

RESIDENTIAL ROADS AND FOOTPATHS IN NORTHUMBERLAND



NORTHUMBERLAND
County Council



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1. INTRODUCTION

1.1 This manual defines new standards for the layout of residential estate roads to be constructed in the County of Northumberland. It gives guidance to Developers on the residential road and footpath layouts likely to be acceptable for Planning Permission and identifies those areas suitable for adoption by the Highway Authority. The manual is to be read in conjunction with its Technical Appendix which gives further details on design considerations, acceptable methods of construction and specifications of materials. This manual in conjunction with the Technical Appendix supersedes the County Council's "Manual on the Design and Construction of Estate Roads" published in 1974.

1.2 Planning applications should contain sufficient information to be assessed against the standards contained in this manual and applicants are advised to discuss applications with the Highway and Planning Authorities prior to submission. The manual may not embrace all possible design concepts and therefore proposals which fail to meet the prescribed standards but incorporate the same design principles may also be acceptable.

1.3 In Darras Hall alternative conditions are set for the layout of new residential areas and applicants are advised to approach the Highway Authority for further information. In Cramlington New Town the Development Plan incorporates a comprehensive network of segregated footpaths and cycleways and the design of residential areas will be expected to integrate with and complement this system.

1.4 Additional background information may be obtained from 'Design Bulletin 32 — Residential Roads and Footpaths' published by H.M.S.O.

2. DESIGN CONSIDERATIONS

2.1 The principal objective of the manual is **to facilitate the provision of better places for people to live in**. The standards allow a flexible approach to design and are intended to encourage more attractive, convenient and economical solutions, whilst maintaining high standards of road safety. The underlying philosophy requires highway provision to be closely related to need and in particular the layout of minor roads in residential areas should promote the interests of residents as pedestrians rather than motorists. These considerations require that the layout should: —

- (a) minimise the danger and nuisance which can be created by non-access traffic;
- (b) keep vehicle flow and speed low in the vicinity of homes;
- (c) provide safe and convenient pedestrian routes between houses and to local community facilities;
- (d) minimise the danger to pedestrians and inconvenience to emergency and other services which can be caused by on-street parking;
- (e) create safe routes for vehicular movement; and
- (f) enable residents' needs for statutory and other services to be met efficiently.

2.2 This manual deals mainly with the technical aspects of planning satisfactory road and footpath layouts although this is only one of a number of inter-related design considerations. In particular, the landscaping treatment and house design chosen and their relationship to the road and footpath layout are fundamental to the creation of an attractive development. Applications for development should incorporate a comprehensive detailed landscaping scheme designed to produce an attractive environment but also to complement measures to encourage safe driving. Advice on landscaping is given in Chapter 11 of this manual and developers are recommended to seek guidance from a qualified landscape architect.

3. ROAD TYPES

3.1 Roads in Northumberland are classified according to their role, see Figure 1, those taking large volumes of long distance traffic being either Primary or Secondary (District) Distributors. This Manual however deals with the remaining categories being: —

- (i) Local Distributor Roads;
- (ii) Access Roads; and
- (iii) Shared Surfaces.

3.2 On Distributor Roads considerations of speed and free traffic movement predominate, and direct access to dwellings will generally be unacceptable.

3.3 On Access Roads and Shared Surfaces direct access is allowed and the convenience and safety of the pedestrian and cyclist dominate. Restrictions have been placed on the numbers of dwellings served by Access Roads and Shared Surfaces to ensure that traffic flows are low, also their layout must ensure that use by through traffic is either impossible or very inconvenient. Traffic speeds must be controlled by the use of short culs-de-sac or loops and by the use of physical features such as bends and junctions.

3.4 Bus routes should be defined at an early stage in order that the requisite carriageway width is provided and the location of bus stops are determined. One aim will be to achieve early access to residential development to encourage use of public transport.

3.5 The table below summarises the standards of each road type and may be used for selecting the road type or combination of road types best suited to a particular site. Further details of Local Distributors, Access Roads and Shared Surfaces are given in the manual and diagrams are included to indicate possible layouts.

Summary of Road Types

Road Type	No. of Dwellings served	Minimum carriageway width (metres)	Footways and/or separate footpath systems
Local Distributor Roads		6.0 (6.75 with bus route)	Required
Access Roads	Up to about 250 or with bus route	5.5	Required
	Up to about 50	4.8	
	Up to about 20	4.1**	
Shared surfaces	Up to about 20	4.5	Not Required

*In some situations 3 metre carriageways may be acceptable (see paragraph 3.14)

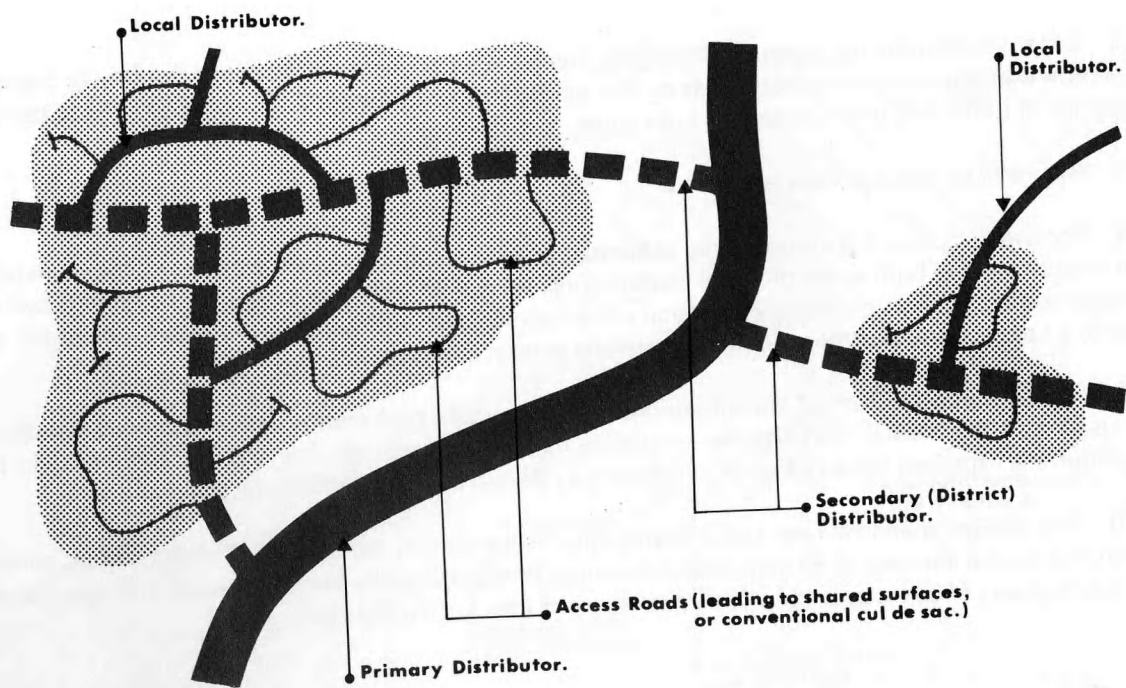


Fig.1
Relationships Between Road Types.

Local Distributor Roads

3.6 Local Distributors are normally through roads forming connections between Primary or Secondary (District) Distributors and Access Roads or Shared Surfaces, see Figure 2. They are allowed to carry high volumes of traffic and may function as bus routes.

