

Advance signing

Signing of the works

It is important that the distances, including safety zone dimensions are determined before starting to set the signs out. From the table inside the back cover select the size and distance for the advance signs. The basic site layout for works on a single carriageway road with a works vehicle present is shown on page 21. If there is limited visibility on the approach to the proposed works site, e.g. on a bend, on a dip in the road, or on the brow of a hill, you must provide extra advance signs. These extra signs will need to be placed first.

Where there is a grass verge the signs should normally be placed there. Placing signs in the footway is permitted, but they must be positioned so as to minimise inconvenience or hazard to pedestrians, with particular consideration given to those with visual impairments, pushchairs, wheelchairs and mobility scooters. A minimum usable footway width of 1.5 metres should be maintained where possible. See page 28 for details.

The lower edge of all signs should be no less than 300 mm from ground level, and care should be taken that signs are level, particularly if the ground is uneven.

Warning: In no circumstances must the footway width be reduced below 1.0 metres. Where the minimum footway width of 1.0 m cannot be maintained, you must consult your [supervisor, manager or other competent person](#).

Caution: Consult your [supervisor, manager or other competent person](#) if the works are going to make it impossible for drivers to comply with a permanent traffic sign. Such signs might need to be covered or relocated; the highway authority must be consulted before this is done.



Road works ahead – the first sign to be seen by approaching traffic. Its size, the minimum distance from the start of the lead-in taper, and clear visibility distance will vary according to the type of road and its speed limit – see table inside the back cover. The range of distances is given to allow the sign to be placed in the most convenient position, bearing in mind the available space and visibility for drivers. Do not simply choose the minimum distance – assess each site carefully.



Road narrows ahead – sign warns the driver which side of the carriageway is obstructed. Place it between the ‘Road works ahead’ sign and the beginning of the lead-in taper. Make sure that the correct sign (i.e. narrows on left or right) is used.

Traffic control warning signs – include advance signing for any traffic control systems in use.

On roads with speed limits of 50 mph or more, the above advance signs should have supplementary distance plates giving the distance to the works in yards or miles (not metres).



Directional arrow – place ‘Keep right’ or ‘Keep left’ signs as appropriate at the beginning and end of the lead-in taper of cones. These signs must be the same size as the ‘Road works ahead’ sign. Make sure that the signs point in the correct direction.

Warning: Do not place ‘Keep left’ or ‘Keep right’ sign frames on their sides to make them point in the correct direction, as this could cause a hazard to road and footway users, and may cause confusion. These signs must not be used for directing pedestrians.

Advance signs should be placed so that they:

- are in the correct sequence;
- are within the correct distances as shown in table inside back cover;
- can be clearly seen;

- cause minimum inconvenience to road and footway users;
- are at a minimum risk of being struck by vehicles; and
- cannot be obscured by parked vehicles.

Fixing of signing, lighting and guarding

Signing, lighting and guarding equipment must be fixed to prevent it being blown over or out of position by wind or passing vehicles. The use of equipment with built-in weights is recommended. Alternatively you may add appropriate weights e.g. sacks containing suitable granular material placed at low level.

Warning: Do not use barrels, kerbstones, spoil, road pins or similar objects for the purpose of weighting or securing road signs and barriers – they could create a danger for highway users if struck by a vehicle.

Additional requirements

Sometimes you might have to duplicate the warning signs on both sides of the road. An example of this would be where signs on the left-hand side become obscured by heavy traffic. On dual carriageway roads, the warning signs may need to be duplicated in the central reservation – consult your [supervisor, manager or other competent person](#).

Warning: You should only cross a live carriageway on foot when traffic flows are low enough to regularly produce sufficient gaps between vehicles to allow time to cross safely. For dual carriageways, the need to place signs in the central reservation must be assessed before you proceed and you should consult your [supervisor, manager or other competent person](#).

The road width and volume of traffic at the works site might make traffic control necessary. See page 53 for details of which type of control is appropriate.

Signs should be set out for traffic approaching from all directions.

Before any works equipment is placed in the carriageway, advance signing must be provided. (For exceptions associated with works between parked vehicles see page 37).

If you place a pedestrian walkway in the carriageway, or create obstructions such as spoil or plant outside the working space, sign, light and guard them separately, and to the same standard.

Coned area

Cones and warning lights

For the minimum size of cones and their placement in lead-in tapers, exit tapers, and safety zones, refer to the table inside the back cover. The retroreflective sleeves of cones must be kept clean. Damaged cones/sleeves must not be used.

All street and road works on roads with a speed limit of 40 mph or more must have warning lights (formerly known as road danger lamps) illuminated in poor visibility or during the hours of darkness. If your risk assessment requires it, warning lights should also be used on lower-speed roads. Steady warning lights can be used on all lit or unlit roads regardless of the speed limit. Where street lighting is present and illuminated, and where the speed limit is 40 mph or less, flashing warning lights are permitted as an alternative. See table on page 97.

