

Manual

**Traffic and Road Use Management
Volume 3 – Signing and Pavement Marking**

Part 9: Diversion route signage

July 2020

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1 Purpose

This document provides guidelines for signing approved diversion routes. Diversion routes may be temporary signs used to divert traffic around traffic incident sites (for example, crash site) or permanent signs that guide specific types of vehicles along an alternative route (for example, excess mass, oversized vehicles).

To promote standard practices on Queensland's state-controlled road network, the signs detailed in this Part are exclusively reserved for diversion route signing only. The intention is for these signs to remain unique, thus they are not to be used (or modified for use) for any other application without prior approval from the Traffic Engineering Unit.

The investigation and selection of roads that form a diversion route, as well as consultation and sign-off by relevant stakeholders, must be finalised before consideration is given to designing a suite of signs using this Part.

2 Sign types

There are two series of signs recommended for signing diversion routes, 'Series 1' and 'Series 2'.

Series 1 diversion route signs are designed for high traffic volume / high-speed roads, such as motorways or key arterial roads. On these road types, there can be many challenges and/or distractions facing motorists, such as navigating complex interchanges (and deciphering associated guide signing), roadside advertising devices, roadside development or the sheer volume of traffic on the road ahead. Series 1 diversion route signs are large, making them highly visible and easily recognised and understood by motorists in what is generally a cluttered visual environment. Series 1 signage is designed for use in highly-developed areas, such as south-east Queensland.

Series 2 diversion route signs are smaller signs designed for lower traffic volume roads where the layout of the network is not complex, and the existing level of guide signing is not excessive. As with Series 1 signs, Series 2 signs are high visibility signs due to their unique design. Series 2 signs are abbreviated to 'DR' as they are typically installed in an uncomplicated road network.

While the following details describe the different and preferred application of Series 1 and Series 2 diversion route signs, unique site conditions may necessitate the use of a particular Series 2 sign in a Series 1 sign layout and vice versa.

2.1 Series 1 diversion route signs

There are three types of Series 1 signs used to guide motorists through an approved diversion route:

- advance diversion warning sign
- diversion direction sign, and
- end diversion sign.

The effectiveness of static sign faces can be diminished over time as motorists become complacent with the information on the sign. To enhance the effectiveness of diversion route signing, all sign faces should be hinged and opened only while the related diversion route is in use. While the initial set up cost will be higher, there should be instant traffic efficiency benefits with the high-visibility diversion routes signs capturing motorists' attention. There are also longer-term maintenance benefits with hinged sign faces, given their limited exposure to atmospheric conditions that can deteriorate the sign face material.

2.1.1 Advance diversion route warning sign – Series 1

Advance diversion route warning signs are installed on the state-controlled road network on approach to the exit point to the diversion route. Their function is to give advance warning of the changed traffic condition ahead and provide adequate time for motorists to make driving decisions.

The advance diversion warning sign has been designed with optional wig-wag lighting. The inclusion of wig-wag lighting will only be required in exceptional circumstances, such as high speed / high volume multi-lane motorways or locations where unique site conditions warrant additional driver attention.

Figure 2.1.1 – Series 1 – Advance diversion warning sign – Series 1



Note: Orientation of arrow to reflect configuration of exit point

2.1.2 Diversion route direction sign

Diversion direction signs are installed to guide motorists along the diversion route. The placement of diversion direction signs at key intersections or decision points is intended to provide greater traffic safety and efficiency benefits. Given motorists driving the diversion route may be unfamiliar with the road network, these signs should be used as reassurance devices at suitable mid-block locations and on long diversion routes in rural areas where motorists may be disorientated or concerned a key intersection has been missed.

The Series 1 diversion route direction sign includes the word DIVERSION ROUTE and includes an arrow facing the direction a motorist is required to take as follows:

- Where a motorist is required to continue ahead, the straight arrow is used on the sign.
- Where a motorist is required to proceed left, a left facing arrow is placed to the left of the sign.
- Where a motorist is required to proceed right, a right facing arrow is placed to the right of the sign.

