

**TORFAEN COUNTY BOROUGH  
COUNCIL**

**RESIDENTIAL  
AND  
INDUSTRIAL DESIGN  
GUIDE**

**DEPARTMENT FOR THE ENVIRONMENT**

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**TORFAEN COUNTY BOROUGH**  
**COUNCIL**

**RESIDENTIAL AND INDUSTRIAL**  
**DESIGN GUIDE**

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# *Foreword*

The purpose of this document is the attainment of consistent standards of highway construction by developers that comply with current design and specification criteria.

A companion guidebook containing standard construction details and amendments to the Specification for Highway Works (HMSO, 1991) is also available

In house design services are offered to developers, either comprehensively to cover all civil engineering aspects of a proposed development, or individually for highways, sewers and/or street lighting design.

Contact with the authority should be made as follows: -

**For design approval, site work approval, Section 38 Agreements, highway and/or sewer design services and all technical queries;**

Traffic and Development  
Environmental Management  
Torfaen County Borough Council  
County Hall, Cwmbran. NP44 2WN

**For street lighting design services;**

Highways Maintenance  
Environmental Management  
Torfaen County Borough Council  
County Hall, Cwmbran. NP44 2WN

# Introduction

## Torfaen County Borough Council Development Highway Design Guide

This design guide has been produced to provide information and design criteria for prospective developers about the design of new roads that are intended for adoption by the Highway Authority, or one of its Agents.

The design guide is split into 3 main parts dealing with: -

- (A) General matters applicable to all new road development  
(Green Section)
- (B) Residential Roads  
(Blue Section)
- (C) Industrial Estate Roads  
(Yellow Section)

This guide is based in the main on Department of the Environment and Transport documents such as Design Bulletin 32 (2nd Edition) (DB32), together with the companion guide "Places Streets and Movements", and Transport in the Urban Environment, as well as technical directives and advice notes including TD 9/93 "Highway Link Design" and TD 42/95 "Junctions and Accesses: Major Minor Priority Junctions" Guidance with respect to highways is also given in the latest Planning Policy Guidance Notes and specifically Technical Advice Note (Wales)18 which relates to "Highways Considerations in Development Control".

Road layout designs should provide for unimpeded access for disabled people and wherever possible should include specific provisions as outlined in the latest guidelines issued by the Institution of Highways and Transportation (IHT) "Providing for People with a Mobility Handicap".

This guide encourages the Government's emphasis on seeking to reduce traffic growth, which has been reflected through the White Paper "A New Deal for Transport and associated Welsh documents including, "Transporting Wales into the Future" and the National Assembly's strategic plan "Better Wales", together with the Road Traffic Reduction Act and other policy statements.

Recent documents make it clear that the Government is committed to sustainable development and will promote greater use of public transport, walking and cycling, and discourage the use of the car.

It is in the interests of the developer and his agent to ensure that the proposed layouts comply with all requirements of this publication and those referred to in the relevant documents. This will speed up procedures to the benefit of all parties involved.

This design guide is not intended to restrict creativity and individuality in design but provides a basic framework for such layouts in both residential and commercial/industrial layouts.

There will inevitably be local variations in some parameters for design and it is strongly recommended that developers enter consultations with the adopting authority at an early stage in order to determine appropriate geometric criteria for layouts and to ascertain the suitability of the proposed layout.

### **1. Highways for Adoption**

- 1.1 The Council will consider for adoption carriageways and associated parking bays, footways, footpaths, bridges combined footpaths and cycle ways, cycle ways linking to adopted roads, road margins, road verges, visibility splays and visibility zones provided that such items are of sufficient public utility to justify future maintenance at public expense. Usually all adjoining building operations on properties must be complete before adoption can take place, and construction must have been completed in accordance with all relevant standards and specifications.

### **2 Adoption Procedure**

- 2.1 Developers are encouraged to enter into a formal Agreement with the Council under Section 38, Highways Act, 1980. Such an agreement will allow the local Highway Authority (the Council) to adopt a road, which is to be constructed subject to acceptance of technical detail and satisfactory construction.
- 2.2 The Council will alternatively consider applications for adoption under the Section 228, Highways Act 1980, procedure if so requested by a developer.

### **3. Advance Payments Code**

- 3.1 The provisions of the advance payments code, Section 204, Highways Act, 1980, are in operation in the County Borough. Immediately a developer receives building regulation consent by the Council or an Initial Notice is received by the Council from an approved inspector under Section 47, Building Act 1984, for a building which will have a frontage onto an existing or proposed private street in which the Council as the streetworks authority has the power under the private street works code to require works to be executed or to execute works, a notice will be issued to the developer in order to secure the payment of expenses for the execution of the streetworks.

