)

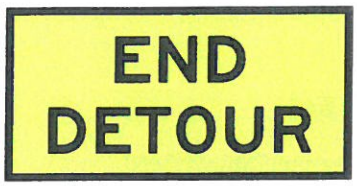
Signs used for end detour are listed in Table 4.3(B).

Table 4.3(B) — Signs for detours — Size table

Sign	Sign number	Size[a], mm
END DETOUR	T2-23	1200 × 600
	TM2-23C	1200 × 600
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		

T2-23

TM2-23A



TM2-23C

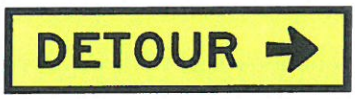
The END DETOUR sign should be used to indicate that a detour has ended wherever road users need to be advised that they have returned to their original route.

4.8.3 DETOUR (T5-1, TM5-1)

Signs used for detour are listed in Table 4.3(C).

Table 4.3(C) — Signs for detours — Size table — Detour

Sign	Sign number	Size[a], mm
DETOUR (Arrow)	T5-1A(S, L or R)	1200 × 300
	T5-1B(S, L or R)	1800 × 450
	TM5-1B	1200 × 300
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		



T5-1(R)

T5-1(L)

T5-1(S)

TM5-1B(R)

The DETOUR sign [T5-1B(S, L or R)] shall be used to indicate the direction and location for traffic to leave the normal roadway to detour via existing roads or streets or via a side track bypassing an obstruction. It will usually be necessary to use the advance sign DETOUR AHEAD (T1-6) in conjunction with this sign.

DETOUR signs [T5-1A(S, L or R)] should be used, if necessary, to reassure and guide traffic along the route of the detour.

4.8.4 Detour marker (T5-6, TM5-6A)

Signs used for detour marker are listed in Table 4.3(D).

Table 4.3(D) — Signs for detours — Size table — Detour marker

Sign	Sign number	Size[a], mm
Detour marker	T5-6	600 × 600
	TM5-6A	600 × 600
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		

T5-6

TM5-6A

The Detour marker should be used in lieu of the Detour (T5-1) sign to guide and reassure road users along the route of a detour if the Detour sign is likely to misdirect road users other than those following the detour. It is typically used in built-up areas where traffic is detoured via side streets.

The signboard shall be designed to be mounted with the arrow either vertically upwards, or to the left or right.

When this sign is used in a multi-message frame, it should be used in conjunction with the DETOUR panel (TM5-7A). (See Appendix A.)

This sign may also be used as a directional marker with another panel that is applicable to that group of road users such as cyclists or pedestrians.

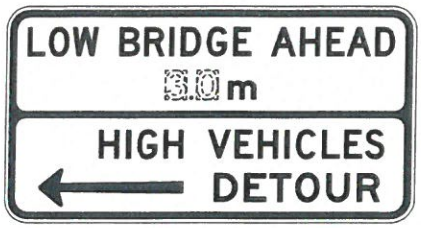
This sign shall not be used as a lane status sign.

4.8.5 LOW BRIDGE AHEAD ... m, HIGH VEHICLES DETOUR (G9-3) LOAD LIMIT ON BRIDGE ... t, HEAVY VEHICLES DETOUR (G9-4)

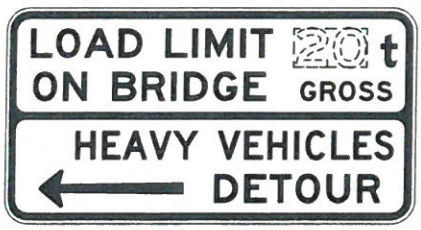
Signs used for LOW BRIDGE AHEAD ... m, HIGH VEHICLES DETOUR (G9-3) LOAD LIMIT ON BRIDGE ... t, HEAVY VEHICLES DETOUR are listed in Table 4.3(E).

Table 4.3(E) — Signs for detours — Size table — LOW BRIDGE AHEAD ... m, HIGH VEHICLES DETOUR (G9-3) LOAD LIMIT ON BRIDGE ... t, HEAVY VEHICLES DETOUR

Sign	Sign number	Size[a], mm
LOW BRIDGE AHEAD ... m, HIGH VEHICLES DETOUR	G9-3(L or R)	1700 × 900
LOAD LIMIT ... t ON BRIDGE, HEAVY VEHICLES DETOUR	G9-4(L or R)	1700 × 900
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		



G9-3(L)



G9-4(L)

The signs LOW BRIDGE AHEAD ... m, HIGH VEHICLES DETOUR and LOAD LIMIT ON BRIDGE ... t GROSS, HEAVY VEHICLES DETOUR shall be erected at locations where it is essential that high or heavy vehicles detour to avoid structures which have a low clearance or a load limitation. They should be erected in advance of the junction with the alternative route.

The alternative legend NARROW BRIDGE AHEAD ... m WIDE VEHICLES DETOUR, may be substituted on Sign No. G9-3.

4.8.6 DETOUR FOR ... VEHICLES (G9-5)

Signs used for DETOUR FOR ... VEHICLES are listed in Table 4.3(F).

Table 4.3(F) — Signs for detours — Size table — DETOUR FOR ... VEHICLES

Sign	Sign number	Size[a], mm
DETOUR FOR HIGH VEHICLES	G9-5-1(L or R)	1300 × 350
DETOUR FOR HEAVY VEHICLES	G9-5-2(L or R)	1400 × 350
a Application of the sign size designations in the T Series is given in Clause 4.4.3.		

G9-5-1(L)

G9-5-2(L)

The DETOUR FOR ... VEHICLES sign should be erected at the junction with an alternative route where certain classes of vehicle are unable to negotiate the work area. The words WIDE or LONG may be used in lieu of HIGH and HEAVY, where appropriate.

4.8.7 Two-way Traffic (W4-11, T2-24, TM2-24)

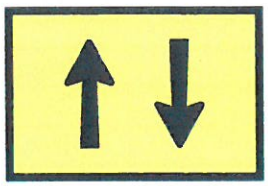
Signs used for Two-way Traffic are listed in Table 4.3(G).

Table 4.3(G) — Signs for detours — Size table — Two-way Traffic

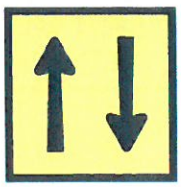
Sign	Sign number	Size[a], mm
Two-way traffic (Diamond)	W4-11B	750 × 750
	W4-11C	900 × 900
	W4-11D	1200 × 1200
Two-way traffic (Rectangular and Square)	T2-24	900 × 600
	TM2-24A	600 × 600

[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.

W4-11



T2-24



TM2-24A

The Two-way Traffic sign shall be used to warn road users that the roadway carries two-way traffic.

The signs should be erected on both sides of the road at the beginning of each section over which two-way conditions temporarily apply. A second set of signs should be located between 100 m and 400 m

after the start of the two-way section with additional sets of signs placed at intervals of approximately 1.5 km where the speed limit is greater than 70 km/h, or otherwise at 400 m intervals.

The signs should be used in the following situations:

(a) On lengths of road consisting of a series of divided sections interspersed with sections of undivided two-way roadways.

(b) Where a roadway designed and normally used for one-way traffic is temporarily being used for two-way traffic.

(c) To face traffic soon after entering from a side road in either of the conditions in Items (a) and (b).

The rectangular and multi-message frame square versions of this sign (T2-24, TM2-24) should only be used for short-term work.

Where state legislation requires, the regulatory Two-way sign (R2-11) should also be used at each end of the section of road described in Item (b) to indicate the points at which the two-way traffic regulation temporarily applies.

The largest sign (W4-11D) shall be used for the situation in Item (b).

4.8.8 All Traffic Turn (R2-14, RM2-14)

Signs used for All Traffic Turn are listed in Table 4.3(H).

Table 4.3(H) — Signs for detours — Size table — All Traffic Turn

Sign	Sign number	Size[a], mm
All Traffic Turn	R2-14B(L or R)	900 × 1200
	RM2-14A(L or R)	600 × 600
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		

R2-14(L)

R2-14(R)

RM2-14A(L)

RM2-14A(R)

The All Traffic Turn sign shall be used at situations where all approaching traffic must turn in the direction indicated by the arrow.

4.8.9 No Left Turn [R2-6(L), RM2-6(L)], No Right Turn [R-6(R), RM2-6(R)], NO ENTRY (R2-4, RM2-4)

These signs shall be used to control traffic movement at intersections within a detour.

Signs used for No Left Turn [R2-6(L), RM2-6(L)], No Right Turn [R-6(R), RM2-6(R)], NO ENTRY (R2-4, RM2-4) are listed in Table 4.3(I).

Table 4.3(I) — Signs for detours — Size table

Sign	Sign number	Size[a], mm
NO ENTRY	R2-4B	600 × 600
	R2-4C	750 × 750
	RM2-4A	600 × 600
No Left Turn	R2-6B(L)	600 × 600
	R2-6C(L)	750 × 750
	RM2-6A(L)	600 × 600
No Right Turn	R2-6B(R)	600 × 600
	R2-6C(R)	750 × 750
	RM2-6A(R)	600 × 600
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		

R2-4

RM2-4A

R2-6(L)

RM2-6A(L)

R2-6(R)

RM2-6A(R)

4.8.10 LOCAL TRAFFIC ONLY (G9-40-2, GM9-40-2)

Signs used for Local Traffic Only are listed in Table 4.3(J).

Table 4.3(J) — Signs for detours — Size table — Local Traffic Only

Sign	Sign number	Size[a], mm
LOCAL TRAFFIC ONLY	G9-40-2A	900 × 600
	G9-40-2B	1200 × 900
	GM9-40-2A	600 × 600
[a] Application of the sign size designations in the T Series is given in Clause 4.4.3.		

G9-40-2

GM9-40-2A

The LOCAL TRAFFIC ONLY sign may be used at detours where local traffic is permitted to enter the work area or a closed section of road in advance of the work area. This sign shall not be used in conjunction with any regulatory sign e.g. NO ENTRY (R2-4), NO LEFT TURN (R2-6L) or NO RIGHT TURN (R2-6R) sign.

4.9 Road condition signs

4.9.1 Slippery, (T3-3, TM3-3), SOFT EDGES (T3-6, TM3-6), ROUGH SURFACE (T3-7, TM3-7), Loose Stones (T3-9, TM3-9), GRAVEL ROAD (T3-13, TM3-13), LOOSE SURFACE (T3-14, TM3-14)

Signs used to advise road users of slippery, soft edges, rough surfaces, loose stones, gravel road and loose surfaces are listed in Table 4.4(A).

