



Hampshire  
County Council

# Notes for Guidance

on the use of  
**HCC Series 10**  
**Standard Detail Drawings**

(Selected details only)

## Contents

	Page
Preamble	1
<a href="#">HCC10/C/010 to 025</a>	Kerbs 3
<a href="#">HCC10/C/030</a>	Bedding detail for modular concrete kerbing system 7
<a href="#">HCC10/C/035 &amp; 040</a>	Bus access kerbs 9
<a href="#">HCC10/C/045</a>	Footways – Type 1A, 1B, 2 and 3 10
<a href="#">HCC10/C/050</a>	Footway Type 4 – Rural 13
<a href="#">HCC10/C/055</a>	Footway Type 5 and Types 6A & 6B – Strengthened 16
<a href="#">HCC10/C/060, 065 &amp; 070</a>	Uncontrolled pedestrian crossings (in new and existing construction) and modular tactile paving 17
<a href="#">HCC10/C/075, 080, 081 &amp; 085</a>	Pedestrian refuge islands (including guidance on the use of illuminated/non-illuminated signs and bollards) 20
<a href="#">HCC10/C/090</a>	Reinstatement of drain and duct trenches in existing carriageways 26
<a href="#">HCC10/C/095</a>	Reinstatement of drain and duct trenches in existing footways 28
<a href="#">HCC10/C/100 to 115</a>	Road humps Type 1, 1A 1B and 2 29
<a href="#">HCC10/C/120</a>	Speed cushions Type 1A and 1B 30
<a href="#">HCC10/C/125</a>	Kerb, footway and vehicular verge crossing details for commercial and industrial areas 31
<a href="#">HCC10/C/130</a>	Wooden dragon’s teeth and bollards 32
<a href="#">HCC10/C/135</a>	High visibility pedestrian guard railing 34
<a href="#">HCC10/C/140</a>	Traffic signing post foundations 37
<a href="#">HCC10/C/145, 146 &amp; 147</a>	HCC scheme sign boards and advanced warning signs 39
<a href="#">HCC10/C/150</a>	End-mounted traffic sign details 41
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)	
<a href="#">Construction of tree pits/trenches within the adoptable highway</a>	43
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)	
<a href="#">Over-run areas at roundabout central islands</a>	44
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)	
<a href="#">Heavy duty safety kerbs</a>	48
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)	
<a href="#">Streetlighting/street furniture/traffic signal ducting</a>	49
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)	
<a href="#">Typical layout of a School Crossing Patrol site</a>	50
<a href="#">HCC10/D/010</a>	Filter drain details 55
<a href="#">HCC10/D/015</a>	Gully Type 1 56
<a href="#">HCC10/D/020</a>	Gully Type 2 57

<a href="#"><u>HCC10/D/025</u></a>	Gully Type 3	58
<a href="#"><u>HCC10/D/030 &amp; 035</u></a>	Combined catchpit/gully – Type CCG – Brick or precast concrete	59
<a href="#"><u>HCC10/D/040</u></a>	Catchpit Types C1 and C2	60
<a href="#"><u>HCC10/D/045 to 065</u></a>	Manhole Types M1, M2, M3, M4 and M5	61
<a href="#"><u>HCC10/D/070</u></a>	Soakaways Type S1 and S1A	63
<a href="#"><u>HCC10/D/075</u></a>	Soakaways Type S2 and S2(G)	64
<a href="#"><u>HCC10/D/080</u></a>	Soakaways Type S3	69
<a href="#"><u>HCC10/D/085</u></a>	Rubble drain, terminal soakaway and linear ditch soakaway	70
<a href="#"><u>HCC10/D/090 to 115</u></a>	Headwalls Type 1 to 6	71
<a href="#"><u>HCC10/D/120</u></a>	Ditches Type 1, 2 and 3	72
<a href="#"><u>HCC10/D/125</u></a>	Rodding eye Types 1 and 2	73
<a href="#"><u>HCC10/M/020</u></a>	Carriageway haunch repair detail	74
<a href="#"><u>HCC10/M/025</u></a>	Carriageway repair details	75
<a href="#"><u>HCC10/M/070</u></a>	Cellular concrete block construction detail Type A and B	76
<a href="#"><u>HCC10/M/300 &amp; 301</u></a>	Typical road closure layouts	77
Notes for Guidance – HCC construction details (not part of the Standard Drawing series)		

# **Preamble to the Notes for Guidance on the Standard Details**

## **Series 10 – Issued February 2016**

The Standard Details and Notes for Guidance are the property of Hampshire County Council. Hampshire County Council accepts no liability as a result of problems arising from the use of any of these Standard Detail Drawings on anything other than Hampshire County Council schemes or schemes to be submitted for approval by Hampshire County Council. All rights including translation, reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Hampshire County Council. Requests should be directed to the Economy, Transport & Environment Department.

The Notes for Guidance to Hampshire County Council's Standard Details (selected drawings only) are intended for use by the Economy, Transport & Environment Department's in-house Engineering Consultancy and have been written with the specific requirements of that organisation in mind.

Other users of the Standard Detail Drawings may use the notes for their own guidance but should not consider that they are in any way comprehensive for design purposes.

Carriageway and Drainage works in Hampshire ('C' and 'D' Series drawings) will be generally in accordance with the Highway Construction Details published by HMSO as Volume 3 of the Manual of Contract Documents for Highway Works, except as modified and extended by HCC Standard Detail Drawings and the latest edition of "Sewers for Adoption".

The HCC Standard Detail Notes for Guidance are intended to provide the designer with an understanding of why and where the Hampshire Standard Details are to be used.

Once selected for inclusion in a contract the Standard Detail should be included in the appropriate Volume of the contract documents and the Drawing No. and Title listed in Appendix 0/4 of the Specification. **Standard Detail Drawings should not be altered in any way. If a modification of a Standard Detail Drawing is to be made then the altered Detail must be clearly modified by changing the Scheme, Drawing Title and Drawing No. to make it 'Scheme Specific'.**

The Standard Details have been produced to save designers having to prepare the same detail for each job and to ensure a standard approach to construction of reasonably common features. For construction they should only be used in conjunction with scheme specific plans or details. The Standard Details are not intended as a substitute for these.

Where appropriate, the Standard Details have followed the guidance given in the DfT document 'Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure'.

Continued.../

The use of sustainable construction techniques and materials is encouraged by Hampshire County Council. The Standard Details include the use of sustainable materials wherever possible. The use of other sustainable materials as alternatives to more traditional materials is welcomed. If alternative sustainable materials are proposed for a scheme, their use should be discussed with the Technical Advice Group\* of the County Council prior to their inclusion in the scheme.

Where a Standard Detail Drawing No. is given as a reference on another Standard Detail, in the Notes for Guidance or in any other document, this is deemed to be the latest revision of that Standard Detail.

Similarly, any other guidance document, standard or code of practice mentioned in the Standard Details or Notes for Guidance shall be read as the latest revision of that document.

Health and Safety has been considered in the preparation of the Standard Details and Notes for Guidance and potential risks reduced wherever possible. However, it is still the responsibility of the designer on a scheme specific basis to consider all aspects of Health and Safety, including the appropriate use of the Standard Details.

The Standard Details also include the 'M' Series (maintenance works), 'L' Series (street lighting works), 'S' Series (structural works relating to bridges) and 'T' Series (traffic signal installations). Designers should contact Hampshire Highways, Street Lighting, the Structures team and Intelligent Transport Systems for further information on the use of the details for which no Notes for Guidance have been produced.

Note that only the Standard Details Drawing numbers are stated in this document and users should satisfy themselves that they have used the latest revision, which can be found at:

<http://www3.hants.gov.uk/transport/engineering-services/developer-information/standard-details.htm>

*\* Accessible to H.C.C. staff only*

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/010 to 025**

#### **Kerbs**

##### **1. Kerbs generally**

- 1.1. In accordance with the Health and Safety at Work Act, the Manual Handling Regulations and the Construction (Design and Management) Regulations, risk assessments should be carried out to protect workers from risks associated with musculoskeletal disorders and work related upper limb disorders. For many kerb operations this will require the use of lifting aids to assist installation.
- 1.2. Full height kerb upstands will generally be 100mm except where existing constraints dictate otherwise. Where 100mm upstand cannot be achieved, or where a different upstand is a design requirement, the dimension(s) shall be clearly specified on the layout drawing or within Appendix 11/1. Unless stated otherwise, over bridges the upstand shall be 75mm along the length of the parapet.
- 1.3. The kerbs shall be close jointed, leaving dry gaps of between 2mm and 5mm. Where kerbs are laid over a jointed concrete pavement, corresponding joints should extend through the line of units at a joint and continue through the haunching concrete.
- 1.4. The drop kerb where a vehicular access crosses a footway or verge will normally have a 25mm upstand.
- 1.5. The drop kerb where a pedestrian access crosses a footway or verge shall be flush with the carriageway. Use of the BN kerb can mean that it is difficult to achieve a truly flush finish, as the edge of the kerb is rounded. Therefore, square channels shall be used to achieve a flush finish instead of flush or upside down BN kerbs. However, it should be noted that square edges can be susceptible to damage during construction (e.g. from rollers and other plant). Extra care should therefore be taken.
- 1.6. HCC's GIS<sup>1</sup> will provide plans showing the extent of Conservation Areas.
- 1.7. Consult with the Landscape Group of the County Council's Economy, Transport and Environment Department regarding which type, colour, shape, etc. of natural stone kerb will be appropriate to particular locations. New and reclaimed natural stone kerbs can be obtained from many suppliers. The properties required for natural stone kerbs shall meet the same criteria as necessary for concrete kerbs. Use of specialist material must be agreed with HCC Economy, Transport and Environment Department due to the increased on-going maintenance costs associated with such materials.

Continued.../

---

<sup>1</sup> Accessible to HCC staff only

- 1.8. Where existing kerbs and concrete bed and backing are being removed and replaced with new, it should be noted that this can lead to a void being created under the existing edge of carriageway. In many cases that void can be reinstated when installing the new kerbs. However, this may not always be possible. Refer to the M Series of drawings for kerb reinstatement details.
- 1.9. The concrete foundation to kerbs shall conform to Clause 2602SR and consistency class S1. In circumstances where recycled aggregates are not available, conventional ST1 concrete may be used with the approval of the Overseeing Organisation. NOTE: HBM concrete can be used as a Clause 2602SR concrete with the mix constituents in accordance with Clause 894AR and moisture content being adjusted dependent on weather conditions.
- 1.10. Laying operations should be discontinued during inclement weather if the conditions are such that the performance of the kerbs in-situ may be jeopardised. Laying operations should not be undertaken when the temperature is below 3°C on a falling thermometer and below 1°C on a rising thermometer. All unfinished areas should be covered in the advent of inclement weather, and stock piles of materials covered.
- 1.11. Further Reference
  - BS 7533-6: Code of Practice for laying of natural stone, precast concrete and clay kerb units
  - BS 8500-2: Concrete – Specification for constituent materials and concrete
  - BS EN 206: Concrete – Specification, performance, production and conformity
  - BS EN 1340: Concrete kerb units – Requirements and test methods
  - BS EN 12620: Aggregates for concrete

**2. Kerbing to roads in totally rural areas and including the following special rural areas**

- New Forest National Park
- South Downs National Park
- Countryside heritage areas
- Areas of outstanding natural beauty
- Environmentally sensitive areas
- Sites of Special Scientific Interest (SSSIs)
- Nature reserves
- The fringes of the above

Continued.../

- 2.1. Typically where roads have grass verges with no footways and will be bordered by hedgerows, field and woodland, there will be a general presumption that there is to be no kerbing except where there is a clear need to protect the road edge from surface water erosion on inclines or from vehicle overrun on bends and junctions.
- 2.2. Where such need arises 'K-lite Traditional' kerb Types CT2 or CT3 should be specified, with CT4 or CT5 used where a drop crossing is required for access.

### 3. **Kerbing to roads in the following special urban areas**

- Designated Conservation Areas
- Scheduled Ancient Monuments
- The vicinity of Listed Buildings not in Conservation Areas
- Non-statutory heritage areas
- The fringes of the above

This typically applies to roads in towns, villages and other built up areas, where consideration needs to be given to the use of special materials to blend sympathetically with the environment and where existing kerbing may be in natural stone.

- 3.1. Wherever possible existing natural stone kerbs should be reused. If there is insufficient quantity of existing kerbing to complete the scheme then matching new or reclaimed natural stone kerbs should be obtained. The County Council may hold some surplus materials in store, which are available for use on County Council schemes. Contact the Hampshire Highways depots to determine what materials are in store and to arrange collection (Totton – 02380 663311, South – 01962 794719, North – 01256 764455 and East – 01730 235800).
- 3.2. To ensure that new or reclaimed natural stone kerbs of the correct match, condition and quantity are available, the designer should locate a supply and consider placing an order for delivery in advance of the letting of the main contract.
- 3.3. As natural stone kerbs are not necessarily of standard shape or size, a standard detail is inappropriate. Once size and shape details are known the designer should prepare a scheme specific drawing.
- 3.4. Where, for whatever reason, natural stone is not an option, then Charcon's silver grey 'Countryside Classic' or Marshal's silver grey 'Conservation Kerbs' should be specified (kerbs CC1 to CC3 or CO1 to CO3 as appropriate).
- 3.5. Any natural stone kerbs, gutter soles, setts, flags, quadrants etc arising from the site but surplus to the requirements of the current scheme should be retained and stored for use in future schemes. Contact the Hampshire Highways depots to arrange delivery (Totton – 02380 663311, South – 01962 794719, North – 01256 764455 and East – 01730 235800).

Continued.../



- 3.6. The designer should determine which natural stone items may be surplus to immediate requirements and include within the contract for taking up, cleaning, transporting and unloading.

#### **4. Kerbing to roads in urban areas other than those listed in 2.2 above**

This typically applies to roads within towns and other built up areas where precast concrete kerbs already predominate.

- 4.1. There is a general preference for the use of precast concrete kerbs to BS EN 1340 in accordance with the minimum criteria given on the Standard Detail. Due to implementation of the European Standard it is now necessary to state the criteria required.
- 4.2. Use kerb types PC1 to PC4 as appropriate. Use 45 degree splay kerbs where there is no footway within the verge and half batter kerbs where there is a footway adjacent to or within 3.0m of the carriageway.
- 4.3. Kerbing to pedestrian refuge islands shall be as shown on drawings HCC10/C/075 to HCC10/C/081.
- 4.4. Where it is considered desirable to moderate the appearance of the precast concrete kerbs then 'Countryside Classic' kerbs may be specified. Kerb types CC1 to CC3 should be specified as appropriate.

#### **5. Kerbing to roads in semi rural areas but excluding special areas as listed in 2.1 and 2.2.**

This typically applies to roads in hamlets and on the fringes of villages and towns where there will be a mixture of grass verges and footways.

- 5.1. Where there is a need for kerbing, the choice of kerbs should be made with careful judgement.
- 5.2. If the built environment is such that precast concrete kerbs would be appropriate or indeed match what is already there then use kerb types PC1 to PC4 as appropriate. Use 45 degree splay kerbs where there is no footway within the verge and half batter kerbs where there is a footway adjacent to or within 3.0m of the carriageway.
- 5.3. If, however, it is considered that a better appearance might be achieved by using the 'K-lite Traditional' or 'Countryside Classic' kerbs then specify kerb types CT1 to CT5 or CC1 to CC3 as appropriate.
- 5.4. Kerb types CT1 or CC1 should be specified where a footway is to be constructed immediately adjacent to a carriageway. Kerb types CT2 and CT3 are only to be used where a grassed verge is to edge the carriageway.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/030**

#### **Bedding detail for modular concrete kerbing system**

##### **1. General**

- 1.1. This specification is for the installation of modular precast concrete kerbs, angles and complementary fittings in accordance with BS 7533-6 (Code of Practice for laying natural stone, precast concrete and clay kerb units), to which reference should be made.
- 1.2. Modular kerbing systems are generally to be used for shared driveways within developments and are not meant for general use within the highway network.
- 1.3. Kerb units shall be Marshalls 'KeyKerb' Type KL, KM, LS or equivalent, in accordance with BS EN 1338 (Concrete paving blocks – Requirements and test methods).
- 1.4. Radial kerbs are available to enable both internal and external radii to be formed. Refer to the manufacturer's details to establish the radii that can be achieved and the number of radial or radial/standard kerb units required to form the radii.

##### **2. Foundation**

- 2.1. The units are to be bedded onto mortar on a fully compacted, hardened kerb bed. Where approved by the Overseeing Organisation in advance, as described in Clause 1101, sub-clause 1, the kerbs may be laid directly onto a still plastic concrete bed.
- 2.2. The kerb bed shall be laid on 150mm subbase to Clause 803, 891AR, 892AR, 893AR or 894AR.
- 2.3. When laying units onto an adjacent base or subbase, it may be necessary to step the base to cater for certain carriageway thickness. The concrete bed for the kerb unit should therefore be bedded on a suitable base material.
- 2.4. The concrete kerb bed shall conform to Clause 2602SR, of consistence class S1. NOTE: HBM concrete can be used as a Clause 2602SR concrete with the mix constituents in accordance with Clause 894AR and moisture content being adjusted dependent on weather conditions.
- 2.5. The concrete kerb bed shall be fully compacted to a minimum thickness of 150mm thick and extend to a width of not less than 300mm.

##### **3. Laying**

- 3.1. When laying units on a fully compacted hardened kerb bed, lay the unit to line and level onto a 12mm to 40mm thick layer of fresh bedding mortar 1:3, cement: sand, (proportions by volume) containing sand complying with BS EN 12620. If the mortar has been mixed for more than two hours or begun to set, it should be discarded and replaced with fresh mortar.
- 3.2. When cutting to adjacent complementary fitting units, only standard kerb units should be cut to fit. No unit should be cut to less than 50mm width.

Continued.../

- 3.3. Units should be bedded onto the bedding mortar using a paviours maul to line and level. String lines should be used to ensure the accuracy of the units being installed to line and level.
- 3.4. If it is required to install flush modular kerbs (i.e. 0mm upstand for a pedestrian crossing), a scheme specific detail will need to be produced.

