A Guide to Controlling Access on Paths

Assessing the need for and implementing appropriate access controls

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Version 1

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1 INTRODUCTION

1.1 Background

1.1.1 Access controls are a common feature on paths throughout the United Kingdom. They are often a well-meaning response to understandable concerns regarding the safety of path users and the amenity of local residents.

1.1.2 However, they can cause considerable inconvenience to and can entirely exclude some legitimate path users, often unreasonably. They can also unlawfully prevent use of rights-of-way or lawful access to land. Furthermore in many cases controls are often not effective at addressing the very misuse problem they were installed to solve.

Photo 1 – Well designed access controls can be effective whilst minimising inconvenience

1.2 Objectives

1.2.1 This document aims to provide a guide to assist policy makers, designers and other parties interested in establishing effective control of access. It covers:

- Assessing whether or not access controls are appropriate in the first place
- Ensuring that all statutory duties and requirements are complied with including maintenance
- Identifying the most appropriate forms of access control for a given situation
- Accommodating the needs of those with impaired mobility and with disabilities that may require to pass through the access control
- Engaging with affected stakeholders and users and
- Ensuring that the final design of any access control is fit for purpose by adopting current best practice.

1.3 How and when to use this document

1.3.1 It is intended to be used when considering **any** aspect of access controls from reviewing existing facilities through to the design of new or improved paths. These objectives are achieved through directing the designer through a process to:

- **Section 2** and **Appendix 1** - Consider the legal background/requirements to controlling access
- **Section 3** and **Appendix 2** - Examine if access control is needed and investigate alternatives
- **Section 4** and **Appendix 3** - Assess the real risk of f mis-use
- **Sections 5** + **6** and **Appendix 4** - Determine the most effective type of access control and follow the design criteria
- **Appendices 5 + 6** provide further details through photo examples and layouts of installed access controls.

In all considerations the first question to be asked is '**Is an access control required and if so why?**'

1.4 Definitions

This document aims to cover the legislation relevant to access control design in all of the United Kingdom and as a result clarity of definition is required. Where a particular country differs in its interpretation it will be highlighted:

- Highway = A way over which the public have a right to pass[++] and is referred to as a **road** in Scotland and includes any way over which the public have a right of passage (R(S)A 1984 sect 151(1))
- Carriageway = Highway or part of over which the public have a right of way for vehicles. The part of the road that carries vehicles[++]
- Cycle track (Cycleway in Scotland) = A way for pedal cyclists which can either be part of the highway adjacent to a carriageway, or a separate highway in its own right, with or without a right of way on foot[++]
- Footway and pavement are deemed to mean the same thing = a pedestrian way within the boundaries of a highway usually adjacent to a carriageway[++]
- Footpath = A separate way provided exclusively for pedestrians unless re-determined by a Traffic Regulatory Order (TRO)[++] In Scotland these can be accessed by all non-motorised vehicles.
- Open Access land = Under the Countryside and Rights of Way Act 2000 (CROW), the public in England can walk freely on mapped areas of mountain, moor, heath, downland and registered common land without having to stick to paths.
- Common Land = is accessible to the public either because it is urban common or CROW Act access land - there is no common land in Scotland or Northern Ireland
- Access to Land = under the Land Reform (Scotland) Act 2003 people now have the right of non-motorised access to most land in Scotland, including private roads, tracks and paths, for recreation and to get from place to place. This right is conditional on people acting responsibly.
- Demountable bollard = Bollard that moves down in position to let traffic past
- Removable bollard = Bollard that can be taken away altogether
- Non-motorised vehicles includes horse drawn carriages and buggies
- NI = Northern Ireland

[++] - From Department of Transport

2 LEGAL

2.1 Highway Users Rights

2.1.1 In order to consider appropriate means of access control, it is important to understand the rights of highway users across the differing types of highway and land. Table 1 below summarises which users have right-of-way (in the case of access to land - the right of access) in the following situations:

Table 1 – Highway users' rights to pass

Type of Highway (Road in Scotland)	Pedestrians, wheelchairs & mobility scooters	Equestrians	Cyclists	Other non-motorised vehicles	Motor vehicles
Carriageway Applies to all UK	✓	✓	✓	✓	✓
Scotland					
Footway	✓	✗	✗	✗	✗
Footpath + Bridleway	✓	✓	✓	✓	✗
Cycle way	**	✓	✓	✗	✗
Access to land	✓	✓	✓	✓	✗
England , Wales and Northern Ireland					
Footpath + Footway	✓	✗	✗	✗	✗
Bridleway	✓	✓	*	✗	✗
Cycle track	**	***	✓	✗	✗
Byway open to all traffic (BOAT)	✓	✓	✓	✓	✓
Restricted byway	✓	✓	✓	✓	✗
Open access land	✓	✗	✗	✗	✗
Permissive path (not over open access land – See 2.2.5)	✗	✗	✗	✗	✗

✓ *indicates the highway user has a right of way*

✗ *indicates the highway user has no right of way*

* *cyclists have a right of way along bridleways – however, they must give way to other users, and there is no obligation on the Highway Authority to maintain or facilitate cycling along bridleways*

** *pedestrians may or may not have right-of-way over a cycle track, depending on the individual cycle track*

*** *For the UK (incl) NI the Highway Code states 'you should not take a horse onto a cycle track'. In Scotland they may use them in all situations.*

2.2 Further information on access within the United Kingdom

2.2.1 In Scotland, a right of way is a route along which the public have a right of passage. To be a right of way, a route must meet certain conditions. The main ones are that the route must have been used by the public for at least twenty years, it must connect two public places and it must follow a more or less defined route. In addition there is a general presumption of access to the countryside. Unlike in England and Wales there is no obligation on Scottish local authorities to signpost or mark a right of way. However, the charity Scotways^, formed in 1845 to protect rights of ways, records and signs the routes.

^ - Scotways: http://www.scotways.com/

2.2.2 There is no legal distinction between footpaths and bridleways in Scotland. Non-motorised users can go where they like as long as they abide by the Scottish Countryside Access Code. See website http://www.outdooraccess-scotland.com/

2.2.3 The Land Reform Act (Scotland) 2003 established a general presumption of access to all land in Scotland. Certain categories of land are excluded from this presumption of open access such as railway land, airfields and private gardens**.**

2.2.4 Public rights of way - In England and Wales are designated (or are able to be designated if not already) paths on which the public have a legally protected right to pass and re-pass. Private rights of way or easements also exist.

2.2.5 In the case of permissive paths in England and Wales, there may be no right-of-way, and instead only an agreement with affected land owner(s) to allow passage. In the case of such permissive paths, the land owner can legitimately revoke any agreement to allow for passage along the path, for some or all users. However, the Equality Act prohibits them from doing so in a fashion which would discriminate against people with disabilities.

2.2.6 An easement is a certain right to use the real property of another without possessing it. In some cases, easements may exist which provide a right-of-way for particular persons or bodies regardless of whether or not the path forms part of a highway or open access land. In these cases, any design would need to accommodate that easement, unless that easement can be terminated (usually with the agreement of the easement holder)

2.2.7 In Northern Ireland a public right of way is a highway which any members of the public may use as of right and is not a privilege granted by the landowner. It may be created specifically or through "deemed dedication", i.e. by the public openly using a path for a period of time with the knowledge of the landowner and may be limited to certain types of user, e.g. walkers only or walkers and horse riders.

2.2.8 Types of public rights of way in NI
There are three different types of public rights of way. These may be marked along their route with signposts.
- footpath – open to walkers only
- bridleway – open to walkers and horse-riders

- carriageway – open to walkers, cyclists, horse-riders, horse-drawn vehicles and motor vehicles

2.2.9 For further information go to http://www.nidirect.gov.uk/index.htm in search type 'Public right of ways'

2.2.10 In addition, there is **no formalised right of open access** to unenclosed land in Northern Ireland.

2.3 Powers to provide access controls

2.3.1 The powers to erect access controls vary due to the different legal systems of England & Wales, of Scotland and that of Northern Ireland. Furthermore, the exact legislation that provides the relevant power might vary depending on the nature of the access control and the purpose for which it is provided. **Appendix 1** to this guide lists relevant empowering legislation.

2.3.2 In the case of permissive paths (i.e. where there is no right of way), access controls may be erected with the land owners' consent.

2.3.3 There are usually no specific regulations prescribing any procedure to be followed when installing access barriers. However, where they are, these are stated in Design Parameters Section 6 of this guide. There are also additional legal responsibilities which may be relevant to the provision of access controls – these are detailed in Section 2.4 below.

2.4 Legal responsibilities when considering access controls

2.4.1 Legislation makes provision for the protection of the rights of the public to pass along highways or to take access to land (Scotland) and open access land (England + Wales). Legislation also exists to make the obstruction of such lawful passage or access an offence. Therefore, any access controls which cause an obstruction to persons entitled by law to go along a highway/ road, or to take lawful access to land or open-access land, may be deemed to be unlawful.

2.4.2 Section 29 of the Equality Act 2010 prohibits providers of services from discriminating against people having one or more of various protected characteristics. Section 149 places a duty on public bodies to have regard to the need to advance equality for, and to eliminate discrimination against, persons sharing one or more of various protected characteristics.

2.4.3 In the context of access barriers on highways, the protected characteristic that is most likely to be affected is disability. Therefore, any proposals for access barriers should strive to ensure that the affected path is as accessible for people with disabilities as it is for anyone else. Any barrier denying access to people with disabilities is liable to be in breach of the Equality Act; it may additionally represent an unlawful obstruction where there is a right-of-way.

2.4.4 Additionally, the Act places a responsibility on public bodies to further equality by removing existing disadvantages to disabled people. This would suggest that any existing access barriers for which a public body is responsible that fail to accommodate the needs of people with disabilities should be reviewed to determine whether or not they are contrary to the provisions within the Equality Act.

3 IS AN ACCESS CONTROL REQUIRED?

3.1 Reasons for not installing Access Controls

3.1.1 The use of physical barriers should be avoided wherever possible and should never be introduced where such barriers would discriminate unlawfully against people with disabilities, or where barriers would prevent rightful access or passage. The process in Section 3.4 leads you through determining whether or not physical barriers are required, or if an alternative approach can be adopted.

3.1.2 Some path designers might install access controls as a matter of course, perhaps as a hangover from the more segregationist traffic management practices of the seventies and eighties. Latest guidance (including *Manual for Streets*, for example) advocates a more flexible approach to design which aims to provide a higher quality outcome for users.

3.1.3 The negative impact of access controls:

- **Inconvenience** – barriers will often cause delay and inconvenience to legitimate users of a path, undermining the benefits and intentions of providing the path in the first case;
- **Clutter** – access controls are often visually intrusive and can appear offensive, especially at locations of some visual or historic appeal. Sustrans advocates the provision of cycle routes that are attractive and interesting, so as to encourage their use – unsightly access barriers can be contrary to this goal;
- **Discrimination** – many types of access barrier have the unintended effect of making paths inaccessible to some legitimate users (for example, people using mobility scooters). Not only is this undesirable, this is likely to constitute a breach of the Equality Act 2010;
- **Cost** – access controls are expensive to install and maintain and can require greater extents of path construction and land take;
- **Anti-social behaviour** – whilst concerns regarding anti-social behaviour may be cited as a justification for the installation of access controls, it should be remembered that access controls will in themselves provide somewhere for those prone to anti-social behaviour to sit and congregate;
- **Ineffectiveness** – in many circumstances, access controls are not effective at addressing the problems they are intended for. For example, by motorbikes simply being lifted over any barrier; by perimeter fencing being vandalised to gain access; by lockable features (such as a gate) for regular legitimate users being left unlocked; by the impractical nature of securing areas that are expansive, open or have a large number of entry points.

3.1.4 Therefore given the number of negative impacts that can stem from the installation of access controls it is prudent to **start with the presumption against the provision of access barriers.** Designers should instead start with a 'blank sheet' at all interfaces with access controls installed only where there is an identified need, where the proposed access control is likely to be effective at addressing that need, and where the problems addressed through use of access barriers outweigh the problems created by access barriers for legitimate users.

Photo 2 – 'Wiggle' in the path (Derby to Nottingham route)

3.1.5 It is important to note that there is a tendency to use access controls to slow or stop cyclists at the end of a path for safety reasons – actual or perceived. This can be inappropriate use and there are other techniques available to achieve the same outcome e.g. signing;

marking on the paths; putting a 'wiggle' into the path alignment – see photo2; speed humps; chicanes.

3.2 Reasons for installing Access Controls

3.2.1 Below are examples of when the installation and maintenance of access controls would be appropriate:

- Misuse by motor-vehicles (particularly motor cycles causing noise and/or safety issues);
- Prevention of fly-tipping;
- Anti-social behaviour;
- Annoyance to other path users and neighbouring communities;
- Concerns regarding cyclists at particular conflict / hazard points including poor sight lines;
- Control of risk and speed of running out onto a road;
- Control of livestock;
- Damage to path surface as a result of misuse; and,
- Prevention of vehicular access to an unsuitable structure (i.e. a bridge not designed to support motor vehicles).

Well designed controls can be attractive and provide an opportunity for promoting the route.

3.2.2 It is important that designers and assessors considering access control have a clear understanding of what problems they are attempting to address, so that they can provide a solution that is both effective and minimises obstruction to legitimate users. For example, where fly tipping is the problem it will usually only be necessary to prevent the passage of vans and maybe cars – more restrictive controls are likely to be a disproportionate response to the problem.

3.3 Alternative measures to control access

3.3.1 In many instances, alternative measures might be more effective at reducing problems associated with the misuse of paths than introducing access controls and the problems these can cause legitimate users. Alternative measures should always be considered, and ideally tried, before physical access controls are proposed.

3.3.2 **Signing** can be provided to emphasise which users are not permitted to use a path. While such signing is unlikely to deter those prone to anti-social behaviour, it might aid the police in prosecuting offenders as they will have no excuse for taking their vehicles beyond the signs.

3.3.3 **Vegetation management**: Many paths, particularly those running along railway alignments, can suffer from a lack of natural surveillance, particularly where there are few overlooking buildings or where foliage has been allowed to grow out of hand. Addressing a lack of natural surveillance by cutting back foliage or altering boundary treatments can open up views of and along paths, which may make them less attractive to those prone to anti-social behaviour.

3.3.4 **Increased legitimate use** of a path can also increase natural surveillance and thus deter mis-use. In Cardiff, access controls have been removed from various locations on some of its more popular paths to improve accessibility for wheelchair and mobility scooter users and those with pushchairs. It is understood that there has been no notable increase in the misuse of these paths.

3.3.5 **Public surveillance**: An alternative could be to provide patrols (such as Sustrans' Volunteers), who could provide an observation presence that may deter misuse – these patrols could also perform useful functions in terms of checking the condition of the path and identifying areas

requiring maintenance. Alternatively, police officers and/or community support officers could walk or cycle traffic free routes as part of their beat.

3.3.6 **Remote Surveillance**: Closed circuit television can provide a deterrent to misuse of the path, particularly if the fact that users are under surveillance is obvious from the path. CCTV can also assist the police in identifying offenders and recording evidence of misuse, which can assist in prosecutions and make enforcement a more effective approach than may otherwise be the case. CCTV may also have benefits in reducing fear of the misuse of the track and improving the comfort of legitimate users.

3.3.7 **Police enforcement** can be effective at deterring the unlawful use of paths, especially when significant sanctions are brought against offenders. The Police have powers to:

- Caution or prosecute those driving motor vehicles unlawfully on paths
- Seize, impound and retain seized motor vehicles until a charge is paid
- Destroy any vehicle where such charges have not been paid after 21 days.

3.3.8 A crackdown on motorcycle misuse was conducted by Durham Constabulary in the late 1990s, which included the confiscation of motorcycles being ridden off-road. This enabled Durham County Council to remove many of its access controls to its walking and cycling routes as part of a drive to improve their accessibility. Little increase in misuse followed the removal of the access barriers (see Sustrans Information Sheet FF22).

3.3.9 **Providing alternative venues**: In the case of the use of off-road vehicles, it may be possible to deter misuse by better providing for legitimate off-road use, or through better promotion and awareness of existing facilities. For example, Cardiff Council in conjunction with the Auto Cycle Union operates a purpose built motocross centre, 'CMX', in Tremorfa, Cardiff, providing a place for the legitimate use of off-road motorcycles. Provision of this facility has helped reduce incidence of anti-social behaviour linked to off-road motorcycles by up to 64%.

3.4 Commencing the assessment process

3.4.1 Where there is an identified desire or request to install access controls, and where alternatives have been tried or ruled out as unfeasible, the first steps are to:

- identify if there is an actual problem to be addressed,
- to what extent this exists,
- and therefore what measures might form proportionate responses to the problem

3.4.2 In the case where the problem relates to some legitimate use of the path or adjacent land (i.e. a need to control livestock, for instance, it will usually be possible to identify a suitable access control through discussions with path user groups and the promoter of the controls (i.e. the farmer where livestock needs to be controlled) and by ensuring that any design does not inhibit lawful passage along a route.

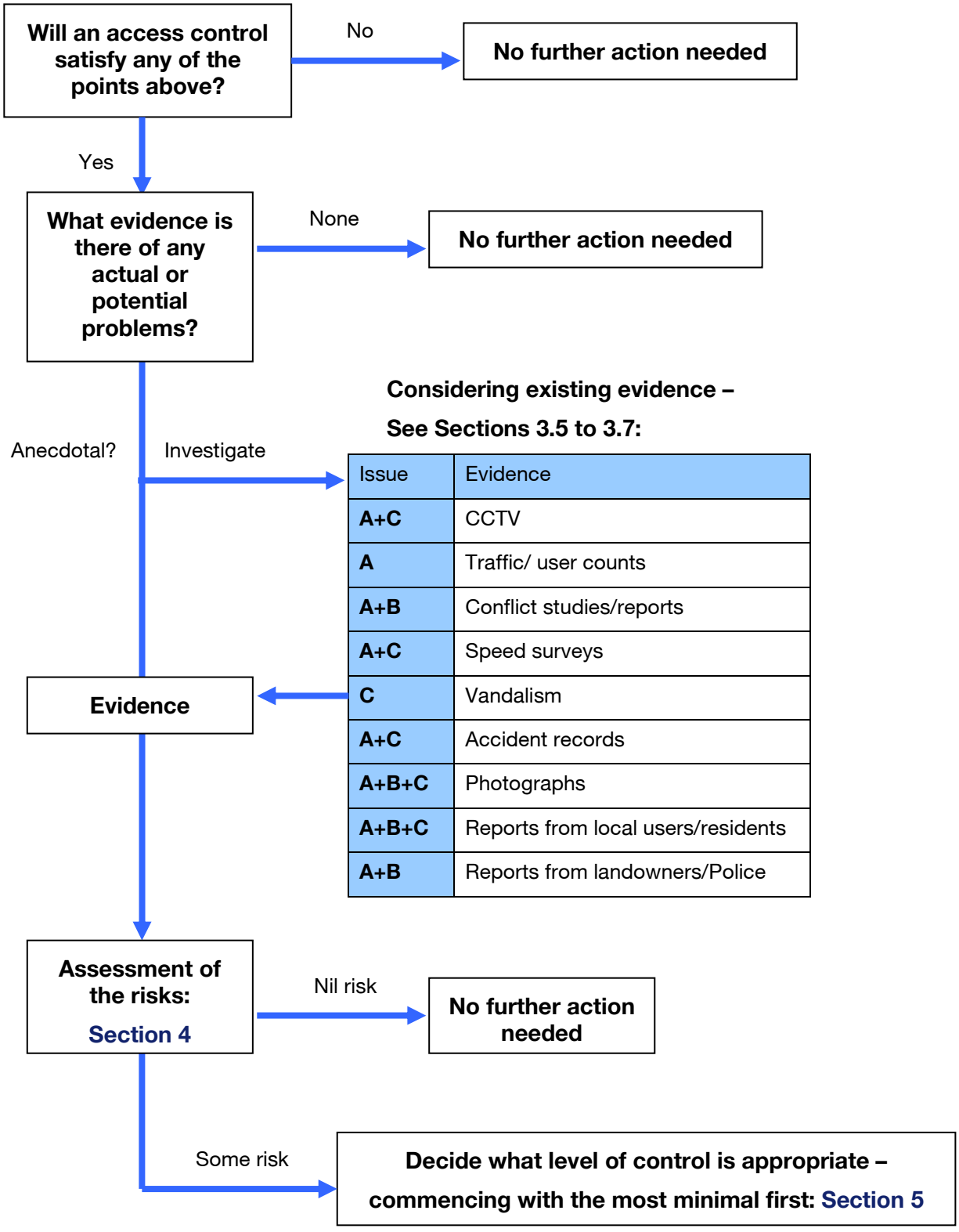
3.4.3 However, in many cases the demand for access controls will relate to illegal use of a path, or perceptions thereof. In these instances, the users that the access control is intended to exclude will often be happy to find unlawful or anti-social means of evading the access control, and the controls are likely to need to impose significant inconvenience on at least some legitimate users if they are to be effective in deterring the anti-social behaviour. Consequently, it is important to ensure that controls in such instances are provided only where necessary and that they are proportionate to the problem.

3.4.4 The flowchart below recommends a process for assessing whether there is a need for access controls – each step is explained in Figure 1.

Figure 1 – Process for assessing the need for access controls: can also be found in Appendix 2

Will an access control assist with the following issues?

A. Safety to legitimate path users
B. Stock control
C. Prevention of misuse of path



Issue	Evidence
A+C	CCTV
A	Traffic/ user counts
A+B	Conflict studies/reports
A+C	Speed surveys
C	Vandalism
A+C	Accident records
A+B+C	Photographs
A+B+C	Reports from local users/residents
A+B	Reports from landowners/Police

3.4.5 For new paths, there should be a presumption against providing access controls; however, where representations have been made during the development of proposals for new paths which suggest access controls may be appropriate, these representations should be taken as the starting point in the flow chart above.

3.5 Considering existing evidence

3.5.1 On existing paths, the initial request for an access control will typically come from members of the public, or their representatives. Before action is considered, the original complainant should be asked to provide a clear description of what they believe the problem to be, along with any further details that may be relevant when considering whether an access control is likely to be proportionate or effective. Such information may include:

- How did the illegal user gain access to the path?
- Did they vandalise existing fencing, or circumvent existing access controls?
- Were they residents living adjacent to the path?
- Were they using the path in a manner likely to cause danger or distress, and if so, in what way?
- Were they engaged in other unlawful activity (i.e. fly tipping, vandalism) at the time?
- Is there a history of misuse of the path? If yes, are there known serial offenders?
- Does misuse occur at particular times or on particular days?
- Any photographs the complainant might have been or be able to obtain.