Table 4.4(A) — Road condition signs — Size table — Slippery, soft edges, rough surface, loose stones, gravel road and loose surface

Sign	Sign number	Size[a], mm
Slippery	T3-3A	900 × 600
	T3-3B	1500 × 900
	TM3-3A	600 × 600
SOFT EDGES	T3-6A	900 × 600
	T3-6B	1500 × 900
	TM3-6A	600 × 600
	TM3-6B	1200 × 300
ROUGH SURFACE	T3-7A	900 × 600
	T3-7B	1500 × 900
	TM3-7A	600 × 600
	TM3-7B	1200 × 300
Loose Stones	T3-9A	900 × 600
	T3-9B	1500 × 900
	TM3-9A	600 × 600
	TM3-9B	1200 × 300
GRAVEL ROAD	T3-13A	900 × 600
	T3-13B	1500 × 900
	TM3-13A	600 × 600
	TM3-13B	1200 × 300
LOOSE SURFACE	T3-14A	900 × 600
	T3-14B	1500 × 900
	TM3-14A	600 × 600
	TM3-14B	1200 × 300

[a] Application of sign size designations in the T Series is given in Clause 4.4.3.

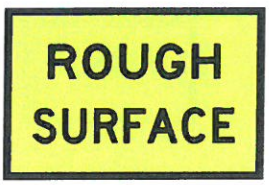
T3-3

TM3-3A

T3-6

TM3-6A

TM3-6B



T3-7

TM3-7A

TM3-7B

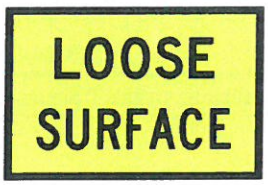
T3-9

TM3-9A

T3-13

TM3-13A

TM3-13B



T3-14

TM3-14A

TM3-14B

The Slippery, SOFT EDGES, ROUGH SURFACE, GRAVEL ROAD, Loose Stones and LOOSE SURFACE signs should be used to warn road users of conditions which render the surface of the roadway or its edges temporarily hazardous. Road condition signs placed other than at an active work area may not require the use of other advance warning signs in conjunction, provided that the normal running lanes are not obstructed. If the hazardous conditions extend over a considerable length the signs may need to be repeated at regular intervals. Advisory Speed signs (T3-16) (see Clause 4.9.2) may be required in conjunction with these signs.

The Slippery sign (T3-3) may be used to warn of a slippery condition caused by water, ice or loose material on the road surface. In the latter case, the sign LOOSE SURFACE (T3-14) should be used in conjunction with the Slippery sign.

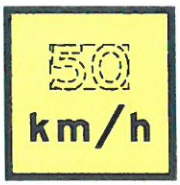
The Loose Stones sign (T3-9) shall be used for any situation where flying stones could be a hazard. It may also be used to protect the road surface against excessive loss of aggregate and to warn of the possibility of flying stones where fresh bituminous surfacing work has been carried out.

4.9.2 Advisory Speed signs (T3-16, TM6-16)

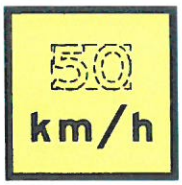
Signs used to advise road users of Advisory Speed signs are listed in Table 4.4(B).

Table 4.4(B) — Road condition signs — Size table — Advisory Speed signs

Sign	Sign number	Size[a], mm
X km/h (square)	T3-16-1A T3-16-1B TM3-16-1A	600 × 600 900 × 900
X km/h (rectangle)	T3-16-2A T3-16-2B	900 × 400 1500 × 600
a Application of sign size designations in the T Series is given in Clause 4.4.3.		



T3-16-1



TM3-16-1A

Advisory Speed signs may be used in conjunction with signs in the Road Condition Series in situations where a speed limit has not been applied for either traffic safety or workplace safety and a reduction in speed is desirable for road user comfort or protection of damaged pavement or partially completed works.

T3-16-2

If the T3-16-1 sign is used, it is designed to be placed beside the sign to which it refers. The T3-16-2 sign is designed to be placed under it.

These signs shall not be used without another sign.

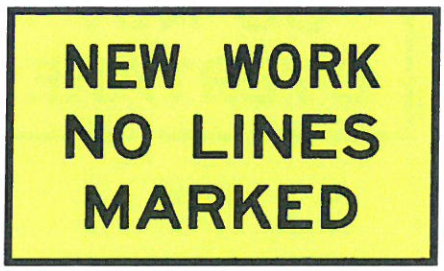
4.9.3 NEW WORK, NO LINES MARKED (T3-11, TM3-11) NO LINES DO NOT OVERTAKE UNLESS SAFE (T3-12, TM3-12) NO LINES DO NOT OVERTAKE (G9-89, GM9-89)

Signs used to advise road users of NEW WORK, NO LINES MARKED, NO LINES DO NOT OVERTAKE UNLESS SAFE, NO LINES DO NOT OVERTAKE are listed in Table 4.4(C).

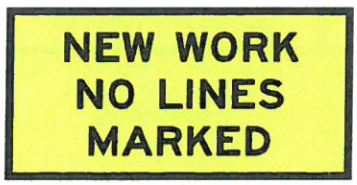
Table 4.4(C) — Road condition signs — Size table — NEW WORK, NO LINES MARKED, NO LINES DO NOT OVERTAKE UNLESS SAFE, NO LINES DO NOT OVERTAKE

Sign	Sign number	Size[a], mm
NEW WORK, NO LINES MARKED	T3-11	1500 × 900
	TM3-11C	1200 × 600
NO LINES, DO NOT OVERTAKE UNLESS SAFE	T3-12	1500 × 900
	TM3-12C	1200 × 600
NO LINES, DO NOT OVERTAKE	G9-89	1500 × 900
	GM9-89C	1200 × 600

[a] Application of sign size designations in the T Series is given in Clause 4.4.3.



T3-11



TM3-11C

These signs should be used in advance of locations where pavement markings normally required for driver guidance have been removed or have not been placed on new surfacing work.

The T3-11, TM3-11C sign should be used in locations such as intersections, multilane or one-way roadways where there is no overtaking risk from oncoming traffic.

T3-12

TM3-12C

The T3-12, TM3-12C sign should be used on lengths of road where overtaking would normally be permitted but temporary conditions require additional caution.

G9-89

GM9-89C

The G9-89, GM9-89C sign shall be used at locations where barrier lines would normally be installed and overtaking is prohibited.

4.10 Signs and devices for road and lane closures

4.10.1 Signs

Signs used to effect road and lane closures are listed in Table 4.5.

Table 4.5 — Signs for road and lane closures — Size table

Sign	Sign number	Size, mm
ROAD CLOSED	T2-4	1800 × 300
	TM2-4B	1200 × 300
	TM2-4C	1200 × 600
Lane Status (2 lane)	T2-6-1A	1200 × 900
	T2-6-1B	1800 × 1200
Lane Status (3 lane)[a]	T2-6-2A	1800 × 900
	T2-6-2B	2400 × 1200
[a] Lane Status signs for more than three lanes may be designed to be similar to this sign.		

(a) *ROAD CLOSED (T2-4, TM2-4)*

T2-4

TM2-4B

TM2-4C

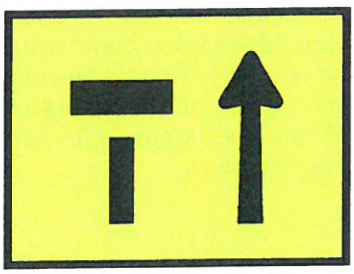
The ROAD CLOSED sign shall be used at the position where a roadway is temporarily closed to traffic. Barrier boards completely barring access to the roadway shall be used in conjunction with the sign.

Consideration should be given to providing traffic detours.

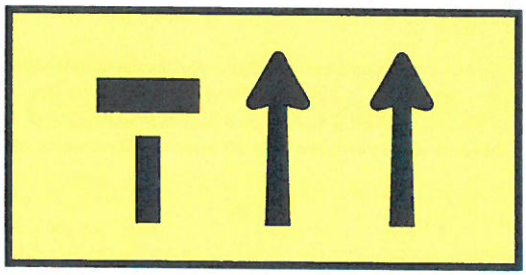
Where a road is closed, but the detour occurs at an intersection in advance, and local traffic access is required, signing at the detour location should include the TM2-4 panel ROAD CLOSED in conjunction with either a TM1-35B panel AHEAD or a TM2-41A panel LOCAL TRAFFIC ONLY.

For a permanent road closure, sign G9-20, in accordance with AS 1742.2, shall be used.

(b) *Lane Status (T2-6, TM10 series)*



T2-6-1



T2-6-2

The Lane Status sign shall be used to give advance warning where one or more lanes of a multilane roadway is closed or the direction it leads to (left turn, through/ahead or right turn) is altered. It shall not be used for any other purpose and shall not be used in lieu of adequate signing and delineation of the closure.

The Lane Status sign consists of a group of arrows and T symbols displayed across the sign. The T symbol incorporates a horizontal bar that indicates the lane is closed ahead. Each arrow or T symbol shall represent a single lane. The total number of arrow shafts and T symbol shafts at the bottom of a Lane Status sign shall equal the number of traffic lanes at the position of the sign. Where an additional lane develops beyond the sign, it may not be necessary to show it on the Lane Status sign. However, if it is shown the arrow or T symbol shall include a black cut-out (see Figure 4.3).

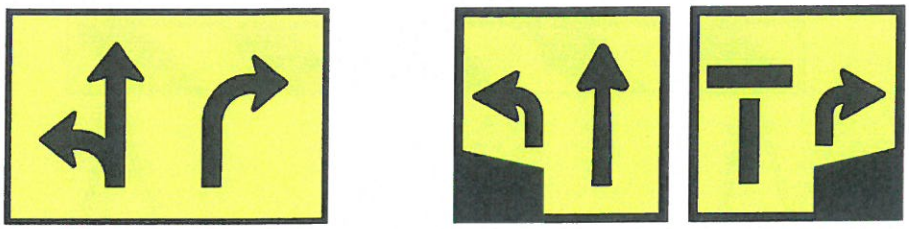
If a multi-message sign frame is used to create a Lane Staus sign, an A size panel shall not show more than two lanes and a C size panel shall not show more than four lanes Panels may be combined to show more lanes. See Appendix A for typical designs.

The Lane Status sign shall be placed on both sides of a multilane road, except where it is impractical, such as on a narrow median. In such cases, alternative action shall be taken to ensure road users in all lanes are aware of the change in lane status.

The Lane Status sign may be used in one of two ways:

(i) *Simple indication of which lane is closed* — The arrows are vertical and straight. This may also be used where drivers have the option to turn, but information about turning is not essential.

(ii) *Indication of lane closures and lane directions at an intersection* — The purpose is to provide advance information about what happens to each lane. This may use a simplified format, or a more detailed format providing information about each lane at the intersection, typically by including arrows or T symbols that have a black cut-out for additional lanes (see Figure 4.3). A turning arrow shall not be combined with a T symbol in a single lane.



Simplified format Detailed format

NOTE A two lane approach example. The left lane is open and continues through. Left turns occur from a left turn lane that develops after the sign position. The right lane is closed for through traffic, but is still open for traffic to access an exclusive right turn lane that develops after the sign position.