These signs are shown in Figure 2.1.2. The use of these signs at and/or in advance of interchanges / intersections along the diversion route depends on the complexity of the subject road network. The level of existing standard guide signing should indicate the need to provide diversion direction signs at or in advance of interchanges / intersections.

Figure 2.1.2 – Diversion direction sign

TC2328 (Example)

2.1.3 End diversion route sign – Series 1

END DIVERSION ROUTE sign must be installed at the end of a signed diversion route. Their purpose is to inform motorists they have completed the diversion and are returning to unrestricted route selection. Ideally, end diversion route sign should be located within sight of the major road network and, where applicable, near existing guide signing that provides motorists with further route selection choices.

Figure 2.1.3 – END DIVERSION ROUTE sign – TC2329

TC2329

2.2 Series 2 diversion route signs

There are three types of Series 2 signs used to guide motorists through an approved diversion route:

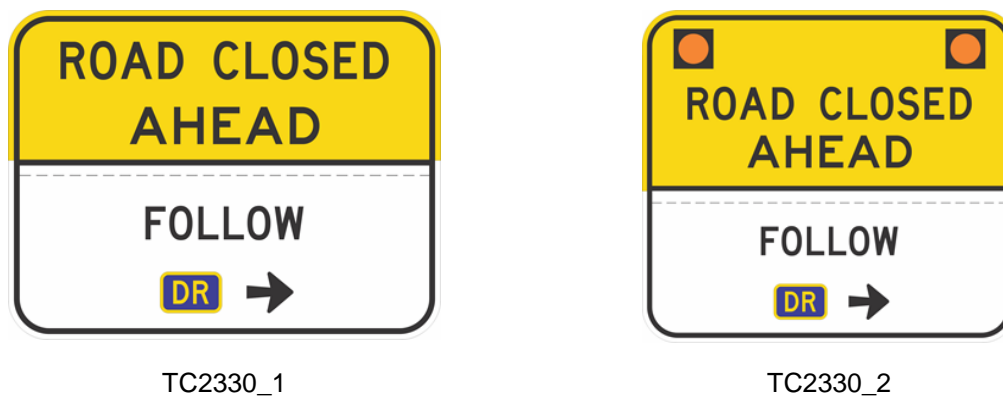
- advance diversion route warning sign
- diversion route direction sign, and
- end diversion route sign.

2.2.1 Advance diversion route warning sign – Series 2

Advance diversion warning signs are installed on the state-controlled road network on approach to the exit point to the diversion route. Their function is to give advance warning of the changed traffic condition ahead and provide adequate time for motorists to make driving decisions.

The advance diversion warning sign has been designed with optional wig-wag lighting. It is expected the inclusion of wig-wag lighting will only be required in exceptional circumstances where unique site conditions warrant additional driver attention. Given the unique design and specific information contained on advance diversion route warning signs, a hinged sign face allowing the device to open only while the diversion route is operational is recommended.

Figure 2.2.1 – Advance diversion route warning sign – Series 2



2.2.2 Diversion route direction sign – Series 2

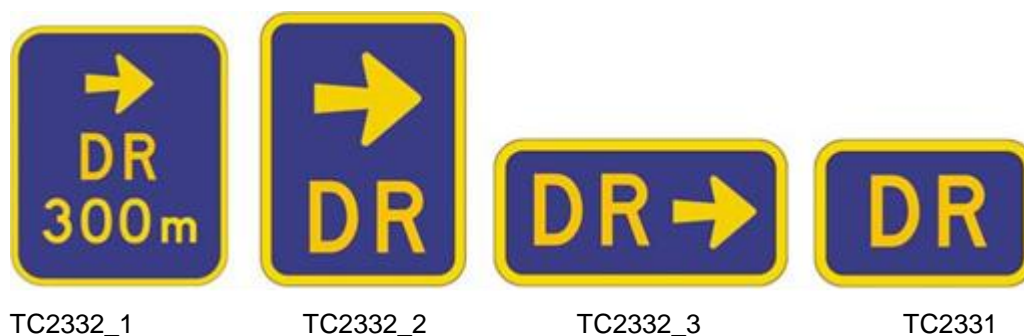
These signs are installed to guide motorists along the road network of the diversion route. The placement of these signs at key intersections or decision points is intended to provide greater traffic safety and efficiency benefits. Given motorists driving the diversion route are likely to be unfamiliar with the road network, these signs may be used for reassurance at suitable mid-block locations. Reassurance signing should be used on long diversion routes in rural areas where motorists may be worried or concerned a key intersection has been missed.