3.5.2 Authorities should where appropriate ask complainants for further evidence or details to substantiate their original correspondence.

3.5.3 Consultation with path users and with local residents can also be helpful in establishing the existence and extent of any problem. A leaflet drop of local premises can be helpful to gain feedback from the latter group. Consultation with path users can be achieved via on-path notices or surveys, and discussions with local user groups.

3.5.4 The Police or Community Support Officers may be able to advise on the nature and scale of a misuse problem, particularly where collisions or near-misses have been recorded, or where crime or other anti-social behaviour has been reported.

3.6 Proposed paths

3.6.1 Consideration of potential misuse in the case of proposed paths is necessary especially where a high risk is perceived. Here the evidence gathering process outlined above would be suitable along with the risk assessment process in Section 4 as a means to formally address and mitigate those perceived fears.

3.7 Investigation

3.7.1 The highway/road authority may also conduct its own investigations. For example, access points to the path may be covered by nearby CCTV – this might be used to identify offenders, or to assess the magnitude of the problem caused by illegitimate use. It may be possible to use temporary CCTV masts such as those used for conventional traffic survey work, or portable police CCTV equipment near where the problem is thought to exist where no permanent CCTV is in place.

3.7.2 Observers can also be deployed to provide surveillance of the path for the purposes of investigation. This might not be practical where mis-use is infrequent, but where abuse is concentrated at certain times (such as during evenings or school holidays), it might be practical to conduct surveillance for periods of, for example, one or two hours. Care should be taken to ensure observers at not put at risk of confrontation. Traffic counts (of both legitimate users and illegitimate users) can inform as to the regularity of misuse and to the number of users likely to be at risk from such misuse. Speeds surveys can also be useful in providing an indication of when and to what extent misuse is occurring, and can give an indication of the risk to legitimate users' safety posed by the misuse.

3.7.3 In isolated locations equipment used for conducting traffic counts or speed surveys may be at risk from vandalism and this risk may be greater at sites prone to misuse of paths. Consequently it may not always be feasible to conduct such surveys, in which case estimates may be required. The consultation exercise described above can help the assessor arrive at an estimate.

4 RISK ASSESSMENT

4.1.1 Having gathered as much evidence as is feasible about the nature, extent and magnitude of the misuse of the path, the risks associated with this misuse should be assessed.

By assembling a list of factual issues the risk of each issue can be assessed to determine its true impact on access. This should formal, recorded risk assessment should consider:

- risk of degradation of comfort for those using the path,
- safety risks (e.g. collisions)
- nuisance to adjacent premises,
- risk of livestock becoming loose
- any maintenance risk or liabilities that may arise as a result of misuse

4.1.2 A suggested framework is provided in **Appendix 3** where a value is put onto each risk and then the result is categorised – this is an optional tool that should be developed to reflect local circumstances through altering the 'weighting - **w**' of different impacts.

4.1.3 For example in a quiet community a school may want to add the same weight to factors affecting the community as to those affecting safety and therefore give both **w**= 3.

4.1.4 Following the assessment and scoring, the risk associated with the misuse requires to be categorised. This categorisation, based upon the **sum of the weighted risks** assigned in Table 2 in **Appendix 3**, needs to lead to the least restrictive access control that will be proportionate to the problem, as shown in Table 3.

4.1.5 In all cases, the solution should be drawn from a hierarchy of response starting with the least restrictive option. These are listed in Section 7. Where the level of risk might mean more restrictive approaches would seem acceptable the 'less is more' attitude is still recommended to ensure that the legitimate use of the access control is not unduly limited.

Tables 2 and 3 can be found in **Appendix 3**

5 HOW TO DECIDE WHAT TYPE OF ACCESS CONTROL IS REQUIRED

5.1 Introduction

5.1.1 Assuming the need for action has been identified following the process outlined in Section 3, the next stage is to identify what design of access controls is appropriate. While Table 3 in the previous section indicates the most restrictive response that is likely to be acceptable, access controls should always be assessed on the presumption that the **least restrictive option is preferred** – therefore, as noted in **section 3.3**, alternatives to access control should always be considered first.

5.2 Identifying suitable controls

5.2.1 Where none of the alternative measures in Section 3.3 has been deemed suitable or has proven effective, then access controls can be considered.

5.2.2 Tables 4 - 10 provided in Section 6 give an indication as to the impacts on various users (legitimate or otherwise) of various types of access control – this can be used to quickly identify which types of control are likely to be suitable for the risk level identified.

5.2.3 Where a land-owner is insistent on restrictive access controls, it should be borne in mind that these can only be erected with the consent of the highway authority where the path forms part of a highway (including footpaths, cycle tracks etc.). Such consent should never be granted for an access control which is more restrictive than is acceptable, given the level of identified risk. However, in the cases of access to land, open access land and some permissive paths, the land owner will typically retain rights to erect access controls on the path.

Photo 3 – Adjustable 'A' type barrier (Leeds)

5.2.4 Adjustable and/or removable barriers can be provided in order to assess in practice the implications of access control. These could be installed initially at a restrictive setting, which could then be relaxed until the desired reduction in misuse is achieved. Examples of this could include adjustable 'A' type barriers, which could be installed initially with a small clearance between the squeeze plates, which would then be increased over time, (see photo). Through all the considerations it is imperative to bear the statement in 5.3.5 in mind regarding what constitutes an obstruction.

5.2.5 Alternatively, a lockable gate can be provided adjacent to the control, which could be locked open in the future to provide a low-cost by-pass should circumstances change to render the access control inappropriate.

5.3 Engagement and consultation

5.3.1 It is important that any proposals for access controls are actively discussed with affected parties, especially those legitimate users of a path at risk of being inconvenienced, or in some cases excluded from using the path. This consultation should not be viewed as a 'box ticking' exercise – affected path users should be able to have a real influence on the design of access controls from an early stage, so as to ensure that the inconvenience caused to legitimate path users is minimised.

5.3.2 Often, stakeholders will have competing concerns and may not have a full awareness of other people's needs and issues. For this reason it can often be advantageous to bring representatives of various interested groups together to discuss each other's differing needs, problems and aspirations. This can help ensure all parties can see the matter from each other's perspective and might help identify bespoke means of addressing those problems.

5.3.3 Stakeholders who will need to be consulted include :

- Local residents, businesses, and any residents / traders associations;
- Parish or Community Councils;
- The Police;
- Crime and Disorder Reduction Partnerships;
- Local civic societies;
- Disabled persons groups;
- Local access forums;
- Pedestrian groups;
- Sustrans;
- Other local and national cycling groups;
- Local and national equestrian groups (including the British Horse Society);
- Any significant bodies nearby who may have use of the path (such as schools, or large employers);
- Any local or national groups concerned with legitimate off-road use of vehicles (such as the Green Lane Association and the Trail Riders Fellowship).

5.3.4 It should be borne in mind that where misuse of a path is felt to be a problem, those at greatest risk from the misuse are often the legitimate users of the path. The most vulnerable will often be the same legitimate users who are most likely to be impeded by access controls. Therefore, where these legitimate users feel that an access control is excessively restrictive, this would suggest that the measures are a disproportionate response to the problem.

5.3.5 It is important to re-iterate that, **regardless of the outcome of consultations**, where an access control measure has the effect of preventing the passage of legitimate users of the path where they have a right-of-way or access, the proposed access control may be in danger of constituting **an unlawful obstruction**. Legal advice may need to be sought to clarify this on a case-by-case basis.

5.3.6 Therefore the design of the access control must comply with the Equality Act 2010 and ensure that no users with a disability are excluded due to a physical restriction. These design parameters are considered in Section 6.

6 DESIGN PARAMETERS

6.1 Introduction

6.1.1 This section lays out the limiting factors that require to be considered to ensure that the design of the access control does not exclude any legitimate user. However, designing out the illegitimate users is also an aim and therefore restricting access to them while maintaining access to all others is where the challenge lies.

6.2 Requirements of legitimate users

Cyclists' Requirements

6.2.1 There are a wide variety of cycles in use in the United Kingdom, which generally have equal rights to be used on highways. These all have their own turning space requirements, which are sometimes more onerous than those of a typical 'standard' bicycle. Furthermore, the turning space requirements of cycles are affected by the ability of their rider and of any loads being carried. For example, a less experienced cyclist may be less balanced and may wobble more, and a cycle carrying panniers may also be less easy to manoeuvre.

6.2.2 A broad indication of the turning space requirements of some more typical designs of cycles is shown in Table 4 below. The table below lists only indicative dimensions for a small sample of cycles. Some designs of cycle (such as hand-cycles or rickshaws) or those towing larger trailers have more onerous requirements.

Table 4 – Dimensions of typical pedal cycles

	Dimensions of cycle and cyclist (mm)			Minimum turning circle (mm)	
Cycle	**Length**	**Width**	**Required clearance**	**Outer radius**	**Inner radius**
Conventional bicycle	1800	800	1200	1650	850
Bicycle and 850mm wide trailer	2700	850	1250	2650	1500
Bicycle and trailer cycle for children	2750	800	1200	2050	700
Tandem	2400	800	1200	3150	2250

Based on LTN 2/08 Cycle Infrastructure Design (Department for Transport, 2008)

6.2.3 In order to maintain a comfortable distance from adjacent obstructions, even a cyclist riding a conventional bicycle will require at least 1200mm of clear width between obstructions in which to cycle. Whilst narrower widths may not physically obstruct cycles, they are likely to require some riders to dismount.

Wheelchair & Mobility Scooter Users' Requirements

6.2.4 Wheelchair and mobility scooter users can require relatively large spaces in which to turn. These turning space requirements are often the limiting factor when designing access controls

that rely upon horizontal deflection, (such as staggered barriers). The figures in Table 5 below give an indication of wheelchair and mobility scooter dimensions as well as turning circle requirements – these figures assume the operator is turning through 90 degrees, and will reverse from their starting position before travelling forwards to turn.

6.2.5 It is important to note that pedal cycles and pedestrians on crutches or using two walking sticks, tend to require greater widths than wheelchair users (see Table 8) – the physical widths sufficient to accommodate wheelchairs may not therefore be enough to accommodate all legitimate use.

Table 5 – Dimensions of typical wheelchairs & mobility scooters

	Dimensions of wheelchair & user (mm)			Turning space (mm for a 90° turn)	
Chair type	Length	Width	Clearance required	Length	Width
Attendant propelled	1750 *typical*	656 *	856 *	1200 *min* 1800 *max*	1200 *min* 1800 *max*
Manual chair (newer style)	1183 *	702 *	902 *	1345 *	1450 *
Electric wheelchair	1328 *	706 *	906 *	1600 *	1625mm *
Mobility scooter	1402 *	685 * 850 *max*	885 * 1050 *max*	1400 *min* 2500 *max*	1300 *min* 2500 *max*

Based on p20, Inclusive Mobility (Department for Transport, 2002) and section C3 of BS 8300:2009 (British Standards Institute, 2009)

** indicates 95th percentile value*

6.2.6 Parameters in the table above illustrate how the turning requirements of wheelchairs and mobility scooters can vary considerably. In order to ensure any access control accommodates all chairs and scooters, space to accommodate at least the maximum turning space will need to be provided.

6.2.7 The clearance dimensions in the table above allow for 100mm clearance to either side of the wheelchair user. This will allow for a manually propelled chair user to pass, allowing for sufficient space for hands and elbows when wheeling the chair. It also allows for a clearance for attended or electrically propelled wheelchairs to pass with a reasonable degree of comfort at low speed. However, larger clearances would be appropriate if the obstacle is to be passed at speed – mobility scooters can reach 4mph lawfully on footpaths, and (although unlawful to travel at this speed in pedestrian areas) can have a top speed of 8mph. Larger clearances may be particularly appropriate where the design of the access control does not force reduced speed (i.e. where a row of bollards is provided).

6.2.8 Some designs of access control might facilitate the passage of wheelchair users by permitting them to pass beneath the obstruction. The maximum heights suggested by *Inclusive Mobility* (Department for Transport, 2002) are 1450mm for wheelchair users, and 1502mm for electric scooter users. These heights are the actual height of the wheelchair and its user – additional headroom is likely to be necessary to ensure the wheelchair user's head passes safely beneath the obstruction. Such designs are not recommended on cycle routes, where some cyclists may attempt to 'duck' beneath the obstacle, placing themselves at risk of a potentially serious collision.

6.2.9 Where features intended for the use of wheelchair users by hand are provided (such as a latch at a gate), these should be not less than 750mm and not greater than 1200mm above ground level, to ensure that wheelchair users can comfortably use the feature.

Equestrians Requirements

6.2.10 Equestrians require greater space than for most other users of paths. Table 6 below gives some indicative dimensions, based upon Paths for All's Equestrian Access Factsheets (Paths for All, 2010).

Table 6 – Space required by equestrians

Width	1200 *min* 1520 *preferred*	**Turning space**	2900 *min width* × *2900 min depth*

Requirements to accommodate all pedestrians

6.2.11 Pedestrians have minimum width requirements, which may be increased if the pedestrian requires the use of aids such as a walking stick or a guide dog. Where a pedestrian (perhaps disabled) is being guided by another pedestrian to their side, further width is required. Table 7 below details the widths required for pedestrians to walk in various typical circumstances.

Table 7 – Minimum widths required for pedestrians

Pedestrian	700mm
Pedestrian with walking stick	750mm
Pedestrian with crutches or walking frame	900mm
Pedestrian with guide dog or long cane	1100mm
Pedestrian guided by another pedestrian	1200mm
Wheelchair user guided by another pedestrian	1500mm

Based on Section 2.2, Inclusive Mobility **(Department for Transport, 2002)**

Maintenance access requirements

6.2.12 Where **maintenance access** is required, a clear width of 3.6 metres is recommended – this will allow for all vehicles that may be required to pass with an additional clearance. A minimum width of 3.25 metres might be acceptable at a constrained site. Widths of less than this may not practically accommodate the passage of some maintenance vehicles, although consultation with local providers of maintenance services may find that narrower widths are acceptable in certain circumstances.

Photo 4 – De-mountable bollards to enable maintenance access (Cardiff)

6.2.13 Access controls can include removable and/or lockable elements, which can be opened as necessary to allow for maintenance access. This will often be easier to accommodate in practice than providing a dedicated gate and by-pass for maintenance access and might result in a less cluttered design.

6.2.14 Maintaining authorities and those with right of vehicular access will require to be consulted where access controls are proposed to provide a suitable locking mechanism with the provision of keys.

Further considerations:

Ensuring access controls do not present a hazard

6.2.15 It can not be emphasised enough the risk access controls present to path users not aware of their presence.

6.2.16 Some types of access control may present additional difficulties for cyclists and wheelchair users if used on steep gradients or on a bend in the path. Design the layout to minimise impedance.

Visibility Requirements – to reduce collision and trip hazards

6.2.17 Access controls can themselves represent a hazard to highway users. Where there is an obstruction at a level between ground and 1000mm height, this will lie outside of many people's field of vision and thus risks forming a trip hazard.

6.2.18 An obstacle with a gap from ground level of more than 400mm (for example, beneath the lowest rail of a post-and-rail fence) may be a hazard to blind people who use a cane, as the cane may not strike the obstacle. In such instances, the problem can be addressed by altering the obstacle so as to present a tapping rail within the sweep of the cane. Alternatively, the provision of a tapping rail, at least 150mm deep and no more than 200mm clear of ground level can assist blind people in detecting the obstacle.

6.2.19 All access controls should be clearly colour contrasted from their surroundings. Often, this can be achieved sensitively by painting the obstruction a single, contrasting colour (if its natural colour is not sufficiently distinct from its background). Painting entirely in a reflective paint can be effective.

6.2.20 Colour contrasting bands (usually yellow) can assist the visually impaired – these should be 150mm deep, and located at heights of 1600mm (for pedestrians) and 1000mm (for children and wheelchair users) from ground level. Colour bands need not be reflective to assist the visually impaired; however, reflective bands can provide greater conspicuousness at night to users with lights.

6.2.21 High visibility markings, and /or warning signs, may be appropriate at sites where legitimate users (typically cyclists, and in some circumstances possibly motor vehicles) can approach the access control at speed. Lighting may also need to be considered, particularly at shaded locations or where the path is well used during the hours of darkness. Providing lamps mounted on the obstruction can be particularly helpful for the partially sighted, for example bollards which incorporate integral lights into the upper section, though vandalism and potential maintenance issues must also be considered.

6.2.22 All access controls should be visible by both day and night from the stopping sight distance (SSD) of the fastest user permitted on the approach to the access control. Section 7.5 of *Manual for Streets 1* (Department for Transport, 2007) has information for calculating sight stopping distances for vehicles. Section 10.1 of *Manual for Streets 2* (Chartered Institution of Highways and Transportation, 2010) incorporates Section 7.5 of MfS1 and develops it further.

6.2.23 Table 8 below is based upon TA 90/05 *The Geometric Design of Pedestrian, Cycle and Equestrian Routes* (Highways Agency, 2005) and gives stopping sight distance requirements for the different path users. All must be considered when positioning an access control.

Table 8 – Distances at which access control should be visible, by user

Cyclist (at 30 km/h)	30m
Equestrian at trot or canter (20 km/h)	30m
Cyclists (at 10 km/h)	10m
Equestrian at walk (10 km/h)	10m
Pedestrian	2m

Clearance from carriageways

6.2.24 Where access controls are provided at junctions with roads, space will be needed between the access control and the edge of carriageway so as to allow path users to clear the control and to operate any gates etc. as may be necessary.

6.2.25 Table 9 below gives absolute minimum clearances required for this purpose. Further clearance will be necessary on busy paths, or paths well used by groups, to provide 'stacking space' for users to queue to let others clear the control.

Table 9 – Minimum space required between access controls and carriageway

Pedestrian (allowing for a pushchair)	2.0 metres
Standard cycle	3.0 metres
Equestrian	4.0 metres
Maintenance vehicle	6.0 metres

6.3 Key parameters relating to illegitimate users

6.3.1 In order to ensure that any access controls are effective at preventing access where this is intended, it is necessary to consider the dimensions of vehicles that it may typically be desirable to exclude. Table 10 below details these for some typical vehicles.

Table 10 – Dimensions of typical illegitimate vehicles

	Typical dimensions of vehicle			
Vehicle type	**Length (mm)**	**Width (mm)**	**Weight (kg unladen)**	
Medium van	5500	2100	2500	
Medium car	4600	1800*	1392	
Mini moto	1100	500	22	
Pit bike / youth motocross bike	1670	780	65	
Stripped down commuter bike	1900	740	114	
Motocross bike	2100	830	105	
Segway i2	480	630	48	
**some small cars (for example the two-seater Smart car) can be as narrow as 1500mm*				

6.3.2 As can be seen, the dimensions of the types of smaller motorcycles are similar to those of a pedal cycle and all are narrower than the width required for a cyclist to continue riding past a pinch point. Motorcycle handlebars can also be turned or shortened, further reducing the clear width required for the motorcycle to pass. It is therefore unlikely that any obstruction that permits the passage of cycles (ridden or pushed) would physically prevent access for motorcycles.

6.3.3 Motorcycles larger than those listed above, such as medium and large capacity road bikes, are seldom misused on paths, as their size and power makes them difficult to use at all within the constraints typically found on paths.

6.3.4 Keeping stock from entering paths requires consulting the farmer/stock owner to ensure all their requirements are met. Cattle grids are effective but when preventing deer they are required to be over 4.0m long with any fencing either side now less than 1.5m high. Historically kissing gates have been used with the more recent solution being self closing gates. However this latter gate can be propped open causing problems for the landowner. Gated arrangements to enable stock to pass from fields on one side of the other are a standard detail which can minimise the impact of a new path crossing a piece of land.

6.4 General design considerations

Surface

6.4.1 Many designs of access control will often require a greater width in the area around the control feature than might be typical for the main section of the path. Care should also be taken with the design of drainage to ensure that ponding does not occur in the vicinity of any barriers.

6.4.2 Where access controls are provided, these will typically concentrate user movements over a small area. Consequently, where the path surface is unbound, this will be subjected to greater wear in the vicinity of any access barriers. Consideration should be given to any surface and/or drainage improvements that may be required to withstand the increased wear.

Fencing

6.4.3 Where access controls are proposed in an attempt to prevent access by illegitimate users, it is vital that the boundaries of the path are fenced off or otherwise restricted to ensure that illegitimate users cannot simply by-pass the access control. It is important to remember that those likely to misuse a path may also be willing to vandalise any fencing or access control in order to go about their activities. The fence will therefore need to be robust – designs such as chicken wire or thin timber fencing that can be easily breached are unlikely to be effective.

Photo 5 – Ineffective access control due to lack of adjacent fencing, (Caldercruix)

6.4.4 Similarly, the planting of vegetation is unlikely to be a satisfactorily secure boundary treatment in itself until such planting has become established. A temporary but robust timber fence, for example, may be required in the interim.

6.4.5 Existing fencing or secure boundary features such as mature trees might have pinch points adjacent to the path; these can provide ideal locations for access controls as they minimise the amount of new fencing that would have to be provided to secure the path.

Choice of materials

6.4.6 Any access controls will need to be constructed of materials that are appropriate to the location and environment in which they are sited as well as achieving the desired aesthetic effect.

Access controls as a feature

6.4.7 Access controls are often required at the interface between paths and public roads and, as such, can be seen by traffic on the road.

Access controls therefore offer an opportunity to provide a feature which can highlight the path's existence and thus encourage its greater use. Not only does this contribute towards Sustrans' objectives of encouraging more journeys to be made on foot or cycle but any increased legitimate use that results from greater public awareness of the existence of the path will in itself deter misuse of the path.

6.4.8 Access controls can also provide an opportunity to provide **artwork along a route**, in line with Sustrans' objectives to provide pleasant and memorable routes for cycling.

6.4.9 Whilst such designs will often be more expensive use of a consistent, distinctive design along a route can provide an interesting feature that helps 'brand' the route and can increase public awareness.

Photo 6 – Access controls can be an interesting feature that draws attention to a route

6.4.10 Points of access are normally a good place for locating information about the route. Incorporating signs e.g. shared use or give way and other information like notices, path name, advertising e.g. website address www.sustrans.org.uk at these points optimises the opportunity for them to be noticed and heeded.

6.4.11 In **Appendix 6** there are extracts from a gateway guide commissioned to specifically brand part of Route 7 between Lochwinnoch and Paisley in Scotland. These may provide ideas to be expanded upon regarding to artistic and aesthetic possibilities.

6.5 Operation and monitoring

Maintenance and operation

6.5.1 In order to be effective and remain safe, access controls need routine inspection and maintenance. The access control itself will require maintaining by painting or repairing for example or even removal if no longer effective or required. The path in the vicinity will also require attention. The accumulation of debris e.g. grit and glass can build up and regular hand sweeping may be required to clear it as mechanical sweepers will not usually be able to sweep the entire area within the access control.