Figure 4.3 — Example of lane status signs for works near an intersection

4.10.2 Barricades

Barricades comprise either barrier boards (see Figure 4.4) or stand-alone non-interconnected lightweight modules. They shall be used to inhibit access to a work area. They should be erected approximately perpendicular to the direction of traffic flow at intervals not exceeding 100 m.

Barricades shall not be used for delineation purposes. This type of barricade also shall not be used adjacent to a pedestrian path of travel to avoid tripping or falling hazard for people with vision impairment. See Clause 4.12.2 for other channelizing devices.

The requirements for each type of barricade are as follows:

(a) *Barrier boards* — Barrier boards shall be 150 mm to 200 mm in height and not more than 4 m in length. They should be mounted on trestles or fixed posts at about 1 m above the pavement. The colour combination used for barrier boards shall be alternate diagonal stripes of black and retroreflective yellow, terminating in yellow at each end as illustrated in Figure 4.4.

They shall not be placed parallel to the direction of traffic flow. Barrier boards so placed can become a spearing hazard if struck end on by an out-of-control vehicle.

(b) *Stand-alone lightweight modules* — Stand-alone non-interconnected lightweight modules when used as barricades shall be placed behind a line of delineating devices.

Both types of device shall satisfy the appropriate test level requirements covered in the road safety device Standard, AS/NZS 3845.2.

Where barrier boards are placed facing traffic, the bars need to be consistently pointing in the same direction. The bars on the barrier board shall point down toward the side that vehicles are required to pass. In Figure 4.4 traffic is required to pass to the left of the barrier board.

Figure 4.4 — Typical barrier board

4.11 Devices for delineating and indicating the travelled path

4.11.1 Traffic cones and temporary bollards

Traffic cones and temporary bollards should be used on short-term and long-term works to define the vehicular traffic path within the work site.

Requirements and recommendations for their use are as follows:

(a) *Traffic cones* — Traffic cones shall comprise cones of fluorescent orange material that is resilient to impact. Various sizes available should be used as follows:

(i) *Small cones* — 450 mm to 500 mm height — most built-up area and open road applications including footpaths, shared paths and bicycle paths where traffic speeds do not exceed 60 km/h

(ii) *Standard size cones* — 700 mm height — all other road applications where traffic speeds exceed 60 km/h Standard size cones may also be used on lower speed roads.

(iii) *Large size signs cones* — 900 mm height may be used instead of standard size cones on high speed, high volume roads (e.g. expressway type roads).

(b) *Temporary bollards* — Temporary bollards shall comprise a vertical parallel sided or tapered tube of fluorescent orange or red material that is resilient to impact. They shall be at least 900 mm in height and a minimum of 100 mm in diameter.

Cones and bollards shall be fluorescent in accordance with the chromaticity coordinates specified in AS/NZS 1906.1.

All cones and bollards shall be fitted with a white horizontal retroreflective band having a retroreflective performance at least equal to Class 400T material as specified in AS/NZS 1906.1. The size and positioning of retroreflective bands on traffic cones and bollards are given in Table 4.6.

Table 4.6 — Size and positioning of retroreflective bands on traffic cones and bollards

Dimensions in millimetres

Item	Height	Band width	Distance from top of device to band
Cone	450 to 500	150	130 ± 5
Cone	700 and over	250	220 ± 5
Bollard	All heights	250	220 ± 5

Cones and bollards shall be designed to be stable under reasonably expected wind conditions and air turbulence from passing traffic. However, they can be displaced by passing traffic and therefore, unless workers are there to replace them, should not be used unless they are securely fixed to the pavement or weighted to provide adequate stability from passing traffic when unattended.

Recommended maximum spacing of cones and bollards are given in Table 4.7. Spacing of cones and bollards may need to be reduced to as little as 1 m if needed to prevent traffic taking a wrong turn or wrong opening through a line of bollards. The tabulated traffic speed shall be the speed of the traffic at the location where the line of cones or bollards is placed.

Table 4.7 — Recommended maximum spacing of cones and bollards

Purpose and usage	Traffic speed, km/h (see Clause 1.3.16)	Recommended maximum spacing, m
At divided road crossovers to transfer traffic to the opposing roadway	All speeds	2
Protecting freshly painted lines	≤ 75	24
	≥ 76	60[a]
All purposes	≤ 55	4
	56 to 75	12
	≥ 76	18

[a] This spacing may need to be reduced on curves or crests, or if the row of cones is not clearly defined at night.

4.11.2 Roadworks temporary guideposts

Where roadworks temporary guideposts are to be used they shall be used as follows:

(a) *For delineation of the travel path through or past the work site as an alternative to traffic cones or bollards* — Yellow delineators on both sides of the roadway.

(b) *For delineation of the roadway on detours and side-tracks* — Red delineators on the left side and white on the right (two-way roadway) or yellow on the right (one-way roadway).

Delineators used at or near works on roads shall meet the requirements of AS/NZS 1906.2 for either the sheeting or discrete device type. Delineators made from orientation-sensitive material shall be made and installed at the material manufacturer's recommended orientation for optimum performance.

NOTE Orientation-sensitive material is generally regarded as material whose CIL at the specified measurement angles changes by more than 10 % as it is progressively rotated in its plane.

Temporary guideposts should be erected 1 m minimum from the edge of the travelled path and at a uniform height of approximately 1 m above the road surface. Delineator posts should be frangible or otherwise non-hazardous. Temporary guideposts should be installed so as to provide a single continuous line defining the travelled path. The spacing of temporary guideposts shall be as follows:

(i) Immediately adjacent to or through work areas:

(A) 24 m maximum at traffic speeds up to 70 km/h.

(B) 60 m maximum at higher traffic speeds.

(ii) On side tracks and detours:

For post spacing, refer to Austroads *Guide to Temporary Traffic Management*.

Typical temporary guideposts with delineators are shown in Figure 4.5.

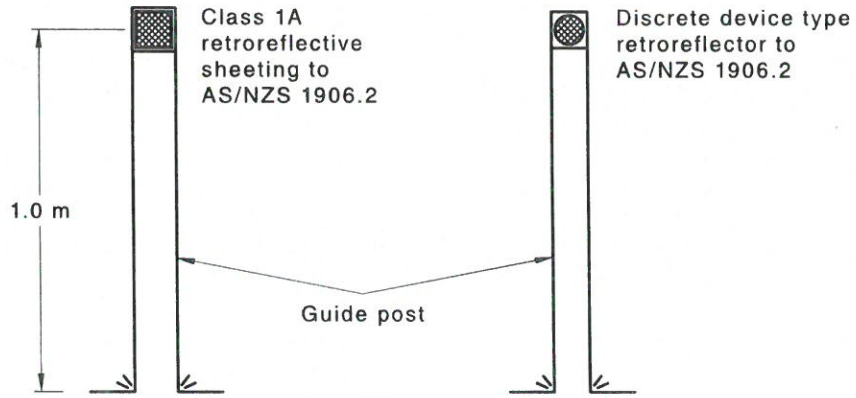


Figure 4.5 — Examples of roadworks temporary guideposts

4.11.3 Temporary Hazard markers (T5-4, T5-5, T5-7)

Temporary Hazard markers are listed in Table 4.8.

Table 4.8 — Temporary hazard markers

Sign number	Size mm
T5-4	1500 × 450
T5-5	600 × 600
T5-7	250 × 1200

T5-4

T5-5

T5-7

Temporary Hazard markers should be used to show any lateral change of direction of the travelled path through a work site and to delineate hazards and non-trafficable work areas adjacent to the travelled way. They should be erected with their edge about 1 m from the edge of the travelled path and the chevrons should always point to the side to which traffic is required to pass. They should be mounted at about 1 m above the pavement.

On works extending overnight or being conducted at night where an obstruction encroaches onto the roadway, a series of T5-4 Temporary Hazard markers may be used in lieu of traffic cones or bollards to form the taper in the transition area guiding traffic away from the obstruction. The T5-4 markers should be spaced so that as the transition area is approached they appear as a continuous line. If temporary delineation is required on both sides of the vehicle path at a taper, temporary hazard markers shall only be used on the side primarily steering traffic away from the obstruction. Since in most cases two parallel lines of hazard markers will lead to confusing visual patterns, traffic cones, bollards or roadworks temporary guideposts should be used on the other side.

The T5-5 Temporary Hazard marker may be used on works extending overnight, in lieu of the T5-4 marker, in confined areas where there is insufficient space to use the wider marker.

The T5-5 or T5-7 marker should also be used at short-term works to indicate the beginning of a line of traffic cones or bollards where the devices themselves may not be sufficiently visible to approaching traffic.

The T5-7 marker may be used to delineate hazards and nontrafficable work areas adjacent to the travelled path.

If other signs, such as ROAD CLOSED or DETOUR, are required at a site in conjunction with a line of Temporary Hazard markers they should be placed so as to appear above but not among the line of Temporary Hazard markers.

4.11.4 Pavement markings

This Clause applies to roads where there were pavement markings in existence prior to the works.

Appropriate pavement markings should be provided or maintained to guide traffic through and past a work area. The following principles apply:

(a) Where existing markings are satisfactory, they should be maintained in good condition throughout the period of the work.

(b) If existing markings are not appropriate or are potentially misleading, they should be removed and replaced by more suitable markings of equal performance to permanent markings. Redundant markings should be permanently removed or obliterated by material which will not become slippery or confused by motorists under certain light and weather conditions.

(c) Consideration should be given to the use of retroreflective pavement marking tape for all temporary lines as the removal of road marking paint is often difficult and is likely to leave a mark that may be mistaken for a line under certain lighting or wet weather conditions.

(d) Temporary lines used to guide traffic through substantial diversions or changes in direction, should be supplemented by raised retroreflective pavement markers.

(e) Where, during or at the conclusion of pavement-surfacing works, a section of roadway is to be left for a period of time without line marking, temporary raised retroreflective pavement markers should be used to provide delineation of the dividing or lane lines. The use of appropriate signs warning of the need to exercise caution in the absence of lines is set out in Clause 4.9.3.

4.11.5 Raised retroreflective pavement markers

Raised retroreflective pavement markers (RRPMs) in accordance with AS 1906.3 may be used in conjunction with temporary pavement markings at long-term work sites. The spacing and application for permanent use shall be in accordance with AS 1742.2.

Temporary RRPMs recommended under Clause 4.11.4(e) at freshly surfaced pavements should be sufficiently robust to survive under traffic until permanent markings are installed.

Where special emphasis of a dividing line is required, e.g. where a multilane or divided road has been temporarily reduced to a two-lane, two-way road, lane dividers typically comprising a larger base than the RRPM, with a vertical flexible flap attached and incorporating a retroreflector, may be placed along the dividing line, generally at the same spacing as RRPMs.