There are many variations of Series 2 diversion route direction signs, given the characteristics of each diversion route is unique. These signs may be erected on independent sign posts or incorporated into existing guide signing. The method of signing diversion routes should provide the clearest level of signing; for example, incorporating diversion route information onto existing guide signs may be complementary and reinforce the correct direction of travel or the additional information could clutter and complicate the existing guide signing so diversion route signs should be erected on independent posts.

Where diversion routes are temporary (that is, around traffic incident sites) and it is practical to drive the route prior to re-directing traffic, hinged sign faces may be installed.

Prior to designing diversion route signs, practitioners should obtain the latest copy of approved TC sign designs at the department's TC signs webpage at <https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/TC-signs>.

Figure 2.2.2 – Diversion route direction sign – Series 2



2.2.3 End diversion sign – Series 2

End diversion route signage (TC2333) must be installed at the end of a signed diversion route. Their purpose is to inform motorists they have completed the diversion and are returning to unrestricted route selection. Ideally, end diversion route signage should be located within sight of the major road network and, where applicable, near existing guide signing that provides motorists with further route selection choices.

The choice of end diversion route signing is based on the complexity of the subject road network. The sign (TC2333) should be used at more complex locations so it is clearly visible to approaching motorists. The use of a hinged sign face is also recommended for the larger sign to avoid the device becoming an unnecessary distraction while the diversion route is not in operation.

Figure 2.2.3 – END DIVERSION ROUTE sign – Series 2



TC2333

3 Numbering diversion routes

Where there are multiple diversion routes located close together or routes that share a common road, there may be a need to number the diversion routes.

A suite of signs has been approved to cater for numbered diversion routes. Before designing diversion route signs, practitioners should obtain the latest copy of approved TC sign designs at the department's TC signs webpage at <https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/TC-signs>.

Figure 3 – Numbered diversion route signs

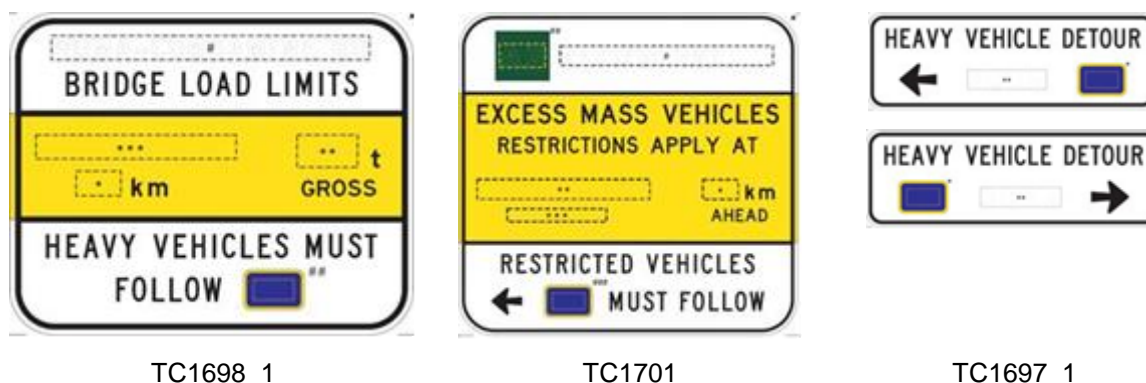


4 Heavy vehicle management

Diversion route signing may be used to manage heavy vehicle access (for example, excess mass, oversized vehicles). While the method of signing the route is outlined in Section 2, additional TC signs have been approved to detail the specifics of the vehicles being diverted.

