

Chapter 8 - Paths and Areas Free from Motor Traffic

Shared Paths

More than one-third of the National Cycle Network will follow paths along disused railways, river or canal banks, bridleways, unsurfaced tracks and forest roads. These will generally be free from motor traffic, although some will provide access to premises. The standards adopted should be based upon the design of established paths, and will relate to the likely levels and type of use of each section as well as the demands of the locality.

National Cycle Network routes will not all be of one type. Gravel roads may be appropriate in forest areas, stone dust surfaces in some rural areas and tarmac surfaces where a path provides access to premises for motor vehicles or where the journey to work is an anticipated use. Design speeds of 10-15mph should be assumed for most locations, although higher speeds may be expected on commuter routes and downhill sections.

All new sections of traffic-free path will be designed equally for pedestrians, including wherever possible people with a disability (including users of wheelchairs). In some instances, provision for horses will also be required, and in these cases the appropriate standard will very much depend upon the level of use anticipated. Whilst most sections of these paths will have unsegregated use, segregation will be appropriate in some circumstances.

In remote areas where total flows are low there will be no need to segregate pedestrians and cyclists. The minimum path width of 2m should suffice and designs should allow for the use of verges in passing. A raised white line delineator can be used to segregate users in busier areas, except where there are likely to be a significant number of people who are visually or mobility impaired, in which case the use of segregation by level may be appropriate. Where this is the case on the National Cycle Network, it is considered that a 50mm upstand is sufficient to give a clear signal to such users whilst minimising the hazard to novice cyclists. Where the pedestrian and cyclist volumes are approximately equal, the capacity of a path with white line segregation is about 180 users/hour/m width. The actual width of each part of a segregated path will depend on the expected proportion of different users and local standards, and will need to take account of local factors. Whilst it is an objective to achieve a path width of 2-3m, for unsegregated shared use it is recognised that this may not be practical at all locations, particularly on canal towpaths. The need for compromise dimensions should be identified at the planning stage before route selection is finalised so that an objective appraisal can be made of the alternatives.

Bridleways may provide useful routes in certain circumstances. This will generally entail providing a hedge or fence along each side, converting it into a 'Green Lane' separate from agricultural fields. For this reason, bridleways along field edges and across fields will often be impractical. Careful consideration should be given to their construction and surfacing, which will vary depending on the type of subsoil, width available, level of horse use and other types of user.

Where a new route is being created it may be appropriate to consider giving it the status of a permissive right of way. This can assist in achieving a route across private land.

Areas Free from Motor Traffic

National Cycle Network routes should reach the heart of town centres to enable both residents and visitors to reach the shops and cultural activities usually concentrated there. People arriving by cycle are very 'efficient' as customers because they make almost no demand for road space, parking or public transport.

National Cycle Network routes should be seen as complementing and enhancing the town centre environment. To achieve this their introduction will need to be the subject of consultation with local people and the local authorities.

Public Spaces

The approach to many town centres will depend upon being able to use some part of an existing path through a park, along a riverside or other public space. Here the greatest care is needed to ensure that existing pedestrian or wheelchair users are not unreasonably inconvenienced but actually benefit from the introduction of the new cycle route. This may occur not only through improved path surfaces and the extension of paths, but also crucially through much better continuity at road crossings and reduced traffic speeds or volumes on adjoining roads.

In general cycle routes through such public spaces are likely to be shared with pedestrians. They should be well defined with pedestrians having the remainder of the area for their continued exclusive use.

Streets Free from Motor Traffic

It is not uncommon in town centres for cyclists to find themselves confined to the busy roads encircling a pedestrianised area, with the consequent inconvenience and hazards. The objective should be to integrate cyclists into the areas from which motor vehicles have been excluded, enabling them to get as close as possible to their destinations in the centre.

In such areas pedestrians and cyclists can often share the same space without segregation (see also Figure 3.1). Where volumes of pedestrians and cyclists are high, a segregated cycle route may be appropriate, with connections into the surrounding streets. Where pedestrian use is particularly high, restrictions on cyclists may be appropriate during the busiest periods, in which case a safe and reasonably direct alternative cycle route should be provided.

A study by the Transport Research Laboratory concluded that there are no real factors to justify excluding cyclists from pedestrianised areas, and that a wide variety of regulatory and design solutions exist to enable space to be used effectively and safely in these areas, which could be tailored to the local circumstances.

Cyclists are more likely to be accepted in pedestrianised areas where there is already a certain amount of access traffic rather than those areas where there are no exemptions. Streets which are currently available to buses or taxis or for access by service vehicles or orange badge holders should also be available as cycle routes.

It is always important when introducing cycling into pedestrian areas to ensure that appropriate publicity and education material is disseminated to promote the need for responsible cycling.

