General Geometry of Commercial and Industrial Estates and Premises

Part 3.2

3.2.1 Introduction

The guidance contained in this part is intended to help you design industrial and commercial street layouts that provide for the safe and free movement of all street users, including pedestrians, cyclists, bus passengers, and motorists, and which meet their movement requirements. You should select and assemble the design elements in table 3.2.1 with the aim of creating an environment that is safe for everyone and that encourages people to walk, cycle, and use public transport. The design and construction of works on classified roads and other roads (existing or proposed) not covered by this design guide must normally comply with the 'Design Manual for Roads and Bridges' published by Her Majesty's Stationary Office.

3.2.2 Scope

For the purposes of this part of the guidance, industrial development has been taken as meaning B2 General industry, B8 Storage and distribution, and E(g)(iii) Industrial processes. All other development except C3 Dwelling houses and C4 Houses in multiple occupation should be considered as commercial regardless of the definition in the Use Class Order. C3 Dwelling houses and C4 Houses in multiple occupation are covered in Part 3.1 of the guide.

Table 3.2.1

Geometry Requirements for Industrial/Commercial Roads			
Road type	**Major industrial access road**	**Minor industrial access road**	**Access to Premises**
Function	Large Retail (supermarkets), General Industry, Warehouse / Distribution	Offices / Light Industry and Assembly and Leisure	All
Size	No limit subject to Transport Assessment (TA). Must include multiple points of access with provision for cyclists and buses.	No limit subject to TA provided all employment units are within a 400m maximum walking distance of a bus stop.	Usually, a single point of access subject to TA depending on scale
Target speed	30mph	25mph	N/A

<table>
<tr><th colspan="4">Geometry Requirements for Industrial/Commercial Roads</th></tr>
<tr><th>Road type</th><th>Major industrial access road</th><th>Minor industrial access road</th><th>Access to Premises</th></tr>
<tr><td>Minimum carriageway width</td><td>7.3m</td><td>6.0m for offices and assembly and leisure uses 6.75m for light industry.</td><td>N/A</td></tr>
<tr><td>Carriageway centre-line radius and widening on bends</td><td colspan="2">55m minimum
<table>
<tr><td>Radius (m)</td><td>55 to 74</td><td>75 to 89</td><td>90 to 150</td></tr>
<tr><td>Min. widening (m)</td><td>1.2</td><td>0.7</td><td>0.6</td></tr>
</table>
Widening should be on both sides of the curve, or on the inside.</td><td>N/A</td></tr>
<tr><td>Junction type</td><td colspan="2">See Design Manual for Road and Bridges CD123
Else subject to vehicle tracking.</td><td>See Figures 3.2.4 to 3.2.8</td></tr>
<tr><td>Junction spacing</td><td colspan="2">90m on the same side of the road that maybe reduced to 60m if the priority road is speed restrained unless it can be demonstrated by way of speed-readings that short stagger distance would remain adequate. 40m on opposite sides.</td><td>Not within twice the junction radii</td></tr>
<tr><td>Junction approach</td><td colspan="2">Wherever possible 90 degrees to priority road for at least twice the kerb radius length along the centreline.</td><td>Wherever possible 90 degrees to priority road</td></tr>
<tr><td>Turning heads</td><td>Not normally required if more than one point of access.</td><td>In accordance with Freight Transport Association publication ‘Designing for Deliveries’.</td><td>See Figures 3.2.9 to 3.2.11</td></tr>
<tr><td>Gates</td><td colspan="2">N/A</td><td>Set back up to 20m depending on largest vehicle likely to visit</td></tr>
<tr><td>Carriageway crossfall</td><td colspan="2">1:40 (2.5%)</td><td>N/A</td></tr>
</table>