4.11.6 Temporary kerbing

Temporary kerbing may be used to form temporary medians, traffic islands or pavement edges during long-term works. Such kerbing shall be yellow, not greater than 150 mm in height and shall be securely fastened to the pavement. It shall be clearly delineated, and as seen by approaching traffic shall appear as a continuous line at least 150 mm wide. Consideration should be given to having retro reflective material on the kerbing to define the travelled path.

When temporary kerbing is used at a pedestrian path of travel, kerb ramp or median cut through shall be provided in accordance with AS 1428.1.

4.12 Containment fences and road safety barrier systems

4.12.1 Containment fences

Containment fences comprising tapes, plastic mesh fencing or longitudinal channelizing devices may be used to provide visible containment as described in Items (a) and (b), and Clause 4.12.2 in situations where physical protection by use of a road safety barrier system (see Clause 4.12.3) is not warranted (see Clause 4.2.7).

All types of containment fence shall have sufficient stability to resist displacement, fracture or deflection of more than 0.5 m resulting from all expected wind conditions, air turbulence from passing traffic and minor vehicular impacts.

Descriptions and use of tapes and mesh fencing used as containment fences are as follows:

(a) *Tapes* — Containment tapes may be used to contain workers on foot and plant within the safe workplace boundary established at the particular work site. The tape should be a minimum of 100 mm wide with alternate of stripes contrasting colour, and should be supported approximately 1 m above ground level with supports spaced so that the minimum height of the tape above ground is not less than 800 mm. The maximum breaking strength should be

low enough not to cause hazard to any vehicle, motor cycle or pedal cycle which might run into it. Tapes shall not be used for pedestrian containment adjacent to traffic.

(b) *Plastic mesh fencing* — Plastic mesh fencing may be used for pedestrian containment as well as for the containment of workers on foot and plant as in Item (a). It comprises a flexible orange mesh approximately 1 m high. It shall be supported so that the top of the fence is at least 800 mm above ground level at all times. Longitudinal channelizing devices (see Clause 4.12.2) are preferred to delineate a pedestrian path of travel a person with vision impairment may become entangled in mesh fencing causing a trip or fall.

4.12.2 Longitudinal channelizing devices

Longitudinal channelizing devices shall comprise interconnected lightweight modules such as plastic water ballasted modules or temporary separation kerb. They may be used either as containment fences for workers or pedestrians, or as delineation devices in situations where a road safety barrier system as specified in Clause 4.12.3 is not required.

The use of the interconnected lightweight modules such as plastic water ballasted modules shall be subject to the following:

(a) They shall satisfy the requirements of Impact tests covered in AS/NZS 3845.2 for work zone traffic control devices.

(b) They shall be marked "NOT A SAFETY BARRIER" in letters at least 100 mm high.

Stand-alone, non-interconnected lightweight modules shall not be used for the above purposes. Their use shall be confined to inhibiting access to a work area as specified in Clause 4.10.2.

4.12.3 Road safety barrier systems

Road safety barrier systems are designed to provide a physical barrier between the travelled way and the work area, which will inhibit penetration by an out-of-control vehicle (see Note) and will have vehicle redirecting properties. They are typically used between traffic and a severe hazard such as a deep excavation, a bridge pier or a hazardous stockpile, and for the protection of workers and non-vehicular road users in vulnerable situations where lateral clearance to moving traffic would otherwise be insufficient for safety. They may also be used to separate opposing traffic.

NOTE The satisfactory performance of a barrier system will depend on its being struck by a vehicle no larger than the "design" vehicle for which it is to be designed. Selection of the design vehicle should be subject to a risk assessment taking into account traffic mix past the site and the nature and length of the works.

Vehicles can be protected from collisions with hazardous fixed objects by crash attenuators as an alternative to safety barrier systems (see Clause 4.12.4).

The type selection and installation of a temporary road safety barrier system including positioning and end treatments shall be in accordance with AS/NZS 3845. For the protection of workers from dynamic deflection of the barrier in a crash, if the work area is close to the rear of the barrier a containment fence or longitudinal channelizing barricade shall be placed behind the barrier a clear distance equal to the likely dynamic deflection. Data on the dynamic deflection of the barrier type used when impacted by the selected design vehicle will be needed to determine the positioning of the containment fence. The positioning of protective fencing behind a barrier is illustrated in Figure 4.6.

The positioning of barriers in relation to high obstructions such as power poles, bridge piers or underpass scaffolding shall take into account the likely extent of body roll of a high vehicle striking the barrier.

Fittings other than delineators shall not be attached to safety barrier systems unless they have been designed to accommodate the fitting.

If safety barriers are used to define a change in the direction of the travelled path they shall be delineated with retro-reflective markers at a maximum spacing of 2 m. As a minimum, the colour, size and orientation of the delineator should be the same as temporary guideposts, see Clause 4.11.2.

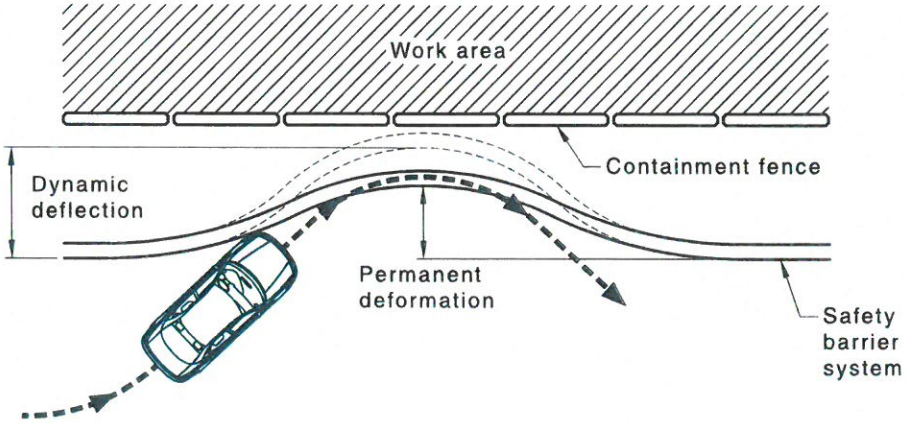


Figure 4.6 — Protective fencing behind a safety barrier system

4.12.4 Temporary crash attenuators

Hazardous fixed objects that have become exposed to traffic due to roadwork, such as bridge piers or safety barrier ends, may need to be equipped with purpose designed energy absorbing terminal devices to reduce the severity of collision by an out-of-control vehicle. The need should be determined from a risk assessment that takes full account of the additional risk due to works on roads.

NOTE Reference should be made to AS/NZS 3845.2.

4.13 Lamps

Flashing yellow lamps may be used at work sites to draw attention to advance signs. They are typically used with the ROADWORK AHEAD (T1-1) or BRIDGEWORK AHEAD (T1-2) signs in areas where road lighting is poor or absent.

Flashing lamps that can be linked electronically (or by other means) to flash each lamp sequentially may be used to indicate the travelled path. Flashing lamps that flash independently shall not be used for delineation purposes. Steady or ripple lamps shall not be used for any purpose.

4.14 Vehicle-mounted signs and devices

4.14.1 Vehicle-mounted warning device

A vehicle-mounted warning device shall consist of one or other of the following:

(a) A single flashing yellow lamp for emergency or other infrequent use on a vehicle not normally used for roadworks purposes, or for use on a plant item working within a static work area, or an inspection vehicle.

(b) A pair of flashing yellow lamps for use on vehicles (e.g. patrol trucks) working on roads with traffic volumes up to 1500 vpd, and positioned on the vehicle so that at least one and preferably both lamps are visible from any direction.

(c) An illuminated flashing arrow sign as specified in Clause 4.14.2 for any work, including the situations in Items (a) and (b) and for mobile works.

The vehicle-mounted warning device shall be mounted as high as practicable on the vehicle for best visibility to other traffic, e.g. on top of the cab of a truck. It may need to be placed near the rear of the

vehicle if a cab-mounted sign could be obscured by a load. Supplementary signs used in conjunction with the illuminated flashing arrow sign (see Clause 4.14.3), may be mounted either in conjunction with that sign or elsewhere in a prominent position on the vehicle.

Where signs are mounted on the device or elsewhere on a vehicle, they shall be capable of being removed from view (e.g. by covering, folding or turning off) when not needed.

4.14.2 Illuminated flashing arrow sign

This sign comprises a matrix of lamps in the form of an arrow that is flashed in a cyclic manner to provide advance warning of a temporary diversion. It includes a backing board for the lamps together with ancillary equipment necessary for mounting and operating the sign, and reducing its light output (dimming) for night-time use.

Flashing yellow signs shall be in accordance with AS/NZS 4192.

Illuminated flashing arrow signs may also be constructed of variable message LED type signs to provide the same or a similar diversion arrow effect.

The following three size designations are used:

(a) *Size A* — Minimum 1260 mm × 650 mm, designed for roof mounting on a light vehicle.

(b) *Size B* — Minimum 1500 mm × 770 mm, designed for cab mounting on a truck.

(c) *Size C* — 2400 mm × 1200 mm, designed for trailer mounting with its own power supply or cab mounting on a truck.

High intensity flashing lamps may be used in conjunction with this sign provided that the lamps are either appropriately shielded or laterally or vertically displaced from the edge of the sign to avoid visually corrupting the arrow shape or its directional effect.

Requirements for the flashing of different patterns of the lights are as follows:

(i) When traffic is expected to pass the sign on a particular side and can do so in safety, i.e. it is not required to seek a gap in oncoming traffic, the bar of the arrow and the barb directing traffic to that side shall be flashed.

(ii) When the sign is used to give a general warning of works activity ahead including mobile works, but either the sign is located clear of the traffic path or the display of an arrow would not be appropriate for some other reason, either the bar of the arrow only or the four corner lights at the extremities of the barbs shall be flashed. In the latter case diagonal pairs should be flashed alternately.

A typical sign as part of a vehicle-mounted warning device is shown in Figure 4.7.