6.5.2 For similar reasons, the surface and drainage at the access control will require maintaining, as users may not be able to avoid any defects or ponding due to the constraints of the access control. Any lamps, signing or reflective banding provided to mark the control will need checking to ensure these remain in place, functioning and conspicuous.

6.5.3 Given some of the reasons access control might be provided, they may be prone to vandalism. This may be associated with attempts to breach the access control or with anti-social behaviour more generally. Consequently, access controls may require regular inspection and maintenance to address issues of damage and graffiti.

6.5.4 Where keys are provided at lockable or removable access controls (to enable maintenance access, for example), records will need to be kept of key holders and checks may need to be made to ensure that the controls are locked or re-mounted after the required access has taken place. A single person should be allocated overall responsibility for holding a master key and maintaining a record, including contact details, of all those who have been issued with a key.

Monitoring and review

6.5.5 Where access controls are erected it is important to ensure these remain fit-for-purpose over time. It is also important to ensure that controls are monitored after implementation (around after, say, three months), to check that they are effective and are not excessively impeding legitimate use. Controls should also be reviewed on a regular basis, say every twelve months, after the initial review, to assess if legitimate use has increased or other circumstances have changed such that relaxation or removal of the access barrier can be trialled. Controls should also be reviewed if:

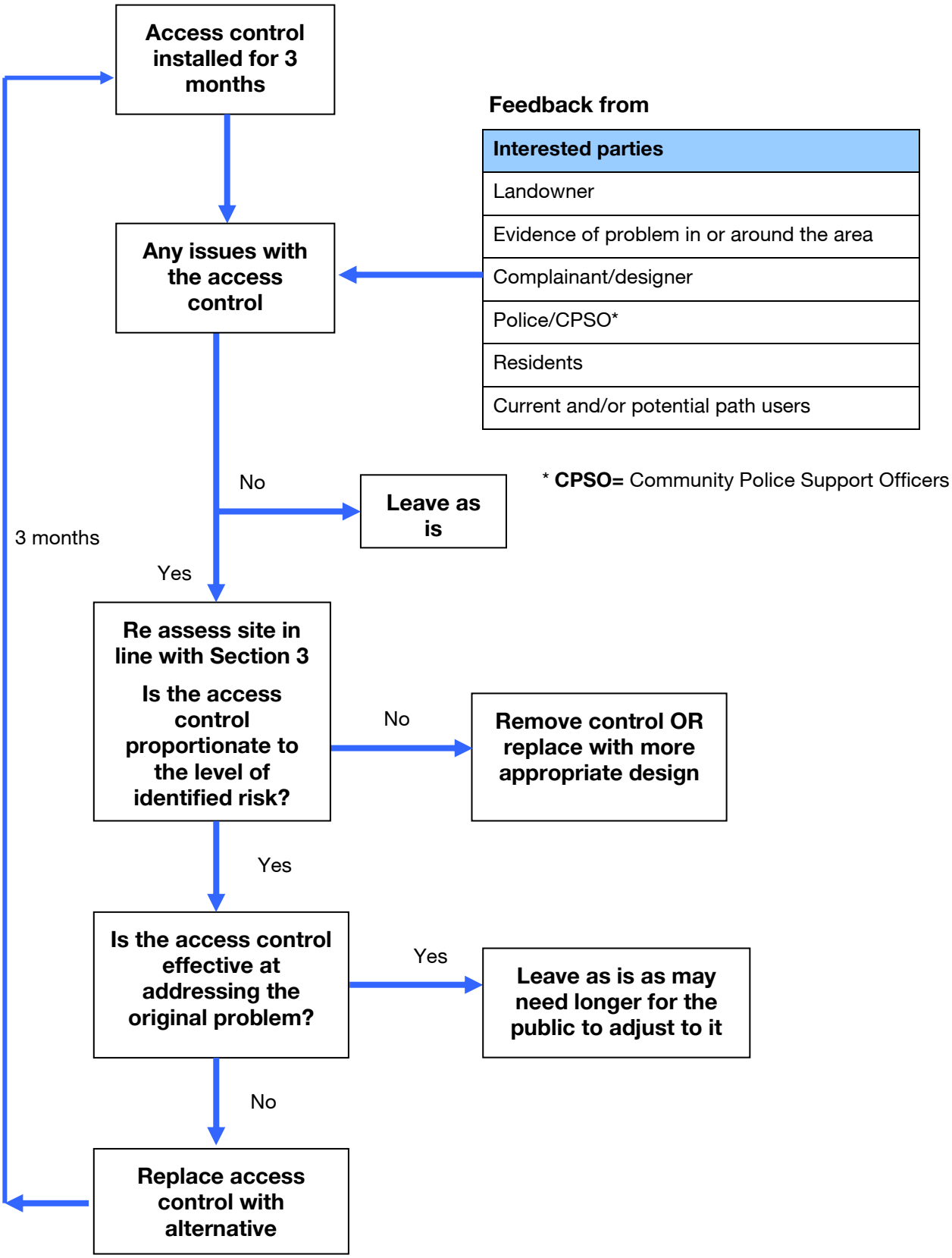
- A complaint is received that the control is preventing lawful passage;
- A complaint is received that the control is discriminating against people with disabilities;
- There are significant new complaints about misuse; or,
- Due to damage or wear and tear, the barrier requires significant maintenance or replacement.

6.5.6 The key objective of the review process is to ensure that the access control is effective, and is no more restrictive than is reasonable given the nature of the problem. Any access control which has excessive limitations (i.e. is excessively restrictive for legitimate users) or brings only limited benefit (as might be the case if the control is ineffective) should be removed; or at least be replaced with a design that is more effective or less restrictive as appropriate.

6.5.7 Where controls are proposed as part of new developments, opportunities to ensure review of access controls as part of the planning process should be explored.

6.5.8 The suggested review cycle is shown in Figure 2 below

Figure 2: The Review Cycle for Access Controls – can also be found in Appendix 2



7 LAYOUT & DESIGN SOLUTIONS

7.1 Summary

Below is a summary of which access controls allow access to which user – legitimate or not.

Appendix 4 holds the Sustrans standard details for the majority of the access controls below with **Appendix 5** displaying photo examples of the different types.

Table 11 – Hierarchy of response

	Allows access to	Pedestrians	Cyclists	Trailer and bike	DDA compliance	Horses	Motor bikes	Cars
Access Control **Least restrictive 1st**								
7.2	Speed humps	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
7.3	Bollards	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**N**
7.5	Kent carriage gap	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**N**
7.6	Staggered chicanes	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**N**
7.7	Cattle grid	**Y**	**Y**	**Y**	**N**	**N**	**Y**	**Y**
7.8	Gate set ajar	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**N**
7.8	Self closing gate	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**N**
7.8	Kissing gate	**Y**	**N**	**N**	**N**	**N**	**N**	**N**
7.9	A frame	**Y**	**Y**	**Y**	**Y/N**	**N**	**N**	**N**
7.10	Horse stile	**Y**	**N**	**N**	**N**	**Y**	**N**	**N**
	U chicane not recommended	**Y**	**Y**	**N**	**N**	**N**	**N**	**N**

7.1.1 The following section outlines key layout and design solutions for a range of different access controls. They are listed from the **least restrictive types** to those which could **severely restrict access** for some legitimate users.

7.1.2 The approximate costs relate to manufacture and installation though ancillary works can affect the final cost.

7.2 Speed humps on paths – more effective in controlling speed than access

		Impact on users			
Suitable for	All routes where speed reduction required	Pedestrians	✓	Vans	–
Approx cost	£500 - £1,000	Wheelchair users	–	Cars	–
Pros	Minimal impact on legitimate use; low cost	Mobility scooters	–	Motorcycles	–
Cons	Does not physically prevent illegitimate users	Cyclists	–	Mini-motos	–
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	✓	Segways	–

Potential uses

7.2.1 Speed humps can be provided on paths to:

- Make a route less attractive to motorcyclists; and,
- Encourage cyclists to reduce speed at hazards.

Suitability

7.2.2 Speeds humps can be suitable for use on all paths with sealed surfaces. A section of sealed surfacing will be required if they are to be put in an unbound path.

Photo 7 – Speed humps on cycle track (York)

Impact on legitimate path users

7.2.3 Speed humps do not present an obstruction to any legitimate user of a route. However, they may require a reduction in speed for some cyclists (this may be intended).

7.2.4 There is potential for cyclists to be de-stabilised by road humps, if they attempt to negotiate them at speed or are caught unawares. Care should therefore be taken to ensure that humps are clearly visible to approaching cyclists; provision of markings of diagram 1062 of the Traffic Signs Regulations and General Directions will generally be sufficient to achieve this, as would provision of lighting.

Impact on illegitimate path users

7.2.5 Speed humps do not physically prevent the use of a path by illegitimate users; however, they will require cyclists to reduce their speed, and may cause some discomfort for wheelchair and mobility scooter users.

Legal issues

7.2.6 Construction of road humps in highways is provided for by section 90A-F of the Highways Act 1980 (in England and Wales), and section 36-40 of the Roads (Scotland) Act 1984. There are also requirements on the design and siting of road humps and for the consultation process (see The Highways (Road Humps) Regulations 1999 in England and Wales, or The Road

Humps (Scotland) Regulations 1998 in Scotland). The design shown below would comply with the design requirements.

7.2.7 The road hump regulations require that the hump is illuminated if placed in a highway, unless otherwise authorised.

7.2.8 In the case of open access land and permissive paths, humps may be constructed with the land owner's consent, without the requirements of the Road Humps Regulations applying.

Design Issues

7.2.9 Humps might introduce additional wear and tear on the surface in the vicinity. This should not pose a problem on metalled paths, but damage to unbound surfaces might arise. Consideration should be given to metalling the path for the 5-10 metres on each approach to the hump.

7.2.10 Where the land to either side of the hump is open, some users might be tempted to by-pass the hump over this land. This may be particularly true of motorcyclists, and this may cause damage to adjacent verges. Consideration should be given to providing planting or fencing to prevent the passage of vehicles across verges.

7.2.11 Care should be taken with drainage design to ensure ponding does not occur between humps.

7.2.12 In order to act as an effective deterrent to excessive speed, a sequence of at least two humps provided in quick succession are likely to be appropriate. Humps should ideally be of a sinusoidal type, to minimise discomfort for cyclists.

7.2.13 A variety of materials are suitable for hump surfacing to maintain aesthetics of a path if required.

Example layout in Appendix 4

Sustrans standard detail SD/52

7.3 Single row of bollards

		Impact on users			
Suitable for	Footpaths, cycle tracks and bridleways	Pedestrians	✓	Vans	××
Approx cost	£200 - £500	Wheelchair users	✓	Cars	××
Pros	Minimal impact on legitimate use	Mobility scooters	✓	Motorcycles	✓
Cons	None	Cyclists	✓	Mini-motos	✓
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	✓	Segways	✓

Potential uses

7.3.1 A single row of bollards are most commonly used for preventing access to a path by cars and vans. They can also be used as a mounting point for any necessary traffic signs.

Photo 8 – Single row of bollards

Suitability

7.3.2 A single row of bollards will be suitable for any path where vehicular access (including for horse drawn carriages) is not required.

7.3.3 Where access for vehicles is required as part of maintenance activities, removable bollards can be used to facilitate access for these vehicles.

Impact on legitimate path users

7.3.4 A single row of bollards will normally allow the passage of cycles and all non-vehicular traffic (including mobility scooters etc.), although some designs with narrow gaps may restrict equestrians.

Impact on illegitimate path users

7.3.5 A single row of bollards is effective at physically preventing access for most cars, although some unusually narrow vehicles (such as two-seater Smart cars) might be able to pass through the bollards at 1.5m spacing.

7.3.6 Bollards will not have any effect on the passage of motor cycles.

Design issues

7.3.7 The clear space between bollards is important to their effectiveness. Clear space of 1.8 metres will obstruct most cars. 1520mm is the minimum clearance that will accommodate equestrians; widths down to a minimum of 1200mm will accommodate all other non-vehicular traffic. Additional bollards to ensure these minimum spaces are achieved can be used if there are no existing features to provide this e.g. hedges, fences, trees.

7.3.8 Bollards should at the very least be a contrasting colour to their surroundings. Ideally they need to be equipped with two yellow reflective strips, or some other device, to ensure they are

conspicuous to the partially sighted and to approaching cyclists. Retro-reflective strips will help cyclists see the obstruction during times of darkness.

7.3.9 Alternatively, providing traffic signs (i.e. to indicate the cycle track) or a lamp in the bollard will help to highlight its presence.

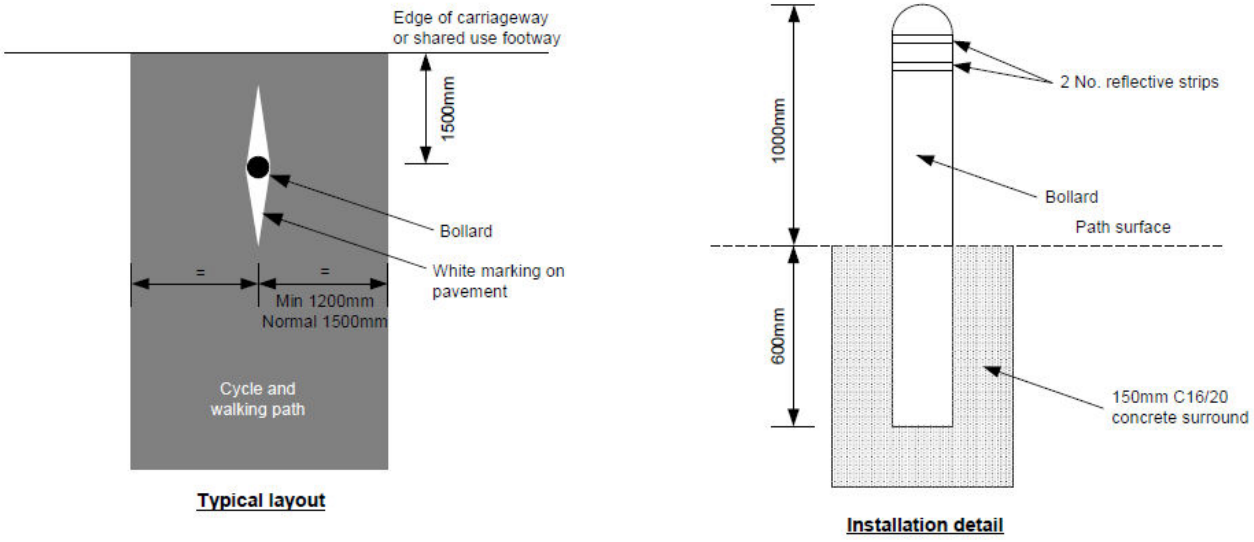
7.3.10 Bollards should be a minimum of 1000mm high, to ensure they are visible and do not pose a trip hazard. In isolated locations prone to vandalism, robust bollards with substantial foundations may be required in order to resist being pulled out by 4×4 vehicles.

7.3.11 Bollards can be constructed from a variety of different material and in various styles to suit the location e.g. steel designs - proprietary and bespoke, timber, recycled plastic, concrete etc and a search on the internet will provide the information necessary on these different types. A sensitively chosen bollard will enhance a path as can be seen in Photo 8.

7.3.12 One or more bollards can be removable to allow for occasional maintenance access. A variety of designs exist for removable bollards. Care should be taken when specifying the bollard type, to ensure it is sufficiently robust, that any sockets or stubs exposed while the bollard is removed do not pose a risk to path users and manual handling issues through removing the bollard are taken into account. Designs which eliminate or minimise the possibility of the bollard not being replaced after use are preferred.

Example layout in Appendix 4

Sustrans standard detail SD/23



Notes:

1) clearances to be measured from outer edges of bollard(s)
2) bollard may be located off-centre to provide a 1.5m gap
3) areas to either side of path will need obstructing to prevent the by-passing of the bollard.

7.4 Staggered bollards

		Impact on users			
Suitable for	Footpaths and cycle tracks.	Pedestrians	✓	Vans	××
Approx cost	£500 - £1,000	Wheelchair users	–	Cars	××
Pros	Minimal impact on legitimate use	Mobility scooters	–	Motorcycles	–
Cons	Some inconvenience to wheelchair users and cyclists.	Cyclists	–	Mini-motos	–
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	–	Segways	✓

Potential uses

7.4.1 Staggered rows of bollards can be used to act as a deterrent to motorcycle use and to encourage cyclists to reduce their speed.

Suitability

7.4.2 Staggered bollards may be appropriate on footpaths and cycle tracks. They will not be appropriate where vehicular access is required (even if only for maintenance) unless a by-pass can be provided or the use of removable bollards.

Photo 9 – Staggered bollards

Impact on legitimate path users

7.4.3 Staggered bollards will accommodate cycles and all non-vehicular traffic. However, they will require cyclists to reduce their speed (which may be intended) and may pose a slight inconvenience to less confident cyclists and for people using wheelchairs or mobility scooters.

7.4.4 Staggered bollards might also be confusing for the blind or partially sighted.

Impact on illegitimate path users

7.4.5 Staggered bollards are highly effective at physically preventing access for cars.

7.4.6 This arrangement will pose a nuisance to motorcyclists and will require them to slow down. This should have the effect of deterring misuse by motor cycles and will at least reduce any safety risk associated with misuse. However, it will still be physically possible for motorcyclists to pass through.

Design issues

7.4.7 It is important that bollards are carefully located to ensure that this arrangement is effective, whilst maintaining access for less-manœuvrable users (such as mobility scooter users). Each row of bollards should provide a clear space of 1.5 metres between bollards (minimum 1.2m), and there should be at least 1.2m of clear space between each row.

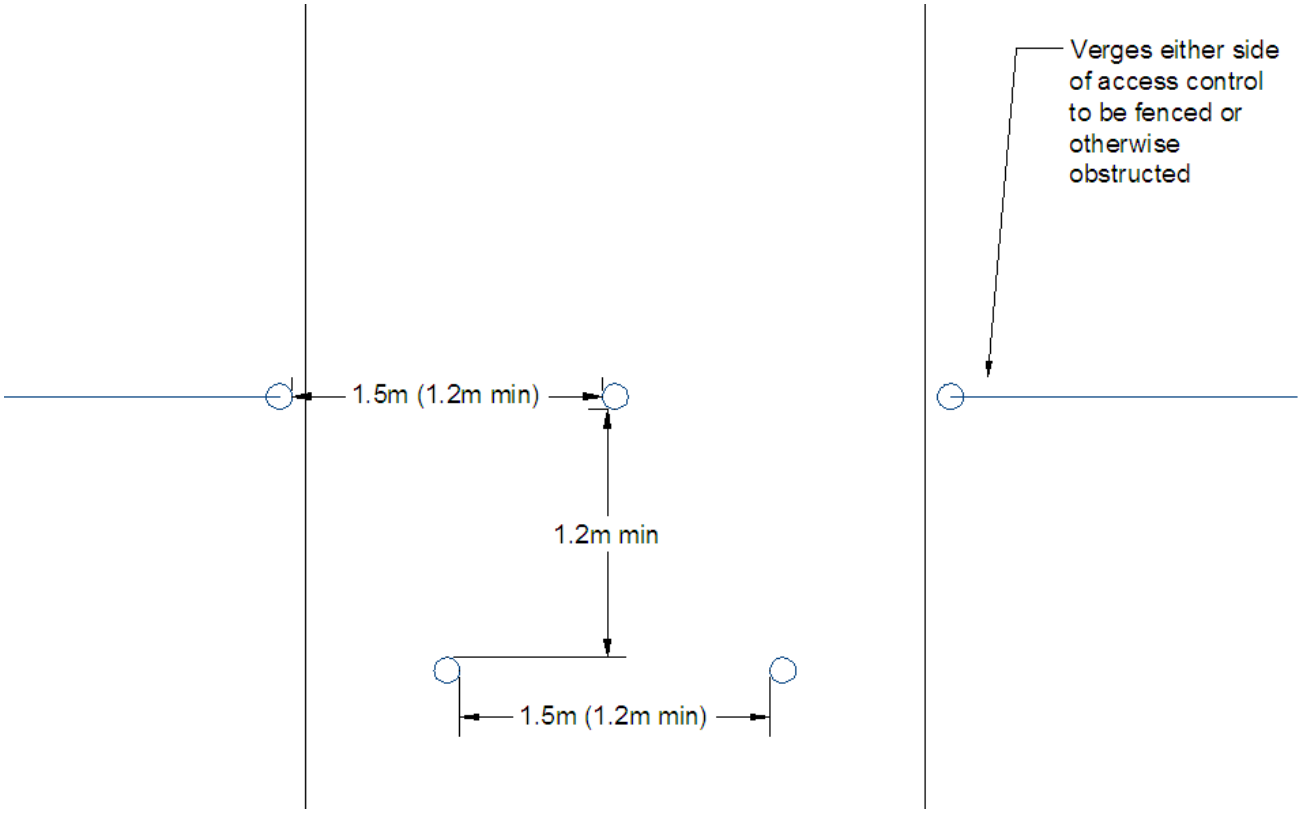
7.4.8 Bollards should at the very least be a contrasting colour to their surroundings. Ideally they need to be equipped with two yellow reflective strips, or some other device, to ensure they are conspicuous to the partially sighted, and to approaching cyclists. Retro-reflective strips will help cyclists see the obstruction during times of darkness.

7.4.9 Alternatively, providing traffic signs (i.e. to indicate the cycle track) or a lamp in the bollard will help to highlight its presence.

7.4.10 Bollards should be 1000mm high, to ensure they are visible, and do not pose a trip hazard.

7.4.11 Essentially the design criteria for single bollards can be used for staggered bollards.

Example layouts



7.5 Kent Carriage Gap

		Impact on users			
Suitable for	All routes where motor vehicles are prohibited	Pedestrians	✓	Vans	××
Approx cost	£750 - £1,500	Wheelchair users	✓	Cars	××
Pros	Minimal impact on legitimate use; low cost	Mobility scooters	✓	Motorcycles	✓
Cons	Ineffective against motorcycles	Cyclists	✓	Mini-motos	✓
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	✓	Segways	✓

Potential uses

7.5.1 The Kent Carriage Gap is suitable for physically preventing access to a path by four-wheeled motor vehicles, particularly where access is required for horse-drawn carriages.

Photo 10 – Kent carriage gap

Suitability

7.5.2 Kent carriage gaps can be suitable for use on all paths where motor vehicles are prohibited. They are particularly suited to Restricted Byways and open access land in Scotland, as in both instances there may be a desire to restrict motor vehicle access whilst non-motorised vehicles have a right of way of access.

