



From mountain to sea

Road markings

Manual

27th June 2017



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1 Introduction

1.1 Legal & Policy Background

The Road Traffic Regulation Act 1984 empowers local authorities to regulate or restrict traffic on a road in the interests of safety and Section 5 of this act allows them to place traffic signs (including lines and markings) on or near the road. All such signs and road markings used on public roads must be as prescribed in the current edition of the Traffic Signs Regulations and General Directions or must have been granted site approval by the Scottish Government.

This Road Markings Manual is directly referred to in Aberdeenshire Council's approved Road Marking Policy and shall be considered as mandatory guidance for all road markings in Aberdeenshire.

1.2 Use

Chapter 5 of the Traffic Signs Manual gives advice on the use of the prescribed markings including guidance on choosing the most appropriate size of marking from the range of variants permitted within the regulations and the recommended usage for each type of marking in various applications.

This manual should be read in conjunction with the guidance in Chapter 5 and generally follows its layout for ease of reference. It is not intended to supersede Chapter 5 but rather aims to promote a consistency of application across Aberdeenshire by giving specific guidance in areas where Chapter 5 allows some discretion.

This manual furthermore seeks to promote best value in the management of our road marking assets by specifying an inspection regime, introducing a road marking inventory and requiring that:

- 1. only markings that will be maintained are installed, and**
- 2. markings installed in compliance with this policy are maintained.**

The requirements in this manual shall apply to all roads managed by Aberdeenshire Council and also to all roads proposed for adoption by Aberdeenshire Council.

2 Application to Aberdeenshire

2.1 Marking Groupings

To help achieve a consistency of approach across the Council's six areas, the various applications of each marking have been allocated into one of the following groups:

Division 1: markings must be installed in all situations identified as being Division 1 applications.

Division 2: markings in situations identified as Division 2 applications must only be installed (or renewed) where the engineer responsible for the design of the lining as part of new, remedial or maintenance works believes that there is a demonstrable benefit and the local Roads Manager agrees to accept the maintenance liability. In instances where an agreement cannot be reached the matter shall be referred to the Roads Standards Group for a decision.

Where it is felt that there is a strong justification, at a particular location, for the use of markings beyond that covered in Divisions 1 or 2, or for the omission of a marking in Division 1, the designer may apply for a departure from standard. Such applications will be considered by the council's Roads Standards Group.

All markings (both Division 1 and Division 2, and approved departures) installed under this policy must be recorded in the Road Marking Inventory and regularly inspected and maintained in accordance with this policy.

2.2 Criteria

The criteria used to determine which division a particular marking usage should be classified includes the following:

- Speed Limit
- Road Category (see below)
- Street Lighting
- Traffic Volume (see below).

2.3 Road Category

The road category shall be based on the carriageway hierarchy specified in the UK Roads Liaison Group's Well Maintained Highways. This is reproduced overleaf as Table 2.1.

Table 2.1 Carriageway Hierarchy

Category	Hierarchy Description	Type of Road General Description	Description
1	Motorway	Limited access motorway regulations apply	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use.
2	Strategic Route	Trunk and some Principal 'A' roads between Primary Destinations	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40 mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
3a	Main Distributor	Major Urban Network and Inter-Primary Links. Short - medium distance traffic	Routes between Strategic Routes and linking urban centres to the strategic network with limited frontage access. In urban areas speed limits are usually 40 mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.
3b	Secondary Distributor	Classified Road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions	In rural areas these roads link the larger villages and HGV generators to the Strategic and Main Distributor Network. In built up areas these roads have 30 mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On-street parking is generally unrestricted except for safety reasons
4a	Link Road	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions	In rural areas these roads link the smaller villages to the distributor roads. They are of varying width and not always capable of carrying two way traffic. In urban areas they are residential or industrial interconnecting roads with 30 mph speed limits random pedestrian movements and uncontrolled parking
4b	Local Access Road	Roads serving limited numbers of properties carrying only access traffic	In rural areas these roads serve small settlements and provide access to individual properties and land. They are often only single lane width and unsuitable for HGVs. In urban areas they are often residential loop roads or cul-de-sacs.

2.4 Traffic Volume

Where criteria are based on traffic volume the two-way annual average daily traffic (AADT) typical for rural sections of the continuous length of that numbered road shall be used.

The A948 for example runs, unbroken, from Ellon to New Deer. While traffic volumes are much lower at the northern end it would be appropriate to use a typical value for the whole route to ensure that drivers are given a consistent message.

Conversely, traffic on the A980 have to turn on to the B9119 briefly before re-joining the A980. Traffic flows on the A980 to the north of the B9119 are significantly less than those on the southern section and it would be appropriate to use different typical traffic volumes for the sections either side of the break.

2.5 Non-Prescribed Markings

The use of any marking not prescribed in the Traffic Signs Regulations and General Directions will require special site authorisation from the Scottish Ministers.

Any proposal for a non-prescribed marking should firstly be discussed with and considered by the Roads Policy and Asset Management Team. All such applications to the Scottish Ministers must be made centrally through the Roads Policy and Asset Management Team.

3 STOP AND GIVE WAY MARKINGS

3.1 General

Several variants of STOP and GIVE WAY lines are included in the Traffic Signs Regulations and General Directions:

- Diag. 1001 indicates the position at which a driver must not proceed when required to stop by light signals. (See Section 9)
- Diag. 1001.1 is only to be used for tramways.
- Diag. 1001.2 is an advanced STOP line for cyclists (See Section 16).
- Diags. 1001.3, 1001.4 and 1001.5 are used at crossing facilities (See Section 15).
- Diag. 1002.1 is only used at junctions controlled by STOP signs and is considered further in this section.
- Dia. 1003A is intended for use at junctions other than those not controlled by traffic signals or stop lines. Direction on the use of this marking is given below.
- Diags. 1003.1 and 1003.3 are used on the approaches to roundabouts (see Section 8).
- Diag. 1003.2 is used approaching a level crossing (see Section 19).

3.2 STOP Markings

The STOP line (Diag. 1002.1) must always be used in conjunction with the worded STOP marking (Diag. 1022) and the STOP sign (Diag. 601.1).

The criteria for the use of STOP signs are discussed in Section 3 of Chapter 3 of the Traffic Signs Manual. While approval in writing by the Scottish Ministers is no longer needed for STOP signs, it is expected that most junctions which would satisfy the criteria for STOP signs have already been signed accordingly. New junctions should not be constructed with very poor visibility, so the use of STOP signs and markings at new locations will be exceptional and considered as a departure from this standard.

3.3 GIVE WAY Markings

The GIVE WAY line (Diag. 1003A) may be used on its own, with an approach triangle (diag. 1023A) or with both the approach triangle and the Give WAY sign (Diag.602). Table 3.1 sets out the criteria for GIVE WAY markings in Aberdeenshire.

Table 3.1 STOP and GIVE WAY markings

Diag. No.	Usage	Division 1	Division 2
1002.1 and 1022	At junctions with existing STOP sign and markings	<ul style="list-style-type: none"> All instances⁽¹⁾ 	-
	Junctions satisfying the national criteria for STOP signs	-	<ul style="list-style-type: none"> Only in exceptional circumstances as an accident-reduction measure⁽²⁾
1003A	Priority junctions other than roundabouts, those with STOP markings or traffic signal control ⁽³⁾	<ul style="list-style-type: none"> All urban junctions where the major road is category 4a or above. All rural junctions. 	<ul style="list-style-type: none"> Crossroads on urban category 4b roads. Accident-reduction measures
1003A and 1023A	Priority junctions other than roundabouts, those with STOP markings or traffic signal control ⁽³⁾	<ul style="list-style-type: none"> All junctions where the major road is category 3b or above. All junctions where the minor road is category 4a or above. 	<ul style="list-style-type: none"> Crossroads on category 4a or 4b roads. Accident-reduction measures

Notes:

(1) If junctions with existing markings are reviewed and found to no longer meet the criteria for a stop sign then the STOP sign and markings should be replaced with the GIVE WAY equivalents.

(2) Subject to authorisation by the Roads Standards Group.

(3) Junction markings may be omitted as part of a larger Naked Streets/removing-clutter scheme but only after safety auditing and consultation with Police Scotland. The effectiveness and safety record of the scheme should be reviewed after one year's operation.

4 Longitudinal Lines

4.1 General

Longitudinal lines prescribed in the Traffic Signs Regulations and General Directions and addressed in this section are:

- **Centre lines on single carriageway roads**
- **Lane lines**
- **Warning lines**
- **Edge of carriageway lines**
- **Hatched Markings**
- **Chevron markings**

Double white lines are considered in Section 5, cycle markings in Section 16 and waiting restrictions in Section 20.

4.2 Centre lines on single carriageway roads

100mm thick centre lines should be used except when they are used parallel to lane lines. In such circumstances the centre line should be 150mm thick and the lane line 100mm thick.

Table 4.1 contains the criteria for the use of centre lines however where warning lines (table 4.3), hatched markings (table 4.6) or double white lines (table 5.1) are required these shall be used in place of centre lines.

Centre lines should not be used for roads with 30mph speed limits. Instead, at suitable locations, consideration should be given to introducing advisory cycle lanes with one central, general traffic lane (see Section 16). Lanes of between 1.0 and 1.5m may be used along with the removal of the centreline where cycle lanes of greater than 1.5m cannot be achieved however these narrower lanes shall not have any marking or signs identifying them as cycle lanes.

4.3 Warning lines

Warning line widths shall be as specified in Chapter 5. Where warning lines are used in place of both centre lines and lane lines the warning line replacing the centre line shall be 150mm thick.

Table 4.3 contains the criteria for the use of warning lines however, where hatched markings (table 4.6) or double white lines (Section 5) are required these shall have precedence over warning lines.

Table 4.1 Centre lines on single carriageway roads

Diag. No.	Usage	Division 1	Division 2
1008 (speed limit 40 mph or less)	Two lane roads not less than 5.5m in width	-	<ul style="list-style-type: none"> Category 4a or above roads with 40 mph speed limit
	Two-lane roads 10 m or more in width	-	<ul style="list-style-type: none"> Category 4a or above roads with 40 mph speed limit
	Three lane roads marked as two lanes in one direction and one in the other)	<ul style="list-style-type: none"> All instances 	-
	Four lanes or more (see para 4.3)	<ul style="list-style-type: none"> All instances 	-
1008.1 (speed limit over 40 mph)	Two lane roads not less than 5.5m in width	<ul style="list-style-type: none"> Rural A class roads (excluding A941) Rural category 3a or above roads with AADT \geq 1000 	<ul style="list-style-type: none"> Other rural roads
	Two-lane roads 10 m or more in width	<ul style="list-style-type: none"> Rural category 3a or above roads with AADT \geq 1000 	<ul style="list-style-type: none"> Other rural roads
	Three lane roads marked as two lanes in one direction and one in the other)	<ul style="list-style-type: none"> All instances 	-
	Four lanes or more (see para 4.3)	<ul style="list-style-type: none"> All instances 	-

Table 4.2 Lane lines

Diag. No.	Usage	Division 1	Division 2
1005 (speed limit 40)	Dividing traffic into lanes	<ul style="list-style-type: none"> All instances where traffic on either side of the 	-

mph or less)		line travels in the same direction	
1005.1 (speed limit over 40 mph)	Dividing traffic into lanes	All instances where traffic on either side of the line travels in the same direction	-

Table 4.3 Warning lines

Diag. No.	Usage	Division 1	Division 2
1004 (speed limit 40 mph or less)	Central warning line to highlight the presence of a road junction (major road)	-	<ul style="list-style-type: none"> Category 3b or above roads with 40 mph speed limit Accident-reduction measures
	Central warning line to highlight the presence of a road junction (minor road)	<ul style="list-style-type: none"> Approach to roundabout or signal-controlled junction Approach to junction with STOP or GIVE WAY markings 	-
	Central warning line at bends and crests ⁽¹⁾	-	<ul style="list-style-type: none"> Category 3b or above roads with 40 mph speed limit Accident-reduction measures
	Central warning line to highlight the presence of other hazard ⁽²⁾	<ul style="list-style-type: none"> Roads with 40 mph speed limit 	<ul style="list-style-type: none"> Roads with 30 mph speed limit Accident-reduction measures
	Lane line on all roads on approach to roundabouts or signal-controlled junctions, and the minor road approaching a priority junction	<ul style="list-style-type: none"> All instances 	-
1004.1 (speed limit)	Central warning line to highlight the presence of a road junction (major road)	<ul style="list-style-type: none"> Rural A class roads (excluding A941) with minor road AADT \geq 500 	<ul style="list-style-type: none"> Accident-reduction measures

over 40 mph)		<ul style="list-style-type: none"> Rural category 3a or above roads with AADT ≥ 1000 and minor road AADT ≥ 500 	
	Central warning line to highlight the presence of a road junction (minor road)	<ul style="list-style-type: none"> Approach to roundabout or signal-controlled junction Approach to junction with STOP or GIVE WAY markings 	-
	Central warning line at bends and crests ⁽¹⁾	<ul style="list-style-type: none"> Rural A class roads (excluding A941) Rural category 3a or above roads with AADT ≥ 1000 	<ul style="list-style-type: none"> Accident-reduction measures
	Central warning line to highlight the presence of other hazard ⁽²⁾	<ul style="list-style-type: none"> All instances 	-
	Lane line on all roads on approach to roundabouts or signal controlled junctions, and the minor road approaching a priority junction	<ul style="list-style-type: none"> All instances 	-

Notes:

- (1) Based on visibility criteria in paragraph 4.16 of Chapter 5 of the Traffic Signs Manual
- (2) See Section 8 for approaches to roundabouts and Section 14 for traffic islands.

