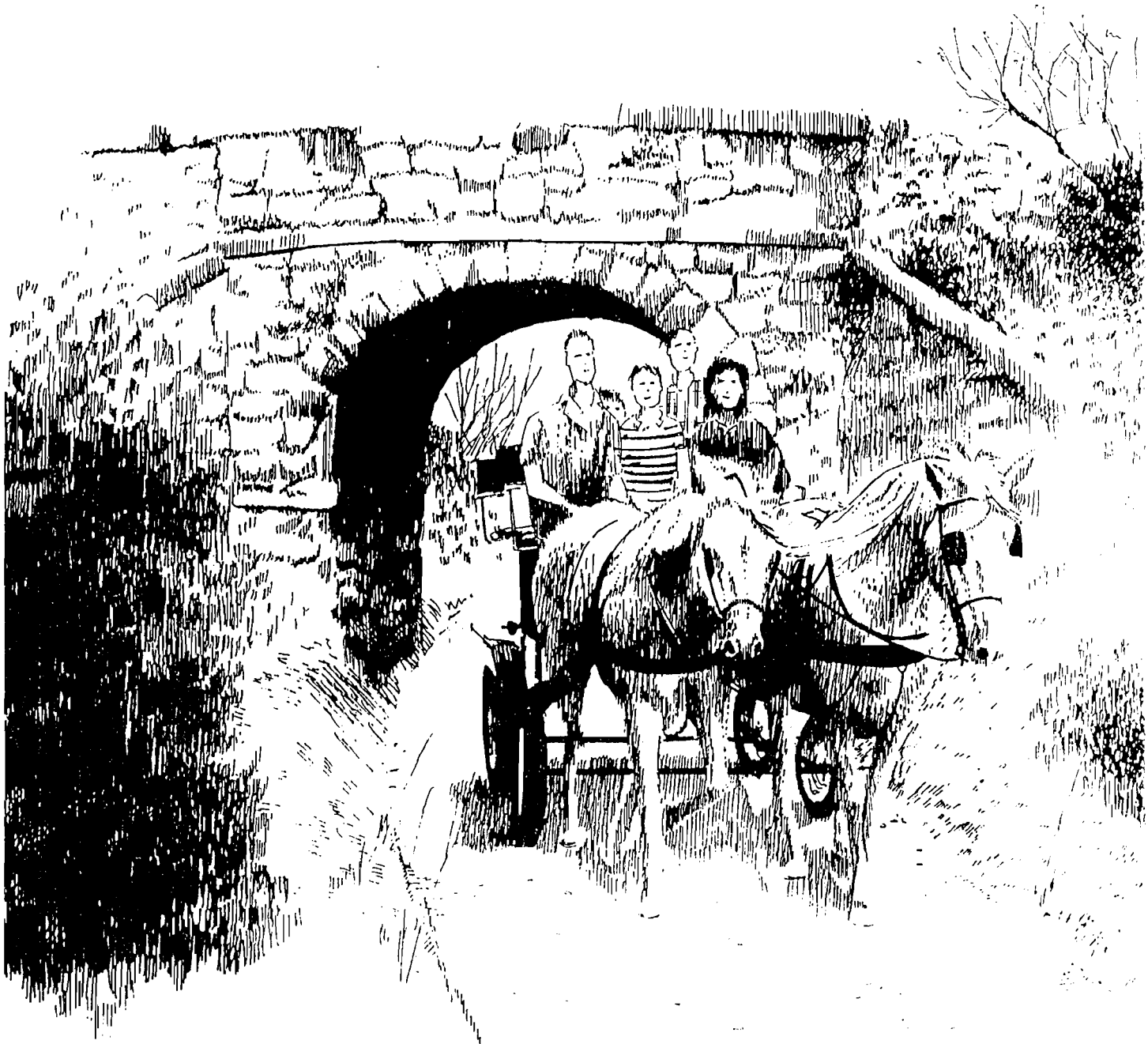
The Great Southern Trail

A report on a railway path from Tralee to Limerick



SUSTRANS

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SHANNON DEVELOPMENT

SHANNON FREE AIRPORT, SHANNON, COUNTY CLARE, IRELAND.

The Great Southern Trail

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A report by Sustrans, 35 King Street, Bristol BS1 4DZ for Shannon Development Company, Shannon Free Airport, Shannon, County Clare, Ireland.

The report was prepared by John Grimshaw with assistance from Bevis Temple and Jem Grimshaw in the field survey. The word processing was by Peggy Foxwell and the illustrations by Paul Boston and Andy Miles. Sustrans wish to thank all who gave information and advice, particularly Kevin O'Connor of the Development Company who initiated the proposals.

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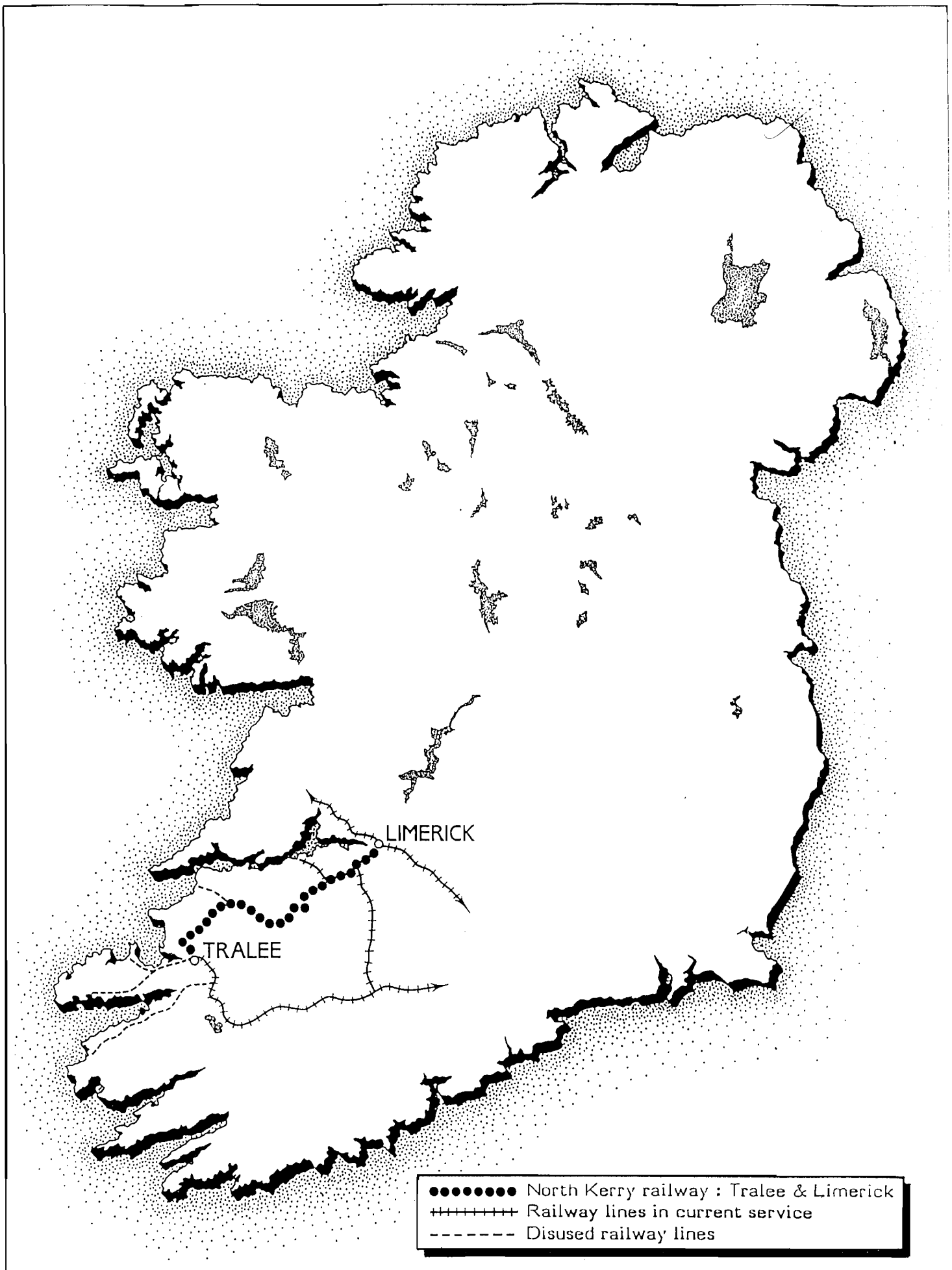


The Great Southern Trail SHANNON DEVELOPMENT

A GREAT SOUTHERN TRAIL : TRALEE & LIMERICK

1. INTRODUCTION

The Great Southern Trail was first proposed by the Shannon Development Company in a document prepared March 1988. It was suggested that the former Tralee and Limerick Railway as far as the junction at Ballingrane would be converted into a long distance trail for walking, cycling and pony-trekking. The stimulus of this would be used to restore and develop the former station houses and crossing cottages along the route which would provide a range of services to meet the needs of trail users. The trail would be used as a basis of creating a linear landscape corridor and railway heritage attraction which would serve to provide a focus for tourism in this general area.

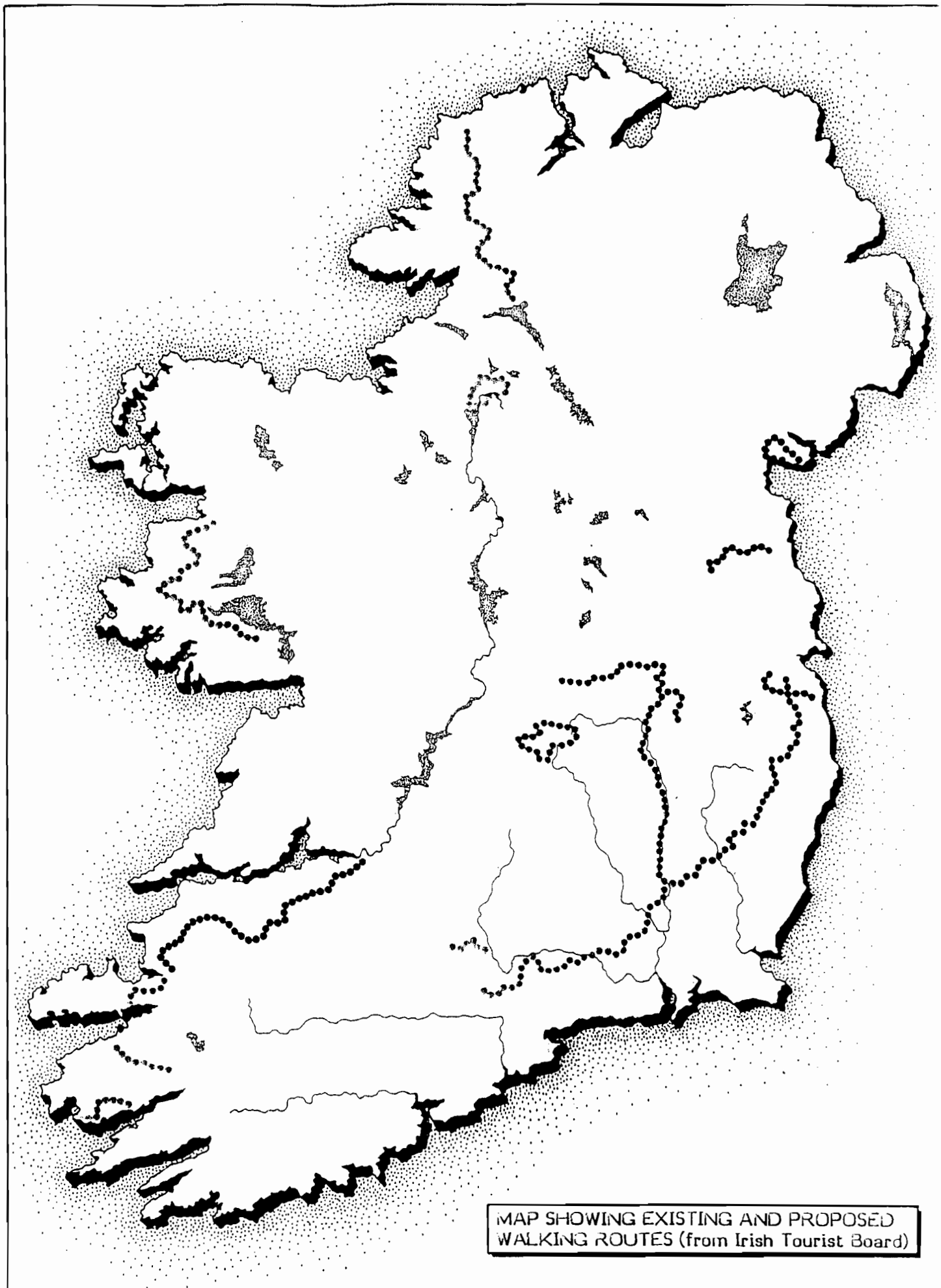
After discussions with the "Rails to Trails" organisation in the United States the Development Company were advised to contact Sustrans Ltd in England. Their engineer, John Grimshaw, who has been responsible for the conversion of 200km of former railway into popular recreation routes was then invited to inspect the route and prepare this report.

2. SUMMARY OF PROPOSALS

The disused railway from Tralee to Ballingrane traces a 80km long route through relatively unspectacular countryside. Either side there are extensive networks of minor routes which are generally suitable for the touring cyclist. As a consequence this particular disused railway is of more importance to the horse rider and long distance walker for whom bridle paths and footpaths are non-existent. On the approach to one or two of the towns it is also desirable to provide routes for cyclists where otherwise they would have no alternative but to use the more heavily trafficked main roads. The disused railway zone can also form the basis for a landscape and wildlife corridor which will be of particular value where it crosses some of the lowland areas which are otherwise relatively sparsely planted with trees. This report explores these two aspects of the railway corridor and recommends the stage by stage development to create an invaluable asset in this part of Ireland.

The report also extends the route from Ballingrane to the centre of Limerick making use of minor routes to and from Curragh Chase Forest Park. This section of the report, whilst it does not relate to the disused railway itself, is quite crucial in ensuring that the largest population in the area and a major tourist centre does have ready access to the Great Southern Trail. Indeed the Great Southern Trail should be seen as extending to the centre of Limerick, even though this last section would inevitably be on trafficked roads.

The report discusses the development of ancillary attractions such as specific features, camp sites and agri-tourist opportunities and reviews the promotion necessary to establish the Great Southern Trail as a popular tourist and recreational feature. This features the introduction of separate cycling and motoring routes joining and rejoining the Great Southern Trail at most points of interest in order to enhance the usage of each development. These aspects should not be overlooked. On its own the proposed Trail is unlikely to generate a level of usage commensurate with the cost of implementing and maintaining it. The justification for the project must lie in its function as a catalyst for a range of related projects designed to make



MAP SHOWING EXISTING AND PROPOSED WALKING ROUTES (from Irish Tourist Board)

The Great Southern Trail **SHANNON** DEVELOPMENT

this part of Ireland attractive to visitors.

The report also discusses various ways of managing the project bearing in mind that the owners of any disused railway have a perpetual obligation, particularly with regard to bridges which may have been established by Act of Parliament.

3. USAGE & NEED

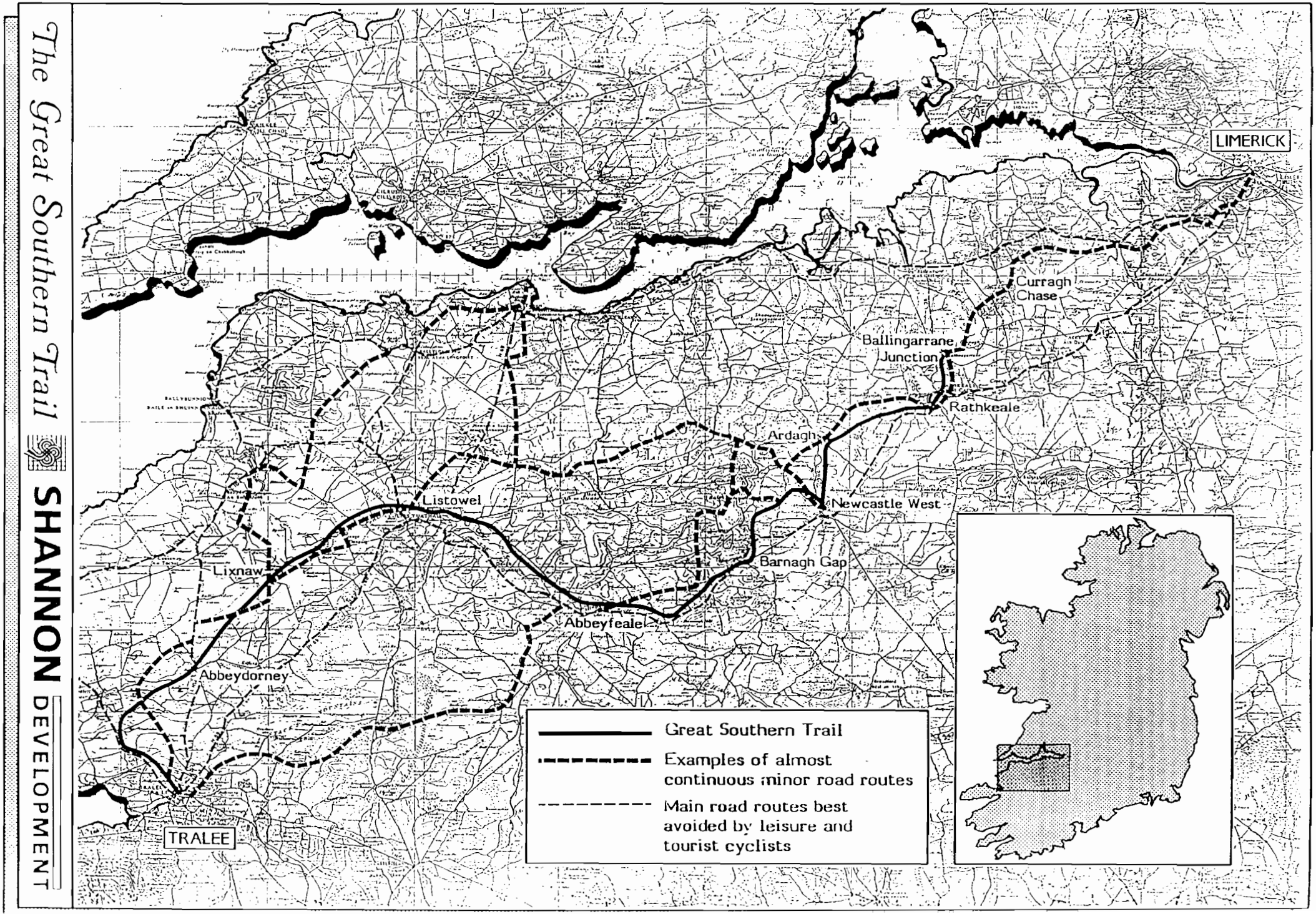
Although we have no hard data regarding the demand for trail facilities in the west of Ireland, it is possible to make some observations.

Ireland appears to be a popular place for cyclists. Almost every house has a bike leaning against a wall; cyclists are a frequent sight on the roads and most cycle shops hire out machines. All these observations contrast very markedly with the situation in Great Britain where it is difficult to find any shop which hires bikes, where cyclists are relatively rare, if not unusual, and where cars not bikes are scattered around the houses. The minor roads and their low levels of traffic are a great Irish resource and we recommend that they are marketed and promoted as such. At the same time care should be taken to ensure that they don't become filled with cars and diminished by spreading "bungalow bliss". In sum, cycling in Ireland must be desirable for visitors from the crowded roads of Europe and promotion of cycling policies will be of benefit to local people as well.

The walkers have aspirations for a long distance path around the whole of Ireland. In Britain such paths - the Pennine Trail, the Cornish Coast Walk - have proved immensely popular, so much so that the authorities now have major problems in keeping their surfaces intact. So the existence of a further leg of the Irish Path in the form of the Great Southern Trail is likely to generate trips.

There seems to be even less information about horses and riding schools, although the ownership of horses in this area appears high and riding centres are extremely popular in Britain. To give some idea of the scale of these operations we can cite Northumbrian Horse Holidays which has its headquarters adjacent to a Sustrans path in Co. Durham. This has 300 horses and caters for 20,000 visitors per year. The Great Southern Trail should be particularly attractive to novices who will be able to attempt a long ride without conflict from traffic.

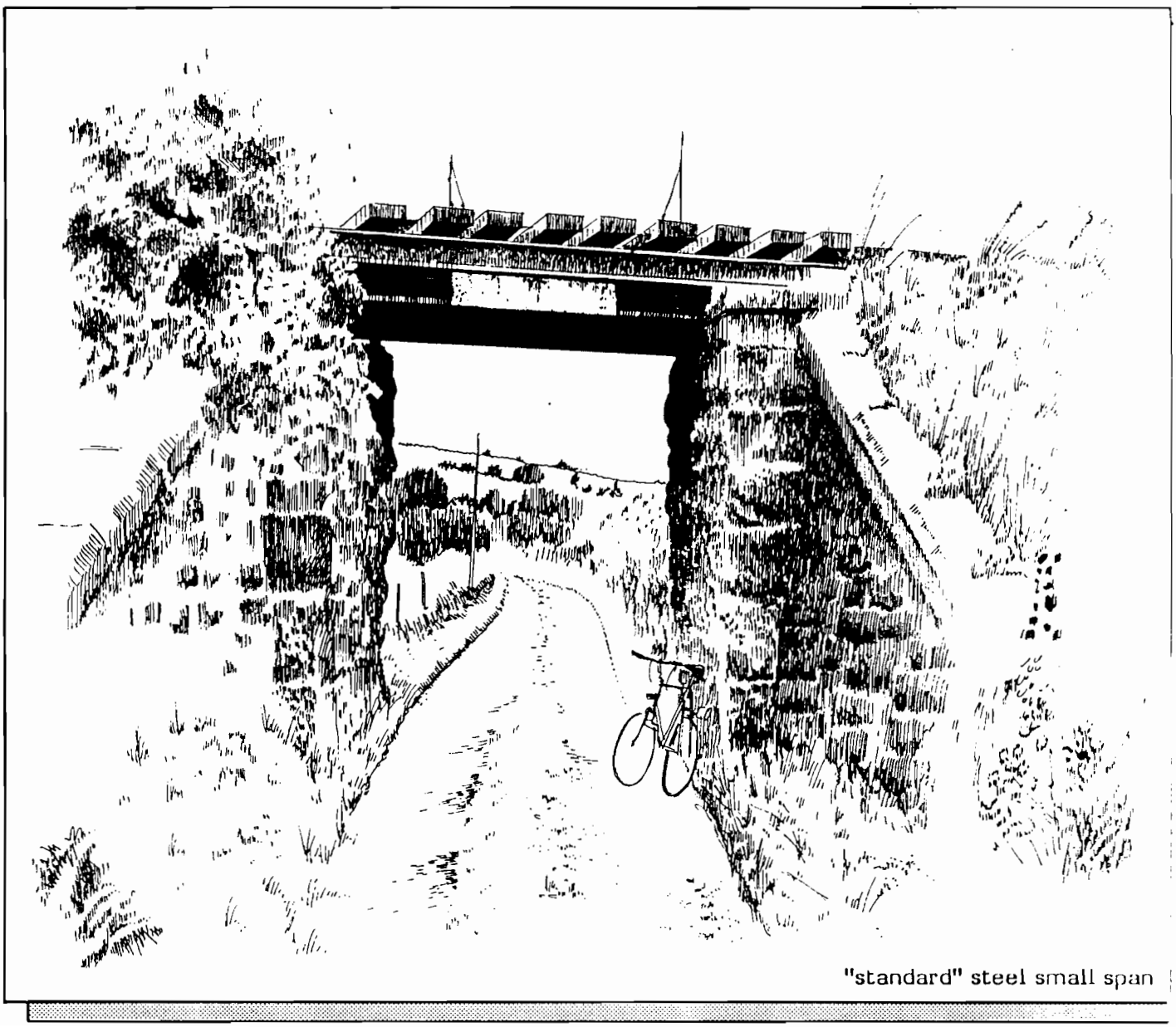
One of the difficulties in assessing levels of use lies in that the public can have no concept of what the Trail can offer, simply because it does not exist in any form at all! Whilst it would be misleading to claim that this Trail will be used as heavily as some urban fringe paths in Britain, we suggest that provided it is developed as part of a corridor-wide programme of tourist attractions, then it will play an important role in co-ordinating the whole.


The Great Southern Trail
SHANNON DEVELOPMENT
LIMERICK
Curragh Chase
Ballingarrane Junction
Rathkeale
Ardagh
Newcastle West
Listowel
Barnagh Gap
Lixnaw
Abbeyfeale
Abbeydorney
TRALEE
Great Southern Trail
Examples of almost continuous minor road routes
Main road routes best avoided by leisure and tourist cyclists

4. OUTLINE OF THE GREAT SOUTHERN TRAIL ROUTE

The disused railway starts at Tralee Station. Had the narrow gauge Dingle Railway still been in existence then it would have been desirable to ensure a good connection between the one and the other. As it is, it is essential that walking and cycling routes around the south-west of Ireland are connected through Tralee in the most attractive way practicable. Possible details for this and other specific proposals are described in subsequent sections of this report.

Most of the way cyclists may take a number of routes avoiding the main roads. Possible minor road routes and the railway route are shown in Fig 3. However we see a need to make a specific provision for cyclists in the vicinity of Tralee itself. Over the first 3 kms the Fenit railway will share the double formation of the Tralee and Limerick route. This will mean the Great Southern Trail will be running parallel to the tourist railway and separated from it by a dividing fence. Alternatively we suggest a parallel route through adjacent playing fields as far as possible. Once past the junction the railway climbs around to Abbeydorney Station through some rather attractive undulating country with extensive views of the Slieve Mish mountains. At Abbeydorney the railway launches itself on a long straight crossing of the flat land to Lixnaw and then to Listowel. Over this section in particular it will be desirable to pay particular attention to creating an interesting landscape. This will mean moving the line of the trail from side to side and if possible acquiring small pockets of additional land in order to create mini woodlands or ponds along the route. Various ways of doing this are shown in detail in the next section of this report. At Listowel comes the first section where it would be desirable to build the route to an enhanced standard in order to create both a pleasant walk for local people looking over the valley of the River Feale and to provide a route avoiding the N68 main road. Along with the valley to Abbeyfeale the railway is closely paralleled by an adjacent road which gives a number of opportunities for creating more planted areas than the narrow strip of land sandwiched between the road and the railway. The section from Abbeyfeale across to Newcastle West is the only part of the route which goes through moderately exciting countryside and then only as it drops away from the summit at Barnagh Gap. Through the gap itself there are again sections of the route which might well be built to an enhanced standard to benefit cyclists who are endeavouring to follow minor road routes. At Newcastle West it is again important to ensure a careful connection to the town centre whilst over the 4km leg to Ardagh there is some merit in giving thought to the route being built to a sufficiently good standard to accommodate regular cycling journeys to and from the main school at Newcastle West. Originally we had thought that the route for horses might stop at Newcastle West as this would have simplified the provision of such a way for cyclists, but given that Rathkeale is such an important centre for "travellers" there clearly should be kept the option for the whole of the Great Southern Trail made suitable for not only horsetrekking but travelling by pony cart and horse drawn caravan as well. At Rathkeale the railway was to be used as a route for the bypass, but after local representations is now to pass just to the north of the railway. This will allow the path to continue to Ballingrane, provided the two road crossings can be safeguarded. Alternatively the trail for horses could stop at Castle Matrix. These options are detailed in the appendix. The rest of the route runs on minor roads to Curragh Chase and thence to Limerick. Here the first real problem is after Old Kildimo where minor routes join the main N69 to cross the River Mague at Ferry Bridge. This very narrow bridge causes considerable trouble and we feel that a much better tourist route would cross via a new footbridge through the reed banks



"standard" steel small span

upstream. Limerick itself is the first place where the roads are so busy that there is a real need to create safe routes for cyclists. We suggest a number of new measures and links to take advantage of residential roads in order to reach the city centre. Once there, the tourists may need to reach the station or the airport or continue on their journey via the Shannon or to County Clare. Whichever way it is again desirable that the Great Southern Trail links into a connecting route, such that the visitors journey is not arbitrarily curtailed. In Limerick city itself any provision will in fact be of greater use to the local residents throughout the year than to tourists in their more limited season, and consequently expenditure from transportation funds and other public budgets would be justified.

The creation of an extensive route of this sort has a number of important ingredients, all of which must be present if the route is to be popular. The route must be safe from conflict with traffic throughout its length. This means that for whichever mode of transport, whether it be pedestrian, cyclist or horse, the Great Southern Trail must be continuous and any possible breaks caused by roadworks on the T28 at Barnagh Hill must be designed such that the Great Southern Trail is taken into account. The trail should also be attractive throughout its length. This means that the immediate ground either side of the trail should be pleasantly rural. Indeed there is an opportunity for introducing plant species which were once common but are now threatened by farming practices. Beyond the confines of the railway land itself the whole landscape as far as the eye can see should be examined with regard to ways in which it could be enhanced. For instance, a clump of trees on a single prominent hill might provide a focus in an otherwise uneventful landscape. Ways in which adjacent farmers can profit from the Trail need to be explored. This may involve changes to existing farming practices and it may be found that the raising of ponies, or forest planting might be more beneficial. Buildings are important and views of church spires and castle towers add to the memories along the overall route. On a route of this length it will also be necessary to provide convenient places for the traveller to stop to rest, to camp or to find other accommodation. As well as mundane focii of this kind, sculptures and other features have deliberately been introduced on some paths to punctuate the length of the overall journey.

5. CONSTRUCTION AND DEVELOPMENT

The general proposals and working methods put forward in this section are based on the lessons learned and the practice developed in the construction of some 200km of railway path in England, Wales and Scotland. As these paths have largely been built in much more populous areas where there is a clearer need for traffic-free routes, these notes concentrate on those elements which are more appropriate to a rural route of this kind. Having said that, a railway path of any dimension, however minimalistic, represents a major investment because of its length, its land area and its features such as fencing and bridges. Consequently any railway path project should start off from the basis that it must be built in such a way as to encourage the maximum level of use in order to justify the expenditure inevitably incurred.

masonry arch

5.1 DESIGN AND PLANNING OF THE ROUTE

The Great Southern Trail runs through relatively uneventful countryside. As a consequence, it is probable that it will only be one of a number of options for walkers, cyclists and horse-riders when travelling between Tralee and Limerick. For instance, walkers whether casually doing a day trip and more seriously following a leg of the long distance Irish Path, may well wish to either follow through a coastal route to take advantage of Tralee Bay and the Shannon Estuary, or they may wish to follow a more mountainous route inland over the Stack Mountains. Cyclists have a range of minor road routes to choose from and their main concern in using the trail will probably be either to avoid too many steep hills, or to take advantage of the rather rougher characteristics of the proposed path or to benefit from an entirely traffic-free route for the benefit of children or elderly people in the party. Those pony-trekking may well find the Great Southern Trail the optimum route as may those with caravans or carts. This means that the eventual form of the Great Southern Trail may change from section to section with a variety of possibilities interweaving one with another, depending on the user. Likewise the design of the trail itself may vary from length to length depending upon the anticipated use and indeed may change with the course of time as the actual use is proven on the ground. These various roles the route may play will affect the design of the path.

5.2 CONSTRUCTION DETAILS

The Ballingrane and Tralee Railway was 52 miles long, and contained over 60 bridges, 180 level crossings of various types, numerous culverts, miles of trackside drains and over 100 miles of fencing. The Great Southern Trail must decide how to handle each component of its property. Here we consider the general components of the railway and then in the Appendix provide specific solutions working from Tralee towards Limerick.

5.2.1 Public Road Bridges over line - 13 in number

These are all masonry arches with the exception of 88a which is more recent and of concrete. They are built from a hard limestone and are in excellent condition. Their great value to the project is twofold. They provide for a safe crossing of a trafficked road and they are the principal railway artefact visible to the traveller on the Trail. Neither of these points should be undervalued as it is the essential characteristic of railway paths that they are traffic-free and they are old railway routes.

The only work required is some pointing to the masonry and a small amount of repair to parapets. In some cases the highway authority may wish to remove the bridge in order to effect a road "improvement". eg. b107 just south of Abbeydorney Station. The Trail should be cautious about such moves as they often result in increased vehicle speeds and always poise the less satisfactory "at grade crossing". It will usually be possible to insert a new subway into any new road works at relatively little cost provided this is done at the time, and any "improvement" works should include this, although the headroom required for horses and caravans may be almost as much as that of the original bridge.

5.2.2 Accommodation Bridges over - 5 in number

These carry private roads or farm tracks over the Trail. They should all be kept for the same reason as those expressed for the public roads. Again they are all masonry arches.

5.2.3 Public Road Bridges under the Trail (2 removed and 2 remaining)

These pose more of a difficulty. They generally have a fairly low headroom, eg. b110 just north of Ardfert, and so are seen as an obstruction to road traffic, and are all of steel, so it is easy to remove them. Indeed 2 have gone in recent years. That at Abbeyfeale Station (b82) illustrates a typical problem. The bridge has gone, leaving stark masonry abutments. Although it is quite possible to ramp down to cross the road at grade, the loss of the bridge does effectively sever the southern extent of the railway from Abbeyfeale Station which might otherwise be a natural picnic area and visitor centre. It is in the vicinity of these more public sections that the traffic- free nature of the Trail is to be the more greatly valued, as it will allow families to relax knowing that their children are safe to wander at will. So we show a sketch for placing a new "footbridge" at a higher level.

Otherwise we do not propose to replace removed bridges, as the general level of conflicting traffic flows on the affected roads is low. However we do feel that very careful consideration should be given to that section of the railway just to the north of the Barnagh Gap which is destined to be lost to road "improvements". Scenically this is the most spectacular section of the route and we strongly recommend that complete segregation is kept at b64, although we show how the road might be improved in this area.

5.2.4. Significant River Bridges - 4 in number

These are essential to the route for most obvious reasons. Whilst three have quite small spans, one - the River Feale bridge (b99) with 2 spans each 88 ft long - is quite a substantial structure.

These river spans are all in steel and are very substantially constructed to carry railway locomotives. From an engineering point of view they are overstrong and even quite severe deterioration and loss of metal would leave them satisfactory for the much lighter loads of pedestrians and horses. However almost none of them have solid decks as the rails were laid direct onto longitudinal timbers which in turn sat over the main carrying girders. It is best to provide reinforced concrete decks for the path as these are maintenance-free. The concrete should be carefully laid so that water is discharged well away from any steelwork. The shuttering is often left in place and treated as sacrificial. Each of the bridge decks will need to be separately designed to suit the structural steelwork details.