Shared Cycle Tracks/Footpaths/Bridleways - Figure 8.1

Notes

1. Cyclists and pedestrians should be segregated on steep paths where higher cyclist speeds can be anticipated.
2. Mowing should be carried out reasonably frequently (at least twice per year) to keep a short verge either side of the path.
3. The line of the path should be arranged where possible to provide a variation of views. Careful control of vegetation may be necessary and in places "windows" may need to be cut through trees and hedging, where environmentally acceptable.
4. It is recommended that where a bridleway runs immediately next to the cycle track/footpath the latter should be provided with a bituminous surface to discourage horses straying onto it and causing damage.
5. Where an existing bridleway runs alongside a field boundary, it may be possible to negotiate converting the route into a 'Green Lane'.
6. Where space permits, it is preferable to separate the bridleway and cycle track/footpath by several metres and if possible by planting.
7. Construction details for shared cycle tracks/ footpaths/bridleways are shown on **Figures 8.5 and 8.6.**

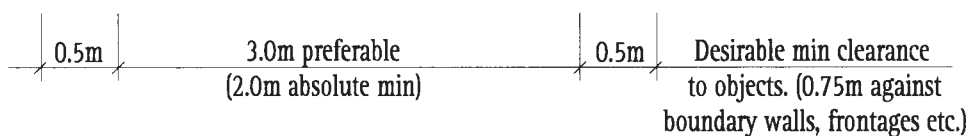
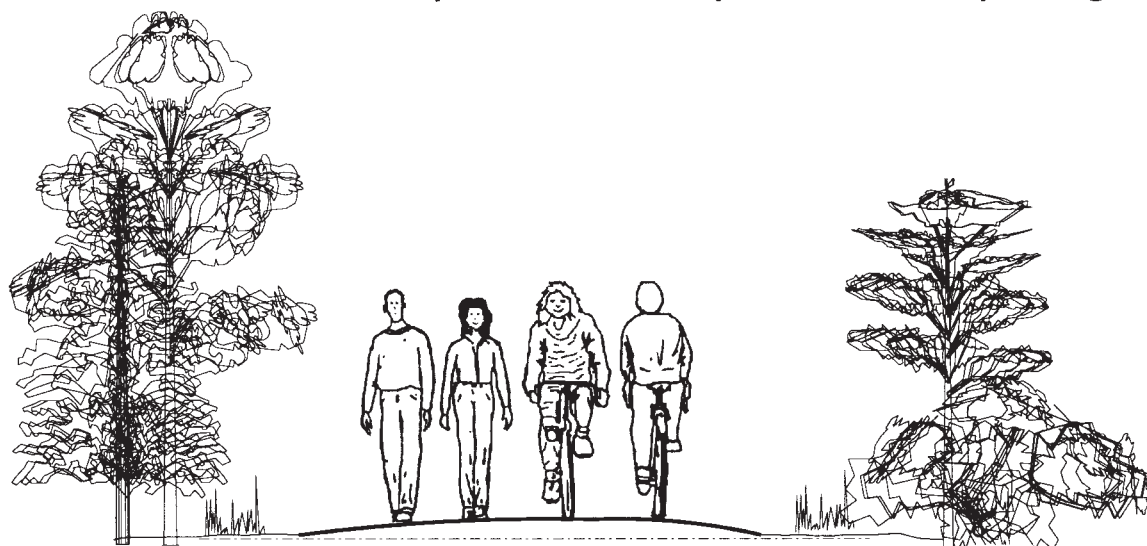
References

1. Local Transport Note 1/89: Making Way for Cyclists (S)
2. Traffic Advisory Leaflet 1/86: Cycle Route Project, Stockton
3. Traffic Advisory Leaflet 3/86: Cycle Route Project, Bedford, The Hastingbury Route
4. Traffic Advisory Leaflet 3/95: Cycle Routes
5. Making Ways for the Bicycle - A Guide to Traffic-Free Path Construction - Sustrans
6. Local Transport Note 2/86: Shared Use by Cyclists and Pedestrians (S)

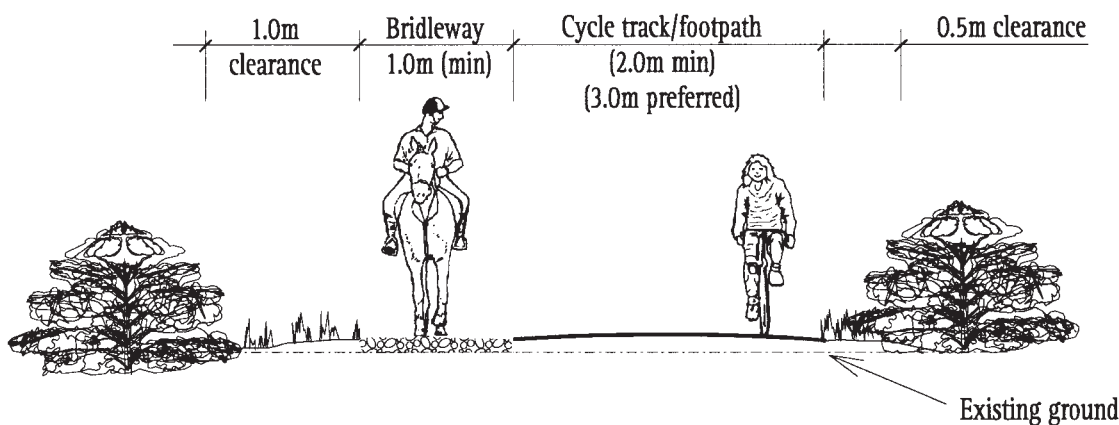
Examples

1. BRISTOL/BATH: Railway Path
(Avon County Council)
2. HAILSHAM: The Cuckoo Trail
(East Sussex County Council)
3. HUTTON TO PRESTON: Cycle Route
(Lancashire County Council)
4. LIVERPOOL/ SEFTON: Cheshire Lines Path
(Lancashire County Council)
Ainsdale to Aintree Path
(Merseyside County Council)