4.4 Edge of carriageway lines

Four types of edge marking are prescribed in the Traffic Signs Regulations and General Directions:

- Diagrams 1009A and 1009B
- Diagram 1010
- Diagram 1012.1
- Diagrams 1012.2 and 1012.3

Diagram 1012.2 is only for use on motorways so has no application on roads maintained by Aberdeenshire Council.

Edge of carriageway line widths shall be as specified in Table 4-5 of Chapter 5. Where this table gives a choice of values for line width the lower of the values appropriate to that speed limit shall be used.

Table 4.5 of this policy document lists the criteria for the use of edge of carriageway lines on Aberdeenshire's roads.

For edge of carriageway lines, a bend shall be defined as the section of road where the radius of the centre of the carriageway is less than the Critical Radius given in Table 4.4 (below) for the speed limit for that section of road.

Table 4.4 – Bend Parameters

Speed Limit (mph)	Critical Radius (m)	Approach Length (m)
30	180	30
40	320	40
50	500	50
60	720	50

Where a bend or hazard (sudden change in carriageway width/reduction in verge width due to bridge parapet, etc.) satisfies the criteria for marking 1012.1 the marking shall be applied on both sides of the carriageway over the full length of the bend/hazard and over the approach length at both ends.

Where the gap between the end of the markings for one bend/hazard and the start of the markings for the next bend/hazard is less than twice the approach length then the edge markings shall be extended to give a continuous marking through the bends/hazards. This is illustrated in Figure 4.1.

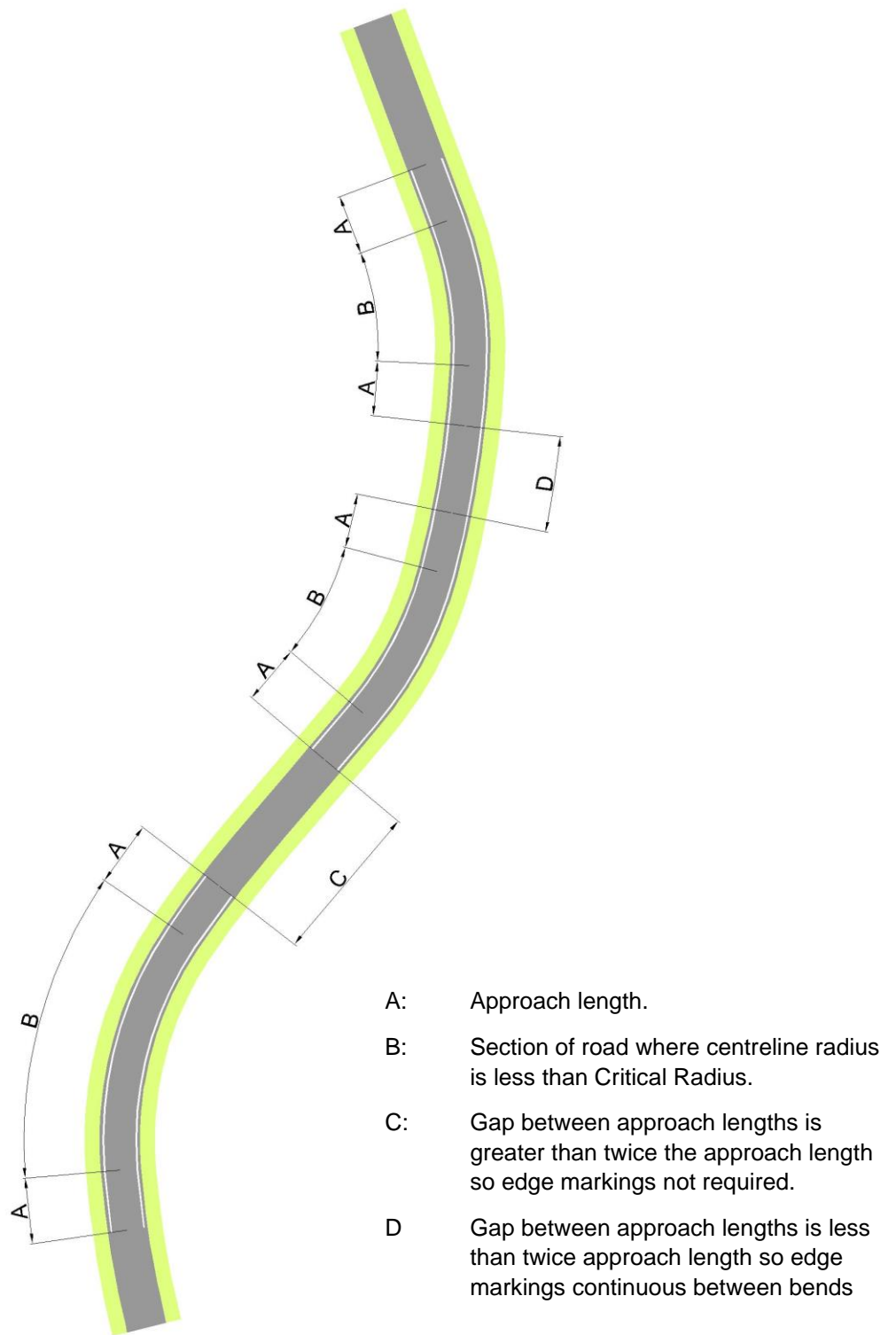


Figure 4.1

Table 4.5 – Edge of Carriageway Markings

Diag. No.	Usage	Division 1	Division 2
1009A	Edge of carriageway at a road junction when a Give Way or Stop marking is used	<ul style="list-style-type: none"> All instances⁽¹⁾ 	-
	Edge of carriageway at a field entrance or exit from a private drive onto a public road (entrance width <5.0m)	<ul style="list-style-type: none"> In all instances where Diag. No. 1012.1 is used 	<ul style="list-style-type: none"> All other instances
	Diagonal marking at the start of a cycle lane	<ul style="list-style-type: none"> All instances 	-
1009B	Edge of carriageway at a junction of a cycle track and another road	<ul style="list-style-type: none"> Two-way cycle tracks only 	-
1010	Edge of carriageway at an exit from a private drive onto a public road (entrance width ≥ 5.0m)	<ul style="list-style-type: none"> In all instances where Diag. No. 1012.1 or 1012.3 is used 	All other instances
	Edge of carriageway at a lay-by	<ul style="list-style-type: none"> All instances 	-
	Start of a bus lane or interruption of a with-flow lane at a left turn (see figure 17-1). The line width will match the associated marking to diagram 1049	<ul style="list-style-type: none"> All instances 	-
	To show the most suitable path for vehicles through an arch bridge	-	All instances
	Division between the main carriageway and a traffic lane which leaves at a junction ahead (lane drop)	<ul style="list-style-type: none"> All instances 	-
	Boundary between main carriageway and either a diverging or merging traffic lane at a road junction	<ul style="list-style-type: none"> All instances 	
1012.1	Edge of carriageway available for through traffic other than at a road junction, an exit from a private drive onto a public road, lay-by or emergency refuge area;	<ul style="list-style-type: none"> At hard strips (unless 1012.3 is used) At bends and their approaches (see Sect. 4) on A Class roads with AADT ≥ 1000 and without street lighting At bends (see Sect. 4) on B Class roads with AADT ≥ 3000 without street lighting 	<ul style="list-style-type: none"> Accident-reduction schemes As a verge protection measure on narrow rural roads where the demarcation between the carriageway and the verge is poor along lengths prone to fog and mist, at sudden changes of carriageway width on the approaches to narrow bridges or other obstructions,

1012.3	Edge of carriageway (see TAL 2/95)	-	<ul style="list-style-type: none">• At hard strips⁽²⁾• Accident-reduction schemes⁽²⁾
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Notes:

- (1) See Section 7 for narrow minor roads.
- (2) The cost of replacing ribbed markings is significant and they should only be used in preference to Diag. No .1012.1 where there is a strong justification for doing so.

4.5 Hatched Markings

The hatched markings prescribed in the *Traffic Signs Regulations and General Directions* and covered in this section are:

- Diagram 1040
- Diagram 1040.3
- Diagram 1040.4

The criteria for the use of these are given in Table 4.6.

Diagram 1040.5 is used to terminate full width hard shoulders and is unlikely to be applicable to roads maintained by Aberdeenshire Council.

Diagrams 1013.3 and 1013.4 are bounded by double white lines and are covered in Section 5 of Chapter 5 of the *Traffic Signs Manual*.

Table 4-6 in Chapter 5 of the *Traffic Signs Manual* gives taper requirements for ranges of speeds and for new works these should be used in preference to the values given in Table 7-3 of TD 73/95 in the *Design Manual for Roads and Bridges*.

4.6 Chevron Markings

The chevron markings prescribed in the *Traffic Signs Regulations and General Directions* and covered in this section are:

- Diagram 1041
- Diagram 1042

The criteria for the use of these are given in Table 4.7.

Table 4.6 – Hatched Markings

Diag. No.	Usage	Division 1	Division 2
1040	On approach to refuge	See Section 8 for approaches to roundabouts and Section 14 for traffic islands	
	To separate opposing flows of traffic on two way roads	-	<ul style="list-style-type: none"> • Between pedestrian refuges/ splitter islands in wide carriageways • As accident-reduction measures at bends or crests
1040.3	To mark an area of carriageway not available to traffic	<ul style="list-style-type: none"> • On approach to a reduction in the number of lanes on a dual carriageway or slip road (see Figure 4-13 in Chapter 5) 	-
1040.4	To mark an area of carriageway which drivers should not enter unless it is safe to do so	<ul style="list-style-type: none"> • Transition from dual carriageway to single carriageway (see Figure 4-16 in Chapter 5) 	-

Table 4.7 – Chevron Markings

Diag. No.	Usage	Division 1	Division 2
1041	To separate streams of traffic travelling in same direction	<ul style="list-style-type: none"> • All instances (except those in Division 2 or where 1042 would be more appropriate) 	<ul style="list-style-type: none"> • As accident-reduction measures at bends
1042	Separation between a high-standard all-purpose road and slip road or at the bifurcation/ convergence of two high-standard all-purpose roads.	<ul style="list-style-type: none"> • All instances 	-
	To indicate a segregated left-turn lane at a roundabout	<ul style="list-style-type: none"> • All instances 	-

5 Double White Lines

5.1 General

This section gives guidance on the use of double white lines (TSRGD Diagrams 1013.1 (A-D),) along with the associated deflection arrow (Diagram 1014)

Police Scotland should be consulted on any proposals to introduce double white lines.

5.2 Design

The design of double white line systems should be based on the visibility criteria described in paragraphs Chapter 5 of the Traffic Signs Manual however double white lines may not be appropriate and judgement needs to be exercised. Recognising this, all new double white line installations shall be categorised as Division 2.

Double white line systems must be fitted with reflecting road studs at intervals of between 3.0m and 4.5m. For new installations an interval of 4.5m shall be used.

Double white lines are generally inappropriate in built-up areas and there should be a presumption against such uses.

5.3 Deflection Arrows

Two deflection arrows to Diagram 1014 shall be provided in advance of the start of any continuous line which is on the driver's side. This may be reduced to one if the available space does not permit the provision of a second arrow.

A third arrow shall be provided in instances where the forward visibility to the second arrow is less than 6 seconds of travel time.

6 Road Studs

6.1 General

This section gives guidance on the use of retroreflecting road studs associated with longitudinal markings and also the use of plain studs at crossings.

6.2 Retroreflecting Road Studs

The criteria for the provision of retroreflecting road studs is given in Table 6.1.

Note: Table 6.1 is only to be used to determine when studs shall be installed in association with markings that already meet the requirements for installing and maintaining markings. It is not intended to indicate when the associated markings are required.