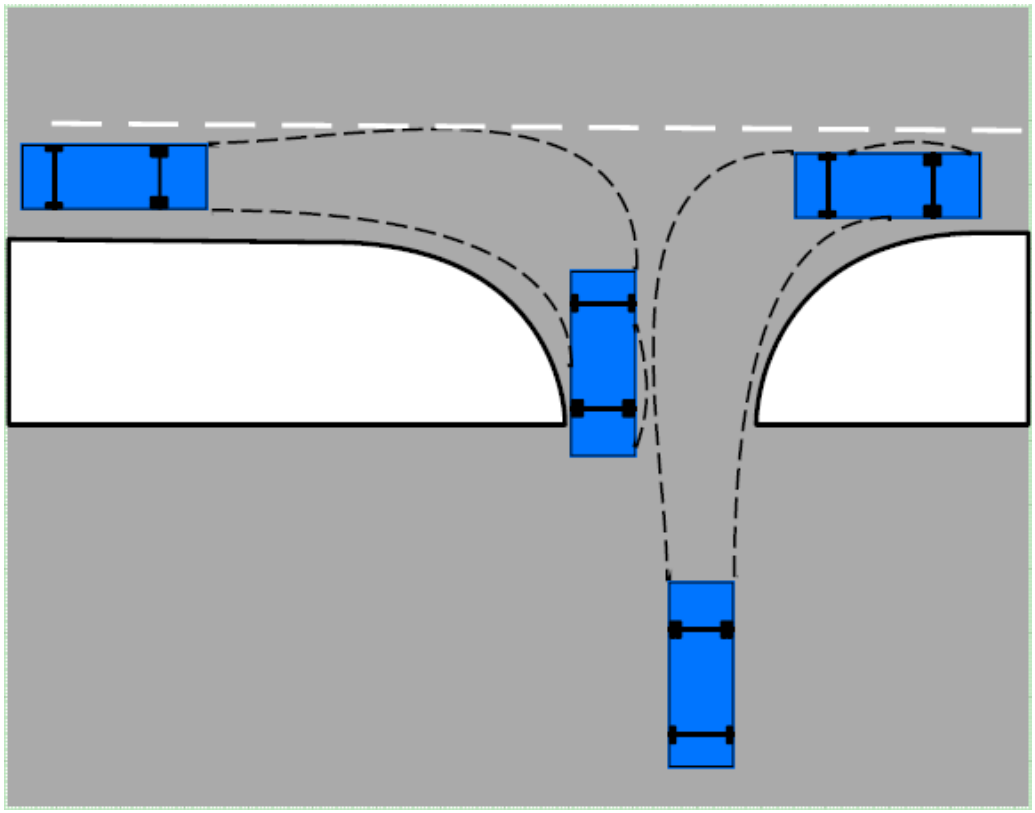
Geometry Requirements for Industrial/Commercial Roads			
Road type	**Major industrial access road**	**Minor industrial access road**	**Access to Premises**
Carriageway/access longitudinal gradient	Flexible surfacing: minimum 1:100 (1%) maximum1:20 (5%) Not to exceed 1:25 (4%) for the first 10m of a junction		Not to exceed 1:25 (4%) for the first 10m of a junction
Carriageway vertical curves	See: Vertical Curves		N/A
Visibility splays at junctions, 'Y' distance also applicable on bends and vertical crests	Minimum 2.4m (X) x 59m (Y)	Minimum 2.4m (X) x 47m (Y)	As per road type from 2.4m minimum setback (***X*** distance)
	Speed-readings may be required from existing roads to establish visibility splay length.		
Service strips	2.0m usually combined with footway (see verges)		N/A
Carriageway margins	0.6m increasing to 0.75m if containing street lighting (Development on opposite side of the road only)		N/A
Verges	Not normally acceptable in the highway		N/A
Footway width	Usually 2.0m minimum width on both sides of the carriageway		N/A
Footway pinch points	Minimum1.2m for a maximum length of 6.0m		N/A
Footway gradients	Minimum 1:100 (1%), Maximum 1:20 (5%) Maximum crossfall 1:35 (2.85%) Maximum 1:14 (7%) at accesses		
Pedestrian visibility splays at access	2.0m x 2.0m		
Bus stops	To include real time bus stop poles & displays including associated electrical connections, shelters, lighting and timetable cases and bus stop clearways. 300m – 400m interval 180mm raised kerbing height for 4m min. Lowered kerbs for access 3m min. footway width To include shelters, lighting, real-time displays, timetable cases, & bus stop clearways		N/A

Geometry Requirements for Industrial/Commercial Roads			
Road type	**Major industrial access road**	**Minor industrial access road**	**Access to Premises**
Bus frequency	Target every 30 minutes minimum day time services, evenings and weekends minimum hourly		
Cycling facilities	To comply with Department for Transport LTN 1/20		

3.2.2 Access to premises for deliveries

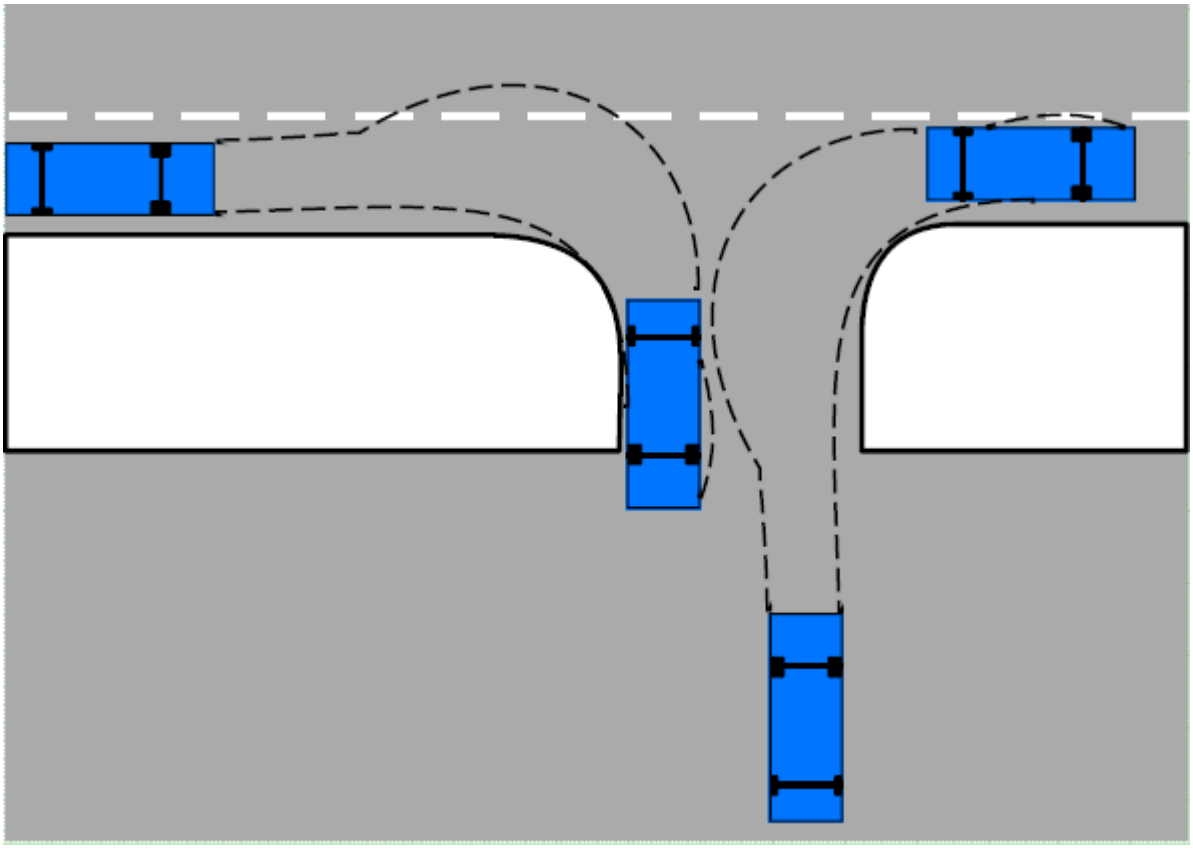
The required size and type of access to development is likely to be dependent on the size of the largest vehicle likely to visit, the frequency of vehicle movements to and from the development, and the speed and volume of traffic passing the development, see figures 3.2.1 to 3.2.3. The size of the access will require defining by a vehicle tracking exercise.

