
VOLUME 6 ROAD GEOMETRY
SECTION 3 HIGHWAY FEATURES

PART 3

TD 69/07

**THE LOCATION AND LAYOUT OF
LAY-BYS AND REST AREAS**

SUMMARY

This Standard details the requirements and gives advice on the provision, siting and design of lay-bys on all-purpose trunk roads and for maintenance hardstandings and rest areas on both all-purpose trunk roads and motorways.

INSTRUCTIONS FOR USE

1. Remove Contents Pages from Volume 6 and insert new Contents Pages dated November 2007.
2. Remove TD 69/96 from Volume 6, Section 3 and archive as appropriate.
3. Insert TD 69/07 into Volume 6, Section 3.
4. Please archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.



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**THE DEPARTMENT FOR REGIONAL DEVELOPMENT
NORTHERN IRELAND**

The Location and Layout of Lay-bys and Rest Areas

Summary: This Standard details the requirements and gives advice on the provision, siting and design of lay-bys on all-purpose trunk roads and for maintenance hardstandings and rest areas on both all-purpose trunk roads and motorways.

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Contents

Chapter

1. Introduction
2. General Principles
3. Siting and Frequency of Lay-bys
4. Parking Lay-bys
5. Bus Lay-bys
6. Emergency Lay-bys
7. Maintenance Hardstandings
8. Rest Areas
9. References
10. Enquiries

1. INTRODUCTION

General

1.1 Advice Note **TA 69/96 ‘The Location and Layout of Lay-bys’** contained advice on the siting and design of lay-bys on all-purpose trunk roads. This new Standard updates and extends the information in the advice note to cover rest areas and maintenance hardstandings. **TA 69/96** is hereby withdrawn. Chapter 2 of **TA 57/87 (DMRB 6.3.3)**, withdrawn by **TA 69/96**, remains defunct. Chapter 3 of **TA 57/87 (DMRB 6.3.3)** is hereby withdrawn.

1.2 This Standard covers the following types of lay-bys:

- parking lay-bys for use by the general public;
- bus lay-bys for the exclusive use of buses;
- emergency lay-bys for use by the general public in an emergency, for example a break down.

1.3 This Standard also covers rest areas and maintenance hardstandings. It does not cover the design of motorway service areas or motorway emergency refuge areas for use with hard shoulder running. For abnormal load lay-bys, advice should be sought from the Overseeing Organisation.

1.4 Chapters 2 to 6 refer to lay-bys, Chapter 7 to maintenance hardstandings and Chapter 8 to rest areas.

1.5 The main changes from **TA 69/96** and Chapter 3 of Advice Note **TA 57/87 (DMRB 6.3.3)** are:

- change of document status from an advice note to a standard with mandatory requirements;
- advice and requirements on accessibility, particularly for bus lay-bys;
- inclusion of design information for maintenance hardstandings;
- new requirements on the use of segregated islands, limiting the use of lay-bys without islands to a smaller number of cases;
- more design advice on the use and design of marker posts on segregated lay-bys;

- new advice for siting lay-bys, particularly in relation to bends and junctions.

Mandatory Sections

1.6 Mandatory sections of this document are contained in boxes. The Design Organisation must comply with these sections or obtain agreement to a Departure from Standard from the Overseeing Organisation. The remainder of the document contains advice and explanation, which is commended to users for consideration.

Implementation

1.7 This Standard must be used forthwith on all schemes for the construction and improvement of all-purpose trunk roads currently being prepared provided that, in the opinion of the Overseeing Organisation, this would not result in significant additional expense or delay. The Design Organisation must confirm its application to particular schemes with the Overseeing Organisation.

Departures from Standard

1.8 In exceptional situations, the Overseeing Organisation may be prepared to agree to a Departure from Standard where the Standard, including permitted relaxations, is not realistically achievable. Design Organisations faced by such situations and wishing to consider pursuing this course must discuss any such option at an early stage in design with the Overseeing Organisation. Proposals to adopt Departures from Standard must be submitted by the Design Organisation to the Overseeing Organisation and formal approval received BEFORE incorporation into a design layout.

Relaxations

1.9 In difficult circumstances, Relaxations may be introduced at the discretion of the Design Organisation, having regard to all relevant local factors, but only where specifically permitted by this Standard. Careful consideration must be given to layout options incorporating Relaxations, having weighed the benefits and any potential disbenefits. Particular attention must be given to the safety aspects (including operation, maintenance, construction and demolition) and the environmental and monetary benefits/disbenefits that would result from the use of Relaxations. The consideration process must be recorded. The preferred option must be compared against options that would meet full standards.

1.10 The legislation referred to in this document may, in some instances, have a specific Northern Ireland equivalent. For schemes in Northern Ireland, the designer should refer to the Overseeing Organisation for advice.

2. GENERAL PRINCIPLES

2.1 Lay-bys are important for drivers needing to stop for a short time. They are typically used on rural roads with speed limits greater than 40mph as in urban areas other types of parking are available. Service or rest areas may be more appropriate than lay-bys for longer stops (see Chapter 8).

2.2 In addition to acting as short-term stopping places, lay-bys may be provided for more specialised functions such as emergency lay-bys for broken down vehicles, bus lay-bys and hardstandings where maintenance vehicles may pull off the road.

2.3 In circumstances where demand for stopping is high, rest areas may be preferred to lay-bys. This is likely to be appropriate for recreational areas such as national parks, where the rest area might be a journey destination rather than an interim stopping place. Such sites should be designed in consultation with the appropriate local authority.

2.4 The information in this document is primarily for rural roads, but some of the principles may be beneficially applied to urban areas.

2.5 A study of personal injury accidents on English class 'A' all-purpose trunk roads between 1998 and 2002 showed that the proportion of personal injury accidents involving vehicles entering, leaving or parked in lay-bys was small (1.1%) but that their severity (25% of injury accidents fatal or serious) was above the average value of 18% for all accidents on these roads. The conclusions were as follows:

- Although the proportion of personal injury accidents involving a vehicle parked on the mainline (1.8%) was not much greater than the 1.1% associated with lay-bys, very few vehicles park on the mainline of a trunk road compared with the number that park in lay-bys. The risk of parking in a lay-by is therefore much lower than that of parking on the mainline.
- Large goods vehicles were over-represented in lay-by accidents, accounting for 24% of the total. The dominant accident type was one in which a car left the mainline and hit a stationary large goods vehicle parked in the lay-by. Large goods vehicles were found to have a much higher stopping rate in lay-bys and on average they stopped for longer periods than did cars. Hence

they had a relatively high accident involvement. Where the forecast level of large goods vehicle use is high, designers should use a segregation island (Type A or Type A with Merge Taper lay-by as described in Chapter 4) to reduce the risk to occupants of errant vehicles.