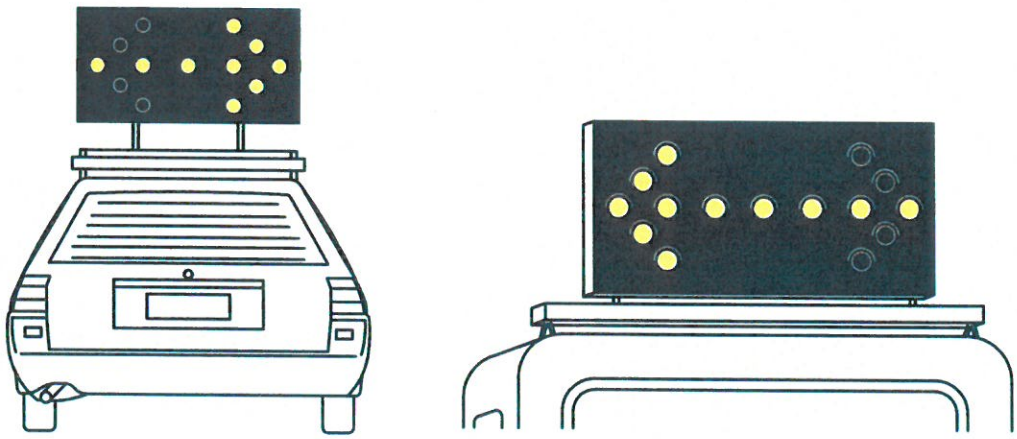


Figure 4.7 — Illuminated flashing arrow sign

4.14.3 Supplementary vehicle-mounted signs

The following lists signs appropriate for use in conjunction with the illuminated flashing arrow sign where necessary to warn road users of the presence of workers on foot or the nature of the work:

(a) *Workers (symbolic) (similar to sign No. T1-5)* — This sign shall be used on all vehicles in a mobile works convoy whenever workers on foot are part of the operation. The colour requirements for this sign are the same as specified for the T1-5 sign in Clause 4.6.5. The symbol size shall be not less than that specified for sign No. T1-5A or B according to the requirements of Clause 4.4.3.

(b) *LINEMARKING* — This sign should be used on advance warning vehicles as well as on the work vehicle. It may be yellow or fluorescent yellow for daytime only use and retroreflective yellow for night use. The legend size shall be not less than 160 D for A size sign or 200 D for B size sign as required under Clause 4.4.3. Legend sizes shall be in accordance with AS 1744.

Where used, these signs shall be mounted either on the vehicle along with the flashing arrow sign or elsewhere in a permanent position on the body of the vehicle. They shall be removed when they do not apply.

Standard signboard sizes are not specified for these signs. Subject to the minimum symbol/legend sizes specified above, they shall be tailored to suit the positioning and mounting arrangements on the vehicle.

4.14.4 Variable message signs

Variable message signs that can display symbols or words may be mounted on a vehicle (see Clause 4.22.1).

4.14.5 Truck-mounted and trailer mounted crash attenuator

Slow-moving or stationary work vehicles which are exposed to potential collisions by high speed approaching traffic should be protected by a separate suitable vehicle fitted with a truck-mounted or trailer mounted crash attenuator. Attenuators may also be appropriate in lower speed environments. They should be selected to have a collision speed rating appropriate to the traffic speed environment in which they are to be used. Reference should be made to AS/NZS 3845.2 and other guidelines issued by state and territory jurisdictions for appropriate test levels.

4.15 Roadwork pilot vehicle

Signs used for pilot vehicle are listed in Table 4.9.

Table 4.9 — Signs for PILOT VEHICLE

Sign	Sign number	Size, mm
PILOT VEHICLE DO NOT OVERTAKE	T6-5A	1000 × 350
	T6-5B	1200 × 500
PILOT VEHICLE IN USE	T6-6A	900 × 600
	T6-6B	1200 × 900

T6-5

T6-6

A roadwork pilot vehicle may be used to guide traffic through a work site. This form of assistance to traffic management may be required where —

(a) part of the length of the work site is out of view of the supervisor, workers and the traffic controller;

(b) the hazard to workers requires the traffic speed to be reduced;

(c) the traffic speed is required to be kept low to minimize damage to the works; or

(d) traffic needs to follow a particular path through the site which may not be obvious unless a pilot vehicle is used.

The minimum identification of a roadwork pilot vehicle shall be a vehicle mounted warning device (see Clause 4.14.1) together with a PILOT VEHICLE DO NOT OVERTAKE (T6-5) sign, which is attached to the rear of the vehicle.

Traffic should be instructed to follow and not to pass the roadwork pilot vehicle. The PILOT VEHICLE IN USE (T6-6) sign shall be installed at a minimum distance as shown in Table 4.10 in advance of the location where the roadwork pilot vehicle operates.

Table 4.10 — Minimum distance for placement of T6-6 sign

Existing posted speed limit km/h	Distance for T6-6 sign m
40 or less	5 to 10
50	10 to 15
60	15 to 45
70, 80	60 to 80
90, 100	80 to 100
110 or higher	100 to 120

4.16 BLASTING WORK signs

Signs used at blasting works are listed in Table 4.11.

The use of explosives shall be in accordance with AS 2187.2.

Table 4.11 — Signs used at BLASTING WORKS — Size table

Sign	Sign number	Size, mm
BLASTING AREA, SWITCH OFF RADIO TRANSMITTERS AND MOBILE PHONES	T4-7	1200 × 900
END BLASTING AREA	T4-3AA	1200 × 450
	T4-3A	1800 × 600
	TM4-3C	1200 × 600

(a) BLASTING AREA SWITCH OFF RADIO TRANSMITTERS AND MOBILE PHONES (T4-7)

T4-7

When electric detonators are to be handled or used within 40 m of a road, the sign BLASTING AREA, SWITCH OFF RADIO TRANSMITTERS AND MOBILE PHONES shall be prominently displayed at the edge of the roadway on all road approaches at a distance of not less than 200 m from the handling or blasting site.

This sign is used in conjunction with the END BLASTING AREA sign (T4-3).

(b) END BLASTING AREA (T4-3, TM4-3)

T4-3

TM4-3C

The END BLASTING AREA sign shall be placed a minimum of 200 m beyond the blasting area to indicate where radio-transmitters can again be used.

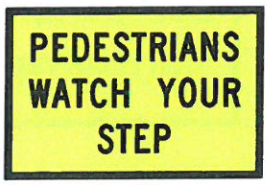
4.17 Signs and devices for managing pedestrians

Signs for pedestrian control are listed in Table 4.12. Other multi-message pedestrian related signs that may be used for pedestrian control are listed in Appendix A.

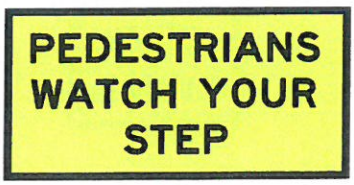
Table 4.12 — Signs for managing pedestrians — Size table

Sign	Sign number	Size, mm
PEDESTRIANS WATCH YOUR STEP	T8-1	900 × 600
	TM8-1C	1200 × 600
PEDESTRIANS (arrow)	T8-2 (L or R)	1200 × 300
	TM8-2B (L or R)	1200 × 300
USE OTHER FOOTPATH	T8-3	900 × 600
	TM8-3A	600 × 600
FOOTPATH CLOSED	T8-4	900 × 600
	TM8-4A	600 × 600
LOOK BOTH WAYS, TWO-WAY TRAFFIC	T8-5	900 × 600
	TM8-5C	1200 × 600

(a) PEDESTRIANS WATCH YOUR STEP (T8-1, TM8-1A, TM8-1)



T8-1



TM8-1C

The PEDESTRIANS WATCH YOUR STEP sign should be used where the route for pedestrians across incomplete works could be hazardous because of roughness, level differences, or loose or other surface material.

(b) PEDESTRIANS (arrow) (T8-2, TM8-2)

T8-2(L)

T8-2(R)

TM8-2(L)

TM8-2(R)

The PEDESTRIANS (arrow) sign shall be used at a work site where it is necessary to direct pedestrians via a particular path.

The sign shall not be used where there is no suitable crossing facility.

(c) USE OTHER FOOTPATH (T8-3, TM8-3) FOOTPATH CLOSED (T8-4, TM8-4)

T8-3

TM8-3A

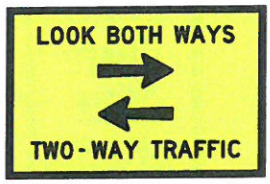
T8-4

TM8-4A

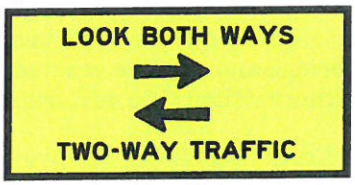
The USE OTHER FOOTPATH sign shall be used where works make it necessary to deny use of the footpath on one side of the road. PEDESTRIANS (arrow) (T8-2) signs shall be used as necessary in conjunction with this sign.

The FOOTPATH CLOSED shall be used at a footpath which is not in use. The footpath should be closed with barriers.

(d) LOOK BOTH WAYS, TWO-WAY TRAFFIC (T8-5, TM8-5)



T8-5



TM8-5C

Where one carriageway of a divided road is temporarily closed, this sign shall be placed at non-signallized pedestrian crossings on both sides of the open roadway to face pedestrians about to cross, if there is a risk that pedestrians might not notice that the roadway is two-way.

(e) Pedestrian containment

Longitudinal channelizing devices (Clause 4.12.2) or mesh fence (see Clause 4.12.1) may be used to control pedestrian movements at a work site. Where pedestrian traffic has been diverted onto an existing roadway, a safety barrier may be required (see Clause 4.12.3). Barrier boards or tapes shall not be used for pedestrian containment adjacent to moving traffic.

4.18 Signs and devices for managing cyclists

Standard signs used for roadworks, including other signs in AS 1742, should generally apply to a wide range of road users including cyclists. However, there may be situations where specific information to cyclists alone, such as detours for the closure of bicycle paths, may be required. Information relating to such signing is given in the Austroads *Guide to Temporary Traffic Management*. Multi-message cyclist related signs that may be used for cyclist control are listed in Appendix A.

4.19 Signs and devices for vehicle height and mass restrictions

Signs indicating vehicle height and mass restrictions are listed in Table 4.13.

Table 4.13 — Signs for vehicle height and mass restrictions — Size table

Sign	Sign number	Size, mm
BRIDGE LOAD LIMIT	R6-3A	600 × 900
... t GROSS	R6-3B	900 × 1350
LOW CLEARANCE ... m	R6-11	1950 × 600
CLEARANCE ... m	R6-1+2	1500 × 600
LOW CLEARANCE ... m	W4-8B	750 × 750
	W4-8C	900 × 900

(a) BRIDGE LOAD LIMIT ... t GROSS (R6-3)

R6-3

The BRIDGE LOAD LIMIT ... t GROSS sign shall be used to indicate the maximum permissible gross load in tonnes on a bridge and shall be erected at, or on, the immediate approaches to the bridge. The relevant authority should be advised of any temporary load limitations.

The sign G9-4 (see Clause 4.8.5) should be erected at an appropriate intersection in advance of the bridge to advise road users of the limitation on load and to indicate an alternative route.

The DETOUR FOR HEAVY VEHICLES sign (G9-5-2) (see Clause 4.8.6) should be erected at appropriate intersections to advise road users of an alternative route bypassing the load limitation.

An alternative to this sign with the legend BRIDGE WIDTH LIMIT ... m shall be used if required to indicate the maximum permissible width of a vehicle crossing the bridge.

