Cul-de-Sac Turning Heads

3.15.4 A cul-de-sac will normally require a turning head of sufficient dimensions to enable service vehicles to enter and leave the cul-de-sac in forward gear. The layouts illustrated in this guide are interchangeable and can be varied to suit differing circumstances. The highway authority may consider a relaxation of the requirement for a turning head on an individual basis where:-

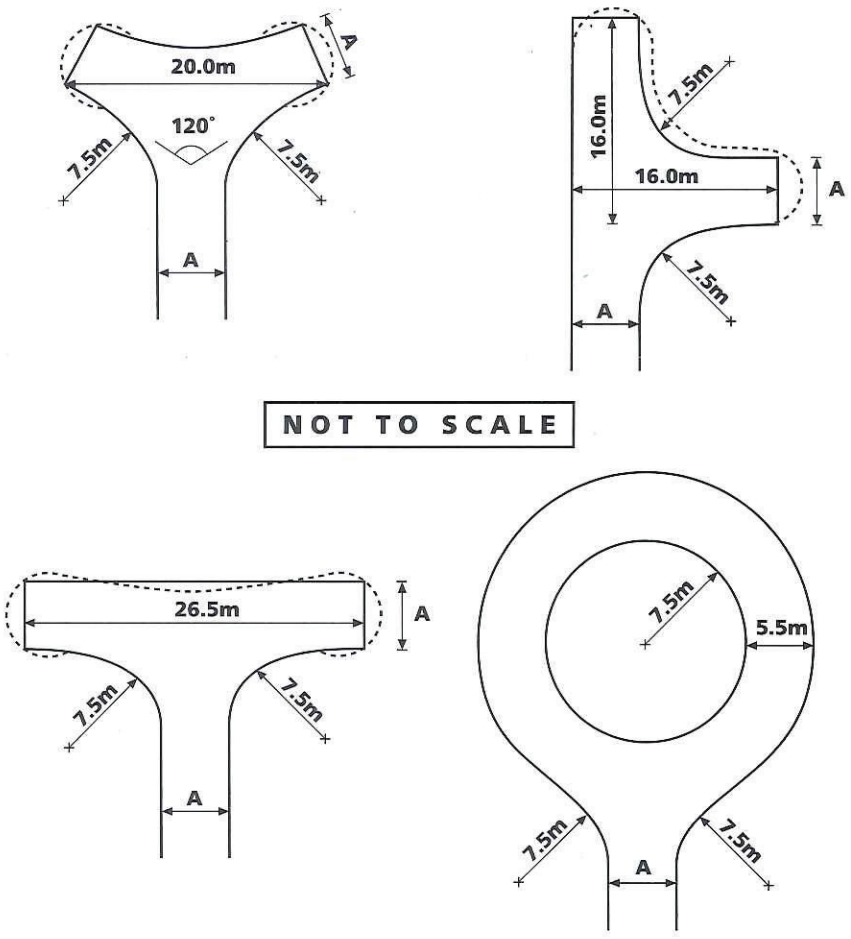
(i) the length of the cul-de-sac does not exceed 40 metres, and

(ii) the status of the road from which the cul-de-sac is accessed is no greater than that of a Major Access Road.

3.15.5 The overall layout of turning heads must provide at least the minimum space to accommodate the lengths, widths and radii illustrated above. Whilst for some shorter development roads these minimum dimensions may seem large, standard refuse/ delivery/service vehicles will still need to turn in order to minimise reversing manoeuvres - which are undesirable in terms of highway safety and convenience.

Junctions

3.15.6 **The highway authority will discourage the creation of new junctions and accesses onto Primary and District Distributor roads.** The slowing, waiting, turning and manoeuvring of vehicles at new junctions and accesses onto these higher category roads would be likely to affect the safety and freedom of flow of other traffic using such roads, particularly as they generally carry heavier flows of traffic than lower category roads. However, where the creation of a new junction or access to Primary and District Distributor roads is essential, the junction design shall accord with the requirements and guidelines contained in the Department of Transport's Advice Note TD 42/95, 'The Layout of Major/Minor