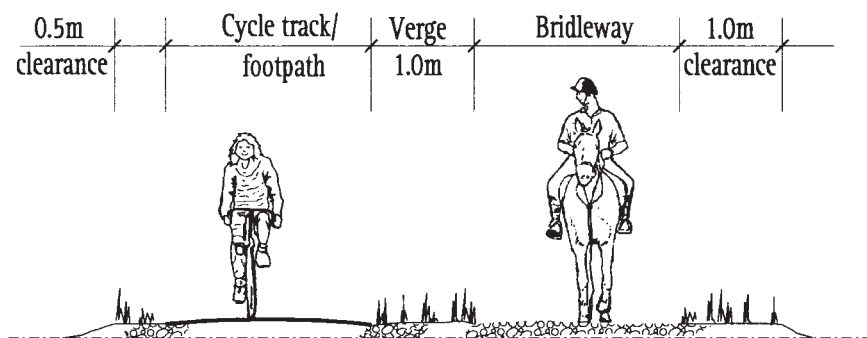
Shared Cycle Tracks/Footpaths/Bridleways – Figure 8.1



Shared Cycle Track/Footpath



Shared Cycle Track/Footpath with Adjoining Bridleway



Shared Cycle Track/Footpath with Separate Bridleway

Canal Paths - Figure 8.2

Notes

1. Where existing paths are being reinstated the finished level should be higher than the adjacent ground for free drainage of the path surface.
2. Geotextile fabric will normally be required in constructing or reinstating paths as generally poor ground conditions are found adjacent to canals.
3. Access points to the path may be infrequent and the construction thickness of the path may need to be increased to allow use by construction plant traffic.
4. The details show bank reinstatement as a method of gaining path width. This is usually an expensive option and probably only suitable for short lengths of path. Revetment can be achieved by a number of methods: sheet piling, stonework, gabions and oak post and larch board. Sheet piling is considerably more costly than alternative methods.
5. Any practical work for National Cycle Network routes will need detailed appraisal by British Waterways or the appropriate owner. Construction work details are to be discussed and agreed with the British Waterways Regional Manager or the appropriate owner prior to construction.