There are also a number of relatively small "river" bridges of 3-5 metres span. These are listed with the culverts. In the case of these small spans it is more economical to scrap the steelwork and provide reinforced concrete decks spanning the abutments.

Table 4 of Southern Trail River Bridges of larger span and individual design

No.	Name	Span	Comment
b83	Oolargh River	12m plate girders	1.05m deep
b99	River Feale	2 x 26m	2.7m deep lattice girders
b103	River Brick	14m plate girders	
b111	Combined with cattle underpass	2 x 4m	

Apart from the absence of solid decks another matter of relatively little importance to the railway was the question of handrails which were only provided to protect maintenance staff. These will often have to be replaced or improved for public use. We recommend the use of 2 ins diameter scaffold tubing as being a suitable robust standard. This can be bent on site to create elegant finials to each parapet - a detail which was used to great effect on the Glasgow-Yoker railway in 1988.

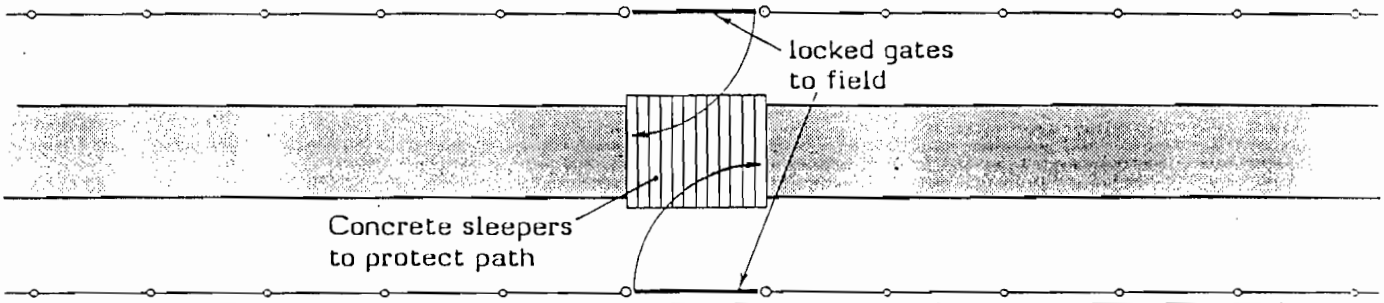
5.2.5 Accommodation bridges under - 20 number + 1 removed

These are generally small affairs for cattle and farm vehicles. They should be treated as river bridges and always retained. Whilst it is unlikely that an at grade crossing will have traffic problems, the mess and mud which can occur at cattle crossings should not be underestimated. On occasion a farmer will seek to remove a bridge in order to allow the occasional large vehicle access. Where possible it is better to agree to provide an additional level crossing nearby rather than see the bridge removed as this will ensure that most traffic continues to avoid the Southern Trail. The accommodation bridges are generally of steel with open decks and these should be replaced with standard reinforced concrete slab. In one case the accommodation bridge is more of a viaduct and moderately spectacular. Ferguson's Viaduct b63 compares 3 x 10 metre lattice spans supported by steel trestles about 10 metres high. This should be retained and provided with a concrete deck. Note that this need only be 1.8m wide to save expense and weight - see cross-section.

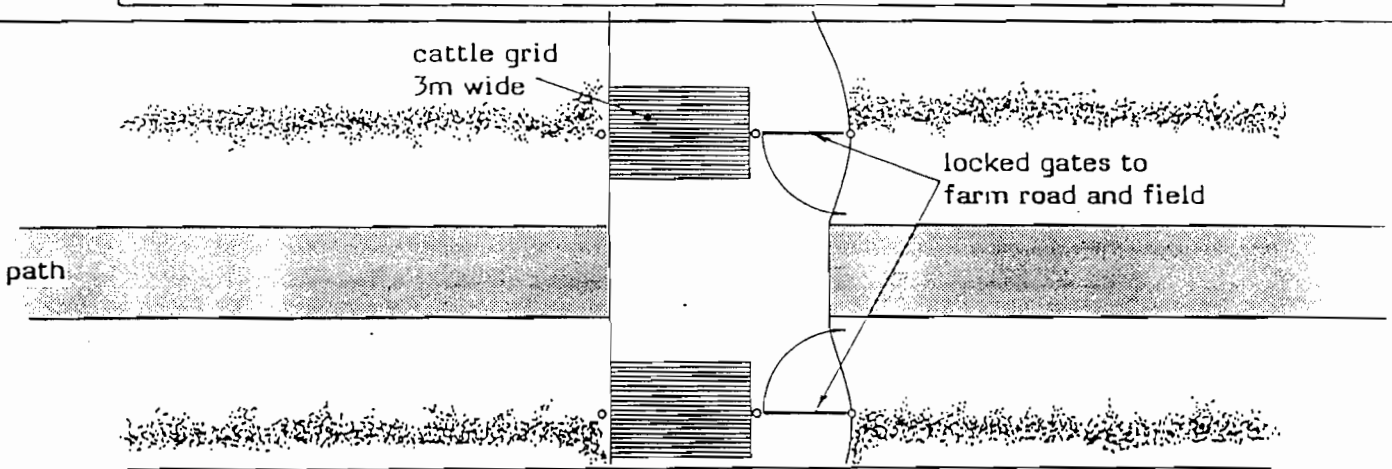
5.2.6 Culverts - 23 numbered and numerous others

Culverts are small watercourse crossings. On this railway they appear to comprise any stream crossing which was small enough to be dealt with in masonry, rather than steel (which was called a bridge). The ones inspected during our survey appeared to be in good order. Nearly all the numbered culverts are soundly built in good masonry and large enough to walk through. Generally it is the smaller un-numbered culverts which cause the greater problem as they are prone to blocking. This cannot always be prevented. In the situation where a blockage would lead to flood water flowing for a considerable distance down the path (eg where a culvert is just uphill from a cutting), then it is important to create a small "dam" across the path just downstream of the culvert, so as to ensure that if and when it blocks, the water is forced to flow away across the path, rather than down it. An alternative to this is to make a small ford of stone or concrete sleepers as shown in the example from the Lochwinnoch Loop Line in Scotland.

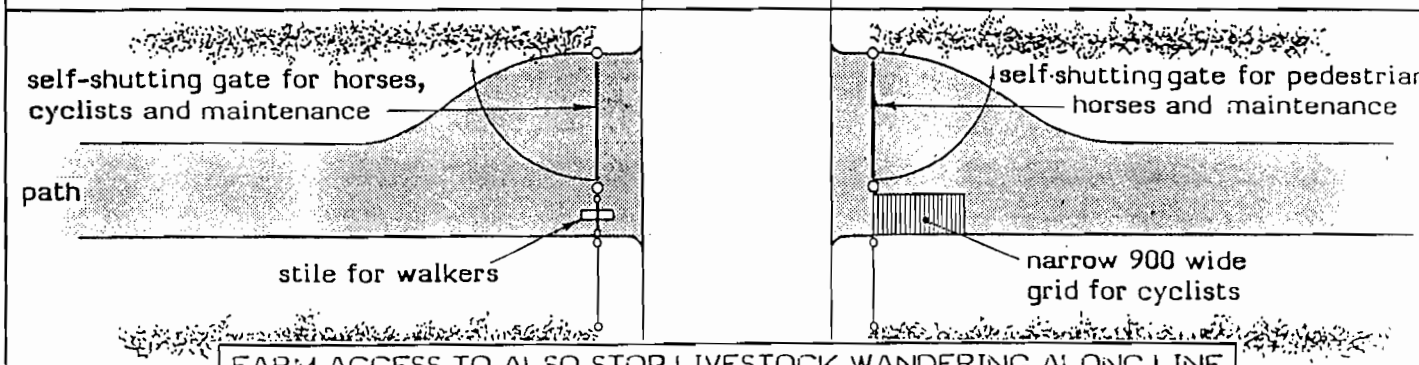
ALTERNATIVE ARRANGEMENTS AT ACCOMMODATION AND ROAD CROSSINGS



ARRANGEMENT FOR FIELD CROSSING OR ROAD USED VERY OCCASIONALLY

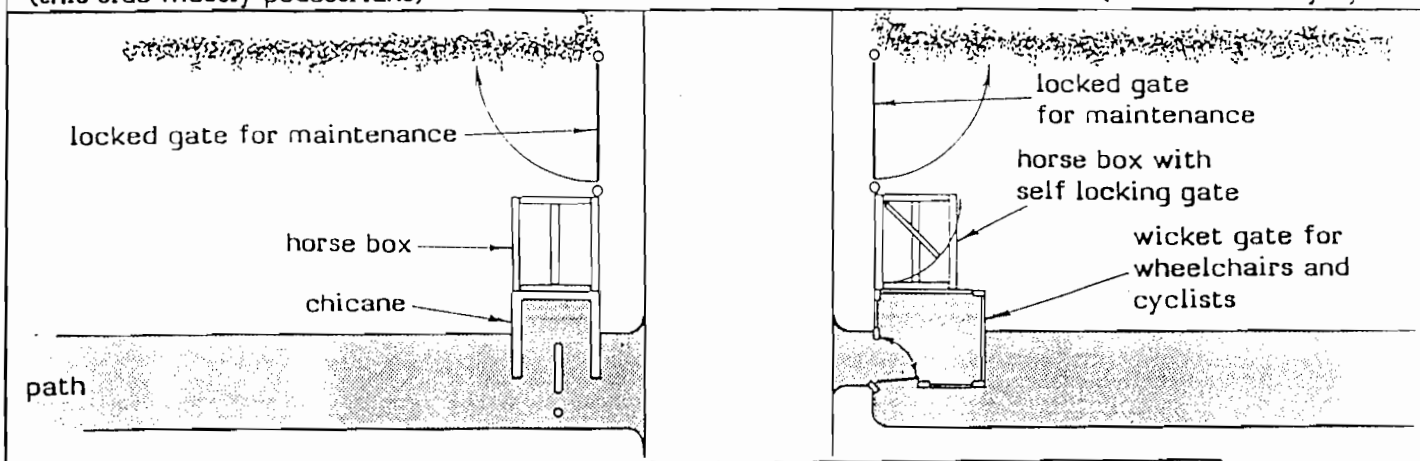


FARM ACCESS IN REGULAR BUT INFREQUENT USE SUCH THAT THE PUBLIC ON THE PATH TAKE PRIORITY



FARM ACCESS TO ALSO STOP LIVESTOCK WANDERING ALONG LINE

(this side mostly pedestrians) (this side mostly cyclists)



ACCESS TO PUBLIC ROADS TO ALSO DEAL WITH MOTORCYCLES

(this side no livestock problems) (this side to also stop livestock entering path)

Table 5 of steel accommodation and small river bridges

No.	location miles from Balingrane	span if known (m)	
b43	3½	2.8	cattle passage
b48	6	1.2	stream
b52	8	3.5	River Daar
b56	10	2.5	stream
b60	13	2.5	stream (once Turbary Track)
b61	13¼	2.5	cattle
b71	16¾	3.0	accommodation to farm
b74	18¼	2.5?	cattle
b76	20¼	2.5?	stream
b77	20¾	2.5?	cattle
b85	20½	3.0	cattle (close sleepers)
b92	28½	3.6	access road 3.6 height
b94	29¾	3.3	cattle
b102	39½	2.5	river bridge (dry)
b105	42¼	3.0?	river bridge
b106	43¾	3.0?	river bridge
b63	14	3 x 10	lattice spans

Total length of all spans 72 metres

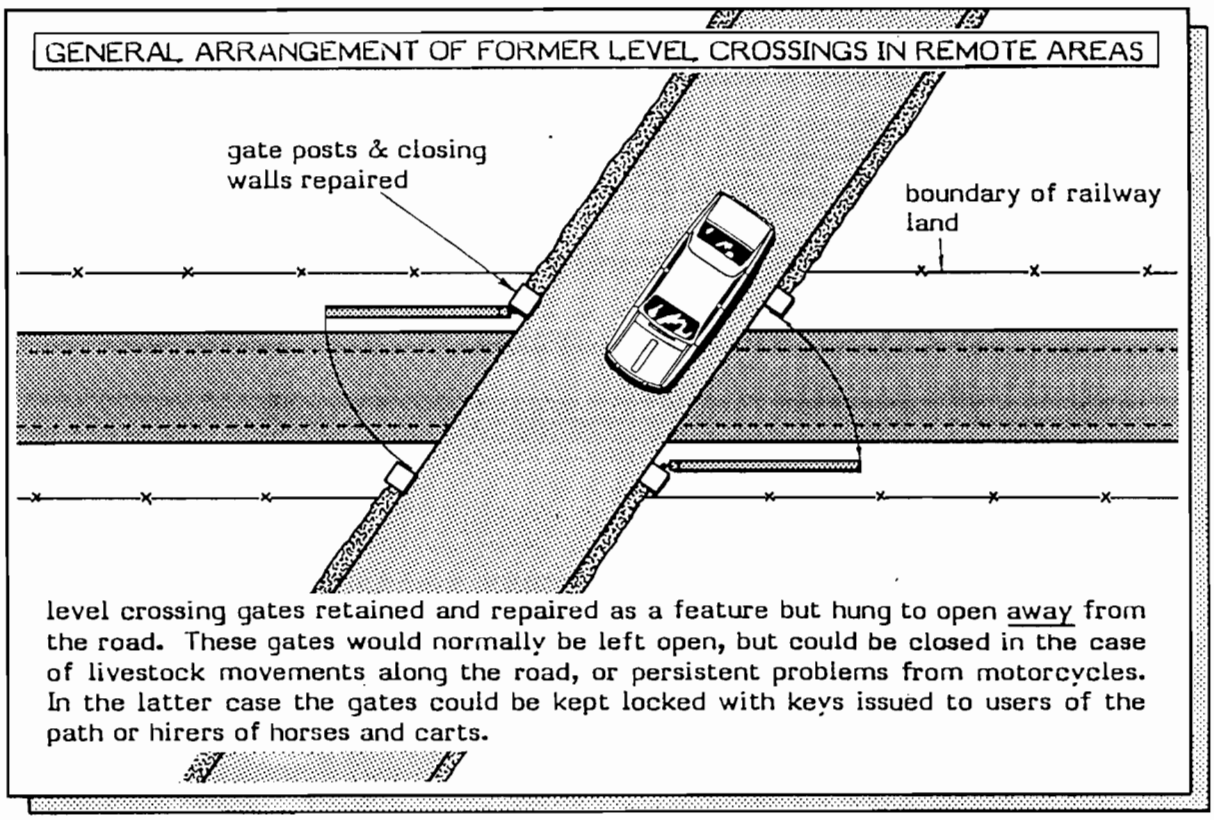
5.2.7 **Drains**

Allied to the care of culverts is the question of drainage. Railways were built to be dry as water would rot and destroy the timber sleepers. Mostly the railway has remained dry, although flooding has started to occur in a number of cuttings. The worst flooding on this line is under b96 just to the north of Listowel. Flooding **must** be dealt with either by opening out a substantial ditch as far as open countryside, or by raising the path on a slight causeway. The latter approach might be preferred in situations where it is intended to keep the cutting as a habitat for wet-loving species of plants. Good examples of each approach may be seen on the Lochwinnoch Loop Line.

Alongside the railway there are ditches and drains which may be the responsibility of the railway authorities and in the future of the Trail operators. Indeed a considerable amount of fresh drainage works have been carried out near Liscaline Crossing (G198). However we find that the demands for works to these ditches are rarely received and it is likely to be a minor problem.

5.2.8 **Level Crossings** - these number 30 at public roads, about 16 for farm accesses and about 145 for field crossings

This railway has a truly enormous number of open crossings. Whilst this may have been an economical solution in an area of very low traffic and infrequent trains, it does cause the Trail some problems. Each level crossing of a trafficked road is a potential hazard. Just as important they are places where motorbikes and livestock might get on the line. Fig 6 shows how one might deal with the various types of crossing, if one was wanting to create a fairly self-contained route well sealed off to unauthorised use. Note that field crossings (provided where the railway



level crossing gates retained and repaired as a feature but hung to open away from the road. These gates would normally be left open, but could be closed in the case of livestock movements along the road, or persistent problems from motorcycles. In the latter case the gates could be kept locked with keys issued to users of the path or hirers of horses and carts.

may not be required any longer if the land tenure has changed such that the fields either side of the Trail are in different ownerships. In these cases the farm crossing should be removed and the gap fenced.

However we do not think that this rather rigid arrangement is appropriate to this rural area as a whole - although it might be so on the approach to Tralee. Rather we recommend that the whole length is treated as country lane with just the occasional gates at key points if necessary. This is shown in Figure 7. In the case of public road crossings, we recommend that the gate is kept as a railway feature, painted and restored, but rarely used, except perhaps when livestock is driven along the road. In the case of the farm accesses it was the responsibility of the landowner to open and close gates as needed for the passage of farm vehicles and livestock. We suggest that new farm gates are installed such that whilst they are normally left open, they can either be closed by the farmer across the access road if livestock is in an adjacent field, or across the track if driven from side to side of the railway. Either way it is the continuing responsibility of the farmer to operate the gates as he requires, and to leave the Trail open for passage. In the case of all remaining field gates, these will normally be left shut and only occasionally used, again the responsibility of the farmer. Careful consultation with each landowner is needed to ascertain just how frequently a gate is used and whether or not it should be considered as a farm access track, and whether or not the crossing surface should be hardened by concrete sleepers or the like. By and large the little-used field gates are the original iron versions, the well-used field crossings have new steel tube gates, whilst the regularly-used accommodation crossings have no gates at all!

The level crossings along this line are a considerable matter and each should be given careful thought. We envisage the proper solution will be an important aspect of the Trail Manager's task, who will have to persuade local farmers to open and shut gates rather more so than they do at present!

In addition to these physical works it will be necessary for the managing authority to establish byelaws to prohibit the use of motorbikes and cars on the Great Southern Trail in order to give the authorities the ability to limit any abuse which might otherwise escalate out of control.

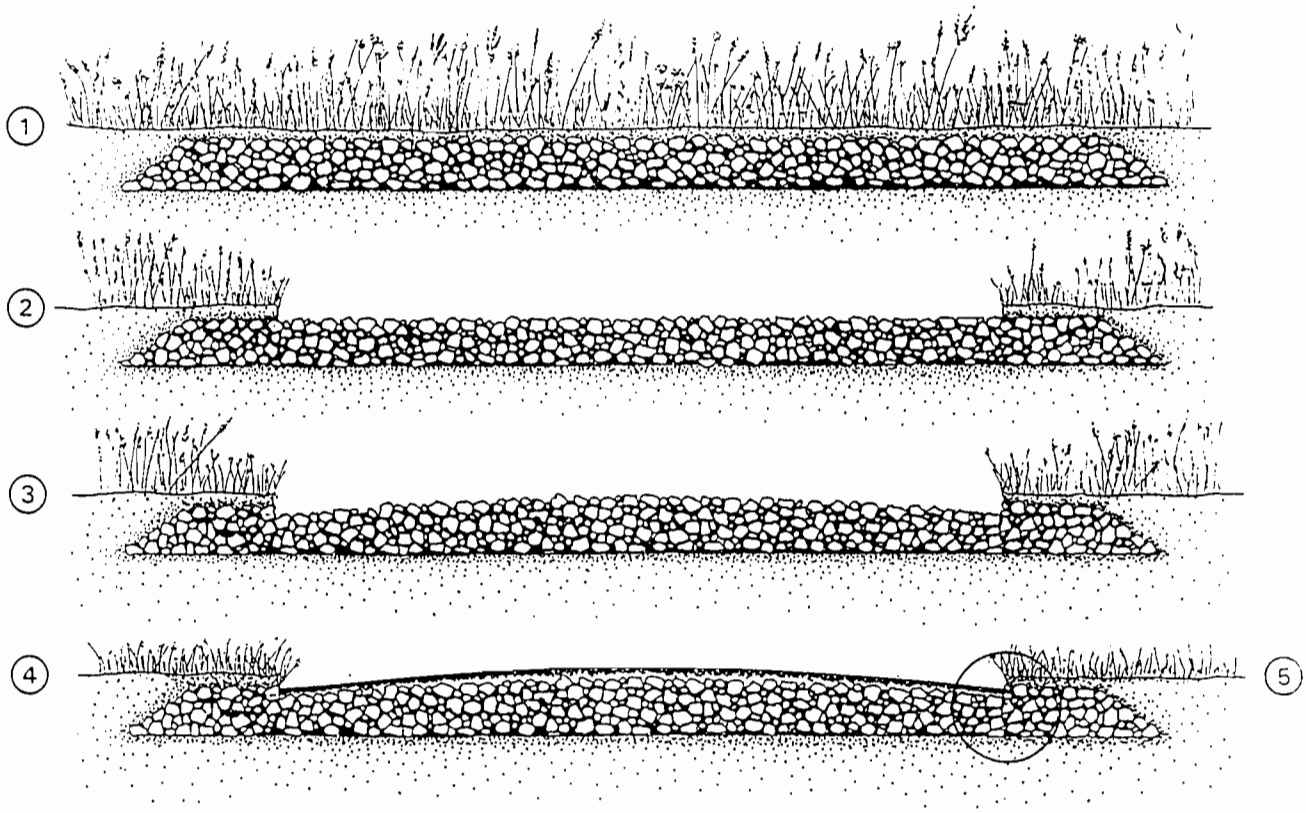
5.2.9 Fences - about 100 miles in length

The long length of fences may seem to be a considerable problem. Whilst it is the responsibility of the Trail to maintain these fences the nature of the burden will depend upon the authority adjacent to the route. The Trail should be stock-proof both to prevent neighbours' animals from straying and to protect the varied vegetation along the path. Along many sections of this railway route, the boundary is already an impenetrable hedge. This should be encouraged. Along others the railway is bounded by woods and other areas which are already free of livestock. Whilst some fencing will be required, the planting and hedging programme should aim gradually to reduce the need for them. In some cases it may be better to negotiate to transfer the fencing responsibility to the adjacent farmer, especially where electric fencing is in use as then he can extend his system as and when required.

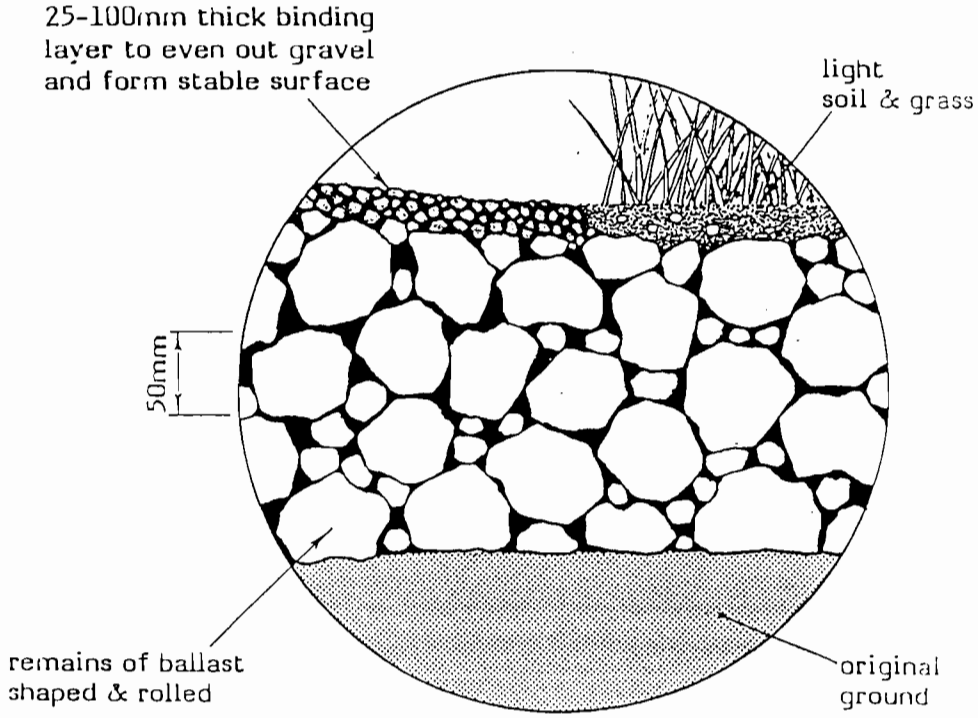
5.2.10 The path surface

The path should be designed as a minor road. It is most important that the remaining ballast is left in situ to provide a firm base for any subsequent works. This ballast is rarely more than 3m wide and this will define the

BASIC PATH CONSTRUCTION DETAILS ON DISUSED RAILWAY



1. Rough overgrown railway
2. Strip off all vegetative matter
3. Shape ballast to central 50mm camber or crossfall add weedkiller if necessary and roll
4. Add 25mm layer of binding gravel and roll
5. Smooth at shoulder for at least first 500mm (2 ft) and lightly soil and sow



DETAIL AT EDGE OF PATH

effective width of the trail. The principal construction works will consist of sorting out the drainage to ensure that the path is dry and sealing the surface. This is shown in Fig 8. This type of surface will inevitably be fairly uneven compared with a metalled road in that horses hooves are bound to do some damage. This will mean it may not be suitable for the average touring cyclist or those making daily journeys to work or school. It will however be suitable for those with "mountain bikes" and indeed for them might be preferable to travelling on ordinary roads. In the vicinity of Listowel where there is probably a real need to provide a surface suitable for regular cyclists, then the most practical option is to overlay this ballast and gravel surface with a single course of Bitmac. Alternatively it is sometimes possible to provide an alternative and parallel route for horses, but in the case of the Tralee and Limerick Railway (which was only a single track) we do not think that this will normally be possible, particularly if carts are to be accommodated as well.

5.2.11 Access points

Access mostly access takes place at existing level crossings and station sites. However there will be instances where additional accesses are required. These can be made where the road runs conveniently close to the railway boundary, and at the same level (eg. just south of b42 and b47). But in some instances negotiations for additional land will be required in order to make a needed link. Such an instance occurs at b50 adjacent to the former Ardagh Station. As this has been sold privately a link path will need to be made at one of the other three quadrants of the bridge to enable Ardagh people to travel to Newcastle. These ramps should be 3 metres wide and not steeper than 1:15 if possible.

5.2.12 Other constructional details

Apart from the basic path and care of the essential railway fabric there are numerous details which relate to the way the Trail looks. These include landscaping, seats, signs, sculpture, camp sites and so forth, all of which are discussed in the next section. They should however be considered as an equally important component of the Trail as it is these more visible items which will be the more often seen and appreciated. The walker or the rider is going at a slower speed than any motorist and can take note of and appreciate small details which would be missed at speed - the design of a gate, the trickle of a streamlet, a cluster of flowers or a seat from which to admire the view.

5.3 LANDSCAPING AND ANCILLARY FEATURES

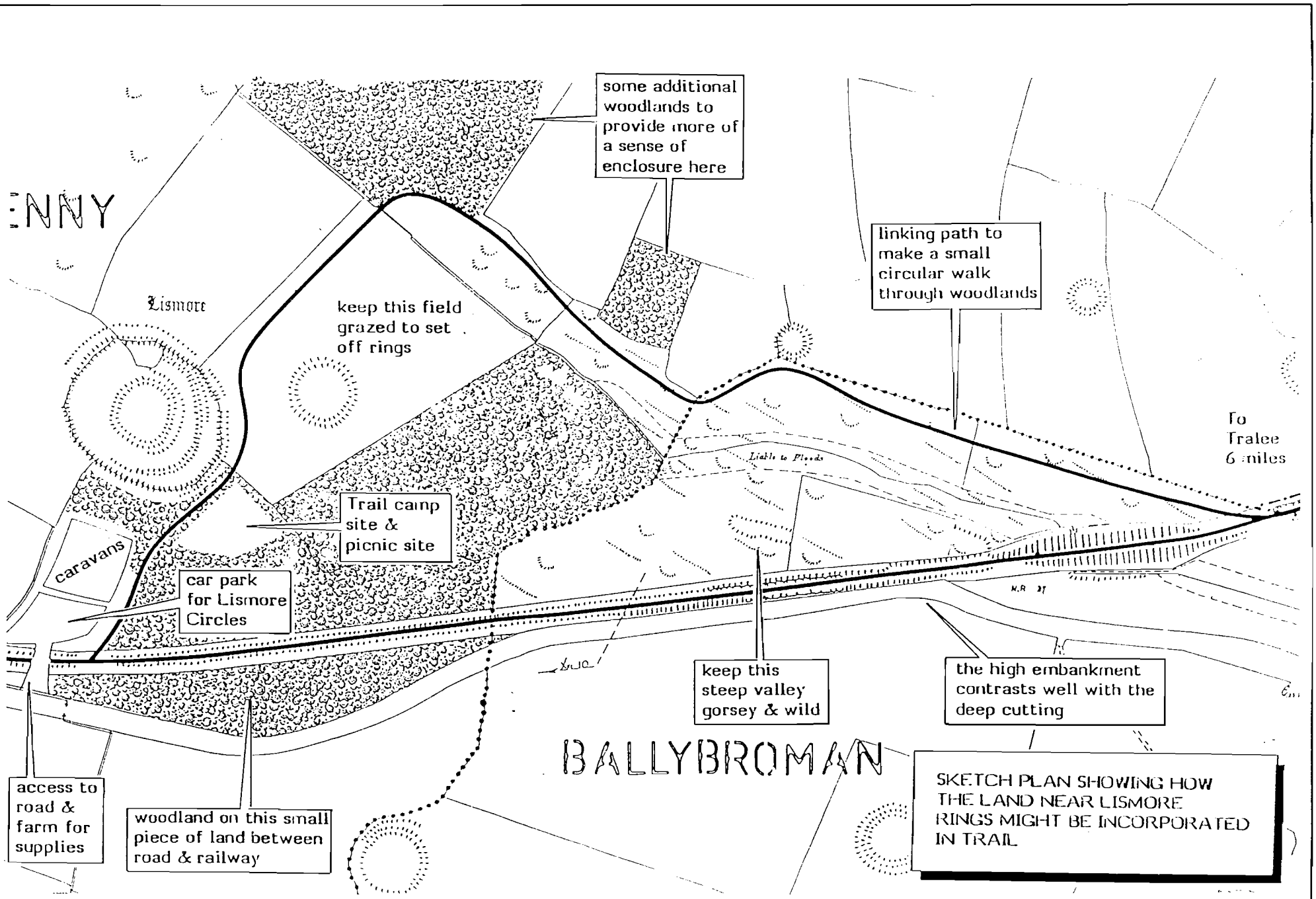
The technical points described in the preceding sections form the basis for a practical path. But its popularity and the memories taken away by those who use it will depend upon other details - on the summer dust, the shade from avenues of trees, the shelter from the wind given by dense hedges, the position of a seat with a commanding view, the profusion of plants by the wayside, the view over fields and countryside, the darkness of Barnagh Tunnel, the convenient cafe, the quiet camp site, the chance acquaintances met on the route. All these go beyond mere construction, but nonetheless must not be neglected, and indeed are essential for the success of this route.

5.3.1 Landscaping and planting

This is the most difficult to discuss because there are endless variations on how best to interpret what should be done. As an example, Appendix II shows

The Great Southern Trail

SHANNON DEVELOPMENT



SKETCH PLAN SHOWING HOW THE LAND NEAR LISMORE RINGS MIGHT BE INCORPORATED IN TRAIL

how the landscaping on the Lochwinnoch Loop Line, south west of Glasgow, was considered. The goals may be summarised as follows:

- at an immediate distance from the path, on its verges and banks, the aim should be to create wide diversity with wild grasses, flowers, shrubs and hedgerow plants. These will be the plants seen first by the traveller. They will contain many species which may have been largely eradicated from adjacent farmland. These verges will generally be mown once each year in the autumn.

- the boundaries should become stockproof, by uncontrolled wilderness, by formal hedging or by dense planting. This will reduce fencing costs, as well as create habitats for wildlife.

- views are important and it is essential to adopt a maintenance policy which will cut back plant growth as necessary so as to avoid miles and miles in a "tunnel" of green without sight of the country beyond.

- windbreaks will be very helpful, particularly on the more exposed southern section.

- additional variety should be encouraged on all adjacent land. This means keeping ponds, reedbeds, peats and copses even if this necessitates coming to some sort of management agreement with the owners. In other cases land should be acquired to carry out additional planting. This will be particularly desirable when the railway is near a river in order to link the path to the water.

- distant views can be enhanced. For instance, the presence of Lixnow is advertised for miles around by its concrete water tower. In the same way a distant copse of trees might mark the site of a stopping place, a former station, or even a point of interest remote from the line.

A general asset survey of the line of the railway will be invaluable in determining the extent of land either out of agriculture, or only marginally productive. The railway record sheets have been annotated to show the extent of fields sometimes visible from the railway, but this is only partial.

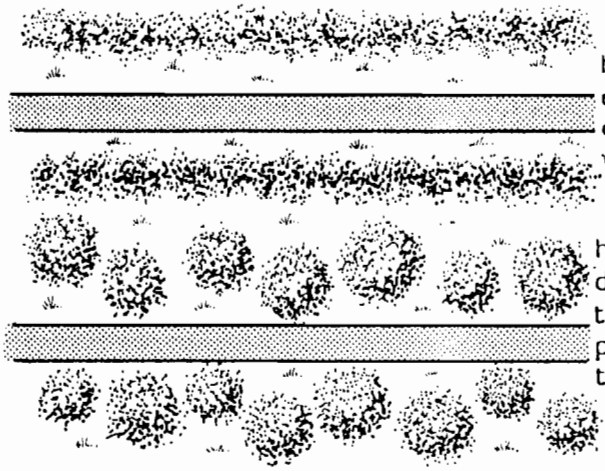
Once the landscape policy is decided, then the land must be planted and maintained. The whole requires the appointment of a skilled landscaper to oversee each aspect of this side of the project from the conception of the scheme to the establishment of the plants.

5.3.2 **Seats** are often overlooked. Especially in the vicinity of settlements there should be plenty of convenient seats to serve those who may just walk a short way, perhaps every day. Seats serve as markers along the route, as destinations (eg. "we'll stop at the seat by the bridge").

Seats can also be used as formal distance markers - say every mile or as deliberate picnic areas overlooking a view, a stream, or shaded by a tree. The technical appendix shows both a utilitarian seat made from railway sleepers and ones moving towards sculpture.

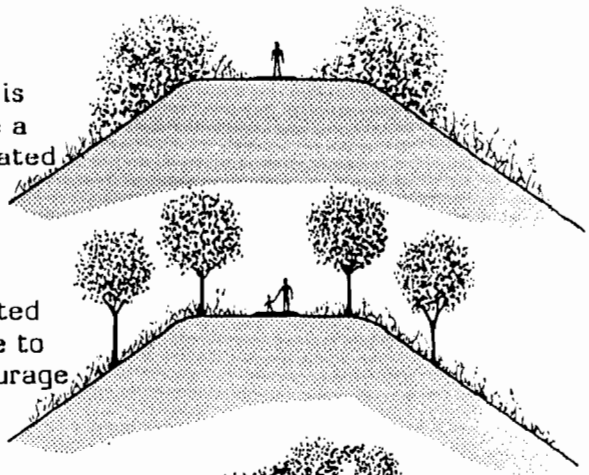
5.3.3 Landscaping, planting and seats are absolutely integral with the design of the whole route. So also is **signposting** where basic signs describing the overall project should be raised as each stage is constructed. As well as these, route signing is also essential. This is discussed in the section of this report under promotion.