3.7 Normally no direct access is allowed.

3.8 Footways at least 1.5 metres wide, separated by at least 1 metre from the edge of the carriageway, are required along both sides of Local Distributors. Where an effective segregated footpath system is established a reduction in footway provision will be considered, although if no footway is provided at the side of a Local Distributor the verge width must be at least 2 metres.

3.9 The carriageway width of Local Distributors will normally be 6 metres or 6.75 metres if ever likely to be used as a bus route. Carriageway widths in excess of 6 metres may also be required if a Local Distributor is expected to carry a peak hour two-way flow in excess of 1000 vehicles.

3.10 The design speed of new Local Distributors will normally be 50 kph (31 mph), with minimum horizontal centre line radii of 90 metres and minimum forward visibility between points 1.05 metres above the carriageway of 60 metres. (See Technical Appendix for further details).

Access Roads

3.11 Access Roads may be used with or without direct access to housing. They are roads serving up to a maximum of 250 dwellings but will not normally function as a bus route, see Figure 3.

3.12 Footways, 2 metres wide will normally be required along both sides of Access Roads. In very low density developments, or where direct access is only taken from one side of an Access Road or where an effective segregated footpath system is established a reduction in footway provision will be considered. In all cases the minimum distance between the edge of carriageway and the highway boundary is 2 metres.

3.13 Carriageway widths are to be related to the number of dwellings served:

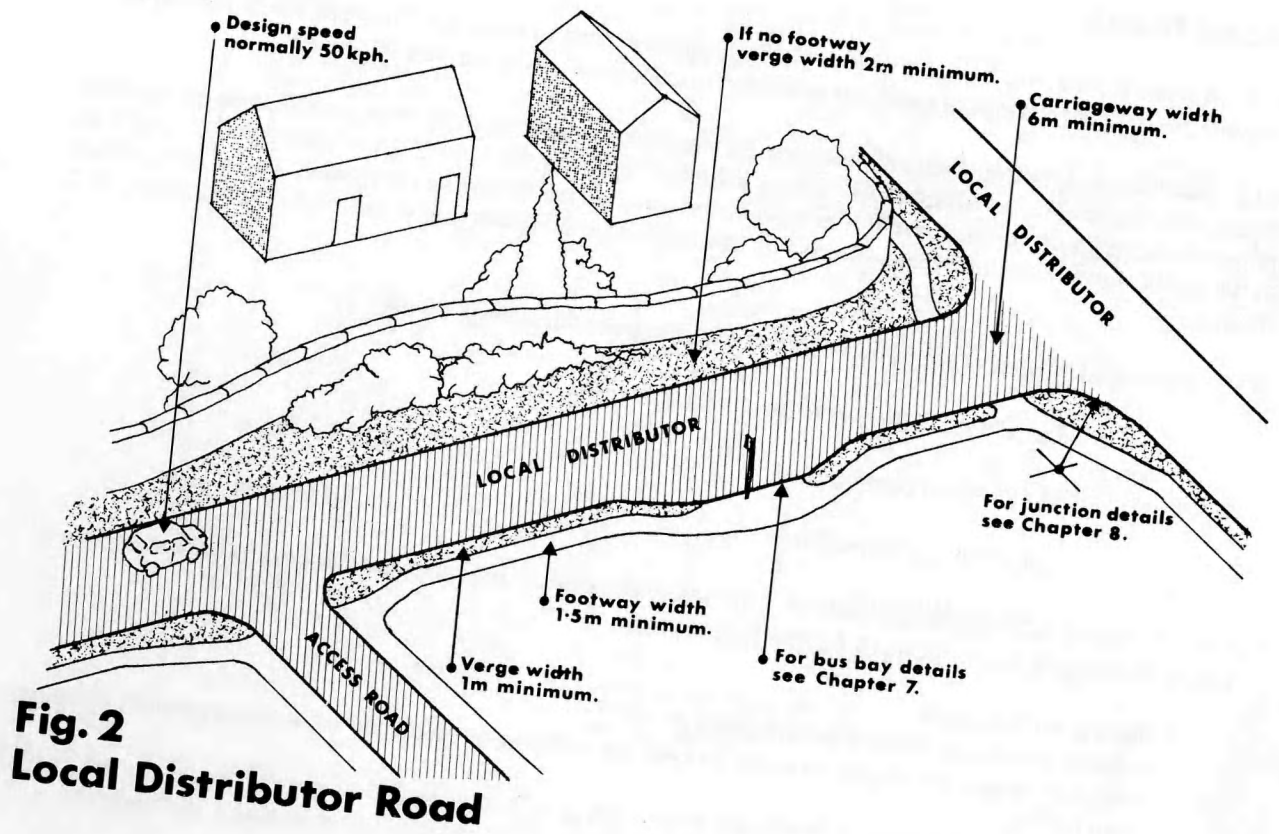
Up to about 250 dwellings or with bus route	5.5 metres
Up to about 50 dwellings	4.8 metres
Up to about 20 dwellings	4.1 metres

3.14 A reduced carriageway width of 3 metres with appropriately located passing bays, see Figure 4, may be acceptable on sections of Access Roads where:—

- there is no bus route;
- services are absent from the carriageway;
- adjacent verges are sloped in order to channel vehicles or protected in order to prevent damage from traffic;
- there is no direct access to dwellings; and
- the Access Road is in the form of a loop or a short cul-de-sac serving up to about 20 dwellings.

3.15 The arms of turning heads at the ends of Access Roads may be used as entrances to Shared Surfaces.

3.16 The design speed of Access Roads will normally be 30 kph (19 mph) with minimum horizontal radii and forward visibility of 30 metres, although on Access Roads serving up to 50 dwellings a 20 kph (13 mph) design speed with radii and visibility down to 20 metres may be acceptable. On Access Road it will be necessary for drivers to have unobstructed forward visibility above a height of 0.6 metres to ensure that young children are not obscured. The alignment of Access Roads must positively discourage high speed and long straight sections will not be permitted.