Impact on legitimate path users

7.5.3 The Kent Carriage Gap does not present an obstruction or inconvenience to any legitimate user of a route. However, bollards associated with the gap may present a trip hazard, or a risk of collision by cyclists (see paragraph 6.2.17).

Impact on illegitimate path users

7.5.4 The carriage gap is effective at physically preventing access for most cars, although some uncommon types of motor vehicle might be able to pass through the bollards (for example, off-road vehicles with large ground clearances).

7.5.5 Carriage gaps will not have any effect on the passage of motor cycles.

Legal issues

7.5.6 No legal issues are identified.

Design issues

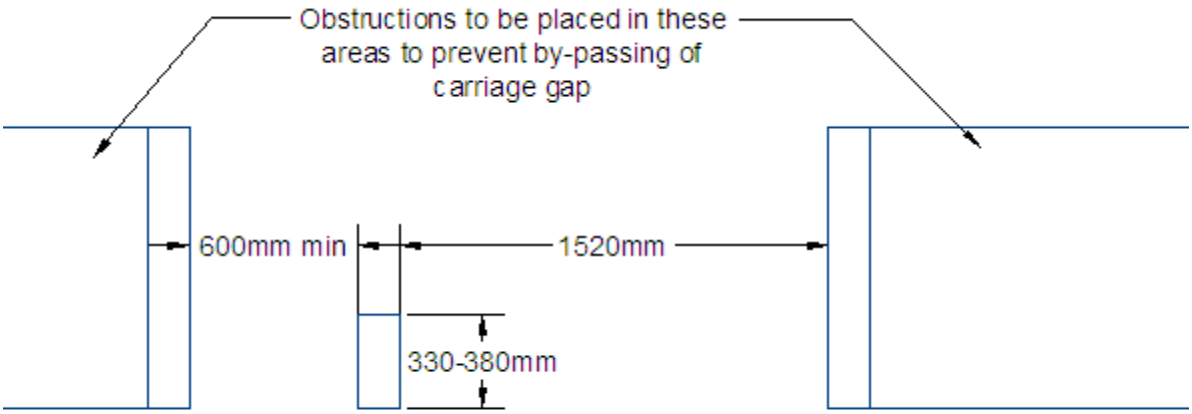
7.5.7 The low height of the bollards associated with the carriage gap (330 mm in the lowest case) means that the bollards may present a trip hazard. Whilst painting these bollards a conspicuous colour (i.e. yellow) will help address this, there may remain an issue for the blind

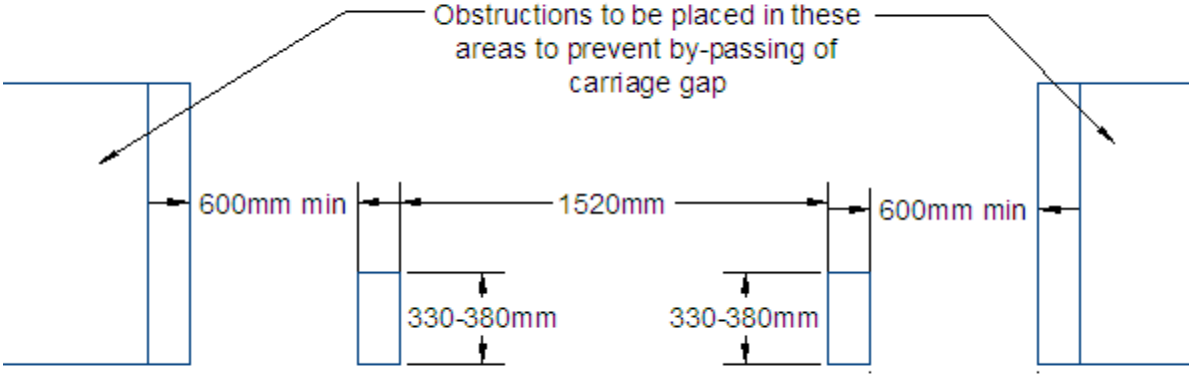
and partially sighted. Local access groups should be consulted to ensure any necessary mitigation is included in the final design.

7.5.8 The design works by allowing larger carriages to pass with one wheel running through the narrower 600mm gap, with the axle and bodywork clearing the low bollard vertically. Narrower carriages can pass between the wider gap. In order for carriages to pass the bollards in this obstruction, they will need to take a straight approach. Care should therefore be taken to ensure the carriage gap is not located too close to junctions or bends.

7.5.9 One or more of the bollards forming the gap can be of a removable design, to allow for maintenance access.

Example layouts





7.6 Chicanes

		Impact on users			
Suitable for	Footpaths and cycle tracks.	Pedestrians	✓	Vans	××
Approx cost	£500 - £2,000	Wheelchair users	!	Cars	××
Pros	Effective at reducing cycle speeds	Mobility scooters	–	Motorcycles	–
Cons	Unlikely to be both inclusive and effective	Cyclists	!	Mini-motos	–
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	–	Segways	✓

Potential uses

7.6.1 Chicanes can be used to act as a deterrent to motorcycle use and to encourage cyclists to reduce their speed. They allow the opportunity of introducing more interesting and less functional elements to a barrier.

Photo 11 – Chicane (Oban to Fort William)

Suitability

7.6.2 Chicanes may be appropriate on footpaths and cycle tracks. The spacing between the chicane panels will determine whether equestrian access is possible.

Impact on legitimate path users

7.6.3 Provided flows are moderate, pedestrians will suffer only minor inconvenience where chicanes are installed. Depending on the spacing between the panels wheelchair users may suffer greater inconvenience and some larger wheelchairs and mobility scooters may be physically prevented from passing.

7.6.4 Cyclists will suffer some inconvenience as they will have to slow for the obstruction. Less confident cyclists or those carrying panniers may find the chicane awkward to negotiate. Again depending on the spacing between the panels some non-standard bicycles may be excluded.

7.6.5 On busier paths, chicanes may result in delays to legitimate users as only one user can pass through the chicane at a time. Users passing in one direction will have to give way to those in the opposite direction.

Impact on illegitimate path users

7.6.6 Chicanes are highly effective at physically preventing access for cars.

7.6.7 This arrangement will pose a nuisance to motorcyclists and will require them to slow down. This should have the effect of deterring misuse by motor cycles and will at least reduce any safety risk associated with misuse. However, it will usually still be physically possible for motorcyclists to pass through.

7.6.8 Where cyclists are not permitted, chicanes can also act as a deterrent against misuse.

Design issues

7.6.9 Chicanes can be varied considerably to allow for different levels of restriction, primarily through varying the depth between the elements of the chicane:

- A depth of 1.0m would be a significant deterrent to cyclists and motorcyclists; however, this depth is likely to result in layouts which are impassable for wheelchair users and mobility scooters, therefore not recommended.
- A depth of 1.5m will accommodate cycling, but is likely to be difficult for some less-able cyclists to negotiate without dismounting. Some mobility scooters are also likely to be excluded by this layout, as are non-standard cycles such as tandems.
- A depth of 2.0m will accommodate all cycles, pedestrians and wheelchairs, but even at this depth is likely to exclude the largest mobility scooters and will be awkward for some cyclists.
- A depth of 3.0m will accommodate all cycles, pedestrians, wheelchairs and mobility scooters. However, this depth will not be effective at deterring motor cycles and may have only limited effectiveness on cyclists' speed.

7.6.10 It is best practice to have the first barrier of the chicane on the nearside of the path, to encourage the greatest speed reduction before cyclists enter the chicane. The barriers themselves do not have to overlap as per standard detail SD/24 – designs with a free view width between the barriers can be easier for cyclists to negotiate, while still having a significant speed reducing effect.

7.6.11 It should be noted that layouts which are better able to accommodate cyclists and the mobility-impaired are less likely to be effective at addressing a motorcycle nuisance.

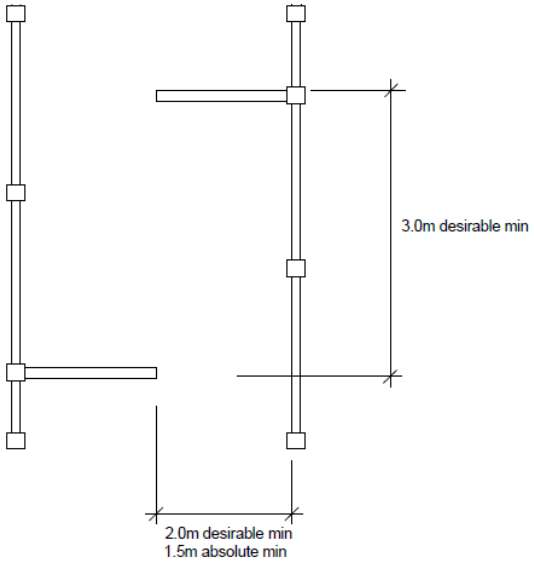
7.6.12 It might be possible to construct a chicane which permits access to wheelchair and mobility scooter users by allowing them to pass beneath the access control. However, this will also make it easier for motorcycles to be wheeled under the barrier.

7.6.13 Use of gates which can be locked in either open or closed positions can allow for maintenance access and can facilitate the trial of removing an access control should the access control be deemed to be excessive in future.

Example layout in Appendix 4

Sustrans standard detail SD/24

Below is an extract from Cycling by Design 2010: Section 6 Off carriageway facilities – fig 6.14



7.7 Cattle / sheep grids

			Impact on users			
Suitable for	Footpaths and cycle tracks		Pedestrians	×	Vans	✓
Approx cost	£3,000-£4,000		Wheelchair users	××	Cars	✓
Pros	Minimal impact on legitimate use; no risk of gates being left open		Mobility scooters	××	Motorcycles	✓
Cons	May be slippery for cyclists		Cyclists	–	Mini-motos	✓
*Key to **impacts**:*		! *may exclude some*	Equestrians	××	Segways	✓
✓ *minimal impact*		× *serious inconvenience*				
– *some inconvenience*		×× *exclusion*				

Potential uses

7.7.1 Cattle and sheep grids will typically be used for enclosing livestock. They can also be used to prevent illegitimate use by equestrians, where this is a problem.

Photo 12 – Cattle grid (Leighton Buzzard)

Suitability

7.7.2 Cattle and sheep grids are only suitable where there is no right or need to ride horses or drive animals – i.e. footpaths and cycle tracks in England, Wales and NI.

7.7.3 They are particularly useful where cyclists are to be accommodated as cattle grids will be much more convenient than having to stop to open a gate or similar.

7.7.4 An adjacent gate or similar can be provided as a by-pass to accommodate horses or driven animals where required and also for those who require an aid to walk e.g. guide dogs, walking sticks/frames.

Impact on legitimate path users

7.7.5 Most cyclists are able to ride safely over cattle grids, though often with some discomfort. Wheelchair and mobility scooter users wouldn't normally be able to pass over the grid. The ease with which users will be able to use the by-pass would depend on the nature of access control provided at the by-pass.

Impact on illegitimate path users

7.7.6 Cattle and sheep grids are generally effective at enclosing livestock and can be effective at deterring equestrian use where this is illegitimate. They will not necessarily have an effect on illegitimate vehicular use, although if sufficiently small the gap between adjacent fencing may obstruct cars and vans (as in the case of the examples shown).

Legal issues

7.7.7 When proposed on a highway open to all traffic (road in Scotland) or on a Byway of any type, an adjacent gate to allow for animal traffic to pass when required is mandatory.

Design issues

7.7.8 In almost all circumstances, it will be necessary to provide a gate to accommodate pedestrians. Although pedestrians can pass across a cattle grid, to do so is often difficult and inconvenient. Any gate will also need to accommodate equestrians, horse drawn vehicles and driven animals where these need access or have right of way or access. Any gate should be self closing to ensure stock control.

7.7.9 The bars of the cattle or livestock grid can be slippery for cyclists. Care should be taken to ensure that the bars are located perpendicularly to the path, and that cycles can approach the grid in a straight line. Where cyclists can use the path, consideration should be given to providing warning signing to diagram 552 of the Traffic Signs Regulations and General Directions.

7.7.10 Cattle grids have been installed in Cambridge, utilising narrower spaces between bars and threaded rods, to improve comfort and safety for cyclists using the grids. These have proven popular and effective at stock control.

Example layouts in Appendix 4

Sustrans standard details SD/20 and SD/21

7.8 Gates

		Impact on users			
Suitable for	Footpaths, bridleways and permissive paths	Pedestrians	–	Vans	××
Approx cost	£250 - £1000	Wheelchair users	×	Cars	××
Pros	Simple and effective stock control	Mobility scooters	×	Motorcycles	–
Cons	Introduces delays for cyclists	Cyclists	×	Mini-motos	–
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	–	Segways	–

Potential uses

7.8.1 Gates can be used to enclose stock, or to provide a deterrent to motorcycle misuse.

7.8.2 Gates can also be used as a by-pass to other access control features that might prevent the access of legitimate traffic.

Suitability

7.8.3 Gates will be suitable on bridleways, footpaths and permissive paths.

Impact on legitimate path users

7.8.4 All legitimate users will be able to pass through gates, providing they offer sufficient clear width when open and that they are kept unlocked. However, there will be some inconvenience and delay associated with opening the gate, particularly for cyclists, equestrians and wheelchair and mobility scooter users.

7.8.5 Larger gates will be heavier and harder to open and close than smaller gates. Where there is a need to provide a large gate to accommodate vehicles, an adjacent smaller gate can be provided as an easier-to-use alternative.

Photo 13 – Gate

Photo 14– Gate left locked partially open

Impact on illegitimate path users

7.8.6 Gates providing less than 1.8m clear width will exclude most cars and vans.

7.8.7 Motorcyclists will not be physically prevented from passing through the gate; nevertheless, the delay associated with having to open the gate should act as a deterrent to misuse of the path.

Legal issues

7.8.8 There is no legal mechanism for installing gates across cycle tracks (i.e. where there is a right of way by cycle and perhaps by foot).

Design issues

7.8.9 Gates should be designed to be two –way self-closing, so as to reduce the risk of the gate being left open carelessly or by accident. Where the gate is sited can assist in making the opening and closing of the gate as easy as possible.

7.8.10 Opening mechanisms (latches etc.) should be designed to be robust whilst also being easy to operate for all users (e.g. not stiff or liable to trap fingers). Latches should be stockproof and high handles can be helpful for cyclists and horse riders.

7.8.11 Where gates are provided to allow maintenance access, but prevent vehicular access, these can be left locked partially open to allow for easier pedestrian and cycle access. This can also provide a slight speed reducing effect for cyclists and motorcyclists. This would not be suitable where the gate is intended to be stockproof (see the example)

Example layouts in Appendix 4

Sustrans standard details SD/40, 41, 42, 43

7.9 Adjustable A-frames

		Impact on users			
Suitable for	Footpaths and cycle tracks	Pedestrians	–	Vans	××
Approx cost	£250 - £1,000	Wheelchair users	!	Cars	××
Pros	Causes serious deterrent against motorcycle use	Mobility scooters	××	Motorcycles	×
Cons	Causes difficulties for almost all legitimate users	Cyclists	–	Mini-motos	–
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	××	Segways	×

Potential uses

7.9.1 A-frames and K-frames are only suitable for deterring misuse of a path by motorcycles, cars and vans and equestrians. They can also be used to deter misuse of a path by cyclists where these are not admitted. As a result they are an undesirable solution as an access control excluding a number of legitimate users and sending out the message of 'Please don't come in'

Photo 15 – A-frame (Thornton)

Suitability

7.9.2 A-frames can be used on footpaths. They can also be used on cycle tracks, although this is not generally recommended due to the serious inconvenience they can cause to cyclists.

Impact on legitimate path users

7.9.3 Almost all legitimate users will be inconvenienced by A-frame barriers. Even pedestrians will have to shuffle through the barriers and some overweight or mobility impaired pedestrians might be excluded altogether.

7.9.4 Some wheelchairs and mobility scooters are at risk of exclusion by the barrier, particularly when set in a restrictive position.

7.9.5 Cyclists will often have to dismount and/or manhandle their bike through the control.

Impact on illegitimate path users

7.9.6 A-frames can pose a significant deterrent to motorcycle misuse. However, they do not always physically prevent the passage of most motorcycles and determined riders will often be able to get their bikes through the control.

Legal issues

7.9.7 Because A-frames can have the effect of excluding some wheelchairs and mobility scooters, they may be liable to be deemed to be unlawfully discriminatory against disabled people.

Design issues

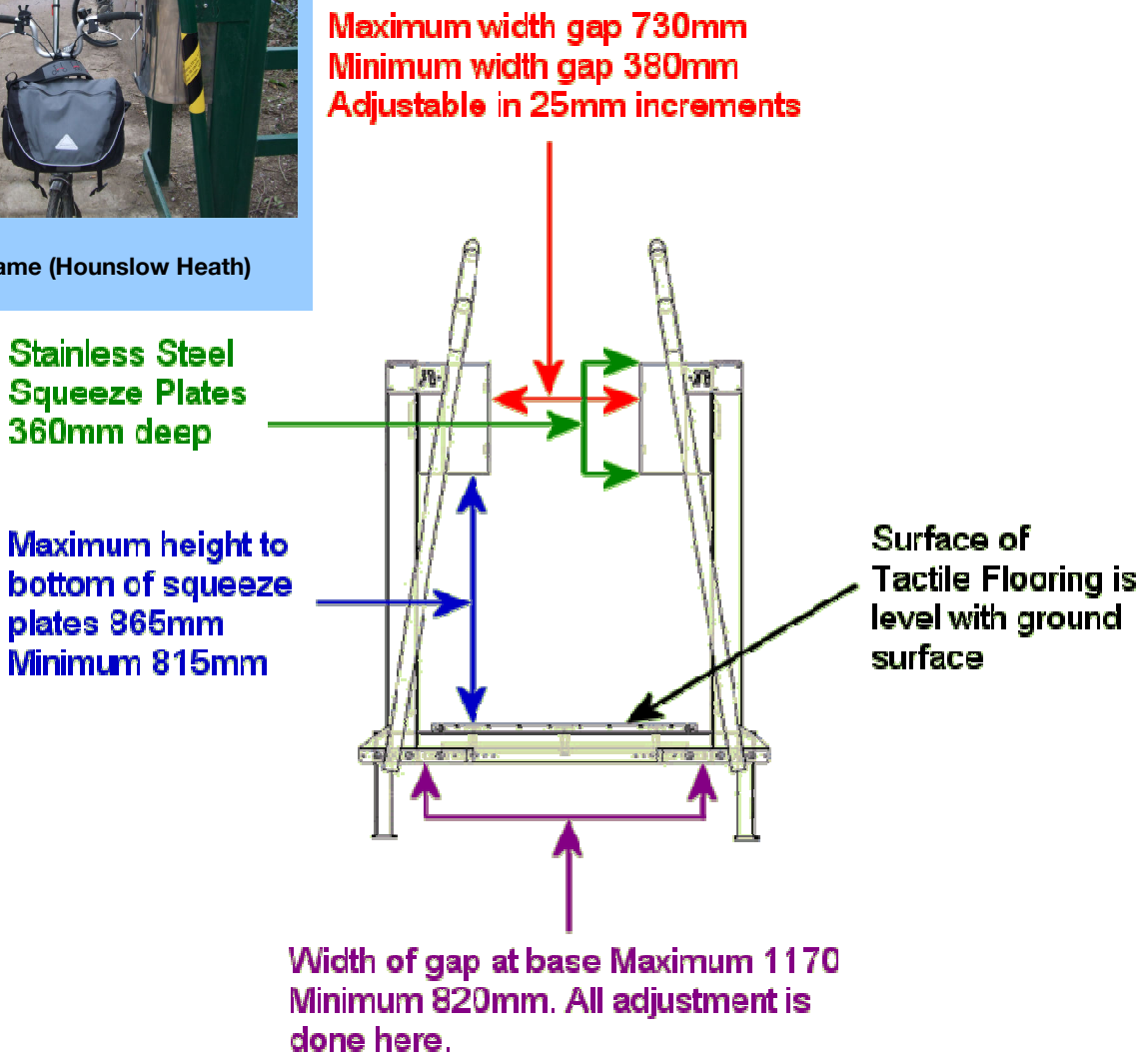
7.9.8 Any A-frames which are installed should be designed to be adjustable, allowing varying degree of restriction. It is recommended that the setting is agreed with local user groups, preferably after an on-site trial. The setting should be regularly reviewed, with opportunities to relax the setting fully explored.

Example layouts in Appendix 4

Sustrans standard details – SD 26 and SD/28

Below is a detail of a K-frame

Photo 16 – K-frame (Hounslow Heath)



7.10 Horse stiles

		Impact on users			
Suitable for	Bridleways	Pedestrians	×	Vans	××
Approx cost	£500 - £800	Wheelchair users	××	Cars	××
Pros	Relatively convenient for horse riders	Mobility scooters	××	Motorcycles	×
Cons	Requires by-pass for other users	Cyclists	×	Mini-motos	×
*Key to **impacts**:* ✓ *minimal impact* – *some inconvenience* ! *may exclude some* × *serious inconvenience* ×× *exclusion*		Equestrians	✓	Segways	×

Potential uses

7.10.1 Horse stiles will typically be used to prevent access by vehicles while allowing for the passage of horses.

7.10.2 Horse stiles can also be used to provide a more convenient bypass for equestrians to avoid other more restrictive access controls. However, this will not be appropriate where stock needs to be enclosed.

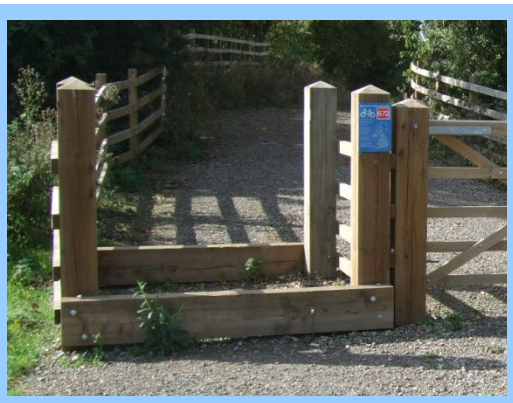


Photo 16 – Horse stile

Suitability

7.10.3 Horse stiles will usually only be appropriate on bridleways, and then only when a gate or other by-pass can be provided for other legitimate users.

Impact on legitimate path users

7.10.4 Horse stiles will exclude or severely inconvenience most users of a path, so a by-pass will need to be provided for these people.