Before designing diversion route signs for heavy vehicles, practitioners should obtain the latest copy of approved TC sign designs at the department's TC signs webpage at <https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/TC-signs>.

Figure 4 – Diversion route signing for heavy vehicle management



5 Positioning of signs

Part 1 of the *Manual of Uniform Traffic Control Devices* (MUTCD) outlines general criteria for the lateral, longitudinal and mounting heights of road traffic signs. The signs referenced in this document must be installed in accordance with the criteria outlined in the MUTCD.

Road traffic signs and structures are potentially hazardous to occupants of errant vehicles. To limit the installation of additional roadside hazards, the diversion direction signs should be installed on existing structures with existing guide signs (where this does not contradict Section 2.2.2). The figures in Section 7 illustrate concept signing layouts.

6 Approval to erect, change or remove signs

6.1 Traffic incident management

Proposed diversion routes and the associated signing should be conceived and endorsed by the local Transport and Main Roads Incident Management Working Group (IMWG). Where a Transport and Main Roads region has not established an IMWG, the department shall, as a minimum, consult with Queensland Police Service's local Regional Traffic Coordinator and the local government authority. Local government consultation is particularly important where a proposed diversion is likely to affect traffic and the pavement condition of the local road network. Transport and Main Roads shall seek written approval from the local government authority's Chief Executive Officer regarding the placement of diversion route signing on the local road network.

While local government must be consulted about diversion route signing on their road network, the Transport and Main Roads Regional Director shall have final authority for approving the installation of diversion route signing on and from the state-controlled road network.

6.2 Heavy vehicle management

Where a proposed diversion route from the state-controlled road network uses the local road network, Transport and Main Roads shall liaise and seek written approval from the relevant local authority. Local government consultation is particularly important where a proposed diversion is likely to affect traffic and the pavement condition of the local road network.

While local government must be consulted about diversion route signing on their road network, the Transport and Main Roads Regional Director shall have final authority for approving the installation of diversion route signing on and from the state-controlled road network.

7 Costs to erect, change or remove signs

All costs associated with the manufacturing and installation of diversion route signing on the state-controlled road network shall be funded by the local Transport and Main Roads regional office. Where a diversion from the state-controlled road network uses the local government road network, Transport and Main Roads shall fund all associated signing works.

These arrangements also apply to any subsequent changes, relocation or removal of signs.

Where local government develop diversion routes on their road network that do not use state-controlled roads, the local authority is responsible for all associated signage costs