LANDSCAPING OPPORTUNITIES



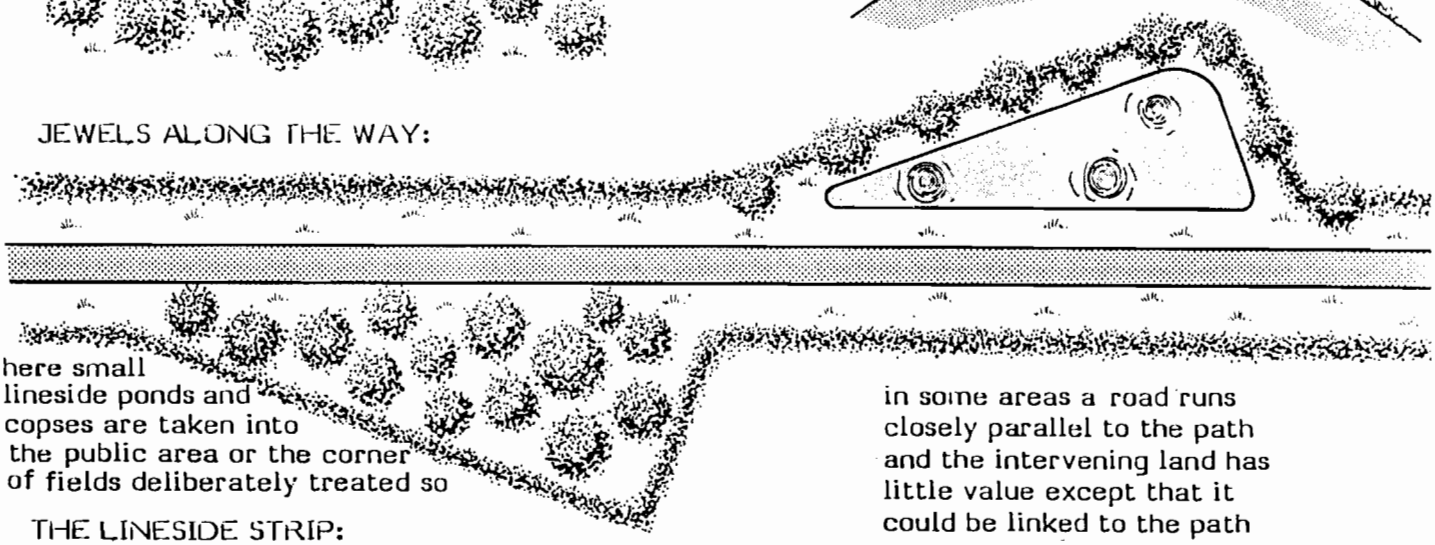
HEDGES:

here the railway is encouraged to be a dense and variegated wild corridor



AVENUES:

here trees are deliberately planted to make a feature to protect and encourage the traveller

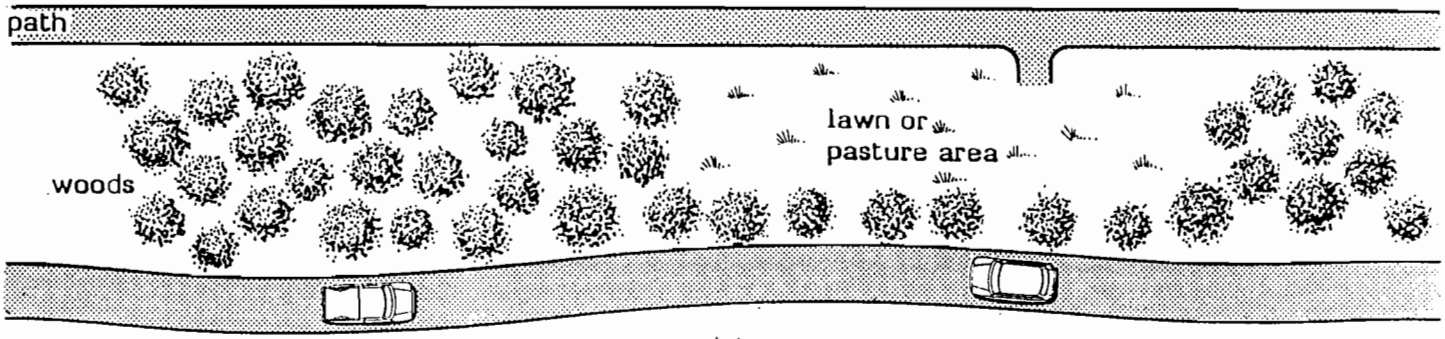


JEWELS ALONG THE WAY:

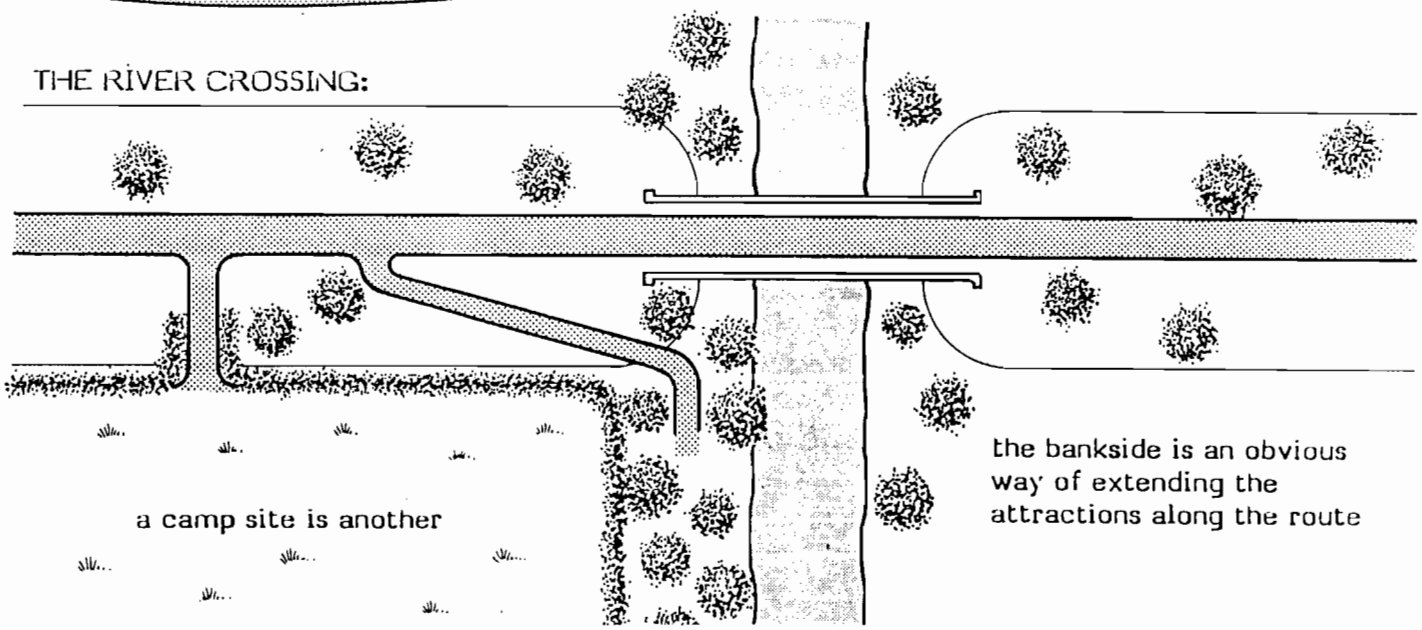
here small lineside ponds and copses are taken into the public area or the corner of fields deliberately treated so

in some areas a road runs closely parallel to the path and the intervening land has little value except that it could be linked to the path

THE LINESIDE STRIP:



THE RIVER CROSSING:



a camp site is another

the bankside is an obvious way of extending the attractions along the route

5.3.4 Privacy

This railway route has almost no instances where it intrudes onto the backs of private houses or gardens. (On some railway paths this can be a considerable issue) Here the closest buildings are all crossing cottages or station houses. Where these have been sold privately then the project manager should make it a priority to discuss the boundary treatment with the new owners. It may be that a remote crossing cottage will welcome passers-by. If the railway is to the south or west of the house then a high screening hedge would be inappropriate as it would shadow the sun, or in other instances the view. Each case will require a different treatment and hopefully one which will satisfy the neighbour and enhance the railway trail.

5.4 COMMON PROBLEMS OF DISUSED RAILWAYS

Disused railways are derelict areas and suffer from being treated as such. They can become the dumping grounds for litter and a racetrack for motorbikes. Their drains block up and flood cuttings and fences break open.

Although these are to be expected, it is quite common for the public to anticipate even worse rather than perceive that the path project will deal with these problems and so change the conditions that they will not recur.

5.4.1 Rubbish and litter

As this railway has only been closed a relatively short time, the amount of dumping has been limited. What there is will be cleared away during the conversion process. The casual litter from the travelling public tends to occur mostly within a short distance of towns and car parks and this will need to be cleared up from time to time. However we find that on most of our popular paths the public see that they are kept clear as even single bags or drink cans offend the idea of the path being a natural place.

5.4.2 Motorcycles

Although there was no sign of motorbikes using this railway, they can be a problem in that their noise and speed is an unwelcome intrusion into a peaceful path. On many railway paths they are positively deterred by means of fixed barriers, by frequent signing, through byelaws of various kinds and by the presence of large numbers of legitimate users, who effectively act as informal rangers.

These circumstances are unlikely to occur here, especially if the Trail is used by horses and caravans. Motorbikes will inevitably gain access to the route if they wish. The problem is likely to be the most prevalent near the towns and here one or two judiciously placed gates may be the best answer. This could be coupled with the way in which some of the former crossing cottages are developed as toll gates and controls which is described later in this report.

5.4.3 Vandalism

On an abandoned railway it is common to find both casual and deliberate damage to structures and fences. This is another problem which can be expected to diminish as the railway takes on a new role as a trail.

5.5 THE CONSTRUCTION PROCEDURE

5.5.1 Management

The construction of the Great Southern Trail is quite a substantial exercise and will require the appropriate direction and management to complete the project. We understand that whilst the project may initially be promoted by Shannon Development, they would envisage that the direction of the project would quite soon be devolved to a separate subsidiary company or trust. It is essential that the project has a complete identity of its own and that those responsible for securing its completion can concentrate on doing so without conflict with other responsibilities. The board of the subsidiary company might consist of a committed representative of the Development Company and the two counties respectively, a leading member of the business community and one or two local representatives able to combine their local knowledge with some appropriate knowledge of the tourist business.

However, once Shannon Development have decided to proceed with the project they will also have to appoint a management team to carry out the works. This team would be responsible for carrying out all negotiations, preparing all designs and contracts, supervising the actual construction and initiating the maintenance and public involvement necessary for the future of the Trail. A possible composition of the team is shown in the table below. The team would become answerable to the board. It might also be assisted by specialist advisors in path construction or tourist developments.

Recommended Trail Management Team

Project Manager
Project Engineer
Landscaper
Secretary/typist
Illustrator

The manager would be responsible for driving the project forward and liaising with the promoters, all public authorities, the funding bodies, neighbours, user groups, possible providers of services and facilities, and co-ordinating every aspect of the project. The engineer would be responsible for the survey of the route, all detailed design works for structures and paths, of preparing contract documents, for overseeing the work and for ensuring that the path is built as well as possible. The landscaper would be responsible for all landscaping and ancillary design, for all planting, for its maintenance and for general presentation of the Trail project. The illustrator would prepare all formal drawings, sections, details, plans for the contracts and instructions to site, whilst the secretary/typist would handle office procedures, letters, filing, accounts, enquiries, etc. A team of this type would need to be in position for the whole of the construction period, including a preparatory period beforehand. In addition it will be necessary to decide how to promote the complementary land use and tourist attractions.

5.5.2 Construction

Railway paths are not difficult to build provided the right designs and directions are chosen. For this reason, and because they can be improved by careful attention to detail, they are suitable for construction by labour intensive methods and many good examples in Britain have been built by

unskilled teams funded through Government job creation programmes, or by volunteer work camps. There are also good examples built by contractors. The options available in Co. Limerick and Co. Kerry may be more limited.

We would favour a composite arrangement whereby the bulk of the basic work was carried out by an "in-house" team of employees working directly under the management team, supplemented in the summer by school parties and other work camps. This would allow the combination of building up railway path expertise via a small but constant work force, as well as involvement by the community and other potential user groups. The table below shows the composition of such a Trail team.

Recommended Basic Trail Construction Team

Supervisor
Paths
Crawler/excavator driver JCB driver 3 labourers on path construction
Bridges and gates
1 welder and steel fixer 1 carpenter 1 labourer
Fences and planting
1 fencer 1 forester
General
1 van driver

In practice the team of 12 would work as a unit and change roles as the occasion demanded.

The school parties would be particularly useful for tree planting in the range of their schools, as they could then get involved in the maintenance and care of the plants. Work camps would be a summer venture aimed at providing a boost for the labour force at the peak construction period. Sustrans has built a number of paths in this way including both the very popular Bristol & Bath and the remote Loch Venachar path in the Scottish Trossachs. A successful camp requires careful organisation and decent accommodation so that volunteers can relax at the end of the day's work and cope with bad weather. The additional effort of involving the public in this way is well worthwhile, it as it is the public who will ultimately use and care for this path.

6. ESTIMATE OF COST OF WORKS

We assume that the construction would be carried out by contractors. Their costs would depend upon the final detailed design, upon the extent of the landscaping and upon the additional services provided. Table 11 shows our estimated unit rates and Table 12 the consequent total cost.

Table 11 - Estimate of Unit Rates for Great Southern Trail - July 1989

1.	Bridges	- repair to masonry arches - new concrete decks, balustrade rails and patch painting to existing steelwork - culverts, clearance and repairs	£2000 each £400/m £500/each
2.	Drainage & causeways	- for machine digging ditches - for importing fill from adjacent embankment to make 0.6 metre high causeway	£3000/km £10000/km
3.	Level crossings	- for repairs and pointing to public road crossings - for providing new gates at farm access crossings including making linking fences and hard crossing area - for providing new field gates	£600/pair £500/pair £300/pair
4.	Fences	- for new field fences - for repairs to existing with very limited number of new posts - for dense hedge planting	£2500/km £1500/km £2000/km
5.	Path surface	- for supply of 200 tonnes binding gravel per km, shaping and rolling including some preparation of ballast base	£2000/km
6.	Access points	- allow for at grade links to adjacent roads - allow for new 1:15 ramps with 3m path averaging 86m long	£200 each £1000 each
7.	Seats	- allow 2 per mile @	£100 each
8.	Landscaping	- allow sum for land purchase and planting as necessary	£2000/km
9.	Signs	- allow sum/mile	£100
10.	Milepoint features and sculpture - allow sum		£5000 each
11.	Engineering and technical management by Trail Management Team	- allow	£60000/year
12.	Contingency for unforeseen problems omitted from this general summary table		Allow 15% total

Table 12 - Estimate cost of Great Southern Trail - July 1989

0.1	Preliminary Costs including promoting project	n.a.
0.2	Costs of setting up management structure	n.a.
1.	Contractors' preliminary setting up on site	10,000
2.	Bridge repairs	
	- 26 arches over @ £2000	10,000
	- 24 steel bridges totalling 200 metres	80,000
	- 11 culverts @ £500	5,500
	- reconstruction of Abbeyfeale bridge	30,000
	- straightening out road at Barnagh Station	40,000
	- straightening out road at bridge 64 on Barnagh Hill	50,000
3.	Level crossings	
	- 30 public @ £600	18,000
	- 16 farm @ £500	8,000
	- 80 field (say= @ £300	24,000
4.	Fences	
	- 20 km of new fencing	50,000
	- 20 km of repairs	30,000
	- 5 km of dense hedging	10,000
5.	Path surface	
	- 80 km of basic path	160,000
	- 5 km of bitmac @ £15,000	45,000
6.	Access points	
	- 10 new at grade	2,000
	- 6 new ramps	6,000
7.	Seats	
	- 50 miles at 2 each	10,000
8.	Landscaping	160,000
9.	Signs	5,000
10.	Milepoint features - allow for 10 major works	50,000
		844,000
11.	Trail Construction Management - 4 years @ £60,000	240,000
12.	Contingency @ 15%	120,000
	Total Estimate	£1,204,000

Note 1 : Within this estimate there is scope for a number of variations, particularly regarding landscaping and sculpture.

Note 2: No account is taken of any ancillary developments such as camp sites, bike hire and other services. As far as possible these should be encouraged to be provided locally at no cost to the project.

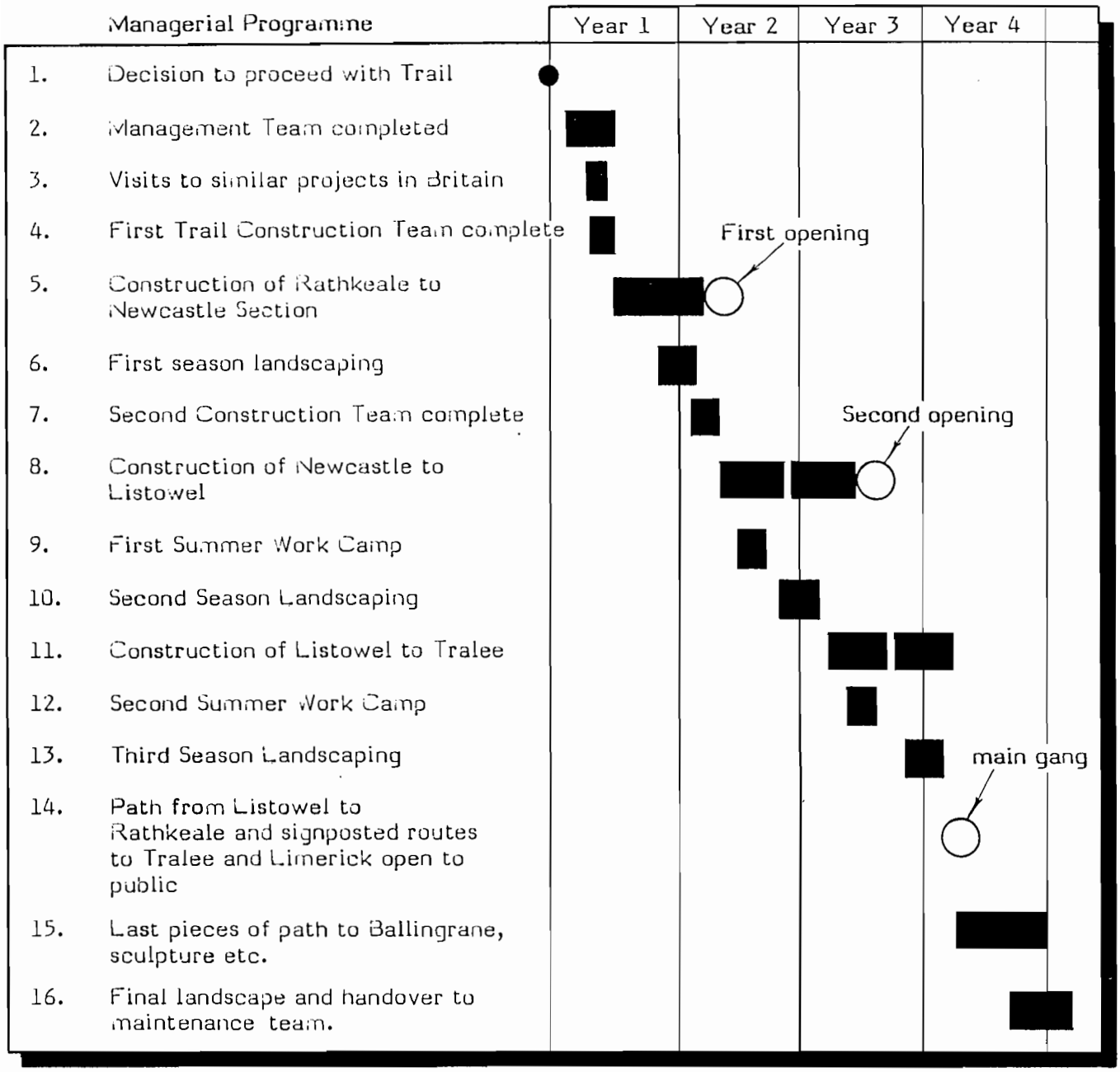
7. TIME SCALES AND PROGRAMME

We recommend that the whole Limerick and Tralee Great Southern Trail is built in a single phase. There is no convenient way of breaking down this project into parts which can flourish without the remainder. The whole is needed to make a sufficient impact upon the potential tourist market and to establish it as a significant attraction. We reckon that the shortest practical time in which to construct the path is 3 full years. If longer than this is taken then management team costs will be increased. Shorter than this will not allow for enough learning and development of the techniques involved.

A possible programme for the project is shown in Fig 13.

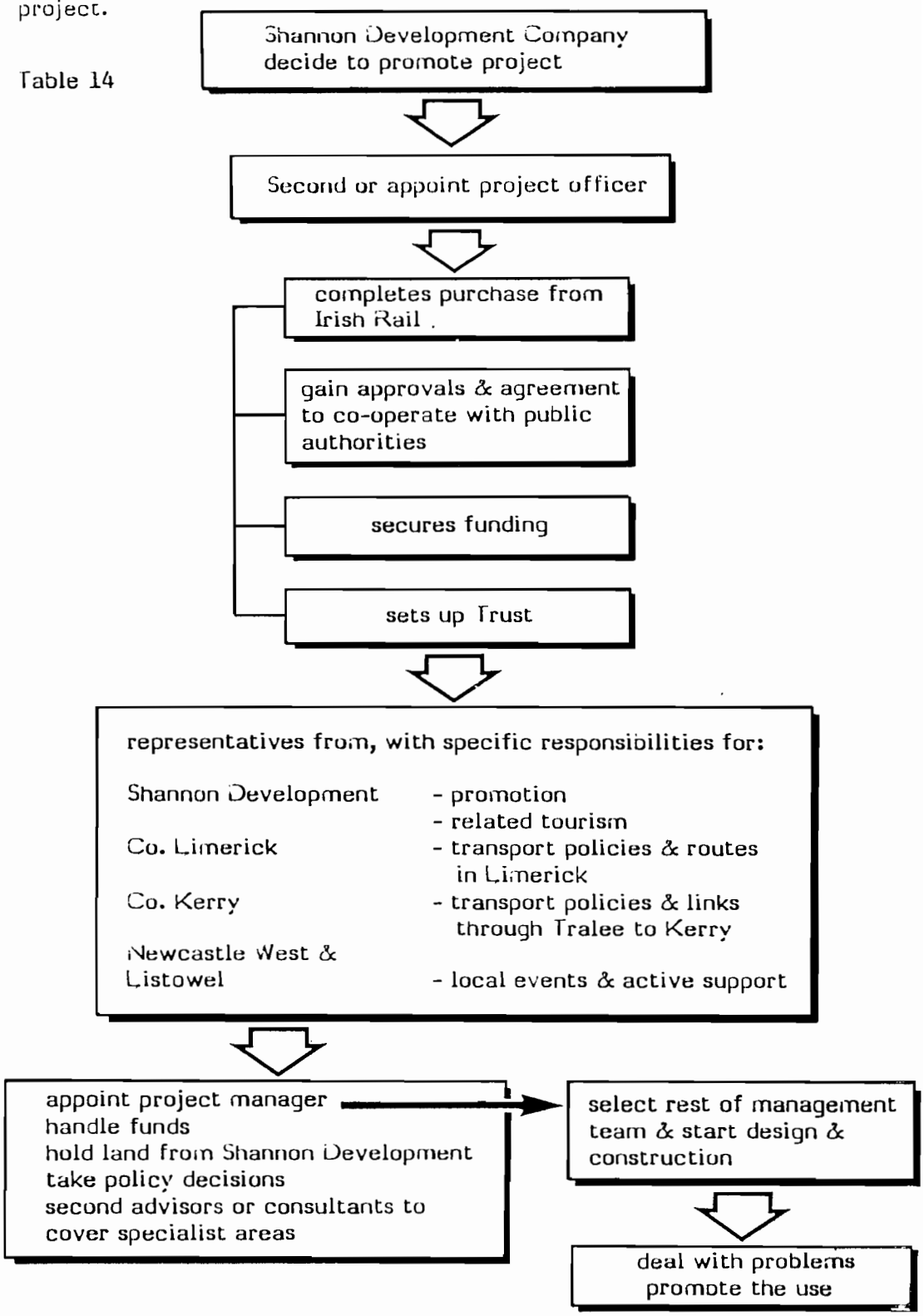
Fig 13.

Programme for construction of Great Southern Trail



It is worthwhile considering the initial stages in a little more detail, covering the period from now to start of work on site. We recommend that a single body promotes the Trail project in order to ensure clarity of purpose and decision. Shannon Development would be best placed for this as they have a legitimate interest in the whole length and all aspects of the project. Once under way then it would be best to transfer the project to a single issue subsidiary or trust (as discussed in 5.5.1). This would be better placed to attract local support and generate interest for the Trail Project. Table 14 below shows a possible sequence of events at this early stage of the project.

Table 14



In this way it would be possible to combine the necessary early decisions best made by a single entity with the later durability of having a widely based board responsible for the project.

8. FUNDING THE CONSTRUCTION OF THE GREAT SOUTHERN TRAIL

Railway paths in Britain are usually funded through a combination of resources including local authority grants, allocation from the Department of Environment Derelict Land Grant and from the Countryside Commission (which is concerned about access to the countryside). On occasion money from the E.E.C. has been available, and lastly British Rail have made their contribution, often in kind.

The estimates set out in the previous section do not include any sum in respect of purchasing the railway itself from Irish Rail. In Britain the normal practice is to assess the value of the land and properties but then offset a proportion of this against the liabilities to be inherited comprising structures; fences and any other ongoing obligations. In some instances this valuation of liabilities and assets may balance out or even be such that the railway authorities make a cash contribution to the purchaser. Whilst this is unlikely here, it is important that the project negotiates to acquire all the level crossing cottages and the station buildings in order both to offset any of the inherited liabilities to the greatest extent possible and to provide a basis for the essential ancillary activities, which must be developed alongside the Trail itself, namely facilities for visitors and tourists.

The careful development of these cottages and station buildings will not only preserve a capital asset against the future event of costly bridge repairs or other works, but will also provide a small income towards the maintenance budget.

For the purposes of this discussion we assume that the railway's assets and liabilities balance and that consequently the line is bought for a nominal sum.

The breakdown in contributions spread over 4 financial years might be as follows:

Co. Kerry	£ 100,000
Co.Limerick	£ 100,000
Shannon Development	£ 100,000
E.R.D.F. (European Regional Development Fund)	£ 900,000
	£1,200,000

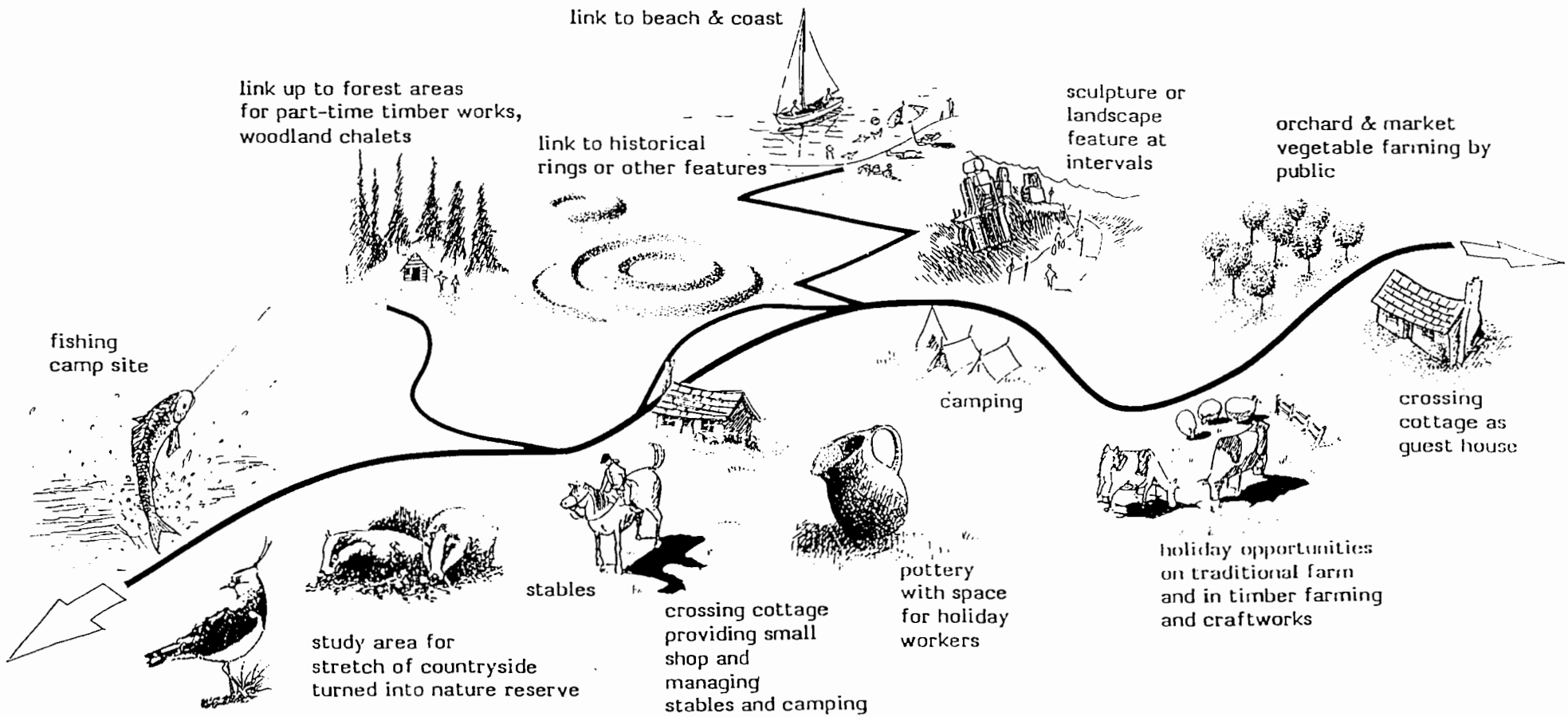
These contributions would be spread over 4 financial years. In addition there may be the possibility of Government employment funds, either direct or via some unemployment scheme which would have the effect of reducing the estimated cost.

9. USAGE OF THE ROUTE AND PROMOTION OF THE PROJECT

9.1 General

The demand for the Great Southern Trail does not arise from the needs of the local population which is sparse. Rather it has been conceived as the catalyst for a whole series of initiatives, each of which will rely to a greater or lesser extent upon the Trail for its existence.

The Trail will be a leisurely way of moving through a rural landscape. At intervals there will be existing attractions such as Curragh Chase, Castle Matrix, Barnagh Visitor Centre, Listowel, and new ones like the Lartigue Railway Museum and Desmond Banqueting Hall.



SCHEMATIC ARRANGEMENT SHOWING THE GRADUAL CREATION OF A GREAT SOUTHERN TRAIL WAY OF LIFE

Just as important will be the stopping places, for food and overnight. Horses will need stabling and feeding and camp sites must be provided.

The image of the rural life could become the theme of the Trail with agricultural fairs, opportunities to work on farms in traditional ways, smallholdings and timeshares in wild areas and woodlands.

We do not see the Trail as being wholly successful unless the whole tract of countryside through which it runs is gradually transformed to relate to the Trail as a central component of its way of life.

The schematic sketch shown here in Fig 16 gives a slight idea of the complexity of this necessary inter-relationship between the Trail and its environs. Whilst these types of suggestions can only develop over time, some will have to be encouraged from the beginning in order to be able to establish the Trail as a place out of time, where we envisage that each of these proposals and many others would be funded independently of the Trail. They would represent a diversification out of agriculture and into the leisure business. At the same time they could lead to a more interesting countryside, one which was more widely wooded and one in which there were a wider range of genuine work opportunities.

The 'image' which might be sold is one in which visitors can stand aside from their hectic pace of life in the crowded parts of the world they come from, and relax into a more basic, more "green" countryside - one which is nearer their idyll.

Judged from this viewpoint the success of the Trail will not be measured in crowded totals of travelling public but rather in how many visitors are staying and partaking of the nearby facilities or lifestyles.

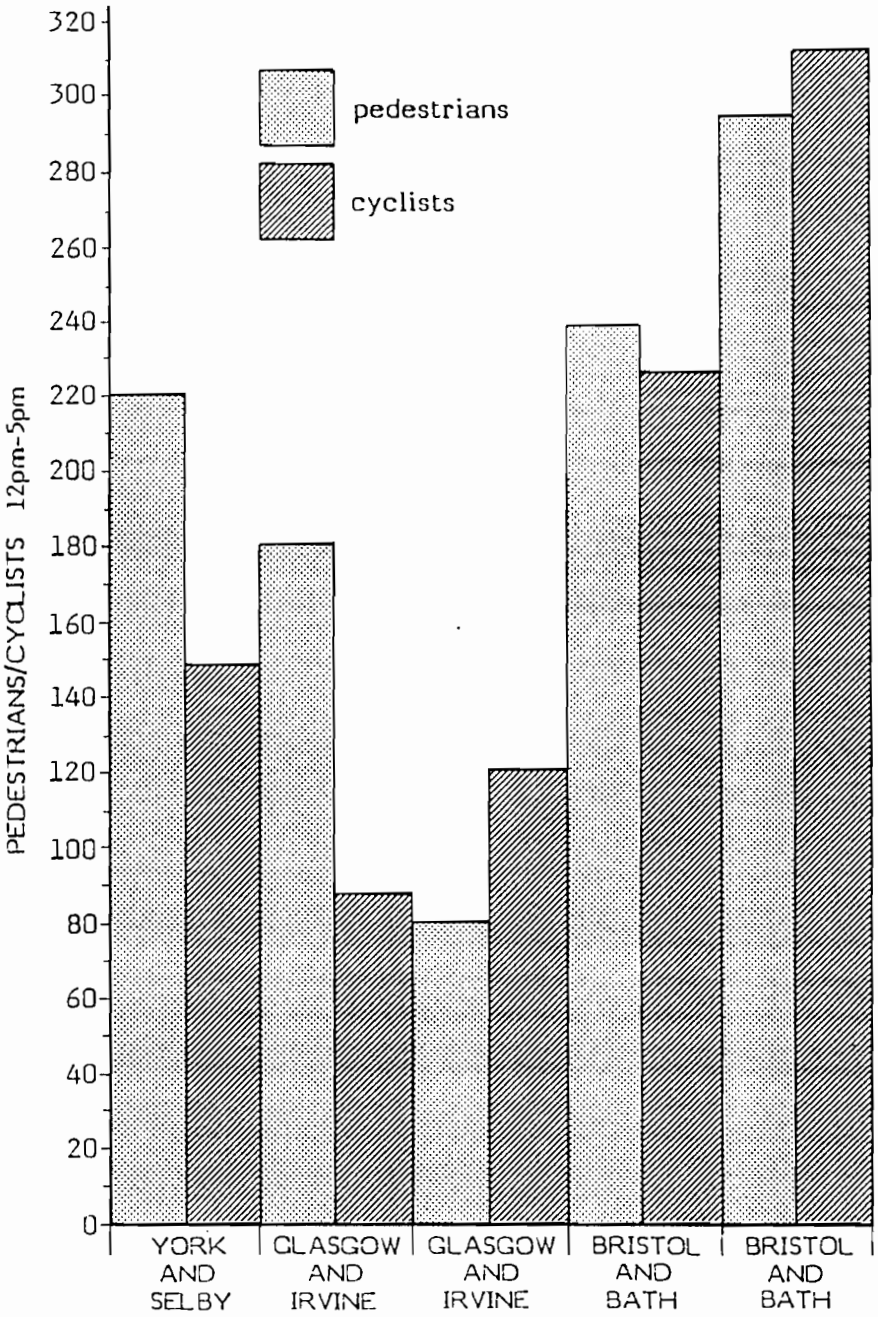
9.2 Usage of railway paths in Britain

Most railway paths in Britain have immediate access to very much larger populations. They serve as the basis for a quiet afternoon's walk out from the city, or even a weekend's bicycle ride with the family. Very little is provided in the way of additional attractions, because the level of use is found to be high without further encouragement.