6.3 Specification for Road Studs

Permanent retroreflecting road studs used on Aberdeenshire's roads network shall be of an embedded type and fully meet the requirements given in Direction 7 of the Traffic Signs Regulations and General Directions 2016. Additionally, the night-time visibility assessment class (BS EN 1463-2) shall be R1.

6.4 Road Studs with Light Source

Intelligent road studs or those with an internal light source shall only be used in accident-reduction schemes where they are intended to specifically address factors linked to the increased accident rate at that location. The use of all such studs shall be categorised as Division 2.

6.5 Pedestrian Delineation Road Studs

The use of non-retroreflecting road studs at pedestrian crossings is covered in Section 15.

Table 6.1 – Road Studs

Stud Colour	Diag. No. of Associated Marking	Usage	Division 1	Division 2
White	1013.1	Double white line system	<ul style="list-style-type: none"> All instances 	-
	1004 1004.1 1008 1008.1	To indicate the centre of carriageway	<ul style="list-style-type: none"> A class roads without street lights B class roads without street lights 	<ul style="list-style-type: none"> Accident-reduction schemes
	1004 1004.1 1005 1005.1 1010	To indicate a traffic lane	<ul style="list-style-type: none"> Dual carriageway with speed limit > 40mph Unlit dual carriageway with speed limit \leq 40mph In ghost island junctions where diag. no. 1013.3 is used On climbing lanes without street lights 	<ul style="list-style-type: none"> Accident-reduction schemes
	1040	Hatched areas	<ul style="list-style-type: none"> A class roads without street lights B class roads without street lights 	<ul style="list-style-type: none"> Accident-reduction schemes
Red	1012.1 1012.3 1040.4 1040.5	Left hand edge of carriageway	<ul style="list-style-type: none"> Roads without street lights and with AADT \geq 3000 	<ul style="list-style-type: none"> Accident-reduction schemes
Red	1041 1042	Chevron markings separating streams of traffic going in same direction	<ul style="list-style-type: none"> Roads without street lights and with AADT \geq 3000 	<ul style="list-style-type: none"> Accident-reduction schemes
Amber	1012.1 1012.3 1040.3 1040.4	Right hand edge of carriageway	<ul style="list-style-type: none"> Dual carriageway roads without street lights 	-

Green	1010 1025.1	Edge of carriageway at a lay-by or road junction when a Give Way or Stop marking is not used	<ul style="list-style-type: none">• In all instances where the adjacent edge of carriageway markings have studs	-
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7 Major / Minor Junctions

7.1 Simple Junctions

The layout of simple T-junctions shall be as shown below in Figure 7.1.

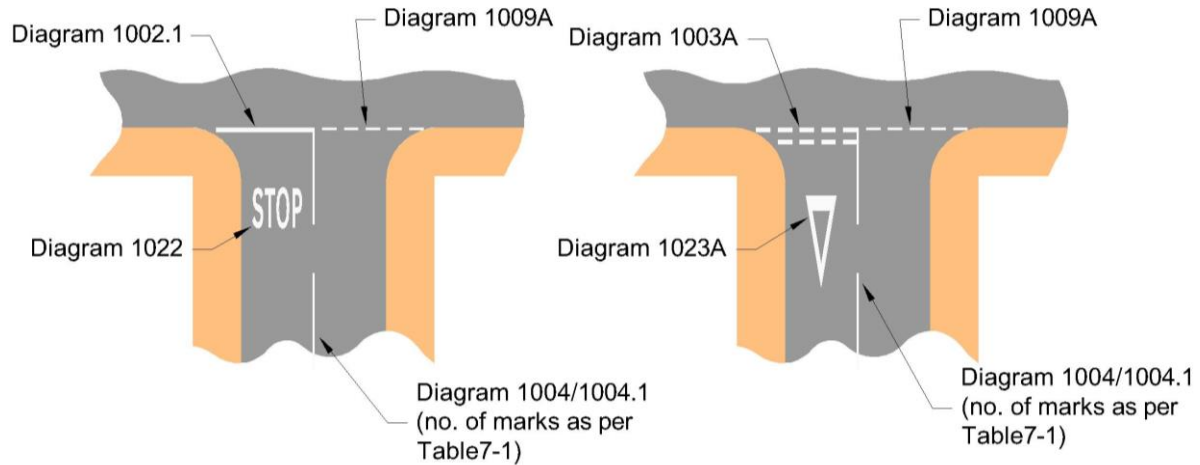


Figure 7.1

On one-way streets, and at junctions where terminating the stop or give way line (Diagram 1002.1/1003) at the centre of the carriageway would give a length of less than 2.75m, the appropriate layout shown in Figure 7.2 should be used.

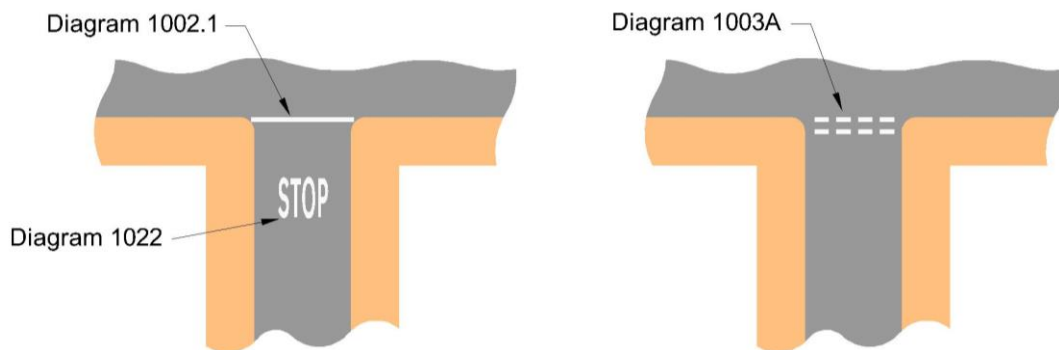


Figure 7.2

Section 3 gives advice on the use of the STOP/GIVE WAY markings (Diagrams 1002.1/1003A) and the associated STOP wording/triangle/ (Diagrams 1022/1023A).

The minimum number of marks (Diagram 1004/1004.1) on the approach to the junction is given in Table 7-1 of Chapter 5.

Where the minor road width narrows to less than 5.5m, full marks shall be provided (up to the minimum number) where the road width at the start of the mark is greater than 5.5m and the width at the end is not less than 4.8m wide. (see Figure 7.3)

If the first mark would not satisfy this criteria (i.e. the road width at the end of the first mark is less than 4.8m) then the appropriate layout in Figure 7.2 shall be used.

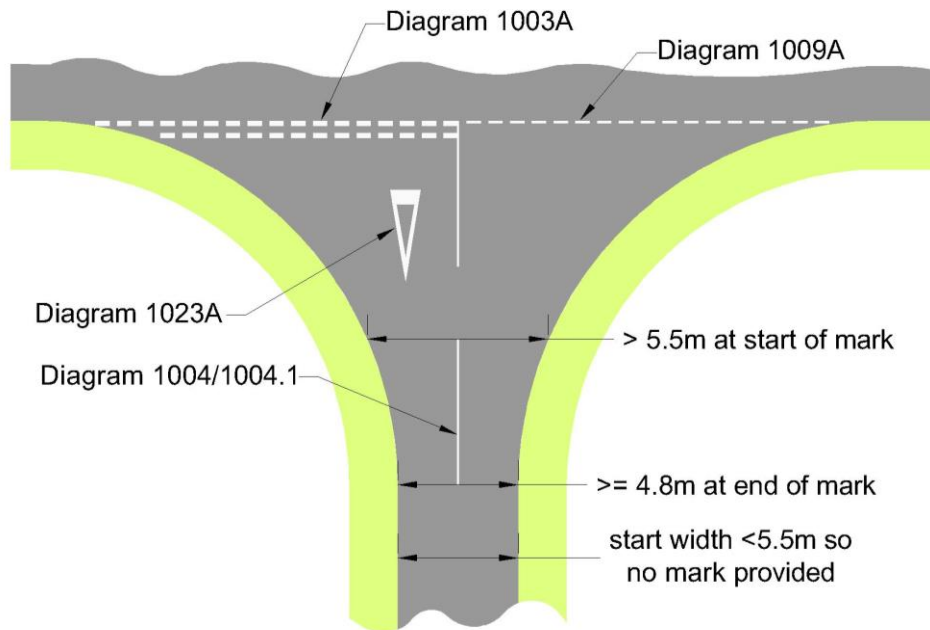


Figure 7.3

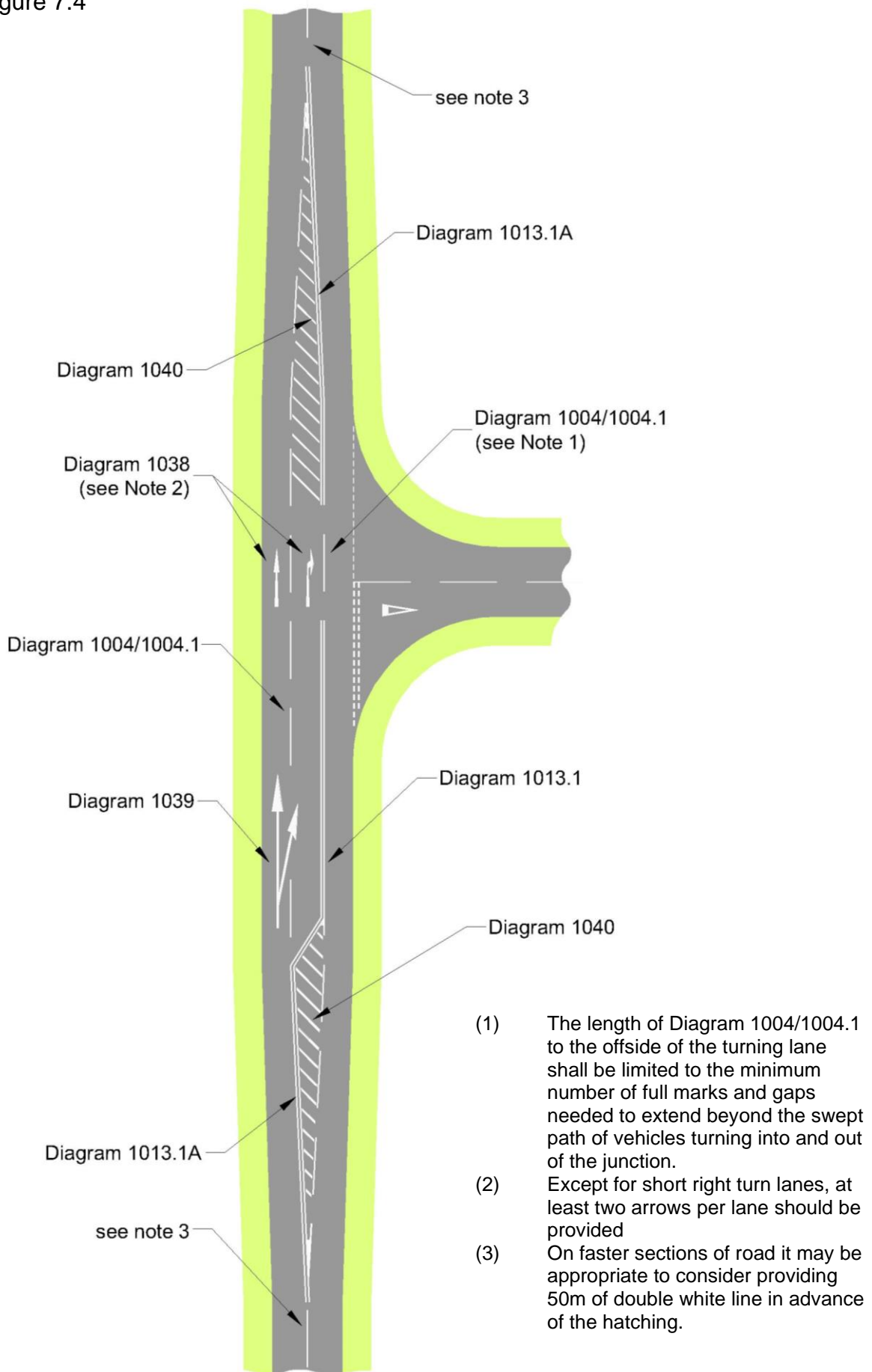
7.2 Ghost Island Junctions

The layout of markings at ghost island junctions shall generally be as shown in Chapter 5 of the Traffic Signs Manual. Where existing markings are being renewed these should correspond to the existing layout (the Design Manual for Roads and Bridges gives different values for ghost island dimensions) however all new installations should follow the guidance given in the Traffic Signs Manual.