- Detailed investigation of the lay-bys with the worst accident records suggested that lay-bys should not be located near road features such as junctions or where vehicles are likely to be making manoeuvres such as lane changes.
- Lay-bys sited on the outside of curves increase the risk of fatigued drivers entering them unintentionally.
- Nearly half the accidents occurring at lay-bys were associated with vehicles either entering or leaving them, including mistaken entry into the lay-by, using the lay-by for U-turns or two-way operation within the lay-by. These manoeuvres can be reduced by careful siting and design of lay-bys.

2.6 In determining the provision of lay-bys and rest areas, an overall route strategy is advised. A significant length of route (say 80km) should be examined. Rest areas should be provided in addition to lay-bys, at not more than 45km intervals and at no more than 30 minutes driving time apart, on each side of the road. The suggested frequency of parking lay-bys is given in Chapter 3.

2.7 Lay-by design must allow for maintenance issues and activities, including landscaping and the need for inspection and service of road studs and markings (see paragraph 7.2). Any implications for activities such as road sweeping, general routine maintenance, resurfacing and winter maintenance operations must be covered. Note also that maintenance vehicles may need to use lay-bys for parking during maintenance operations.

3. SITING AND FREQUENCY OF LAY-BYS

Siting

3.1 Several factors need to be taken into account when considering where to site a lay-by. Siting affects the safety and operation of the lay-by as well as the land-take requirements and consequently it should be considered at an early stage in the design process in order to reach a balanced solution.

3.2 Lay-bys should not be sited on the inside of a left hand curve of radius less than the appropriate value for the design speed of the road given in Table 3-1 as this can lead to visibility being compromised. See **TD 9 (DMRB 6.1.1)**.

3.3 Lay-bys should not be sited on the outside of a right hand curve with a radius of less than the appropriate value for the design speed of the road given in Table 3-1 as this increases the risk that a fatigued driver may unintentionally enter the lay-by at high speed.

3.4 Visibility on exit from lay-bys must conform to the requirements for a major/minor junction as set out in **TD 42 (DMRB 6.2.6)**.

3.5 Drivers approaching a lay-by along the major road must be able to see vehicles entering or exiting the lay-by for a distance corresponding to the Desirable Minimum Stopping Sight Distance for the design speed of the major road, as described in **TD 9 (DMRB 6.1.1)**. This visibility allows drivers on the major road to be aware of traffic entering or exiting the lay-by in time for them to be able to slow down and stop safely if necessary. It applies in both directions on a single-carriageway road.

3.6 Lay-bys are to be treated as junctions for the purposes of highway link design and the requirements of **TD 9 (DMRB 6.1.1)** concerning limitations on relaxations on a junction approach apply, as well as the restriction on siting within one kilometre of the end of a section of dual carriageway.

3.7 The separation between a lay-by (other than a maintenance hardstanding) and a junction or access, both upstream and downstream, must be at least $3.75V$ metres where V is the design speed in km/hr. This is to avoid the possibility of drivers confusing a downstream junction or access with the lay-by entrance and also to avoid the possibility of unexpected late manoeuvres where a junction or access is upstream of the lay-by. For a grade separated junction the requirement is given in **TD 22 (DMRB 6.2.1)** (minimum separation 1km on rural roads). Lay-bys must not be sited between a junction advance direction sign and the junction diverge.

3.8 Lay-bys must not be combined with a junction or access as this has been shown to increase the potential for accidents.

3.9 Lay-bys should be sited on level ground and should not be sited on crests or gradients in excess of the desirable minimum value (see **TD 9, DMRB 6.1.1**).

3.10 On single carriageway roads, where there is a need for lay-bys on both sides of the road in close proximity, lay-bys should be at least 150m apart (measured between the two merge end points, as shown in Figure 3/1). They should be staggered in a left-right configuration (nearside lay-by first) in order to reduce the likelihood of vehicles making a right turn into a lay-by from the opposite direction or using the lay-by to make a U-turn.

Design speed (km/h)	120	100	85	70	60	50
Minimum curve radius (m)	2,040	1,440	1,020	720	510	360

Table 3-1: Minimum Radius Where the Lay-by is Sited on a Curve

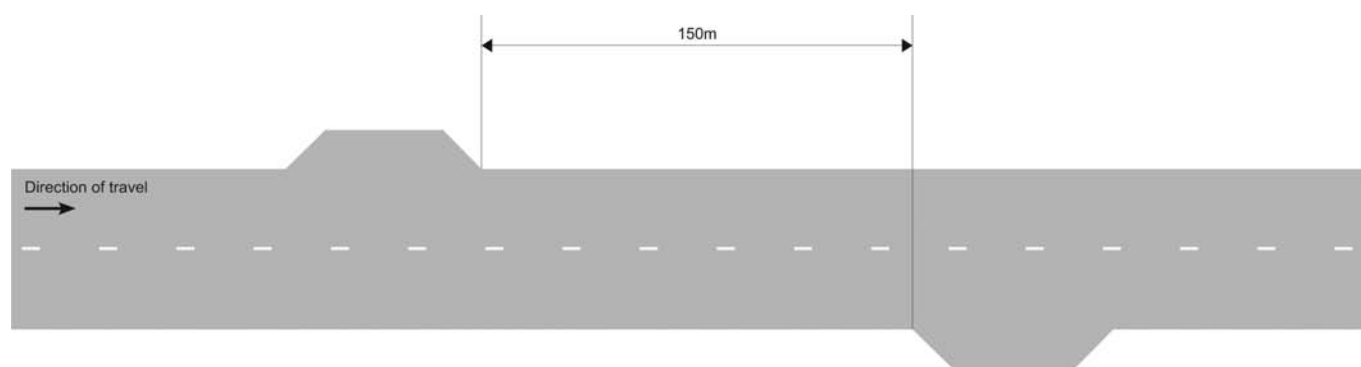


Figure 3/1: Left-Right Stagger Configuration for a Pair of Lay-bys on a Single Carriageway

3.11 Where practical, lay-bys should be sited away from housing to avoid noise and visual intrusion and to reduce the possibility of trespass. For reasons of personal security, there should be an open aspect rather than woods or adjacent ground cover that might screen individuals from passing traffic.

3.12 Where redundant highway is to be converted to lay-by, the siting, access and egress must conform to the requirements of this standard.