#### **4. Existing Highways**

- 4.1 Alterations to existing highways, necessary to provide new road junctions, can be undertaken by or for the developer if an Agreement under Section 278 of the Highways Act 1980, is entered into by the developer. Dependent upon the classification of the existing highway, the developer may be required to prepare a separate contract for such works and invite tenders for the works on behalf of the Council. In these instances the Council will act as Employer to the contract. Minor alterations may be covered by use of Section 50 of the New Roads and Streetworks Act, 1991.
- 4.2 Both approval and a licence must be obtained from the Highways Maintenance section prior to undertaking any work on or the opening up of any highway or the construction of any temporary access to any site from an existing highway.

#### **5. New Street Orders**

- 5.1 In order to safeguard the widths of narrow rural highways likely to be the subject of development, it is the Council's custom to make New Street Orders under Section 30 of the Public Health Act 1925, and Section 188 of the Highways Act, 1980. Such 'added widths' will not become maintainable at public expense until made up by the developer and formally adopted by the Council.

#### **6. Highway Extinguishment**

- 6.1 Any proposal involving the extinguishment or stopping up of an existing section of highway (being either a road or a public right of way) will need to be the subject of an appropriate order. If the proposals are as a direct consequence of a planning application the order will be made under the provisions contained in Section 247 of the Town and Country Planning Act, 1990. It will be incumbent on the developer to ensure compliance with all statutory procedures prior to any site works commencing which might affect the existing highway network.
- 6.2 In certain instances the Highway Authority will be prepared to consider highway extinguishment procedures subject to Executive Member approval under Sections 116 and 117 of the Highways Act, 1980, subject to all associated costs being borne by the developer.

#### **7. Public Rights Of Way**

- 7.1 Under the National Parks and Access to the Countryside Act, 1949 the status of a particular route on the Definitive Map of Public Rights of Way could be shown as either: -

- Footpath or
- Bridleway or
- Road Used as a Public Path

Throughout the former county of Gwent, Roads used as Public Paths (RUPPs) were shown on the Definitive Map as Cartroad/Footpaths (CRFs) or Cartroad/Bridalways (CRBs).

7.2 Under the provisions of section 54 of the Wildlife and Countryside ACT 1981, surveying authorities are required to review all RUPPs and reclassify them to one of the following:-

- Footpath, or
- Bridleway, or
- Byway Open to All Traffic

The task of reclassification is an onerous one and many authorities, like Torfaen, have not yet embarked on this work. However, the Countryside and Rights of Way Bill, which is proceeding through Parliament, is likely to change the legislation concerning RUPPs.

## **8. Retaining Walls**

8.1 Wherever possible the support for the highway should be by means of embankment, but these will not normally be adopted beyond edge of highway unless required for forward visibility purposes. Only retaining walls, which directly support the highway, will be considered for adoption.

8.2 No retaining wall, whether it supports the highway or is constructed alongside within structural influence distance from the edge of the highway, shall be erected without the structural details receiving the prior approval of the Highway Authority.



**9. Highway Drains**

- 9.1 Surface water from new streets shall not be connected to the Council's highway drainage system or to a watercourse without the explicit consent of the Council. Drains collecting highway water only will be suitable for inclusion in a Section 38 agreement or for adoption under Section 228, provided they discharge into a public watercourse or to a drain to be maintained by the Council.
- 9.2 Those drains collecting yard or roof water, as well as highway water, will be subject to a separate Agreement under Section 104 of the Water Industries Act 1991 with the Council.

**10. Land Drainage**

- 10.1 Existing land drainage facilities, which include both streams and culverted streams, shall not be diverted or stopped up or otherwise altered without the explicit consent of the Council.
- 10.2 New land drainage facilities of any nature shall not be provided without the explicit consent of the Council, and no drainage or sewerage connection shall be made to any existing or new land drainage facility without the explicit consent of the Council.
- 10.3 All new land drainage structures provided by the developer shall be constructed in accordance with current Council specifications.
- 10.4 The Council has general drainage powers conferred on it by the Land Drainage Act 1991, and parallel powers are enjoyed by the Environment Protection Agency. Developers are therefore advised to ascertain from the Environment Agency whether any separate approval is required from the Agency in addition to that which may be issued by the Council.
- 10.5. The Council has no authority in respect of main rivers, which fall under the exclusive control of the Environment Agency. Developers must therefore obtain land drainage consents and discharge consents from the Environment Agency for any land drainage proposals, which will affect any main river.

**11.. Public Sewers**

- 11.1 All proposed alterations to any existing public sewer, or proposed new public sewers to be constructed by the developer must form the subject of a separate Agreement with the Council under Section 104 of the Water Industries Act.