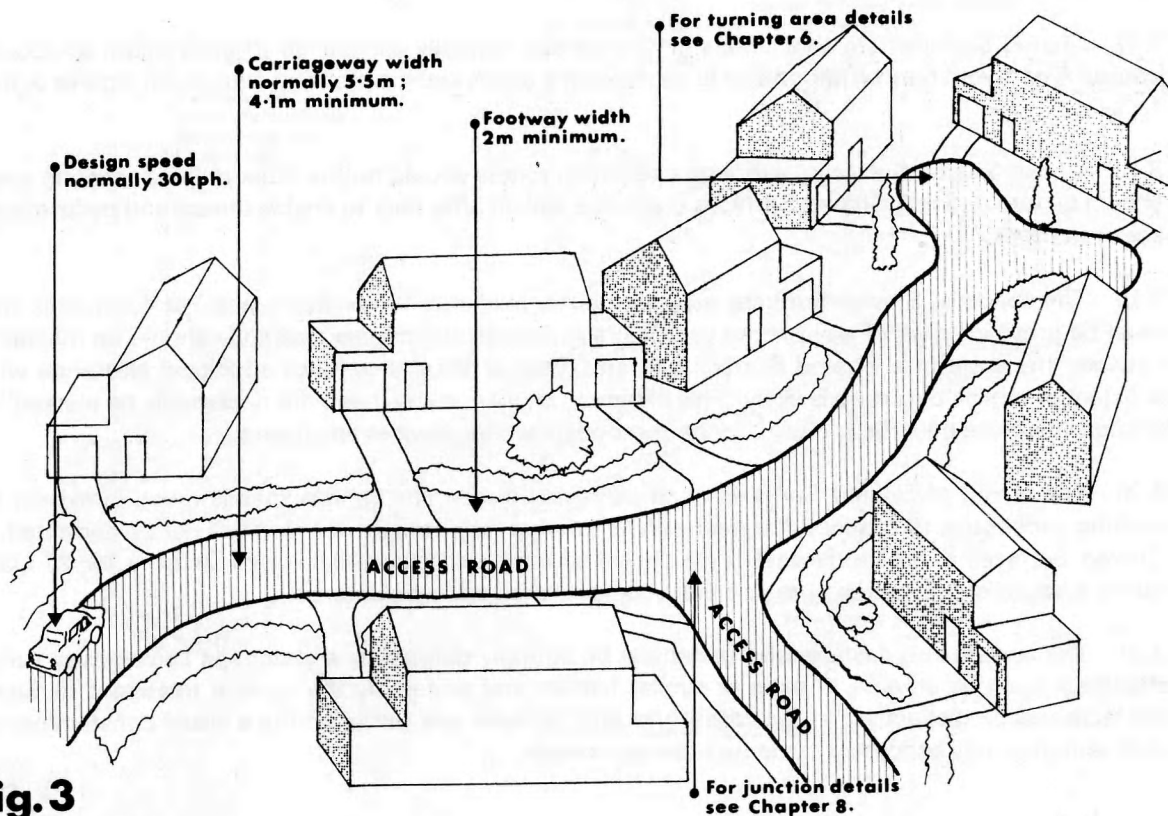


Fig.3
Access Road

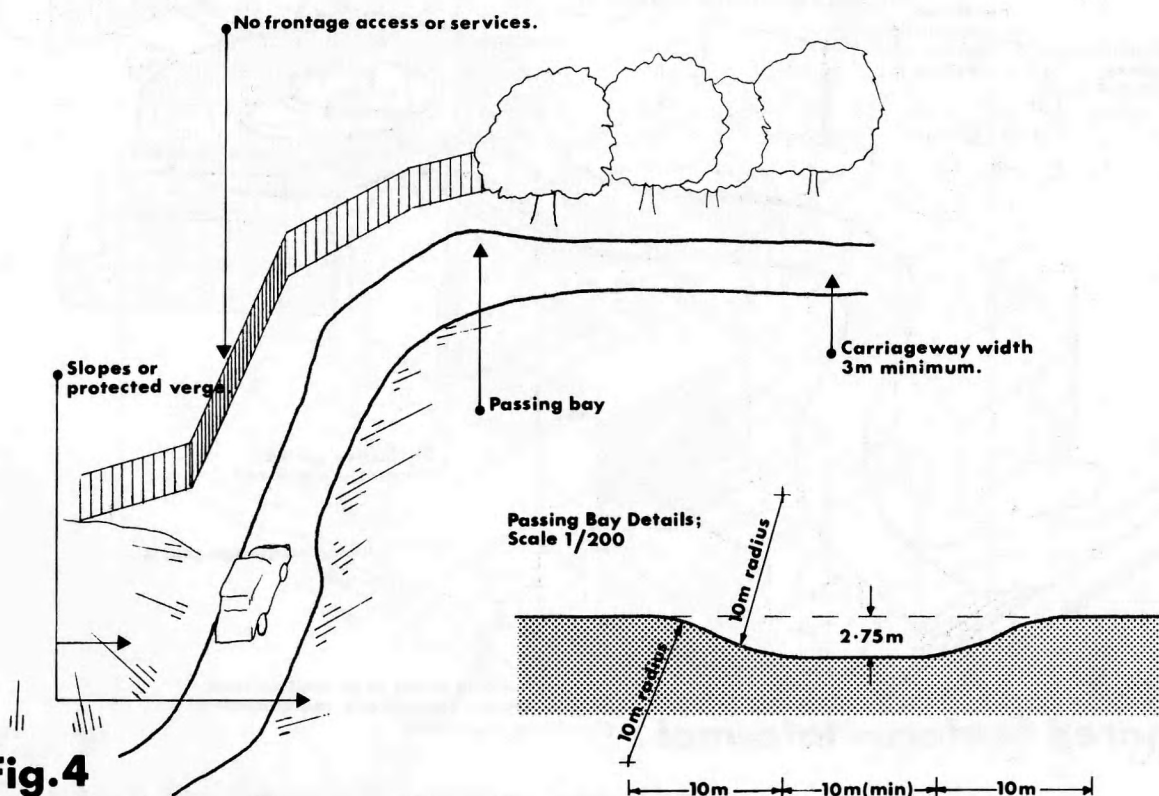


Fig.4
Single Lane Access Road

Shared Surfaces

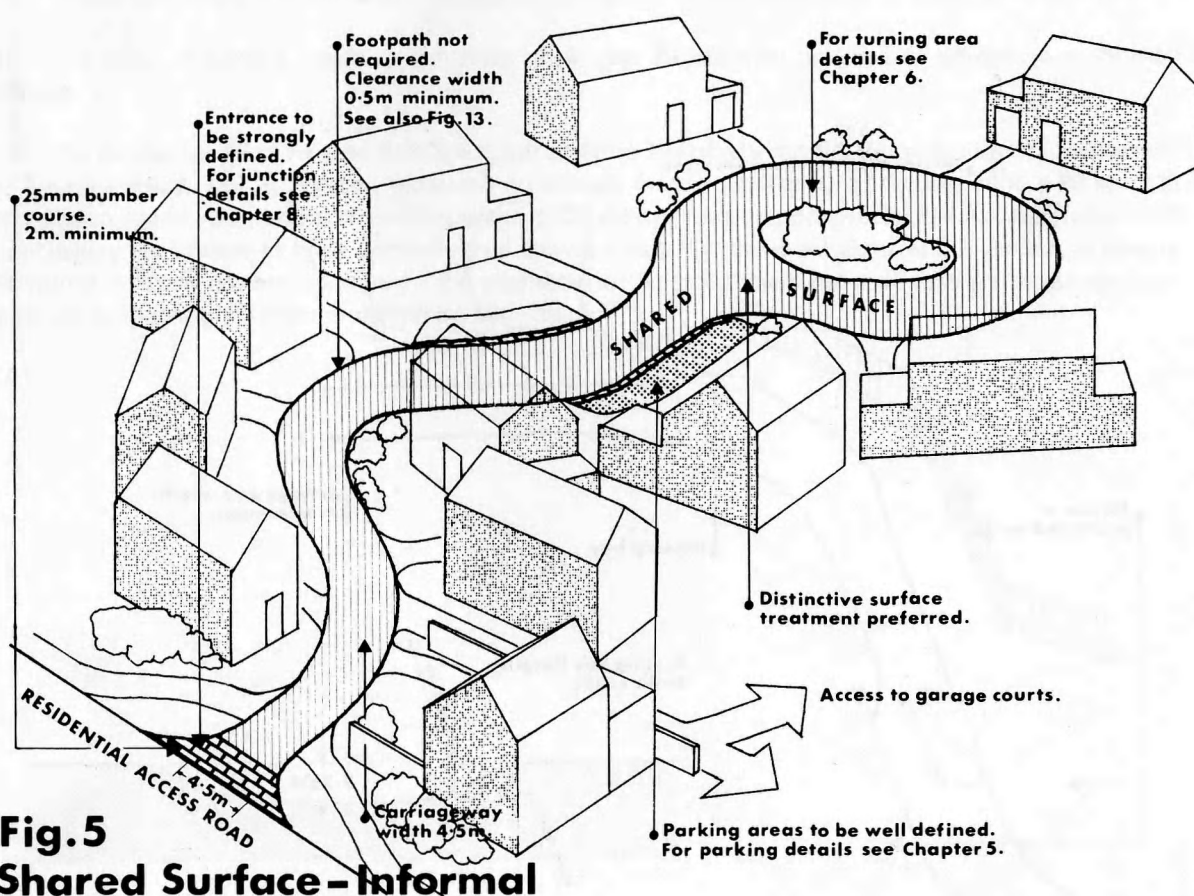
3.17 Shared Surfaces are short loops or culs-de-sac normally serving up to a minimum of about 20 houses. The layout may be informal or in the form of a mews court or housing square see Figures 5, 6 and 7.

