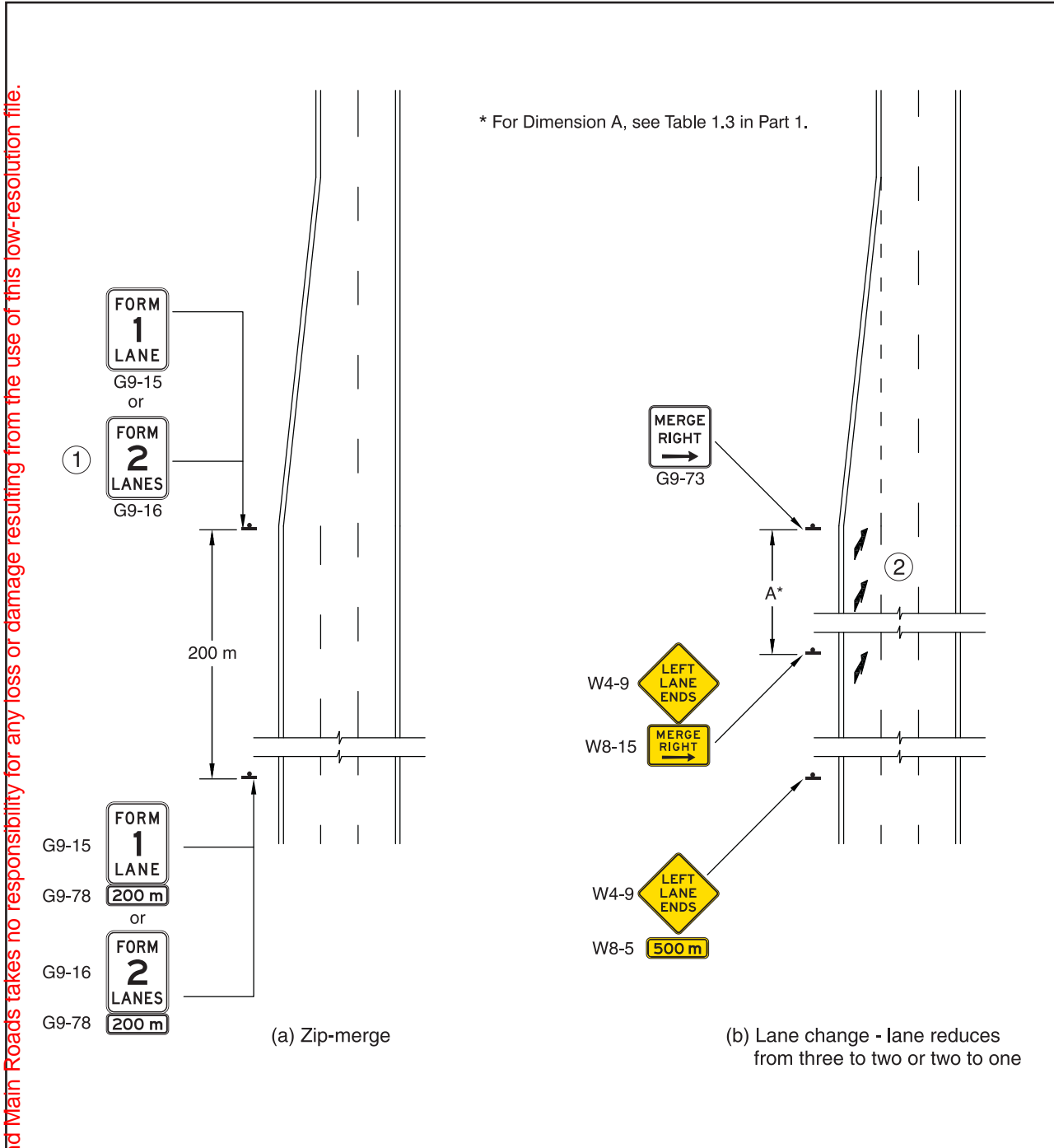
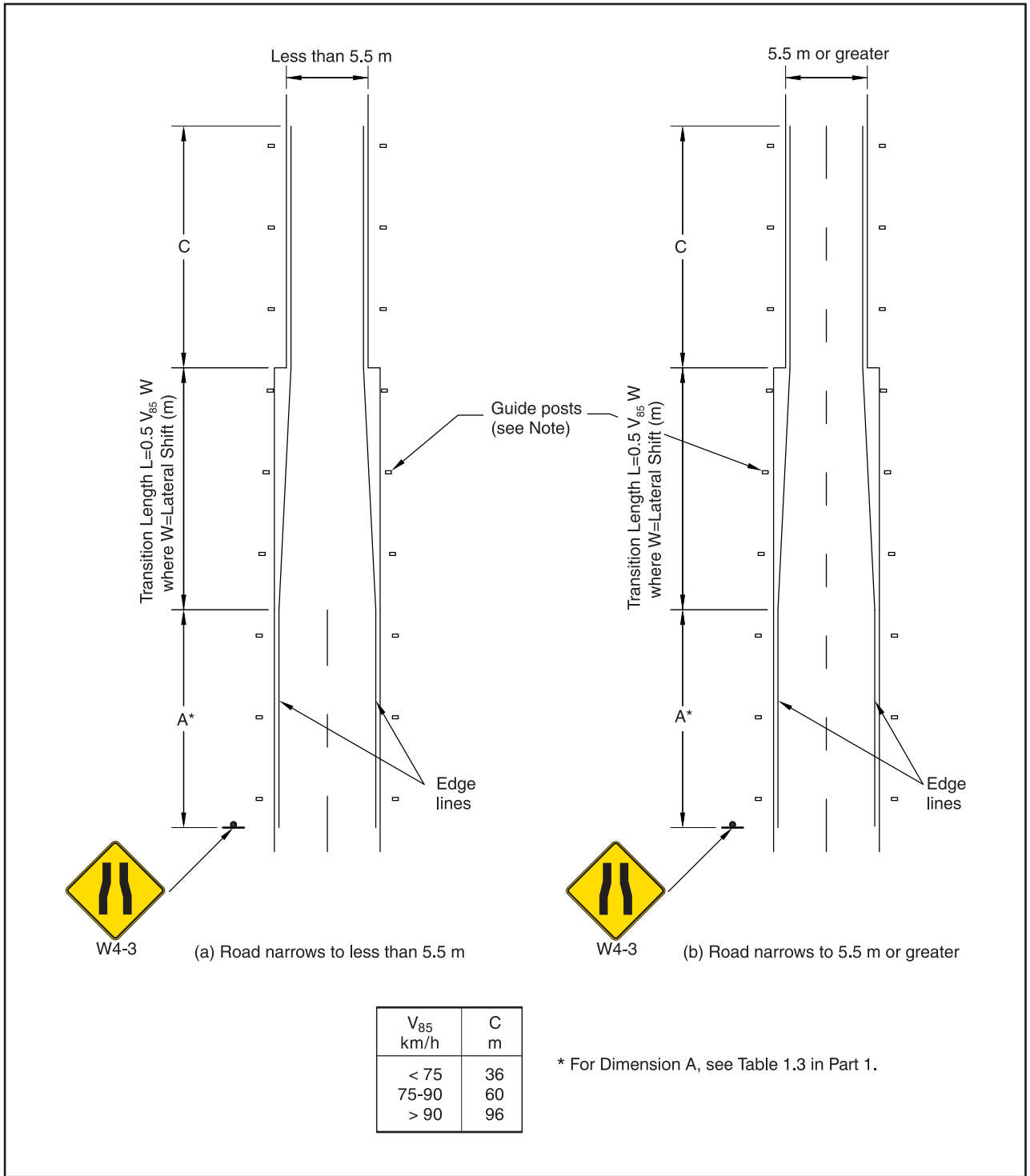


NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



- NOTES:
- 1 The FORM 2 LANES sign applies if this illustration is one side of the divided road.
 - 2 Lane change arrows are always used in Figure (b). They are not used in Figure (a).