# *Section A*

## *General Matters Relating to All New Road Development*

- A1. Adoption Procedures
- A2. Specification
- A3. Highway Drainage
- A4. Street Lighting
- A5. Traffic Signs and Carriageway Markings
- A6. Footways and Footpaths
- A7. Statutory Undertakers and Service Utilities
- A8. Marginal Strips
- A9. Land Required for Visibility
- A10. Section 38 Submissions by the Developer
- A11. Programme and Inspection
- A12. Structures
- A13. Works in Existing Highways or Highway Land
- A14. Landscaping
- A15. Public Transport
- A16. Public Rights of Way
- A17. Cycleways
- A18. Conservation Areas

- 1.1. **Agreement under Section 38 of the Highways Act 1980.**
  - 1.1.1. **The preferred procedure for adoption will be in accordance with Section 38 of the Highways Act 1980 and developers will be encouraged to enter into a formal road agreement with the Highway Authority.**
  - 1.1.2. A Section 38 agreement can be progressed by a Highway Authority where there is sufficient public utility to justify future maintenance at public expense and where a length of road is involved which is directly connected to an existing highway maintainable at public expense or to a road subject to an existing Agreement.
  - 1.1.3. Only the owner of the land in perpetuity has the necessary capacity to dedicate the land as a highway. Lessees and other limited owners are not capable of dedicating the way without the agreement of the freehold owner. Certain tripartite section 38 agreements can be made between the Highway Authority, the freehold owner and the builder (where he/she is not the freehold owner of the land).
  - 1.1.4. It is normal practice for the agreements to be supported by a bond or surety to ensure the completion of the road by the highway authority in the event that the builder or landowner defaults, the bond value is 100% of the Highway Authority's estimated cost of building the roads. The developer on signing the agreement also has to pay the authority a 5% fee of the aforementioned estimated cost to cover the authority's technical administration and inspection charges.
  - 1.1.5. A developer should note that where the surface water drainage system is taking yard and roof water in addition to highway drainage it will be necessary to secure a Section 104 Agreement under the Water Industries Act 1991. Until the Section 38 Agreement is completed a developer will NOT be permitted to undertake works connected with the development in or over or under any existing public highway.
  - 1.1.6. Completion of the Agreement also releases the developer from his/her obligation under the Highways Act 1980 in respect of the advance payment code, which is described in the following paragraphs.

1.2. **The Advance Payments Code in the Highways Act 1980 - Section 219**

1.2.1. Where it is proposed to erect a building for which plans are required under the Building Bylaws and the building will front onto an unadopted street, the applicant or his agent shall make a payment, or arrange security, of a sum calculated to be needed to construct or improve the length of road extending along the frontage of the building to the standard necessary for it to become maintainable at public expense.

1.2.2. Under the Code the street works authority is obliged, after notification of the approval of the plans to serve on the person by or on whose behalf the plans were deposited, a notice ('The Section 220 Notice') requiring the payment or security of the appropriate sum.

1.2.3. The sum specified in the Section 220 Notice is calculated by using the cost to the Highway Authority at the time of service of the notice, for construction of the type of road involved.

1.2.4. **It is an offence** on the part of the owner of the site or the building to do work in or for the purpose of erecting the building before the payment or security of the specified sum or the making of an Agreement under Section 38, of the Highways Act 1980. To ensure proper compliance with the Code, the street works authority inspect sites in respect of which Section 220 Notices have been served. The issue of planning permission or building regulation approval **does not constitute approval** by the Highway Authority that the highway element within the proposal is suitable for adoption.

1.3. **Methods for Provision of Security For Roadwork's**

1.3.1. After the serving of the Section 220 Notice, the following options are open to the developer: -

**Either**

1.3.2. **Payment of sum or Provision of Security**

1.3.3. The developer must pay or secure a sum specified in the Section 220 Notice as required under the Advance Payments Code.

1.3.4. When the payment is made or security given, the liability of the owner for the time being is deemed to have been discharged to the extent of the sum paid or secured. If not enough has been paid or secured and the road is not completed, the street works authority can/may carry out the outstanding works under the Private Street Works Code and recover the balance from the frontages.

Or

1.3.5. **Agreement under Section 38 of the Highways Act 1980**

(As previously described)

1.4 **Procedure For Adoption of Highways**

Section 38 Adoption

1.4.1. At the expiration of the maintenance period and upon the satisfactory completion of any remedial works required, the Highway Authority will accept the highway for adoption. The developer should request adoption in writing and forward 6 sets of drawings properly amended to show any alterations from the original approved drawings, which have been agreed by the appropriate authorities. The Highway Authority will notify the developer of the date of adoption and notify all other interested parties i.e., Registrar of Local Land Charges, Bondsmen etc. It is for this purpose that the 6 sets of drawings are required in order to avoid any future confusion over the extent of the adoption.

1.4.2 Section 228 Adoption

If the foregoing Section 38 adoption procedure is not progressed, on completion of the highways work, and after a satisfactory maintenance period the highways can be considered for adoption under the alternative Section 228 Procedure. In this case the highway works must be undertaken at the risk of the developer, who on completion must bear the cost of all testing considered necessary to demonstrate the quality of both materials used and workmanship, although the majority if not all of this cost will be covered by a fee of 5%. Even then, adoption cannot be guaranteed and the developer may have to remain the street manager and owner ad infinitum.