Table 15 shows the usage of some established British paths. It serves only to give an indication that these features can be popular. The usage of the Great Southern Trail is hard to estimate without knowledge of the eventual ancillary attractions.

9.3 Signposting and brochures

For people to use the Trail it is necessary for them to both know about it and then be able to find it. We constantly find it amazing that despite being in existence for over 10 years, we are regularly told by local people that they have never heard of the Bristol and Bath path. To get around this problem it will be essential to ensure that the existence of the Trail is shown in all general tourist material and that a specific leaflet is available in local towns and on request. Examples of similar leaflets are shown in Appendix IV.



date	path	location of count
30/10	York & Selby	3 miles outside York
16/10	Glasgow & Irvine	In Paisley
23/10	Glasgow & Irvine	14 miles outside Glasgow
6/11	Bristol & Bath	2 miles from Bristol centre
30/10	Bristol & Bath	9 miles from Bristol centre

All counts carried out over 5 hour periods on Sundays and covered pedestrians and cyclists travelling in both directions.

The route must be signed from main roads. A variety of signs has been used in Britain but generally a small specific sign is adequate. It may be that the authorities also decide to signpost larger routes for pedestrians or cyclists along other paths or minor roads in which case the signs might be part of a longer series reaching back even to Dublin. Again the appendix gives as an example a brochure covering these longer routes. Once on the Trail some signs are helpful giving the distance to the next place of interest. These are often routed out of wood on an individual basis.

9.4 Special events to foster usage

Right from the start of the project it should be the aim to establish a series of traditions. There would be events which travelled part or all of the route at a regular time each year - a horse trek to the Listowel races, a cycle ride to coincide with a festival at either end, or a regular series of local guided walks to examine the history or the wildlife of the area. In addition we suggest that a tradition of summer maintenance work camps is established with a view to attracting people from all over Europe for a working holiday. Numerous other regular events were held on British railway paths with sponsored walks or rides commonplace.

10. ANCILLARY ATTRACTIONS

This section attempts to make a start on amplifying the ideas sketched out in the preamble to the preceding chapter on usage. There we stated that the value of the Great Southern Trail lay in its potential for acting as a catalyst to the whole rural corridor in which it runs. The chief asset of the Tralee/Limerick area lies in its quiet rural nature. The adverse side of this at present is the relatively low income from these marginal agricultural areas and consequent poor job prospects resulting in a continued loss of young people from the countryside.

The Trail could be a focus for a broadening of the agricultural base and a diversification into other rural activities which would attract the tourist. As the Trail stands as an antithesis to the trafficked road it would be wise to concentrate on catering for those visitors who tire of the rush of modern metropolis and long for a break in an idyllic image of their mind. Within this scenario the following guiding tenets might be observed:

(i) do not allow motorists to intrude into the whole corridor. Downrate roads rather than encourage more traffic. The ideal would be a complete absence of the concept of the car for the whole holiday.

(ii) retain inefficient and "quaint" methods of agriculture. Take advantage of the rise of the green movement and the yearning for chemical-free, unprocessed foods. Offer working holidays on farms of all descriptions - dairy, market vegetables and fruit.

(iii) follow the "green" image of Ireland still further by diversifying into forestry for timber and lakes for fisheries. Offer holidays working timber in the woods or in craft shops. Offer fishing trips in the lakes and rivers of the area.

(iv) take advantage of the natural and historic features of the area to allow people to feel a closer link with their past.

(v) encourage all manner of "craft" industries such as pottery, weaving, painting, printing, brewing, baking, etc. - but all on a participative basis such that along the length of the Trail there are a whole series of camping places and holiday buildings where courses are run or the visitor can participate in actual rural life. In other words the concept of support for the Trail user should go far wider than merely providing horse-riding centres, bicycle hire or bed and breakfast establishments.

This whole subject of developing the overall corridor of the Great Southern Trail lies beyond the scope of this report on the construction of the Trail itself. Some aspects do however affect the work to the Trail.

10.1 Specific features

Along the length of the Trail a number of points of interest have already been identified, for example Castle Matrix. Each of these should be provided with a direct and if possible specific link to the path. They could also be a focus for a camp site including grazing for horses.

10.2 Accommodation and camp sites

We suggest that camp sites should be established at about 5 mile centres in order that even the walker has a range of choice. The sites should be readily accessible from the Trail and need only have fairly limited facilities - grass, water, toilets with access to a farm for produce. If possible the project manager should identify which farms will be willing to develop a camp field so that as the Trail is built the sites may be closely linked. Fig 9 is a large scale plan of part of the railway showing how awkward shaped fields and features might be developed to take advantage of this tourist business.

10.3 Use of railway buildings

This railway includes a large number of remaining buildings comprising 20 level crossing cottages and 6 station complexes. Many of these have been sold but we suggest that the remaining cottages are developed to provide accommodation along the route, except at those places where they can be linked into another facility such as a hire centre. Station buildings are left at Listowel and Newcastle West and these are the obvious places for encouraging rural activities and crafts accompanied by rather more accommodation so that visitors may come for working holidays. We recommend that the negotiation with Irish Rail will ensure that all remaining buildings are in fact transferred to the Great Southern Trail.

10.4 Mile posts and sculpture

A route of this length needs mile posts to pace out the length of the journey. These in time can become part of the essential character of the Trail. On a number of British railway paths we are pursuing landscape sculpture work as an additional means of introducing variety, points of interest and interpretation. These works may be carried out in planting, or earthworks, as well as conventional materials. We recommend the appointment of a number of "sculptors in residence" working on the Trail so that over the years a memorable collection of work is built up as at Grizedale Forest in the Lake District. Two themes spring to mind - one a reflection of the Celtic art left as rings on the ground or rock carvings, and the other a series of wayside "shrines" to commemorate some happening, even some very small event, at that particular place in the world. A series of shrines which capture the

This curving mass of earth, 984 feet long, was sculpted by Andy Goldsworthy on a derelict railway cutting at Chester-Le-Street, County Durham. Cycle paths will run alongside the "worm" — the lone cyclist is David Gray of Sustrans, a company specialising in this work.

loyalties of the local people, as well as visitors, would be a sure way to realise popular maintenance of the Trail. Approaches should be made to the Irish Arts Council to fund the sculptors in residence in the first instance.

11. MAINTENANCE, METHODS AND COSTING

The Trail will need continued maintenance - repairs to its surface, care of its vegetation, mending of fences and works to the bridges. We suggest that the maintenance team is composed as follows -

Recommended Maintenance Team for Great Southern Trail

General Manager
Maintenance Ranger
2 part-time summer workers
1 part-time Typist/Secretary

On this minimal basis the general manager would be responsible for liaison with all neighbours and those providing services for the Trail, with co-ordinating events and summer camps, with publicity and with the management of the rest of the staff. The maintenance ranger would be responsible for carrying out most of the basic repairs to fences and drains, for co-ordinating the part-time summer workers and the summer camps, and for letting routine maintenance such as grass cutting to local farmers. The part-time secretary would deal with the paperwork. The maintenance team should be based either at Listowel or Newcastle West, and it would be best if the part-timers lived near different parts of the track. This minimum workforce is based upon the assumption that policies designed to get the general public and visitor involved in looking after the path will be followed.

The objective of the maintenance programme will be to create the feeling of a rural lane rather than a manicured suburban road. For instance, cutting back the verges will tend to happen after wild flowers have sown their seeds. The actual maintenance programme should be drawn up by the engineer and landscaper on the construction team.

The annual maintenance cost of this work might be £60,000 made up as follows:

Wages	£30,000
Expenses	£10,000
Tools and materials	£10,000
Specialist contractors' costs	£10,000
	£60,000

In addition, a contingency sum should be allowed to cover any large or unforeseen problems.

Whilst most of this cost will have to be provided by a revenue fund it might be possible to generate some income by

(i) the general manager spending some time on the design and promotion of other routes (say £5000)

(ii) making charges to the major commercial benefactors along the route, eg. riding stables(say £10,000)

(iii) Seeking voluntary contributions from path users and tourists (say £5,000)

However this leaves £40,000/annum maintenance costs to be found from a general tourist and recreation budget.

12. SUMMARY OF APPENDICES

The appendices contain details of the railway and the design of the Trail which if included in the main text would have made it too cumbersome to use. They also contain discussions on existing and proposed attractions, together with bibliographies and details of other paths in Britain. Lastly, bound separately, are detailed maps of the railway and the colour slides taken during the survey. These appendices should be viewed both as an integral part of this report and as a basis for the actual construction works. We anticipate that whilst the number of details to be resolved will be considerable, the general arrangements put forward here will be a satisfactory basis for their resolution.

13. SUMMARY AND CONCLUSION

This will be a difficult project to justify solely on the basis of an individual tourist feature. Rather it should be seen as a catalyst for a whole series of rural activities which together become recognised as a "green" holiday area particularly tuned to changing priorities in the developed world. We recommend that the Shannon Development Company now purchase the whole of the North Kerry railway, together with what buildings are left belonging to Irish Rail and that they set in motion the procedures described to manage, to fund, to construct and operate the Great Southern Trail. In parallel with this, the development and encouragement of a corridor-wide range of associated activities and attractions should be actively pursued to take advantage of this quiet rural countryside to attract visitors and benefit the local population.

The Great Southern Trail

A report on a railway path from Tralee to Limerick

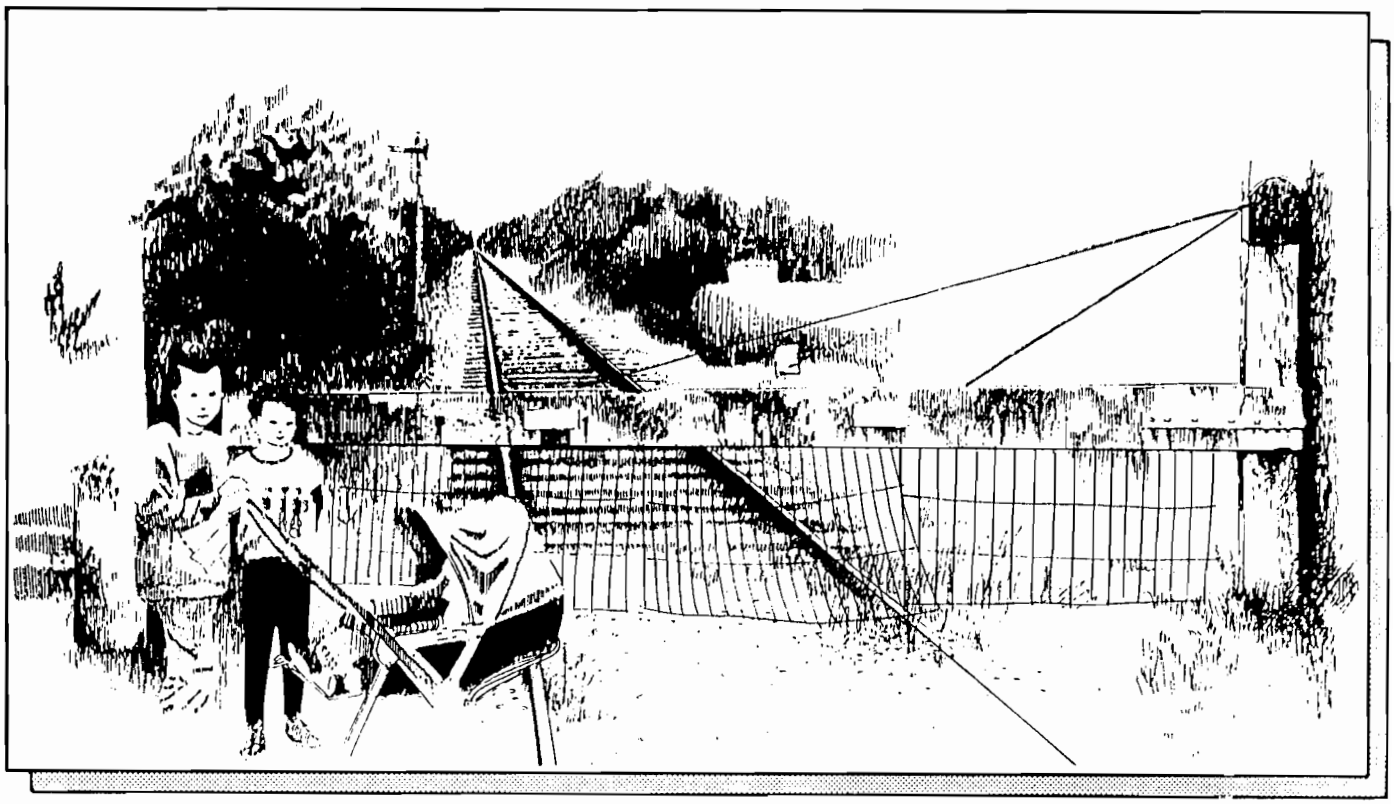
APPENDIX I

APPENDIX I : NORTH KERRY RAILWAY : SCHEDULE OF BRIDGES & CROSSINGS

Summary of structures and features from Tralee to Ballingrane

1.	Length - 52 miles.	
2.	*Public road bridges over -	13
3.	Accommodation bridges over -	5
4.	Public road bridges under -	2
5.	Road bridges under span removed -	4
6.	*River bridges -	4
7.	Cattle underpass/accommodation bridges under	20
8.	Culverts (numbered ones only) and small streams	23
9.	Public road level crossings -	30
10.	Farm access roads -	16
11.	Field accommodation crossings -	145
(A number of these may be in regular use as farm access roads).		

*omitting the structures acquired by Limerick County Council for the construction of the Rathkeale Bypass.



level crossing gate

railway mileage	miles from Ballingrane	bridge or gate number	* = public road W = works access	item	
42¾	0	G212	*	Rock Street Level Crossing & start of Tralee Station	
		G211		Gallowsfield Level crossing	preferred route in adjacent fields
42½		G210		field crossing	
42¼		G209		crossing	
42					
41¾	1	G208		field access	
		G207		field access	
				junction with Fenit Branch	
41½		G206		farm access	
41¼		G205		field access	
		G204		farm access	
41		G203		field crossing	
		G202		field crossing	
40¾	2	G201		farm access	
40½		b114	*	public road under bridge removed - low steel	
40¼		G200		farm access	
40		b113		hotel bridge removed - low steel	
39¾	3				
39½		b112		road over, masonry - good views	
39¼		G199		field	
39		G198	*W	Liscahine Crossing	
38¾	4	b111		river & cattle crossing - steel span	
38½		G197		field crossing	
		G196		farm access	
38½		G195		field crossing	
38¼		G194		" "	
38		G193	*	Ardfert Level Crossing (open sewerage on track)	
37¾	5	G192		field crossing	
		G191		field crossing	
37½		b110	*	public road under low steel bridge	
37¼		G190	*	Tubridge Level Crossing	
37					
36¾	6	G189		field crossing	
36½				Kismore rings	
36¼					
36		G188	*	Ballynahine Level Crossing	
35¾	7				
35½		G187		Knockreagh Level crossing	
35¼		b108		river crossing & grain silos - standard steel	
35		b107	*	public road over - brick arch	
34¾	8	G186	*	Abbeydorney Station Level Crossing	
34½		b106		river bridge - steel span	
34¼		G185		field crossing	
		G184		"	
34		G183		"	
		G182		"	
33¾	9	G181		"	
		G180		"	
33½		G179		"	
33¼		G178		"	
		G177		field crossing	
		b105		river bridge	
33		b104		culvert	
32¾	10	G176		farm crossing	
		G175		farm crossing	
32½		G175		Killaspictardin No. 2 level crossing	
32¼		G174		" No. 1 level crossing	
32		G173		field crossing	
31¾	11	G172	*W	Aghacoora Level Crossing	
31½		G171		farm crossing	
31¼		G170		field crossing	
31		G169		farm crossing and earthworks	
30¾	12	G168		field crossing	

railway mileage	miles from Ballingrane	bridge or gate number	* = public road W = works access	item
27	42½	b53 & b54	*	public road over - double masonry arch
				junction with line to Tralee & Newcastle West Station
26¾				
		G35		field access - iron gate
		b52		River Daar bridge
		G34		iron gates
26½	43	G33		2 gates on south side - rarely used
26¼		G32		iron gates - rarely used
		G31A		recent track cut across path, railway in shallow cutting
		G31		field access - regularly used & horses on line
26		b51		accommodation bridge under - masonry - 3m high
25¾				
		G30		gate only on south
25½	44	G29		regularly used by tractor, no gates & cattle on line
25¼		G28		track to houses
		G27		field access
25		G26		field access
24¾		G25		" "
		G24		" "
		b50	*	public road over - masonry arch - 15'11" span
24½	45			Ardagh Station now private
		G23		field access
24¼		G22		" "
		LC2		level crossing to private house
24		G21		field access
23¾		G20		field access
			W	Works access
		b49	*	public road over - masonry arch
23½	46	b48		stream bridge under - timber & steel - very small
23¼				
23		G19		field access
22¾				
		G18		" "
22½	47	G17		" "
22¼		G16		" "
		b47	*	public road over - masonry skew
		G15		field crossing
22		G14		" "
		b46		accommodation under - high stone arch sufficient for
21¾		G13		field crossing - well used tractors
21½	48	b45		accommodation over - stone arch
		b44		cattle under - stone arch
21¼		G12		field crossing
21				
		b43		cattle passage under - low iron & timber - 2.8 span
20¾		G10		field crossing - iron gates little used (G11 gone)
		G10a		well used new crossing
20½	49	b42	*	public road over - masonry arch
		b41		accommodation bridge under - masonry arch
20¼		G9		field crossing
20				Proposed terminus of Great Southern Trail
		b40	*	public road over masonry arch. Note this is the start of the proposed Rathkeale bypass which will involve the demolition of this bridge
		b39		mill race under - 45° skew steel & timber - 5.3m span
19¾		b38		cattle pass under - timber deck on 300 x 200 steel beams 2.3 span
		b37		River Keale bridge - 2 large lattice spans
19½	50	G8		field crossing - recent steel gates
		G7		iron gates - little used
19¼				Rathkeale Station
19		b36	*	public road over masonry arch. Again to be demolished as part of Rathkeale bypass
18½	51	G6		field crossing
18¼		G5		" "
		b35		culvert - high stone arch - stream recently excavated
		b34		cattle pass under - low stone arch
18		G4		field crossing
17¾		LC1	*	Ballingrane public road
		G2		field crossing
17½	52			junction with Limerick/Foynes railway

section bought by Limerick County Council

section excluded from main Trail

railway mileage	miles from Ballingrane	bridge or gate number	* = public road W = works access	item
18¾	24	b91		accommodation over - high masonry arch
18½		b90		accommodation over - masonry arch
		b89		river bridge - masonry culvert
18¼		B125		field access
18				Kilmorna Station (sold privately?)
		G124		open crossing
		G123		used along track from G122
		G122		well used
		G121		well used
17¾	25	G120		accommodation bridge over
17½				
17¼		b87A	*	accommodation bridge over (concrete beam and slab)
		b88		cattle pass under - masonry arch
		G119		
17		b87		river bridge - high masonry functioning as a cattle pass?
16¾	26	G118		well used farm track
		G117		" " " "
16½		G116		" " " "
		G115		farm access
16¼		G114		farm access
		G113		" "
16		b86		river bridge
15¾	27	G112		
		G109		well used track with lane up from b85
15½		b85		accommodation road under - border Co.Kerry & Co.Limerick - 3m steel span
		G108		field access
		G107		farm track - well used
15¼		G106		field access
15		G105		field access
14¾	28	b84		stone culvert - ruined castle to south of track
		G104		field access
14½		G103		field access
		G102		field access
14¼		b83		river under steel span - 12m plate girders
		b82	*	road bridge under 6.5m span removed
14				Abbeyfeale Station
		G101		field access with track or path) open grassland and
13¾	29	G100		" " " " " ") no hedges
13½		G99		note problem of River Allaghaun erosion - path could readily be diverted to the north if necessary
13¼		G98		field access
13		G97		field access - ?G95 & G96
12¾	30	b81		stream culvert stone arch
		b80	*	public road over - masonry arch - b78 & b79 probably both culverts
		G94		field access
12½		G93		" "
12		G92		" "
11¾	31	G91		" "
11½		G90		field access
		b77		cattle passage - standard steel
11¼		G89		Ballybehy Level Crossing - cottage demolished
11				
		b76		river bridge - standard steel
		G88		field access
	32			Devonwood Station
10¾				additional accommodation crossing
10½		b75		public road under - standard steel
		G87		field access
10¼		G86		" "
10				
9¾	33			

railway mileage	miles from Ballingrane	bridge or gate number	* = public road W = works access	item
		b74		accommodation bridge under - standard steel
9½		G85		field access
		G84		" "
9¼		G83	*	Tullagoline Level Crossing cottage demolished
		G82		field access
9		G81		field access
		b73		culvert
		G79 & G80		farm road crossing at same site?
8¾	34	G78		field access
		G77		field access
8½		G76		farm level crossing (note G74 & G75?)
8¼		G73		field access
		G72		" "
		G71		" "
8		G70		" "
		G69		" "
7¾	35	b72	*	public road over - masonry arch
7½		b71		accommodation under - standard steel 3m span
		b70		culvert - masonry under high embankment
		G68		(note G67-G62 apparently missing)
7		b69		culvert - masonry
6¾	36	G61		field access
		b68	*	public road over - masonry arch
6½		G60		field access
6¼				
6		b67	*	public road over - Barnagh Station - masonry arch, sharp bends in road
5¾	37	b66	*	public road over - Tunnel 377 ft long
		G59		field access
5½		b65	*	public road under - masonry arch 5m skew 14 ft heads
5¼		G58		field crossing
5		G57		field crossing
		b64	*	public road under - steel beams - 8m span on skew 16'6" headroom
		b63		3 x 32ft on steel trestles - Ferguson's Viaduct
4¾	38	G56		field crossing - 1 in 64 gradient
4½		b62	*	accommodation road under - very high masonry arch - 11'7" span
4¼		b61		cattle passage under - standard steel
4		G55		field crossing
		G54		Glenagown level crossing - no cottage
		b60		river crossing - standard steel
3¾	39	G53		field crossing
3½		G52		" "
3¼		G51		" "
		G50		field crossing
3		b59		field crossing
2¾	40	G49		" "
		G48		" "
2½		b58		masonry culvert
2¼		G47	*W	Dromin level crossing
		G46	*W	Ashgrove level crossing
		b57		culvert
2		G45		well used - no gate
1¾	41	G44		west gate gone but crossing unused
1½		G43		well used - no gates
1¼		G42		field access - iron gate
		G41		field access - used by livestock
		G40		field access - iron gates unused, fields overgrown
		b56		river under - 2.5m above stream, standard
1		LC3	*W	Churchdown level crossing (cottage)
¾	42	G38		field access - rarely used
		b55	*	public road over - masonry arch
½		G37		field access - wrecked car
¼	42½	G36		field access - rarely used

APPENDIX I : North Kerry Railway : Historical background and schedule of bridges and crossings

II. Historical background (from Patrick J O'Connor, Limerick and Kerry Railway Society 1986).

Construction and opening

After Limerick city had been connected to the Irish railway system in 1848, the onward link to Tralee was forged in three stages in the period 1858-80. Firstly, in 1858, the Limerick and Foynes Railway commenced operations via Ballingrane. This was followed some three years later by the formation of a company known as the Rathkeale and Newcastle Junction Railway (R. & N.J.R.) which sought to join Newcastle with the Foynes line at Ballingrane. Progress proved slow, due in large measure to an insufficiency of financial backing by the English controlled company, and in a belated attempt to expedite the project, a 'completion fund' was launched in November 1865. In less than two months the bulk of the £5,000 necessary for completion was raised locally. Even before its inception therefore, local and regional interests had identified positively with a new railway in the making, and the 10 mile stretch from Ballingrane to Newcastle was opened for traffic on January 1 1867.

Newcastle remained the terminal station for several years thereafter during which schemes to link Limerick with Tralee via either Foynes or Newcastle were discussed. Eventually, a proposal of 1865 which had been shelved was activated as the Limerick and Kerry Railway (L. and K.R.), and in the closing years of the 1870s the 43 mile section from Newcastle to Tralee via Barnagh was built. It was opened on December 20 1880.

Among the three companies involved in running and maintaining the line a pattern of divided proprietorship continued through to the new century. Finally, in 1902, the R. & N.J.R. and the L. & K.R. were absorbed into the Great Southern and Western Railway (G.S. & W.R.).

In this century sufficient evidence may be adduced of the capacity of the Limerick-Tralee railway to serve the needs of the west Limerick/north Kerry region. For example, arising out of the Newcastle West August Fair of 1916 over 90 wagons of cattle and sheep were transported to onward destinations by the G.S. & W.R., and at peak four passenger trains and one goods train operated daily to and from Limerick.

However, the early impetus failed to be maintained. Following on the 'emergency' (1939-45), operations were scaled down to such an extent that, as we embarked upon the expansive decade of the 1960s, prospects for the railway appeared paradoxically bleak.

Closure

A decisive blow to viability was struck in 1963 when, apart from occasional specials, passenger services were withdrawn. Further retrenchment followed. In 1972 goods trains ceased running through to Tralee as once again Newcastle reverted to its former role as terminus. After that, closure came in two stages. On October 31 1975 the last revenue generating train entered Newcastle with one wagon of cement for a local firm; on January 10 1977 freight services were withdrawn on the Listowel-Tralee section of the line.

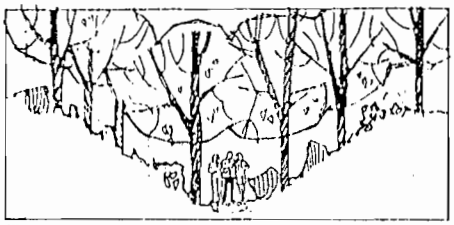
The Great Southern Trail

A report on a railway path from Tralee to Limerick

APPENDIX II

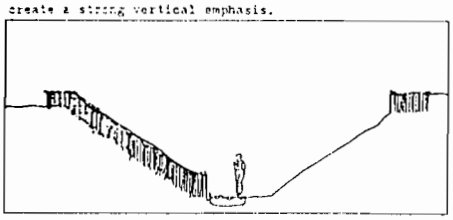
BROAD PLANTING TYPES

ROUTE IN CUTTING



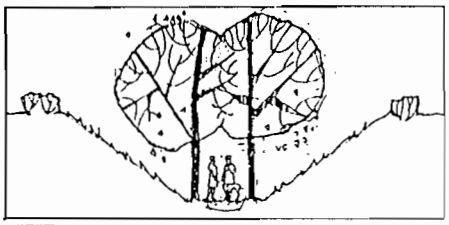
WOODLAND

Plant to create woodland with varying canopy, understorey and field layer, using all three elements to establish changing spatial interest, disguise side slope by planting tree species only on lower levels, together with a dense understorey, accentuate cutting by omitting understorey planting trees species at close centres to create a strong vertical emphasis.



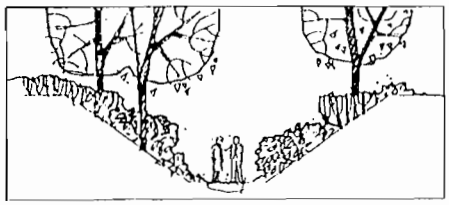
HEDGEROW

Introduce hedgerow geometrically to hint at the landscape beyond the cutting, and to create a series of 'rooms', emphasize 'doorways', by small tree groupings within the hedge, run the hedgerow close to the path for long sections then sweep it up the cutting to disappear over the top and beyond to link with existing.



AVENUE

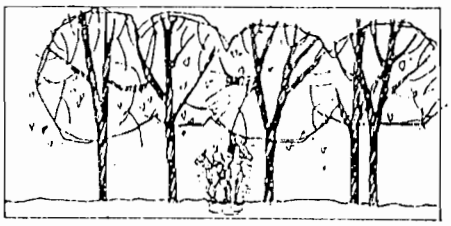
Plant close to cycleway to emphasize the sense of enclosure and create a tunnel-like effect. Manipulate planting to create false perspective for the purposes of emphasizing and framing focal points and confusing the sense of distance along long straight stretches of the route.



ESTATE

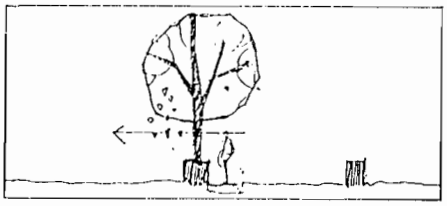
Plant utilizing estate like species, particularly in the shrub layer, in order to suggest the character of the wider landscape through which the cyclist passes. Such plantings will be of a more ornamental nature and may co-incide with stopping points.

ROUTE AT GRADE



WOODLAND

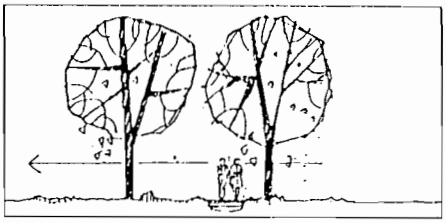
Plant to control views out, omit understorey species to create vistas, panoramas and glimpses of focal points and the general landscape or urban scenes, articulate understorey plantings to create sense of enclosure and to establish a series of varying spaces where views out are not desirable.



HEDGEROW

Create a low enclosure pattern to link with the existing field pattern, with angular changes of direction to establish a low level visual design, linking to the landscape beyond.

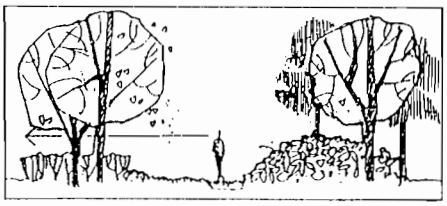
Utilize tree groupings to emphasize changes in direction and to establish a sense of enclosure overhead where long stretches with views out exist.



AVENUE

Avoid parallelism with cycleway along straight stretches: establish an undulating line which will close long on line views and direct vision to the landscape beyond.

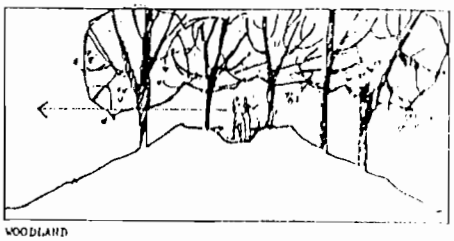
PLAN OF AVENUE



ESTATE

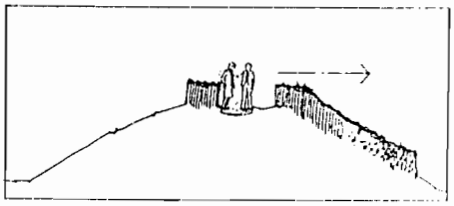
Plant groups of ornamental tree species with associated shrubbery to reflect the character of the overall landscape through which the route passes. Locate these plantings to direct views towards the existing vegetation which such on-line groupings echo.

ROUTE ON EMBANKMENT



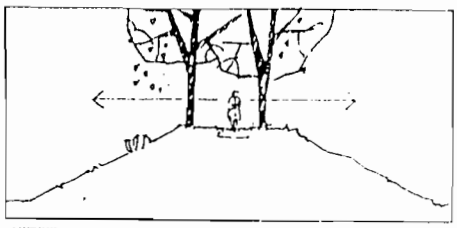
WOODLAND

Plant with consideration to the overall landscape in addition to the route experience: to reduce the impact of the embankment create an undulating outer edge, utilize tree species only at base of embankment to give the impression of a shelterbelt: permit views out by low planting or tree species only at the top of embankment.



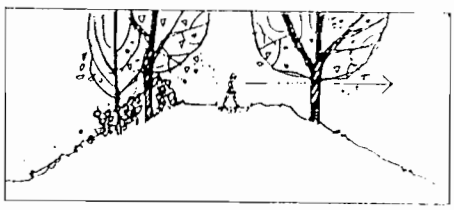
HEDGEROW

Establish the hedgerow close to the path to give a sense of low enclosure with branches extending to link to existing hedges outwith the site to reflect the wider landscape pattern and give the cyclist a feeling of 'belonging' to the landscape rather than isolated, elevated and divorced from it.



AVENUE

Plant line to meander, i.e. not follow cycleway necessarily, but maintain constant width to obscure forward views and create termination points to vistas established along long straight sections. Possibility for branching off to link with the wider landscape.



ESTATE

Establish specimen tree and shrub groupings to create a sense of enclosure, provide variation in spatial sequence, direct views out to the wider landscape and to link with existing off line vegetation.

APPENDIX II

LANDSCAPE STATEMENT USED FOR LOCHWINNOCH LOOP LINE 1988

A Railway path landscape design - policy and methods

The design and construction of Sustrans' railway paths, accesses and controls ensure safe passage on high capacity, multi-purpose routes that require little maintenance. These guidelines suggest landscape design policies and methods appropriate to our aims and resources.