#### **4. Backing**

- 4.1. The units should be backed with concrete conforming to Clause 2602SR, of consistence class S1, and shall be laid to dimensions shown on drawing HCC10/C/030. NOTE: HBM concrete can be used as a Clause 2602SR concrete with the mix constituents in accordance with Clause 894AR and moisture content being adjusted dependent on weather conditions.
- 4.2. The backing mix, the kerb and the bed must be bonded and should not act independently of each other.
- 4.3. In areas where kerbs are likely to be subjected to high loading, dowel bars should be fixed into the bed with the kerb backing cast around the bars. Further details of dowel bars are shown on drawing HCC10/C/125.
- 4.4. In areas where the kerbs are to be trafficked prior to the installation of the final surfacing, a temporary frontal kerb bed shall be installed to prevent the kerbs becoming displaced.

#### **5. Jointing**

- 5.1. The kerbs shall be close jointed, leaving dry gaps of between 1mm and 2mm. Where kerbs are laid over a jointed concrete pavement, suitable joints should extend through the line of units at a joint and continue through the haunching concrete.

#### **6. Visual definition of kerb unit**

- 6.1. Where blocks are to be used for carriageway, kerbing and footway, a colour contrast shall be provided to avoid the possibility of tripping by pedestrians with impaired vision.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/035 & 040**

#### **Bus access kerbs**

1. At bus stops, bus access kerbs are installed in order to reduce the step height between the footway and the bus platform.
2. With the introduction of buses with ‘low floor’ capability on many routes over the last few years, and the continuing trend to replace older vehicles with those that can achieve level access, it is now recommended that all access kerb height throughout Hampshire should have a 160mm upstand.
3. The recommendation for 160mm access kerbs is to avoid grounding of the front overhang of the bus on the kerb when being manoeuvred into the stop position. The bodywork and hydraulics for the passenger door on some ‘low floor’ buses can become damaged by striking a 180mm access kerb. HCC’s Passenger Transport section and bus operators must be consulted whenever new bus kerbs are proposed.
4. The overall length of the full height access kerb and kerb face should be determined and shown on the layout drawings. The minimum length of full height bus access kerbs shall generally be 3.0m. However, this can be reduced to an absolute minimum of 2.0m where it is impossible to achieve 3.0m of full height access kerbs and moving the bus stop is not practical. Providing more than 4.0m at any single bus stop is not considered necessary. At a double length bus stop (one in front of another), a length of about 15 metres of full height access kerbs, or two separate installations of 3.0m/4.0m of full height kerbs are to be used. If in doubt, HCC’s Passenger Transport section and bus operators should be consulted, as the overall length of access kerbing will depend upon how many buses may service the stop at one time, the size of the bus shelter, if present or proposed and other site specific constraints.
5. The layout drawings should detail the extent and type of footway construction / reconstruction behind the access kerb, with consideration given to the fall of the footway which may affect drainage. Where practicable, the footway should fall towards the channel, as shown on drawing HCC10/C/040.
6. Separate drawings should be prepared to show details of bus shelters where they are required to be installed.
7. Consult the Department for Transport publication Inclusive Mobility, particularly Section 6, for guidance on bus stop design.
8. Tactile warning surfaces shall NOT be used on raised bus borders. Instead, road markings as shown on the Standard Detail drawings shall be provided.
9. Bus access kerbs are of such a size and weight that mechanical lifting devices will be required in all instances.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/045**

#### **Footways – Type 1A, 1B, 2 and 3**

1. Consult the Department for Transport publication “Inclusive Mobility”, particularly Section 3, for guidance on footway design in relation to people with disabilities.
2. Unobstructed footway width should normally be a minimum of 1.8 m.
3. A footway width of at least 3.0m should be provided outside schools, community buildings, bus stops, etc
4. The longitudinal gradient of a footway should be no greater than 8 per cent and no greater than 5 per cent where regular wheel chair usage is expected.
5. Vehicular dropped crossings of footways should be shown on layout drawings, with slope and dimensions to suit the specific requirements of each location.
6. When a dropped crossing in Footway Type 1A or 1B is providing access to a domestic driveway subbase thickness should be increased to 150 mm for the full width of the crossing. When providing access to commercial properties a design should be detailed appropriate to the anticipated usage (see drawing HCC10/C/125 for further information).
7. When regular vehicle overrun of the footway Type 1A or 1B by heavy vehicles can be expected, or where footway is used for parking on a regular basis, the Type 5 - Strengthened footway construction, as shown on drawing HCC10/C/055, shall be specified.
8. For Type 1A or 1B footway, the contract specific details shall state which option is to be used. **Type 1A is the preferred option.**
9. Specifying Type 2 flag paved footways should be avoided if vehicular dropped crossings are spaced at frequent intervals along the length. The occasional vehicular dropped crossing within a flag paved footway can be installed substituting concrete block paving for flags, thus providing clear delineation and greater resistance to damage due to wheel load.
10. For footway Types 2 and 3 the minimum PPTV is 45. However, on gradients greater than 5% or in heavily trafficked areas or in areas where there are vulnerable users (e.g. outside an old people’s home), the minimum PPTV shall be 55. This should be specified in the contract specific details.
11. The type and thickness of pre-cast concrete flags to be used in Type 2 footways should be stated on the layout drawings or in Appendix 11/1. Unless stated otherwise in Appendix 11/1, the bedding and jointing details shall be as detailed on drawing HCC10/C/045. Where pre-cast concrete flag footways are likely to be trafficked by heavy vehicles, the footway shall be constructed as Footway Type 6B on drawing HCC10/C/055.

Continued.../

12. A scheme specific detail shall be prepared if natural stone paving is to be used. The PPTV requirements of paragraph 10 shall apply to natural stone paving.
13. As an alternative to cutting precast concrete flags to form dropped crossings in footway Type 2, block paving of a colour to match or complement the adjacent flags may be used as shown on drawing HCC10/C/060.
14. The designer should evaluate the risks associated with the selection of any particular flags or kerbs in respect of the Manual Handling Regulations and HSE Guidance and include this in the Health & Safety Hazard Identification sheets if necessary. Generally, depending on thickness, slabs or flags greater than 450 mm x 450 mm plan area will require mechanical lifting devices.
15. Clay paving blocks shall only be used on a site specific basis (e.g. to match existing blocks), but must comply with the minimum PPTV requirements of paragraph 10. Unless otherwise indicated on the layout drawings, concrete paving blocks shall be installed as footway Type 3.
16. The need for weed control in footways should be assessed on a site specific basis. At every footway location the full depth of topsoil should be removed and the resulting excavation below formation backfilled with subbase material. If it is expected that weed growth may still be a problem, incorporate a thermally bonded non-woven separation membrane (geotextile), such as 'Terram 1000' or equivalent, into the footway construction at formation level extending for the full width and length of the footway.  
  
At sites where 'Japanese Knotweed' is known to be present, substitute root barrier for geotextile. It is recommended that a black root barrier be used where Japanese Knotweed is present.  
  
Following advice from a qualified arboriculturalist, geotextiles and root barrier requirements should be comprehensively detailed on the layout drawings and in Appendices. The presumption shall be that chemical weed killers shall not be used.
17. Where practicable at entrances to driveways a minimum width of 900 mm should be carried through the back of the footway at standard footway crossfall to enable wheelchair users to avoid the steeper ramp to the dropped kerbs.
18. For footways within town centre refurbishment contracts and the like, where existing or new stone kerbs or flags are to be used, and where level and crossfall constraints, multiple service covers, etc, have to be contended with, it will be necessary to prepare contract specific details.

Continued.../

19. Where significant volume changes can be anticipated post-construction, the footway construction should be reinforced to prevent consequential shrinkage cracking. Circumstances where shrinkage cracking can be anticipated include those where the footways are:

- On highly plastic clays.
- Are subject to potential inundation, eg in flood plains.
- Are in the vicinity of tree species with a high water demand, eg oaks.
- Are constructed near the edge of embankments, especially where the embankment face is planted.
- Are constructed on soils with a low bearing capacity generally.

Under such circumstances the footway construction should be reinforced though the incorporation of geotextiles/geogrid. The preferred configuration for reinforcement is:

- A geotextile like Terram 1000 or similar at subgrade level,
- A soil reinforcement grid, eg Tensar SS20 or similar at mid depth of the subbase layer and
- An asphalt reinforcement grid eg Rotaflex 838SL or similar between surface course and binder course.

Where such reinforcement is used this should be registered on the Street Gazetteer to safeguard the structure from future utilities services activity.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/050**

#### **Footway Type 4 – Rural**

1. Footway Type 4 is included for use in rural settings where Types 1 to 3, 5 or 6 would be inappropriate.
2. It can be used as either a footway within the verge of a carriageway or as a footpath remote from the highway.
3. Type 4 Footway should not be used if regular use by prams and pushchairs is expected.
4. Good drainage is essential to avoid long term maintenance costs. Lay to a 2.5% crossfall and if possible in low spots, or other areas susceptible to flooding, raise the path slightly above the ground.
5. Where soft ground may prevent adequate compaction, specify in Appendix 11/1 the inclusion of a geotextile to be laid the full width of formation. Specify 'Tensar SS20' or equivalent.
6. Details of one potential supplier (Grundon Sand and Gravel) of material for self binding path gravel, as specified in Clause 1174AR, along with the laying guidelines attached for information. The Standard Detail requires the contractor to follow these guidelines, which the contractor should obtain from the supplier. Ensure that your site supervisor has a copy.
7. Note that this is not a cheap option. Recent rates indicate that Type 4 Footway would be approximately 85% of the cost of a Type 1A.
8. Experience has shown that this material beds down to its final state over a period of a few months assisted by heavy rain. However in the first few weeks after laying a fine, orange silt can be trafficked off the surface during wet weather. This should not be an issue in truly rural locations but the situation will need to be managed in the short term where the fines could potentially be walked into houses, etc.

[Back to Contents](#)



# **GRUNDON SAND & GRAVEL**

## **COXWELL SELF BINDING PATH GRAVEL** **LAYING GUIDELINES**

Grundon's Self Binding Path Gravel is a naturally occurring material, quarried from a deposit of sponge gravel, a unique product with a very pleasing natural reddish/brown colouring which will improve and mellow as the pathway weathers.

For calculating volumes use 1.8 tonnes per cubic metre which relates to approximately 7 square metres per tonne when laid to a compacted depth of 75mm, and approximately 13 square metres per tonne when laid to a compacted depth of 40mm.

### **For new pathway constructions:-**

The foundation must be of sufficient stability to carry the proposed traffic. The area must have sufficient drainage, which will ensure any storm water can drain away freely. Where a path is to be constructed which has sloping ground which should shed water onto the pathway, a French drain must be constructed on the slope side or sides alongside the pathway to take the excess water, so as not to flood the pathway. We would not recommend that Coxwell 5mm Path Dressing is used in these locations.

### **To achieve best results:-**

We recommend using Coxwell Pathway Subbase, which is a totally compatible base material for the Coxwell Self Binding Gravel. This is laid 100mm thick and then compacted using a suitable weight vibrating roller. When the Coxwell Pathway Subbase is fully compacted and is still moist, the Coxwell Self Binding Path Gravel can be laid. This should be done in two layers, to achieve a finished compacted depth of 75mm. Lay both layers 60mm thick, rake and compact each layer. The ideal compaction is best achieved by the initial first two passes of the roller being carried out with the roller vibrator turned off, then continue compacting with the vibrator operating. The Coxwell Pathway Subbase and the Coxwell Self Binding Path Gravel must both be very moist but not too wet when rolling.

If a finer surface pathway is required i.e. Golf Courses, Coxwell 5mm Path Dressing can be added. Follow the above laying guidelines, but when the Self Binding Path Gravel has been laid and raked to the cambers required, leave uncompacted, and whilst still moist add 15mm of Coxwell 5mm path Dressing, rake evenly and compact using a vibrating roller, as described in the previous paragraph with the first two passes of the roller with the vibrator turned off.

If any repairs should be required at a later date, then scarify the surface of the path, moisten, and add a new layer of the same material and compact.

Continued.../

**Please note**

1. Moisture content **MUST** be maintained at all times.
2. When newly laid there may be some initial staining but this will diminish with exposure to the elements.
3. The pathway will strengthen and harden with traffic and weathering.

**FOR FURTHER INFORMATION PLEASE CONTACT EITHER;**  
WICKLESHAM QUARRY, SANDSHILL. FARINGDON, OXON, SN7 7PN  
TELEPHONE: 01367 244078 FAX: 01367 242746

Or

Ewelme Head Office  
Aggregates Department  
Goulds Grove, Ewelme, Oxon, OX10 6PJ  
Telephone: 01491 834311

<http://www.grundon.com/Sand-and-Gravel>  
[aggregates@grundon.com](mailto:aggregates@grundon.com)

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/055**

#### **Footway Type 5 and Types 6A & 6B - Strengthened**

1. Footway construction Type 5 – Strengthened shall be specified where it is considered that over-running of the footway Type 1A or Type 1B by vehicular traffic may lead to its early deterioration and result in frequent maintenance.
2. At locations where anticipated trafficking by heavy vehicles may cause scuffing of the 6mm dense surface course then 30mm of High Stone Content Asphalt (HRA 55/10C surf 40/60 PSV55) to BS EN 13108-1 should be specified.
3. Footway construction Type 6A or 6B – Strengthened footways shall be specified where it is considered that over-running of the footway Type 2 or Type 3 by vehicular traffic may lead to its early deterioration and result in frequent maintenance.
4. For situations where regular over-running by commercial vehicles is likely, the footway should be constructed as shown on drawing HCC10/C/125 – Kerb, Footway, Verge and Vehicular Verge Crossing Details for Commercial and Industrial Areas.
5. Where significant volume changes can be anticipated post-construction, the footway construction should be reinforced to prevent consequential shrinkage cracking. Circumstances where shrinkage cracking can be anticipated include those where the footways are:
  - On highly plastic clays.
  - Are subject to potential inundation, eg in flood plains.
  - Are in the vicinity of tree species with a high water demand, eg oaks.
  - Are constructed near the edge of embankments, especially where the embankment face is planted.
  - Are constructed on soils with a low bearing capacity generally.

Under such circumstances the footway construction should be reinforced though the incorporation of geotextiles/geogrid. The preferred configuration for reinforcement is:

- A geotextile like Terram 1000 or similar at subgrade level,
- A soil reinforcement grid, eg Tensar SS20 or similar at mid depth of the subbase layer and
- An asphalt reinforcement grid eg Rotaflex 838SL or similar between surface course and binder course.

Where such reinforcement is used this should be registered on the Street Gazetteer to safeguard the structure from future utilities services activity.

[Back to Contents](#)

## Notes for Guidance – HCC Standard Detail Drawings

### HCC10/C/060, 065 & 070

#### Uncontrolled pedestrian crossings (in new and existing construction) and modular tactile paving

1. The Disabled Persons Act 1981 requires highway authorities to “have regard to the needs of disabled persons when considering the desirability of providing ramps at appropriate places between carriageways and footways”. This was reinforced by the Disability Discrimination Act 1995, which gives disabled people a “rights of access” to goods facilities, services and premises.
2. When preparing a contract involving uncontrolled pedestrian crossings follow the advice given in the DETR publication ‘Guidance on the use of Tactile Paving Surfaces’ particularly the Introduction and the relevant sections of Chapter 1. Only the 400mm x 400mm size of Tactile flags, or 200mm x 133mm Tactile paving blocks, should be used. Refer to paragraph 9 if the paving blocks need to be cut to form the required shape and extent.
3. The designer should show on the layout drawings the precise location and configuration of uncontrolled dropped crossings clearly detailing the tactile flag paving layout.

This should include location and size of service boxes occurring within a tactile area, which will require application of ‘stick on’ tactile tiles – refer to note 7 below. Service covers with dimensions less than 150mm x 150mm will not require this treatment. Where ‘stick on’ tactile tiles are proposed, it may be necessary for the service box to be lowered to take account of the thickness of the tiles so that it ties in with the surrounding tactile paving and does not create a potential trip hazard.

4. The two rows of 400mm x 400mm Tactile flags, or an equivalent area of Tactile paving blocks, shown on Standard Detail Drawings HCC10/C/060 and 065 are appropriate for an **uncontrolled crossing away from a junction** (see Figure 9 in Guidance on the use of Tactile Paving Surfaces).
5. An **in-line uncontrolled crossing** will require a three row depth of 400mm x 400mm Tactile flags, or an equivalent area of Tactile paving blocks. (See Figure 7 in Guidance on the use of Tactile Paving Surfaces).
6. An **indented uncontrolled crossing** will require a single row of 400mm x 400mm tactile flags, or an equivalent area of Tactile paving blocks, (See Figure 6 in Guidance on the use of Tactile Paving Surfaces).
7. When installing a pedestrian dropped crossing in an existing footway the installation process should involve an assessment of the surrounding environment; in particular the condition of the surrounding footway surface. If in poor condition, include for the footway to be reconstructed. If an existing flush dropped crossing without tactile paving exists, consider using surface mounted ‘stick on’ tactiles. **It is essential that the relevant Utility be contacted to seek permission prior to proposing the use of ‘stick on’ tactiles.**

Example – Rediweld:

<http://www.rediweldtraffic.co.uk/products/inclusive-mobility/takpave/>

Other factors to consider include the location of existing or proposed street furniture or service covers and existing gullies, which may be situated within the proposed crossing line. It may be necessary to relocate the crossing or to allow for the street furniture service cover or gullies to be removed or relocated.

8. Where the existing footway is flag paved and the existing flags are in good condition they may be cut to shape, cleaned and used to form the slopes between the outer saw cut and the drop kerbs. If the existing flags are in poor condition then specify new flags to shape the slopes. Construction to be as Footway Type 2.

Alternatively, concrete block paving of a colour to match the flags can be installed in line with the transition kerbs either side of the uncontrolled crossing, as detailed on Standard Detail Drawing HCC10/C/070. This option avoids or reduces the need to cut flags and reduces the 'sharp' change in gradient between the surrounding footway and that of the crossing point.