Where double lines are used to discourage overtaking on the immediate approach to the right turn lane the layout shown here in Figure 7.4 shall be used in preference to Figure 7-4 in Chapter 5 of the traffic signs manual. In lit areas, this layout may only be used in accident-reduction schemes. All usages of this layout shall be categorised as Division 2.

Coloured surfacing shall not be used.

Figure 7.4



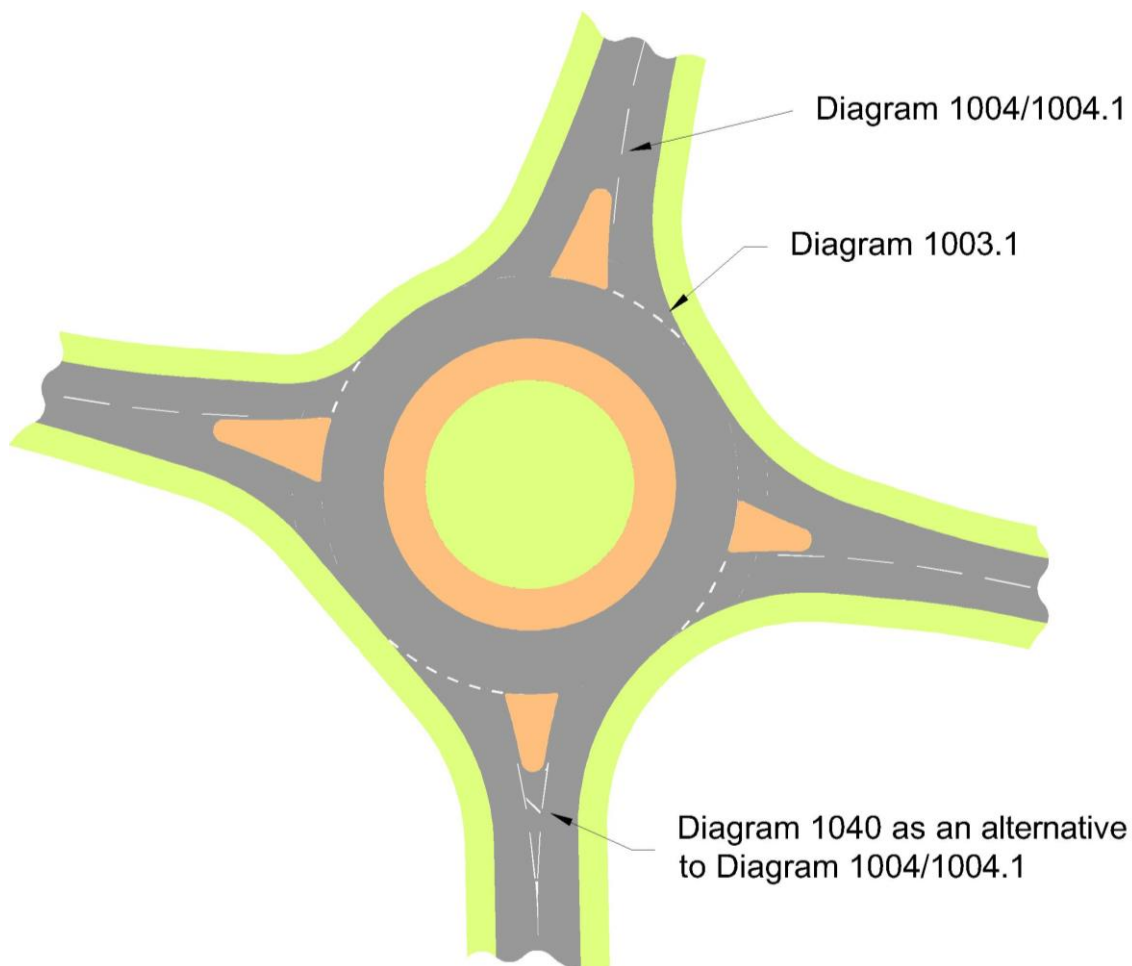
8 Roundabouts

8.1 General

This section prescribes the use of road markings at and on the approaches to roundabouts. Only simple layouts are considered here – markings needed for more complicated layouts shall be referred to the Roads Standards Group for approval before use.

8.2 Compact Roundabouts

Compact roundabouts have single lane entries and exits on each arm. The width of the circulatory carriageway is limited to prevent cars passing each other. Accordingly, there are no lane lines or markings in the circulatory carriageway.



The give way marking to diagram 1003.1 shall be used on all entries; 200mm wide lines at sites where the speed limit is 40mph or less and 300mm where the limit is greater than 40mph.

Centre lines on the approach to compact roundabouts shall be changed to warning lines (diagram 1004/ 1004.1) for the minimum number of marks specified in Table 4-3 of Chapter 5 of the Traffic Signs Manual.

Where warning lines approach splitter islands they should terminate in a position offset 300mm from the edge of the island. This offset may be reduced to 150mm when there is limited width between the island and the nearside kerb but only when the speed limit is 40mph or less and the height of the kerb in the island does not exceed 75mm. Hatching to diagram 1040 may be used on the approach to splitter islands as a more emphatic alternative to the warning line.

8.3 Mini Roundabouts

The central disc of the mini roundabout marking (diagram 1003.4) must be retroreflective and coloured white. The height of the marking must not exceed 6mm at the perimeter.

Domed markings may be used to deter light vehicles from overrunning and improve conspicuity but should be avoided for mini roundabouts likely to be regularly overrun by heavy goods vehicles or buses in residential areas. The maximum height of the dome shall be 1/40th of the dome diameter.

Both the Scottish Fire and Rescue Service and the Scottish Ambulance Service should be consulted about any proposal to introduce a mini-roundabout with a domed white circle.

Hatched markings to Diagram 1040 may be used to increase conspicuity to drivers approaching the mini-roundabout or to assist in the provision of adequate deflection of the path of vehicles. Where vehicles would encounter an easier path if they were to pass on the wrong side of the central disc however, the hatched markings must be replaced by a kerbed splitter island.

8.4 Lane Destination Markings and Arrows

The use of lane destination markings (diagram 1035) and arrows (diagram 1038) should be limited to busier roundabouts with multi-lane approaches. In such instances a minimum of two arrows in sequence per lane shall be used to ensure that the first arrow is not obscured by queuing traffic.

Right-turn arrows shall not normally be used on the approach or entry to any roundabout.

Table 8.1 –Markings at Roundabouts

Diag. No.	Usage	Division 1	Division 2
1003A	Mandatory Give Way at mini roundabout	-	<ul style="list-style-type: none"> At arm of roundabout where adequate deflection is not achieved and traffic entering roundabout might, because of its approach speed, disregard diagram 1003.3 (see para. 8.17, Ch. 5, TSM)
1003.1	Advisory Give Way at roundabout	<ul style="list-style-type: none"> All instances for compact and normal roundabouts (central island diameter $\geq 4\text{m}$) 	-
1003.3	Advisory Give Way at mini roundabout	<ul style="list-style-type: none"> On each arm (except where criteria for 1003 are met) 	-
	Advisory Give Way at compact or normal roundabout	<ul style="list-style-type: none"> At compact or normal roundabouts only where central island diameter $< 4\text{m}$ 	-
1003.4	Central marking at mini roundabout	<ul style="list-style-type: none"> All mini roundabouts 	-
1004 (speed limit 40 mph or less)	Lane line on all roads on approach to roundabouts	<ul style="list-style-type: none"> On all multi-lane approaches to roundabout 	-
	Warning line on approach to roundabout splitter island	<ul style="list-style-type: none"> All instances 	
1004.1 (speed limit over 40 mph)	Lane line on all roads on approach to roundabouts	<ul style="list-style-type: none"> On all multi-lane approaches to roundabout 	-
	Warning line on approach to roundabout splitter island	<ul style="list-style-type: none"> All instances 	
1023A	Approach to roundabout with marking 1003	<ul style="list-style-type: none"> All instances where the major road is category 3b or above. All instances where the minor road is category 4a or above. 	<ul style="list-style-type: none"> Accident-reduction measures
	Approach to roundabout with marking 1003.3	<ul style="list-style-type: none"> On approaches to mini roundabouts on category 3b or above roads where there is an exit directly opposite. 	<ul style="list-style-type: none"> Accident-reduction measures
1035	Markings indicating appropriate traffic lane on approach to roundabout	-	<ul style="list-style-type: none"> Busy roundabouts with multi-lane approaches where lane allocation is required for capacity reasons
	Markings indicating appropriate traffic lane in circulatory carriageway of roundabout	-	<ul style="list-style-type: none"> Circulatory carriageways with 3 or more lanes.

1038	Arrows indicating appropriate traffic lane on approach to roundabout	-	<ul style="list-style-type: none">• Busy roundabouts with multi-lane approaches where lane allocation is required for capacity reasons
	Arrows indicating appropriate traffic lane in circulatory carriageway of roundabout	-	<ul style="list-style-type: none">• Circulatory carriageways with 3 or more lanes.
1040	Hatch marking on approach to mini roundabout	-	<ul style="list-style-type: none">• Where increased conspicuity or deflection is required
	Hatch marking on approach to roundabout splitter island	-	<ul style="list-style-type: none">• Where increased conspicuity is required

9 Signal Controlled Junctions

9.1 General

Table 9.1 prescribes the use of stop lines, warning lines, lane destination markings and arrows and crossing delineation studs at signal-controlled junctions.

9.2 Advance Stop Lines for Cyclists

All new signal-controlled junctions shall include advance stop lines to provide a reservoir for cyclists. The depth of the reservoir shall be 4m and coloured surfacing shall not be used.

Markings to Diagram 1001.2 shall be used where there are cycle lanes or to Diagram 1001.2B where there are no cycle lanes. (See figure 9.1)

Advance stop lines shall be provided at existing signal-controlled junctions where possible but it is recognised that this may require alterations to apparatus and their introduction may be delayed to tie-in with other works at the junction.

9.3 Stop Lines

The traffic signal stop line (Diagram 1001) is a continuous marking with permitted widths in the TSRGD of 200mm or 300mm. Traffic signal stop lines tend to wear more quickly than adjacent longitudinal lines however, so the greater width shall be used for all instances of this marking in Aberdeenshire.

The 300mm width shall also be used for both stop lines where markings to Diagram 1001.2 or 1001.2B are used.

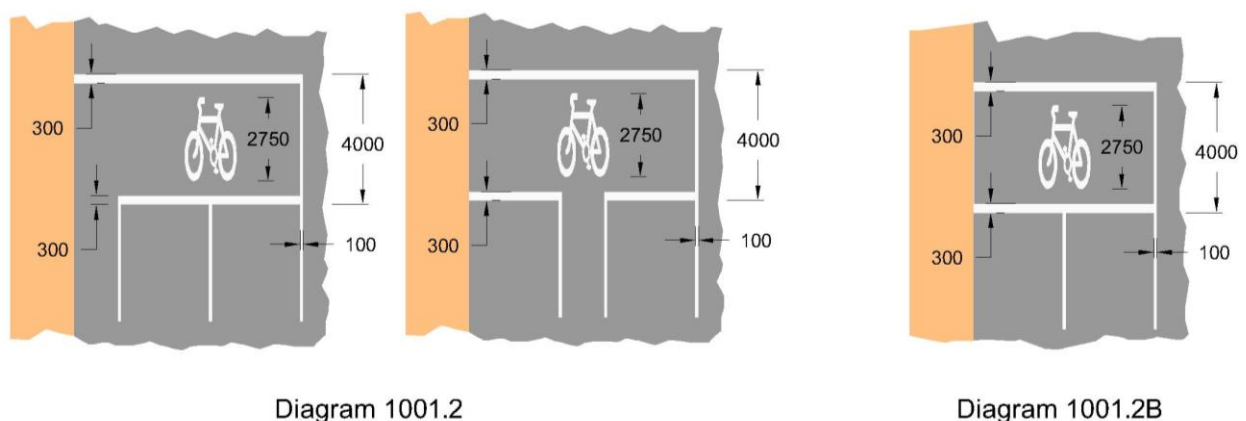


Figure 9.1

Table 9.1 –Markings at Signal-controlled Junctions

Diag. No.	Usage	Division 1	Division 2
1001	Stop line at signal-controlled junction	<ul style="list-style-type: none"> All instances where diagram 1001.2 or 10012B cannot be used 	-
1001.2	Stop line at signal-controlled junction with advanced stop line for cyclists	<ul style="list-style-type: none"> At signal-controlled junctions, where there is a cycle lane 	-
1001.2B	Stop line at signal-controlled junction with advanced stop line for cyclists	<ul style="list-style-type: none"> At signal-controlled junctions, where there is no cycle lane 	-
1004 (speed limit 40 mph or less)	Lane line on all roads on approach to signal-controlled junction	<ul style="list-style-type: none"> On all multi-lane approaches to signal-controlled junction 	-
	Lane lines through signal-controlled junction	-	<ul style="list-style-type: none"> Complex junctions where guidance to traffic would be useful
1004.1 (speed limit over 40 mph)	Lane line on all roads on approach to signal-controlled junction	<ul style="list-style-type: none"> On all multi-lane approaches to signal-controlled junction 	-
	Lane lines through signal-controlled junction	-	<ul style="list-style-type: none"> Complex junctions where guidance to traffic would be useful
1035	Markings indicating appropriate traffic lane on approach to signal-controlled junction	-	<ul style="list-style-type: none"> Busy signal-controlled junctions with multi-lane approaches where lane allocation is required for capacity reasons
1038	Arrows indicating appropriate traffic lane on approach to signal-controlled junction	<ul style="list-style-type: none"> Where lanes are dedicated for left or right-turning movements only 	<ul style="list-style-type: none"> Busy signal-controlled junctions with multi-lane approaches where lane allocation is required for capacity reasons
1038.1	Arrows indicating route through signal-controlled junction	-	<ul style="list-style-type: none"> In pairs to indicate that opposing right-turning traffic should pass nearside to nearside Complex junctions where guidance to traffic would be useful
1055.1	Road studs marking pedestrian crossing ⁽¹⁾	<ul style="list-style-type: none"> At signal-controlled pedestrian crossing At crossing point within 10 metres of traffic light signals 	-

Notes:

(1) See section 15.