Landscaping involves environmental improvements to meet the many other demands on the landscape. Satisfaction of demand will encourage use and extensions and quell those that object to our management of land. Methods must not conflict with our main aims. Materials must be cheap, robust and close at hand.

Aspects

- Sculpting stimulating **'travelling landscapes'** from existing landforms and the dynamic pattern of 'mass' and 'space' created by lineside vegetation.

- Building **'identity landscapes'** around accesses, drawing full advantage from existing materials, vegetation and features.

- Using the expression of **natural vegetation processes** as the driving force of design of mass/space patterns, screens and covering exposed soil.

- **Reinstating disturbed areas** immediately after path construction.

Resultant landscapes will satisfy most path users and concerned conservationists. We must recognise that old railways are valuable, wild, linear habitats that yield vital, dynamic components of the pleasure of travel.

Methods

1. **Clear indication of routes/access from draft planning applications.**

2. **Preliminary survey of the route**

   Assess the value of existing landscape components and predict changes as natural succession and construction alter their contribution. Compare what exists and what is needed. Will the present contribution continue, develop or decline? Will a vital component develop naturally or will we need earthworks or planting? Can we develop existing features.

   'Components' include special habitats, views, features, screens and contrasts. A balanced approach is essential. Build up practical design maps showing identity landscapes, required mass/space in the landscape, valuable habitats and features.

3. Route design

Judicious route design is a landscaper/ecologist's main job. We can steer the path clear of special habitats using distance and subtle barriers to dissuade access. Ecological, engineering, safety and maintenance considerations are paramount but single options are rare. Seek compromises that maintain and expand the contrasts given to the travelling landscape by existing components; exposure/shelter, light/dark, height/depth, rough/smooth, wet/dry, clean/dirty, wild/kempt. Contrasts can be sharp and surprising or smooth and satisfying, propelling the traveller onwards in a rhythm of anticipation and discovery.

Route design must compliment landforms, bridges and vegetation to conceal the inherent direct and level nature of railways.

Get off the trackbed whenever advisable through lineside trees, beside drains, onto the tops of cuttings and beneath banks, exposing the traveller to the environment's extremes, exploiting its variation.

If options are few, punctuate the landscape with local artificial features that divide the route into compartments and generate a travelling rhythm. Vary the gradients and direction along and across the track by a balance of local cut and fill operations. Generate a rhythm of features with a theme. Expand on any vestige of interest, drawing it close, keeping it at a distance, bringing it back, (e.g. water, walls, telegraph poles, hedges, fences, crops, adjacent bridlepath).

Look upon planting as a method of reinforcing the contrasts built into the travelling landscape by judicious route design. Plant more trees if contrasts are scarce.

4. Identity Landscapes

Accesses are at safe, strategic points on the route. Conglomerations of fences, walls, chicanes, gates and surfaces are too often unco-ordinated and intimidating. Access landscapes should be open for security and mirror local construction methods and materials to form an appropriate transition between road and railway path. Continue pavement landscapes along access paths, put white stones in the asphalt, continue existing stonework and plant the same type of plants.

Widen the junctions as funnels and set the controls back from the boundary. Each access will derive a different yet appropriate identity from the site.

5. Screens

Screens are intended to prevent overlooking and back-access, not to blinker the traveller from supposed ugliness in the landscape (some exceptions). Use distance and existing features efficiently since artificial banks and plantings cost money, take time and delay plant colonisation. Chain-link fences, 1.0 - 1.8 metres high, covered in evergreen climbers can be compact screens 'fitted into' existing vegetation to give density at an appropriate height. If needed, plant hedges of Hawthorn, Blackthorn or Roses that are dense, thorny and repellent even without leaf. Ideally you could mimic the composition of local hedges with an evergreen component of Ivy and Holly. Never plant trees as screens like Cypress and Poplar since they create management problems.

6. Moonscaping

Reinstate disturbed areas for erosion control and fast good looks as a close rearguard to path construction. Some standard techniques have arisen:

i) Turf a metre up any slope beside the path to catch falling debris and define the path edge.

ii) To protect and define path edges on levels and rises, rake ballast/soil to build a level shoulder 200 - 400mm wide along path edges. Blind this with fine soil/cinder/sand of low fertility (not topsoil or clay). Prepare and grass seed.

Alternatively, rake back rubble and turf 300mm wide along pathsides. This method gives good looks faster, but runs the risk of introducing fertile soil and coarse grasses that will demand more mowing and grow into dust paths.

iii) In 'identity landscapes' prepare and grass-seed open areas of trackbed and slopes beyond the pathside turf. Minimise necesary maintenance by sowing appropriate seed mixes on existing or imported low fertility mineral soil to create a green look from a distance, not a dense sward beyond our resources to control.

Standard landscape details for 'catch-turfing', protecting path edges and grass-seeding are in preparation.

7. Segregation of railway paths and bridlepaths

Segregation is vital to protect railway path surfaces. Avoid monontony by using several methods appropriate to site conditions.

- In **cuttings,** redistribute ballast and soil to separate paths by a green slope that varies in gradient and height.

- On **embankments and levels,** redistribute ballast and soil to separate paths with a central green mound that varies in height and width.

- Use **existing lineside trees and scrub** as mass barriers and screens.

- Use **retaining walls, station platforms and other features.**

- If **space is limited,** either build a wide dual-use tarmac path or erect thin barriers, such as timber fences or steel balustrades on bridges.

Efficient single machine operations at Consett and Bridge of Weir have formed segregated paths and replaced soil simultaneously.

8. Scrub clearance and tree management (separate document)

9. Planting design, methods and priorities

Guidelines will follow if in demand, but are fairly site-specific.

B Specific features

After closure of railway lines, more competitive plant communities develop a mosaic of higher, denser scrub and young woodland, usually dominated by willow (salix caprea), sycamore and hawthorn. Scrub obstructs path construction, drains, sightlines, views, free passage and damages stonework. Scrub is a wildlife habitat, forms screens and is a vital component of the travelling landscape. Release of the succession through scrub often yields attractive trees and woodlands. These guidelines stress the advantages of:

- total clearance of scrub from the trackbed in cuttings, on rock faces and by masonry and services.

- selection of trees off the trackbed in cuttings and on all land on embankments, levels and in wet areas.

- maintenance of open areas and selected trees on single and double track railway lines converted to railway path routes.

Cuttings

Scrub regenerates fast and dense in cuttings. Trees on the trackbed conceal the sides and give too much enclosure. Clear all scrub on the trackbed in cuttings. In cuttings with dense regeneration, the trees on the slopes usually lean and overhang the route. Every trackbed clearance must be balanced by selection of stable trees on the slopes.

Rock faces

Rock faces support sparse, small trees rooted in soil in cracks and on ledges usually fairly safe and stable until trees are damaged or die. Access problems hinder management. The status of individual trees is difficult to assess. Ease the problem by removing trees on a 7-10 year cycle so they never reach a size that gives problems. Never strip the rock of all vegetation since rock face habitats yield some of the most interesting plants, animals and experiences on routes. Vegetation is sparse exposed on rock, damp and luxuriant in nooks and crannies, more like a gallery than a landscape. Total clearance is vandalism.

Scree

Select stable trees to stablize loose material and shelter the ground hastening the establishment of ground cover plants. Cut trees on the same cycle as rock cuttings but without removing the roots or using poison. Trees on scree give a 'timberline' landscape.

Bridges, stonework and services

Cut and poison all trees within 2 metres of these features to avoid damage by roots. If a tree within 2 metres is plainly not a risk then leave it.

Embankments and levels

Retain trees on the trackbed on embankments to span the gap in woods and hedges split by the railway, especially in open farmland and at either side of bridges spanning wooded riversides. Retain any tree on the trackbed on long

exposed embankment and where the landscape lacks trees.

Select trees on embankment slopes to stabilize soil, reduce privacy problems, afford shelter and wildlife habitats. Soil on slopes is comparatively deep and fertile so trees will be safe and stable. Note that trees on embankments can cut the light out from adjacent properties. Selection of trees on embankments and levels should follow a practical design for 'mass' and 'space' in the landscape. On these formations there is a dire need for contrasts in the landscape.

Wet areas

Willows grow fast on poorly drained trackbed and will never be replaced by more desirable trees. Wetland habitats can be maintained open with a wooded edge by regular clearance or by planting alders before willows can recolonise. Alders (alnus glutinosa) are attractive, small, manageable wetland trees easy to establish in poor soil, and are quite rare on railways because of good drainage in the past.

Techniques and tools used will depend on size of operation, money, labour and tools available. These guidelines stress the broad essentials.

i) Scrub clearance

How much to remove?

- in clearance of the trackbed remove all parts of trees
- in cyclical clearance of rock faces remove as much of tree as access permits, but use no poison.
- on scree, cut as coppice and use no poison.
- within 2 metres of masonry and services, cut stumps as low as possible on large trees, flay and poison the stump, remove all parts of small trees, without damage to masonry and services.
- when removing redundant trees on the verge of cuttings, embankments and levels; cut stems as low as possible and split with a billhook, apply poison only to stumps in the open.

Disposal

Large scrub clearance operations yield large volumes of branchwood and willow not easy to sell as firewood. On-site burning takes a lot of time, is pollutive and risky. The hire of chipper machines (driven off tractor PTO) is recommended as a fast, clean method of reducing a large volume of wood into chips. Chips can be used to surface adjacent bridlepaths or as a mulch.

Techniques and Maintenance

Scrub will recolonise cleared areas outside the path verge mown twice each year to control grass. Design a programme of clearance cycles to maintain open areas following practical designs for 'mass' and 'space' in the landscape. Maintain open areas prone to scrub invasion by the following methods:

- Prevent regrowth from cut stumps by splitting/flaying and light application of poison.

- Chain-flail open cleared areas on the trackbed every third winter.

- Remove trees from rock faces every seventh winter, shorten the cycle if trees grow fast, use ladders where safe, long-reach pruning shears/saws, enlist the help of local climbers who are usually keen on outdoor work and any excuse to use their equipment.

- Plant alders on watersides to exclude willows

- Maintain open areas of verge on levels and easy slopes in tandem with trackbed clearance cycles every third winter.

- Maintain open areas on steeper slopes by hand clearance or controlled burning every 5 years.

Larger areas on slopes will pose more problems. Slopes in cuttings are stressed environments that yield diverse and often rare plant communities. Local wildlife groups will be keen to manage (or buy?) these habitats if long-term management agreements with few constraints are allowed. Slopes of embankments are resource-rich environments that require more tree management. A large proportion should be managed as woods comprised of selected trees (see tree management).

Maintain essential open areas on banks following a programme involving;

- hand clearance and burning by ranger's team/conservation task forces

- management agreements that demand effective tree management.

ii) **Tree management**

Which trees to select from scrub and young woodland?

- Cut any tree within 1 metre of the proposed route of path.

- Cut any trees likely to fall on the path; if they lean more than 30 degrees, have obvious soil-heave when shaken, or are dead or badly damaged.

- Cut any sycamore or willow that plays no part in a screen, woodland link, habitat diversity or slope stablisation.

The number of selected (remaining) trees will depend on the age, species, initial density and status of trees. Further removals to give space to selected trees can only be decided on site. Broad guidelines for desirable spacings are misleading.

5 basics for thinning hardwoods are:

- attain the final spacing gradually selecting trees perhaps every 8 years.

- assess stability, safety and damage to each tree each time.

- look at the canopies not the stems, thinning heavily so that you leave a fair gap between the outer twigs of adjacent trees.

- heavy thinning allows long cycles but if too many trees are removed the ground is ripe for the establishment of more trees that have to be managed.

- do it in winter.

- take your time.

Select indigenous species that allow flexibility in management;

- frequent local seeding/regeneration.

- tolerate coppicing.

- open canopy allowing grass to grow underneath

- saleable timber or other product.

- any rare species or interesting tree

Selection of small trees will ease future management. (e.g. hawthorn, rowan, birch, gean). Select larger trees like oak, ash, lime and beech where their is plenty of space for expansion and felling.

Economic wood harvests will suffer from inefficient haulage routes. Select large trees where haulage routes are short, adjoining roads and other woods, running above farms (houses, pubs, businesses?) likely to buy wood 'over the fence'. Otherwise cut wood can rot on site or be stacked for later use in the fences or elsewhere.

The Great Southern Trail

A report on a railway path from Tralee to Limerick

APPENDIX III

APPENDIX III

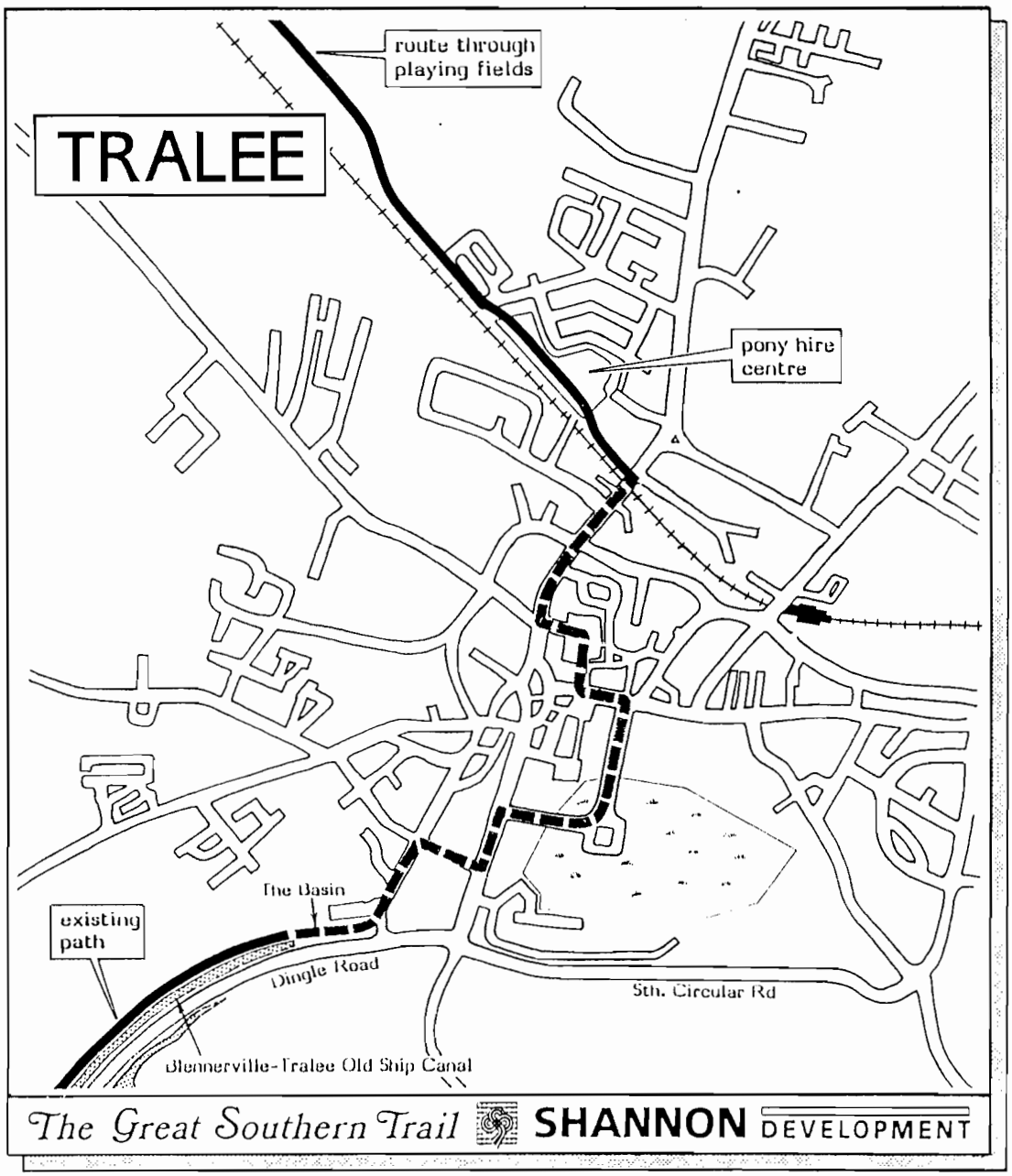
CONSTRUCTION DETAILS

A. PARTICULAR POINTS ALONG THE ROUTE FROM TRALEE TO LIMERICK

This appendix deals with some of the more obvious problems relating to the route itself. It does not consider arrangements at stations and crossing houses as these will evolve from the individual design of these modal points.

A1. Tralee itself

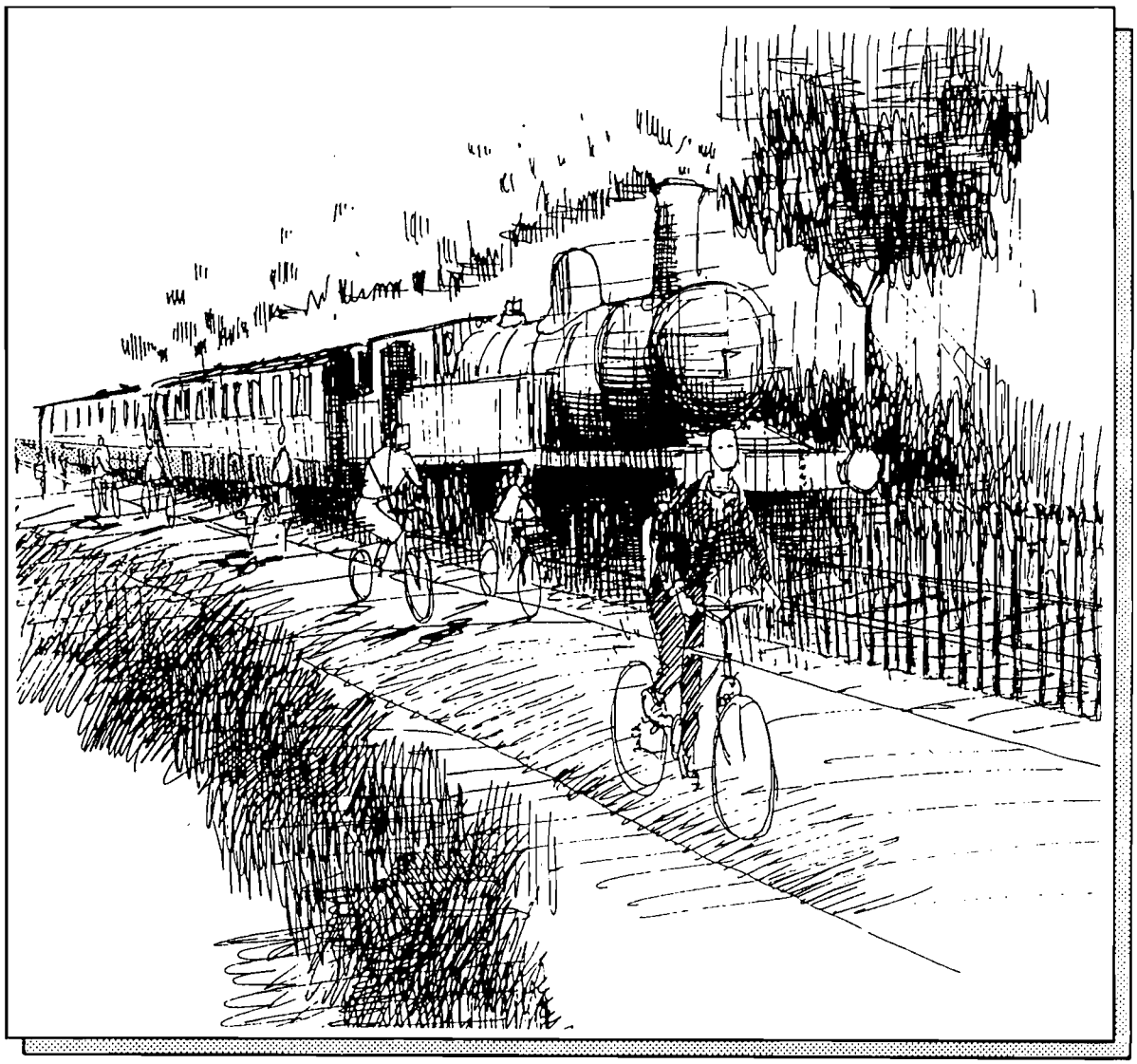
All too often a pleasant country route can be marred by unpleasant roads on the outskirts of the built-up area. The centre of Tralee has some most attractive streets and it is to these that the visitor should be led without getting lost in one-way roads or circular roads. As far as possible the linking route should be defined and enhanced by planting trees along the pavement.



With the restoration of the Blennerville and Tralee Ship Canal towpath the route should link to the canal basin as shown on the map. The basin itself could be developed and planted to enhance the route.

A2. Beside the Fenit railway

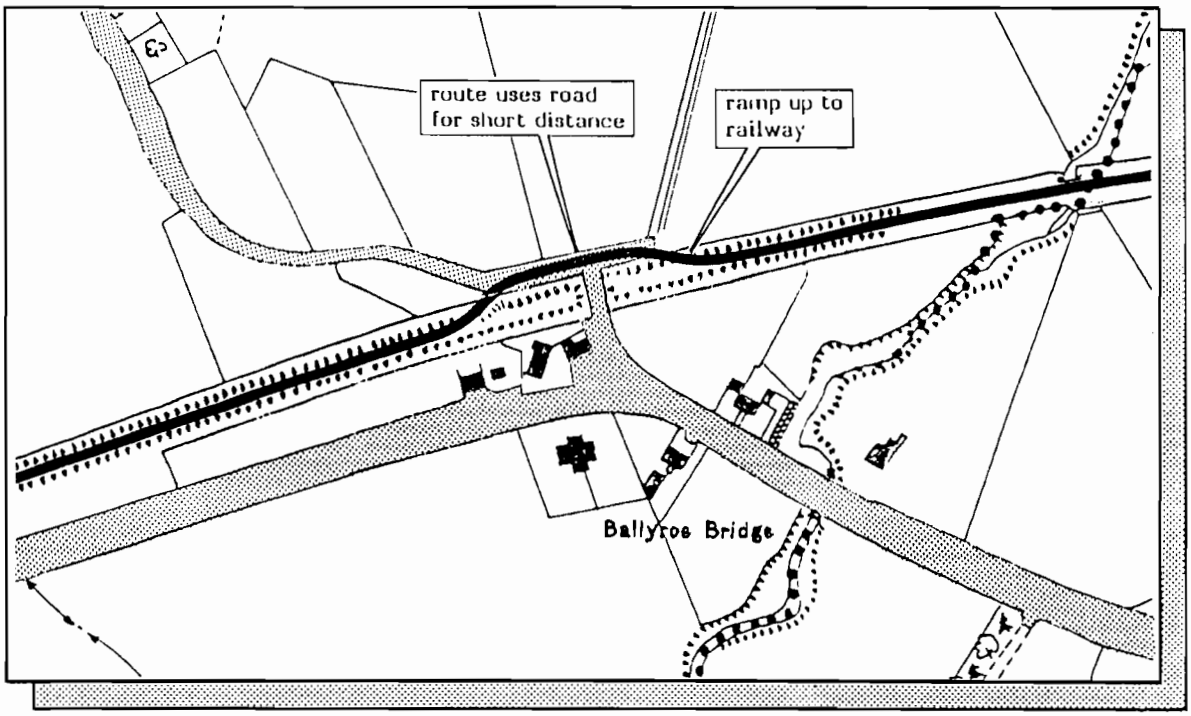
For the first 1½ miles of the route, the original line was double-tracked. The western line remains and is to be re-opened as a steam railway to Fenit. Irish Rail are prepared to allow the path to travel beside this track provided that it is separated by a 4'6" high palisade fence. Although the sketch shows that there is room for this, it would be both expensive and restrictive. We suggest as an alternative that land is obtained and a route devised to run through the adjacent Gallows Field, along Cahermoneen Road, along the edge of the existing playing fields and grazing land to join the railway route at the junction. Only for its first stretch from Rock Street Upper is it really necessary to run beside the railway. In this way a pleasant route could be achieved with close links to local streets. The section between Rock Street Upper and Edward Street is superfluous as travellers can go to the town centre via the first. Gallows Field itself could be used at least in part as the first grazing area and base for hiring ponies.



Despite the suggested route described here, the Development Company should acquire the right to run beside the Fenit railway should it ever be needed.

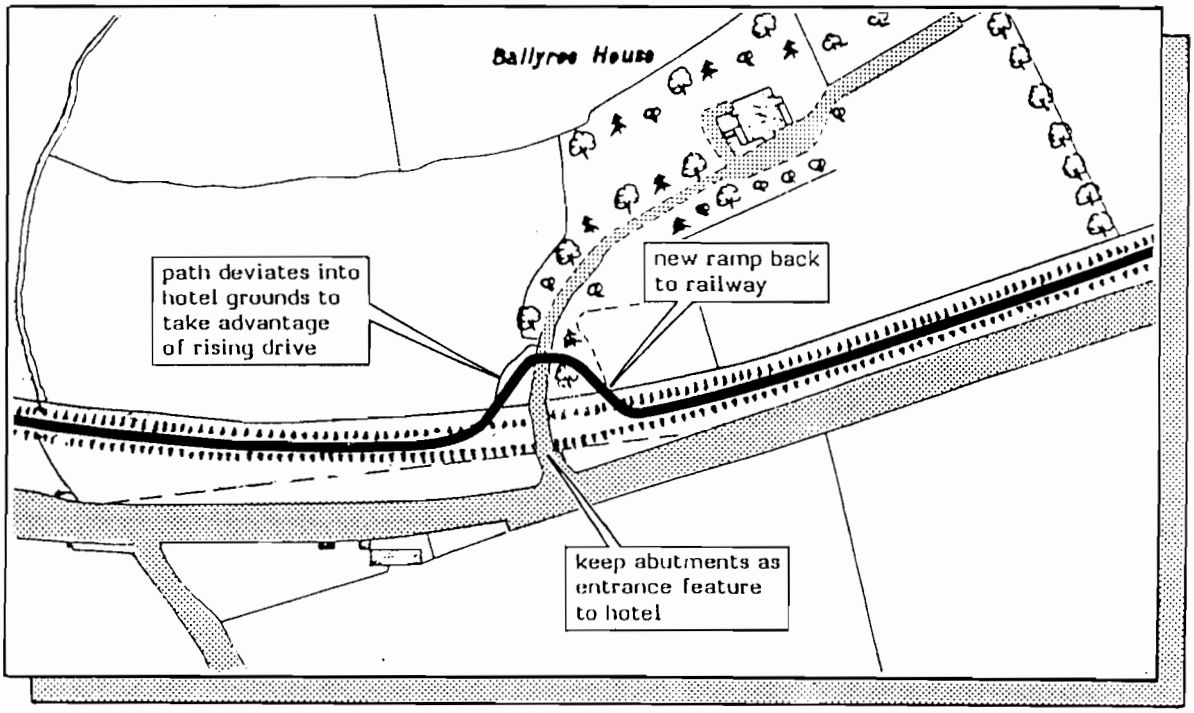
A3. Missing bridge 114 at mile $2\frac{1}{4}$

The steel span over this minor road has been summarily removed because of its low headroom. The road is lightly trafficked and the deviation shown in the sketch will be quite satisfactory. We recommend keeping the abutments both as a railway feature and a device to slow down any traffic there might be.



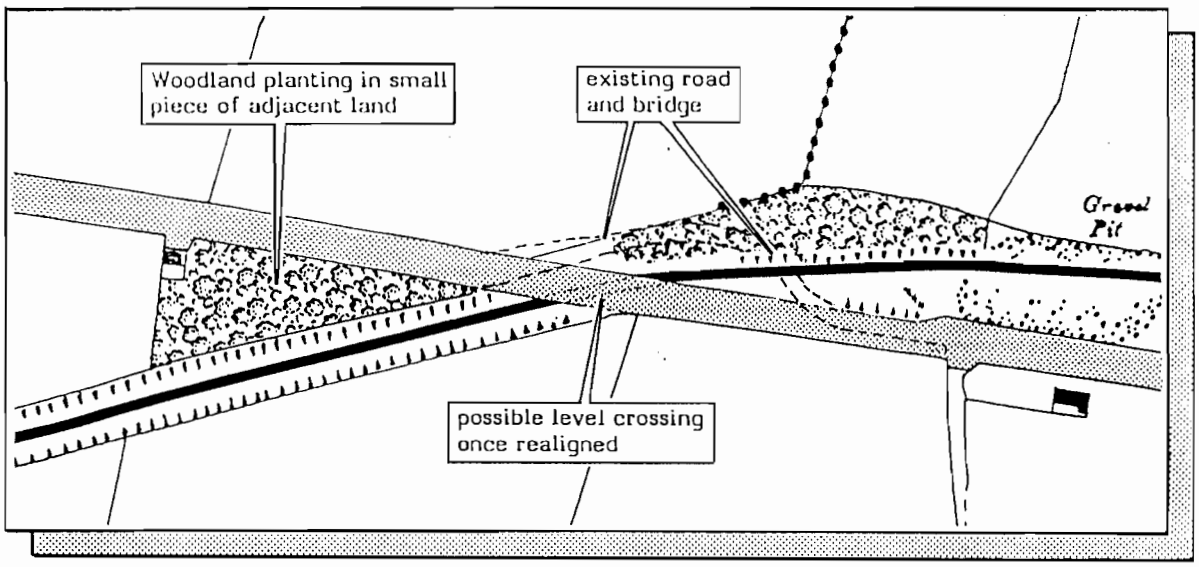
A3a. Missing bridge B113 at mile $2\frac{1}{2}$

This span has also gone as the bridge only gave a clearance of 10'6". The sketch shows the ramp descending into the hotel grounds to make up for its illicit removal. The hotel could also profit by servicing the travellers.



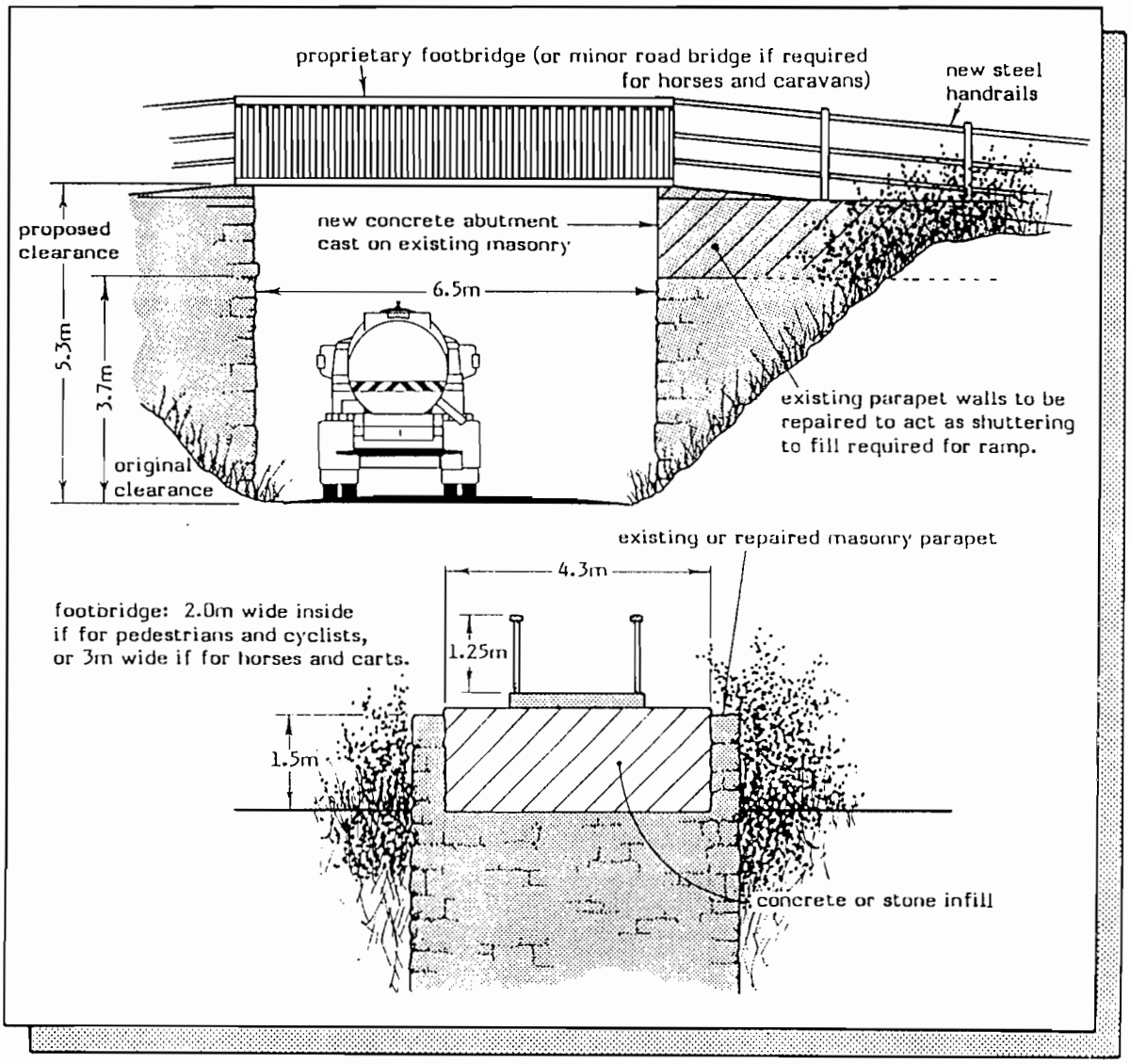
A4. Bridge 107 at mile 7¾ south of Abbeydorney Station

This gives rise to a sharp bend in the road. If it is ever removed by the County Council then a level crossing replacement will suffice as the road is lightly trafficked. It should however be finished off in the style of the North Kerry Railway.



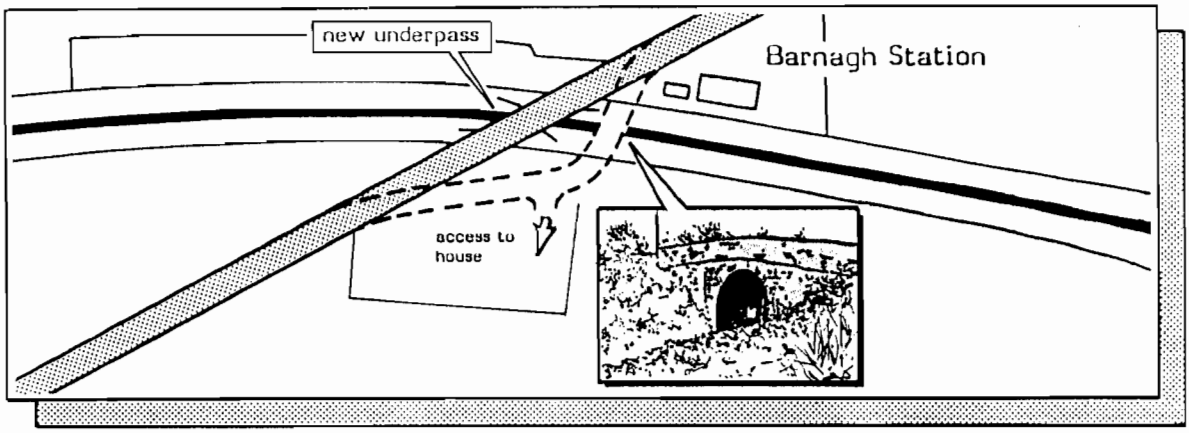
A5. Missing bridge at Abbeyfeale

The Athea road is fairly well used and because of the proximity of this crossing to a potential focus of attraction at the former station, we do recommend the replacement of this bridge as shown in the section below.



