



**DESIGN STANDARDS FOR
INDUSTRIAL ROADS**



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Introduction

Although the **general principles and advice given elsewhere in National Guidance apply equally to Industrial Roads** the layout of these roads has a different emphasis from that of Residential Roads. In order to cater for the larger and heavier vehicles the roads need to be of greater width and strength. The Design Standards to cater for this traffic are set out in this Section.

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1.1 Design Standards

1.1.0 Industrial Estate Roads have been **categorised** as follows:

- i. Major Industrial Roads (Major IR)
- ii. Minor Industrial Roads (Minor IR)

In general only culs-de-sac of less than 200m in length should be considered as Minor Industrial Roads with all others being Major Industrial Roads. It is not essential to use both Categories in any one development.

1.1.1 **Details of design** are summarised in Table 1. These should be read in conjunction with the following notes:-

- i. **Forward Visibility** is measured on the centre line of the carriageway (see also Clause 1.1.2)
- ii. On Major Industrial Roads where the **gradient** is greater than 6% (1 in 16.7) an increased carriageway width may be required. (See also Clause 1.1.4)
- iii. **Footways** must be provided on both sides of the carriageway; the width of 2m may need to be increased to 3m in certain cases to cater for heavier pedestrian flows and shared cycle use.
- iv. Increased carriageway width may also be required on sharp **bends** to enable larger vehicles to pass each other.

1.1.2 **Visibility splays** within Industrial Estates are to be provided at all junctions as shown in Table 3. Where a new estate road joins the existing wider highway network visibility will be required to be in accordance with National Guidance.

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Visibility on curves, at summits and at junctions shall be provided between points 1.05m above the carriageway. (See also clause 1.1.1 (i).)

1.1.3 A **Turning space** shall be provided at the end of each cul-de-sac. This turning space must be in accordance with one of the diagrams shown in Figure 1.

The positioning of accesses to individual premises with turning spaces is recommended as this discourages casual parking which obstructs turning movements.

1.1.4 The **gradients** of carriageways shall normally not exceed the following limits:-

Maximum gradient	8.33%	(1 in 12)
Minimum gradient	0.83%	(1 in 120)

In exceptional cases steeper gradients may be approved by the Engineer. Where the channel is formed of pre-cast concrete or other suitable channel blocks, the gradient shall not be less than 0.66% (1 in 150).
(See also Clause 1.1.1)

1.1.5 **Culs-de-sac over 200m in length** are undesirable but will be considered in certain circumstances (eg, to avoid sterilisation of land) up to a maximum of 400m in length beyond which a **second access** to the existing highway network should be provided. Where the 200m maximum length is exceeded intermediate turning facilities must be provided in accordance with clause 1.1.3 at a maximum spacing of 200m.

1.1.6 Where an Industrial Estate Road joins an existing Distributor Road, offside diverging (right turn) lanes may be required to be provided by the Developer, together with associated traffic signs, central refuges and road markings. Under normal circumstances **offside diverging lanes** will be required at all junctions between Distributor Roads and Major Industrial Roads. Details of Pedestrian facilities may also be required to be agreed with the Engineer, based on the

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latest Department of Transport advice.

- 1.1.7 The use of **roundabout/mini-roundabout** junctions will be considered where appropriate.
- 1.1.8 **Carriageway construction thickness** shall be in accordance with Table 2. (See also Figure 3).
- 1.1.9 On Industrial Estates **footway construction** shall be in accordance with Table 2. (See also Figure 3).
- 1.1.10 The layout of these premises shall be such that all **vehicles can leave and regain the public highway in a forward direction.**
- 1.1.11 For **access to premises** radius kerbs (normally 6.0 metres) should be provided. The width of accesses to premises will depend on the size and nature of the premises but should not be less than 6.0m. In addition an area of footway of 2m long on each side of the access shall be constructed to carriageway standards to reduce the effects of vehicles mounting the kerb (see Figure 2).
- 1.1.12 All necessary provision for vehicular **parking**, including deliveries, should be clear of the public highway. In general parking to serve premises is not acceptable on the highway and the Developer will be expected to meet the full costs of Traffic Regulation Orders, signs and road markings required to enable waiting restrictions to be implemented, where appropriate. General off-street parking provision shall be in accordance with the standards set out in the current edition of “Standards for Parking and Servicing for Developments” produced by East Sussex County Council.