Lead-in taper

The recommended lead-in taper is given in the table inside the back cover. Sometimes it might not be practicable to provide the full taper. If this happens on congested roads with speed limits of 30 mph or less, shorter lengths of taper may be used. Reduced tapers should always be as long as permitted under the circumstances. However, they must not be reduced to less than 45° unless there are restrictions associated with parked vehicles (see page 37.)

Caution: Where reduced taper lengths are used, the siting distance (D) of the first sign in advance of the taper must be no less than 20 metres.

Traffic barrier

When a traffic lane is closed for fixed (i.e. not short duration or mobile) works to take place, a traffic barrier with a retroreflective red and white barrier sign should be placed across the lane as shown in the layout diagrams.



Site layout

You must include the works area, working space and safety zone in the area to be marked off with cones, and/or barriers. Warning lights should be placed where necessary (see page 94).

You must provide safety zones when either:

- operatives are present; or
- a pedestrian walkway is located in the carriageway.

Working space

The working space includes the works area (e.g. the excavation or chamber opening) and the space around the works area where it is permitted to store tools, excavated material, equipment and plant. You must leave enough working space to ensure that movement and operation of plant (e.g. swinging of buckets or counterweights) is clear of passing traffic and does not encroach into the safety zone or any adjacent footway, walkway or cycle route. Where materials or welfare facilities cannot be accommodated within the site, the location and arrangement of the storage area must be agreed with the highway authority.

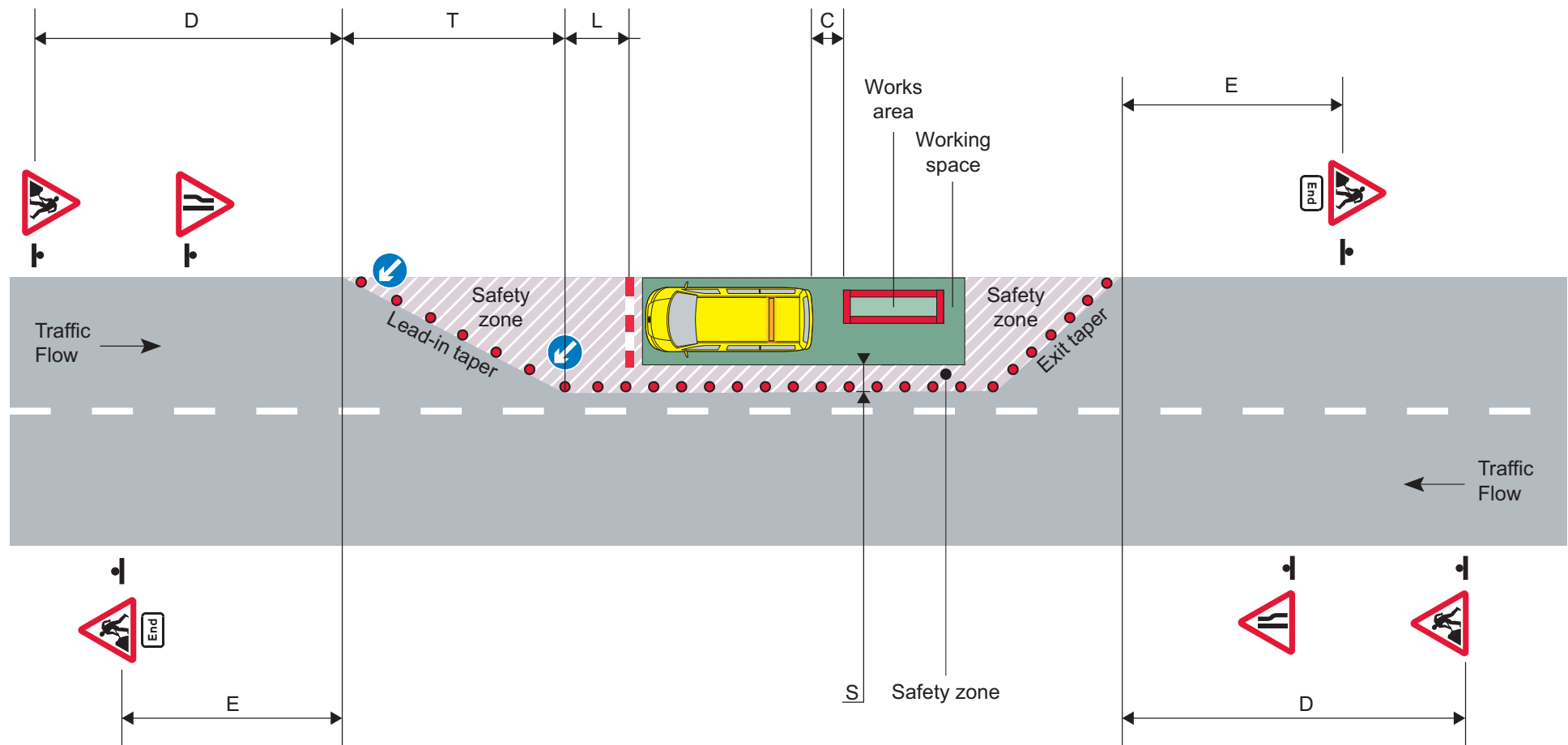
Safety zone

The safety zone is provided to protect you from traffic and to protect the traffic from you.