1.5. **Non Highway Areas**

1.5.1. Every part of the development must be either conveyed to a house (or factory) owner or held by a Housing Association or adopted as public open space by the council if it is not adopted by the council as Highway Authority. For details concerning the adoption of public open space refer to Section A 15.9,

1.5.2. In particular the developer should not retain any ransom strips, which might prejudice the future development of adjoining land. Where a road may be required to give future access to adjoining land any intervening strip between the carriageway and the ownership boundary will be adopted as highway verge.

- 2.1. The specification applicable to all residential and industrial estate roads is the Specification for Highways Works HMSO 1991 as amended.
- 2.2. References to 'clauses' contained in this guide refer to the Specification for Highway Works.
- 2.3. The Specification for Highway works has been modified and extended by the Torfaen County Borough Council publication "Standard Specification for Residential and Industrial Development", which is available separately. This publication also includes standard detail drawings.
- 2.4. The developer is advised to contact the Highway Authority for guidance.
- 2.5. All materials and workmanship to be used in carriageway and footway construction shall comply with the relevant British Standard, where applicable and with the requirements of the Specification for Highway Works HMSO 1991 as amended, and the Standard Specification referred to in the Specification section of this document.
- 2.6. The Highway Authority reserves the right to limit the choice of materials to suit local or individual site circumstances.
- 2.7. **Carriageway Construction**
  - 2.7.1 Permitted pavement options for local distributor roads shall be in accordance with Welsh Office Departmental Standards HD 23/94 - 26/94.
- 2.8. **California Bearing Ratio Test Results**
  - 2.8.1 The developer will be required to submit California Bearing Ratio (CBR) test results for all roads to the Highway Authority, prior to the commencement of road construction. CBR samples should be taken on the sub-grade formation (at intervals to be determined along the centre line of the proposed carriageway).
  - 2.8.2 Sub-base thickness requirements will need to be agreed with the Highway Authority. Where the provision of a new development requires the widening of a portion or single side of the existing carriageway the Highway Authority may request the developer to overlay the whole of the carriageway with appropriate base and/or wearing course material. This is both to ensure that adequate falls for drainage are maintained and for the sake of providing a uniform appearance to the carriageway.

- 3.1. Prospectively maintainable highway drains will be considered as those drains which only carry surface water run off from the highway and carry no water from any other source such as roofs or unadopted areas (Please note the provisions of paragraph 1.1.5.).
- 3.2. Systems which combine highway run-off with water emanating from roofs, yards, etc., are considered the responsibility of the sewerage utility. On such systems only the gully connections are adoptable by the Highway Authority.
- 3.3. Highway drains are to be sited within the carriageway wherever possible but on no account should they be sited longitudinally under the kerb race.
- 3.4. Road gullies must be sited at all valley points. Where a length of road is longer than 200 metres away from a valley point, two gullies should be provided at the valley point with independent drainage pipes to the main drain. Unless required for a valley point position, gullies should not be sited against the radius kerbs at the junctions. The spacing of gullies should be such that each drains no greater an area than 160 sq. metres of highway (carriageways and footways).
- 3.5. Where a new junction is being constructed onto an existing road a gully should be provided at the highest tangent point of the junction radius on the existing road to collect surface water before it crosses the mouth of the junction. The surface water from the gully should normally discharge into the new drainage system being provided by the developer.
- 3.6. Inspection chambers and catchpits are to be provided at changes of horizontal and vertical alignment and spaced at not more than 100 metre intervals. Drainpipe sizes shall generally be not less than 225mm diameter with gully connections not less than 150mm diameter. No drain shall be laid at a lesser gradient than 1 in 200. Minimum self-cleansing velocity to be 1.0 metre/second.
- 3.7. Gully gratings and frames, manhole and catchpit covers and frames shall be of an approved size and type and shall be in accordance with European Standard EN124 (formerly BS 497: 1976), Class D.

3.8. Where longitudinal channel gradients of less than 1:120 are unavoidable consideration should be given to the use of channel drainage. When bituminous materials are used, a gradient of no less than 1 in 100 is normally acceptable. On exceptionally flat sites use of a level crown with false falls in the channel are required. It is desirable that gullies are located to have level variation of not more than 50mm from the summit to the gully. Crossfall on the carriageway should be between 1:48 and 1:24 where false falls are used.

3.9. The developer should take positive measures to prevent surface water from a highway ingressing into land for development and ensure that existing highway drainage/watercourses are adequately protected.

### 3.10. Soakaways

3.10.1. Discharge of highway surface water into soakaways will only be considered in exceptional circumstances, where evidence of extensive investigation into alternative means of disposal has been supplied and considered.

3.10.2. Guidance on the determination of soakaway size and construction details is given in Building Research Establishment Digest 365. Copies of this document may be obtained from Her Majesty's Stationery Office.