Figure 3.2.1 Simple turn



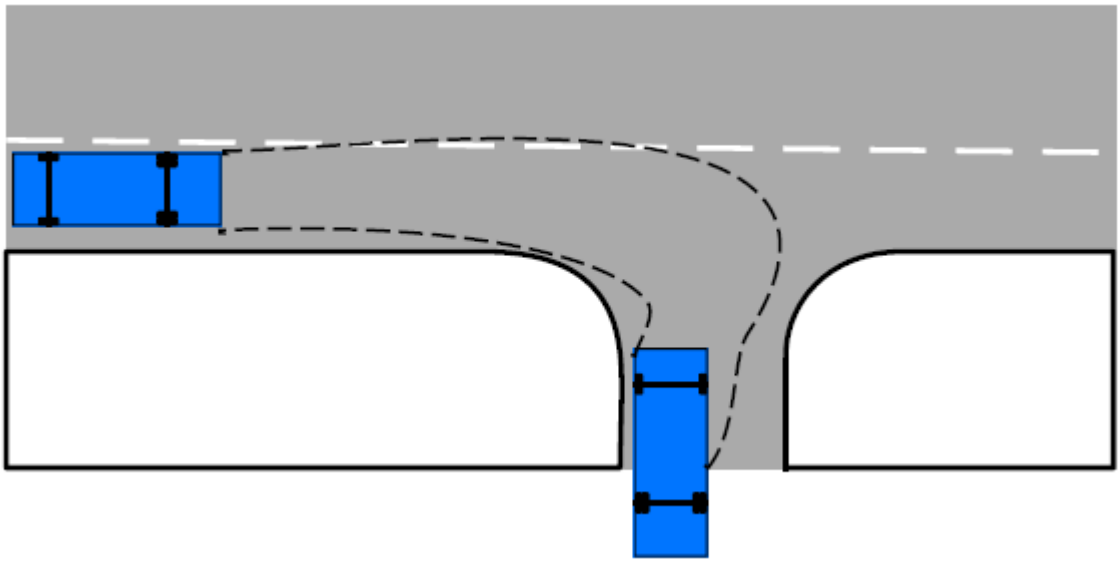
The delivery vehicle can access and egress the development turning left without encroaching into the offside carriageway and without blocking the access into the development. This arrangement is acceptable in most situations.

Figure 3.2.2 Forward overturn



The delivery vehicle is unable to egress the development to the left whilst maintaining access into the development without encroaching into the offside carriageway. This arrangement is only likely to be acceptable where there are adequate gaps in the two-way traffic flows passing the site at peak times and when the delay to the emerging vehicle is likely to be momentary. The left turn ‘in’ should not encroach into the path of exiting vehicles.

