4.7.5.1 Signs for zip-merge

The following signs shall be used in accordance with Clause 4.7.2(a) where there is a reduction in the number of lanes by means of a zip-merge:

FORM 1 LANE (G9-15)

FORM x LANES (G9-16)

(Distance) x m (G9-78)



The Distance supplementary plate (G9-78) is added to the G9-15 or G9-16 sign when it is required as an advance sign. The distance on the sign may be varied to suit site conditions or traffic speeds. Signs AFTER SIGNALS, AFTER ROUNDABOUT may be used instead of the Distance supplementary plate.

# 4.7.5.2 Signs for lane changes

The following signs shall be used in accordance with Clause 4.7.2(b) where there is a reduction in the number of lanes by means of a lane change:

LEFT LANE ENDS (W4-9)

MERGE RIGHT (W8-15)

(Distance) x m (W8-5)

MERGE RIGHT (G9-73)



Advance assembly

Position sign

W4-9/W8-5 Distant advance assembly

**4.7.5.3** Road Narrows (W4-3)



W4-3

The Road Narrows sign shall be used where a reduction of the pavement width may constitute a hazard. Recommended conditions for its use are as follows:

- (i) On a two-lane roadway where—
  - (A) there is a reduction in pavement width of 1.2 m or more; or
  - (B) the pavement is reduced to 4.5 m or less.
- (ii) On any roadway where the width of any lane is reduced by 600 mm or more in the direction of travel concerned.

This sign shall not be used for conditions where the End Divided Road (W4-6) sign (see Clause 4.7.5.4(a)) is applicable, or on a multi-lane road, including a roadway of a divided road, where there is a reduction in the number of lanes.

4.7.5.4 Signs at the beginning and end of divided roads

The following signs shall be used:

(a) *Divided Road (W4-4)* 



The Divided Road sign shall be used to give warning of the approach to a divided road where the median is more than 300 m in length.

W4-4

(b) *ISLAND (W4-5)* 

(c) End Divided Road (W4-6)



For the use of this sign refer to Clause 2.9.4.

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 sign (W4-11) (see Item(d)).

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



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 two-way roadway where, because of the road conditions, it is not clear that the roadway carries traffic in 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 lanes, 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 desirable to provide for traffic to overtake slower moving vehicles. Overtaking lanes shall be marked 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,  $85^{th}$  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.

#### TABLE4.7

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Sign	Sign number	Size, mm
KEEP LEFT UNLESS OVERTAKING	R6-29B R6-29C	1 800 900 2 400 1 200
Lane allocation	W4-10B	750 750
	W4-10C	900 900
SLOW VEHICLE LANE AHEAD	G9-10	900 900
SLOW VEHICLE LANE x km AHEAD	G9-11	900 1 100
SLOW VEHICLES USE LEFT LANE	G9-12	950 1 100
OVERTAKING LANE x m AHEAD	G9-37	2 600 1 300
OVERTAKING LANE x km AHEAD	G9-38	2 600 1 300
SLOW VEHICLE TURNOUT x m	G9-50A	900 900
	G9-50B	1 200 1 200
SLOW VEHICLE TURNOUT	G9-51A	900 900
	G9-51B	1 200 1 200
SLOWER VEHICLES USE TURNOUTS NEXT x km	G9-77	1 800 750

# SIGNS FOR CLIMBING AND OVERTAKING LANES AND TURNOUTS—SIZE TABLE

## 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 that has an extra lane for traffic travelling in the opposite direction (see Figure 4.21).



\* For Dimension A, see Table D1

#### NOTES:

- 1 A double barrier line is required if 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 The lane reduction (merge) 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. The lane change case will usually be required in this case.
- 3 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





(c) SLOW VEHICLE LANE AHEAD (G9-10)
SLOW VEHICLE LANE x km AHEAD (G9-11)



G9-10

G9-11

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(d) SLOW VEHICLES USE LEFT LANE (G9-12)

SLOW VEHICLES USE LEFT LANE

SLOW LANE The VEHICLE 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 advance to give information at a greater distance, the alternative sign **SLOW** VEHICLE LANE x km AHEAD may be used with an appropriate distance shown.

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)).

G9-12

(e) OVERTAKING LANE x m AHEAD (G9-37) OVERTAKING LANE x km AHEAD (G9-38)



G9-37

OVERTAKING LANE km AHEAD

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.



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 4.8.1(a)).

Near the end of the overtaking lane signs for either a zip-merge or a lane change in accordance with Clauses 4.7.5.1 or 4.7.5.2 shall be provided at the lane drop as shown in Figure 4.21.

NOTE: In most rural and high-speed urban cases the lane change option will be required.

See also Clause 4.13.5 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.

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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 are 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 shall 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 shall be provided (see Clauses 4.9.3(b) and 4.9.3(c)).

The signs listed in Table 4.8, shall be 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)



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.



# **TABLE 4.8**

#### SIGNS FOR STEEP GRADES AND SAFETY RAMPS—SIZE TABLE

Sign	Sign number	Size, mm
NO STOPPING	R5-35B (L, R, D)	450 600
TRUCKS AND BUSES MUST USE LOW GEAR	R6-22A R6-22B R6-22C	1 200 1 000 1 440 1 200 1 800 1 500
END TRUCK AND BUS LOW GEAR AREA	R6-23A R6-23B	1 000 800 1 500 1 200
NEXT x m NEXT x (km)	R9-6-1 R9-7-1	$\begin{cases} A & 750 & 150^* \\ B & 1 & 000 & 200^* \\ C & 1 & 200 & 240^* \end{cases}$
SAFETY RAMP x km	G9-24-1A G9-24-1B G9-24-2A G9-24-2B	$\begin{array}{ccccc} 2 \ 200 & 800 \\ 4 \ 400 & 1 \ 600 \\ 1 \ 500 & 1 \ 200 \\ 3 \ 000 & 2 \ 400 \end{array}$
SAFETY RAMP x m	G9-25-1A G9-25-1B G9-25-2A G9-25-2B	$\begin{array}{ccccc} 2 \ 200 & 800 \\ 4 \ 400 & 1 \ 600 \\ 1 \ 500 & 1 \ 200 \\ 3 \ 000 & 2 \ 400 \end{array}$
SAFETY	G9-27A G9-27B	2 000 750 3 000 1 125
RAMP	G9-28A G9-28B	1 600 750 2 400 1 125
SAFETY RAMP (L or R)	G9-36-1 G9-36-2	4 500 750 2 200 2 000
VERY STEEP CLIMB x km AHEAD, NOT SUITABLE FOR	G9-46	2 800 1 800
VERY STEEP CLIMB NEXT x km	G9-47	3 000 1 800
ALTERNATIVE ROUTE FOR	G9-52	2 400 400
VERY STEEP DESCENT x km AHEAD, NOT SUITABLE FOR	G9-53	2 800 1 800
ON RIGHT	G9-80-1A G9-80-1B G9-80-2A G9-80-2B	1 800 450 3 600 900 1 500 800 3 000 1 600
STEEP DESCENT	G9-82	3 000 1 400
LONG STEEP DESCENT NEXT x km	G9-83	3 000 1 800
Steep Descent	W5-12A W5-12B W5-12C	600 600 750 750 900 900
Steep Climb	W5-13A W5-13B W5-13C	600 600 750 750 900 900
NEXT x km	W8-17-1A W8-17-1B W8-17-1C	600 400 750 500 900 600

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