10 Grade Separated Junctions

10.1 General

Grade separated junctions can often be complex with complicated road marking layouts and it is not intended that this document should try and give guidance beyond that given in Chapter 5 of the Traffic Signs Manual and TD 22 in the Design Manual for Roads and Bridges. Accordingly all markings associated with grade separated junctions shall be categorised in Division 2 and require approval before use.

11 Yellow Bar Markings

11.1 General

Yellow bar markings (diagram number 1067) may be used only on the approaches to roundabouts on dual carriageway roads subject to the national speed limit.

Yellow bar markings shall be categorised in Division 2.

12 Yellow Box Junction Markings

12.1 General

Yellow box junction markings should be used sparingly and in accordance with the guidance in Chapter 5 of the traffic signs Manual.

The use of yellow box junction markings shall be classified as Division 2.

13 Arrows and Lane Destinations

13.1 General

The use of arrows and lane destination markings at roundabouts is covered in section 8. Table 9.1 gives guidance on their usage at signal-controlled junctions. Other usages are covered in Table 13.1.

13.2 Drive-on-Left Arrow Pairs

Research suggests that “foreign drivers appear to have difficulty remembering which side of the carriageway to drive on. This may occur when no other traffic is around or when they come to the end of a single track road and re-join a two lane single carriageway, or at view points and resting places.” ⁽¹⁾

To address this, straight direction arrows may be used in pairs (as shown in Figure 13.1) to remind drivers to drive on the left.

The 4m arrow length shall be used where the speed limit is 40mph or less while the 6m length shall be used for 50mph or 60mph limits.

The use of the drive-on-left shall be categorised as Division 2. Instances where it may be considered for use are as follows:

1. Roads at junctions with access to major tourist attractions (>20,000 visitors per annum)
2. Unrestricted roads at junctions with access to minor tourist attractions where the junction is an exit only or where the access road is not of sufficient width to have a dividing centreline at the junction (Figure 13.1)
3. Where single-track sections of road widen to two lanes on the Deeside Tourist Route, the Castle Trail, the Coastal Trail or the Victorian Heritage Trail (Figure 13.2)
4. Other sites identified by the Road Safety Engineering Unit for relevant accident reduction measures.

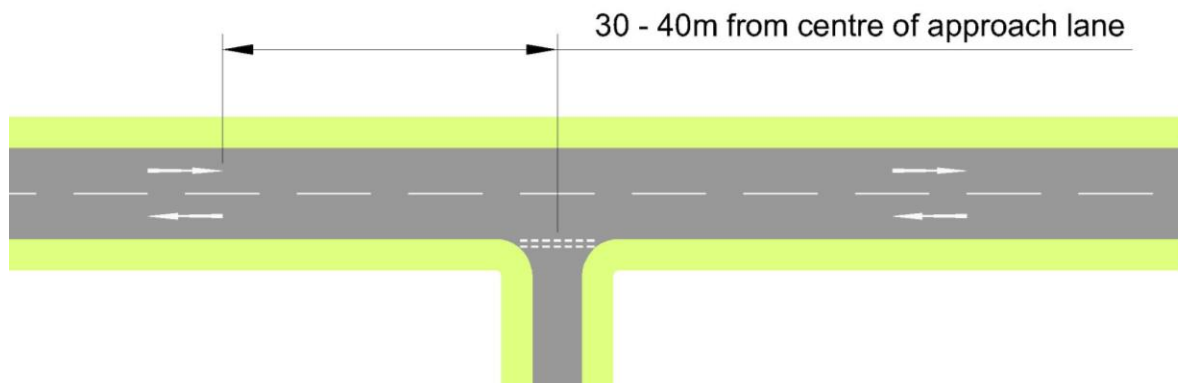


Figure 13.1

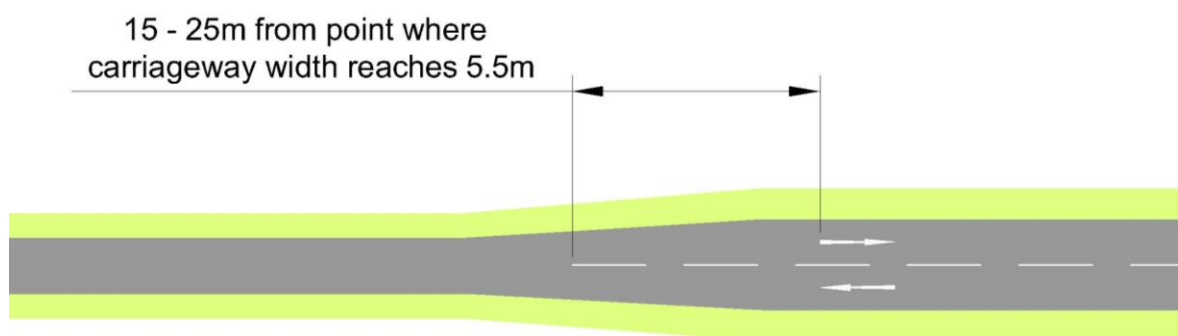


Figure 13.2

Table 13.1 –Arrows and Lane Destinations

Diag. No.	Usage	Division 1	Division 2
1014	In advance of double white line markings ⁽¹⁾	<ul style="list-style-type: none"> All instances 	-
	In advance of hatching (1040, 1040.3 and 1040.4)	<ul style="list-style-type: none"> Where number of lanes reduce 	<ul style="list-style-type: none"> Where speed limit is 40mph or greater Accident-reduction measure
	In advance of bus lane boundaries to indicate the side on which other vehicles should pass them	<ul style="list-style-type: none"> All instances 	-
	In advance of cycle lane boundaries to indicate the side on which other vehicles should pass them	-	<ul style="list-style-type: none"> Where speed limit is 40mph or greater
	In advance of arch bridges ⁽²⁾	<ul style="list-style-type: none"> Where markings are required to guide high vehicles through the highest part of the arch 	-
1035	Markings indicating appropriate traffic lane on approach to junction	-	<ul style="list-style-type: none"> Busy junctions with multi-lane approaches where lane allocation is required for capacity reasons
1036.1	Arrow and legend indicating mandatory left turn	<ul style="list-style-type: none"> All instances where such a restriction is enforced by traffic order 	-
1036.2	Arrow and legend indicating mandatory ahead only	<ul style="list-style-type: none"> All instances where such a restriction is enforced by traffic order 	-
1037.1	Arrow and legend indicating mandatory right turn	<ul style="list-style-type: none"> All instances where such a restriction is enforced by traffic order 	-
1038	Arrows indicating appropriate traffic lane on approach to junction	<ul style="list-style-type: none"> Where lanes are dedicated for left or right-turning movements only 	<ul style="list-style-type: none"> Busy junctions with multi-lane approaches where lane allocation is required for capacity reasons
	Arrow pairs to remind drivers to drive on left	-	<ul style="list-style-type: none"> See section 13 text

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1038.1	Arrows indicating route through junction	-	<ul style="list-style-type: none">• In pairs to indicate that opposing right-turning traffic should pass nearside to nearside• Complex junctions where guidance to traffic would be useful
1039	Bifurcation arrow	<ul style="list-style-type: none">• At the commencement of deceleration lanes on the approach to junctions	-

Notes:

- (1) See section 5.
- (2) In conjunction with diagrams 1010 and 1024.1

14 Traffic Islands

14.1 General

Approaches to traffic islands shall be marked by the use of inclined warning lines to diagram 1004/ 1004.1 or hatching to diagram 1040 as detailed below and in Table 14.2.

Warning lines to diagram 1004/ 1004.1 shall only be used on the approach to an island where the taper length is no greater than or equal to that given in Table 14.1 below. Where the taper length is shorter than this minimum, hatched markings to diagram 1040 shall be used. (See figure 14.3). Chevron markings must be used on the approach to traffic islands separating flows of traffic travelling in the same direction (see Section 4).

Table 14.1 Tapers on the approach to islands

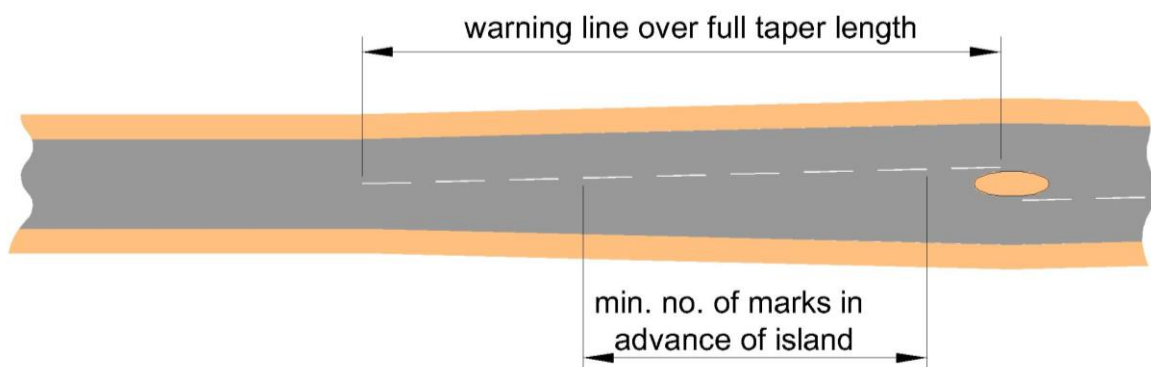
(Supersedes Table 14-1 in Ch. 5)

Speed Limit (mph)	Minimum Taper
30	1 in 40
40	1 in 45
50 or above	1 in 50

Warning lines shall be inclined over the full length of the taper.