3.10.3. In the event that a developer satisfies the Highway Authority that soakaway drainage is the only possible means of dealing with surface water discharge, standard soakaway details will apply. Soakaways shall be sited at a distance no less than 5 metres from the highway boundary and any building foundations. Details of a soakaway can be found in Figure 1.

### 3.11. Off-site Highway Drains

3.11.1 Where a proposed highway drain passes through land outside the control of the developer, the developer must supply a copy of written confirmation by the owner and any other persons having a legal interest in the land that the proposals are acceptable to them, before commencement of construction of any part of the highway works associated with the development. A formal easement agreement must also be drawn up to enable the Highway Authority to carry out necessary maintenance on the sewer.

### 3.12. Easement Widths

3.12.1 These should be in accordance with the following requirements.

3.12.2 Under normal circumstances the easement width should be the greater of the following: -

- (i) 6 metres
- (ii) 10 times the nominal internal diameter of the pipe.
- (iii) Twice the depth of the trench to the invert, plus the nominal internal diameter of the pipe.

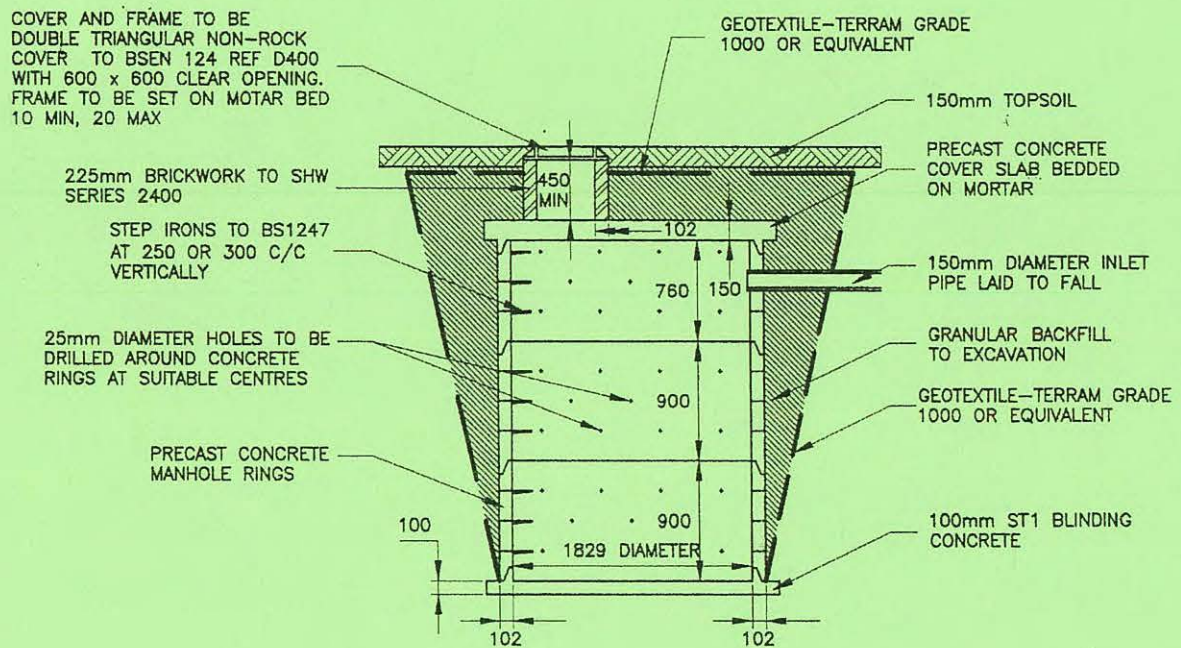


- 3.12.3 The pipe should be situated centrally within the easement strip. The easement is intended to give protection to the pipe by restricting building and the storage of certain materials within its width.
- 3.12.4 The width of 6 metres or 10 times the diameter of the pipeline is the minimum amount considered reasonable for the repair of a pipe, assuming the building occurs at both sides of the easement. Account has been taken of the types of repairs necessary, the amount of excavated material and its effect on the trench whilst it is being stored prior to the back-filling and also the excavation equipment required.
- 3.12.5 The easement width derived from the dimension of twice the depth of the trench, plus the diameter of the pipe is intended to prevent any loads from buildings etc, being superimposed upon the pipeline.

### 3.13. Discharge Consent

- 3.13.1 A copy of written confirmation of agreement to the discharge of highway surface water into a sewer which is not the responsibility of the highway authority, or into a water course etc. must be supplied before commencement of construction of any part of the highway works associated with the development.