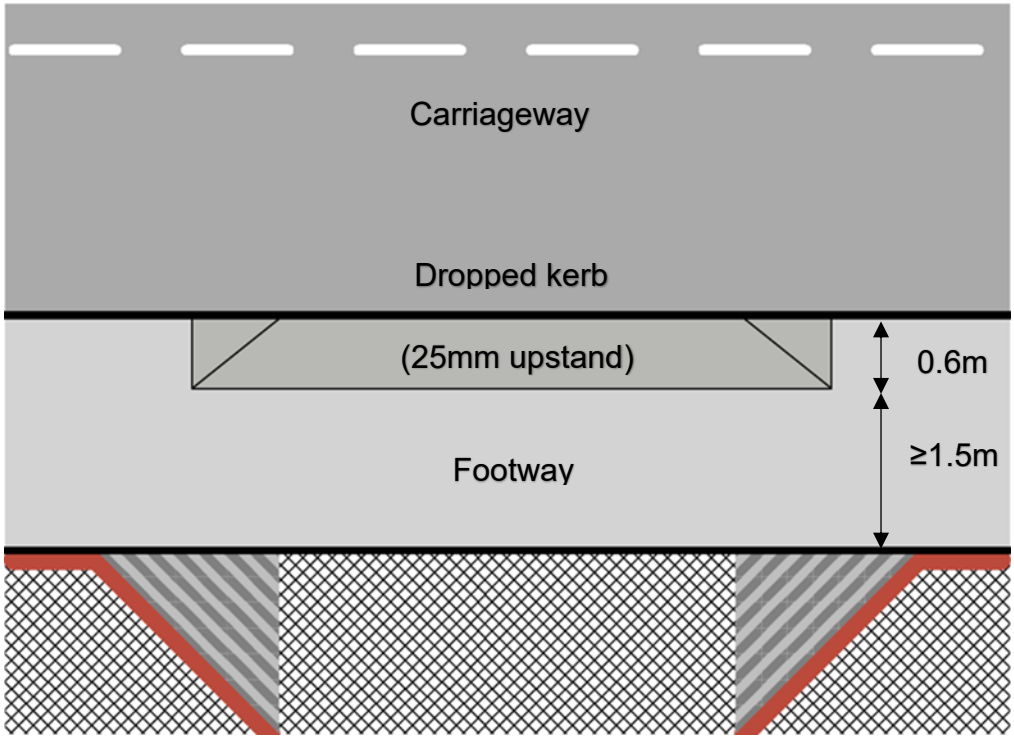
Figure 3.2.3 Side overturn



The delivery vehicle is unable to egress the development to the left whilst avoiding the offside carriageway without blocking access into the development. This arrangement is only likely to be acceptable when there are unlikely to be occasions when departing deliveries and arriving vehicles occur simultaneously.

3.2.2 The choice of access design will be dependent on the scale and kind of development, and its surroundings, see figures 3.2.4 to 3.2.8.

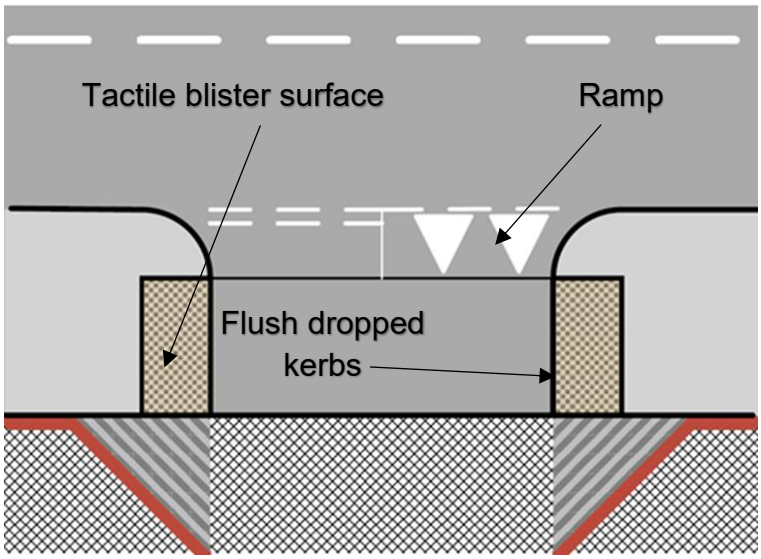
Figure 3.2.4 Dropped kerb (small scale commercial development)



Likely to be suitable for individual premises subject to all the following:

- in situations where both passing pedestrian and vehicular access flows are low,
- where deliveries are likely to be by car or van, and
- where segregated pedestrian access is provided.

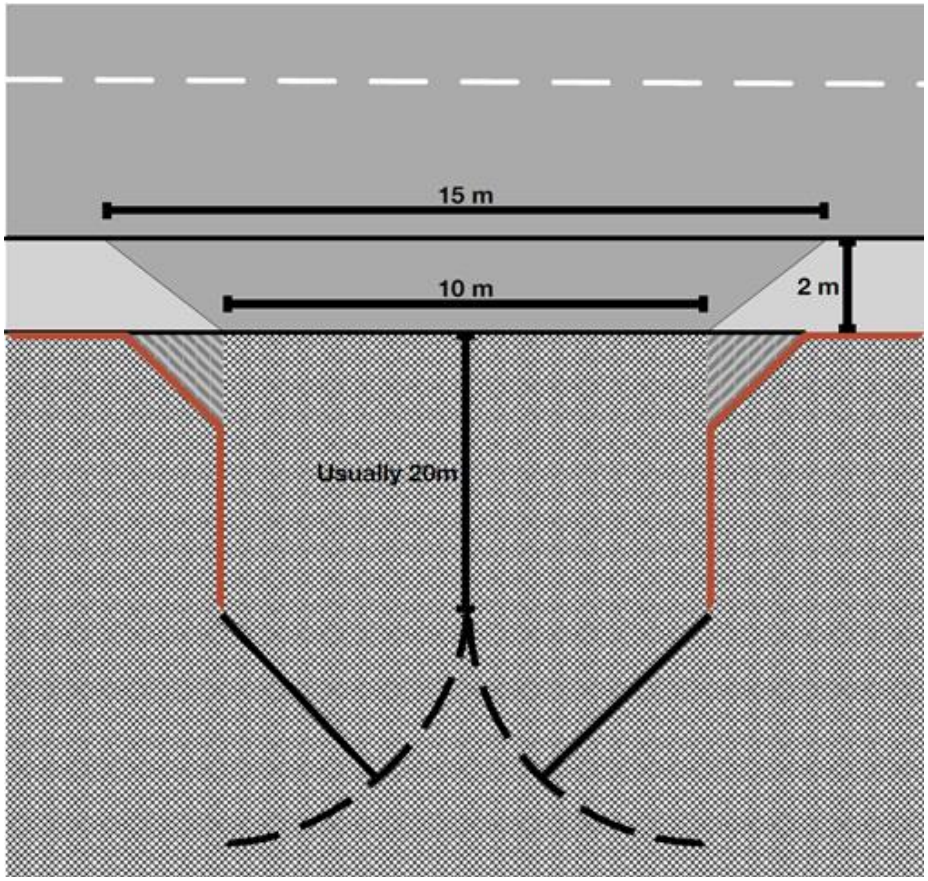
Figure 3.2.5 Footway crossover (medium scale commercial development)



Likely to be suitable subject to all the following:

- in situations where passing pedestrian and/or vehicular access flows are moderate,
- where deliveries are likely to be by car, van, or the occasional rigid lorry, and
- where segregated pedestrian access is provided.