When the length of the minimum number of marks is less than the taper length then additional marks shall be used to extend the warning line marking to the start of the taper. (See figure 14.1)

Figure 14.1



The minimum number of marks shall be provided in advance of an island even if the length is greater than the taper length. (See figure 14.2)

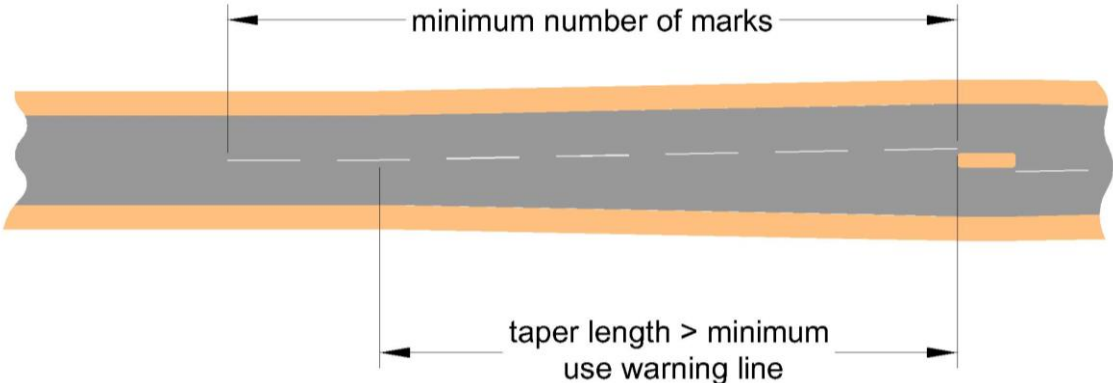


Figure 14.2

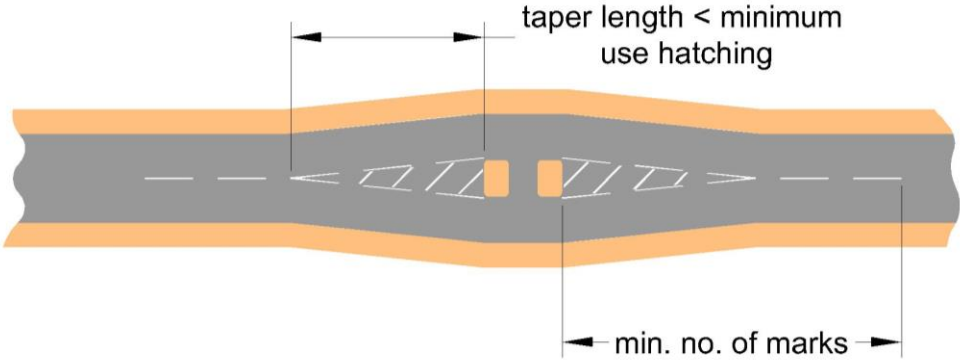


Figure 14.3

Table 14.2 –Traffic Islands

Diag. No.	Usage	Division 1	Division 2
1004 (speed limit 40 mph or less)	Central warning line to highlight the presence of a central refuge or other hazard	<ul style="list-style-type: none"> Roads with 40mph speed limit ⁽¹⁾ 	<ul style="list-style-type: none"> Roads with 30mph speed limit ⁽¹⁾ Accident-reduction measures ⁽¹⁾
1004.1 (speed limit over 40 mph)	Central warning line to highlight the presence of a central refuge or other hazard	<ul style="list-style-type: none"> All instances ⁽¹⁾ 	-
1040	Hatched marking to highlight the presence of a central refuge or other hazard	<ul style="list-style-type: none"> Central islands where the taper length is shorter than that specified in Table 14.1 Category 3a or higher roads 	<ul style="list-style-type: none"> Accident-reduction measures

Notes:

- (1) Where hatched markings are required they shall have precedence over warning lines.

15 Pedestrian Crossings

15.1 General

Markings for Zebra, Puffin, Toucan and equestrian crossings are prescribed in the Traffic Signs Regulations and General Directions. Designers should note the restrictions placed on the use of other markings within the controlled area.

Any new installations of crossings or amendments to existing crossings must be referred to the Roads Standards Group for approval.

The criteria for installing pedestrian crossings is given in Aberdeenshire Council's Pedestrian Crossing Assessment Policy.

Parking is not permitted within the controlled area. This restriction applies to the full road, including any laybys, and not just the traffic lanes.

15.2 Zebra Crossings

Road Studs are not required to delineate the limits of zebra crossings and should not be installed.

Markings to Diagram 1001.5 shall be used at zebra crossings where a cycle path crosses the carriageway.

15.3 Puffin Crossings

New puffin crossings shall not be installed in Aberdeenshire. Instead, pedex crossings should be used.

15.4 Pedex Crossings

These are similar to signal-controlled crossings at junctions with far-side pedestrian signals and use the same sequence but in a stand-alone setting. On-crossing pedestrian detectors shall be used for new installations. Road markings to Diagram 1001.3 shall be used.

15.5 Studs

Markings to Diagrams 1055.1/1055.2 showing the limits of crossing for puffin, pedex, toucan, equestrian and cycle crossings shall be non-reflective studs 100mm square and made of aluminium with a raised profile to improve skid resistance in adverse weather conditions

Table 15.1 –Pedestrian Crossings

Diag. No.	Usage	Division 1	Division 2
1001	Stop line indicating point beyond which vehicular traffic must not proceed when required to stop by light signals.	<ul style="list-style-type: none"> • Puffin crossings • Pelican crossings • Toucan crossings • Equestrian crossings • Pedex crossing 	-
1001.3	Zig-zag lines to indicate requirements or prohibitions relating to stopping or overtaking	<ul style="list-style-type: none"> • Puffin crossings • Pelican crossings • Toucan crossings • Equestrian crossings • Pedex crossing 	-
1001.4	Zig-zag lines to indicate requirements or prohibitions relating to stopping or overtaking	<ul style="list-style-type: none"> • Zebra crossings 	-
1001.5	Give-way marking	<ul style="list-style-type: none"> • Zebra crossings • Parallel pedestrian and cyclist crossings 	-
1055.1	Marking showing suitable place to cross	<ul style="list-style-type: none"> • Puffin crossings • Pelican crossings • Toucan crossings • Equestrian only crossings • Pedex crossing 	-
1055.2	Marking showing suitable place to cross with additional crossing point for equestrians.	<ul style="list-style-type: none"> • Equestrian crossings 	-
1055.3	Marking showing route for pedal cycles to cross	<ul style="list-style-type: none"> • Parallel pedestrian and cyclist crossings 	-
-	Black and white stripes to indicate limits of crossing	<ul style="list-style-type: none"> • Zebra crossings • Parallel pedestrian and cyclist crossings 	-

16 Cycle Markings

16.1 General

Table 16.1 prescribes the use of longitudinal lines, give-way lines, raised profile markings, arrows and the cycle symbol marking at advisory cycle lanes, mandatory cycle lanes and cycle tracks.

16.2 Coloured Road Surfaces

Coloured surface treatments shall not be used in cycle lanes, cycle tracks or cycle reservoirs.

16.3 Advanced Stop Lines for Cyclists

Advance stop lines for cyclists shall be provided at signal-controlled junctions where possible. (see Section 9) .

16.4 Advisory Cycle Lanes – Removal of Centreline

In many situations the introduction of advisory cycle lanes would leave insufficient remaining carriageway width for the use of a centreline and a single centre lane would serve motorised vehicles travelling in both directions. Trials have shown that the removal of centrelines in 30mph speed limited areas led to a reduction in accident rates and vehicle speeds. The benefits were even greater when advisory cycle lanes were introduced.

For 2-way roads, the use of advisory cycle lanes with the removal of centrelines can be considered for road widths of at least 7.0 metres (two 1.5m cycle lanes and one central general-traffic lane of 4m. Wider central traffic lanes will be needed for routes with higher flows or significant numbers of buses or large goods vehicles.

The use of advisory cycle lanes with a single central general-traffic lane is not appropriate where:

- The speed limit is greater than 30mph
 - The demand for on-street parking would be such that there would be frequent blocking of the cycle lane and waiting restrictions would not be appropriate
 - Forward visibility is restricted, particularly due to vertical alignment.
-

Table 16.1 – Cycle Markings

Diag. No.	Usage	Division 1	Division 2
1001	Stop line	<ul style="list-style-type: none"> Where cycle track crosses road at signalised crossing 	-
1003B	Give way line	<ul style="list-style-type: none"> Priority junction of cycle track/mandatory cycle lane with road 	-
1004	Lane line marking (speed limit 40mph or less)	<ul style="list-style-type: none"> At edge of advisory cycle lane 	-
1004.1	Lane line marking (speed limit greater than 40mph)	<ul style="list-style-type: none"> At edge of advisory cycle lane 	-
1009A	Edge of carriageway line)	<ul style="list-style-type: none"> To mark start of cycle lane or segregated cycle track 	-
1009B	Edge of carriageway line)	<ul style="list-style-type: none"> At a junction of a two-way cycle track and another road (in conjunction with 1003B) 	-
1014	Arrow indicating direction in which vehicular traffic should pass a road marking shown in diagram 1049 ahead	<ul style="list-style-type: none"> Where diagram 1009A is used to narrow the traffic lane at the start of a mandatory cycle lane 	-
1023B	Give Way triangle on cycle way/cycle track on approach to priority junction	<ul style="list-style-type: none"> Where major road is category 3b or above Where the cycle lane/track forms part of the National Cycle Network 	<ul style="list-style-type: none"> Accident-reduction measures
1049B	Boundary of cycle lane, cycle track or route used by pedal cyclists and pedestrians only	<ul style="list-style-type: none"> Mandatory cycle lanes 	-
	Division of a route into that part reserved for pedal cycles and that part reserved for pedestrians	<ul style="list-style-type: none"> Segregated pedestrian/cycle tracks in rural areas 	-
1049.1	Division of a route into that part reserved for pedal cycles and that part reserved for pedestrians	<ul style="list-style-type: none"> Segregated pedestrian/cycle tracks in urban areas 	-
1057	Symbol indicating cycle lane, track or route	<ul style="list-style-type: none"> At start of cycle lane/track and after every break in cycle lane/track 	<ul style="list-style-type: none"> Across exit from side road at priority junctions (not at driveways nor

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		<ul style="list-style-type: none"> • Across exit from side road at priority junctions (not at driveways nor minor accesses) on mandatory cycle lanes • At intervals along cycle lane not exceeding 100m 	minor accesses) on advisory cycle lanes
1058	End of cycle lane or track	<ul style="list-style-type: none"> • At end of a cycle facility where there is a risk of cyclists riding onto a pedestrian only area 	
1058.1	SLOW marking warning cyclists of potential danger ahead	-	<ul style="list-style-type: none"> • In advance of hazard in cycle facility
1059	Arrow indicating directions in which pedal cyclists should travel along a cycle lane, track or route.	-	<ul style="list-style-type: none"> • At locations where vertical signing would be unsuitable on high flow cycle facilities

17 Bus Markings

17.1 General

Bus lane and bus stop markings shall be categorised as division 1.

17.2 Coloured Road Surfaces

Coloured surface treatments shall not be used in bus lanes nor bus stops.

17.3 Bus Stops

For bus stops on the main carriageway the bus stop cage (diagram number 1025.1) shall be 25 metres long and positioned as shown in relation to the raised kerbs in figure 17.1. This may be reduced to 19 metres long where the stop is served only by mini or midi buses; or where geometry or parking restrictions prevent parked vehicles from obstructing buses approaching the bay; and with the agreement of the council's Public Transport Unit.

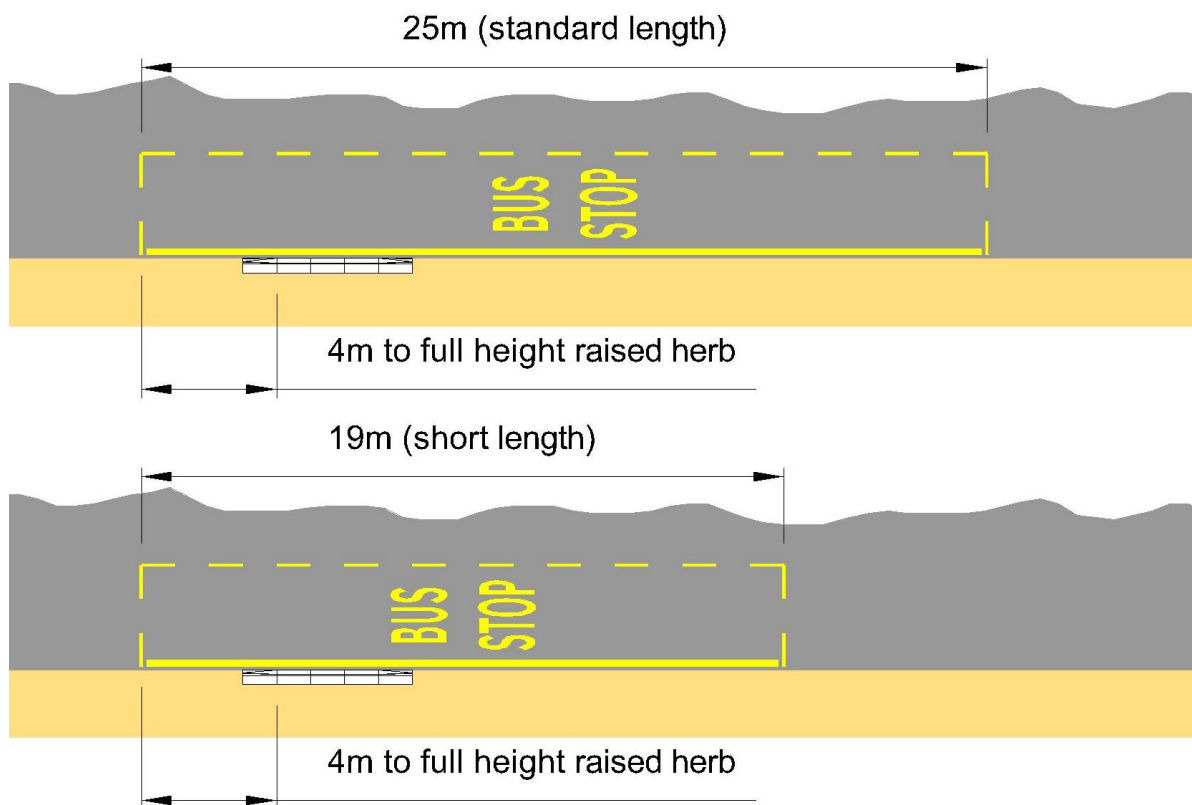


Figure 17.1

18 Tram Markings

18.1 General

The general principles for signing and marking tramways are set out in the Office of Rail Regulation's "Railway Safety Publication 2, Guidance on tramways".