Figure 4.16 TREATMENTS AT LANE REDUCTIONS (MERGES)

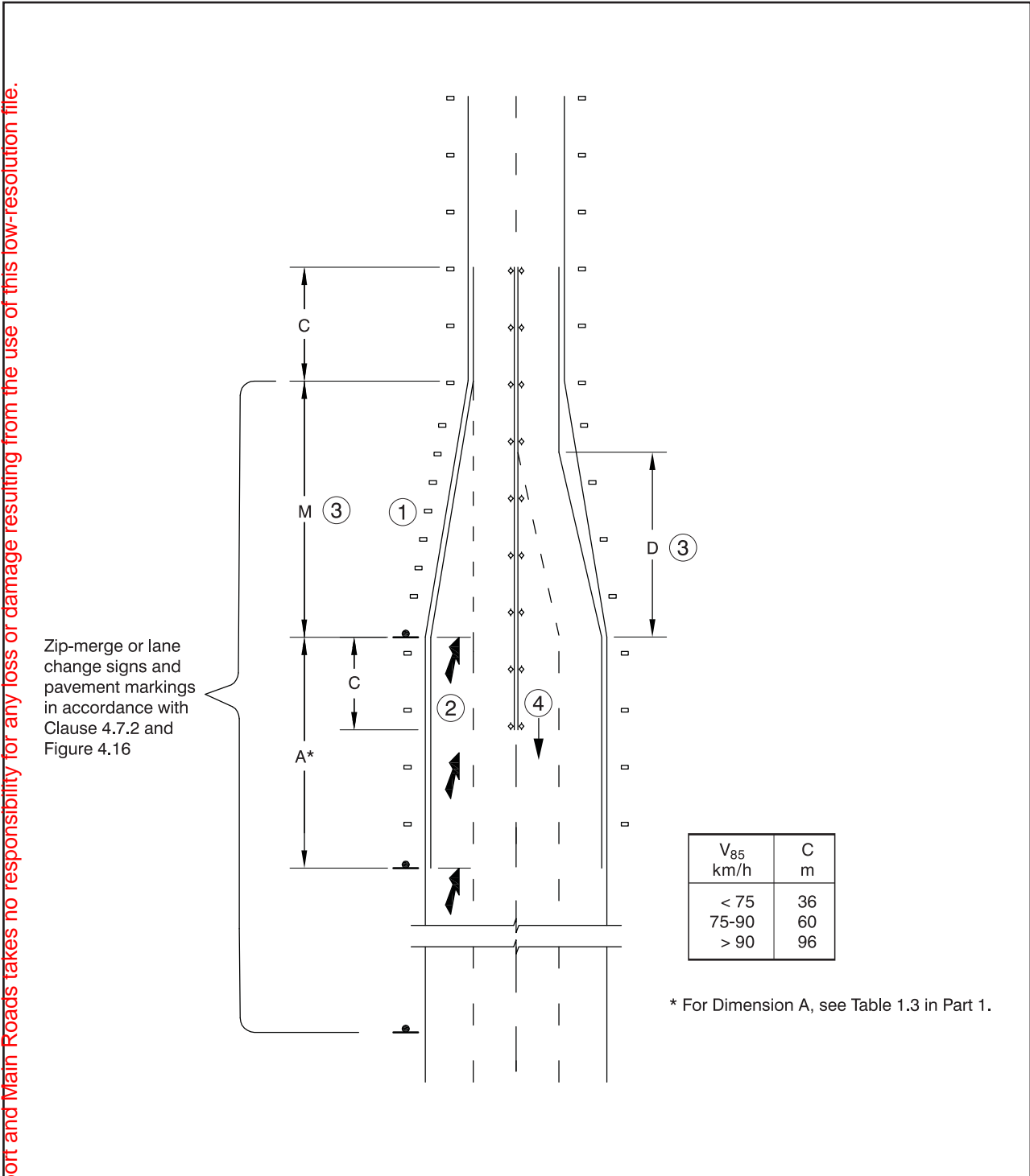


NOTE: Guide posts are at a constant distance from the edge line, minimum 1.2 m, and at 10 m to 15 m longitudinal spacing throughout the transition.

Figure 4.17 NARROWING OF TWO-LANE ROAD

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

- 1 Guide posts at 10 m to 15 m on the lane reduction transition side. Wider spacings may be used on the other side of the transition.
- 2 The lane reduction is treated either as a zip-merge in accordance with Clause 4.7.2(a) or a lane change in accordance with Clause 4.7.2(b). In the zip-merge case, both the lane change arrows and the continuity line are omitted. In the lane change case the lane change arrows are used always.
- 3 M and D are the merge and diverge distances calculated from traffic speeds and lane widths in accordance with road design practice.
- 4 If this is the start of an overtaking lane, see Clause 4.8, the signs and pavement markings shown in Figure 4.21 will be required.

Figure 4.18 TRANSITION FROM FOUR-LANE TO TWO-LANE ROAD

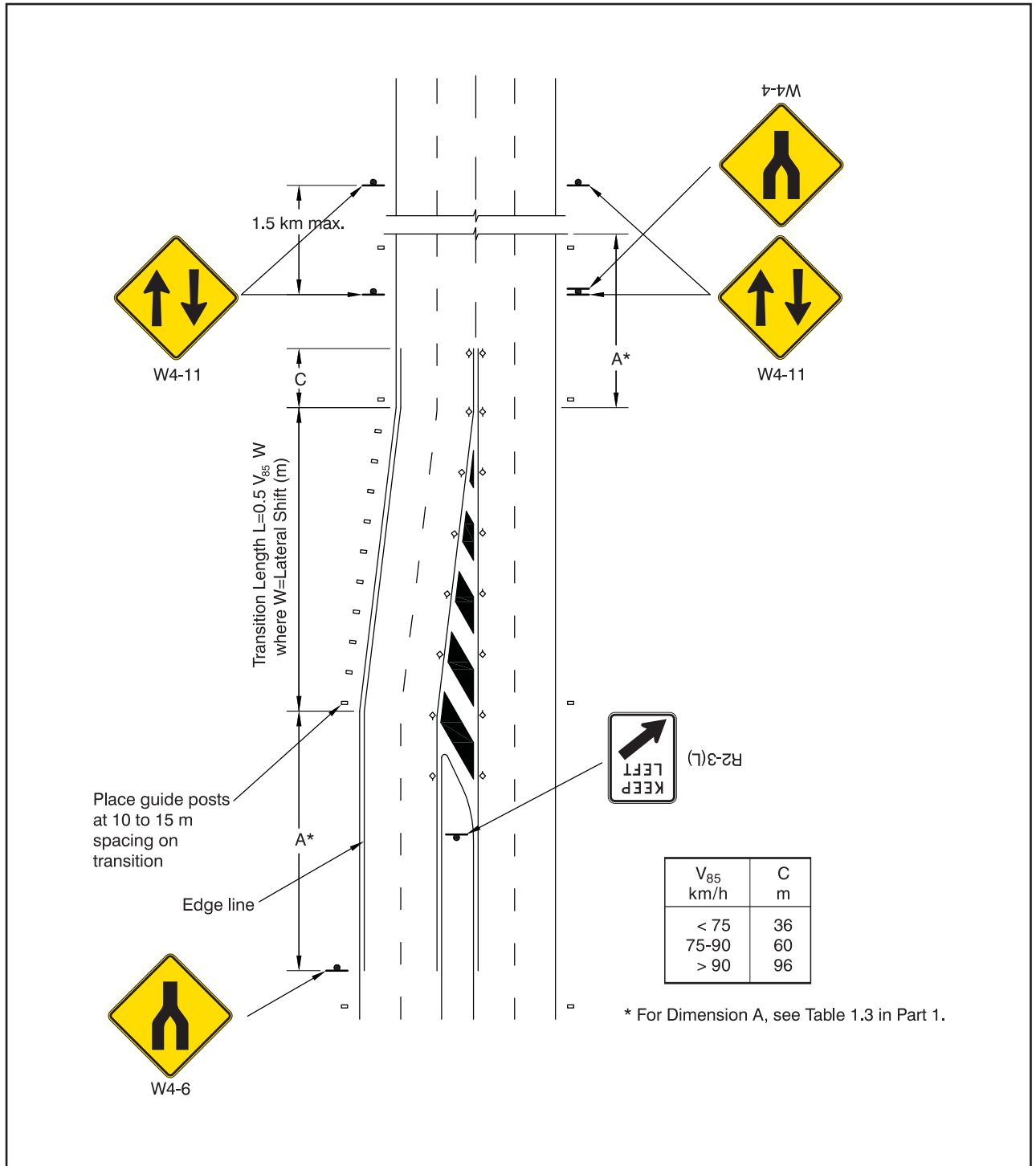
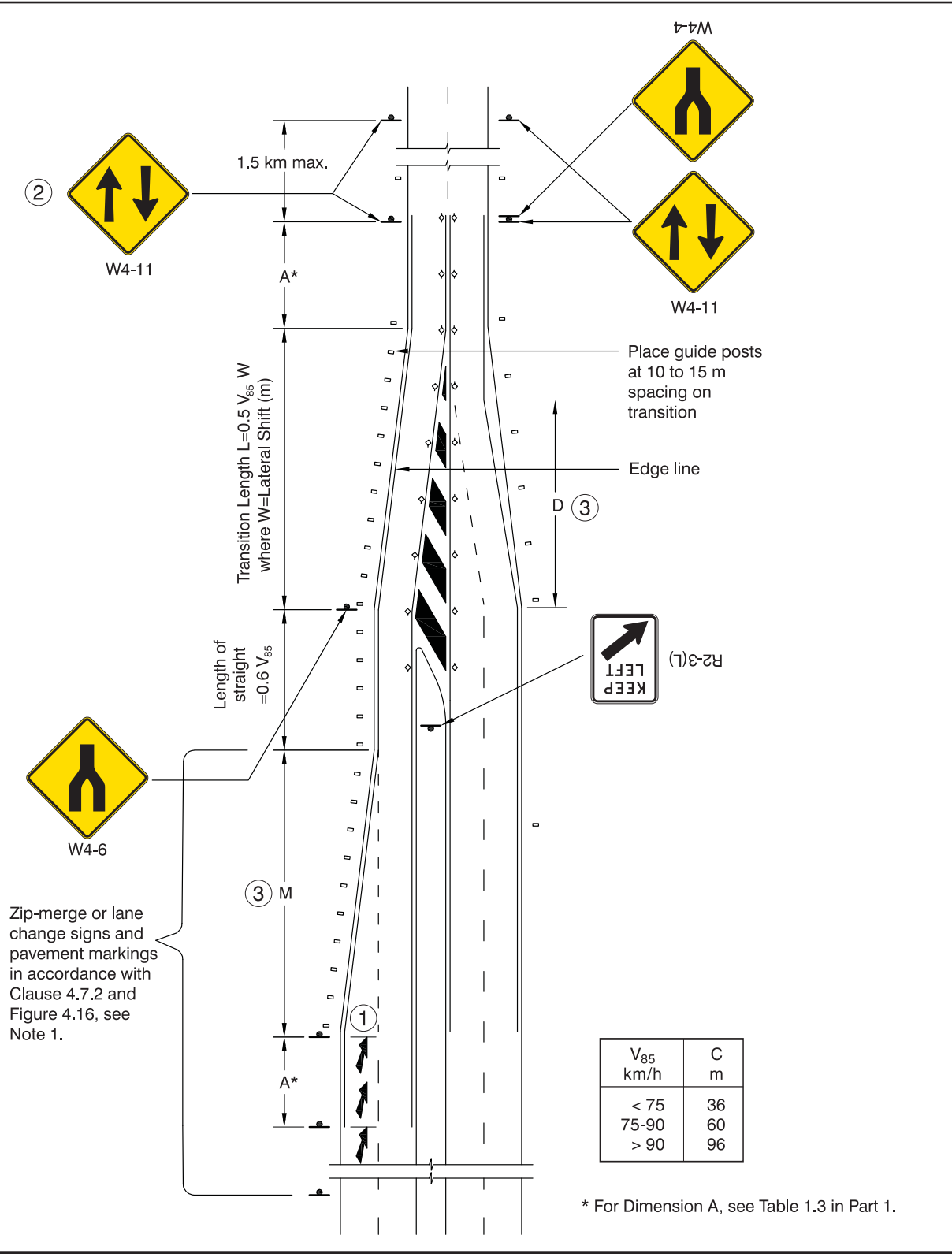