Figure 3.2.6 Dropped kerb (industrial access)

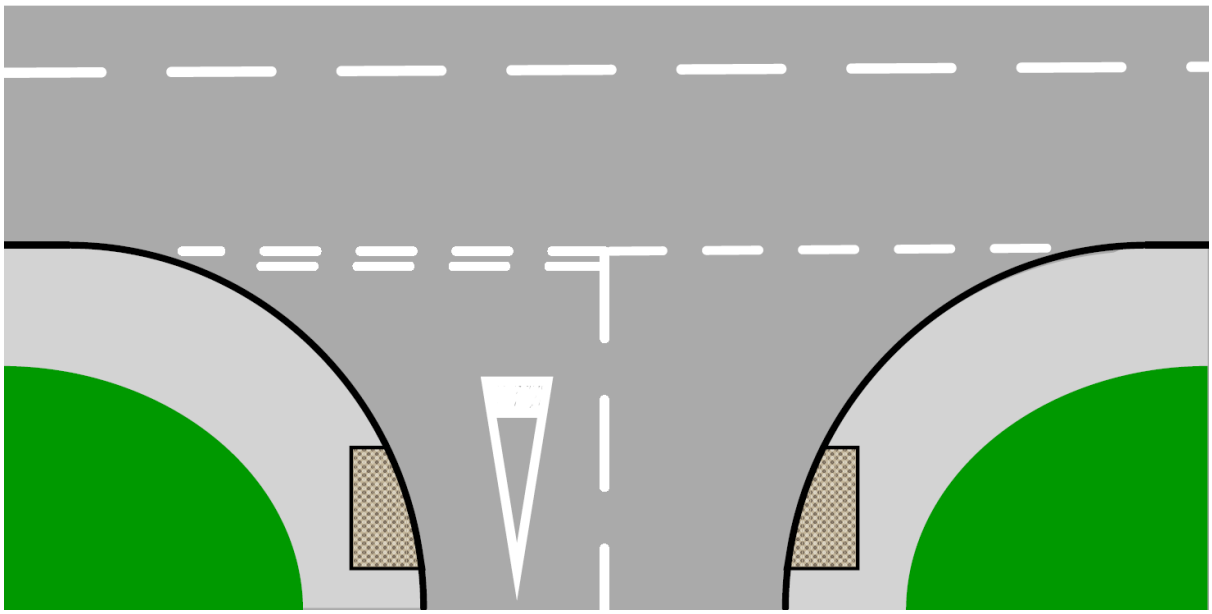


Likely to be suitable subject to all the following:

- within industrial estates or areas,
- where passing pedestrian movements are low,
- where lorries are unlikely to arrive and depart simultaneously,
- where segregated pedestrian access is provided.

Note: Narrower widths may be acceptable where it can be demonstrated that it would be unnecessary for the type and scale of development.

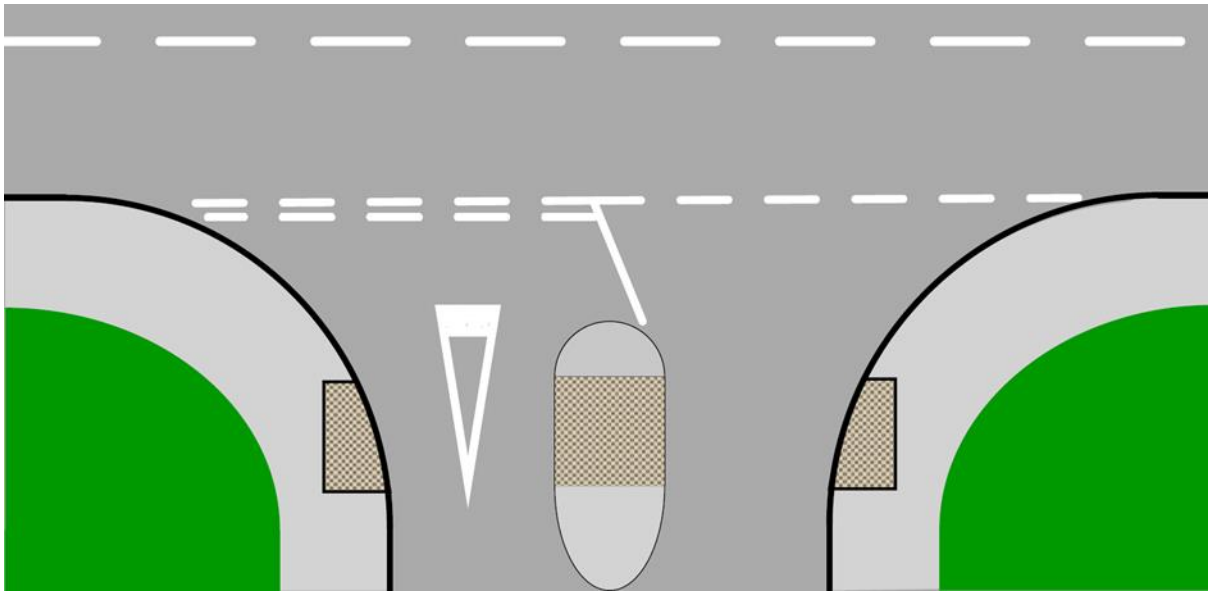
Figure 3.2.7 Priority junction (large commercial and industrial development)