Marking schemes associated with tramways shall be classified as Division 2 and submitted for approval before use.

19 Railway Level Crossings

19.1 General

Level crossings exist at the following locations on the public road network in Aberdeenshire:

B977	Boat of Kintore	Automatic half barrier crossing (AHBC)
B9002	Insch	Locally monitored manually controlled barrier crossing (MCB)
C76S	Gartly	Automatic half barrier crossing (AHBC)
U61S	Oyne	Automatic half barrier crossing (AHBC)
U72K	Carmont	Locally monitored manually controlled barrier crossing (MCB)

Markings at these crossings must be as specified in the relevant level crossing order and cannot be varied without consultation with the Office of Rail and Road and Network Rail.

The responsibility for markings within the crossing (from STOP line to STOP line) rests with Network Rail however, generally, the Council is responsible for the maintenance of markings and signs on the approach to the crossing. These markings shall be classified in Division 1.

Network Rail's Highways Interface Manager (streetworks.scotland@networkrail.co.uk) should be notified in advance of any works near a level crossing which may affect the crossing or the traffic passing through it.

At least one deflection arrow to Diagram 1014 shall be provided on each approach to the double white line markings at crossings. The double white line system must be fitted with a single row of white bi-directional reflecting studs laid at an interval of 4.5m and any stud within 2 metres of a running rail should be made of plastic.

19.2 Inch

The centreline shall be marked with diagram 1013.1D for a distance of not less than 36 metres beyond the stop lines on each side of the crossing.

19.3 Carmont

There are no road markings required by a Level Crossing Order for Carmont.

19.4 Boat of Kintore, Gartly & Oyne

The centreline shall be marked with diagram 1013.1A for a distance of not less than 12 metres beyond the stop lines on each side of the crossing and for a further distance of not less than 24 metres with diagram 1013.1D.

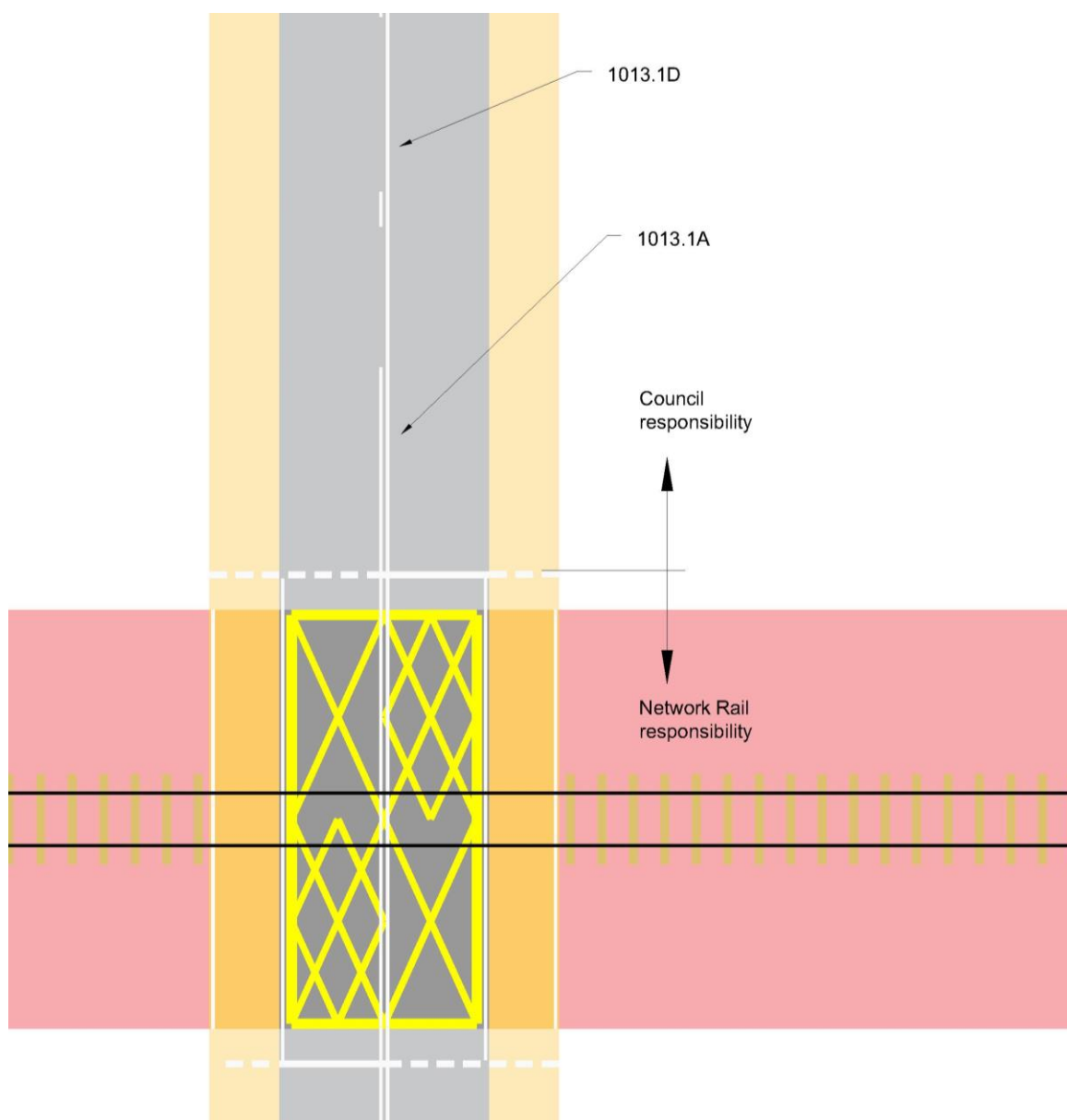


Figure 19-1

20 Waiting Restrictions

20.1 General

Waiting restriction markings are used to indicate the effect of a statutory provision so it is essential that these are installed and maintained to a high standard. Such markings shall be categorised in Division 1.

20.2 Prohibition of Waiting Markings

All waiting restriction markings with yellow lines shall be coloured lemon (BS 381C No. 355).

Roads with a speed limit greater than 40mph should have waiting restrictions marked with lines 100mm wide.

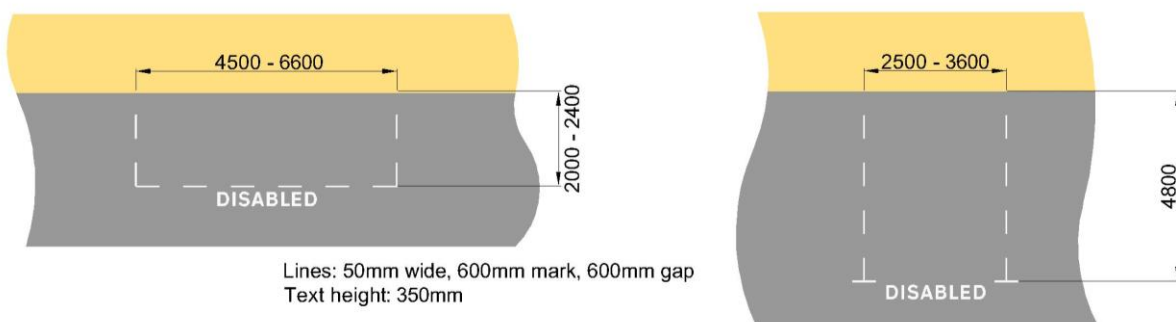
Roads in designated (and proposed designated) conservation areas with a speed limit of 40mph or less should have waiting restrictions marked with lines 50mm wide. (A list of conservation areas in Aberdeenshire can be found at <http://www.aberdeenshire.gov.uk/environment/built-heritage/conservation-areas/what-is-a-conservation-area/>).

All other roads with a speed limit of 40mph or less should have waiting restrictions marked with lines 75mm wide.

20.3 Parking Bays

The use of disabled parking spaces is covered in Roads Policy Note 1. Aberdeenshire have obtained authorisation for variants to Diagram 1028.4. These are shown in figure 20.1 and may be used (on existing roads only) where site constraints would make the use of the standard marking impossible or undesirable. A space length of 6 metres should generally be used for a resident's disabled parking space but this can be shortened or extended within the permitted limits to suit particular site conditions or specific access requirements.

Figure 20.1



21 Traffic Calming

21.1 General

All markings used with traffic calming shall be categorised as Division 2 except for the following which shall be categorised as Division 1:

- Diagram 1062 – triangle marking on road humps, thumps humped crossings or speed cushions (excluding use in a zone identified as being a 20 miles per hour zone by a traffic sign shown in diagram 674)
- Diagrams 1012.1/ 1017/ 1018.1 over road humps with tapered ends which terminate within 300 mm of the edge of the kerb

21.2 Dragon's Teeth

Dragon's teeth markings are, officially, not road markings so do not require special authorisation to use. They have traditionally been used to enhance the conspicuity of gateways however, as they are generally not visible from a distance or in wet weather, their contribution to any speed reduction is likely to be small. Existing dragon's teeth markings shall be categorised as Division 2 but their use is not recommended for new installations.

22 Worded and Diagrammatic Markings

22.1 General

Worded and diagrammatic markings shall be categorised as Division 2 except for the following which shall be categorised as division 1:

- Diagram 1027.1 – KEEP CLEAR marking when associated with a traffic regulation order.

22.2 Keep Clear Markings

Residents may request the provision of an elongated H marking (Diagram 1026.1) where they have difficulty accessing an entrance to off-street premises and a standard application form is available for this purpose on the website. To avoid over use, approval should only be granted where there is a demonstrable need. Applicants (with the exception of disabled badge holders) shall pay a standard fee for the installation. Any future maintenance of these markings will be carried out at the discretion of, and cost to, the Council.

The “Keep Clear” markings to Diagram No 1026.1 should only be used on the applicant’s side of the road and not to keep an area opposite the access clear. If there is a problem with getting in and out of a drive caused by vehicles parking opposite then other solutions must be considered such as widening the access.

Diagram 1026 shall not be used to keep areas of carriageway outside premises clear of parked vehicles.

23 Materials and Maintenance

23.1 Register of Markings

All markings and studs installed and maintained under this policy must be recorded in a register to ensure that they continue to be maintained.

Each area office shall be responsible for maintaining the register for the roads in their area.

The register shall contain the following fields:

Markings	Road Studs
Unique Street Reference Number	
Name or description of road	
Start point (grid reference or textual description)	
End point (grid reference or textual description)	
Reason for installation	
If Category 2, name of Roads Manager approving initial installation	
Date of installation	
Location (left/ right/centreline etc.)	
Length	Number of studs
Marking TSGRD reference number	Colour
Width	Unidirectional or bidirectional
Textual description of any other variable dimensions (e.g. marking and gap length)	Manufacturer and model
Dates of renewal	

23.2 Maintenance and Inspection

Road Studs and edge of carriageway markings used in accordance with this note will play an important part in enabling the safe movement of vehicles on our roads. They must, therefore, be maintained in good condition.

The February or March routine safety inspection should have specific regard to road studs and carriageway markings with any missing or worn markings or studs recorded. The Principal Roads Engineer shall prepare the annual lining and stud replacement programme based on these inspection records to ensure that all studs and markings under this policy shall be maintained in a serviceable condition.

In other routine safety inspections any loose studs and failed markings must be noted. Loose studs must be made safe immediately while failed markings shall be assessed to determine the urgency of repair/renewal based on the risk to road users.

24 Hazard Marker Posts

24.1 Normal Usage

Paragraph 15.1.4 of Chapter 4 of the Traffic Signs Manual describes the situations where the signs may normally be used as follows:

- To indicate the edge of the carriageway on embankments, mountain roads and other points where special danger exists;
- At the edge of the carriageway in conjunction with signs to Diagram 516 or 517 (Road Narrows) to indicate the place where the carriageway suddenly narrows;
- To indicate obstructions unusually near the kerb such as a bridge parapet or abutment or an obstructing building. In these cases the marker may be fitted to the structure instead of to a separate post.

The uses of hazard markers in the situations described above shall be categorised as Division 2.