(b) LOW CLEARANCE ... m (R6-11)

R6-11

The LOW CLEARANCE ... m sign shall be erected on all bridges, underpasses and other structures where the safe vertical clearance above the road pavement is less than 4.6 m. The sign should be attached to or located adjacent to the structure and over the centre of the roadway to face approaching traffic. The sign shall show a clearance in metres to the nearest 0.1 m below the safe clearance. The relevant authority should be advised of any temporary height.

The warning sign LOW CLEARANCE ... m (W4-8) (see Clause 4.19(d)) should be located in advance of the structure.

(c) CLEARANCE ... m (R6-12)

R6-12

The CLEARANCE ... m sign may be erected on structures where the safe vertical clearance is greater than 4.6 m but less than 5.3 m. The sign shall show a clearance in metres to the nearest 0.1 m below the safe clearance.

(d) LOW CLEARANCE ... m (W4-8)

W4-8

The LOW CLEARANCE ... m sign shall be used in advance of all bridges, underpasses and other structures where the clearance is less than 4.6 m. The sign shall show a clearance in metres to the nearest 0.1 m below the safe clearance.

In locating this sign, the needs of a driver of a large vehicle that may have to stop at a safe turning area in advance of the structure should be taken into account.

The LOW CLEARANCE ... m sign (R6-11) (see Clause 4.19(b)) located on or adjacent to the structure is used in conjunction with this sign.

The informative sign (G9-3) (see Clause 4.8.5) should be erected at an appropriate intersection in advance of the structure to advise road users of the height limitation and to indicate an alternative route.

A supplementary detour sign (G9-5-1) (see Clause 4.8.6) should be erected at appropriate intersections to advise road users of an alternative route bypassing the low clearance hazard.

(e) Low clearance warning gauge

A low clearance warning gauge is a device which may be erected in advance of an overhead structure where there is a safety risk to workers or other traffic in the event of impact. It should be designed either to physically inhibit passage under the structure, or to visually or audibly warn that a vehicle exceeds the available clearance. The gauge should be located

sufficiently in advance of the structure to permit a vehicle which exceeds the available clearance and is driven at not more than the speed limit, to stop safely. The gauge should apply to the full width of the approach roadway, be mounted approximately at right angles to it and be signposted in accordance with Clause 4.19(d) and Austroads *Guide to Temporary Traffic Management*.

4.20 Other signs and devices

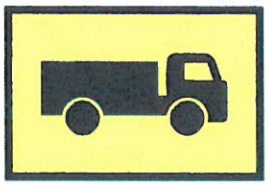
4.20.1 General

Signs used at works on roads which do not fall into previously defined classifications, are listed in Table 4.14.

Table 4.14 — Other roadworks signs — Size table

Sign	Sign number	Size, mm
Trucks (Rectangle and square)	T2-25	900 × 600
	TM2-25A	600 × 600
Trucks (Diamond)	W5-22B	750 × 750
	W5-22C	900 × 900
TRAFFIC HAZARD	T1-10	1200 × 900
	TM1-10A	600 × 600
	TM1-10C	1200 × 600
POWER LINE WORKS IN PROGRESS	T4-5	1800 × 900
	TM4-5C	1200 × 600

(a) Trucks (T2-25, TM2-25) Trucks (W5-22)



T2-25

TM2-25A

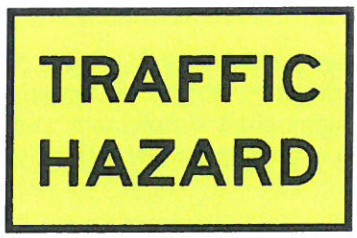
W5-22

The Trucks (T2-25, TM2-25) sign shall only be used where trucks cross, enter or leave the road from an adjoining property at a frequency and in circumstances which create a hazard. The sign should be displayed only when the need exists. The sign shall be removed or covered when truck activity has ceased.

The sign should be placed on the side of the road from which trucks will be crossing or entering.

The diamond version of this sign is (W5-22) for long-term use only.

(b) TRAFFIC HAZARD (T1-10, TM1-10)



T1-10

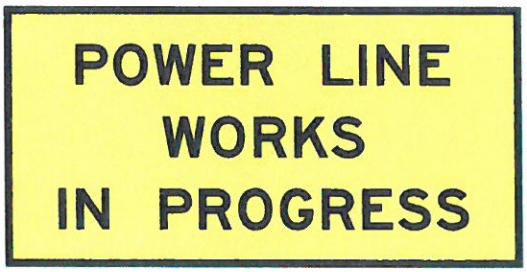
TM1-10A

TM1-10C

The sign TRAFFIC HAZARD is for emergency use only, and may be used whenever any unexpected event causes a traffic hazard. Should the hazard remain for any appreciable time, this sign should be replaced as soon as possible, generally within 24 h, by signs more

appropriate to conditions imposed on traffic. If the sign is used for a longer period of time, additional signing must be used with this sign to warn road users of the hazard.

(c) POWER LINE WORKS IN PROGRESS (T4-5, TM4-5)



T4-5

TM4-5C

This sign is an example of signs which may be used to describe specialized works carried out on or near roads by public authorities which are responsible for power supply, communications, and other utilities. Such signs shall supplement and not replace the appropriate standard signs and devices required in accordance with this Standard for the particular work site.

4.20.2 Antiglare screen

An antiglare screen which reduces excessive headlight glare to an acceptable level should be considered where temporary diversions result in directly opposing traffic. Screens should also be provided where oncoming headlights could mislead drivers as to their correct travel path. The screen supports should be of sufficient strength to ensure the stability of the screen in windy conditions but frangible under vehicle impact.

4.20.3 Work site screens (anti-gawking or anti-debris screen)

Work site Safety Barrier Screens (WSBS) may be used to minimize visibility and help prevent distraction of construction activities to the travelling public, to protect workers in close proximity of passing traffic from flying debris and to provide a physical partition between work site and roadway. WSBS are typically used on high speed roads or where safety barriers are used on high traffic volume roads. Refer to state road jurisdictions and Austroads *Guide to Traffic Management* for guidance on the use of WSBS.

4.21 High-visibility clothing for work personnel

High visibility clothing meeting the requirements of AS/NZS 4602 for Classes D, N or D/N garments shall be worn by all personnel working in or adjacent to traffic. The clothing is designed to make personnel more conspicuous and to warn road users of their presence.

The clothing shall be used as follows:

(a) *For general use by all personnel at a work site* — Class D/N (day/night) garment.

NOTE This requirement covers the contingency that a worker may be required to work in darkness or in partial darkness at the beginning or end of a day shift, or may be called out unexpectedly at night.

(b) *Where the garment is to be worn during daylight hours only* — Class D (day only) garment.

(c) *Where the garment is to be worn during hours of darkness only* — Class N (night only) garment.

(d) Clothing shall be properly fastened when being worn at a work site so that the entire available area of high visibility material for each direction of observation can be seen.

4.22 Variable message signs used at roadworks

4.22.1 General

An electronic variable message sign (VMS) is a traffic control device which displays one or more messages providing road users with necessary information about construction operations, maintenance, road incidents, traffic congestion, and roadway conditions.

When used efficiently, a VMS can convey information that is critical in nature (i.e. that requires road users to alter their driving in some manner and take specific action as a result), or that assists in the protection of workers at work sites or inspection sites.

A portable VMS may be trailer mounted or vehicle mounted and can be readily moved to a location as required, thus enabling the information to be given at the point of maximum impact.

More information regarding the usage and placement of VMS is provided in Austroads *Guide to Temporary Traffic Management.*

4.22.2 Application

A VMS is used to provide added advance warning to road users on high speed and/or high volume roads where work activities may cause delays, or may require stopping, slowing, merging, or other manoeuvres that need a specific reaction.

Examples of work site applications where a VMS can be effective include —

(a) construction and maintenance activities to provide advance warning on high speed freeways and arterial roads where workers are exposed to traffic, and to notify of delays and future activities;

(b) temporary traffic conditions for all parts of the road reserve including closures, detours and restrictions on vehicle dimensions;

(c) traffic conditions including changes in alignment, surface conditions, roadway width, lane drops, traffic delays, congestion and expected decrease of traffic speed;

(d) combined with radar-speed readout, to encourage speed reduction prior to work activities. Due to unit reset/response time, they should only be used on roadways with low to moderate traffic volumes;

(e) to provide information on work schedules, alternative routes, anticipated delays, and other time-related information; and

(f) to advise road users of the reason for the imposition of reduced speed limits.

Care should be taken to limit VMS use to work sites where there is a significant degree of hazard such as on high speed or multi-lane roads, or where the traffic arrangements are complex. Excessive and inappropriate use of these signs will reduce their effectiveness.

4.22.3 Message screens

Variable Message Signs (VMS) message screens shall be in accordance with AS 4852.1 or AS 4852.2. The following requirements and recommendations apply when a message is displayed on a VMS:

(a) Messages should be limited in length to no more than four words or numbers on any one screen, with each line being centred. This enables road users to quickly read the message without being distracted from the road.

(b) There shall not be more than two separate screens in any alternating series of screens in all speed zones. Where the message cannot be condensed to fit on two screens, an additional VMS should be located downstream of the first sign. In this situation, only one of the VMSs should display a multiple screen message at any given time.

(c) Letter forms and legend height shall be adequate to be comfortably read by drivers at the prevailing speed of traffic [see also Item (d)].

(d) Where there are alternating screens the "on" time of each screen shall be 0.6 ± 0.1 s per word or number and the total time required to read the message on both screens shall be taken into account when determining message length and letter height.

NOTE A procedure for determining letter sizes for signs is given in AS 1742.2. The letter series that most nearly matches the on-screen fonts should be used in the calculations. It is recommended that the calculated letter height be doubled for this purpose.

(e) Symbols shall not be used unless they have been tested for comprehension in their on-screen format (i.e. taking into account distortions due to pixel size limitations).

(f) Messages shall be relevant to the nature and phase of the work in progress and shall be changed or switched off when they are not relevant.

(g) Variable message sign may be used to substitute a static sign. When it is used to substitute the following signs, the message shall not be alternated with another message:

(i) Regulatory control, see Tables 4.2(A) to 4.2(E).

(ii) Any regulatory sign.

(iii) Lane status sign.

(h) Word messages on variable message signs shall be yellow on a black background.

(i) Word messages should not scroll horizontally or vertically.

(j) Symbols/signs (e.g. a speed limit sign) displayed on a portable variable message sign shall be shown in the reverse colour to the appropriate standard sign.

(k) Word messages should not —

(i) advise road users of something they already know;

(ii) provide information that is so specific it gives road users a false sense of security (e.g. Roadwork Ends 1.002 km); and

(iii) display unnecessary information such as "Please Be Careful" or "Drive Safely".

Variable message signs on roads near a work site displaying unrelated messages shall be switched off. Attempts should also be made to have such signs on adjacent property switched off.

Variable Speed Limit signs, if used, shall be in accordance with AS 1742.4 and other requirements of this Standard relating to temporary speed zones.