3.13 The level of provision of facilities should be determined by the expected use of the lay-by. Under-provision may lead to soiling, litter or unwanted trading while facilities at infrequently used lay-bys may lead to vandalism or other undesirable behaviour.

3.14 If a lay-by is located close to a rail or bus interchange or where it may be used by large goods vehicles for long term parking, its design should take into account its likely use or the appropriateness of positioning the lay-by at this location should be considered. It may be necessary to consider introducing waiting restrictions.

Frequency

3.15 Lay-bys should be provided for each direction on all-purpose trunk road schemes. The recommended spacing of parking or emergency lay-bys is presented in Table 3-2. The location of lay-bys may be changed to coincide with emergency telephone locations.

3.16 Local factors should be taken into consideration when assessing the frequency of lay-bys.

Carriageway Type	Two-way Annual Average Daily Traffic (AADT) Vehicle Flow	Recommended Spacing
Dual Carriageway	All levels	2.5km
Single Carriageway	>8,000	Between 2km and 5km
	2,500 – 8,000	Between 5km and 8km
	1,200 – 2,500	Between 8km and 12km

Table 3-2: Recommended Spacing of Lay-bys in Both Directions

4. PARKING LAY-BYS

Lay-by Types

4.1 Parking lay-bys must be designed to one of the following layouts:

- | | |
|-------------------------|--------------------------------------|
| Type A | – incorporating a segregation island |
| Type A with Merge Taper | – as Type A, but with a merge taper |
| Type B | – without a segregation island |

4.2 Lay-by layouts must be selected according to road type and speed limit, as shown in Figures 4/1 to 4/3 and Tables 4-1 and 4-2.

4.3 A Type A with Merge Taper lay-by must not be used on single carriageway roads.

4.4 Type B layouts must not be used on dual carriageway roads, or single carriageway roads with a speed limit greater than 40mph.

Speed limit > 40mph	Speed limit ≤ 40mph
Type A with Merge Taper	Type A

Table 4-1: Lay-by Type on Dual Carriageway Roads

Speed limit > 40mph	Speed limit ≤ 40mph	
	Two-way AADT > 8,000	Two-way AADT ≤ 8,000
Type A	Type A	Type A or B

Table 4-2: Lay-by Type on Single Carriageway Roads

Capacity

4.5 The parking area must have a minimum width of 3.5 metres to accommodate large goods vehicles.

4.6 The length of the bay in which vehicles are expected to park should be based on an estimation of demand, as shown in Figures 4/1 to 4/3.

4.7 Estimation of demand will be affected by local factors including proximity to major junctions and other facilities. If a high number of large goods vehicles is expected to use the lay-by, the length of the lay-by will need to be at the upper end of the range.

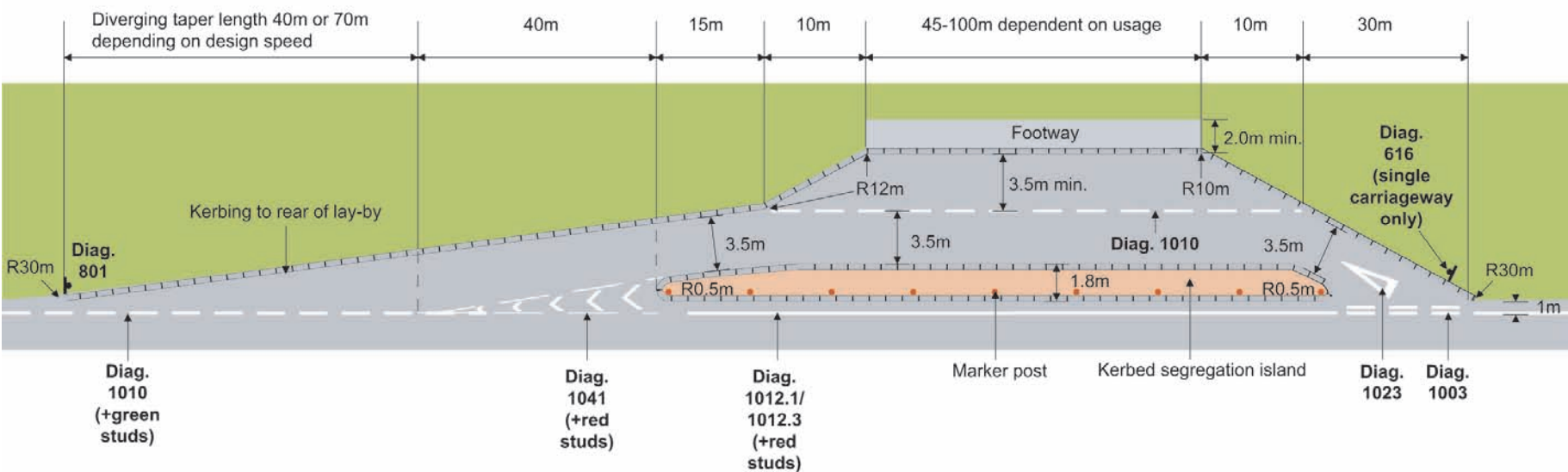
Advance Signing

4.8 Advance signing enables drivers to decide whether or not to stop at a lay-by in good time, thus avoiding sudden changes in direction and speed. In the absence of advance signing, there is an increased risk of drivers making late decisions and entering the lay-by too quickly.

4.9 Advance signs to diagram 2501 of the **Traffic Signs Regulations and General Directions (TSRGD)**, incorporating the appropriate distance to the lay-by, should be erected at least 800 metres before the lay-by entrance. Where lay-bys are located at irregular intervals, or the distance between them is greater than that indicated in paragraph 3.15, additional signs should be used at intervals of not less than 2 miles. A sign to diagram 801 should be provided at the start of the taper for the lay-by.