A = Width of carriageway
Minimum form of amorphous alternative shown dotted

TURNING FEATURES FOR RESIDENTIAL DEVELOPMENT

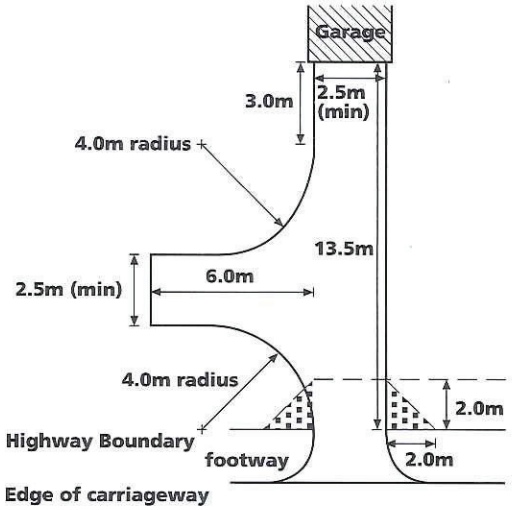
Priority Junctions' or Standard TD 16/93, 'The Geometric Design of Roundabouts'.

3.15.7 The design of new junction layouts onto roads of lower status in the road hierarchy will normally be in accordance with the requirements in the above paragraph. However, the highway authority may consider relaxation of these requirements in the light of particular local circumstances. Where relaxation is permitted it will be necessary to consider the function and status of the existing road in determining the general layout of the new junction.

3.15.8 Where the creation of a new junction or access necessitates the improvement or modification of the layout of an existing county road (for example, by the provision of a ghost island right turning lane, roundabout, traffic signals, speed reduction measures, etc) the cost of the design and construction of the improvement or modification will be the responsibility of the developer. Advice should be sought from the highway authority in respect of the established legal process for achieving execution of the necessary works. In this respect it will normally be necessary for the developer to enter into an Agreement with the County Council under Section 278 of the Highways Act 1980. It is expected that such Agreements will be in place prior to development commencing.

Visibility at Junctions

3.15.9 **All land within specified visibility splays at junctions will need to be dedicated to the publicly maintainable highway.** The 'X' and 'Y' distances quoted within the hierarchy descriptions (see Chapter 6) relate to roads subject to the appropriate target design speed. Advice should be sought from the Highway Authority in respect of visibility splay requirements for an estate road junction onto a road which may be outside the estate road hierarchy.



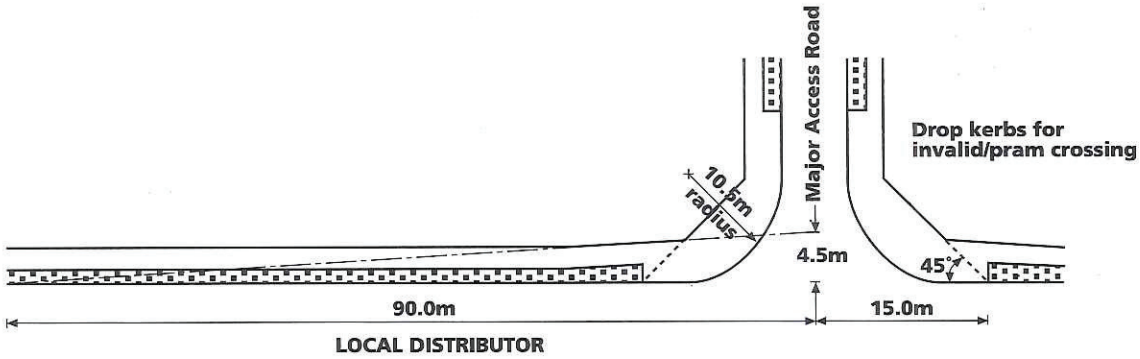
Notes:

1. The shaded area indicates pedestrian visibility splay requirements. This area shall be kept free of obstructions exceeding 0.6 metres in height above footway /verge/carriageway level as appropriate.
2. Where the footpath is replaced by service margin or a verge is provided, the vehicle crossover shall incorporate radiused edging kerbs.