Figure 3.19 TRANSITION FROM FOUR-LANE DIVIDED TO FOUR-LANE UNDIVIDED ROAD

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed.
 This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication.
 A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au
 The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

- The lane reduction is treated either as a zip-merge in accordance with Clause 4.7.2(a) or a lane change in accordance with Clause 4.7.2(b). In the zip-merge case both the lane change arrows and the continuity line are omitted. In the lane change case the lane change arrows are always used.
- Additional signs to further remind road users of the change to two-way conditions may be required, see Clause 4.7.5.4(d).
- M and D are the required merge and diverge distances calculated in accordance with road design practice.

Figure 4.20 TRANSITION FROM FOUR-LANE DIVIDED TO TWO-LANE UNDIVIDED ROAD

(c) *End divided road (W4-6)*

W4-6

The End Divided Road sign shall be used at the end of a section of divided road as a warning of two-way traffic ahead.

The sign should, where necessary, be followed by the Two-way Traffic sign (W4-11) (see Clause 3.7.4.(e)).

NOTE: Sign W4-6 is Sign W4-4 inverted.

(d) *Two-way (W4-11)*

W4-11

The Two-way sign (W4-11) shall be used just beyond the end of a divided road or other one-way roadway in any situation where there is a risk that road users will fail to perceive that they are no longer on a divided road and need to be warned that they are about to enter or have entered a road with two-way traffic. It may be used in conjunction with the End Divided Road sign (W4-6) where a two-way roadway is the extension of a one-way roadway.

The sign shall be erected on both sides of the road at such locations and repeater signs placed at further distances along the two-way section as necessary.

It may be used on any other roadway where, because of the road conditions, it is not clear whether a particular roadway carries traffic in one or both directions.

NOTE: For the use of the Two-way sign (R2-11) see Clause 4.13.2.

(e) *Keep left (R2-3)*

For the use of this sign refer to Clause 2.8.3.

4.8 CLIMBING AND OVERTAKING LANES, AND TURNOUTS

4.8.1 General

Climbing and overtaking lanes, and turnouts are provided and marked as follows:

- (a) *Overtaking lanes.* These are provided on two-lane, two-way roads at long or steep grades or elsewhere where it is necessary or desirable to provide for traffic to pass slower moving vehicles. Overtaking lanes are designed as shown in Figure 4.21 to encourage all traffic in the first instance to travel in the added left-hand lane, leaving the centre lane for overtaking vehicles only.
- (b) *Climbing lanes.* These are provided on multilane roads, i.e. two or more lanes in one direction, at long or steep grades to minimize reductions in capacity due to slow moving vehicles. Climbing lanes shall be marked as shown in Figure 4.22(a) to encourage only the slow-moving vehicles to use the added left-hand lane.
- (c) *Turnouts.* These are provided only on low speed roads, 85th percentile speed 60 km/h or less, where it is desirable to provide for traffic to pass slower moving vehicles, but due to geometric, topographical or other constraints a full length climbing or overtaking lane cannot be provided. They are generally not more than 150 m in length overall including 50 m entry and exit tapers and shall have a layout and pavement markings as shown in Figure 4.22(b).

The signs listed in Table 4.7 are used for climbing and overtaking lanes and turnouts.

Table 4.7 SIGNS FOR CLIMBING AND OVERTAKING LANES AND TURNOUTS – SIZE TABLE

Sign type	Sign Number	Size (mm)
KEEP LEFT UNLESS OVERTAKING	R6-29B R6-29C	1800 x 900 2400 x 1200
END KEEP LEFT UNLESS OVERTAKING	R6-32	1200 x 800
Lane allocation	W4-10B W4-10C	750 x 750 900 x 900
SLOW VEHICLE LANE AHEAD	G9-10	900 x 900
SLOW VEHICLE LANE x km AHEAD	G9-11	900 x 1100
SLOW VEHICLES USE LEFT LANE	G9-12	950 x 1100
OVERTAKING LANE x m AHEAD	G9-37	2600 x 1300
OVERTAKING LANE x km AHEAD	G9-38	2600 x 1300
SLOW VEHICLE TURNOUT x m	G9-50A G9-50B	900 x 900 1200 x 1200
SLOW VEHICLE TURNOUT	G9-51A G9-51B	900 x 900 1200 x 1200
SLOWER VEHICLES USE TURNOUTS NEXT x km	G9-77	1800 x 750

4.8.2 Signs for climbing and overtaking lanes

The warning and traffic instruction signs required at climbing lanes, overtaking lanes and turnouts are as follows:

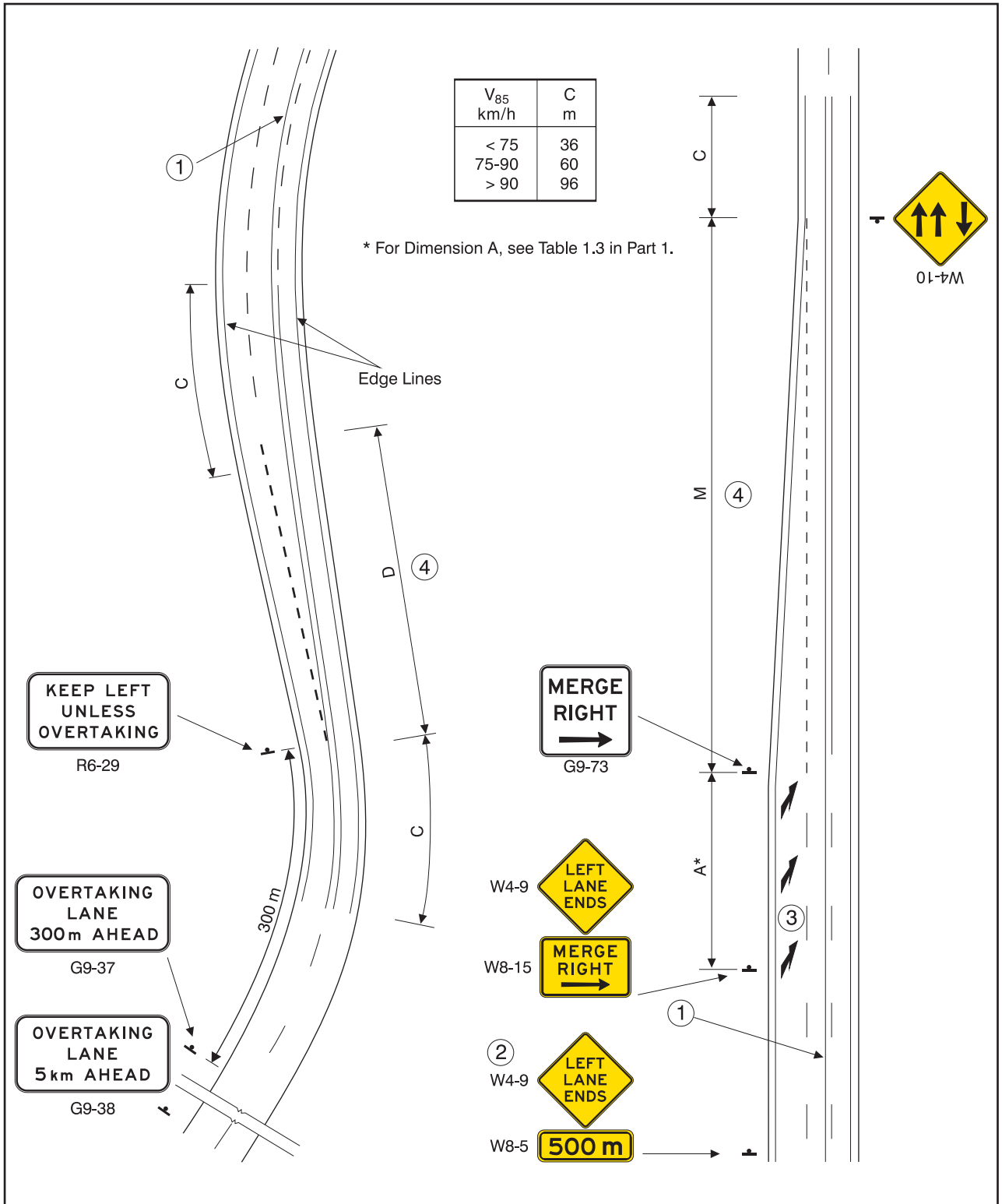
- (a) *Zip-merge and lane change signs*
Refer to Clauses 4.7.5.1 and 4.7.5.2.
- (b) *Lane allocation (W4-10)*



W4-10

The Lane Allocation sign should be used on undivided roads to warn drivers they are approaching or have entered a section of roadway which has an extra lane for traffic travelling in the opposite direction (see Figure 4.21).

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

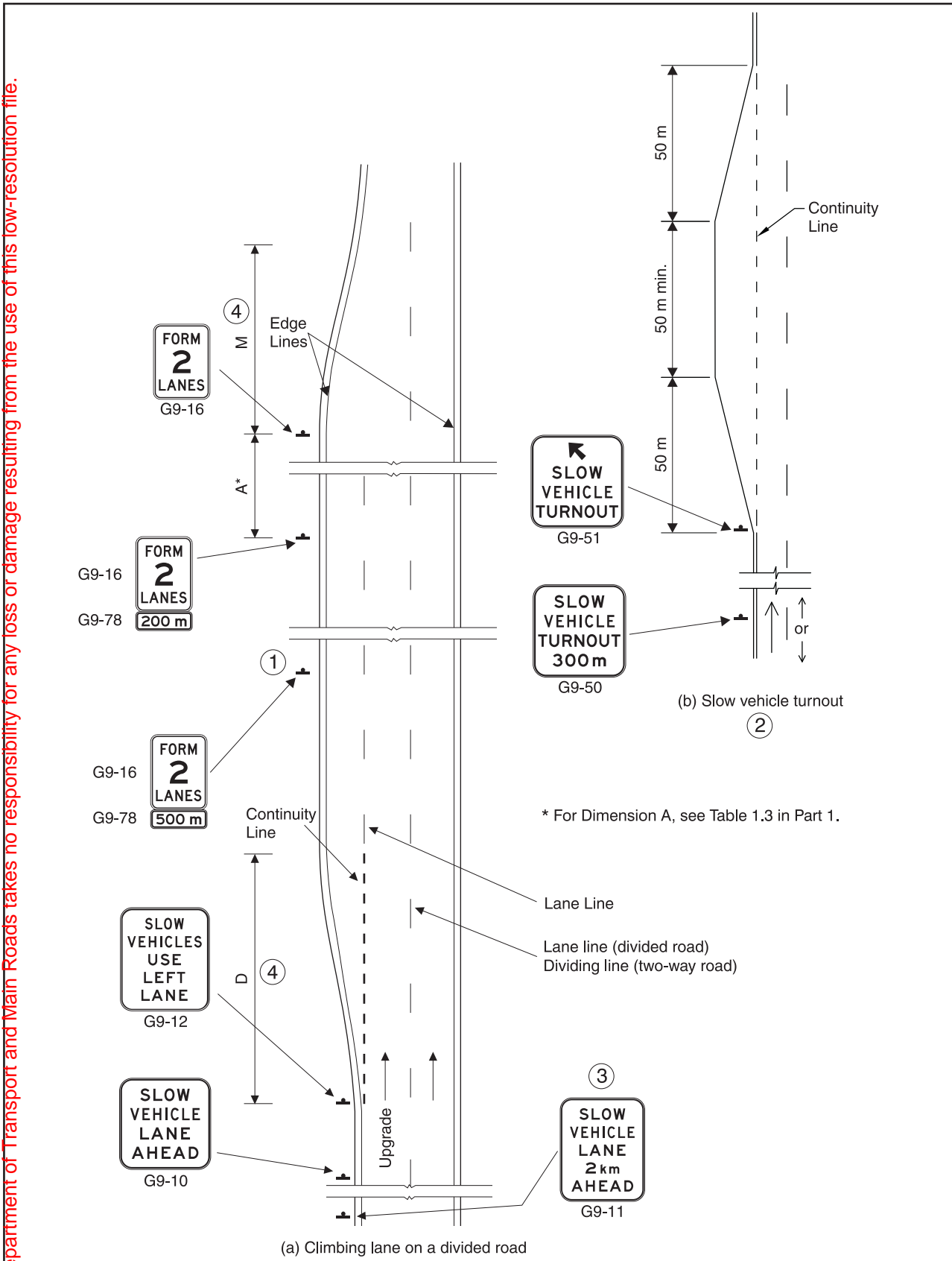
- 1 A double barrier line is required if the warrants for a no- overtaking zone are met in the single-lane direction. It should also be considered if the overtaking lane section is on curved alignment even though overtaking sight distance is available.
- 2 For erection where left lane is more than 1 km long. This sign is erected 500 m in advance of the G9-73 sign.
- 3 Merge arrows are optional (see Clause 4.5.2.4).
4. M and D are the required merge and diverge distances calculated in accordance with road design practice.

Figure 4.21 OVERTAKING LANES ON TWO-LANE RURAL ROADS

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed.

This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

- 1 For use where the left lane is more than 1 km long.
- 2 The slow vehicle turnout can be used on any low speed road, divided or undivided where V_{85} is 60 km/h or less.
- 3 Use G9-11 where advance information is desirable i.e. where overtaking opportunities are reduced for some distance in advance of lane (generally 2 km, maximum 5 km).
- 4 M and D are the required merge and diverge distances calculated in accordance with road design practice.