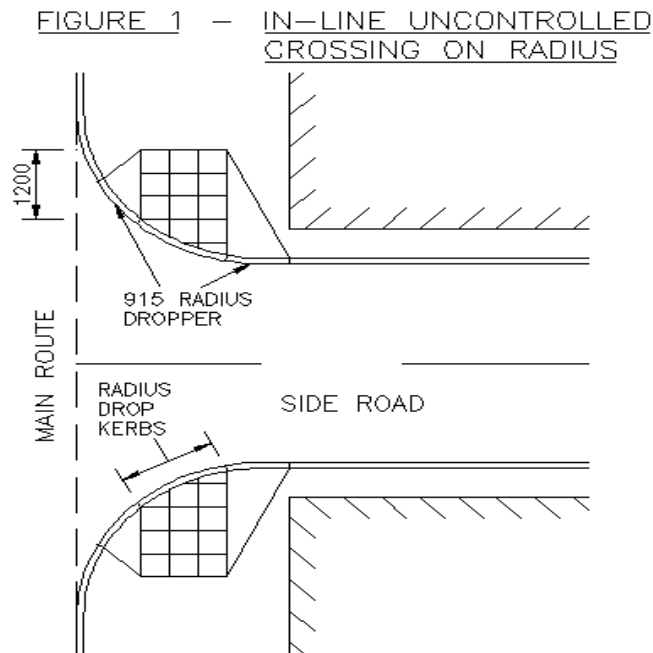
9. Where there is the likelihood of the uncontrolled pedestrian crossing being overridden by heavy vehicles, such as when located within the radius of a bellmouth, blister Tactile paving blocks and foundation details as detailed on Standard Detail Drawings HCC10/C/060 and 65 shall be specified. Where the surrounding footway is constructed of paving flags, the alternative option shown on Standard Detail Drawings HCC10/C/070 could be used.

Cut Tactile paving blocks shall only be used if the area of the cut block is greater than half the area of the full block.

10. Exceptionally if existing physical constraints prevent the construction of the full 2400mm width layout shown on Standard Detail Drawings HCC10/C/060 to 070, then a narrower width of either 2000mm, 1600mm or an absolute minimum width of 1200mm may be used and detailed accordingly.
11. Blister Tactile paving flags or blocks at uncontrolled crossings should normally be buff coloured, but in conservation areas or in the vicinity of listed buildings some relaxation of colour requirements may be acceptable subject to consultation with the HCC Client and Safety Audit. Where service boxes occur within a tactile area consideration should be given to replacing the cover and frame with appropriate infill type covers. Service covers with dimensions less than 150mm x 150mm will not require this treatment.
12. Consultees should include:
  - The local Hampshire Highways office
  - Representatives of local Disability Groups
  - In addition, in conservation areas, scheduled ancient monuments and in listed historic parks and gardens the Local Planning Authority shall be consulted.

13. Dropping the radius section of a kerb will create difficulties for visually impaired people and wheelchair users and should be avoided where possible. Where it cannot be avoided and an in-line crossing has to be constructed on the radius of a junction then the depth of tactile flags should be shown to a minimum depth of 1200mm as shown in the figure. To avoid causing the visually impaired confusion the tactile paving should be set back from the main route. Under no circumstances should the tactile paving form a 'triangle' with both the side road and main route, which could direct a visually impaired person across the main route rather than the side road.

Continued.../



14. There will be a general presumption that blister tactile flag paving will be included in all uncontrolled pedestrian crossings to be constructed in either new or existing footways. If however a particular site is encountered where it may be considered unwise to encourage the visibly impaired to cross seek advice from your safety auditor.
15. Presently it is not the practice in Hampshire to provide colour contrast at the kerb edge by painting the drop kerb white.
16. At indented uncontrolled crossings, road markings to Diagram 1026.1 to prevent blocking by parked cars should only be applied if such parking is seen to be a problem.
17. In new works it is worth arranging the spacing of gullies such that one can be sited just up-stream of a dropped crossing thereby reducing the surface water flow across the crossing point.
18. In new or existing works with flattish gradients, particular care should be taken to avoid creating a low point where ponding can occur. Provide levels at close intervals and highlight within Appendix 11/1 the importance of compliance with Clause 1101.5.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/075, 080 and 081**

#### **Pedestrian refuge islands (including guidance on the use of illuminated/non-illuminated signs and bollards)**

##### **1. General guidance**

- 1.1. Where the speed limit is greater than 30mph or where the traffic volume is high, it becomes more difficult for pedestrians and cyclists to judge vehicle speeds and find an appropriate gap to cross the road in one movement. A central refuge can be provided to enable them to cross the carriageway in two separate stages. For further details on the assessment and design of pedestrian crossings refer to Local Transport Notes 1/95 and 2/95. Details HCC10/C/75 to 085 are only appropriate for use on roads with a speed limit of 40mph or less. For roads within a speed limit of 50mph or more, a scheme specific detail shall be prepared and consideration must be given to the use passively safe signposts in accordance with TA 89/08 (Use of Passively Safe Signposts, Lighting Columns and Traffic Signal Posts to BS EN 12767).
- 1.2. The size and shape of the islands will vary according to the space available and to the amount and variety of street furniture to be located upon it.
- 1.3. These standard details show the most commonly constructed layouts incorporating non-illuminated or illuminated ‘keep left’ bollards and non-illuminated or illuminated high level Diagram 610 signs. Further information on whether non-illuminated or illuminated bollards/signs should be specified is given in Section 3 below.
- 1.4. Where the shape and size of a pedestrian refuge differs from the standard in order to accommodate existing carriageway shape, streetlighting columns, additional signs etc, a site specific detail should be prepared.
- 1.5. Where a standard refuge island is to be provided, it is desirable that it is large enough for the expected usage. Type 6A, 6B or 6C (2.0 metre width) is the preferred width island for general pedestrian use, but where space constraints preclude its use, the designer should select the most appropriate from Types 1A/1B/1C to 5A/5B/5C (1.9m to 1.5m wide). An absolute minimum width of 1.5 metres is advised. Refer to paragraph 3.2 regarding the construction sequence of drawpits and kerb beds for the smaller width islands.
- 1.6. The standing area for pedestrians must be sufficient for the location. Near a school, for example, large numbers of children and parents with prams and pushchairs may need to be accommodated. On roads with higher speeds or pedestrian flows, extra width should be provided if possible to make pedestrians feel less vulnerable.
- 1.7. If the crossing forms part of an off-road cycle route, the central refuge should be an absolute minimum of 2.1 metres wide (Type 7A, 7B or 7C) and preferably not less than 2.5m (Type 8A, 8B or 8C) to comfortably accommodate the full length of a standard bicycle without overhang the carriageway.

Continued.../

- 1.8. The preferred distance between the islands (dimension E) is 2.4 metres. If this width has to be reduced due to space constraints or increased because of the anticipated usage, the distance should be reduced or increased in multiples of 400mm, in order to avoid cutting of tactile flags.

## **2. Signing requirements**

- 2.1. High level keep left signs shall be provided in accordance with HCC10/C/080 on all refuges in non-street lit areas, unless there is a practical reason for not doing so, such as on a wide load route. Any decision not to provide high level signage shall be considered as part of road safety audit process.
- 2.2. If the refuge is to be located within a street lit, low speed environment, where the risk of overtaking is considered to be low, then it may be appropriate to omit the high level keep left signs as shown in detail HCC10/C/081. It is however recommended that the signs should be provided in more rural location where there is a higher risk of the low level bollards becoming covered in detritus and losing their effectiveness. For further advice speak to the Safety Audit team.
- 2.3. Refuges located within a junction bellmouth will not normally require high level keep left signs.
- 2.4. The keep left signs to diagram 610 must be illuminated in accordance with the latest edition of the Traffic Signs Regulations and General Directions, which means that, if the refuge is located within a street lit area, the high level signs and bollards should be illuminated. However, in 2003 the Department for Transport authorised the use of approved reflective Keep Left bollards as an alternative to illuminated bollards, but only when mounted on a central refuge together with high level Keep Left signs.
- 2.5. The minimum diameter of the high level keep left signs to diagram 610 shall be as follows:
  - where the speed limit is 20mph or 30 mph: 600mm
  - Where the speed limit is 40mph: 750mm
- 2.6. The minimum horizontal clearance from the edge of the signs to the edge of the carriageway shall be 500mm.

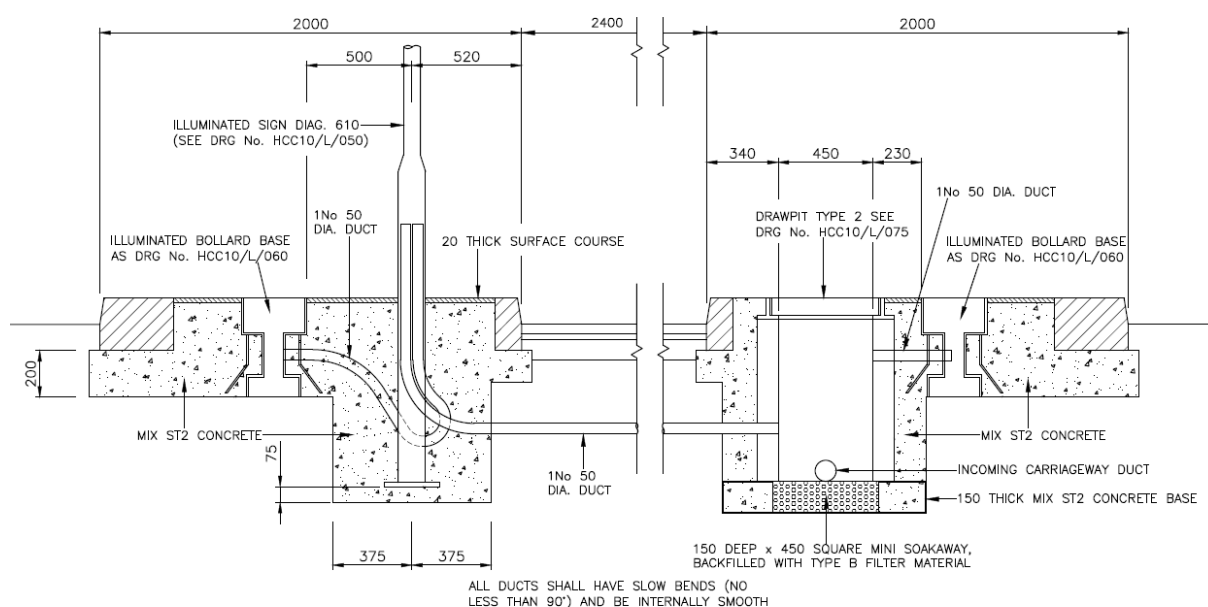
## **3. Summary of the choice of each type of refuge island**

- 3.1. Detail HCC10/C/075 (Types 1A-8A – Non-illuminated Signs and Bollards) should be used when the refuge is located on an unlit road, except where located in a junction bellmouth.
- 3.2. Detail HCC10/C/080 (Types 1B-8B – Illuminated Signs and Non-illuminated Bollards) should be used when the high level Keep Left signs are required and the refuge is located within 50m of a system of streetlighting. Note 9 on the drawing states that, for the smaller width islands, the drawpit shall be constructed first with the kerbs laid with a reduced bed where they sit upon the edges of the drawpit.

Continued.../



- 3.3. Detail HCC10/C/081 (Types 1C-8C – Solar Bollards Only for Use in Junction Bellmouth) should be used when the refuge is located within 50m of a system of streetlighting and does not require high level Keep Left signs, including when located in a junction bellmouth. It can also be used in areas covered by Manual for Streets where very slow traffic speeds are expected.
- 3.4. Detail HCC10/C/081 should be used with reflective bollards when the refuge is located within a junction bellmouth on an unlit road.
- 3.5. In circumstances where the designer opts to use illuminated signs and internally illuminated bollards (HCC10/L/060), a scheme specific detail should be prepared. A typical example of the ducting/drawpit layout is given in the figure below.



#### 4. Use of non illuminated bollards

- 4.1. Non-illuminated bollards have been used for several years in areas with no street lighting and adjacent to the carriageway to warn of build-outs, central refuges, pinch points etc. In 2003 the Department for Transport (DfT) authorised the use anywhere in Hampshire of TMP 'Flecta' non-illuminated bollards, and have subsequently approved the use of Glasdon's 'Rebound Signmaster' non-illuminated bollards, as alternatives to illuminated bollards in specific circumstances. The latest authorisation allows the use of non-illuminated bollards as an alternative to illuminated bollards in three sets of circumstances, as follows:

- (a) Where the bollard is mounted on a central carriageway refuge or in the mouth of a side road. In this situation the device **must** be backed up by a conventional sign to diagram 610, or 611, mounted on a centre island post. This back up sign must be illuminated in accordance with Traffic Signs Regulations and General Directions and the use of bollards with or without signs should comply with Traffic Advisory Leaflet 3/13 (Traffic Bollards and Low Level Traffic Signs).

Continued.../

- (b) Where the bollard is mounted on a central carriageway refuge or in the mouth of a side road on which there are traffic signals facing in the same direction as the bollard. In these cases a separate sign to diagram 610 is not required.
- (c) When mounted on a central traffic island or central reservation that forms part of a zebra pedestrian crossing and in conjunction with two Belisha beacon globes mounted on the central island or reservation in accordance with paragraph 1 of Part 1 in Schedule 1 to The Zebra, Pelican and Puffin Pedestrian Crossings Regulations 1997. **Note that these Regulations will be superseded by the proposed new version of the TSRGD.**

In Hampshire these are the only three instances when non-illuminated bollards can currently be used as an alternative to illuminated bollards.

It is expected that the Department for Transport will issue similar approvals upon application for devices broadly offering a similar performance specification to the 'Flecta' and 'Rebound Signmaster' bollards. It is understood that other suppliers are currently seeking similar approvals either in isolation or in consultation with the County Council (see 4.7 below).

- 4.2. The use of non-illuminated bollards is not acceptable under the existing terms of approval at any traffic signal junction unless the traffic signal head is facing in the same direction as the non-illuminated sign and the vehicular traffic is coming from that direction only.
- 4.3. The use of non-illuminated bollards at roundabouts is not permitted under any circumstances.
- 4.4. Any island in the mouth of a side road shall be set back from the edge of the intersecting 'running lane' as stipulated in the DfT Design Manual for Roads and Bridges (i.e. the nearest edge of the island to the 'running lane').
- 4.5. In areas more than 50m from a lamp forming part of a street lighting system non-illuminated retroreflective signs have been and continue to be acceptable. However the use of high specification retroreflective sign face materials (e.g. 3M Diamond Grade) is recommended. There may be circumstances where a previous specification for this type of sign could now be adequately substituted by the new type of retroreflective bollard.
- 4.6. For a central refuge island with traffic passing either side, left and right hand 610 arrows are required on the approach end of the refuge.
- 4.7. The following products are currently known to be approved/available:
  - (a) TMP 'Flecta' bollard manufactured by TMP Solutions (Unit 7, Gatwick Distribution Point, Church Road, Lowfield Heath, Crawley, West Sussex RH11 0PJ Tel. 08456 808066). DfT approval ref. No GT46/45/120 (Note this approval covers both the TMP and Glasdon bollards).

Continued.../

- (b) Glasdon ‘Rebound Signmaster’ bollard manufactured by Glasdon U.K. Ltd. (Preston New Road, Blackpool, Lancashire FY4 4UL. Tel No. 01253 600411. Fax No. 01253 7925558). DfT approval ref. No GT46/45/120. Because of its greater conspicuity, particularly at junctions, this is the preferred product for use in Hampshire.
- 4.8. For any new highway scheme the use of non-illuminated bollards shall be considered as part of the scheme specific Safety Auditing process. A risk assessment shall be prepared where the maintenance authority is replacing illuminated bollards with non-illuminated bollards. In both of the above cases for specification or replacement, the assessment of the appropriate bollard to deploy shall take account of the matters outlined in Annexe A on the next page.
- 4.9. The minimum clearance from the edge of the non illuminated sign to the edge of carriageway shall be 500mm.
- 4.10. The minimum diameter of diagram no. 610 sign to be used to back up non-illuminated bollards shall be in accordance with the Traffic Signs Regulations and General Directions.
- 4.11. The non-illuminated bollards should be installed as detailed in Appendix 12/1.
- 4.12. As the signs are non-illuminated careful consideration should be given to the maintenance regime and who will carry this out as they are only fully effective when clean. This should be agreed with the maintaining authority (e.g. Hampshire Highways Unit office) prior to inclusion in a design. Note that the regularity of cleaning operations may vary depending upon the role of the road in the local highway hierarchy.
- 4.13. In addition to providing retroreflective bollards on pedestrian refuges in non-street lit areas, high level ‘keep left’ signs shall also be provided, unless there is a practical reason for not doing so, i.e. a wide load route. Any decision not to provide high level signage shall be considered as part of the scheme specific Safety Audit process.

[Back to Contents](#)

Continued.../

## **ANNEXE A – NON ILLUMINATED BOLLARDS**

### **RISK ASSESSMENT PRIOR TO PLACEMENT**

**Prior to placement of retroreflective bollards at any location on the Hampshire highway network, the following factors should be considered as to the suitability of this device, either as a new installation or as a replacement for a traditional lit bollard device:**

- Does the device have a product – specific type approval letter / certificate from the Department for Transport for placement on Hampshire’s roads?
- Does the location, use and local signing regime fully conform to any associated DfT guidance or requirements contained in that approval?
- Are adequate arrangements in place for the regular cleaning / maintenance of the device?
- How critical is it that the device should be reasonably clean and offering full retro–reflectivity, in order to ensure road user safety, particularly under night time conditions?
- Does the device offer sufficient retro–reflectivity to ensure awareness of presence if approached from other directions to that in which the main sign face(s) are directed?
- Is the device likely to conform in design choice to a local system of bollards in the immediate vicinity (i.e. will it blend with other installations or create the appearance of a random choice of street furniture in a locality?)