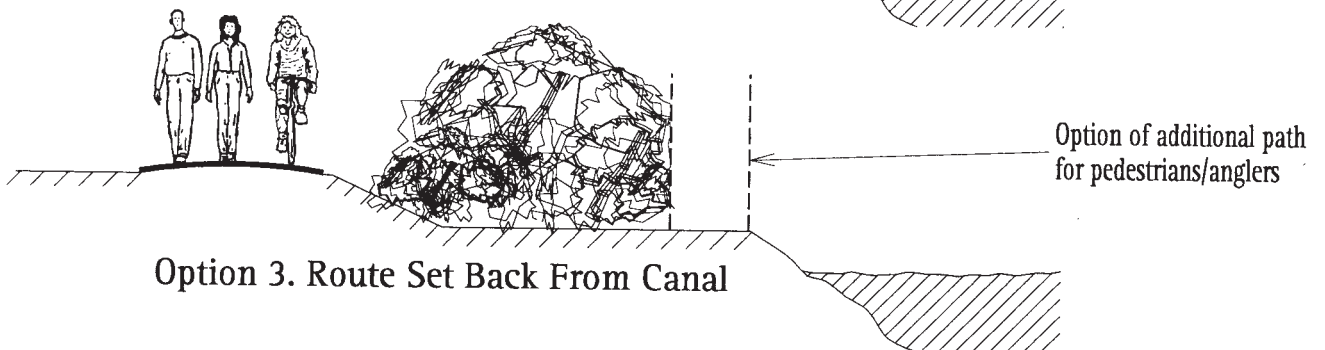
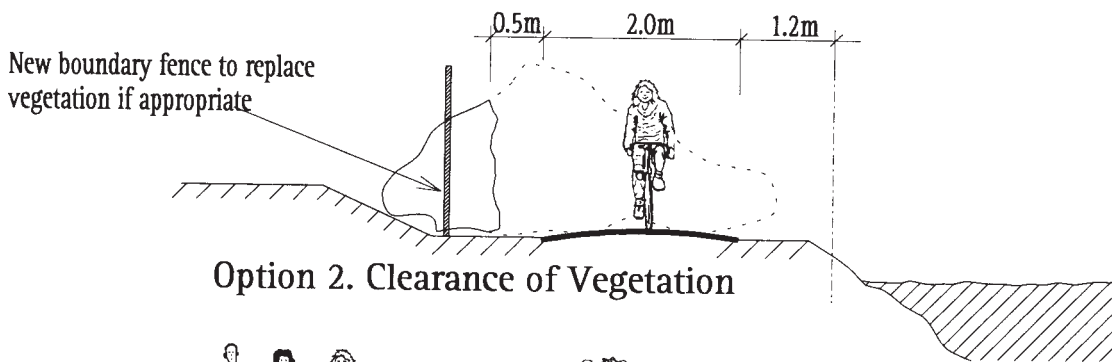
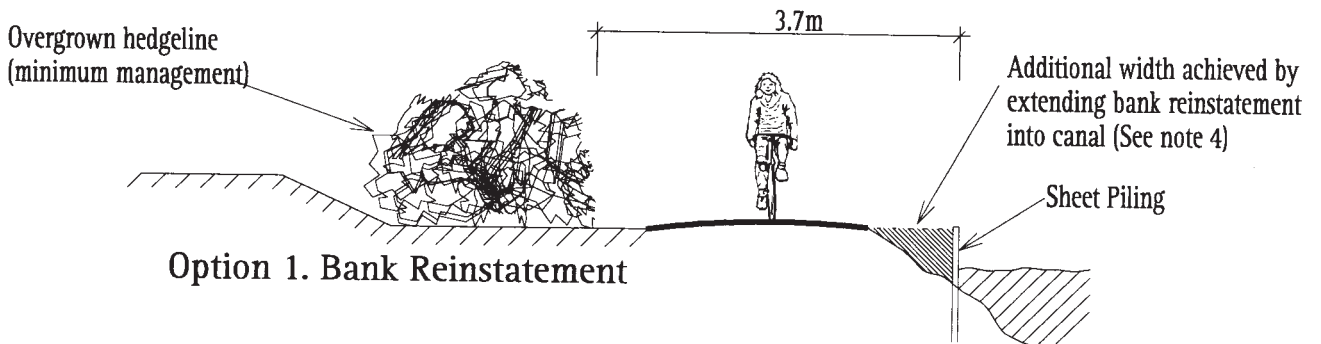
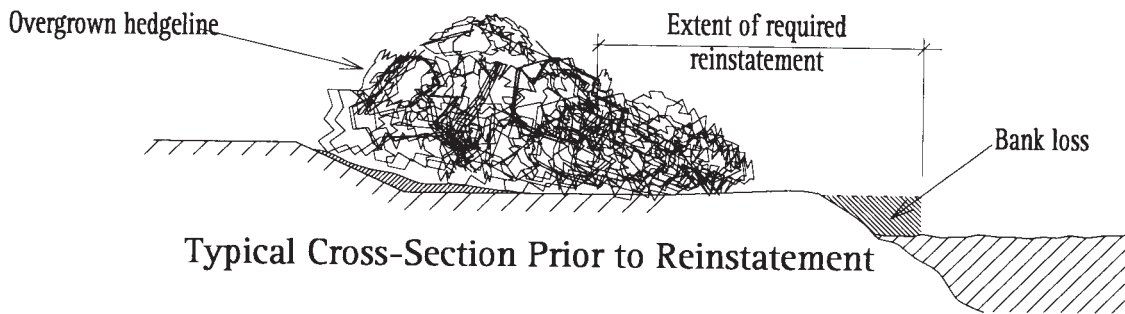
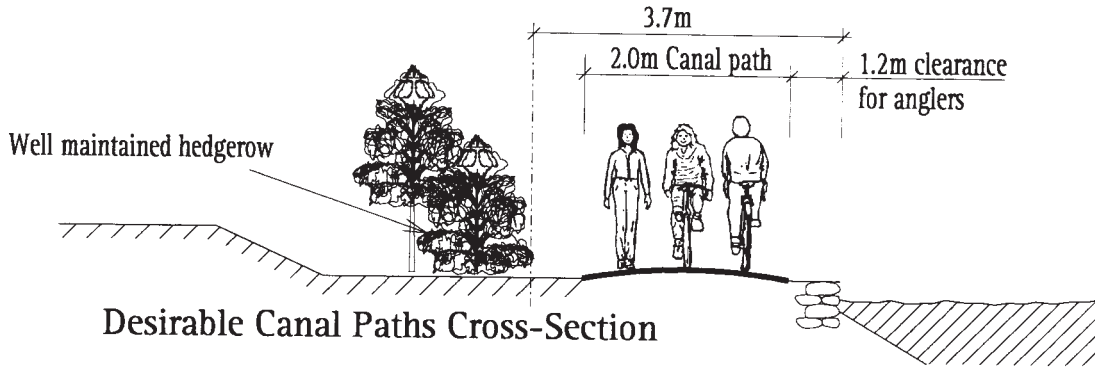
References

1. Making Ways for the Bicycle
A Guide to Traffic-Free Path Construction - Sustrans

Examples

1. WIGAN: Burscough Canal Path
(British Waterways)
2. BIRMINGHAM: Birmingham Canal
(British Waterways)
3. TAUNTON: Bridgwater Canal
(British Waterways)

Canal Paths - Figure 8.2



Canal Path Balustrades - Figure 8.3

Notes

1. On very narrow sections through canal bridges it may be appropriate to indicate to cyclists that they should dismount (Diag No. 966), or for other suitable warning signing to be provided,
2. The direction signs and waymarker signs as shown in Figure 9.1 can be used when necessary, but away from the public highway, signing appropriate to the location should be agreed with the landowner. The same standard of clarity and continuity will be expected and the route number patch would continue to be red or blue as appropriate.