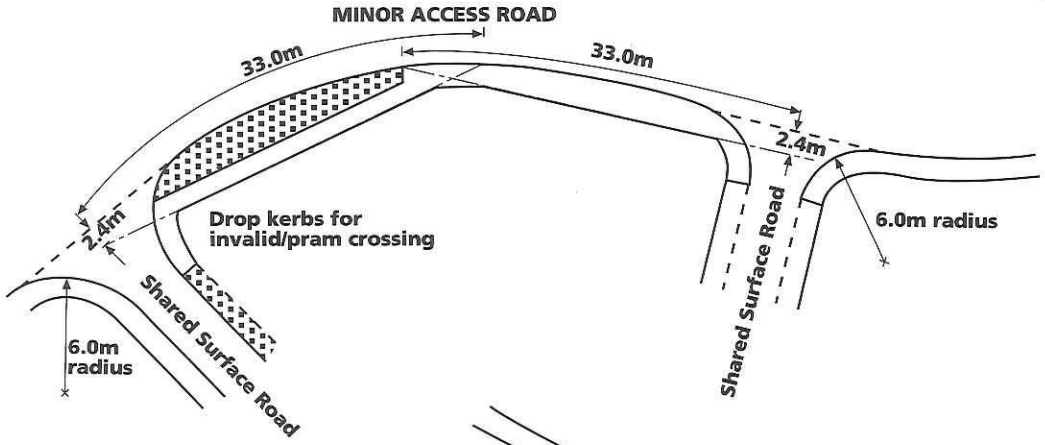
NOT TO SCALE

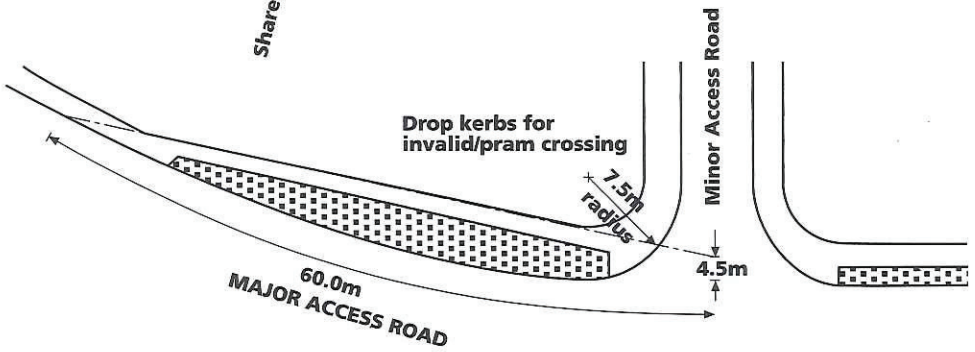
DOMESTIC TURNING SPACE

TYPICAL JUNCTION LAYOUT DETAILS SHOWING VISIBILITY



Note: These are examples of junction layouts - all permutations are not illustrated