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/090**

#### **Reinstatement of drain and duct trenches in existing carriageways**

1. The designer should visit the site to determine the existing surfacing, then, knowing the width of trench required for the drain pipe or duct(s) select the Reinstatement Type from HCC10/C/090.
2. Using the layout drawings and Appendix 7/2, the designer should detail the location of any reinstatements in existing carriageways.
3. It may be that surfacing material specified within Appendix 7/1, for use elsewhere in the contract, will be appropriate as surfacing material for the reinstatement of trenches, in which case the detailer should state this in Appendix 7/2. Otherwise he should comprehensively schedule within Appendix 7/2 all of the relevant detail of the material to be used in the reinstatement surface course. This should include stone size, minimum PSVs, maximum AAVs, etc.
4. In new construction, subbase to Clause 891AR or 894AR should normally be the material specified for trench backfill. However, where significant amounts of backfill are involved, the use of granular fill type 6F4 should be considered particularly if 6F1 is specified elsewhere in the works e.g. as capping layer material.
5. The Stress Absorbing Membrane (Geogrid) reinforcement will normally be laid immediately beneath the binder course layer and be all as described in Standard Detail drawing No. HCC10/C/090. However, where the sub-grade is clay the designer should specify, within Appendix 7/2, that the geogrid should be 'Tensar AR1' or equivalent to be laid ensuring at least 100mm of material above the grid.
6. If in doubt regarding any of the above consult Technical Advice Group<sup>2</sup>.
7. Clause 1043 foamed concrete or Clause 1030, C6/8 Wet Lean Concrete 1 has been specified as a backfill to trenches less than 1m wide in carriageway. Foamed concrete fills all voids and no compaction is needed. Due to its 'honeycombed' construction it is also easier and safer to excavate at a later date. A trench will however have to be 'plated over' until the foamed concrete gains sufficient strength if a road needs to be opened up to traffic. The option to use plating shall be subject to a risk assessment on a scheme specific basis, including duration of their use, size, whether they are transverse or longitudinal to traffic flow, type of traffic flow etc. If use of a plate is considered to be unsafe and the trench is shallow e.g. less than 1m deep, a Wet Lean Concrete 1, C6/8 mix can be used to backfill a trench prior to placing of temporary or permanent bituminous surfacing. The designer should specify this in the scheme specific details, if it is considered necessary.
8. Subject to the approval of the Overseeing Organisation, the width of reinstatement Types A(i) to D(i) may be reduced to a minimum of 500mm if a machine mounted plate compactor MAV 01 by RF Systems is used. Experience has shown that best compaction levels are achieved when operated on the lower frequency level. More details of the this equipment can be found using the following link -

<http://www.rf-system.se/kataloger/Pricelist07.pdf> - Page 6

Continued.../

---

<sup>2</sup> Accessible to HCC staff only

9. Where possible longitudinal surface course joints are to be positioned outside of the wheel tracks. It may be necessary to widen the surface course reinstatement to achieve this.
10. Where wet lean concrete 1 is used, cracks are to be induced at 3 metre centres.

[Back to Contents](#)

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/C/095**

**Reinstatement of drain and duct trenches in existing footways**

1. The designer should visit the site to determine the surface of any existing footway or other pedestrian area across which drainage pipes or ducts are to be laid.
2. Using the layout drawings the designer should show the location of proposed reinstatements of footways and pedestrian areas and should schedule the surface type on the drawings or in Appendix 7/2.
3. The contract specific details should state whether granular subbase (to Clause 803, 891AR or 894AR) or foamed concrete to Clause 1043 is to be used as backfill to the trench. The decision on which material to use depends on the depth of the trench, its width, whether it can be adequately compacted and future loading. It is recommended that subbase backfill is generally used except where the cover to the pipe/duct is greater than 600mm or where the trench is less than 450mm wide or where it is subject to regular heavy vehicular loading when foamed concrete shall be used instead.
4. Standard concrete backfill is not recommended as it creates difficulties and is a health and safety risk for those carrying out maintenance work. However, for very small reinstatements where the cost of foamed concrete is likely to be prohibitive, then C6/8 Wet Lean Concrete 1, to Clause 1030, may be used.
5. Where wet lean concrete 1 is used, cracks are to be induced at 3 metre centres.
6. The pipe, bed and surround shall be as specified separately in Appendix 5/1.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/100 to 115**

#### **Road humps Type 1, 1A 1B and 2**

1. When installing kerb to kerb road humps Type 1, 1A and 1B it will be almost certainly necessary to install at least one, possibly two road gullies upstream of the road hump, where it will obstruct the flow of surface runoff within the channel(s).
2. When a road hump is to be installed on a road with a particularly barrelled transverse profile take care to ensure that the transverse profile of the road hump generally obtains a flowing alignment whilst at the same time maintaining the specified height relative to the adjacent road surface. Consider providing detailed level information.
3. Road hump Type 1A or 1B are generally used as an entry treatment, which can at the same time provide improved side road crossing facilities for pedestrians. Ensure that adjacent kerbs are raised/lowered as necessary to be flush with the table of the road hump.

Tactile blister paving will normally be buff coloured, but consider specifying another colour if buff may not provide sufficient contrast with the existing footway material. Red coloured tactile paving shall only be used in association with controlled pedestrian crossings.

4. When road humps are installed at their maximum permitted height of 100mm there can be a high incidence of vehicles grounding.

Studies have shown that the use of road humps with a height of 75mm will substantially lessen the likelihood of grounding while at the same time resulting in little or no erosion of speed reduction when compared with the 100mm high humps.

Although 75mm is the most commonly used height for traffic calming road humps in Hampshire, heights above this and up to the absolute maximum of 100mm should not be ruled out.

The best result will be obtained from a carefully considered combination of hump spacing, ramp gradient and table length and height designed to meet the specific site requirements. The approach and departure gradients of the carriageway should also be considered when locating road humps if grounding is to be prevented.

5. A full list of the main items of published traffic calming advice from the Department of Transport and from the Transport Research laboratory can be found in the latest DETR Traffic Advisory leaflet entitled Traffic Calming Bibliography.

[Back to Contents](#)



## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/120**

#### **Speed cushions Type 1A and 1B**

1. In conjunction with gateway and other traffic calming features these speed cushions may be used on roads where emergency vehicles and buses require unimpeded access but where cars and other vehicles are slowed down. Choice of Type 1A or Type 1B will depend upon such factors as, width of carriageway and the 85<sup>th</sup> percentile design speed. Type 1B is more likely to be used in 20mph zones.
2. The cushions should be installed in pairs (sometimes in threes on wide sections of road) positioned centrally in the running lane but not extending to the kerb. A minimum gap of 750mm, maximum 1.0m, is to be provided between the base of the cushion and the kerb, as well as the adjacent cushions, to accommodate cyclists and motorcyclists. The positioning of gullies alongside cushions should be avoided. The cushions should be in line with the direction of travel if the road width varies.
3. The edges of the cushions should be keyed into the existing carriageway to a depth of 50 mm. Therefore, they are not suitable for installation in concrete carriageways.
4. Care should be taken during the construction of the cushions to ensure that their eventual height (including high friction surfacing) when measured relative to the road surface at the edge of the cushion is not more than 75 mm nor less than 70 mm.
5. On non-bus routes where wider cushions up to 2000mm wide may be appropriate they should be detailed on a scheme specific basis.
6. Useful design guidance can be found in Traffic Advisory Leaflet 4/94, or the superseding document.
7. Anecdotal evidence on the use of speed cushions reveals that they most often fail or deteriorate on the leading edge. This is the face of the structure that is first impacted by traffic and is one of the areas of the cushion that is particularly awkward to compact. Other insufficiently compacted areas will be the sloped side ramps, as the slope angle and limited width prevent compaction by a roller.

[Back to Contents](#)

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/C/125**

**Kerb, footway and vehicular verge crossing details for commercial and industrial areas**

1. Specify capping layer and subbase detail from the following table:

EQUILIBRIUM CBR*	SUBBASE	CAPPING
<2%	150 mm	600 mm
2% to 5%	150 mm	350 mm
5% to 15%	225 mm	
>15%	150 mm	

\* Soaked CBR or equivalent test.

2. At high stress locations where anticipated trafficking by heavy vehicles may cause scuffing of the 6mm dense surface course then 30mm of High Stone Content Asphalt (HRA 55/10F surf 40/60 PSV55) to BS EN 13108-1 should be specified.
3. Show extent and type of kerbing on the layout plans and specify as appropriate dropper and transition kerbs.
4. Covers and frames, gratings and frames and any other iron work whether in carriageway or footway shall be to both BS EN 124 (Class D400) and certified by a UKAS approved third party accreditation body e.g. BSI. The minimum depth of frames should be 150mm.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/130**

#### **Wooden dragon's teeth and bollards**

1. In footways or other paved areas the absolute minimum height of any bollard shall be 900mm above the adjacent ground level. It should have adequate contrast with its background.
2. Dragon's teeth and bollards can be installed in highway verges and the like for the purpose of preventing unauthorised vehicular access across or onto highway land.
3. The rustic wooden dragon's teeth Types DT1, 2 and 3 will normally be used on rural verges, spaced at 1.5m centres, offset a minimum of 1.8m from the edge of carriageway or 0.5m back from the sight line on the inside of bends.

Lesser offsets from the edge of carriageway may be considered in more urban situations where perhaps parent parking on verges near a school is to be discouraged. Even then the clearance from the face of the post to the edge of the carriageway should not be less than 600mm.

4. Dragon's teeth should not be a hazard to pedestrians, equestrians, or other legitimate users of rural verges. Where dragon's teeth are to be installed in verges subject to infrequent grass cutting, then conspicuity should be enhanced by installing the taller (L) version at alternate centres.
5. At sites with a high likelihood of trespass, dragon's teeth Type DT2 should be used. The steel strap is intended to deter removal by chain saw.
6. Concrete bollards should be installed in urban locations where there is a need to prevent unauthorised vehicles gaining access to tracks, paths and other areas intended only for use by pedestrians and or cyclists. Spacing to suit the requirements of the particular location.

Where appropriate, reflectors should be attached to concrete bollards using epoxy glue. A note should be added to the contract drawings accordingly.

7. Bollards are to be installed where there is a need to highlight the existence of traffic calming build-outs, uncontrolled pedestrian crossings, etc. The minimum offset from the edge of carriageway shall generally be 450mm unless specified differently on the site specific drawings.
8. Timber bollards are generally only to be used where the speed limit is 30mph or less. For speeds above 30mph or potentially high-risk sites, the designer shall carry out a site specific risk assessment.

The factors to consider include, but are not limited to, the following:

- Expected or measured speed of traffic and volume.
- Expected or measured volume of pedestrians/cyclists or other users.
- Site accident record.
- Proximity of the proposed bollard to these users and to vehicular traffic.
- Environmental considerations.
- The presence of streetlighting.

Continued.../

If timber bollards are used and the offset is between 450mm and 1000mm from the edge of carriageway, their impact resistance will be lessened by substituting the concrete foundation with well compacted granular material to Clause 891AR. For bollards with a greater section than 150mm, the foundation should be well compacted sand. As an alternative to granular material and sand, the 'as dug' material may be used if modified using a soil stabiliser by SMR (UK) Ltd, or equivalent.

[http://www.smrsoilstabiliser.com/smr\\_intro.swf](http://www.smrsoilstabiliser.com/smr_intro.swf)

**The type of foundation to be used should be clearly specified on scheme specific drawings.**

9. 'Neopolitan 150' socketed plastic bollards manufactured by Glasdon Ltd. or equivalent, are also suitable and can be used on all HCC maintained roads subject to local restrictions e.g. Conservation areas, AONB or National Park areas or the existing or proposed adjacent street furniture, gateway feature or artwork. Any plastic bollard specified for normal use shall be black in colour with a Class 1 to BS 873 (Class Ref 2 to BS EN 12899-1) or equivalent (or 'Diamond' grade for extra conspicuity) 150mm wide red and white reflective band at the top and 20mm lower band. For extra conspicuity the designer can specify the use of a Class 1 (Class Ref 2 to BS EN 12899-1) yellow reflective sleeve for all or part of the bollard.

At particularly vulnerable sites the designer may consider the use of the Glasdon Ltd. 'Neopolitan 150 Rebound' plastic bollard or equivalent. 'Rebound' bollards are designed to withstand being hit or knocked down and return into place. They can be used on routes where emergency vehicles need to gain access. A full yellow sleeve or lower band should not be used with the 'Rebound' bollard.

It is the designer's responsibility to specify the correct bollard for the correct situation.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/135**

#### **High visibility pedestrian guard railing**

1. Conventional pedestrian guard railing, as shown on Standard Detail Drawing No. HCC10/M/045 should be used where safety concerns requiring improved visibility are not an issue.
2. With conventional pedestrian guard railing, the vertical bars can ‘line up’ and appear as a solid barrier, blocking the view of a driver approaching, e.g. at a crossing points, side road or access, to a pedestrian behind the railing.
3. High visibility pedestrian guard railing provides improved inter-visibility by using vertical bars in groups of 1, 2, 4 or 8, angled away from the approaching driver. Visibility ‘gaps’ are created between each group of bars, and enables a driver to ‘see-through’ the railing. The choice of which bar group arrangement is to be used is based on a combination of sight angle, affected by the curvature of the road, and stopping sight distance.
4. The standard ‘solid’ posts used with conventional pedestrian guard railing can also create a visual barrier effect to approaching drivers. Therefore, the use of ‘see-through’ posts is just as important as the choice of bar grouping.
5. In specific instances it is appropriate for drivers to be able to view through guard railing located to their offside. Such instances would be in a one-way road, for a ‘sheep pen’ on a pedestrian refuge and, in some circumstances, on the departure from a controlled or uncontrolled crossing point, or side road (See para. 9, below).
6. It should be recognised that high visibility pedestrian guard railing is more expensive than conventional pedestrian guard railing.
7. The panel types HV2, HV3 and HV4, correspond to ‘Visirail’ panel types as manufactured by Hugh Logan Engineering Ltd. Check for their latest product information and guardrail types/specifications for different road speeds by contacting them:

Whistleberry Industrial Estate, Hamilton ML3 0ED  
Tel No. 01623 629295, Email [sales@hughlogan.co.uk](mailto:sales@hughlogan.co.uk)

HV1, HV2, HV3 and HV4 correspond to ‘Vista’ panel types as manufactured by Fabrikat Ltd. Again, check for their latest product information and guardrail types/specifications for different road speeds:

Hamilton Road, Sutton in Ashfield, Nottingham NG17 5LN  
Tel No. 01623 442200, Email [sales@fabrikat.co.uk](mailto:sales@fabrikat.co.uk) or [technical@fabrikat.co.uk](mailto:technical@fabrikat.co.uk)

However, other companies may produce equivalent products, which may include options with sight rails. These are acceptable and may provide additional strength when required (see para. 14 below).

8. BS 7818 and the ‘Visirail’ brochure contain useful information on choosing the correct type of high visibility guardrail panel. Unless it is obvious which panel to use, a design shall be carried out.

Continued.../

9. The layout drawings should detail the extent of each section of pedestrian guard railing. Details of the location and bar group shall be specified in Appendix 4/2. In addition the direction of travel for vehicles should be specified on the contract drawings or Appendix 4/2.
10. Where possible, pedestrian guard railings shall be specified in standard 2.0 metre long panels, measured centre to centre of the posts. However, in specific circumstances, or where specified for installation around radii less than 10 metres, half panels (1.0 metre long), or 2.0 metre panels curved to suit the radius, are to be used. These are 'specials' and are considerably more expensive with potentially longer delivery periods. The panels are to be installed with the infill bars tapering away from the direction of vehicular traffic. Visibility after installation should be checked immediately as the panels can easily be installed up side down potentially blocking a driver's view of a pedestrian.
11. Where guard railing is to be installed on a gradient, it shall be installed with vertical post and panels raked to follow the profile of the slope, or with panels 'stepped' by a maximum of 100mm, within the range of the tolerance between the underside of the bottom rail and ground level. Raked panels are custom made to suit the slope. Panels can be stepped up to a maximum slope of 1 in 20. If stepped panels are proposed, longer posts will be required to ensure the embedment depth is achieved. Again, it should be noted that these custom made panels are considerably more expensive than standard panels and can have longer delivery periods.
12. To assist ground maintenance teams paved areas should be specified beneath any pedestrian guard rail panels and posts wherever reasonably practicable. This saves time having to 'trim' around these areas.
13. Designers and Site Supervisors should give careful consideration to the location / setting out of the panels in relation to proposed or existing manholes / draw pits / statutory utility covers and ensure that access to these can be maintained once the panels are installed. Posts should be installed prior to the final surface course being laid. To enable full compaction of the surface course it is recommended that the panels are temporarily removed whilst this operation is carried out. Where this is to be done, great care must be taken to ensure the posts are not disturbed and the panels are re-installed in the correct orientation. Fitment of vandal-proof bolts shall be delayed until final assembly and suitable provision must be made in the item coverage.
14. Due to the thin construction used for the top bar to maximise the visible area of the panels, the panels can easily deform under a vertical load (e.g. children sitting on them). This should be considered at the design stage. The use of conventional guard rail may need to be considered subject to safety not being compromised. The pedestrian guard rail shown assumes normal use (BS 7818: Class 2 loading and Class B infill). Conventional pedestrian guard rail to Class 3 (Class C infill) or exceptionally Class 4 (Class D infill) could be considered.
15. Pedestrian guard rail partially infilled with bars as detailed on HCC10/M/045 are not a suitable alternative to high visibility pedestrian guard rail as it may not be possible for drivers to see small children below the open panel.

Continued.../

16. The use of any decorative pedestrian guard rail must be agreed with the maintaining authority prior to use.
17. Further guidance on the use of pedestrian guard rail is contained in TA 57 /87, or superseding document, contained in Section 3, Volume 6 of the DfT Design Manual for Roads and Bridges.
18. The absolute minimum clearance from the guardrail to the back of the footway shall be 1000mm. In exceptional circumstances on very narrow footways the clearance from the guardrail to the edge of the carriageway can be reduced to 300mm to enable the 1000mm to be provided. The preferred option is to widen the footway if possible. It may even be necessary not to install pedestrian guardrails. If the clearance is reduced to 300mm or no guard rail is installed, a risk assessment should be prepared, and the layout assessed to ensure that the turning movements of large vehicles can be accommodated without over-running the footway.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/140**

#### **Traffic signing post foundations**

1. This drawing provides the detailed foundation dimensions for given sizes and types of sign post.
2. Post size, type and number should be determined using the D.T.P. nomograms WBM 140. These design charts use 4.0mm thick circular hollow sections for the design of 88.9mm dia. posts (see note 7, below).

Choose wind pressure from between, 1200 N/m<sup>2</sup> for well sheltered inland sites and 1600 N/m<sup>2</sup> for exposed sites.