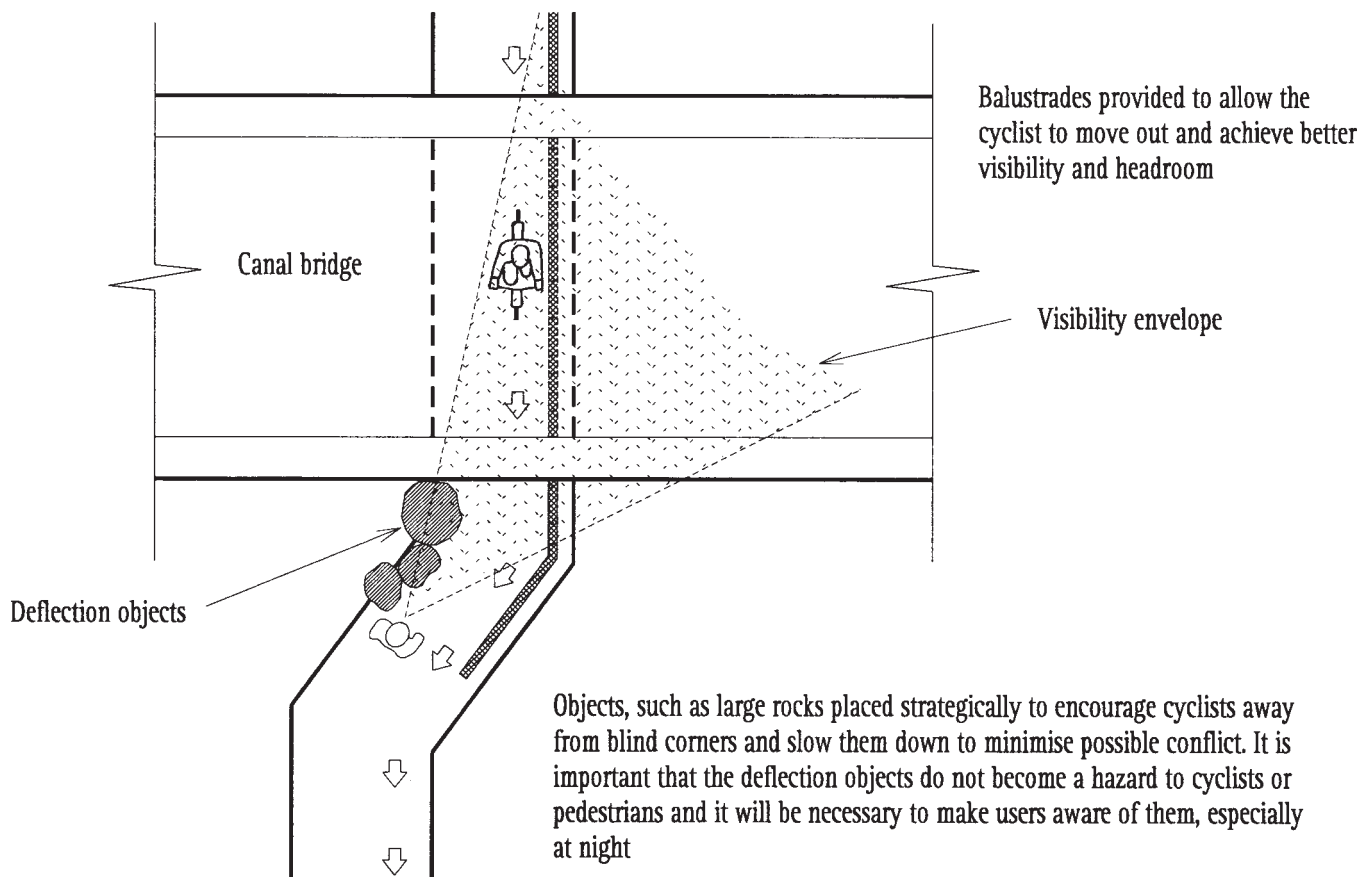
References

1. BD 52193 The Design of Highway Bridge Parapets
2. Making Ways for the Bicycle
A Guide to Traffic-Free Path Construction - Sustrans

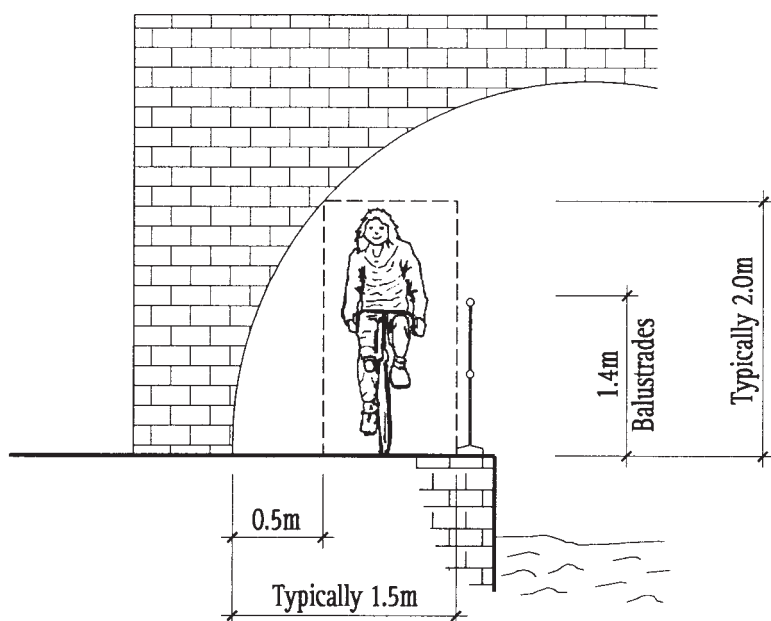
Example

1. Kennet & Avon Canal, Bathampton

Canal Path Balustrades – Figure 8.3



Plan of Canal Bridge



At bridges over canal towpath, the width is generally 1.5m over short lengths with good visibility. This will often provide the safest crossing of a busy road