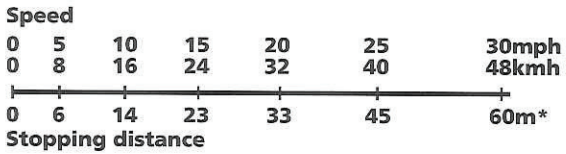




NOT TO SCALE

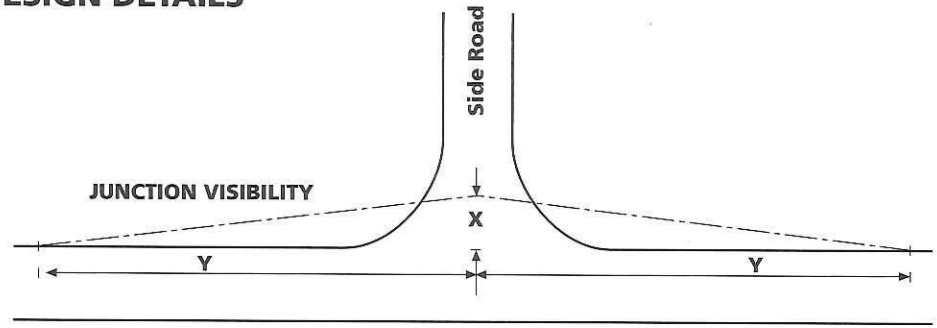
VISIBILITY DESIGN DETAILS

DETERMINATION OF STOPPING DISTANCE

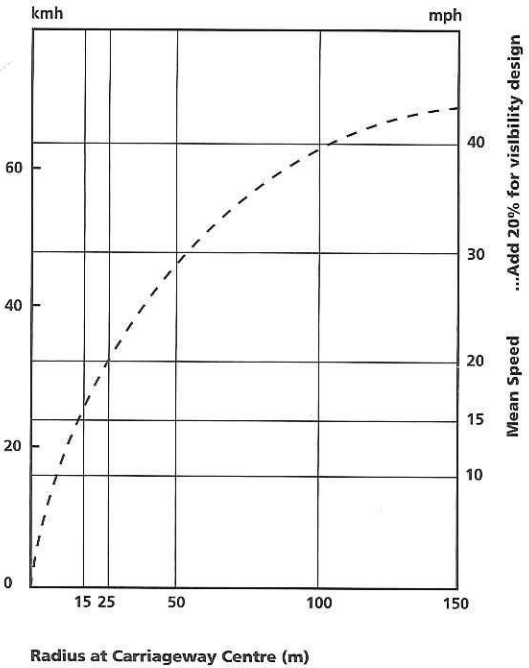


* Increased to 90.0m for Local Distributor Roads

JUNCTION VISIBILITY

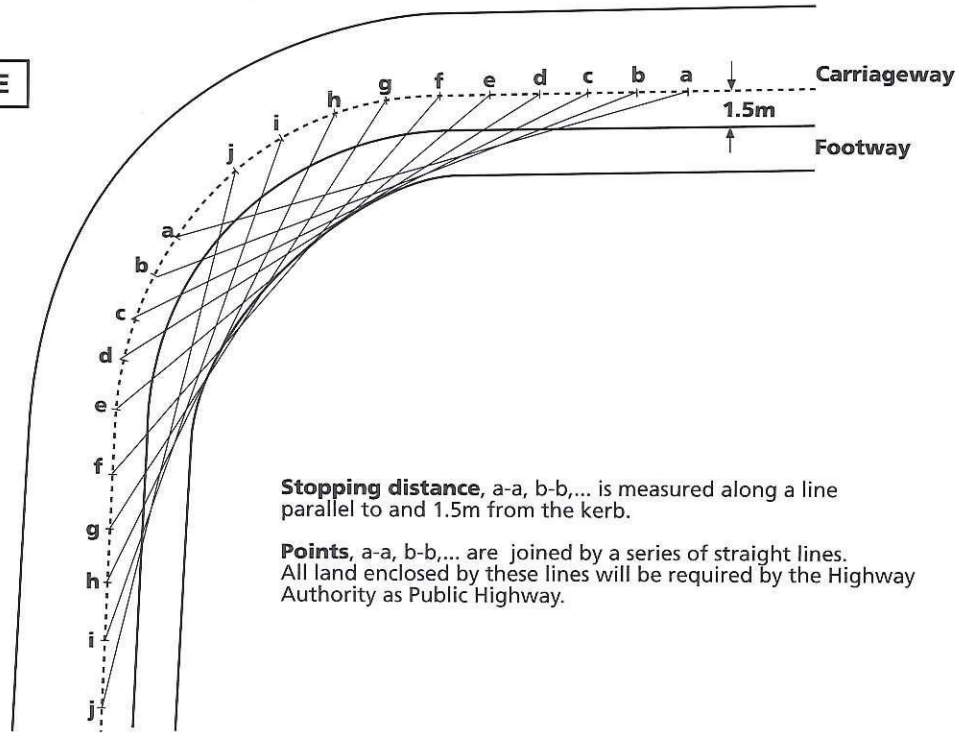


DETERMINATION OF SPEED VALUE AT BEND



NOT TO SCALE

CONSTRUCTION OF FORWARD VISIBILITY CURVE AROUND BEND



Stopping distance, a-a, b-b,... is measured along a line parallel to and 1.5m from the kerb.

Points, a-a, b-b,... are joined by a series of straight lines. All land enclosed by these lines will be required by the Highway Authority as Public Highway.

FOOTPATHS, CYCLEWAYS AND EMERGENCY LINKS

3.15.10 Existing public rights of way, and other public paths, are an important part of our heritage. They provide convenient and often attractive routes within and between residential areas and the countryside and are protected by legislation.

3.15.11 It is important that public paths and other public rights of way are taken into consideration at an early stage in the design process. They can be used positively as attractive features if designed into the new development at the outset, on their original routes as far as possible. Houses adjacent to public rights of way need to be carefully sited and orientated to maximise surveillance from main windows. The security of dwellings and surveillance of public paths is generally greater where the front or sides of property face towards the footpath.

3.15.12 Where required, cyclists should be segregated from vehicular traffic, and provision for cyclists should be made during the design stage of new development, particularly in respect of joint use footpaths/ cycleways which can provide alternative traffic free routes. These facilities can be especially useful where they lead to schools, shops, etc or where they form 'emergency links' between culs-de-sac. Combined footpaths/cycleways will be preferred unless developers can demonstrate that joint use would be inappropriate. Where relatively high traffic flows are anticipated these may be segregated.