Impact on illegitimate path users

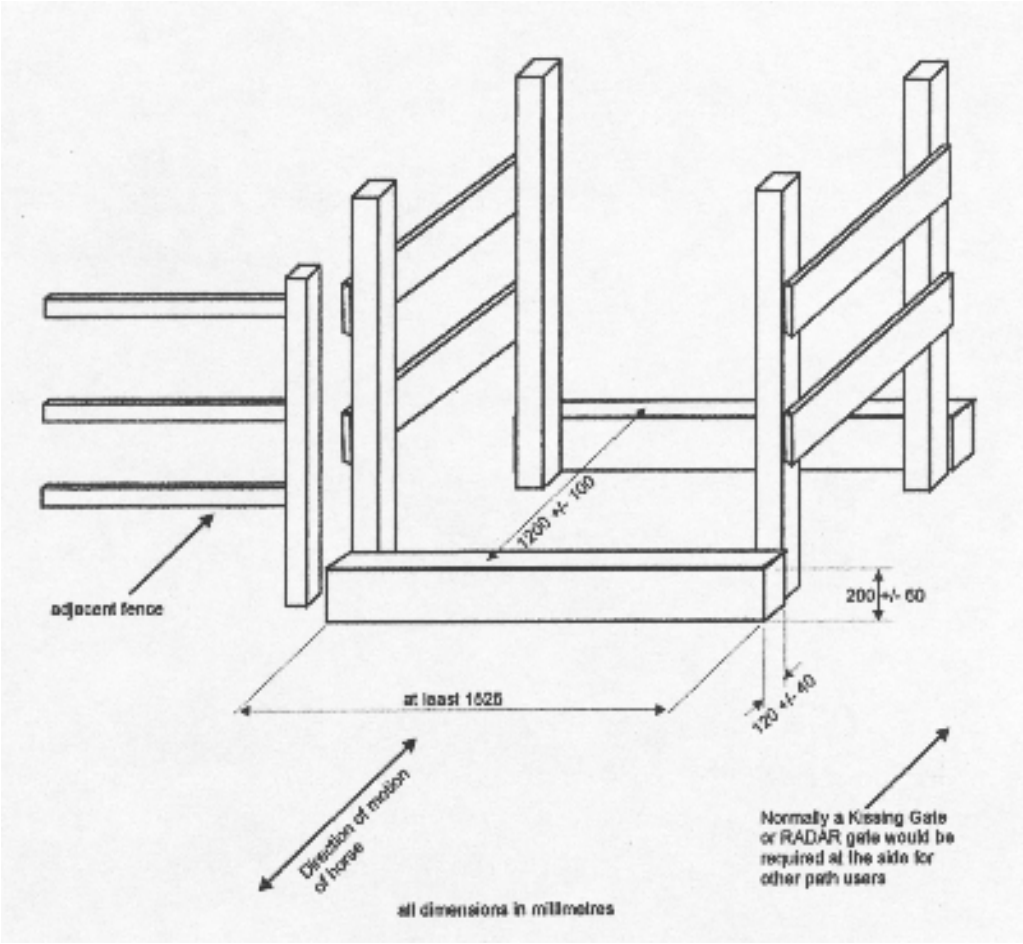
7.10.5 Horse stiles are highly effective at physically preventing access for cars.

7.10.6 This arrangement will also act as a significant deterrent to motorcycle use. However, it will still be possible for most motorcycles to be lifted over the stile, so the horse stile will not physically prevent use of a path by motorcycles.

Design issues

7.10.7 The width of the stile will need to be sufficient to allow a horse to pass through – a minimum of 1520mm.

Example layouts (from BHS website)



Example layout in Appendix 4

Sustrans standard detail SD/22

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APPENDIX 1 - Legislation related to the provision of access controls

E&W = England and Wales; S = Scotland; NI = Northern Ireland

Power	Description	Applicable in		
		E& W	S	NI
Which authority is responsible for which part of the motor road network – who to approach				
In England	The Trunk Road Network (Motorways and all purpose A roads) is the responsibility of the Highway Agency	✓		
	Principal, local minor classified and unclassified roads are the responsibility of the Local Authorities	✓		
In Wales	The Trunk Road Network (Motorways and all purpose A roads) is the responsibility of the National Assembly of Wales	✓		
	Principal, local minor classified and unclassified roads are the responsibility of the Local Authorities	✓		
In Scotland	The Trunk Road Network (Motorways and all purpose A roads) is the responsibility of the Transport Scotland		✓	
	Principal, local minor classified and unclassified roads are the responsibility of the Local Authorities		✓	
In Northern Ireland	All roads are the responsibility of the Roads Service			✓
Powers to provide access controls in rights-of-way				
s.66(2) Highways Act 1980	Power to erect works in a highway comprising a carriageway to safeguard users of the highway	✓		
s.66(3) Highways Act 1980	Power to erect works in a footpath or bridleway to safeguard users of the highway	✓		
s. 80 Highways Act 1980	Power to fence boundary of a highway to prevent illegitimate access	✓		
s. 82 Highways Act 1980	Power to provide cattle grids in highways comprising a carriageway, provided a by-pass is provided	✓		
s. 147 Highways Act 1980	Power to authorise gates, stiles or other works in a footpath or bridleway where requested by a land owner where they feel these necessary as part of agricultural works.	✓		
s.4 Cycle Tracks Act 1984	Power to erect works in a cycle track comprising a carriageway to safeguard users of the cycle track	✓		
s. 28 Roads (Scotland) Act 1984	Power to erect fences etc. in roads to safeguard persons using public roads		✓	

		Applicable in		
s. 41 Roads (Scotland) Act 1984	Power to provide cattle grids in roads, provided a by-pass is provided		✓	
Access to the Countryside (Northern Ireland) Order 1983 4.1.11	Any additional gates, stiles, etc that are put up after the right of way came into being constitute an obstruction unless they are specifically authorised			✓
Responsibilities with regard to protection of rights-of-way				
s. 66(5) Highways Act 1980	Works provided under s.66 not to interfere with legitimate access	✓		
s. 80(3) Highways Act 1980	Boundary fencing not to obstruct right-of-way or interfere with legitimate access	✓		
s.130 Highways Act 1980	Duty of Highway Authorities to assert and protect the rights of the public to the use and enjoyment of the highway	✓		
s.137 Highways Act 1980	Obstruction of free passage along a highway without lawful authority or excuse to be an offence	✓		
s. 129(2) Roads (Scotland) Act 1984	Placement of anything in a road to obstruct the passage of road users to be an offense		✓	
s. 28(2) Roads (Scotland) Act 1984	Works provided under s.28 not to obstruct right-of-way or interfere with legitimate access		✓	
Access to the Countryside (Northern Ireland) Order 1983 2.1.3	The council has a statutory duty to identify, record and protect existing access opportunities along public rights of way. It also has wide discretionary powers to help manage and maintain that access and to establish new access opportunities where they are needed.			✓
	http://www.countrysiderecreation.com/ http://www.iprow.co.uk/			

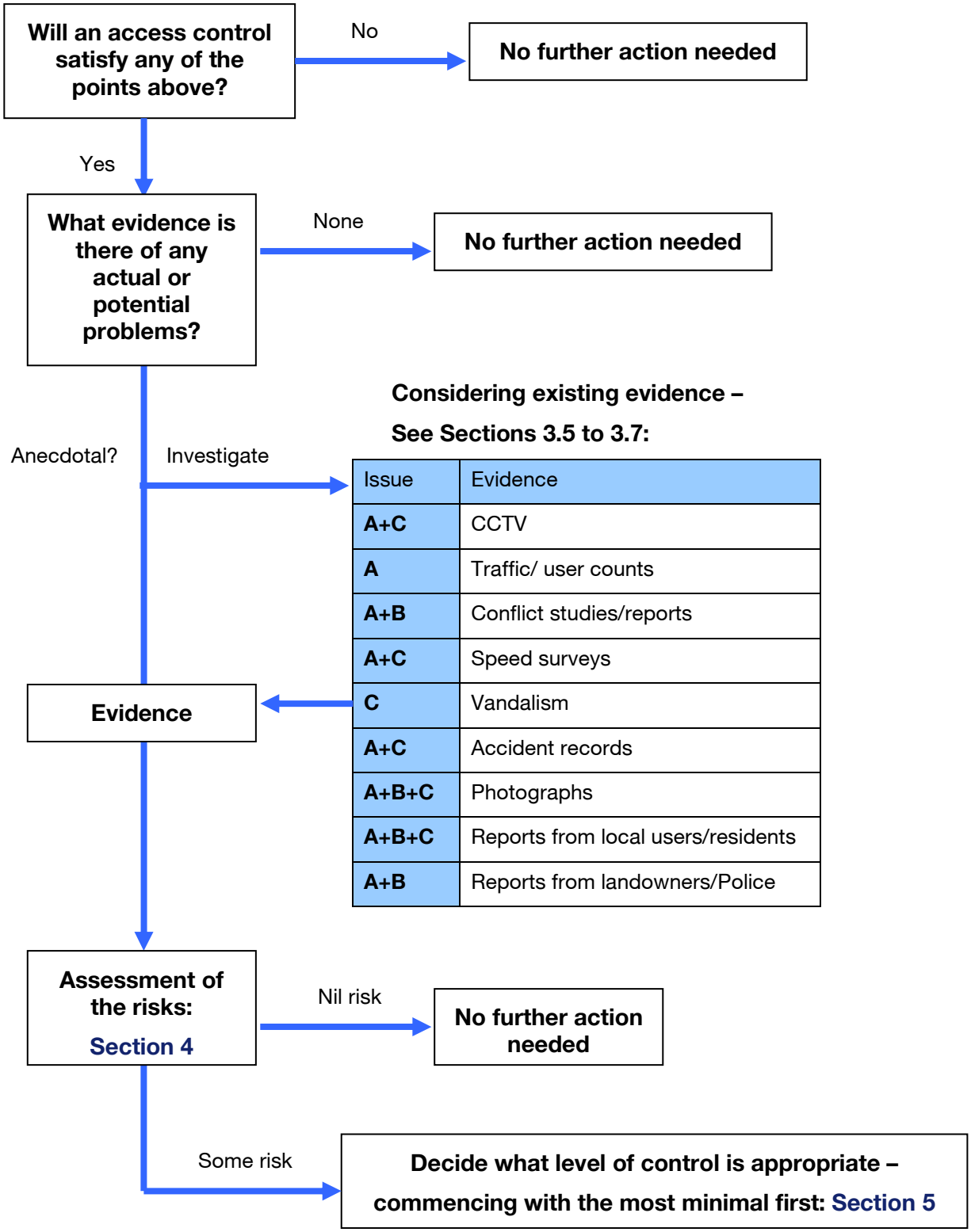
		Applicable in		
		E& W	**S**	**NI**
Responsibilities with regard to protection of right of lawful access to open access land				
s.3 Land Reform (Scotland) Act	Owners of open access land to use, manage and conduct ownership of land in a manner which does not cause unreasonable interference with persons exercising access rights		✓	
s. 14 Land Reform (Scotland) Act 2003	Owners of open access land not to act with the main purpose of preventing or deterring persons exercising access rights		✓	
Access to the Countryside (Northern Ireland) Order 1983 2.2.2	District Council has the responsibility to identify, protect, develop and manage existing opportunities for the public to enjoy the countryside in its area			✓
Responsibilities with regard to protection of rights of people with disabilities				
s. 29 Equality Act 2010	Providers of services must not discriminate against people with protected characteristics (including disability)	✓	✓	
s.149 Equality Act 2010	Public bodies (including highway & roads authorities) to have regard to advance equality and eliminate discrimination against people with protected characteristics (including disability)	✓	✓	
Statement from Equality Commission Northern Ireland	In April last year, the Equality Act 2010 was passed in Great Britain. The provisions of the Act, apart from a few minor exceptions, only apply to Great Britain and will not change equality law in Northern Ireland. Further details on the Equality Act 2010 and the resulting gaps between GB and NI Equality Law can be accessed through the link below: http://www.equalityni.org/archive/pdf/EqualityAct2010gapsinNI2011.pdf			✓
Disability Discrimination Act 1995	Has not been replaced by the Equality Act 2010 in Northern Ireland Section 75 of the Northern Ireland Act 1998 A Good Practice Guide to Countryside Access for Disabled People – Fieldfare Trust			✓

APPENDIX 2 - Assess and review flowcharts for access controls from Sections 3 and 6

Figure 2 –Process for assessing the need for access controls - Section3

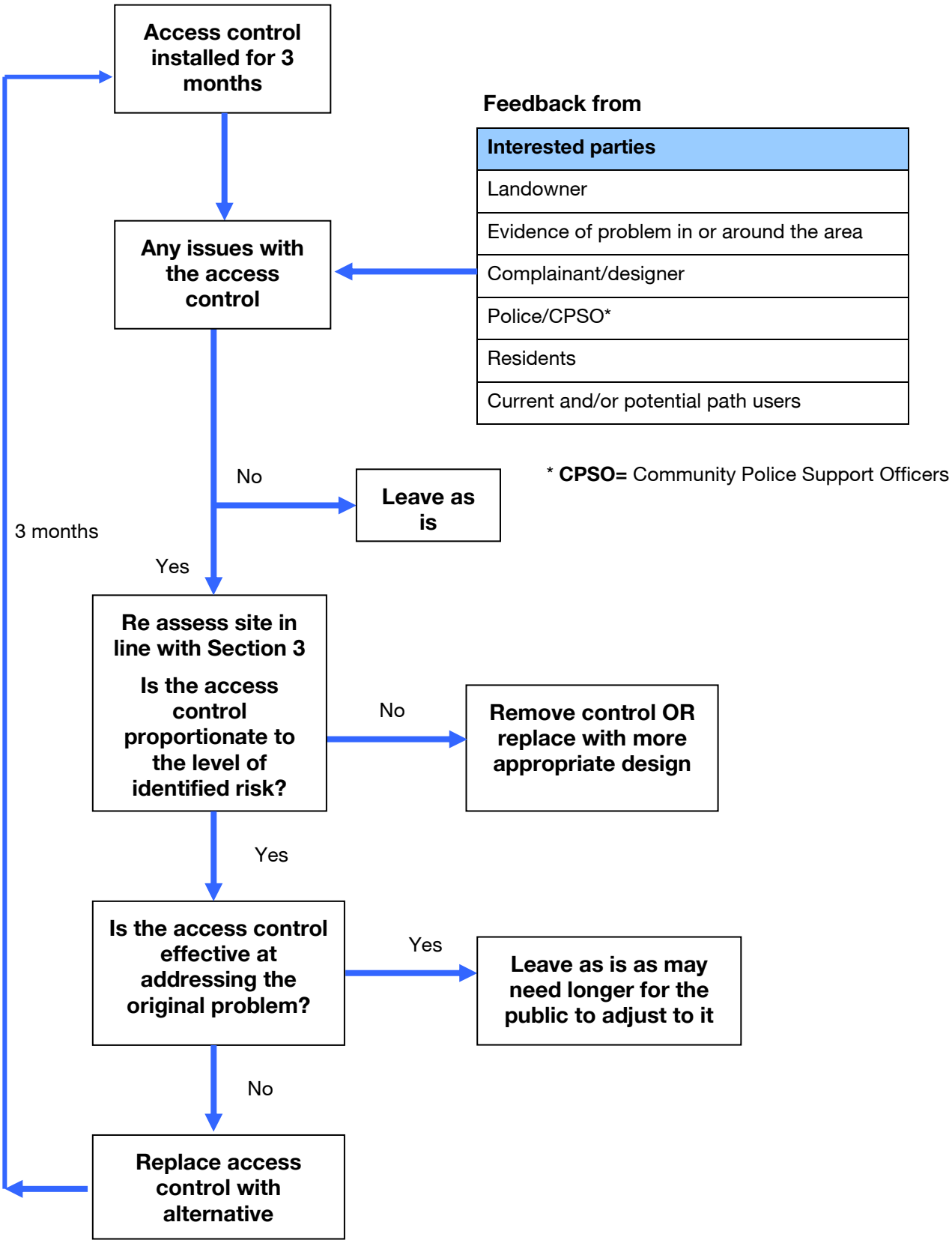
Will an access control assist with the following issues?

D. Safety to legitimate path users
E. Stock control
F. Prevention of misuse of path



Issue	Evidence
A+C	CCTV
A	Traffic/ user counts
A+B	Conflict studies/reports
A+C	Speed surveys
C	Vandalism
A+C	Accident records
A+B+C	Photographs
A+B+C	Reports from local users/residents
A+B	Reports from landowners/Police

Figure 2: The Review Cycle for Access Controls – Section 6



APPENDIX 3 - Risk assessment table from Section 4

Table 2 – Example risk assessment framework where Magnitude x Frequency = Risk (M x F=R) then weighted by w depending on the priorities local to the route.

	Magnitude M 1-3*	***Frequency F 1-4†***	***Risk R M × F = R***	***Weighted Risk R x w***
Impacts affecting safety of the public (Weighting w=3)				
Collision				
Damage to structure carrying vehicles				
Encounter between user and dangerous animal (i.e. bulls)				
Impacts affecting owner of land carrying or adjacent to path (w=2)				
Stock becoming loose				
Damage to property				
Anti-social behaviour				
Noise nuisance				
Impacts to users or manager of path (w=2)				
Intimidation				
Noise nuisance				
Damage to path or associated equipment				
Vandalism and/or fly tipping				
Obstruction of path				
Impacts to adjacent community (w=1)				
Noise nuisance				
Damage to property				
Antisocial behaviour				
Total Weighted Risk – summation of the end column =				

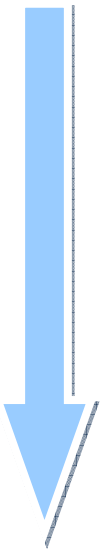
** **Magnitudes** scored as follows:* *1=Scare / minor nuisance;* *2=Major nuisance or discomfort;* *3= Injury or severe nuisance/discomfort*	*† **Frequencies** scored as follows:* *0= Negligible;* *1=Isolated incidents* *2=Occasional;* *3=Often;* *4=Regularly*

8.1.1 Following the assessment and scoring, the risk associated with the misuse requires to be categorised. This categorisation, based upon the **sum of the weighted risks** assigned in Table

2 on the previous page, needs to lead to the least restrictive access control that will be proportionate to the problem, as shown in Table 3 below.

8.1.2 In all cases, the solution should be drawn from a hierarchy of response starting with the **least** restrictive option. These are listed in Section 7. Where the level of risk might mean more restrictive approaches would seem acceptable the 'less is more' attitude is still recommended to ensure that the legitimate use of the access control is not unduly limited.

Table 3 – Categorisation of risk and appropriate responses

Risk level	Weighted Risk Total	Description	Most restrictive response acceptable	
Nil	0	No risks or nuisances identified	No further action	Consider first  Consider last
Minimal	15	Misuse poses only moderate nuisance	Alternative measures, or access controls which pose no inconvenience to legitimate users	
Moderate	30	Misuse poses some risk to the safety of persons using the path	Access controls which cause some inconvenience to legitimate users, but do not exclude any legitimate user	
High	50	Misuse poses significant risk to the safety of persons using the path, or a severe nuisance	Access controls which may cause serious inconvenience to a small number of legitimate users. Controls may exclude some exceptional legitimate users (for example, tandem cycles), subject to agreement of user groups and any traffic regulation orders that may be required)	

APPENDIX 4 – Sustrans standard details

Sustrans standard details for the following access controls can be found on Sustrans website at:

http://www.sustrans.org.uk/resources/design-and-construction/documents-and-drawings

Click on **Documents and drawings** then **Standard details**

Or for further information on access click on **Traffic free** and then on **Access Controls**

They are listed below:

Access Control	Drg No.
Anti-motorcycle speed humps	SD/52
Bollard	SD/23
Chicane	SD/24
Sheep grid	SD/20
Cattle grid	SD/21
Metal field gate	SD/40
Vehicle barrier	SD/41
Pedestrian gate	SD/42
Bridle gate	SD/43
Adjustable A-frame installation details	SD/26
Horse stile	SD/22

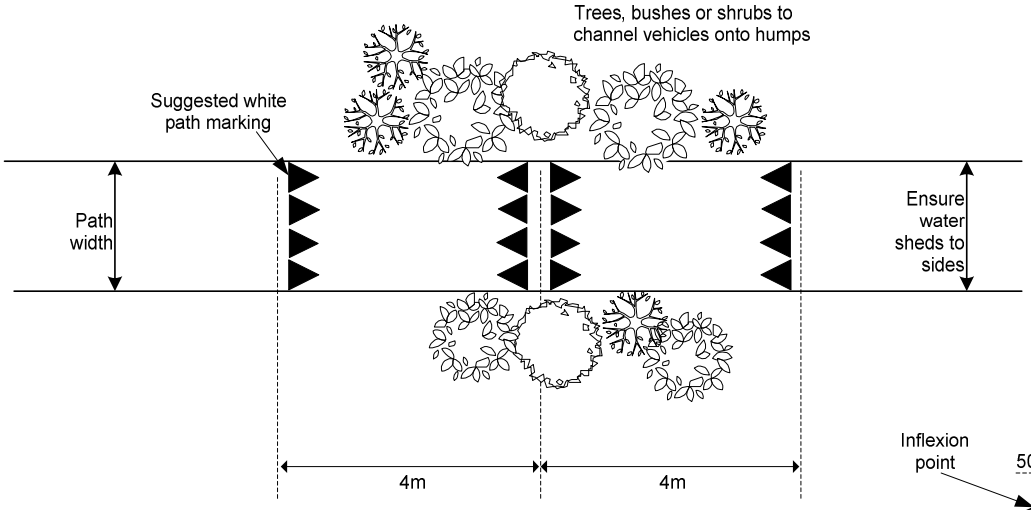
In addition,

Countryside Access Design Guide. *Scottish National Heritage, 2002* – is another good source of information with construction details for standard access controls.