Appendix A
(normative)

Additional multi-message signs

A.1 Scope

This Appendix prescribes the description and use of multi-message signs for which there are no equivalent standard signs in Section 4. These additional multi-message signs have been developed by the relevant state and territory authorities as a need has arisen. This Appendix lists these signs, now in general use. Further information on the use of the multi-message signs is given in this Standard and in the Austroads *Guide to Temporary Traffic Management*.

A.2 Development of further multi-message signs

Multi-message sign panels not listed in this Appendix may be developed by the relevant state and territory authorities. Where this occurs, the sign specifications, conditions of use and permissible panel combinations should be consistently applied across all jurisdictions.

A.3 List of additional multi-message sign panels

Multi-message sign panels in common use by relevant state and territory authorities are shown in Table A1. It should be noted that state and territory authorities may develop new sign panels from time to time and as such the list in Table A1 is not inclusive of all such signs in use.

Multi-message sign panels can be made in four different sizes of 600 mm × 600 mm, 1200 mm × 300 mm, 1200 mm × 600 mm and 600 mm × 900 mm. These sizes will be designated sizes A, B, C and D respectively.

Further examples of multi-message signs, including details of use are provided in the Austroads *Guide to Temporary Traffic Management*.

Table A.1 — List of additional multi-message sign panels

Sign	Sign number	Size, mm	Figure	Notes
TM1 — Advance sign				
XX km/m AHEAD	TM1-36B	1200 × 300		This sign may be used in conjunction with an A or C size panel placed in a panel above it describing the activity such as ROADWORK or BRIDGEWORK. This sign shall not be used in conjunction with a regulatory speed sign.

Table A.1 *(continued)*

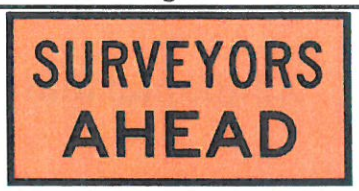
Sign	Sign number	Size, mm	Figure	Notes
SURVEYORS AHEAD	TM1-37C	1200 × 600		
Road Hump Ahead	TM1-38A	600 × 600		This sign may be placed in advance of a road hump.
SIGNAL WORKS AHEAD	TM1-39A	600 × 600		
LINE MARKING AHEAD	TM1-40A	600 × 600		
MOWING AHEAD	TM1-41A	600 × 600		
TRAM WORKS AHEAD	TM1-42A	600 × 600		
ROAD CLOSED AHEAD	TM1-43A	600 × 600		
	TM1-43C	1200 × 600		

Table A.1 *(continued)*

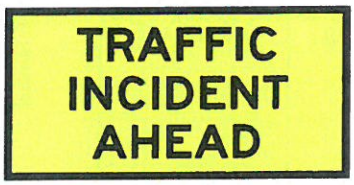
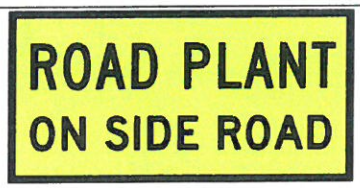
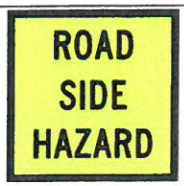
Sign	Sign number	Size, mm	Figure	Notes
BURNING OFF AHEAD	TM1-44A	600 × 600		
	TM1-44C	1200 × 600		
TRAFFIC INCIDENT AHEAD	TM1-45A	600 × 600		
	TM1-45C	1200 × 600		
QUEUED TRAFFIC AHEAD	TM1-46A	600 × 600		This sign should be used in conjunction with TM1-47 in a combination as shown below. 
Queued traffic symbol	TM1-47A	600 × 600		See TM1-46A
ROAD PLANT ON SIDE ROAD	TM1-48C	1200 × 600		
ROAD SIDE HAZARD	TM1-49A	600 × 600		

Table A.1 *(continued)*

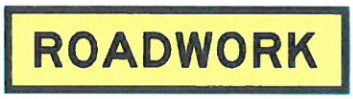
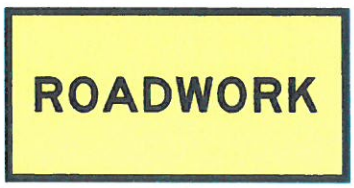
Sign	Sign number	Size, mm	Figure	Notes
WATCH FOR WANDERING ANIMALS	TM1-50A	600 × 600		
AHEAD	TM1-51B	1200 × 300		This sign may be used in conjunction with an A or C size panel placed in a panel above it describing the activity such as ROADWORK or BRIDGEWORK. This sign shall not be used in conjunction with a regulatory speed sign.
DO NOT OVERTAKE	GM9-90B	1200 × 300		This sign may be used in conjunction with another panel placed above it describing why overtaking is prohibited.
TM2 — Position sign				
ROADWORK	TM2-26A	600 × 600		
	TM2-26B	1200 × 300		
	TM2-26C	1200 × 600		Sign TM2-26C may be used in conjunction with the AHEAD TM1-35B sign placed underneath.

Table A.1 *(continued)*

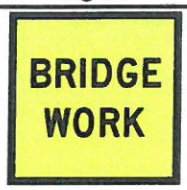
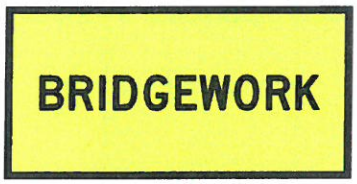
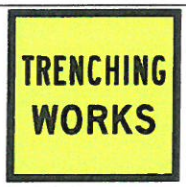
Sign	Sign number	Size, mm	Figure	Notes
BRIDGEWORK	TM2-27A	600 × 600		
	TM2-27B	1200 × 300		
	TM2-27C	1200 × 600		Sign TM2-27C may be used in conjunction with the AHEAD TM1-35B sign placed underneath.
END BRIDGE WORK	TM2-28A	600 × 600		
TRENCHING WORKS	TM2-29A	600 × 600		
	TM2-29B	1200 × 300		
MOWING	TM2-30B	1200 × 300		
LITTER COLLECTION	TM2-31A	600 × 600		
	TM2-31B	1200 × 300		

Table A.1 *(continued)*

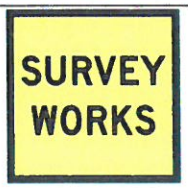
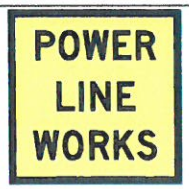
Sign	Sign number	Size, mm	Figure	Notes
UTILITY REPAIRS	TM2-32A	600 × 600		
	TM2-32B	1200 × 300		
EMERGENCY WORKS	TM2-33A	600 × 600		
	TM2-33B	1200 × 300		
SURVEY WORKS	TM2-34A	600 × 600		
SURVEYORS	TM2-35B	1200 × 300		
ROAD PLATES IN USE	TM2-36A	600 × 600		This sign should be used in conjunction with the Slippery sign (TM3-3A).
	TM2-36C	1200 × 600		
POWERLINE WORKS	TM2-37A	600 × 600		
	TM2-37C	1200 × 600		

Table A.1 *(continued)*

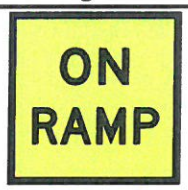
Sign	Sign number	Size, mm	Figure	Notes
ON RAMP	TM2-38A	600 × 600		This sign may be used where the work activity is on the ramp.
	TM2-38B	1200 × 300		
MERGE LEFT	TM2-39A	600 × 600		
	TM2-39B	1200 × 300		
MERGE RIGHT	TM2-40A	600 × 600		
	TM2-40B	1200 × 300		
LOCAL ACCESS ONLY	TM2-41A	600 × 600		
SLOW MOVING VEHICLE	TM2-42A	600 × 600		
SIDE ROAD CLOSED	TM2-43A	600 × 600		
CHANGED TRAFFIC CONDITIONS	TM2-44A	600 × 600		

Table A.1 *(continued)*

Sign	Sign number	Size, mm	Figure	Notes
OVERSIZE VEHICLE	TM2-45A	600 × 600		
HEAVY VEHICLES	TM2-46A	600 × 600		
HIGH VEHICLES	TM2-47A	600 × 600		
Signal Not Operating symbolic	TM2-48A	600 × 600		
SIGNAL NOT IN USE	TM2-49A	600 × 600		
SIGNAL UNDER REPAIR	TM2-50A	600 × 600		
Road Hump	TM2-51A	600 × 600		
Boom Barrier symbolic	TM2-52A	600 × 600		This sign shall be used to give advance warning of the presence of a boom barrier. The PREPARE TO STOP shall be used in conjunction with this sign. See Clause 4.7.5.

Table A.1 *(continued)*

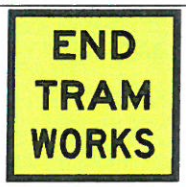
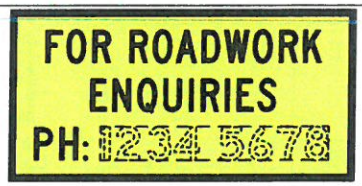
Sign	Sign number	Size, mm	Figure	Notes
KEEP TRACKS CLEAR	TM2-53A	600 × 600		
TRAM ONLY	TM2-54A	600 × 600		
TRAM WORKS	TM2-55A	600 × 600		
END TRAM WORKS	TM2-56A	600 × 600		
FOR ROADWORK ENQUIRIES	TM2-57C	1200 × 600		
AT INTERSECTION	GM-91B	1200 × 300		This sign shall not be used in conjunction with a regulatory sign, e.g. NO RIGHT TURN
AT SIGNALS	GM-92B	1200 × 300		This sign shall not be used in conjunction with a regulatory sign, e.g. NO RIGHT TURN.
TM3 — Road condition				
NO LINES	TM3-17A	600 × 600		

Table A.1 *(continued)*

Sign	Sign number	Size, mm	Figure	Notes
LINE MARKING	TM3-18A	600 × 600		
	TM3-18B	1200 × 300		
LOOSE STONES	TM3-19B	1200 × 300		Symbolic Loose Stones signs T3-9 and TM3-9 are preferred.
WET BITUMEN	TM3-20A	600 × 600		
WATER OVER ROAD	TM3-21A	600 × 600		
DUE TO FLOODING	TM3-22B	1200 × 300		
FALLEN ROCKS	TM3-23B	1200 × 300		
ROAD FLOODED	TM3-24A	600 × 600		
DEEP EDGE DROP	TM3-25A	600 × 600		
TM4 — Special hazard				