3.15.13 Where a footpath only is proposed, developers will be required to show the reasons for departure from the preferred standard quoted in the next paragraph. A footpath will normally have a constructed width of 1.8 metres with 2 metres overall between fence lines. Positive drainage may be required.

3.15.14 A footpath and cycleway forming a link as a pedestrian route will normally be acceptable for adoption. It will have a constructed width of 3 metres with 3.5 metres overall between fence lines. The footpath and cycleway will be divided by a continuous 150mm wide white line, allowing 1.8 metres for cycles and 1.2 metres for pedestrians. The cycle lane will normally be surfaced with a red slurry seal. Positive drainage may be required. A footpath and cycleway conforming to this standard will also be suitable as an 'emergency link' for use by emergency service vehicles when other routes are blocked.

3.15.15 Footpaths/cycleways should be designed to follow the shortest and safest practicable route. The ends of the links should be intervisible and the links as a whole should be overlooked by adjacent dwellings. Adequate lighting will be required which, coupled with the absence of hiding places along the links, will help to deter criminal activity. The principle of combined facilities for pedestrians/cyclists may also be extended to footways alongside larger development roads.

3.15.16 The installation of appropriate fencing/barriers will normally be required where footpaths/cycleways meet the road network. Given the impact that such features may have on the development, their type and design will be approved on an individual basis, provided that they do not restrict or impair visibility for drivers or pedestrians. Fencing/barriers will not, of course, be appropriate at the ends of emergency links. However, bollards of an approved type and design, or other acceptable measures, may be required in order to deter unauthorised vehicular use of emergency links.

3.15.17 Dropped kerbs should be provided adjacent to the ends of fences/barriers where footpaths/cycleways meet carriageways, in order to prevent cyclists and pedestrians from emerging directly onto the carriageway. In the case of emergency links where fences/barriers are not present


3.15.14

dropped kerbs should also be offset from the ends of the links to deter unauthorised vehicular use.

3.15.18 Appropriate signs and markings, installed at approved locations, will be required to indicate the presence and function of the footpath/ cycleway.

SPEED RESTRAINTS

3.15.19 Design Bulletin 32, 2nd Edition, gives guidance on measures suitable for the restraint of vehicle speeds on residential roads. The object is to limit vehicle speeds to the target design speeds within the road hierarchy. This guide incorporates detailed guidance on speed restraint measures which reflects, amongst other things, the guidance contained in DB32.

3.15.20 For straight lengths of road of 60 metres and 100 metres between junctions or bends, traffic speeds may be expected to be around 32 kph (20 mph) and 40 kph (25 mph). Similarly, short lengths of culs-de-sac will prevent the build-up of vehicle speeds. Conversely, lengthy straight or sweeping curved alignments can permit the build-up of vehicle speeds to levels incompatible with the residential environment. **Thus the careful design of the horizontal alignment of the road between bends and junctions will help to restrict the speed of vehicles.**

3.15.21 However, in larger developments such designs may result in maze-like configurations restricting the overall design concept for the development. On other sites there may be particular constraints (eg narrow sites, extensions to culs-de-sac, etc) precluding optimum design of the road layout for speed restraint. In such circumstances it is likely to be necessary to introduce traffic calming measures in order to further moderate the speed of traffic. The scope and scale of such traffic calming measures will need to be considered according to the layout of the development site. A variety of traffic calming measures may be incorporated in the development road network in order to moderate traffic speeds.

3.15.22 The overall aim must be to provide a scheme which moderates vehicle speeds to the design speed of each development road, to improve highway safety for all road users, whether pedestrians, cyclists or drivers, whilst harmonising with the local environment. It is particularly important therefore, that speed restraint measures are considered early in the design process. With new development, the grouping and alignment of dwellings, and boundary treatment, should emphasise and complement speed restraint measures. In historic areas, extra care must be taken, as speed tables and humps can look out of place.

3.15.23 **Further guidance and information on speed restraint measures is contained in Appendix F.**

BUSES

3.15.24 When planning new residential areas consideration should be given to the possibility of accommodating bus services to meet the needs of potential users whilst maintaining a satisfactory residential environment. It will be the developer's responsibility to seek the views of local public transport operators and, where appropriate, ensure that the road layout can accommodate buses as safely and conveniently as possible. The recent move towards the user of smaller buses in some areas can allow for greater flexibility in the choice of routes, particularly in residential areas.