**Summary of Basic Data
Industrial Estate Roads**

Category	Design Speed	Minimum Widths		Bend centre line radius		Minimum Forward Visibility	Minimum distance between centre lines of junctions		Minimum distance between centre line of first junction and commencement of road	Normal Maximum Gradient
		C/way	Footway	Normal	Minimum		Same side	Opposite Side		
Major Industrial Roads	50kph (30mph)	7.3m	Two x 2m	200m	90m	70m	80m	40m	75m	8.33% (1 in 12)
Minor Industrial Roads	25kph (15mph)	7.3m or 6.75m	Two x 2m	45m	20m	25m	24m	10m	20m	8.33% (1 in 12)

Details of visibility requirements and junction radii are included in Table 10

Table 1

Table 2

Construction Details (Carriageways and Footways) Industrial Roads

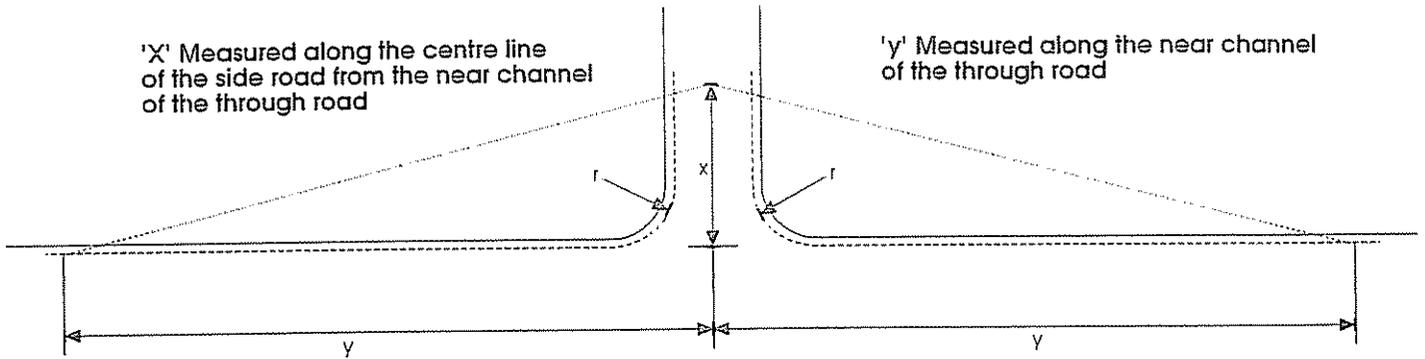
Carriageway Construction

Layer	Material	Road Category: All Industrial Estate Roads Thickness of Layer (mm)
SURFACE Course	30% (0-14mm) hot rolled asphalt 50 PEN to BS 594 Table 3, column 3/2, with (14-20mm) pre-coated chippings	45 mm
Binder Course (Material to be approved by the Engineer)	0-20mm nominal size dense bitumen macadam 125 PEN or 60% (0-20mm) hot rolled asphalt Binder Course 50 PEN to BS 594 Table 2 column 2/4	60mm
Base	(0-32mm) nominal size Dense Bitumen Macadam 125 PEN	160mm
Sub-base	Granular sub-base material Type 1 Recycled Permitted as approved by the Engineer	From Figure 15 but not less than 150mm

Footway Construction

Layer	Material	Footways Thickness of layer (mm)	Footway Crossings Thickness of layer (mm)
Surface Course (Material to be approved by the Engineer)	(0-6mm) nominal size dense bitumen macadam 125 PEN or (0-6mm) size gravel hot rolled asphalt to a proprietary mix or design approved by the Engineer	20 mm	Construction to be as for adjoining carriageway
Binder Course	(0-20mm) nominal size dense bitumen macadam 125 PEN	60mm	
Sub-base	Granular sub-base material Type 1 Recycled Permitted As Approved by the Engineer	150mm	