Figure 4.22 TYPICAL TREATMENT FOR CLIMBING LANES AND TURNOUTS

(c) *Slow vehicle lane ahead (G9-10), Slow vehicle lane x km ahead (G9-11)*

G9-10



G9-11

The SLOW VEHICLE LANE AHEAD sign shall be used to give advance warning of a climbing lane (see Clause 4.8.1(b)). It should be placed on the left side of the road approximately 100 m in advance of the climbing lane. Where it is desirable to give advance information at a greater distance, the alternative sign SLOW VEHICLE LANE x km AHEAD may be used with an appropriate distance shown.

(d) *Slow vehicles use left lane (G9-12)*

G9-12

The SLOW VEHICLES USE LEFT LANE sign shall be erected on the left side of a road at the beginning of the taper leading to a climbing lane (see Clause 4.8.1(b)).

(e) *Overtaking lane x m ahead (G9-37), Overtaking lane xkm ahead (G9-38)*

G9-37



G9-38

The OVERTAKING LANE x m AHEAD sign may be used to give advance warning of an overtaking lane (see Clause 4.8.1(a)). It should be placed on the left side of the road approximately 300 m in advance of the start of the taper leading to the extra lane.

Where it is desirable to give long distance advance information the legend may be altered to OVERTAKING LANE x km AHEAD (G9-38) with the appropriate distance shown.

(f) *Keep left unless overtaking (R6-29)*

R6-29

The KEEP LEFT UNLESS OVERTAKING sign shall be erected at the start of an overtaking lane section on the left side of the road at the beginning of the taper leading to the added left-hand lane (see Clause 5.8.1(a)).

Near the end of the overtaking lane a lane change in accordance with Clause 4.7.5.2 shall be provided at the lane drop as shown in Figure 5.22.

See also Clause 4.15.5 regarding the regulatory use of this sign on multi-lane roads generally.

4.8.3 Signs for turnouts

SLOW VEHICLE TURNOUT x m (G9-50)

SLOW VEHICLE TURNOUT (G9-51)

SLOWER VEHICLES USE TURNOUTS NEXT x km (G9-77)

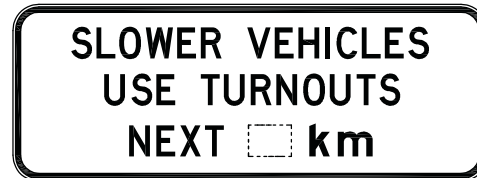
Signs G9-50 and G9-51 shall be used at up to 300 m in advance of, and at the beginning of the taper leading to a turnout (see Clause 4.8.1(c)). The sign G9-77 may be used to give advance warning of a series of turnouts.



G9-50



G9-51



G9-77

4.9 STEEP GRADES AND SAFETY RAMPS

4.9.1 General

The signing of steep downgrades may take one of the following forms, as illustrated in Figure 4.24.

Type 1 – Short steep descent (see Figure 4.24(a)).

Type 2 – Steep descent (see Figure 4.24(b)).

Type 3 – Long steep descent (see Figure 4.24(c)).

Guides for the use of these treatments is given in Figure 4.25.

NOTE: These signs may not be necessary or appropriate in residential street applications.

Safety ramps may be provided on steep descents to allow runaway vehicles to be brought safely to a stop. Wherever practicable they should be located on the left side of the roadway. Adequate advance advice and directions to its entry point are essential to the effectiveness of a safety ramp. Advance information at successive points covering the entire length of the steep grade above the safety ramp should be considered. Safety ramp signing is illustrated in Figure 4.26. An arrester bed is sometimes used instead of a safety ramp. The requirements for signing and delineation of the entry are similar to those for the safety ramp.

At upgrades in excess of 10%, advance warning should be provided where the length of grade exceeds 100 m (see Clause 4.9.3(a)). Where the length of grade exceeds 1000 m, additional warning should be provided (see Clauses 4.9.3(b) and 4.9.3(c)).

The signs listed in Table 4.8, are used for steep grades (up and down) and safety ramps.

4.9.2 Signs for steep descents

The signs are to be used as follows:

- (a) *Steep Descent (W5-12)*



W5-12

The Steep Descent sign shall be used in advance of short steep descents as indicated in Figure 4.25. It is used as illustrated in Figure 4.24(a).

The supplementary plate NEXT x km shall be used in conjunction with this sign if the length of the steep descent is 1 km or more.

The sign with supplementary plate NEXT x km shall also be used as a repeater sign on long steep descents as illustrated in Figure 4.24(c).

- (b) *TRUCKS AND BUSES MUST USE LOW GEAR (R6-22)*
END TRUCK AND BUS LOW GEAR AREA (R6-23)
NEXT x m (R9-6)
NEXT x km (R9-7)



R6-22

The TRUCKS AND BUSES MUST USE LOW GEAR sign shall be used at steep and very steep descents as shown in Figures 4.24(b) and (c).

To prescribe the legal extent of the control, either the END TRUCK AND BUS LOW SPEED AREA sign shall be placed at the end of the control or a NEXT Distance plate, R9-6 or R9-7, shall be placed below the R6-22 sign at the beginning.

The widths of the distance plates R9-6-1 and R9-7-1 may be varied to suit the sign with which they are to be used.



R6-23



R9-6-1



R9-7-1

Table 4.8 SIGNS FOR STEEP GRADES AND SAFETY RAMPS – SIZE TABLE

Sign type	Sign Number	Size (mm)
NO STOPPING	R5-35B (L, R, D)	450 x 600
TRUCKS AND BUSES LOW GEAR	R6-22A	1200 x 1000
	R6-22B	1440 x 1200
	R6-22C	1800 x 1500
END TRUCKS AND BUSES LOW GEAR	R6-23A	1000 x 800
	R6-23B	1500 x 1200
NEXT x m	R9-6-1	} A 750 x 150* B 1000 x 200* C 1200 x 240*
NEXT x (km)	R9-7-1	
SAFETY RAMP x km	G9-24-1A G9-24-1B G9-24-2A G9-24-2B	
SAFETY RAMP x m	G9-25-1A	2200 x 800
	G9-25-1B	4400 x 1600
	G9-25-2A	1500 x 1200
	G9-25-2B	3000 x 2400
SAFETY	G9-27A	2000 x 750
	G9-27B	3000 x 1125
RAMP	G9-28A	1600 x 750
	G9-28B	2400 x 1125
SAFETY RAMP (L or R)	G9-36-1	4500 x 750
	G9-36-2	2200 x 2000
VERY STEEP CLIMB x km AHEAD, NOT SUITABLE FOR....	G9-46	2800 x 1800
VERY STEEP CLIMB NEXT x km	G9-47	3000 x 1800
ALTERNATIVE ROUTE FOR ...	G9-52	2400 x 400
VERY STEEP DESCENT x km AHEAD, NOT SUITABLE FOR ...	G9-53	2800 x 1800
ON RIGHT	G9-80-1A	1800 x 450
	G9-80-1B	3600 x 900
	G9-80-2A	1500 x 800
	G9-80-2B	3000 x 1600
STEEP DESCENT	G9-82	3000 x 1400
LONG STEEP DESCENT NEXT x km	G9-83	3000 x 1800
Steep Descent	W5-12A	600 x 600
	W5-12B	750 x 750
	W5-12C	900 x 900
Steep Climb	W5-13A	600 x 600
	W5-13B	750 x 750
	W5-13C	900 x 900
NEXT x km	W8-17-1A	600 x 400
	W8-17-1B	750 x 500
	W8-17-1C	900 x 600

* The widths of these signs may be varied to suit the sign with which they are to be used.

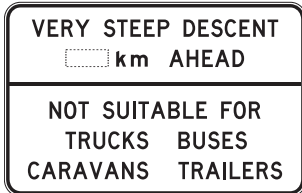
(c) *NEXT x km (W8-17-1)*



W8-17-1

The NEXT x km sign should be used in conjunction with the Steep Descent sign (W5-12), as illustrated in Figures 4.24(a) and (c).

(d) *VERY STEEP DESCENT x km AHEAD, NOT SUITABLE FOR ... (G9-53)*



G9-53

The VERY STEEP DESCENT x km AHEAD, NOT SUITABLE FOR ... sign shall be used as illustrated in Figures 4.24(b) and (c) where certain classes of vehicle, which would encounter difficulty at a very steep descent or be unable to negotiate the descent, need to be warned in time to take an alternative route or turn back. The sign should, wherever practicable, be placed in advance of any suitable detour or alternative route intersection, or, failing this, at a location where vehicles can turn around before reaching the steep descent.