3. Where the required post sizes exceed those covered by the Standard Detail (greater than 139.7mm OD.) the sign as a whole should be designed in accordance with the Bridge Office design guide DG5/94.<sup>3</sup>

In almost all cases posts bigger than 139.7mm OD will require to be protected by safety fencing.

4. For smaller signs, avoid erecting additional sign posts where possible by utilising lighting columns or existing sign posts where they are suitably located.
5. All lighting columns are designed to additionally support a sign with a surface area of 0.3m<sup>2</sup>.
6. In areas where it is particularly desirable to minimise the amount of street furniture it is worth considering providing lighting columns designed to resist additional loadings so that they can be used for mounting signs with surface areas in excess of 0.3m<sup>2</sup>.
7. For roads with a speed limit of 50mph or greater, and for sign posts with a diameter of or exceeding 88.9mm with a wall thickness greater than 3.2mm, the designer shall comply with TD 89/08 (use of Passively Safe Signposts, Lighting Columns and Traffic Signal Posts to BS EN 12767:2007). If compliance is not possible a site specific risk assessment should be carried out and approved and the results recorded in case of future litigation. The designer shall ensure that where posts up to and including 88.9mm diameter, with a wall thickness of 3.2mm are to be specified, they be assessed to ensure that they are adequate to cope with the design wind pressure for the proposed location of the sign.

For further information refer to:

- TD 89/08
- BS EN 12767 : 2007
- TRL Report 3/359 (TRL 11106660) - Passive safety tests on steel circular hollow section sign posts

Continued.../

---

<sup>3</sup> Accessible to HCC staff only



8. In order to highlight their presence to visually impaired pedestrians, traffic sign posts to be erected in footway areas or within 0.5 metres of a footway or cycleway shall have a 150mm deep self adhesive white band applied at between 1.4m and 1.6m above ground level. The band shall be in retroreflective material to BS 873, Class 1 or 2 (BS EN 12899-1 Class Ref 2 or 1), with the ends of the band secured to resist removal. Further guidance is provided in the DfT's 'Inclusive Mobility' document.
9. The construction and assembly of all permanent traffic signs shall comply with Clause 1207 and BS 873-6. Resistance to twisting is essential, especially for signs mounted on single posts, lighting columns etc. Clause 6.2 of BS 873-6 requires that the complete sign, when mounted in accordance with the manufacturer's instructions, shall be locked rigidly into position to resist twisting. Support arrangements utilising single posts shall be tested as described in clause 9 of BS 873-1. At the end of the test, the residual deflection of the sign by reason of permanent set or slippage shall not exceed 5°.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/145, 146 and 147**

#### **HCC scheme sign boards and advanced warning signs**

##### **HCC10/C/145**

1. The blue scheme sign board has been developed to promote the corporate image of Hampshire County Council. As such, the specification has been approved by the Corporate Communications Team, and use is obligatory for all works and routine maintenance on adopted highway delivered by the ETE Department, including Operation Resilience schemes, with a duration longer than 5 working days. They are also to be used on all Hampshire Highways Service Contract (HHSC) sites if the works are to last three or more days. For any other schemes, the Client Manager/Communications team should be contacted to discuss the requirements for a scheme sign board.
2. The scheme sign boards shall not be used for Section 278 works undertaken by developers.
3. The generic nature of this particular sign allows for re-use at other sites. Consequently, unless directed otherwise in Appendix 1/21, the Contractor is to retain the signs for re-use as appropriate.

##### **HCC10/C/146**

1. These signs are the large scheme boards for use on Capital schemes. There are variations with and without the funding logos.
2. As noted above, both the Client Manager and the Communications team should be consulted regarding the text for the title and the “strap line” and the inclusion of funding corporate logos.
3. These signs are not to be installed on street lighting columns as they are too large. A full sign and post design should be carried out, with sizing to suit the specific site text requirements.

##### **HCC10/C/147**

1. The yellow advance notification signs notifying the start date of works and their anticipated duration are covered by this standard detail. Full site specific details of these should be specified in the contract documents.
2. Generally these yellow signs are only to be used where there will be disruption to the normal flow of traffic (e.g. by use of temporary traffic signals or other form of lane closure). They will normally be erected 1 to 2 weeks before work starts on site. The blue scheme sign boards shall be erected at the same time as any yellow advance notification signs.
3. The signs shall be manufactured from appropriate materials and erected as indicated in the contract documents.

Continued.../

4. When yellow advance notification signs are not required, the blue scheme sign boards shall be erected at commencement of the works and maintained until the issue of the Certificate of Substantial Completion.

**In general**

1. No change to the size, format or colours of the signs shall be permitted.
2. The number of signs required on each site shall be determined, with a view to providing one sign on each main approach to the site in question.
3. Signs shall be positioned so as not to obstruct the passage of traffic, including pedestrians. Where signs are to be mounted above a footway, they shall have a minimum vertical clearance of 2.1m (2.4m for cycleways). A minimum horizontal clearance of 0.5m shall also be provided from the edge of the trafficked carriageway. Where the width of footway is such that this would cause an obstruction, the sign shall be located at the rear of the footway.
4. In order to highlight their presence to visually impaired pedestrians, traffic sign posts to be erected in footway areas or within 0.5 metres of a footway or cycleway shall have a 150mm deep self adhesive white band applied at between 1.4m and 1.6m above ground level. The band shall be in retroreflective material to BS 873, Class 1 or 2 (BS EN 12899-1 Class Ref 2 or 1), with the ends of the band secured to resist removal. Further guidance is provided in the DfT's 'Inclusive Mobility' document.
5. Signs shall also not be situated where they can cause obstruction of visibility from side roads or private vehicular accesses.
6. Signs shall not be positioned so that they obscure visibility to regulatory, warning or other permanent traffic signs, or the contractor's works.
7. All scheme sign boards and temporary posts shall be removed on completion of the works.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/C/150 & 151**

#### **End-mounted traffic sign details**

1. This method of attaching sign plates to posts will generally be used for the direction signing of cycle and/or pedestrian routes.
2. Unnecessary street furniture should be avoided by utilising lighting columns to mount signs up to a maximum surface area of 0.3m<sup>2</sup>, or existing sign posts where suitably located. If an existing sign post is to be used, it should be assessed to ensure it is capable of supporting the additional wind loading of the total area of sign faces mounted upon it. If not, a suitable new post should be installed.
3. In order to highlight their presence to visually impaired pedestrians, traffic sign posts to be erected in footway areas or within 0.5 metres of a footway or cycleway shall have a 150mm deep self adhesive white band applied at between 1.4m and 1.6m above ground level. The band shall be in retroreflective material to BS EN 12899-1 Class RA1 or RA2, with the ends of the band secured to resist removal. Further guidance is provided in the DfT's 'Inclusive Mobility' document.
4. The construction and assembly of all permanent traffic signs shall comply with Clause 1207 and BS EN 12899-1. Resistance to twisting is essential, especially for end-mounted signs.. Support arrangements utilising single posts shall be tested as described in BS EN 12899-1. At the end of the test, the residual deflection of the sign by reason of permanent set or slippage shall not exceed 5°.
5. In areas where ornamental cast iron finger post signs are required, such as in rural villages, New Forest National Park etc., they shall be specified individually. Below are details of contractors who have undertaken the casting and/or painting of such signs for use in Hampshire:
  - Casting/painting and installing of signs, including removal of existing and disposal if necessary:  
Essex Replica Castings Ltd  
108-112 Westmoor Street  
Charlton, London  
SE7 8NQ  
Tel:020 8858 6110
  - Casting of signs:  
Brooks Crownhill Patternmakers Limited  
North Way  
Walworth Industrial Estate  
Andover  
Hampshire  
SP10 5AZ  
Tel:01264 366500

Continued.../

*HCC10/C/150 & 151*

- Painting/installation of signs. Removal of existing signs and disposal if necessary:  
Siteweld Construction  
Manor Farm  
Monxton Road  
Abbotts Ann  
Andover  
Hampshire  
SP11 7DB  
Tel:01264 710194

[Back to Contents](#)

**Notes for Guidance – HCC Construction Details (Not part of the Standard Drawing Series)**

**Construction of tree pits/trenches within the adoptable highway**

1. Tree stock size – Trees must normally be planted at 16-18cm girth.
2. Pit volume – 10m<sup>3</sup> minimum for each new tree. If more than one tree are planted in close proximity, linked tree pits should be used to form a continuous trench.
3. Topsoil – Topsoil shall be to BS 3882 or better, e.g. ‘As-dug native topsoil’ approved by the Arboricultural Officer or manufactured soil comprising of 80% soil, 10% Pro Grow or similar, 10% stone/RA 10mm – 20mm diameter grade.
4. Subsoil – Any imported soil below 600mm depth shall be subsoil to BS 8601.
5. Structural soils – These shall be Amsterdam Tree Sand or similar approved, e.g. Green tree Amenity Tree Soil.
6. Load supporting systems – These shall be as approved by the Engineer/Supervisor and the Arboricultural Officer. No system may be used within the load line of the carriageway.
7. Root barrier – A root barrier shall only to be used where services or drainage systems need protection from future root growth, but will not usually be acceptable on more than two sides of the tree pit.
8. Root deflectors – These may be acceptable on all four sides where there is a need to direct roots down away from surfacing. Permission should be sought from the Arboricultural Officer.
9. Drainage – Tree pit drainage will only be necessary in areas where waterlogging is an identified risk.
10. Irrigation systems – These are not normally necessary, but advice should be sought from the Arboricultural Officer.
11. Guying systems – Underground systems are preferable when the tree stock size is 16-18cm or above.
12. Tree guards – Guards will not normally be required when the tree stock size is 16-18cm or above.
13. Grilles – These are not normally acceptable. If used, they should have removable concentric rings, or a similar design feature to take account of future tree growth.
14. Bonded surfaces – Shredded rubber systems are preferable due to their flexibility. All systems must take into account future tree growth and provide at least 75mm spacing from the tree stem.

[Back to Contents](#)

**Notes for Guidance – HCC Construction Details (Not part of the Standard Drawing Series)**

**Over-run areas at roundabout central islands**

1. Over-run areas are used to create the optical illusion that the useable carriageway is narrower than it actually is. At roundabouts they can be used to deflect lighter traffic away from a straight ahead and faster path, while still enabling larger vehicles to negotiate turns without a problem.

Figures 1 and 2 show the construction detail required where the island is to be constructed within an existing carriageway. Figures 3 and 4 show the detail for use in new construction. Some sites may have a combination of the two and there will be variations such as where the existing carriageway is to be overlaid.

2. In Hampshire the over-runnable section of a roundabout central island will generally be constructed as follows:
  - With the outer edge having a 15mm upstand
  - With a 7.5 degree slope rising to the inner island
  - With a surface of either granite setts (see 5 to 7, below) or ‘Imprint’ (See 8 & 9 below)
3. The advantages of the ‘Imprint’ surface option over the granite sett surface option are that it is quicker to install and can be trafficked relatively soon following installation, thereby lessening disruption to traffic and avoiding high traffic management costs during construction. However, ‘Imprint’ may not withstand regular trafficking by HGVs. Therefore, at sites where light vehicles will predominate and HGV usage will be occasional the ‘Imprint’ option should be specified and at sites where regular and high levels of trafficking by HGVs can be anticipated the more robust granite sett option should be specified.
4. Construction details for the kerbs and over-run area surfacing should be as shown in Figures 1 to 4, and as described below.
5. In choosing the radius for the outer edge of the over-runnable island, ensure that kerbs of that radius are obtainable from manufacturers. Where necessary, adapt the design to a radius that can be constructed from obtainable kerbs. The specifier should prepare details appropriate to the site-specific requirements.
6. As shown in Figure 1 the existing carriageway will be excavated to enable the construction of the kerb and its bed and surround. The bed and surround must be sufficiently robust to avoid kerbs becoming displaced under traffic and it may be necessary to provide subbase beneath. Where the detail is to be used in areas of poor ground conditions, the width and depth of the ST4 concrete bed and surround should be increased. The carriageway to the front of the kerb should be neatly saw cut. Reinstatement of the surface course and treatment of the receiving surfaces shall be as detailed on HCC10/M/005.

Continued.../

*HCC Construction Detail – Over-run areas at roundabout central islands*

7. Where granite setts are to be detailed as an over-run surface they should be as shown in Figures 1 and 3. The setts should be 100mm x 100mm x 200mm deep, with 15mm wide joints, laid on 30mm thick bed of 'EasiPoint' Bedding Mortar or equivalent with joints filled with 'EasiPoint' Dark Grey 'Settpoint Rapid', or equivalent, to approximately 2mm of the surface of the setts. Materials shall be used in accordance with the manufacturer's instructions. The underlying carriageway construction must be sufficiently robust to support the setts rigidly. If necessary a concrete base shall be provided.
8. 'Imprint' is a synthetic surfacing material that can be laid in a variety of colours and moulded to various pattern shapes to replicate bricks, blocks, setts and paving slabs etc. It is manufactured by Prismo and installed by them or one of their approved installers. It is essential that the underlying carriageway construction is sound and without evidence of cracking or deformation. If not, it is possible that failure of the 'Imprint' surface will occur. To prevent this from occurring it may be necessary to partially or fully reconstruct the carriageway prior to applying the 'Imprint' material.
9. Where 'Imprint' is to be detailed as an over-run surface it should be installed as shown in Figures 2 and 4 and in accordance with the manufactures instructions. Imprint shall be Grade 60 and will generally be buff in colour, providing good contrast with adjacent carriageway. Details of the colour and surface pattern shall be specified on the layout drawings or in Appendix 7/1.
10. Over-run areas should not be used in un-lit roads unless special lighting to illuminate the over-run area is provided.
11. 'Imprint' is by:

DBI Prismo Contracting Services  
Renny's Lane, Dragonville Industrial Estates  
Belmont  
Durham  
DH1 2RS  
Tel: 0845 688 0155  
<http://www.dbiservices.com/europe>

'Easipoint' is by  
Easipoint Marketing Ltd.  
Unit 6, East Chorley Business Centre  
Eastway  
Chorley  
Lancashire  
PR6 OBJ  
Tel:01257 224900

Continued.../



DETAIL OF OVER-RUNNABLE AREA AT ROUNDABOUT  
CENTRAL ISLAND IN EXISTING CARRIAGEWAY

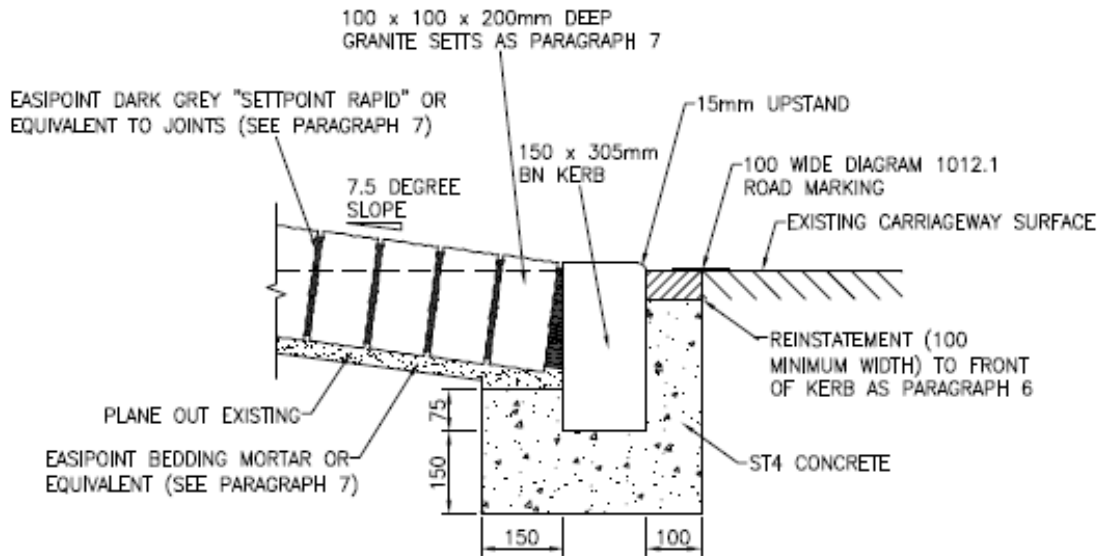


FIGURE 1 (GRANITE SETTS)

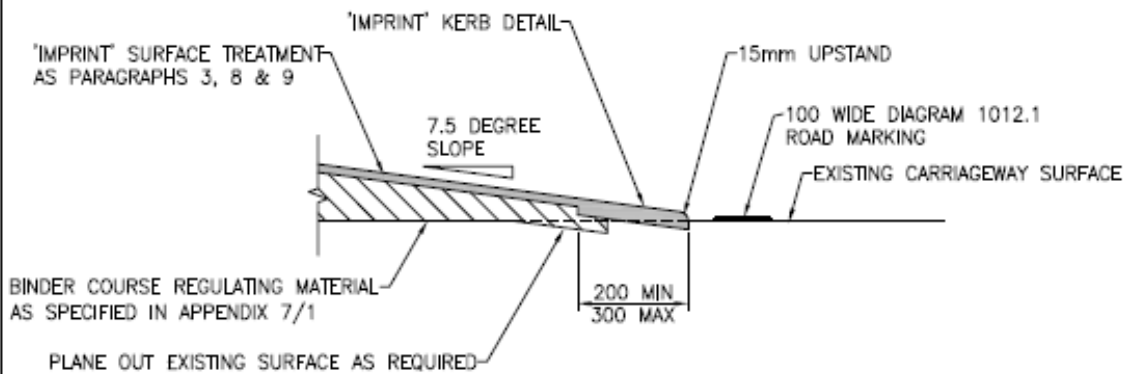


FIGURE 2 (IMPRINT)