FIGURE 1 Soakaway Detail



- 4.1. Street lighting will be a requirement for adoption in all cases and must be to the satisfaction of the local Highway Authority.
- 4.2. In house design services are available and the developer should make contact with the Highway Maintenance Team Leader before any work commences. A specification note for developers dealing with streetlighting is available within Appendix F section of this document.
- 4.3. It should be noted that all columns, cables, control apparatus and lighting feeder pillars must be wholly situated in adoptable areas.
- 4.4. The developer must agree with South Wales Electricity (SWALEC) and the authority the location of the point of electricity supply to the street lighting installation and submit SWALEC Form ASE3 (U) - Agreement For An Unmetered Supply of Electricity.
- 4.5. The developer must also enter into an unmetered connection agreement with SWALEC the energy supplier. This agreement is known as the Short Connection Agreement and sets down the basis on which energy will be calculated and charged to the developer during his period of responsibility.
- 4.6. Upon completion of the street lighting installation SWALEC Form 008/0 Completion of Electrical Installation must be completed by the installer on behalf of the developer and submitted to SWALEC. The installation must not be energised until these procedures have been satisfied.
- 4.7. Copies of completed SWALEC Forms ASE3 (U), 008/0 and the Short Connection Agreement must be forwarded to the authority at the time of issue.
- 4.8. The developer will retain responsibility for both the payment of energy and maintenance of the street lighting installation until the final adoption procedures are completed.
- 4.9. The developer must provide details of the procedures in place to undertake maintenance of the street lighting installation during his period of responsibility together with the name address and telephone number of the maintenance contractor.
- 4.10. The authority will not be responsible for the maintenance of the installation until final adoption is completed but if notified of any dangerous situation requiring emergency action will organise the making safe with the authority's maintenance contractor on a rechargeable basis to the developer.

5.1. In all cases the provision of traffic signs and carriageway markings will be a requirement for adoption and must comply with the Traffic Signs Regulations and General Directions to the satisfaction of the local Highway Authority.

5.2. Streetname plates should be provided as a requirement of adoptable streets. Where appropriate a 'no through road for vehicular traffic' sign as indicated by Diagram 816 in the Traffic Signs Regulations and General Directions 1994 should be incorporated in the street name plate.

Details can be found in the Specification.

5.3. Traffic safety measures for road works must be carried out strictly in accordance with Chapter 8 of the Traffic Signs Manual **and to the satisfaction of the Highway Authority.**

6.1. **In every case Footways will be adopted**

6.2. **Definitions**

6.2.1. The Highways Act 1980 defines a footway as follows: -

- (i) 'Footway' means a way comprised in a highway, which also comprises a carriageway, being a right of way on foot over which the public have a right of way on foot only immediately adjacent to the carriageway.

and defines a footpath as follows: -

- (ii) 'Footpath' means a highway over which the public has a right of way on foot only, not being a footway.

6.3. **Widths**

6.3.1. In most cases a minimum 1.8m wide footway will be required on the frontage of residential developments.

Minimum footway widths for industrial development will be 2.0m.

Consultation by the developer with Statutory Undertakers will be necessary in respect of service mains and footway widths may need to be increased to accommodate large mains.

6.4. **Adoption of Footpaths**

6.4.1. It will be expected that link footpaths in one or both of the following categories will be adopted and must, therefore, be constructed to adoption standards: -

- (i) Those which will provide the most direct and practicable route for pedestrians making door-to-door collections and deliveries and will serve more than two properties, where this function is not fulfilled by a footway. The last portion of a cul-de-sac footpath serving one or two properties will be considered for adoption if it is constructed to the appropriate standard.
- (ii) Those forming direct through routes within a development area.

6.4.2. Footpaths, which will not normally be considered for adoption, include those in the following categories: -

- (i) Secondary footpaths located at the rear of dwellings, which do not also fall in 7.4.1. (i).
- (ii) Secondary footpaths, which provide inferior alternatives to other footpaths or footways, which are to be adopted.
- (iii) Public rights of way on inferior footpaths not to adoptable standards.
- (iv) Secondary footpaths, which provide inadequate forward visibility to the user.

The developer shall make his own arrangements for the maintenance of all footpaths falling into the above four categories.

#### 6.5. **Adoptable features for Footways and Footpaths**

- (i) Dropped crossings must be situated at all junctions and changes of level on the most direct pedestrian route.
- (ii) The longitudinal gradient should not exceed 8%. It should be borne in mind that less steep gradients are desirable and the preferred maximum should be 6.66%.
- (iii) The maximum crossfall should not exceed 4%.
- (iv) The use of tactile paving slabs to assist the visually impaired may be required at specific crossing points.
- (v) Street lighting.
- (vi) Positive drainage.

#### 6.6. **Design Features for Adoptable Footways and Footpaths**

6.6.1 Footpath links with roads are to be strategically sited to serve bus stops, schools, shopping areas and other community and social centres. Developers must ensure that walking distances between such facilities and residential properties are minimized. It is also important to design footpaths to ensure that passive surveillance from nearby properties is optimised. This will encourage use of footpaths by minimizing the risk of attacks on pedestrians and vandalism.