Entries and Exits at Lay-bys

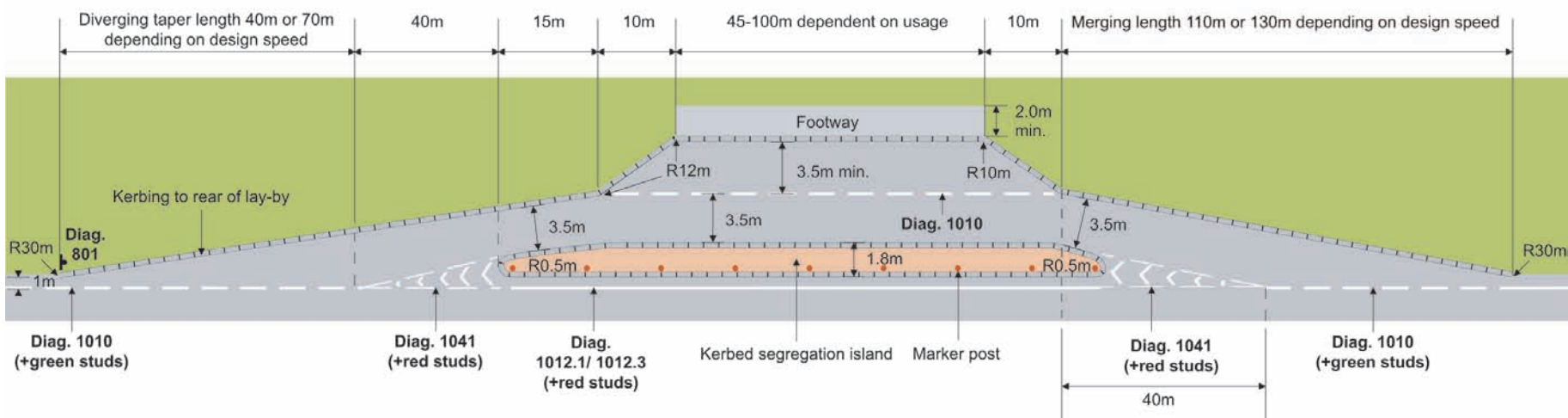
4.10 Reflective green studs must be installed across the entries of Type A lay-bys and the full length of Type B lay-bys in accordance with the **Traffic Signs Manual (TSM) Chapter 5** and used in conjunction with markings to diagram 1010 of the **TSRGD**.



Notes:

1. Diagram numbers refer to **TSRGD**.
2. See paragraphs 4.19 and 4.20 for footway details.
3. Segregation island to have a kerbed and raised surface of contrasting colour.
4. Diverging taper length: 40m for design speed $\leq 100\text{km/h}$, 70m for 120km/h.
5. Collapsible black and white marker posts with a red reflector to diagram 560 or 561 may be used on the segregation island.
6. R is the radius indicated.

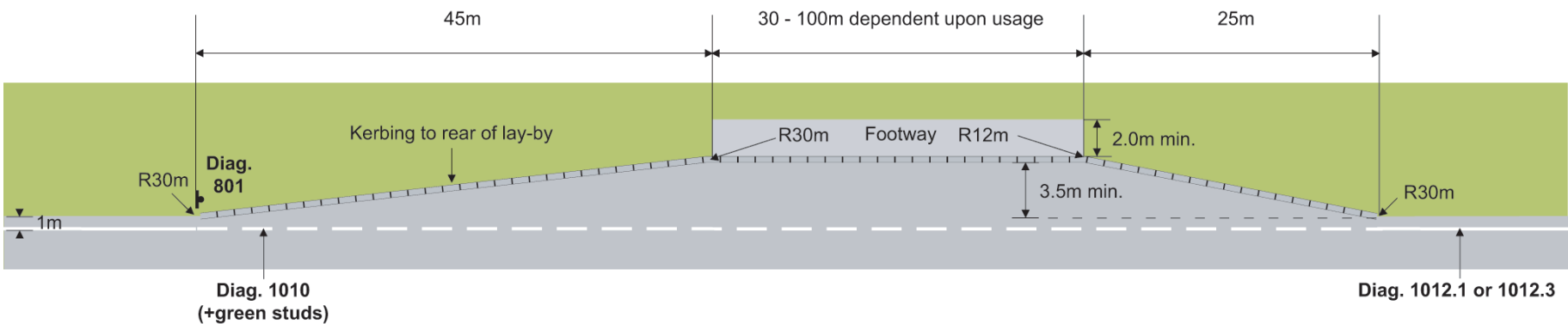
Figure 4/1: Geometric Layout of Type A Lay-by



Notes:

1. Diagram numbers refer to **TSRGD**.
2. See paragraphs 4.19 and 4.20 for footway details.
3. Segregation island to have a kerbed and raised surface of contrasting colour
4. Collapsible black and white marker posts with a red reflector to diagram 560 or 561 may be used on the segregation island
5. Diverging taper length: 40m for design speed $\leq 100\text{km/h}$, 70m for 120km/h
6. Merging length: 110m for design speed $\leq 100\text{km/h}$, 130m for 120km/h
7. R is the radius indicated

Figure 4/2: Geometric Layout of Type A with Merge Taper Lay-by



Notes:

1. Diagram numbers refer to **TSRGD**.
2. See paragraphs 4.19 and 4.20 for footway details.
3. R is the radius indicated.

Figure 4/3: Geometric Layout of Type B Lay-by (to be Used Only on Single Carriageway Roads with Speed Limits not Exceeding 40 mph)

4.11 For Type A lay-bys, there is a conspicuous segregation island emphasized by carriageway markings to diagram 1041 of the **TSRGD**. Bifurcation arrows must NOT be used as they risk confusion with a junction exit. Vehicles leaving the lay-by must give way to traffic on the mainline with priority indicated by the give way markings to diagram 1023 and the double broken white line to diagram 1003 of the **TSRGD**. A 'No Entry' sign to diagram 616 of the **TSRGD**, in conjunction with a Traffic Regulation Order, is required at the exit of a Type A lay-by on single carriageway roads (see Figure 4/1).

4.12 On single carriageway roads, there is a risk that a vehicle exiting a lay-by may be faced by an overtaking vehicle travelling in the opposite direction. To discourage these manoeuvres, the centre line to diagram 1004.1 of the **TSRGD** should be used for roads with a speed limit of 50mph or more. When the speed limit is 40mph or less, use markings to diagram 1004. (See **TSM, Chapter 5**.)

4.13 The lengths of the merge and diverge tapers at Type A lay-bys depend on the design speed and are as shown in Figures 4/1 and 4/2.

Segregation Island

4.14 The segregation island on Type A lay-bys is a safety feature that separates traffic on the mainline from parked vehicles in the lay-by.

4.15 The segregation island must be raised and kerbed, with the kerbing complying with Chapter 1 of **TA 57 (DMRB 6.3.3)**.

4.16 It is important to ensure that the segregation island is sufficiently conspicuous to drivers on the mainline and those entering the lay-by. The surface of the segregation island should be finished in a colour that contrasts with the surfacing of the lay-by and mainline. Hard surfaces are preferable for ease of maintenance, to allow for occasional over-riding by long vehicles and to avoid possible obstruction of visibility by uncut grass.