Continued.../

DETAIL OF OVER-RUNNABLE AREA AT ROUNDABOUT  
CENTRAL ISLAND IN NEW CONSTRUCTION

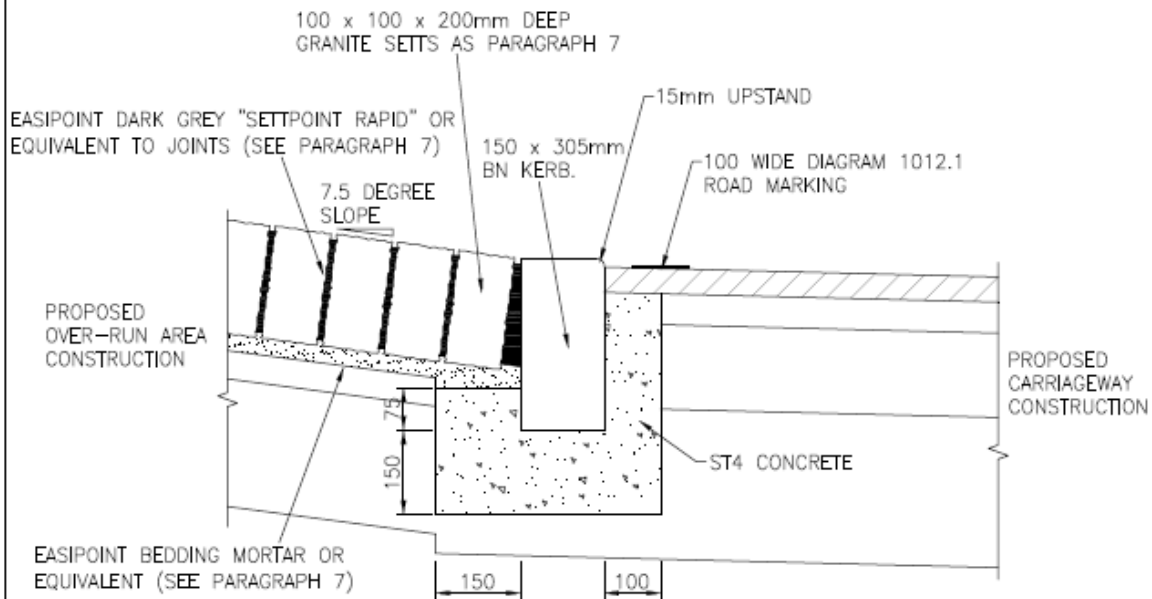


FIGURE 3 (GRANITE SETTS)

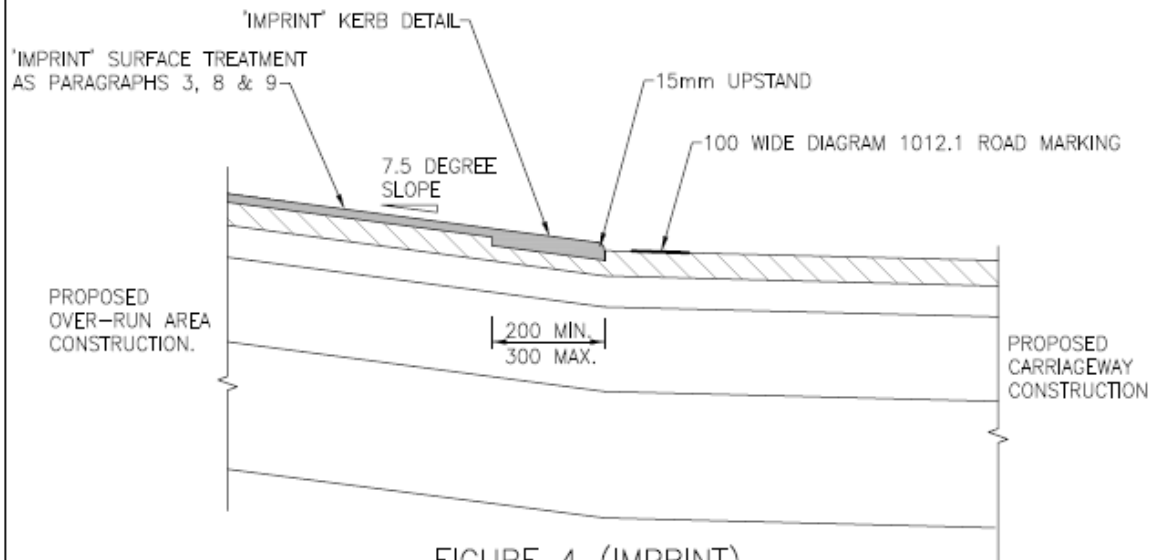


FIGURE 4 (IMPRINT)

[Back to Contents](#)

**Notes for Guidance – HCC Construction Details (Not part of the Standard Drawing Series)**

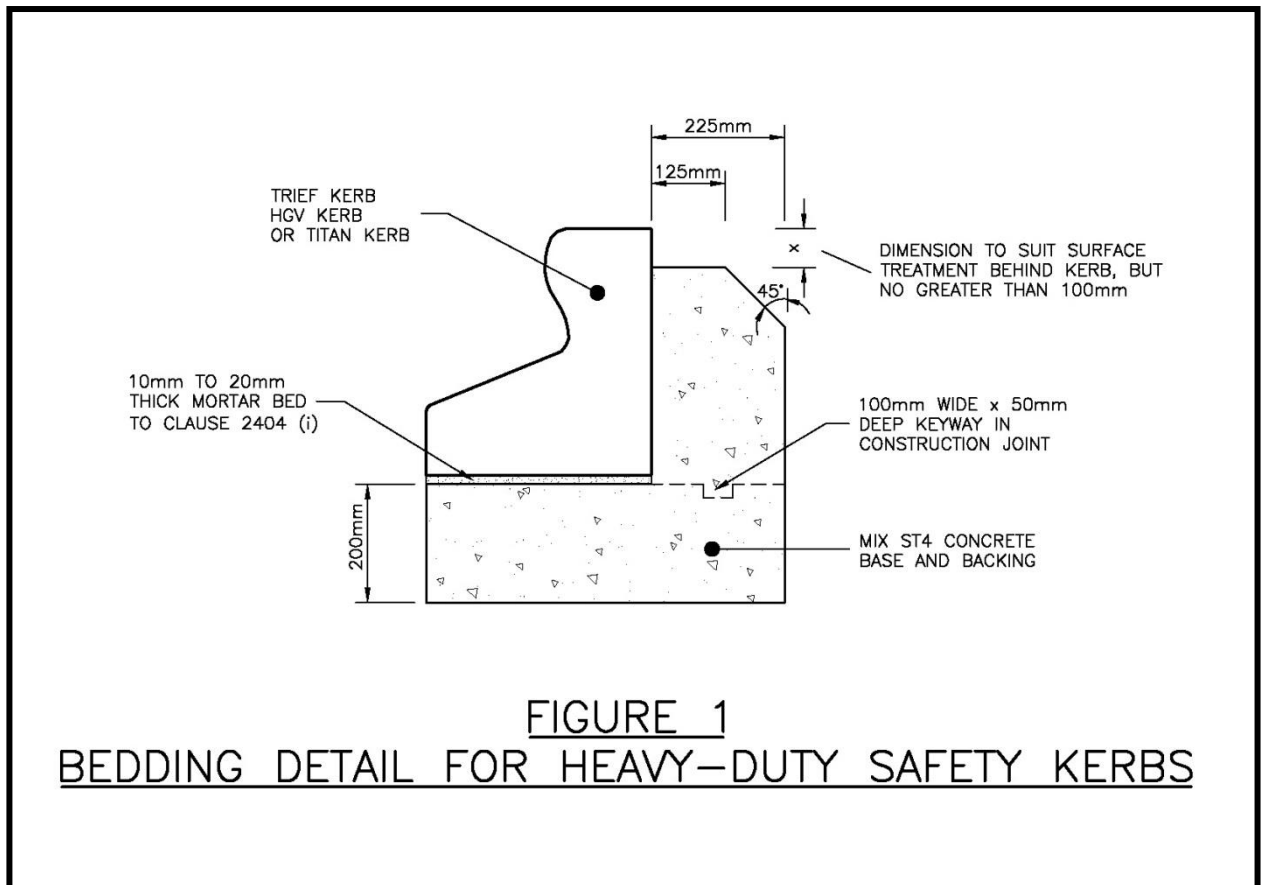
**Heavy duty safety kerbs**

1. Three manufacturers in the UK produce heavy-duty safety kerbs:

Brett Landscaping -	Trief Kerbs
Charcon -	HGV kerbs
Marshalls -	Titan kerbs

All three are approved for use by Hampshire County Council.

2. The three kerbs differ in profile, overall dimensions and in terms of the range of accessories, such as quadrants, transition units, radius kerbs etc. Because of these differences a Standard Detail is not appropriate and contract specific details should be prepared.
3. Decide from their brochures which manufacturer product best suits your requirements and produce a detailed design based upon that.
4. Notwithstanding the manufacturers printed installation advice, the design should be detailed to include insitu concrete base and backing and mortar bed of minimum dimensions, mix and shape shown in figure 1, below.



[Back to Contents](#)

**Notes for Guidance – HCC Construction Details (Not part of the Standard Drawing Series)**

**Streetlighting/street furniture/traffic signal ducting**

1. “Streetlighting” is defined by the HCC Streetlighting team as illuminated columns, signs and bollards. “Street furniture” requiring a power supply would be items like feeder pillars, bus shelters, digital installations like VMS, parking meters etc.
2. LV cables feeding the street furniture items should be in black ducts.
3. Only those cables actually leading to streetlighting columns, illuminated signs and illuminated bollards should be in orange ducts. It should be noted that, however, the final section of ducting that is used to enter an individual column (as noted on drawings HCC10/L/025 and 026) may be black in colour.
4. It is recommended that the duct colours should change if necessary where cables are spurred to individual items.
5. All ducts carrying supply to traffic signals shall be orange, as specified on the T Series of Standard Details.
6. The Department for Transport publication “Practical Guide to Street Works – HAUC (UK)”

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/4382/practicalguidetostreetworks.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4382/practicalguidetostreetworks.pdf)

states that compliance with NJUG guidance on the colour coding of utilities’ apparatus (NJUG Volume 1) is required, and a table is given in Annex 5 of the “Practical Guide to Street Works – HAUC (UK)”.

The NJUG document can be accessed by the link below.

<http://www.njug.org.uk/wp-content/uploads/V1-Positioning-Colour-Coding-Issue-8.pdf>

7. The NJUG guidance reflects utility practice, but it must not be assumed that any existing services encountered will conform to these recommendations. As the guidance is updated periodically, designers should check that reference has been made to the latest edition. Ultimately, when there are doubts, clarification should be sought from NJUG:

**Email:** info@njug.org.uk

**Telephone:** 0203 397 3315

**Address:** 69 Wilson Street, London, EC2A 2BB

[Back to Contents](#)

**Notes for Guidance – HCC Construction Details (Not part of the Standard Drawing Series)**

**Typical layout of a School Crossing Patrol site**

1. This typical layout shall only be used on roads with a speed limit of 40 mph or less. Site specific drawings are required for all School Crossing Patrol sites. Specific circumstances for consideration include, but are not limited to, rural settings, sensitive landscape settings and Conservation Areas.
2. In these areas, the use of yellow backing boards to the signs, yellow retro-reflective bands to the bollards, the type of material to be used for the bollards, the use of flashing amber lights (Wig-Wags) or of red anti-skid surfacing under the SLOW road markings should all be assessed as they may be inappropriate. The reasons for choosing to omit or change these details should be documented in case of possible future litigation.
3. Signing should be in accordance with the Traffic Signs Manual Chapter 4 (Warning Signs) and should be suitable for site specific circumstances.
4. The use of buff coloured High Friction surfacing on the approaches is optional as it is dependent on the site circumstances. The minimum distance of buff Type 1 HFS from the leading top edge of the transition kerb shall be 50m on roads with a speed limit of 30 mph and below and 60m on roads with a speed limit of 31-40 mph. In certain situations it may be necessary to extend the length of anti-skid surfacing (e.g. on a hill or at sites with poor forward visibility, or where long queues may form). These minimum distances have been agreed with the HCC Technical Advice Group.
5. Dark grey Type 1 High Friction surfacing should be used over the width of the proposed crossing to provide a contrast as shown in the detail in this note. The HFS in this area should be changed to buff coloured Type 1 when omitting the HFS on the approaches (see note 4 above).
6. The latest edition of the Traffic Signs Regulations and General Directions gives guidance on whether signing should be illuminated or not. On roads that are not major traffic routes (i.e. non-principal traffic roads), that are single carriageway and have a speed limit no greater than 30mph, Diagram No. 545 can now be illuminated by the use of retro reflective material only (i.e. direct lighting is not required).
7. The class/type of retro reflective material should be specified on the sign schedule. The minimum standard of retro reflective material shall be Class 1 to BS 873-6 or its equivalent.
8. Depending on the location of the site, either mains or solar powered Wig-Wags to Diag. 4004 will be installed. The designer shall determine if there is a nearby power supply and agree which type of Wig Wag units are to be installed with the SCP team and/or scheme Client. It should also be confirmed who will be responsible for future maintenance and control of programming (i.e. to ensure that they are only operational on weekdays in term time, or for specific out of core-time events, to prevent them being ignored by drivers). If pre-programmed, the school should be asked to confirm that they will inform Hampshire County Council of any subsequent faults. If they are to be operated by a key or remote

Continued.../

### *HCC Construction Detail – Typical layout of a School Crossing Patrol site*

control by someone other than an appointed School Crossing Patrol Officer (SCPO), again the school shall be asked to confirm responsibility for this operation. The preferred option is for the signs to be adopted by the Hampshire County Council Street Lighting Section. This section should also be consulted during the design process.

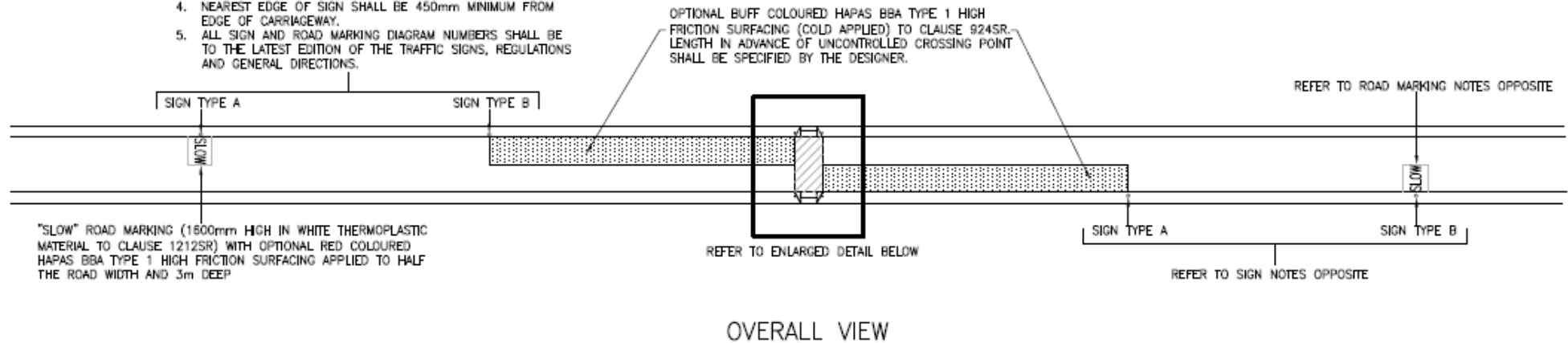
9. On roads wider than 6m, local narrowing of the carriageway over the width of the crossing using a kerbed build-out should be considered. For very wide roads, more substantial narrowing may be required. The use of a central pedestrian refuge island is not recommended as this in effect creates two crossings which one SCPO cannot control safely. Use of islands can also present safety issues, as impatient drivers can be tempted to use the wrong side of the island if there is no traffic coming the other way. Any narrowing must be detailed on the drawings and a Safety Audit should be carried out in conjunction with consultation with the Headquarters SCP office. The designer should check that the design does not affect an abnormal load route.
10. On narrow footways, the clearance from the edge of the carriageway to the bollards can be reduced to 300mm. Bollards are not recommended for use where a clearance of 1000mm cannot be maintained from behind the bollard to the back of footway. See Notes for Guidance to Standard Detail HCC10/C/130 for further guidance on the use of bollards.
11. The layout drawing shall include all of the following information:
  - Location of the crossing with OS grid reference and the SCP site reference.
  - Location of all signing relevant to the crossing.
  - Details of sign illumination, power supplies and control systems for the flashing amber lights.
  - The length of the buff HFS in advance of the crossing if used and details of any other coloured HFS deemed appropriate.
  - All civil works details/specifications.
12. Site specific health and safety information shall be provided separately, including details of traffic management requirements. Information on restricted hours of working should also be provided, together with details of Statutory Undertakers' plant.