Figure 7(1) – Concept signing layout 1

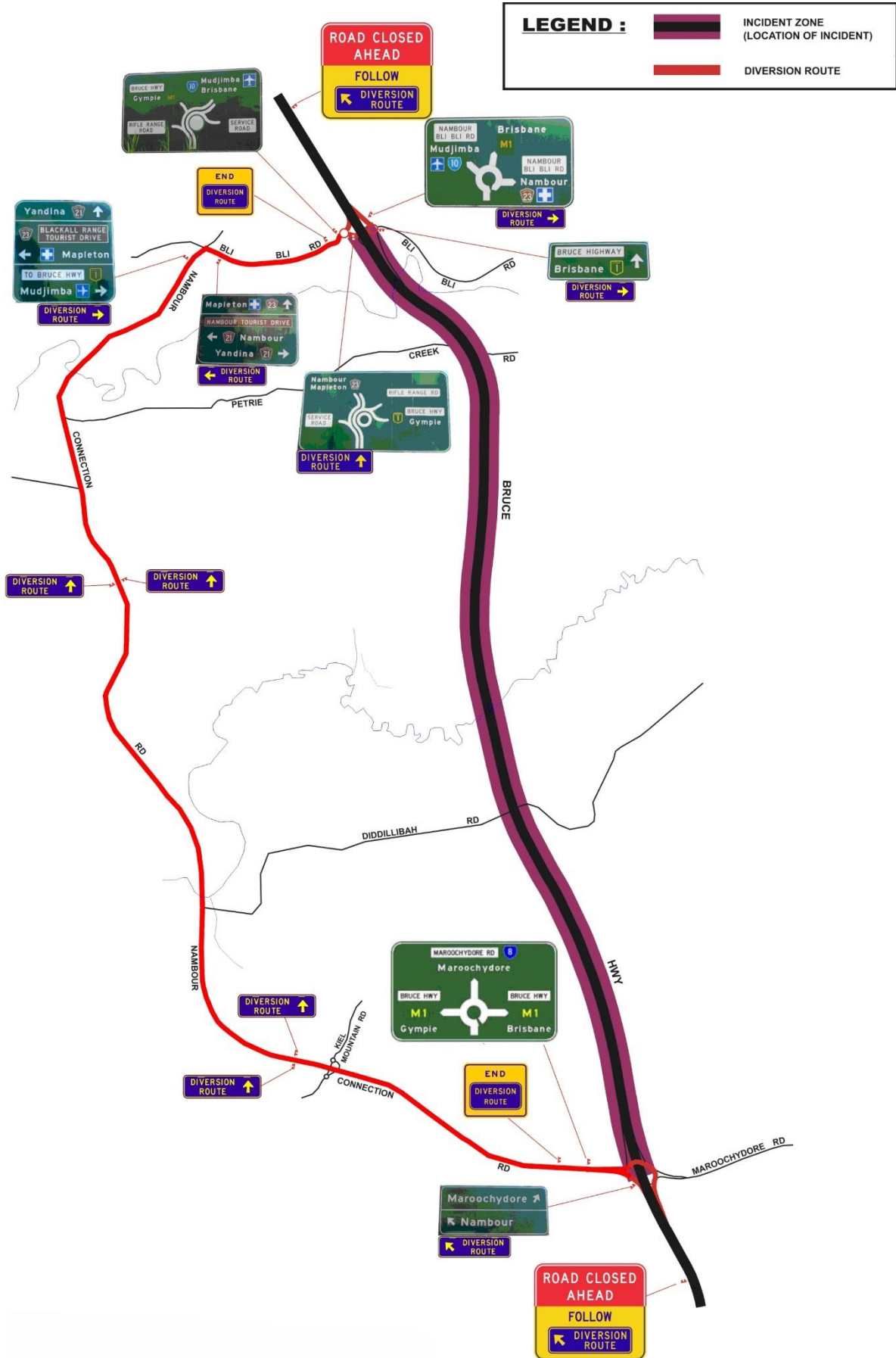
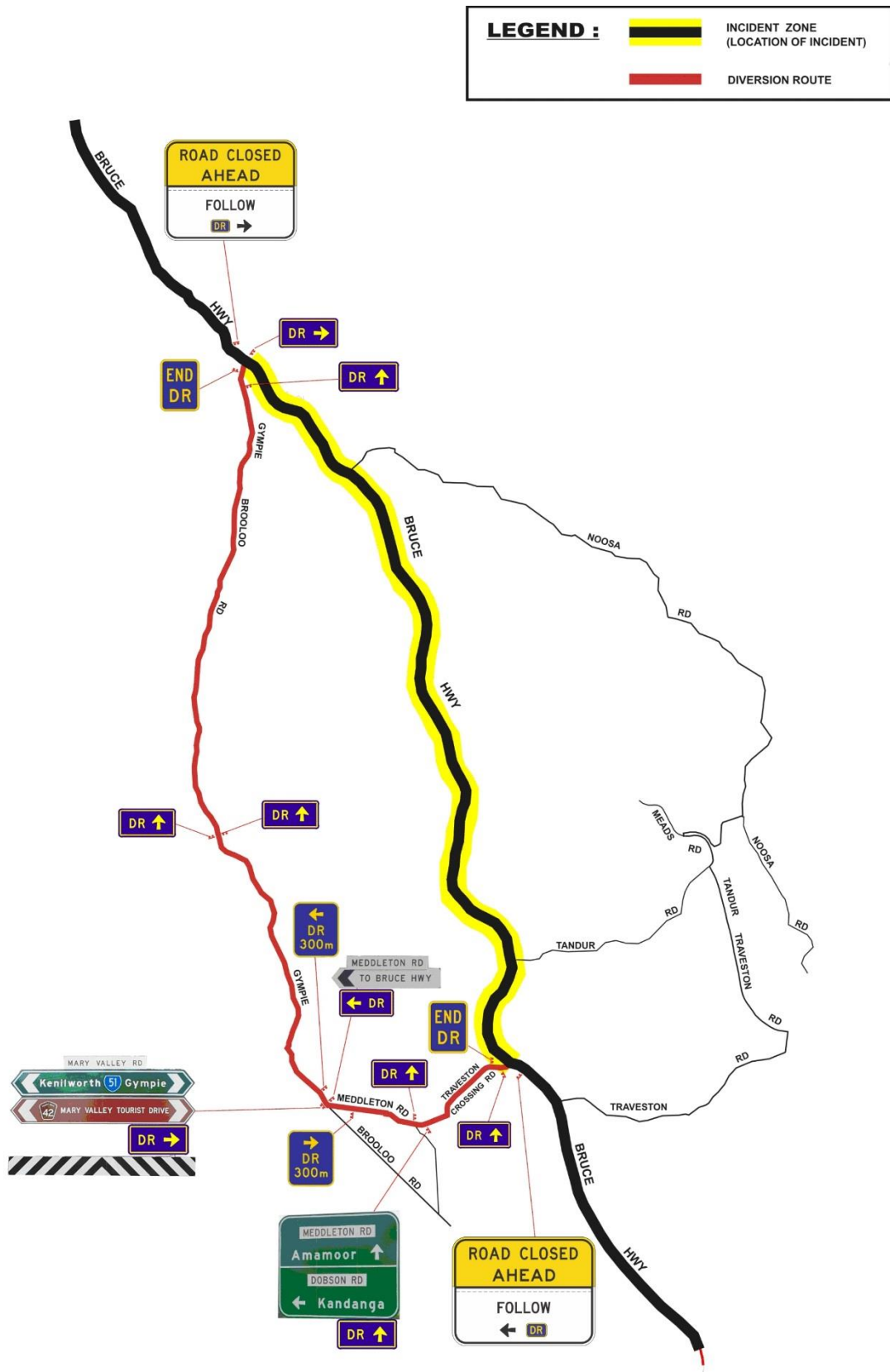