Balustrade to have a smooth top

Section through Canal Bridge

Widths of Segregated Cycle/Pedestrian Facilities - Figure 8.4

Notes

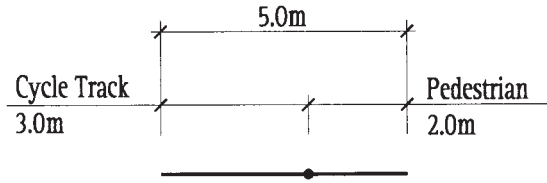
1. More general notes on the use of segregated cyclist/pedestrian facilities are provided in Figure 4.7.
2. When a segregated facility is created on a public footway or footpath then two distinct, though adjacent ways are created:
 - a) a cycle track - which will usually have a continuing right of way on foot to allow pedestrians to cross it or cyclists to wheel their bicycle along it; and
 - b) an adjacent footway or footpath which has a right of way on foot only and on which it is illegal for a cyclist to ride.
3. Experience has shown that high pedestrian and cycle flows can be catered for in safety on shared facilities of restricted width. The appropriate path widths should be determined with reference to the likely level of usage.
4. The most common recommended minimum width for cycles is 2m, but this can be reduced to the figures shown in brackets on a path segregated by a raised white line delineator (Diag No. 1049. 1).
5. The most common method of tactile segregation is by using the raised white line delineator (Diag no. 1049. 1) combined with tactile paving. The use of a 50mm change of level may be appropriate in certain locations on the National Cycle Network to suit local conditions or where its omission will be particularly detrimental to partially sighted people.

Reference

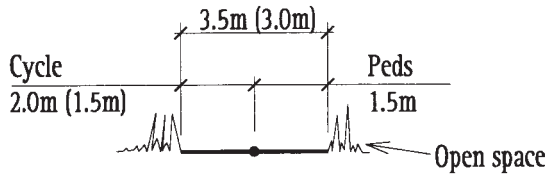
1. Local Transport Note 2/86: Shared Use by Cyclists and Pedestrians (S)

Widths of Segregated Cycle/Pedestrian Facilities – Figure 8.4

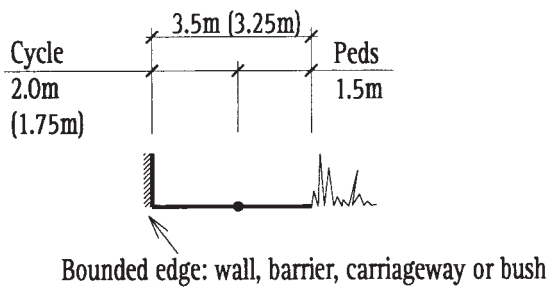
Optimum Dimensions



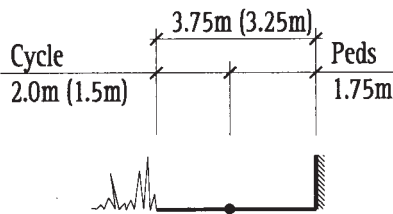
Minimum Dimensions



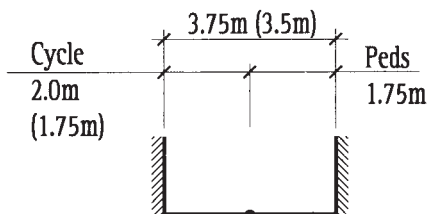
Open Both Sides



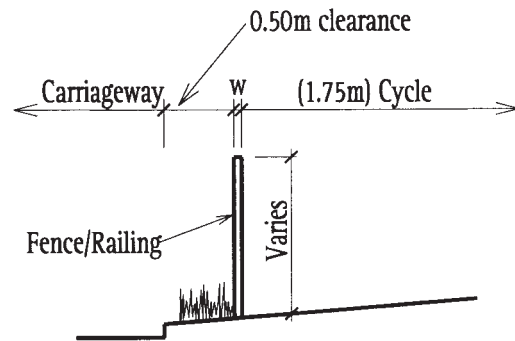
Bounded Cycle Track



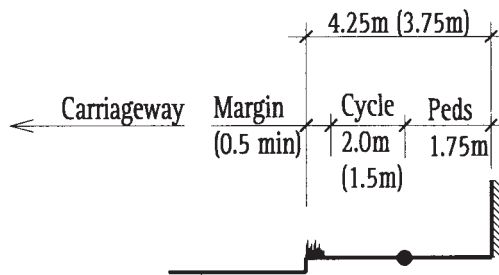
Bounded Footway



Bounded Both Sides



Where the margin contains safety fence or guard rail the portion of track adjacent is to be considered bounded. The width of the margin should be increased to include the width of the fence and the clearance from the carriageway



Bounded with Verge to Carriageway

Note: The dimensions given are the minimum required to permit cyclists and wheelchair users to pass each other on their respective paths. Dimensions in brackets refer to minimum width on a path segregated by a raised white line delineator

Construction Materials and Thickness - Figure 8.5

Notes

1. The table opposite is for guidance purposes only. The designer will make the choice of surfacing on the basis of the following criteria:

- aesthetic considerations - suitability for purpose - construction and maintenance costs - construction methods.

2. The construction thicknesses, particularly sub-base, will be designed on the basis of the following information:

- the strength of the sub-grade/use of geotextile membranes - drainage and frost susceptibility of the sub-grade - type of surfacing
- design life - location of cycle track (what level of traffic will it be subject to from motorised vehicles and horses) - the construction method (size of construction plant used).