Likely to be suitable subject to all the following:

- where traffic flows are moderate and/or there are regular deliveries by heavy goods vehicles,
- where passing pedestrian movements are moderate,
- where a Transport Statement or Transport Assessment has not identified a need for an alternative junction type.

Figure 3.2.8 Priority junction (large commercial and industrial development)



Likely to be suitable subject to all the following:

- where traffic flows are moderate and/or there are regular deliveries by heavy goods vehicles,
- where the need to accommodate the swept path of lorries has resulted in a wide bellmouth,
- where passing pedestrian movements are moderate,
- where a Transport Statement or Transport Assessment has not identified a need for an alternative junction type.

3.2.3 The parking layout to be provided in accordance with Chapter 4.2 should avoid the need for vehicles to reverse across the site access when accessing or egressing spaces.

3.2.4 Turning provision within development

All industrial and commercial developments will be expected to provide on-site serving provision of sufficient size to allow the largest vehicles likely to visit sufficient space to load and unload and to manouvre on-site so access and egress can be achieved in a forward direction, see figures 3.2.9 to 3.2.11. In most cases, the size and the shape of the turning area will require defining by a vehcile tracking exercise. On-street serving is unlikely to be acceptable unless the size and type of development is sufficiently small so to be unlikely to be served by lorries and where deliveries are likely to occur as part of the day to day arrival and departure of staff.

3.2.5 The manoeuvring area should avoid the need to reverse within car parks.

Figure 3.2.9 Service yard roundabout – design artic, 40 tonne gross vehicle weight, 16.5m long, 2.55m wide

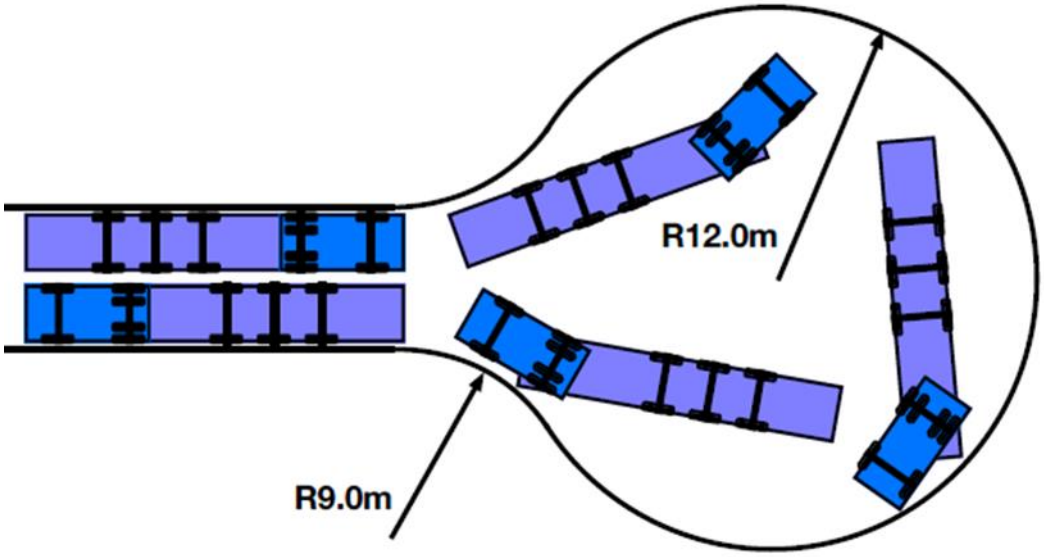


Figure 3.2.10 U-turn - small rigid lorry, 7.5 tonne gross vehicle weight, 7.17m long, and 2.3m wide.