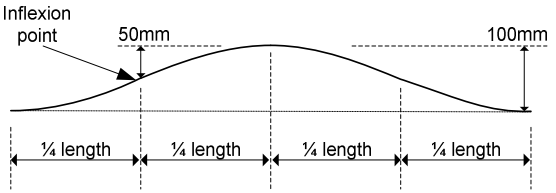
http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=104

And for a direct link to some of the key references:

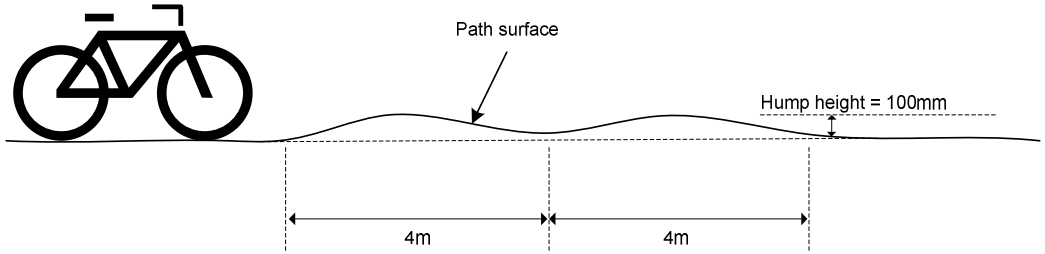
http://www.sustrans.org.uk/resources/design-and-construction/traffic-free/access-controls



Plan of humps



Detail of sinusoidal hump profile



Section through speed humps

Health and Safety Information:

Notes:

1. This drawing to be read in conjunction with all other drawings.

Rev	Description	Drawn	Date
B	Update	TR	24/3/11
A	First Issue	CHE	11/12/08

sustrans
JOIN THE MOVEMENT

George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

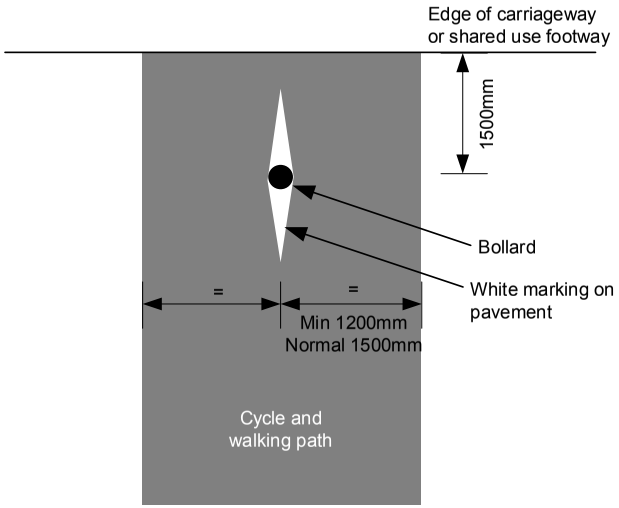
Project: **National Cycle Network**

Title: **Anti-Motorcycle speed humps**

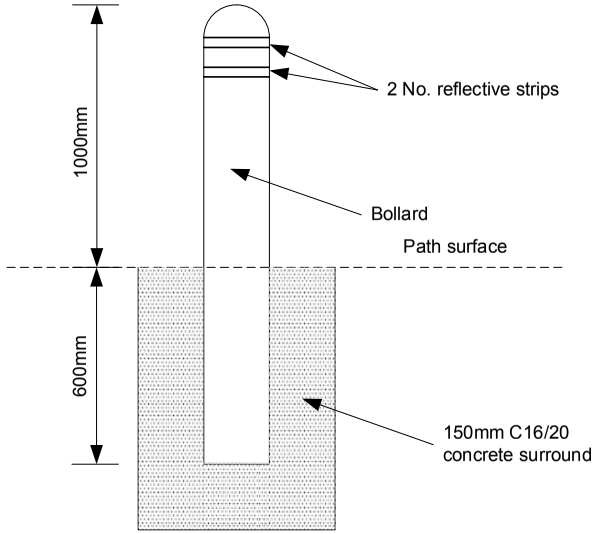
Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

Drawing No: **SD/52** | Revision: **B**



Typical layout



Installation detail

Bollard

Health and Safety Information:

Notes:

1. This drawing to be read in conjunction with all other drawings.
2. Final location of bollard to be decided on site by Engineer

Rev	Description	Drawn	Date
B	Markings added	CHE	14/7/09
A	First Issue	CHE	11/12/08

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George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Fixed Bollard**

Drawn and designed by: **CHE** | Checked by: **GE**

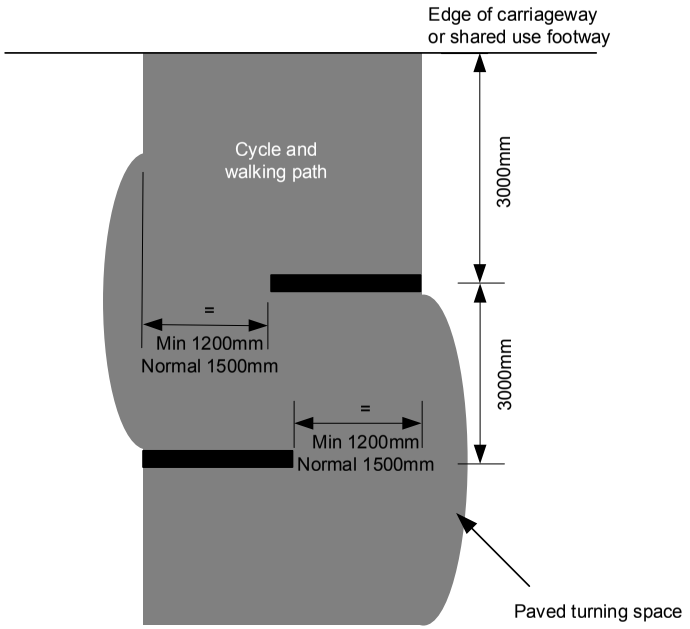
Scale: **Not to scale**

Drawing No: **SD/23** | Revision: **B**

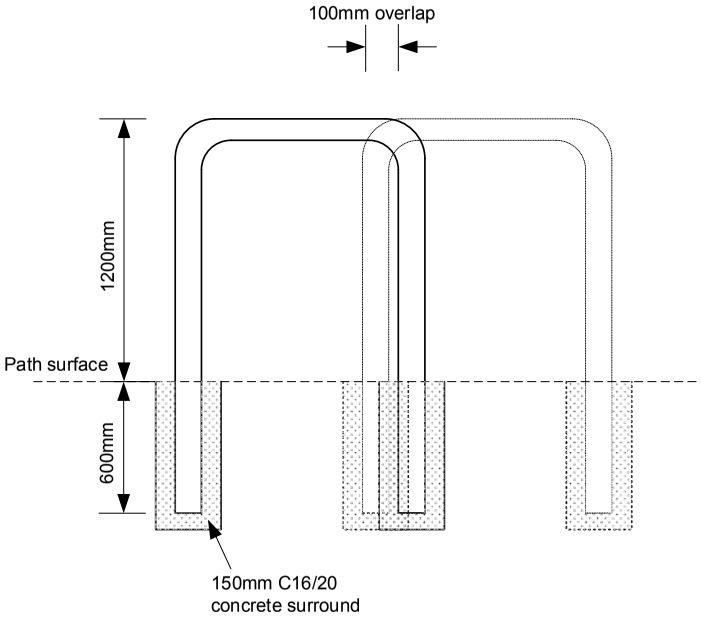
Notes:

1. This drawing to be read in conjunction with all other drawings.
2. Final location of chicane to be decided on site by Engineer
3. Hoops to be 100mm, hot dip Galvanised Steel to BS EN 150146. Any damage to the galvanised finish to be made good with zinc rich paint of a least equal thickness to the galvanising all to BS EN 12944:1998
4. Surfacing to be made good around chicane footings to match surrounding path and to prevent ponding.
5. Barrier to tie in with proposed/existing fences and/or gate posts to proposed/existing access gate.

Health and Safety Information:



Typical layout



Installation detail

Chicane

Rev	Description	Drawn	Date

sustrans
JOIN THE MOVEMENT
George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Chicane**

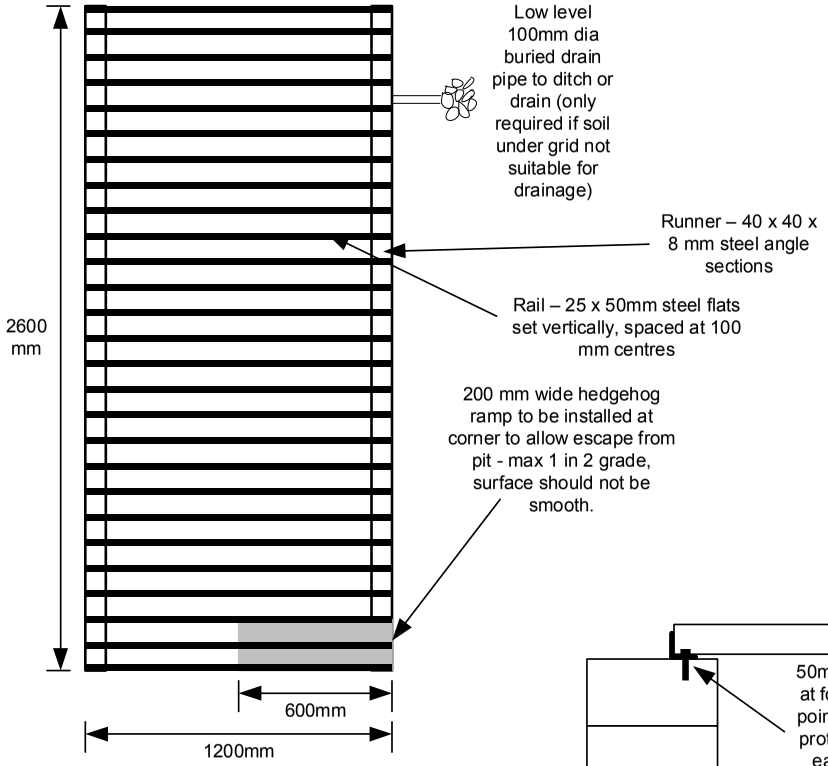
Drawn and designed by: **CHE**	Checked by: **GE**

Scale: **Not to scale**

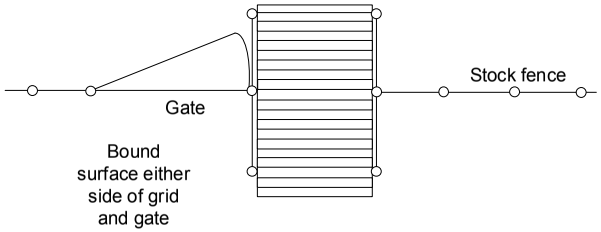
Drawing No:	Revision:
SD/24	**B**

Notes:

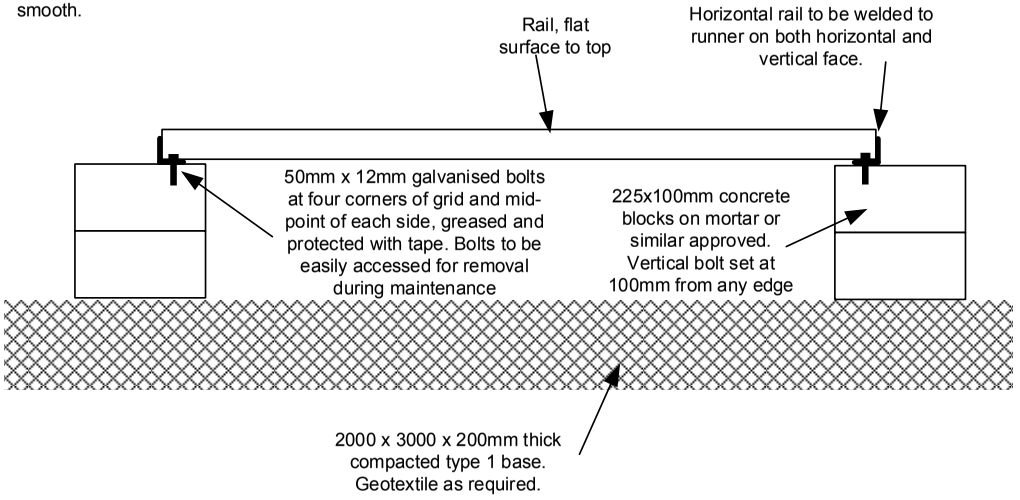
1. All steel parts to be hot dip galvanised to BS729 Part 1. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS5493.
2. Drainage to be provided by 100 mm diameter pipe at location agreed on site.
3. This drawing to be read in conjunction with all other drawings.



Plan



General arrangement detail



Typical cross - section

Health and Safety Information:

Rev	Description	Drawn	Date

sustrans
JOIN THE MOVEMENT
George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Sheep proof grid**

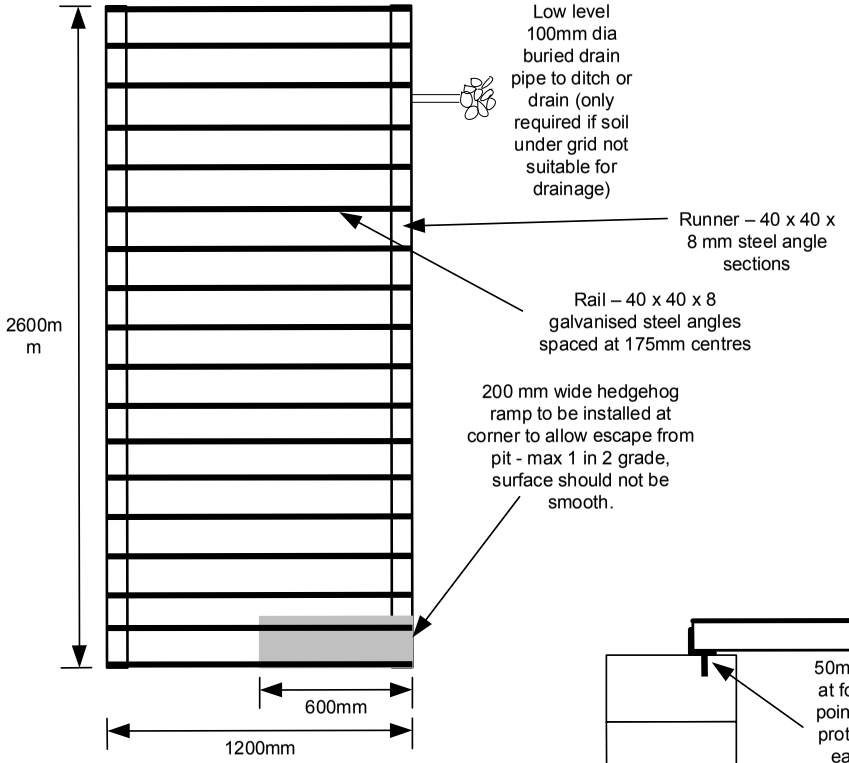
Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

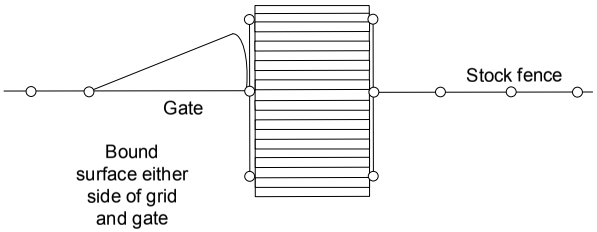
Drawing No: **SD/20** | Revision: **C**

Notes:

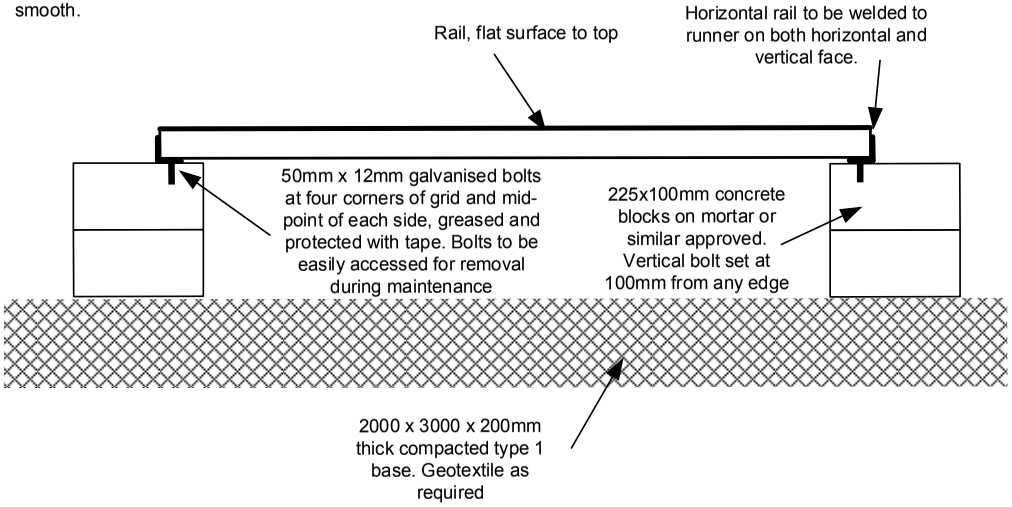
1. All steel parts to be hot dip galvanised to BS729 Part 1. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS5493.
2. Drainage to be provided by 100 mm diameter pipe at location agreed on site.
3. This drawing to be read in conjunction with all other drawings.



Plan



General arrangement detail



Typical cross - section

Do not scale from this drawing

Health and Safety Information:

Rev	Description	Drawn	Date
C	Updates	TR	24/3/11
B	Red note revised	CHE	13/7/09
A	First Issue	CHE	11/12/08

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JOIN THE MOVEMENT

George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Cattle proof grid**

Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

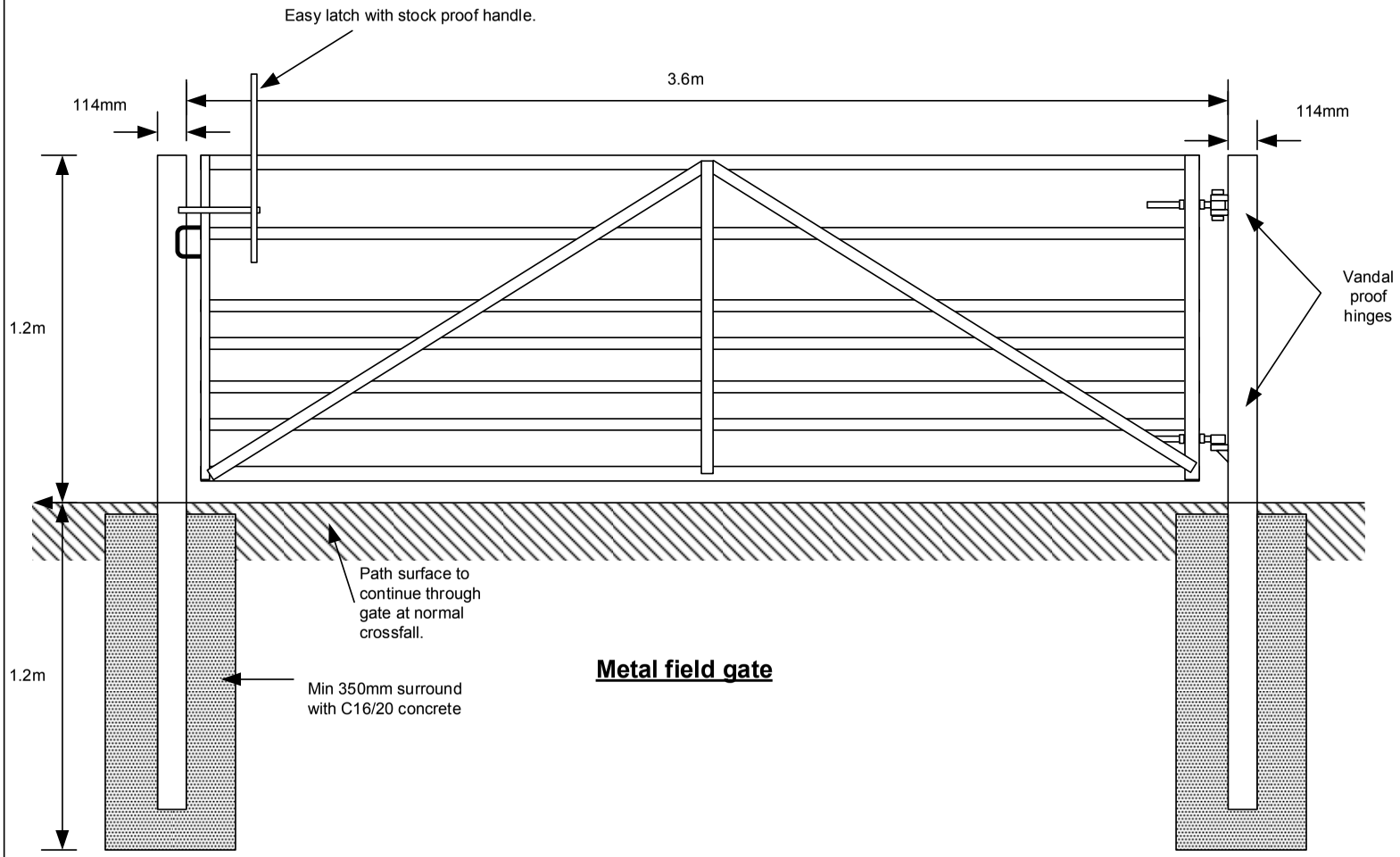
Drawing No: **SD/21** | Revision: **C**

Notes:

1. Gate supplier to be approved by Engineer before ordering.
2. Gate to consist of 44.5 mm and 38 mm steel tubes and 50 x 50 mm and 50 x 25 mm steel box section, all hot dip galvanised to BS EN ISO 3834-1:2005. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS EN ISO 14713:1999.
3. Gate to be installed in accordance with manufacturers specifications.
4. Post footings to be 350 x 350mm x 1.2m C16/20 concrete. Surfacing to be made good to match existing and to prevent ponding.
5. Gate to open into cattle field where present
6. This drawing to be read in conjunction with all other drawings.