Continued.../

HCC Construction Detail – Typical layout of a School Crossing Patrol site

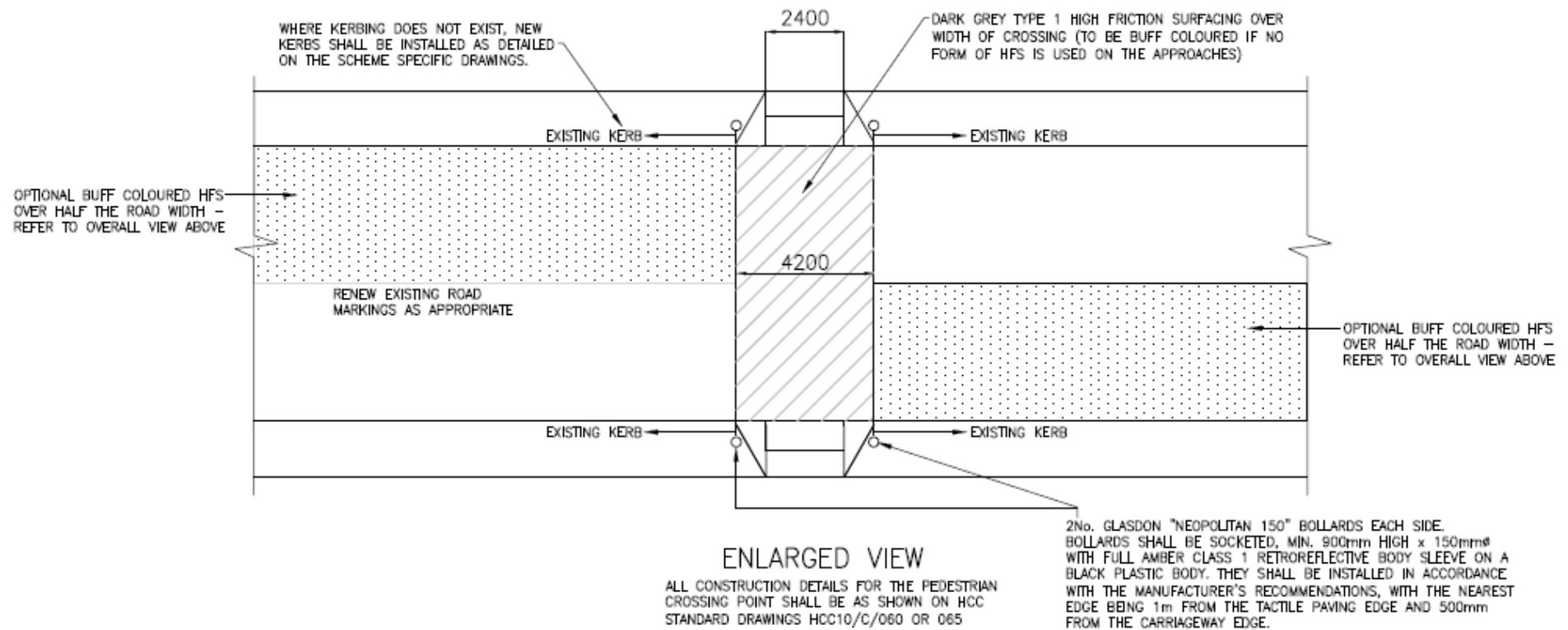
TYPICAL SIGN LAYOUT SHOWN

1. DESIGNER TO CONSULT TRAFFIC MANAGEMENT DEPARTMENT BEFORE SELECTING A LAYOUT BASED ON SITE SPECIFIC CIRCUMSTANCES.
2. SIGN DETAILS SHALL BE PROVIDED IN THE PROPOSED SIGN SCHEDULE IN APPENDIX 12/1.
3. MINIMUM MOUNTING HEIGHT FROM GROUND LEVEL TO LOWER EDGE OF SIGN SHALL BE 2100mm ON A FOOTWAY AND 2400mm ON A CYCLEWAY OR SHARED USE ROUTE.
4. NEAREST EDGE OF SIGN SHALL BE 450mm MINIMUM FROM EDGE OF CARRIAGEWAY.
5. ALL SIGN AND ROAD MARKING DIAGRAM NUMBERS SHALL BE TO THE LATEST EDITION OF THE TRAFFIC SIGNS, REGULATIONS AND GENERAL DIRECTIONS.



Continued.../

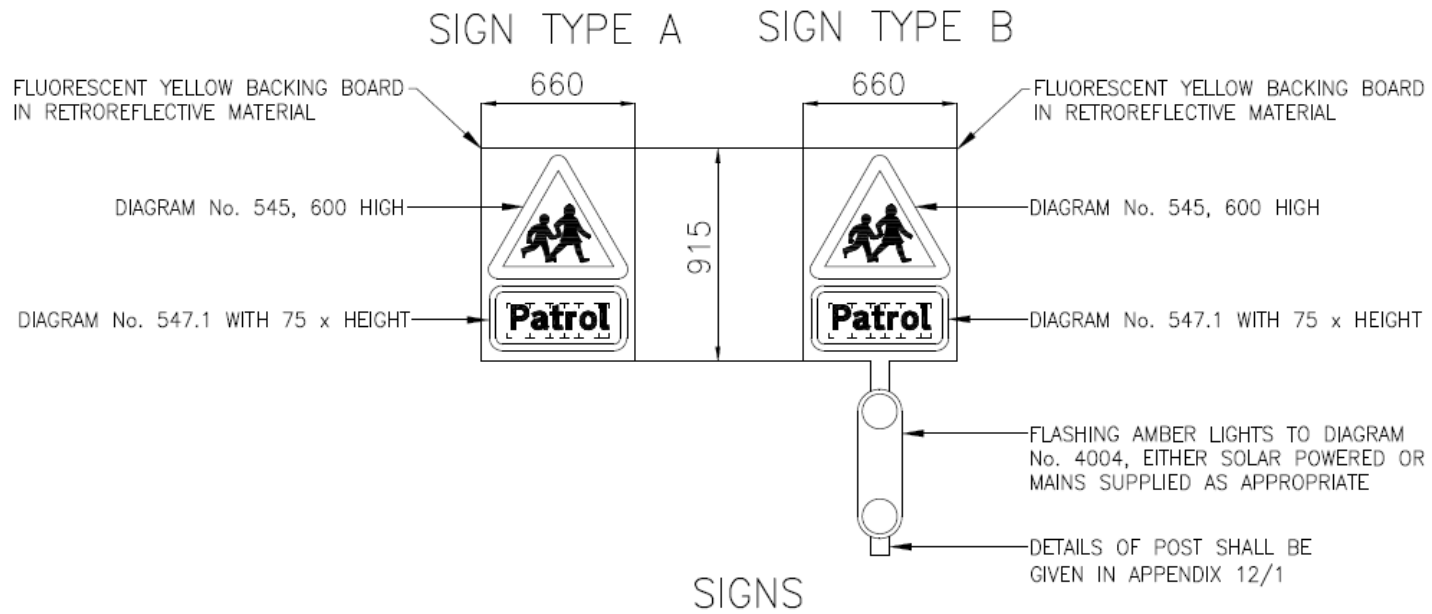
HCC Construction Detail – Typical layout of a School Crossing Patrol site



Continued.../



*HCC Construction Detail – Typical layout of a School Crossing Patrol site*



[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/010**

#### **Filter drain details**

1. Trench and bedding details for surface water drains should be as Highway Construction Detail Drawing F1. (Volume 3 of the Manual of Contract Documents for Highway Works).
2. Trench and bedding details for filter drains should be as Standard Detail Drawing HCC10/D/010.
3. The range of pipe types allowable for use in both surface water and filter drains should be determined in accordance with Advice Note HA 40/01.
4. The primary function of filter drain Types 1A and 1B is to collect surface water although there will of course be some interception of sub surface water. Type 1B should be specified wherever sands and silts are encountered so that the geotextile can lessen the migration of fines into the filter media.
5. Filter drain Type 1C should be specified where sub-surface water requires to be intercepted but there is no requirement to collect surface water.
6. Except for gully connections, which are generally of 150mm internal diameter, the smallest diameter for pipes used for surface water or filter drainage should be 225mm diameter.
7. The preference in Hampshire is to use recycled plastic drainage pipes, eg JFC Twinwall Drainage System manufactured by JFC Plastics Limited, Hardwick Road, Astmoor Industrial Estate, Runcorn Cheshire, WA7 1PH, Tel. 01928 583391.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/015**

#### **Gully Type 1**

1. Currently the in-situ concrete type with the permanent uPVC shuttering is the most economical and the safest (manual handling) to install and is therefore most favoured by contractors. It is this version which is shown in the Standard Detail.

Supervisors should note the specification requirement that the shuttering used should have a current British Board of Agrèment Road and Bridges Certificate.

2. All Type 1 gullies shall be trapped, unless specified otherwise in Appendix 5/1. Stoppers must be in place if these are to be effective. The minimum frame depth shall be 100mm.
3. Gully pots, 900mm or 1050mm deep, may be specified where significantly higher than average amounts of silt/detritus is expected or where required to help prevent contamination of ground water (see NfG to Standard Detail HCC10/D/075). If in doubt regarding this consult the local Hampshire Highways Office.<sup>4</sup>
4. The requirements for gully grating and frames are comprehensively specified in Appendix 5/1. An important safety issue is the orientation of the grating hinge. All gratings should be side hinged with the hinge at the traffic approach side of the frame. Emphasise this requirement when detailing gullies to be installed in dual carriageways, one-way streets and roundabouts.

Where a gully must be installed at a location where the above hinge criteria cannot be met, such as at a traffic calming build-out which will be trafficked in both directions, then a side entry gully should be specified.

5. Before specifying the re-use on site of existing gratings and frames from gullies which are to be abandoned they should be checked to ensure that they comply in all respects with the requirements for new gratings and frames. If they do not, then specify their disposal.

If gratings and frames on existing gullies which are to be raised or lowered do not comply with the requirements for new then they should be replaced with conforming products.

6. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Supervisors should therefore ensure that this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site or if subject to agricultural effluent) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>4</sup>
7. Gully grating frames shall be a minimum of 100mm deep as specified in Appendix 5/1.

[Back to Contents](#)

---

<sup>4</sup> Accessible to HCC staff only

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/020**

#### **Gully Type 2**

1. Gully Type 2 provides more flexibility of shape than Gully Type 1. Dimensions can be modified in order to accommodate underground obstructions.
2. Guidance notes regarding gratings and frames for Gully Type 2 should be as those for Standard Detail HCC10/D/015.
3. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Supervisors should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site or if subject to agricultural effluent) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>5</sup>
4. Gully grating frames shall be a minimum of 100mm deep as specified in Appendix 5/1.

[Back to Contents](#)

---

<sup>5</sup> Accessible to HCC staff only

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/025**

#### **Gully Type 3**

1. Gully Type 3 should be considered for use at locations where sump-cleansing operations would be particularly difficult and would cause disruption to traffic, for example, on the inside kerb line to a busy roundabout or a dual carriageway.
2. Wherever Gully Type 3 is provided, the drainage design should include an accessible downstream catchpit where silt is trapped and can be removed during routine maintenance.
3. The requirements for gratings and frames shall be as those for Standard Detail HCC10/D/015.
4. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Supervisors should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site or if subject to agricultural effluent) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>6</sup>
5. Gully grating frames shall be a minimum of 100mm deep as specified in Appendix 5/1.

[Back to Contents](#)

---

<sup>6</sup> *Accessible to HCC staff only*

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/030 & 035**

#### **Combined catchpit/gully – Type CCG – Brick or precast concrete**

1. The brick or precast concrete combined catchpit/gully is for use in rural areas at sites such as adjacent to farms and field accesses, which can be subject to regular or periodic excesses of agricultural detritus.

The larger area of waterway provided by the grating and frame is less likely to block between maintenance visits than would be the case with Gully Types 1, 2 or 3.

2. The gully grating frame shall be a minimum of 150mm deep in accordance with the specification for chamber covers in Appendix 5/1.
3. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Supervisors should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site or if subject to agricultural effluent) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>7</sup>

[Back to Contents](#)

---

<sup>7</sup> Accessible to HCC staff only

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/040**

#### **Catchpit Types C1 and C2**

1. Catchpits shall be used preceding any soakaways, filter drains or covered storage systems to reduce silt and hydrocarbon contamination. A catchpit can be used to facilitate changes in pipe size and pipe direction and provide an access point for jetting and condition surveys, but additionally provides a sump where silt can be trapped and periodically removed. As a general rule, where a piped drainage solution is proposed, that will be adopted/maintained by HCC, manholes shall be used except where indicated above. For a solution to carriageway flooding, the decision to use a manhole or a catchpit on a surface water system should be site specific, taking into account of environmental and maintenance requirements.
2. A catchpit constructed within a carriageway or within 3.0m of the edge of a carriageway should be specified as Catchpit Type C1.
3. A catchpit constructed further than 3m from the edge of a carriageway should be specified as Catchpit Type C2.
4. Catchpits shall be constructed without step irons. Should access be required for inspections or maintenance purposes, it shall be undertaken using a portable winch and harness, by a team of operatives who have received training and are certified to work in confined spaces.
5. Catchpits need regular cleansing and should be sited where they will be accessible to conventional cleansing tankers. The level difference between catchpit invert and tanker pump should not exceed 10.0m.
6. At construction stage, it may be necessary due to constraints in pipe lengths to vary the lengths of the articulated section described in sub-Clause 507.17. However, the principle of having the joint nearest the chamber as close as possible to the chamber, and the next joint positioned so as to give an effective length of intervening articulated pipe free from constraint by the trench bottom, should be maintained.
7. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>8</sup>

[Back to Contents](#)

---

<sup>8</sup> *Accessible to HCC staff only*

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/045 to 065**

#### **Manhole Types M1, M2, M3, M4 and M5**

1. Manholes will be used to facilitate changes in pipe direction, size and depth and to provide access for jetting and condition survey. Manholes shall not be greater than 100m apart.
2. The manholes shown will normally be constructed on foul sewerage systems. Manholes which are to be offered for adoption by one of the three water Authorities operating within the county of Hampshire should be constructed in accordance with the details in the latest edition of “Sewers for Adoption – A Design and Construction Guide for Developers”. However, it is recommended that the “Sewers for Adoption” should be used as a reference guide on all Hampshire County Council infrastructure schemes.
3. The three Water Authorities operating within the County of Hampshire are: Thames Water, Wessex Water and Southern Water.

Each of the above authorities has its own individual guidance notes to supplement the guidance within “Sewers for Adoption”. Up to date versions of the Supplementary Guidance issued by each authority can be accessed via the Water Research Councils web site:

<http://www.wrcplc.co.uk/sfa/>

4. The HCC Standard Details make reference to the requirements of the Water Authorities, while at the same time modifying those requirements to meet compliance with the Specification for Highway Works.
5. On drawings HCC10/D/045 and 050, the manhole reference numbers correspond with those in Sewers for Adoption. In SFA, Type 1 manholes are those with a depth of 3m to 6m (either with a riser section or without) and Type 2 manholes are those with a depth of 1.5m to 3m. The HCC Standard Details then split those types further into options W, X, Y and Z, depending on the pipe diameter and therefore the manhole ring size. Drawing HCC10/D/050 (Type 1), Note 3 gives guidance on how and when to specify use of the reducing slab and riser shaft in deep manholes.
6. All manholes to be adopted by Hampshire County Council shall be constructed without step irons or access ladders. Should access be required for inspections of maintenance purposes, it shall be undertaken using a portable winch and harness, by a team of operatives who have received training and are certified to work in confined spaces. The relevant adopting Water Authority should be contacted regarding the requirements for step irons/ladders if applicable. Where manhole step irons are specified within precast concrete chamber rings, they shall be factory fitted and the Supervisor should ensure this is the case.
7. Each of the three Water Authorities and the County Council has different requirements in terms of chamber access clear opening dimensions. The designer should contact the relevant Authority for advice and specify the information in the chamber schedule within Appendix 5/1.

Continued.../



8. In order to ensure that all the requirements of adoption are satisfied, it is advisable to consult with the relevant Water Authority in the early stages of design. Approval for the use of manhole Types M4, M4 and M5 are to be sought from the relevant adopting Water Authority before proposing their use.
9. Where manholes with chamber rings are to be used, the minimum diameter of manhole shall be 1200mm to facilitate safe access.
10. “Sewers for Adoption” (check latest edition) requires the use of sulphate resisting cement. However, this type of cement is not readily available. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>9</sup> Where the use of sulphate resisting cement is a recommendation, then it shall be specified.

[Back to Contents](#)

---

<sup>9</sup> Accessible to HCC staff only

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/D/070**

**Soakaways Type S1 and S1A**

1. Soakaways Type S1 and S1A shall not generally be used for the discharge of highway drainage, unless a suitable silt trap arrangement is provided upstream of the inlet.
2. Typically, the S1 and S1A soakaways are used to discharge water from water table-lowering filter drains running along the toe of embankments.
3. All soakaways shall be constructed without step irons. Should access be required for inspections of maintenance purposes, it shall be undertaken using a portable winch and harness, by a team of operatives who have received training and are certified to work in confined spaces.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/075**

#### **Soakaways Type S2 and S2(G)**

These soakaway types are further split into options A and B, depending on chamber diameter selected. The (G) types are those with a geotextile membrane around the sides and under the base of the backfill.

1. Although infiltration drainage should be selected wherever possible, soakaways should only be used where tests have shown that the subsoil will accept the volume of water expected. Soakage tests and capacity calculations shall be carried out in accordance with BRE Digest 365 and in accordance with the additional requirements set out below.
2. All calculations regarding storage capacities and surface areas of soakaways should be based upon the volume of the open chamber only (using a safety factor of 2), which will ignore the contribution of the voids within the granular surround. This is to allow for the fact that the surround will probably become blocked with silt over time.
3. Storage capacities should be measured from the base of the chamber to the invert of the lowest inlet pipe.
4. The width/diameter and depth of the soakaway should be determined by the designer, using suitable software (eg MicroDrainage) and design guides and according to the site specific information. The depth should be a minimum of 1m above winter (or seasonally high) groundwater levels. The designer should seek advice from the Geotechnical team or consult the Site Investigation report regarding this.
5. It should be noted that the Environment Agency is not in favour of ‘deep’ soakaways (eg borehole soakaways – not permitted) so this may be another constraint on designers. The maximum permissible ring chamber depth should be 3m. This limitation may be based on practical maintenance in that a gully sucker & single hose can reach 3m. To reach deeper, a second hose is required and this impacts on cleansing efficiencies. Soakaways need regular cleansing and should be sited where they will be accessible to conventional cleansing tankers. The level difference between soakaway invert and tanker pump should not exceed 10.0m.
6. When soakaways are linked there shall be at least 5.0m of undisturbed ground between chamber surrounds.
7. Under their Policy and Practice for the Protection of Groundwater, the Environment Agency has developed Ground Water Protection Zone maps.
8. The maps which detail the groundwater protection zones of varying vulnerability are available on the EA website.  
<http://apps.environment-agency.gov.uk/wiyby/37833.aspx>
9. Boundaries to ground water protection zones will change as rates of abstraction increase or decrease and the maps should be consulted for each scheme.

Continued.../

10. Three levels of ground water protection zone are designated:
  - Zone 1 – Ground Water Inner Source Protection Zone
  - Zone 2 – Ground Water Outer Source Protection Zone
  - Zone 3 – Catchment Zone
11. No soakaways for the discharge of highway drainage shall be permitted within Zone 1, nor within 250m of Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) or RAMSAR sites. These sites are detailed in the H.C.C. GIS system.<sup>10</sup>
12. No soakaways for the discharge of highway drainage from a major road carrying in excess of 30,000 AADT shall be permitted in Zone 2. Within Hampshire these roads are:
  - All Motorways and Trunk Roads
  - A36 from M27 to County Boundary
  - A326
  - A337 from M27 to A35
  - A3057 south of Romsey
  - A27 east of Southampton (including spur to M27)
  - A32 from Wickham to M27
  - A32 from A27 into Gosport
  - A31 east of Alton
  - A325 through Rushmoor
  - A323 and A331 in Rushmoor
  - A339 from M3 to County Boundary
  - A340
  - A33 from A339 to County Boundary
13. Soakaway discharge of highway drainage from major roads carrying less than 30,000 AADT and all other categories of road may be permitted in Zones 2 and 3 subject to pre-treatment or interception in the form of gully pots and/or petrol/oil interceptors as appropriate for the location.
14. Where it is proposed to install a soakaway within any of the following areas, the Environment Agency's Development Control Section shall be consulted:
  - Ground Water Protection Zones 2 and 3.
  - A Major Aquifer located outside of the Ground Water Protection Zones. A Major Aquifer is defined as a 'highly permeable formation usually with a known or probable presence of significant fracturing'. Major Aquifers occurring in Hampshire are Chalk, Upper Greensand and Lower Greensand Strata.
  - A 250m wide buffer zone around SSSI, SPA, RAMSAR and SACs.