3.18 Within Shared Surfaces, although pedestrian routes should not be differentiated, parking spaces should be well defined. Shared Surfaces should be well-lit after dark to enable drivers and pedestrians to see each other.

3.19 The shape of Shared Surfaces may vary but a minimum "movement area" of 4.5 metres width must be provided clear of any parked vehicles; also at least 0.5 metres clearance should be maintained between the edge of a Shared Surface and any walls or structures, with additional clearance where substantial vehicle overhang is likely. This minimum clearance area need not necessarily be marked by a change in surface material and will only be appropriate where services are absent.

3.20 The layout of Shared Surfaces must positively discourage vehicle speeds much in excess of a walking pace, must not exceed 100 metres in length and long straight sections will not be permitted. On Shared Surfaces it will be necessary for drivers to have unobstructed forward visibility for 20 metres above a height of 0.6 metres to ensure that young children are not obscured.

3.21 The entrance to a Shared Surface must be strongly defined by a change in carriageway surface treatment such as an area of setts or similar feature and preferably the surface treatment of Shared Surfaces will be distinctive. In the case of housing squares and mews courts a visual constriction near their entrance may be formed by dense planting or walls.



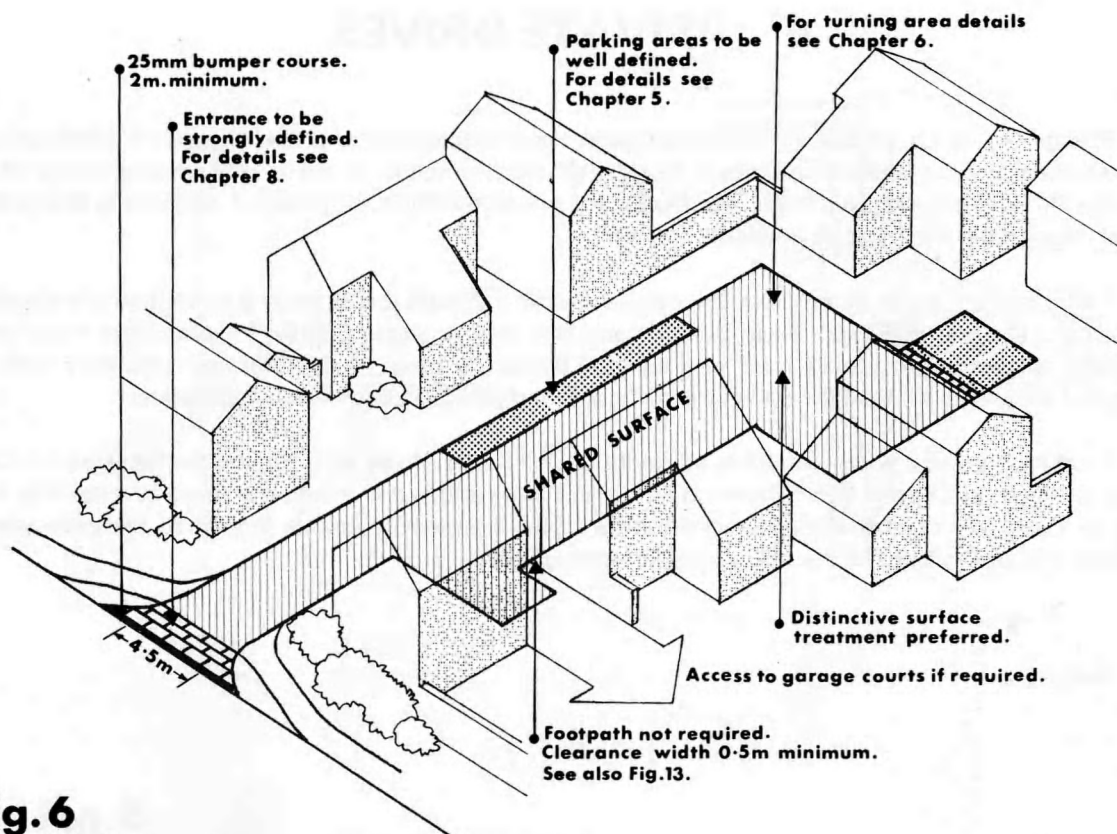


Fig. 6
Shared Surface - Mews Court

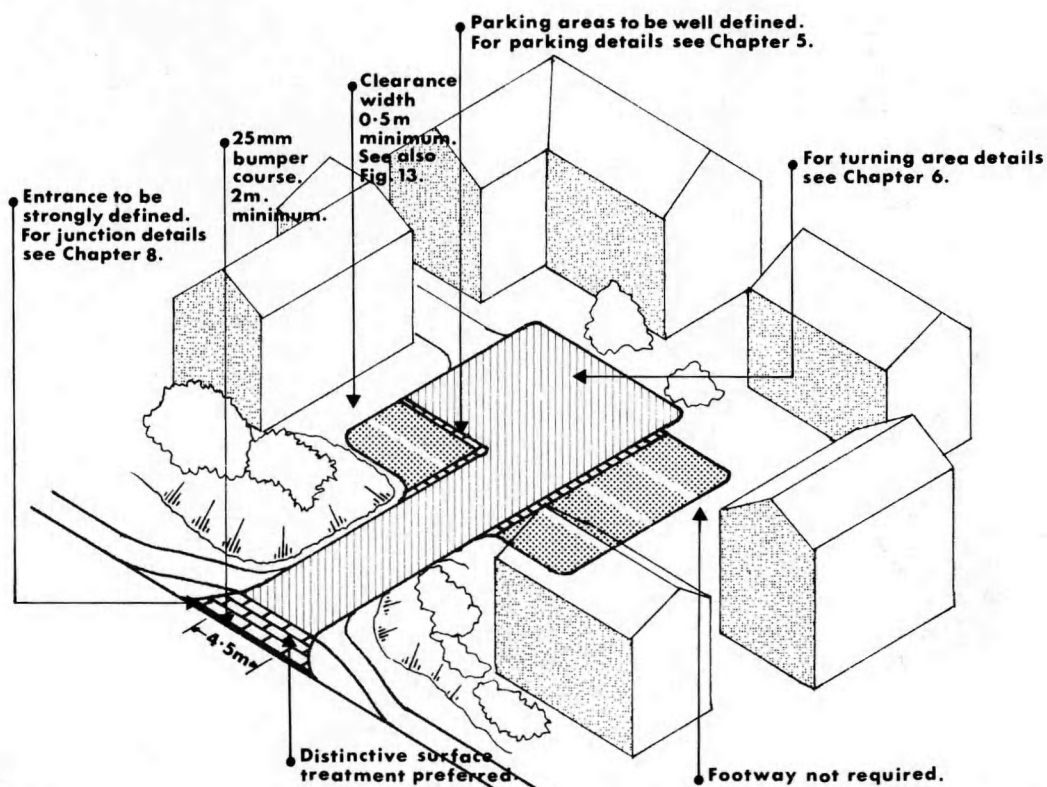


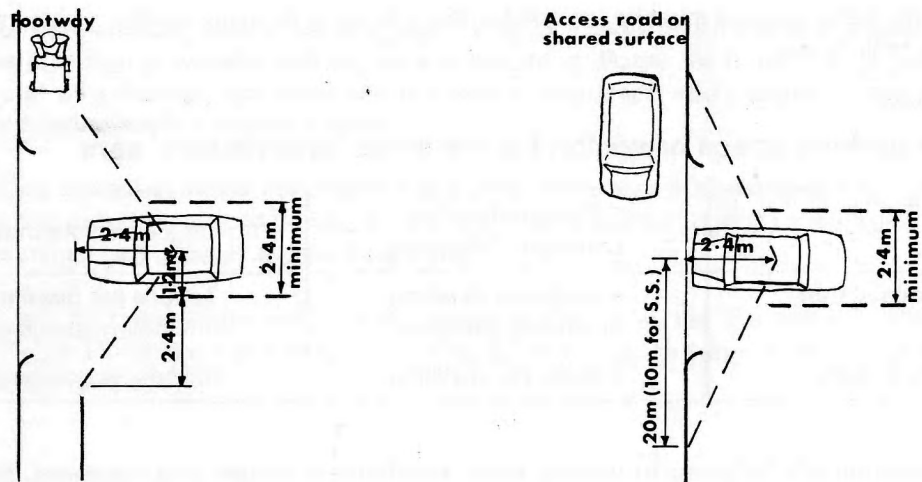
Fig. 7
Shared Surface - Housing Square

4. PRIVATE DRIVES

4.1 Private Drives are pedestrian and vehicular ways giving access to a maximum of 4 dwellings and normally emerge onto Shared Surfaces or Residential Access Roads. In the special circumstances where a Private Drive emerges onto a Local Distributor, for example infill development, a car turning area within the curtilage of the site must be provided.