Do not scale from this drawing

Health and Safety Information:



Metal field gate

Rev	Description	Drawn	Date
A	First Issue	CHE	11/12/08

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JOIN THE MOVEMENT

George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Metal field gate**

Drawn and designed by: **CHE** | Checked by: **GE**

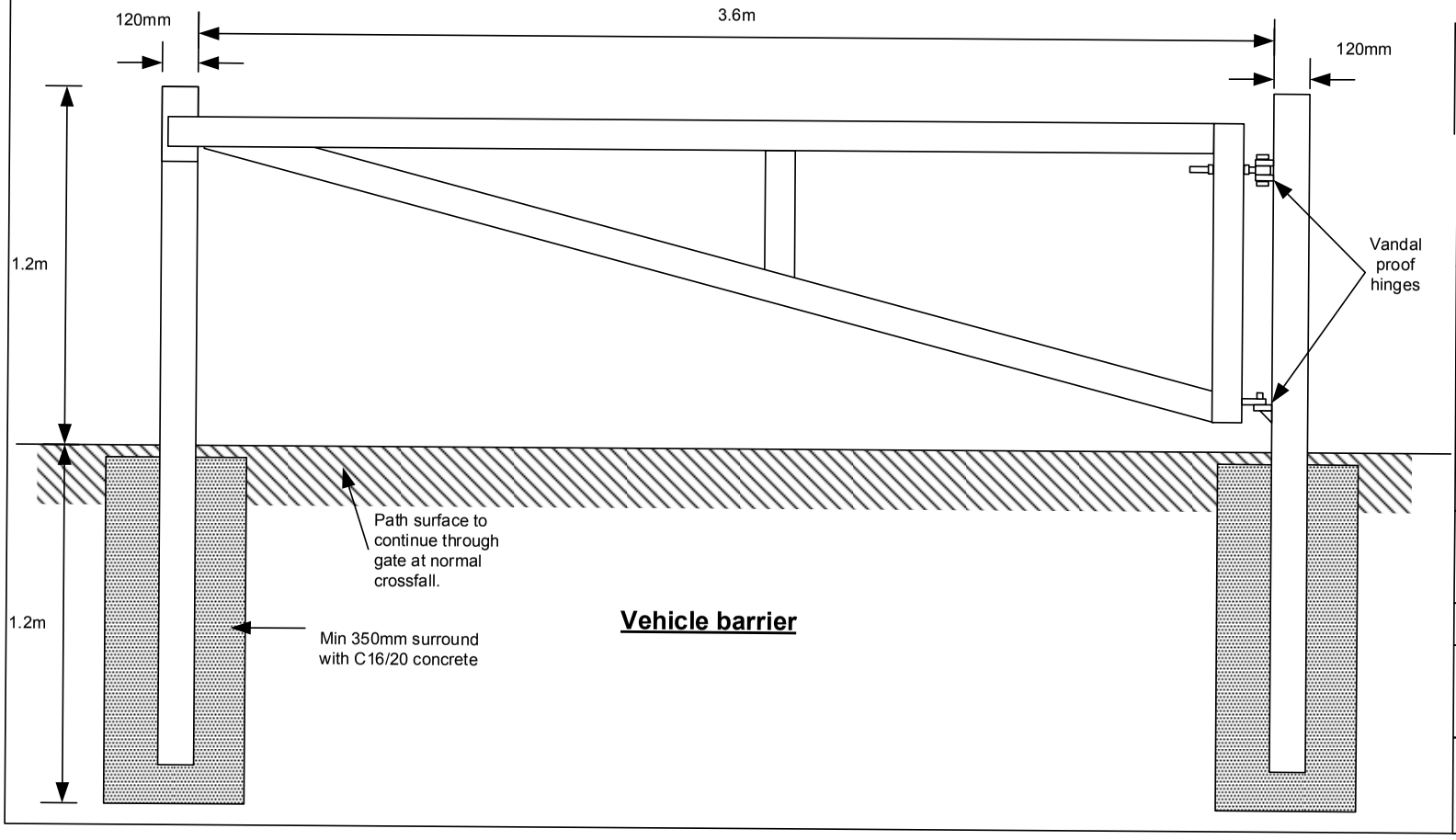
Scale: **Not to scale**

Drawing No: **SD/40** | Revision: **A**

Notes:

1. Barrier supplier to be approved by Engineer before ordering.
2. Barrier to have lock box and padlockable sliding bolt.
3. Barrier to consist of 100 x 50mm RHS, all hot dip galvanised to BS EN ISO 3834-1:2005. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS EN ISO 14713:1999.
4. Barrier to be installed in accordance with manufacturers specifications.
5. Post footings to be 350 x 350mm x 1.2m C16/20 concrete. Surfacing to be made good to match existing and to prevent ponding.
6. This drawing to be read in conjunction with all other drawings.

Health and Safety Information:



Vehicle barrier

Rev	Description	Drawn	Date

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JOIN THE MOVEMENT
George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Vehicle barrier**

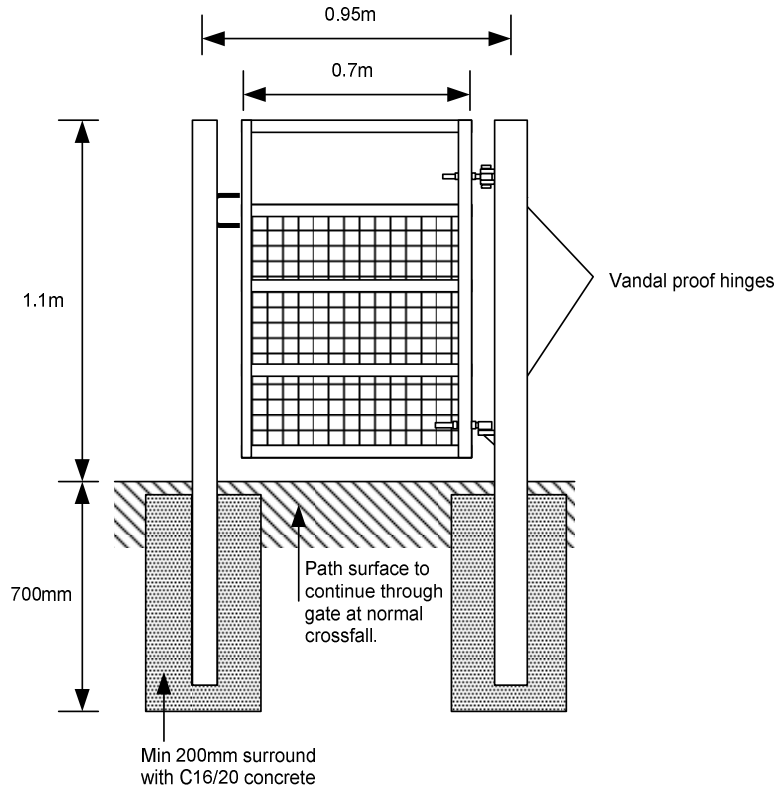
Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

Drawing No: **SD/41** | Revision: **A**

Notes:

1. Gate supplier to be approved by Engineer before ordering.
2. Gate to be hot dip galvanised to BS EN ISO 3834-1:2005. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS EN ISO 14713:1999.
3. Gate to be installed in accordance with manufacturers specifications.
4. Post footings to be 350 x 350mm x 700m C16/20 concrete. Surfacing to be made good to match existing and to prevent ponding.
5. Self-closing gates to be used
6. This drawing to be read in conjunction with all other drawings.



Pedestrian gate

Health and Safety Information:

Rev	Description	Drawn	Date
A	First Issue	CHE	11/12/08

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JOIN THE MOVEMENT

George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Pedestrian gate**

Drawn and designed by: **CHE** | Checked by: **GE**

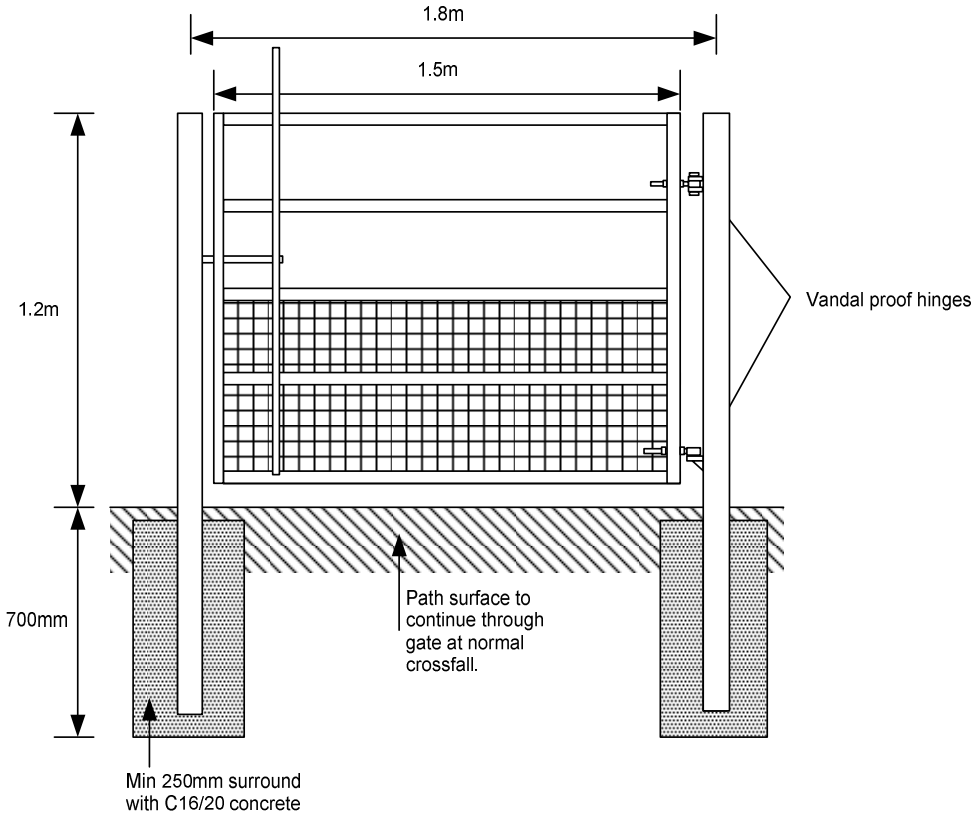
Scale: **Not to scale**

Drawing No: **SD/42** | Revision: **A**

Notes:

1. Gate supplier to be approved by Engineer before ordering.
2. Gate to be hot dip galvanised to BS EN ISO 3834-1:2005. Any damage to the galvanised finish to be made good with zinc rich paint of at least equal thickness to the galvanising, all to BS EN ISO 14713:1999.
3. Gate to be installed in accordance with manufacturers specifications.
4. Post footings to be 350 x 350mm x 700m C16/20 concrete. Surfacing to be made good to match existing and to prevent ponding.
5. Self-closing gate to be used
6. Easy-open handle to suit equestrians and wheelchair users
7. This drawing to be read in conjunction with all other drawings.

Health and Safety Information:



Bridle gate

Rev	Description	Drawn	Date
A	First Issue	CHE	11/12/08

sustrans
JOIN THE MOVEMENT
George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Bridle gate**

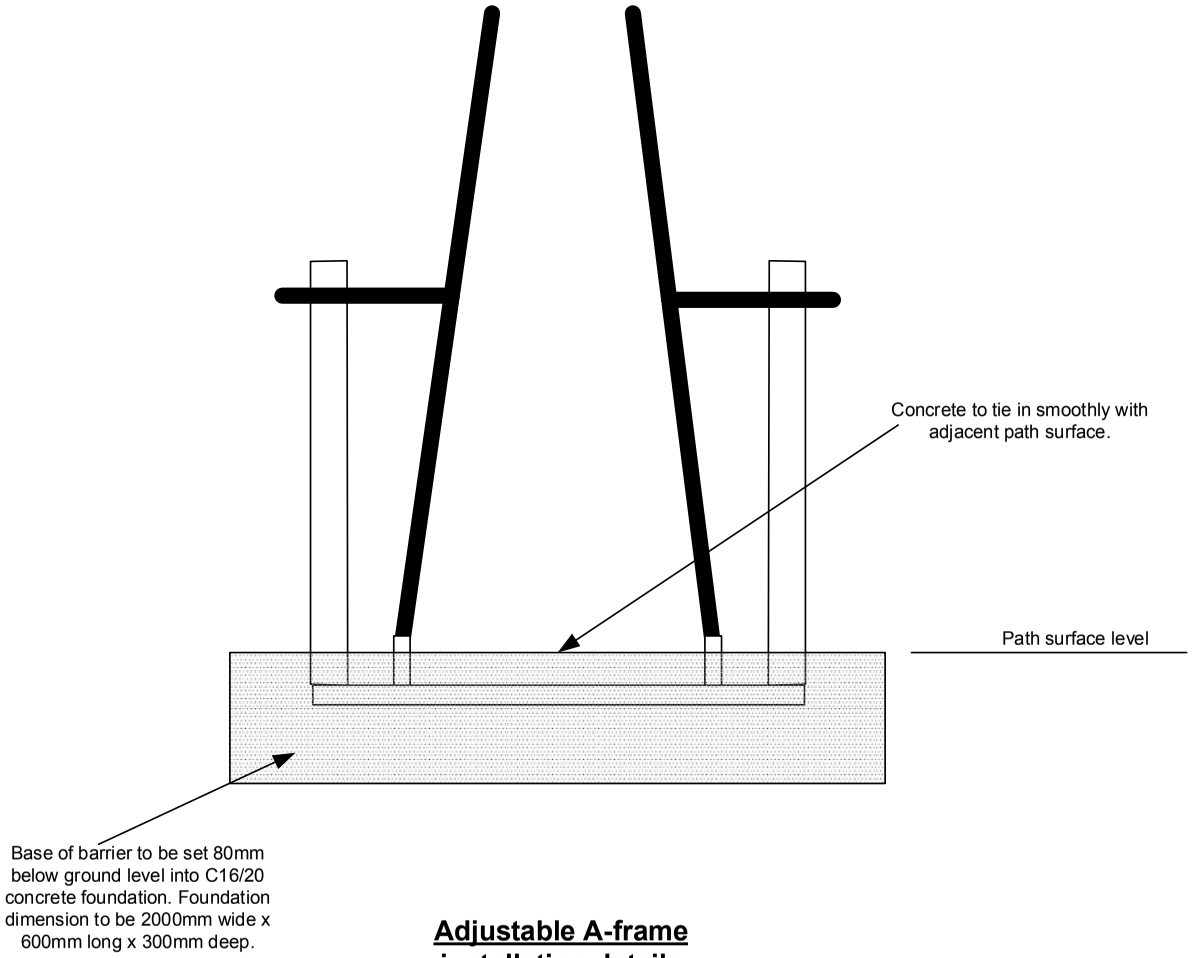
Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

Drawing No: **SD/43** | Revision: **A**

Notes:

1. This drawing to be read in conjunction with all other drawings.
2. Final location of barrier to be decided on site by Engineer
3. Adjustable A-frame to be as per standard detail SD/28
4. Surfacing to be made good around barrier footings to match surrounding path and to prevent ponding.
5. Barrier to tie in with proposed/existing fences and/or gate posts to proposed/existing access gate.



Adjustable A-frame installation details

Health and Safety Information:

Rev	Description	Drawn	Date
B	Updates	TR	24/3/11
A	First Issue	CHE	15/12/08

sustrans
JOIN THE MOVEMENT

George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

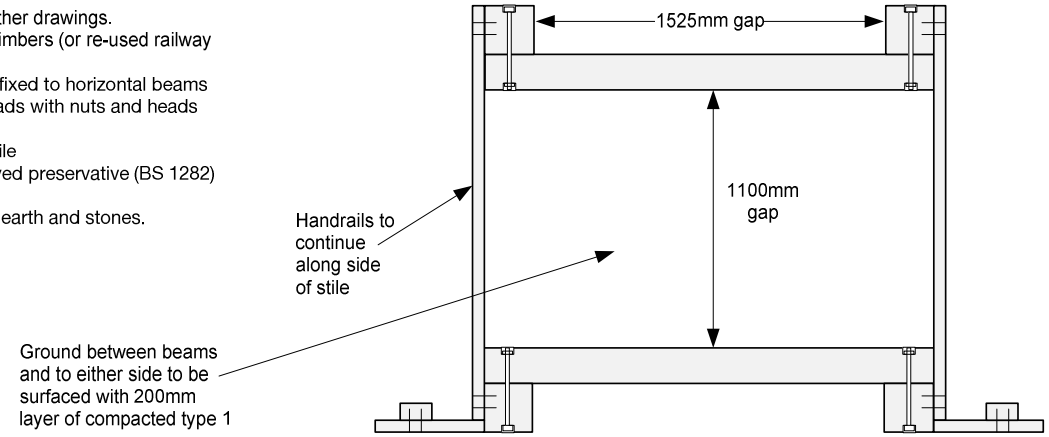
Title: **Adjustable A-frame installation details**

Drawn and designed by: **CHE** | Checked by: **MP**

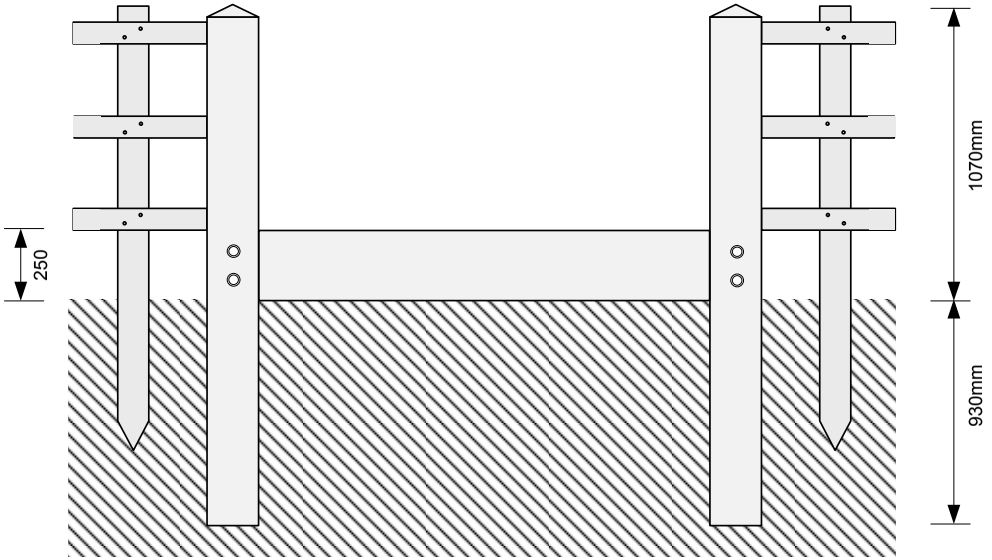
Scale: **Not to scale**

Drawing No: **SD/26** | Revision: **B**

Notes:
1. This drawing to be read in conjunction with all other drawings.
2. Beams to be 2 No. 1825 x 250 x 125mm sawn timbers (or re-used railway sleepers).
3. Posts to be 2000 x 150 x 150mm sawn timber, fixed to horizontal beams with 8 No. galvanised 275mm M10 threaded roads with nuts and heads countersunk..
4. Fence rails to continue along the sides of the stile
5. All timber to be pressure treated with an approved preservative (BS 1282)
6. 90mm galvanised nails and to be used.
7. Holes for corner posts to be filled with rammed earth and stones.



Horse stile Plan



Horse stile Elevation

Health and Safety Information:

Rev	Description	Drawn	Date
A	First Issue	CHE	11/12/08

sustrans
JOIN THE MOVEMENT
George Nott House
119 Holloway Head
Birmingham B1 1QP
Tel: 0121 633 5500
Fax: 0121 643 1214

Status: **Standard detail**

Project: **National Cycle Network**

Title: **Horse stile**

Drawn and designed by: **CHE** | Checked by: **GE**

Scale: **Not to scale**

Drawing No: **SD/22** | Revision: **A**

APPENDIX 5 – Photo examples of different access controls

Bollards

Killin, Stirlingshire

Hamilton, South Lanarkshire

Chester Greenway

Comber Way, Northern Ireland

Northampton

Fixed and demountable bollards

Bollards

Wicken Fen, Cambridgeshire

Shrewsbury

Barcaldine, Oban to Fort William

Paisley, Glasgow

Sleepers used as bollards on NCN 73, Ayrshire

Central bollard with ample passing space and adjacent maintenance vehicle access gate

Chicanes

Harpenden to Luton greenway

Derby to Nottingham

Clydach, South Wales

Lon Eifion, Wales

Maryhill, Glasgow

SE London

Chicanes

Sea Life Sanctuary, north of Benderloch, Oban

Creagan – Oban to Fort William

SE London

Deeside Way, Aberdeenshire

Innovative design as an access control

Locked maintenance vehicle access gate incorporated into chicane on NCN 7

Cattle Grids, Gates and horse stiles

Leighton Buzzard

Ornamental gate showing route profile and allowing maintenance vehicle access - NCN 75

Coe Fen links, Cambridge

Colliers Way, Somerset

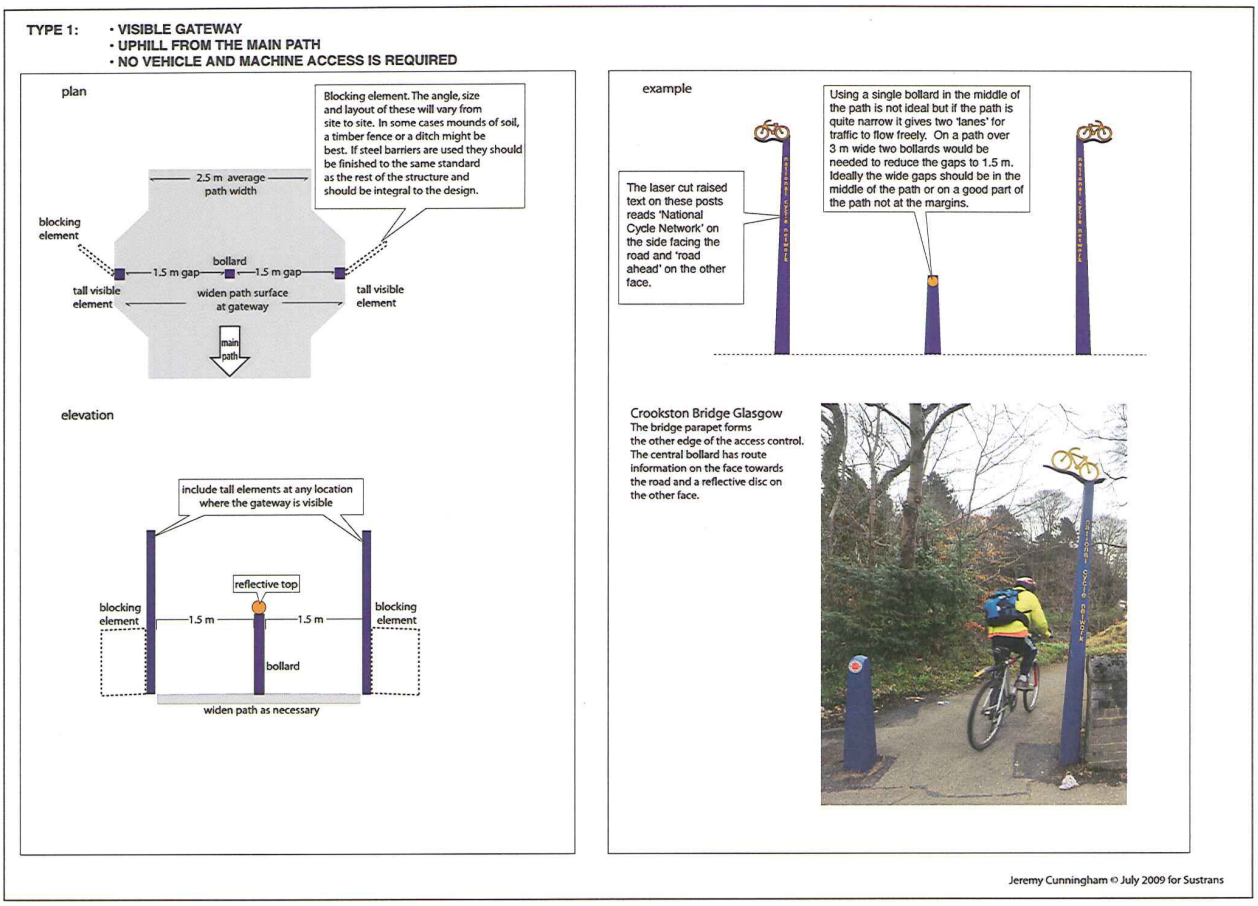
Bennerley Viaduct, Nottinghamshire

Removable central gate post to allow maintenance vehicle access on NCN 7

APPENDIX 6 - Art and gateway examples

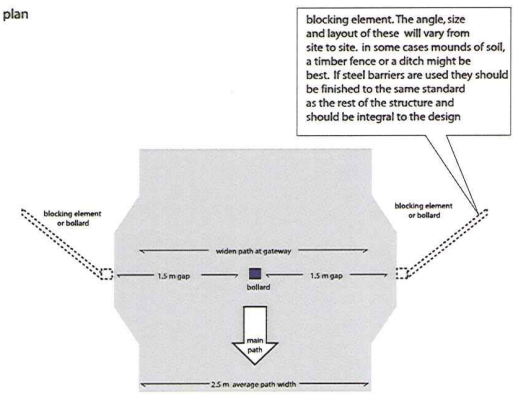
Extracts from a gateways guide by Jeremy Cunningham. This was a project implemented in Scotland to provide access controls that were attractive and interesting and was funded by Transport Scotland's Sustainable Transport Team.