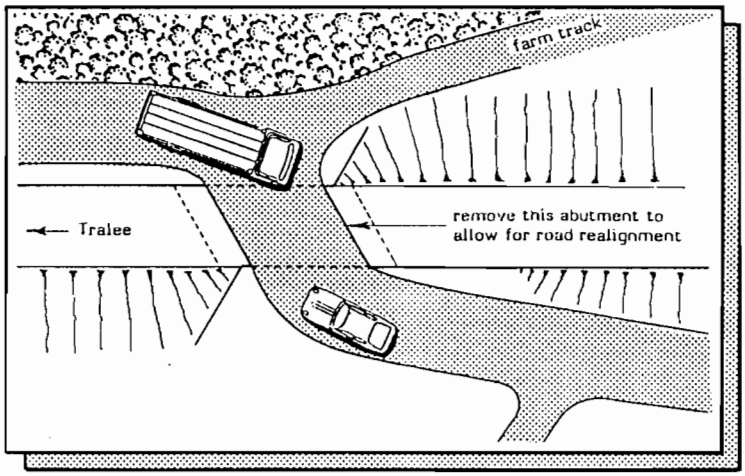
A6. b68 at Barnagh Station - road realignment

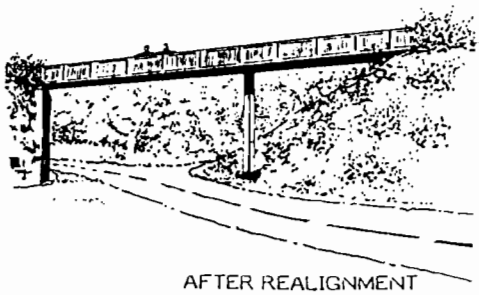
This imposes a severe zig-zag bend on the main road and will surely come under pressure for "improvement" in due course. Here it is most important to place a new "armco" type culvert in the cutting so as to maintain the continuity of the trail (and the drainage from the summit cutting). The sketch below shows how the existing bridge could be retained as a feature and private access. The works to this bridge and b64 just to the north of Barnagh Gap are allowed for in the overall project estimates.



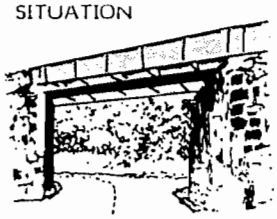
A7 b64 at Barnagh Hill - road realignment

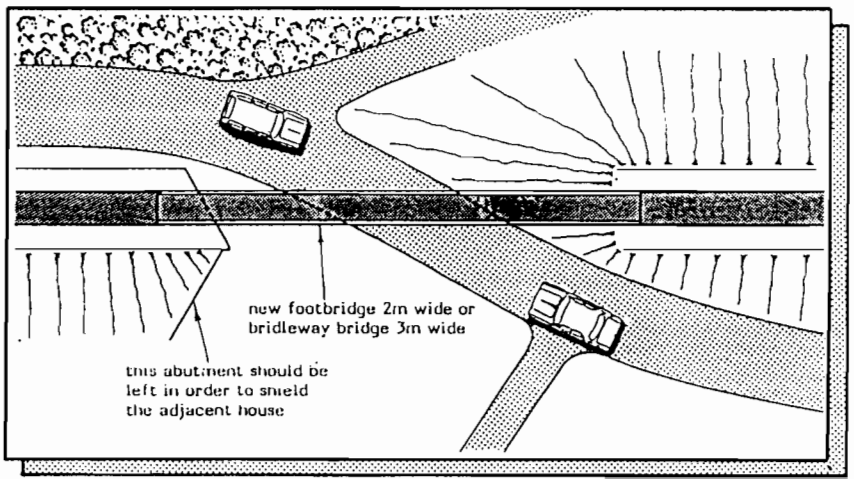
This steel girder bridge over the road has a clearance of 16'6" but creates a dangerous bend on the main road. The County Council have plans to realign a whole section of road in this area by utilising a length of the railway path. We suggest that this would be unfortunate as not only does this one section of the railway have the most useful transport function in avoiding the main road, but it also has the most spectacular views of the whole route. It would be preferable to remove the northside span, in order to straighten out the zig-zag bend, and rebuild it further back to accommodate a 20 metre span bridge (say), rather than the present 8m. This is shown in the sketch.

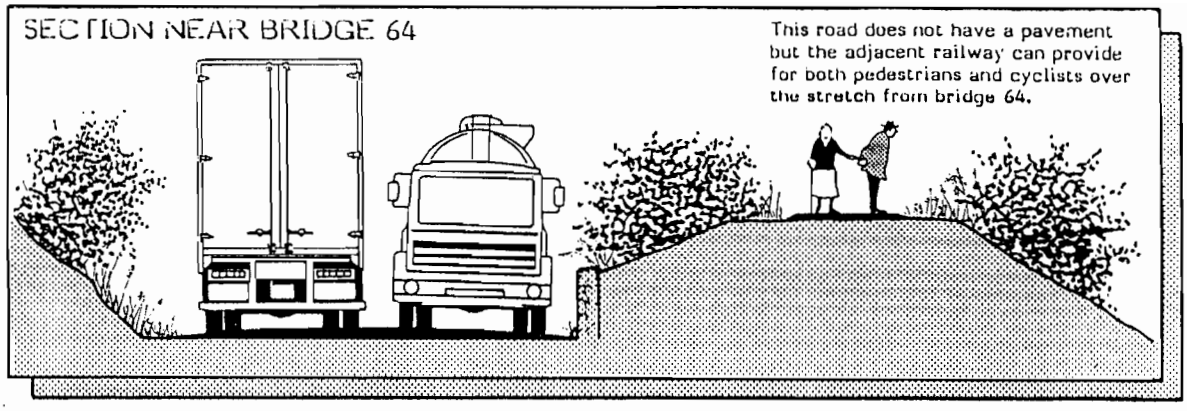




PRESENT SITUATION

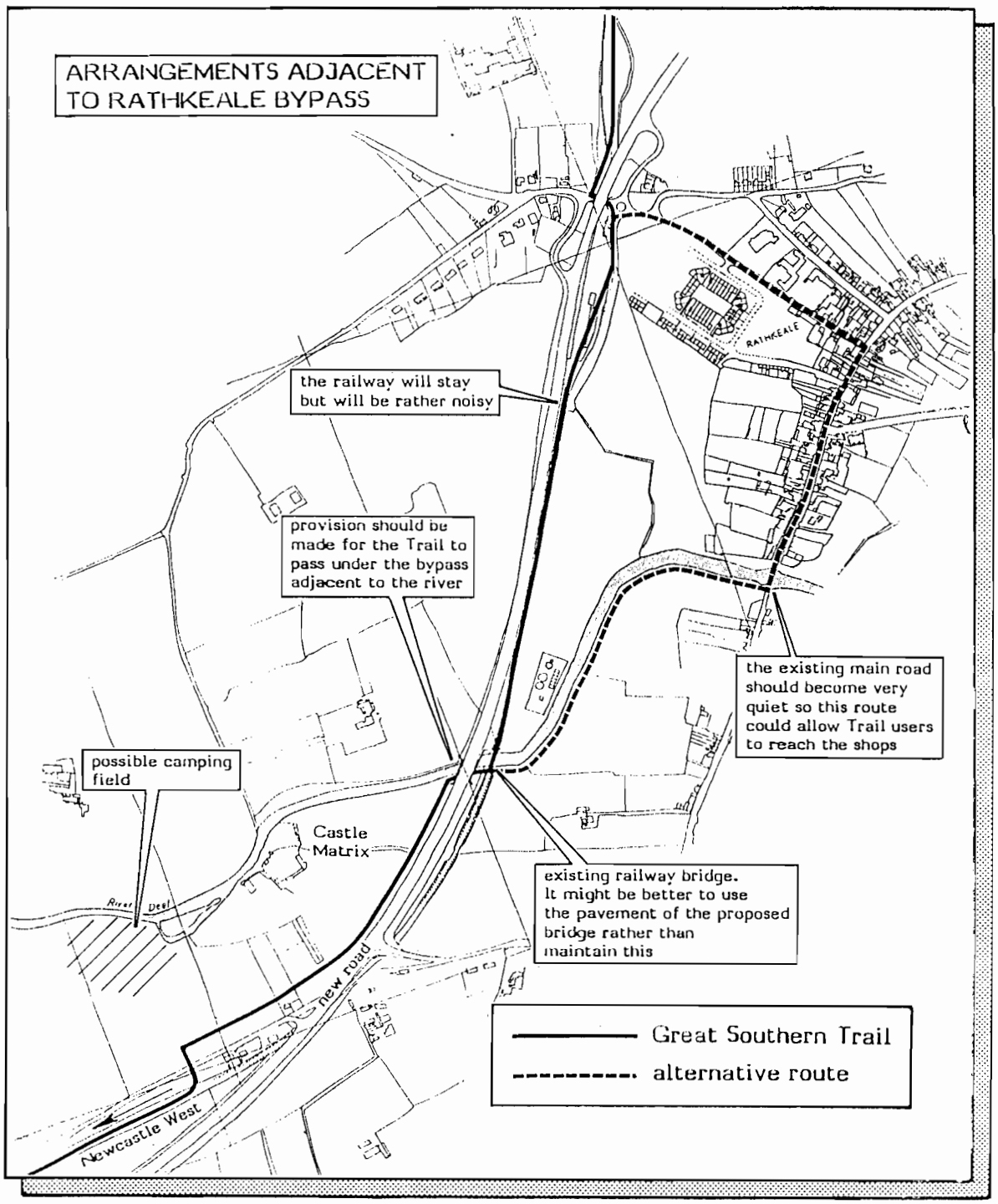






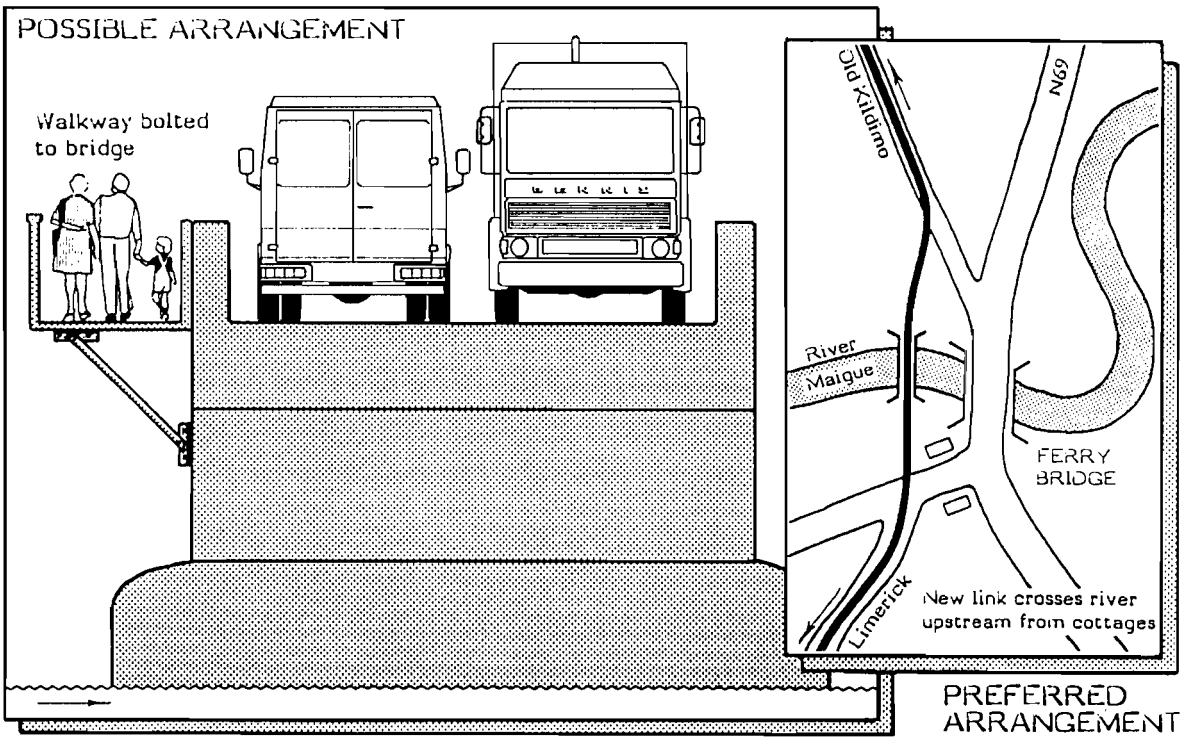
A8 Rathkeale Bypass Proposals

There are proposals to realign the main Limerick road via the disused North Kerry line. If this were to happen then the Great Southern Trail should be terminated at Castle Matrix. The trail for horses would finish at the end of the railway path, but the route for cyclists would be signposted along minor roads to Limerick.



A9 Ferry Bridge on Limerick - Foynes road

The minor road through Curragh Chase and Old Kildimo works very well at present. It is completely rural and very lightly trafficked and quite suitable to form the ongoing route (although the ever-onward marching bungalows could spoil this unless some curbs are enforced). But at Old Ferry Bridge there is quite a severe bottleneck. This bridge has no pavements, making it particularly difficult for those travelling towards Limerick who have to cross to the north side of the bridge. If this does prove to be a source of danger then a new footbridge could be attached to the upstream side of the main bridge.

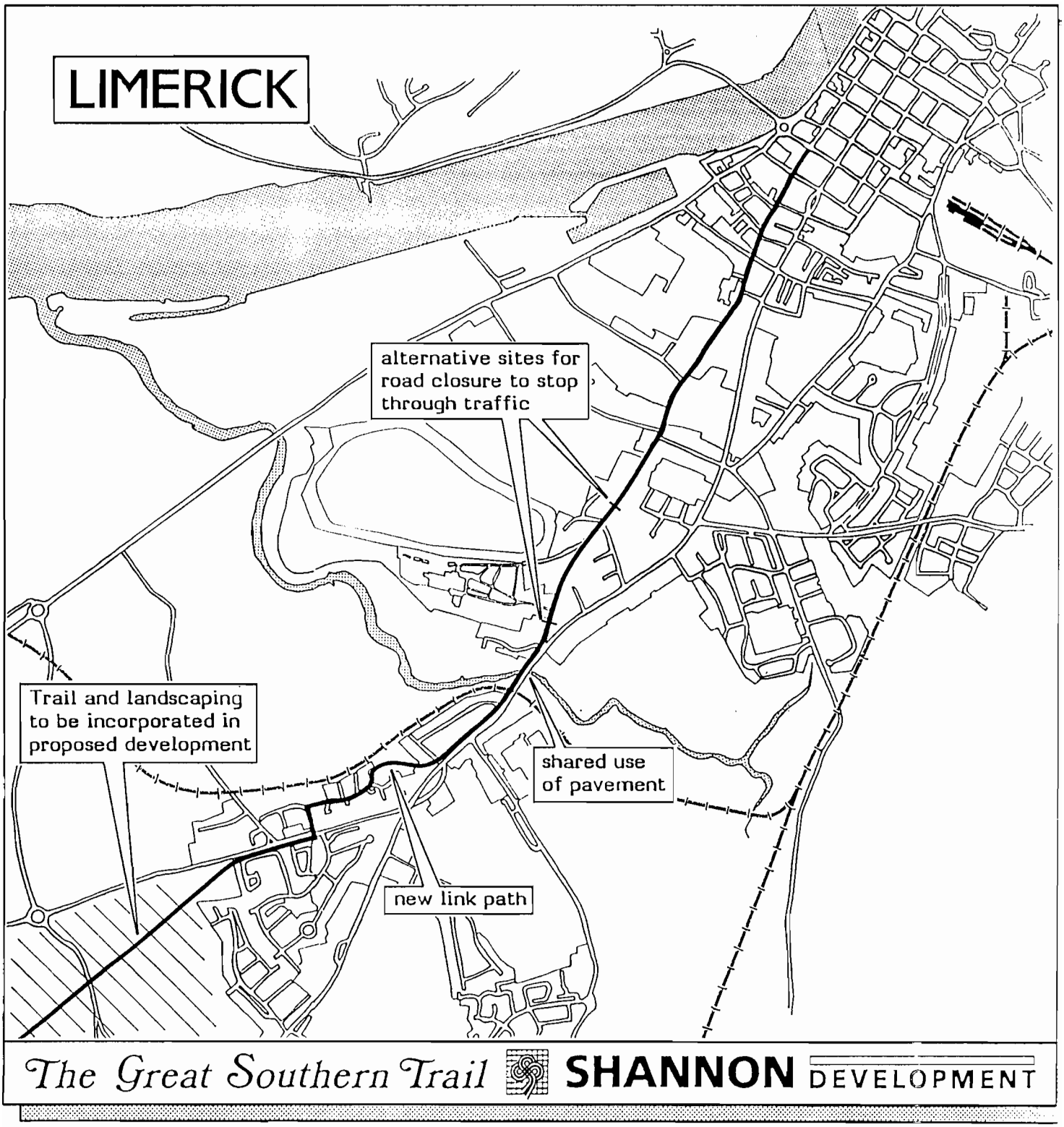


A10 Limerick and its approaches

The minor road runs out at Mungret, from which point the main roads into Limerick are unsuitable for family cycling. Limerick is of a size where its continued expansion will require a policy for cyclists as well as other forms of transport, if the former are to be encouraged and accidents minimised. As the city is fairly level and its size convenient for cyclists, we suggest that they should be encouraged by the provision of quiet routes, rather than deterred by the conflict with heavy traffic. To the north-east of the city, the Shannon Canal forms the basis for a good route to the Castle Troy area, and the town centre itself will become much more attractive when through traffic can be diverted via the new bypass. To link back to Mungret it would be best to eliminate through-traffic on the South Circular Road by either closing it at its south-east end near Ballinacurra Close, or opposite the schools near Prospect Avenue. From there a combination of shared use of the existing pavements, use of residential roads, and the incorporation of a completely traffic-free path through the proposed new housing to the south-west of the city, could complete a route for cyclists back to Mungret. Whilst such a route would be invaluable to tourists on the Great Southern Trail, its main use would be for everyday journeys by residents of Limerick. This route is illustrated on the enclosed sketch map.

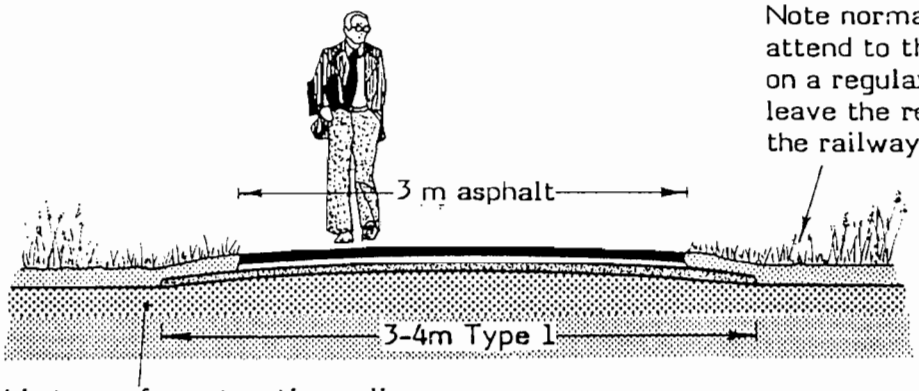
B Standard Structure Details

The following figures are taken from Sustrans' normal practice in Britain. They represent only a generalised approach and the project engineer will need to devise a whole range of specific proposals to cover each element of the great Southern Trail along its length.


LIMERICK
alternative sites for road closure to stop through traffic
Trail and landscaping to be incorporated in proposed development
shared use of pavement
new link path
The Great Southern Trail
SHANNON DEVELOPMENT

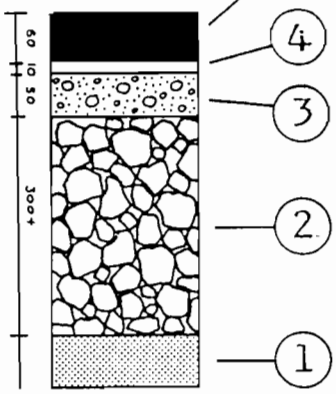
TYPICAL CONSTRUCTION OF URBAN PATH
eg. BRISTOL, LIVERPOOL & GLASGOW RAILWAY PATH

TYPICAL CROSS-SECTION THROUGH PATH



shoulders to be made up level to the surface of the asphalt and levelled for a width of 1 metre. Note normal maintenance will attend to this one metre strip on a regular basis but may leave the remaining width of the railway laid as wildlife area.

this type of construction relies on a wide base of firm ballast to give edge support to the asphalt surface. If the base is weak, then the Type 1 stone will have to be extended in width and thickness.

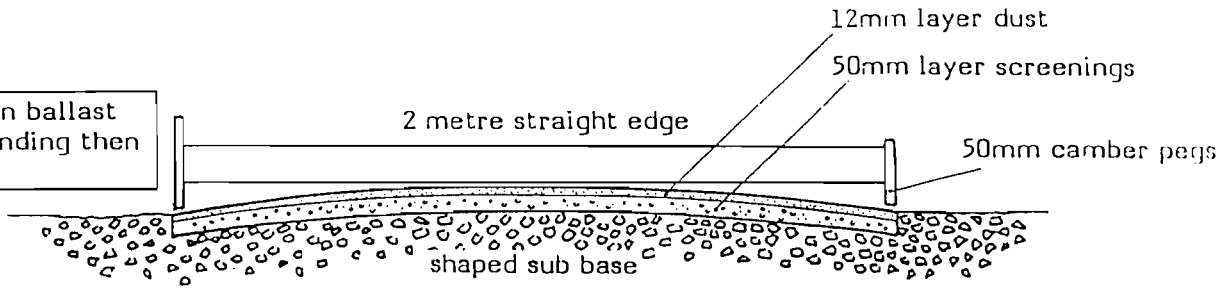


5. Final asphalt surface laid 3 metres wide, 60 mm thick 50 mm camber
4. 10 mm thick layer of 3 mm whinstone dust
3. 50 mm thick (100 mm thick if on ash) layer of Type 1 stone (40 mm down), laid 4 m wide, 75 mm camber, and compacted
2. Existing railway ballast or ash cleaned of all vegetative matter for a width of 4 m, shaped to give 75 mm camber and compacted
1. Existing ground or made up surface

CROSS SECTION THROUGH 3M WIDE PATH

CAMBER

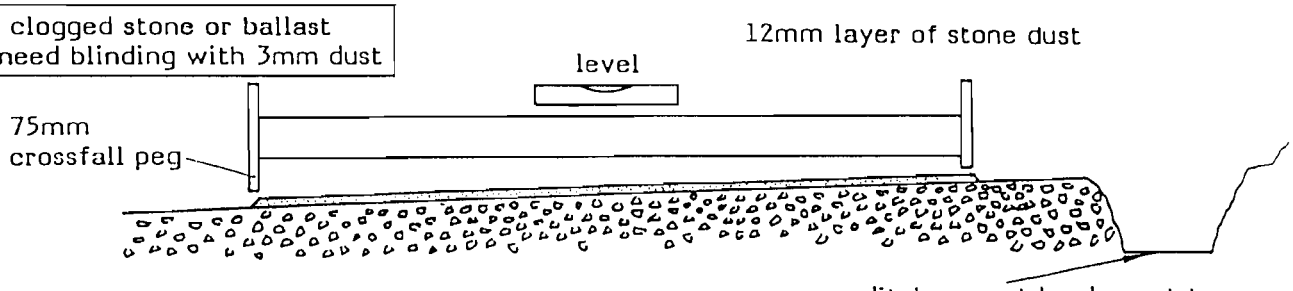
paths on clean ballast need first blinding then surface dust



Note - the sub-base stone is suitable for alternative sealed finishes - tar spray and chippings or bitmac

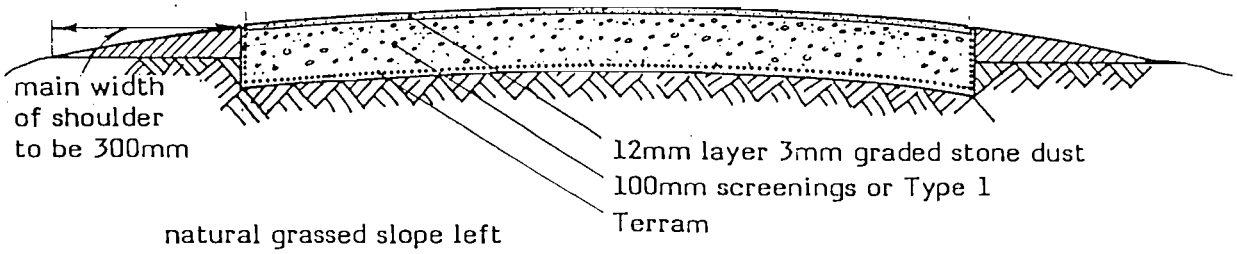
CROSSFALL

path on clogged stone or ballast simply need blinding with 3mm dust

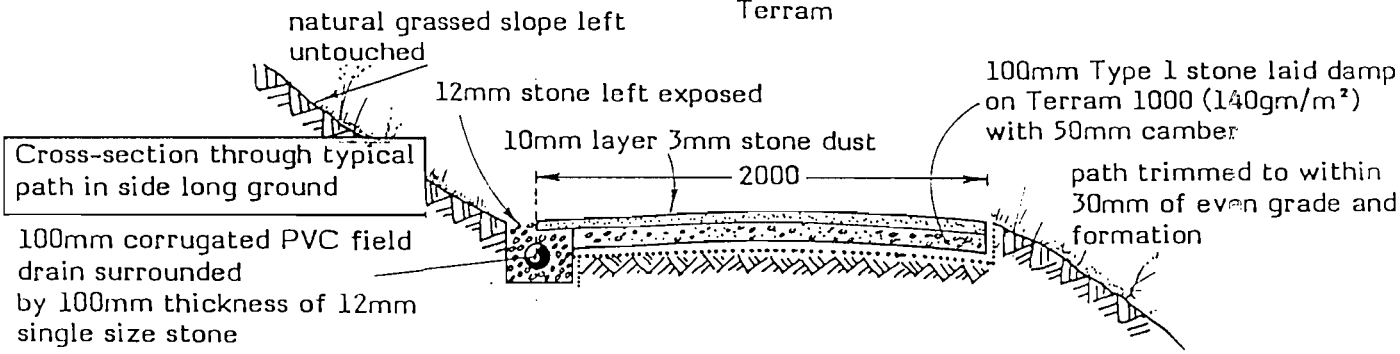


ditches must be dug out to ample minimum maintenance size. Drains cleaned, manholes covered with concrete slabs, and buried from sight

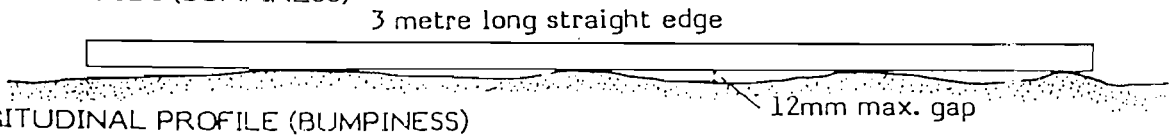
paths on poor soils - silts, riverside bunds, field paths should be laid on polypropylene fabric to prevent loss of stone and strength



Cross-section through typical path in side long ground

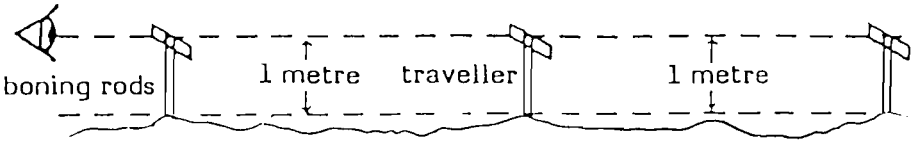


LONGITUDINAL PROFILE (BUMPINESS)



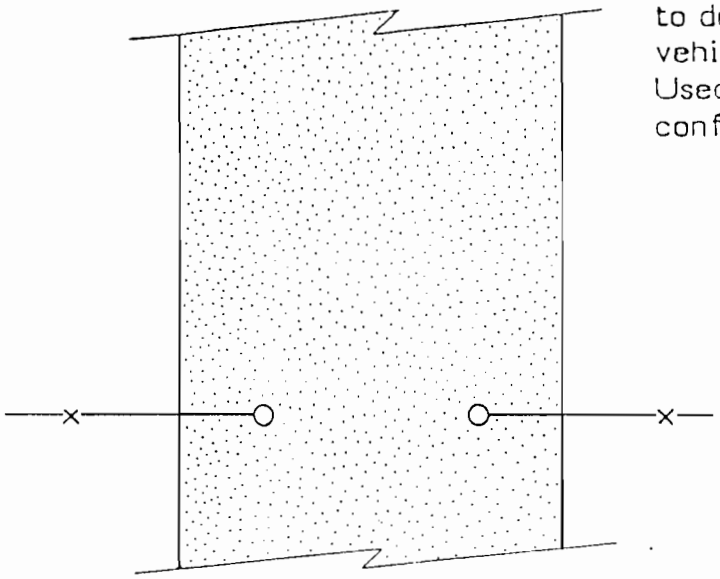
LONGITUDINAL PROFILE (BUMPINESS)

The traveller is used to determine the level between sighting points

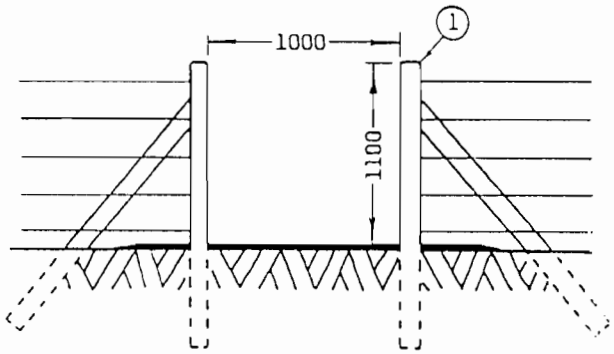


3 TYPES OF ACCESS CONTROL - PLANS AND VIEWS WITH DIMENSIONS

TYPE A : ONE METRE SLOT

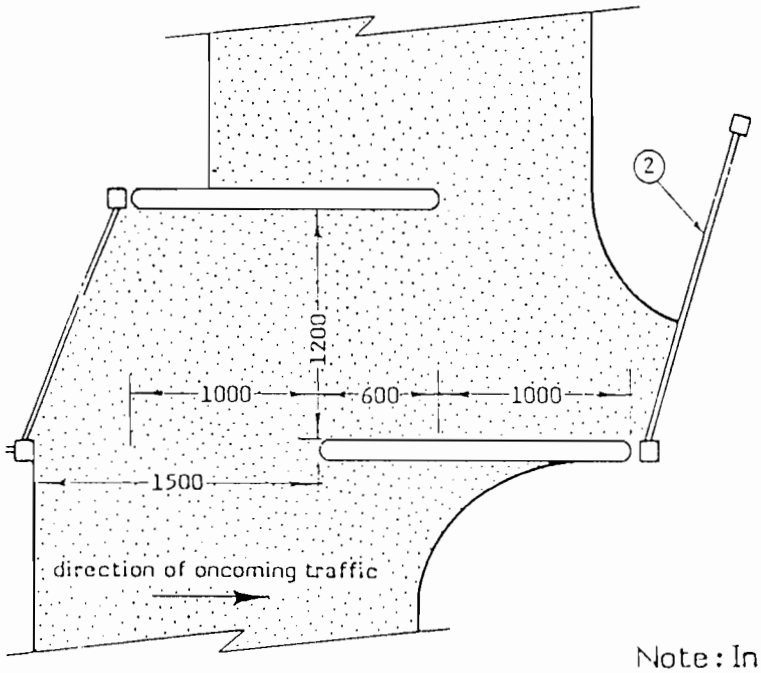


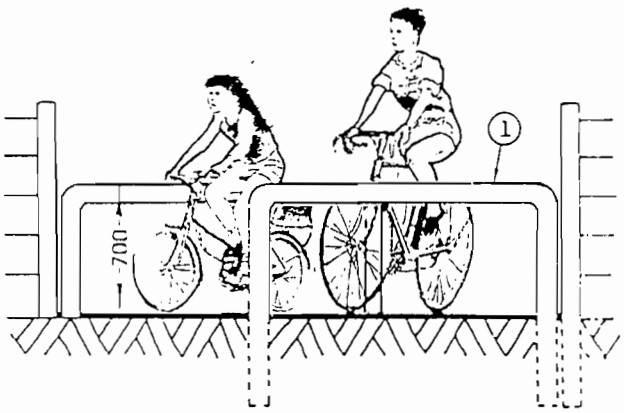
to define entrance to path and prevent vehicular access
Used where there is no conflict with traffic