3. The specifications in the table opposite will generally be acceptable in well drained areas, with formations with a CBR > 2.5% and lightly trafficked.

4. The use of french drains will need to be considered if the construction is likely to become water logged.

5. It is recommended that bitumen materials be machine laid and that the specifications applied to surface tolerances bumpiness/unevenness be those applied to highways.

6. It is important that the edge of the track is not formed with an upstand of any sort as this can impound water and present a hazard to cyclists.

7. Wherever possible the use of reclaimed materials such as road planings or crushed concrete should be considered.

References

1. Making Ways for the Bicycle
A Guide to Traffic-Free Path Construction - Sustrans
2. Guide for Design of Footways - Interpave,
The Precast Concrete Paving and Kerb Association

Construction Materials and Thickness - Figure 8.5

Cycle Track Construction Materials and Thickness

Surface	Construction Details	Comments
Macadam	Wearing Course Base Course Sub Base	Suitable for heavily used routes Allows for colour surfacing variation
	20mm thick medium grade bitumen macadam, 6mm nominal aggregate size (machine laid) 40mm dense bitumen macadam, 20mm aggregate size 100 - 150mm thick Type 1 granular material	
Macadam (Alternative)	Wearing Course Base Course	Suitable for heavily used routes
	60mm dense bitumen macadam, 20mm aggregate size (machine laid) 100 - 150mm thick Type 1 granular material	
Limestone Dust	Wearing Course Base Course	Dust can spray when wet Alternative surface materials may be appropriate in certain areas Surface dressing can be applied once path has settled
	20mm thick Limestone, 3mm to dust. 100 - 150mm Type 1 granular material, or similar	
Tar spray and chippings on bitumen	Wearing Course Base Course Sub Base	Range of attractive finishes available by selecting chippings Surplus chippings should be removed after spreading Extra strength can be achieved with reinforced surface dressing, eg Fibredec
	Single coat of gravel, 3-6mm size 50mm dense bitumen macadam, 20mm aggregate size 100 - 150mm Type 1 granular material	
Tar spray and chippings on stone base	Wearing Course Base Course Sub Base	
	Single coat of gravel, 3-6mm size Single coat of gravel, 6mm size (surplus chippings removed) 100 - 150mm Type 1 granular material	
Coxwell Gravel (or similar)	Wearing Course Base Course	
	75mm gravel (30mm fines) 100 - 150mm Type 1 granular material	
Block Paving	Wearing Course Base Course Sub Base	Interlocking blocks can be used on soft sand, eg dunes Tends to trap glass and debris
	65mm thick precast concrete blocks or bricks 50mm clean sharp sand bed 100 - 150mm Type 1 granular material	

Construction Details - Figure 8.6

Notes

1. In constructing rural paths the types of user expected must be taken into account, especially horses and heavy farm vehicles. Routes along which cattle are herded regularly should be avoided.
2. On rural paths with restricted width, the cross-section may need to be divided longitudinally between hard and soft surfacing to suit the different users. For example load bearing path could be provided on each side to carry farm vehicles and cycles, with a soft central bridleway.
3. Appropriate strengthening of the surface may be required on short sections of paths crossed by farm vehicles.
4. Interlocking block paving can be used without edging restraint in sandy areas.
5. Repairs to cycle tracks should be made using sympathetic materials.

Visibility Splays

6. Where a new cycle track meets a local highway different advice on visibility requirements to those outlined in Design Bulletin 32 may be appropriate, recognising that Design Bulletin 32 focuses on visibility at the junctions between all vehicle carriageways, rather than a cycle track/ all vehicle carriageway junction.
7. Where the cycle flow is 200 - 500 cycles per day the x-distance can be 2.4m min. Where the cycle flow is less than 200 cycles per day the x-distance can be 2.0m min. If these visibility requirements cannot be achieved the alternative is to use the full range of markings and signs available to make clear the need for cyclists to slow down and give way. The use of the "Stop" sign is not appropriate for cycles, given the slower speed at which cycles can be expected to be travelling compared with motor vehicles. Using "Give Way" options will also be simpler procedurally as the "Stop" sign requires approval from the Secretary of State.

Dropped Kerbs

8. The transition from cycle track or footway to carriageway should be as smooth as possible with no upstand. Even a small upstand is a hazard to wheelchair users and uncomfortable for cyclists.
There is no evidence that properly designed flush surfaces cause ponding.