3.15.25 When new estates are reasonably close to a main bus route, the estate road design should permit a circulatory route with a safe entry and exit. Bus stops may be provided along both Local Distributor and Major Access roads, and should be located within convenient walking distance of all dwellings wherever possible.

3.15.19 SPEED RESTRAINTS

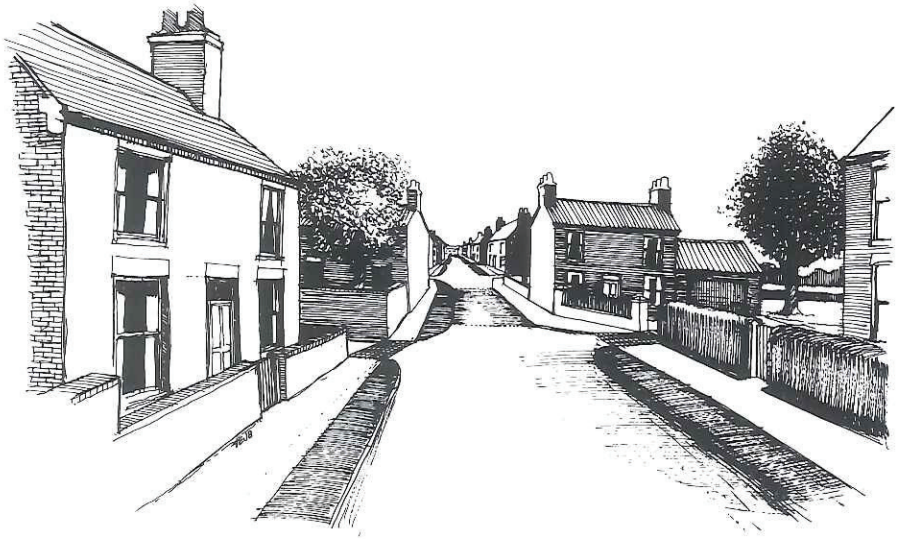
"Gateway"

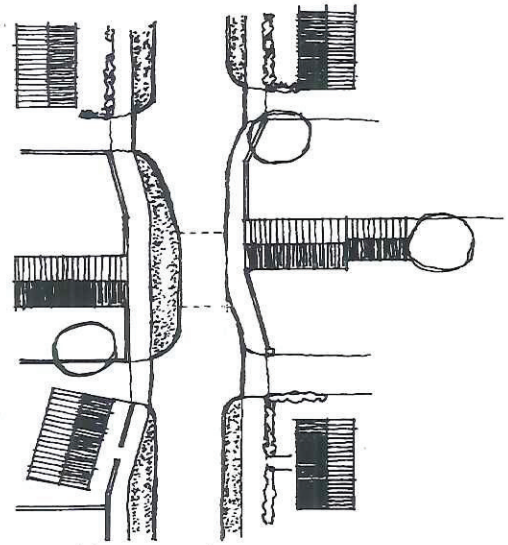
"Horizontal alignment"

"Entry" detail

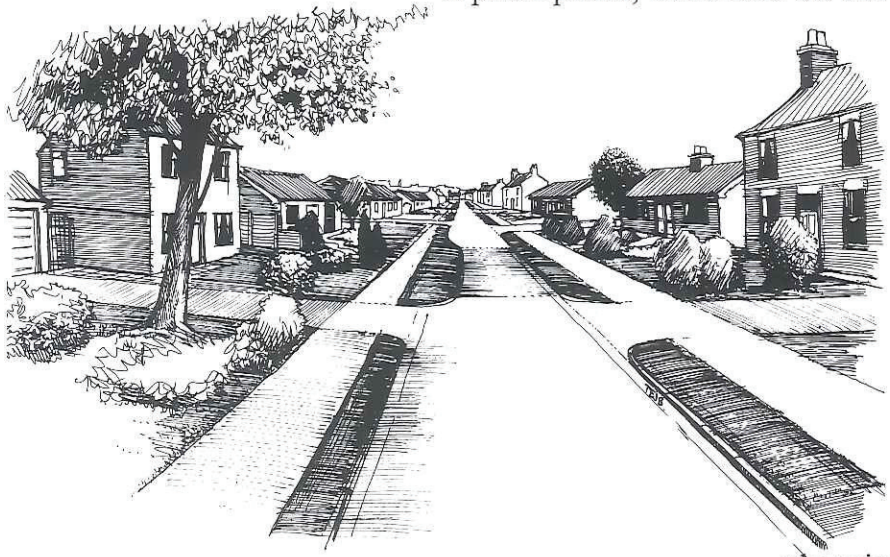
"Speed table"