TYPE B : CHICANE TO SLOW CYCLISTS

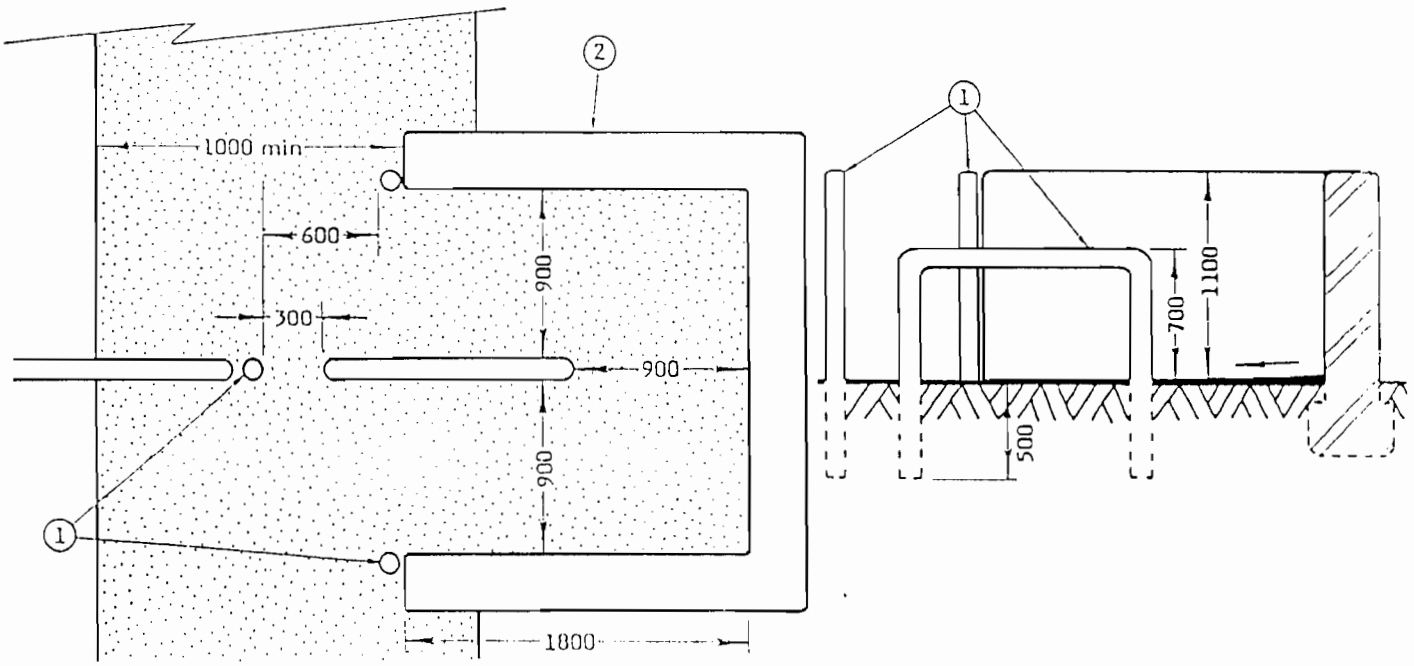
Used where cyclists are to be slowed down on emerging onto a trafficked road





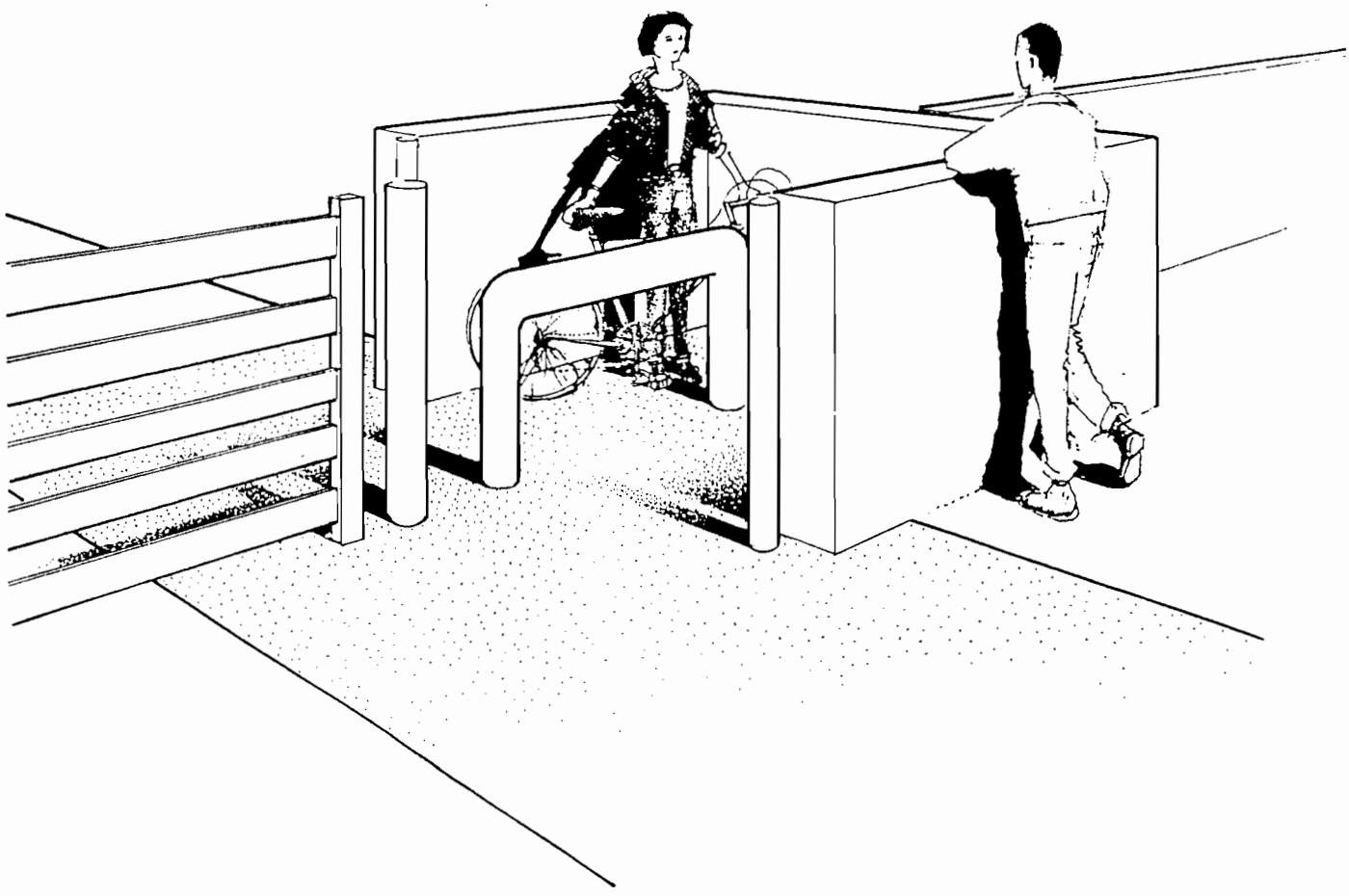
Note: In each case the access control is to be set back at least 2 metres from the edge of the carriageway.

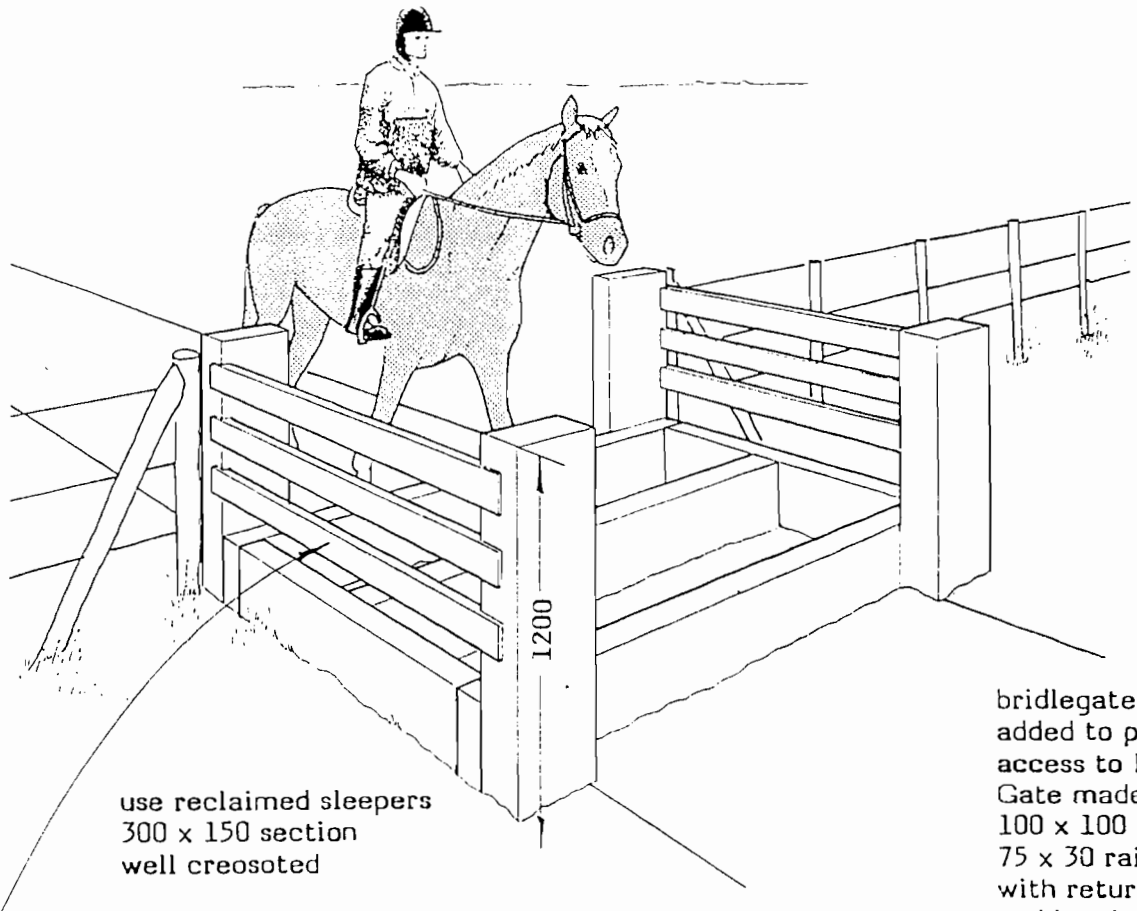
TYPE C : SLOT & BAR TO PREVENT MOTORBIKES



Note :

(1)	These pieces to be made from 100 diameter mild steel painted.
(2)	Boundary may be stone, timber, steel, to suit conditions.

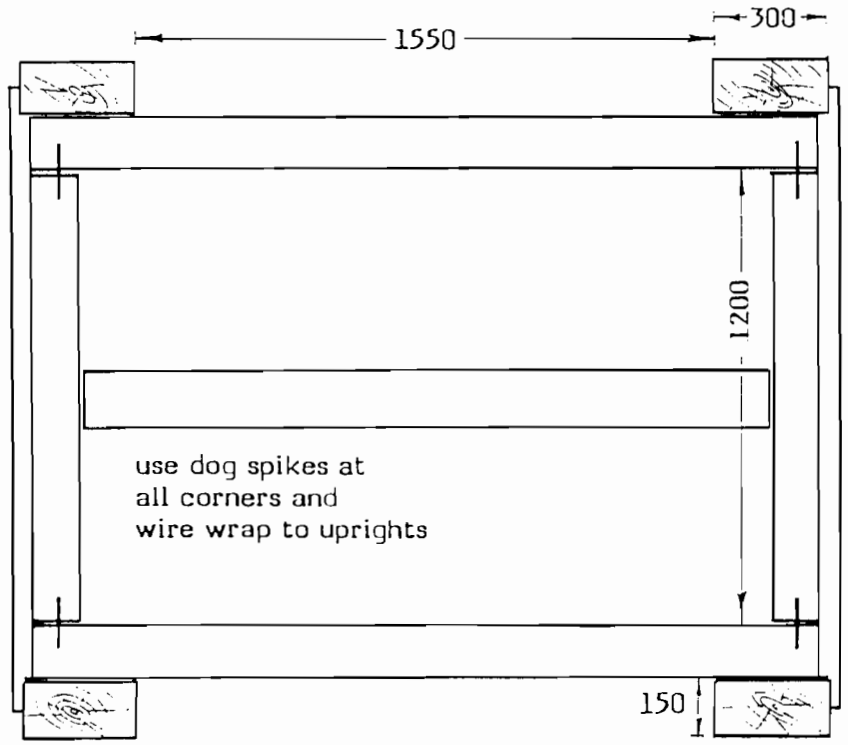




use reclaimed sleepers
300 x 150 section
well creosoted

bridlegate can be added to prevent access to livestock. Gate made from 100 x 100 posts and 75 x 30 rails, fitted with return spring and level closure

50 x 100 timber rails

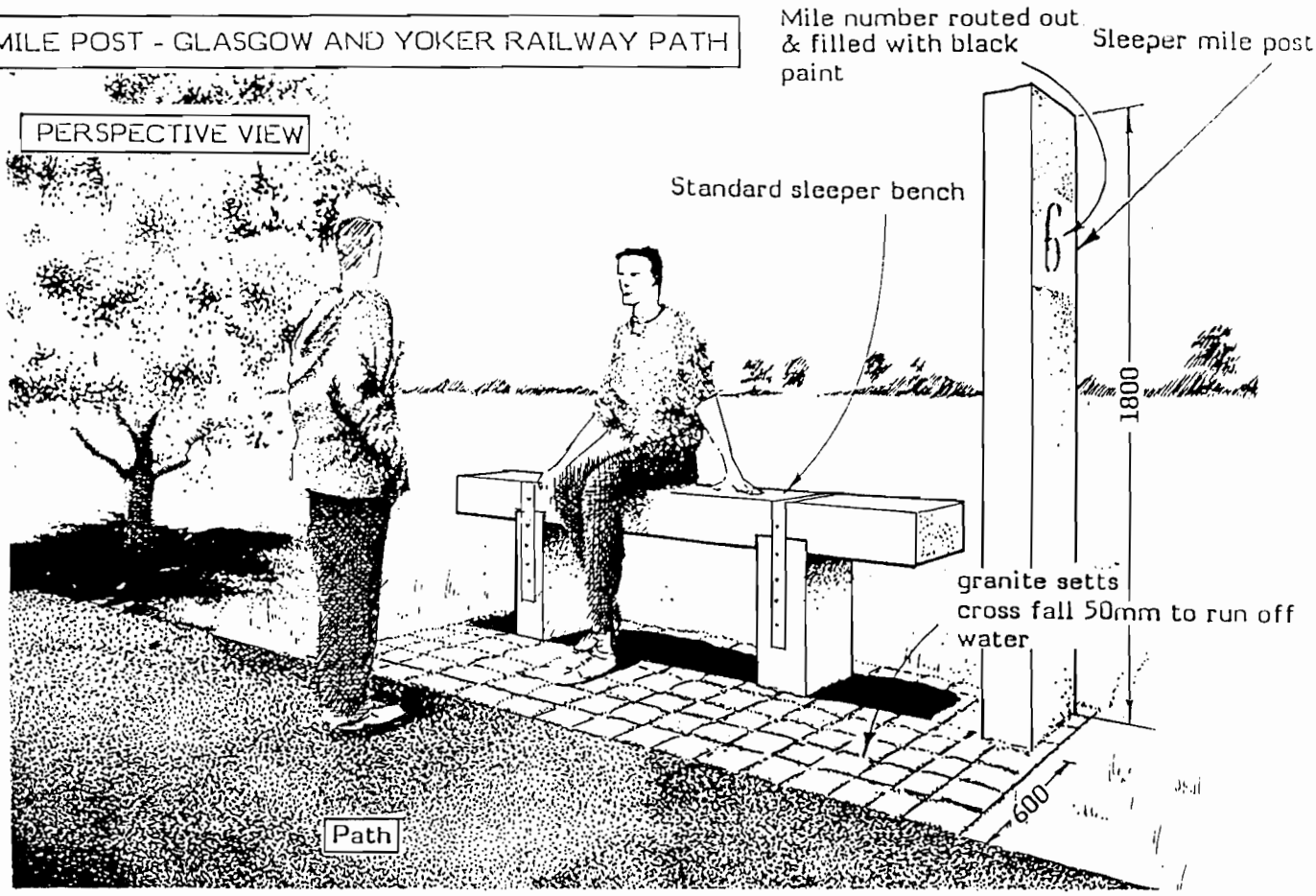


use dog spikes at
all corners and
wire wrap to uprights

minimum clearance suggested by British Horse Society

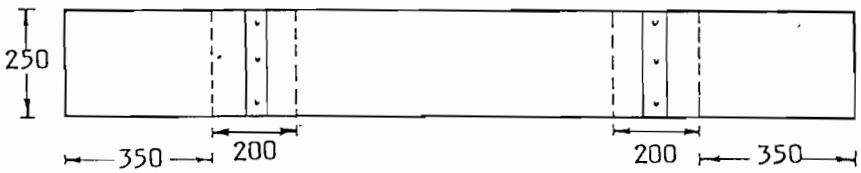
MILE POST - GLASGOW AND YOKER RAILWAY PATH

PERSPECTIVE VIEW

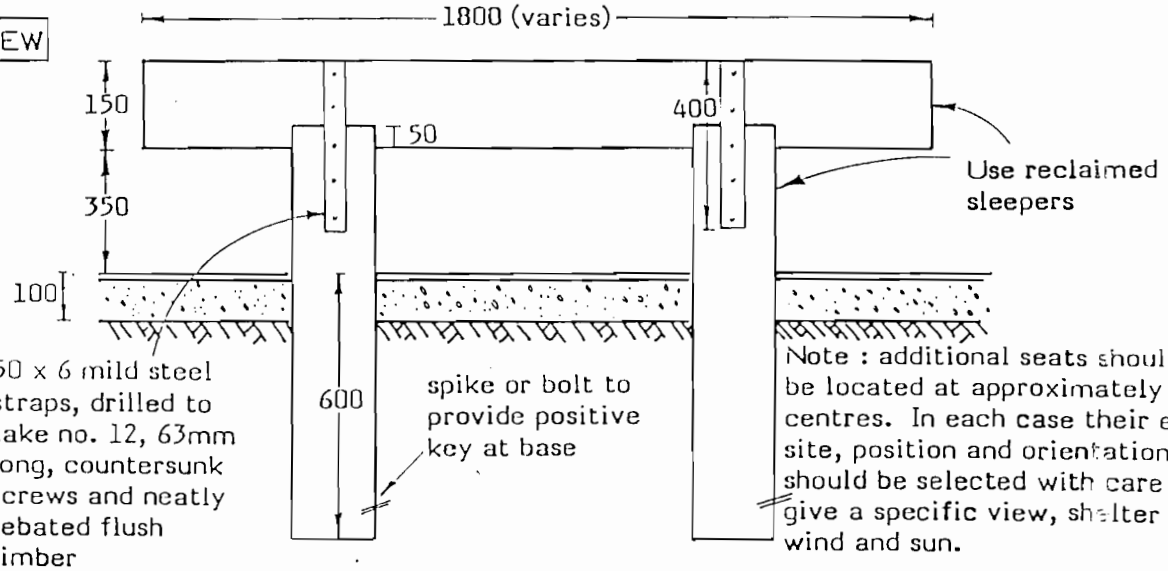


DETAILS OF BENCH CONSTRUCTION

PLAN VIEW

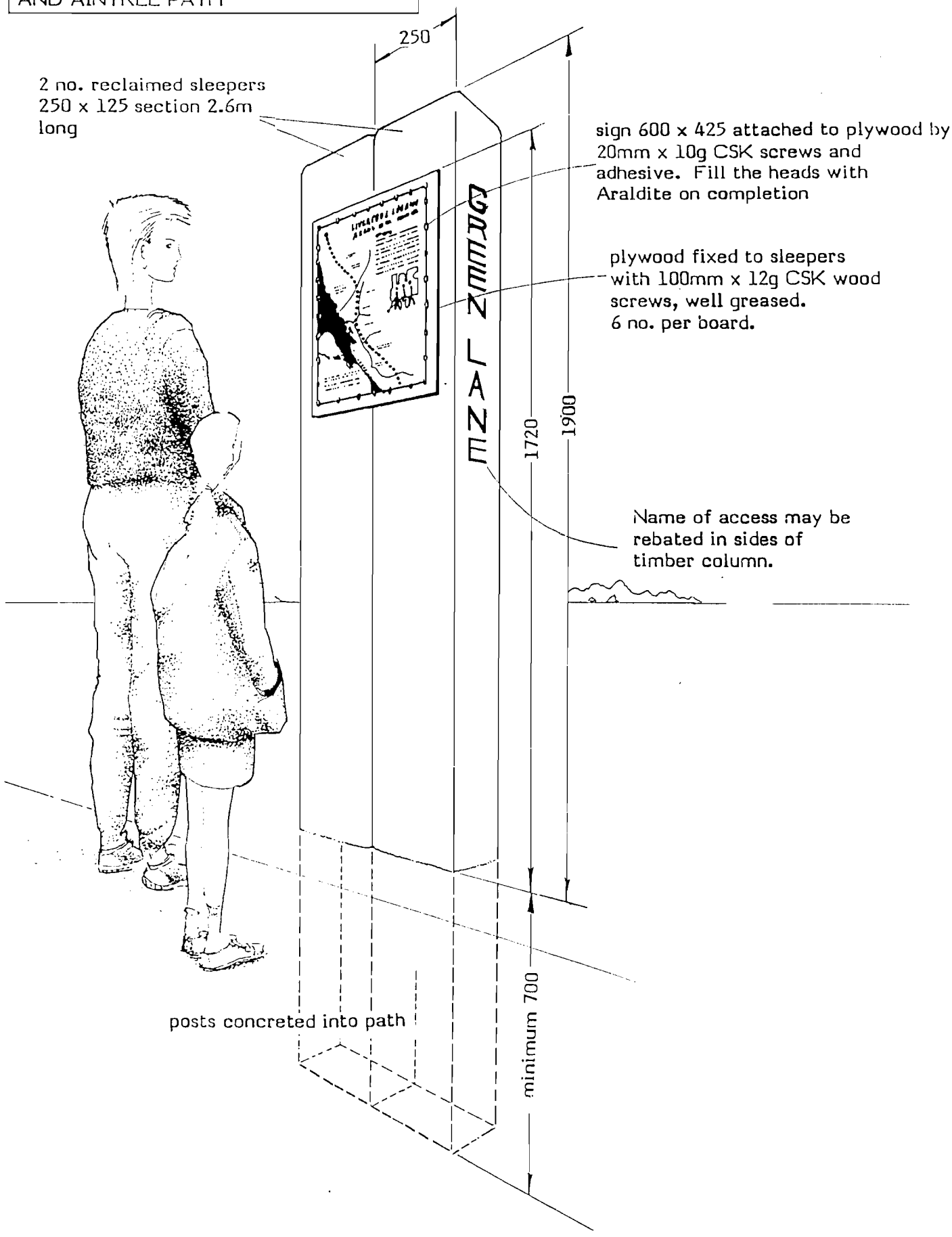


SIDE VIEW



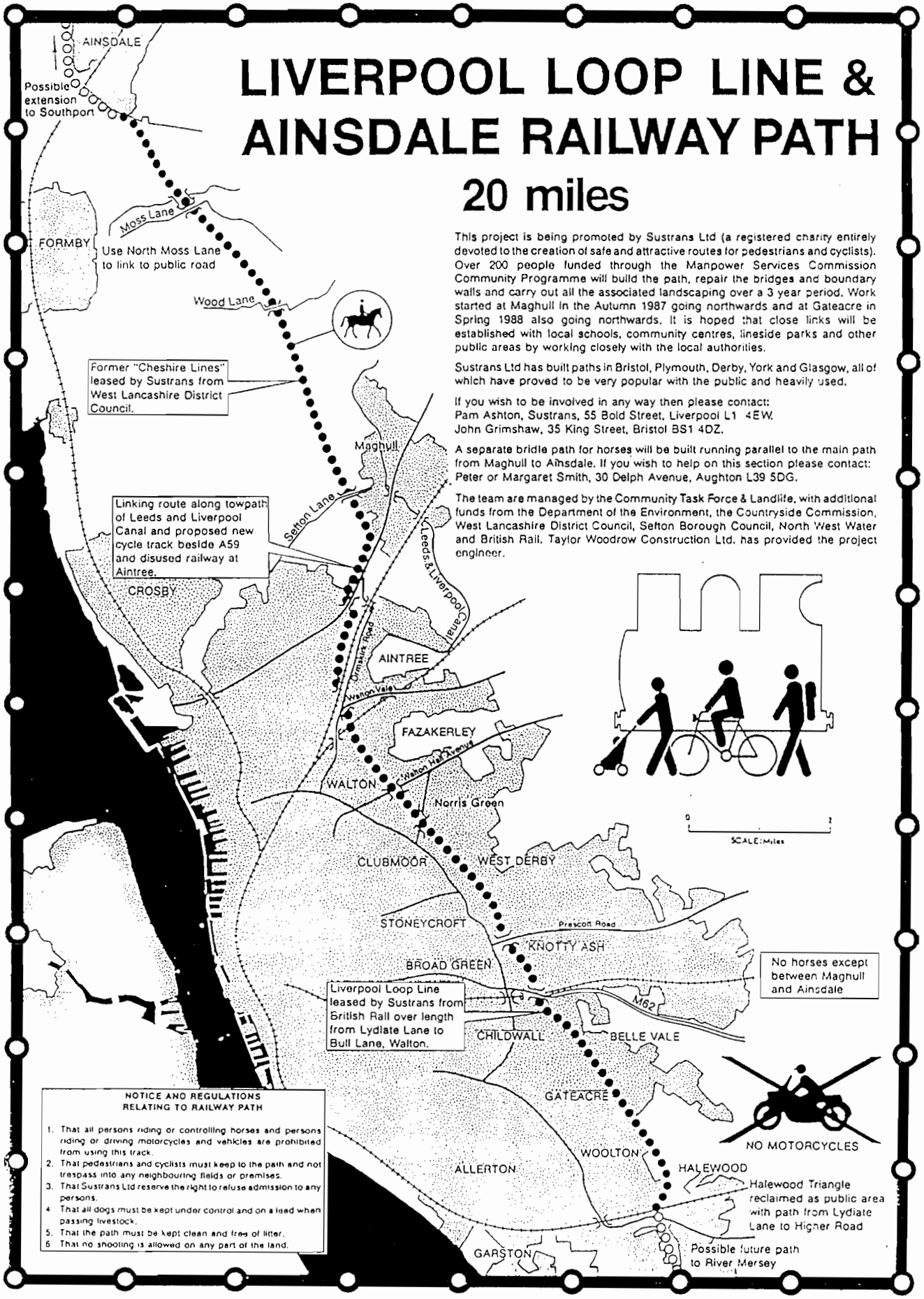
Note : additional seats should be located at approximately ½ mile centres. In each case their exact site, position and orientation should be selected with care to give a specific view, shelter from wind and sun.

DETAILS OF STANDARD INFORMATION POST AS USED ON THE AINSDALE AND AINTREE PATH



LIVERPOOL LOOP LINE & AINSDALE RAILWAY PATH

20 miles



This project is being promoted by Sustrans Ltd (a registered charity entirely devoted to the creation of safe and attractive routes for pedestrians and cyclists). Over 200 people funded through the Manpower Services Commission Community Programme will build the path, repair the bridges and boundary walls and carry out all the associated landscaping over a 3 year period. Work started at Maghull in the Autumn 1987 going northwards and at Gateacre in Spring 1988 also going northwards. It is hoped that close links will be established with local schools, community centres, lineside parks and other public areas by working closely with the local authorities.

Sustrans Ltd has built paths in Bristol, Plymouth, Derby, York and Glasgow, all of which have proved to be very popular with the public and heavily used.

If you wish to be involved in any way then please contact:
Pam Ashton, Sustrans, 55 Bold Street, Liverpool L1 4EW.
John Grimshaw, 35 King Street, Bristol BS1 4DZ.

A separate bridle path for horses will be built running parallel to the main path from Maghull to Ainsdale. If you wish to help on this section please contact:
Peter or Margaret Smith, 30 Delph Avenue, Aughton L39 5DG.

The team are managed by the Community Task Force & Landlife, with additional funds from the Department of the Environment, the Countryside Commission, West Lancashire District Council, Sefton Borough Council, North West Water and British Rail. Taylor Woodrow Construction Ltd. has provided the project engineer.

NOTICE AND REGULATIONS RELATING TO RAILWAY PATH

1. That all persons riding or controlling horses and persons riding or driving motorcycles and vehicles are prohibited from using this track.
2. That pedestrians and cyclists must keep to the path and not trespass into any neighbouring fields or premises.
3. That Sustrans Ltd reserve the right to refuse admission to any persons.
4. That all dogs must be kept under control and on a lead when passing livestock.
5. That the path must be kept clean and free of litter.
6. That no shooting is allowed on any part of the land.

The Great Southern Trail

A report on a railway path from Tralee to Limerick

APPENDIX IV

APPENDIX IV SPECIAL ATTRACTIONS ALONG THE ROUTE OF THE GREAT SOUTHERN TRAIL

A. Existing attractions (from Shannon Development Company report March 1988)

AO Overview

The number, variety and quality of attractions and points of interest located on or near the line illustrate the potential in this project for the creation of a major tourist attraction in West Limerick and North Kerry. These vary in type and include historical features such as the Embury and Heck Methodist Church located at Ballingrane, the site where the famous Ardagh Chalice was found in 1868, Castle Matrix which has a very interesting military museum and several others. Environmental features located on or near the line include Curragh Chase Forest and Park, Doohyle Lough where a major environmental project is currently in progress, Barnagh Hill viewing area and gardens and the many mature wooded areas through which the line passes. The development of some of the old railway stations could also be considered and would serve as attractive features to remind visitors of the railway heritage of the trail. Some of the more significant attractions are outlined in this chapter and liberty has been taken to suggest how some features might be improved and developed. Additional features may exist along the line which could be included later for future presentations.

A1 Tralee

The 46 mile Trail concludes in the town of Tralee, the chief town in County Kerry. This town has a long and interesting history with many attractions and facilities for visitors, which include horse riding and pony trekking, a modern sports centre with a swimming pool and tennis courts. Headquarters of Siamsa Tire - the Folk Theatre of Ireland is located here - and the famous Rose of Tralee Festival is held in the town each year.

A2 The Dingle Way and the Kerry Way

Having completed the Great Southern Trail to Tralee, visitors can then if they wish link in to the Dingle Way, which extends 45 kms from Tralee to Dingle via Camp and Annascul. This trail is intended for use by walkers only and is not suitable for cyclists. Like the Great Southern Trail this route follows the old Tralee to Dingle line now long abandoned.

An alternative option for visitors destined for Killarney is to link in to the Kerry Way which runs from Killarney to Glenbiegh.

It should be noted that these two trails are high level trails, in contrast to the Great Southern Trail which is a low level trail. The Dingle Way and the Kerry Way are attractive in that they offer some breathtaking sea and mountain scenery. The Great Southern Trail is equally interesting however in that it is a unique journey which offers historical, social and environmental features of Irish life and the countryside which only a low level trail could offer. In addition it offers the opportunity for private, public and community enterprise to participate in a unique tourist product in this area which has not benefitted from tourism to the same extent as other parts of the Shannon and Kerry regions.

A3 Ardfert

Ardfert is located about 5 miles before the trail ends in Tralee, where the imposing cathedral dates mainly from the thirteenth century. Visitors should also see the twelfth century Teampall na Hoe, Teampall Griffin and the Ogham stone in the graveyard. In the former Crosbie demesne is

Ardfert Friary founded in 1253 by the first Lord Kerry, Thomas Fitzmaurice.

A mile west of Ardfert is a single rampart earthen fort in a field by the roadside. This is now called Casement's Fort as Sir Roger Casement (1864-1916) was arrested here in 1916 after landing at Banna Strand with arms for the Easter Rising.

A4 Listowel

The station house in Listowel has over the years fallen into disrepair. However, it is an extremely attractive building and well worth restoring. Enterprises which could be located here include a hostel, restaurant, hire services and possibly a car park. It could also serve as a museum for the famous Lartigue Railway.

In the town itself lie the ruins of a castle which belonged to the lords of Kerry and was the last to hold out against the Elizabethan forces during the Desmond revolt, in 1600 it was taken by Sir Charles Wilcrest, who put the garrison to the sword. Listowel is renowned for the many special events hosted in the town each year and these include Writers Week, Fleadh Ceol, Race Week, the Harvest Festival of Ireland and Wren Boys Championships.

A5 Abbeyfeale

This station is presently occupied and has been maintained quite attractively. In addition, adjacent to the site lies the Railway Bar which is also very attractive with some well maintained planting in front of the property. The station site itself is very spacious and does offer potential for a number of enterprises, a caravan park or a complimentary manufacturing enterprise in the disused goods shed.

A6 Barnagh Gap and Tunnel

Located between Abbeyfeale and Newcastle West, Barnagh Gap is famous for the view it provides over the Golden Vale, and one can see up to 5 counties on a clear day. This was the highest point in the Irish Rail system. 530 feet O.D. An added feature is the famous tunnel which is several hundred yards long. Ajdacent to the line a number of acres of privately owned property are presently being developed as a park and several hundred trees and shrubs have been planted. The proprietor is currently considering the development of a visitor attraction at that point.

A7 Newcastle West

Next is Newcastle West, Limerick's county capital and a busy market town. Like the town of Kendall which is the headquarters of the Elroy Sparta State Trail in Wisconsin U.S.A., the local station house would be the ideal centre for the headquarters of the "Great Southern Trail".

A8 Cahermoyle House

North of Ardagh in Cahermoyle House (1871) which incorporates much of the previous house, the residence of William Smith O'Brien (1803-64) the Young Ireland leader, who was transported to Tasmania after the Young Ireland Rising.

A9 Ardagh

The village of Ardagh where in 1868 the famous Ardagh Chalice was discovered in Reevarsta Fort, an ancient ring fort. The treasure, now in the National Museum in Dublin, is a perfectly proportional two-handed cup seven inches high. It is wrought of gold, silver grid bronze, with rich setting soft enamel, amber, gloss and crystal and dates from the eighth century.

A10 Castle Matrix

This castle is adjacent to the Trail, and was originally built by the earls of Desmond, who erected castles to guard the passage on the river Deel. The castle has now been fully restored and it is open to the public on request for group visits and mediaeval banquets. In 1580 Walter Raleigh, installed in Castle Matrix, was responsible for the defence of the town, during the march by English troops to meet the Spanish force then entrenched at Smerwick Harbour, County Kerry. Cromwell disenfranchised the town during his Munster campaign for refusing to provision his army.

A11 Doohyle Lough Amenity Development

This project is presently being developed at Ballingrane where it is envisaged the trail would commence or conclude. It is being undertaken as a community project by the Rathkeale Amenities Development Committee. This project envisages a number of developments around Doohyle Lough and these include the provision of a small marina for leisure and angling crafts, the planting of several hundred trees and shrubs to develop a park, the renovation of existing dressing rooms and toilets, the creation of a camping site for visitors using the trail and stocking the lake for anglers.

A12 Embury, Heck Memorial Methodist Church Ballingrane (Built in 1766)

In 1709 a number of Palatines from Germany settled in a number of areas on the Southwell Estate, one of which was at Ballingrane near Rathkeale.

In 1749 the first Methodist Preachers visited Limerick and when John Wesley came to Ballingrane in 1756 there was a flourishing Methodist Society. Barbara Heck and her cousin Phillip Embury became members of that society and in 1758 Embury became one of Wesley's preachers. In 1760 Embury and Heck emigrated to the U.S.A. and in 1766 Embury preached the first Methodist sermon in America in his new home New York. This was the beginning of the Methodist Episcopal Church of the U.S.A.

A13 Curragh Chase Forest Park

Just 4 miles north of Ballingrane junction lies Curragh Chase, the birthplace of the poet and author Aubrey de Vere (1814-1902). Today the 600 acre demesne has been developed as a forest park, one of the finest in Ireland. The house was destroyed by fire in 1942, but the attractive ruin still remains today. The park is beautifully laid out, amid many exotic trees which were planted in the 19th century, and nature trails, forest walks, lakes, caravan park and picnic areas are available for visitors.