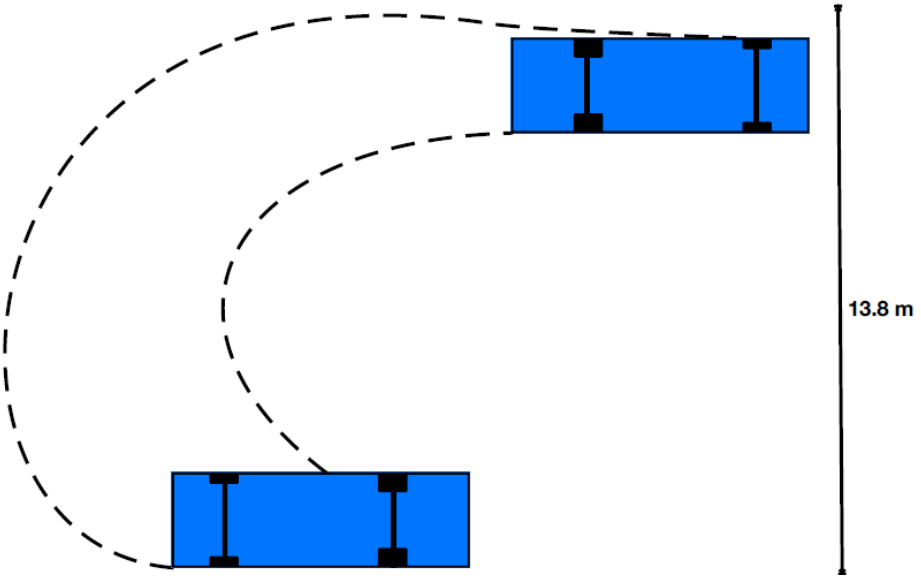
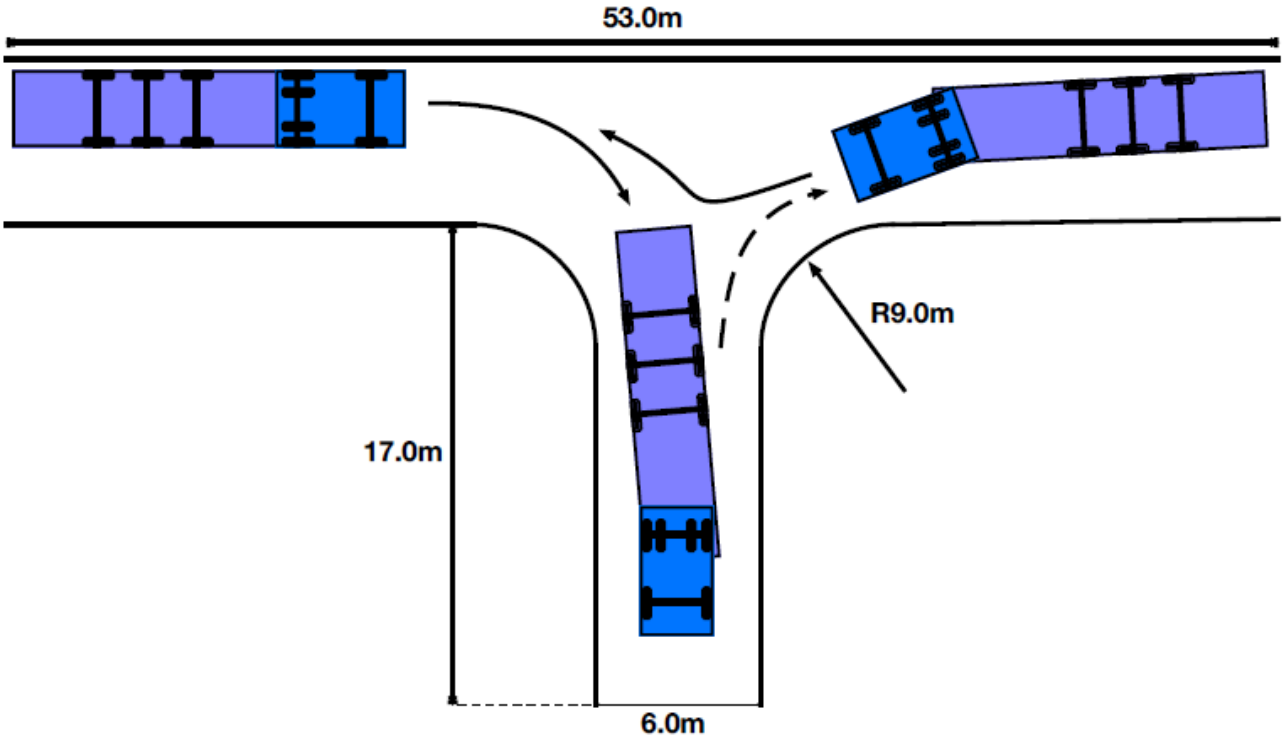
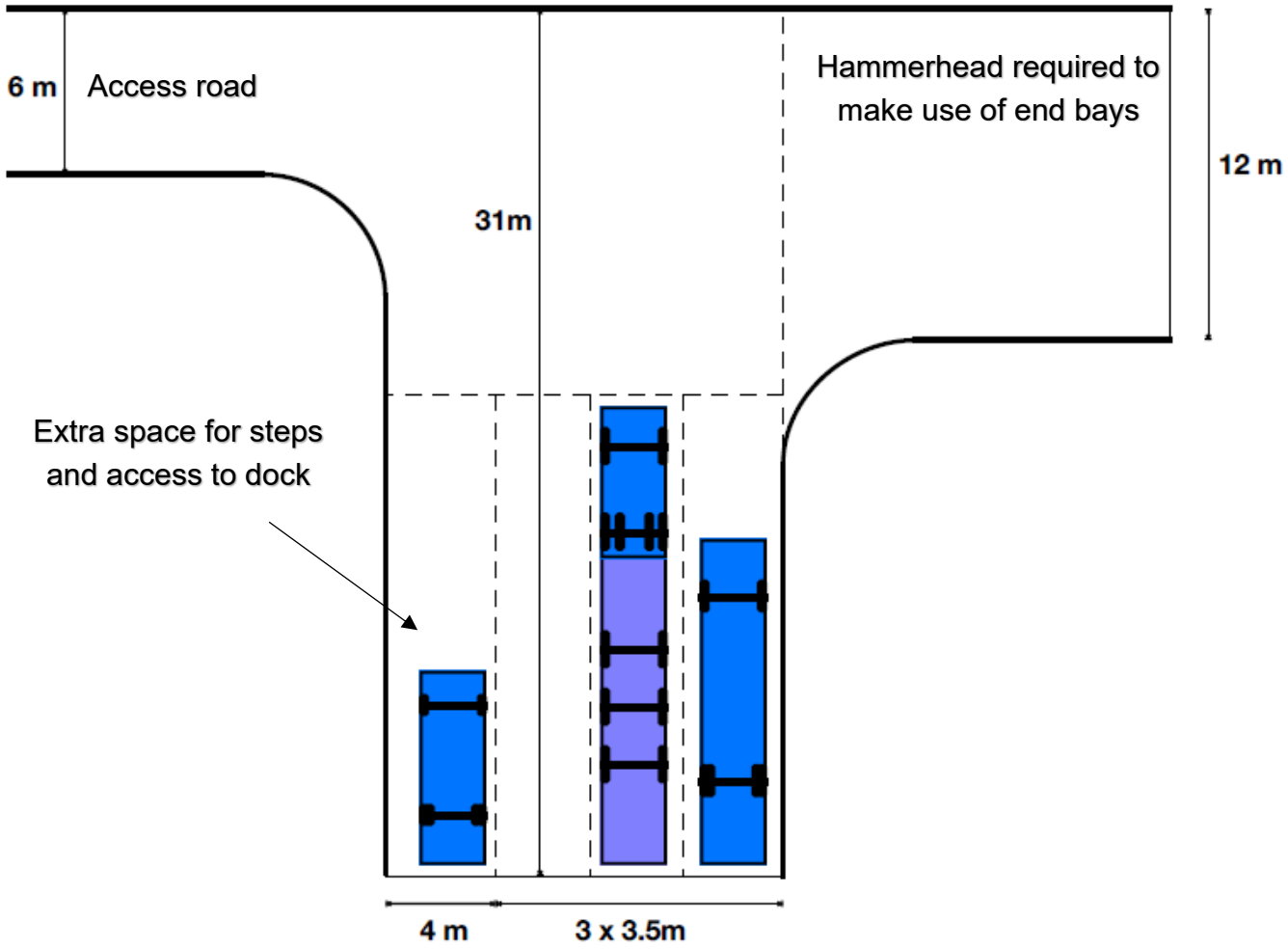
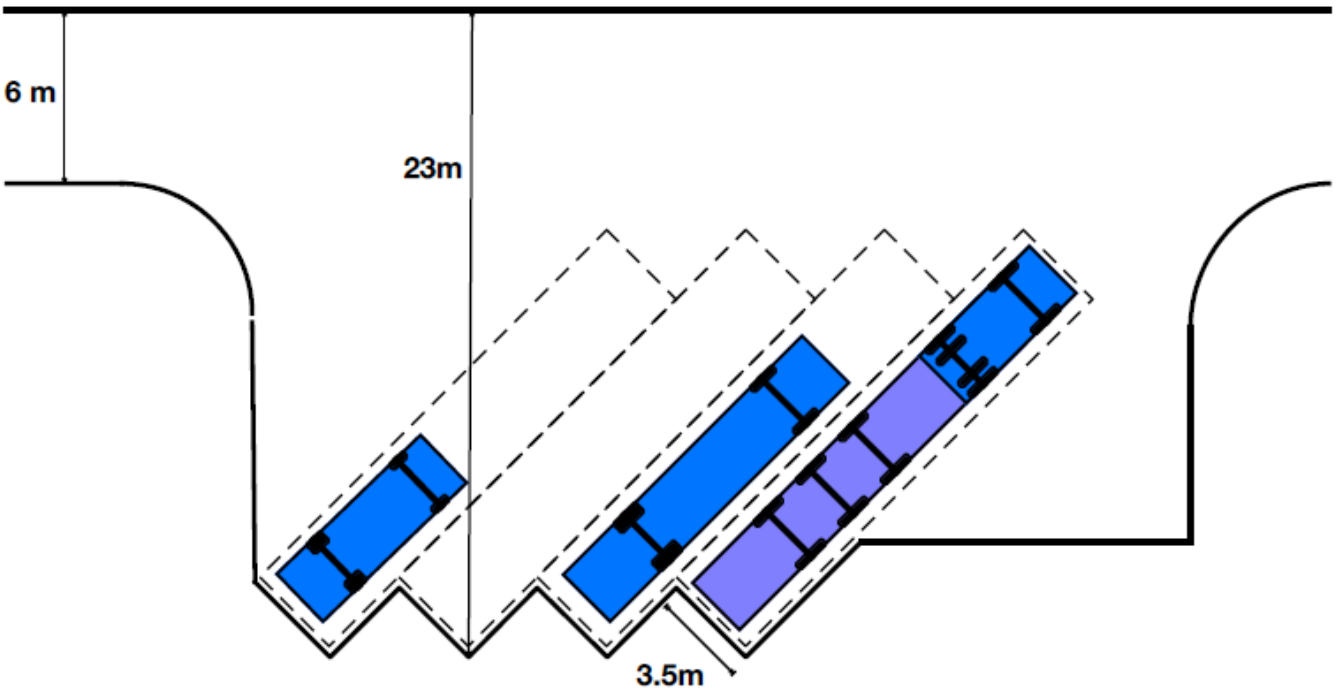


Figure 3.2.11 Service yard T-turning area – design artic, 40 tonne gross vehicle weight, 16.5m long, 2.55m wide




6 m
Access road
Hammerhead required to make use of end bays
12 m
31m
Extra space for steps and access to dock
4 m
3 x 3.5m


6 m
23m
3.5m

[End]