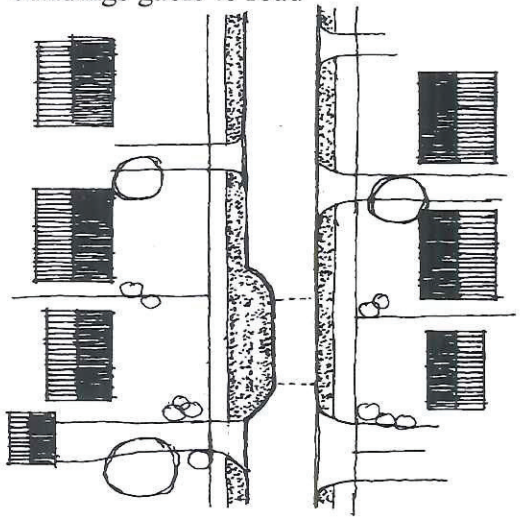
3.15.22: SPEED RESTRAINT MEASURES SHOULD BE AN INTEGRAL PART OF THE DESIGN





... pinch-points, 'build-outs' etc can be emphasised by buildings gable to road





... otherwise the effect is lost!

PROVIDING FOR PEOPLE WITH DISABILITIES AND SPECIAL NEEDS

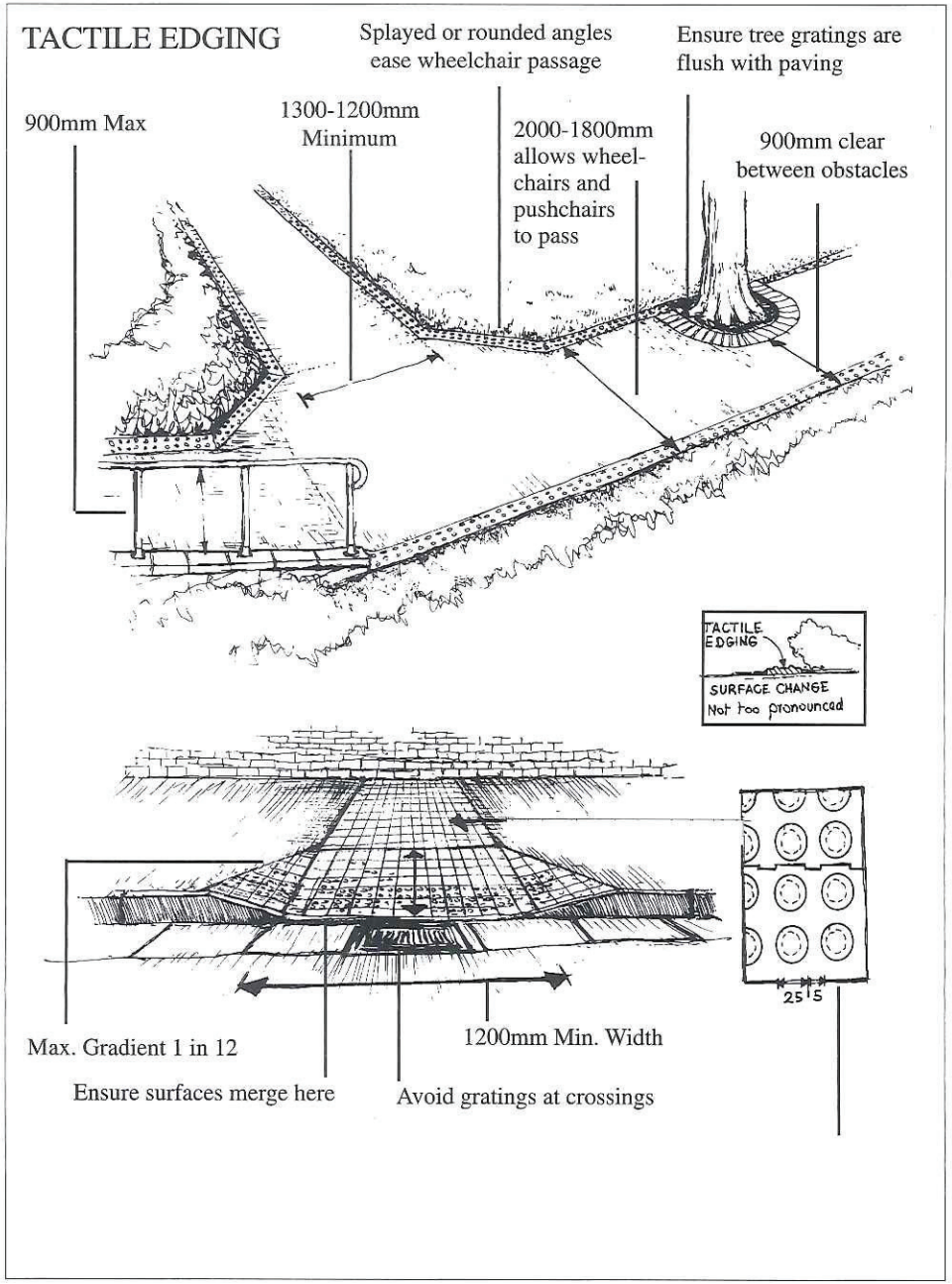
3.16.1 Access to any development should be available to all sections of the community. Provision for motor vehicles should not, therefore, be to the detriment of the access requirements of pedestrians, including those with disabilities.