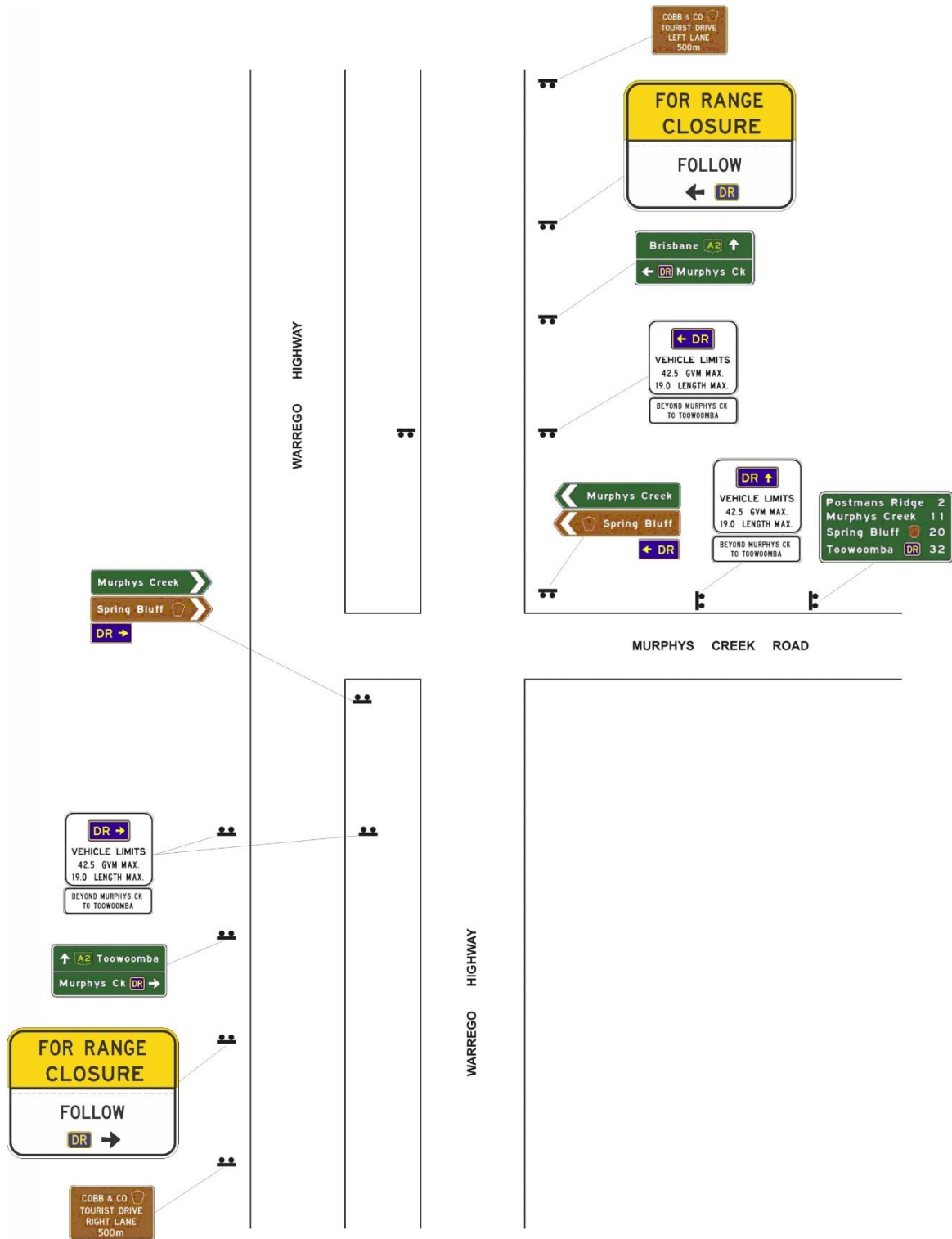