4.2 The minimum width of a Private Drive is 2.4 metres although drives serving more than one dwelling should be 3 metres wide with a turning area and may require passing bays. Private drives must be of sufficient length to provide at least one car parking space clear of the highway boundary with an additional area to be allowed for the opening of gates and garage doors where appropriate.

4.3 Layout and visibility requirements at junctions of Private Drives with Shared Surfaces and Access Roads are given in Chapter 8 and shown in Figure 8. Where a footway crossing is required a visibility area must be kept clear of obstructions above a height of 0.6 metres to enable drivers to see pedestrians, although this area will not be adopted as part of the highway.



Scale 1/200

Fig. 8
Visibility from Private Drives

5. CAR PARKING

5.1 Adequate parking space must be provided within a housing development for residents' and visitors' cars, see the table below.

Minimum parking space provision for residents' and visitors' cars

	If located within curtilage of dwelling	If located communally
Residents' Cars	1 space per dwelling (including garages)	1 space per dwelling (including garage courts)
Visitors' Cars	1 space per dwelling	0.5 spaces per dwelling

5.2 Consideration will be given to varying these standards in certain circumstances, for example in situations where low car ownership levels are anticipated or where the imposition of the standard would have a serious detrimental effect on the appearance of the layout.

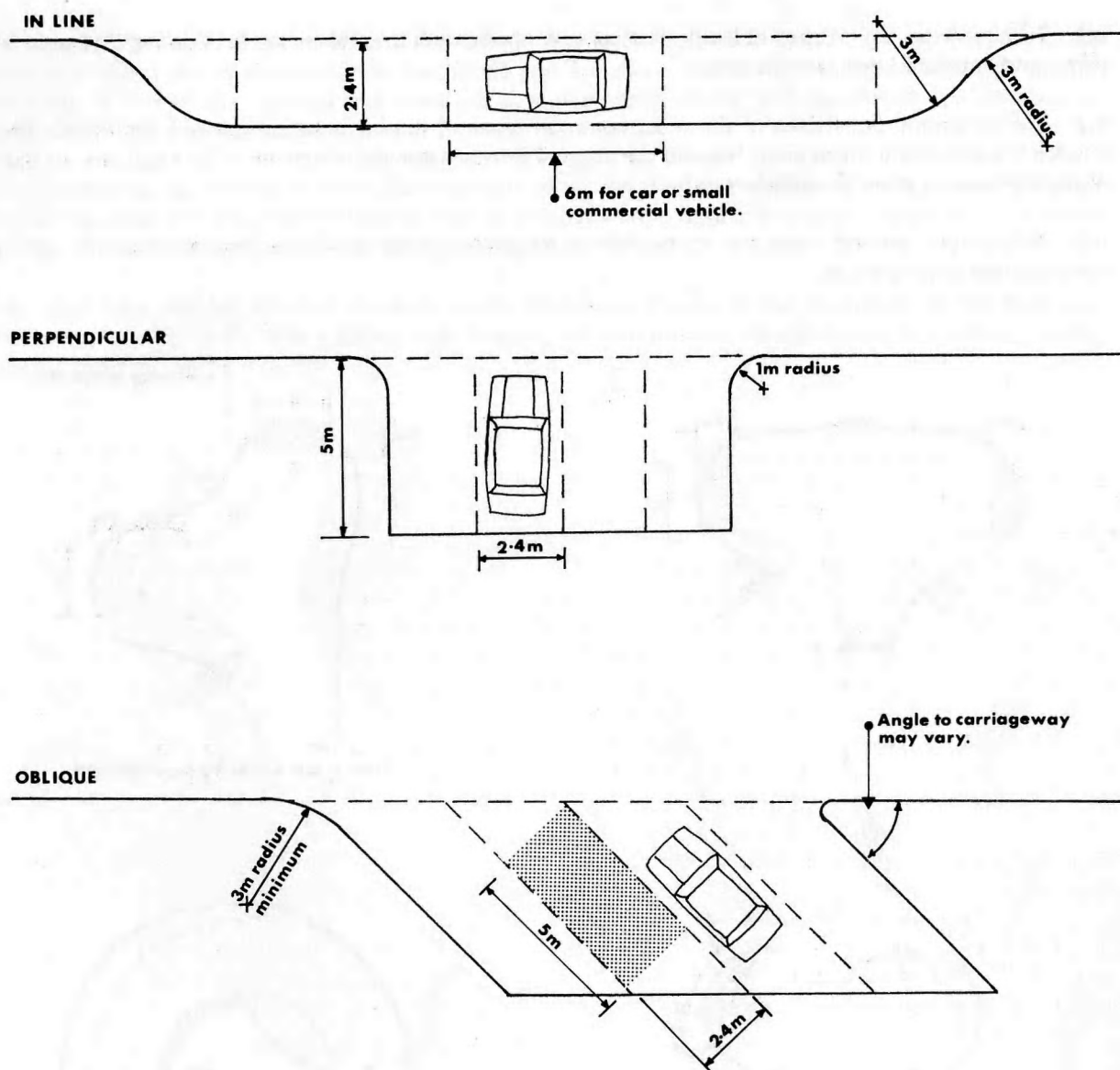
5.3 The size of each car parking space shall be at least 5 metres by 2.4 metres, with an additional area to be allowed for the opening of gates and garage doors where appropriate. Three types of parking bay are shown in Figure 9. With parking bays at an angle to the kerb adequate manoeuvring space is required between the parking bay and the kerb opposite to allow cars to enter or exit with only one reversing manoeuvre.