3.16.2 It is a statutory requirement to have regard to the needs of people with disabilities in designing any building to which the public have access. This will include the provision of a suitable access for wheelchair users and the marking out of parking spaces close to pedestrian entrances.

3.16.3 Provision should be made at all road junctions for pedestrians to cross the minor road with a minimum of inconvenience. Kerbs should, therefore, be dropped almost flush with the carriageway and tactile paving provided at all junctions. This does not apply where pedestrians are directed to a footbridge or underpass provided that it is suitable for persons with disabilities.

3.16.4 Suitable routes should be provided for pedestrians with prams or wheelchairs, between residential areas and shops, schools, clinics and community services. These routes should have a firm, non-slip surface and avoid steps even if this means slightly longer ramped routes. Steep crossfalls, gratings likely to trap wheels, and obstructions such as lighting columns and sign posts should also be avoided. Long ramps should include rest platforms and there should also be level areas at the top, bottom and at every turn.

3.16.5 Particular attention should be paid to the locations at which pedestrian routes cross the carriageway (eg at road junctions) so that footway and footpath users are not exposed to unexpected dangers. Judicious use of hard and soft landscaping can guide pedestrians to suitable crossing



points and help prevent children running directly out onto the road. Special consideration should be given to the need for crossing facilities adjacent to shops, clinics, community facilities, old people's homes and other generators of pedestrian traffic.

3.16.6 Steps pose particular problems for prams and wheelchairs, and also for mechanised maintenance. However, since some people find walking on steeply sloping surfaces difficult or impossible, steps should be provided, where appropriate, in addition to ramps. Flights should comprise between three and twelve steps and longer flights should be split into sections by landings. Steps should be provided with handrails, have permanently non-slip treads, and a minimum width of 1200mm clear between handrails.

3.16.7 Handrails should be easily gripped, and must be securely fixed. They should be provided at both sides of the steps (or centrally on steps a minimum of 3 metres wide) so they can be used by either hand, and should extend well beyond the top and bottom nosings.

3.16.8 Stepped ramps are unmanageable for wheelchair users and can cause acute difficulties for people with disabilities. They should never provide the sole means of pedestrian access unless no alternative exists, and hence will not normally be eligible for adoption.

3.16.9 Shared Surface Roads will not be permissible for access to sheltered accommodation where the elderly, blind or infirm would be regular users. Provision should continue to be made for prams and wheelchairs.

3.16.10 The location of car parking areas in a development should be considered at an early stage in the design process to achieve a balanced distribution of spaces throughout the site, conveniently related to user destinations. Pedestrian access to premises should be so arranged that it is easier and more convenient to use the designated parking areas than to park casually on the road.

3.16.11 All car parking bays for people with disabilities shall be of sufficient size, shape and disposition to provide room for the safe and convenient unloading of wheelchairs. The minimum size for such bays shall be 4800 x 3300mm. Longer bays may be required in certain situations.