4.17 Collapsible black and white marker posts with a red reflector to diagram 560 or diagram 561 of the **TSRGD** may be installed along the island to increase

conspicuity. Additionally, either a single marker post or a cluster of three posts may be used near the leading edge of the island, dependent on width.

4.18 If used, marker posts on the segregation island must be at centres not less than 4.5 metres. The height of the top of each post above the surface of the adjacent carriageway must not exceed 0.6m. These requirements are to avoid obstructing intervisibility between vehicles on the mainline and those leaving the lay-by.

Footway and Kerbing

4.19 A raised kerbed footway designed to **HD 39 (DMRB 7.2.5)** must be provided adjacent to the lay-by parking area. In order to cater for people with a disability, it must be at least 2m wide and must comply with **Inclusive Mobility** with respect to gradient and crossfall.

4.20 Details of kerbing requirements for the footway are given in Chapter 1 of **TA 57 (DMRB 6.3.3)**. See also paragraph 5.2 for bus lay-bys and paragraph 4.23 for lay-bys with emergency telephones.

Lighting

4.21 On roads with street lighting, the lay-by must be illuminated to the same standard. Lighting columns must not be located on segregation islands.

Emergency Telephones

4.22 Emergency telephones may be appropriate in certain locations, and advice should be obtained from the Overseeing Organisation. They can be introduced in any lay-by without it being designated for emergency use only, but advance signing to paragraph 6.3 of this standard will be required.

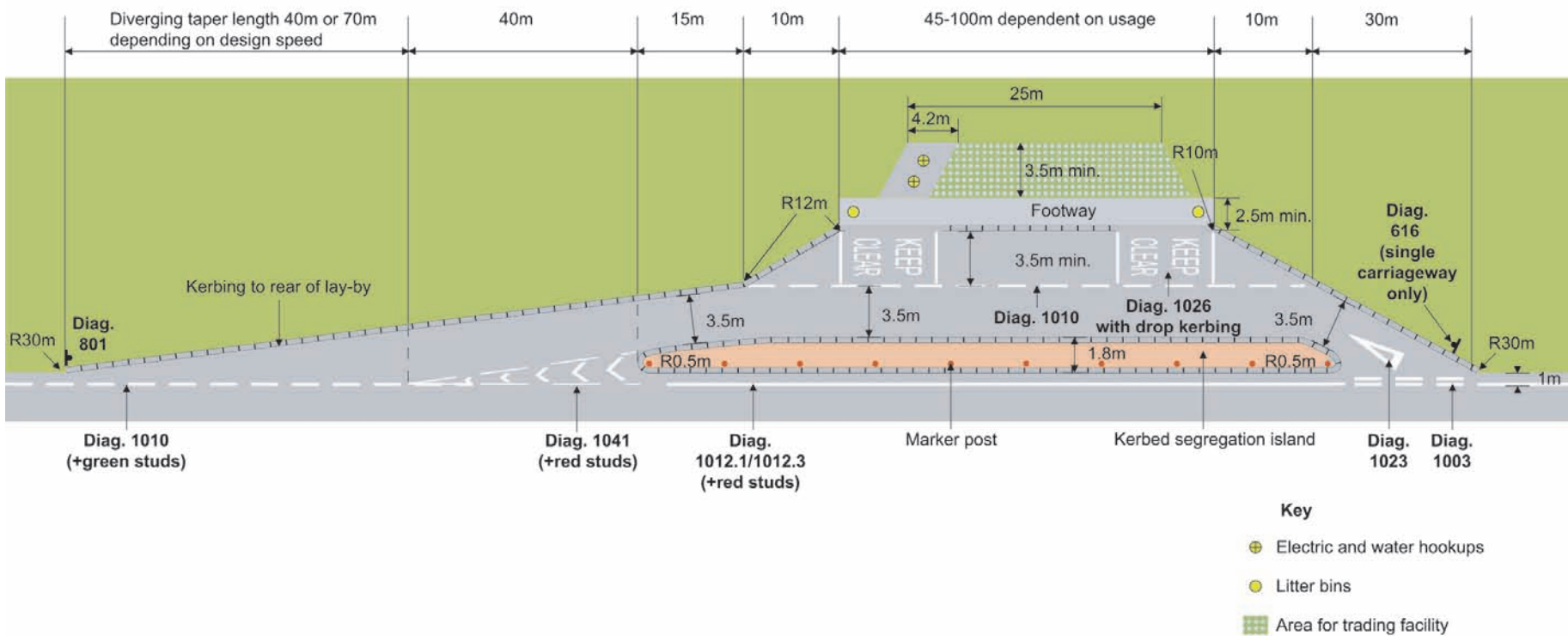
4.23 Where emergency telephones are provided, dropped kerbs with markings to diagram 1026.1 of the **TSRGD** must be provided to aid drivers with a disability and the facility must comply with **Inclusive Mobility**.

4.24 Telephone companies should be invited to install public telephone kiosks in lay-bys on the approaches to bypassed towns and villages, and in remote locations where no alternative facilities exist. In view of the minimal cost of ducts, they should be laid at the time of construction of the lay-by in order to avoid costly works at a later date.

4.25 Where telephones are provided, and there are lay-bys on both sides of the road close to one another, they should be installed in both lay-bys so that drivers do not need to cross the road to reach one.

Facilities for Trading

4.26 Subject to the approval of the Overseeing Organisation, the layout of Type A and Type A with Merge Taper lay-bys may be amended as shown in Figure 4/4 to include a trading facility.



Notes:

1. Diagram numbers refer to **TSRGD**.
2. See paragraphs 4.19 and 4.20 for footway details.
3. Segregation island to have a kerbed and raised surface of contrasting colour.
4. Diverging taper length: 40m for design speed $\leq 100\text{km/h}$, 70m for 120km/h .
5. Collapsible black and white marker posts with a red reflector to diagram 560 or 561 may be used on the segregation island.
6. R is the radius indicated.

Figure 4/4: Geometric Layout of Type A lay-by with Trading Facility

5. BUS LAY-BYS

5.1 A bus lay-by has a similar layout to the Type B lay-by (see Figure 5/1). The length of the full width stopping area should exceed the length of any bus expected to use the lay-by.

5.2 The layout should be designed to accommodate the needs of people with a disability (see **Inclusive Mobility**). A raised boarding area, extending to the back of the footway and between 3m and 9m long, depending on the type of bus expected to use it and the expected peak numbers of passengers, should be provided. The kerb height of the boarding area will typically be about 160mm and should be agreed with the Local Highway Authority and the relevant bus operating authority. Local disability groups should also be consulted.