Visibility Splays Within Industrial Estates



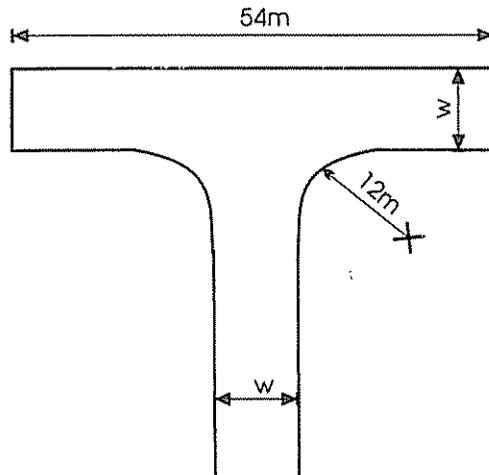
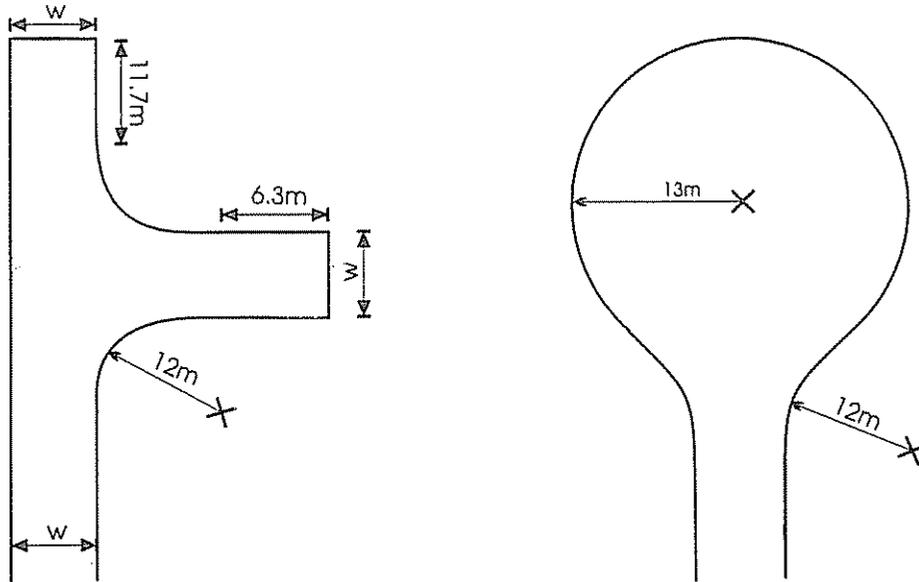
Main Road Type	Distributor Road			Major IR			Minor IR		
Side Road Type	x	y	r	x	y	r	x	y	r
Major IR	4.5	70	15.0	4.5	70	15.0			
Minor IR	4.5	70	15.0	* 2.4	70	15.0	* 2.4	25	12.0

See also clause 5.2.3

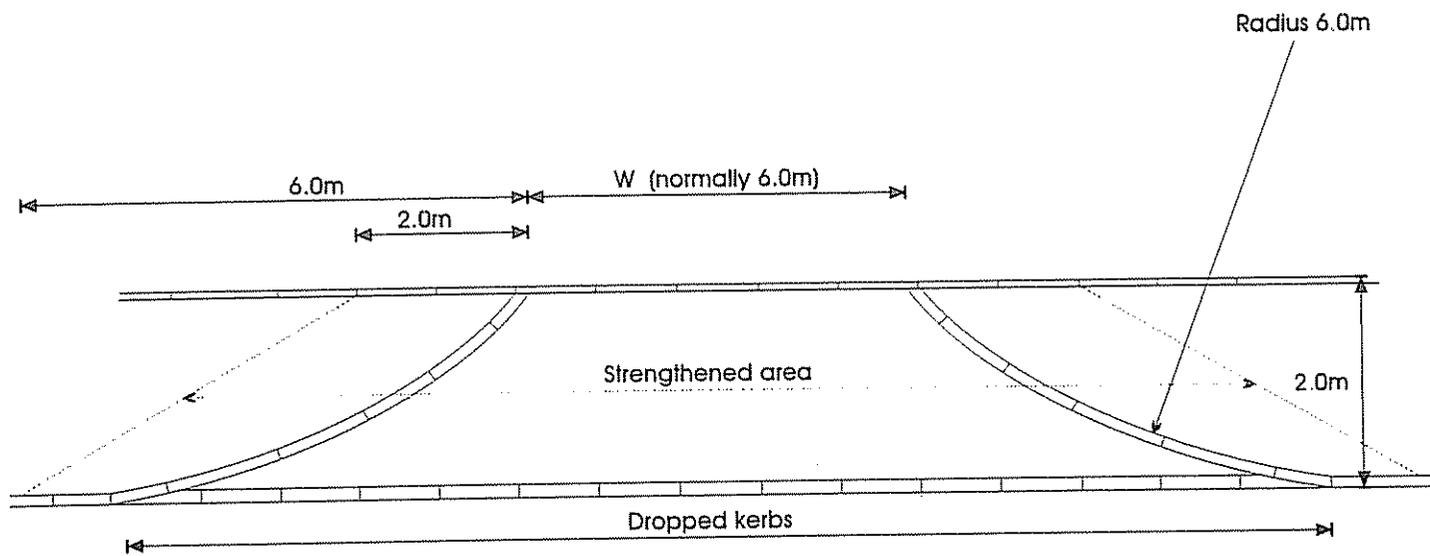
Note:

* These splays also to be used at the point of access of larger industrial premises onto Industrial Estate Roads.