24.2 Special Usage

In addition to the situations described above, hazard marker posts may sometimes be used as part of a specific accident-reduction scheme. This will normally be in locations where the markers will assist drivers in identifying the line of the edge of the road, for instance through a series of bends. Although these locations may not have a specific hazard off the carriageway, as normally required for the use of the sign, the increased risk of leaving the carriageway would be taken to constitute the hazard.

Within Aberdeenshire, hazard marker posts should normally only be used in the non-standard situations described in this paragraph as part of a specific accident-reduction scheme promoted or approved by the Road Accident Investigation and Prevention Unit. This shall be categorised as Division 2

24.3 Marker Post Spacing at Bends

Where marker posts are provided around bends, the recommended layout is shown in figure 24.1, with use being limited to the outside of the bend. The spacing on bends shall not exceed 50m and the spacing on approaches to bends shall not exceed 100m.

Where, in a series of bends, there is an overlap in the approach and exit lengths on the same side of the carriageway, the spacings shall be adjusted to ensure that the progression of reducing spacings going into the bend is maintained (see example in figure 24.2).

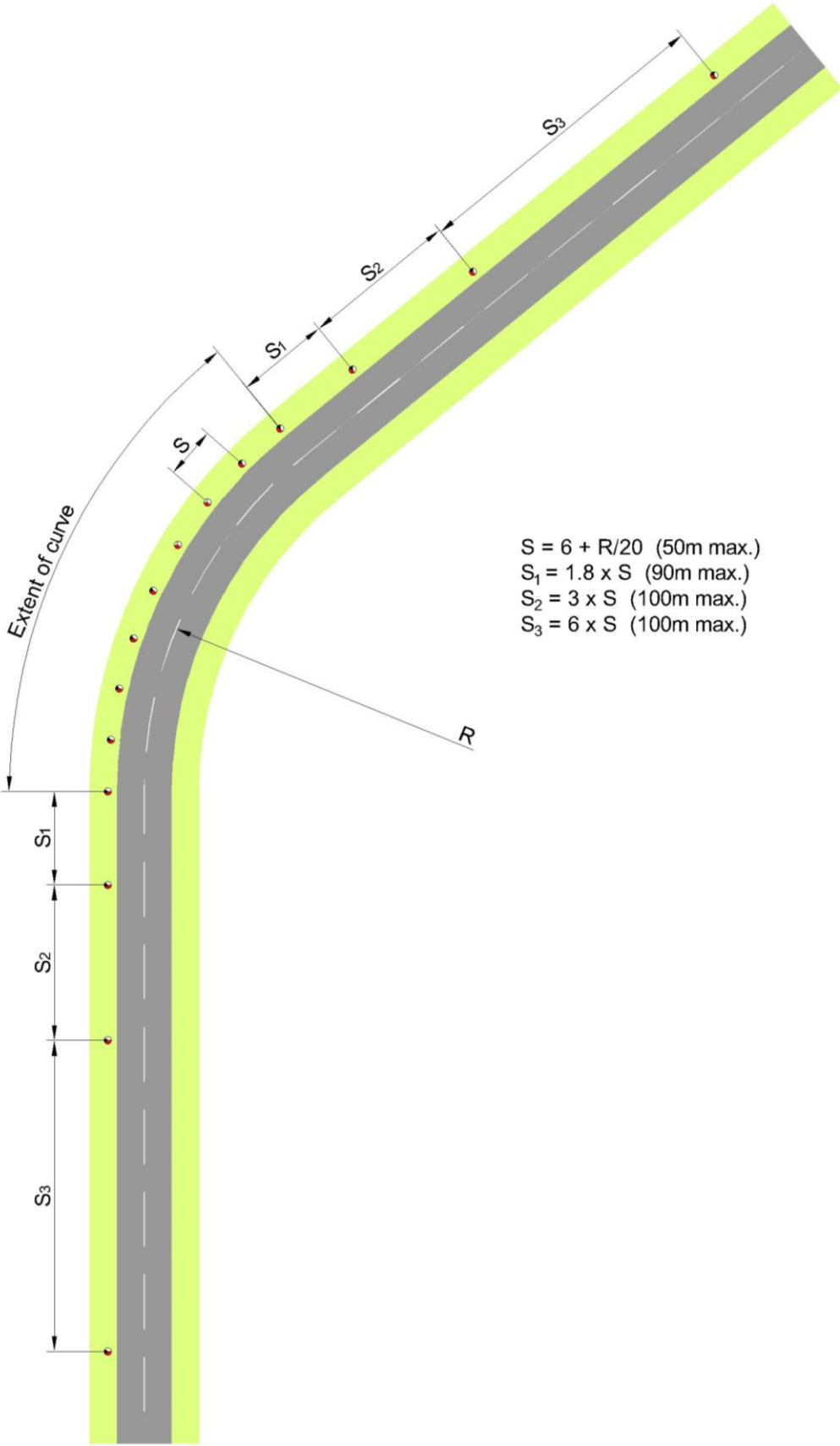


Figure 24.1

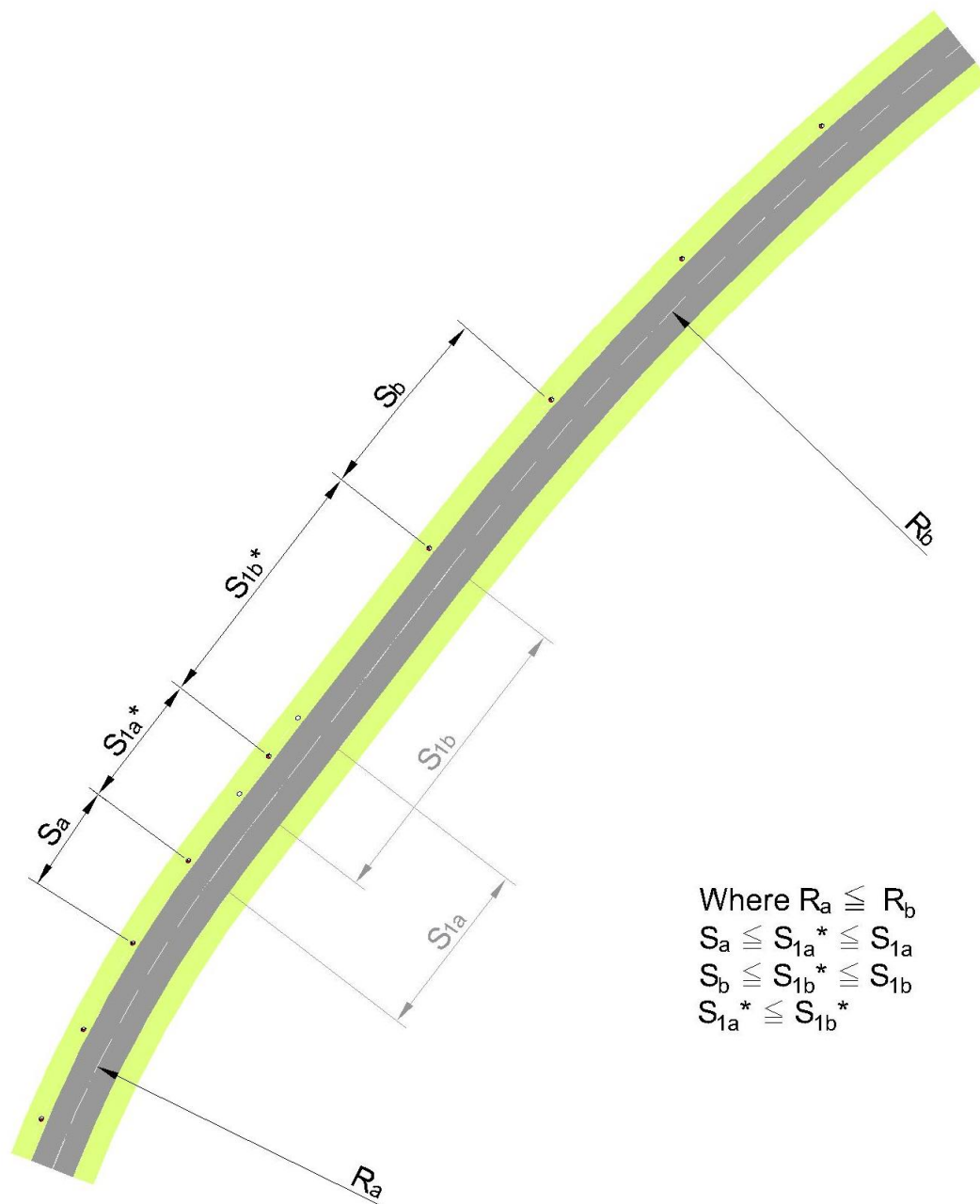


Figure 24.2

24.4 Marker Post Type and Installation

Hazard markers shall be mounted on posts as shown in Figure 24.2. Markers shall conform to the requirements of The Traffic Signs Regulations and General Directions for diagram number 560 and shall be coloured as follows:

- Red on the left hand of the carriageway
- White on the right-hand edge of a single-carriageway road

- Amber on the right hand edge of a dual-carriageway road adjacent to the central reservation, or on a road carrying traffic in one direction only.

Markers shall be retroreflective and be of type R1, Class RA2 in accordance with BS EN 12899-3.

Posts shall be as shown in figure 24.1 and shall be reboundable (type D3 of BS EN 12899-3)

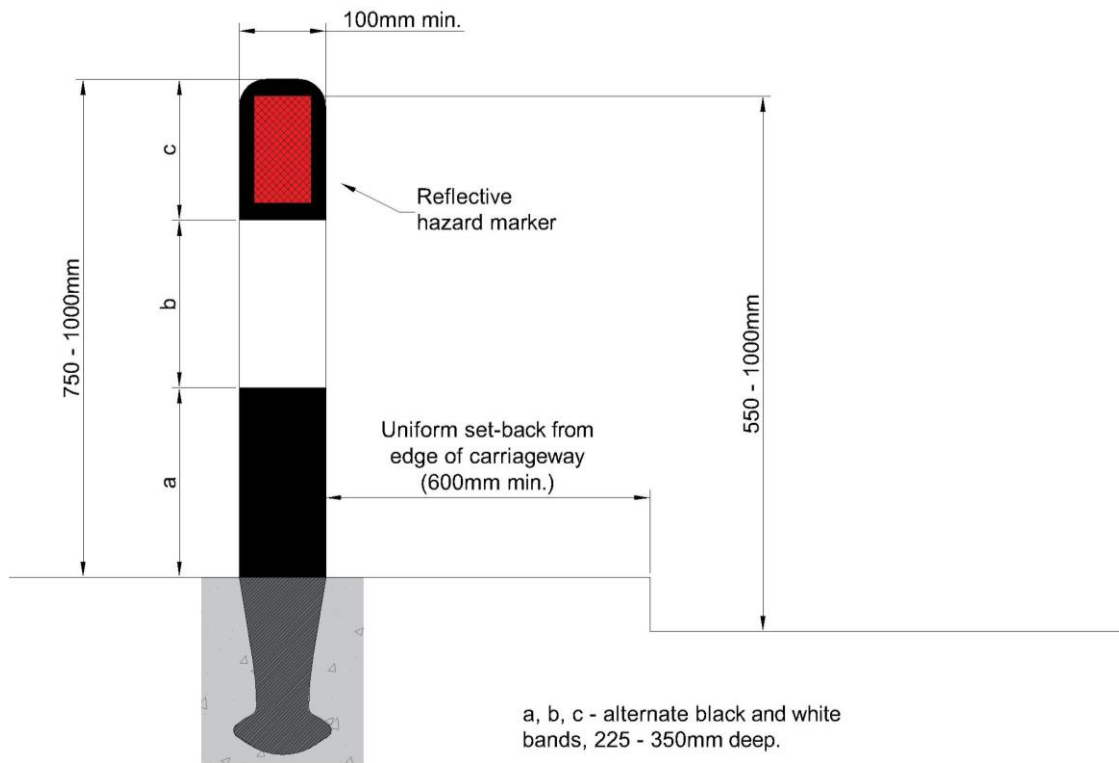


Figure 24.3

Hazard marker posts must always be installed in accordance with the manufacturer's instructions using the specified installation methods and tools.

24.5 Maintenance

Hazard marker posts used in accordance with this note will play an important part in enabling the safe movement of vehicles on our roads. They must, therefore, be maintained in good condition. Any missing or damaged posts should be picked up in routine safety inspections and replaced within one month using the manufacturer's specified installation methods and tools.

24.6 Avoidance of Damage during Grass Cutting

Some types of hazard marker post are designed to spring back after being accidentally overrun by stray vehicles. This does not mean that they are designed to survive repeated overrunning with a flail mower. On no account should grass-cutting equipment be driven over hazard marker posts. If necessary, the area immediately surrounding the base of a post may be treated with a contact herbicide and covered with wood or bark chippings to inhibit vegetation growth.