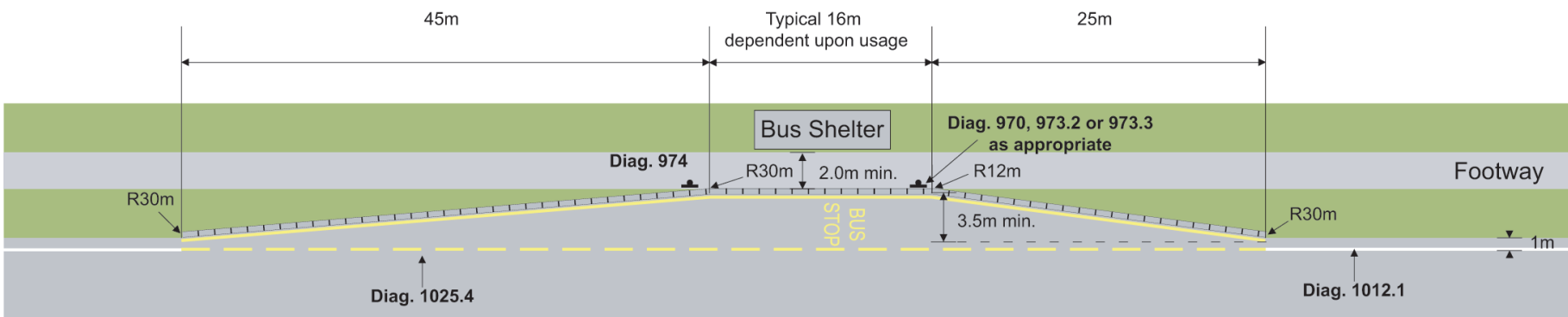
5.3 Bus lay-bys must include signs and markings to indicate that their use is for buses only. Road markings to diagram 1025.4 in the **TSRGD** must be provided.

5.4 Seating and shelters may be provided at bus lay-bys, as shown in Figure 5/1.

5.5 The footway should be at least 2m wide, including the area around the shelter, if provided.

5.6 Reference should be made to **Inclusive Mobility** for siting of bus stops in relation to walking distances and for the design of any additional infrastructure required. However, the recommendations in this standard for the safe location of lay-bys take precedence.

5.7 Bus lay-bys located near and combined with junctions can result in hazardous layouts. Paragraphs 3.7 and 3.8 also apply to bus lay-bys, but designers may propose departures from standard to the Overseeing Organisation where bus lay-bys close to a junction are needed to serve a community and the risks can be managed to an acceptable level. The siting of the lay-by should allow for the need to provide safe pedestrian routes to the lay-by. See **Inclusive Mobility, HD 39 (DMRB 7.2.5)** and **HD 42 (DMRB 5.2.5)** for the design requirements of any additional infrastructure provided.



Notes:

1. Diagram numbers refer to **TSRGD**.
2. See paragraphs 5.2 and 5.5 for footway details.
3. R is the radius indicated.

Figure 5/1: Geometric Layout of Bus Lay-by

6. EMERGENCY LAY-BYS

6.1 In situations where there is a possibility of long-term parking denying space for emergency stops or where there is strong opposition to the construction of a parking lay-by, an option is the construction of a lay-by for emergency use only (see Figure 6/1).

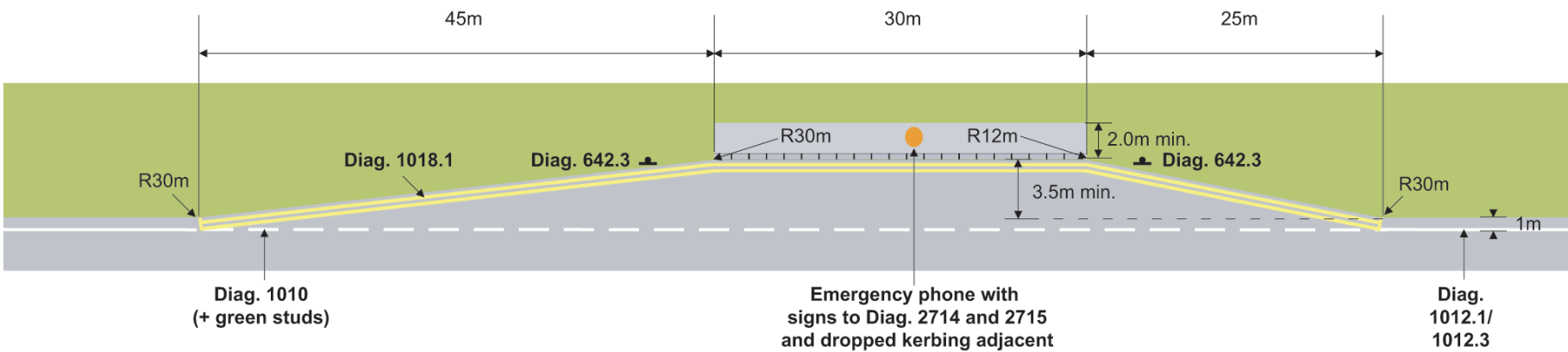
6.2 The emergency lay-by may be used on single or dual carriageways but only where stopping for non-emergency purposes is undesirable for safety or operational reasons or where it is not reasonably practicable to construct a Type A lay-by. It is designed to the same geometric standards as the Type B lay-by but has additional signs and markings.

6.3 Emergency lay-bys should incorporate an emergency telephone marked with signs to diagrams 2714 and 2715 of the **TSRGD**. A sign to diagram 2713.1 should be erected at least 800 metres before the entrance to give advance warning to drivers. A further sign to diagram 2713.1, but with no distance indicated, should be erected at the entry to the lay-by.

6.4 Carriageway markings should be to diagram 1010 and should incorporate green road studs in accordance with **Chapter 5** of the **TSM**.

6.5 In order to prohibit non-emergency use, it is necessary to obtain a Traffic Regulation Order (TRO). To allow enforcement of the TRO, regulatory signs to diagram 642.3 of the **TSRGD** should be placed at the back of the lay-by. If the lay-by is more than 60m long (including tapers), it is advisable to repeat these signs. Additionally, road markings to diagram 1018.1 (double yellow lines) should be provided along the back of the lay-by and its tapers.

6.6 See paragraph 4.23 for details of the emergency telephone.



Note:

1. Diagram numbers refer to **TSRGD**.
2. See paragraph 4.23 for emergency telephone details required.
3. R is the radius indicated.