NOTE: Use of this sign does not obviate the need to impose low gear use requirements on trucks and buses, see Item (b).

(e) *STEEP DESCENT (G9-82)*



G9-82

The STEEP DESCENT sign shall be used in advance of steep descents as indicated in Figure 4.25. It is used as illustrated in Figure 4.24(b). Signs imposing low gear use requirements on trucks and buses, see Item (b), shall be used in conjunction with this sign.

(f) *LONG STEEP DESCENT, NEXT x km (G9-83)*



G9-83

The LONG STEEP DESCENT NEXT x km sign shall be used in advance of long steep descents as indicated in Figure 4.25. It is used as illustrated in Figure 4.24(c).

Signs imposing low gear use requirements on trucks and buses, see Item (b), shall be used in conjunction with this sign. An example of a diagrammatic sign which may be used as an alternative to this sign is shown in Figure 4.23. It is appropriate where the grade eases at one or more locations during the descent.



Figure 4.23 EXAMPLE OF A DIAGRAMMATIC STEEP DESCENT SIGN

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.

(g) ALTERNATIVE ROUTE FOR ... (G9-52)



G9-52

The ALTERNATIVE ROUTE FOR ... sign should be used in conjunction with the G9-53 sign at the turnoff to the alternative route for the named vehicle types.

(h) Flashing light enhancement

where it is necessary to emphasize warning of a particularly hazardous situation, use of signs W5-12, G9-82 or G9-83 augmented with flashing lights, examples of which are illustrated at Appendix E, may be considered.

4.9.3 Signs for steep upgrades

The signs are to be used are as follows:

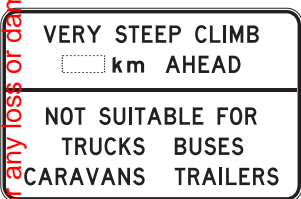
(a) Steep Climb (W5-13)



W5-13

The Steep Climb sign should be used in advance of steep upgrades of 10% or more, and generally at least 100 m in length.

(b) VERY STEEP CLIMB x km AHEAD, NOT SUITABLE FOR ... (G9-46)



G9-46

The VERY STEEP CLIMB x km AHEAD, NOT SUITABLE FOR ... sign should be used in advance of long steep climbs, generally in excess of 10% grade and 1 km in length, to advise drivers of certain classes of vehicles that they may experience difficulty in negotiating a steep upgrade. Signing of alternative routes for the vehicle types named on the sign, should be considered.

(c) VERY STEEP CLIMB NEXT x km (G9-47)



G9-47

The VERY STEEP CLIMB NEXT x km sign may be placed at the beginning of a long steep climb (see Clause 3.9.3.2) and elsewhere along its length as a repeater sign as needed, e.g. beyond intersections. An alternative diagrammatic sign based on the design illustrated in Figure 4.23 may also be considered.

4.9.4 Signs for safety ramps

The signs used are as follows:

SAFETY RAMP x km (G9-24)

SAFETY (G9-27)

SAFETY RAMP x m (G9-25)

RAMP (G9-28)

NO STOPPING (G9-80-1)

SAFETY RAMP (G9-36)

NO STOPPING (G9-80-2)

No Stopping (R5-35)(L, R, D)



G9-24-1

At the commencement of the descent and immediately following signs warning of the steep descent (see Clause 4.9.2) an advisory sign SAFETY RAMP x km (G9-24) shall be erected 200 m to 400 m beyond the last warning sign.



G9-24-2

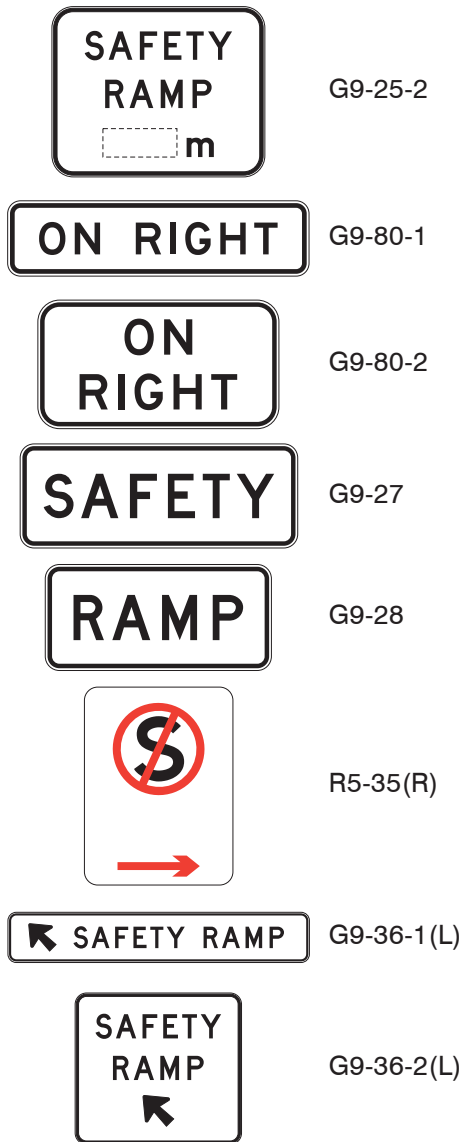
Depending upon the length of the grade and particular circumstances it may be desirable to repeat the G9-24 sign at intervals with the appropriate distance indicated. There should be a G9-24 sign 1 km from the start of the safety ramp. Approximately 300 m from the start of the safety ramp there should be an advisory sign SAFETY RAMP x m (G9-25).



G9-25-1

Parking and stopping shall be restricted on the approach to and at, the safety ramp by imposing a no-stopping

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file



restriction for 60 m in advance of the safety ramp using No Stopping (R5-35) signs.

At the safety ramp the SAFETY sign (G9-27) shall be erected on the left and the RAMP sign (G9-28) on the right of the ramp entrance facing approaching traffic, except that a single SAFETY RAMP sign (G9-36) shall be erected in lieu where it better suits the layout and alignment of the approach to the safety ramp.

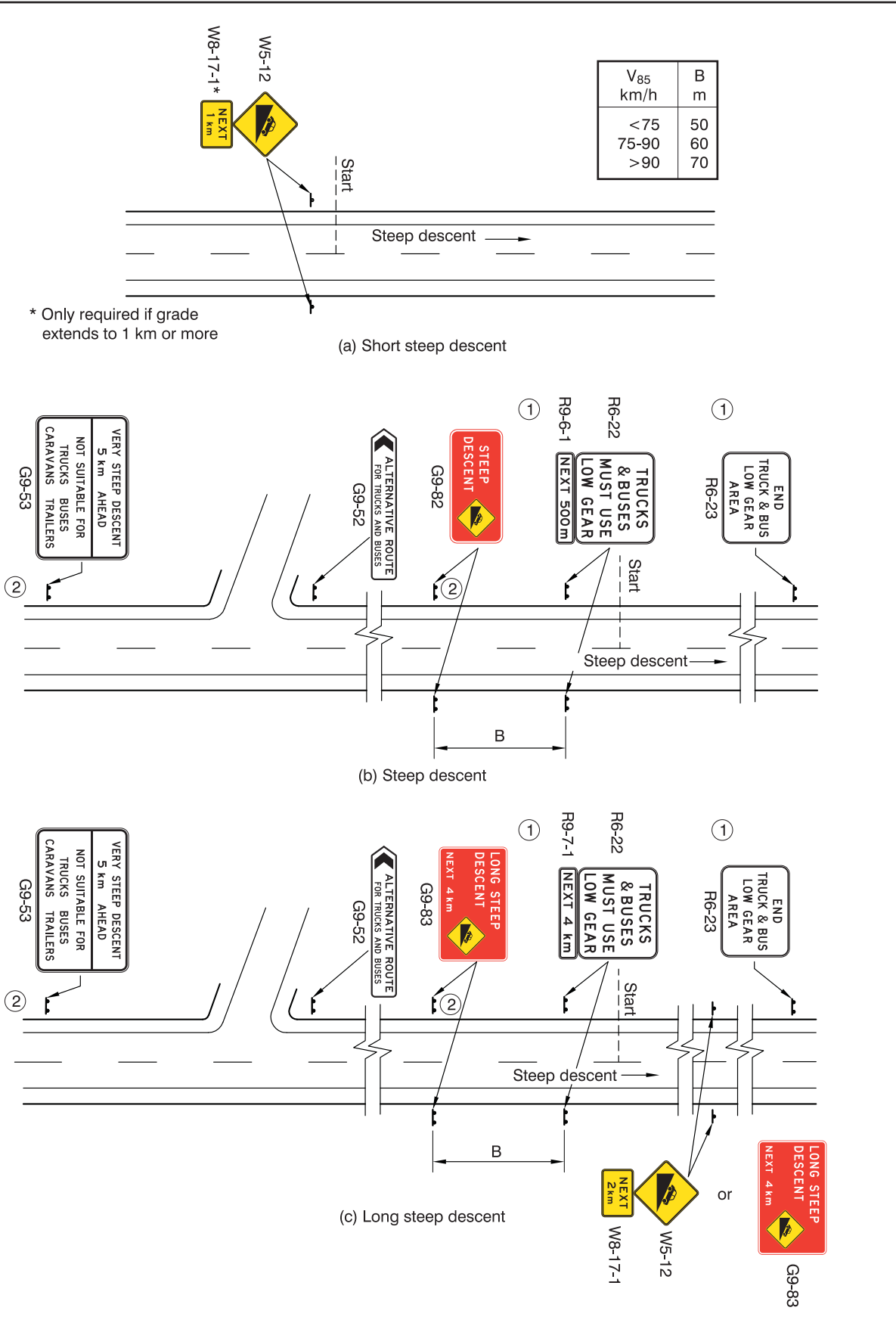
When the safety ramp is located on the right, the signs should be located as shown in Figure 3.24(b). The advance advisory signs for a safety ramp on the right are SAFETY RAMP x km ON RIGHT (G9-35) and SAFETY RAMP x m ON RIGHT (G9-26).