B PROPOSED ATTRACTIONS

Apart from existing attractions which may be used as a focus for a wide range of tourist developments there remain other opportunities for creating additional attractions. These include :

(i) bicycle hire and support facilities

(ii) pony and horse hire and stabling

(iii) caravans

(iv) camping sites

(v) "agri-tourist" projects.

(vi) riverside and forests

(vii) summary.

B(i) CYCLE HIRE AND SUPPORT FACILITIES

Cycling holidays must be a particularly fertile opportunity for tourist development. Compared with roads in Britain the intricate network of minor roads in Ireland is almost traffic free. They are ideal for family groups, novices of all ages and all those for whom trafficked roads are a deterrent to their cycling. For the Irish too, cycling is still a common transport with many, if not most, houses and bungalows in the countryside seeming to have a bike propped against a wall.

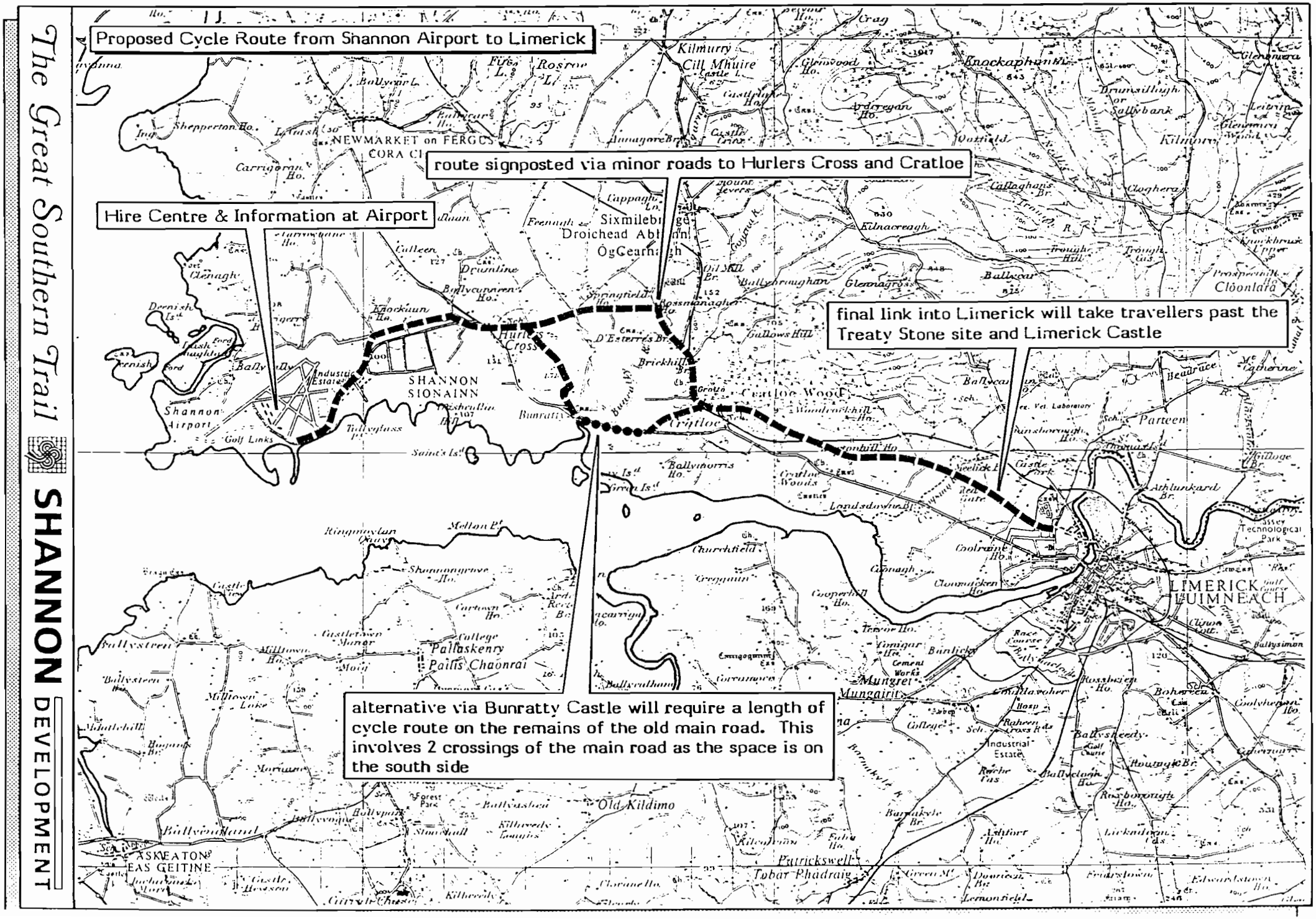
Maps and guides

The promotional literature produced by the Irish Tourist Board is very poor as their general brochure suggested tours often run on the busier roads which are as unpleasant as those of any other country. Meanwhile the ½" to mile map series is excellent and all visitors should be advised to purchase one for their chosen area (clearly very few did as on our surveys of this area we rarely met visitors on these minor roads, but saw many on the few principal roads which we did in fact use). What these maps lack is any specific information listing attractions and facilities. By way of example we enclose copies of 1:50,000 cycling maps of part of the Black Forest in Southern Germany which may be compared with the 1:126,000 map of the Limerick area.

If similar overprinted maps were available for Ireland then guides for specific cycle routes would probably not be necessary. However a general promotional leaflet for use in attracting visitors from abroad is necessary. This should concentrate as guiding people to the appropriate support facilities at their point of entry into the country, together with emphasising the plethora of excellent roads available, the location of hostels and the spread of camp sites. Such a map might be similar to that enclosed, compared with the one of a same scale available from the Irish Tourist Board.

Special routes

Once safely arrived and equipped with cycle, maps and possibly camping equipment from an outlet at, say, Shannon Airport, the cyclist often has to immediately face the most heavily trafficked, and therefore most hazardous roads, before having any time to grow accustomed to the ways of the new country. Again, considering Shannon Airport, the way to Limerick should be clearly signed via Hurlers Cross and Cratloe, or if Bunratty is to be included, then a short length of special path is needed to the east of the river to avoid using the N18 (perhaps utilising part of the old road).


Proposed Cycle Route from Shannon Airport to Limerick
route signposted via minor roads to Hurlers Cross and Cratloe
Hire Centre & Information at Airport
final link into Limerick will take travellers past the Treaty Stone site and Limerick Castle
alternative via Bunratty Castle will require a length of cycle route on the remains of the old main road. This involves 2 crossings of the main road as the space is on the south side
The Great Southern Trail
SHANNON DEVELOPMENT

This route would act not only as the link to Limerick but as the start of tours to Dublin and the first part of the journey to the south-west along the corridor of the Great Southern Trail.

Cycle hire & bicycle shops

Cycle hire is needed at the point of entry to the country for those who intend to spend their whole holiday cycling, and also at local centres for those who maybe want to do so for only a few days in an otherwise longer holiday, or for local people. Whilst the first type will need to be specially created, the second is largely in existence as a surprising number of cycle shops also hire out cycles.

Data from the Peak District in England indicate that cycle hire can prove highly popular when linked to traffic-free routes (e.g. the Tissington and High Peak Trails in Derbyshire). Cycle hire centres in that area experienced increases in trade of 15-26% in 1988 compared with 1987, and indications thus far, point to another big increase in 1989.

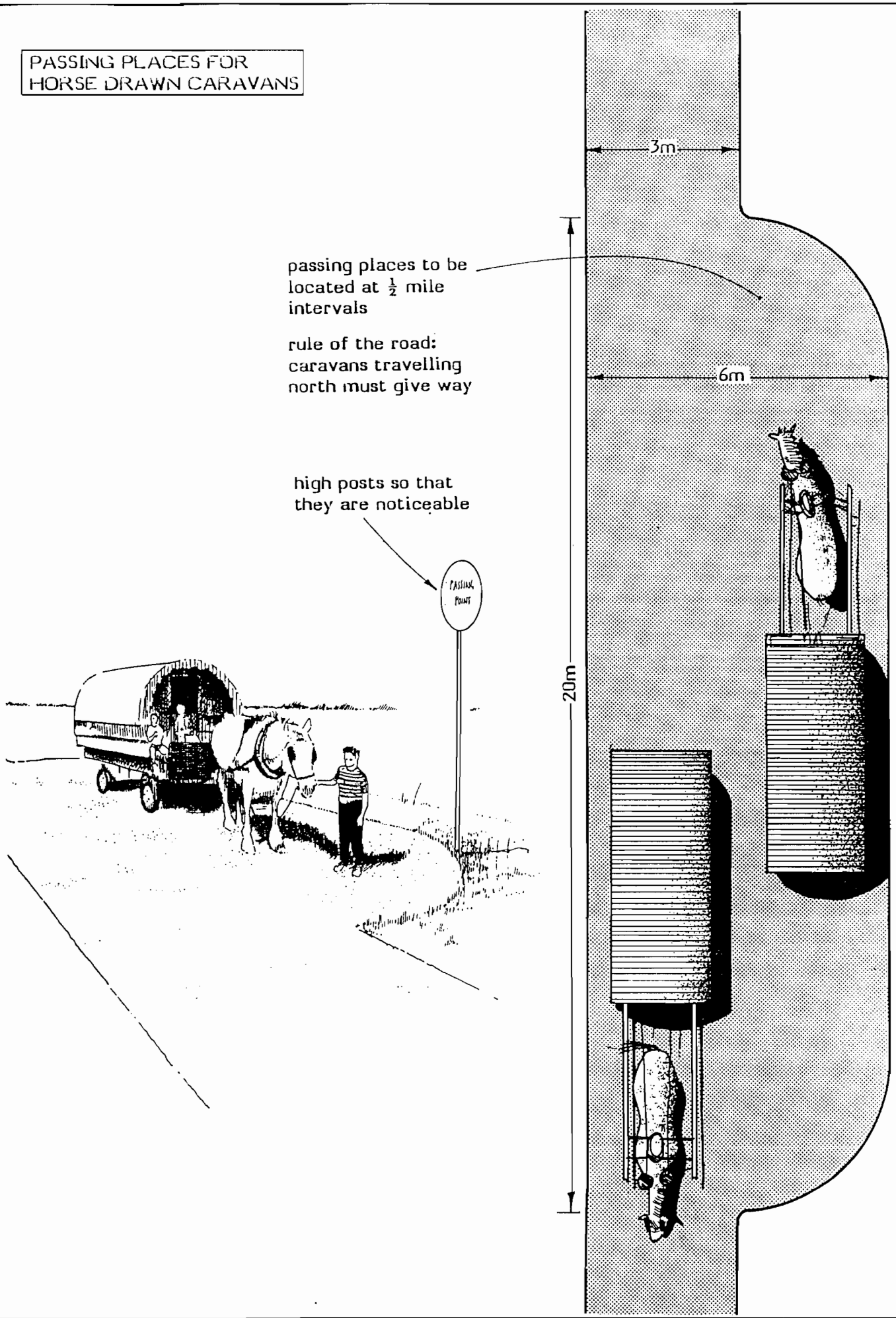
As regards the hire figures for the individual Peak District hire centres for 1988, these are as follows:

Centre	Hirings
Bollington	4,000
Talton	4,000
Hayfield	6,000
Waterhouses	8,361
Middleton Top	11,000
Ashbourne	14,376
Derwent	14,475
Paisley Hay	22,506
TOTAL	84,718

Likewise there seems to be a quite plentiful number of cycle shops for repairs and spares, at least from our survey in Co. Limerick and Co. Clare.

One last point on cycle hire relates to the need to develop a linked arrangement of cycle hire such that a bike may be collected at say Shannon and left at Dublin Airport. This arrangement should cover each of the principal ports of entry or airports. In some European countries this is carried much further e.g. in Holland, West Germany and Switzerland, where interchangeable cycle hire is available at many railway stations. Given the comparatively few cities of great size in Ireland we suspect that this is not necessary here, but strongly recommend that some central body, such as Shannon Development Corporation Company a more limited arrangement at points of entry.

PASSING PLACES FOR HORSE DRAWN CARAVANS



B(ii) PONY HIRE AND STABLING

This is more specific to the Great Southern Trail. Hire centres are needed at either end of the Trail, namely at Tralee and Castle Matrix, and possibly also at Newcastle West and Listowel. Again it should be possible to leave the ponies at the far end of the Trail. Apart from the two ends which are quite specific and illustrated in the figures, we recommend that literally every farmer with horses alongside the line should be invited to consider providing for hire, providing camping, overnight stopping, grazing and possibly some rougher riding on adjacent fields or over Sugar Hill, jumping and a regular series of events and gymkhanas. There will also be the need for tuition, guides and assistance for complete novices, and perhaps quite sophisticated facilities such as formal schooling and covered areas as the usage of the Trail increased. All these could turn the 50 mile journey into a week's event. Alternatively people might ride one way and then cycle back!

B(iii) HORSE DRAWN CARAVANS

These have much declined in popularity. One of the only two hirers mentioned by the Irish Tourist Board is based in Tralee. The Great Southern Trail offers a way of revitalising this gentle way of travelling in that the route will be both traffic-free and quietly graded. Caravan hire should be available at either end of the Trail and may may be seen as an adjunct to the pony hire. For instance a family group might go caravanning and also hire ponies for each of the children so that they can travel slightly independently and yet the accommodation is available all the time in the form of the caravan.

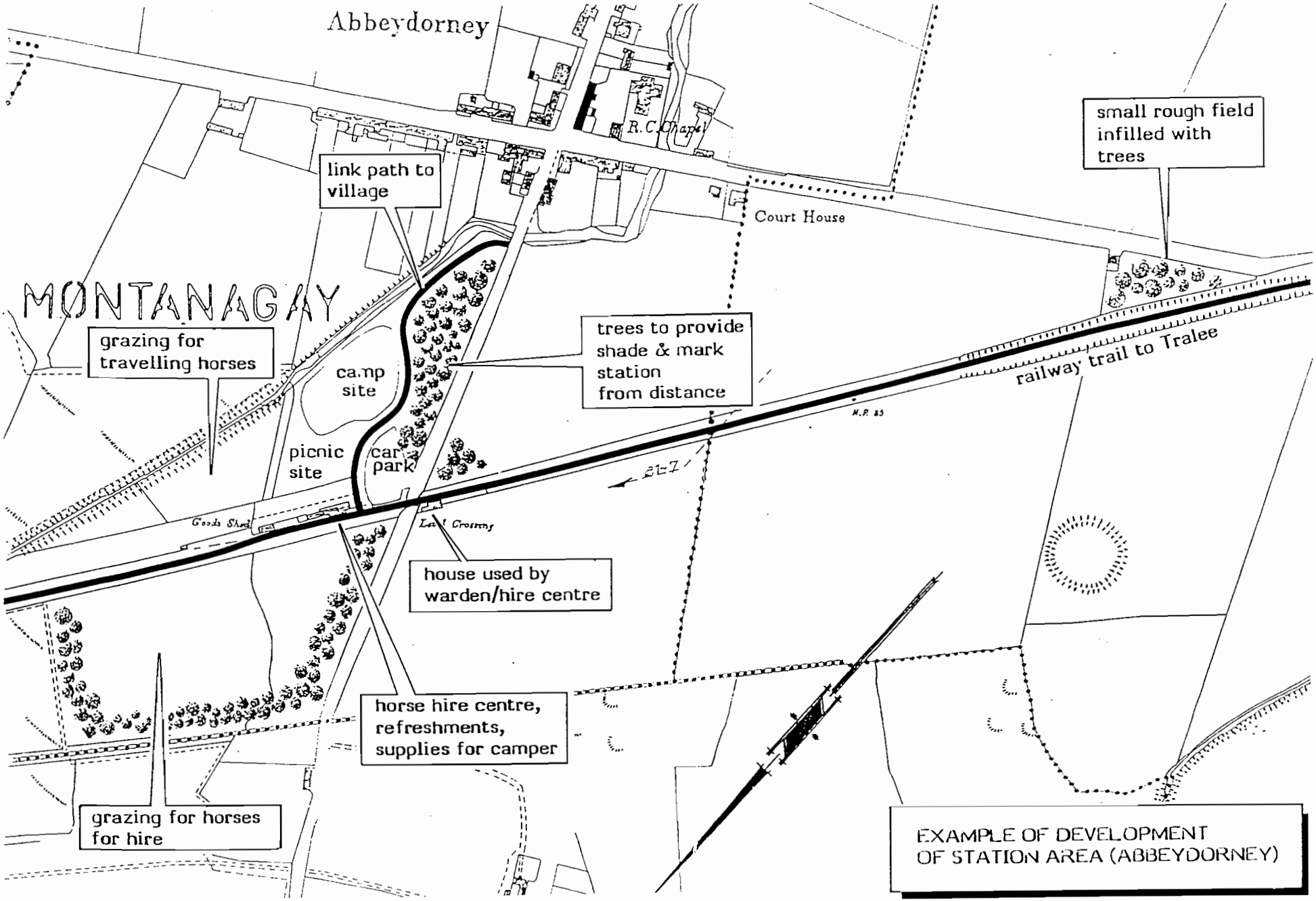
If it is decided to promote caravan use then the Trail will need to be defined accordingly with clear passing places. This is because the general path with a width of 3m will in effect be a single track lane. Drawing B5 shows a passing bay set at about half mile intervals and clearly marked with a sign indicating which direction of travel should wait for the other to pass!

B(iv) CAMPING SITES AND ACCOMMODATION

These should be of two types - larger formal sites at the main centres - Tralee, Lisburn, Newcastle West and Castle Matrix, together with the existing site at Curragh Chase and a much needed one at Limerick - say on the Shannon by the old bathing pools. Whilst these sites would be convenient to some of the main focii along the route they should be sited so that they are pleasant in themselves, e.g. beside the river at Listowel. They must be readily accessible both from the Trail and from the road as they will form the points at which the paths of cyclists, motorists, walkers and riders all cross. At the same time the site itself should be arranged so that motorists are kept separate from other users who are using the Trail expressly to get away from cars.

These main sites should have a modest range of facilities including workrooms and drying areas.

In addition low-key sites should be encouraged all along the route. Again each farmer's assistance should be sought to devise numerous sites suitable for a few tents with supplies available from the farm. Often no facilities other than the ground and the availability of a toilet and water will be needed. Ideally the frequency of sites will be such that the traveller is faced with no undue pressures to reach a particular goal, nor should there be any anxiety at not being welcomed at whatever point is reached at the end of the day.


Abbeydorney
R.C. Chapel
Court House
small rough field infilled with trees
link path to village
MONTANAGAY
grazing for travelling horses
camp site
trees to provide shade & mark station from distance
railway trail to Tralee
picnic site
car park
Goods Shed
Level Crossing
house used by warden/hire centre
horse hire centre, refreshments, supplies for camper
grazing for horses for hire
EXAMPLE OF DEVELOPMENT OF STATION AREA (ABBEYDORNEY)

B(v) "AGRI-TOURISM"

This ungainly word is used here to describe almost any farming activity which can be extended to provide for the tourist business and thereby profit the farmer. Here we suggest that the target is the "green" consumer grown suspicious of mass-produced foods, worried about additives and weary of consumerism and technology. The very lack of development in this area should be seen as an asset and farmers encouraged to let visitors share their way of life, work on the farm, provide **paying** labour to carry out labour intensive growing of organic crops or caring for livestock, carrying out all the work of the farm including milking, harvesting of produce, making cheeses and preserves for taking home and so forth. This sort of working holiday is an extension of weekend working on organic farms (WWOOF) which is quite common in England.

As well as this, and providing camping and grazing for Trail users, we wonder whether some areas of marginal lands could be profitably planted with trees given the existence of grants from the Forest Services. These would both enhance the environs of the Trail and provide an eventual return on the land. In addition there will arise opportunities for visitors to practice forestry and woodworking. The highlight of a week's family tour might be the felling of a tree by hand!

B(vi) RIVERSIDE AND COPSES

All along the route there are numbers of examples of several fragments of wooded land, scrubland and riverside which are difficult to work because of their steepness or being cut off by the railway. Where possible these should be incorporated into the project to provide variety, public areas and rest areas. Riversides are particularly attractive and every opportunity should be taken to make a link to a riverside (Fig IV).

Feale River

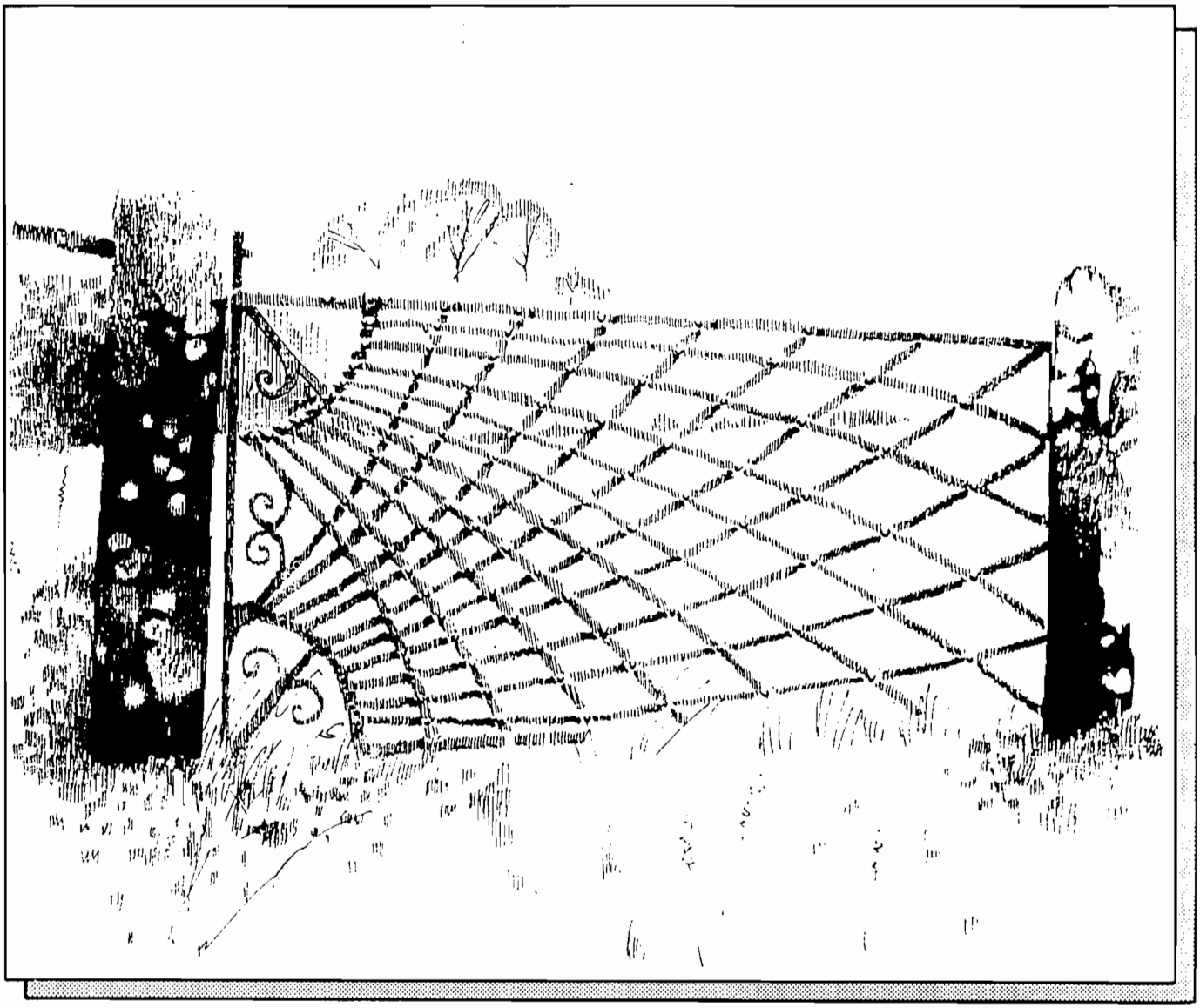
From Listowel to Abbeyfeale the Trail runs adjacent to the Feale River which could be developed as a beautiful riverside section with careful landscaping. Wherever possible the land between the railway path and the river should be incorporated into the overall scheme beginning a wildlife and forest area which could be extended up to Barnagh.

Wooded Areas and Community Forest

Between Abbeyfeale and Barnagh the trail runs through some very attractive mature deciduous wooded areas. It is felt that this would appear to provide an ideal habitat for various forms of wildlife which would be of interest to visitors on the Trail. It is suggested that interesting habitats such as this be surveyed by conservationists such as the I.W.C. or An Taisce and that the results illustrating species of flora or fauna, be displayed on weatherproof boards as a guide for visitors to observe and appreciate the relatively unspoilt countryside. As far as possible the area under forestry should be extended with new plantings to soften this upland area. This would also provide a link to the new gardens at Barnagh Gap.

B(vii) SUMMARY OF ADDITIONAL FEATURES

This section of the report has endeavoured to sketch the range of activities which might be pursued to the advantage of the Trail. Inevitably the list has been partial and is incomplete, but without these the Trail will be lifeless and little used. The project manager appointed to the Trail must be capable of bringing the whole corridor to life in ways similar to this.



The Great Southern Trail

A report on a railway path from Tralee to Limerick

APPENDIX V

NORTH KERRY LINE: TRALEE-LIMERICK 1989

APPENDIX V : CATALOGUE OF SLIDES OF THE NORTH KERRY LINE TAKEN IN NOVEMBER 1988 AND JULY 1989 FROM TRALEE TO LIMERICK
(all directions of view are shown simply by compass points, ie.N.E.

1. View of Windmill at Blennerville showing canal with towpath on right.
2. View of seaward end of canal.
3. Tralee - Denny Street with Ashe Memorial Hall in background. This would be the recommended route from the basin at the end of the old ship canal via James Street and Ivy Terrace.
4. Rock Street upper level crossing N.W.
5. S.E. towards centre of Tralee.
6. N.W. from Rock Park Avenue.
7. N. across Gallows Field from near footpath crossing.
8. S.E. adjacent to Caherinoneen. November 1988.
9. " " " " showing rails removed.
10. Looking S. at railway from near playing fields.
11. N.W. from playing fields.
12. Looking S. over the railway from the minor road to Listellick. Slieve Mish Mountains in the background.
13. b114 - Ballyroe - bridge removed.
14. View N.W. from b114 - mile $2\frac{1}{4}$.
15. o113 - hotel bridge removed. Original height 10'6".
16. View S. from b112 - mile $3\frac{1}{4}$.
17. View N. b112.
18. Mile $3\frac{3}{4}$ - new drainage works adjacent to road to Abbeydorney.
19. Road to Abbeydorney looking S.
20. b111 - from road.
21. Ardfert Station from the S.W.
22. Ardfert Station.
23. Mile $6\frac{1}{4}$ - looking S.W. near Lismore Rings.
24. Mile $6\frac{1}{4}$ - looking N.E. near Lismore Rings.
25. View to N.E. towards the coast.
26. Abbeydorney Granary - mile $7\frac{1}{2}$ - from bridge 107.
27. View from bridge 107 towards Abbeydorney Station in distance.
28. View from bridge 107 down main street.
29. Mile 8 - Abbeydorney Station Level Crossing looking towards Tralee.
30. Abbeydorney Station Crossing looking N.E. - ruined church on left.
31. Abbeydorney Station.
32. Cottage on road to Lixnaw showing bicycles.
33. Cattle on road to Lixnaw showing bicycles.
34. Peat cutting on road to Aghacoora Level Crossing - mile $10\frac{1}{2}$.
35. Aghacoora Level Crossing looking towards Listowel.
36. Aghacoora Level Crossing looking towards Tralee.
37. b103 looking S. at the River Brick.
38. " " " " ".
39. Looking towards b103 from mile $12\frac{1}{2}$.
40. Well at Lixnaw.
41. b102 showing rail in situ but sleepers lifted beyond.
42. Detail of b102 looking towards well in background.
43. Lixnaw Station from level crossing.
44. Quarry at Mile $13\frac{1}{2}$.
45. " " " "
46. b99 - from near the road.
47. b99.
48. Finuge Bridge over the River Feale.
49. Shrine at junction with Listowel Road, near Gortnaminsha Level Crossing.
50. Farm access at mile 17.
51. View along track from mile 17 towards Listowel.
52. " " "

53. Listowel race course from minor road.
54. Level crossing at Craughatussane Level Crossing looking E. towards Listowel Station.
55. Listowel Station goods shed.
56. Remains of signal box.
57. " " " "
58. Listowel Station looking E.
59. Listowel Station looking W.
60. Listowel Station from William Street.
61. William Street level crossing looking W.
62 William Street level crossing look E.
63. Railway in Listowel.
64. View from railway in Listowel.
65. " " "
66. " " "
67. View from b96 - mile 20¼.
68. " " " looking E.
69. View of b96.
70. " " "
71. Detail of flooding under b96.
72. Remaining signal post.
73. Mile 21.
74. Further on.
75. View from path towards river.
76. Further on.
77. Farm gate across track.
78. View of track.
79. View of river.
80. b94 - mile 22½.
81. " " - showing steelwork in place.
82. View looking W from mile 20¾.
83. View from G126 - farm access - looking W.
84. " " " - looking at the start of the heavily overgrown section.
85. b92 - accommodation bridge 3.6m span.
86. " "
87. View from b91 - looking W.
88. " " " - looking E.
89. b90 looking S.E.
90. b90 looking towards Listowel.
91. b90 looking towards Kilmorna.
92. Kilmorna Station from S.E.
93. Detail of Kilmorna Station.
94. b88 - at mile 25½.
95. b87a - showing care taken with concrete to match in with rest of railway.
96. View looking S.E. from b87A.
97. Typical view of railway from road towards Abbeyfeale showing gated crossing.
98. View of the River Feale from b87a showing road viaduct in foreground.
99. Survey team.
100. View of River Feale from mile 25½.
101. b87 - from S.W.
102. Cattle crossing line at G116.
103. " " "
104. Looking along the line near mile 26½ N.W.
105. Looking S.E. - mile 27.
106. " " " "
107. Looking from road towards railway b86 lost in bushes on left.
108. b85 - farm bridge - note close spacing of sleepers.
109. Looking along path near b87.

110. Ditto - towards Abbeyfeale and ruined castle on right.
111. View of b83 from road - Abbeyfeale in the background.
112. View of river from road.
113. Detail of b83.
114. Detail of b83 looking towards Abbeyfeale Station.
115. b82 - looking from N.
116. Detail of b82 abutment looking towards bowl.
117. View of area of erosion at mile 29.
118. Further view.
119. View of G90 and cottage beyond at mile 29¼.
120. View of railway near mile 30.
121. View looking W. near culvert - b81 - at mile 30.
122. b80 from the W.
123. View of path just west of b80.
124. View from b80 towards Abbeyfeale.
125. Devon Road Station building.
126. View from Devon Road Station to E.
127. View of railway.
128. b75 - mile 32¼.
129. View of railway from main road - mile 32½ - near Templeglentan.
130. " " "
131. " " "
132. " " "
133. View of railway from hotel gardens.
134. b72 from the east.
135. View from b72 looking E.
136. b71 looking N.
137. View from b71 looking E.
138. View from Knockawahig of b71.
139. View from Knockawahig towards E.
140. View from Knockawahig showing Barnagh Gap.
141. View.
142. View.
143. View from b68 S.W.
144. View from b68 N.E.
145. Barnagh Station with entrance to tunnel in distance.
146. b67 at Barnagh Station.
147. View from top of Barnagh Tunnel looking towards Barnagh Station.
148. View from top of Barnagh Tunnel looking E.
149. b65 looking E (down hill).
150. Looking at railway beside main road separated by wall.
151. b64 over main road.
152. b64 over main road.
153. b64 over main road.
154. View of b63 (Fergusons Viaduct).
155. Detail.
156. View.
157. Detail.
158. b62 - mile 38¼ - high masonry arch over road.
159. Remains of Glenagown Level Crossing.
160. River bridge adjacent to level crossing.
161. View of line near b60.
162. View of line from Knockanimpaha looking towards Newcastle West.
163. " " "
164. b58 - masonry culvert under high embankment - mile 40¼.
165. Dromin Level Crossing looking S.W.
166. " " looking N.E.
167. Ashgrove Level Crossing.

168. View.
169. View.
170. b56 - steel bridge.
171. " " "
172. Churchdown Level Crossing.
173. " " " looking towards Newcastle West.
174. b55.
175. "
176. Drive to Newcastle West Station.
177. Newcastle West.
178. View from b53/b54 towards Newcastle West.
179. View of b53/b54.
180. " " ".
181. Detail.
182. b52 River Daar bridge.
183. b51 - accommodation bridge under.
184. G28 - track to house.
185. View.
186. b50 at Ardagh Station.
187. View of old station from bridge.
188. b49.
189. View of b49 from N.E.
190. View from b49 looking N.E. with small river bridge b48 in foreground.
191. " " "
192. Detail of b48.
193. Field gate near mile 46¼.
194. Track parallel to road near 46¼.
195. " " "
196. " " "
197. b47.
198. View from path at b46 - mile 47½.
199. " " "
200. " " "
201. b45.
202. b44.
203. b43.
204. View to the N. from b43.
205. View along track.
206. Typical field gate.
207. View from b42 - mile 49.
208. b41.
209. b40 from the W.
210. View of Castle Matrix from track.
211. b39 looking towards Rathkeale.
212. Detail of b39.
213. b39 looking down in the direction of Castle Matrix.
214. b38.
215. View of b37 River Keale bridge.
216. Detail looking towards Castle Matrix.
217. View looking towards Rathkeale.
218. " " " "
219. View along railway towards Rathkeale (very narrow here).
220. Rathkeale Station from road bridge.
221. " "
222. b36 at Rathkeale.
223. View in Rathkeale.
224. View of Rathkeale church from road from Ballygrane.
225. View from b36 looking north/

226. Reed beds N of Rathkeale Station.
227. Children on b34.
228. View of b35 - nigh masonry culvert under railway.
229. b34.
230. Wayside seat near Cappagh.
231. Estate road to Curragh Chase.
232. Field gate to Curragh Chase.
233. Formal walk in Curragh Chase.
234. Road to Old Kildimo.
235. Ferry Bridge.
236. Track looking back to Old Kildimo Castle.

Limerick and Shannon Canal.

237. Entrance near Lock Quay.
238. Canal towpath - S.side.
239. Canal towpath - S.side.
240. Junction with Shannon.
241. Riverside path.
242. Canal towpath - N. side.
243. River Shannon path.
244. River Shannon path N. of Athlunkard Bridge.
245. Shannon bathing place.
246. Foot bridge at bathing place.

END