5.4 Areas of communal car parking should be convenient and for appearance reasons be restricted in size to a maximum of 10 spaces. Where possible communal car parks should be visible from the houses they serve to reduce the risk of vandalism.

5.5 On Access Roads parking of service and emergency vehicles will normally occur on the carriageway.

5.6 Where residents' and visitors' car parking spaces are located within the curtilage of households served by Shared Surfaces additional communal parking spaces outside the 4.5 metre wide 'movement area' will be required for small commercial vehicles and occasions when several visitors call at one address as follows: —

Up to 6 dwellings	1 communal space
7 to 13 dwellings	2 communal spaces
14 or more dwellings	3 communal spaces



Scale 1/200

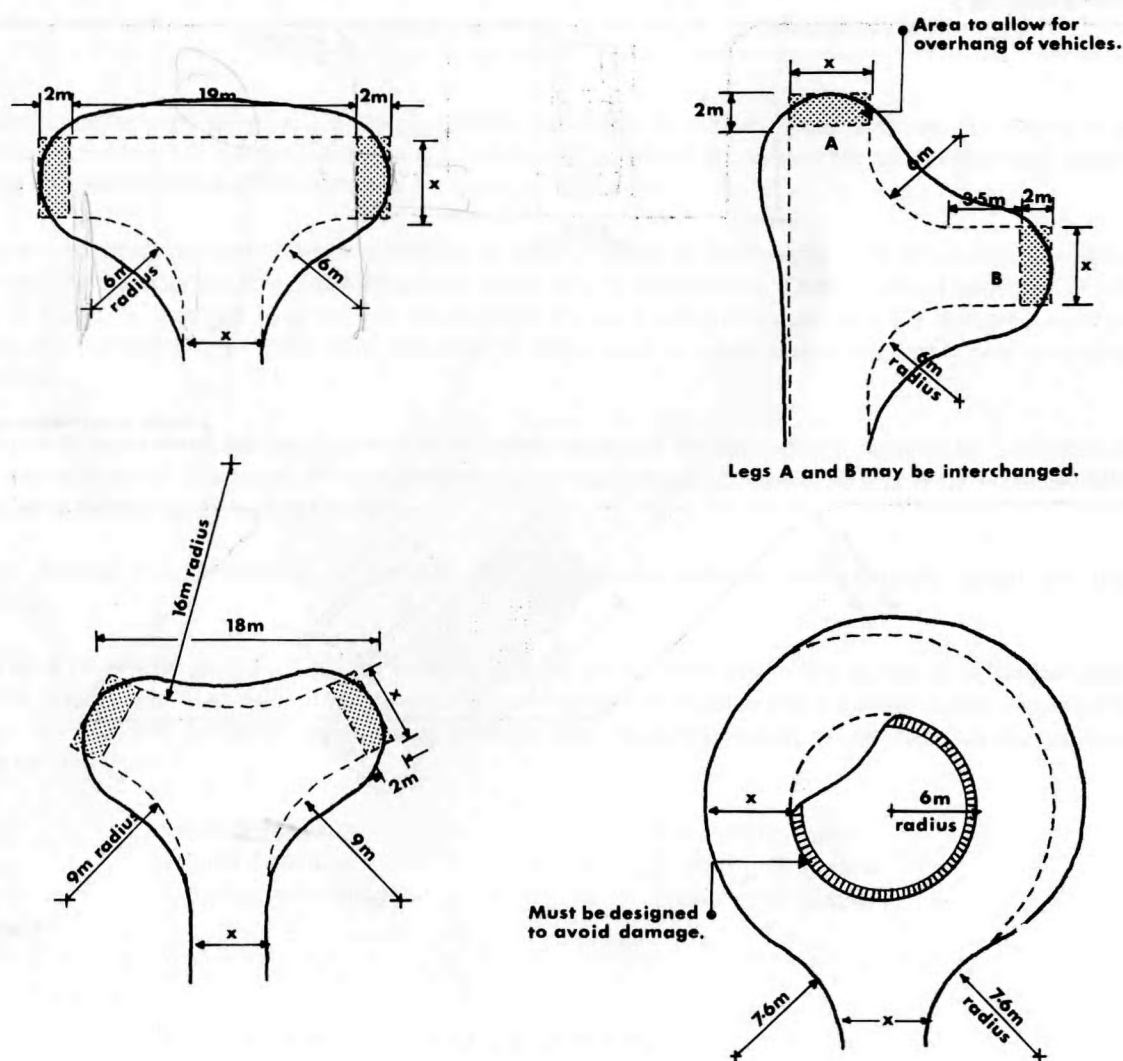
Fig. 9
Parking Bay Dimensions

6. TURNING AREAS

6.1 Turning areas are required at the ends of all culs-de-sac with lengths in excess of about 25 metres or with junctions onto Local Distributors.

6.2 The minimum dimensions of the most common types of turning area are given in Figure 10. The shaded areas indicate those areas beyond the edge of the carriageway which are to be kept clear as part of the highway to allow for vehicle overhang.

6.3 Amorphous turning areas are acceptable in residential areas providing they enclose one of the dimensioned turning areas.



Scale 1/500

Fig.10
Turning Areas-Residential Estates

7. PUBLIC TRANSPORT

7.1 Residential development should be designed to allow residents satisfactory access to public transport by the provision of suitable bus routes and bus stops. Roads for future use by buses should normally form part of a through bus route which is reasonably direct, and capable of operation as an extension of the existing public transport system.

7.2 In general, no houses in a new development should be more than 400 metres actual walk distance from a bus stop and bus stops should be kept at least 350 metres apart; bus stops should also be located to allow those waiting a clear view of approaching buses.

7.3 Bus bays will be required on busy Local Distributor Roads at the discretion of the Highway Authority, see Figure 11. Where a bus route is expected to terminate, an appropriate bus turning facility and layover area will be required.