Safety ramps should be located on the left as illustrated in Figure 4.26. In the event that a safety ramp on the right is required, the ON RIGHT (G9-80) supplementary plate shall be attached to the advance signs G9-24 and G9-25.

NOTE: Right hand safety ramps are only applicable where it has not been practical to provide a ramp on the left. The risks associated with a right hand safety ramp need to be carefully assessed.

Where an arrester bed is provided in lieu of a safety ramp the legend ARRESTER BED should be substituted for SAFETY RAMP on all relevant signs for downhill traffic.

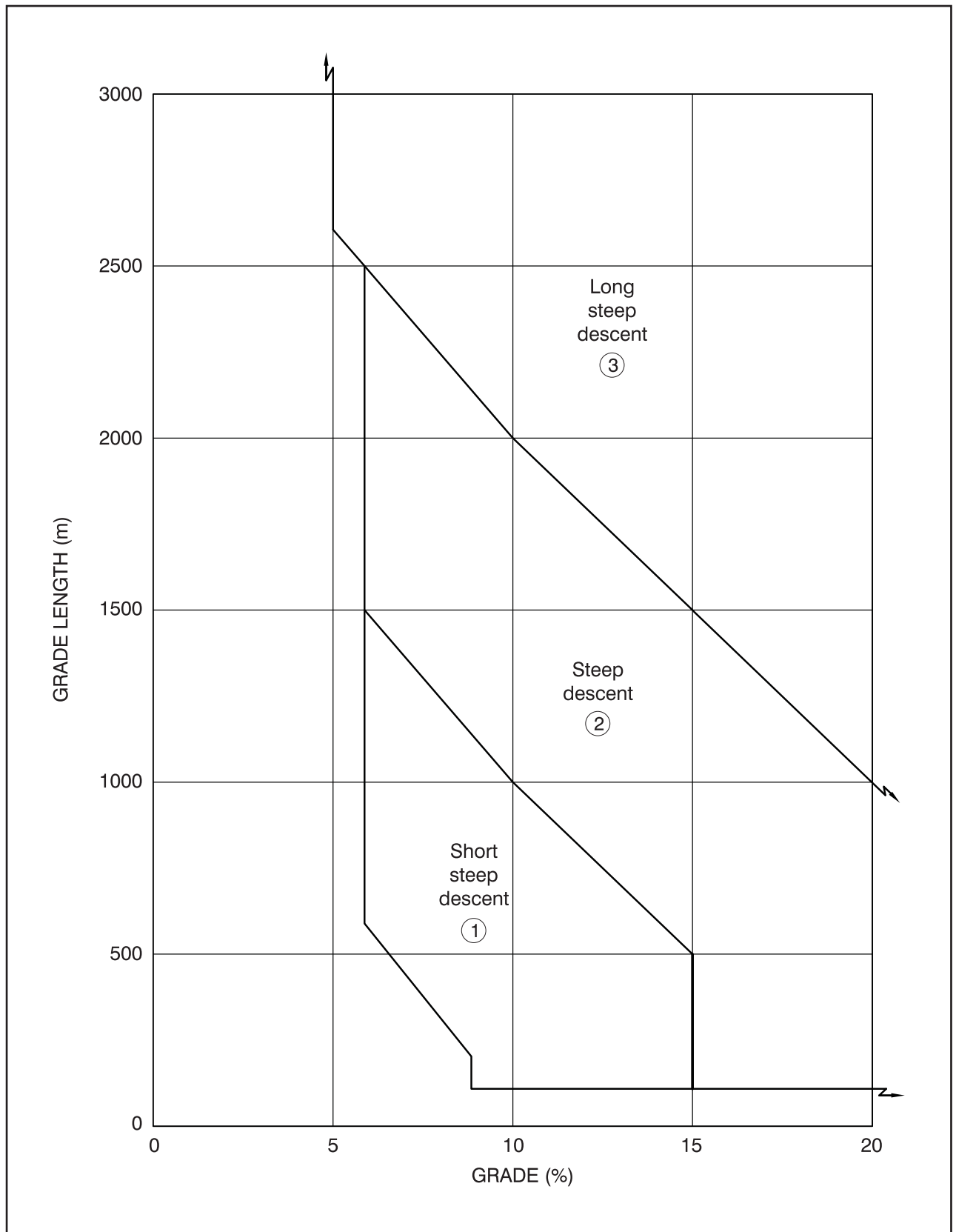
NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

- 1 The R9-6-1 and R6-23 signs are alternatives, see Clause 4.9.2(b).
- 2 The G9-53 and G9-52 are for use where it is desired and practicable to discourage certain classes of vehicle from using the steep descent, see Clause 4.9.2(d) and (f).