Figure 7(2) – Concept signing layout 2



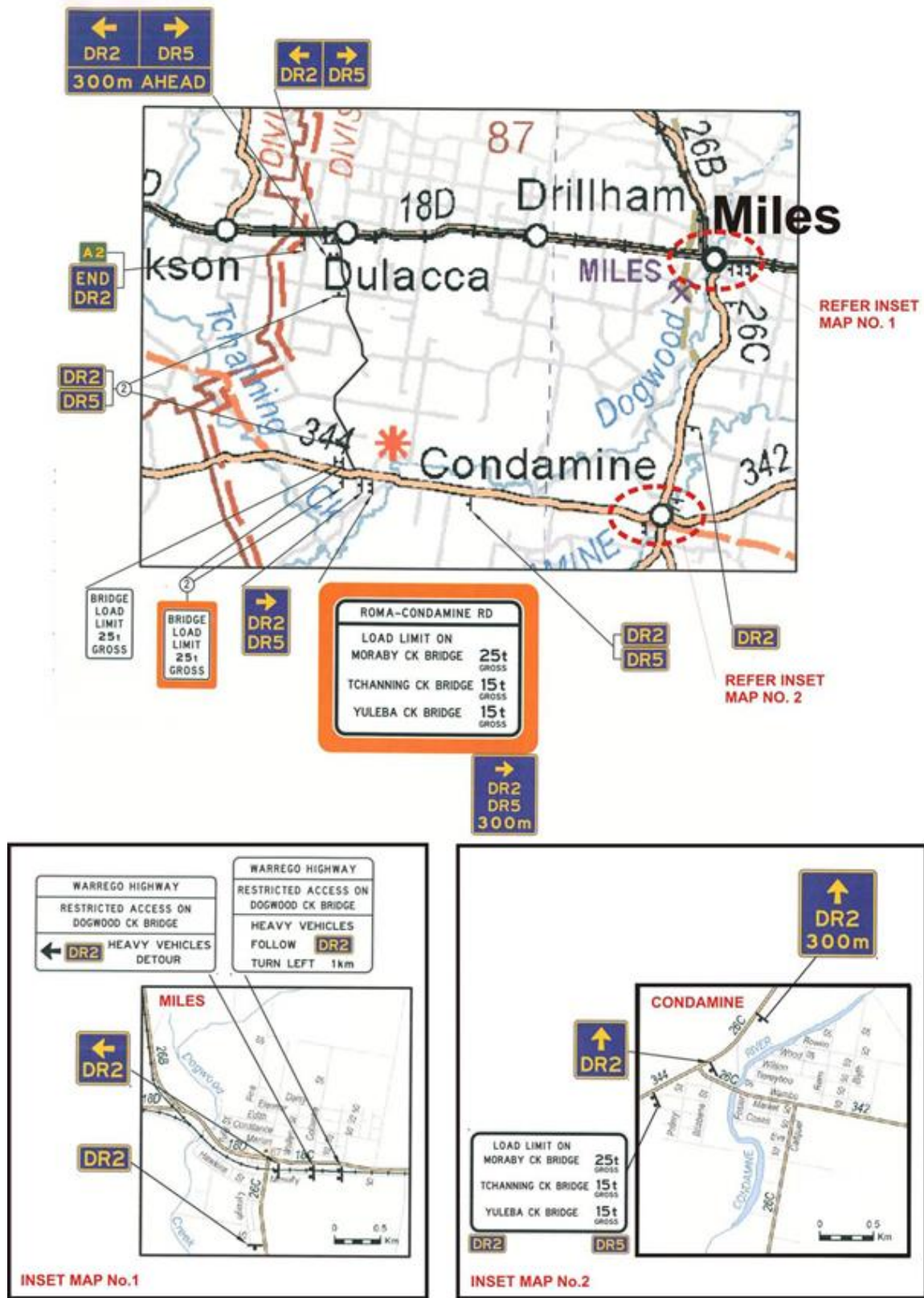
CONCEPT SIGNING LAYOUT 2

Figure 7(3) – Concept signing layout 3 – Series 2 Diversion route signing – Road conditions / vehicle restrictions



CONCEPT SIGNING LAYOUT 3 - SERIES 2
DIVERSION ROUTE SIGNING - ROAD CONDITIONS / VEHICLE RESTRICTIONS

Figure 7(4) – Concept signing layout 4 – Series 2 Diversion route signing – Heavy vehicle management



CONCEPT SIGNING LAYOUT 4 - SERIES 2
DIVERSION ROUTE SIGNING - HEAVY VEHICLE MANAGEMENT

Appendix A – Background information

Diversion route signage was initially conceived as a traffic incident management tool. Traffic incident management is a coordinated approach to reducing the negative effects of traffic incidents. This type of management focuses on quick detection, response and clearance of traffic incidents / hazards.

Traffic incident management programs also alert drivers about traffic incidents and seek to maximise traffic flow through and around the incident site.

The effect of not having incident management programs in place is significant and may include: threats to public safety, personal injuries, delays in emergency response to incidents, time loss, fuel consumption, delays in critical goods reaching their destinations, increased vehicle emission and other economic effects.

The *Strategic Alliance (Road Operations) Draft 2010* is a coordinated approach by the Department of Transport and Main Roads, Department of Community Safety and Queensland Police Service including in which to implement traffic management measures. Annex A of the *Strategic Alliance* identifies the responsibility of Transport and Main Roads and local government to manage traffic in the outer cordon of incident sites and the establishment of traffic diversion routes.

The approved application of diversion route signing has been broadened from its initial use around traffic incident sites only. As is the case with traffic incident management, it is expected the unique style of diversion route signing will be equally effective providing alternative route guidance for the heavy vehicle industry (for example, excess mass, oversized vehicles).