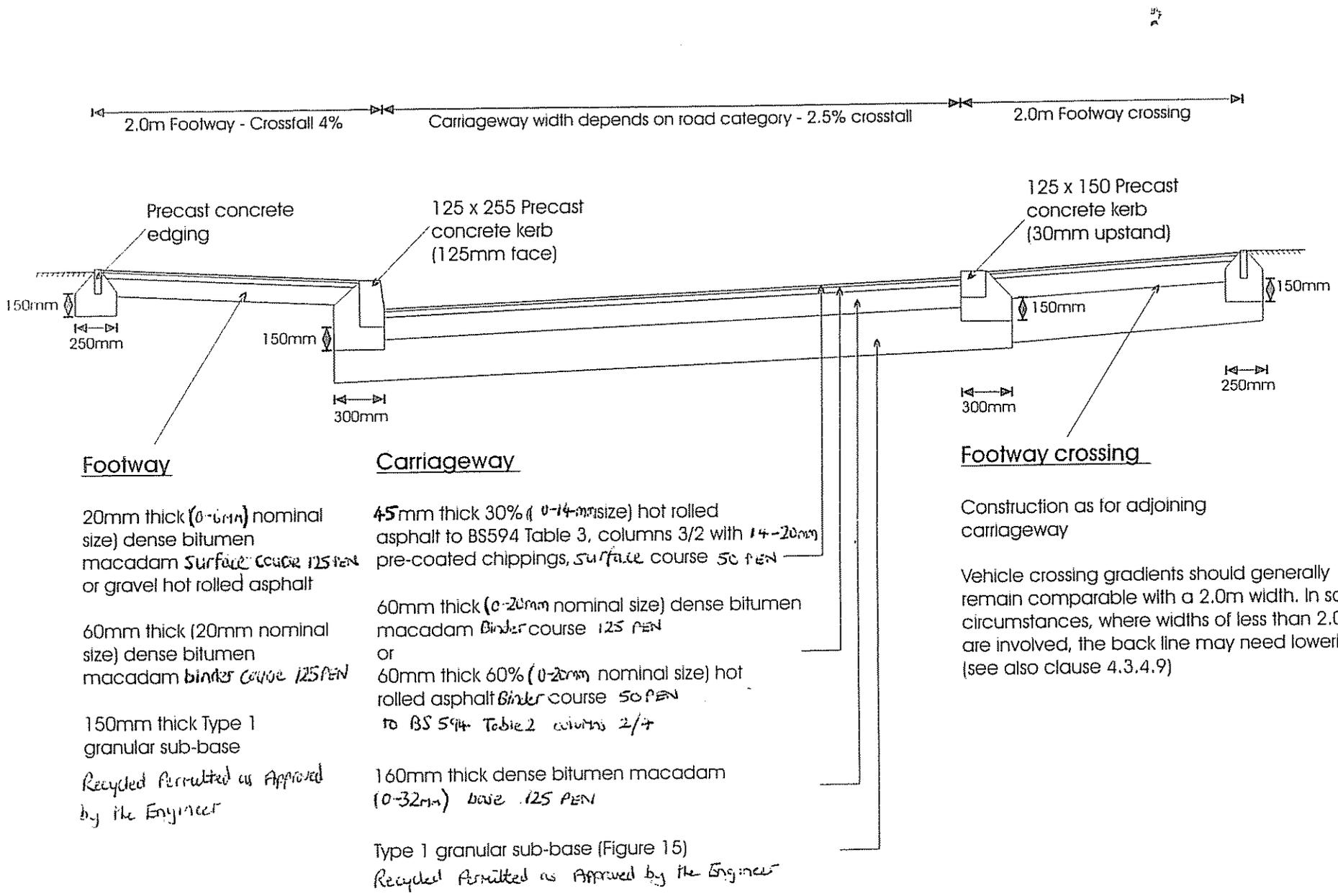
Turning Spaces Industrial Roads



Access to Premises Industrial Roads



For visibility splays see note on Table 10



Typical Section - Hot Rolled Asphalt
Road Construction
Industrial Roads
(see Table 11)

Figure 3