When working in a footway, remember you must provide a safety zone in the carriageway if the working space is closer to the edge of the carriageway than the width of the sideways clearance (S). If cones are placed in the road, advance signing will be required.

These same principles apply when working in a verge or cycle track adjacent to the carriageway.

Basic layout with a works vehicle



Notes

- 1 For numbers and minimum size of cones, and dimensions D, T, C, L, S and E, see table inside back cover.
- 2 An information board (omitted here for clarity) must be displayed.

Warning: Do not enter the safety zone in the normal course of work. Materials, equipment and vehicles must not be placed in this zone. You should only enter the safety zone to maintain cones, barriers and other road signs.

The basic safety zone including a works vehicle, (see page 21) is made up of:

- a lead-in taper of cones whose length (T) generally varies with the speed limit and the width of the works (although a 45° lead-in taper is used for shuttle working and short duration stops);
- the longways clearance (L), which is the distance between the end of the lead-in taper and the first traffic barrier placed across the lane. L will vary with the speed limit;
- the sideways clearance (S), which is the width between the working space (or in some cases, the pedestrian walkway) and moving traffic; and
- the exit taper.

See inside the back cover for dimensions T, L, C and S.

Sideways clearance (S) depends on the speed limit in force, although you should consider as part of your risk assessment if a greater width than stated in the table would be appropriate, especially on roads with a high speed limit. If traffic consistently exceeds the speed limit, this should also be taken into consideration when reviewing the width of the safety zone. This may result in a restricted width available to traffic, and could cause particular problems for drivers of large vehicles at junctions and bends. If so, you might need to consider other traffic management options. See page 52 regarding unobstructed widths.

At times when no operatives or hazards within the site (e.g. open excavation, plant, materials or spoil heap) are present, and no pedestrian walkway is provided in the carriageway, the overall size of the layout can be temporarily reduced to make less of an obstruction to traffic. Dimensions of the longways clearance (L) and sideways clearance (S) can be reduced (or these spaces omitted altogether) and the length of taper (T) adjusted to match the reduced width. L, S and T must be restored to the appropriate dimensions when work restarts.

Where the coned off area is simply protecting a hazard, it may be possible to temporarily reduce the size of the working space. In this case however, dimensions L, S and T will still be required, even though no works are taking place.

Warning: Where the width of the usable carriageway does not permit the necessary sideways clearance to be maintained and a full road closure is not practicable, a safe method of work must be agreed before starting work. Such agreement must be between the works promoter and the appropriate highway authority.

Exit taper

An exit taper is normally required and should be at 45° to the kerb line or road edge. However, for works on a dual carriageway where a works vehicle exit is needed, the exit taper may be omitted as long as the end of the works is properly signed as a works vehicle exit.

Information board

An information board must be displayed at every street and road works site except mobile works, short duration works and minor works that do not involve excavation. Information boards are still highly desirable at these sites where it is safe and practicable to provide them. This board should be placed so that it does not obstruct footways or carriageways but can be clearly read by pedestrians, and any drivers who have stopped close to the board.

The information board must give the name of the organisation undertaking the works, any principal contractor and an emergency contact telephone number. Wherever practical, it should also contain other information that will be helpful in explaining to the public why the work is being done, how long it will take and a message apologising for inconvenience.



For mobile and short duration works that do not involve excavation or advance signing, information may be displayed on works vehicles, so long as it does not cause a distraction to drivers.

End sign



An end sign, consisting of a 'Road works ahead' sign in conjunction with a supplementary 'End' plate, indicates the end of works and the end of any temporary restrictions. You must place an end sign (in both directions) beyond works that are 50 metres or more in length (measured between the end of the lead-in taper and the beginning of the exit taper, i.e. excluding the length of the tapers). If there is a series of two or more sites close together, an end sign should only be placed after the last of these sites (in both directions), i.e. end signs should not be placed between closely spaced sites. **The use of an end sign is optional for works less than 50 m in length unless there are two or more such sites close together.**

End signs are not necessary at works on minor roads restricted to 30 mph or less that do not carry a significant volume of through traffic or many large vehicles.

If the permanent speed limit changes within a length of road covered by a temporary speed restriction:

- the sign indicating the change in permanent speed limit (and any other permanent speed limit signs) should be covered up; and
- at the end of the temporary speed restriction, in addition to the end sign, signs must be provided on both sides of the carriageway to indicate the permanent speed limit that applies from that point onwards.

Variable message signs

Variable message signs (VMS) can be used. The use of VMS and their location must be agreed with the highway authority. Any wording and text colour must be in accordance with the TSRGD (TSR (NI) in Northern Ireland), and must not be scrolling or paging. Depending on their location,