Continued.../

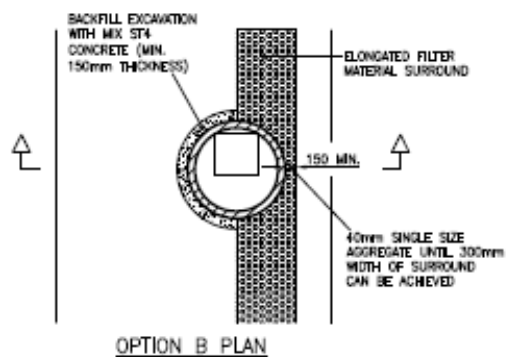
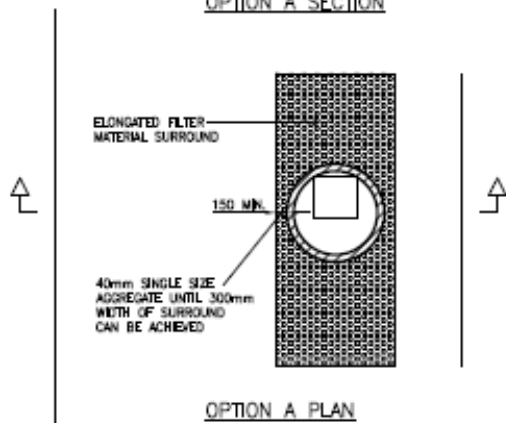
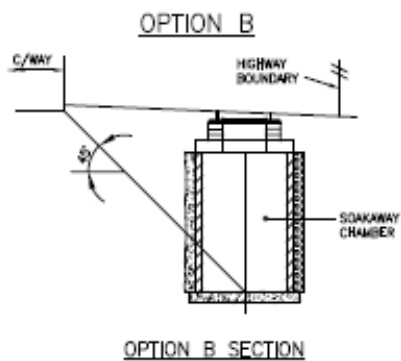
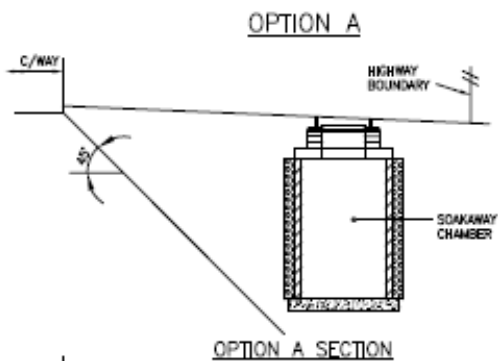
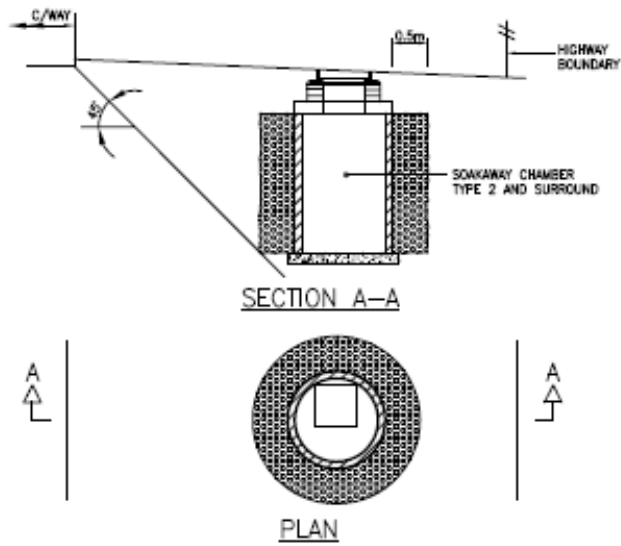
---

<sup>10</sup> Accessible only to HCC staff

15. The concentrated ingress of water into chalk can initiate new dissolution features, particularly in low-density chalk, and destabilise the loose backfill of existing ones. For this reason, soakaways to be constructed in the vicinity of buildings, structures (such as bridges, underpasses, retaining walls, tunnels, box culverts) and railways, shall:
- be avoided if at all possible in areas of chalk where dissolution features are known to be prevalent. If unavoidable, they should be sited such that the closest part of the soakaway is at least 20m from the closest part of the foundation of the building, structure or railway.
  - in areas of chalk of low density, or unknown density, be sited such that the closest part of the soakaway is at least 10m from the closest part of the foundation of the building, structure or railway.
  - in soils other than chalk, or in chalk which is structured and of medium density (or higher), be sited such that the closest part of the soakaway is at least 5m from the closest part of the foundation of the building, structure or railway.
16. Where soakaways are to be constructed (subject to all other constraints) adjacent to a highway, in any soil including chalk, they shall be positioned such that they lie wholly outside of the notional load line struck at 45 degrees through the channel line of the carriageway. The preferred layout complying with this requirement is shown in the figure “Soakaway Loading” below.
17. Where the site space available for the soakaway is insufficient to accommodate the preferred standard 0.5m width of surround, the plan area of the surround may be elongated to suit the available space. This is subject to a minimum width of surround to the chamber of 150mm and to the modified shape providing a volume at least equivalent to that provided by the 0.5m wide standard surround. Where the minimum width of surround is to be provided, a smaller 40mm nominal size aggregate should be selected (see Option A in “Soakaway Loading” below).
18. Exceptionally, where there is no option but to locate a soakaway within the 45 degree load line, the full height backfill to the soakaway within the load line will be in mix ST4 concrete as shown in Option B in “Soakaway Loading” below. Chamber ring perforations within the area of concrete backfill shall be plugged with mortar prior to backfill.
19. Where any modified design is to be used, the designer should prepare detailed site-specific drawings.

Continued.../

SOAKAWAY LOADING



Continued.../

20. All soakaways shall be constructed without step irons. Should access be required for inspections of maintenance purposes, it shall be undertaken using a portable winch and harness, by a team of operatives who have received training and are certified to work in confined spaces.
21. No discharge from soakaways via overflows to water courses or adjacent land will be permitted without a discharge of land drainage consent.
22. More than one gully may be connected to each soakaway. The normal maximum will be three, subject to satisfactory soakaway calculations.
23. In locations where silts, sands and the like will be encountered, the geotextile lining to the base and sides of the filter material backfill, as described in Note 4 on Standard Detail No. HCC10/D/075, should be specified in order to prevent the migration of fines into the backfill voids. The requirement should be clearly specified in Appendix 5/1.
24. At construction stage it may be necessary to vary the length of the articulated section described in sub-Clause 507.17. However, the principle of having the joint nearest the chamber as close as possible to the chamber, and the next joint positioned so as to give an effective length of intervening articulated pipe, free from constraint by the trench bottom, should be maintained.
25. The Environment Agency should, in the first instance, be contacted at:  
[enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk), or on:  
03708 506 506  
Staff will then direct the engineer to the most appropriate department or local office.
26. In confined areas, the use of plastic voided structures to assist infiltration drainage may be permissible. The designer should contact the Technical Advice Group<sup>11</sup> to discuss such options early in the design process. Any proposal must be proved to be able to take any anticipated future loading.
27. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>12</sup>
28. The following documents should also be consulted during any soakaway design:  
[Guidance for Highway Soakaways](#)  
[Manual for Streets Companion Document adopted version June 2010](#)

[Back to Contents](#)

---

<sup>11</sup> Accessible to HCC staff only

<sup>12</sup> Accessible to HCC staff only

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/080**

#### **Soakaways Type S3**

1. Type S3 soakaways can be used to enable large volumes of highway drainage to be recharged into the underground aquifers as close as possible to the site. The type is further sub-divided into options A and B, depending on length.
2. The use of this type of soakaway will be subject to the same criteria as set out in the Notes for Guidance to drawing HCC10/D/075.
3. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>13</sup>

[Back to Contents](#)

---

<sup>13</sup> *Accessible to HCC staff only*



**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/D/085**

**Rubble drain, terminal soakaway and linear ditch soakaway**

1. Rubble drains, terminal soakaways and linear ditch soakaways are features designed to intercept surface water run-off from fields and other soft landscaped areas. They should not generally be used to discharge highway drainage.
2. Typically the Rubble Drain is used as a cut-off drain along the top of a new cutting slope to protect the slope from surface water run-off until establishment of plant growth on the slope is sufficient to stabilise the slope.
3. The Terminal Soakaway provides additional storage capacity, if required, at the low end of the rubble drain.
4. Linear Ditch Soakaways are for use in low points of remote open ditches where flows are low.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/090 to 115**

#### **Headwalls Type 1 to 6**

1. Headwalls Type 1 and 2 will be used in urban areas and in some rural locations where their enhanced appearance would be appropriate.
2. Headwall Type 1 should be constructed no higher than 1.0m above invert and Headwall Type 2 no higher than 2.0m above invert. Detailed levels and dimension should be provided on layout drawings or within Appendix 5/1.
3. Headwalls Type 3 to 6 will be used in rural areas and then only in locations remote from carriageways and footways. They are intended for use in watercourses of less than 1.0m depth. Where the Environment Agency is the maintenance authority, it will not generally approve the use of concrete bagwork on rivers etc.. Designers should consult the EA early in the design process.
4. Headwalls Type 5 will be used where piped water enters a watercourse and Type 6 where a water course enters a pipe.
5. Headwalls Type 3 and 4 will be used for lateral pipe entry into a water course.
6. When the dimensions of a water course are such that they preclude the use of the standard headwalls the designer will prepare a detailed headwall design to suit the specific requirements.
7. The approval of the Environment Agency must be obtained for the discharge of water into a watercourse in the form of a discharge consent.
8. The approval of Hampshire County Council, in its role as Lead Local Flood Authority, must be obtained if a ditch or other ordinary watercourse is to be culverted, filled in or diverted and this will only generally be approved after all other options have been considered. For further information on the consenting process, visit the HCC website at  
<http://www3.hants.gov.uk/flooding/hampshireflooding/watercourses.htm>
9. At construction stage it may be necessary, due to constraints in pipe lengths, to vary the lengths of the articulated section described in sub-Clause 507.17. However, the principal of having the joint nearest the chamber as close as possible to the chamber, and the next joint positioned so as to give an effective length of intervening articulated pipe, free from constraint by the trench bottom, should be maintained.
10. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>14</sup>

[Back to Contents](#)

---

<sup>14</sup> *Accessible to HCC staff only*

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/D/120**

**Ditches Type 1, 2 and 3**

1. Ditches as a means of highway drainage are only likely to be used in rural areas and only then when space permits and the ditch can be located at a safe distance from the highway.
2. Because of its more economical use of space, ditch Type 1, the typical profile for use in chalk, is the most likely to be used.
3. Using the open ditch for highway drainage conforms to the philosophy of recharging the aquifers as close as possible to the source and all highway drainage must enter the ditch via gully pots and/or petrol interceptors.
4. Open ditches in chalk will not normally need to be lined but any connecting drainage pipes should be provided with a headwall, Type 1 to Type 6, as appropriate.
5. In the event of an open ditch being constructed in material other than chalk (e.g. perhaps as an outfall under easement across private land) then ditch Types 2 or 3 may be used according to soil types encountered. Lining of ditch Types 2 and 3 will be subject to expected flow rates and channel velocities. Site specific details should be prepared.

[Back to Contents](#)

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/D/125**

#### **Rodding eye Types 1 and 2**

1. Rodding eyes should only be used at the summit end of a filter drain run as an alternative to the more expensive catchpit.
2. Pipe sizes should not be smaller than 225mm diameter to accommodate the feed through of CCTV cameras for future condition surveys.
3. The cement specified has been chosen because it is resistant to all but the worst aggressive ground conditions. It is also cheaper and more sustainable (as it is a blended mix of cement and slag, etc.). Site supervisory staff should therefore ensure this cement is used. In very aggressive ground conditions (e.g. on an industrial brown field site) the recommendations of the Geotechnical Investigation Report should be followed, if one is available. If not, advice should be sought from the Engineering Consultancy Geotechnics team.<sup>15</sup>

[Back to Contents](#)

---

<sup>15</sup> *Accessible to HCC staff only*

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/M/020**

#### **Carriageway haunch repair detail**

1. The designer should visit the site to ascertain the existing surface course material before determining the type and thickness of the proposed surface course and the thickness of the other pavement layers. If in doubt, consult the Technical Advice Group.<sup>16</sup>
2. The width of the cut-back should generally be 150mm for B and C class roads and 300mm for A class and trunk roads.
3. Where possible, longitudinal surface course joints are to be positioned outside of the wheel tracks. It may be necessary to widen the surface course reinstatement to achieve this.
4. Transport laying and compaction of materials should be as BS 594987.

[Back to Contents](#)

---

<sup>16</sup> *Accessible to HCC staff only*

## **Notes for Guidance – HCC Standard Detail Drawings**

### **HCC10/M/025**

#### **Carriageway repair details**

1. The designer should, by visual inspection, determine the areas of carriageway to be repaired, and then make an assessment of the repair type required.
2. The width of the cut-back should generally be 150mm for B and C class roads and 300mm for A class and trunk roads.
3. Where possible longitudinal surface course joints are to be positioned outside of the wheel tracks. It may be necessary to widen the surface course reinstatement to achieve this.
4. A glass fibre Stress Absorbing Membrane (geogrid) is required to reinforce the edges of full depth repairs Types A4 and B4 as described in Note 6 of the drawing. Where the sub-grade is clay, the designer should specify that the geogrid shall be Tensar AR1 (or equivalent) and that it should be laid beneath the binder course layer ensuring at least 60mm of material above the grid. To accommodate this, the cut-back should be extended to the depth of the upper binder course layer.

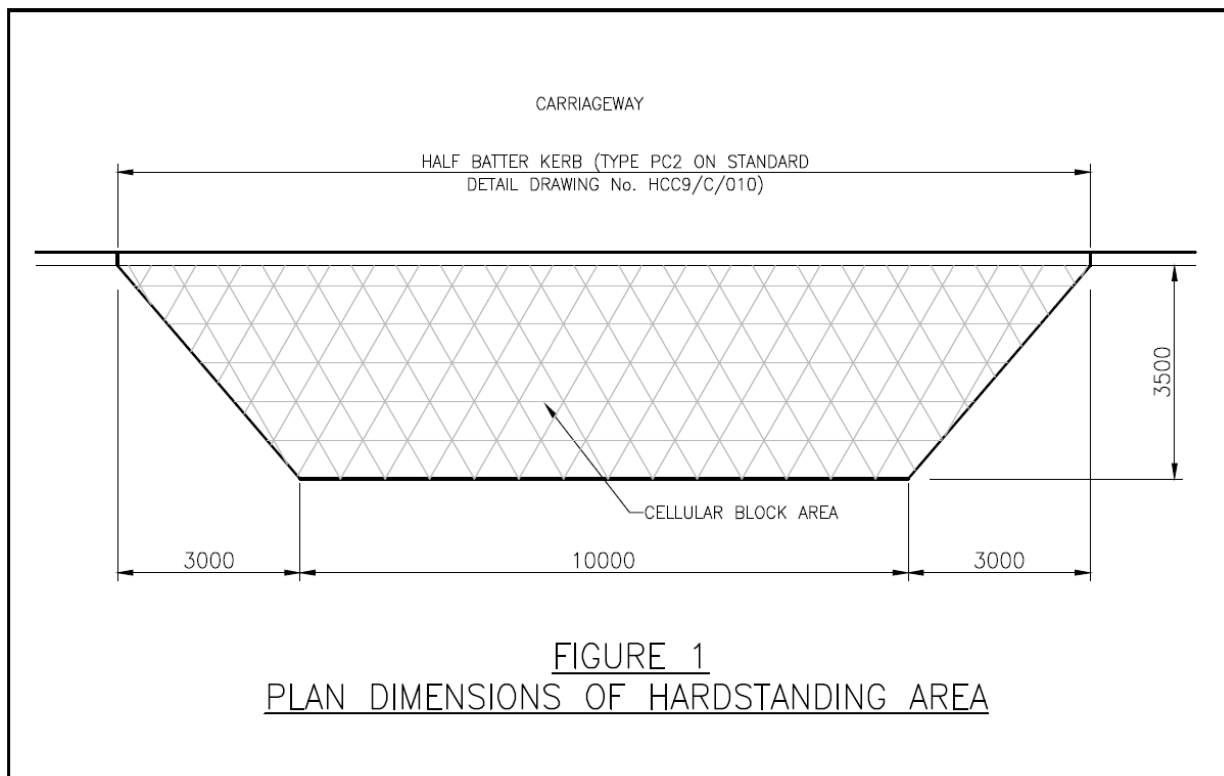
[Back to Contents](#)

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/M/070**

**Cellular concrete block construction detail Type A and B**

1. A maintenance vehicle hardstanding is to be provided at traffic signal and pedestrian improvement schemes where specified on the contract drawings. The vehicle hardstanding shall be dimensioned as shown in Figure 1 below unless otherwise specified elsewhere. Construction details shall be as shown on Standard Detail HCC10/M/070, Type A or Type B being specified in the contract drawings to suit the chosen product.
2. The length of the hardstanding area may be reduced from 10m to 6.5m in exceptional circumstances and by agreement with the designer.



[Back to Contents](#)

**Notes for Guidance – HCC Standard Detail Drawings**

**HCC10/M/300 & 301**

**Typical road closure layouts**

The layouts shown on both of these drawings are over and above, and should be used in conjunction with, the requirements of the Traffic Signs Manual Chapter 8.

[Back to Contents](#)