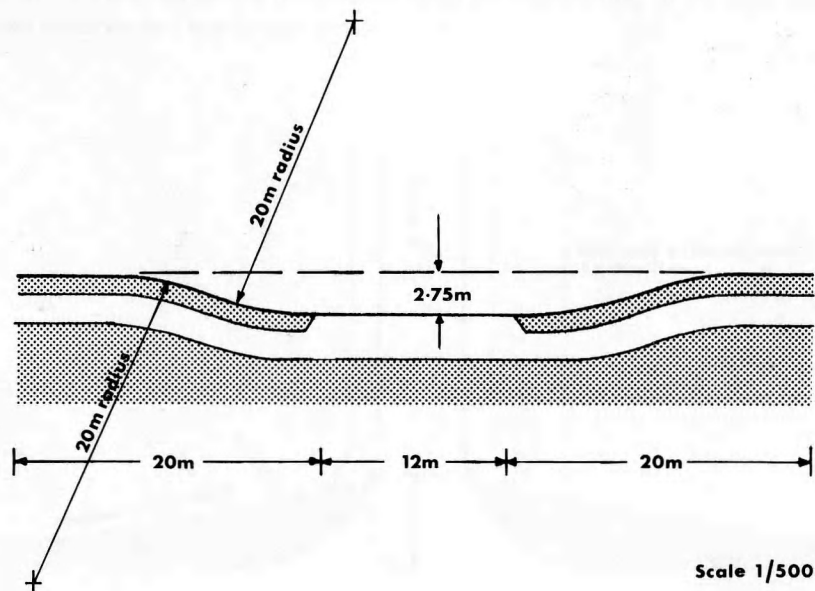


Fig. 11
Bus Bay Dimensions

8. JUNCTIONS

8.1 Table 8.1 gives minimum standards for the junctions of various road types. The main considerations are: —

- Radius
- Visibility

The triangular areas shown shaded in Figure 12 must be kept clear of obstructions above a height of 0.6 metres and must be part of the highway.

- Minimum junction spacing

Standards are given for when the connecting roads are either adjacent or opposing. Crossroads are not acceptable on Local Distributor or Access Roads.

8.2 On difficult sites where the junction spacing given in the table opposite would prohibit development a reduction in this standard may be acceptable, subject to the approval of the Highway Authority.

8.3 In rural areas the layout requirements of new junctions onto existing roads should be discussed with the Highway Authority. The visibility "Y" distance along existing rural roads will be related to the prevailing speed of traffic in accordance with the following: —

85th Percentile Speed

50 kph (31 mph)
60 kph (38 mph)
80 kph (50 mph)
100 kph (63 mph)
120 kph (75 mph)

Visibility "Y"

90 metres
140 metres
180 metres
210 metres
230 metres

Junction Requirements

Connecting Roads		Radius (metres)	Visibility (metres)		Junction Spacing (metres)	
Road A	Road B	R	X	Y	Connecting roads adjacent	Connecting roads opposing
Local Distributor	Local Distributor	10.5	9.0	90 in 30 mph zone. 120 in 40 mph zone 150 in 50 mph zone	80	40
	Access Road or Shared Surface ¹	10.5	4.5			
Access Road	Access Road	6.0 ²	4.5	40	25	8
	Access Road serving up to 20 dwellings or Shared Surface	6.0	2.4	40		
	Private Drives	3.0	2.4	20	-	-
Shared Surface	Shared Surface	4.5	2.4	10	-	-
	Private Drives	2.0				

¹ Junction between Local Distributors and Shared Surfaces will normally be discouraged.

² To be increased to 10.5 metres where likely to be used as a bus route, or by large commercial vehicles serving other than the adjacent residential area.

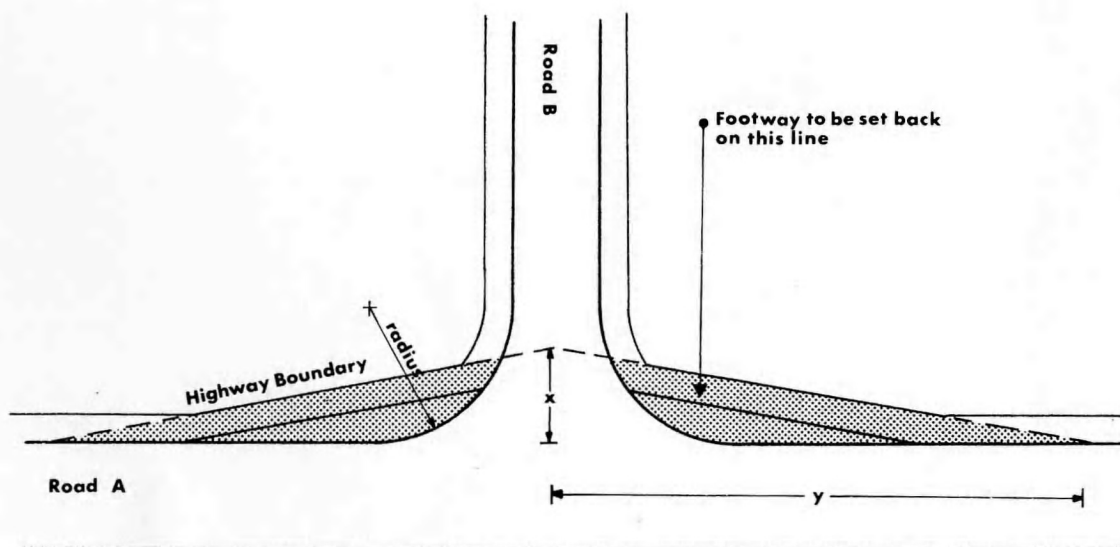


Fig. 12
Junction Dimensions

9. FOOTPATHS AND CYCLEWAYS

9.1 Footpaths are independent pedestrian routes segregated from vehicular traffic and will normally be required on large residential developments. Their routes must be carefully planned in relation to homes, bus stops, community facilities and play and open spaces and their layout should be safe and convenient.

9.2 In small developments short lengths of footpath may be used to provide for local pedestrian movement. e.g. links between culs-de-sac.

9.3 Informal alignments of footpaths are preferred but small isolated areas of grass should be avoided to simplify maintenance. Footpath widths may vary but should normally be a minimum of 2 metres, widening to 3 metres on busy sections. **Detailed design of footpaths should take account of the problems of people with prams and the handicapped.**

9.4 In Cramlington New Town the design of residential areas will be expected to make provision for segregating both cyclists and pedestrians from busy roads. Information on cycleway design criteria may be obtained from the Highway and Planning Authorities.

10. SIGNS AND STREET LIGHTING

10.1 The Developer will be required to submit proposals for signs, carriageway markings and street lighting (See Technical Appendix for further details).

10.2 The standards of street lighting will vary with road type and on Access Roads and Shared Surfaces lighting installations should not dominate the appearance of the area. Consideration should be given to keeping mounting heights below the level of the eaves of nearby houses and, where appropriate, to the use of wall mountings or other means.

11. LANDSCAPING

11.1 Landscaping and its relationship to the remainder of the development are fundamental to the creation of an attractive residential layout and therefore the Planning Authority will normally require a satisfactory detailed landscaping scheme to be submitted with planning applications. Landscaping should be used to create a pleasant visual environment by softening the rigid outlines of roads and buildings.

11.2 Existing healthy trees, hedges and shrubs must be retained wherever possible to give an appearance of maturity to the development site. The layout should be designed around such features and adequate protection will be required during the construction period.