Figure 6/1: Geometric Layout of Emergency Lay-by

7. MAINTENANCE HARDSTANDINGS

Location

7.1 Health and Safety legislation requires that consideration be given at the design stage to the safety of maintenance operations and the safety of all who may be required to work on or near the highway. (See **TD 27, DMRB 6.1.1**). Research has shown that there is a much higher risk of a vehicle being involved in an accident when it is parked at least partially on the running lanes compared with being parked in a lay-by.

7.2 The Design Organisation must consult with both the Overseeing Organisation and the Maintaining Organisation and compile a statement of health and safety issues related to all maintenance activities. The statement must include risk assessments for these activities and determine the need for maintenance hard standings. The risk assessments must demonstrate consideration of the location and dimensions of proposed hard standings.

7.3 Visibility requirements for lay-bys, detailed in paragraphs 3.4 and 3.5, also apply to maintenance hardstandings.

7.4 If a particular maintenance activity can take place without being compromised by the presence of the public, an existing parking lay-by or an emergency lay-by may be used. The emergency lay-by can be used by maintenance vehicles and personnel, provided the Traffic Regulation Order has been worded accordingly.

7.5 The location of safe taper positions for lane closures should be considered when deciding on the precise location of lay-bys and maintenance hardstandings on roads without hard shoulders. The number of maintenance hardstandings required will be reduced if lay-bys can be positioned such that maintenance vehicles can stop in lay-bys, for example to erect advance signing or place cones.

7.6 The location of maintenance hardstandings should take into account routine and capital maintenance regimes. Rationalising the locations of equipment that requires regular maintenance will maximise safety benefits and provide cost savings.

7.7 The Maintaining Organisation should be consulted with regard to their preferred locations of maintenance hardstandings for use in temporary traffic management layouts.

7.8 Maintenance hardstandings should be located in positions that reduce the overall risk to the workforce and to road users. If the maintenance operation is associated with a feature such as a communications cabinet, a safety camera or a variable message sign, the maintenance hardstanding should be located adjacent to the feature to avoid the need for workers to walk long distances. Hazards associated with access and egress will be minimised where the hardstandings are located at sites that comply with Chapter 3 of this standard. Where this is not practicable, consideration should be given to the repositioning of maintainable features.

Choice of Layout

7.9 Maintenance hardstandings should be designed to accommodate the largest vehicle expected to use them and to allow the safe access and egress of maintenance vehicles. There should be sufficient room for maintenance personnel to move around the parked vehicle with their equipment.

7.10 The layout of a maintenance hardstanding should be appropriate to its location and intended use. The Design Organisation should consult with both the Overseeing and Maintaining Organisations on the positioning and size of the maintenance hardstanding. Policy on maintenance hardstandings continues to evolve and designers should refer to the Overseeing Organisation for information on latest developments.

7.11 The emergency lay-by layout (Figure 6/1), with appropriate changes to signing and marking to discourage use by the general public, is recommended as a starting point, but designers have scope to vary the dimensions to suit local needs.

7.12 Examples of other possible layouts are presented in Figures 7/1 and 7/2, based on existing designs on the motorway and trunk road network and included here for information and consideration. A summary of their possible applications is presented in Table 7-1.

7.13 On all-purpose roads where there is no specific roadside feature to be maintained, hardstandings may be based on the layout in Figure 7/1. The width of the hardstanding will depend on its intended use. For example, mobile lane closures may not require personnel to leave the vehicle and therefore a narrower width may be adequate.

7.14 At a feature where a road restraint system is required (for example, a variable message sign), maintenance hardstandings may be based on the layout in Figure 7/2. This layout affords additional protection by providing an area protected by a safety barrier downstream of the feature into which a vehicle can be reversed. The hardstanding needs to be long enough to allow the vehicle to leave the mainline in forward gear and stop safely without the need to reverse along the mainline or the hard shoulder.

7.15 Where a grass verge is present, a strengthened verge constructed from a cellular type material that allows grass to grow through will make the hardstanding less obvious. This may deter unauthorised stops and is likely to be less costly than surfacing the area to full standards.

7.16 Figure 7/3 shows examples of hardstandings that are in current use on the network.

Signing and Marking

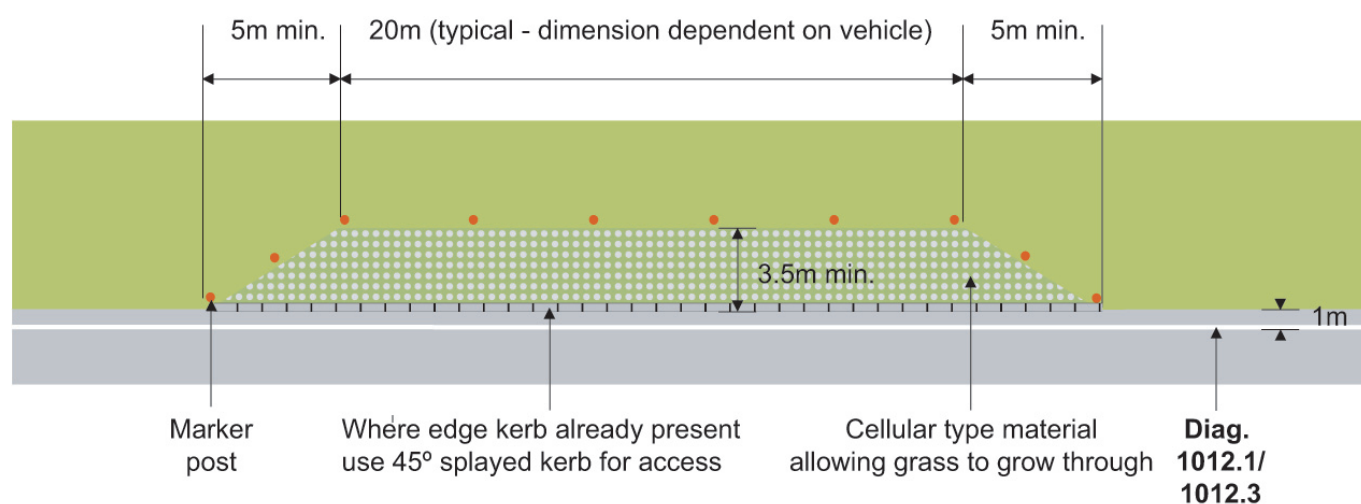
7.17 Where the hardstanding comprises a strengthened verge rather than a paved surface, an informal notice legible by drivers who stop in the hardstanding should be erected indicating 'Maintenance Vehicles Only'.