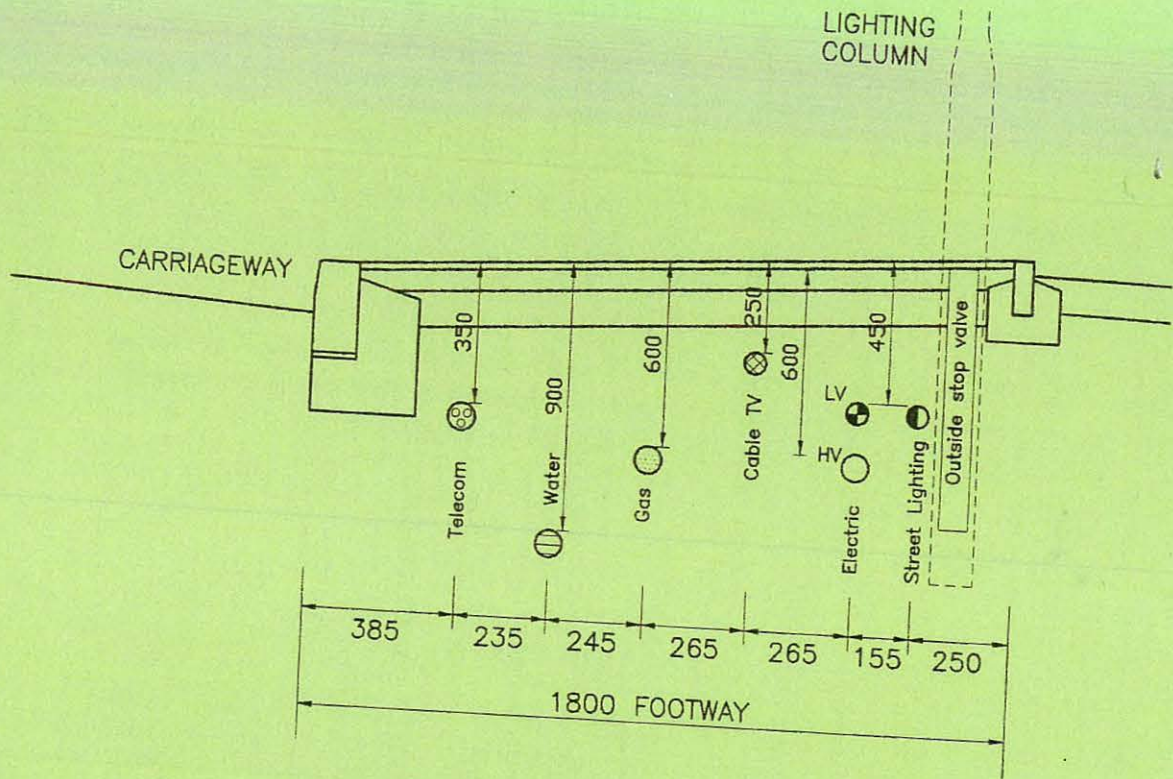
6.6.2. Where footpaths emerge onto local housing distributor roads or onto the general road network; facilities to ensure safe-crossing movements (such as pedestrian refuges, footbridges, carriageway narrowings and pedestrian crossings) shall be considered and provided at the discretion of the County Borough Council. Exceptionally, subways may also be considered where other measures prove impractical. In such circumstances, the footpath will, wherever possible, continue at the same grade whilst the carriageway is elevated above.

- 6.6.3. Consideration shall be given to the need to provide high visibility guardrail, at the point where footpaths emerge, to prevent children running out onto the carriageway. Due regard shall also be taken of the need to provide staggered guardrail within footpaths, to prevent or discourage their misuse by pedal cyclists, motorcyclists and skateboarders etc.
- 6.6.4. Where a footpath is flanked on both sides by walls and fences more than 900mm in height the width should be increased to 2.5m (where no cycle way is to be provided alongside) unless the path is only 10 metres long and open to view from either end.
- 6.6.5. Steps are permitted on footpaths (not footways) where there is an alternative route for prams and wheelchairs; Flights of 6 risers are preferred with a maximum of 10 risers allowed. Landings between flights should be at least 1.5 metres long. A galvanised steel handrail should be provided on one side of the steps. The base of the vertical lowest support to the handrail should be located on the ground level before the first riser. The base of the vertical highest support should be located at the same level and 0.75 metres away from the edge of the top tread. Dwarf walls along each side of the steps may be required to prevent the adjoining ground from falling onto the steps.