11.3 The location and selection of species for new planting will require careful consideration to ensure healthy plant growth and low maintenance costs both in the long and short term. In areas containing public utilities' services, only grass or ground cover with restricted root growth is acceptable to prevent damage to services and disruption of planting during maintenance.

11.4 Local Distributor Roads tend to be linear in character and their appearance may be improved by variable verge widths and footway alignment and by tree planting. Relatively large areas of land may be needed for visibility on curves and at road junctions and planting of ground cover within these areas up to a height of 0.6 metres is permitted to reduce the dominance of the road and increase visual enclosure. Certain species of trees free from lateral growth below a height of 2 metres may also be acceptable subject to the diameter of the trunk not exceeding 0.3 metres at maturity and approval of the location by the Highway Authority.

11.5 On Access Roads and Informal Shared Surfaces, landscape features such as grassed areas, trees and shrubs should be provided by the developer as an integral part of the design, and these should be located in areas which will be maintained by the local authority. Similar provision should be made in Mews Courts and Housing Squares, where planting boxes etc. should be incorporated in hard surfaced areas.

11.6 All hard landscaping should be drained, designed for low maintenance requirements and be capable of carrying vehicle loading where likely to be over run.

12. CONSERVATION AREAS

12.1 The Highway Authority will consider departures from the standards laid down in this manual for developments either in or adjacent to Conservation Areas or other areas of high environmental character, including the National Park, Areas of Outstanding Natural Beauty and the North Tyneside Green Belt.

12.2 Modifications should be discussed in advance with the Highway and Planning Authorities and must relate to the preservation of the essential visual character of the area. Each area has its own character and identity and therefore proposals will be examined on an individual basis. As a general guide the Highway Authority will be prepared to consider modifications to the following: —

- Road and footpath widths
- Corner and centre line radii
- Visibility areas
- Materials
- Signs and Street Lighting

13. SERVICES

13.1 The layout, installation and ease of future maintenance of public utilities' services are important considerations in development proposals and liaison with Statutory Undertakers is advisable as part of the initial design process.

13.2 It is desirable where possible for services to be laid in highway verges or footpaths to minimise disruption, installation costs and repair costs. Where services are required by the Statutory Undertakers a 2 metre strip adjacent to one or both sides of Shared Surfaces may be included within the highway and where the frontage development is open plan the Highway Authority may enter into licensing agreements for the frontager to carry out maintenance thereon in excess of the maintenance carried out by the Highway Authority. This license would not extinguish the rights of the Statutory Undertakers to gain access to their services. It is particularly important that the highway boundary is defined by markers such as bands of setts or bricks laid in Private Drives, see Figure 13.

13.3 Further details of layout requirements for public utilities' equipment are given in the Technical Appendix.

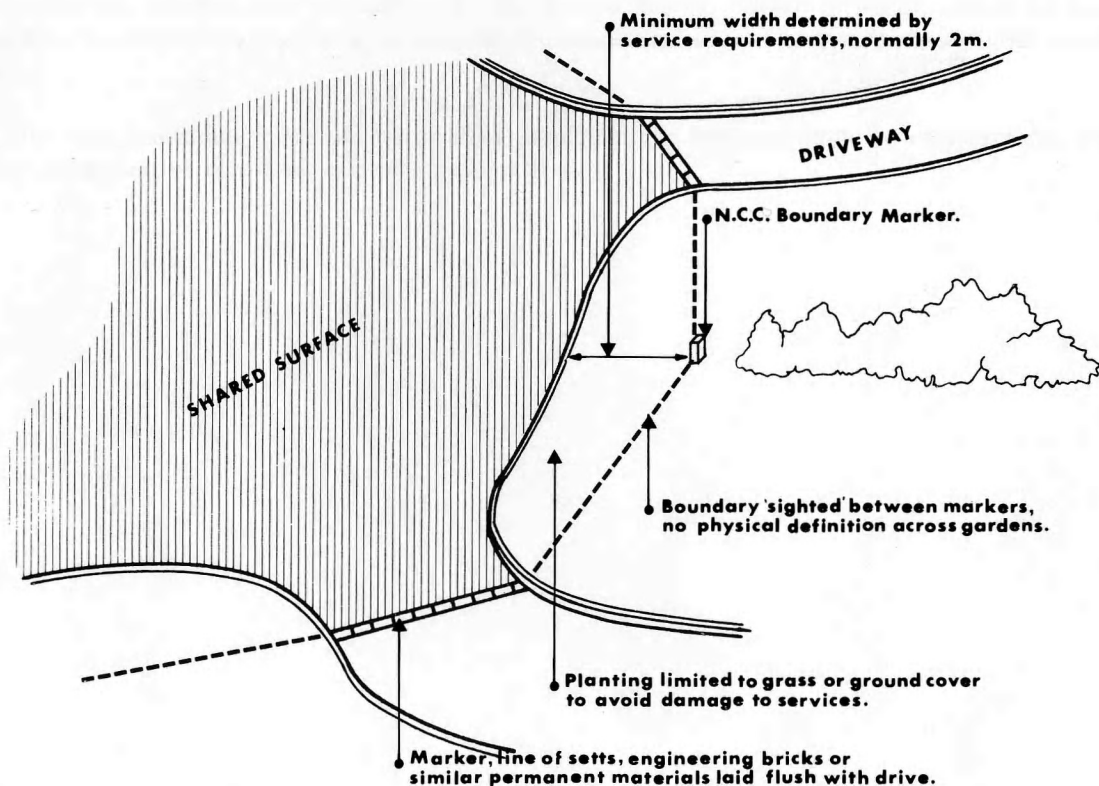


Fig. 13
Services Adjacent to Shared Surface

14. ADOPTION

14.1 It is intended that roads and footpaths forming the primary means of access to housing developments should become publicly maintainable highways upon satisfactory completion of the works.

The Highway Authority will adopt as highways maintainable at public expense those areas which are in accordance with these standards and are necessary for public access or passage including: —

- roads, cycleways, footways and footpaths which are of real use to the general public;
- highway verges between the footway and the carriageway normally up to a maximum of 3 metres or where a footway is absent up to a maximum of 3 metres;
- visibility areas necessary for the safe use of the highway;
- lay-bys and turning areas;
- communal visitors parking spaces parallel and adjacent to the highway which are clearly not for the regular use of any specific dwellings;
- a 2 metre strip beside Shared Surfaces where required for the accommodation of public utilities' services providing conditions regarding notification to occupants and demarcation of the highway boundary have been met.

Additionally, the Highway Authority will adopt the lighting equipment and drainage system required to light and drain those areas listed above.

14.2 Private parking spaces may not be provided on the highway and areas such as garage courts and their approaches provided in lieu of garages or private drives for the regular parking of residents cars will not be adopted by the Highway Authority.

14.3 The Advance Payment Code of the Highways Act 1959 (Section 192) requires a developer to provide financial security to offset the frontager's liability for private street works. This security may be in the form of a cash deposit or a bond.

14.4 It is hoped that developers will make arrangements with the Council under Section 40 of the Highways Act 1959. Further details of standards of highways for adoption are contained in the Technical Appendix.

14.5 A system of foul and surface water drainage satisfying the requirements of the Northumbrian Water Authority will be required for adoption and early consultation with the appropriate District Council is advised.

The District Council will also consider for adoption other areas within a housing development such as play spaces or amenity planting.