Figure 4.24 STEEP DESCENT

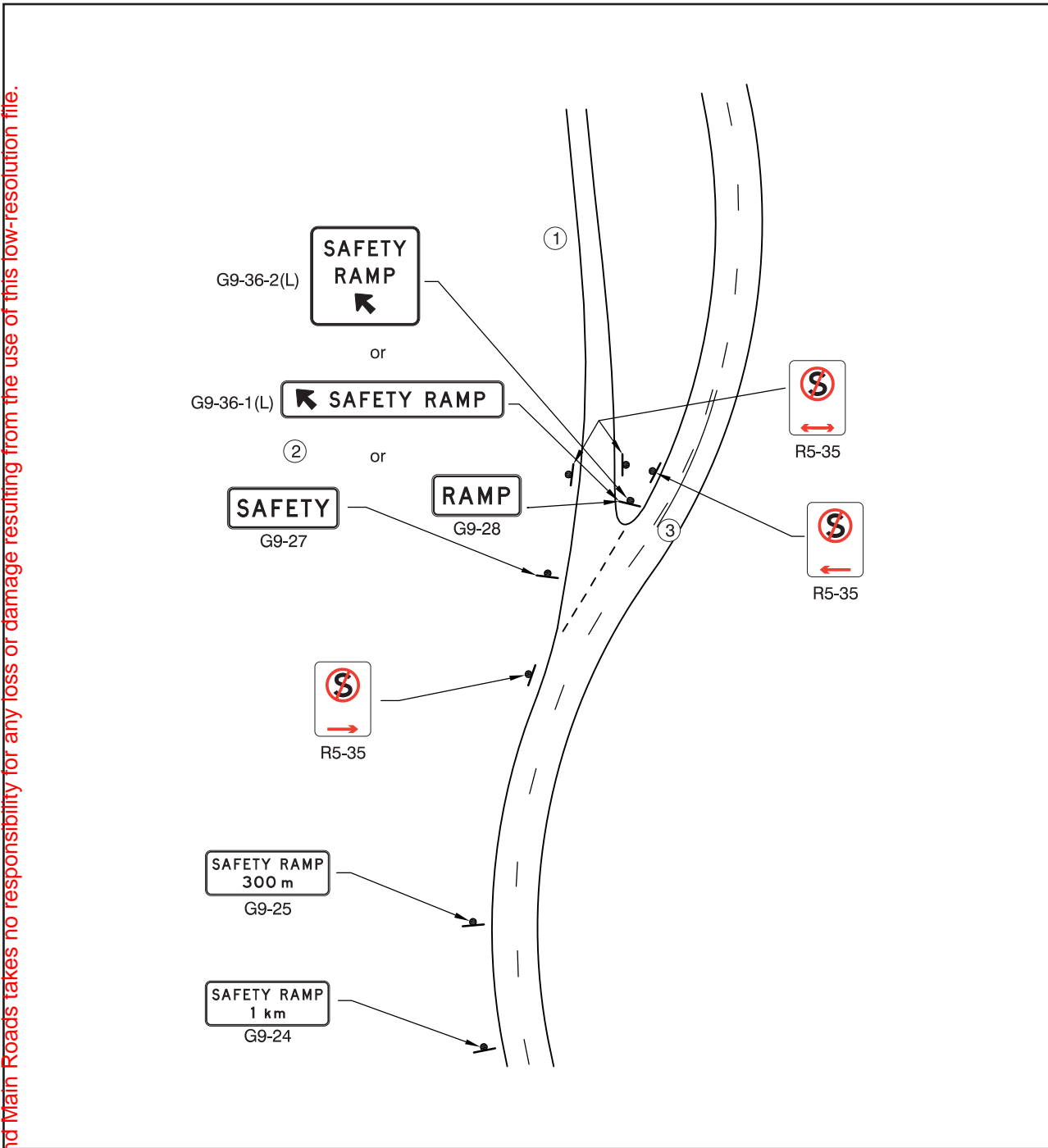


NOTES:

- 1 Short steep descent (see Figure 4.24(a)).
- 2 Steep descent (see Figure 4.24(b)).
- 3 Long steep descent (see Figure 4.24(c)).

Figure 4.25 GUIDE FOR THE TREATMENT OF STEEP DESCENTS

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage resulting from the use of this low-resolution file.



NOTES:

- Night time delineation of the safety ramp should not visually overshadow that on the through roadway to the extent that drivers might be inadvertently drawn into the safety ramp.
- Use of the single sign or the pair of signs will depend upon the layout and alignment of approach to the safety ramp.
- Double barrier lines should be used if sight distance restricted.

Figure 4.26 SAFETY RAMPS

4.10 WATER CROSSINGS

4.10.1 General

The following water crossings are dealt with in this Clause:

(a) *Ferries and opening bridges*

Situations where traffic must be brought to a stop by means of a road block barrier when the ferry is not loading or the bridge is open.

(b) *Fords*

Locations where water flows over the road except during prolonged dry periods but the road through the water is trafficable with care when depth indicators so indicate.

(c) *Floodways*

Sections of road over which water may flow for short periods in times of flood but the road remains trafficable with care. Temporary signs WATER OVER ROAD, T2-13 (see Clause 4.11.3.1), shall be used as soon as practicable after water begins to cover the road.

(d) *Low level bridges*

Locations where there is an abrupt descent on the approach to a bridge that is substantially lower than the approach road, and which may be liable to flooding.

NOTE: Partial or complete road closure in accordance with Part 3 of the Manual may be required if flooding affects safe passage of traffic.

The signs used for water crossings are listed in Table 4.9.

Table 4.9 SIGNS FOR WATER CROSSINGS – SIZE TABLE

Sign type	Sign Number	Size (mm)
NEXT x km	R9-7-1B	1000 x 200
FERRY	W5-1	} A 600 x 600 } B 750 x 750 } C 900 x 900
OPENING BRIDGE	W5-2	
FORD	W5-6	
FLOODWAY	W5-7	
LOW LEVEL BRIDGE	W5-8	
ON SIDE ROAD (L or R)	W8-3	} 600 x 400 } 750 x 500 } 900 x 600
(Distance) x m	W8-5	
NEXT x km	W8-17-1	
STOP banner	R6-8B	600 dia.
STOP HERE ON RED SIGNAL	R6-6A R6-6B	450 x 750 675 x 1125
ROAD SUBJECT TO FLOODING INDICATORS SHOW DEPTH	G9-21-1A G9-21-2A	2150 x 800 1400 x 1400
Depth Indicator	G9-22-1A G9-22-1B G9-22-2 G9-22-3	200 x 1350 } 200 x 2350

4.10.2 Ferries and opening bridges

The treatment comprises use of the FERRY (W5-1) or OPENING BRIDGE (W5-2) as specified in Clauses 4.10.6.1 and 4.10.6.2 together with a road block barrier, see Clause 4.11.1.

4.10.3 Fords

The treatment at fords shall comprise the FORD (W5-6) sign located sufficiently far in advance of the ford to enable vehicles to stop before entering the water. Distant advance signs using the distance plate (W8-5), e.g. 500 m, may also be required. Depth Indicators (G9-22) and the sign ROAD SUBJECT TO FLOODING, INDICATORS SHOW DEPTH (G9-21) (see Clauses 4.10.6.9 and 4.10.6.10) shall be used at fords.

4.10.4 Floodways

The treatment at floodways shall comprise one of the following:

- (a) At an isolated single floodway the sign FLOODWAY (W5-7-1) shall be located in advance of the highest point floodwaters would be expected to reach. Depth indicators (G9-22) and the sign ROAD SUBJECT TO FLOODING, INDICATORS SHOW DEPTH (G9-21) (see Clauses 4.10.6.9 and 4.10.6.10) shall be located near the floodway.
- (b) Where on a floodplain there are a number of floodways at intervals not exceeding 2 km, the sign assembly FLOODWAYS, NEXT x km (W5-7-2, W8-17-1) shall be located in advance of the first floodway as in Item (a) and may be repeated as necessary if there are a large number of floodways along the section. At each location where the assembly is used, the sign ROAD SUBJECT TO FLOODING, INDICATORS SHOW DEPTH (G9-21) shall be used in conjunction with it. Depth indicators shall be placed at every floodway.

The use of floodway signs is illustrated in Figure 4.27.

At times of flood, the temporary sign WATER OVER ROAD (T2-13) (see Clause 4.11.3.1) may also be displayed on the approaches to the flooded section if it is trafficable, or ROAD CLOSED (T2-4) (see Clause 4.11.3.6) if it is not trafficable.

4.10.5 Low level bridges

The treatment at low level bridges shall comprise the sign LOW LEVEL BRIDGE (W5-8) located sufficiently far in advance to enable vehicles to slow down to the comfortable speed of negotiation of the dip to the bridge. The Advisory Speed sign (W8-2) (see Clause 4.5.4.4) may be used in conjunction with this sign.

If the low level bridge is liable to flooding, Depth Indicators (G9-22) and the sign ROAD SUBJECT TO FLOODING, INDICATORS SHOW DEPTH (G9-23) (see Clauses 4.10.6.9 and 4.10.6.10) shall be used.

At times of flooding, the temporary sign WATER OVER ROAD (T2-13) (see Clause 4.11.3.1) may also be displayed on the approaches if the bridge is trafficable, or ROAD CLOSED (T2-4) (see Clause 4.11.3.6) if it is not trafficable.

4.10.6 Signs for water crossings

4.10.6.1 FERRY (W5-1)



W5-1

The FERRY sign shall be used to give warning of the approach to a ferry landing.

If desirable, additional prior warning of the approach to the landing may be given by using a FERRY sign in conjunction with a distance indication, (Distance) x m (W8-5) (see Clause 4.8.2.1(c)).

Where the ferry landing is located on a side road and the normal distance requirements for placement of the sign cannot be met, the sign may be erected on the through road and supplemented by the ON SIDE ROAD sign (W8-3) (see Clause 4.10.6.6).

4.10.6.2 OPENING BRIDGE (W5-2)



W5-2

The OPENING BRIDGE sign shall be used on the approaches to a bridge having an opening span.

Where desirable, additional prior warning of the approach to an opening bridge may be given by using an OPENING BRIDGE sign in conjunction with a distance indication, (Distance) x m (W8-5) (see Clause 4.10.6.11).

NOTE: This may be a low-resolution file intended for on-screen viewing only. This file cannot be printed. This file may be one part of a complete technical publication, and should not be read in isolation of the other parts of the publication. A full-resolution version of all parts of the publication can be obtained from the Department of Transport and Main Roads. www.tmr.qld.gov.au The Department of Transport and Main Roads takes no responsibility for any loss or damage caused by the use of this low-resolution file.