Table A.1 *(continued)*

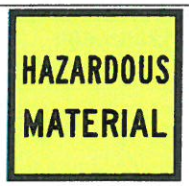
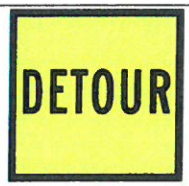
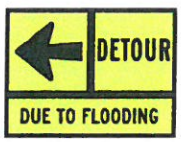
Sign	Sign number	Size, mm	Figure	Notes
SMOKE HAZARD	TM4-6A	600 × 600		
	TM4-6B	1200 × 300		
UHF CHANNEL	TM4-8A	600 × 600		
	TM4-8B	1200 × 300		
BUSH FIRE	TM4-9A	600 × 600		
	TM4-9B	1200 × 300		
HAZARDOUS MATERIAL	TM4-10A	600 × 600		
TM5 — Traffic diversion				
DETOUR	TM5-7A	600 × 600		This sign should be used in conjunction with a detour marker panel TM5-6A as shown below. 
	TM5-7B	1200 × 300		

Table A.1 *(continued)*

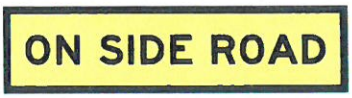
Sign	Sign number	Size, mm	Figure	Notes
Horizontal Arrow	TM5-8B	1200 × 300		This sign may be used with an ON SIDE ROAD panel to indicate the direction of the side road where road work is being carried out as shown below. 
ON SIDE ROAD	TM5-9A	600 × 600		
	TM5-9B	1200 × 300		
ON SIDE ROAD L/R	TM5-10B(L)	1200 × 300		This sign shall not be used with a regulatory sign
	TM5-10B(R)	1200 × 300		
DETOUR FOR HEAVY VEHICLES (L and R)	TM5-11C(L)	1200 × 600		
	TM5-11C(R)	1200 × 600		

Table A.1 *(continued)*

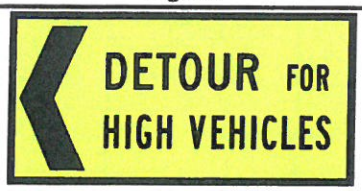
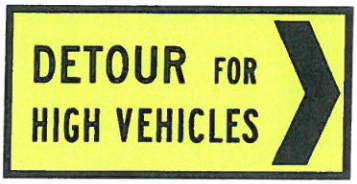
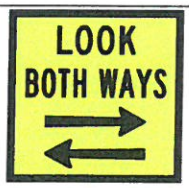
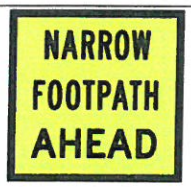
Sign	Sign number	Size, mm	Figure	Notes
DETOUR FOR HIGH VEHICLES (L and R)	TM5-12C(L)	1200 × 600		
	TM5-12C(R)	1200 × 600		
TM8 — Pedestrian and cyclist				
LOOK BOTH WAYS	TM8-6A	600 × 600		
WATCH YOUR STEP	TM8-7A	600 × 600		
Symbolic Pedestrians	TM8-8A	600 × 600		This sign shall be used in conjunction with an arrow TM5-6A sign
FOOTPATH CLOSED AHEAD	TM8-9A	600 × 600		
NARROW FOOTPATH AHEAD	TM8-10A	600 × 600		
PATH CLOSED AHEAD	TM8-11A	600 × 600		

Table A.1 *(continued)*

Sign	Sign number	Size, mm	Figure	Notes
PATH CLOSED	TM8-12A	600 × 600		
PEDESTRIAN HAZARD	TM8-13A	600 × 600		This sign shall only be used to warn of a hazard affecting pedestrians
	TM8-13B	1200 × 300		
CYCLING HAZARD	TM8-14A	600 × 600		This sign shall only be used to warn of a hazard affecting cyclists
	TM8-14B	1200 × 300		
BICYCLE LANE CLOSED AHEAD	TM8-15A	600 × 600		
BICYCLE LANE CLOSED	TM8-16A	600 × 600		
Symbolic Bicycle Ahead	TM8-17A	600 × 600		

Table A.1 *(continued)*

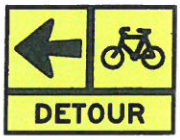
Sign	Sign number	Size, mm	Figure	Notes
Symbolic Bicycle	TM8-18A	600 × 600		This sign may be used on a bike path in conjunction with a detour marker as shown below. 
Accessible Path and Pedestrian Path	TM8-19C(R)	1200 × 600		This sign may be used when an accessible path is in a different direction to a pedestrian path. When used, additional TM8-20B should be used to provide a complete detour path of travel for people with disability.
	TM8-19C(L)	1200 × 600		
Accessible Path	TM8-20B(R)	1200 × 300		
	TM8-20B(L)	1200 × 300		
CYCLISTS DISMOUNT	GM9-58A	600 × 600		
TM9 — Event				
END AHEAD	TM9-1A	600 × 600		
	TM9-1B	1200 × 300		

Table A.1 *(continued)*

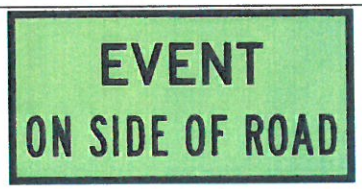
Sign	Sign number	Size, mm	Figure	Notes
END EVENT	TM9-2A	600 × 600		
	TM9-2B	1200 × 300		
EVENT IN PROGRESS	TM9-3A	600 × 600		
	TM9-3B	1200 × 300		
EVENT ON SIDE ROAD	TM9-4C	1200 × 600		
EVENT ON SIDE ROAD L/R	TM9-5B(L)	1200 × 300		
	TM9-5B(R)	1200 × 300		
COMMUNITY EVENT AHEAD	TM9-6C	1200 × 600		
Cyclist Racing Symbolic	TM9-7A	600 × 600		
Runner Symbolic	TM9-8A	600 × 600		
TM10 — Lane status				

Table A.1 *(continued)*

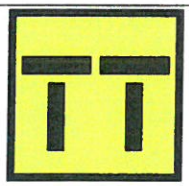
Sign	Sign number	Size, mm	Figure	Notes
Lane Through Ahead	TM10-1A	600 × 600		
Lane Closed Ahead	TM10-2A	600 × 600		
Left Lane of Two Lane Closed	TM10-3A	600 × 600		
Right Lane of Two Lane Closed	TM10-4A	600 × 600		
Two Lanes Ahead	TM10-5A	600 × 600		
Two Lanes Closed Ahead	TM10-6A	600 × 600		
Lane Status	TM10-7A	600 × 600		
Lane Status	TM10-8A	600 × 600		

Table A.1 *(continued)*

Sign	Sign number	Size, mm	Figure	Notes
Lane Status	TM10-9A	600 × 600		
Lane Statu	TM10-10A	600 × 600		
Lane Status	TM10-11A	600 × 600		
Lane Status	TM10-12A	600 × 600		
Lane Status	TM10-13A	600 × 600		
Lane Status	TM10-14A	600 × 600		
Lane Status	TM10-15A	600 × 600		
Lane Status	TM10-16A	600 × 600		

Table A.1 *(continued)*

Sign	Sign number	Size, mm	Figure	Notes
Lane Status — Through Median	TM10-17A	600 × 600		

Appendix B
(informative)

Multi-message sign combinations

Examples of logically related panels are shown in Figure B.1.

NOTE Any unused modules within the multi-message sign frame are filled with yellow retro-reflective panels without messages.

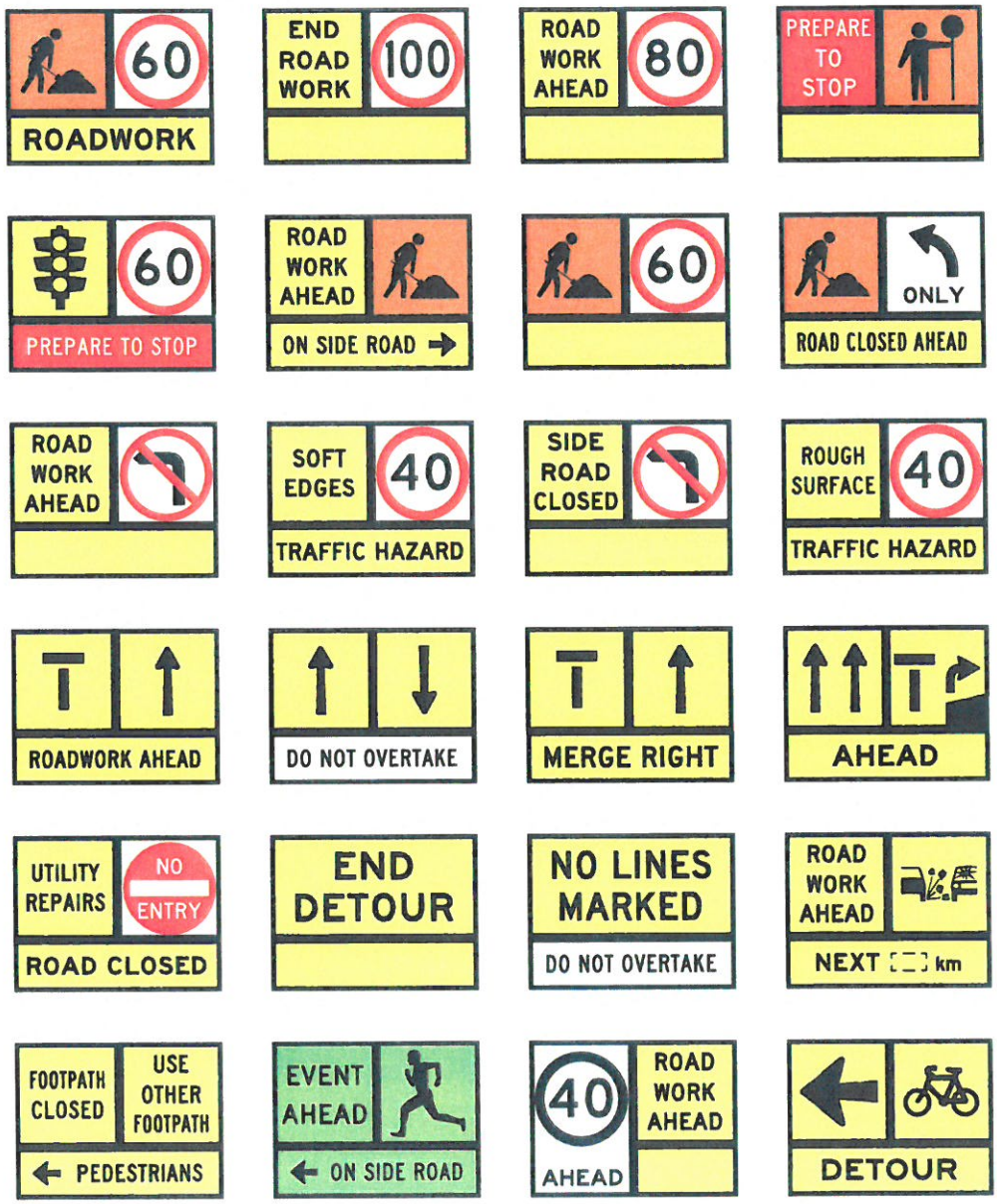


Figure B.1 — Multi-message sign combination examples

Bibliography

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