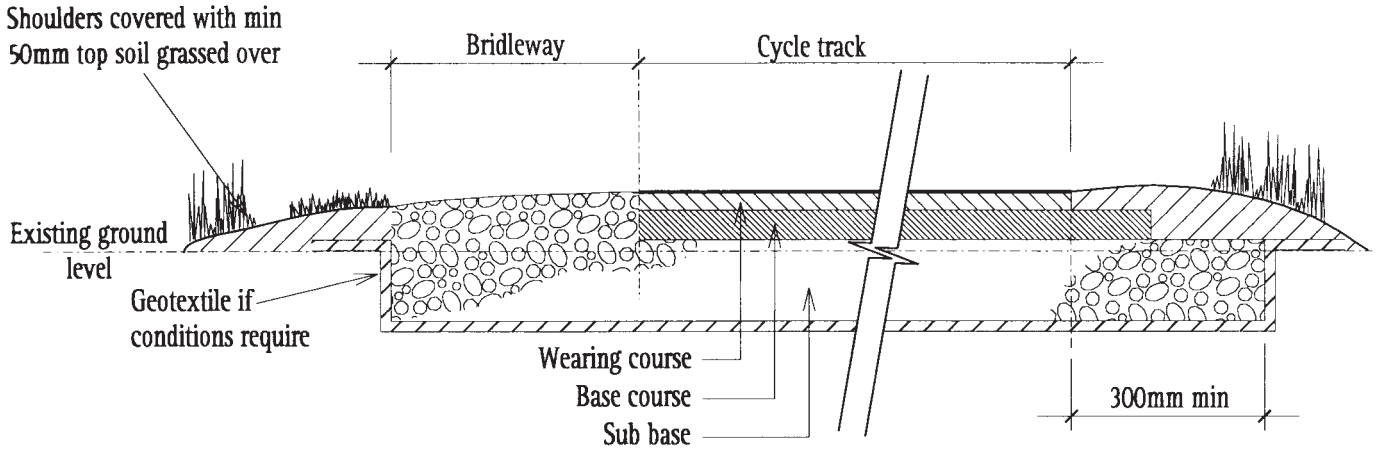
References

1. Making Ways for the Bicycle
A Guide to Traffic-Free Path Construction - Sustrans
2. Design Bulletin 32
Residential Roads and Footpaths - DoE/DOT
3. TD41/95
Vehicular Access to All Purpose Trunk Roads

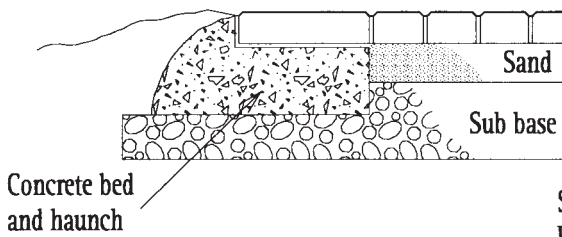
Construction Details - Figure 8.6

Typical Construction

Note: Path to be generally 75mm above existing ground level and laid with 40mm crossfall or 25mm central camber to eliminate ponding, or on low causeway through wet or flooded areas

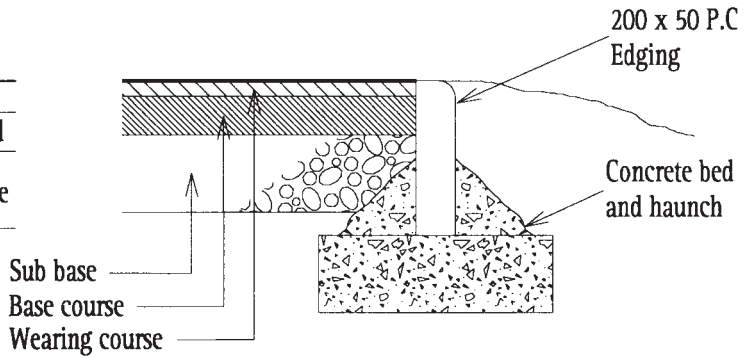


Typical Edge with Bridleway



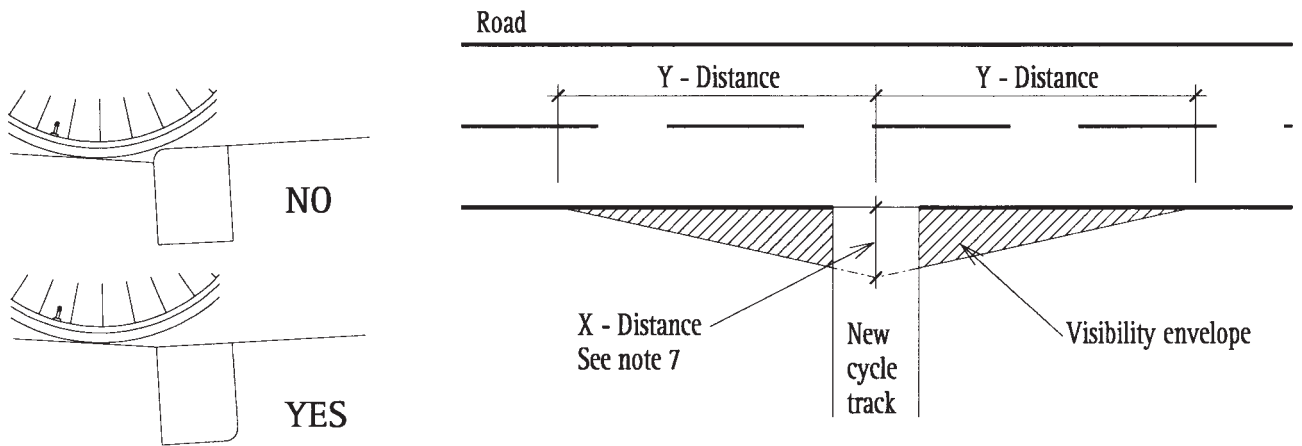
Block Paving Edging

Typical Edging



P.C. Concrete Edging

Visibility Splays for New Cycle Tracks



Section Through Dropped Kerb Detail

85 percentile speed of priority road vehicles (mph)	53	44	37.5	30	25	20
Y - Distance (m)	160	120	90	70	45	33

Note: All dimensions in mm.