- 7.1. Public utility mains and services shall be laid in footways, adoptable footpaths or service reservations.
- 7.2. **Preferred Layout For Mains In a 1.8m Footway For New Works**
  - 7.2.1. The recommended dispositions as illustrated in Figure 2 result from analysis of utility needs as set out in the following sections. It will be seen that the street lighting column is shown on the property side of the footway rather than the kerb side to conform to the requirements of BS 5489 (Code of Practice for Road Lighting). The relative depths for the various mains illustrated in Figure 2 are therefore recommended as standard locations. The lateral clearances between adjacent utility mains should be considered as the minimum. It should also be noted that an allocation of footpath/service strip space has now been made for cable television.
- 7.3. In industrial estates, where large mains are required, footways will be relatively wider and the minimum clearances between mains will be as shown in Figure 2.
- 7.4. Sewers must not be laid in the centre of estate roads nor under the kerb race so that future repair and maintenance does not require road closures.
- 7.5. The developers attention is drawn to the necessity to check the requirements of the New Roads and Street Works Act 1991.
- 7.6. When excavating in an existing highway, a check for existing statutory undertaker's plant in accordance with the Health and Safety at Work Act, etc. - "Avoiding Danger to Underground Services" HS (G) 47 must be carried out.
- 7.7. Where necessary all public utilities are to be protected at the developers expense.
- 7.8. Traffic management incorporating appropriate safety measures for road works must be carried out in accordance with Chapter 8 of the Traffic Signs Manual.
- 7.9. The National Joint Utilities Group (C/o The Electricity Council, London) - covering the gas, water, electricity and telecommunication industry - has produced two documents, NJUG2 and NJUG5, which give comprehensive guidelines on procedures and technical requirements for the installation and location of buried services on residential and other new building developments. The standards set out in those documents are acceptable to the Council and consequently no detailed information on this subject is given in this document.

- 7.10 However, it should be noted that public utility mains other than sewers must generally be located beneath the highway but not when crossing from side to side.
- 7.11 The arrangement of mains in a footway is detailed in Figure 2.

FIGURE 2 Arrangement of mains in a 1.8m footway.





- 8.1. Where no footway is required marginal strips shall be provided and be a minimum width of 1m.
- 8.2. A marginal strip is required to facilitate kerb maintenance and accommodate street furniture services, etc., the overhang of maneuvering vehicles and to allow for vehicle doors to open.
- 8.3. Due to restrictions on local government expenditure, grass cutting is now undertaken at infrequent intervals, except where the safety of highway users may be affected. In order to foster a tidy appearance on new residential and industrial developments and eliminate the need for regular grass cutting where safety may be affected, marginal strips should be paved using normal footway or other approved construction.
- 8.4. Where streetlighting columns are erected, the marginal strip shall be constructed in permanent material.
- 8.5. In cases where a marginal strip is contiguous with the private garden of a dwelling, it should generally be hard paved to prevent encroachment.
- 8.6. Where considered appropriate by the Highway Authority, soft marginal strips may be provided. Highway boundary markers must be provided in soft marginal strips. The developer must ensure by covenant that the householder does not subsequently remove these. They must be set flush to facilitate mowing of grass and other essential maintenance.
- 8.7. Planting of trees in a marginal strip is expressly prohibited. Small shrubs not exceeding 600mm in height may be planted subject to the terms of a license under Section 142 of the Highways Act 1980.

- 9.1. The Highway Authority will require visibility splays to be adopted and generally to be hard paved.
- 9.2. Where considered appropriate by the Highway Authority, soft visibility splays may be provided. Highway boundary markers must be provided in these instances.
- 9.3. Visibility splay lines and forward visibility curves must be clearly marked on drawings submitted for approval.
- 9.4. If planting is deemed acceptable by the local Highway Authority within a vision splay area it will be controlled in accordance with a license under Section 142 of the Highways Act 1980.
- 9.5. For appropriate visibility standards see Part B3 - B7 inclusive.

- 10.1. Seven sets of the following plans will be required
- (i) A 1/200 scale general layout plan showing:-
    - (a) The detailed layout of the development.
    - (b) The dimensioned widths of the carriageway and footways/footpaths with full particulars and dimensions of all radii and kerb types.
    - (c) Full details and dimensions of sight lines and visibility splays.
    - (d) The lines, sizes and gradients of existing and proposed foul and surface water sewers, highway drains, land drains and watercourses together with the locations of manholes and road gullies.
    - (e) The location of cross sections.
    - (f) All building plots are to be numbered and the plan should show clearly existing streets/roads and existing properties together with their respective names and postal numbers.
  - (ii) A longitudinal section of the carriageway to a scale of 1/500 horizontal and 1/100 vertical indicating existing ground levels and proposed finished carriageway levels. The longitudinal sections shall also show the diameter and gradients of the proposed surface water sewers, the pipe strengths and bedding construction details together with manhole positions and proposed invert levels.
  - (iii) A typical cross section to a natural scale of not less than 1/50 showing the details of the proposed construction, in accordance with the Highway Authority's requirements of the different types and widths of road.
  - (iv) Cross sections to a natural scale of 1/100 showing carriageways, footways/marginal strips, cuttings, embankments, cut-off drains/ditches, etc conforming to the requirements of the Highway Authority.