Transport Scotland is the national transport agency for Scotland

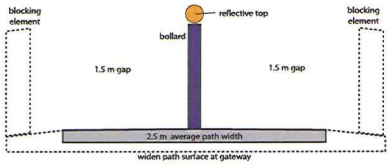


TYPE 2: • GATEWAY NOT VISIBLE
• UPHILL FROM THE MAIN PATH
• NO VEHICLE AND MACHINE ACCESS IS REQUIRED

plan

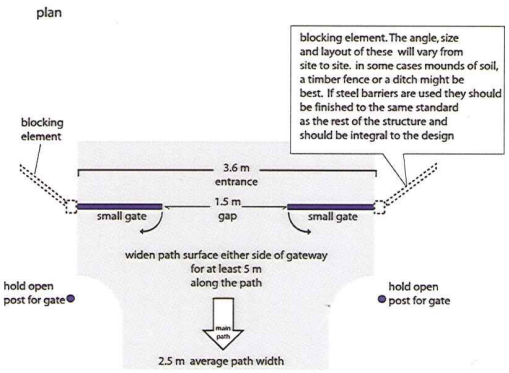


elevation

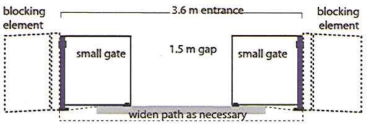


TYPE 4: • GATEWAY NOT VISIBLE
• UPHILL FROM THE MAIN PATH
• VEHICLE AND MACHINE ACCESS IS REQUIRED

plan



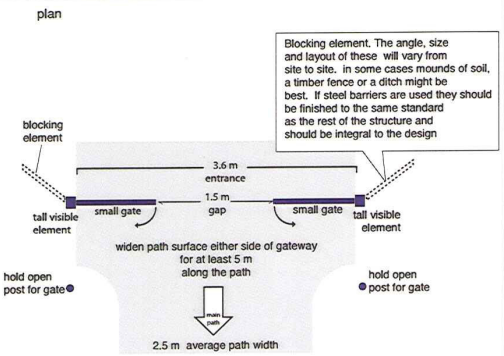
elevation



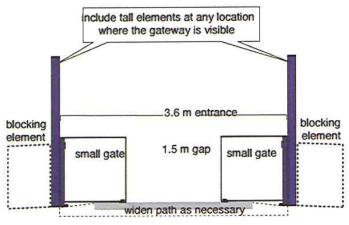
Jeremy Cunningham© January 2011 for Sustrans

TYPE 3: • VISIBLE GATEWAY
• UPHILL FROM THE MAIN PATH
• VEHICLE AND MACHINE ACCESS IS REQUIRED

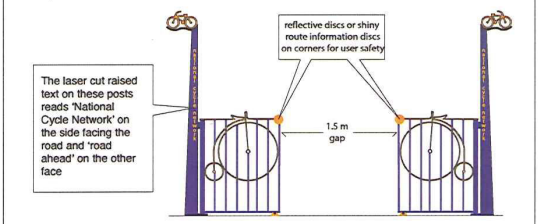
plan



elevation



example

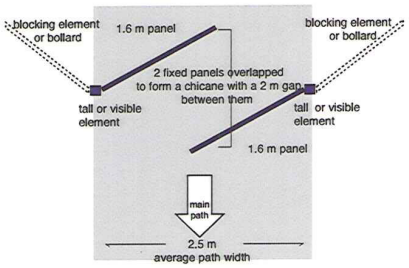


Brookfield near Johnstone
using timber blocking elements

Jeremy Cunningham © January 2011 for Sustrans

TYPE 5: • VISIBLE GATEWAY
• DOWNHILL FROM THE MAIN PATH OR IF THERE IS A CROSSING POINT AT A VERY BUSY ROAD
• NO VEHICLE AND MACHINE ACCESS IS REQUIRED

plan



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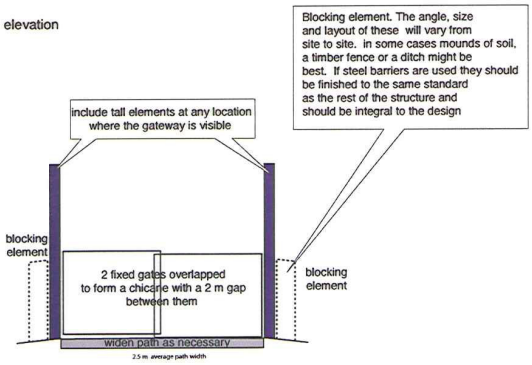
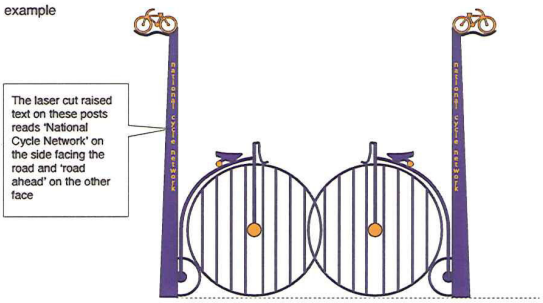


example

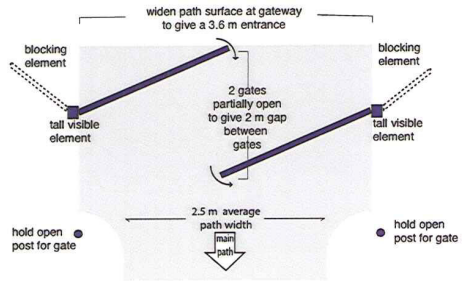


Jenny's Well Pailsey

Jeremy Cunningham © January 2011 for Sustrans

TYPE 7: • VISIBLE GATEWAY
• DOWNHILL FROM THE MAIN PATH
• VEHICLE AND MACHINE ACCESS IS REQUIRED

plan



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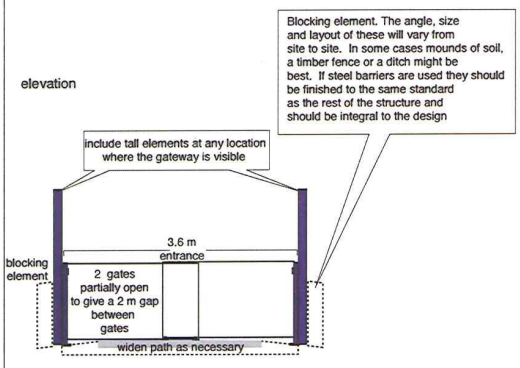

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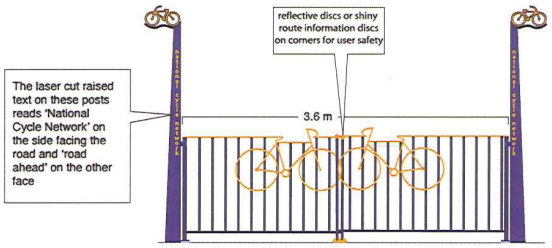
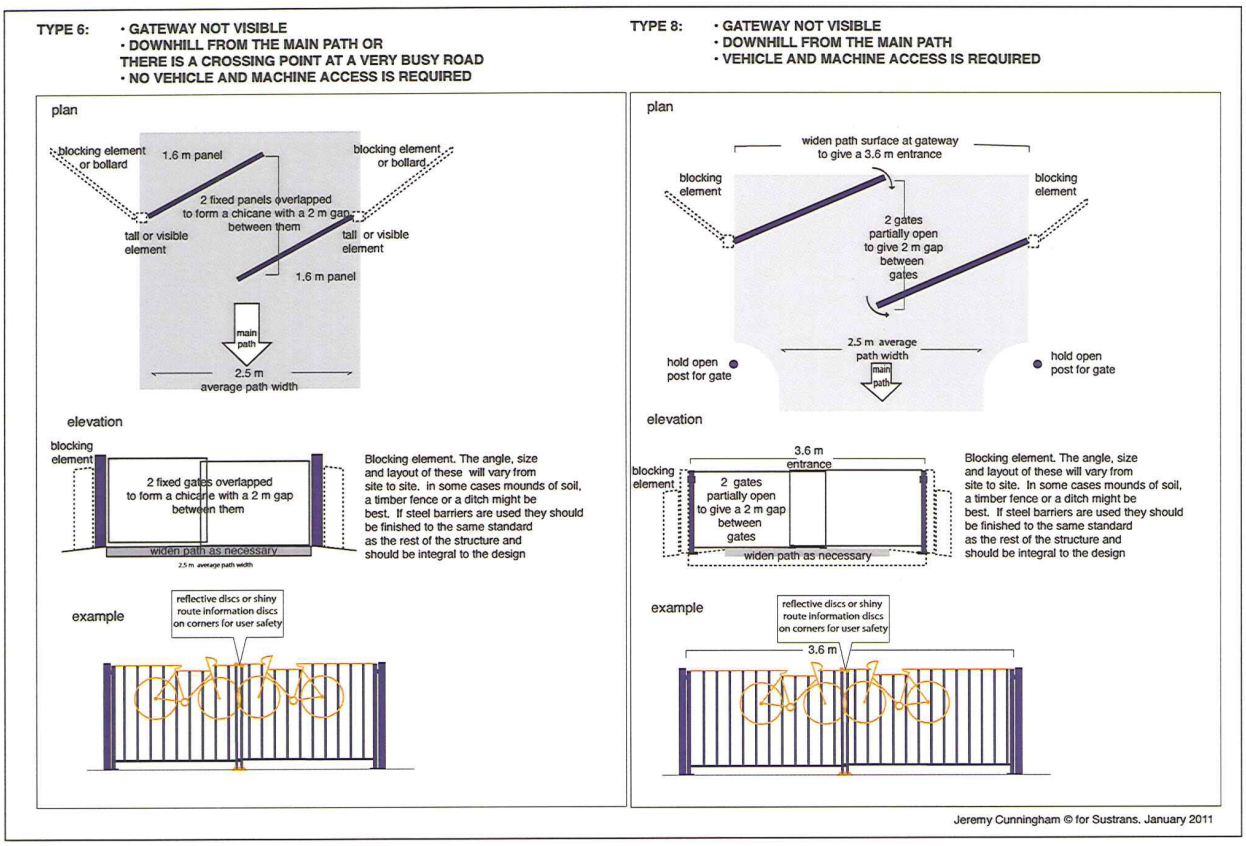
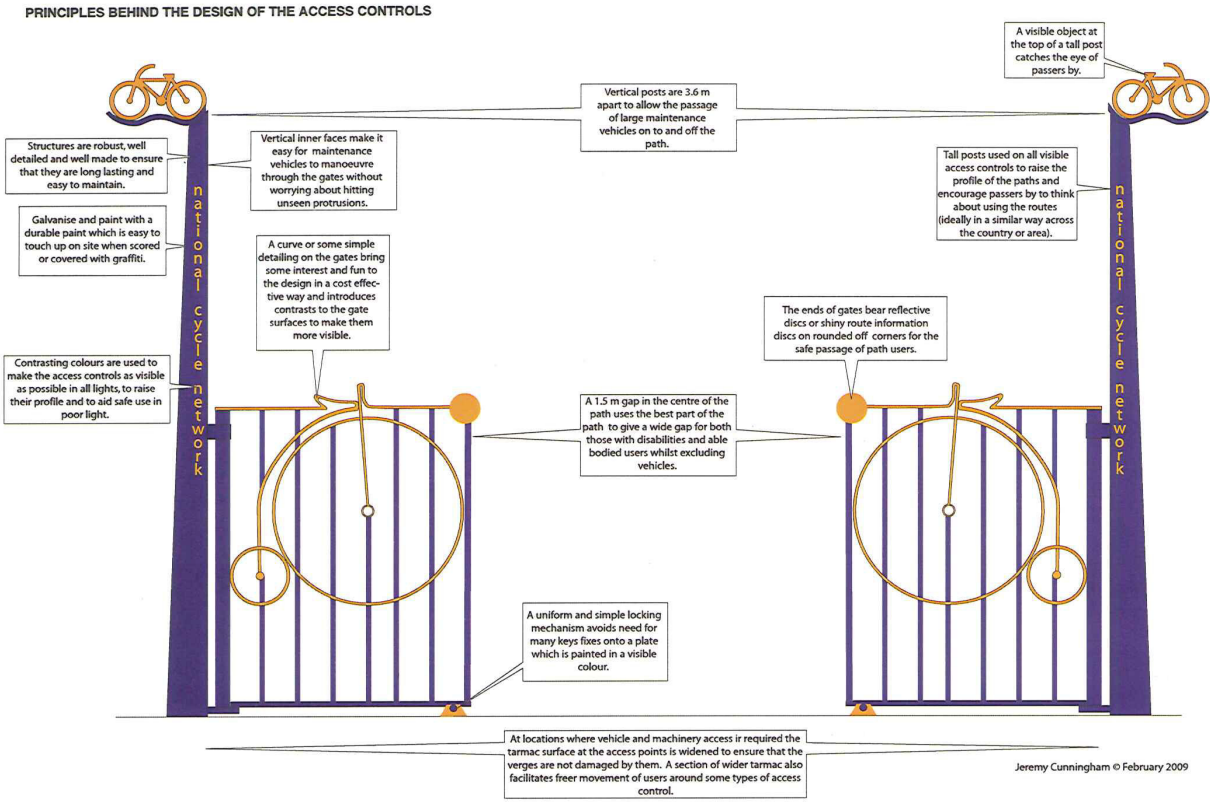


School access near Johnstone

Jeremy Cunningham © for Sustrans. January 2011

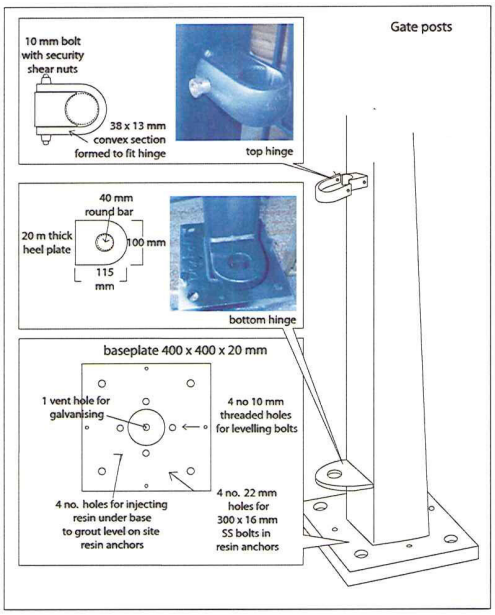

TYPE 6: • GATEWAY NOT VISIBLE
• DOWNHILL FROM THE MAIN PATH OR
THERE IS A CROSSING POINT AT A VERY BUSY ROAD
• NO VEHICLE AND MACHINE ACCESS IS REQUIRED
plan
blocking element or bollard
1.6 m panel
blocking element or bollard
2 fixed panels overlapped to form a chicane with a 2 m gap between them
tall or visible element
tall or visible element
1.6 m panel
main path
2.5 m average path width
elevation
blocking element
2 fixed gates overlapped to form a chicane with a 2 m gap between them
widen path as necessary
Blocking element. The angle, size and layout of these will vary from site to site. in some cases mounds of soil, a timber fence or a ditch might be best. If steel barriers are used they should be finished to the same standard as the rest of the structure and should be integral to the design
example
reflective discs or shiny route information discs on corners for user safety
TYPE 8: • GATEWAY NOT VISIBLE
• DOWNHILL FROM THE MAIN PATH
• VEHICLE AND MACHINE ACCESS IS REQUIRED
plan
widen path surface at gateway to give a 3.6 m entrance
blocking element
blocking element
2 gates partially open to give 2 m gap between gates
2.5 m average path width
main path
hold open post for gate
hold open post for gate
elevation
3.6 m entrance
blocking element
2 gates partially open to give a 2 m gap between gates
widen path as necessary
Blocking element. The angle, size and layout of these will vary from site to site. In some cases mounds of soil, a timber fence or a ditch might be best. If steel barriers are used they should be finished to the same standard as the rest of the structure and should be integral to the design
example
reflective discs or shiny route information discs on corners for user safety
3.6 m
Jeremy Cunningham © for Sustrans. January 2011

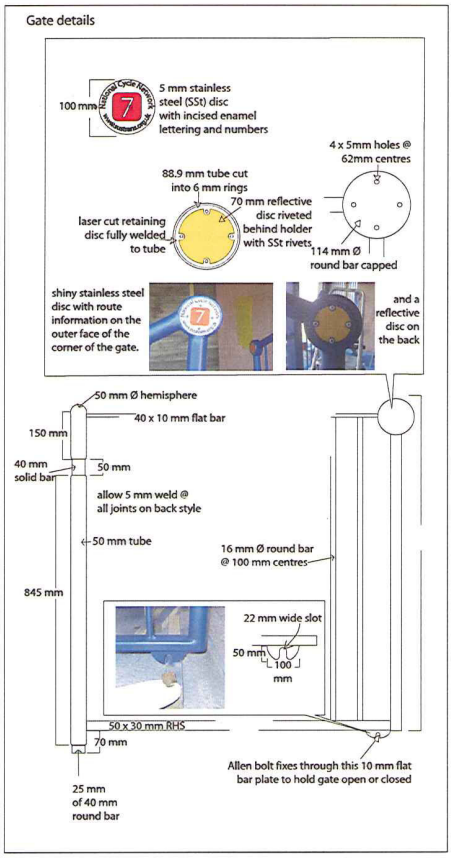

PRINCIPLES BEHIND THE DESIGN OF THE ACCESS CONTROLS
A visible object at the top of a tall post catches the eye of passers by.
Vertical posts are 3.6 m apart to allow the passage of large maintenance vehicles on to and off the path.
Structures are robust, well detailed and well made to ensure that they are long lasting and easy to maintain.
Vertical inner faces make it easy for maintenance vehicles to manoeuvre through the gates without worrying about hitting unseen protrusions.
Tall posts used on all visible access controls to raise the profile of the paths and encourage passers by to think about using the routes (ideally in a similar way across the country or area).
national cycle network
Galvanise and paint with a durable paint which is easy to touch up on site when scored or covered with graffiti.
A curve or some simple detailing on the gates bring some interest and fun to the design in a cost effective way and introduces contrasts to the gate surfaces to make them more visible.
The ends of gates bear reflective discs or shiny route information discs on rounded off corners for the safe passage of path users.
Contrasting colours are used to make the access controls as visible as possible in all lights, to raise their profile and to aid safe use in poor light.
A 1.5 m gap in the centre of the path uses the best part of the path to give a wide gap for both those with disabilities and able bodied users whilst excluding vehicles.
A uniform and simple locking mechanism avoids need for many keys fixes onto a plate which is painted in a visible colour.
At locations where vehicle and machinery access ir required the tarmac surface at the access points is widened to ensure that the verges are not damaged by them. A section of wider tarmac also facilitates freer movement of users around some types of access control.
Jeremy Cunningham © February 2009

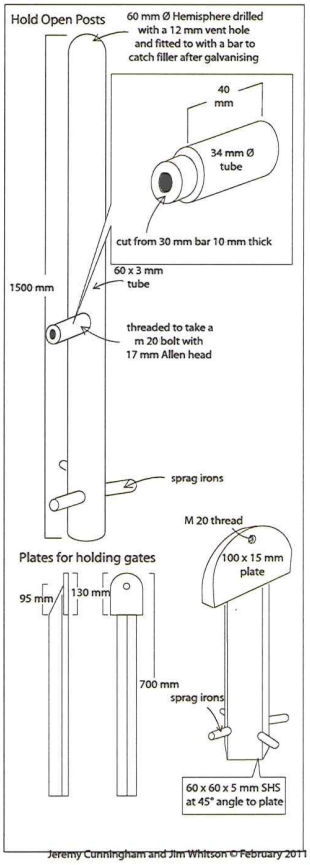
DESIGN DETAILS, Part 1 gates.

A structure is only as good as the weakest component in it. A more systematic approach to access control design should extend into the construction and installation.

It is important to design structures which can be installed accurately on site. The components of the structure which do a great deal of work are obvious points of potential weakness. Other problems also have to be solved such as how to hold a gate open or closed. This page cover some detils used in steel to gate design to try and address the need for ease of use and durability.







Jeremy Cunningham and Jim Whitson © February 2011

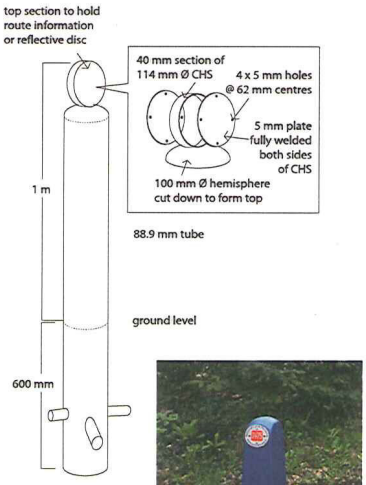
DESIGN DETAILS, Part 2 bollards.

Removable bayonet bollard

The ideal removable bollard can be taken out efficiently to gain access to traffic-free routes without making contact with the unpleasant material which tends to gather at the base of a bollard. This design goes some way to addressing this by using a slightly protruding bayonet type fitting rather than a recessed fitting which holds foul water.

J Whitson with J Cunningham ©28 February 2009

Fixed bollard



a variation on this theme

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