7.18 In some layouts, marker posts may be required in order to indicate the location of the hardstanding.

7.19 Where there is a need to prohibit public use of paved maintenance hardstandings, signs to diagram 642.3 of the **TSRGD** ('No stopping except in an emergency') may be used, in conjunction with double yellow lines to diagram 1018.1. A Traffic Regulation Order is required to give effect to the restriction and should include an exemption for maintenance vehicles.

Example of layout	Road type	Feature being maintained requires a road restraint system?	Example of use
Figure 6/1 with appropriate changes to signing and marking	Single or dual carriageway all-purpose road	No	General
Figure 7/1	Single or dual carriageway all-purpose road	No	Mobile lane closures
Figure 7/2	All-purpose road or motorway	Yes	Maintenance of Variable Message Signs

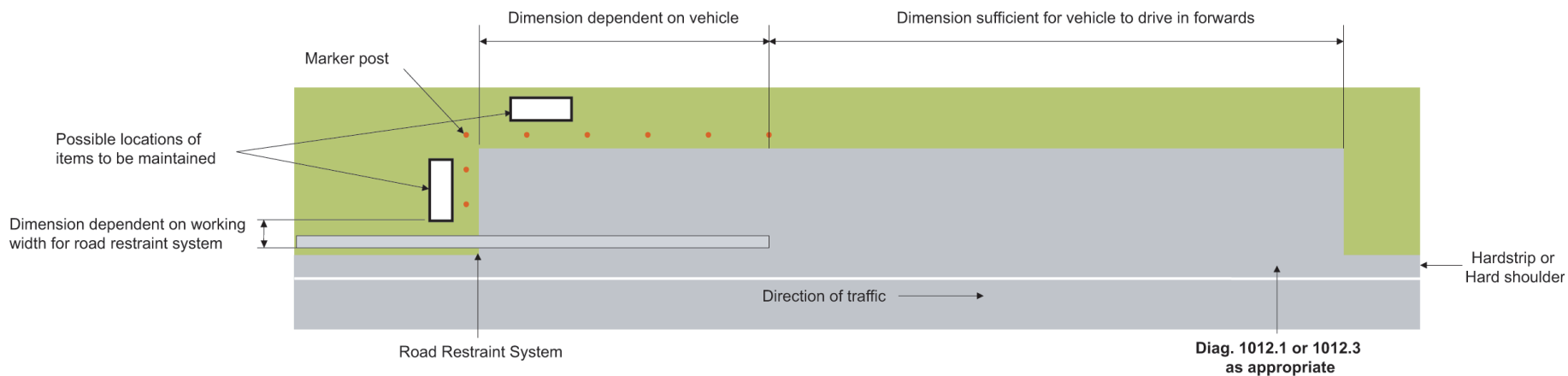
Table 7-1: Examples of Layouts for Maintenance Hardstandings



Notes:

1. Diagram numbers refer to **TSRGD**.
2. Marker posts with a red reflector to diagram 560 or 561 may be used.

Figure 7/1: Geometric Layout of Simple Maintenance Hardstanding



Notes:

1. Diagram numbers refer to **TSRGD**.
2. Marker posts with a red reflector to diagram 560 or 561 may be used

Figure 7/2: Geometric Layout of Maintenance Hardstanding Where the Feature to be Maintained Requires a Road Restraint System



Note: Stone scatter may be a hazard and designers should eliminate this risk in the detailed design

Figure 7/3: Examples of Maintenance Hardstandings

8. REST AREAS

Background

8.1 The term rest area includes all sites on motorways or all-purpose trunk roads that provide parking and an associated picnic area. They may also provide some, but not all, of the facilities normally associated with a service area.

8.2 Research has shown that driver fatigue is a major factor in accidents on rural roads. In addition, there are statutory restrictions governing maximum working hours and rest periods for commercial vehicle drivers. Whilst lay-bys can provide relatively safe stopping places for short durations, they are less suitable for longer stops. Therefore, rest areas may be provided on rural roads as safe and comfortable places for drivers to pull off the highway.

Siting

8.3 Paragraph 2.6 gives recommendations for the frequency of rest areas as part of a route strategy. The Overseeing Organisation should be contacted for details of the latest policy and requirements.

8.4 The precise locations of rest areas should be determined at an early stage in the design process, in order to make the horizontal and vertical alignment of the access compatible with the mainline. The siting of rest areas should therefore be considered as an integral part of the scheme design within a route strategy. The strategy for provision and spacing of rest areas should take into account bypassed towns, local amenities and possible provision of parking facilities in such towns after consultation/agreement with local communities.

8.5 The advice and requirements on siting of lay-bys in paragraphs 3.1 to 3.14 apply also to rest areas.

8.6 The design of the access must be in accordance with **TD 42 (DMRB 6.2.6)** or **TD 22 (DMRB 6.2.1)**, as appropriate to the standard of the road. Rest areas may alternatively be accessed by a side road junction; this strategy has advantages on single carriageway roads if there is a site on only one side of the road, or if sites cannot be paired in a left-right stagger configuration.

8.7 The location and layout of rest areas will depend greatly on local constraints such as the availability of land; areas of disused carriageway can sometimes be used. Where it is not possible to pair sites in a left-right stagger configuration, advance signs for the next easily available nearside site should be provided to reduce the likelihood of drivers using one on the opposite side of the road.

Signs and Markings

8.8 Advance direction signs must be provided. Refer to the Overseeing Organisation for the latest requirements.

Internal Layout and Facilities

8.9 Contact the Overseeing Organisation for details on policy and requirements with respect to the internal layout and facilities to be provided in rest areas.

9. REFERENCES

Traffic Signs Regulations and General Directions, 2002.
Department for Transport.

Traffic Signs Manual, 2003 (Chapter 5, Road
Markings). Department for Transport.

Inclusive Mobility – A Guide to Best Practice on
Access to Pedestrian and Transport Infrastructure,
2003. Department for Transport.

Design Manual for Roads and Bridges

- (a) HD 42 Non-motorised user audits (DMRB 5.2.5).
- (b) TD 9 Highway Link Design (DMRB 6.1.1).
- (c) TD 27 Cross-Sections and Headrooms
(DMRB 6.1.2).
- (d) TD 22 Layout of Grade-Separated Junctions
(DMRB 6.2.1).
- (e) TD 41 Vehicular Access to All-purpose Trunk
Roads (DMRB 6.2.7).
- (f) TD 42 Geometric Design of Major/Minor
Priority Junctions (DMRB 6.2.6).
- (g) TA 57 Roadside Features (DMRB 6.3.3).
- (h) HD 39 Footway Design (DMRB 7.2.5).

10. ENQUIRIES

All technical enquiries or comments on this Standard should be sent in writing as appropriate to:

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